

Myanmar Case Study Results

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June 12, 2024

1 Global parameters

1.1 Global Warming Potentials (GWPs) over 100 years

GWP100 for CO₂: 1.0

GWP100 for CH₄: 34.0

GWP100 for N₂O: 298.0

1.2 Unit conversion factors

Conversion from mg CO₂-C m⁻² d⁻¹ to g CO_{2,eq} m⁻² yr⁻¹: 3.667

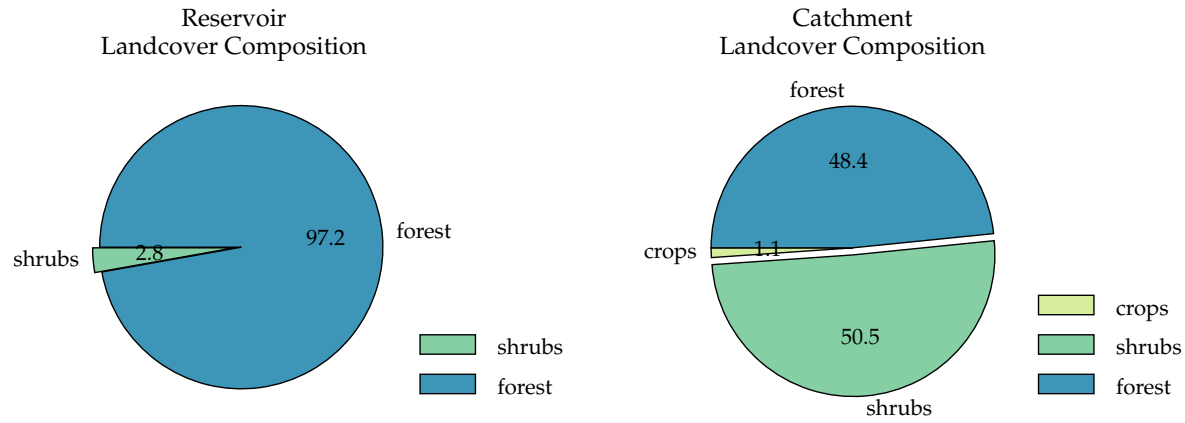
Conversion from mg CH₄ m⁻² d⁻¹ to g CO_{2,eq} m⁻² yr⁻¹: 16.55

Conversion from μg N₂O m⁻² d⁻¹ to g CO_{2,eq} m⁻² yr⁻¹: 0.1709

2 Bawgata

2.1 Inputs

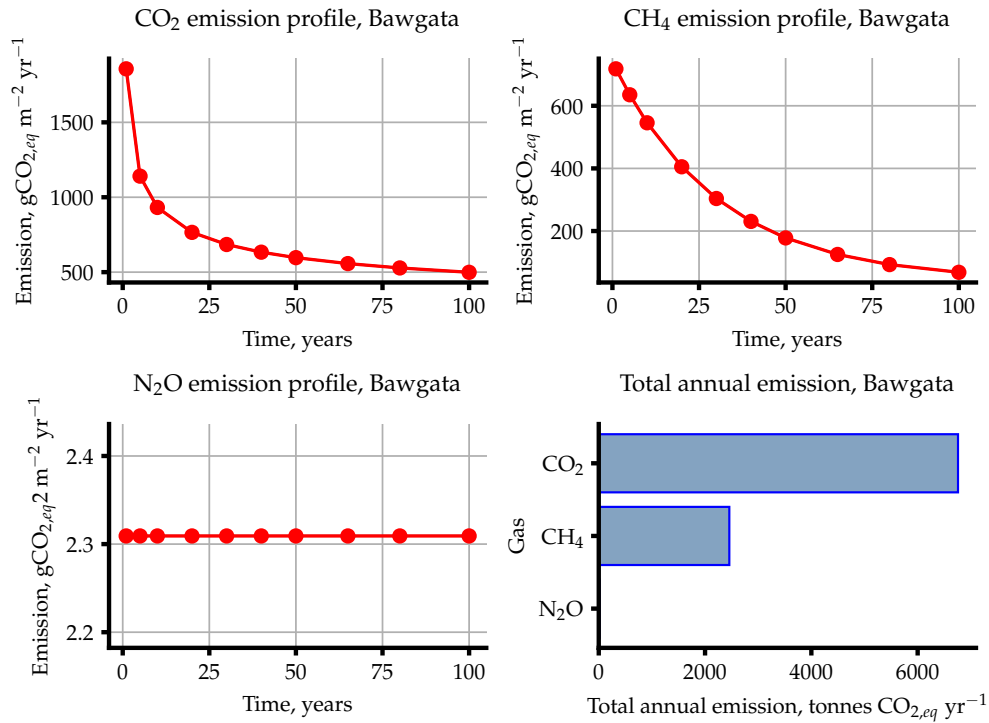
Input Name	Unit	Value(s)
Reservoir ID		8
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.268924, LON: 96.859766
Monthly Temperatures	$^{\circ}\text{C}$	21.2, 23.1, 25.9, 28.4, 27.8, 25.8, 25.4, 25.4, 25.9, 26.0, 24.5, 21.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	902.0
Catchment area	km^2	228.0
Length of inundated river	km	8.112
Population	capita	11 370
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.011, 0.505, 0.484, 0.0
Mean catchment slope	$\%$	22.00
Mean annual precipitation	mm/year	1912
Mean annual evapotranspiration	mm/year	1302
Soil wetness	mm over profile	448.0
Soil Olsen P content	kgP ha^{-1}	12.64
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	854 600 000
Reservoir area	km^2	10.05
Maximum reservoir depth	m	213.0
Mean reservoir depth	m	85.10
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.028, 0.972, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.744
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.030
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.340
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.458
Mean monthly wind speed	m s^{-1}	0.9700
Water intake depth below surface	m	N/A



2.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	554.2
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	380.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-499.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	173.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	672.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	6759
Total CO ₂ emission per lifetime	ktCO _{2,eq}	675.9
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	84.82
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	41.57
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	118.1
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	244.5
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	2457
Total CH ₄ emission per lifetime	ktCO _{2,eq}	245.7
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.309
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.4840
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.397
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	23.20
Total N ₂ O emission per lifetime	ktCO _{2,eq}	2.320
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	917.4
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	918.8

2.3 Emission plots



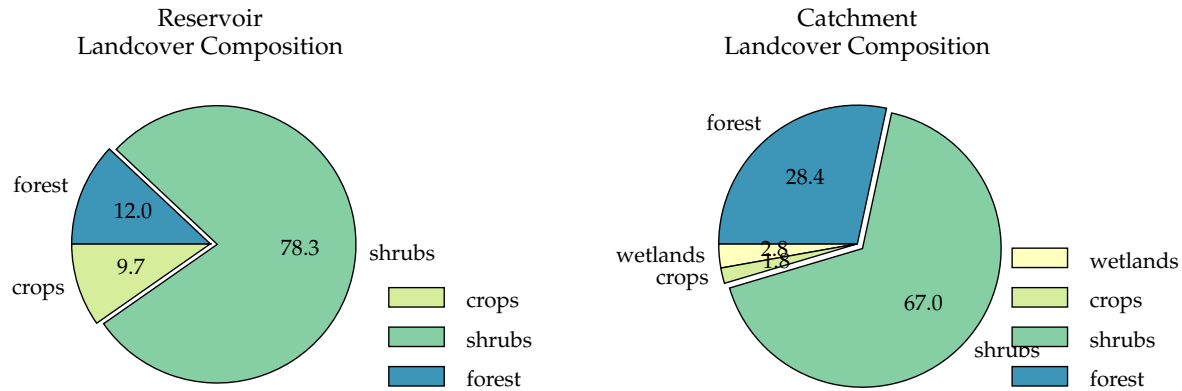
2.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	55.67
Retention coefficient	-	0.7689
Influent total N concentration	$\mu\text{g L}^{-1}$	22.17
Reservoir TN concentration	$\mu\text{g L}^{-1}$	5.126
Reservoir TP concentration	$\mu\text{g L}^{-1}$	13.36
Percentage of reservoir's surface area that is littoral	%	2.109
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.030
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	60.36
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.62
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	27.03
Water density at the surface of the reservoir	kg m^{-3}	996.5
Thermocline depth	m	1.609
Influent total N load	kgN yr^{-1}	4560
Influent total P load	kgP yr^{-1}	11 450
Downstream TN concentration	mg L^{-1}	0.003 394

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3.1 Inputs

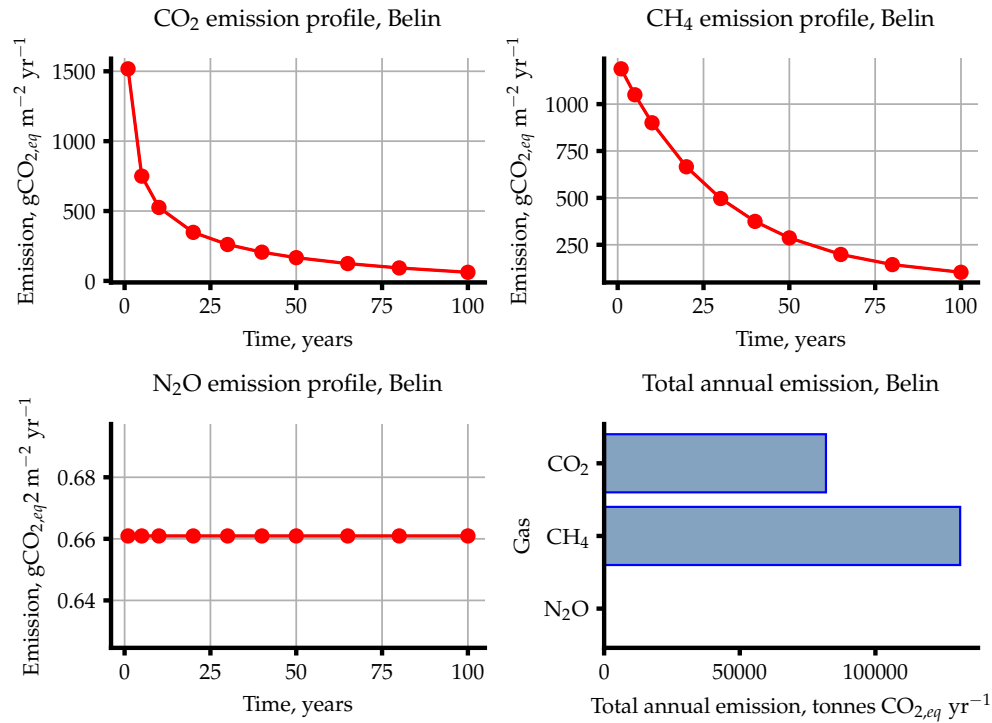
Input Name	Unit	Value(s)
Reservoir ID		9
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.5197, LON: 97.2435
Monthly Temperatures	$^{\circ}\text{C}$	22.4, 24.1, 27.0, 29.6, 28.9, 26.8, 26.4, 26.3, 26.9, 27.1, 25.8, 23.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1678
Catchment area	km ²	1907
Length of inundated river	km	72.68
Population	capita	13 300
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.028, 0.018, 0.671, 0.284, 0.0
Mean catchment slope	%	24.00
Mean annual precipitation	mm/year	2723
Mean annual evapotranspiration	mm/year	1337
Soil wetness	mm over profile	530.0
Soil Olsen P content	kgP ha ⁻¹	7.322
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	14 210 000 000
Reservoir area	km ²	329.7
Maximum reservoir depth	m	108.0
Mean reservoir depth	m	43.10
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.097, 0.783, 0.12, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	6.062
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	4.870
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	3.995
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	5.459
Mean monthly wind speed	m s ⁻¹	1.050
Water intake depth below surface	m	N/A



3.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	594.1
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	407.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-61.60
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	186.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	248.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	81 770
Total CO ₂ emission per lifetime	ktCO _{2,eq}	8177
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	130.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	58.83
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	208.5
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	398.0
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	131 200
Total CH ₄ emission per lifetime	ktCO _{2,eq}	13 120
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.6609
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.1377
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.3993
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	217.9
Total N ₂ O emission per lifetime	ktCO _{2,eq}	21.79
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	646.0
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	646.4

3.3 Emission plots



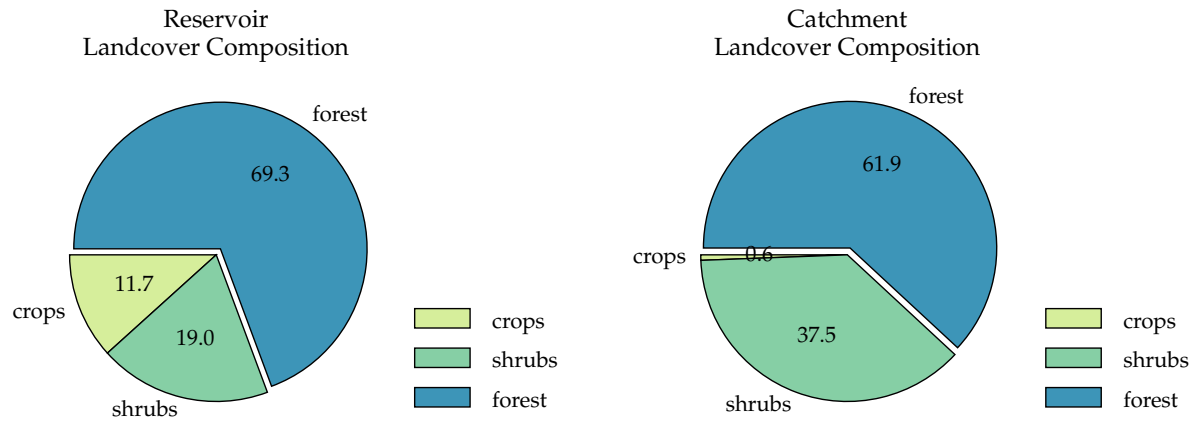
3.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	14.88
Retention coefficient	-	0.7806
Influent total N concentration	$\mu\text{g L}^{-1}$	13.31
Reservoir TN concentration	$\mu\text{g L}^{-1}$	2.868
Reservoir TP concentration	$\mu\text{g L}^{-1}$	3.294
Percentage of reservoir's surface area that is littoral	%	4.153
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.41
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.15
Water density at the surface of the reservoir	kg m^{-3}	996.2
Thermocline depth	m	3.834
Influent total N load	kgN yr^{-1}	42 570
Influent total P load	kgP yr^{-1}	47 620
Downstream TN concentration	mg L^{-1}	0.001 995

4 Buywa (upper)

4.1 Inputs

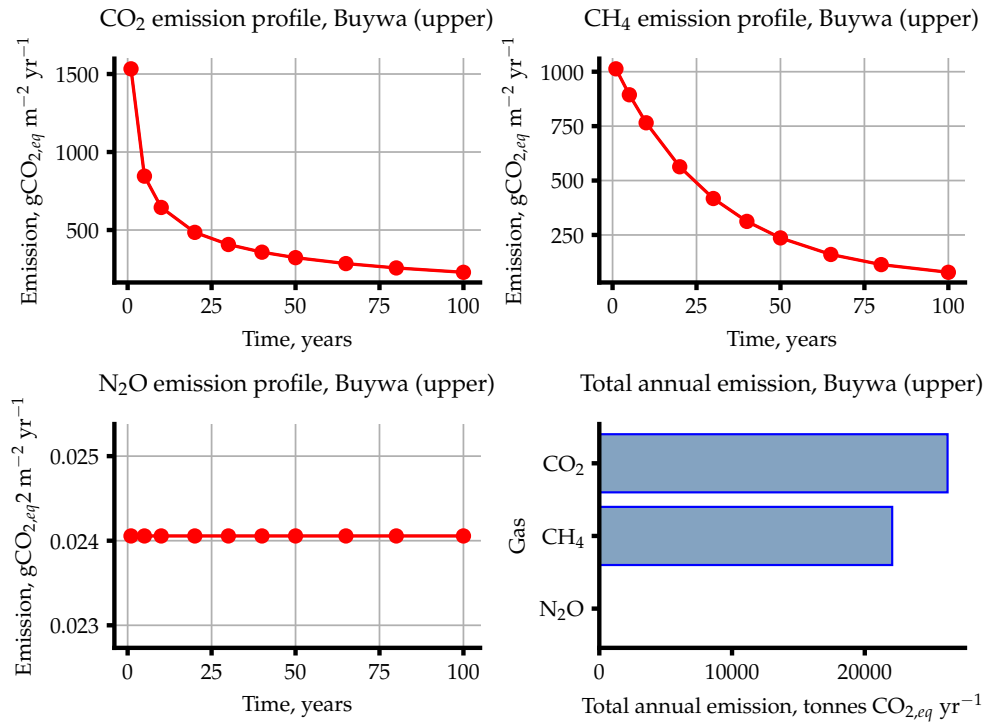
Input Name	Unit	Value(s)
Reservoir ID		10
Reservoir type		multipurpose
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.7661, LON: 94.0818
Monthly Temperatures	$^{\circ}\text{C}$	18.5, 21.3, 25.5, 28.3, 28.0, 26.4, 26.0, 25.8, 25.7, 25.0, 22.1, 18.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1400
Catchment area	km^2	2335
Length of inundated river	km	42.73
Population	capita	23 690
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.006, 0.375, 0.619, 0.0
Mean catchment slope	$\%$	39.00
Mean annual precipitation	mm/year	2221
Mean annual evapotranspiration	mm/year	1171
Soil wetness	mm over profile	174.0
Soil Olsen P content	kgP ha^{-1}	5.578
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	4 245 000 000
Reservoir area	km^2	66.26
Maximum reservoir depth	m	188.0
Mean reservoir depth	m	64.10
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.117, 0.19, 0.694, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.701
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.785
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.126
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.090
Water intake depth below surface	m	N/A



4.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	532.2
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	365.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-229.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	167.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	396.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	26 240
Total CO ₂ emission per lifetime	ktCO _{2,eq}	2624
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	95.04
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	40.16
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	197.8
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	333.0
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	22 060
Total CH ₄ emission per lifetime	ktCO _{2,eq}	2206
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.024 06
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.008 962
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.016 51
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.594
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1594
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	729.0
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	729.0

4.3 Emission plots



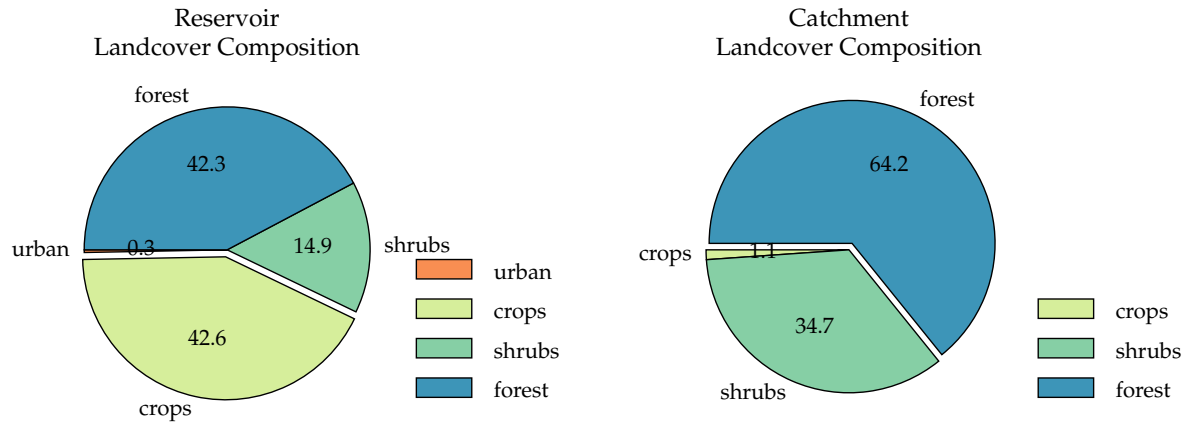
4.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	15.16
Retention coefficient	-	0.5098
Influent total N concentration	$\mu\text{g L}^{-1}$	0.1708
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.083 44
Reservoir TP concentration	$\mu\text{g L}^{-1}$	7.509
Percentage of reservoir's surface area that is littoral	%	3.061
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.785
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.42
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	22.85
Water density at the bottom of the reservoir	kg m^{-3}	997.6
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	27.17
Water density at the surface of the reservoir	kg m^{-3}	996.5
Thermocline depth	m	2.193
Influent total N load	kgN yr^{-1}	558.4
Influent total P load	kgP yr^{-1}	49 560
Downstream TN concentration	mg L^{-1}	0.000 105 7

5 Buywa

5.1 Inputs

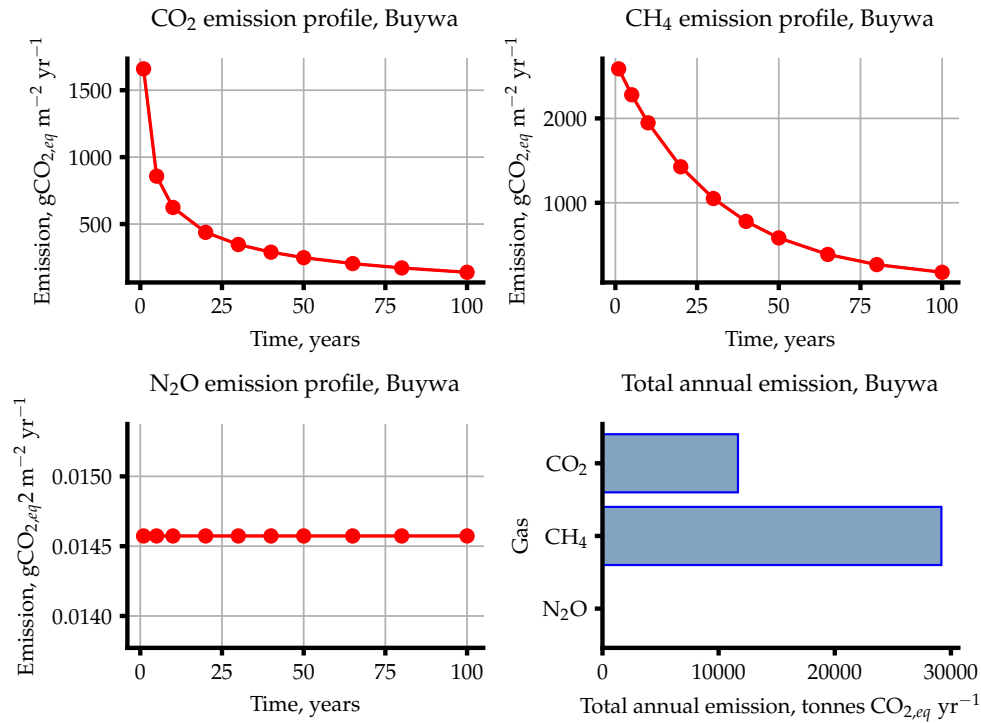
Input Name	Unit	Value(s)
Reservoir ID		11
Reservoir type		multipurpose
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.6566, LON: 94.143
Monthly Temperatures	$^{\circ}\text{C}$	19.9, 22.6, 26.8, 29.6, 29.3, 27.5, 27.1, 27.0, 26.8, 26.1, 23.3, 20.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1336
Catchment area	km^2	2939
Length of inundated river	km	21.00
Population	capita	32 130
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.011, 0.347, 0.642, 0.0
Mean catchment slope	$\%$	38.00
Mean annual precipitation	mm/year	2160
Mean annual evapotranspiration	mm/year	1186
Soil wetness	mm over profile	170.0
Soil Olsen P content	kgP ha^{-1}	5.479
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	999 100 000
Reservoir area	km^2	34.90
Maximum reservoir depth	m	66.00
Mean reservoir depth	m	28.60
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.426, 0.149, 0.423, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.003, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.240
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.850
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.300
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.188
Mean monthly wind speed	m s^{-1}	1.030
Water intake depth below surface	m	N/A



5.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	620.3
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	425.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-139.6
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	194.6
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	334.2
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	11 660
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1166
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	147.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	77.10
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	611.9
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	836.0
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	29 180
Total CH ₄ emission per lifetime	ktCO _{2,eq}	2918
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.014 57
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.011 21
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.012 89
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.5087
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.050 87
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1170
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1170

5.3 Emission plots



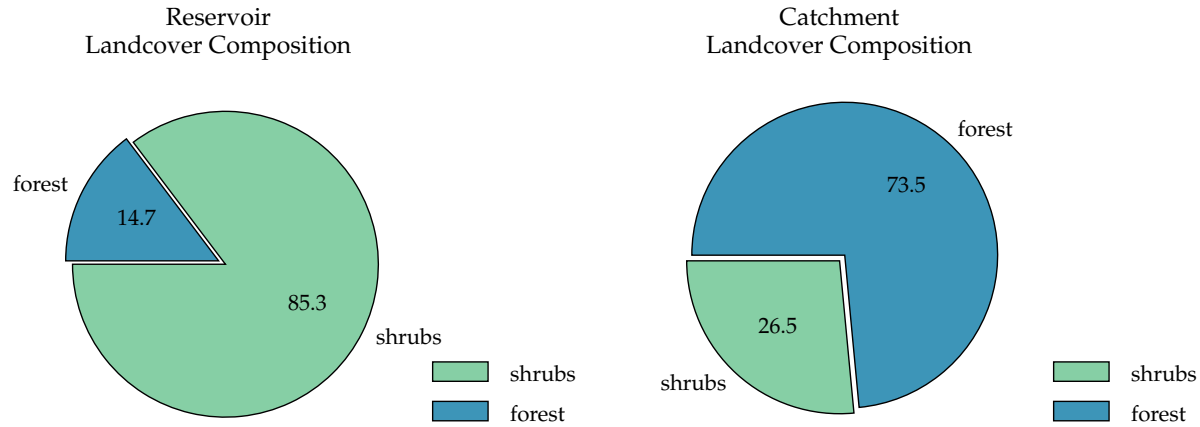
5.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	15.92
Retention coefficient	-	0.1693
Influent total N concentration	$\mu\text{g L}^{-1}$	0.2112
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.1745
Reservoir TP concentration	$\mu\text{g L}^{-1}$	13.25
Percentage of reservoir's surface area that is littoral	%	5.902
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.850
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.20
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.76
Water density at the bottom of the reservoir	kg m^{-3}	997.4
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.38
Water density at the surface of the reservoir	kg m^{-3}	996.2
Thermocline depth	m	1.675
Influent total N load	kgN yr^{-1}	829.3
Influent total P load	kgP yr^{-1}	62 530
Downstream TN concentration	mg L^{-1}	0.000 254 8

6 Dum Ban

6.1 Inputs

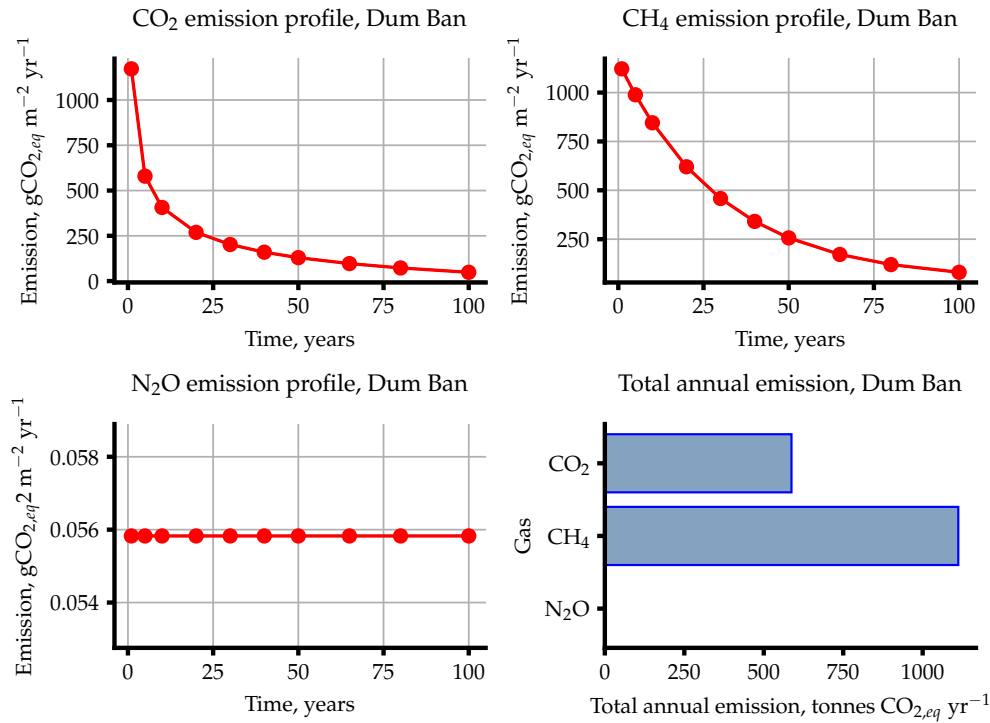
Input Name	Unit	Value(s)
Reservoir ID		21
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 25.5116, LON: 97.907
Monthly Temperatures	$^{\circ}\text{C}$	15.0, 16.8, 20.5, 23.2, 25.2, 25.9, 25.7, 26.0, 25.7, 23.7, 19.6, 16.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	930.0
Catchment area	km ²	533.0
Length of inundated river	km	4.735
Population	capita	8629
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.265, 0.735, 0.0
Mean catchment slope	%	34.00
Mean annual precipitation	mm/year	1811
Mean annual evapotranspiration	mm/year	1045
Soil wetness	mm over profile	203.0
Soil Olsen P content	kgP ha ⁻¹	9.888
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	104 400 000
Reservoir area	km ²	3.053
Maximum reservoir depth	m	85.00
Mean reservoir depth	m	34.20
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.853, 0.147, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	6.871
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	4.430
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	3.968
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	4.680
Mean monthly wind speed	m s ⁻¹	1.040
Water intake depth below surface	m	N/A



6.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	458.5
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	314.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-48.51
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	143.8
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	192.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	587.3
Total CO ₂ emission per lifetime	ktCO _{2,eq}	58.73
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	96.75
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	37.85
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	229.7
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	364.3
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	1112
Total CH ₄ emission per lifetime	ktCO _{2,eq}	111.2
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.055 83
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.043 65
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.049 74
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.1704
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.017 04
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	556.6
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	556.7

6.3 Emission plots



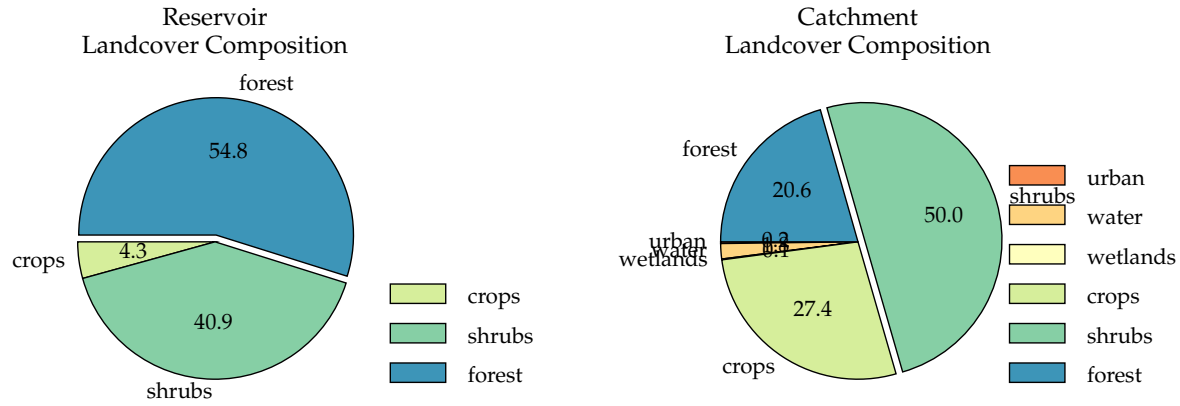
6.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	24.82
Retention coefficient	-	0.1444
Influent total N concentration	$\mu\text{g L}^{-1}$	0.6764
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.5787
Reservoir TP concentration	$\mu\text{g L}^{-1}$	21.23
Percentage of reservoir's surface area that is littoral	%	5.197
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.430
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	53.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	20.55
Water density at the bottom of the reservoir	kg m^{-3}	998.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.83
Water density at the surface of the reservoir	kg m^{-3}	996.9
Thermocline depth	m	0.9121
Influent total N load	kgN yr^{-1}	335.3
Influent total P load	kgP yr^{-1}	12 300
Downstream TN concentration	mg L^{-1}	0.000 835 0

7 Hawkham (upper)

7.1 Inputs

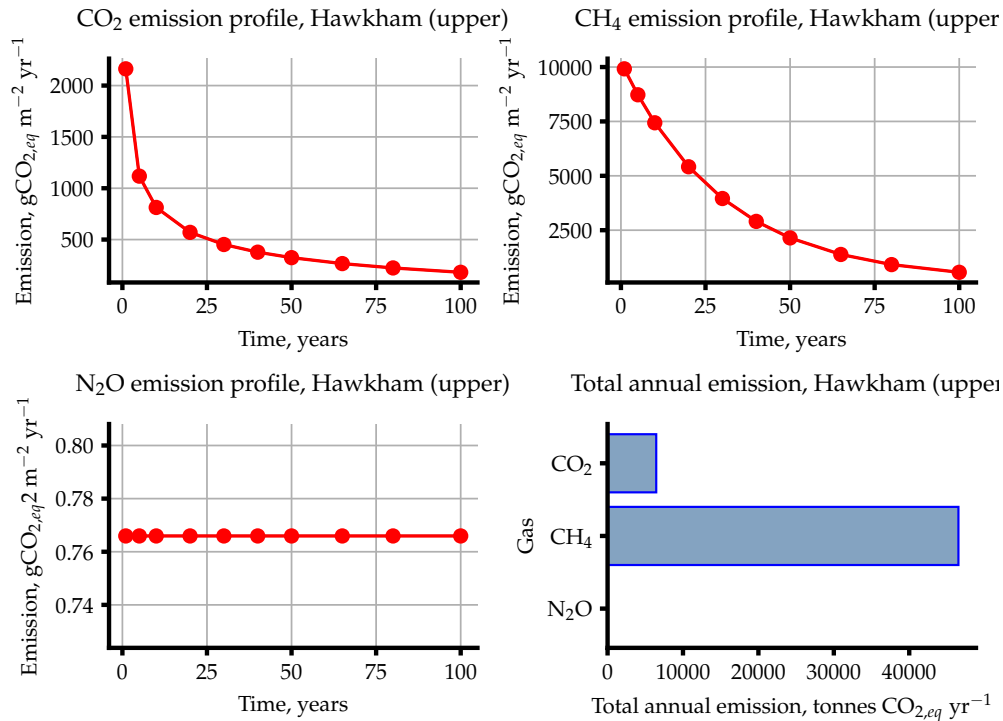
Input Name	Unit	Value(s)
Reservoir ID		26
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.2142, LON: 97.3992
Monthly Temperatures	$^{\circ}\text{C}$	21.5, 24.2, 27.8, 30.6, 29.4, 27.6, 27.1, 26.9, 27.0, 26.5, 24.7, 21.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	577.0
Catchment area	km^2	16 230
Length of inundated river	km	30.16
Population	capita	1 531 000
Area fractions	-	0.0, 0.0, 0.002, 0.018, 0.001, 0.274, 0.5, 0.206, 0.0
Mean catchment slope	$\%$	15.00
Mean annual precipitation	mm/year	1502
Mean annual evapotranspiration	mm/year	1278
Soil wetness	mm over profile	170.0
Soil Olsen P content	kgP ha^{-1}	6.842
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	206 700 000
Reservoir area	km^2	14.84
Maximum reservoir depth	m	35.00
Mean reservoir depth	m	13.90
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.043, 0.409, 0.549, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.879
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.990
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.416
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.350
Mean monthly wind speed	m s^{-1}	1.170
Water intake depth below surface	m	N/A



7.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	808.7
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	555.0
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-181.2
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	253.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	434.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	6452
Total CO ₂ emission per lifetime	ktCO _{2,eq}	645.2
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	223.9
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	181.3
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	2731
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	3136
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	46 520
Total CH ₄ emission per lifetime	ktCO _{2,eq}	4652
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.7659
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.8512
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.8086
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	11.36
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.136
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3571
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3572

7.3 Emission plots



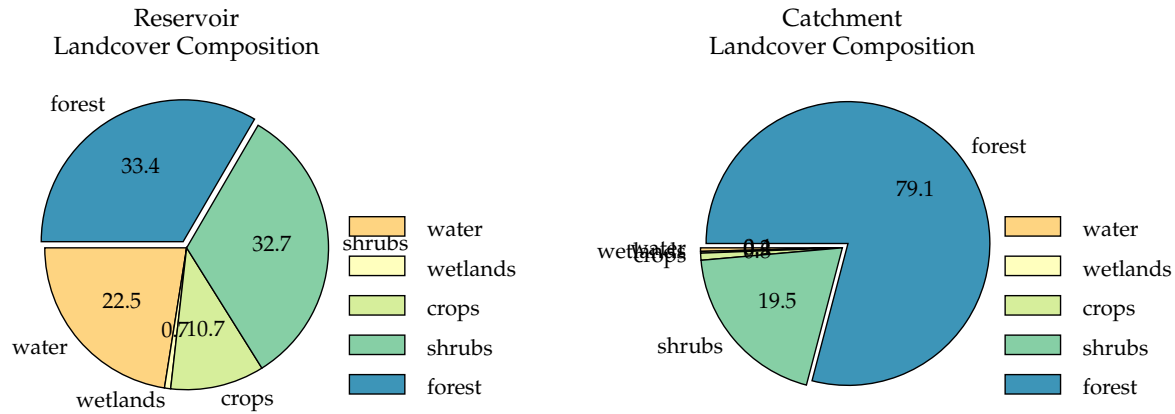
7.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	138.3
Retention coefficient	-	0.017 38
Influent total N concentration	$\mu\text{g L}^{-1}$	31.17
Reservoir TN concentration	$\mu\text{g L}^{-1}$	30.63
Reservoir TP concentration	$\mu\text{g L}^{-1}$	136.0
Percentage of reservoir's surface area that is littoral	%	12.72
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.990
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.88
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.81
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.85
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.619
Influent total N load	kgN yr^{-1}	291 800
Influent total P load	kgP yr^{-1}	1 295 000
Downstream TN concentration	mg L^{-1}	0.030 84

8 Tamanthi

8.1 Inputs

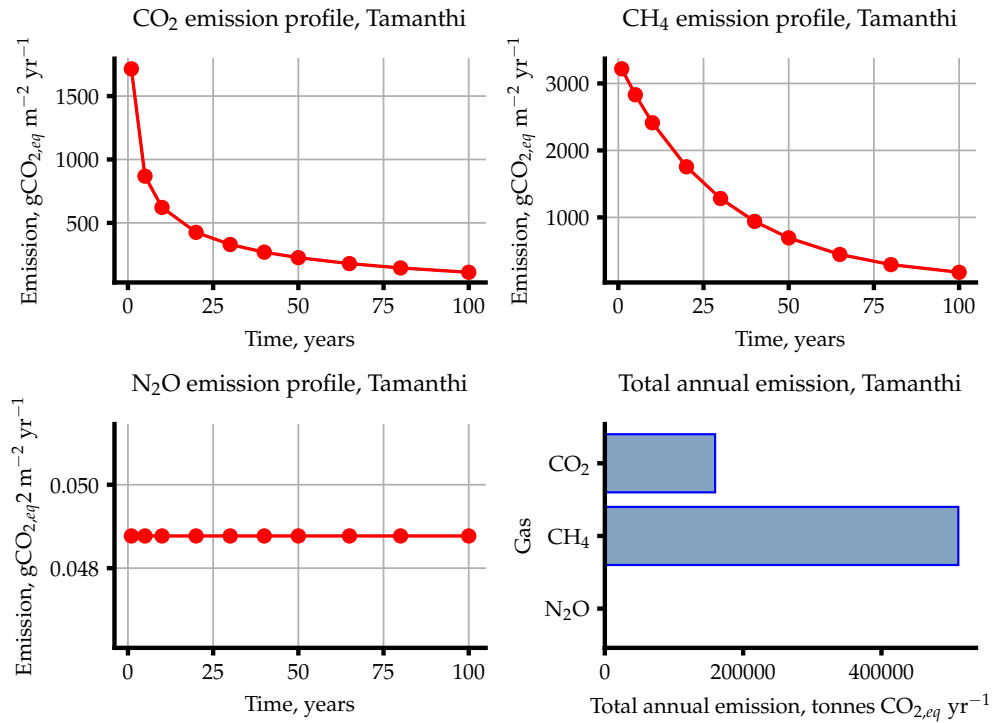
Input Name	Unit	Value(s)
Reservoir ID		31
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 25.3222, LON: 95.297
Monthly Temperatures	$^{\circ}\text{C}$	17.0, 18.9, 22.5, 25.0, 27.1, 27.5, 27.1, 27.4, 27.1, 25.7, 21.9, 17.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1792
Catchment area	km ²	39 630
Length of inundated river	km	255.5
Population	capita	765 000
Area fractions	-	0.0, 0.0, 0.0, 0.004, 0.002, 0.008, 0.195, 0.79, 0.0
Mean catchment slope	%	28.00
Mean annual precipitation	mm/year	2700
Mean annual evapotranspiration	mm/year	1045
Soil wetness	mm over profile	223.0
Soil Olsen P content	kgP ha ⁻¹	7.736
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	8 592 000 000
Reservoir area	km ²	505.1
Maximum reservoir depth	m	59.00
Mean reservoir depth	m	17.00
Inundated area fractions	-	0.0, 0.0, 0.0, 0.219, 0.007, 0.107, 0.327, 0.334, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.006, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	5.952
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	4.193
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	3.989
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	4.274
Mean monthly wind speed	m s ⁻¹	0.9400
Water intake depth below surface	m	N/A



8.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	654.8
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	449.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-110.2
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	205.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	315.6
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	159 400
Total CO ₂ emission per lifetime	ktCO _{2,eq}	15 940
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	172.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	55.29
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	784.0
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1012
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	511 100
Total CH ₄ emission per lifetime	ktCO _{2,eq}	51 110
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.048 77
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.039 07
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.043 92
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	24.64
Total N ₂ O emission per lifetime	ktCO _{2,eq}	2.464
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1327
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1327

8.3 Emission plots



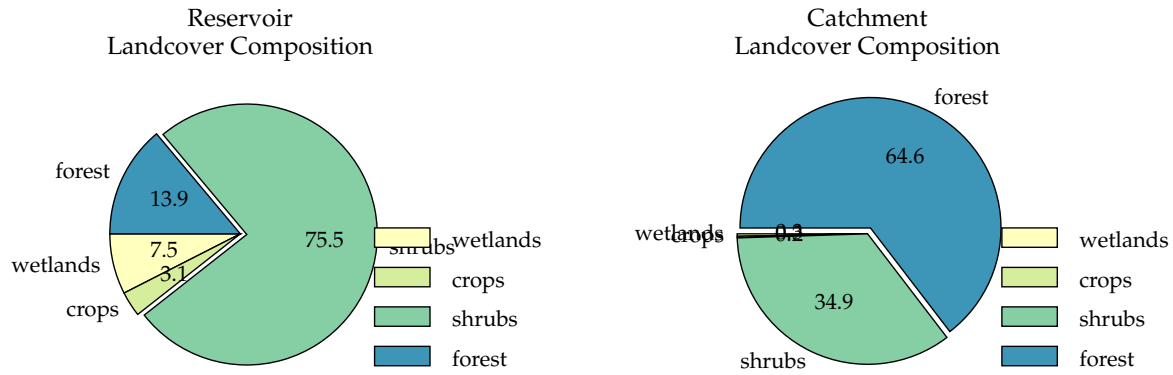
8.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	13.13
Retention coefficient	-	0.088 34
Influent total N concentration	$\mu\text{g L}^{-1}$	1.186
Reservoir TN concentration	$\mu\text{g L}^{-1}$	1.080
Reservoir TP concentration	$\mu\text{g L}^{-1}$	12.04
Percentage of reservoir's surface area that is littoral	%	12.1
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.193
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	50.32
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	21.86
Water density at the bottom of the reservoir	kg m^{-3}	997.8
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	27.28
Water density at the surface of the reservoir	kg m^{-3}	996.5
Thermocline depth	m	2.833
Influent total N load	kgN yr^{-1}	84 260
Influent total P load	kgP yr^{-1}	932 500
Downstream TN concentration	mg L^{-1}	0.001 533

9 Kabaung

9.1 Inputs

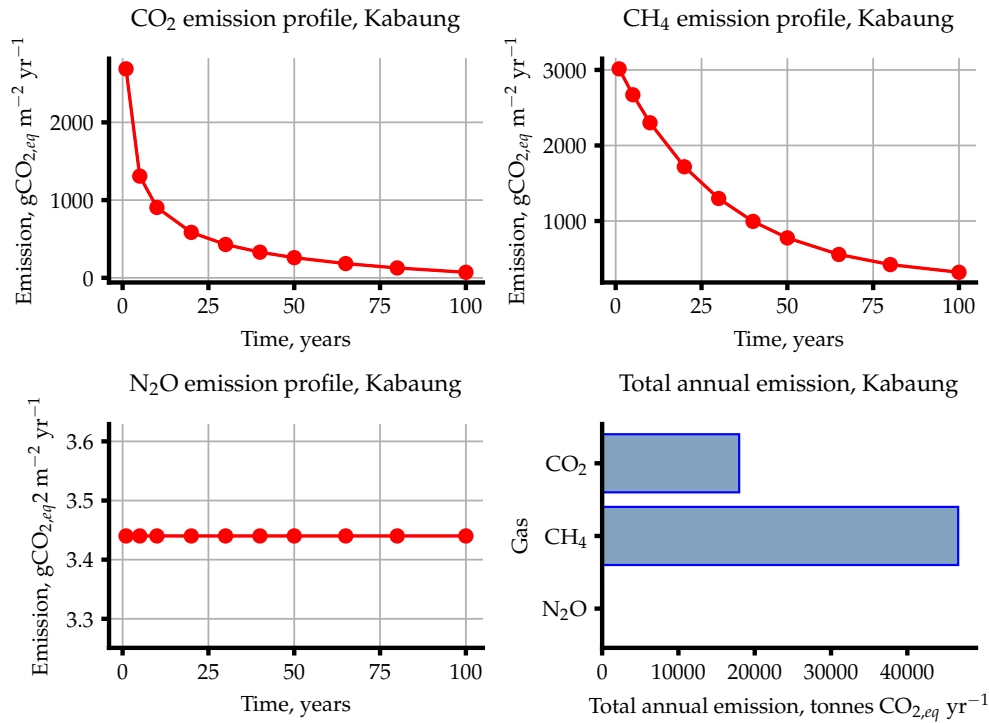
Input Name	Unit	Value(s)
Reservoir ID		35
Reservoir type		multipurpose
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.8967, LON: 96.2208
Monthly Temperatures	$^{\circ}\text{C}$	21.6, 23.7, 27.2, 30.1, 29.3, 26.9, 26.5, 26.5, 27.0, 27.3, 25.4, 22.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	470.0
Catchment area	km^2	1181
Length of inundated river	km	21.60
Population	capita	142 200
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.003, 0.002, 0.349, 0.646, 0.0
Mean catchment slope	$\%$	11.00
Mean annual precipitation	mm/year	1498
Mean annual evapotranspiration	mm/year	1346
Soil wetness	mm over profile	323.0
Soil Olsen P content	kgP ha^{-1}	5.231
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	592 000 000
Reservoir area	km^2	44.19
Maximum reservoir depth	m	39.00
Mean reservoir depth	m	13.40
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.075, 0.031, 0.755, 0.139, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.021
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.030
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.340
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.458
Mean monthly wind speed	m s^{-1}	1.000
Water intake depth below surface	m	N/A



9.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1068
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	732.9
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-71.35
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	335.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	406.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	17 960
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1796
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	231.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	210.6
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	614.3
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1056
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	46 670
Total CH ₄ emission per lifetime	ktCO _{2,eq}	4667
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.440
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.498
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.469
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	152.0
Total N ₂ O emission per lifetime	ktCO _{2,eq}	15.20
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1462
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1465

9.3 Emission plots



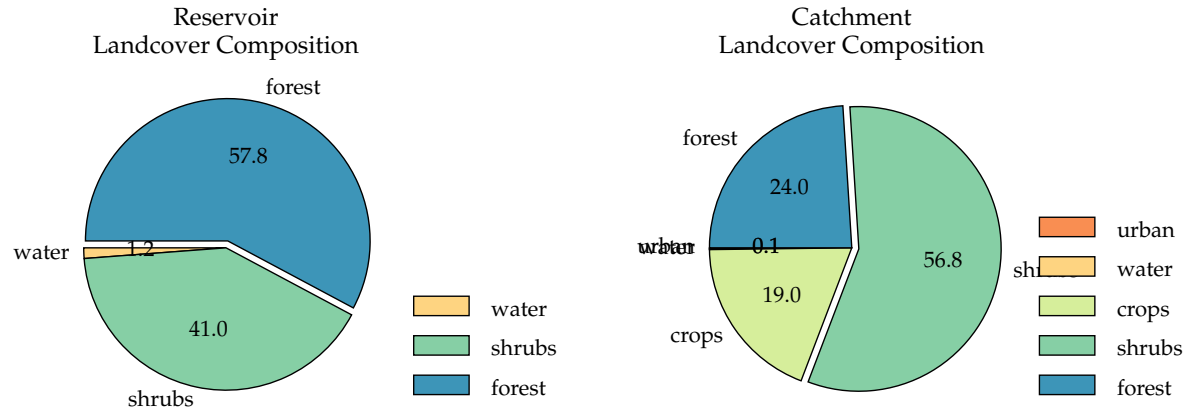
9.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	198.2
Retention coefficient	-	0.4606
Influent total N concentration	$\mu\text{g L}^{-1}$	113.4
Reservoir TN concentration	$\mu\text{g L}^{-1}$	61.08
Reservoir TP concentration	$\mu\text{g L}^{-1}$	110.0
Percentage of reservoir's surface area that is littoral	%	14.18
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.030
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	60.36
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.88
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.48
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.933
Influent total N load	kgN yr^{-1}	62 950
Influent total P load	kgP yr^{-1}	110 000
Downstream TN concentration	mg L^{-1}	0.082 75

10 Keng Tawng (upper)

10.1 Inputs

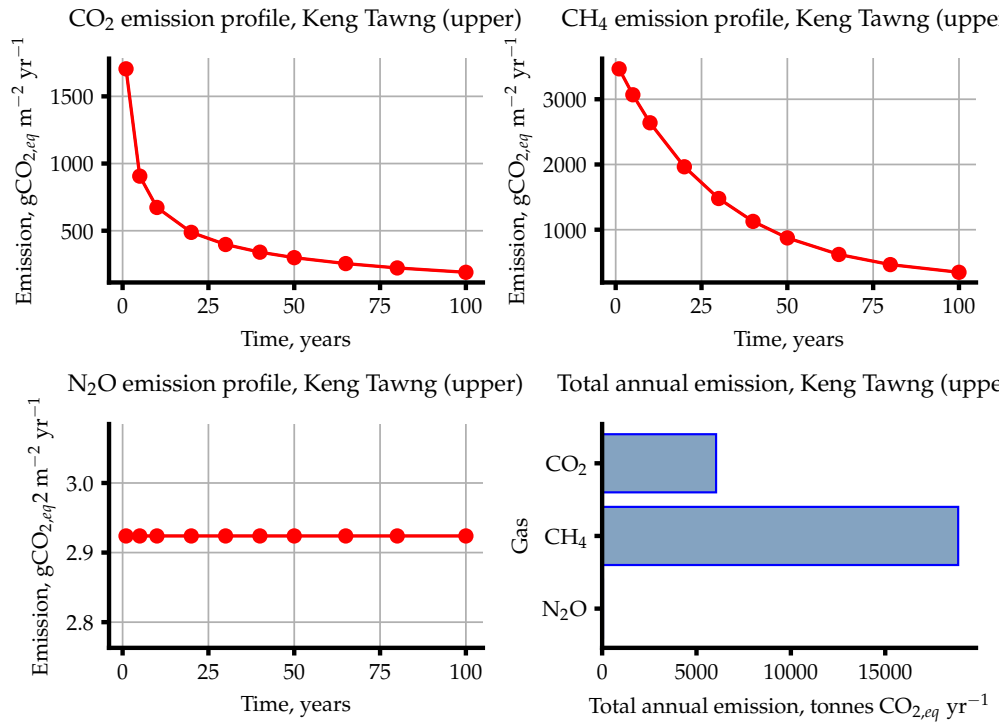
Input Name	Unit	Value(s)
Reservoir ID		39
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.7456, LON: 98.1841
Monthly Temperatures	$^{\circ}\text{C}$	17.3, 19.5, 23.0, 26.1, 25.8, 25.2, 24.7, 24.6, 24.5, 23.4, 20.9, 17.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	578.0
Catchment area	km^2	7612
Length of inundated river	km	14.23
Population	capita	194 800
Area fractions	-	0.0, 0.0, 0.001, 0.001, 0.0, 0.19, 0.568, 0.24, 0.0
Mean catchment slope	$\%$	10.00
Mean annual precipitation	mm/year	1545
Mean annual evapotranspiration	mm/year	1269
Soil wetness	mm over profile	221.0
Soil Olsen P content	kgP ha^{-1}	5.475
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	231 300 000
Reservoir area	km^2	15.70
Maximum reservoir depth	m	64.00
Mean reservoir depth	m	14.70
Inundated area fractions	-	0.0, 0.0, 0.0, 0.012, 0.0, 0.0, 0.41, 0.578, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.843
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.030
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.754
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.182
Mean monthly wind speed	m s^{-1}	1.200
Water intake depth below surface	m	N/A



10.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	617.8
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	424.0
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-190.7
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	193.8
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	384.6
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	6037
Total CO ₂ emission per lifetime	ktCO _{2,eq}	603.7
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	164.2
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	219.3
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	818.1
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1202
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	18 860
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1886
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.924
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.642
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.783
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	45.90
Total N ₂ O emission per lifetime	ktCO _{2,eq}	4.590
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1586
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1589

10.3 Emission plots



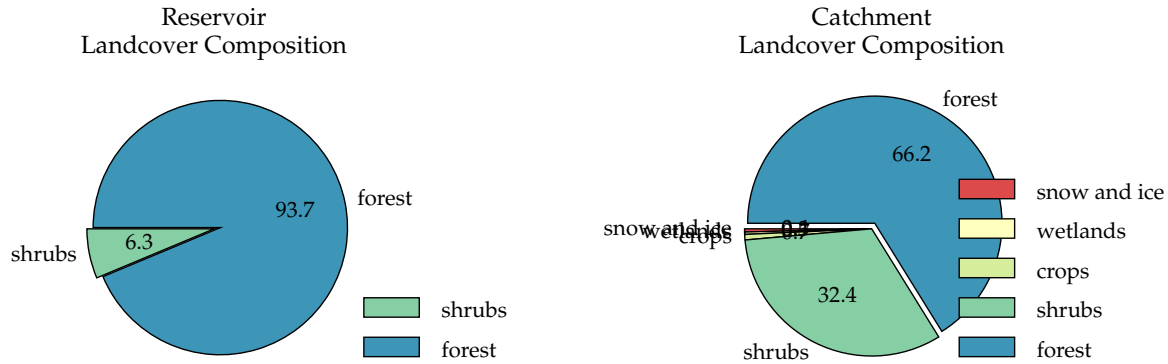
10.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	62.34
Retention coefficient	-	0.040 41
Influent total N concentration	$\mu\text{g L}^{-1}$	91.64
Reservoir TN concentration	$\mu\text{g L}^{-1}$	87.97
Reservoir TP concentration	$\mu\text{g L}^{-1}$	59.90
Percentage of reservoir's surface area that is littoral	%	14.87
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.030
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	60.36
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	22.06
Water density at the bottom of the reservoir	kg m^{-3}	997.8
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.45
Water density at the surface of the reservoir	kg m^{-3}	997.0
Thermocline depth	m	1.955
Influent total N load	kgN yr^{-1}	403 200
Influent total P load	kgP yr^{-1}	274 300
Downstream TN concentration	mg L^{-1}	0.1097

11 Khaunglanphu

11.1 Inputs

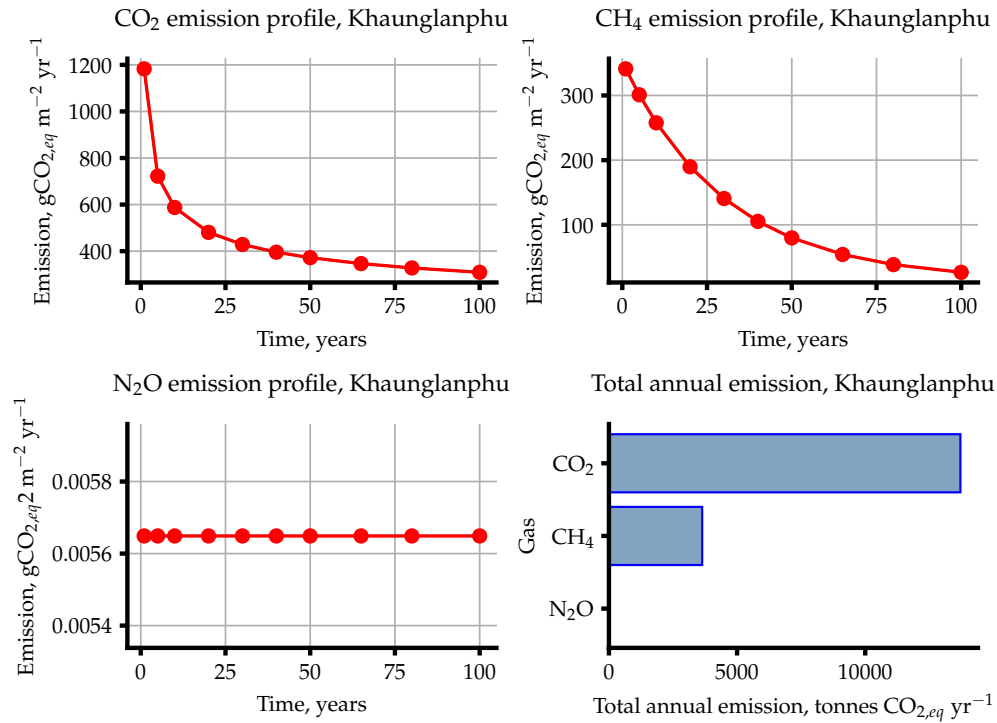
Input Name	Unit	Value(s)
Reservoir ID		44
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 26.8495, LON: 98.3768
Monthly Temperatures	$^{\circ}\text{C}$	10.1, 11.5, 15.3, 18.0, 21.4, 22.7, 23.3, 23.4, 22.7, 19.9, 15.2, 11.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	temperate coniferous
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	589.0
Catchment area	km^2	13 610
Length of inundated river	km	50.32
Population	capita	24 290
Area fractions	-	0.0, 0.004, 0.0, 0.0, 0.003, 0.007, 0.324, 0.661, 0.0
Mean catchment slope	$\%$	54.00
Mean annual precipitation	mm/year	1221
Mean annual evapotranspiration	mm/year	697.0
Soil wetness	mm over profile	134.0
Soil Olsen P content	kgP ha^{-1}	8.158
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	2 214 000 000
Reservoir area	km^2	32.57
Maximum reservoir depth	m	172.0
Mean reservoir depth	m	68.00
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.063, 0.937, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.556
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.272
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	3.967
Mean monthly wind speed	m s^{-1}	1.200
Water intake depth below surface	m	N/A



11.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	356.6
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	244.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-309.2
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	111.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	421.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	13 710
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1371
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	47.57
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	13.69
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	50.48
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	111.7
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	3639
Total CH ₄ emission per lifetime	ktCO _{2,eq}	363.9
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.005 649
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.004 307
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.004 978
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.1840
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.018 40
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	532.8
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	532.8

11.3 Emission plots



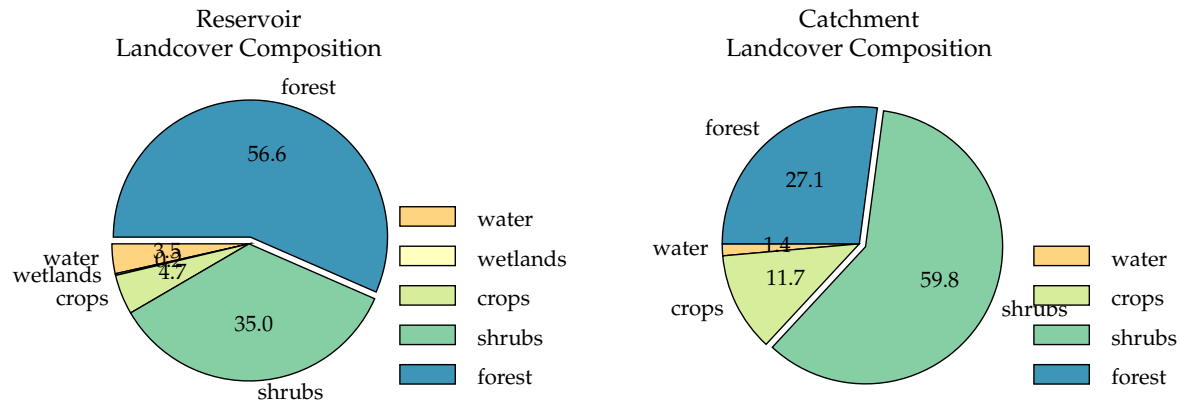
11.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	24.83
Retention coefficient	-	0.1811
Influent total N concentration	$\mu\text{g L}^{-1}$	0.034 49
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.028 24
Reservoir TP concentration	$\mu\text{g L}^{-1}$	20.35
Percentage of reservoir's surface area that is littoral	%	2.655
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	49.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	17.33
Water density at the bottom of the reservoir	kg m^{-3}	998.7
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.03
Water density at the surface of the reservoir	kg m^{-3}	997.6
Thermocline depth	m	1.971
Influent total N load	kgN yr^{-1}	276.5
Influent total P load	kgP yr^{-1}	199 100
Downstream TN concentration	mg L^{-1}	4.112×10^{-5}

12 Kinda

12.1 Inputs

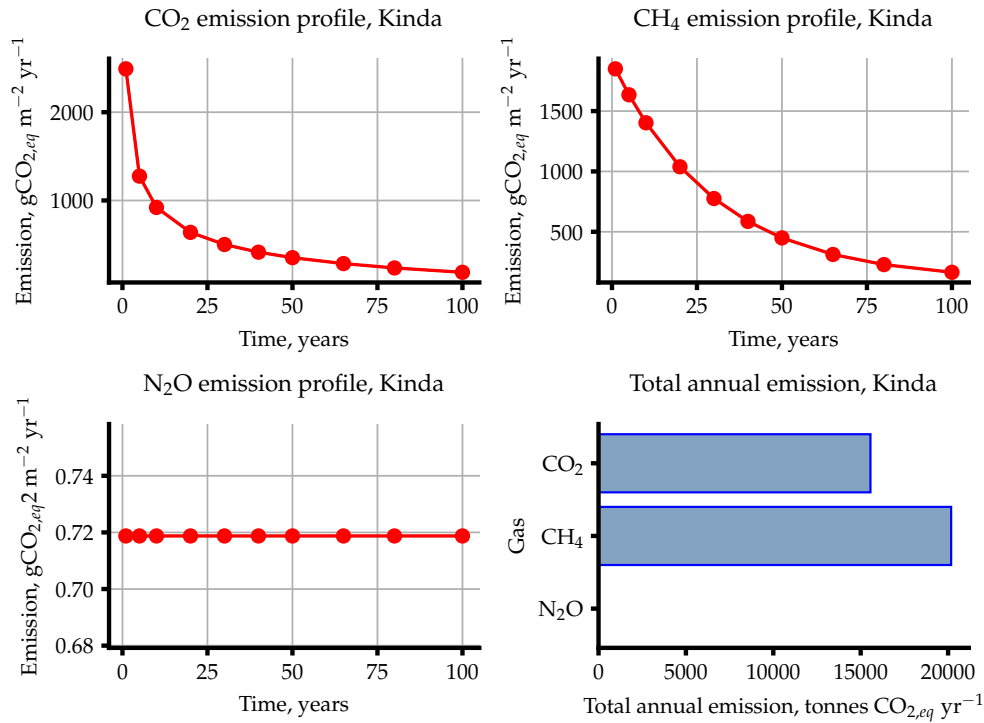
Input Name	Unit	Value(s)
Reservoir ID		45
Reservoir type		multipurpose
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.1604, LON: 96.321
Monthly Temperatures	$^{\circ}\text{C}$	20.7, 23.0, 27.2, 30.2, 29.4, 28.0, 27.6, 27.2, 27.2, 26.6, 24.1, 20.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	561.0
Catchment area	km^2	2294
Length of inundated river	km	17.07
Population	capita	159 400
Area fractions	-	0.0, 0.0, 0.0, 0.014, 0.0, 0.117, 0.598, 0.271, 0.0
Mean catchment slope	$\%$	20.00
Mean annual precipitation	mm/year	1450
Mean annual evapotranspiration	mm/year	1286
Soil wetness	mm over profile	140.0
Soil Olsen P content	kgP ha^{-1}	4.985
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	1 078 000 000
Reservoir area	km^2	32.31
Maximum reservoir depth	m	71.90
Mean reservoir depth	m	33.40
Inundated area fractions	-	0.0, 0.0, 0.0, 0.023, 0.0, 0.047, 0.35, 0.565, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.012, 0.002, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.236
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.962
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Mean monthly wind speed	m s^{-1}	1.130
Water intake depth below surface	m	N/A



12.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	940.5
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	645.5
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-186.5
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	295.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	481.5
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	15 560
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1556
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	140.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	95.19
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	388.7
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	624.4
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	20 170
Total CH ₄ emission per lifetime	ktCO _{2,eq}	2017
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.7188
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.3729
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.5458
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	23.22
Total N ₂ O emission per lifetime	ktCO _{2,eq}	2.322
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1106
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1106

12.3 Emission plots



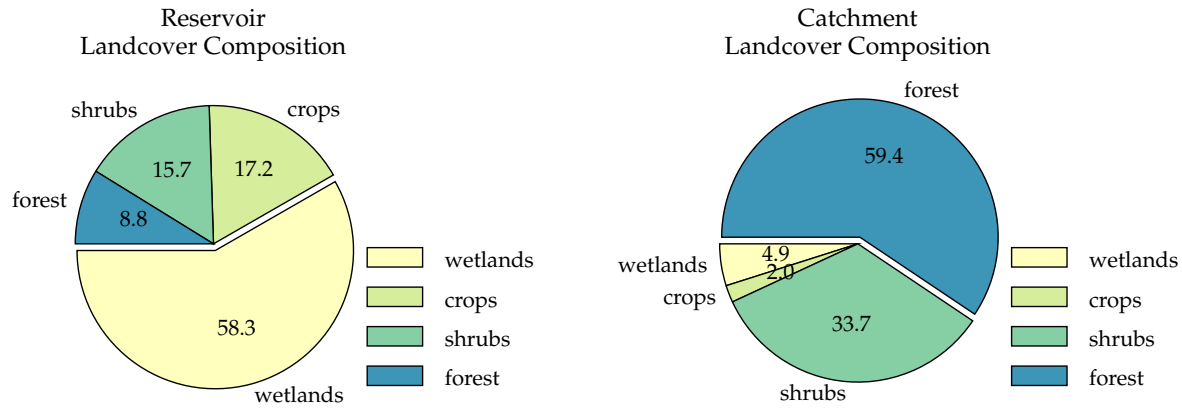
12.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	116.6
Retention coefficient	-	0.4016
Influent total N concentration	$\mu\text{g L}^{-1}$	9.276
Reservoir TN concentration	$\mu\text{g L}^{-1}$	5.557
Reservoir TP concentration	$\mu\text{g L}^{-1}$	70.58
Percentage of reservoir's surface area that is littoral	%	4.794
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.29
Water density at the bottom of the reservoir	kg m^{-3}	997.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.80
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.806
Influent total N load	kgN yr^{-1}	11 940
Influent total P load	kgP yr^{-1}	150 100
Downstream TN concentration	mg L^{-1}	0.007 902

13 Kun Chaung

13.1 Inputs

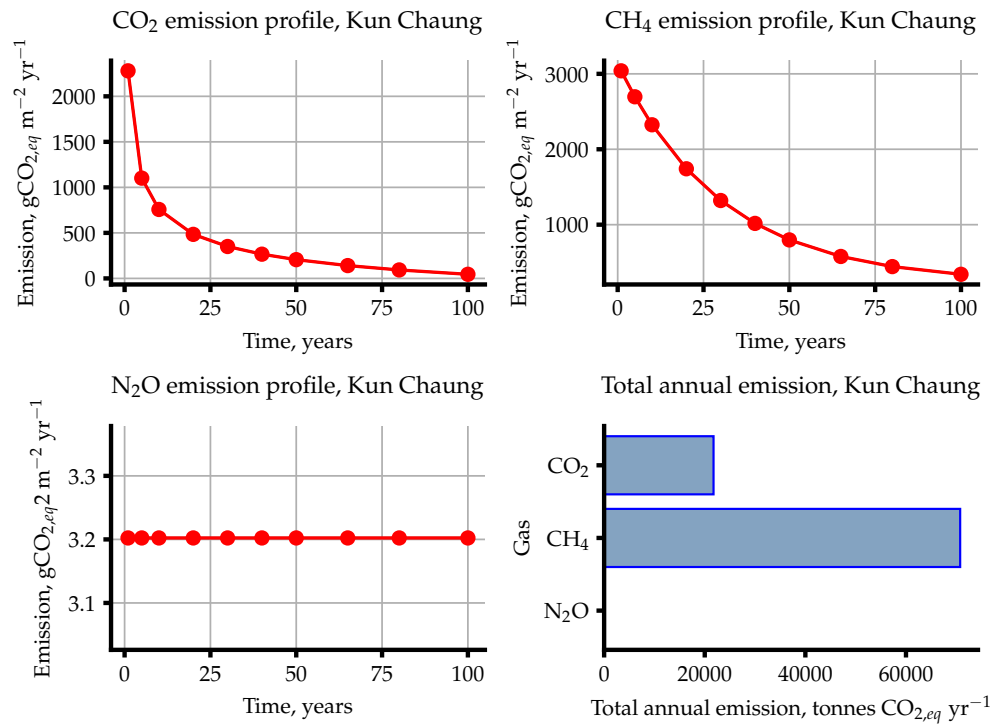
Input Name	Unit	Value(s)
Reservoir ID		47
Reservoir type		multipurpose
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.4204, LON: 96.3639
Monthly Temperatures	$^{\circ}\text{C}$	21.6, 23.6, 26.9, 29.7, 29.0, 26.7, 26.2, 26.2, 26.8, 27.1, 25.3, 22.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	833.0
Catchment area	km^2	871.2
Length of inundated river	km	24.48
Population	capita	80 370
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.049, 0.02, 0.337, 0.594, 0.0
Mean catchment slope	$\%$	11.00
Mean annual precipitation	mm/year	1852
Mean annual evapotranspiration	mm/year	1337
Soil wetness	mm over profile	366.0
Soil Olsen P content	kgP ha^{-1}	5.291
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	833 200 000
Reservoir area	km^2	65.65
Maximum reservoir depth	m	43.00
Mean reservoir depth	m	12.70
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.583, 0.172, 0.157, 0.088, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.960
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.030
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.340
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.458
Mean monthly wind speed	m s^{-1}	0.9600
Water intake depth below surface	m	N/A



13.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	911.9
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	625.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-45.17
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	286.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	331.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	21 750
Total CO ₂ emission per lifetime	ktCO _{2,eq}	2175
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	237.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	231.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	609.5
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1078
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	70 770
Total CH ₄ emission per lifetime	ktCO _{2,eq}	7077
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.202
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.316
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.259
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	210.2
Total N ₂ O emission per lifetime	ktCO _{2,eq}	21.02
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1409
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1412

13.3 Emission plots



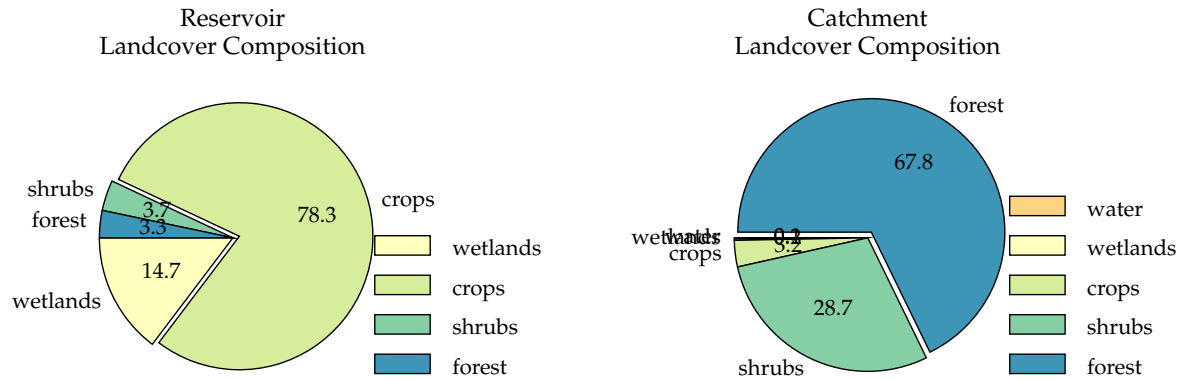
13.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	90.1
Retention coefficient	-	0.4790
Influent total N concentration	$\mu\text{g L}^{-1}$	112.6
Reservoir TN concentration	$\mu\text{g L}^{-1}$	57.89
Reservoir TP concentration	$\mu\text{g L}^{-1}$	49.97
Percentage of reservoir's surface area that is littoral	%	15.85
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.030
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	60.36
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.88
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.18
Water density at the surface of the reservoir	kg m^{-3}	996.2
Thermocline depth	m	2.146
Influent total N load	kgN yr^{-1}	81 710
Influent total P load	kgP yr^{-1}	65 390
Downstream TN concentration	mg L^{-1}	0.077 55

14 Kyee Ohn Kyee Wa

14.1 Inputs

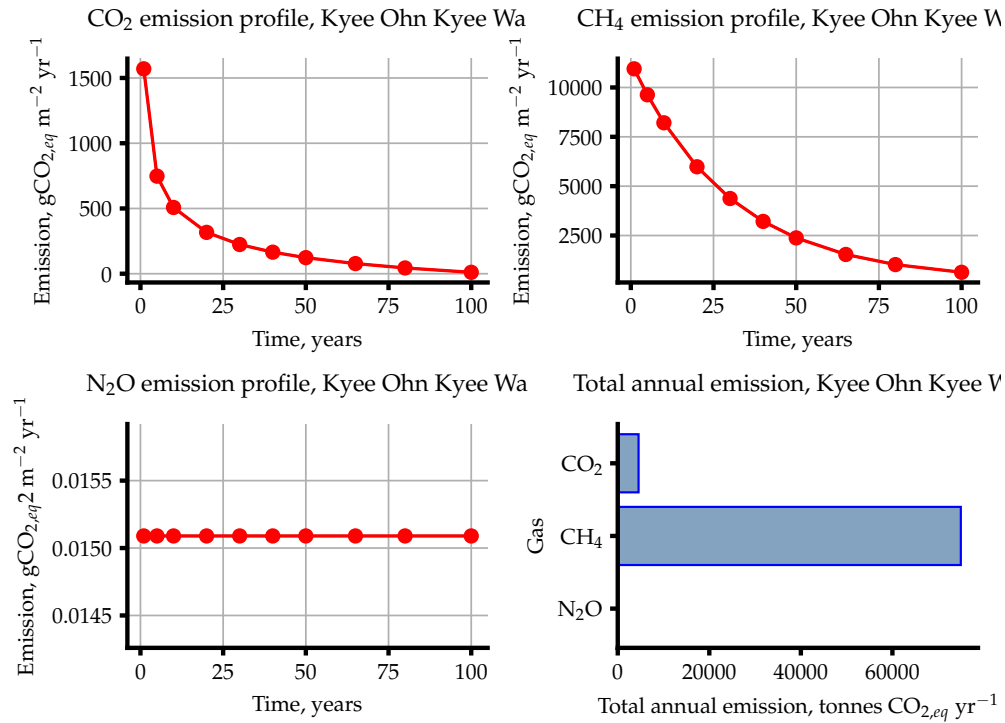
Input Name	Unit	Value(s)
Reservoir ID		49
Reservoir type		multipurpose
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.331, LON: 94.416
Monthly Temperatures	$^{\circ}\text{C}$	20.6, 23.2, 27.5, 30.7, 30.4, 28.3, 27.9, 27.7, 27.6, 27.0, 24.3, 21.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1093
Catchment area	km^2	5153
Length of inundated river	km	29.03
Population	capita	72 080
Area fractions	-	0.0, 0.0, 0.0, 0.001, 0.002, 0.032, 0.287, 0.677, 0.0
Mean catchment slope	$\%$	31.00
Mean annual precipitation	mm/year	1912
Mean annual evapotranspiration	mm/year	1237
Soil wetness	mm over profile	145.0
Soil Olsen P content	kgP ha^{-1}	5.336
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	207 000 000
Reservoir area	km^2	21.61
Maximum reservoir depth	m	28.00
Mean reservoir depth	m	9.600
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.147, 0.784, 0.037, 0.033, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.950
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.850
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.300
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.188
Mean monthly wind speed	m s^{-1}	0.9900
Water intake depth below surface	m	N/A



14.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	636.2
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	436.6
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-10.89
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	199.6
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	210.5
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	4548
Total CO ₂ emission per lifetime	ktCO _{2,eq}	454.8
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	280.3
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	213.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	2975
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	3469
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	74 940
Total CH ₄ emission per lifetime	ktCO _{2,eq}	7494
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.015 09
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.015 37
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.015 23
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.3260
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.032 60
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3679
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3679

14.3 Emission plots



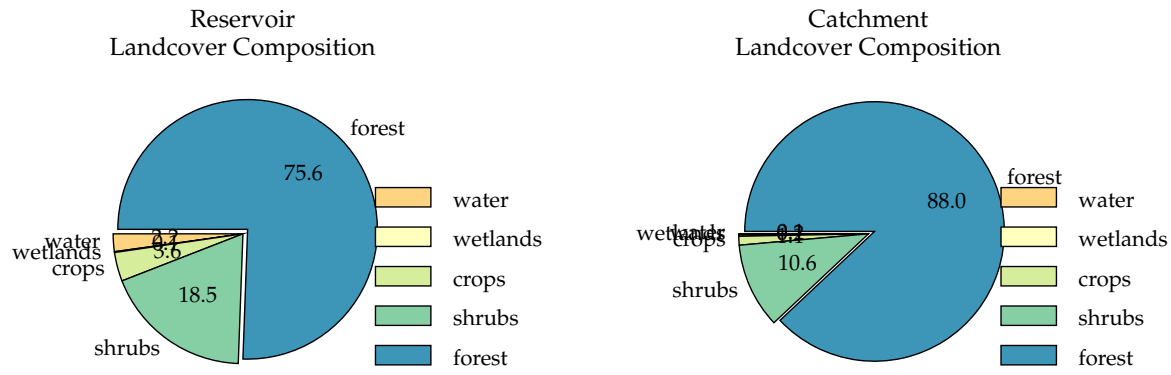
14.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	20.40
Retention coefficient	-	0.028 60
Influent total N concentration	$\mu\text{g L}^{-1}$	0.8191
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.7930
Reservoir TP concentration	$\mu\text{g L}^{-1}$	19.84
Percentage of reservoir's surface area that is littoral	%	19.52
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.850
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.20
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.22
Water density at the bottom of the reservoir	kg m^{-3}	997.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.32
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	1.339
Influent total N load	kgN yr^{-1}	4613
Influent total P load	kgP yr^{-1}	114 900
Downstream TN concentration	mg L^{-1}	0.000 877 4

15 Laza

15.1 Inputs

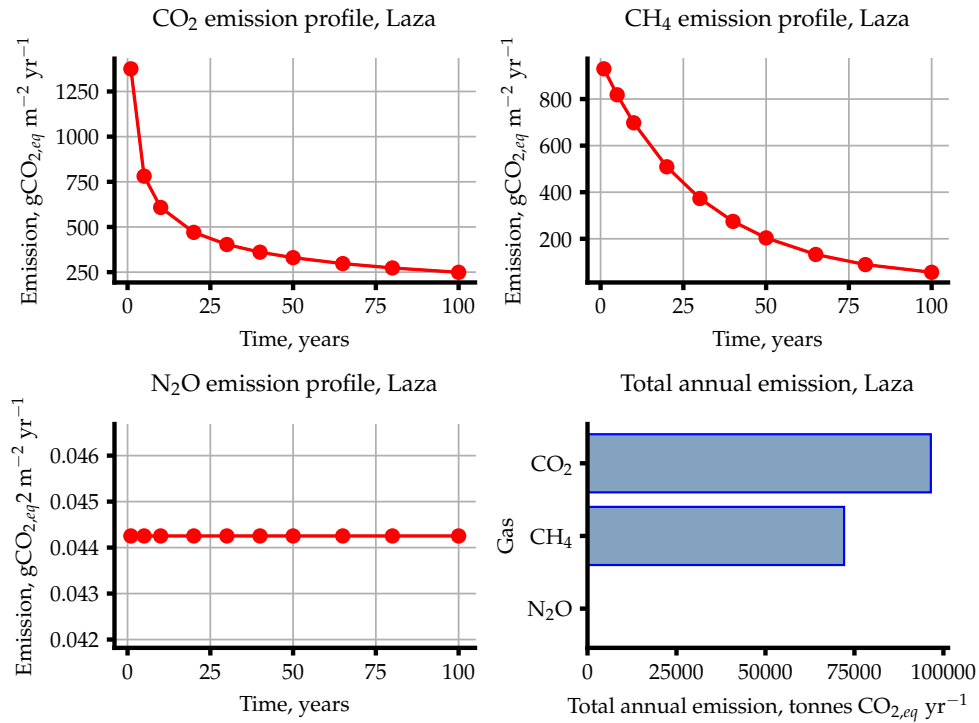
Input Name	Unit	Value(s)
Reservoir ID		53
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 26.4918, LON: 97.777
Monthly Temperatures	$^{\circ}\text{C}$	13.8, 15.2, 19.2, 21.8, 24.7, 25.6, 26.1, 26.3, 25.9, 23.6, 19.1, 15.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1970
Catchment area	km^2	13 220
Length of inundated river	km	100.7
Population	capita	80 650
Area fractions	-	0.0, 0.0, 0.0, 0.001, 0.002, 0.011, 0.106, 0.879, 0.0
Mean catchment slope	$\%$	32.00
Mean annual precipitation	mm/year	2882
Mean annual evapotranspiration	mm/year	1016
Soil wetness	mm over profile	196.0
Soil Olsen P content	kgP ha^{-1}	13.60
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	10 540 000 000
Reservoir area	km^2	245.3
Maximum reservoir depth	m	147.0
Mean reservoir depth	m	43.00
Inundated area fractions	-	0.0, 0.0, 0.0, 0.021, 0.001, 0.036, 0.185, 0.755, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.001, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.291
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.035
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.998
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	3.993
Mean monthly wind speed	m s^{-1}	0.9800
Water intake depth below surface	m	N/A



15.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	459.5
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	315.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-249.2
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	144.2
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	393.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	96 470
Total CO ₂ emission per lifetime	ktCO _{2,eq}	9647
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	90.56
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	20.29
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	183.1
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	293.9
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	72 090
Total CH ₄ emission per lifetime	ktCO _{2,eq}	7209
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.044 25
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.031 58
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.037 92
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	10.85
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.085
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	687.2
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	687.3

15.3 Emission plots



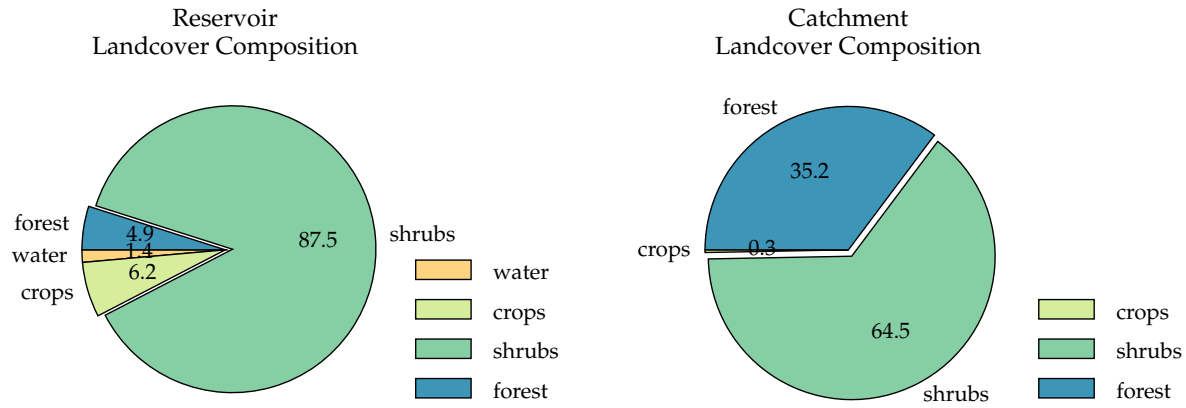
15.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	6.774
Retention coefficient	-	0.2448
Influent total N concentration	$\mu\text{g L}^{-1}$	0.4297
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.3244
Reservoir TP concentration	$\mu\text{g L}^{-1}$	5.135
Percentage of reservoir's surface area that is littoral	%	4.865
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.035
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	48.42
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	19.76
Water density at the bottom of the reservoir	kg m^{-3}	998.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.98
Water density at the surface of the reservoir	kg m^{-3}	996.8
Thermocline depth	m	2.387
Influent total N load	kgN yr^{-1}	11 190
Influent total P load	kgP yr^{-1}	176 400
Downstream TN concentration	mg L^{-1}	0.000 477 2

16 Lemro 2

16.1 Inputs

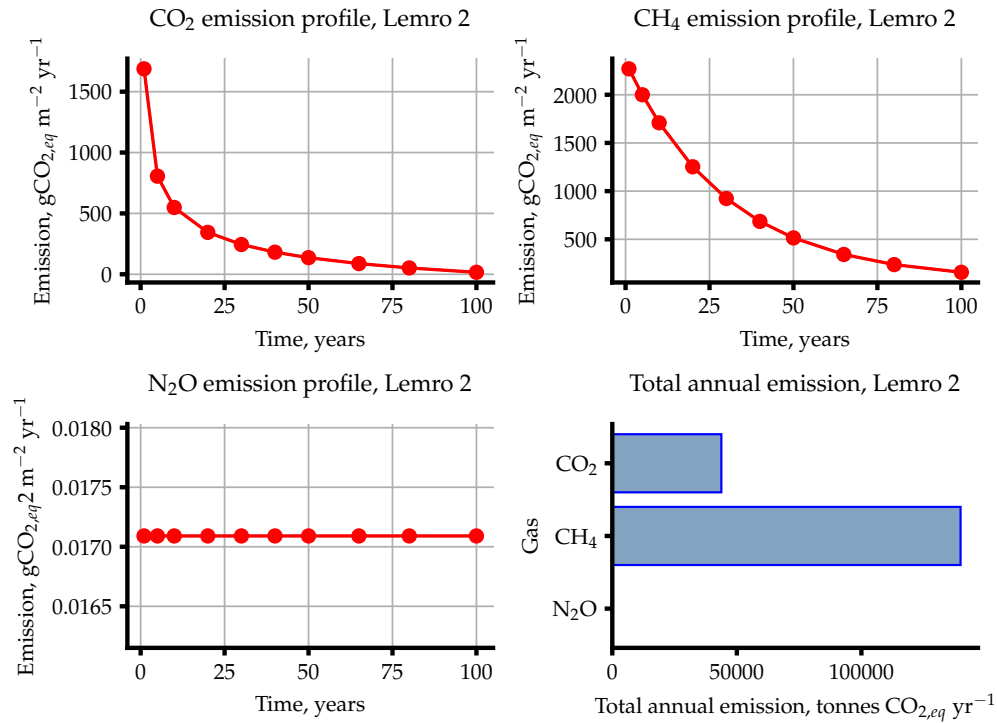
Input Name	Unit	Value(s)
Reservoir ID		54
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.740347, LON: 93.268689
Monthly Temperatures	$^{\circ}\text{C}$	19.3, 21.5, 25.3, 28.0, 28.4, 27.2, 26.9, 26.9, 27.0, 26.6, 23.7, 20.2
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1877
Catchment area	km^2	8340
Length of inundated river	km	106.8
Population	capita	142 000
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.003, 0.644, 0.352, 0.0
Mean catchment slope	$\%$	37.00
Mean annual precipitation	mm/year	2783
Mean annual evapotranspiration	mm/year	1232
Soil wetness	mm over profile	227.0
Soil Olsen P content	kgP ha^{-1}	7.792
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	6 252 000 000
Reservoir area	km^2	190.2
Maximum reservoir depth	m	102.0
Mean reservoir depth	m	32.90
Inundated area fractions	-	0.0, 0.0, 0.0, 0.013, 0.0, 0.062, 0.874, 0.049, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.001, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.945
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.775
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.112
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.191
Mean monthly wind speed	m s^{-1}	1.250
Water intake depth below surface	m	N/A



16.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	682.1
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	468.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-16.17
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	214.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	230.2
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	43 780
Total CO ₂ emission per lifetime	ktCO _{2,eq}	4378
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	141.3
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	70.98
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	522.8
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	735.0
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	139 800
Total CH ₄ emission per lifetime	ktCO _{2,eq}	13 980
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.017 09
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.012 24
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.014 66
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	3.251
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.3251
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	965.2
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	965.2

16.3 Emission plots



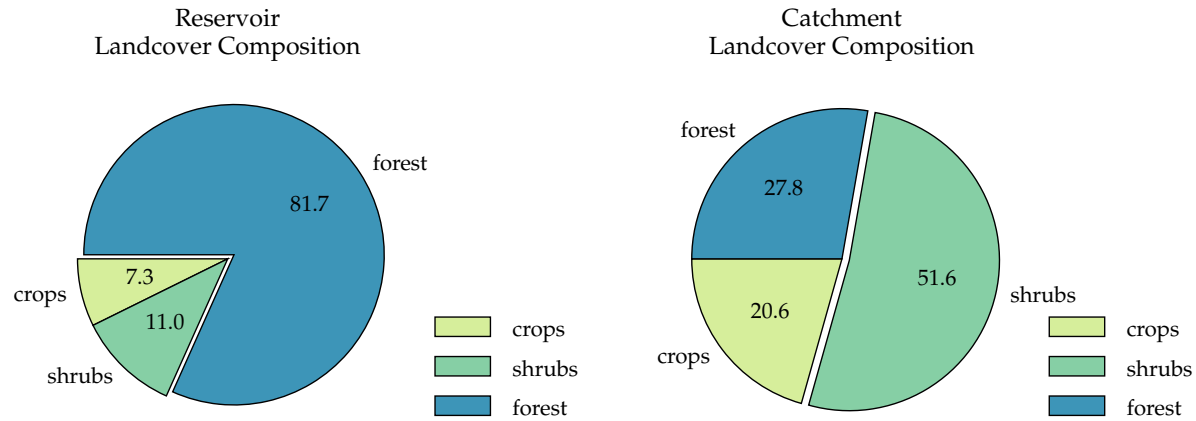
16.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	16.31
Retention coefficient	-	0.2424
Influent total N concentration	$\mu\text{g L}^{-1}$	0.2169
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.1641
Reservoir TP concentration	$\mu\text{g L}^{-1}$	12.41
Percentage of reservoir's surface area that is littoral	%	6.078
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.775
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.30
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.37
Water density at the bottom of the reservoir	kg m^{-3}	997.5
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	27.65
Water density at the surface of the reservoir	kg m^{-3}	996.4
Thermocline depth	m	3.260
Influent total N load	kgN yr^{-1}	3396
Influent total P load	kgP yr^{-1}	255 300
Downstream TN concentration	mg L^{-1}	0.000 241 7

17 Nam Pawn (lower)

17.1 Inputs

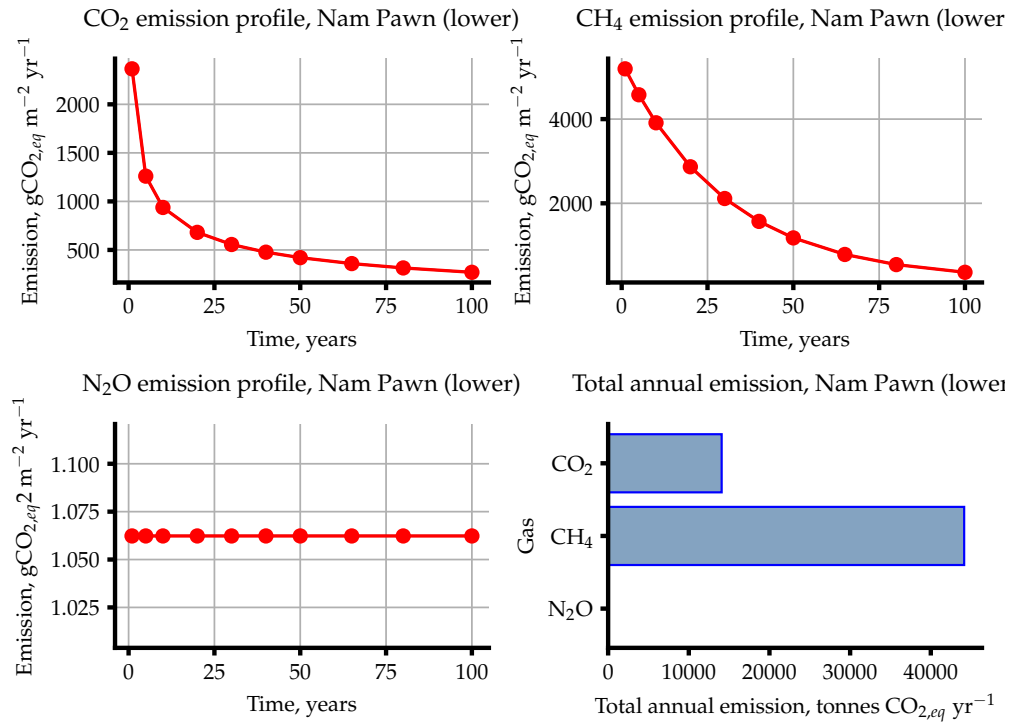
Input Name	Unit	Value(s)
Reservoir ID		55
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.55454, LON: 97.399864
Monthly Temperatures	$^{\circ}\text{C}$	20.4, 23.1, 26.9, 29.7, 28.7, 27.1, 26.6, 26.4, 26.6, 25.9, 23.9, 20.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	629.0
Catchment area	km ²	7846
Length of inundated river	km	39.00
Population	capita	581 400
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.206, 0.515, 0.277, 0.0
Mean catchment slope	%	16.00
Mean annual precipitation	mm/year	1568
Mean annual evapotranspiration	mm/year	1277
Soil wetness	mm over profile	178.0
Soil Olsen P content	kgP ha ⁻¹	6.448
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	480 600 000
Reservoir area	km ²	26.16
Maximum reservoir depth	m	64.00
Mean reservoir depth	m	18.40
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.073, 0.11, 0.817, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	5.782
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	4.990
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	4.416
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	5.350
Mean monthly wind speed	m s ⁻¹	1.210
Water intake depth below surface	m	N/A



17.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	855.3
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	587.0
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-269.6
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	268.3
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	537.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	14 070
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1407
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	195.1
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	162.9
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1329
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1687
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	44 140
Total CH ₄ emission per lifetime	ktCO _{2,eq}	4414
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.062
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.8577
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.9600
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	27.79
Total N ₂ O emission per lifetime	ktCO _{2,eq}	2.779
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2225
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2226

17.3 Emission plots



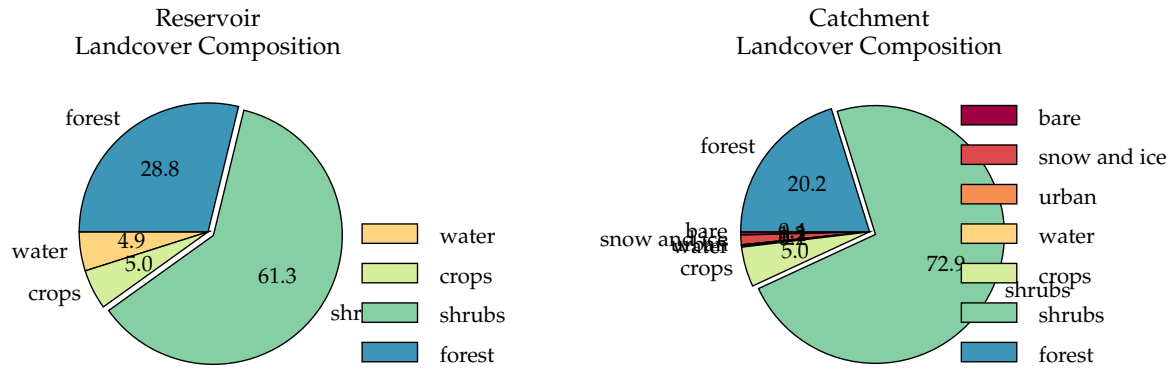
17.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	106.0
Retention coefficient	-	0.072 36
Influent total N concentration	$\mu\text{g L}^{-1}$	24.01
Reservoir TN concentration	$\mu\text{g L}^{-1}$	22.28
Reservoir TP concentration	$\mu\text{g L}^{-1}$	98.63
Percentage of reservoir's surface area that is littoral	%	11.22
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.990
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.88
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.09
Water density at the bottom of the reservoir	kg m^{-3}	997.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.10
Water density at the surface of the reservoir	kg m^{-3}	996.2
Thermocline depth	m	1.964
Influent total N load	kgN yr^{-1}	118 500
Influent total P load	kgP yr^{-1}	523 200
Downstream TN concentration	mg L^{-1}	0.031 28

18 Mong Ton

18.1 Inputs

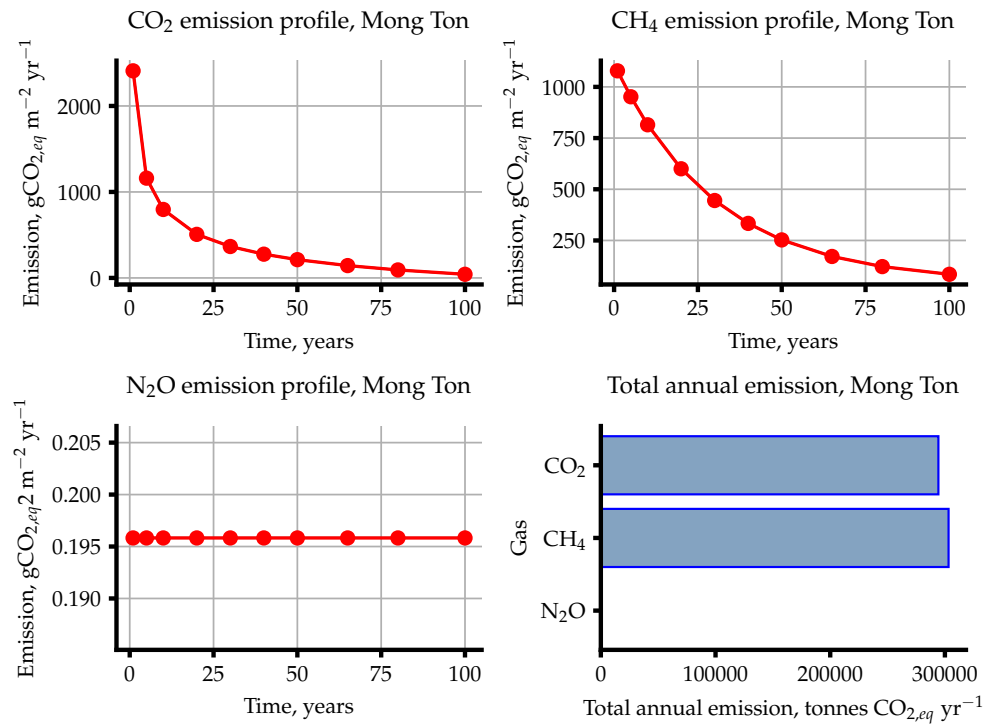
Input Name	Unit	Value(s)
Reservoir ID		57
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.4564, LON: 98.65
Monthly Temperatures	$^{\circ}\text{C}$	18.2, 20.4, 23.7, 27.2, 27.5, 26.9, 26.4, 26.3, 26.2, 24.9, 22.0, 18.8
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	boreal
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	321.0
Catchment area	km^2	183 900
Length of inundated river	km	417.0
Population	capita	5 469 000
Area fractions	-	0.004, 0.012, 0.001, 0.002, 0.0, 0.05, 0.729, 0.202, 0.0
Mean catchment slope	$\%$	32.00
Mean annual precipitation	mm/year	910.0
Mean annual evapotranspiration	mm/year	726.0
Soil wetness	mm over profile	121.0
Soil Olsen P content	kgP ha^{-1}	5.766
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	56 910 000 000
Reservoir area	km^2	852.7
Maximum reservoir depth	m	218.0
Mean reservoir depth	m	66.70
Inundated area fractions	-	0.0, 0.0, 0.0, 0.049, 0.0, 0.05, 0.613, 0.288, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.725
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.842
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.548
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.002
Mean monthly wind speed	m s^{-1}	1.250
Water intake depth below surface	m	N/A



18.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	965.6
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	662.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-42.24
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	302.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	345.2
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	294 300
Total CO ₂ emission per lifetime	ktCO _{2,eq}	29 430
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	93.12
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	43.98
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	218.5
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	355.6
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	303 200
Total CH ₄ emission per lifetime	ktCO _{2,eq}	30 320
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.1958
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.091 99
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.1439
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	167.0
Total N ₂ O emission per lifetime	ktCO _{2,eq}	16.70
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	700.7
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	700.9

18.3 Emission plots



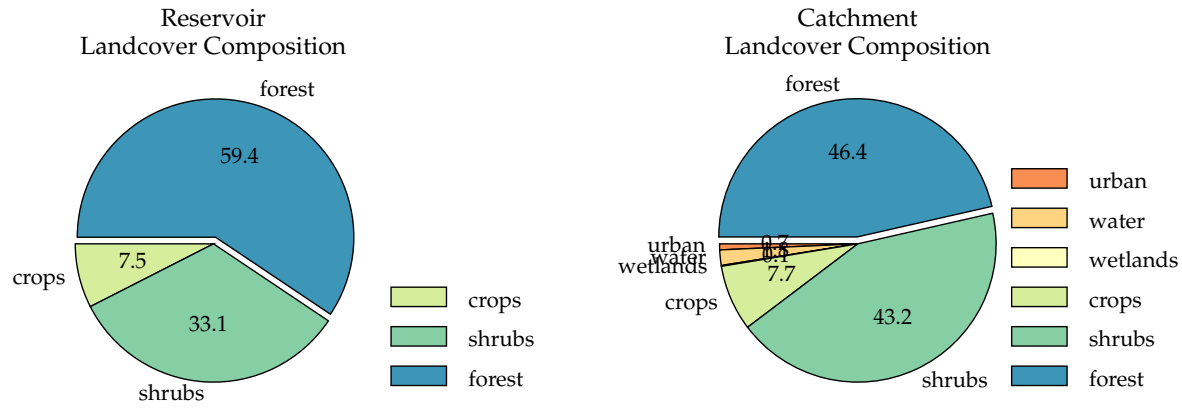
18.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	127.5
Retention coefficient	-	0.4357
Influent total N concentration	$\mu\text{g L}^{-1}$	1.280
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.7222
Reservoir TP concentration	$\mu\text{g L}^{-1}$	72.13
Percentage of reservoir's surface area that is littoral	%	3.094
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.842
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.10
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	22.65
Water density at the bottom of the reservoir	kg m^{-3}	997.7
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	27.00
Water density at the surface of the reservoir	kg m^{-3}	996.5
Thermocline depth	m	4.768
Influent total N load	kgN yr^{-1}	75 550
Influent total P load	kgP yr^{-1}	7 526 000
Downstream TN concentration	mg L^{-1}	0.001 002

19 Manipur

19.1 Inputs

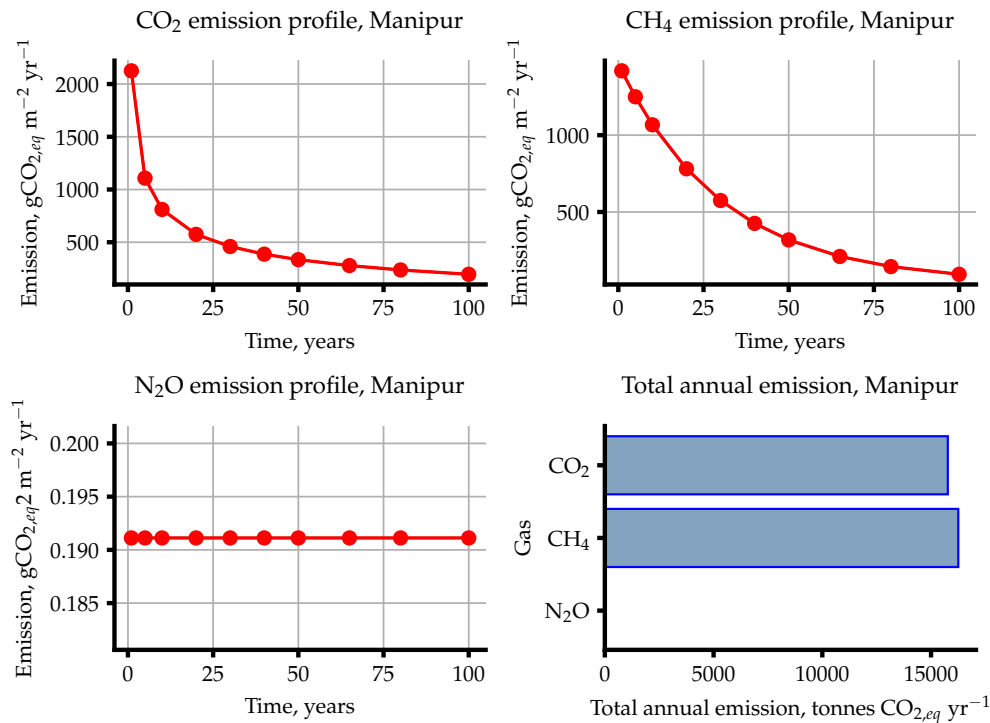
Input Name	Unit	Value(s)
Reservoir ID		58
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.8044, LON: 93.9432
Monthly Temperatures	$^{\circ}\text{C}$	17.4, 19.7, 24.0, 26.8, 27.3, 26.2, 26.0, 25.5, 25.4, 24.3, 21.1, 17.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1140
Catchment area	km^2	11 530
Length of inundated river	km	52.66
Population	capita	2 596 000
Area fractions	-	0.0, 0.0, 0.007, 0.018, 0.001, 0.077, 0.432, 0.464, 0.0
Mean catchment slope	$\%$	29.00
Mean annual precipitation	mm/year	2043
Mean annual evapotranspiration	mm/year	1103
Soil wetness	mm over profile	165.0
Soil Olsen P content	kgP ha^{-1}	7.460
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	2 241 000 000
Reservoir area	km^2	35.60
Maximum reservoir depth	m	172.0
Mean reservoir depth	m	63.00
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.075, 0.331, 0.594, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.772
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.795
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.540
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.904
Mean monthly wind speed	m s^{-1}	1.220
Water intake depth below surface	m	N/A



19.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	787.3
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	540.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-196.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	247.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	443.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	15 770
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1577
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	86.46
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	40.02
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	330.1
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	456.6
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	16 250
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1625
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.1911
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.1513
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.1712
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	6.804
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.6804
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	899.6
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	899.7

19.3 Emission plots



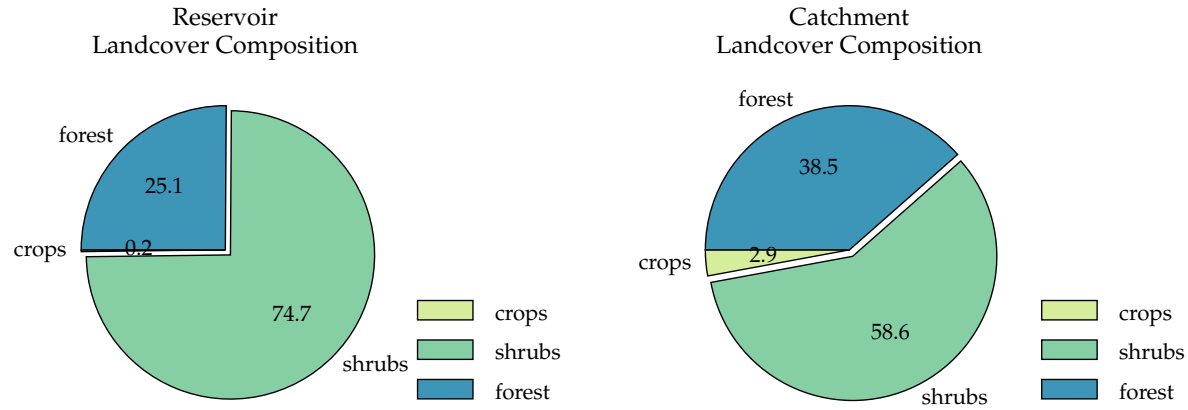
19.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	145.3
Retention coefficient	-	0.1202
Influent total N concentration	$\mu\text{g L}^{-1}$	1.257
Reservoir TN concentration	$\mu\text{g L}^{-1}$	1.106
Reservoir TP concentration	$\mu\text{g L}^{-1}$	128.2
Percentage of reservoir's surface area that is littoral	%	2.998
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.795
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.54
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	22.12
Water density at the bottom of the reservoir	kg m^{-3}	997.8
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.58
Water density at the surface of the reservoir	kg m^{-3}	996.7
Thermocline depth	m	2.100
Influent total N load	kgN yr^{-1}	16 520
Influent total P load	kgP yr^{-1}	1 910 000
Downstream TN concentration	mg L^{-1}	0.001 584

20 Mantong

20.1 Inputs

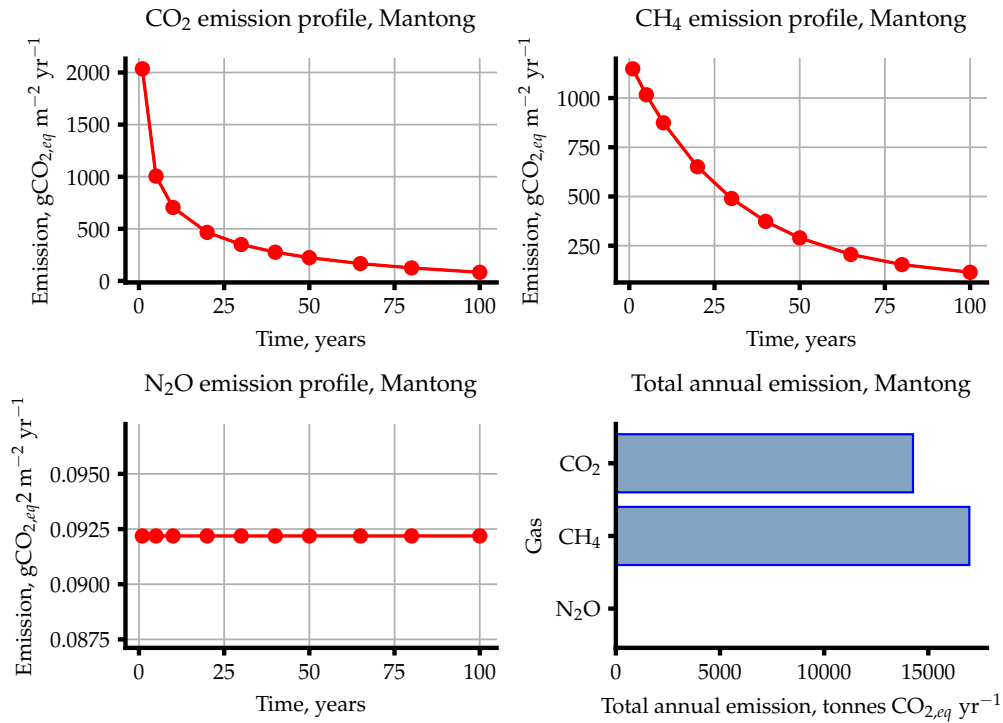
Input Name	Unit	Value(s)
Reservoir ID		59
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.9747, LON: 98.5573
Monthly Temperatures	$^{\circ}\text{C}$	15.8, 18.0, 21.3, 24.7, 26.3, 26.4, 26.0, 26.1, 25.7, 23.9, 20.2, 16.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	364.0
Catchment area	km^2	3960
Length of inundated river	km	43.49
Population	capita	225 600
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.029, 0.586, 0.385, 0.0
Mean catchment slope	$\%$	32.00
Mean annual precipitation	mm/year	1345
Mean annual evapotranspiration	mm/year	1261
Soil wetness	mm over profile	203.0
Soil Olsen P content	kgP ha^{-1}	3.587
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	1 194 000 000
Reservoir area	km^2	42.86
Maximum reservoir depth	m	88.00
Mean reservoir depth	m	27.90
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.002, 0.747, 0.251, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.312
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.690
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.409
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.838
Mean monthly wind speed	m s^{-1}	1.160
Water intake depth below surface	m	N/A



20.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	796.8
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	546.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-82.83
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	250.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	332.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	14 260
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1426
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	119.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	72.57
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	203.5
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	395.9
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	16 970
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1697
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.092 19
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.048 17
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.070 18
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	3.951
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.3951
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	728.7
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	728.7

20.3 Emission plots



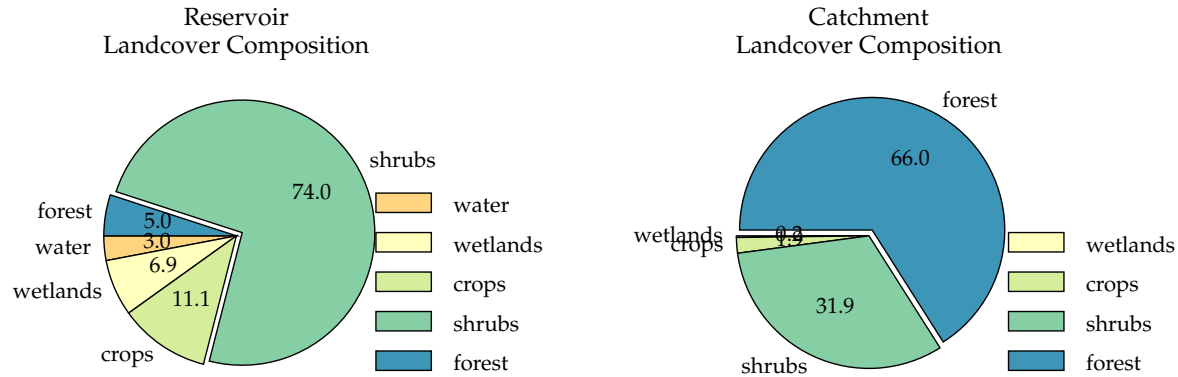
20.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	154.4
Retention coefficient	-	0.3989
Influent total N concentration	$\mu\text{g L}^{-1}$	1.423
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.8558
Reservoir TP concentration	$\mu\text{g L}^{-1}$	93.43
Percentage of reservoir's surface area that is littoral	%	7.199
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.690
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	56.28
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	21.07
Water density at the bottom of the reservoir	kg m^{-3}	998.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.20
Water density at the surface of the reservoir	kg m^{-3}	996.8
Thermocline depth	m	1.978
Influent total N load	kgN yr^{-1}	2052
Influent total P load	kgP yr^{-1}	222 500
Downstream TN concentration	mg L^{-1}	0.001 220

21 Mone Chaung

21.1 Inputs

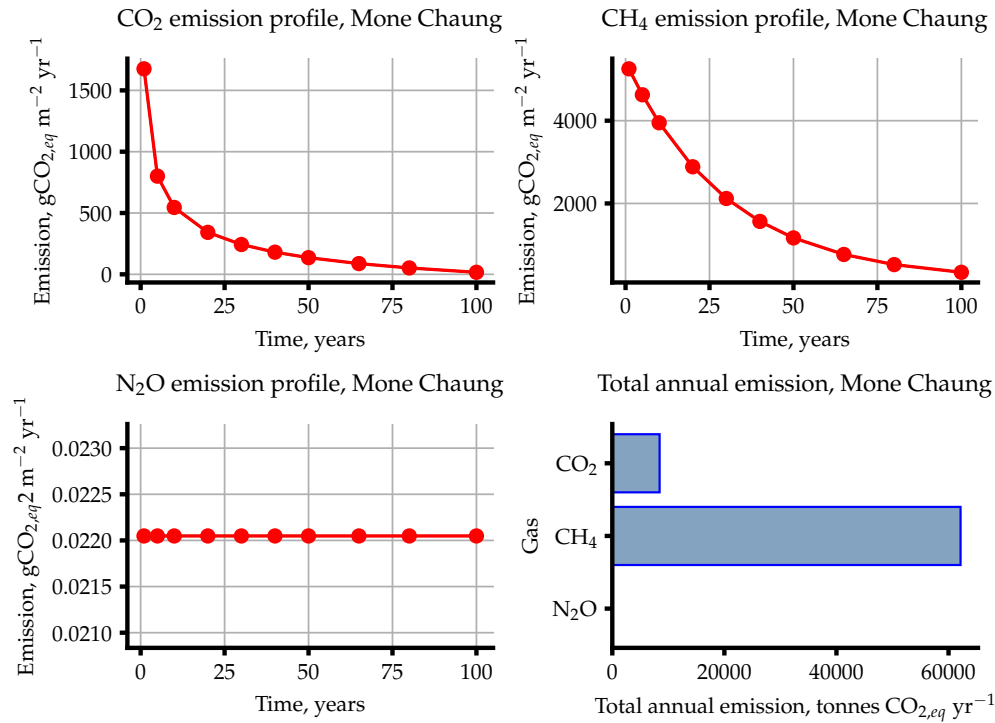
Input Name	Unit	Value(s)
Reservoir ID		62
Reservoir type		multipurpose
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.4799, LON: 94.2553
Monthly Temperatures	$^{\circ}\text{C}$	20.4, 22.8, 27.1, 30.2, 30.0, 28.0, 27.6, 27.5, 27.3, 26.7, 24.0, 20.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1184
Catchment area	km^2	3969
Length of inundated river	km	22.07
Population	capita	48 350
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.002, 0.019, 0.319, 0.66, 0.0
Mean catchment slope	$\%$	33.00
Mean annual precipitation	mm/year	2001
Mean annual evapotranspiration	mm/year	1217
Soil wetness	mm over profile	154.0
Soil Olsen P content	kgP ha^{-1}	5.423
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	611 500 000
Reservoir area	km^2	36.88
Maximum reservoir depth	m	47.00
Mean reservoir depth	m	16.60
Inundated area fractions	-	0.0, 0.0, 0.0, 0.015, 0.069, 0.111, 0.74, 0.05, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.015, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.160
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.850
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.300
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.188
Mean monthly wind speed	m s^{-1}	1.020
Water intake depth below surface	m	N/A



21.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	677.1
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	464.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-16.50
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	212.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	228.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	8443
Total CO ₂ emission per lifetime	ktCO _{2,eq}	844.3
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	210.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	134.8
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1339
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1685
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	62 150
Total CH ₄ emission per lifetime	ktCO _{2,eq}	6215
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.022 05
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.017 63
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.019 84
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.8132
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.081 32
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1914
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1914

21.3 Emission plots



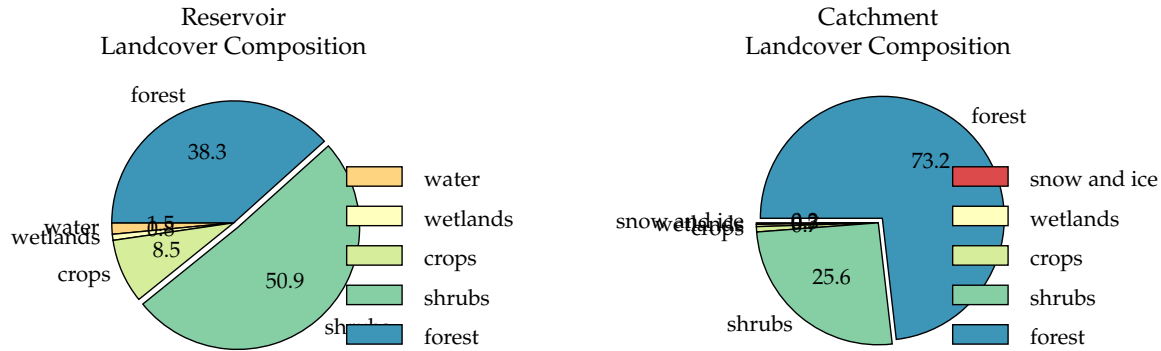
21.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	18.28
Retention coefficient	-	0.094 39
Influent total N concentration	$\mu\text{g L}^{-1}$	0.5502
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.4978
Reservoir TP concentration	$\mu\text{g L}^{-1}$	16.55
Percentage of reservoir's surface area that is littoral	%	11.38
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.850
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.20
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.09
Water density at the bottom of the reservoir	kg m^{-3}	997.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.95
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.624
Influent total N load	kgN yr^{-1}	2586
Influent total P load	kgP yr^{-1}	85 900
Downstream TN concentration	mg L^{-1}	0.000 707 9

22 Myitsone

22.1 Inputs

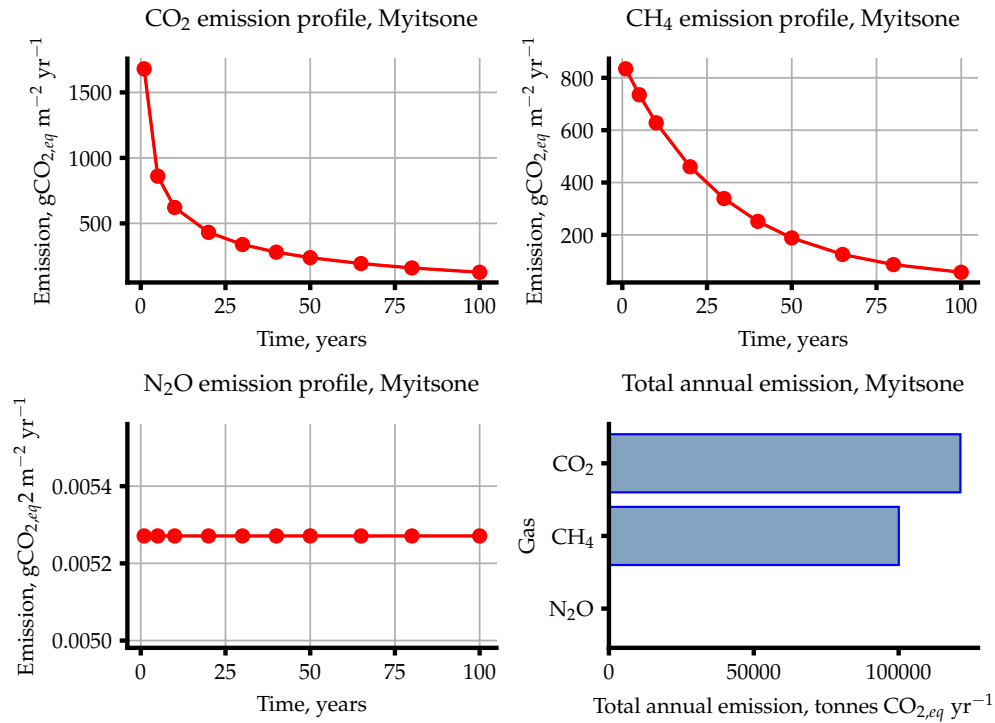
Input Name	Unit	Value(s)
Reservoir ID		64
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 25.715, LON: 97.535
Monthly Temperatures	$^{\circ}\text{C}$	15.9, 17.7, 21.5, 24.2, 26.1, 26.8, 26.6, 26.9, 26.6, 24.7, 20.6, 16.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	694.0
Catchment area	km^2	24 260
Length of inundated river	km	118.0
Population	capita	97 240
Area fractions	-	0.0, 0.002, 0.0, 0.0, 0.003, 0.007, 0.256, 0.731, 0.0
Mean catchment slope	$\%$	49.00
Mean annual precipitation	mm/year	1417
Mean annual evapotranspiration	mm/year	816.0
Soil wetness	mm over profile	155.0
Soil Olsen P content	kgP ha^{-1}	8.036
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	19 760 000 000
Reservoir area	km^2	372.9
Maximum reservoir depth	m	153.0
Mean reservoir depth	m	53.00
Inundated area fractions	-	0.0, 0.0, 0.0, 0.012, 0.008, 0.085, 0.508, 0.383, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.003, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.802
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.353
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.103
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.476
Mean monthly wind speed	m s^{-1}	0.9900
Water intake depth below surface	m	N/A



22.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	634.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	435.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-126.4
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	198.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	325.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	121 300
Total CO ₂ emission per lifetime	ktCO _{2,eq}	12 130
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	91.39
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	25.18
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	151.7
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	268.3
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	100 100
Total CH ₄ emission per lifetime	ktCO _{2,eq}	10 010
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.005 271
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.002 127
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.003 699
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.966
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1966
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	593.6
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	593.6

22.3 Emission plots



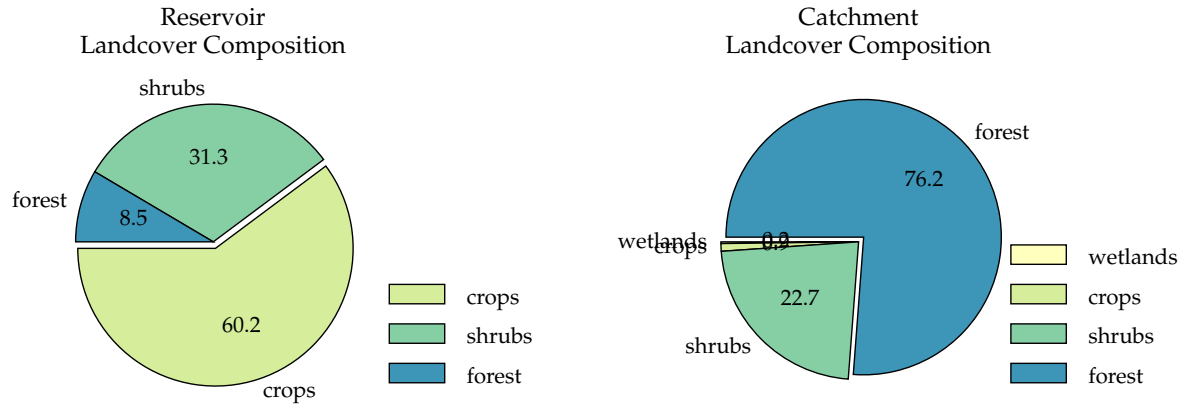
22.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	21.22
Retention coefficient	-	0.4846
Influent total N concentration	$\mu\text{g L}^{-1}$	0.044 50
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.022 90
Reservoir TP concentration	$\mu\text{g L}^{-1}$	10.90
Percentage of reservoir's surface area that is littoral	%	3.667
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.353
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	52.24
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	21.14
Water density at the bottom of the reservoir	kg m^{-3}	998.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.73
Water density at the surface of the reservoir	kg m^{-3}	996.6
Thermocline depth	m	2.759
Influent total N load	kgN yr^{-1}	749.1
Influent total P load	kgP yr^{-1}	357 200
Downstream TN concentration	mg L^{-1}	3.012×10^{-5}

23 Myittha

23.1 Inputs

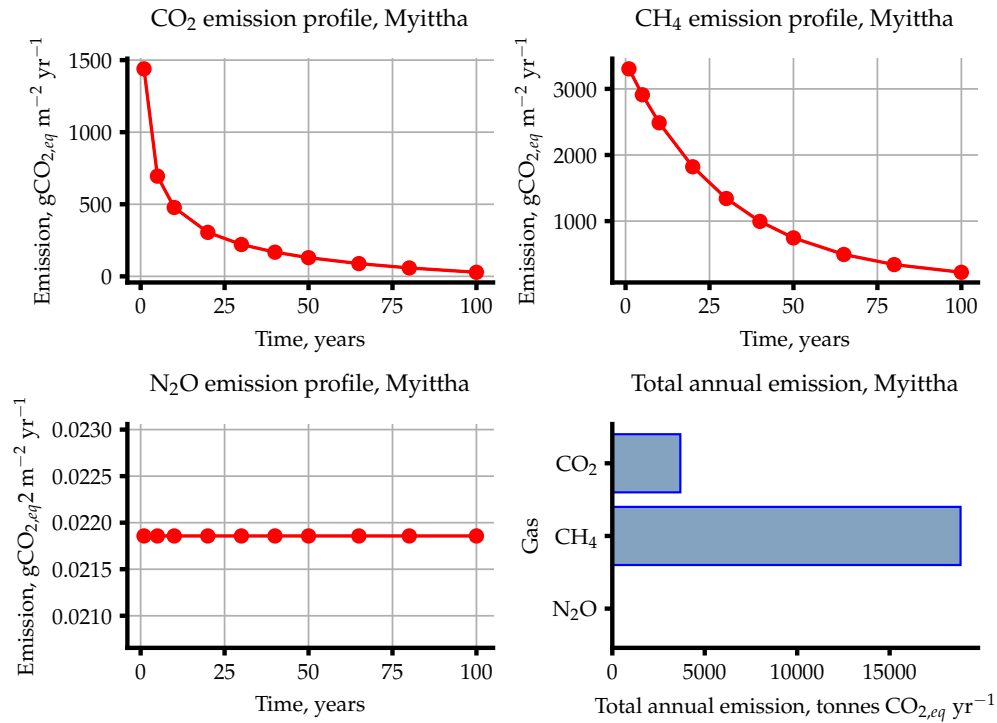
Input Name	Unit	Value(s)
Reservoir ID		65
Reservoir type		multipurpose
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.9922, LON: 94.0369
Monthly Temperatures	$^{\circ}\text{C}$	19.1, 21.9, 26.2, 29.1, 29.0, 27.6, 27.3, 26.8, 26.6, 25.5, 22.5, 19.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1011
Catchment area	km^2	1895
Length of inundated river	km	12.38
Population	capita	18 690
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.002, 0.009, 0.227, 0.762, 0.0
Mean catchment slope	$\%$	35.00
Mean annual precipitation	mm/year	1841
Mean annual evapotranspiration	mm/year	1189
Soil wetness	mm over profile	166.0
Soil Olsen P content	kgP ha^{-1}	5.393
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	352 000 000
Reservoir area	km^2	17.63
Maximum reservoir depth	m	54.00
Mean reservoir depth	m	20.00
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.602, 0.313, 0.085, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.380
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.760
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.438
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.956
Mean monthly wind speed	m s^{-1}	1.090
Water intake depth below surface	m	N/A



23.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	575.9
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	395.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-28.05
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	180.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	208.7
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	3680
Total CO ₂ emission per lifetime	ktCO _{2,eq}	368.0
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	173.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	99.42
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	795.3
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1068
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	18 840
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1884
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.021 86
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.017 23
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.019 55
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.3854
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.038 54
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1277
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1277

23.3 Emission plots



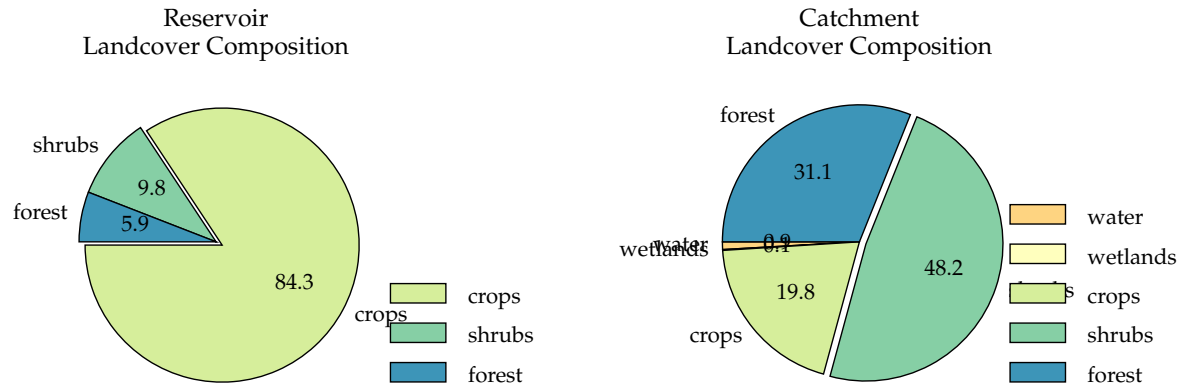
23.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	18.16
Retention coefficient	-	0.1283
Influent total N concentration	$\mu\text{g L}^{-1}$	0.4534
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.3929
Reservoir TP concentration	$\mu\text{g L}^{-1}$	15.77
Percentage of reservoir's surface area that is littoral	%	9.260
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.760
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.12
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.24
Water density at the bottom of the reservoir	kg m^{-3}	997.5
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.25
Water density at the surface of the reservoir	kg m^{-3}	996.2
Thermocline depth	m	1.442
Influent total N load	kgN yr^{-1}	868.4
Influent total P load	kgP yr^{-1}	34 790
Downstream TN concentration	mg L^{-1}	0.000 567 6

24 Myogyi

24.1 Inputs

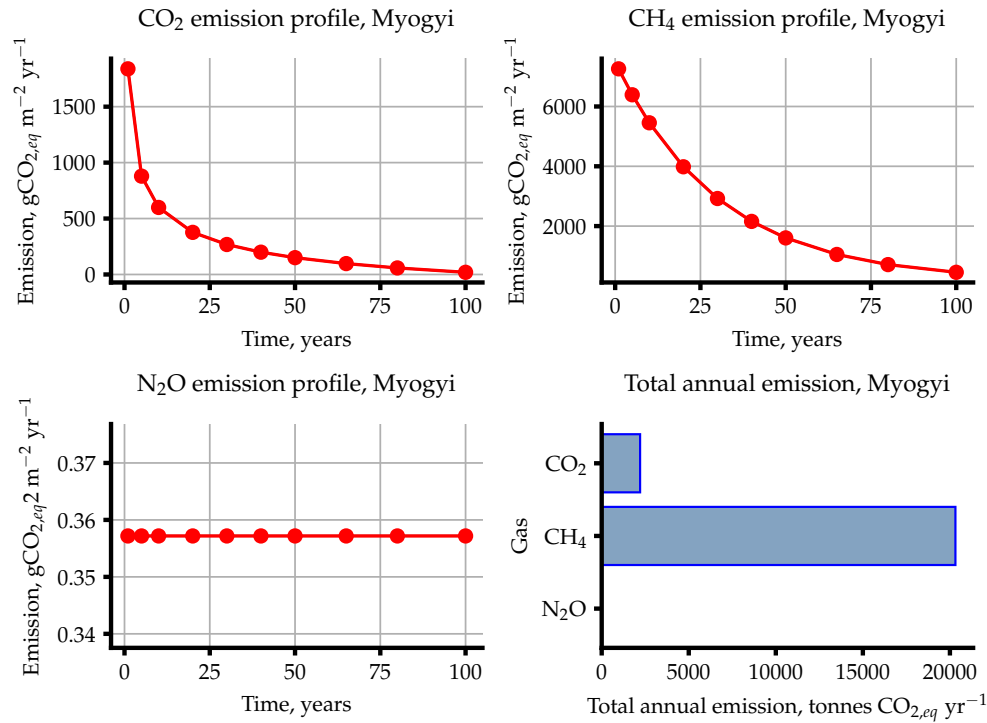
Input Name	Unit	Value(s)
Reservoir ID		66
Reservoir type		multipurpose
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.4611, LON: 96.3823
Monthly Temperatures	$^{\circ}\text{C}$	20.6, 23.1, 27.4, 30.4, 29.8, 28.6, 28.3, 27.8, 27.7, 26.8, 24.2, 20.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	877.0
Catchment area	km^2	3873
Length of inundated river	km	11.96
Population	capita	182 900
Area fractions	-	0.0, 0.0, 0.0, 0.009, 0.001, 0.198, 0.482, 0.311, 0.0
Mean catchment slope	$\%$	21.00
Mean annual precipitation	mm/year	1813
Mean annual evapotranspiration	mm/year	1243
Soil wetness	mm over profile	218.0
Soil Olsen P content	kgP ha^{-1}	6.032
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	153 400 000
Reservoir area	km^2	8.742
Maximum reservoir depth	m	42.00
Mean reservoir depth	m	17.50
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.843, 0.098, 0.059, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.835
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.962
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Mean monthly wind speed	m s^{-1}	1.130
Water intake depth below surface	m	N/A



24.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	742.2
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	509.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-19.47
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	232.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	252.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2206
Total CO ₂ emission per lifetime	ktCO _{2,eq}	220.6
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	203.3
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	175.8
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1945
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2324
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	20 320
Total CH ₄ emission per lifetime	ktCO _{2,eq}	2032
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.3572
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.3390
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.3481
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	3.123
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.3123
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2576
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2577

24.3 Emission plots



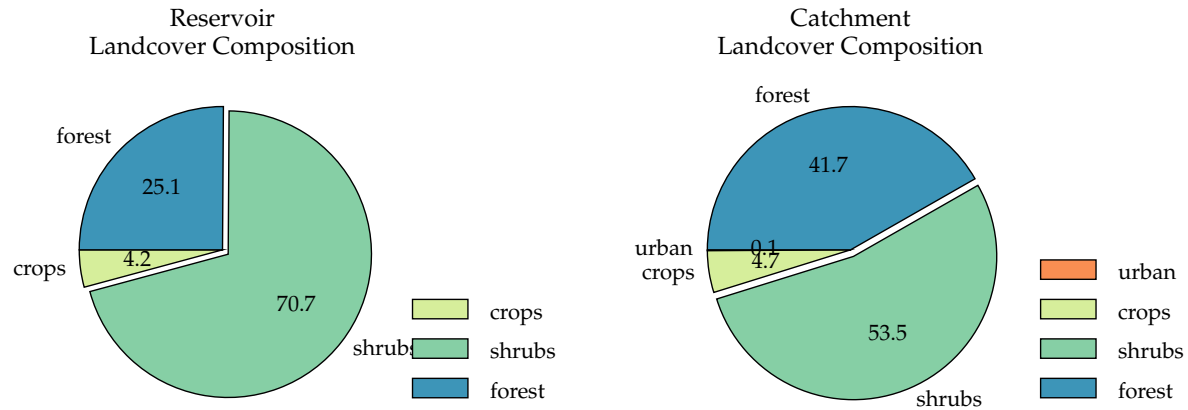
24.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	55.63
Retention coefficient	-	0.034 91
Influent total N concentration	$\mu\text{g L}^{-1}$	9.868
Reservoir TN concentration	$\mu\text{g L}^{-1}$	9.509
Reservoir TP concentration	$\mu\text{g L}^{-1}$	53.78
Percentage of reservoir's surface area that is littoral	%	9.855
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.22
Water density at the bottom of the reservoir	kg m^{-3}	997.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.28
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	1.226
Influent total N load	kgN yr^{-1}	33 520
Influent total P load	kgP yr^{-1}	189 000
Downstream TN concentration	mg L^{-1}	0.011 29

25 Nam Hka

25.1 Inputs

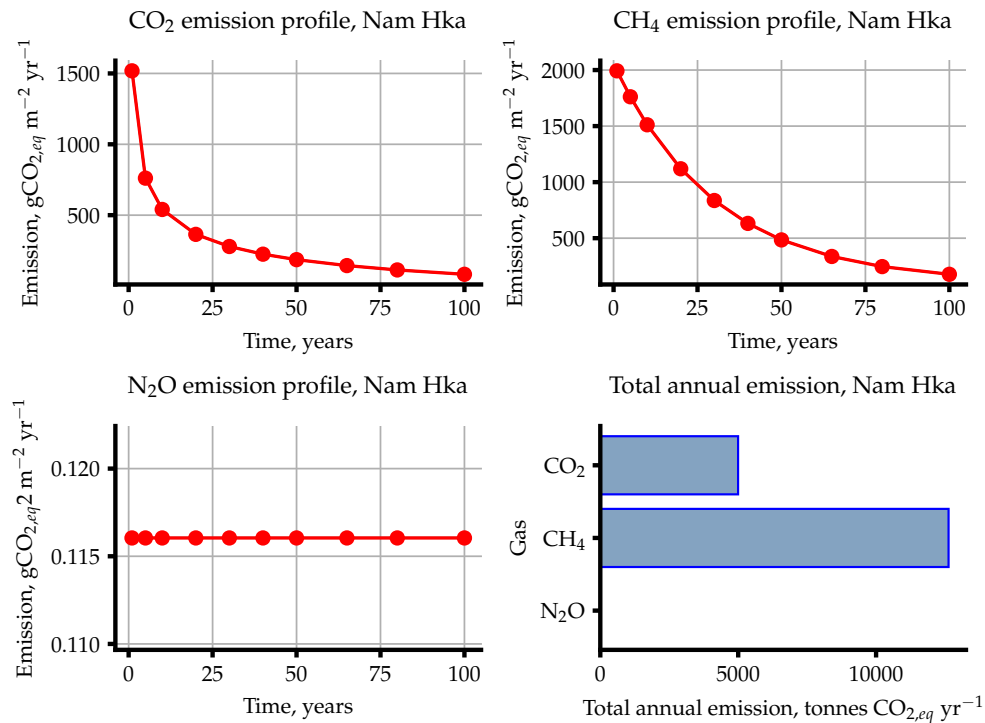
Input Name	Unit	Value(s)
Reservoir ID		67
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.7338, LON: 98.95
Monthly Temperatures	$^{\circ}\text{C}$	16.7, 18.8, 22.0, 25.4, 26.4, 26.2, 25.7, 25.7, 25.4, 23.8, 20.6, 17.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	364.0
Catchment area	km^2	8033
Length of inundated river	km	55.44
Population	capita	354 200
Area fractions	-	0.0, 0.0, 0.001, 0.0, 0.0, 0.047, 0.534, 0.417, 0.0
Mean catchment slope	$\%$	31.00
Mean annual precipitation	mm/year	1354
Mean annual evapotranspiration	mm/year	1254
Soil wetness	mm over profile	233.0
Soil Olsen P content	kgP ha^{-1}	3.592
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	440 600 000
Reservoir area	km^2	18.74
Maximum reservoir depth	m	74.00
Mean reservoir depth	m	23.50
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.042, 0.707, 0.251, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.889
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.837
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.531
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.994
Mean monthly wind speed	m s^{-1}	1.200
Water intake depth below surface	m	N/A



25.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	585.8
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	402.0
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-82.83
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	183.8
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	266.6
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	4996
Total CO ₂ emission per lifetime	ktCO _{2,eq}	499.6
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	130.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	103.3
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	439.7
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	673.8
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	12 630
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1263
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.1160
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.092 32
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.1042
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	2.175
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.2175
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	940.5
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	940.6

25.3 Emission plots



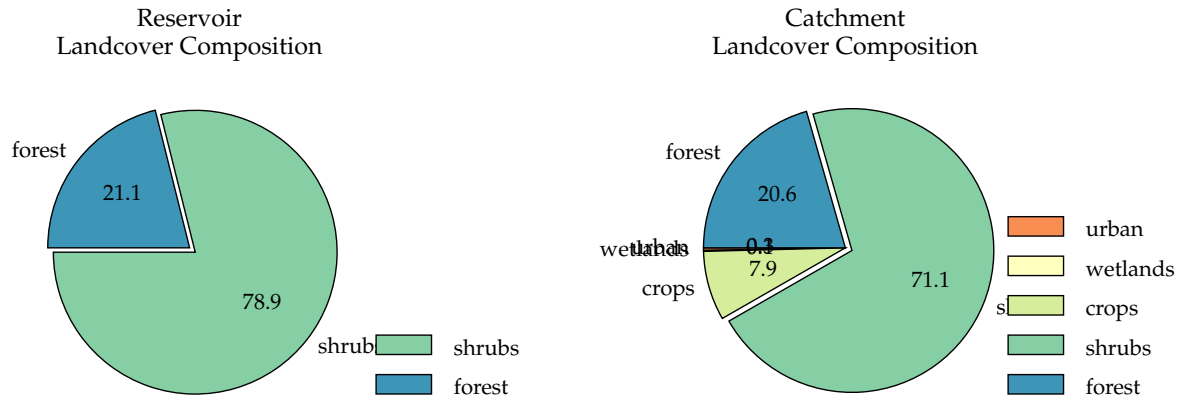
25.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	129.1
Retention coefficient	-	0.1077
Influent total N concentration	$\mu\text{g L}^{-1}$	2.042
Reservoir TN concentration	$\mu\text{g L}^{-1}$	1.823
Reservoir TP concentration	$\mu\text{g L}^{-1}$	115.4
Percentage of reservoir's surface area that is littoral	%	8.509
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.837
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.04
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	21.66
Water density at the bottom of the reservoir	kg m^{-3}	997.9
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.00
Water density at the surface of the reservoir	kg m^{-3}	996.8
Thermocline depth	m	1.803
Influent total N load	kgN yr^{-1}	5972
Influent total P load	kgP yr^{-1}	377 600
Downstream TN concentration	mg L^{-1}	0.002 601

26 Nam Hsim

26.1 Inputs

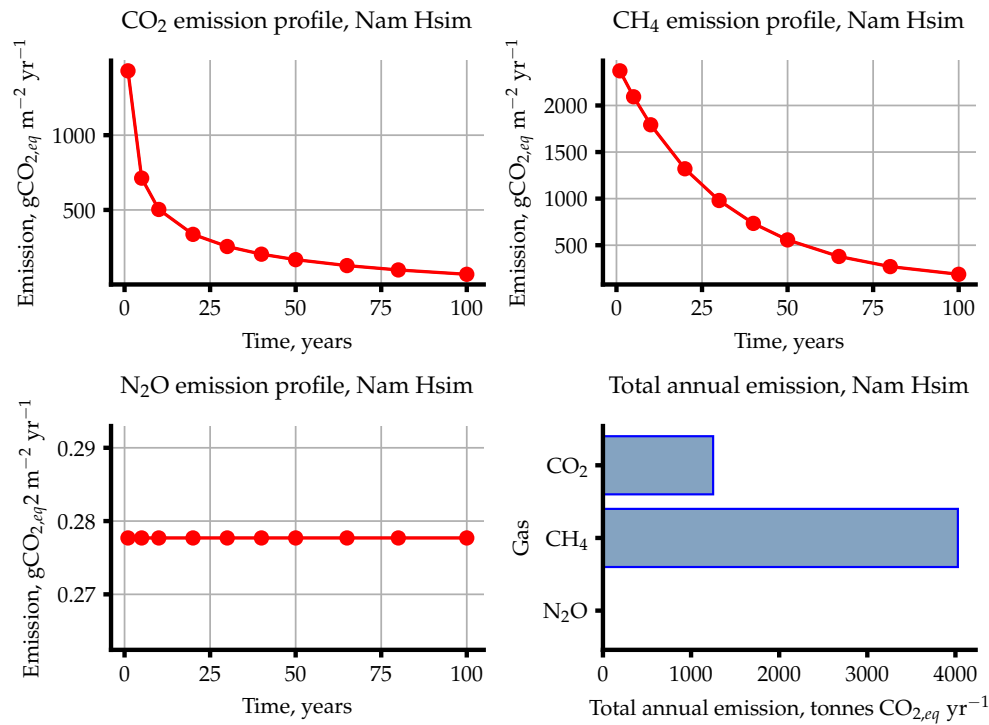
Input Name	Unit	Value(s)
Reservoir ID		68
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.5603, LON: 97.1241
Monthly Temperatures	$^{\circ}\text{C}$	16.4, 18.9, 22.3, 26.2, 26.4, 26.2, 25.9, 25.5, 25.4, 23.9, 20.7, 17.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	834.0
Catchment area	km ²	1371
Length of inundated river	km	13.20
Population	capita	68 780
Area fractions	-	0.0, 0.0, 0.003, 0.0, 0.001, 0.079, 0.712, 0.206, 0.0
Mean catchment slope	%	25.00
Mean annual precipitation	mm/year	1799
Mean annual evapotranspiration	mm/year	1206
Soil wetness	mm over profile	246.0
Soil Olsen P content	kgP ha ⁻¹	4.154
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	120 000 000
Reservoir area	km ²	5.128
Maximum reservoir depth	m	80.00
Mean reservoir depth	m	23.40
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.789, 0.211, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	5.263
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	4.780
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	4.472
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	4.946
Mean monthly wind speed	m s ⁻¹	1.140
Water intake depth below surface	m	N/A



26.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	555.2
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	381.0
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-69.63
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	174.2
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	243.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1250
Total CO ₂ emission per lifetime	ktCO _{2,eq}	125.0
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	134.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	98.26
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	552.3
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	785.4
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	4028
Total CH ₄ emission per lifetime	ktCO _{2,eq}	402.8
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.2777
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.2234
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.2506
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.424
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1424
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1029
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1029

26.3 Emission plots



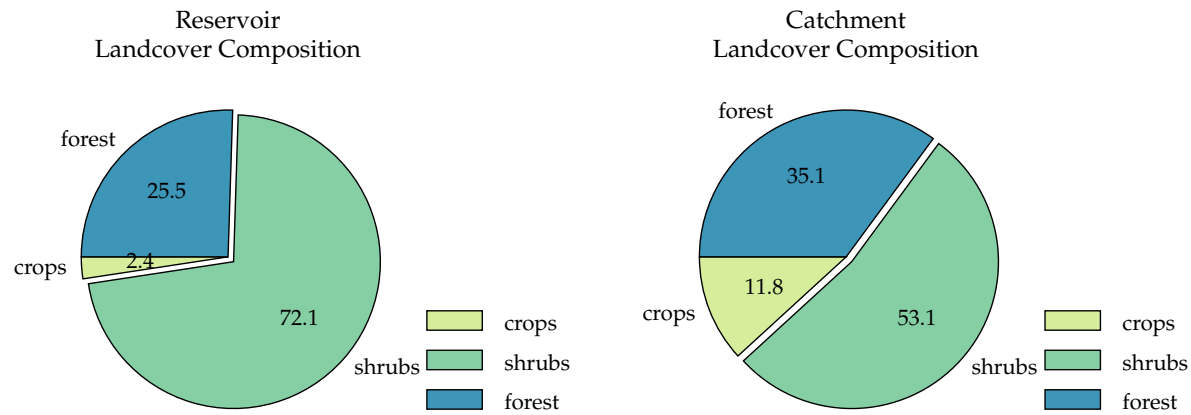
26.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	66.77
Retention coefficient	-	0.077 56
Influent total N concentration	$\mu\text{g L}^{-1}$	4.915
Reservoir TN concentration	$\mu\text{g L}^{-1}$	4.535
Reservoir TP concentration	$\mu\text{g L}^{-1}$	61.73
Percentage of reservoir's surface area that is littoral	%	8.830
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.780
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.36
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	21.47
Water density at the bottom of the reservoir	kg m^{-3}	997.9
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.17
Water density at the surface of the reservoir	kg m^{-3}	996.8
Thermocline depth	m	1.189
Influent total N load	kgN yr^{-1}	5620
Influent total P load	kgP yr^{-1}	76 340
Downstream TN concentration	mg L^{-1}	0.006 394

27 Nam Lang

27.1 Inputs

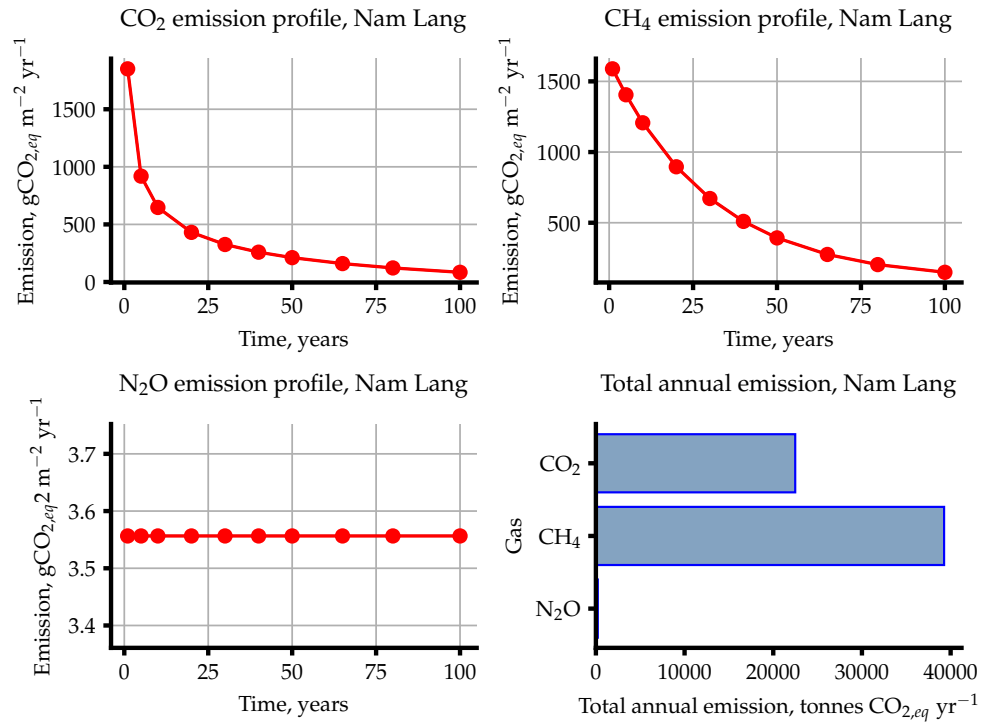
Input Name	Unit	Value(s)
Reservoir ID		70
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.1556, LON: 97.2486
Monthly Temperatures	$^{\circ}\text{C}$	16.8, 19.1, 22.9, 26.7, 26.8, 26.3, 25.8, 25.5, 25.5, 24.1, 21.1, 17.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	750.0
Catchment area	km^2	6668
Length of inundated river	km	26.70
Population	capita	261 200
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.118, 0.531, 0.351, 0.0
Mean catchment slope	$\%$	12.00
Mean annual precipitation	mm/year	1703
Mean annual evapotranspiration	mm/year	1252
Soil wetness	mm over profile	198.0
Soil Olsen P content	kgP ha^{-1}	5.786
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	2 342 000 000
Reservoir area	km^2	72.43
Maximum reservoir depth	m	138.0
Mean reservoir depth	m	32.30
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.024, 0.721, 0.255, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.854
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.865
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.537
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.045
Mean monthly wind speed	m s^{-1}	1.100
Water intake depth below surface	m	N/A



27.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	720.9
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	494.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-84.15
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	226.2
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	310.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	22 480
Total CO ₂ emission per lifetime	ktCO _{2,eq}	2248
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	123.9
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	90.43
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	327.8
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	542.1
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	39 260
Total CH ₄ emission per lifetime	ktCO _{2,eq}	3926
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.556
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.441
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.999
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	257.6
Total N ₂ O emission per lifetime	ktCO _{2,eq}	25.76
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	852.4
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	855.4

27.3 Emission plots



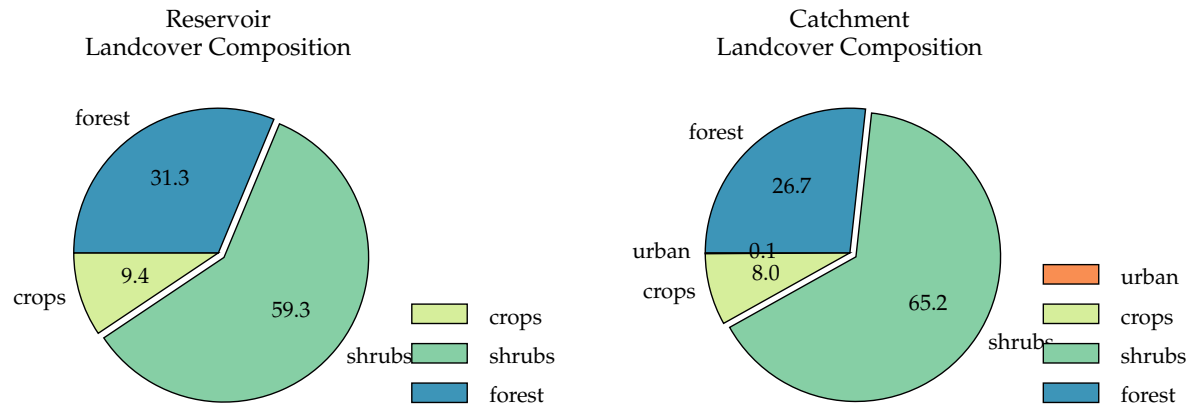
27.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	58.46
Retention coefficient	-	0.2728
Influent total N concentration	$\mu\text{g L}^{-1}$	46.08
Reservoir TN concentration	$\mu\text{g L}^{-1}$	33.54
Reservoir TP concentration	$\mu\text{g L}^{-1}$	42.76
Percentage of reservoir's surface area that is littoral	%	6.940
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.865
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.38
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	21.73
Water density at the bottom of the reservoir	kg m^{-3}	997.9
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.40
Water density at the surface of the reservoir	kg m^{-3}	996.7
Thermocline depth	m	2.221
Influent total N load	kgN yr^{-1}	230 400
Influent total P load	kgP yr^{-1}	292 400
Downstream TN concentration	mg L^{-1}	0.049 32

28 Nam Tu

28.1 Inputs

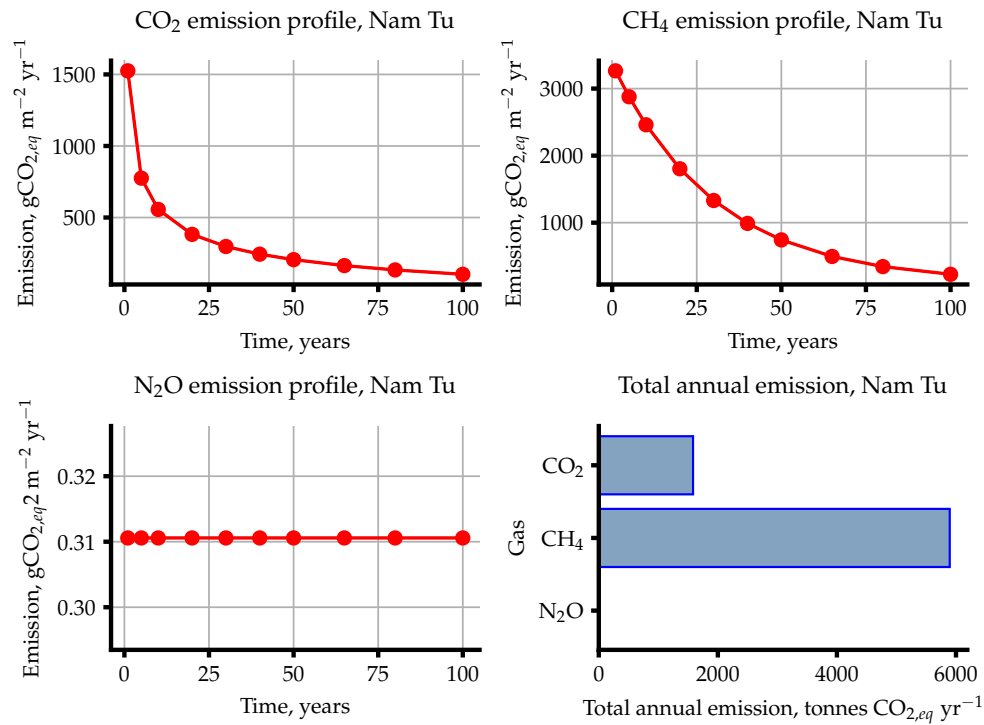
Input Name	Unit	Value(s)
Reservoir ID		83
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.7209, LON: 97.3194
Monthly Temperatures	$^{\circ}\text{C}$	16.1, 18.3, 21.5, 25.6, 26.1, 25.9, 25.7, 25.4, 25.2, 23.7, 20.5, 17.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	608.0
Catchment area	km^2	6795
Length of inundated river	km	9.549
Population	capita	315 200
Area fractions	-	0.0, 0.0, 0.001, 0.0, 0.0, 0.08, 0.651, 0.267, 0.0
Mean catchment slope	$\%$	22.00
Mean annual precipitation	mm/year	1566
Mean annual evapotranspiration	mm/year	1205
Soil wetness	mm over profile	219.0
Soil Olsen P content	kgP ha^{-1}	4.470
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	111 700 000
Reservoir area	km^2	5.550
Maximum reservoir depth	m	59.00
Mean reservoir depth	m	20.10
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.094, 0.594, 0.313, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.806
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.780
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.472
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.946
Mean monthly wind speed	m s^{-1}	1.080
Water intake depth below surface	m	N/A



28.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	580.2
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	398.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-103.3
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	182.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	285.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1583
Total CO ₂ emission per lifetime	ktCO _{2,eq}	158.3
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	135.2
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	105.6
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	821.5
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1062
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	5895
Total CH ₄ emission per lifetime	ktCO _{2,eq}	589.5
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.3106
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.3451
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.3278
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.724
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1724
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1348
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1348

28.3 Emission plots



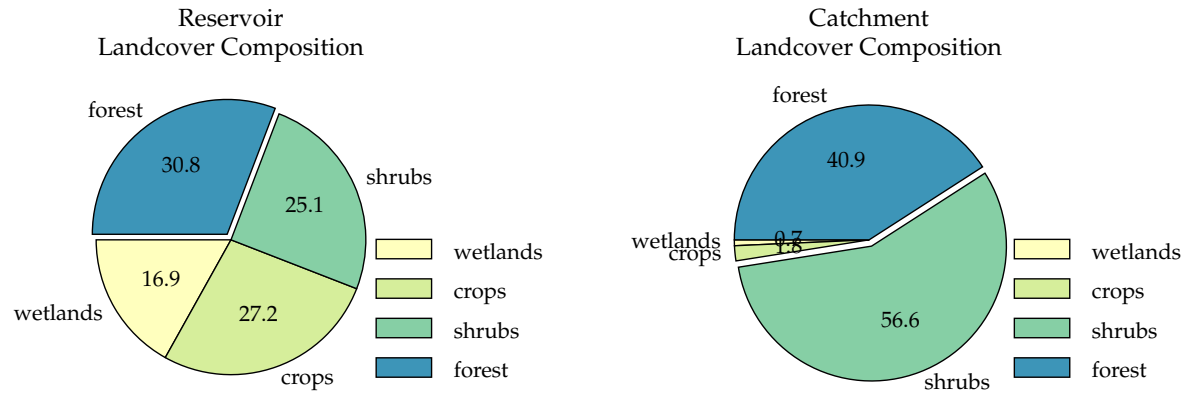
28.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	83.77
Retention coefficient	-	0.021 19
Influent total N concentration	$\mu\text{g L}^{-1}$	8.751
Reservoir TN concentration	$\mu\text{g L}^{-1}$	8.565
Reservoir TP concentration	$\mu\text{g L}^{-1}$	82.04
Percentage of reservoir's surface area that is littoral	%	9.606
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.780
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.36
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	21.27
Water density at the bottom of the reservoir	kg m^{-3}	998.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.83
Water density at the surface of the reservoir	kg m^{-3}	996.9
Thermocline depth	m	1.175
Influent total N load	kgN yr^{-1}	36 150
Influent total P load	kgP yr^{-1}	346 100
Downstream TN concentration	mg L^{-1}	0.008 638

29 Paung Laung (lower)

29.1 Inputs

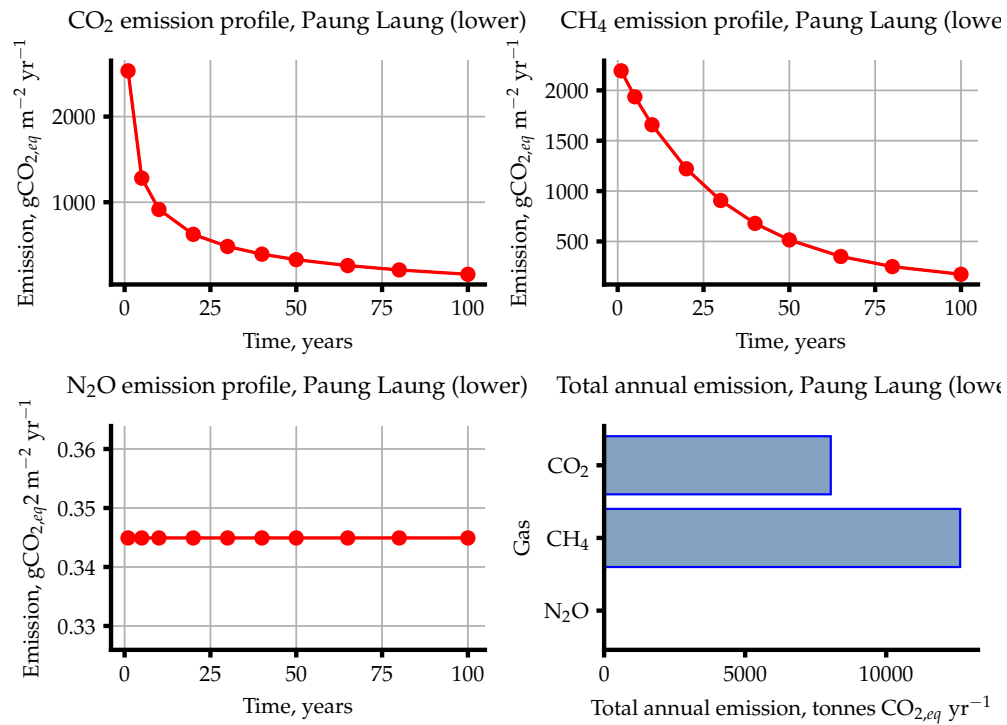
Input Name	Unit	Value(s)
Reservoir ID		96
Reservoir type		multipurpose
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.785, LON: 96.335
Monthly Temperatures	$^{\circ}\text{C}$	21.2, 23.5, 27.3, 30.2, 29.2, 27.1, 26.6, 26.5, 27.0, 26.7, 24.7, 21.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	338.0
Catchment area	km^2	4577
Length of inundated river	km	19.65
Population	capita	290 600
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.007, 0.018, 0.566, 0.409, 0.0
Mean catchment slope	$\%$	27.00
Mean annual precipitation	mm/year	1291
Mean annual evapotranspiration	mm/year	1307
Soil wetness	mm over profile	194.0
Soil Olsen P content	kgP ha^{-1}	8.362
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	718 200 000
Reservoir area	km^2	17.38
Maximum reservoir depth	m	103.0
Mean reservoir depth	m	41.30
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.169, 0.272, 0.251, 0.308, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.801
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.150
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.672
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.426
Mean monthly wind speed	m s^{-1}	1.120
Water intake depth below surface	m	N/A



29.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	969.7
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	665.5
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-158.1
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	304.2
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	462.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	8034
Total CO ₂ emission per lifetime	ktCO _{2,eq}	803.4
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	131.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	90.94
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	503.6
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	726.3
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	12 620
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1262
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.3449
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.2373
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.2911
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	5.994
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.5994
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1189
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1189

29.3 Emission plots



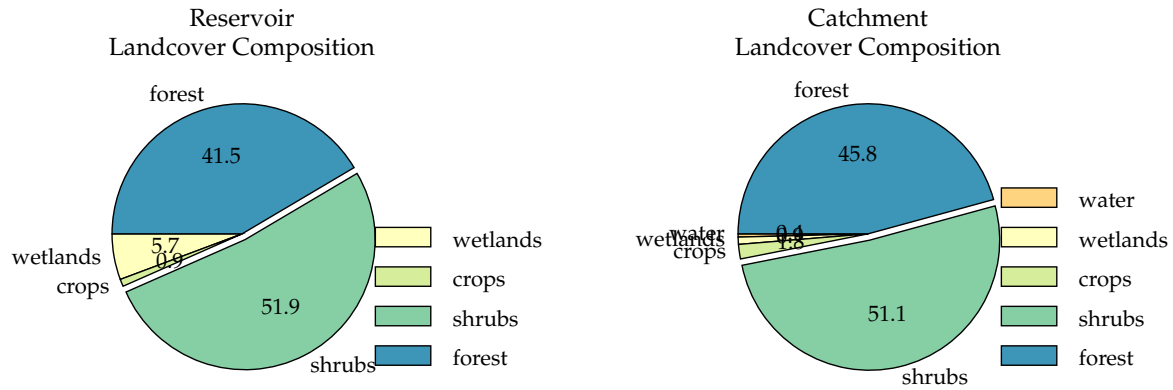
29.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	177.4
Retention coefficient	-	0.2711
Influent total N concentration	$\mu\text{g L}^{-1}$	3.493
Reservoir TN concentration	$\mu\text{g L}^{-1}$	2.544
Reservoir TP concentration	$\mu\text{g L}^{-1}$	129.7
Percentage of reservoir's surface area that is littoral	%	4.320
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.150
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.80
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.62
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.45
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.664
Influent total N load	kgN yr^{-1}	5405
Influent total P load	kgP yr^{-1}	274 500
Downstream TN concentration	mg L^{-1}	0.003 749

30 Paung Laung (middle)

30.1 Inputs

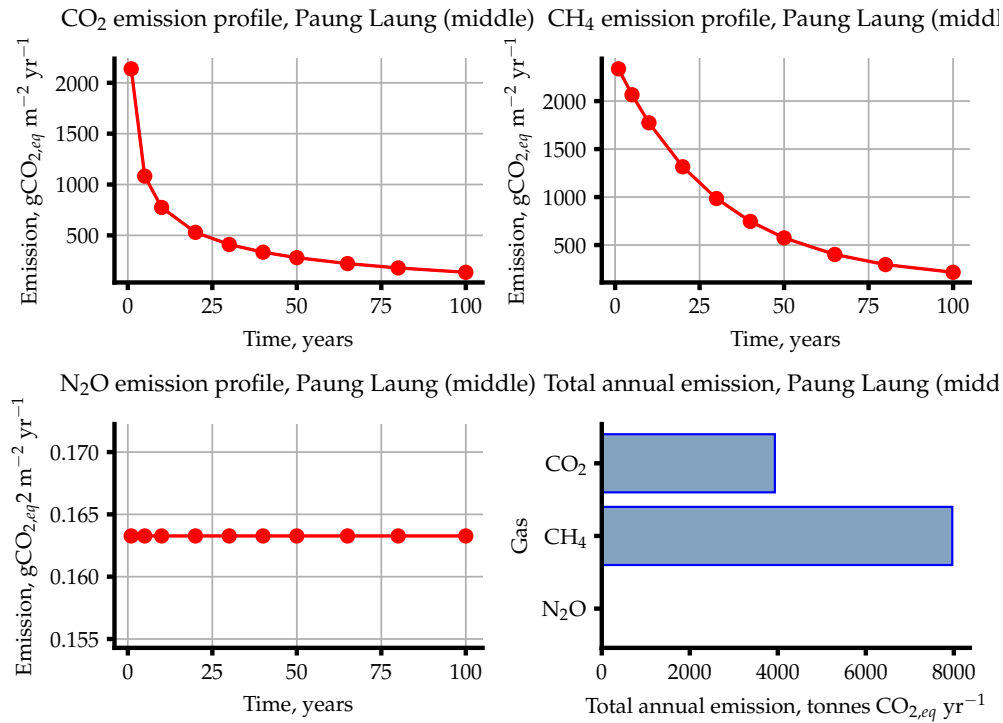
Input Name	Unit	Value(s)
Reservoir ID		97
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.86, LON: 96.508
Monthly Temperatures	$^{\circ}\text{C}$	19.3, 21.5, 25.3, 28.5, 27.8, 26.0, 25.5, 25.4, 26.0, 25.6, 23.3, 19.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	361.0
Catchment area	km^2	3250
Length of inundated river	km	17.37
Population	capita	213 500
Area fractions	-	0.0, 0.0, 0.0, 0.004, 0.009, 0.018, 0.512, 0.458, 0.0
Mean catchment slope	$\%$	29.00
Mean annual precipitation	mm/year	1297
Mean annual evapotranspiration	mm/year	1299
Soil wetness	mm over profile	170.0
Soil Olsen P content	kgP ha^{-1}	7.634
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	321 400 000
Reservoir area	km^2	10.01
Maximum reservoir depth	m	111.0
Mean reservoir depth	m	32.10
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.057, 0.009, 0.519, 0.415, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.038
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.150
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.672
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.426
Mean monthly wind speed	m s^{-1}	1.170
Water intake depth below surface	m	N/A



30.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	816.3
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	560.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-137.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	256.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	393.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	3934
Total CO ₂ emission per lifetime	ktCO _{2,eq}	393.4
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	136.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	129.0
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	530.8
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	795.9
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	7965
Total CH ₄ emission per lifetime	ktCO _{2,eq}	796.5
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.1633
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.1246
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.1439
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.634
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1634
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1189
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1189

30.3 Emission plots



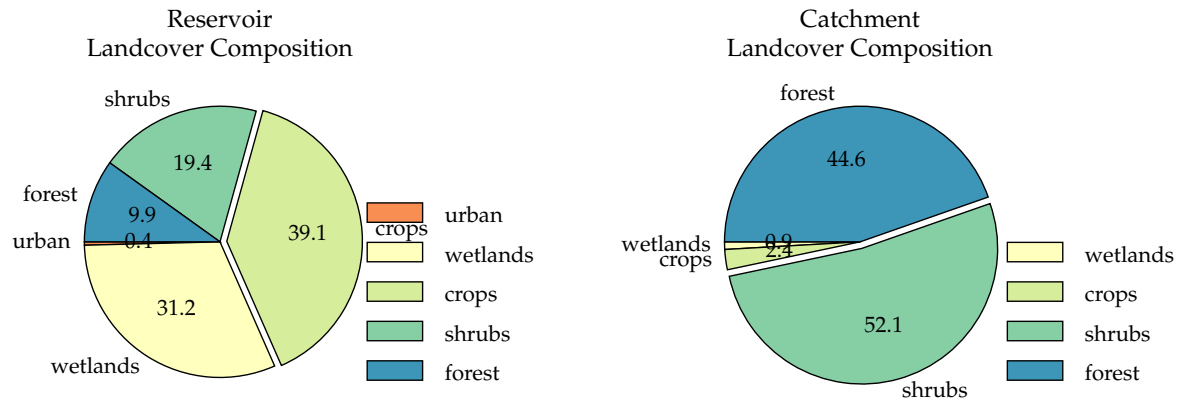
30.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	μg L ⁻¹	167.5
Retention coefficient	-	0.1800
Influent total N concentration	μg L ⁻¹	2.110
Reservoir TN concentration	μg L ⁻¹	1.731
Reservoir TP concentration	μg L ⁻¹	137.6
Percentage of reservoir's surface area that is littoral	%	6.513
Mean radiance at the reservoir	kWh m ⁻² d ⁻¹	5.150
Cumulative global horizontal radiance at the reservoir	kWh m ⁻² d ⁻¹	61.80
Bottom (hypolimnion) temperature in the reservoir	°C	23.37
Water density at the bottom of the reservoir	kg m ⁻³	997.5
Surface (epilimnion) temperature in the reservoir	°C	27.08
Water density at the surface of the reservoir	kg m ⁻³	996.5
Thermocline depth	m	1.580
Influent total N load	kgN yr ⁻¹	2476
Influent total P load	kgP yr ⁻¹	196 500
Downstream TN concentration	mg L ⁻¹	0.002 519

31 Paung Laung (upper)

31.1 Inputs

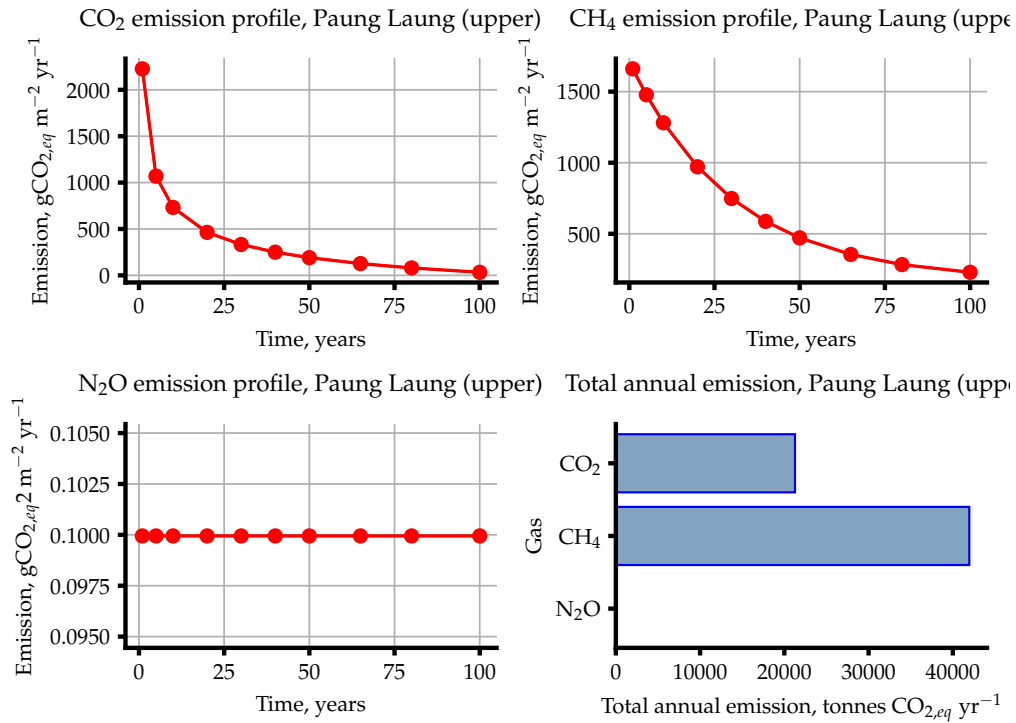
Input Name	Unit	Value(s)
Reservoir ID		98
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.7561, LON: 96.5947
Monthly Temperatures	$^{\circ}\text{C}$	19.0, 21.2, 25.1, 28.4, 27.8, 26.0, 25.5, 25.4, 25.8, 25.4, 23.0, 19.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	365.0
Catchment area	km^2	3053
Length of inundated river	km	55.25
Population	capita	199 200
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.009, 0.024, 0.52, 0.446, 0.0
Mean catchment slope	$\%$	29.00
Mean annual precipitation	mm/year	1299
Mean annual evapotranspiration	mm/year	1296
Soil wetness	mm over profile	167.0
Soil Olsen P content	kgP ha^{-1}	7.429
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	1 486 000 000
Reservoir area	km^2	67.83
Maximum reservoir depth	m	69.00
Mean reservoir depth	m	21.90
Inundated area fractions	-	0.0, 0.0, 0.001, 0.0, 0.312, 0.391, 0.194, 0.099, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.003, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.666
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.145
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.773
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.335
Mean monthly wind speed	m s^{-1}	1.140
Water intake depth below surface	m	N/A



31.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	895.2
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	614.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-32.67
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	280.8
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	313.5
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	21 260
Total CO ₂ emission per lifetime	ktCO _{2,eq}	2126
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	156.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	170.6
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	291.5
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	618.6
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	41 960
Total CH ₄ emission per lifetime	ktCO _{2,eq}	4196
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.099 95
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.036 47
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.068 21
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	6.779
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.6779
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	932.1
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	932.1

31.3 Emission plots



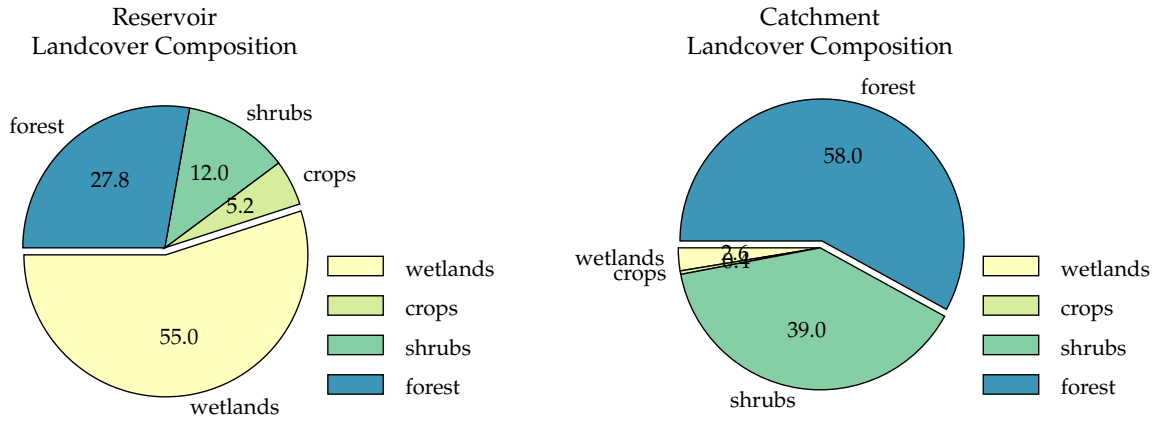
31.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	165.5
Retention coefficient	-	0.5164
Influent total N concentration	$\mu\text{g L}^{-1}$	2.086
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.9998
Reservoir TP concentration	$\mu\text{g L}^{-1}$	81.32
Percentage of reservoir's surface area that is littoral	%	9.117
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.145
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.74
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.17
Water density at the bottom of the reservoir	kg m^{-3}	997.5
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	27.00
Water density at the surface of the reservoir	kg m^{-3}	996.5
Thermocline depth	m	2.451
Influent total N load	kgN yr^{-1}	2325
Influent total P load	kgP yr^{-1}	184 500
Downstream TN concentration	mg L^{-1}	0.001 259

32 Phyu Chaung

32.1 Inputs

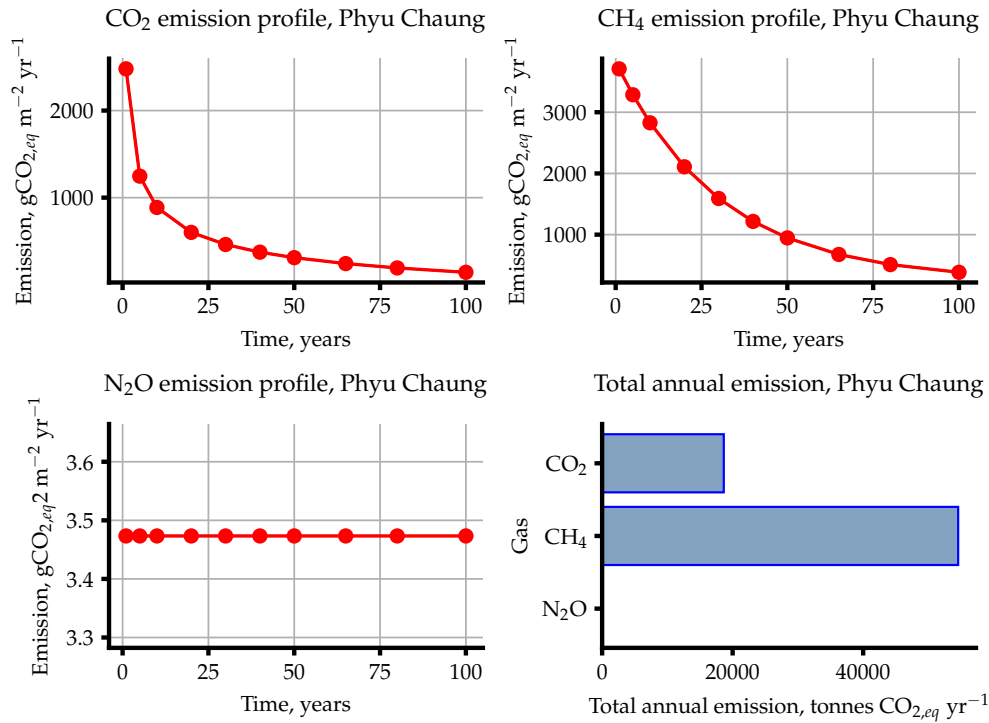
Input Name	Unit	Value(s)
Reservoir ID		101
Reservoir type		multipurpose
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.5067, LON: 96.3519
Monthly Temperatures	$^{\circ}\text{C}$	21.3, 23.5, 26.9, 29.9, 29.0, 26.6, 26.2, 26.2, 26.7, 27.0, 25.2, 22.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	677.0
Catchment area	km^2	1041
Length of inundated river	km	30.55
Population	capita	106 300
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.026, 0.004, 0.39, 0.58, 0.0
Mean catchment slope	$\%$	11.00
Mean annual precipitation	mm/year	1707
Mean annual evapotranspiration	mm/year	1341
Soil wetness	mm over profile	355.0
Soil Olsen P content	kgP ha^{-1}	4.881
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	540 600 000
Reservoir area	km^2	42.19
Maximum reservoir depth	m	60.00
Mean reservoir depth	m	12.80
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.55, 0.052, 0.12, 0.278, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.068
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.030
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.340
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.458
Mean monthly wind speed	m s^{-1}	0.9900
Water intake depth below surface	m	N/A



32.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	953.5
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	654.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-142.7
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	299.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	441.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	18 640
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1864
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	245.2
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	248.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	799.3
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1293
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	54 560
Total CH ₄ emission per lifetime	ktCO _{2,eq}	5456
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.473
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.908
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.691
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	146.5
Total N ₂ O emission per lifetime	ktCO _{2,eq}	14.65
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1735
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1738

32.3 Emission plots



32.4 Intermediate variables

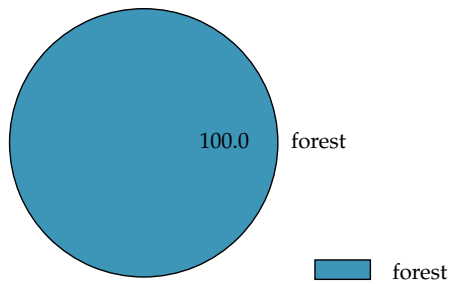
Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	121.2
Retention coefficient	-	0.3805
Influent total N concentration	$\mu\text{g L}^{-1}$	116.0
Reservoir TN concentration	$\mu\text{g L}^{-1}$	71.73
Reservoir TP concentration	$\mu\text{g L}^{-1}$	77.74
Percentage of reservoir's surface area that is littoral	%	17.23
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.030
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	60.36
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.68
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.20
Water density at the surface of the reservoir	kg m^{-3}	996.2
Thermocline depth	m	1.921
Influent total N load	kgN yr^{-1}	81 800
Influent total P load	kgP yr^{-1}	85 430
Downstream TN concentration	mg L^{-1}	0.1034

33 Renan

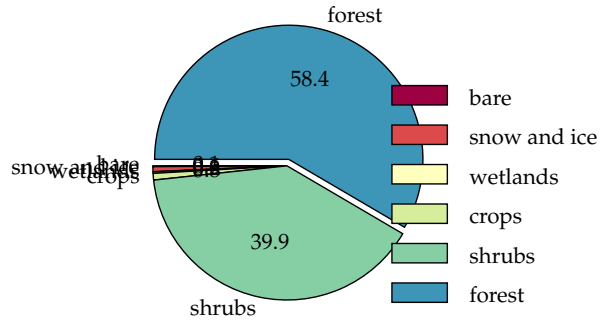
33.1 Inputs

Input Name	Unit	Value(s)
Reservoir ID		103
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 27.5259, LON: 98.0902
Monthly Temperatures	$^{\circ}\text{C}$	8.7, 9.7, 13.6, 16.6, 20.3, 21.6, 22.5, 22.8, 22.0, 19.2, 14.2, 10.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	montane grasslands
Climate	-	boreal
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	551.0
Catchment area	km ²	9908
Length of inundated river	km	27.39
Population	capita	15 170
Area fractions	-	0.001, 0.006, 0.0, 0.0, 0.002, 0.008, 0.399, 0.585, 0.0
Mean catchment slope	%	54.00
Mean annual precipitation	mm/year	1115
Mean annual evapotranspiration	mm/year	617.0
Soil wetness	mm over profile	129.0
Soil Olsen P content	kgP ha ⁻¹	7.244
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	348 400 000
Reservoir area	km ²	10.55
Maximum reservoir depth	m	60.00
Mean reservoir depth	m	33.00
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	6.815
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	3.970
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	4.209
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	3.736
Mean monthly wind speed	m s ⁻¹	1.170
Water intake depth below surface	m	N/A

Reservoir
Landcover Composition



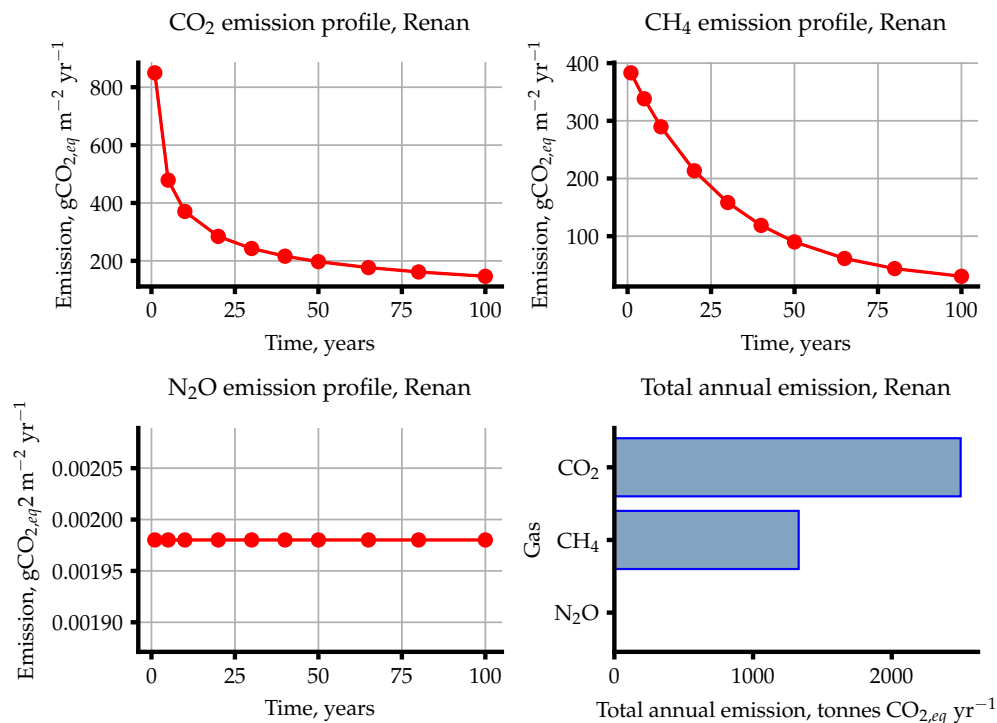
Catchment
Landcover Composition



33.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	286.8
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	196.9
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-146.7
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	89.99
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	236.7
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2497
Total CO ₂ emission per lifetime	ktCO _{2,eq}	249.7
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	52.19
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	16.01
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	57.76
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	126.0
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	1329
Total CH ₄ emission per lifetime	ktCO _{2,eq}	132.9
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.001 980
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.001 694
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.001 837
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.020 89
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.002 089
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	362.6
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	362.6

33.3 Emission plots



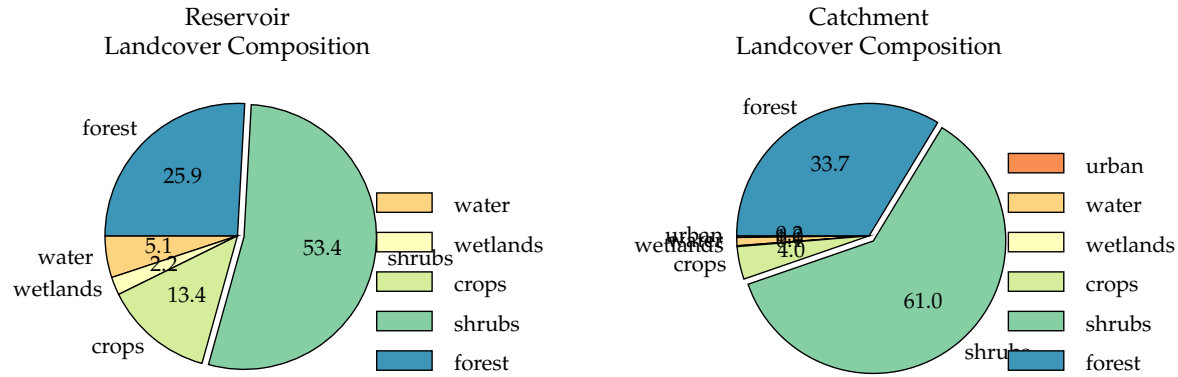
33.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	28.98
Retention coefficient	-	0.048 62
Influent total N concentration	$\mu\text{g L}^{-1}$	0.026 25
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.024 98
Reservoir TP concentration	$\mu\text{g L}^{-1}$	27.59
Percentage of reservoir's surface area that is littoral	%	4.11
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	3.970
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	47.64
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	16.41
Water density at the bottom of the reservoir	kg m^{-3}	998.9
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	22.23
Water density at the surface of the reservoir	kg m^{-3}	997.7
Thermocline depth	m	1.469
Influent total N load	kgN yr^{-1}	143.3
Influent total P load	kgP yr^{-1}	158 200
Downstream TN concentration	mg L^{-1}	3.297×10^{-5}

34 Sedawgyi

34.1 Inputs

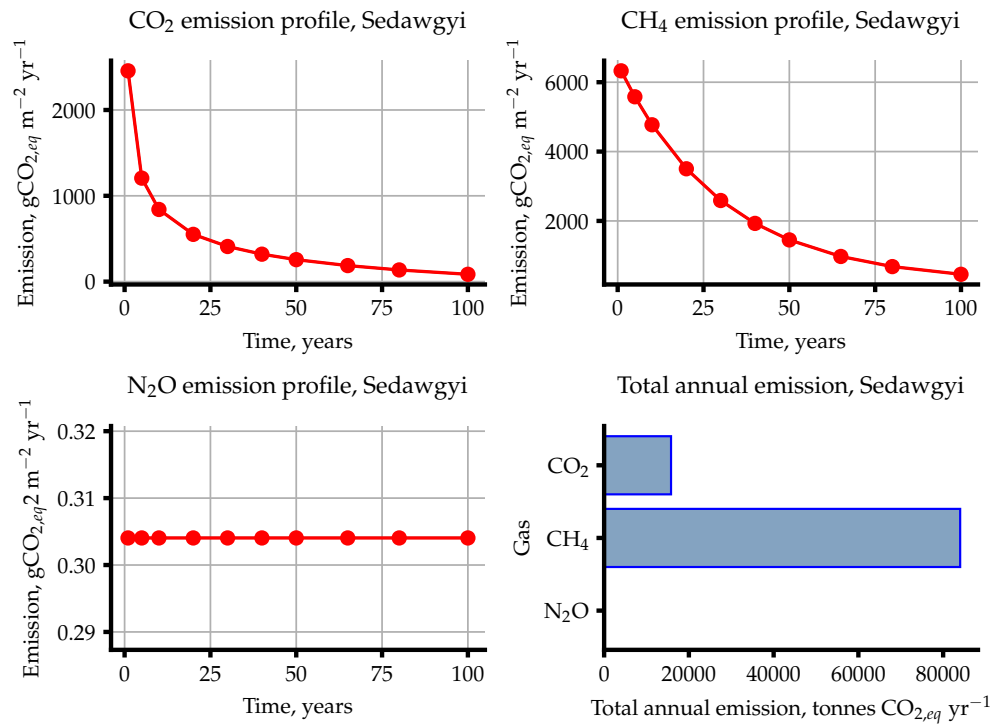
Input Name	Unit	Value(s)
Reservoir ID		105
Reservoir type		multipurpose
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.3486, LON: 96.3269
Monthly Temperatures	$^{\circ}\text{C}$	19.4, 22.0, 26.2, 29.9, 29.5, 28.6, 28.3, 27.7, 27.8, 26.7, 24.0, 20.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	825.0
Catchment area	km^2	3508
Length of inundated river	km	15.49
Population	capita	223 100
Area fractions	-	0.0, 0.0, 0.002, 0.01, 0.001, 0.04, 0.611, 0.337, 0.0
Mean catchment slope	$\%$	21.00
Mean annual precipitation	mm/year	1778
Mean annual evapotranspiration	mm/year	1214
Soil wetness	mm over profile	270.0
Soil Olsen P content	kgP ha^{-1}	4.425
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	448 000 000
Reservoir area	km^2	40.59
Maximum reservoir depth	m	40.50
Mean reservoir depth	m	11.00
Inundated area fractions	-	0.0, 0.0, 0.0, 0.049, 0.022, 0.132, 0.535, 0.259, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.002, 0.0, 0.002, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.674
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.900
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.656
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.992
Mean monthly wind speed	m s^{-1}	1.070
Water intake depth below surface	m	N/A



34.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	967.4
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	663.9
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	−85.47
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	303.5
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	389.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	15 790
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1579
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	262.2
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	220.6
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1587
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2070
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	84 020
Total CH ₄ emission per lifetime	ktCO _{2,eq}	8402
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.3040
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.2417
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.2729
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	12.34
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.234
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2459
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2459

34.3 Emission plots



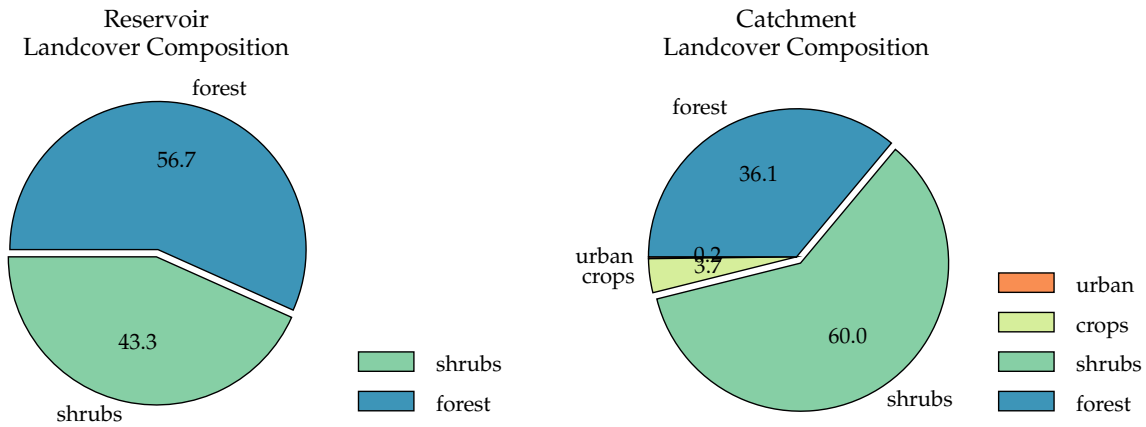
34.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	74.69
Retention coefficient	-	0.1103
Influent total N concentration	$\mu\text{g L}^{-1}$	11.40
Reservoir TN concentration	$\mu\text{g L}^{-1}$	10.13
Reservoir TP concentration	$\mu\text{g L}^{-1}$	66.99
Percentage of reservoir's surface area that is littoral	%	18.65
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.900
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.80
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.44
Water density at the bottom of the reservoir	kg m^{-3}	997.5
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.08
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.627
Influent total N load	kgN yr^{-1}	33 000
Influent total P load	kgP yr^{-1}	216 200
Downstream TN concentration	mg L^{-1}	0.014 49

35 Sedawgyi (upper)

35.1 Inputs

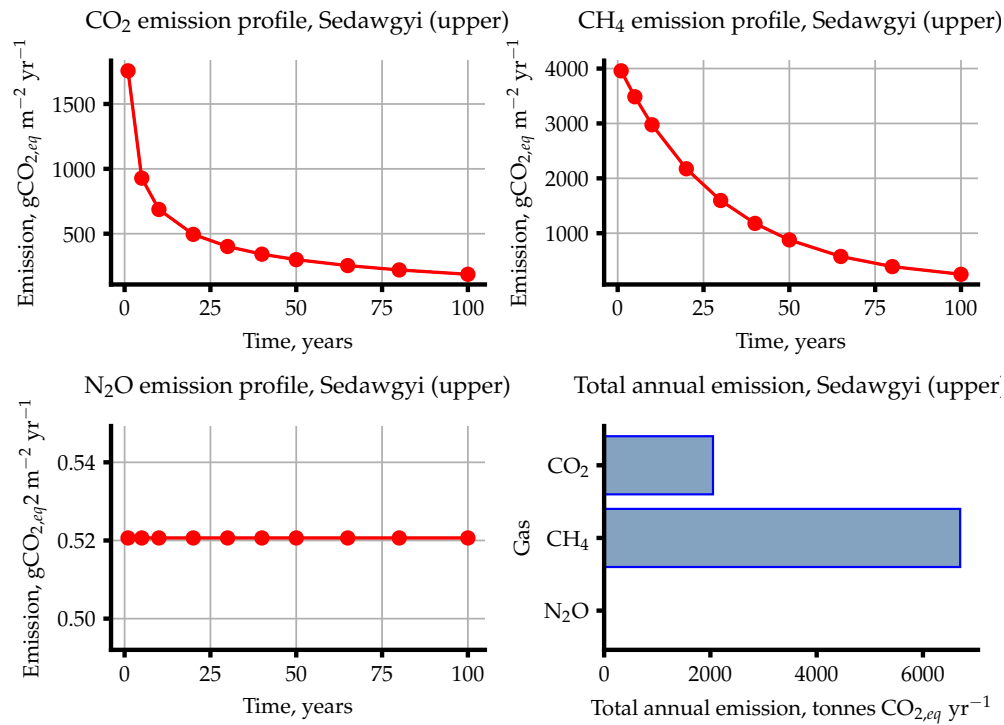
Input Name	Unit	Value(s)
Reservoir ID		106
Reservoir type		multipurpose
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.7502, LON: 96.2086
Monthly Temperatures	$^{\circ}\text{C}$	17.6, 20.3, 24.3, 28.2, 28.0, 27.5, 27.1, 26.7, 26.7, 25.5, 22.5, 18.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	999.0
Catchment area	km^2	2475
Length of inundated river	km	9.364
Population	capita	148 100
Area fractions	-	0.0, 0.0, 0.002, 0.0, 0.0, 0.037, 0.601, 0.361, 0.0
Mean catchment slope	$\%$	22.00
Mean annual precipitation	mm/year	1956
Mean annual evapotranspiration	mm/year	1193
Soil wetness	mm over profile	279.0
Soil Olsen P content	kgP ha^{-1}	4.166
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	142 000 000
Reservoir area	km^2	5.282
Maximum reservoir depth	m	81.00
Mean reservoir depth	m	26.90
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.433, 0.567, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.656
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.900
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.656
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.992
Mean monthly wind speed	m s^{-1}	1.070
Water intake depth below surface	m	N/A



35.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	640.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	439.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-187.1
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	200.8
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	387.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2049
Total CO ₂ emission per lifetime	ktCO _{2,eq}	204.9
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	146.2
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	99.39
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1023
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1269
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	6701
Total CH ₄ emission per lifetime	ktCO _{2,eq}	670.1
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.5206
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.4578
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.4892
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	2.750
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.2750
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1656
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1657

35.3 Emission plots



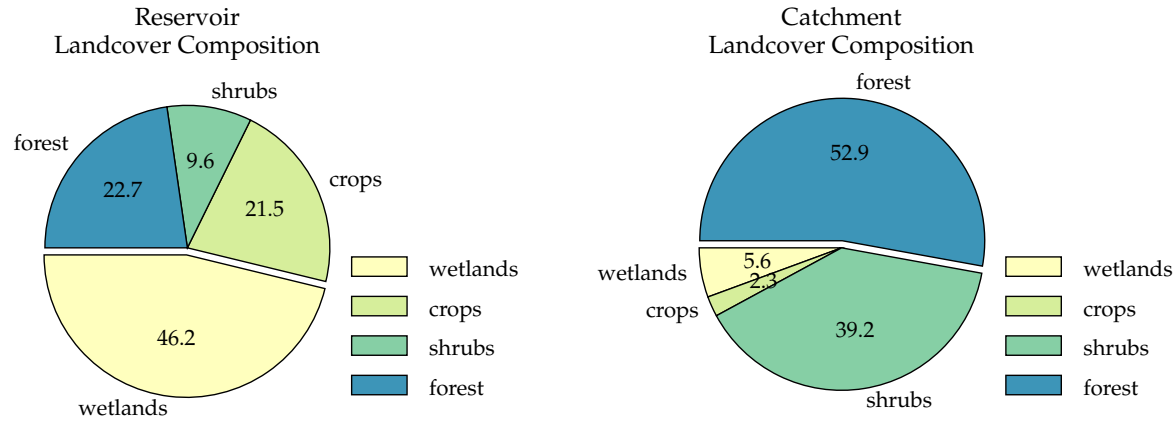
35.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	59.15
Retention coefficient	-	0.043 98
Influent total N concentration	$\mu\text{g L}^{-1}$	8.708
Reservoir TN concentration	$\mu\text{g L}^{-1}$	8.326
Reservoir TP concentration	$\mu\text{g L}^{-1}$	56.64
Percentage of reservoir's surface area that is littoral	%	7.309
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.900
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.80
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	22.25
Water density at the bottom of the reservoir	kg m^{-3}	997.7
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	27.70
Water density at the surface of the reservoir	kg m^{-3}	996.3
Thermocline depth	m	1.020
Influent total N load	kgN yr^{-1}	21 530
Influent total P load	kgP yr^{-1}	146 200
Downstream TN concentration	mg L^{-1}	0.010 68

36 Shwegyin

36.1 Inputs

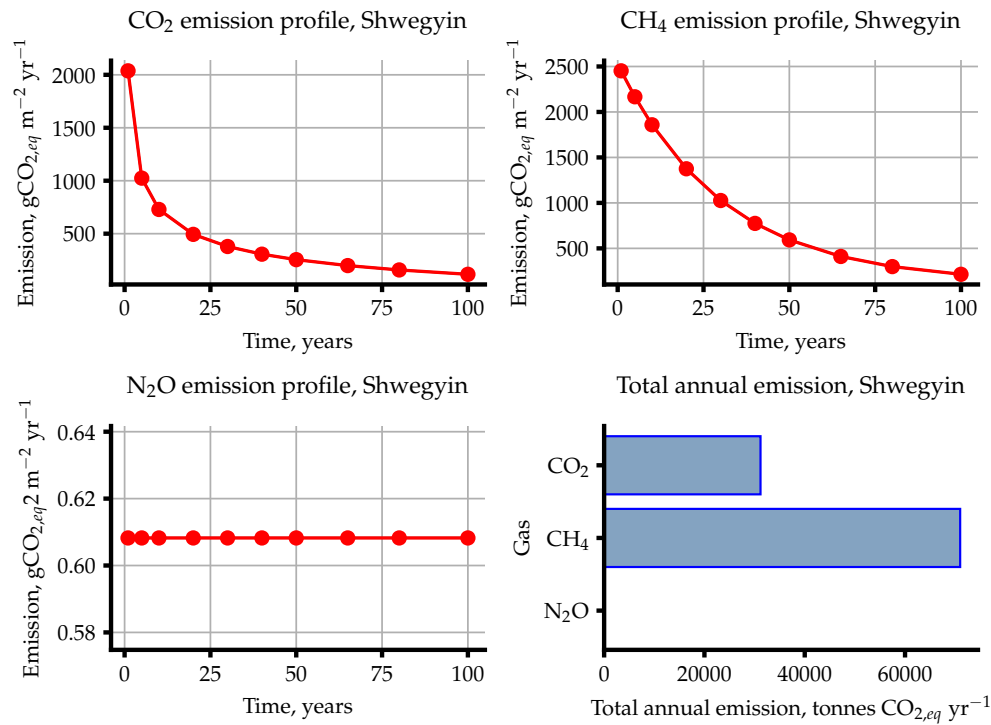
Input Name	Unit	Value(s)
Reservoir ID		107
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.9702, LON: 96.935
Monthly Temperatures	$^{\circ}\text{C}$	22.9, 24.7, 27.7, 30.2, 29.5, 27.3, 26.9, 26.8, 27.3, 27.6, 26.2, 23.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1423
Catchment area	km^2	874.1
Length of inundated river	km	30.78
Population	capita	36 010
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.056, 0.023, 0.392, 0.528, 0.0
Mean catchment slope	$\%$	24.00
Mean annual precipitation	mm/year	2449
Mean annual evapotranspiration	mm/year	1320
Soil wetness	mm over profile	501.0
Soil Olsen P content	kgP ha^{-1}	9.629
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	1 726 000 000
Reservoir area	km^2	86.03
Maximum reservoir depth	m	50.00
Mean reservoir depth	m	20.10
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.462, 0.215, 0.096, 0.227, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.145
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.160
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.445
Mean monthly wind speed	m s^{-1}	0.9400
Water intake depth below surface	m	N/A



36.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	783.9
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	538.0
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-116.5
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	245.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	362.5
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	31 180
Total CO ₂ emission per lifetime	ktCO _{2,eq}	3118
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	195.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	123.2
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	506.5
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	825.2
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	70 990
Total CH ₄ emission per lifetime	ktCO _{2,eq}	7099
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.6082
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.2151
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.4117
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	52.33
Total N ₂ O emission per lifetime	ktCO _{2,eq}	5.233
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1188
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1188

36.3 Emission plots



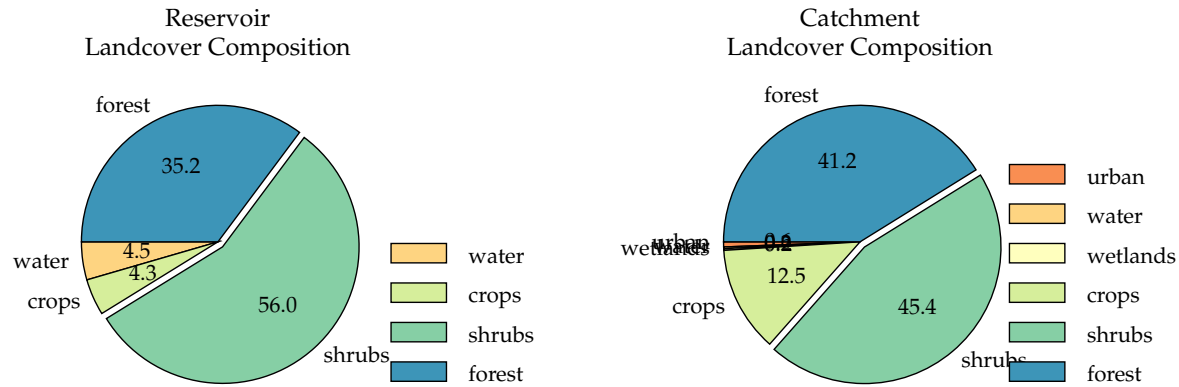
36.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	29.92
Retention coefficient	-	0.5264
Influent total N concentration	$\mu\text{g L}^{-1}$	13.97
Reservoir TN concentration	$\mu\text{g L}^{-1}$	6.473
Reservoir TP concentration	$\mu\text{g L}^{-1}$	15.16
Percentage of reservoir's surface area that is littoral	%	8.793
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.28
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.73
Water density at the bottom of the reservoir	kg m^{-3}	996.9
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.75
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	2.319
Influent total N load	kgN yr^{-1}	17 380
Influent total P load	kgP yr^{-1}	37 220
Downstream TN concentration	mg L^{-1}	0.008 105

37 Shweli 3

37.1 Inputs

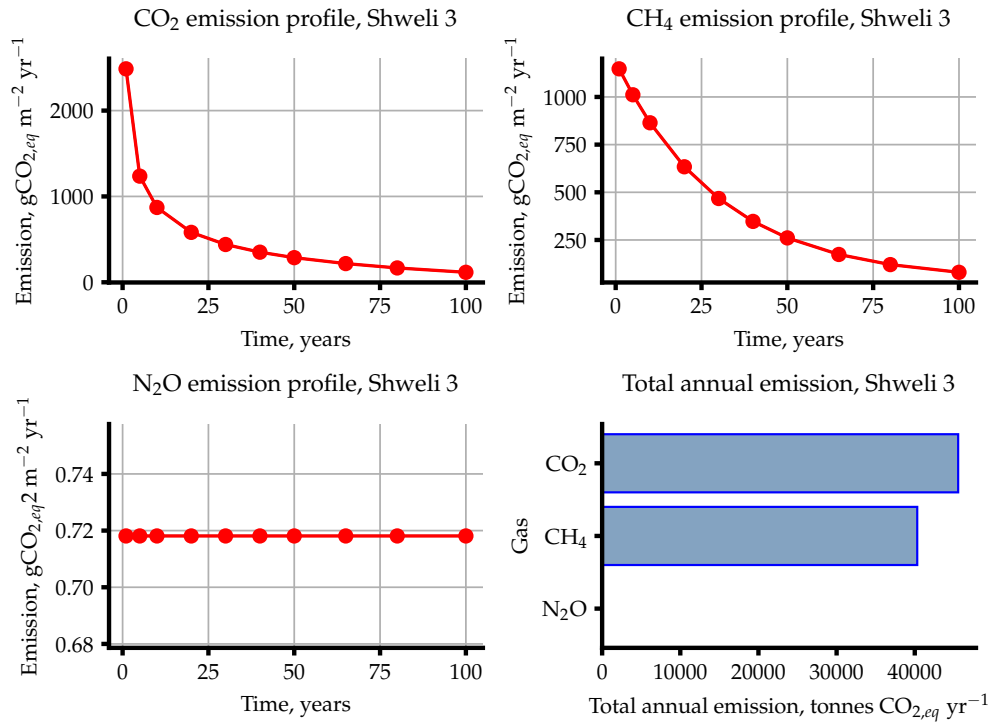
Input Name	Unit	Value(s)
Reservoir ID		110
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 23.315, LON: 96.769
Monthly Temperatures	$^{\circ}\text{C}$	17.2, 19.5, 23.2, 27.1, 27.9, 27.6, 27.2, 27.0, 26.9, 25.3, 22.0, 18.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	631.0
Catchment area	km^2	15 020
Length of inundated river	km	78.43
Population	capita	1 666 000
Area fractions	-	0.0, 0.0, 0.006, 0.002, 0.002, 0.125, 0.454, 0.412, 0.0
Mean catchment slope	$\%$	23.00
Mean annual precipitation	mm/year	1522
Mean annual evapotranspiration	mm/year	1133
Soil wetness	mm over profile	164.0
Soil Olsen P content	kgP ha^{-1}	5.685
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	5 642 000 000
Reservoir area	km^2	108.6
Maximum reservoir depth	m	119.0
Mean reservoir depth	m	52.00
Inundated area fractions	-	0.0, 0.0, 0.0, 0.043, 0.0, 0.043, 0.56, 0.352, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.002, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.447
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.690
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.409
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.838
Mean monthly wind speed	m s^{-1}	1.030
Water intake depth below surface	m	N/A



37.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	967.3
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	663.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-116.2
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	303.5
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	419.6
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	45 550
Total CO ₂ emission per lifetime	ktCO _{2,eq}	4555
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	97.63
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	36.73
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	237.0
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	371.4
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	40 320
Total CH ₄ emission per lifetime	ktCO _{2,eq}	4032
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.7181
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.4506
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.5844
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	77.96
Total N ₂ O emission per lifetime	ktCO _{2,eq}	7.796
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	791.0
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	791.6

37.3 Emission plots



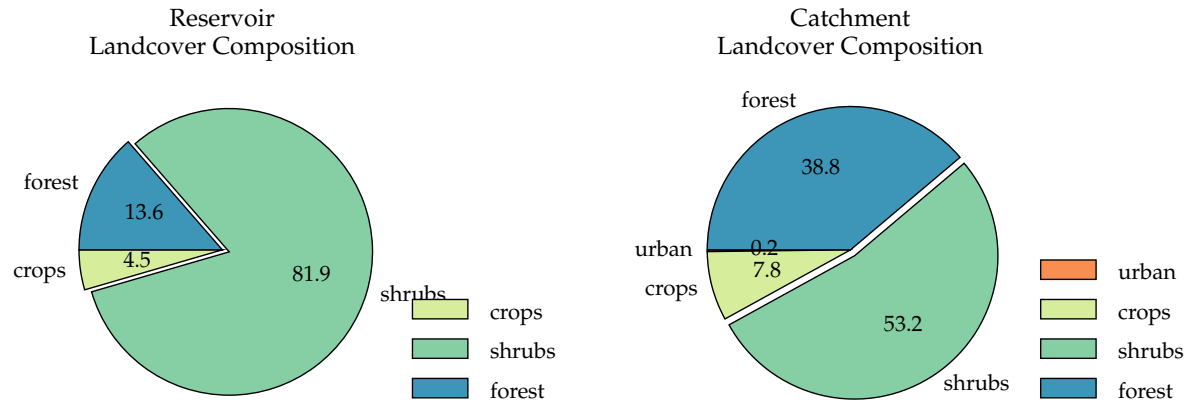
37.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	144.0
Retention coefficient	-	0.3228
Influent total N concentration	$\mu\text{g L}^{-1}$	5.831
Reservoir TN concentration	$\mu\text{g L}^{-1}$	3.951
Reservoir TP concentration	$\mu\text{g L}^{-1}$	98.08
Percentage of reservoir's surface area that is littoral	%	3.236
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.690
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	56.28
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	21.99
Water density at the bottom of the reservoir	kg m^{-3}	997.8
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	27.45
Water density at the surface of the reservoir	kg m^{-3}	996.4
Thermocline depth	m	2.099
Influent total N load	kgN yr^{-1}	55 280
Influent total P load	kgP yr^{-1}	1 365 000
Downstream TN concentration	mg L^{-1}	0.005 790

38 Suo Lwe

38.1 Inputs

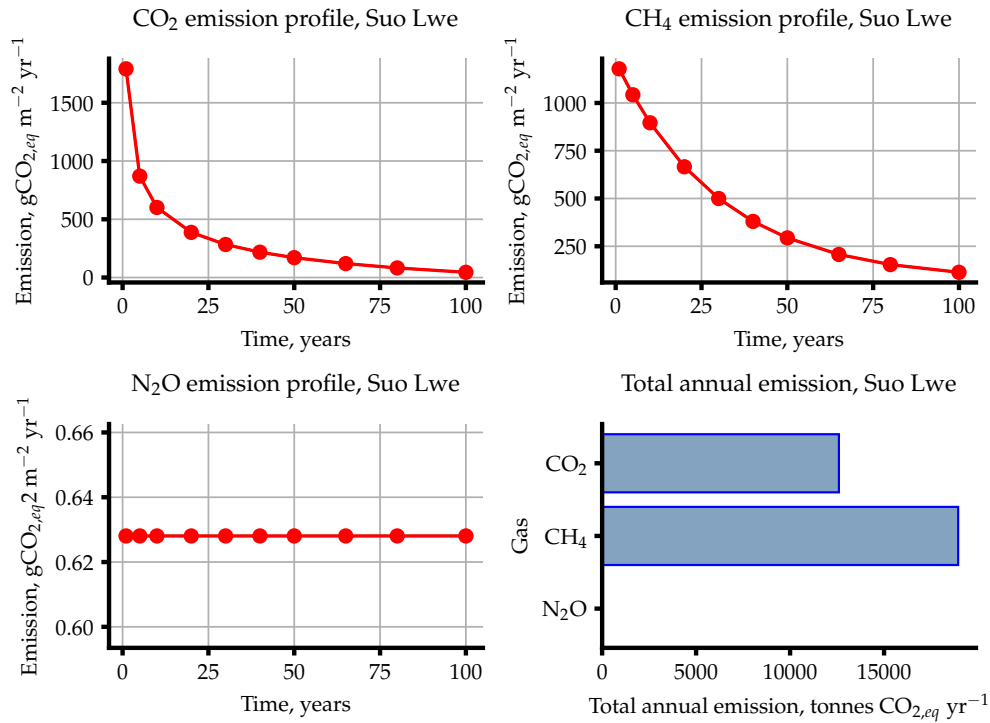
Input Name	Unit	Value(s)
Reservoir ID		112
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.3595, LON: 100.1761
Monthly Temperatures	$^{\circ}\text{C}$	17.2, 19.4, 22.4, 25.4, 26.1, 25.8, 25.3, 25.2, 24.8, 23.3, 20.4, 17.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	397.0
Catchment area	km ²	7561
Length of inundated river	km	71.81
Population	capita	312 700
Area fractions	-	0.0, 0.0, 0.002, 0.0, 0.0, 0.078, 0.531, 0.388, 0.0
Mean catchment slope	%	24.00
Mean annual precipitation	mm/year	1408
Mean annual evapotranspiration	mm/year	1264
Soil wetness	mm over profile	241.0
Soil Olsen P content	kgP ha ⁻¹	4.643
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	1 615 000 000
Reservoir area	km ²	46.93
Maximum reservoir depth	m	114.0
Mean reservoir depth	m	34.40
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.045, 0.819, 0.136, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	6.439
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	4.775
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	4.490
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	4.915
Mean monthly wind speed	m s ⁻¹	1.350
Water intake depth below surface	m	N/A



38.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	712.7
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	489.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-44.88
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	223.6
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	268.5
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	12 600
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1260
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	108.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	70.05
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	224.8
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	403.7
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	18 940
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1894
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.6281
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.4108
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.5194
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	29.47
Total N ₂ O emission per lifetime	ktCO _{2,eq}	2.947
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	672.1
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	672.7

38.3 Emission plots



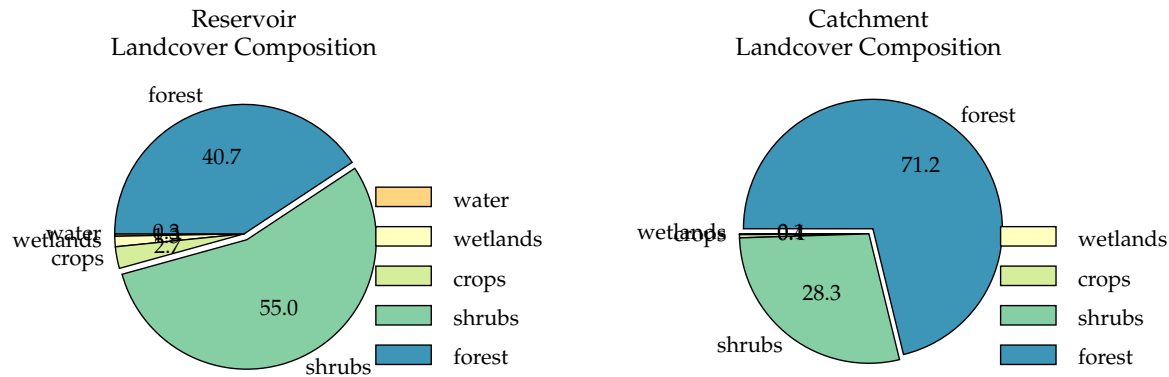
38.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	114.9
Retention coefficient	-	0.3012
Influent total N concentration	$\mu\text{g L}^{-1}$	7.672
Reservoir TN concentration	$\mu\text{g L}^{-1}$	5.363
Reservoir TP concentration	$\mu\text{g L}^{-1}$	80.51
Percentage of reservoir's surface area that is littoral	%	5.984
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.775
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.30
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	21.99
Water density at the bottom of the reservoir	kg m^{-3}	997.8
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.65
Water density at the surface of the reservoir	kg m^{-3}	996.9
Thermocline depth	m	2.780
Influent total N load	kgN yr^{-1}	23 030
Influent total P load	kgP yr^{-1}	344 800
Downstream TN concentration	mg L^{-1}	0.007 884

39 Taninthayi

39.1 Inputs

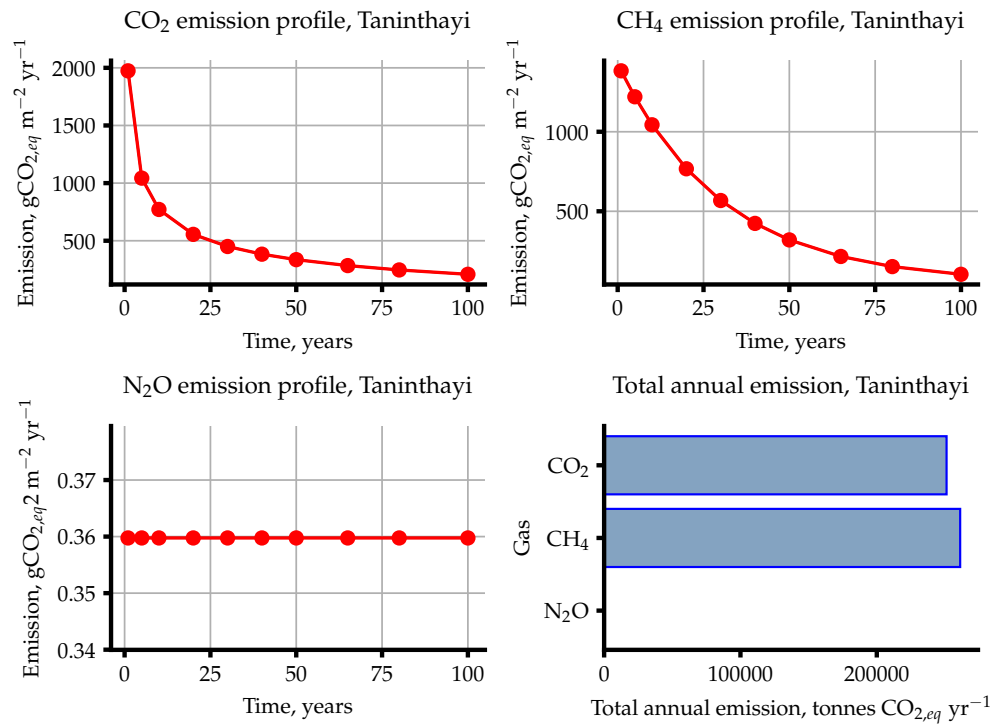
Input Name	Unit	Value(s)
Reservoir ID		113
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 12.7887, LON: 98.9379
Monthly Temperatures	$^{\circ}\text{C}$	25.0, 26.2, 27.5, 28.6, 27.7, 26.5, 26.1, 26.1, 26.1, 26.4, 25.8, 24.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1035
Catchment area	km^2	9564
Length of inundated river	km	205.3
Population	capita	152 500
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.001, 0.004, 0.283, 0.712, 0.0
Mean catchment slope	$\%$	26.00
Mean annual precipitation	mm/year	2137
Mean annual evapotranspiration	mm/year	1386
Soil wetness	mm over profile	326.0
Soil Olsen P content	kgP ha^{-1}	5.021
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	27 310 000 000
Reservoir area	km^2	577.6
Maximum reservoir depth	m	135.0
Mean reservoir depth	m	47.30
Inundated area fractions	-	0.0, 0.0, 0.0, 0.003, 0.013, 0.027, 0.55, 0.407, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.043
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.786
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.845
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.490
Mean monthly wind speed	m s^{-1}	1.070
Water intake depth below surface	m	N/A



39.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	720.2
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	494.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-208.9
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	226.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	434.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	251 200
Total CO ₂ emission per lifetime	ktCO _{2,eq}	25 120
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	129.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	51.37
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	271.0
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	452.2
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	261 200
Total CH ₄ emission per lifetime	ktCO _{2,eq}	26 120
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.3598
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.083 42
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.2216
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	207.8
Total N ₂ O emission per lifetime	ktCO _{2,eq}	20.78
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	887.0
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	887.3

39.3 Emission plots



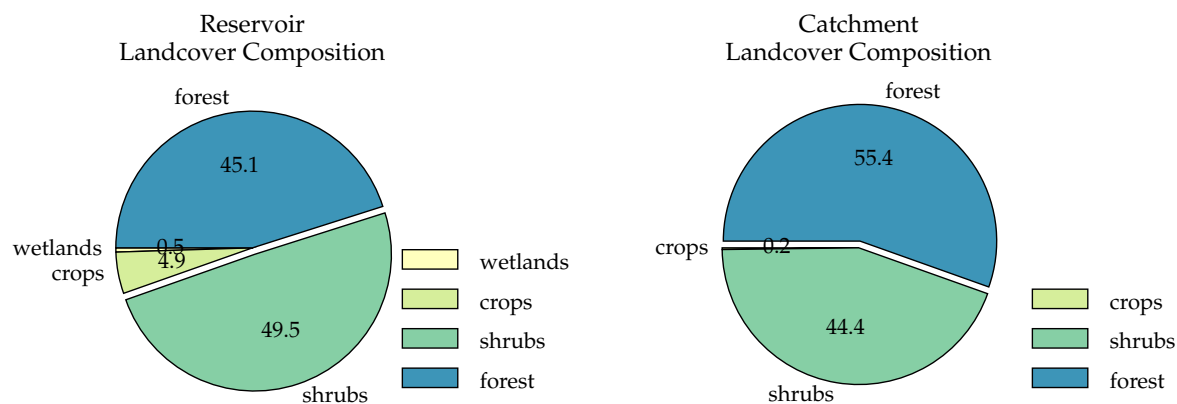
39.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	22.35
Retention coefficient	-	0.6884
Influent total N concentration	$\mu\text{g L}^{-1}$	4.565
Reservoir TN concentration	$\mu\text{g L}^{-1}$	1.420
Reservoir TP concentration	$\mu\text{g L}^{-1}$	7.063
Percentage of reservoir's surface area that is littoral	%	4.081
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.786
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.43
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.85
Water density at the bottom of the reservoir	kg m^{-3}	996.6
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	27.58
Water density at the surface of the reservoir	kg m^{-3}	996.4
Thermocline depth	m	8.688
Influent total N load	kgN yr^{-1}	45 190
Influent total P load	kgP yr^{-1}	221 200
Downstream TN concentration	mg L^{-1}	0.001 034

40 Thahtay

40.1 Inputs

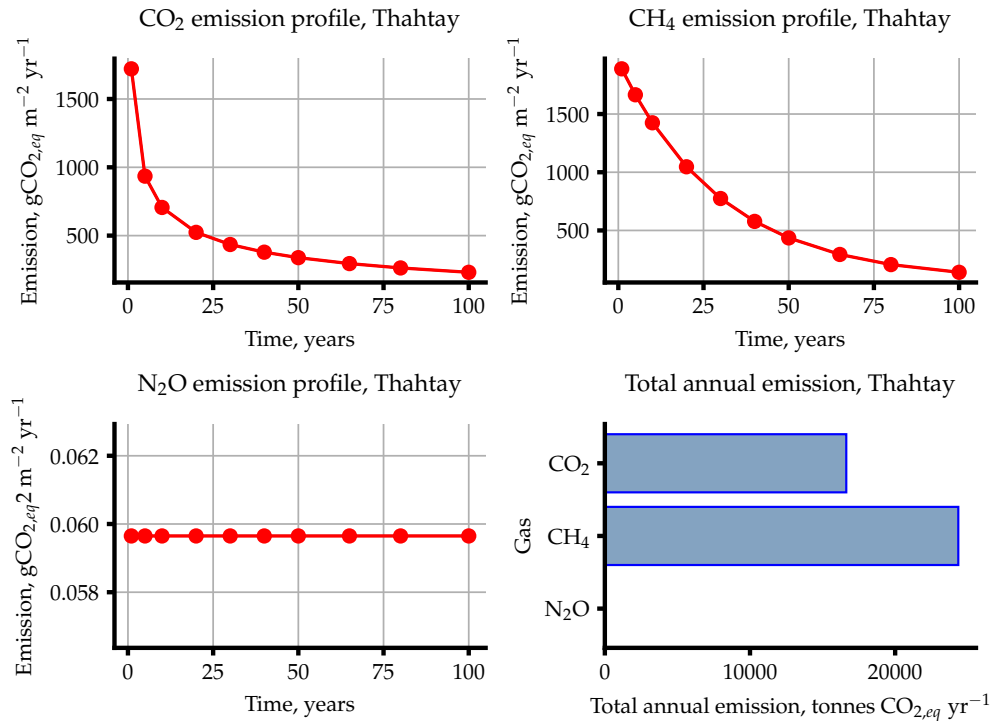
Input Name	Unit	Value(s)
Reservoir ID		116
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.64, LON: 94.381
Monthly Temperatures	$^{\circ}\text{C}$	20.7, 22.1, 25.3, 28.3, 28.6, 26.9, 26.4, 26.4, 26.9, 27.2, 25.4, 22.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	2507
Catchment area	km^2	1210
Length of inundated river	km	40.15
Population	capita	38 110
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.002, 0.444, 0.555, 0.0
Mean catchment slope	$\%$	30.00
Mean annual precipitation	mm/year	3463
Mean annual evapotranspiration	mm/year	1291
Soil wetness	mm over profile	285.0
Soil Olsen P content	kgP ha^{-1}	16.55
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	1 512 000 000
Reservoir area	km^2	39.40
Maximum reservoir depth	m	94.00
Mean reservoir depth	m	38.40
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.005, 0.049, 0.495, 0.451, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.557
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.920
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.916
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.540
Mean monthly wind speed	m s^{-1}	1.350
Water intake depth below surface	m	N/A



40.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	607.7
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	417.0
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-231.5
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	190.6
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	422.2
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	16 630
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1663
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	128.3
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	68.80
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	420.9
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	618.0
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	24 350
Total CH ₄ emission per lifetime	ktCO _{2,eq}	2435
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.059 65
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.040 11
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.049 88
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	2.350
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.2350
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1040
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1040

40.3 Emission plots



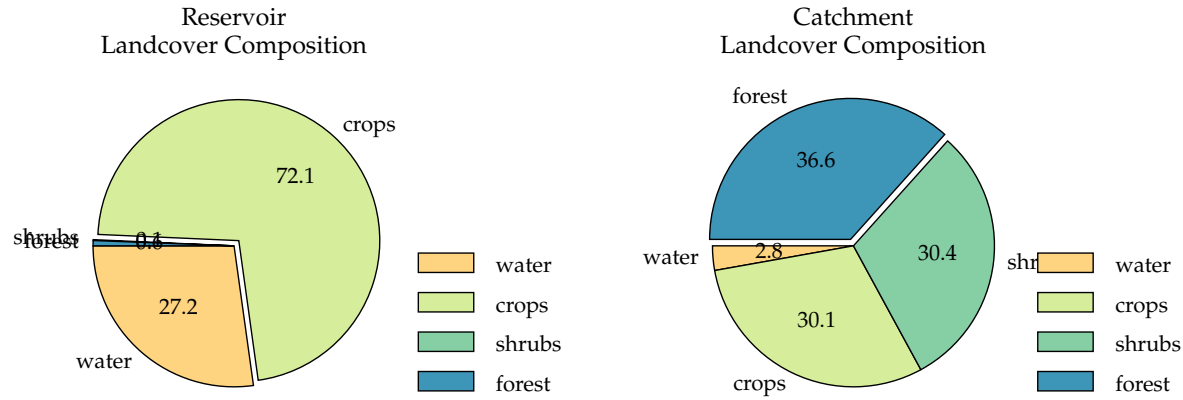
40.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	14.57
Retention coefficient	-	0.2854
Influent total N concentration	$\mu\text{g L}^{-1}$	0.6519
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.4651
Reservoir TP concentration	$\mu\text{g L}^{-1}$	10.58
Percentage of reservoir's surface area that is littoral	%	4.588
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.920
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.04
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.29
Water density at the bottom of the reservoir	kg m^{-3}	997.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	27.75
Water density at the surface of the reservoir	kg m^{-3}	996.3
Thermocline depth	m	2.617
Influent total N load	kgN yr^{-1}	1977
Influent total P load	kgP yr^{-1}	44 180
Downstream TN concentration	mg L^{-1}	0.000 685 8

41 Thapanzeik

41.1 Inputs

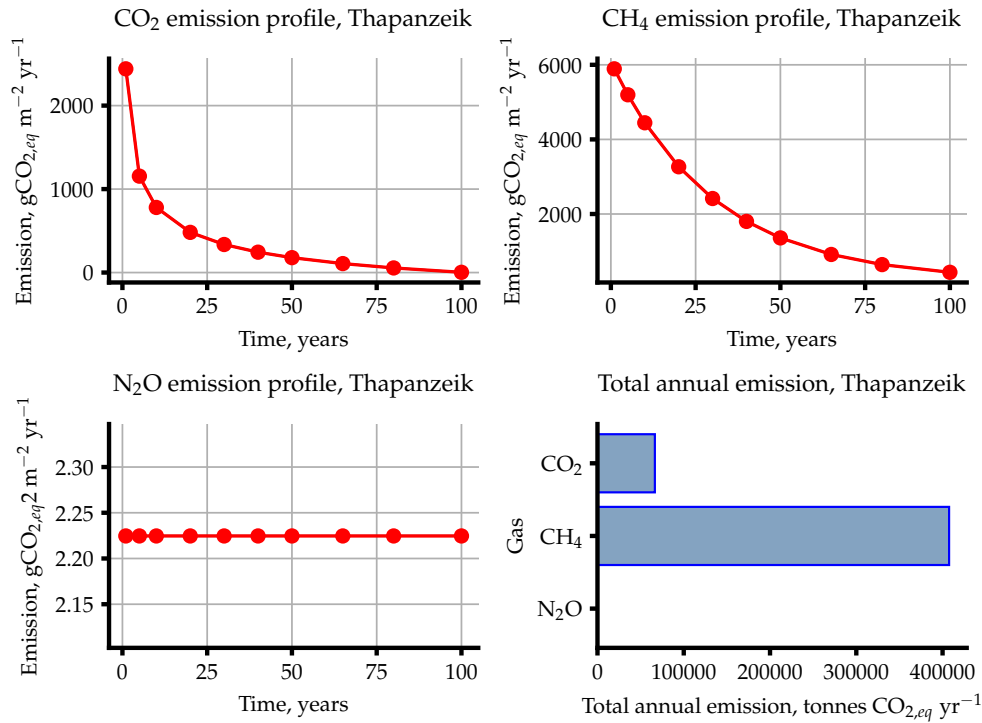
Input Name	Unit	Value(s)
Reservoir ID		118
Reservoir type		multipurpose
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 23.3059, LON: 95.3583
Monthly Temperatures	$^{\circ}\text{C}$	19.2, 21.5, 25.2, 28.6, 29.2, 28.6, 28.4, 27.8, 27.9, 26.7, 23.8, 20.2
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	660.0
Catchment area	km^2	9292
Length of inundated river	km	59.35
Population	capita	438 800
Area fractions	-	0.0, 0.0, 0.0, 0.028, 0.0, 0.301, 0.304, 0.366, 0.0
Mean catchment slope	$\%$	8.000
Mean annual precipitation	mm/year	1604
Mean annual evapotranspiration	mm/year	1237
Soil wetness	mm over profile	202.0
Soil Olsen P content	kgP ha^{-1}	6.730
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	1 520 000 000
Reservoir area	km^2	211.1
Maximum reservoir depth	m	32.00
Mean reservoir depth	m	7.200
Inundated area fractions	-	0.0, 0.0, 0.0, 0.271, 0.0, 0.721, 0.001, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.001, 0.0, 0.0, 0.0, 0.006, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.298
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.620
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.362
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.734
Mean monthly wind speed	m s^{-1}	1.000
Water intake depth below surface	m	N/A



41.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	994.7
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	682.6
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-3.080
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	312.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	315.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	66 530
Total CO ₂ emission per lifetime	ktCO _{2,eq}	6653
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	310.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	213.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1407
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1931
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	407 600
Total CH ₄ emission per lifetime	ktCO _{2,eq}	40 760
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.225
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.719
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.972
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	469.6
Total N ₂ O emission per lifetime	ktCO _{2,eq}	46.96
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2246
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2248

41.3 Emission plots



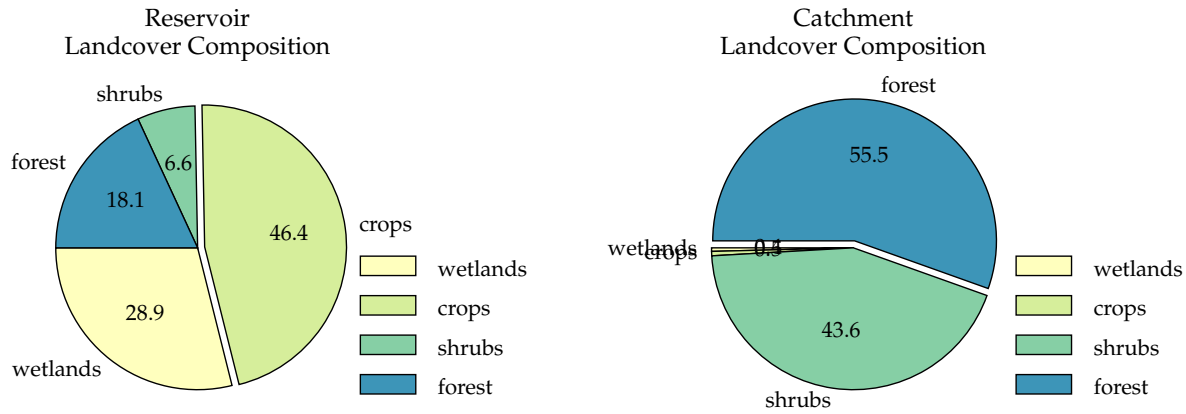
41.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	68.02
Retention coefficient	-	0.1657
Influent total N concentration	$\mu\text{g L}^{-1}$	128.4
Reservoir TN concentration	$\mu\text{g L}^{-1}$	106.0
Reservoir TP concentration	$\mu\text{g L}^{-1}$	57.89
Percentage of reservoir's surface area that is littoral	%	28.76
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.620
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	55.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.30
Water density at the bottom of the reservoir	kg m^{-3}	997.5
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.70
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	2.359
Influent total N load	kgN yr^{-1}	787 200
Influent total P load	kgP yr^{-1}	417 200
Downstream TN concentration	mg L^{-1}	0.1551

42 Thauk Ye Khat 2

42.1 Inputs

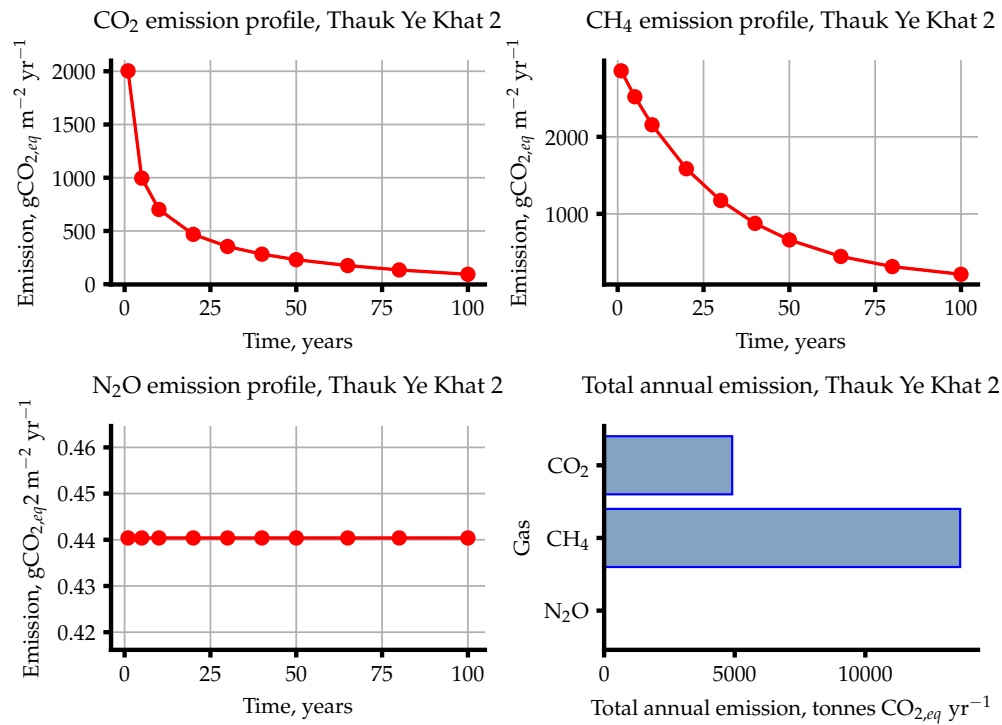
Input Name	Unit	Value(s)
Reservoir ID		120
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.9141, LON: 96.6199
Monthly Temperatures	$^{\circ}\text{C}$	21.8, 24.1, 27.4, 30.2, 29.1, 27.0, 26.6, 26.4, 27.0, 27.2, 25.4, 22.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	503.0
Catchment area	km^2	2160
Length of inundated river	km	19.13
Population	capita	56 150
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.004, 0.005, 0.436, 0.554, 0.0
Mean catchment slope	$\%$	27.00
Mean annual precipitation	mm/year	1539
Mean annual evapotranspiration	mm/year	1323
Soil wetness	mm over profile	350.0
Soil Olsen P content	kgP ha^{-1}	7.836
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	394 100 000
Reservoir area	km^2	14.52
Maximum reservoir depth	m	66.00
Mean reservoir depth	m	27.10
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.289, 0.464, 0.066, 0.181, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.403
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.030
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.340
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.458
Mean monthly wind speed	m s^{-1}	1.060
Water intake depth below surface	m	N/A



42.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	779.9
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	535.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-92.91
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	244.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	337.6
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	4903
Total CO ₂ emission per lifetime	ktCO _{2,eq}	490.3
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	161.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	107.8
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	668.9
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	938.5
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	13 630
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1363
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.4404
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.3219
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.3811
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	6.396
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.6396
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1276
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1276

42.3 Emission plots



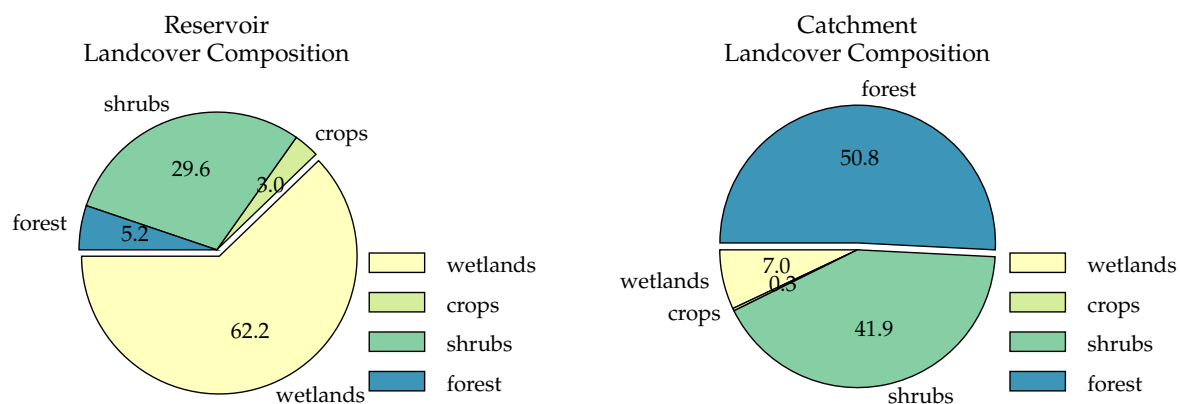
42.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	65.15
Retention coefficient	-	0.2251
Influent total N concentration	$\mu\text{g L}^{-1}$	6.761
Reservoir TN concentration	$\mu\text{g L}^{-1}$	5.222
Reservoir TP concentration	$\mu\text{g L}^{-1}$	50.61
Percentage of reservoir's surface area that is littoral	%	6.460
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.030
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	60.36
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.01
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.47
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.578
Influent total N load	kgN yr^{-1}	7347
Influent total P load	kgP yr^{-1}	70 800
Downstream TN concentration	mg L^{-1}	0.007 687

43 Yenwe

43.1 Inputs

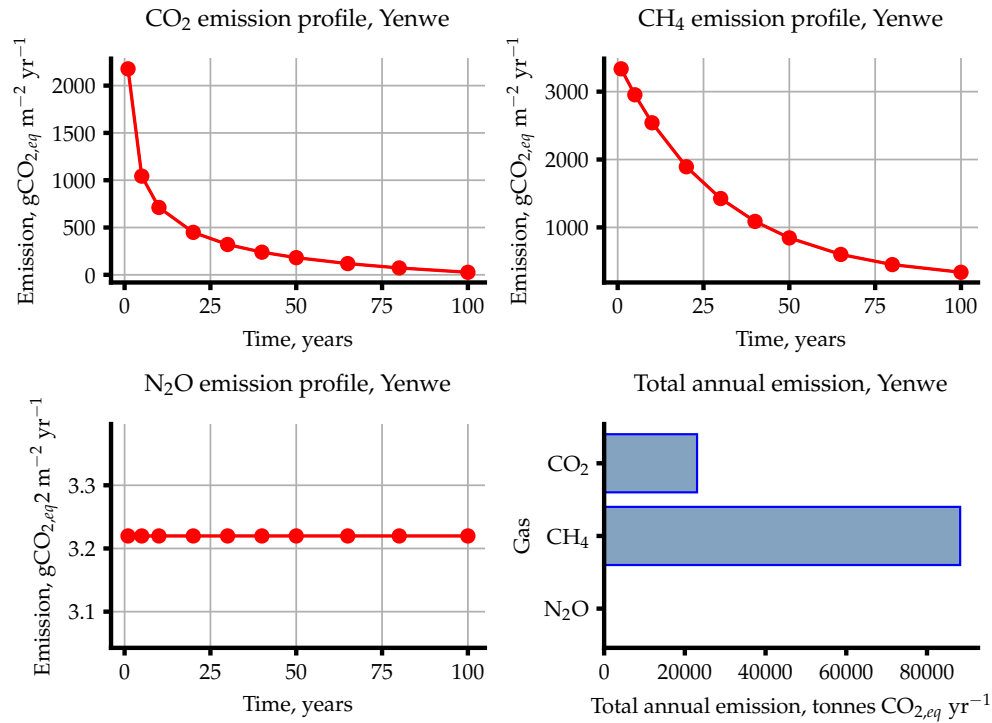
Input Name	Unit	Value(s)
Reservoir ID		127
Reservoir type		multipurpose
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.085211, LON: 96.446152
Monthly Temperatures	$^{\circ}\text{C}$	22.2, 24.1, 27.3, 30.0, 29.3, 26.9, 26.5, 26.5, 27.0, 27.3, 25.8, 22.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1242
Catchment area	km^2	817.9
Length of inundated river	km	34.98
Population	capita	63 020
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.07, 0.003, 0.419, 0.508, 0.0
Mean catchment slope	$\%$	10.00
Mean annual precipitation	mm/year	2254
Mean annual evapotranspiration	mm/year	1341
Soil wetness	mm over profile	368.0
Soil Olsen P content	kgP ha^{-1}	8.192
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	1 089 000 000
Reservoir area	km^2	76.24
Maximum reservoir depth	m	53.00
Mean reservoir depth	m	14.30
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.622, 0.03, 0.296, 0.052, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.974
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.030
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.340
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.458
Mean monthly wind speed	m s^{-1}	0.9300
Water intake depth below surface	m	N/A



43.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	877.6
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	602.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-26.69
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	275.3
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	302.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	23 030
Total CO ₂ emission per lifetime	ktCO _{2,eq}	2303
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	236.9
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	215.8
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	704.4
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1157
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	88 220
Total CH ₄ emission per lifetime	ktCO _{2,eq}	8822
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.220
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.398
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.309
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	245.5
Total N ₂ O emission per lifetime	ktCO _{2,eq}	24.55
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1459
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1461

43.3 Emission plots



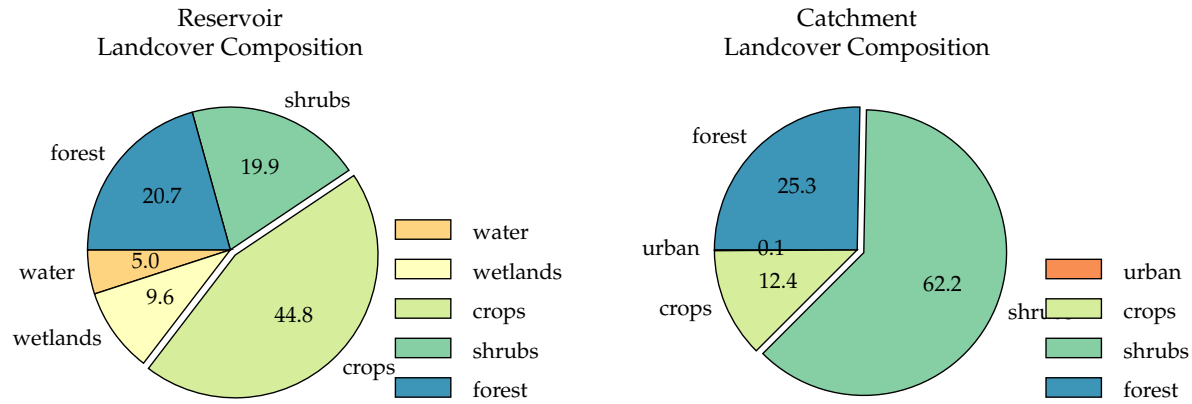
43.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	53.34
Retention coefficient	-	0.4621
Influent total N concentration	$\mu\text{g L}^{-1}$	99.72
Reservoir TN concentration	$\mu\text{g L}^{-1}$	53.48
Reservoir TP concentration	$\mu\text{g L}^{-1}$	30.94
Percentage of reservoir's surface area that is littoral	%	14.59
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.030
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	60.36
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.27
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.47
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	2.176
Influent total N load	kgN yr^{-1}	101 300
Influent total P load	kgP yr^{-1}	54 180
Downstream TN concentration	mg L^{-1}	0.072 34

44 Yeywa

44.1 Inputs

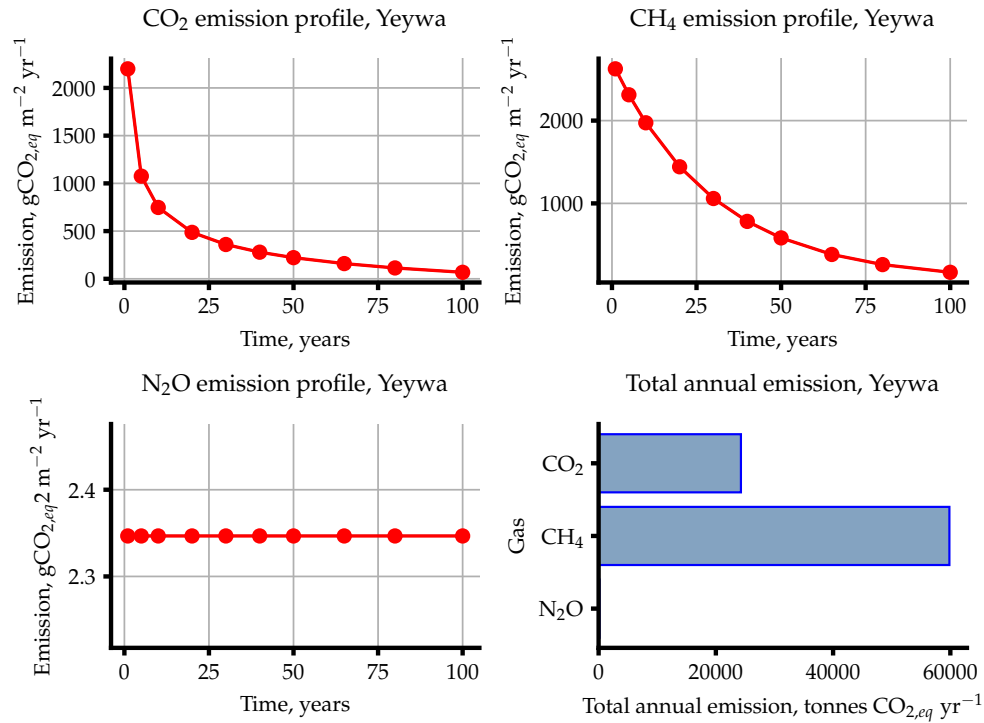
Input Name	Unit	Value(s)
Reservoir ID		129
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.6752, LON: 96.4741
Monthly Temperatures	$^{\circ}\text{C}$	19.4, 22.0, 26.4, 29.7, 29.2, 28.3, 28.0, 27.5, 27.3, 26.2, 23.4, 20.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	611.0
Catchment area	km^2	28 710
Length of inundated river	km	78.54
Population	capita	1 468 000
Area fractions	-	0.0, 0.0, 0.001, 0.0, 0.0, 0.124, 0.622, 0.253, 0.0
Mean catchment slope	$\%$	17.00
Mean annual precipitation	mm/year	1562
Mean annual evapotranspiration	mm/year	1233
Soil wetness	mm over profile	203.0
Soil Olsen P content	kgP ha^{-1}	5.353
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	3 276 000 000
Reservoir area	km^2	71.15
Maximum reservoir depth	m	111.0
Mean reservoir depth	m	46.00
Inundated area fractions	-	0.0, 0.0, 0.0, 0.05, 0.096, 0.448, 0.199, 0.207, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.697
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.010
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.809
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.066
Mean monthly wind speed	m s^{-1}	1.140
Water intake depth below surface	m	N/A



44.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	869.9
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	597.0
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-68.31
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	272.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	341.2
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	24 280
Total CO ₂ emission per lifetime	ktCO _{2,eq}	2428
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	122.6
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	66.65
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	651.8
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	841.0
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	59 840
Total CH ₄ emission per lifetime	ktCO _{2,eq}	5984
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.347
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.849
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.098
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	167.0
Total N ₂ O emission per lifetime	ktCO _{2,eq}	16.70
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1182
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1184

44.3 Emission plots



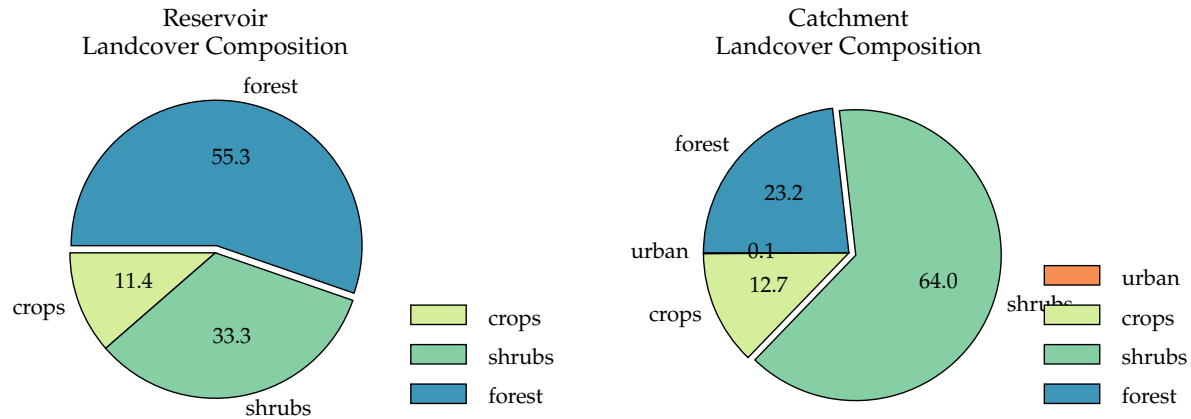
44.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	87.03
Retention coefficient	-	0.1301
Influent total N concentration	$\mu\text{g L}^{-1}$	21.11
Reservoir TN concentration	$\mu\text{g L}^{-1}$	18.35
Reservoir TP concentration	$\mu\text{g L}^{-1}$	75.86
Percentage of reservoir's surface area that is littoral	%	3.798
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.010
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	60.12
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.44
Water density at the bottom of the reservoir	kg m^{-3}	997.5
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.80
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	2.051
Influent total N load	kgN yr^{-1}	370 300
Influent total P load	kgP yr^{-1}	1 527 000
Downstream TN concentration	mg L^{-1}	0.026 38

45 Yeywa (middle)

45.1 Inputs

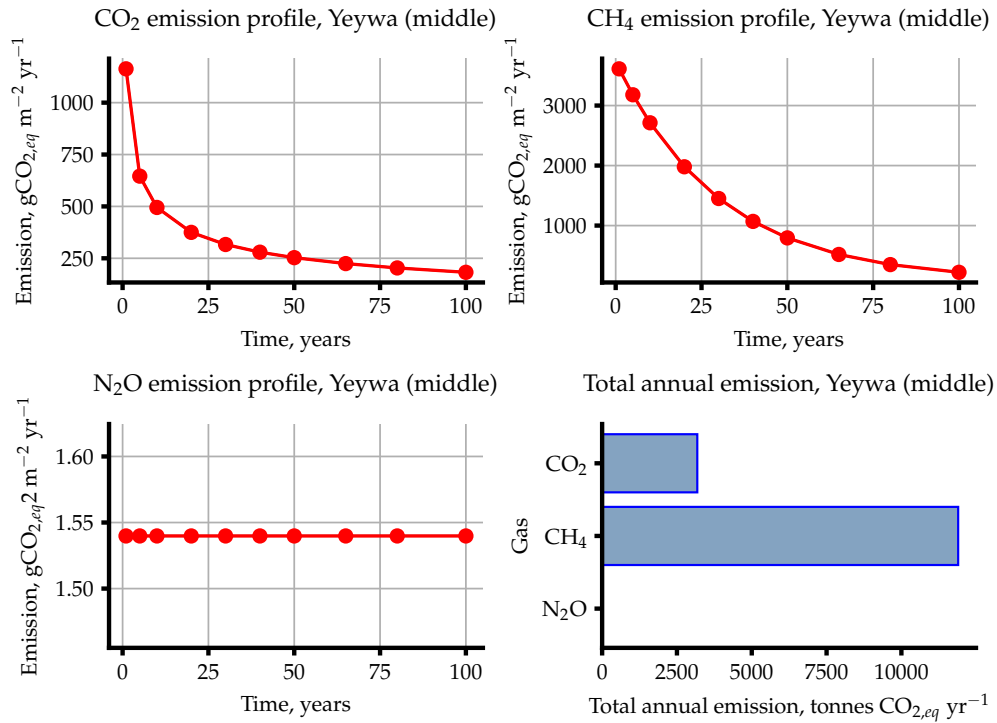
Input Name	Unit	Value(s)
Reservoir ID		130
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.9602, LON: 96.8731
Monthly Temperatures	$^{\circ}\text{C}$	17.9, 20.4, 24.4, 27.9, 27.6, 27.0, 26.6, 26.2, 26.1, 24.8, 21.9, 18.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	611.0
Catchment area	km^2	25 520
Length of inundated river	km	34.74
Population	capita	1 181 000
Area fractions	-	0.0, 0.0, 0.001, 0.0, 0.0, 0.127, 0.64, 0.232, 0.0
Mean catchment slope	$\%$	16.00
Mean annual precipitation	mm/year	1567
Mean annual evapotranspiration	mm/year	1232
Soil wetness	mm over profile	207.0
Soil Olsen P content	kgP ha^{-1}	5.266
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	347 700 000
Reservoir area	km^2	10.32
Maximum reservoir depth	m	75.00
Mean reservoir depth	m	33.70
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.114, 0.333, 0.553, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.733
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.010
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.809
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.066
Mean monthly wind speed	m s^{-1}	1.100
Water intake depth below surface	m	N/A



45.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	400.1
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	274.6
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-182.5
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	125.5
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	308.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	3180
Total CO ₂ emission per lifetime	ktCO _{2,eq}	318.0
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	116.4
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	82.51
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	953.5
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1152
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	11 900
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1190
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.540
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.711
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.625
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	15.90
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.590
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1460
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1462

45.3 Emission plots



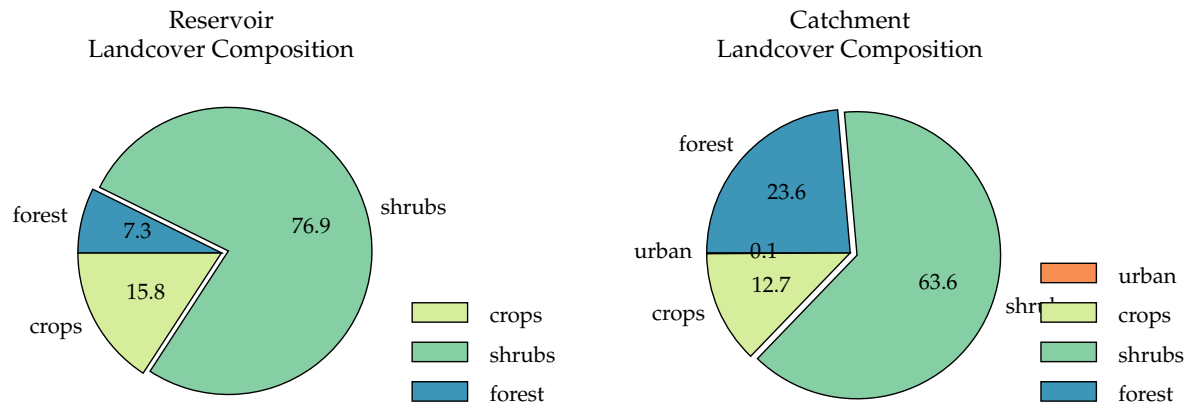
45.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	82.41
Retention coefficient	-	0.017 55
Influent total N concentration	$\mu\text{g L}^{-1}$	25.92
Reservoir TN concentration	$\mu\text{g L}^{-1}$	25.46
Reservoir TP concentration	$\mu\text{g L}^{-1}$	80.99
Percentage of reservoir's surface area that is littoral	%	4.880
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.010
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	60.12
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	22.45
Water density at the bottom of the reservoir	kg m^{-3}	997.7
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	27.28
Water density at the surface of the reservoir	kg m^{-3}	996.5
Thermocline depth	m	1.321
Influent total N load	kgN yr^{-1}	404 100
Influent total P load	kgP yr^{-1}	1 285 000
Downstream TN concentration	mg L^{-1}	0.025 64

46 Yeywa (upper)

46.1 Inputs

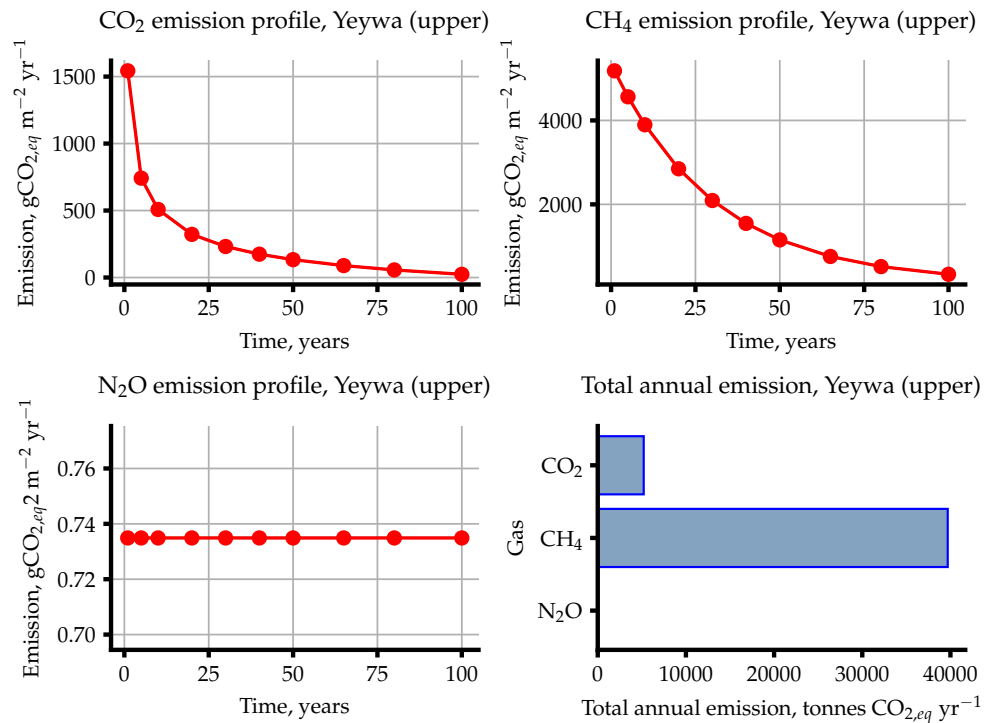
Input Name	Unit	Value(s)
Reservoir ID		131
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.2439, LON: 97.0927
Monthly Temperatures	$^{\circ}\text{C}$	17.0, 19.3, 23.0, 27.1, 27.2, 26.9, 26.4, 26.1, 26.1, 24.6, 21.4, 17.8
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	629.0
Catchment area	km^2	22 680
Length of inundated river	km	38.87
Population	capita	1 058 000
Area fractions	-	0.0, 0.0, 0.001, 0.0, 0.0, 0.127, 0.636, 0.236, 0.0
Mean catchment slope	$\%$	16.00
Mean annual precipitation	mm/year	1589
Mean annual evapotranspiration	mm/year	1233
Soil wetness	mm over profile	207.0
Soil Olsen P content	kgP ha^{-1}	5.167
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	389 600 000
Reservoir area	km^2	23.85
Maximum reservoir depth	m	59.00
Mean reservoir depth	m	16.30
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.158, 0.768, 0.073, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.877
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.780
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.472
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.946
Mean monthly wind speed	m s^{-1}	1.110
Water intake depth below surface	m	N/A



46.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	619.8
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	425.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-24.09
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	194.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	218.5
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	5212
Total CO ₂ emission per lifetime	ktCO _{2,eq}	521.2
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	172.3
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	134.6
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1357
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1664
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	39 690
Total CH ₄ emission per lifetime	ktCO _{2,eq}	3969
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.7349
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.8165
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.7757
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	17.53
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.753
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1883
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1884

46.3 Emission plots



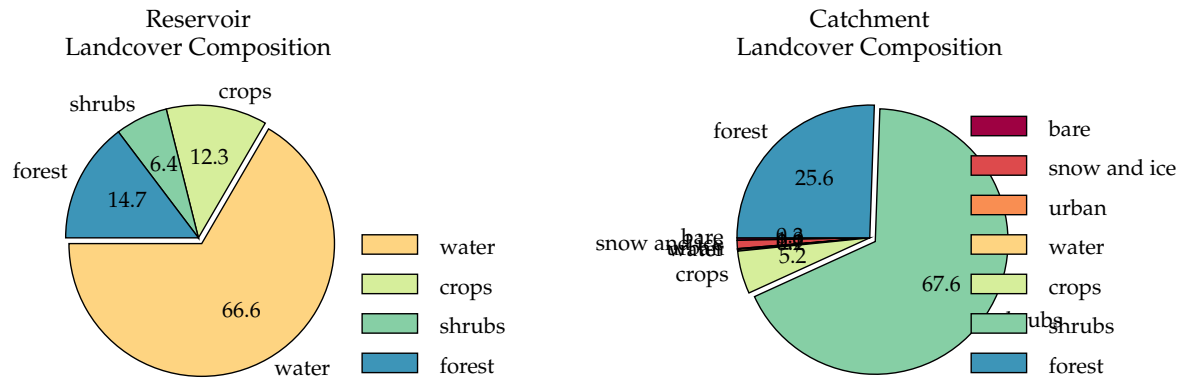
46.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	80.37
Retention coefficient	-	0.021 41
Influent total N concentration	$\mu\text{g L}^{-1}$	25.50
Reservoir TN concentration	$\mu\text{g L}^{-1}$	24.95
Reservoir TP concentration	$\mu\text{g L}^{-1}$	78.69
Percentage of reservoir's surface area that is littoral	%	12.78
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.780
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.36
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	21.86
Water density at the bottom of the reservoir	kg m^{-3}	997.8
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.90
Water density at the surface of the reservoir	kg m^{-3}	996.6
Thermocline depth	m	1.623
Influent total N load	kgN yr^{-1}	363 800
Influent total P load	kgP yr^{-1}	1 147 000
Downstream TN concentration	mg L^{-1}	0.025 17

47 Ywathit

47.1 Inputs

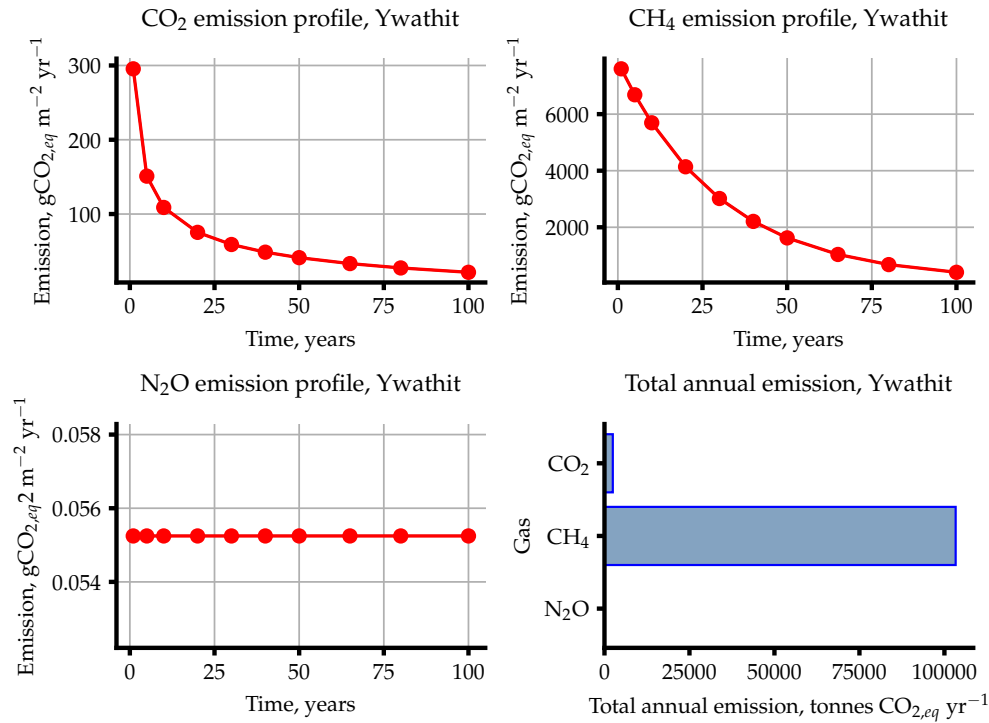
Input Name	Unit	Value(s)
Reservoir ID		132
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.1311, LON: 97.5213
Monthly Temperatures	$^{\circ}\text{C}$	21.0, 23.6, 27.5, 30.4, 29.3, 27.7, 27.2, 27.0, 27.1, 26.5, 24.4, 21.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	boreal
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	310.0
Catchment area	km^2	217 400
Length of inundated river	km	130.0
Population	capita	6 041 000
Area fractions	-	0.003, 0.01, 0.001, 0.002, 0.0, 0.052, 0.675, 0.255, 0.0
Mean catchment slope	$\%$	31.00
Mean annual precipitation	mm/year	960.0
Mean annual evapotranspiration	mm/year	818.0
Soil wetness	mm over profile	143.0
Soil Olsen P content	kgP ha^{-1}	5.874
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	809 000 000
Reservoir area	km^2	43.31
Maximum reservoir depth	m	34.00
Mean reservoir depth	m	18.70
Inundated area fractions	-	0.0, 0.0, 0.0, 0.655, 0.0, 0.123, 0.064, 0.147, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.011, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.883
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.990
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.416
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.350
Mean monthly wind speed	m s^{-1}	1.180
Water intake depth below surface	m	N/A



47.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	111.8
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	76.71
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-21.56
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	35.07
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	56.63
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2452
Total CO ₂ emission per lifetime	ktCO _{2,eq}	245.2
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	170.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	112.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	2102
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2385
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	103 300
Total CH ₄ emission per lifetime	ktCO _{2,eq}	10 330
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.055 25
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.061 41
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.058 33
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	2.393
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.2393
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2442
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2442

47.3 Emission plots



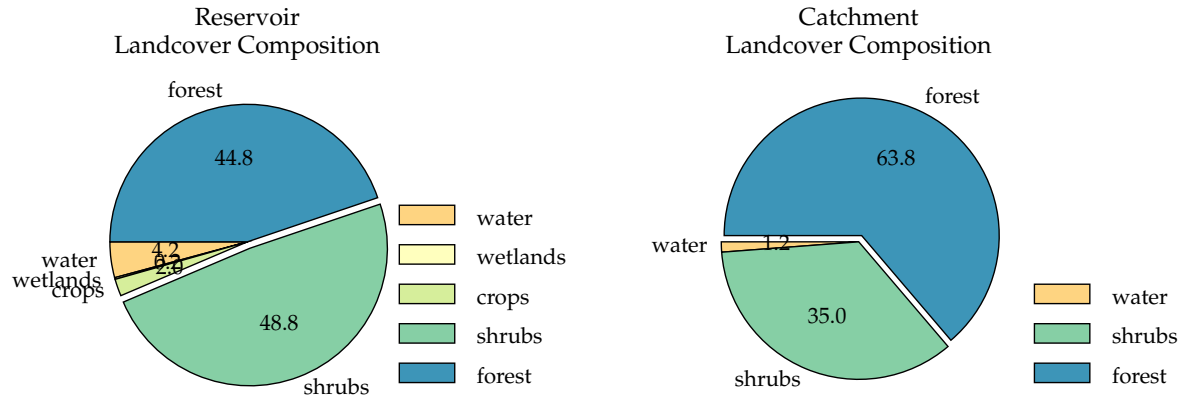
47.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	124.3
Retention coefficient	-	0.009 523
Influent total N concentration	$\mu\text{g L}^{-1}$	1.676
Reservoir TN concentration	$\mu\text{g L}^{-1}$	1.660
Reservoir TP concentration	$\mu\text{g L}^{-1}$	123.2
Percentage of reservoir's surface area that is littoral	%	7.279
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.990
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.88
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.49
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.73
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	2.091
Influent total N load	kgN yr^{-1}	113 000
Influent total P load	kgP yr^{-1}	8 380 000
Downstream TN concentration	mg L^{-1}	0.001 667

48 Zaungtu

48.1 Inputs

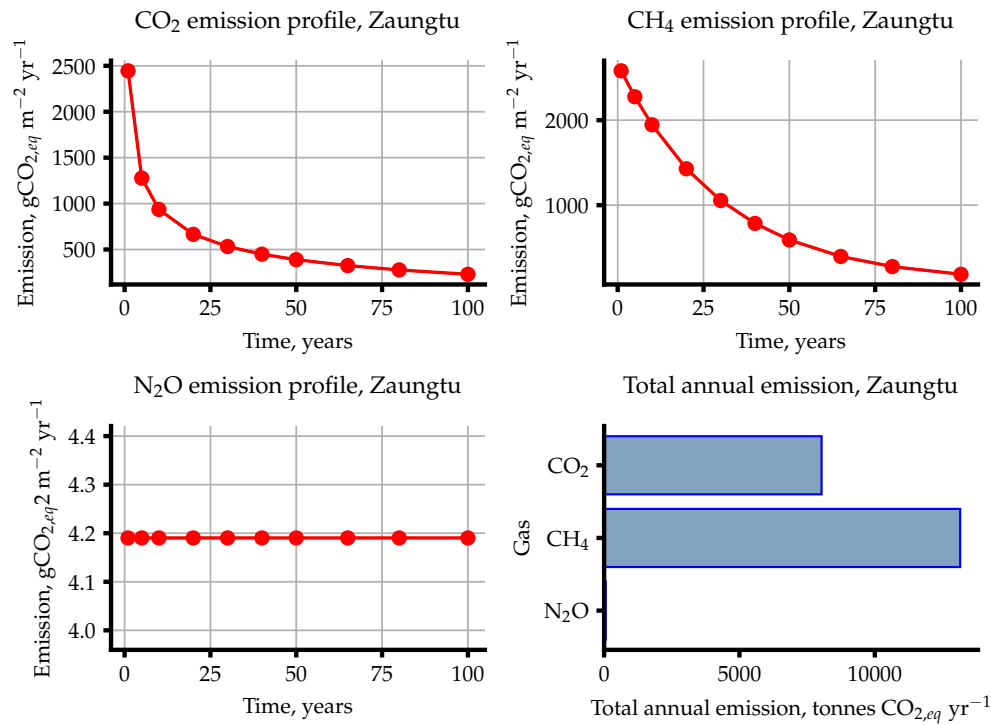
Input Name	Unit	Value(s)
Reservoir ID		133
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.7558, LON: 96.199
Monthly Temperatures	$^{\circ}\text{C}$	22.5, 24.3, 27.5, 30.1, 29.3, 26.9, 26.5, 26.4, 27.0, 27.3, 25.9, 23.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1262
Catchment area	km^2	1098
Length of inundated river	km	17.57
Population	capita	147 100
Area fractions	-	0.0, 0.0, 0.0, 0.012, 0.0, 0.0, 0.35, 0.637, 0.0
Mean catchment slope	$\%$	10.00
Mean annual precipitation	mm/year	2261
Mean annual evapotranspiration	mm/year	1328
Soil wetness	mm over profile	378.0
Soil Olsen P content	kgP ha^{-1}	8.914
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	260 000 000
Reservoir area	km^2	15.64
Maximum reservoir depth	m	26.00
Mean reservoir depth	m	16.60
Inundated area fractions	-	0.0, 0.0, 0.0, 0.037, 0.002, 0.02, 0.488, 0.448, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.005, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.078
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.970
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.462
Mean monthly wind speed	m s^{-1}	0.8800
Water intake depth below surface	m	N/A



48.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	904.1
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	620.5
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	−230.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	283.6
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	513.6
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	8032
Total CO ₂ emission per lifetime	ktCO _{2,eq}	803.2
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	167.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	88.47
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	585.5
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	841.0
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	13 150
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1315
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	4.190
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	3.303
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.747
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	65.53
Total N ₂ O emission per lifetime	ktCO _{2,eq}	6.553
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1355
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1358

48.3 Emission plots



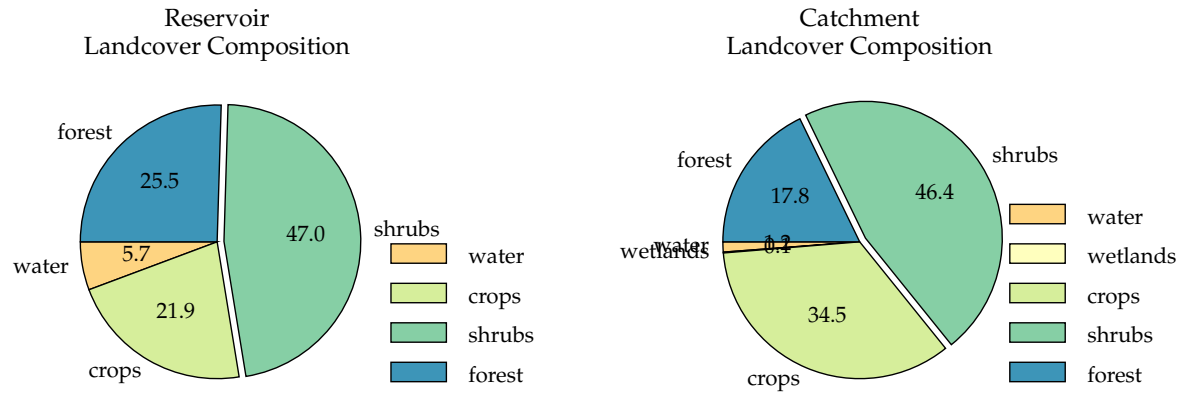
48.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	80.76
Retention coefficient	-	0.1306
Influent total N concentration	$\mu\text{g L}^{-1}$	104.5
Reservoir TN concentration	$\mu\text{g L}^{-1}$	90.80
Reservoir TP concentration	$\mu\text{g L}^{-1}$	71.07
Percentage of reservoir's surface area that is littoral	%	6.707
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.47
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.55
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.409
Influent total N load	kgN yr^{-1}	144 800
Influent total P load	kgP yr^{-1}	111 900
Downstream TN concentration	mg L^{-1}	0.1304

49 Zawgyi II

49.1 Inputs

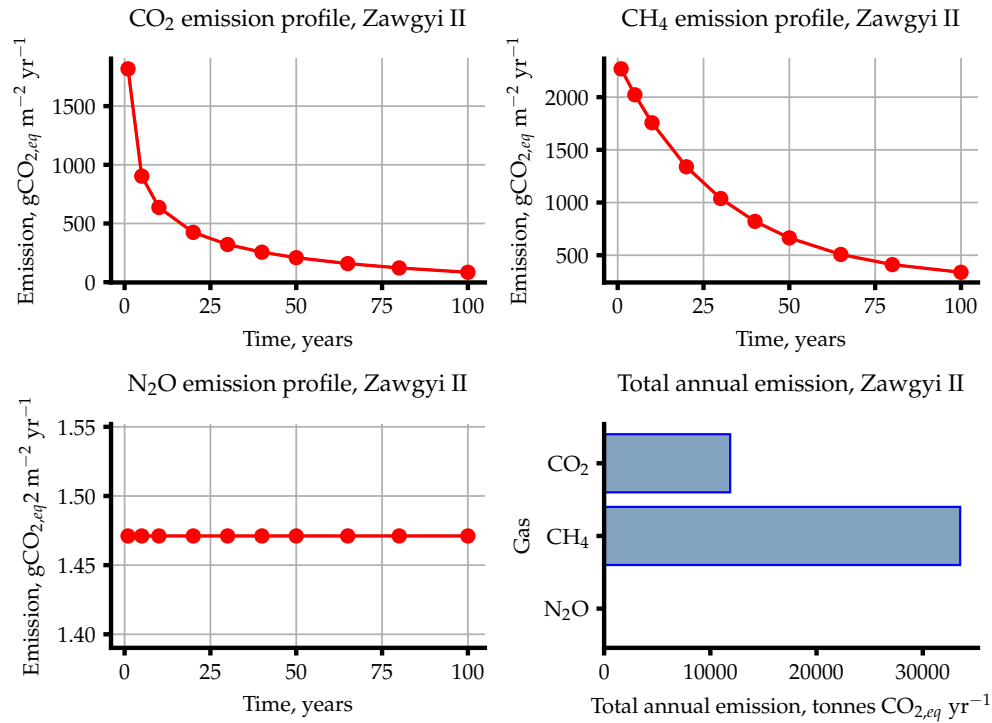
Input Name	Unit	Value(s)
Reservoir ID		135
Reservoir type		multipurpose
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.5648, LON: 96.8726
Monthly Temperatures	$^{\circ}\text{C}$	17.3, 19.1, 23.0, 26.5, 26.3, 25.6, 25.2, 24.9, 24.9, 24.0, 21.2, 18.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1067
Catchment area	km^2	2085
Length of inundated river	km	12.00
Population	capita	128 300
Area fractions	-	0.0, 0.0, 0.0, 0.012, 0.001, 0.345, 0.464, 0.178, 0.0
Mean catchment slope	$\%$	12.00
Mean annual precipitation	mm/year	2007
Mean annual evapotranspiration	mm/year	1234
Soil wetness	mm over profile	227.0
Soil Olsen P content	kgP ha^{-1}	6.612
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	430 800 000
Reservoir area	km^2	38.77
Maximum reservoir depth	m	27.00
Mean reservoir depth	m	11.10
Inundated area fractions	-	0.0, 0.0, 0.0, 0.053, 0.0, 0.219, 0.47, 0.255, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.004, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.117
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.962
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Mean monthly wind speed	m s^{-1}	1.140
Water intake depth below surface	m	N/A



49.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	707.4
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	485.5
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-84.15
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	221.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	306.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	11 870
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1187
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	173.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	258.9
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	432.2
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	864.6
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	33 520
Total CH ₄ emission per lifetime	ktCO _{2,eq}	3352
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.471
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.157
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.314
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	57.04
Total N ₂ O emission per lifetime	ktCO _{2,eq}	5.704
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1171
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1172

49.3 Emission plots



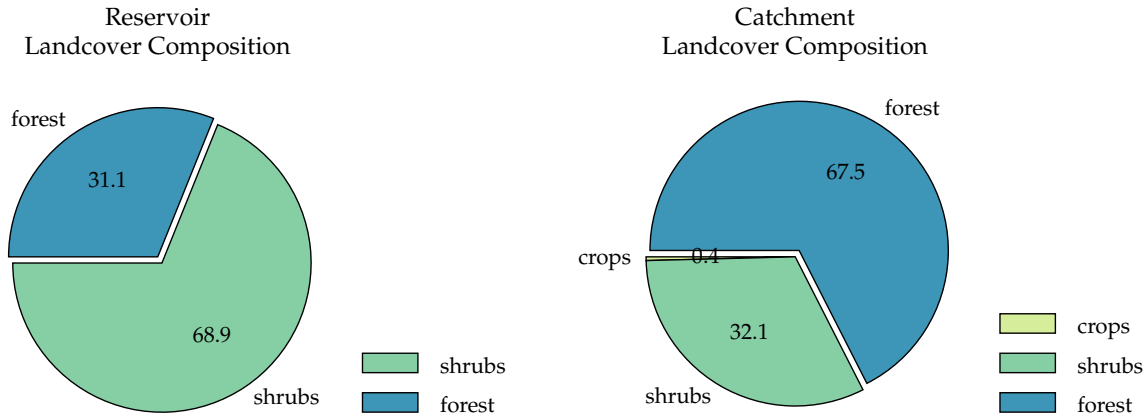
49.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	55.27
Retention coefficient	-	0.1343
Influent total N concentration	$\mu\text{g L}^{-1}$	54.87
Reservoir TN concentration	$\mu\text{g L}^{-1}$	47.62
Reservoir TP concentration	$\mu\text{g L}^{-1}$	48.50
Percentage of reservoir's surface area that is littoral	%	15.53
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	22.06
Water density at the bottom of the reservoir	kg m^{-3}	997.8
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.90
Water density at the surface of the reservoir	kg m^{-3}	996.8
Thermocline depth	m	2.176
Influent total N load	kgN yr^{-1}	122 100
Influent total P load	kgP yr^{-1}	123 000
Downstream TN concentration	mg L^{-1}	0.068 30

50 Mong Hsat

50.1 Inputs

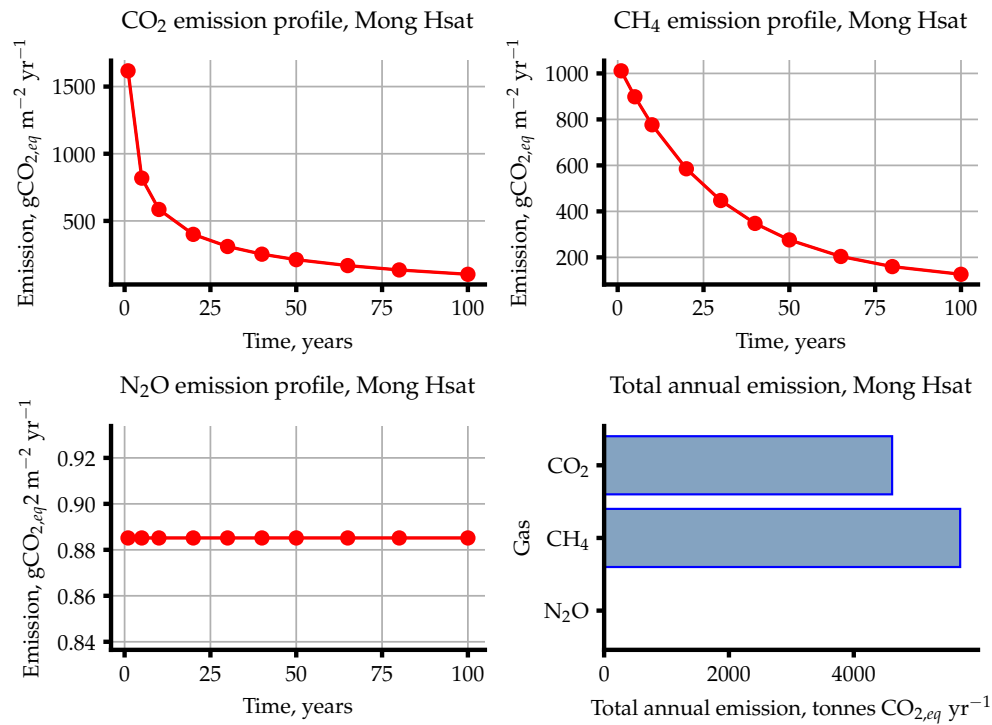
Input Name	Unit	Value(s)
Reservoir ID		137
Reservoir type		hydroelectric
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.6622, LON: 99.375
Monthly Temperatures	$^{\circ}\text{C}$	17.5, 19.8, 22.7, 25.7, 25.8, 25.3, 24.8, 24.7, 24.4, 23.2, 20.6, 17.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	351.0
Catchment area	km^2	1181
Length of inundated river	km	18.17
Population	capita	37 270
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.004, 0.321, 0.675, 0.0
Mean catchment slope	$\%$	23.00
Mean annual precipitation	mm/year	1399
Mean annual evapotranspiration	mm/year	1298
Soil wetness	mm over profile	306.0
Soil Olsen P content	kgP ha^{-1}	5.247
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	505 200 000
Reservoir area	km^2	15.56
Maximum reservoir depth	m	116.0
Mean reservoir depth	m	32.50
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.689, 0.311, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.350
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.900
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.574
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.082
Mean monthly wind speed	m s^{-1}	1.310
Water intake depth below surface	m	N/A



50.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	618.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	424.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-102.6
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	193.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	296.5
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	4615
Total CO ₂ emission per lifetime	ktCO _{2,eq}	461.5
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	111.6
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	90.06
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	165.0
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	366.6
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	5705
Total CH ₄ emission per lifetime	ktCO _{2,eq}	570.5
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.8852
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.3467
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.6159
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	13.78
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.378
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	663.1
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	663.7

50.3 Emission plots



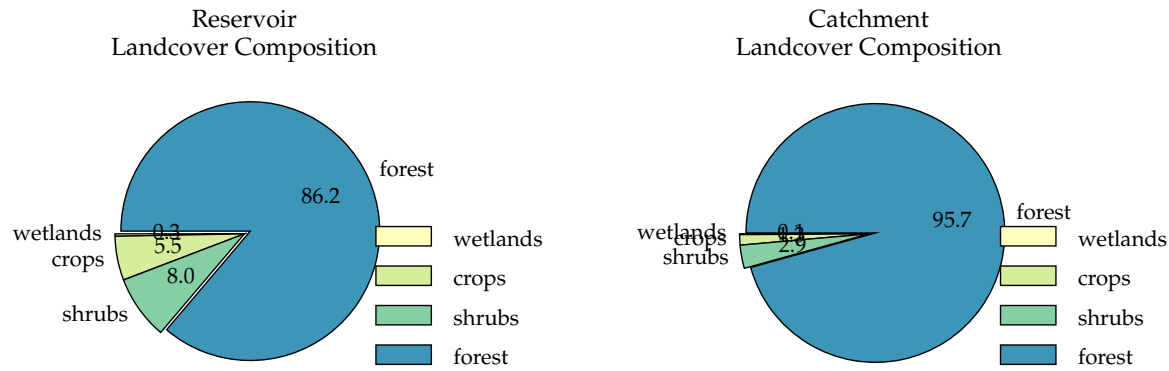
50.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	97.79
Retention coefficient	-	0.4940
Influent total N concentration	$\mu\text{g L}^{-1}$	12.27
Reservoir TN concentration	$\mu\text{g L}^{-1}$	6.208
Reservoir TP concentration	$\mu\text{g L}^{-1}$	49.75
Percentage of reservoir's surface area that is littoral	%	6.510
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.900
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.80
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	22.19
Water density at the bottom of the reservoir	kg m^{-3}	997.8
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.40
Water density at the surface of the reservoir	kg m^{-3}	997.0
Thermocline depth	m	2.187
Influent total N load	kgN yr^{-1}	5085
Influent total P load	kgP yr^{-1}	40 530
Downstream TN concentration	mg L^{-1}	0.008 042

51 Tawog Hka

51.1 Inputs

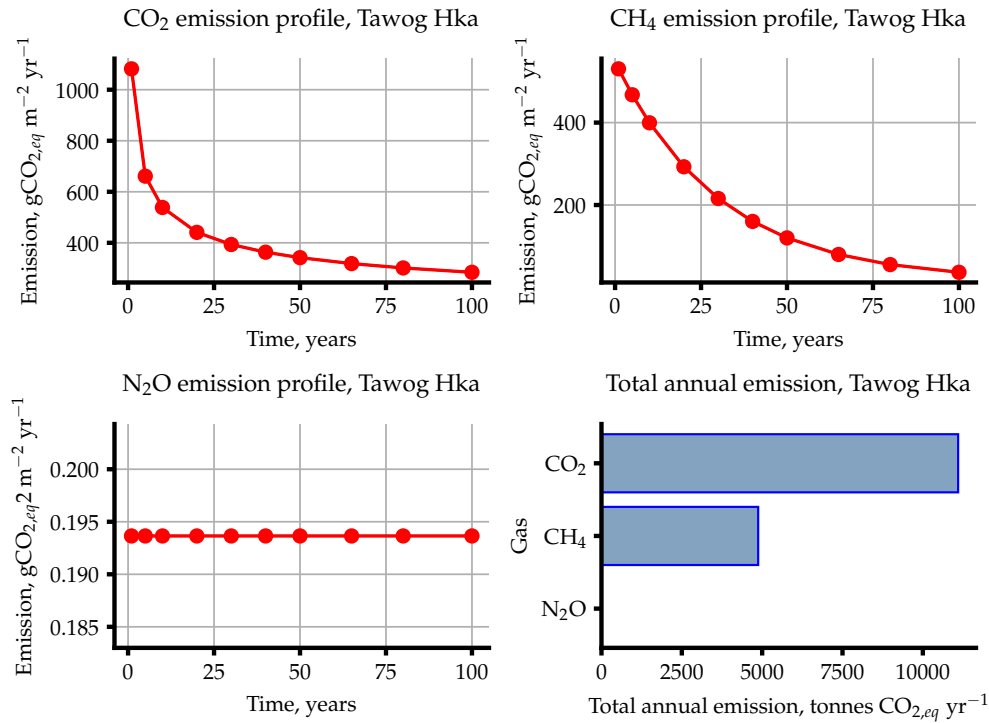
Input Name	Unit	Value(s)
Reservoir ID		148
Reservoir type		unknown
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 26.3302, LON: 96.5056
Monthly Temperatures	$^{\circ}\text{C}$	15.7, 17.2, 21.0, 23.4, 25.8, 26.5, 26.5, 26.8, 26.5, 24.7, 20.6, 16.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	2316
Catchment area	km^2	118.8
Length of inundated river	km	14.49
Population	capita	628.0
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.001, 0.013, 0.029, 0.957, 0.0
Mean catchment slope	$\%$	20.00
Mean annual precipitation	mm/year	3239
Mean annual evapotranspiration	mm/year	1067
Soil wetness	mm over profile	249.0
Soil Olsen P content	kgP ha^{-1}	8.117
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	1 062 000 000
Reservoir area	km^2	28.71
Maximum reservoir depth	m	69.00
Mean reservoir depth	m	37.00
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.003, 0.055, 0.08, 0.862, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.785
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.040
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.824
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.132
Mean monthly wind speed	m s^{-1}	0.9700
Water intake depth below surface	m	N/A



51.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	325.4
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	223.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-284.5
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	102.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	386.5
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	11 100
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1110
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	90.12
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	16.45
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	63.26
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	169.8
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	4876
Total CH ₄ emission per lifetime	ktCO _{2,eq}	487.6
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.1936
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.041 01
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.1173
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	5.560
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.5560
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	556.4
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	556.5

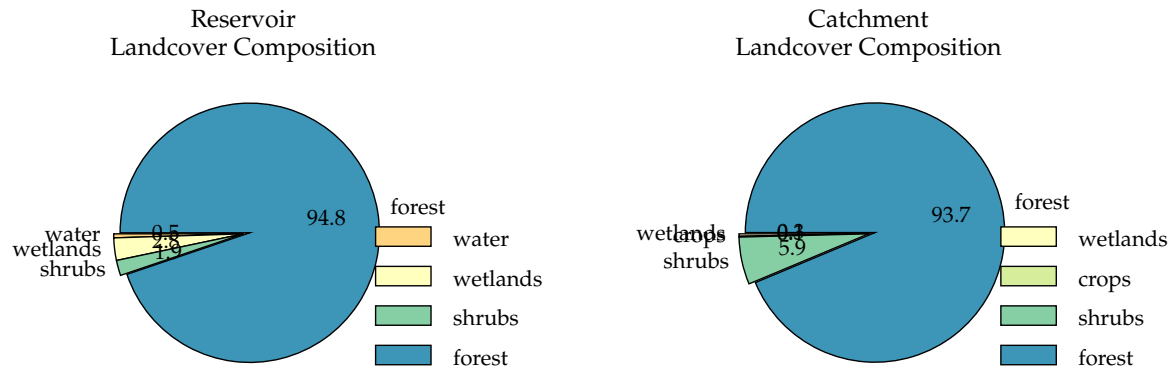
51.3 Emission plots



51.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	5.338
Retention coefficient	-	0.7557
Influent total N concentration	$\mu\text{g L}^{-1}$	4.014
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.9670
Reservoir TP concentration	$\mu\text{g L}^{-1}$	1.321
Percentage of reservoir's surface area that is littoral	%	3.772
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.040
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	48.48
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	21.01
Water density at the bottom of the reservoir	kg m^{-3}	998.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.58
Water density at the surface of the reservoir	kg m^{-3}	996.7
Thermocline depth	m	1.431
Influent total N load	kgN yr^{-1}	1104
Influent total P load	kgP yr^{-1}	1468
Downstream TN concentration	mg L^{-1}	0.000 636 0

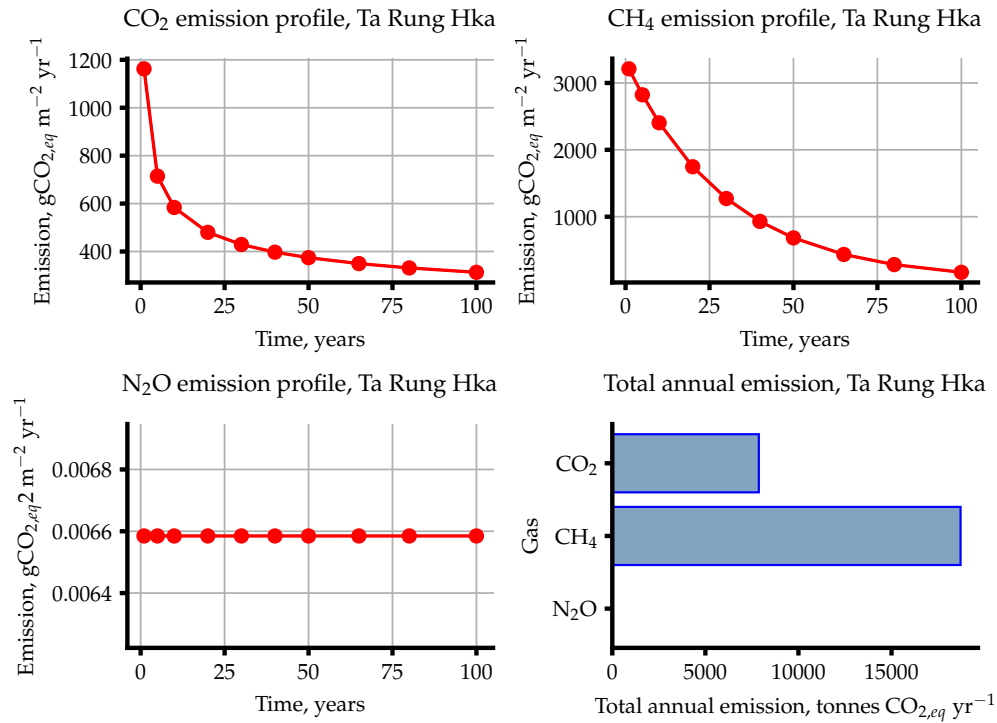
Input Name	Unit	Value(s)
Reservoir ID		149
Reservoir type		unknown
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 26.718, LON: 96.4683
Monthly Temperatures	$^{\circ}\text{C}$	15.0, 16.4, 20.1, 22.5, 25.2, 26.2, 26.4, 26.6, 26.3, 24.3, 20.0, 16.2
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1947
Catchment area	km ²	4834
Length of inundated river	km	38.94
Population	capita	24 420
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.003, 0.001, 0.059, 0.936, 0.0
Mean catchment slope	%	36.00
Mean annual precipitation	mm/year	2856
Mean annual evapotranspiration	mm/year	1008
Soil wetness	mm over profile	190.0
Soil Olsen P content	kgP ha ⁻¹	10.46
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	324 500 000
Reservoir area	km ²	18.66
Maximum reservoir depth	m	63.00
Mean reservoir depth	m	17.40
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.028, 0.0, 0.019, 0.949, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.005, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	6.352
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	4.040
Mean monthly horizontal radiance:	kWh m ⁻² d ⁻¹	3.824
May - Sept		
Mean monthly horizontal radiance:	kWh m ⁻² d ⁻¹	4.132
Nov - Mar		
Mean monthly wind speed	m s ⁻¹	0.9800
Water intake depth below surface	m	N/A



52.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	346.6
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	237.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-313.2
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	108.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	421.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	7872
Total CO ₂ emission per lifetime	ktCO _{2,eq}	787.2
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	146.2
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	44.09
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	812.4
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1003
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	18 710
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1871
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.006 585
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.006 852
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.006 718
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.1229
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.012 29
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1425
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1425

52.3 Emission plots



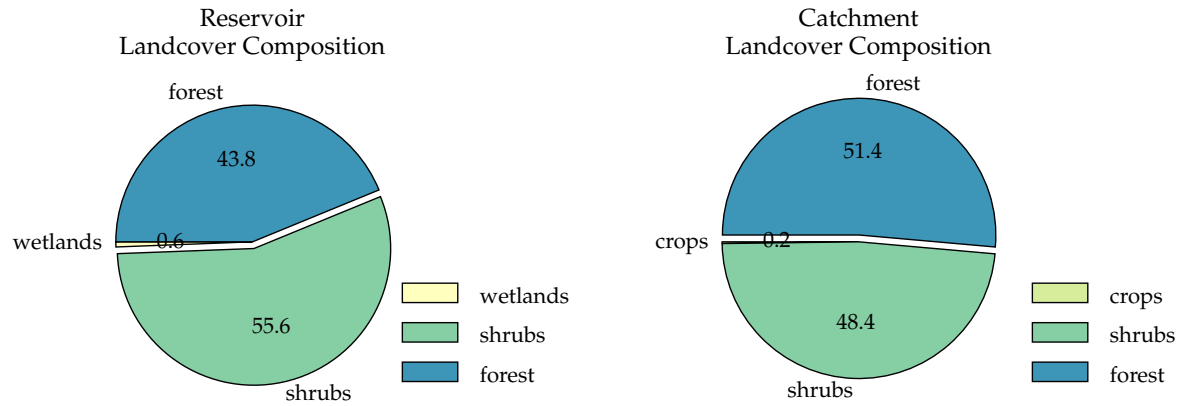
52.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	6.038
Retention coefficient	-	0.026 88
Influent total N concentration	$\mu\text{g L}^{-1}$	0.2011
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.1957
Reservoir TP concentration	$\mu\text{g L}^{-1}$	5.884
Percentage of reservoir's surface area that is littoral	%	12.00
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.040
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	48.48
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	20.55
Water density at the bottom of the reservoir	kg m^{-3}	998.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.38
Water density at the surface of the reservoir	kg m^{-3}	996.7
Thermocline depth	m	1.278
Influent total N load	kgN yr^{-1}	1893
Influent total P load	kgP yr^{-1}	56 830
Downstream TN concentration	mg L^{-1}	0.000 211 1

53 Thauk Ye Khat 1

53.1 Inputs

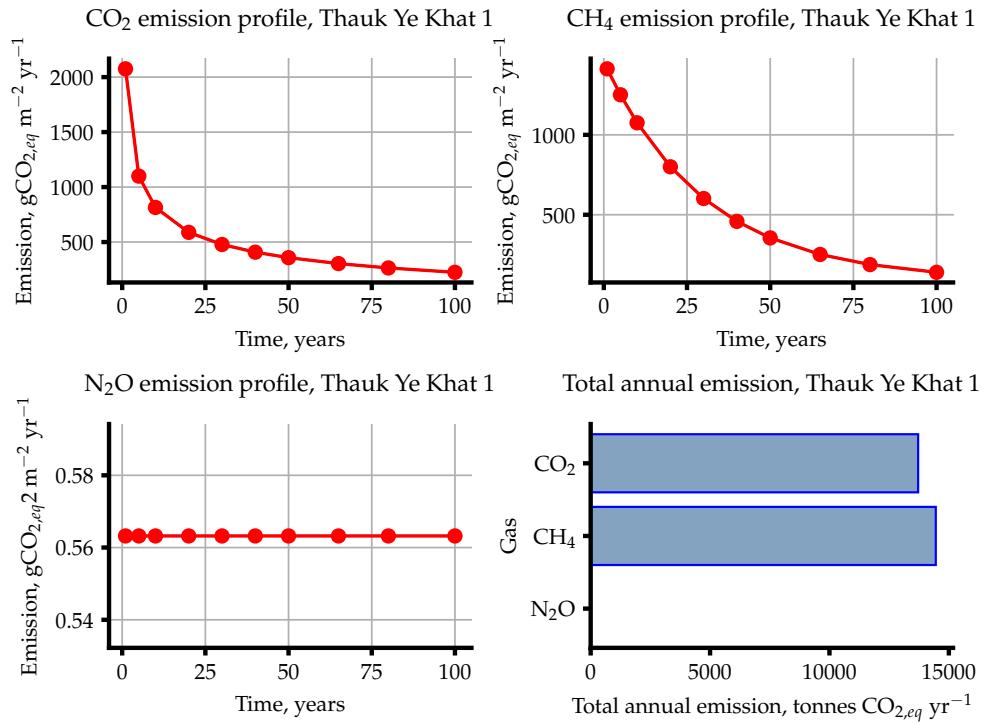
Input Name	Unit	Value(s)
Reservoir ID		151
Reservoir type		unknown
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.9439, LON: 96.7188
Monthly Temperatures	$^{\circ}\text{C}$	20.8, 22.9, 26.4, 29.2, 28.5, 26.4, 26.0, 26.0, 26.5, 26.5, 24.6, 21.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	411.0
Catchment area	km^2	1622
Length of inundated river	km	26.23
Population	capita	46 320
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.002, 0.484, 0.514, 0.0
Mean catchment slope	$\%$	27.00
Mean annual precipitation	mm/year	1438
Mean annual evapotranspiration	mm/year	1326
Soil wetness	mm over profile	329.0
Soil Olsen P content	kgP ha^{-1}	8.263
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	1 318 000 000
Reservoir area	km^2	29.70
Maximum reservoir depth	m	141.0
Mean reservoir depth	m	44.40
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.006, 0.0, 0.556, 0.438, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.056
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.090
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.506
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.442
Mean monthly wind speed	m s^{-1}	1.140
Water intake depth below surface	m	N/A



53.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	755.1
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	518.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-224.8
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	236.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	461.7
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	13 710
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1371
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	126.9
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	87.55
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	272.1
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	486.6
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	14 450
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1445
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.5632
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.1549
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.3590
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	16.73
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.673
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	948.3
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	948.7

53.3 Emission plots



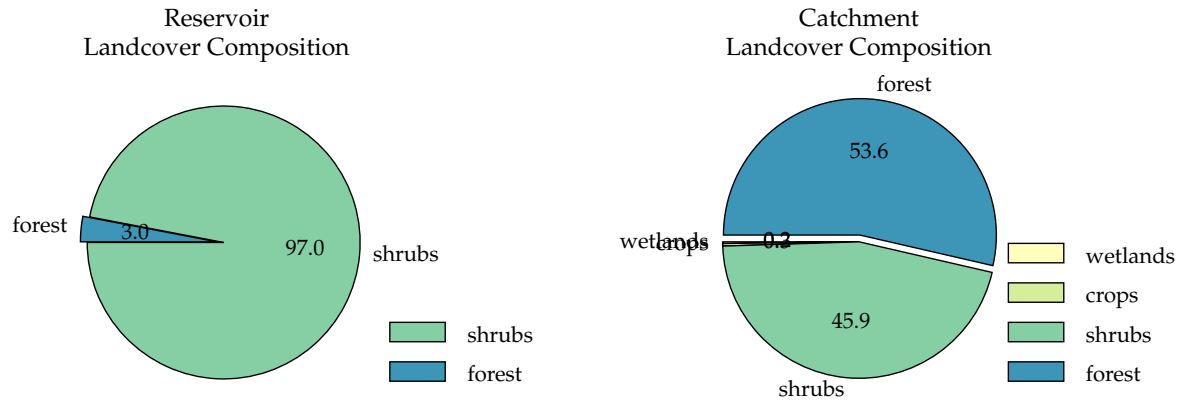
53.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	85.88
Retention coefficient	-	0.6129
Influent total N concentration	$\mu\text{g L}^{-1}$	6.471
Reservoir TN concentration	$\mu\text{g L}^{-1}$	2.505
Reservoir TP concentration	$\mu\text{g L}^{-1}$	33.55
Percentage of reservoir's surface area that is littoral	%	4.571
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.090
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.08
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.36
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	27.68
Water density at the surface of the reservoir	kg m^{-3}	996.4
Thermocline depth	m	2.102
Influent total N load	kgN yr^{-1}	4314
Influent total P load	kgP yr^{-1}	57 260
Downstream TN concentration	mg L^{-1}	0.002 428

54 Yunzalin

54.1 Inputs

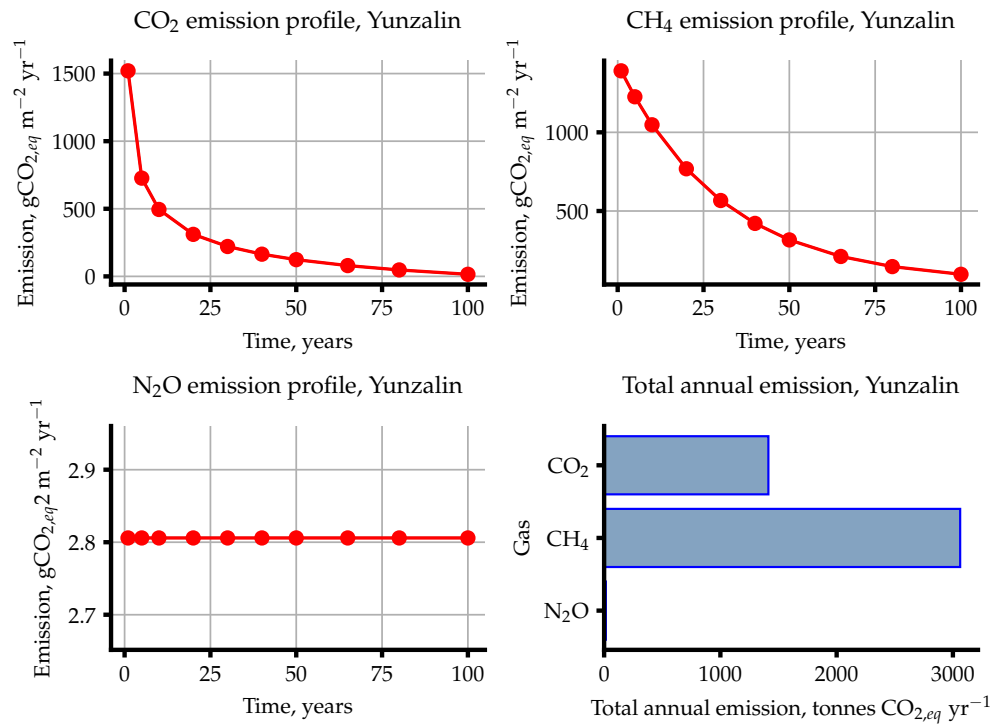
Input Name	Unit	Value(s)
Reservoir ID		152
Reservoir type		unknown
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.295, LON: 97.3408
Monthly Temperatures	$^{\circ}\text{C}$	21.3, 23.3, 26.2, 28.9, 28.3, 26.3, 25.9, 25.9, 26.2, 26.1, 24.5, 21.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	469.0
Catchment area	km ²	1370
Length of inundated river	km	5.590
Population	capita	3908
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.002, 0.003, 0.459, 0.536, 0.0
Mean catchment slope	%	24.00
Mean annual precipitation	mm/year	1451
Mean annual evapotranspiration	mm/year	1274
Soil wetness	mm over profile	412.0
Soil Olsen P content	kgP ha ⁻¹	5.658
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	461 900 000
Reservoir area	km ²	6.791
Maximum reservoir depth	m	185.0
Mean reservoir depth	m	68.00
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.97, 0.03, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	5.648
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	4.920
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	4.170
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	5.416
Mean monthly wind speed	m s ⁻¹	1.040
Water intake depth below surface	m	N/A



54.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	614.1
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	421.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-15.40
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	192.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	208.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1413
Total CO ₂ emission per lifetime	ktCO _{2,eq}	141.3
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	99.73
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	44.82
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	306.4
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	451.0
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	3062
Total CH ₄ emission per lifetime	ktCO _{2,eq}	306.2
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.806
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.601
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.203
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	19.05
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.905
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	659.0
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	661.2

54.3 Emission plots



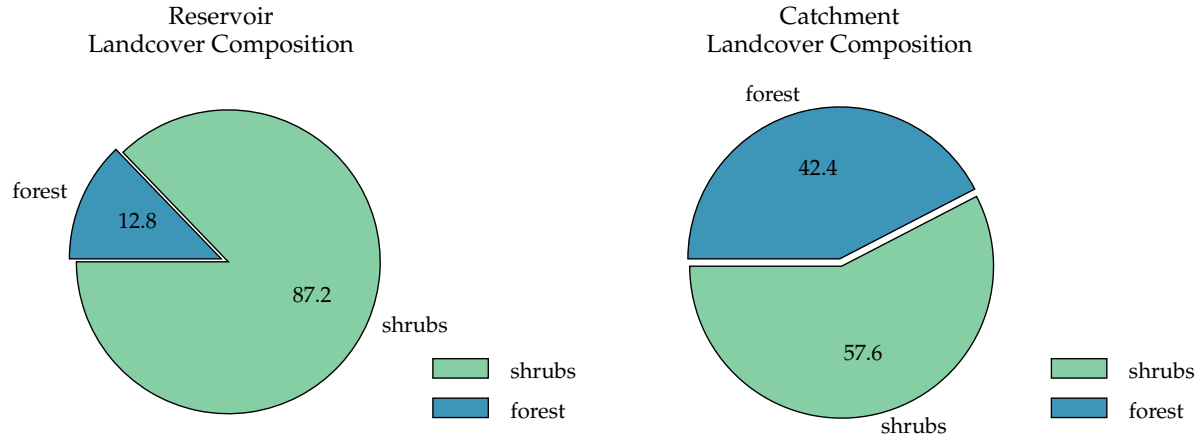
54.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	38.34
Retention coefficient	-	0.3653
Influent total N concentration	$\mu\text{g L}^{-1}$	17.58
Reservoir TN concentration	$\mu\text{g L}^{-1}$	11.16
Reservoir TP concentration	$\mu\text{g L}^{-1}$	24.28
Percentage of reservoir's surface area that is littoral	%	2.774
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.920
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.04
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.68
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	27.43
Water density at the surface of the reservoir	kg m^{-3}	996.4
Thermocline depth	m	1.459
Influent total N load	kgN yr^{-1}	11 300
Influent total P load	kgP yr^{-1}	24 640
Downstream TN concentration	mg L^{-1}	0.016 17

55 Mi Chaung

55.1 Inputs

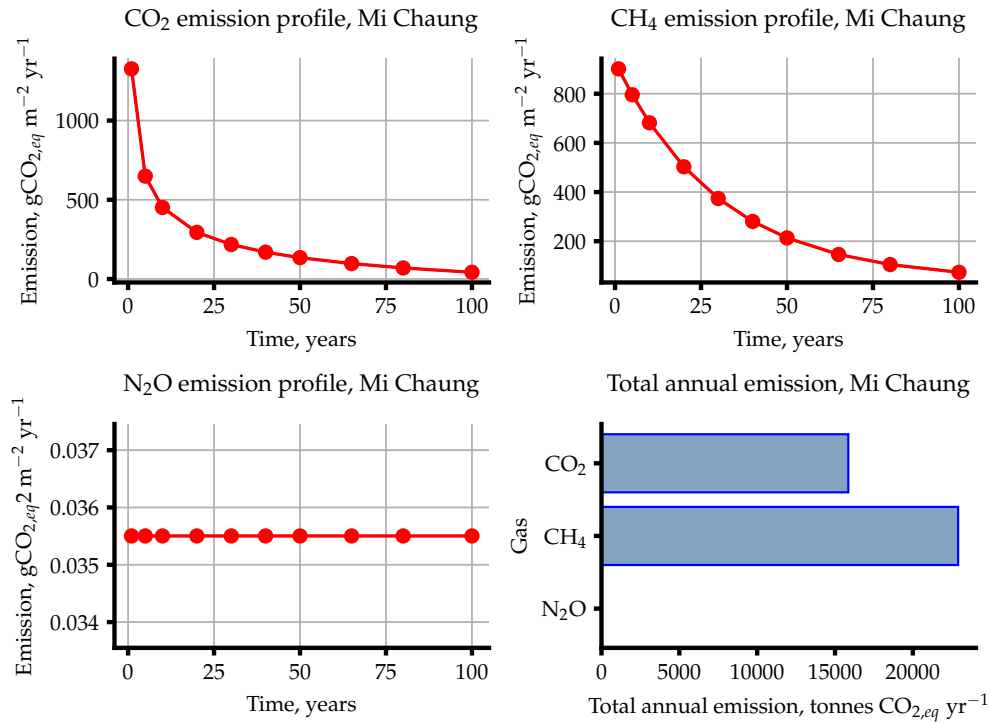
Input Name	Unit	Value(s)
Reservoir ID		154
Reservoir type		unknown
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.3342, LON: 93.0735
Monthly Temperatures	$^{\circ}\text{C}$	19.0, 21.2, 25.0, 27.6, 27.9, 26.8, 26.6, 26.4, 26.7, 26.1, 23.2, 19.8
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1841
Catchment area	km^2	1322
Length of inundated river	km	69.18
Population	capita	20 130
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.576, 0.424, 0.0
Mean catchment slope	$\%$	35.00
Mean annual precipitation	mm/year	2774
Mean annual evapotranspiration	mm/year	1221
Soil wetness	mm over profile	208.0
Soil Olsen P content	kgP ha^{-1}	14.59
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	4 961 000 000
Reservoir area	km^2	76.72
Maximum reservoir depth	m	164.0
Mean reservoir depth	m	64.70
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.872, 0.128, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.004
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.830
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.272
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.166
Mean monthly wind speed	m s^{-1}	1.080
Water intake depth below surface	m	N/A



55.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	524.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	359.6
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-42.24
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	164.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	206.6
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	15 850
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1585
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	94.57
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	39.63
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	164.4
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	298.6
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	22 910
Total CH ₄ emission per lifetime	ktCO _{2,eq}	2291
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.035 50
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.009 581
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.022 54
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	2.724
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.2724
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	505.2
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	505.3

55.3 Emission plots



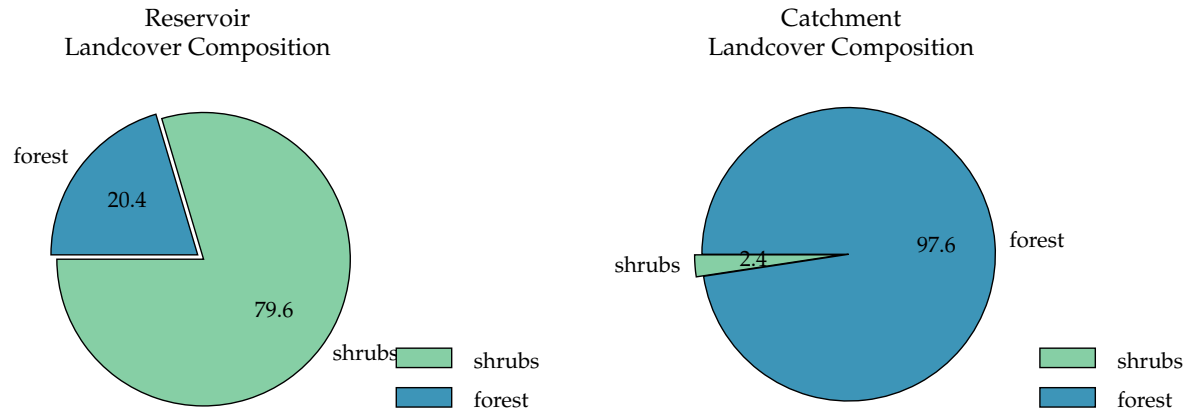
55.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	15.30
Retention coefficient	-	0.6201
Influent total N concentration	$\mu\text{g L}^{-1}$	0.2832
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.1076
Reservoir TP concentration	$\mu\text{g L}^{-1}$	5.870
Percentage of reservoir's surface area that is littoral	%	2.794
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.830
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.96
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.17
Water density at the bottom of the reservoir	kg m^{-3}	997.5
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	27.25
Water density at the surface of the reservoir	kg m^{-3}	996.5
Thermocline depth	m	2.314
Influent total N load	kgN yr^{-1}	689.4
Influent total P load	kgP yr^{-1}	37 240
Downstream TN concentration	mg L^{-1}	0.000 101 6

56 Tha Gyet Chaung

56.1 Inputs

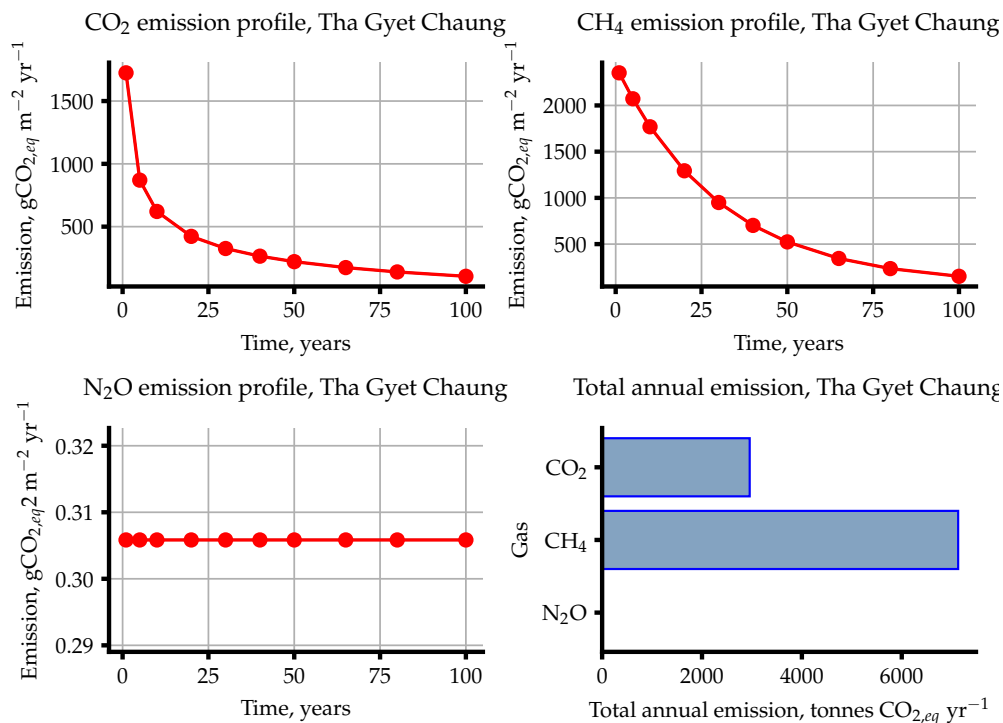
Input Name	Unit	Value(s)
Reservoir ID		157
Reservoir type		unknown
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 12.1345, LON: 99.2269
Monthly Temperatures	$^{\circ}\text{C}$	24.8, 25.7, 27.1, 28.1, 27.7, 26.8, 26.4, 26.4, 26.3, 26.3, 25.8, 24.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	377.0
Catchment area	km^2	1107
Length of inundated river	km	17.83
Population	capita	11 210
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.024, 0.976, 0.0
Mean catchment slope	$\%$	26.00
Mean annual precipitation	mm/year	1511
Mean annual evapotranspiration	mm/year	1389
Soil wetness	mm over profile	270.0
Soil Olsen P content	kgP ha^{-1}	4.551
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	229 200 000
Reservoir area	km^2	9.468
Maximum reservoir depth	m	55.00
Mean reservoir depth	m	24.20
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.796, 0.204, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.507
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.600
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.870
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.192
Mean monthly wind speed	m s^{-1}	0.9600
Water intake depth below surface	m	N/A



56.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	661.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	453.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-104.7
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	207.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	312.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2955
Total CO ₂ emission per lifetime	ktCO _{2,eq}	295.5
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	164.1
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	61.42
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	527.5
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	753.0
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	7130
Total CH ₄ emission per lifetime	ktCO _{2,eq}	713.0
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.3058
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.1985
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.2522
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	2.896
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.2896
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1065
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1065

56.3 Emission plots



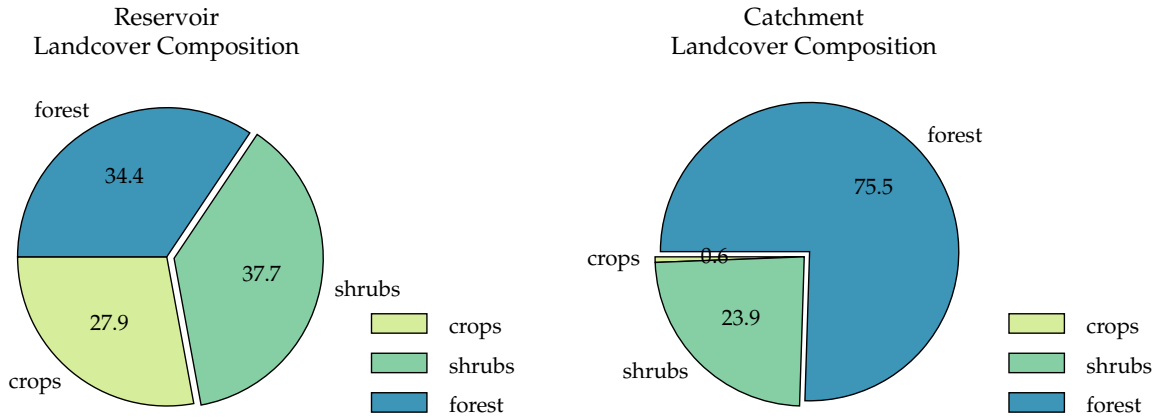
56.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	38.56
Retention coefficient	-	0.3055
Influent total N concentration	$\mu\text{g L}^{-1}$	5.314
Reservoir TN concentration	$\mu\text{g L}^{-1}$	3.691
Reservoir TP concentration	$\mu\text{g L}^{-1}$	26.66
Percentage of reservoir's surface area that is littoral	%	6.890
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.600
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	55.20
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.92
Water density at the bottom of the reservoir	kg m^{-3}	996.6
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	27.43
Water density at the surface of the reservoir	kg m^{-3}	996.4
Thermocline depth	m	3.331
Influent total N load	kgN yr^{-1}	2219
Influent total P load	kgP yr^{-1}	16 100
Downstream TN concentration	mg L^{-1}	0.005 425

57 Than Dwe

57.1 Inputs

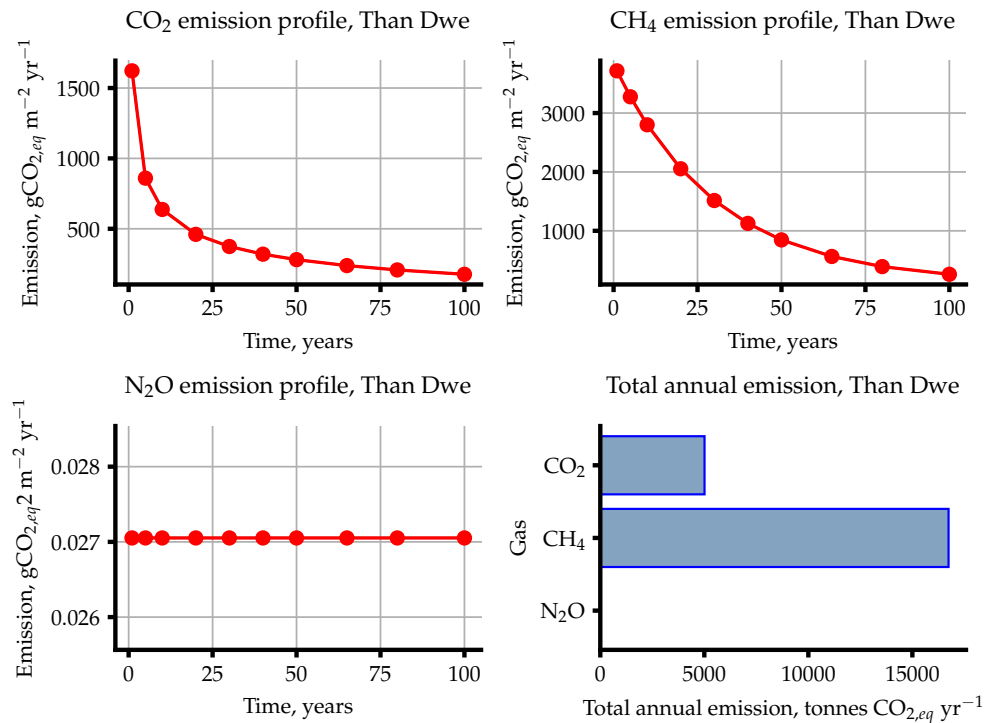
Input Name	Unit	Value(s)
Reservoir ID		161
Reservoir type		unknown
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.3861, LON: 94.4939
Monthly Temperatures	$^{\circ}\text{C}$	21.5, 22.9, 25.9, 28.8, 28.9, 27.2, 26.6, 26.6, 27.2, 27.6, 25.9, 23.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	2656
Catchment area	km^2	749.7
Length of inundated river	km	15.49
Population	capita	24 330
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.006, 0.239, 0.755, 0.0
Mean catchment slope	$\%$	30.00
Mean annual precipitation	mm/year	3620
Mean annual evapotranspiration	mm/year	1290
Soil wetness	mm over profile	313.0
Soil Olsen P content	kgP ha^{-1}	15.86
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	228 200 000
Reservoir area	km^2	13.85
Maximum reservoir depth	m	32.00
Mean reservoir depth	m	16.50
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.279, 0.377, 0.344, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.455
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.920
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.916
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.540
Mean monthly wind speed	m s^{-1}	1.430
Water intake depth below surface	m	N/A



57.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	589.9
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	404.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-176.6
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	185.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	361.6
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	5010
Total CO ₂ emission per lifetime	ktCO _{2,eq}	501.0
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	181.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	120.2
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	906.3
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1208
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	16 740
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1674
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.027 05
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.021 70
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.024 38
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.3748
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.037 48
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1570
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1570

57.3 Emission plots



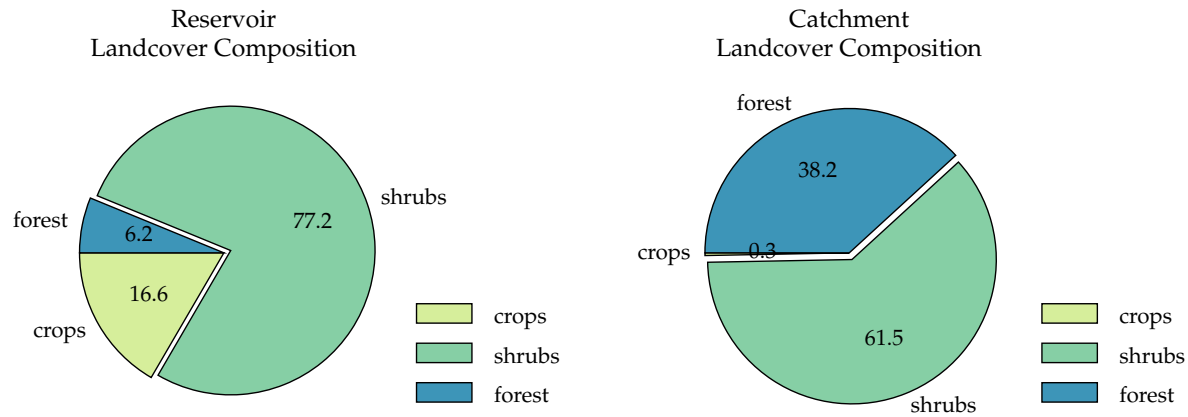
57.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	12.61
Retention coefficient	-	0.084 08
Influent total N concentration	$\mu\text{g L}^{-1}$	0.6797
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.6192
Reservoir TP concentration	$\mu\text{g L}^{-1}$	11.61
Percentage of reservoir's surface area that is littoral	%	8.833
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.920
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.04
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.81
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.13
Water density at the surface of the reservoir	kg m^{-3}	996.2
Thermocline depth	m	2.164
Influent total N load	kgN yr^{-1}	1353
Influent total P load	kgP yr^{-1}	25 120
Downstream TN concentration	mg L^{-1}	0.000 880 9

58 Kyein Ta Li

58.1 Inputs

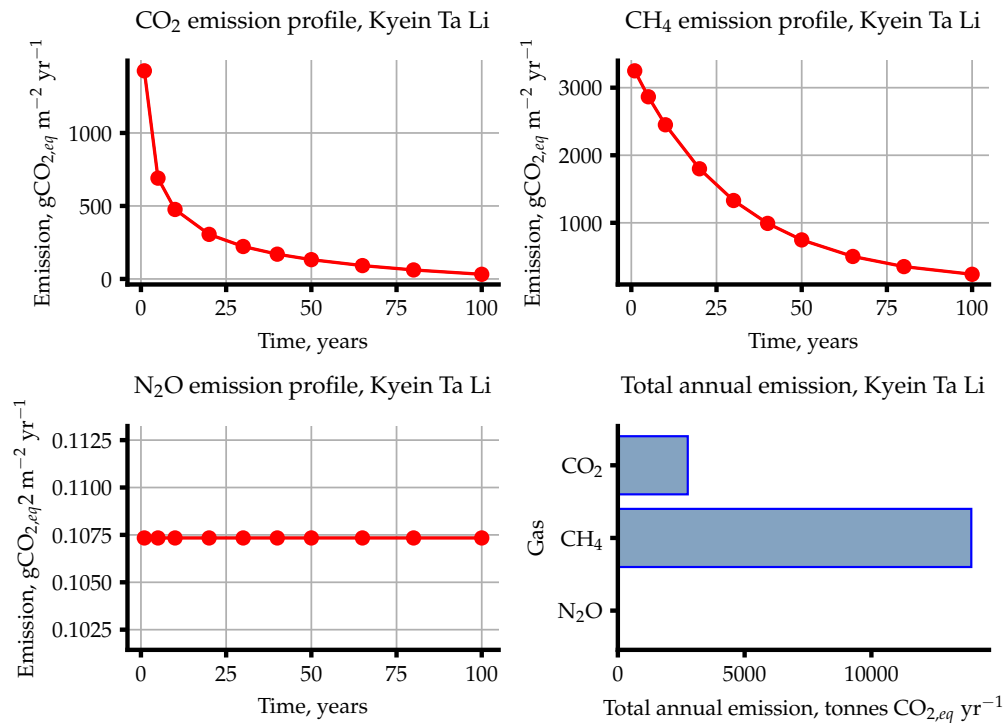
Input Name	Unit	Value(s)
Reservoir ID		162
Reservoir type		unknown
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.95, LON: 94.5765
Monthly Temperatures	$^{\circ}\text{C}$	21.7, 23.3, 26.1, 28.7, 28.7, 26.9, 26.4, 26.4, 26.9, 27.3, 25.8, 23.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	2520
Catchment area	km ²	832.3
Length of inundated river	km	24.99
Population	capita	21 420
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.003, 0.615, 0.382, 0.0
Mean catchment slope	%	25.00
Mean annual precipitation	mm/year	3486
Mean annual evapotranspiration	mm/year	1310
Soil wetness	mm over profile	309.0
Soil Olsen P content	kgP ha ⁻¹	12.09
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	317 500 000
Reservoir area	km ²	13.11
Maximum reservoir depth	m	53.00
Mean reservoir depth	m	24.20
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.166, 0.772, 0.062, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	6.460
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	5.050
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	3.930
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	5.730
Mean monthly wind speed	m s ⁻¹	1.420
Water intake depth below surface	m	N/A



58.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	568.8
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	390.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-31.83
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	178.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	210.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2757
Total CO ₂ emission per lifetime	ktCO _{2,eq}	275.7
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	158.2
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	114.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	790.4
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1063
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	13 940
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1394
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.1073
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.085 39
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.096 36
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.408
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1408
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1273
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1273

58.3 Emission plots



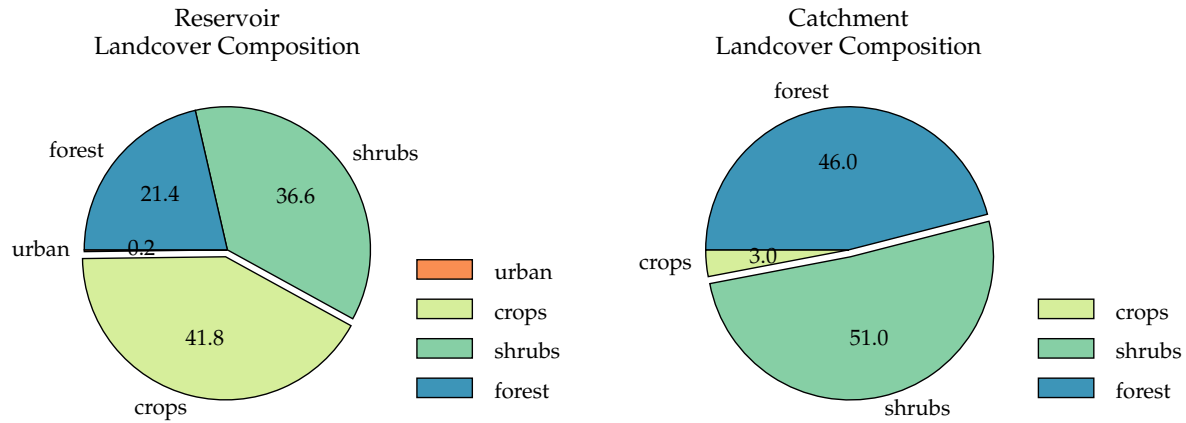
58.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	14.27
Retention coefficient	-	0.1081
Influent total N concentration	$\mu\text{g L}^{-1}$	1.835
Reservoir TN concentration	$\mu\text{g L}^{-1}$	1.632
Reservoir TP concentration	$\mu\text{g L}^{-1}$	12.77
Percentage of reservoir's surface area that is littoral	%	6.700
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.050
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	60.60
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.95
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	27.90
Water density at the surface of the reservoir	kg m^{-3}	996.3
Thermocline depth	m	2.246
Influent total N load	kgN yr^{-1}	3849
Influent total P load	kgP yr^{-1}	29 930
Downstream TN concentration	mg L^{-1}	0.002 336

59 Nam Hkok

59.1 Inputs

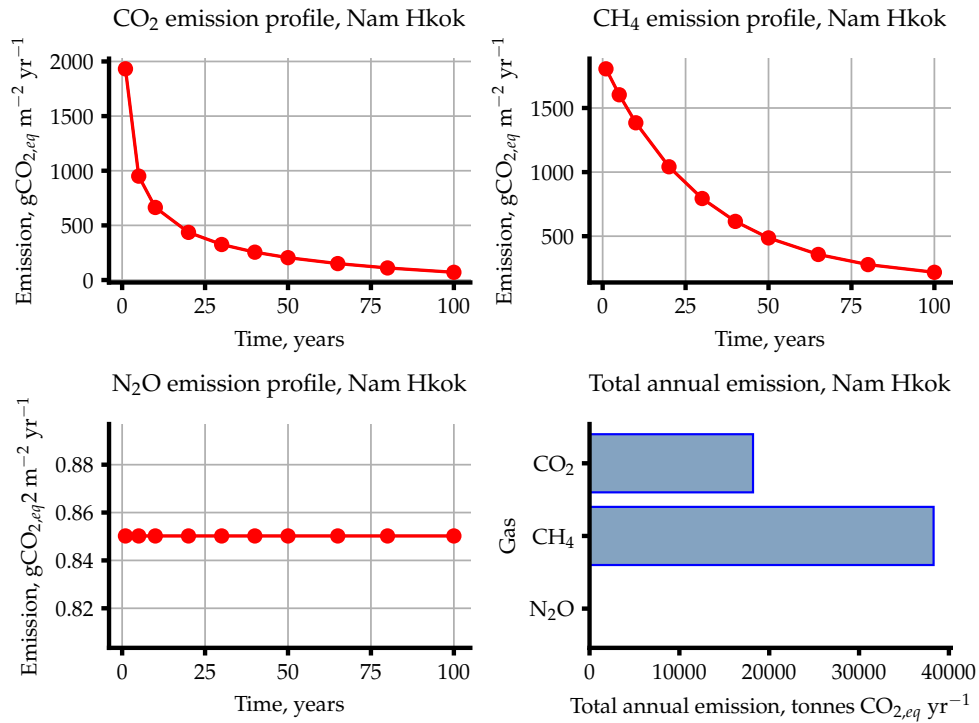
Input Name	Unit	Value(s)
Reservoir ID		163
Reservoir type		unknown
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.1963, LON: 99.3467
Monthly Temperatures	$^{\circ}\text{C}$	18.6, 21.0, 24.0, 27.0, 27.0, 26.5, 26.0, 25.7, 25.5, 24.4, 21.7, 18.8
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	329.0
Catchment area	km^2	2745
Length of inundated river	km	53.56
Population	capita	79 510
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.03, 0.51, 0.46, 0.0
Mean catchment slope	$\%$	21.00
Mean annual precipitation	mm/year	1389
Mean annual evapotranspiration	mm/year	1325
Soil wetness	mm over profile	323.0
Soil Olsen P content	kgP ha^{-1}	6.751
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	1 122 000 000
Reservoir area	km^2	58.90
Maximum reservoir depth	m	99.00
Mean reservoir depth	m	19.00
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.418, 0.366, 0.214, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.002, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.939
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.900
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.574
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.082
Mean monthly wind speed	m s^{-1}	1.260
Water intake depth below surface	m	N/A



59.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	759.8
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	521.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-70.62
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	238.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	309.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	18 200
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1820
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	169.1
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	153.2
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	327.9
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	650.2
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	38 300
Total CH ₄ emission per lifetime	ktCO _{2,eq}	3830
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.8502
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.3281
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.5891
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	50.07
Total N ₂ O emission per lifetime	ktCO _{2,eq}	5.007
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	959.2
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	959.8

59.3 Emission plots



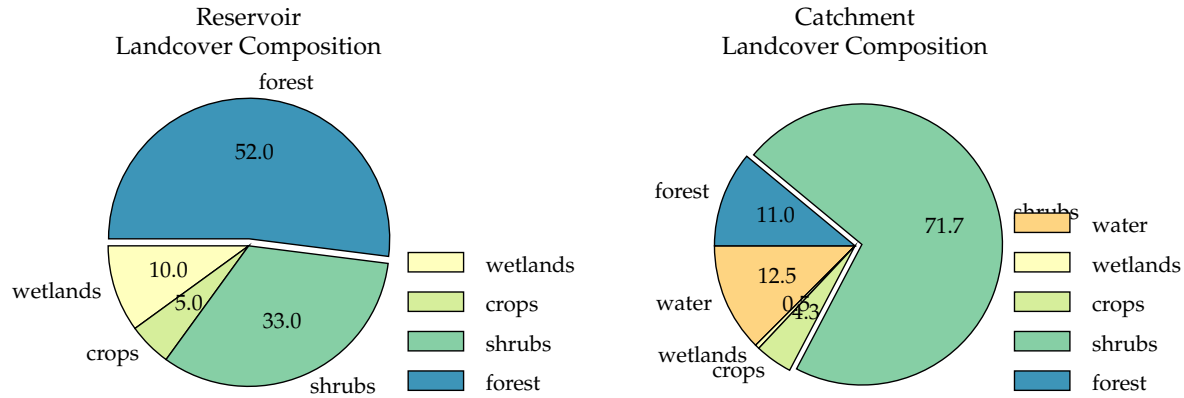
59.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	110.8
Retention coefficient	-	0.4987
Influent total N concentration	$\mu\text{g L}^{-1}$	20.15
Reservoir TN concentration	$\mu\text{g L}^{-1}$	10.01
Reservoir TP concentration	$\mu\text{g L}^{-1}$	56.08
Percentage of reservoir's surface area that is littoral	%	12.15
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.900
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.80
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	22.91
Water density at the bottom of the reservoir	kg m^{-3}	997.6
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.63
Water density at the surface of the reservoir	kg m^{-3}	996.6
Thermocline depth	m	2.672
Influent total N load	kgN yr^{-1}	18 200
Influent total P load	kgP yr^{-1}	100 000
Downstream TN concentration	mg L^{-1}	0.012 99

60 Gyobyu

60.1 Inputs

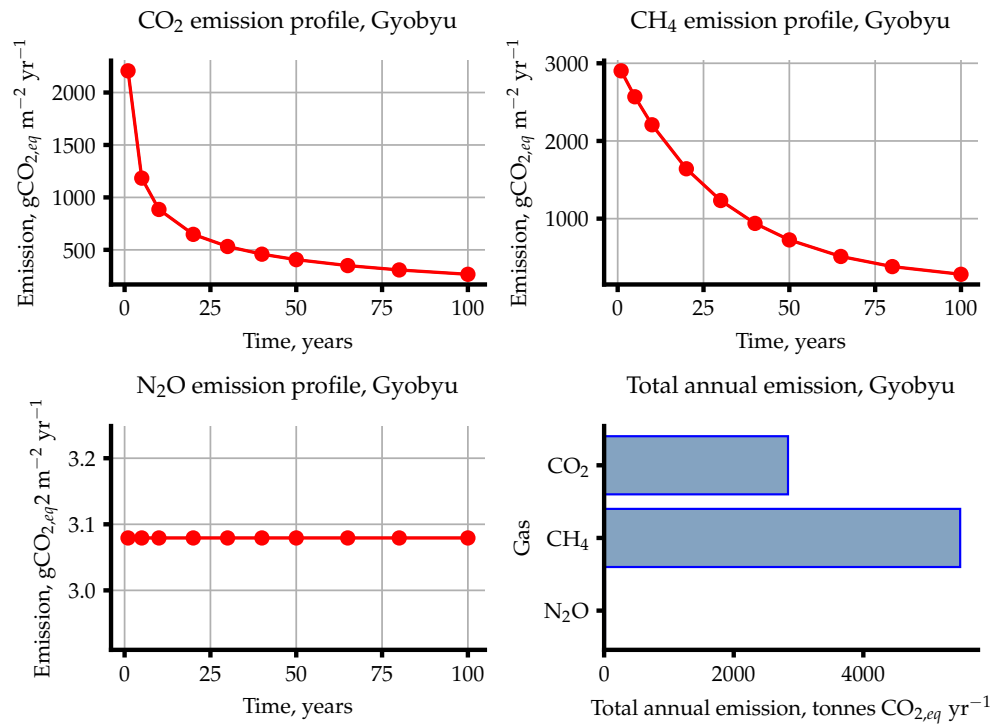
Input Name	Unit	Value(s)
Reservoir ID		9009
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.376953, LON: 96.036089
Monthly Temperatures	$^{\circ}\text{C}$	22.9, 24.6, 27.5, 29.9, 29.1, 26.9, 26.3, 26.3, 26.9, 27.2, 26.0, 23.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1745
Catchment area	km ²	35.85
Length of inundated river	km	3.949
Population	capita	5454
Area fractions	-	0.0, 0.0, 0.0, 0.125, 0.005, 0.043, 0.717, 0.11, 0.0
Mean catchment slope	%	7.000
Mean annual precipitation	mm/year	2740
Mean annual evapotranspiration	mm/year	1340
Soil wetness	mm over profile	372.0
Soil Olsen P content	kgP ha ⁻¹	19.72
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	57 270 000
Reservoir area	km ²	5.507
Maximum reservoir depth	m	22.00
Mean reservoir depth	m	10.40
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.1, 0.05, 0.33, 0.52, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	5.970
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	4.870
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	3.970
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	5.462
Mean monthly wind speed	m s ⁻¹	0.9500
Water intake depth below surface	m	N/A



60.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	791.6
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	543.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-266.9
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	248.3
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	515.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2838
Total CO ₂ emission per lifetime	ktCO _{2,eq}	283.8
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	241.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	176.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	579.6
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	997.7
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	5495
Total CH ₄ emission per lifetime	ktCO _{2,eq}	549.5
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.079
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.505
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.292
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	16.96
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.696
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1513
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1515

60.3 Emission plots



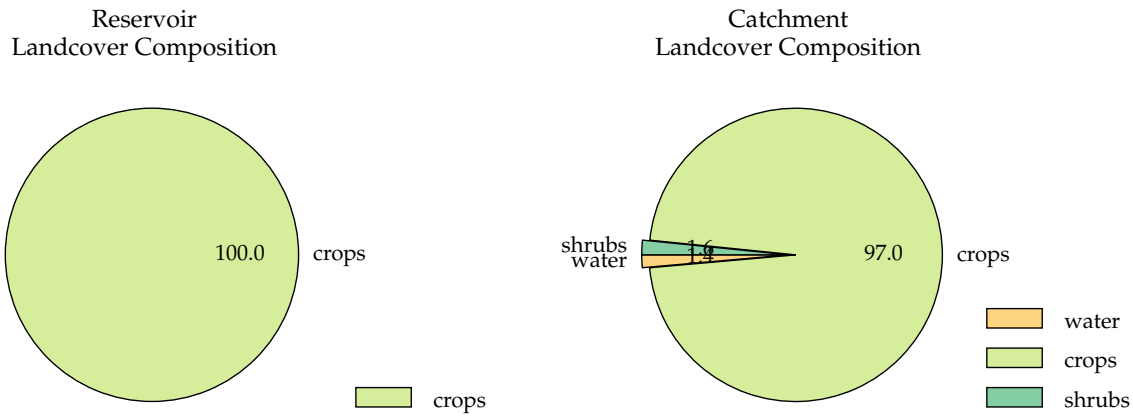
60.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	70.01
Retention coefficient	-	0.4231
Influent total N concentration	$\mu\text{g L}^{-1}$	128.7
Reservoir TN concentration	$\mu\text{g L}^{-1}$	74.16
Reservoir TP concentration	$\mu\text{g L}^{-1}$	46.75
Percentage of reservoir's surface area that is littoral	%	15.08
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.73
Water density at the bottom of the reservoir	kg m^{-3}	996.9
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.43
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.252
Influent total N load	kgN yr^{-1}	8053
Influent total P load	kgP yr^{-1}	4379
Downstream TN concentration	mg L^{-1}	0.1040

61 Taungpulu Dam

61.1 Inputs

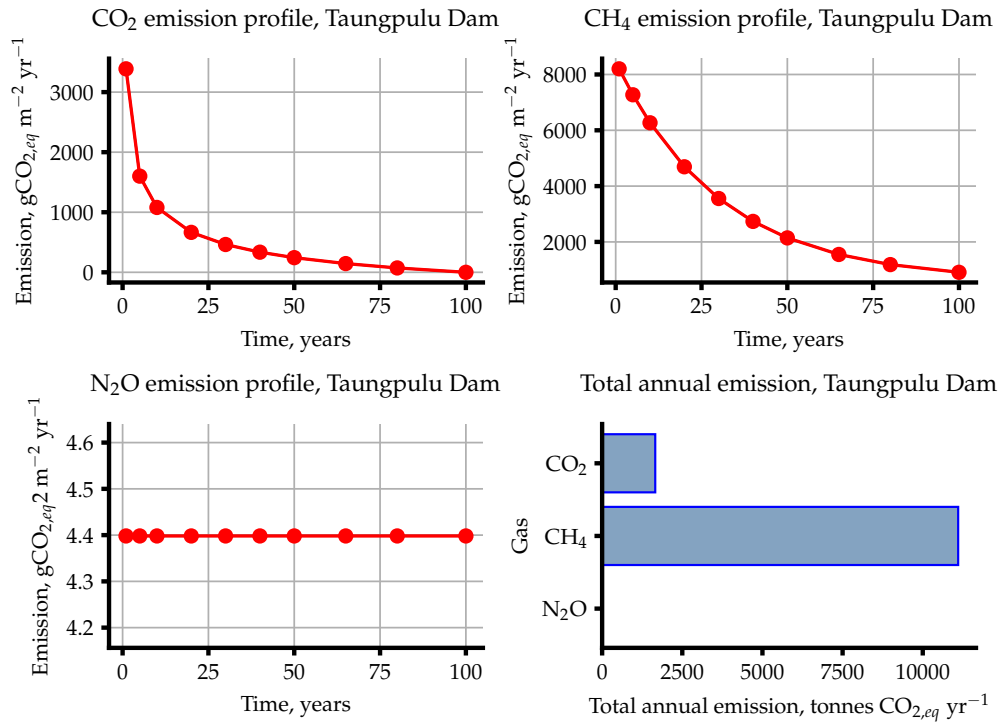
Input Name	Unit	Value(s)
Reservoir ID		9070
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.038013, LON: 95.833887
Monthly Temperatures	$^{\circ}\text{C}$	21.9, 24.3, 28.5, 31.6, 30.5, 29.1, 28.7, 28.3, 28.1, 27.5, 25.1, 21.8
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	130.0
Catchment area	km^2	302.3
Length of inundated river	km	3.492
Population	capita	42 070
Area fractions	-	0.0, 0.0, 0.0, 0.014, 0.0, 0.97, 0.016, 0.0, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	877.0
Mean annual evapotranspiration	mm/year	1464
Soil wetness	mm over profile	49.00
Soil Olsen P content	kgP ha^{-1}	4.862
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	16 610 000
Reservoir area	km^2	3.820
Maximum reservoir depth	m	16.00
Mean reservoir depth	m	4.348
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.356
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.230
Water intake depth below surface	m	N/A



61.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1382
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	948.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	433.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	433.7
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1657
Total CO ₂ emission per lifetime	ktCO _{2,eq}	165.7
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	434.6
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	612.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1860
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2907
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	11 100
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1110
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	4.398
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	3.106
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.752
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	16.80
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.680
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3341
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3344

61.3 Emission plots

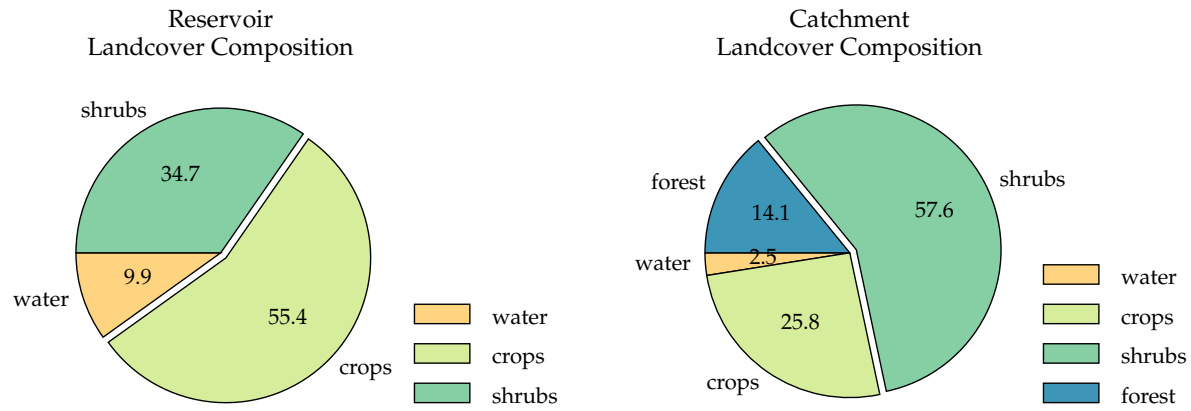


61.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	842.2
Retention coefficient	-	0.2529
Influent total N concentration	$\mu\text{g L}^{-1}$	422.6
Reservoir TN concentration	$\mu\text{g L}^{-1}$	315.6
Reservoir TP concentration	$\mu\text{g L}^{-1}$	636.2
Percentage of reservoir's surface area that is littoral	%	42.68
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.01
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.98
Water density at the surface of the reservoir	kg m^{-3}	995.7
Thermocline depth	m	1.080
Influent total N load	kgN yr^{-1}	16 610
Influent total P load	kgP yr^{-1}	33 090
Downstream TN concentration	mg L^{-1}	0.4644

62.1 Inputs

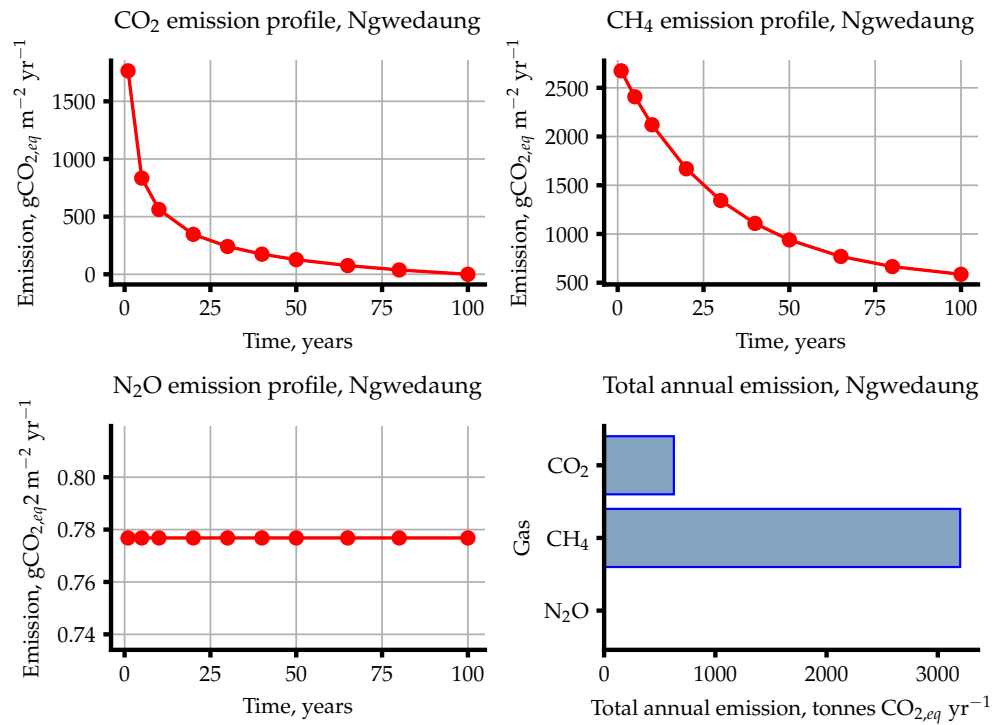
Input Name	Unit	Value(s)
Reservoir ID		9113
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.556761, LON: 97.163755
Monthly Temperatures	$^{\circ}\text{C}$	17.9, 20.1, 23.5, 26.1, 25.5, 24.2, 23.9, 23.6, 24.1, 23.4, 21.4, 18.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	301.0
Catchment area	km ²	102.2
Length of inundated river	km	3.291
Population	capita	6316
Area fractions	-	0.0, 0.0, 0.0, 0.025, 0.0, 0.258, 0.575, 0.141, 0.0
Mean catchment slope	%	12.00
Mean annual precipitation	mm/year	1280
Mean annual evapotranspiration	mm/year	1328
Soil wetness	mm over profile	218.0
Soil Olsen P content	kgP ha ⁻¹	8.505
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	11 000 000
Reservoir area	km ²	2.776
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	3.963
Inundated area fractions	-	0.0, 0.0, 0.0, 0.08, 0.0, 0.56, 0.35, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.02, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	4.890
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	4.990
Mean monthly horizontal radiance:	kWh m ⁻² d ⁻¹	4.416
May - Sept		
Mean monthly horizontal radiance:	kWh m ⁻² d ⁻¹	5.350
Nov - Mar		
Mean monthly wind speed	m s ⁻¹	1.210
Water intake depth below surface	m	N/A



62.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	720.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	494.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	225.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	225.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	627.0
Total CO ₂ emission per lifetime	ktCO _{2,eq}	62.70
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	259.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	500.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	393.6
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1153
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	3201
Total CH ₄ emission per lifetime	ktCO _{2,eq}	320.1
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.7768
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.5694
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.6731
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	2.156
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.2156
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1379
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1380

62.3 Emission plots



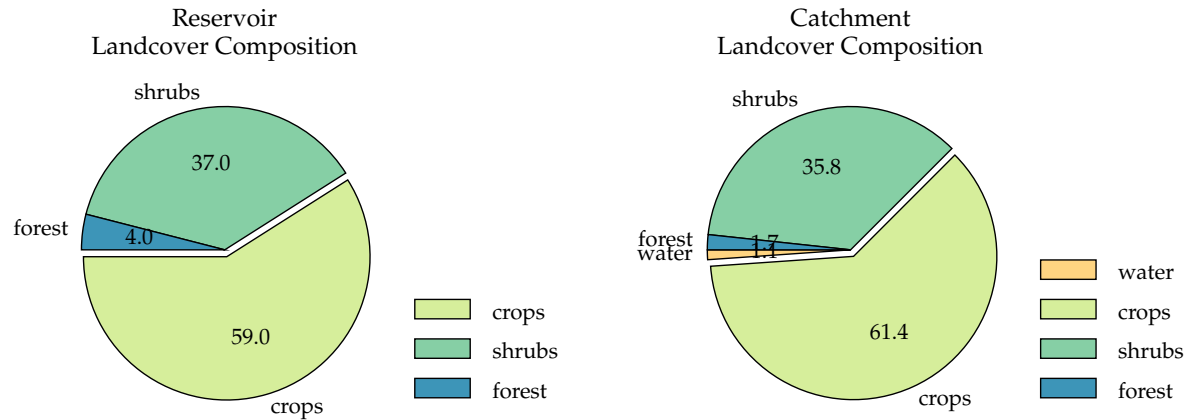
62.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	215.2
Retention coefficient	-	0.2227
Influent total N concentration	$\mu\text{g L}^{-1}$	81.65
Reservoir TN concentration	$\mu\text{g L}^{-1}$	62.90
Reservoir TP concentration	$\mu\text{g L}^{-1}$	170.3
Percentage of reservoir's surface area that is littoral	%	41.93
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.990
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.88
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	22.45
Water density at the bottom of the reservoir	kg m^{-3}	997.7
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.98
Water density at the surface of the reservoir	kg m^{-3}	997.1
Thermocline depth	m	1.484
Influent total N load	kgN yr^{-1}	2511
Influent total P load	kgP yr^{-1}	6619
Downstream TN concentration	mg L^{-1}	0.093 09

63 Kyet Mauk Taung

63.1 Inputs

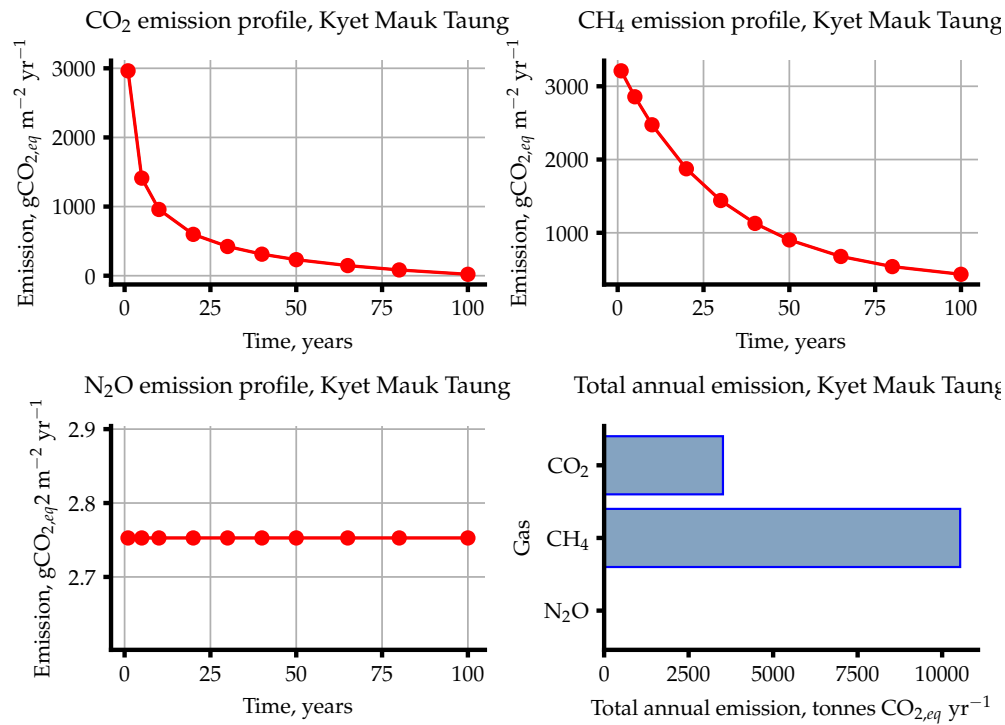
Input Name	Unit	Value(s)
Reservoir ID		9068
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.800523, LON: 95.246303
Monthly Temperatures	$^{\circ}\text{C}$	21.3, 23.6, 27.6, 30.8, 30.0, 28.2, 27.8, 27.5, 27.4, 26.7, 24.2, 21.2
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	143.0
Catchment area	km^2	369.4
Length of inundated river	km	5.208
Population	capita	44 450
Area fractions	-	0.0, 0.0, 0.0, 0.011, 0.0, 0.614, 0.358, 0.017, 0.0
Mean catchment slope	$\%$	7.000
Mean annual precipitation	mm/year	814.0
Mean annual evapotranspiration	mm/year	1410
Soil wetness	mm over profile	30.00
Soil Olsen P content	kgP ha^{-1}	4.737
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	90 170 000
Reservoir area	km^2	8.850
Maximum reservoir depth	m	28.00
Mean reservoir depth	m	10.19
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.59, 0.37, 0.04, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.588
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.170
Water intake depth below surface	m	N/A



63.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1201
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	824.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-20.53
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	376.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	397.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	3516
Total CO ₂ emission per lifetime	ktCO _{2,eq}	351.6
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	268.3
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	319.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	602.3
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1190
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	10 530
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1053
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.753
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.8345
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.794
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	24.36
Total N ₂ O emission per lifetime	ktCO _{2,eq}	2.436
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1588
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1589

63.3 Emission plots



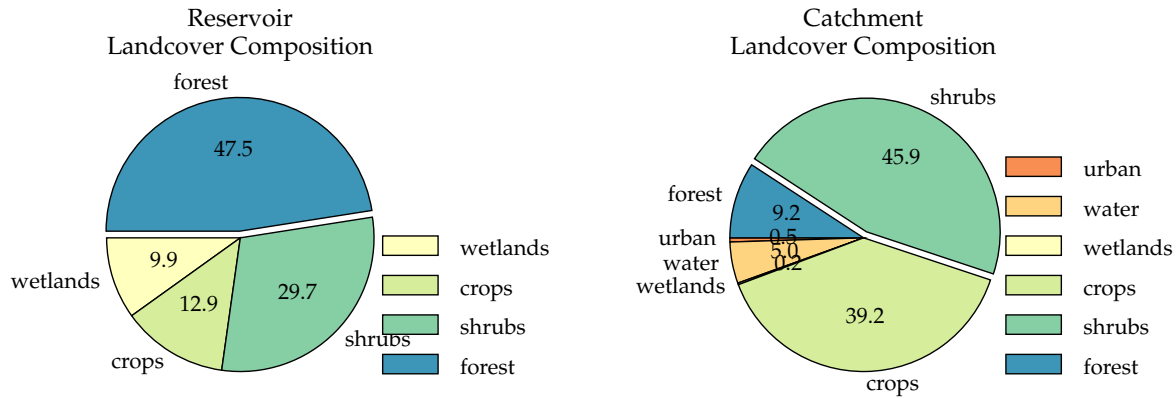
63.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	701.7
Retention coefficient	-	0.5775
Influent total N concentration	$\mu\text{g L}^{-1}$	131.1
Reservoir TN concentration	$\mu\text{g L}^{-1}$	55.43
Reservoir TP concentration	$\mu\text{g L}^{-1}$	302.3
Percentage of reservoir's surface area that is littoral	%	17.97
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.62
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.20
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	1.333
Influent total N load	kgN yr^{-1}	6927
Influent total P load	kgP yr^{-1}	37 070
Downstream TN concentration	mg L^{-1}	0.060 04

64 Moby

64.1 Inputs

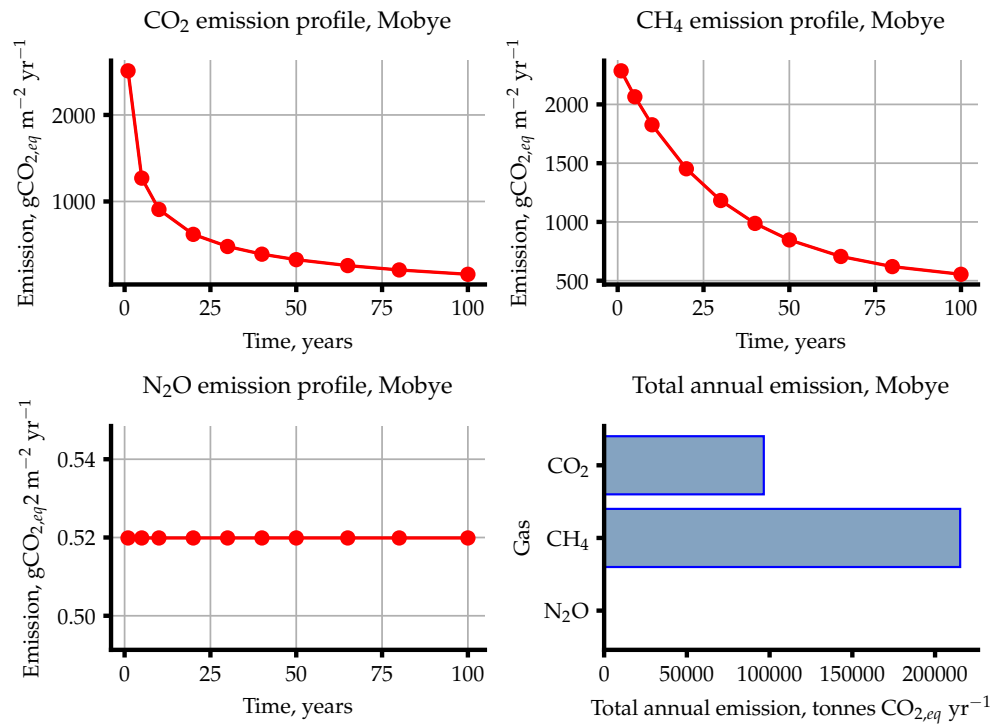
Input Name	Unit	Value(s)
Reservoir ID		9007
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.787765, LON: 97.093779
Monthly Temperatures	$^{\circ}\text{C}$	17.3, 19.0, 22.6, 25.5, 24.9, 23.6, 23.3, 23.1, 23.6, 23.0, 20.9, 18.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	735.0
Catchment area	km^2	5830
Length of inundated river	km	30.05
Population	capita	770 500
Area fractions	-	0.0, 0.0, 0.005, 0.05, 0.002, 0.392, 0.459, 0.092, 0.0
Mean catchment slope	$\%$	12.00
Mean annual precipitation	mm/year	1642
Mean annual evapotranspiration	mm/year	1259
Soil wetness	mm over profile	154.0
Soil Olsen P content	kgP ha^{-1}	7.349
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	894 300 000
Reservoir area	km^2	210.0
Maximum reservoir depth	m	8.000
Mean reservoir depth	m	4.258
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.1, 0.13, 0.3, 0.48, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.929
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.093
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.654
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.340
Mean monthly wind speed	m s^{-1}	1.260
Water intake depth below surface	m	N/A



64.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	959.5
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	658.5
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-158.4
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	301.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	459.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	96 500
Total CO ₂ emission per lifetime	ktCO _{2,eq}	9650
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	219.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	483.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	321.5
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1024
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	215 200
Total CH ₄ emission per lifetime	ktCO _{2,eq}	21 520
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.5199
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.4068
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.4633
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	109.2
Total N ₂ O emission per lifetime	ktCO _{2,eq}	10.92
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1484
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1484

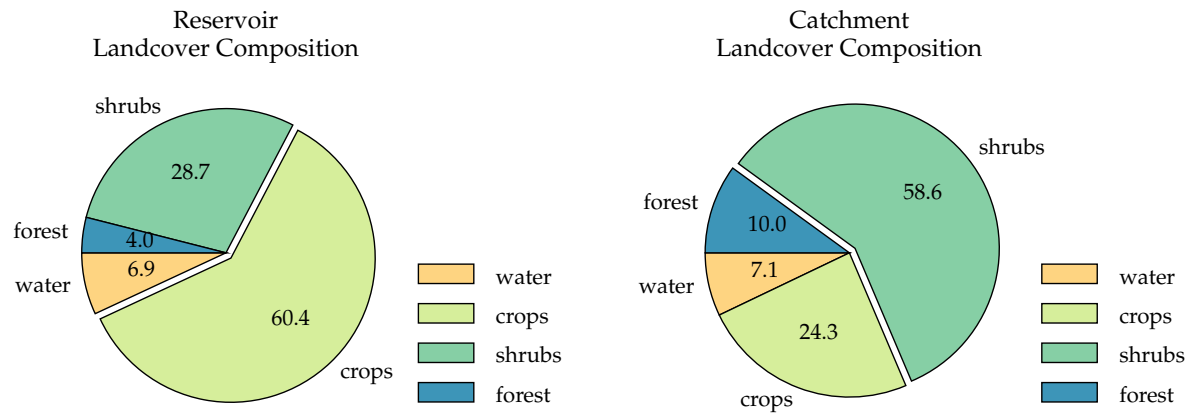
64.3 Emission plots



64.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	143.3
Retention coefficient	-	0.1432
Influent total N concentration	$\mu\text{g L}^{-1}$	50.60
Reservoir TN concentration	$\mu\text{g L}^{-1}$	43.81
Reservoir TP concentration	$\mu\text{g L}^{-1}$	126.8
Percentage of reservoir's surface area that is littoral	%	33.84
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.093
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.12
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	22.06
Water density at the bottom of the reservoir	kg m^{-3}	997.8
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.40
Water density at the surface of the reservoir	kg m^{-3}	997.2
Thermocline depth	m	4.782
Influent total N load	kgN yr^{-1}	216 800
Influent total P load	kgP yr^{-1}	614 300
Downstream TN concentration	mg L^{-1}	0.062 52

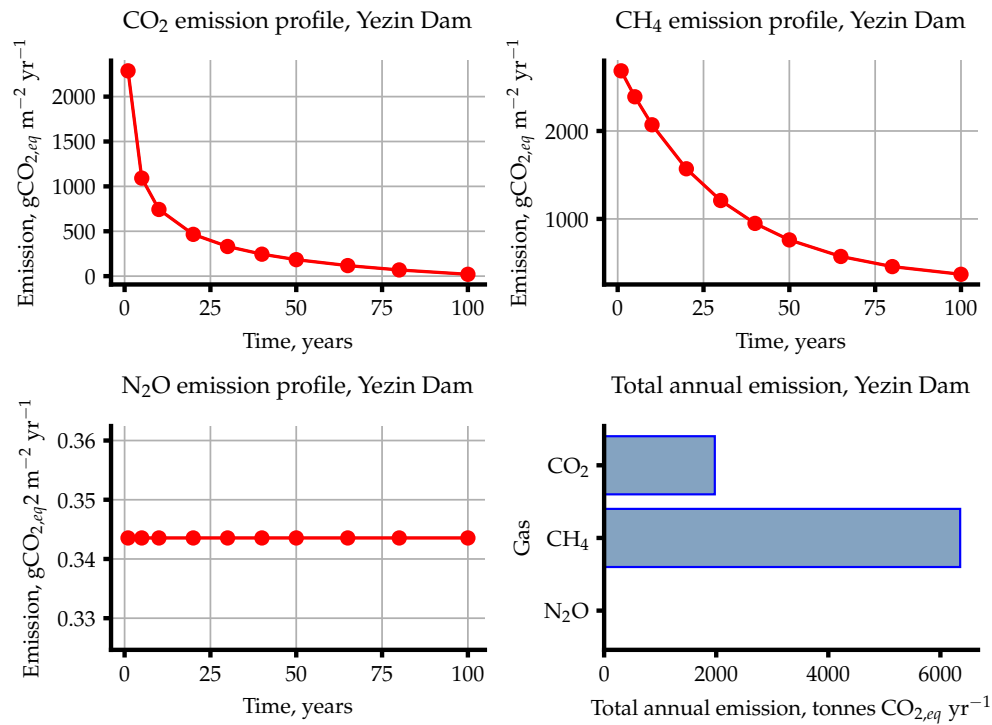
Input Name	Unit	Value(s)
Reservoir ID		9053
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.84917, LON: 96.267763
Monthly Temperatures	$^{\circ}\text{C}$	22.1, 24.6, 28.2, 31.0, 29.9, 27.8, 27.3, 27.2, 27.6, 27.4, 25.4, 22.2
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	283.0
Catchment area	km ²	90.02
Length of inundated river	km	4.606
Population	capita	7187
Area fractions	-	0.0, 0.0, 0.0, 0.071, 0.0, 0.243, 0.586, 0.1, 0.0
Mean catchment slope	%	19.00
Mean annual precipitation	mm/year	1257
Mean annual evapotranspiration	mm/year	1365
Soil wetness	mm over profile	192.0
Soil Olsen P content	kgP ha ⁻¹	7.476
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	62 810 000
Reservoir area	km ²	6.356
Maximum reservoir depth	m	21.00
Mean reservoir depth	m	9.900
Inundated area fractions	-	0.0, 0.0, 0.0, 0.01, 0.0, 0.61, 0.29, 0.04, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.06, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	4.623
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	5.150
Mean monthly horizontal radiance:	kWh m ⁻² d ⁻¹	4.672
May - Sept		
Mean monthly horizontal radiance:	kWh m ⁻² d ⁻¹	5.426
Nov - Mar		
Mean monthly wind speed	m s ⁻¹	1.120
Water intake depth below surface	m	N/A



65.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	925.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	634.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-20.53
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	290.2
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	310.7
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1975
Total CO ₂ emission per lifetime	ktCO _{2,eq}	197.5
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	260.6
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	275.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	463.4
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	999.5
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	6353
Total CH ₄ emission per lifetime	ktCO _{2,eq}	635.3
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.3435
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.083 64
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.2136
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	2.184
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.2184
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1310
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1310

65.3 Emission plots



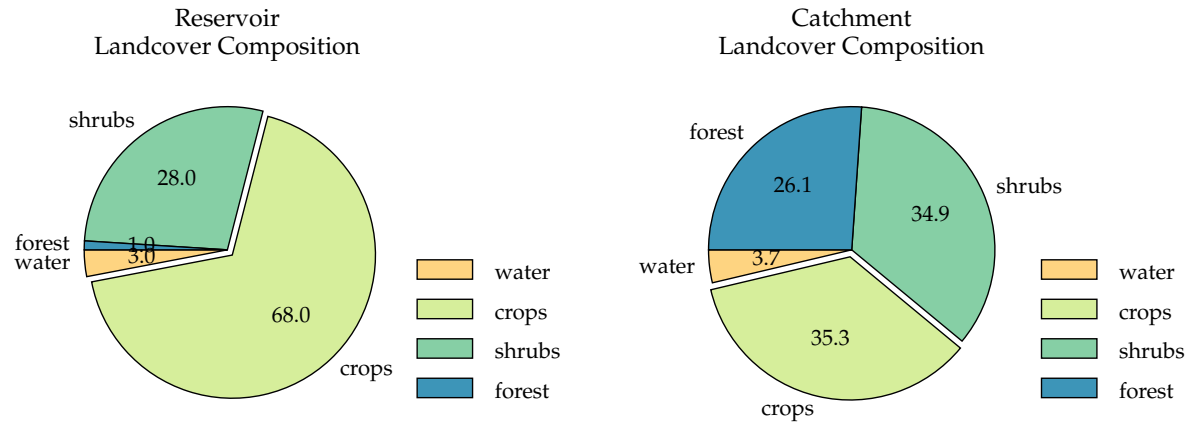
65.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	270.2
Retention coefficient	-	0.6639
Influent total N concentration	$\mu\text{g L}^{-1}$	19.57
Reservoir TN concentration	$\mu\text{g L}^{-1}$	6.386
Reservoir TP concentration	$\mu\text{g L}^{-1}$	95.58
Percentage of reservoir's surface area that is littoral	%	15.87
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.150
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.80
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.21
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.22
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	1.248
Influent total N load	kgN yr^{-1}	498.5
Influent total P load	kgP yr^{-1}	6882
Downstream TN concentration	mg L^{-1}	0.005 252

66 North Nawin dam

66.1 Inputs

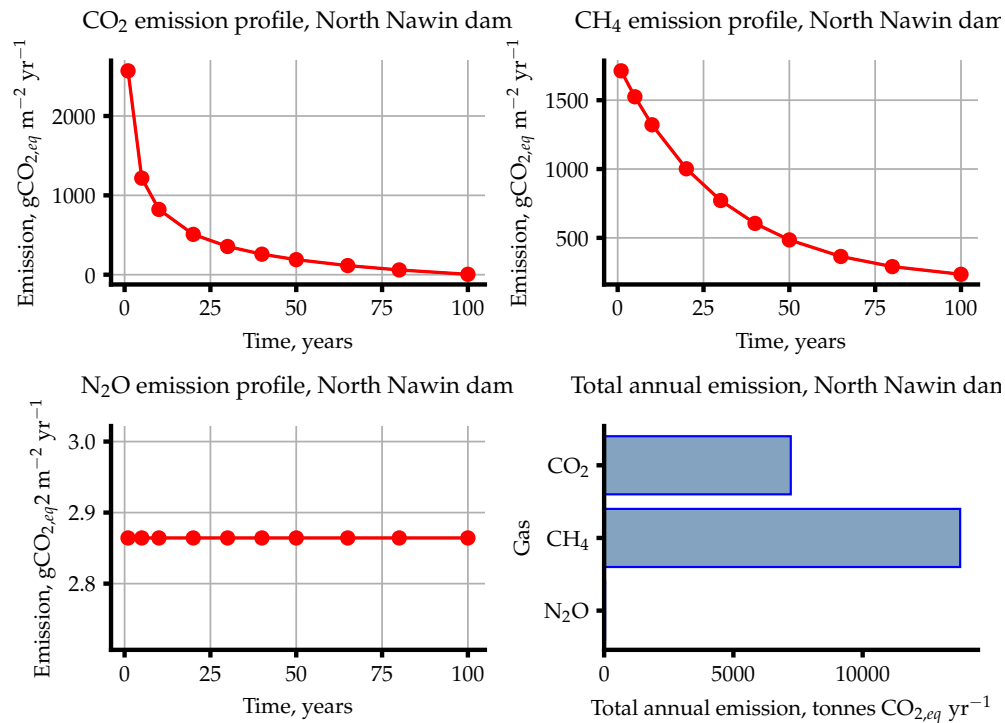
Input Name	Unit	Value(s)
Reservoir ID		9015
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.066578, LON: 95.441897
Monthly Temperatures	$^{\circ}\text{C}$	21.5, 23.9, 27.9, 31.1, 30.3, 27.8, 27.3, 27.2, 27.6, 27.6, 25.5, 22.2
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	89.00
Catchment area	km^2	592.2
Length of inundated river	km	9.137
Population	capita	37 220
Area fractions	-	0.0, 0.0, 0.0, 0.037, 0.0, 0.353, 0.349, 0.261, 0.0
Mean catchment slope	$\%$	7.000
Mean annual precipitation	mm/year	1010
Mean annual evapotranspiration	mm/year	1370
Soil wetness	mm over profile	182.0
Soil Olsen P content	kgP ha^{-1}	3.997
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	358 800 000
Reservoir area	km^2	21.66
Maximum reservoir depth	m	35.00
Mean reservoir depth	m	16.60
Inundated area fractions	-	0.0, 0.0, 0.0, 0.03, 0.0, 0.68, 0.28, 0.01, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.736
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.754
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.358
Mean monthly wind speed	m s^{-1}	0.9400
Water intake depth below surface	m	N/A



66.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1046
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	718.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-5.133
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	328.3
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	333.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	7220
Total CO ₂ emission per lifetime	ktCO _{2,eq}	722.0
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	205.2
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	174.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	256.1
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	635.9
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	13 770
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1377
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.864
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.5887
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.727
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	62.03
Total N ₂ O emission per lifetime	ktCO _{2,eq}	6.203
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	969.3
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	971.0

66.3 Emission plots



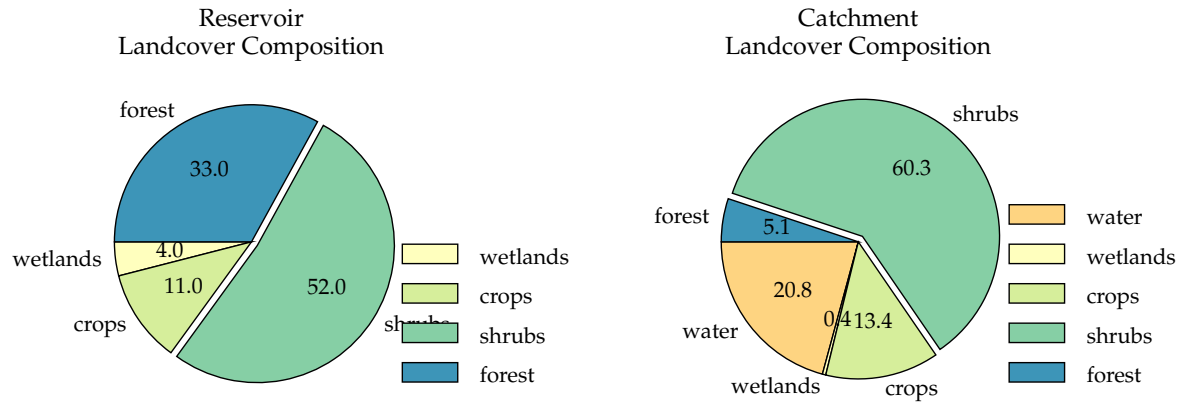
66.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	666.2
Retention coefficient	-	0.8450
Influent total N concentration	$\mu\text{g L}^{-1}$	226.9
Reservoir TN concentration	$\mu\text{g L}^{-1}$	34.70
Reservoir TP concentration	$\mu\text{g L}^{-1}$	106.0
Percentage of reservoir's surface area that is littoral	%	9.456
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.81
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.28
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	1.354
Influent total N load	kgN yr^{-1}	11 960
Influent total P load	kgP yr^{-1}	35 120
Downstream TN concentration	mg L^{-1}	0.033 20

67 Tabuhla

67.1 Inputs

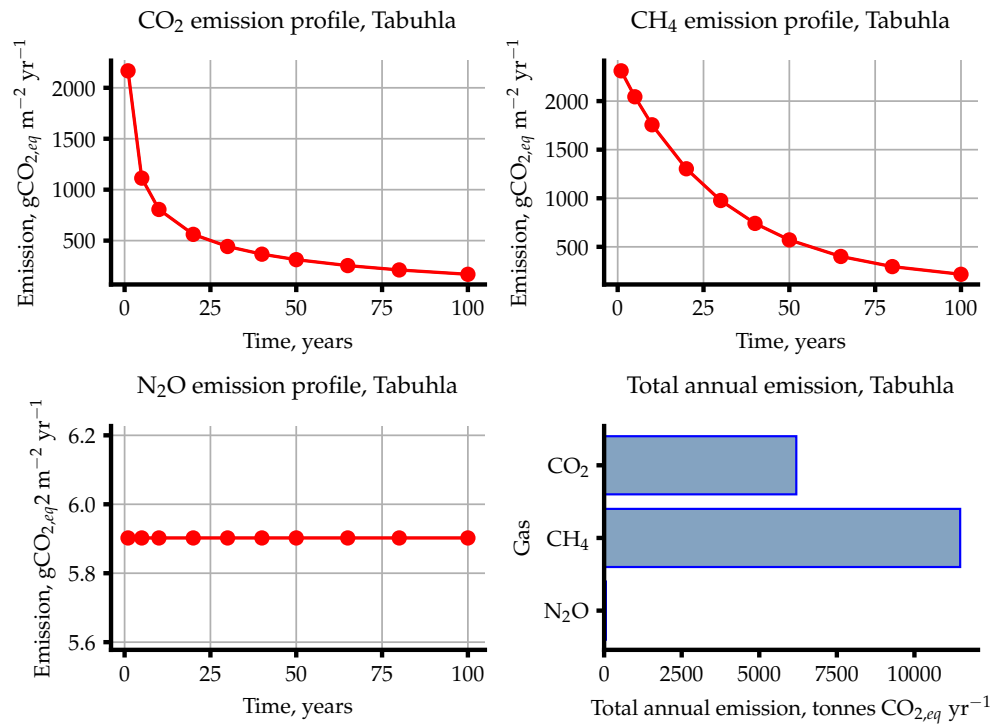
Input Name	Unit	Value(s)
Reservoir ID		9012
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.248467, LON: 96.039583
Monthly Temperatures	$^{\circ}\text{C}$	23.4, 25.0, 27.9, 30.2, 29.3, 27.1, 26.5, 26.6, 27.1, 27.5, 26.4, 23.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1771
Catchment area	km^2	76.04
Length of inundated river	km	5.220
Population	capita	10 510
Area fractions	-	0.0, 0.0, 0.0, 0.208, 0.004, 0.134, 0.604, 0.051, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	2763
Mean annual evapotranspiration	mm/year	1351
Soil wetness	mm over profile	337.0
Soil Olsen P content	kgP ha^{-1}	20.00
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	204 400 000
Reservoir area	km^2	14.57
Maximum reservoir depth	m	28.00
Mean reservoir depth	m	14.03
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.04, 0.11, 0.52, 0.33, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.785
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.970
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.462
Mean monthly wind speed	m s^{-1}	1.010
Water intake depth below surface	m	N/A



67.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	815.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	559.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-169.4
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	255.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	425.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	6193
Total CO ₂ emission per lifetime	ktCO _{2,eq}	619.3
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	213.4
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	131.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	442.7
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	787.5
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	11 470
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1147
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	5.902
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.966
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.934
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	86.00
Total N ₂ O emission per lifetime	ktCO _{2,eq}	8.600
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1213
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1217

67.3 Emission plots



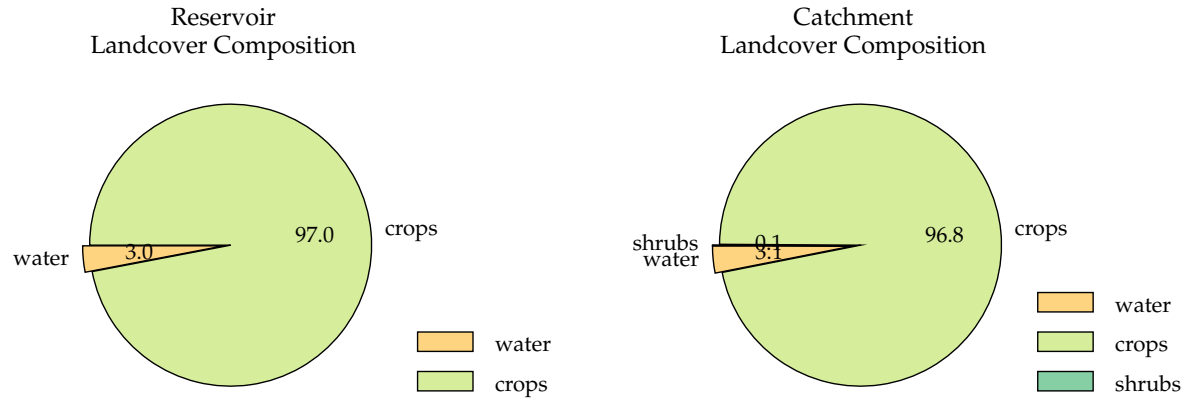
67.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	63.39
Retention coefficient	-	0.5487
Influent total N concentration	$\mu\text{g L}^{-1}$	199.5
Reservoir TN concentration	$\mu\text{g L}^{-1}$	90.60
Reservoir TP concentration	$\mu\text{g L}^{-1}$	34.22
Percentage of reservoir's surface area that is littoral	%	10.67
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.06
Water density at the bottom of the reservoir	kg m^{-3}	996.8
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.73
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.697
Influent total N load	kgN yr^{-1}	26 870
Influent total P load	kgP yr^{-1}	8536
Downstream TN concentration	mg L^{-1}	0.1043

68 Thitsone Dam

68.1 Inputs

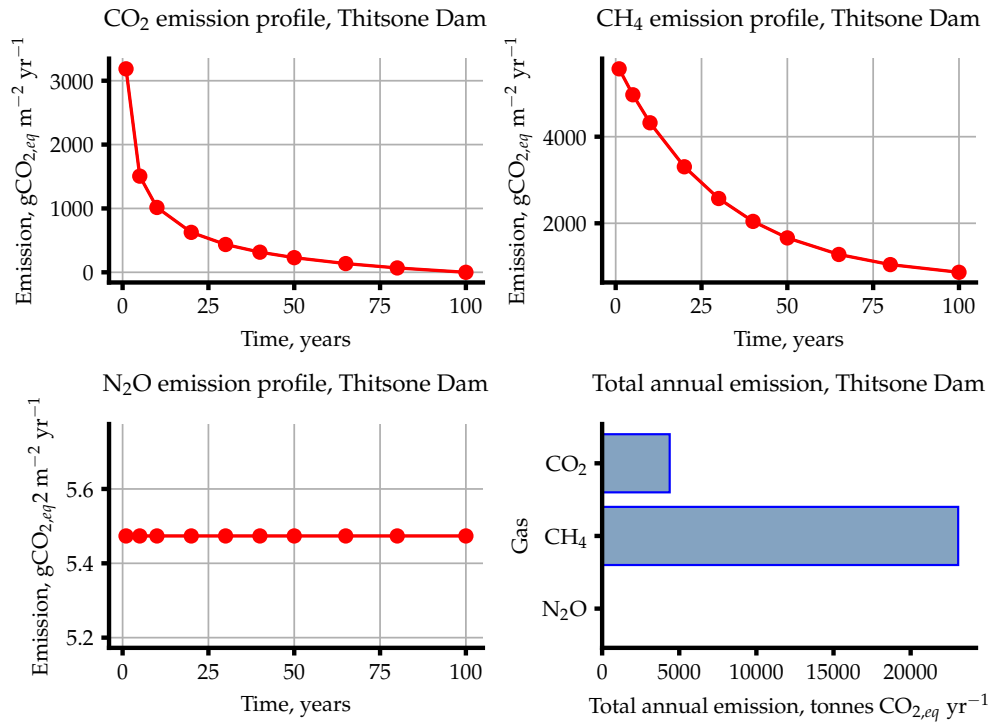
Input Name	Unit	Value(s)
Reservoir ID		9059
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.45311, LON: 95.969313
Monthly Temperatures	$^{\circ}\text{C}$	21.7, 24.1, 28.2, 30.9, 30.0, 28.2, 27.7, 27.4, 27.6, 27.2, 25.0, 21.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	117.0
Catchment area	km^2	318.4
Length of inundated river	km	6.336
Population	capita	36 910
Area fractions	-	0.0, 0.0, 0.0, 0.031, 0.0, 0.968, 0.001, 0.0, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	951.0
Mean annual evapotranspiration	mm/year	1452
Soil wetness	mm over profile	81.00
Soil Olsen P content	kgP ha^{-1}	3.939
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	49 300 000
Reservoir area	km^2	10.74
Maximum reservoir depth	m	24.40
Mean reservoir depth	m	4.591
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.97, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.091
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.190
Water intake depth below surface	m	N/A



68.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1300
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	892.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	407.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	407.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	4380
Total CO ₂ emission per lifetime	ktCO _{2,eq}	438.0
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	411.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	674.8
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1063
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2150
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	23 080
Total CH ₄ emission per lifetime	ktCO _{2,eq}	2308
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	5.474
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.01
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.742
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	58.77
Total N ₂ O emission per lifetime	ktCO _{2,eq}	5.877
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2558
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2561

68.3 Emission plots



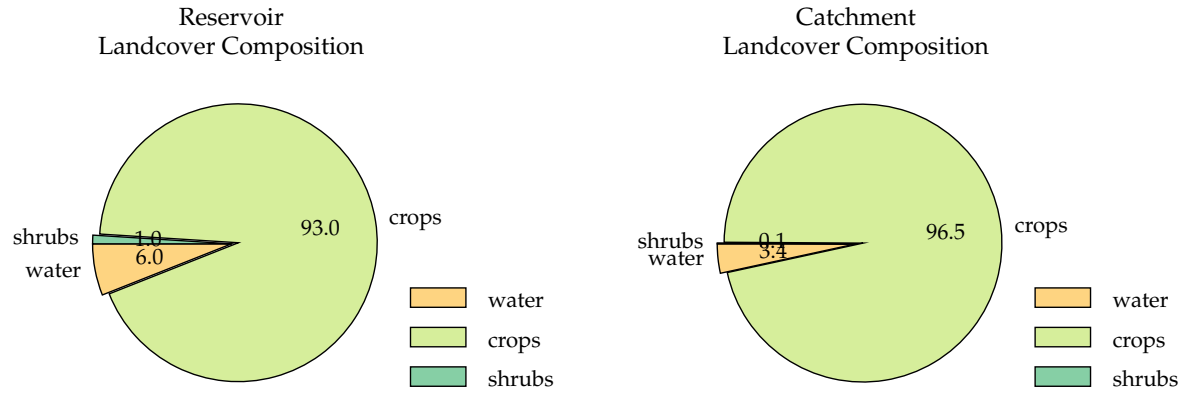
68.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	799.7
Retention coefficient	-	0.5145
Influent total N concentration	$\mu\text{g L}^{-1}$	544.4
Reservoir TN concentration	$\mu\text{g L}^{-1}$	264.3
Reservoir TP concentration	$\mu\text{g L}^{-1}$	399.8
Percentage of reservoir's surface area that is littoral	%	43.22
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.95
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.33
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	1.450
Influent total N load	kgN yr^{-1}	20 280
Influent total P load	kgP yr^{-1}	29 790
Downstream TN concentration	mg L^{-1}	0.3309

69 Unknown7

69.1 Inputs

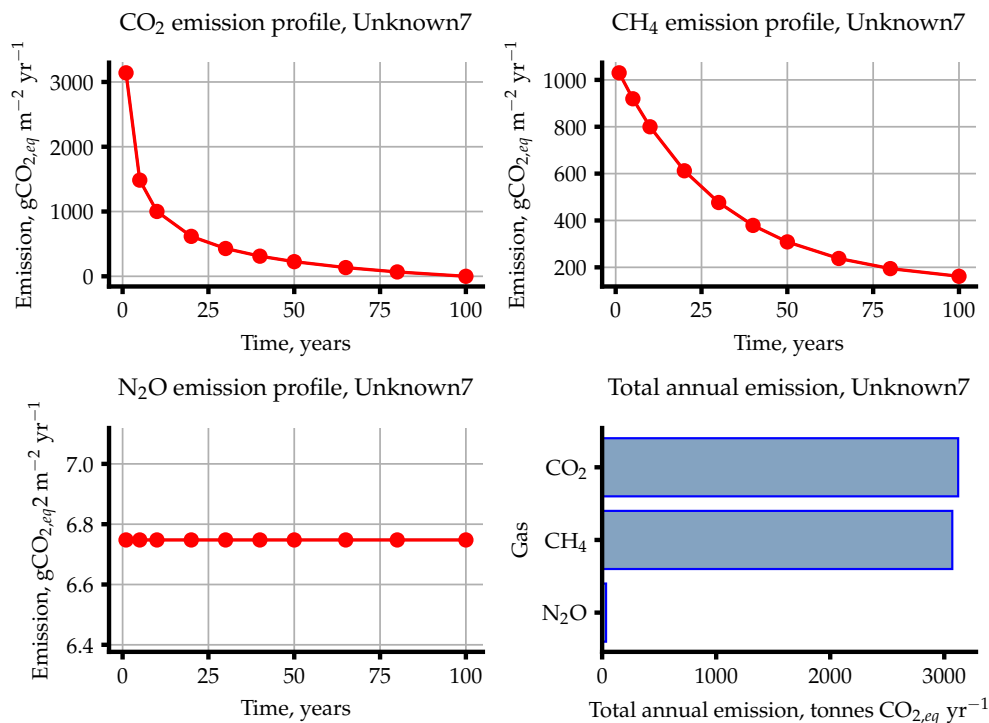
Input Name	Unit	Value(s)
Reservoir ID		9060
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.595072, LON: 95.893261
Monthly Temperatures	$^{\circ}\text{C}$	21.9, 24.2, 28.3, 31.1, 30.2, 28.4, 28.0, 27.7, 27.7, 27.3, 25.1, 21.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	123.0
Catchment area	km ²	247.6
Length of inundated river	km	6.544
Population	capita	34 980
Area fractions	-	0.0, 0.0, 0.0, 0.034, 0.0, 0.965, 0.001, 0.0, 0.0
Mean catchment slope	%	3.000
Mean annual precipitation	mm/year	925.0
Mean annual evapotranspiration	mm/year	1462
Soil wetness	mm over profile	66.00
Soil Olsen P content	kgP ha ⁻¹	3.632
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	49 120 000
Reservoir area	km ²	7.764
Maximum reservoir depth	m	7.000
Mean reservoir depth	m	6.300
Inundated area fractions	-	0.0, 0.0, 0.0, 0.02, 0.0, 0.93, 0.01, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.04, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	4.142
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	5.180
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	5.040
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	5.202
Mean monthly wind speed	m s ⁻¹	1.210
Water intake depth below surface	m	N/A



69.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1282
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	879.6
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	402.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	402.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	3122
Total CO ₂ emission per lifetime	ktCO _{2,eq}	312.2
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	169.9
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	126.1
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	99.45
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	395.5
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	3070
Total CH ₄ emission per lifetime	ktCO _{2,eq}	307.0
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	6.748
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.130
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	4.439
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	52.39
Total N ₂ O emission per lifetime	ktCO _{2,eq}	5.239
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	797.6
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	802.0

69.3 Emission plots



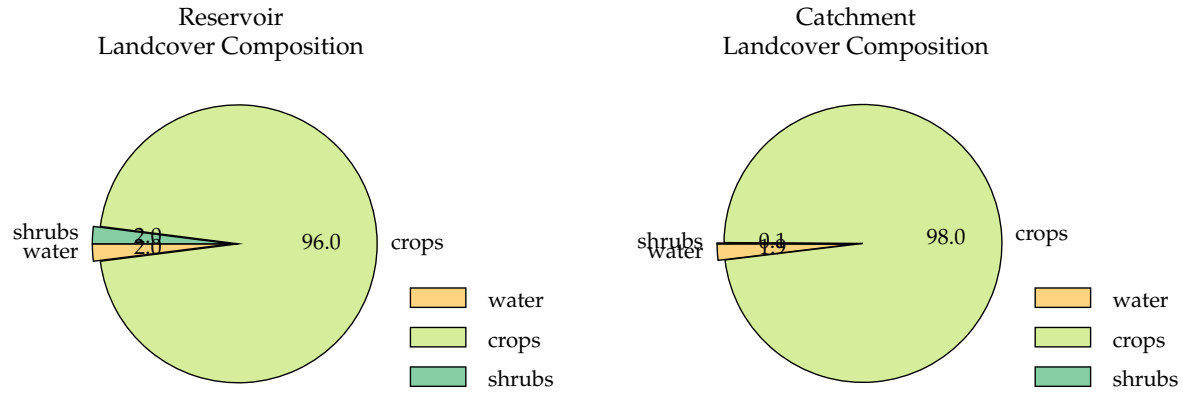
69.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	904.2
Retention coefficient	-	0.5637
Influent total N concentration	$\mu\text{g L}^{-1}$	509.4
Reservoir TN concentration	$\mu\text{g L}^{-1}$	222.5
Reservoir TP concentration	$\mu\text{g L}^{-1}$	405.6
Percentage of reservoir's surface area that is littoral	%	6.029
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.08
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.50
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	1.349
Influent total N load	kgN yr^{-1}	15 510
Influent total P load	kgP yr^{-1}	27 540
Downstream TN concentration	mg L^{-1}	0.2501

70 Mondaing Dam

70.1 Inputs

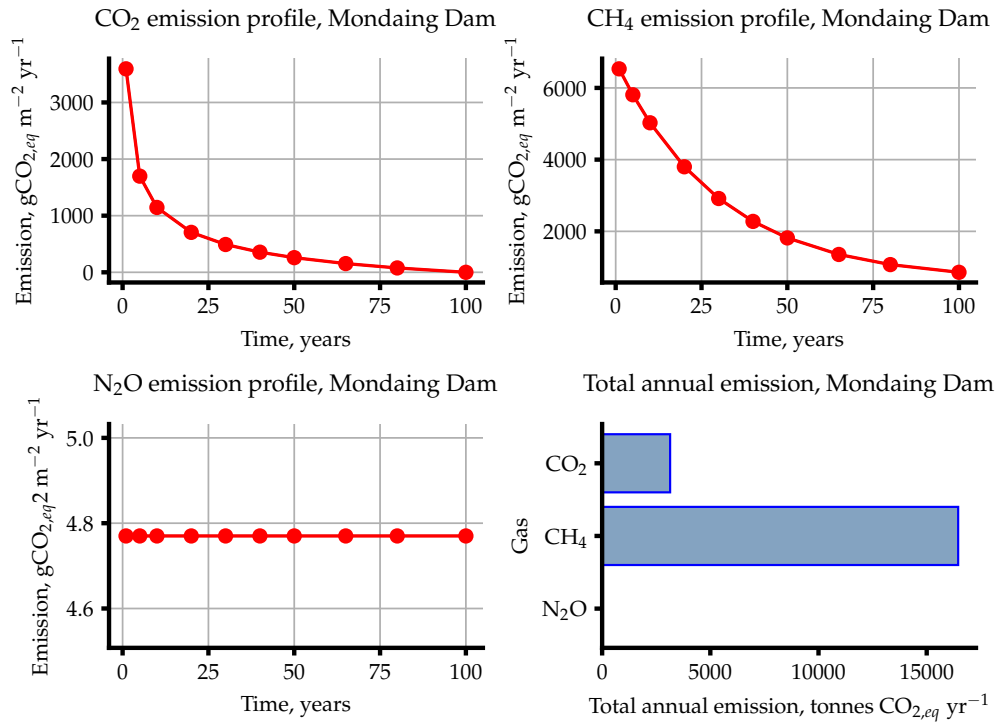
Input Name	Unit	Value(s)
Reservoir ID		9064
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.810769, LON: 95.721141
Monthly Temperatures	$^{\circ}\text{C}$	21.6, 23.9, 28.1, 31.1, 30.1, 28.4, 28.0, 27.7, 27.6, 27.0, 24.6, 21.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	141.0
Catchment area	km^2	394.5
Length of inundated river	km	5.621
Population	capita	89 310
Area fractions	-	0.0, 0.0, 0.0, 0.019, 0.0, 0.981, 0.001, 0.0, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	874.0
Mean annual evapotranspiration	mm/year	1456
Soil wetness	mm over profile	42.00
Soil Olsen P content	kgP ha^{-1}	4.666
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	33 360 000
Reservoir area	km^2	6.830
Maximum reservoir depth	m	20.00
Mean reservoir depth	m	4.884
Inundated area fractions	-	0.0, 0.0, 0.0, 0.02, 0.0, 0.96, 0.02, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.280
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.220
Water intake depth below surface	m	N/A



70.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1467
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1006
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	460.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	460.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	3142
Total CO ₂ emission per lifetime	ktCO _{2,eq}	314.2
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	396.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	625.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1387
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2409
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	16 450
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1645
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	4.770
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.983
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.877
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	32.58
Total N ₂ O emission per lifetime	ktCO _{2,eq}	3.258
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2869
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2873

70.3 Emission plots



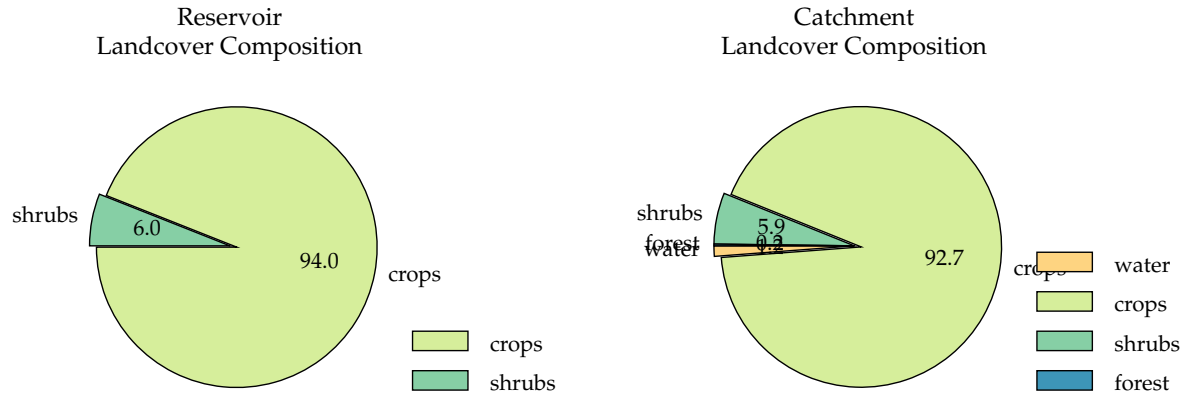
70.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1174
Retention coefficient	-	0.3245
Influent total N concentration	$\mu\text{g L}^{-1}$	412.3
Reservoir TN concentration	$\mu\text{g L}^{-1}$	278.6
Reservoir TP concentration	$\mu\text{g L}^{-1}$	805.9
Percentage of reservoir's surface area that is littoral	%	39.53
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.75
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.42
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	1.285
Influent total N load	kgN yr^{-1}	22 930
Influent total P load	kgP yr^{-1}	65 310
Downstream TN concentration	mg L^{-1}	0.4082

71 Unknown13

71.1 Inputs

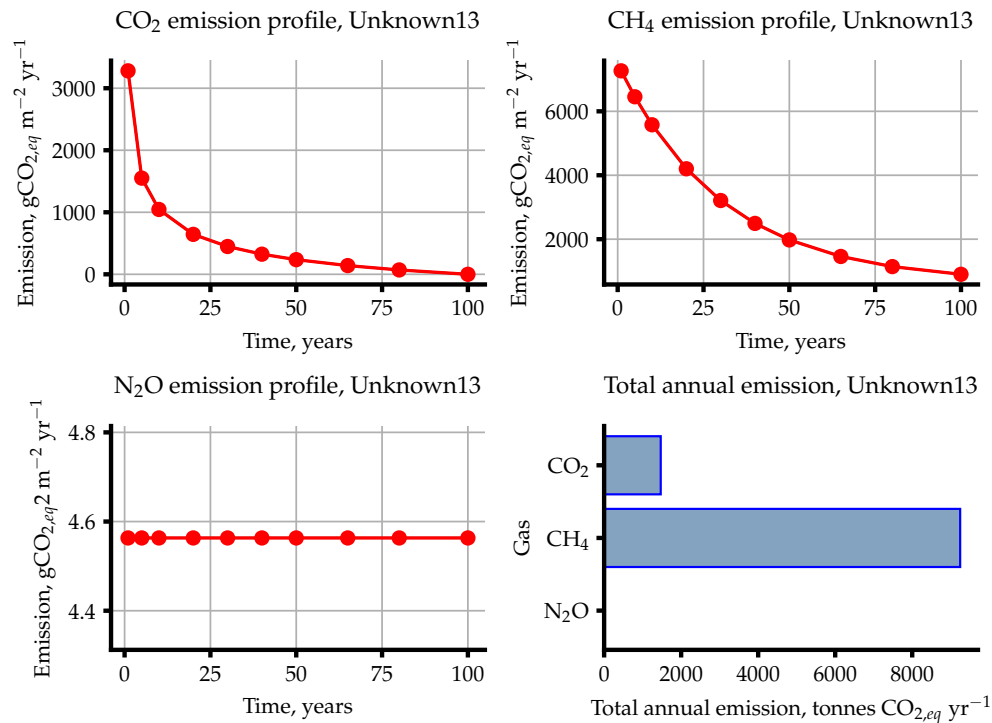
Input Name	Unit	Value(s)
Reservoir ID		9077
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.373258, LON: 95.799073
Monthly Temperatures	$^{\circ}\text{C}$	21.5, 24.1, 28.3, 31.5, 30.6, 29.3, 29.0, 28.6, 28.2, 27.5, 24.9, 21.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	135.0
Catchment area	km^2	153.5
Length of inundated river	km	0.1860
Population	capita	19 700
Area fractions	-	0.0, 0.0, 0.0, 0.012, 0.0, 0.927, 0.059, 0.002, 0.0
Mean catchment slope	$\%$	2.000
Mean annual precipitation	mm/year	881.0
Mean annual evapotranspiration	mm/year	1460
Soil wetness	mm over profile	46.00
Soil Olsen P content	kgP ha^{-1}	5.704
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	14 270 000
Reservoir area	km^2	3.500
Maximum reservoir depth	m	15.00
Mean reservoir depth	m	4.076
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.94, 0.06, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.039
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.220
Water intake depth below surface	m	N/A



71.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1339
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	918.6
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	419.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	419.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1470
Total CO ₂ emission per lifetime	ktCO _{2,eq}	147.0
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	446.4
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	640.9
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1554
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2642
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	9246
Total CH ₄ emission per lifetime	ktCO _{2,eq}	924.6
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	4.563
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.666
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.615
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	15.97
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.597
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3062
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3065

71.3 Emission plots



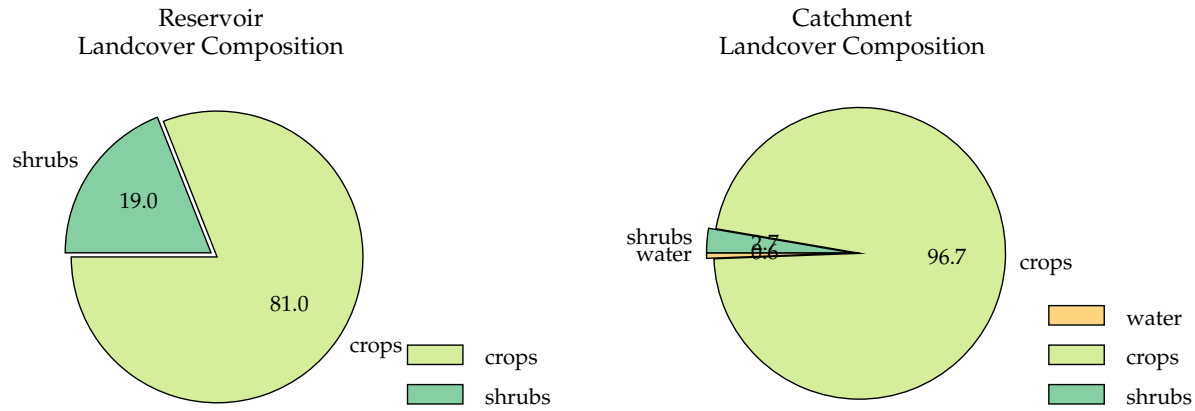
71.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	783.1
Retention coefficient	-	0.3554
Influent total N concentration	$\mu\text{g L}^{-1}$	475.9
Reservoir TN concentration	$\mu\text{g L}^{-1}$	306.6
Reservoir TP concentration	$\mu\text{g L}^{-1}$	514.6
Percentage of reservoir's surface area that is littoral	%	45.01
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.81
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.10
Water density at the surface of the reservoir	kg m^{-3}	995.6
Thermocline depth	m	1.016
Influent total N load	kgN yr^{-1}	9861
Influent total P load	kgP yr^{-1}	16 230
Downstream TN concentration	mg L^{-1}	0.4460

72 Ta Zoe Dam

72.1 Inputs

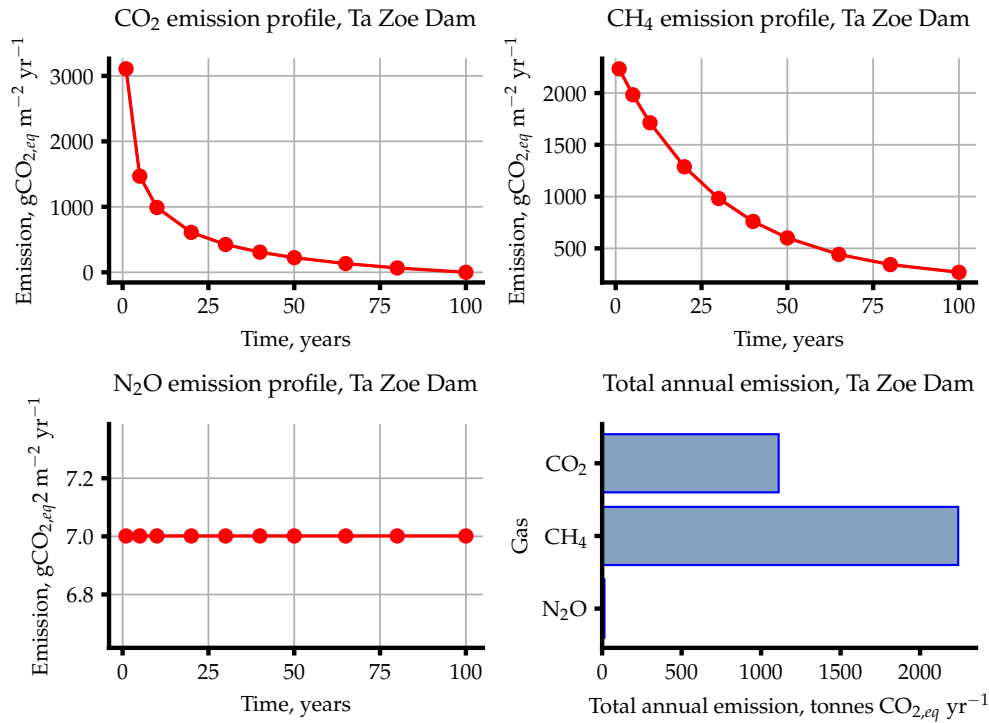
Input Name	Unit	Value(s)
Reservoir ID		9078
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.386123, LON: 95.518839
Monthly Temperatures	$^{\circ}\text{C}$	21.3, 24.1, 28.4, 31.9, 30.9, 29.5, 29.1, 28.7, 28.4, 27.5, 24.7, 21.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	140.0
Catchment area	km^2	164.4
Length of inundated river	km	2.108
Population	capita	22 160
Area fractions	-	0.0, 0.0, 0.0, 0.006, 0.0, 0.967, 0.027, 0.0, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	850.0
Mean annual evapotranspiration	mm/year	1466
Soil wetness	mm over profile	36.00
Soil Olsen P content	kgP ha^{-1}	6.498
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	21 210 000
Reservoir area	km^2	2.791
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	7.600
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.81, 0.19, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.136
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.190
Water intake depth below surface	m	N/A



72.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1268
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	870.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	397.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	397.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1110
Total CO ₂ emission per lifetime	ktCO _{2,eq}	111.0
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	233.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	187.9
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	381.2
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	802.5
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	2240
Total CH ₄ emission per lifetime	ktCO _{2,eq}	224.0
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	7.001
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	3.399
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	5.200
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	19.54
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.954
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1200
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1206

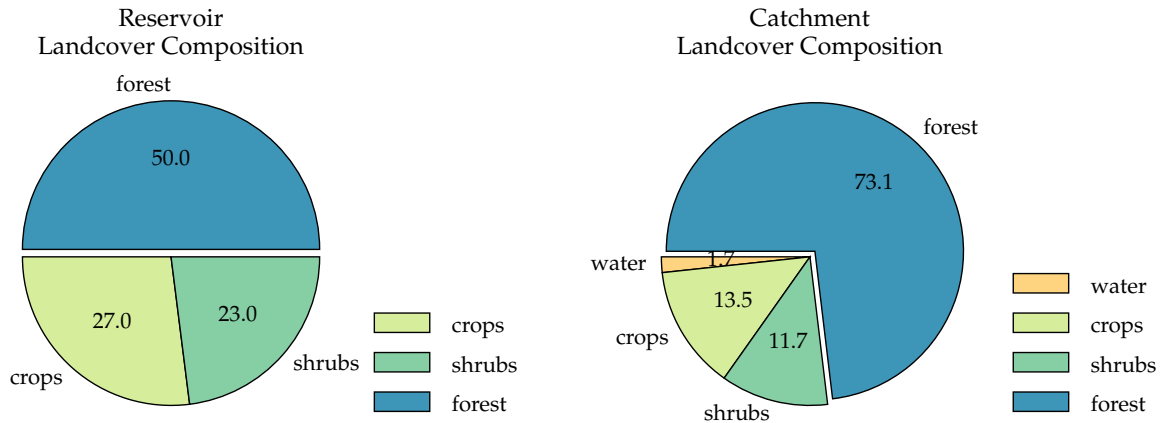
72.3 Emission plots



72.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	782.0
Retention coefficient	-	0.4248
Influent total N concentration	$\mu\text{g L}^{-1}$	400.1
Reservoir TN concentration	$\mu\text{g L}^{-1}$	230.8
Reservoir TP concentration	$\mu\text{g L}^{-1}$	456.4
Percentage of reservoir's surface area that is littoral	%	10.65
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.68
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.35
Water density at the surface of the reservoir	kg m^{-3}	995.6
Thermocline depth	m	0.9029
Influent total N load	kgN yr^{-1}	9207
Influent total P load	kgP yr^{-1}	17990
Downstream TN concentration	mg L^{-1}	0.3223

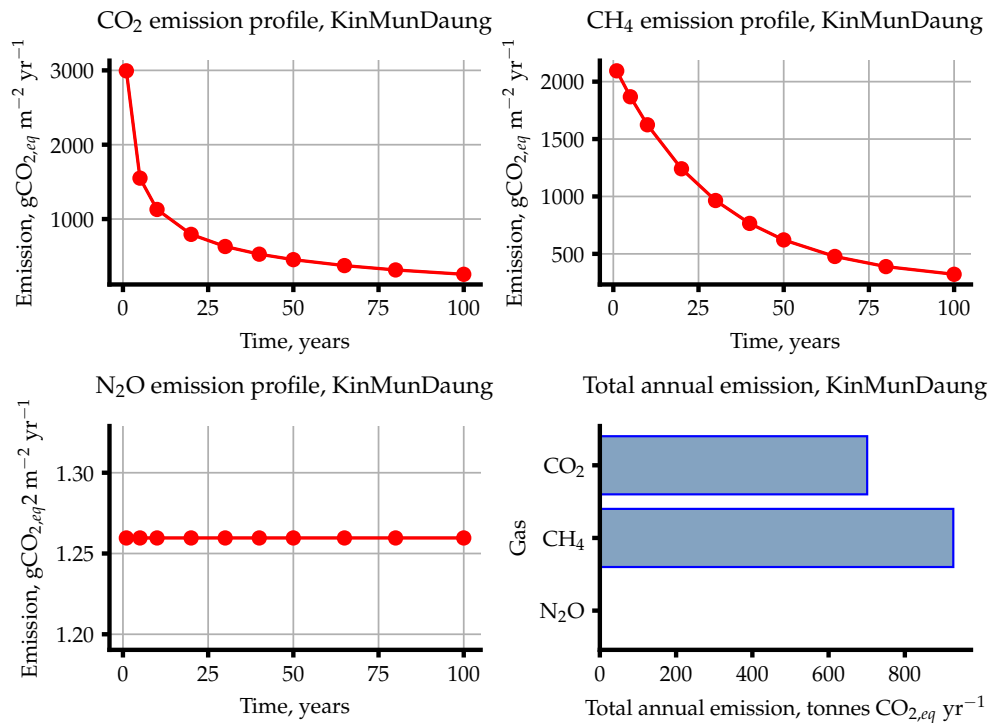
Input Name	Unit	Value(s)
Reservoir ID		9114
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	°	LAT: 19.90866, LON: 95.693093
Monthly Temperatures	°C	21.1, 23.6, 27.7, 30.9, 29.9, 27.6, 27.1, 26.9, 27.2, 26.8, 24.6, 21.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	86.00
Catchment area	km ²	68.01
Length of inundated river	km	1.757
Population	capita	7843
Area fractions	-	0.0, 0.0, 0.0, 0.017, 0.0, 0.135, 0.117, 0.731, 0.0
Mean catchment slope	%	9.000
Mean annual precipitation	mm/year	911.0
Mean annual evapotranspiration	mm/year	1388
Soil wetness	mm over profile	95.00
Soil Olsen P content	kgP ha ⁻¹	3.068
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	8 050 000
Reservoir area	km ²	1.155
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	6.970
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.27, 0.23, 0.5, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	4.534
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	5.140
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	4.754
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	5.358
Mean monthly wind speed	m s ⁻¹	1.080
Water intake depth below surface	m	N/A



73.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1117
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	766.5
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-256.7
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	350.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	607.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	701.2
Total CO ₂ emission per lifetime	ktCO _{2,eq}	70.12
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	238.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	249.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	315.3
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	802.7
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	927.1
Total CH ₄ emission per lifetime	ktCO _{2,eq}	92.71
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.260
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.4483
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.8539
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.455
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1455
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1410
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1411

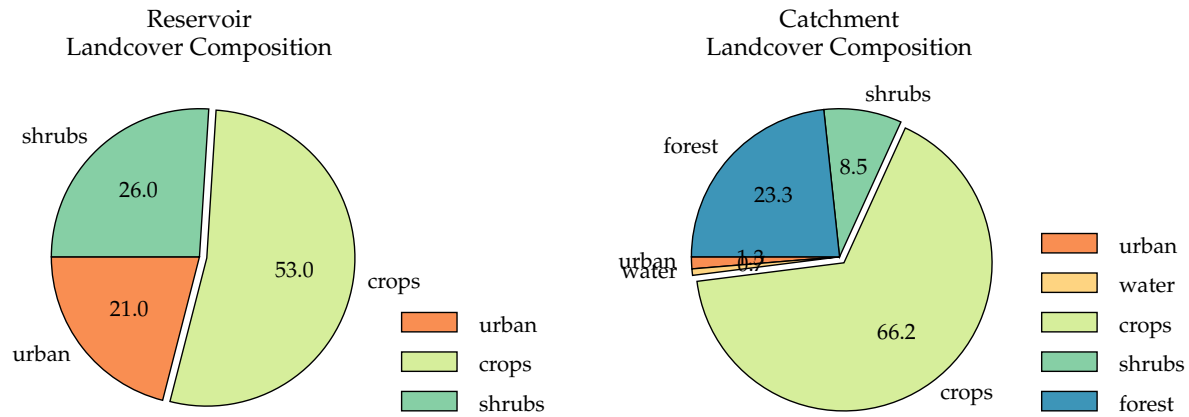
73.3 Emission plots



73.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1045
Retention coefficient	-	0.5244
Influent total N concentration	$\mu\text{g L}^{-1}$	83.15
Reservoir TN concentration	$\mu\text{g L}^{-1}$	39.45
Reservoir TP concentration	$\mu\text{g L}^{-1}$	504.1
Percentage of reservoir's surface area that is littoral	%	14.36
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.55
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.03
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	0.7503
Influent total N load	kgN yr^{-1}	486.3
Influent total P load	kgP yr^{-1}	6114
Downstream TN concentration	mg L^{-1}	0.048 63

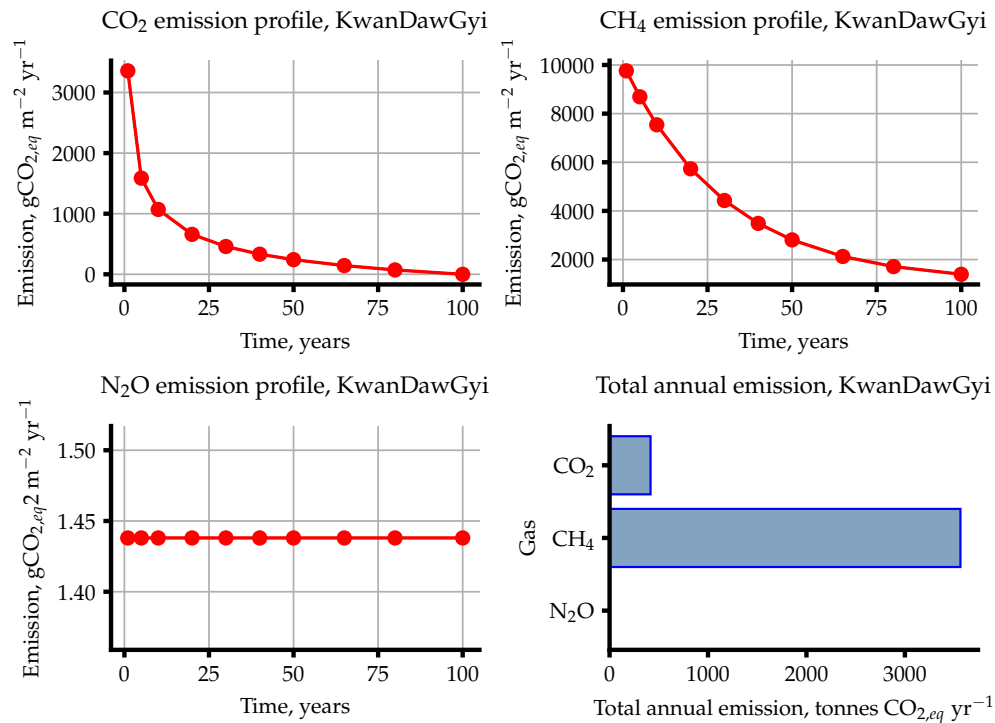
Input Name	Unit	Value(s)
Reservoir ID		9115
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.016414, LON: 95.551903
Monthly Temperatures	$^{\circ}\text{C}$	21.7, 24.1, 28.2, 31.5, 30.7, 28.5, 27.9, 27.8, 27.9, 27.6, 25.3, 22.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	78.00
Catchment area	km ²	101.3
Length of inundated river	km	1.120
Population	capita	11 840
Area fractions	-	0.0, 0.0, 0.013, 0.007, 0.0, 0.662, 0.085, 0.233, 0.0
Mean catchment slope	%	4.000
Mean annual precipitation	mm/year	873.0
Mean annual evapotranspiration	mm/year	1434
Soil wetness	mm over profile	72.00
Soil Olsen P content	kgP ha ⁻¹	4.057
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	2 000 000
Reservoir area	km ²	0.9680
Maximum reservoir depth	m	4.000
Mean reservoir depth	m	2.066
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.53, 0.26, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.21, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	4.142
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	5.180
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	5.040
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	5.202
Mean monthly wind speed	m s ⁻¹	1.100
Water intake depth below surface	m	N/A



74.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1370
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	940.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	429.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	429.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	416.1
Total CO ₂ emission per lifetime	ktCO _{2,eq}	41.61
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	542.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	1050
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	2089
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	3682
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	3564
Total CH ₄ emission per lifetime	ktCO _{2,eq}	356.4
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.438
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.107
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.272
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.392
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1392
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	4112
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	4113

74.3 Emission plots



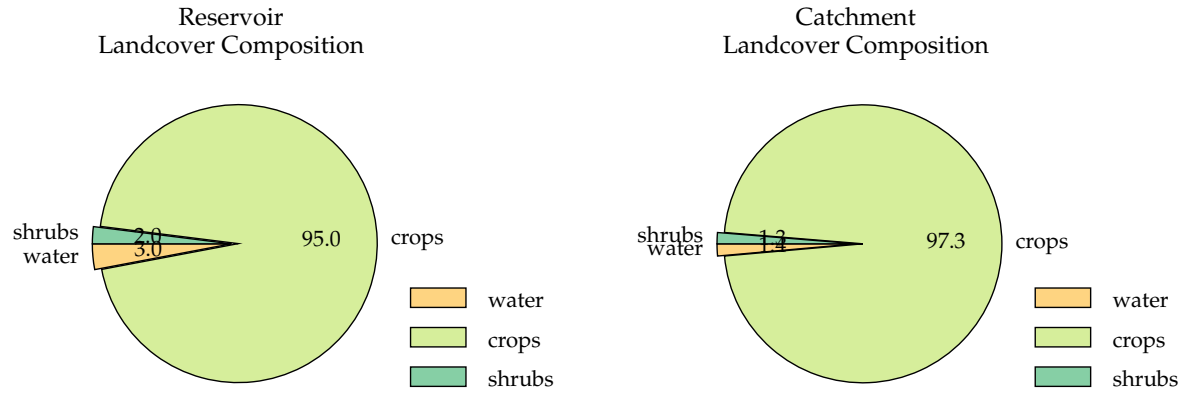
74.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1298
Retention coefficient	-	0.1686
Influent total N concentration	$\mu\text{g L}^{-1}$	288.8
Reservoir TN concentration	$\mu\text{g L}^{-1}$	240.4
Reservoir TP concentration	$\mu\text{g L}^{-1}$	1081
Percentage of reservoir's surface area that is littoral	%	72.68
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.95
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.73
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	0.7002
Influent total N load	kgN yr^{-1}	2281
Influent total P load	kgP yr^{-1}	10 250
Downstream TN concentration	mg L^{-1}	0.3485

75 Koebin

75.1 Inputs

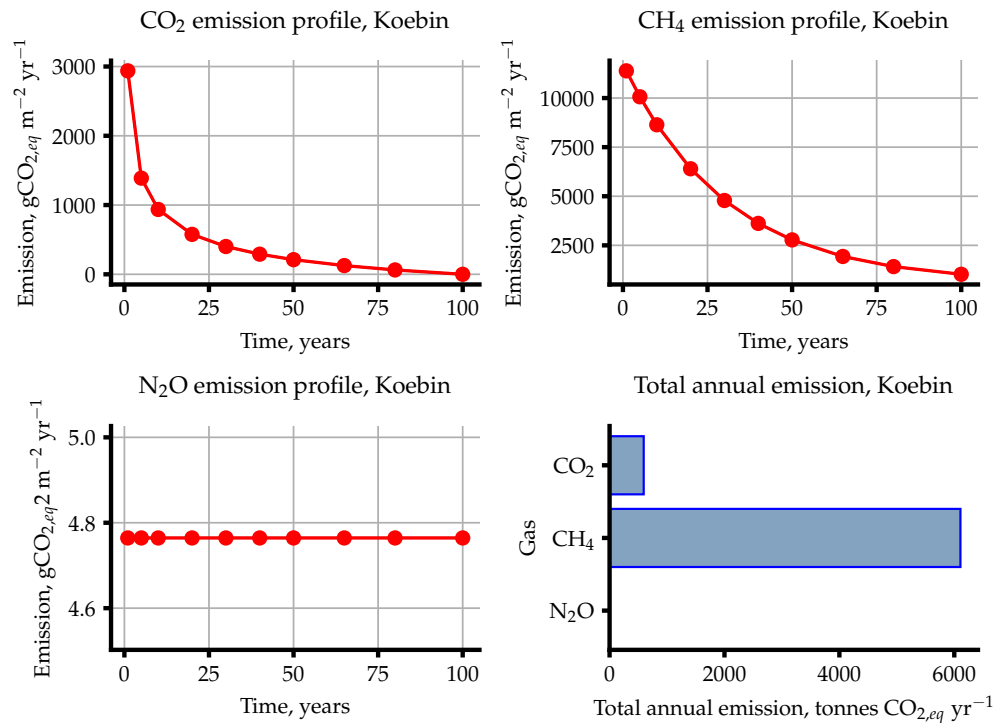
Input Name	Unit	Value(s)
Reservoir ID		9116
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.667117, LON: 95.707628
Monthly Temperatures	$^{\circ}\text{C}$	20.2, 23.6, 27.4, 31.3, 30.4, 29.6, 29.2, 28.5, 28.5, 27.3, 24.7, 21.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	198.0
Catchment area	km^2	145.9
Length of inundated river	km	3.198
Population	capita	21 650
Area fractions	-	0.0, 0.0, 0.0, 0.014, 0.0, 0.973, 0.013, 0.0, 0.0
Mean catchment slope	$\%$	2.000
Mean annual precipitation	mm/year	1071
Mean annual evapotranspiration	mm/year	1399
Soil wetness	mm over profile	113.0
Soil Olsen P content	kgP ha^{-1}	4.806
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	4 345 000
Reservoir area	km^2	1.580
Maximum reservoir depth	m	11.00
Mean reservoir depth	m	2.750
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.96, 0.02, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.03, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.495
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.890
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.728
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.924
Mean monthly wind speed	m s^{-1}	1.140
Water intake depth below surface	m	N/A



75.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1199
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	822.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	376.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	376.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	594.2
Total CO ₂ emission per lifetime	ktCO _{2,eq}	59.42
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	504.6
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	601.1
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	2760
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	3865
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	6107
Total CH ₄ emission per lifetime	ktCO _{2,eq}	610.7
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	4.764
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	3.794
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	4.279
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	7.528
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.7528
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	4241
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	4246

75.3 Emission plots

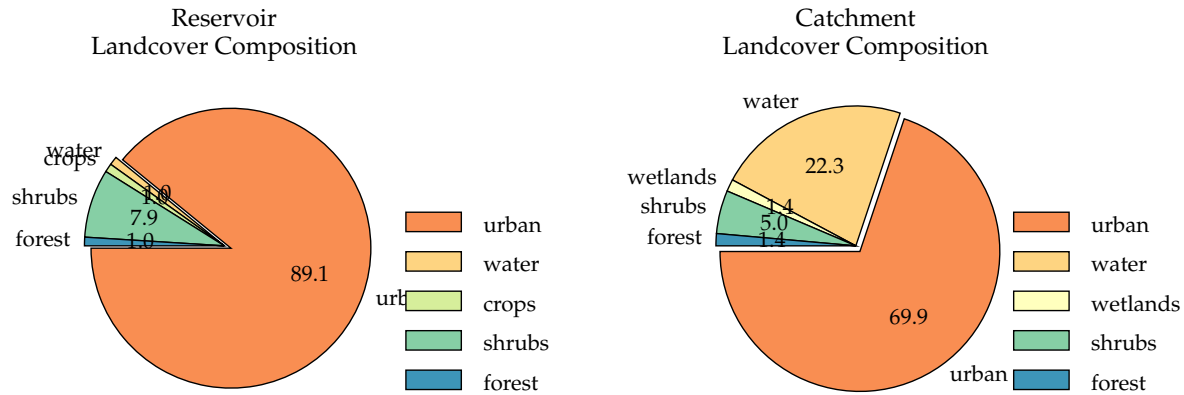


75.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	599.2
Retention coefficient	-	0.1075
Influent total N concentration	$\mu\text{g L}^{-1}$	717.5
Reservoir TN concentration	$\mu\text{g L}^{-1}$	640.5
Reservoir TP concentration	$\mu\text{g L}^{-1}$	539.8
Percentage of reservoir's surface area that is littoral	%	61.53
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.890
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.96
Water density at the bottom of the reservoir	kg m^{-3}	997.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.13
Water density at the surface of the reservoir	kg m^{-3}	995.6
Thermocline depth	m	0.7254
Influent total N load	kgN yr^{-1}	20 730
Influent total P load	kgP yr^{-1}	17 310
Downstream TN concentration	mg L^{-1}	0.9131

76.1 Inputs

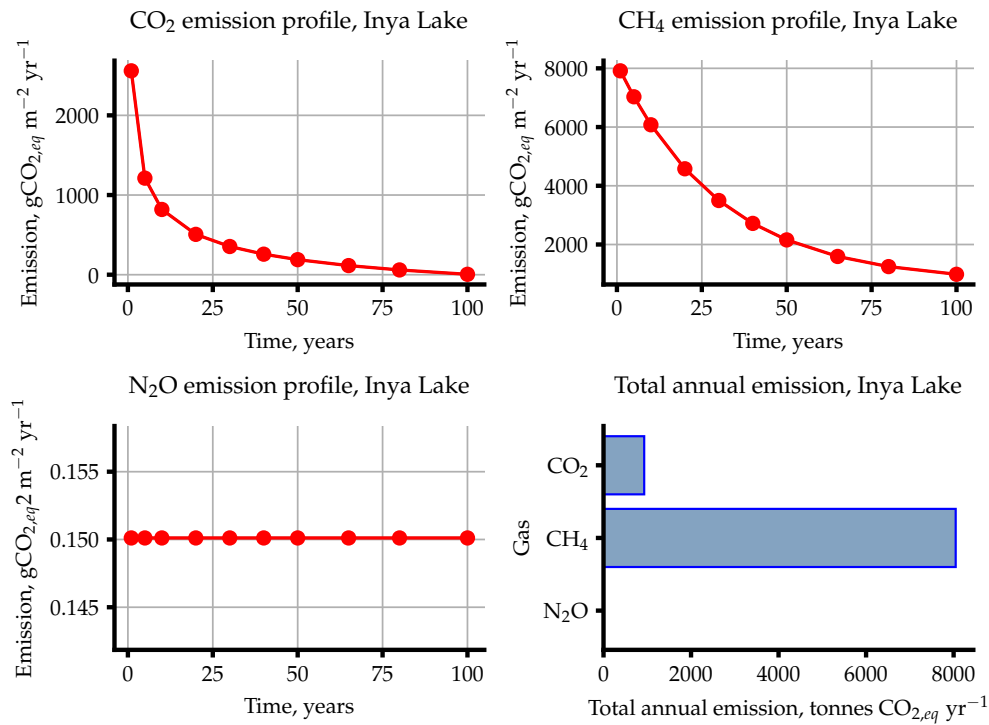
Input Name	Unit	Value(s)
Reservoir ID		9118
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 16.838837, LON: 96.134925
Monthly Temperatures	$^{\circ}\text{C}$	25.0, 26.4, 28.7, 30.5, 29.5, 27.6, 27.0, 27.0, 27.4, 28.0, 27.4, 25.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1827
Catchment area	km ²	12.53
Length of inundated river	km	0.7640
Population	capita	1376
Area fractions	-	0.0, 0.0, 0.698, 0.223, 0.014, 0.0, 0.05, 0.014, 0.0
Mean catchment slope	%	2.000
Mean annual precipitation	mm/year	2782
Mean annual evapotranspiration	mm/year	1451
Soil wetness	mm over profile	207.0
Soil Olsen P content	kgP ha ⁻¹	3.651
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	1 514 000
Reservoir area	km ²	2.800
Maximum reservoir depth	m	7.000
Mean reservoir depth	m	0.5408
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.06, 0.01, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.9, 0.01, 0.0, 0.01, 0.02, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	5.836
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	4.710
Mean monthly horizontal radiance:	kWh m ⁻² d ⁻¹	3.754
May - Sept		
Mean monthly horizontal radiance:	kWh m ⁻² d ⁻¹	5.362
Nov - Mar		
Mean monthly wind speed	m s ⁻¹	1.890
Water intake depth below surface	m	N/A



76.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1042
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	715.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-5.133
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	326.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	332.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	929.7
Total CO ₂ emission per lifetime	ktCO _{2,eq}	92.97
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	642.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	701.1
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1531
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2874
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	8048
Total CH ₄ emission per lifetime	ktCO _{2,eq}	804.8
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.1501
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.1274
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.1388
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.4203
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.042 03
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3206
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3206

76.3 Emission plots



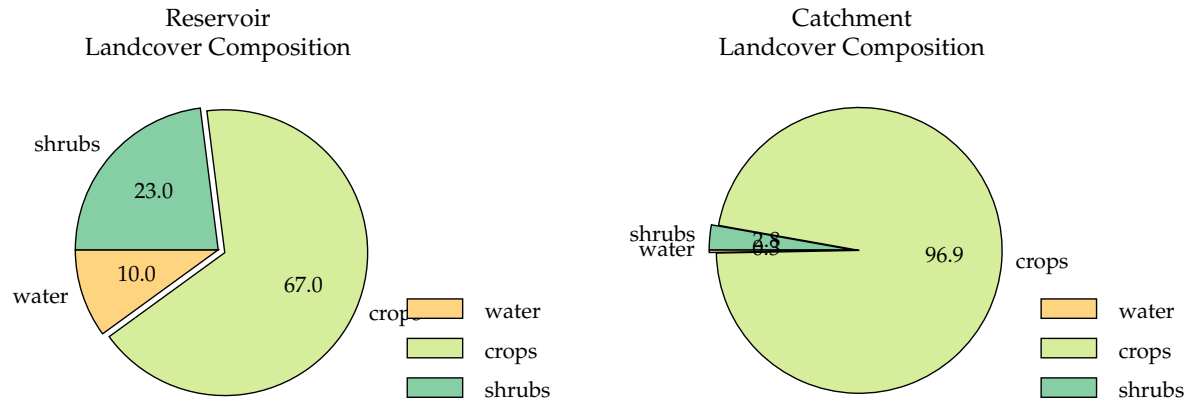
76.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	145.4
Retention coefficient	-	0.05031
Influent total N concentration	$\mu\text{g L}^{-1}$	120.6
Reservoir TN concentration	$\mu\text{g L}^{-1}$	114.2
Reservoir TP concentration	$\mu\text{g L}^{-1}$	140.5
Percentage of reservoir's surface area that is littoral	%	99.87
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.710
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	56.52
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	27.11
Water density at the bottom of the reservoir	kg m^{-3}	996.5
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.18
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	2.359
Influent total N load	kgN yr^{-1}	2761
Influent total P load	kgP yr^{-1}	3330
Downstream TN concentration	mg L^{-1}	0.1524

77 Unknown35

77.1 Inputs

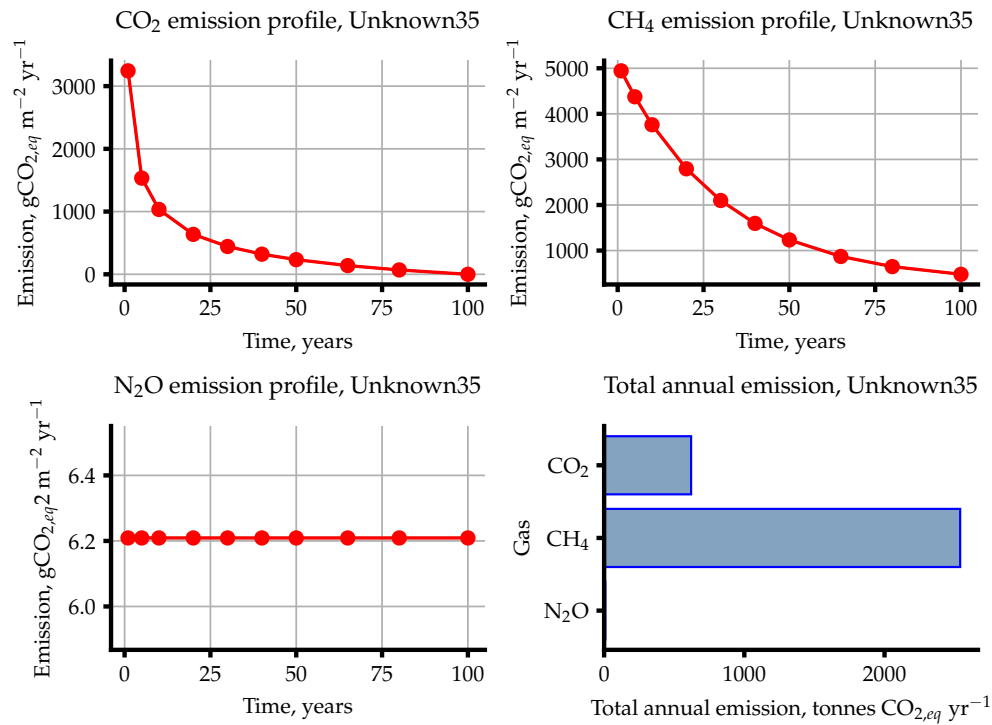
Input Name	Unit	Value(s)
Reservoir ID		9120
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.506008, LON: 95.534417
Monthly Temperatures	$^{\circ}\text{C}$	21.4, 24.2, 28.5, 32.0, 31.1, 29.7, 29.4, 28.9, 28.6, 27.7, 24.9, 21.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	134.0
Catchment area	km ²	238.5
Length of inundated river	km	1.975
Population	capita	36 730
Area fractions	-	0.0, 0.0, 0.0, 0.003, 0.0, 0.968, 0.028, 0.0, 0.0
Mean catchment slope	%	3.000
Mean annual precipitation	mm/year	852.0
Mean annual evapotranspiration	mm/year	1461
Soil wetness	mm over profile	37.00
Soil Olsen P content	kgP ha ⁻¹	5.663
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	9 586 000
Reservoir area	km ²	1.494
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	6.400
Inundated area fractions	-	0.0, 0.0, 0.0, 0.1, 0.0, 0.67, 0.23, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	4.035
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	5.120
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	5.018
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	5.112
Mean monthly wind speed	m s ⁻¹	1.210
Water intake depth below surface	m	N/A



77.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1324
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	908.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	415.3
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	415.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	620.4
Total CO ₂ emission per lifetime	ktCO _{2,eq}	62.04
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	304.3
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	296.1
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1099
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1700
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	2540
Total CH ₄ emission per lifetime	ktCO _{2,eq}	254.0
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	6.209
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	4.685
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	5.447
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	9.276
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.9276
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2115
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2121

77.3 Emission plots



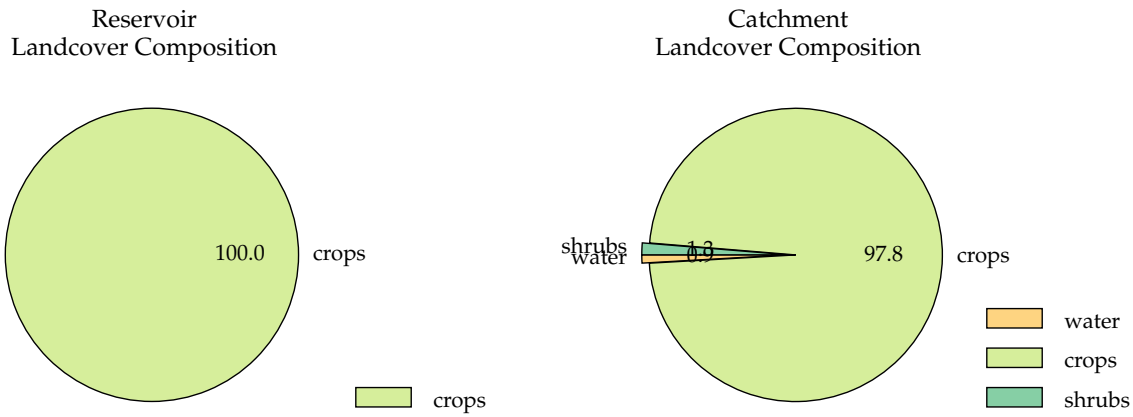
77.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	899.0
Retention coefficient	-	0.1937
Influent total N concentration	$\mu\text{g L}^{-1}$	402.2
Reservoir TN concentration	$\mu\text{g L}^{-1}$	324.9
Reservoir TP concentration	$\mu\text{g L}^{-1}$	728.8
Percentage of reservoir's surface area that is littoral	%	18.18
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.75
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.55
Water density at the surface of the reservoir	kg m^{-3}	995.5
Thermocline depth	m	0.7743
Influent total N load	kgN yr^{-1}	12 850
Influent total P load	kgP yr^{-1}	28 730
Downstream TN concentration	mg L^{-1}	0.4733

78 Unknown38

78.1 Inputs

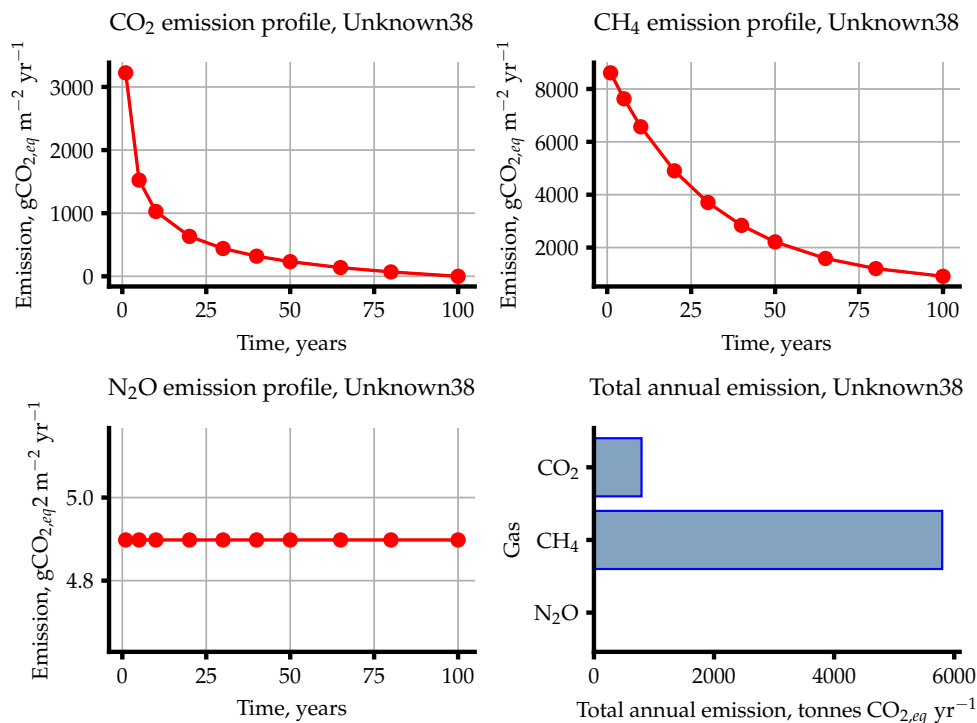
Input Name	Unit	Value(s)
Reservoir ID		9122
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.468022, LON: 95.867177
Monthly Temperatures	$^{\circ}\text{C}$	21.5, 24.1, 28.3, 31.5, 30.6, 29.4, 29.1, 28.6, 28.3, 27.6, 24.9, 21.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	129.0
Catchment area	km^2	217.3
Length of inundated river	km	2.154
Population	capita	27 490
Area fractions	-	0.0, 0.0, 0.0, 0.009, 0.0, 0.977, 0.013, 0.0, 0.0
Mean catchment slope	$\%$	2.000
Mean annual precipitation	mm/year	878.0
Mean annual evapotranspiration	mm/year	1454
Soil wetness	mm over profile	48.00
Soil Olsen P content	kgP ha^{-1}	5.271
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	7 680 000
Reservoir area	km^2	1.920
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	4.000
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.282
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.200
Water intake depth below surface	m	N/A



78.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1316
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	902.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	412.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	412.7
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	792.4
Total CO ₂ emission per lifetime	ktCO _{2,eq}	79.24
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	431.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	597.2
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1992
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	3021
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	5800
Total CH ₄ emission per lifetime	ktCO _{2,eq}	580.0
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	4.898
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	3.739
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	4.318
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	9.404
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.9404
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3433
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3438

78.3 Emission plots



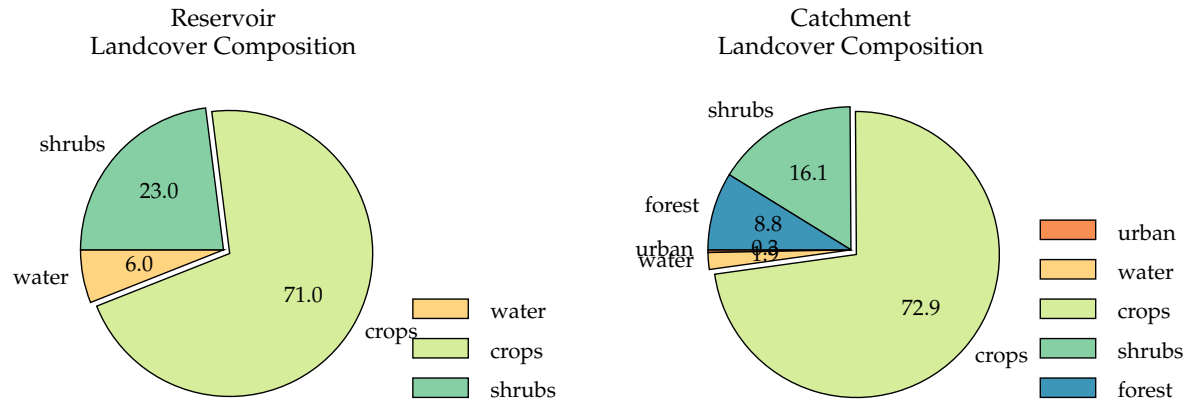
78.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	795.1
Retention coefficient	-	0.1800
Influent total N concentration	$\mu\text{g L}^{-1}$	508.5
Reservoir TN concentration	$\mu\text{g L}^{-1}$	416.9
Reservoir TP concentration	$\mu\text{g L}^{-1}$	656.9
Percentage of reservoir's surface area that is littoral	%	41.43
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.81
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.15
Water density at the surface of the reservoir	kg m^{-3}	995.6
Thermocline depth	m	0.8553
Influent total N load	kgN yr^{-1}	14 250
Influent total P load	kgP yr^{-1}	22 290
Downstream TN concentration	mg L^{-1}	0.6068

79 Unknown39

79.1 Inputs

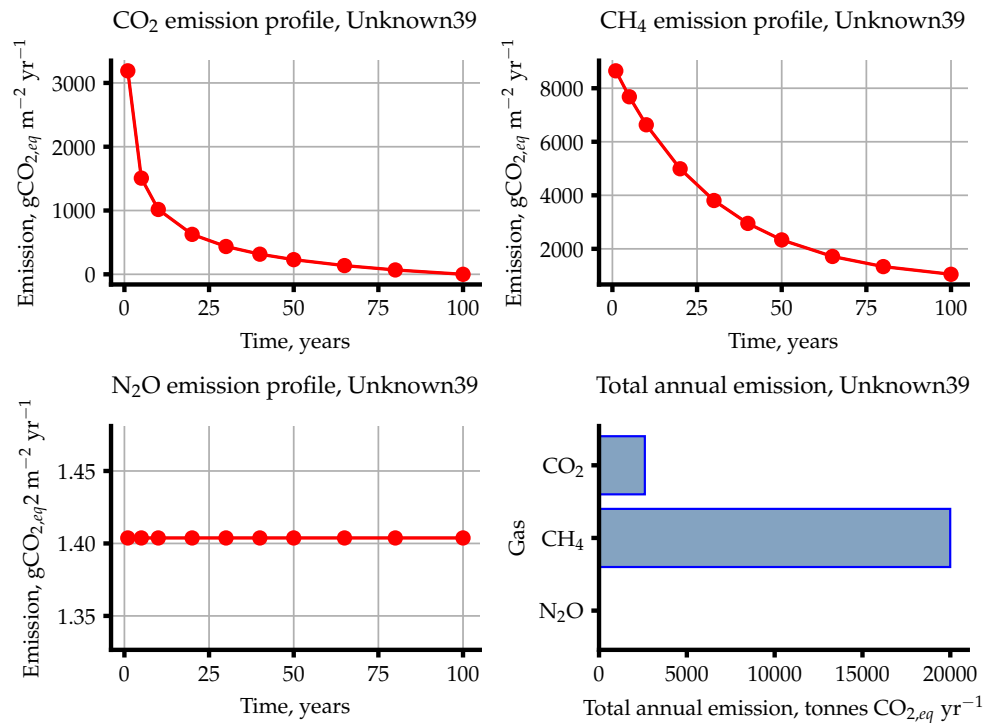
Input Name	Unit	Value(s)
Reservoir ID		9123
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.577118, LON: 96.177811
Monthly Temperatures	$^{\circ}\text{C}$	21.7, 24.0, 28.1, 30.9, 29.9, 28.3, 27.8, 27.5, 27.8, 27.3, 25.1, 21.8
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	170.0
Catchment area	km^2	677.7
Length of inundated river	km	3.266
Population	capita	76 500
Area fractions	-	0.0, 0.0, 0.003, 0.019, 0.0, 0.729, 0.161, 0.088, 0.0
Mean catchment slope	$\%$	7.000
Mean annual precipitation	mm/year	1052
Mean annual evapotranspiration	mm/year	1430
Soil wetness	mm over profile	99.00
Soil Olsen P content	kgP ha^{-1}	3.694
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	17 890 000
Reservoir area	km^2	6.389
Maximum reservoir depth	m	5.000
Mean reservoir depth	m	2.800
Inundated area fractions	-	0.0, 0.0, 0.0, 0.06, 0.0, 0.71, 0.23, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.066
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.874
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.244
Mean monthly wind speed	m s^{-1}	1.170
Water intake depth below surface	m	N/A



79.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1302
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	893.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	408.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	408.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2609
Total CO ₂ emission per lifetime	ktCO _{2,eq}	260.9
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	447.4
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	737.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1945
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	3130
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	20 000
Total CH ₄ emission per lifetime	ktCO _{2,eq}	2000
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.404
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.116
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.260
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	8.969
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.8969
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3538
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3539

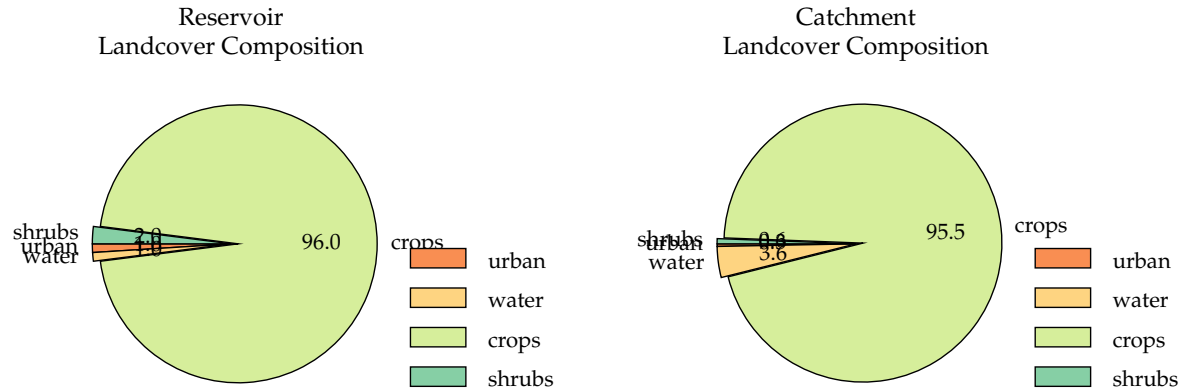
79.3 Emission plots



79.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	539.0
Retention coefficient	-	0.1106
Influent total N concentration	$\mu\text{g L}^{-1}$	207.5
Reservoir TN concentration	$\mu\text{g L}^{-1}$	184.6
Reservoir TP concentration	$\mu\text{g L}^{-1}$	483.2
Percentage of reservoir's surface area that is littoral	%	51.32
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.95
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.30
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	1.256
Influent total N load	kgN yr^{-1}	23 910
Influent total P load	kgP yr^{-1}	62 100
Downstream TN concentration	mg L^{-1}	0.2636

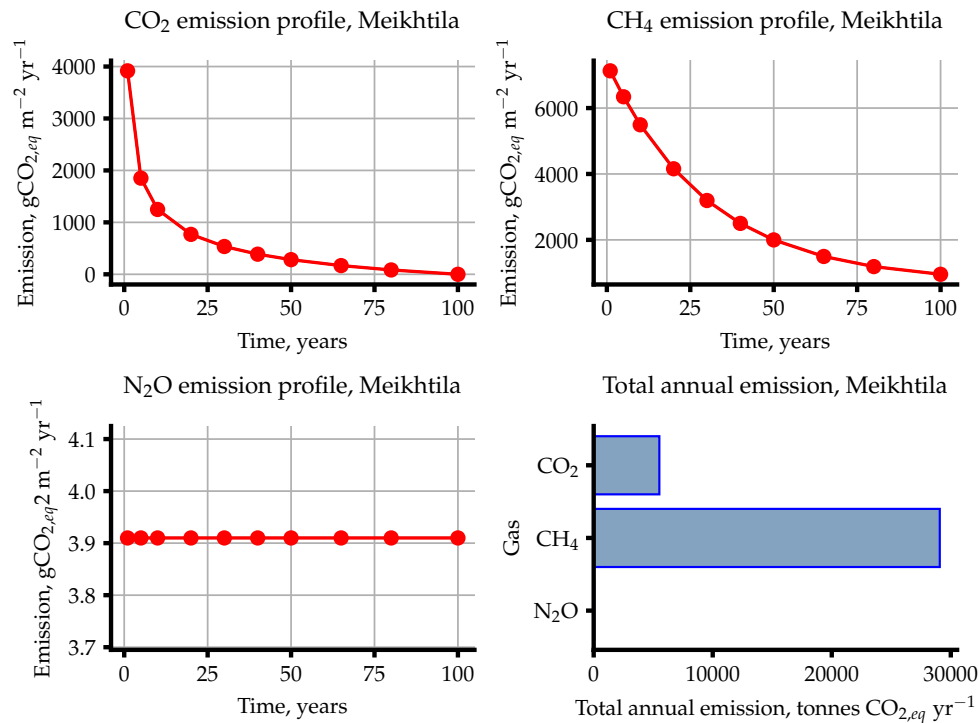
Input Name	Unit	Value(s)
Reservoir ID		9171
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.890007, LON: 95.860822
Monthly Temperatures	$^{\circ}\text{C}$	21.8, 24.0, 28.2, 31.2, 30.3, 28.6, 28.2, 27.9, 27.8, 27.2, 24.9, 21.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	133.0
Catchment area	km ²	611.5
Length of inundated river	km	5.391
Population	capita	135 900
Area fractions	-	0.0, 0.0, 0.003, 0.036, 0.0, 0.955, 0.006, 0.0, 0.0
Mean catchment slope	%	3.000
Mean annual precipitation	mm/year	878.0
Mean annual evapotranspiration	mm/year	1458
Soil wetness	mm over profile	47.00
Soil Olsen P content	kgP ha ⁻¹	4.562
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	44 000 000
Reservoir area	km ²	11.00
Maximum reservoir depth	m	14.00
Mean reservoir depth	m	4.000
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.96, 0.02, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.01, 0.01, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	4.503
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	5.180
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	5.040
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	5.202
Mean monthly wind speed	m s ⁻¹	1.180
Water intake depth below surface	m	N/A



80.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1599
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1097
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	501.5
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	501.5
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	5517
Total CO ₂ emission per lifetime	ktCO _{2,eq}	551.7
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	430.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	702.1
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1510
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2643
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	29 070
Total CH ₄ emission per lifetime	ktCO _{2,eq}	2907
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.91
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.553
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.231
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	43.01
Total N ₂ O emission per lifetime	ktCO _{2,eq}	4.301
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3145
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3148

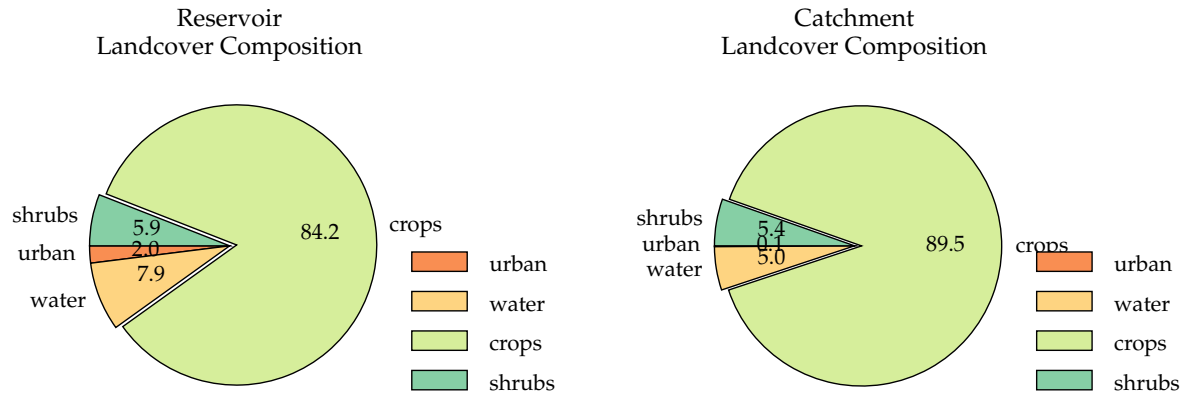
80.3 Emission plots



80.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1217
Retention coefficient	-	0.3023
Influent total N concentration	$\mu\text{g L}^{-1}$	411.1
Reservoir TN concentration	$\mu\text{g L}^{-1}$	286.8
Reservoir TP concentration	$\mu\text{g L}^{-1}$	863.4
Percentage of reservoir's surface area that is littoral	%	45.28
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.95
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.58
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	1.403
Influent total N load	kgN yr^{-1}	33 430
Influent total P load	kgP yr^{-1}	99 010
Downstream TN concentration	mg L^{-1}	0.4217

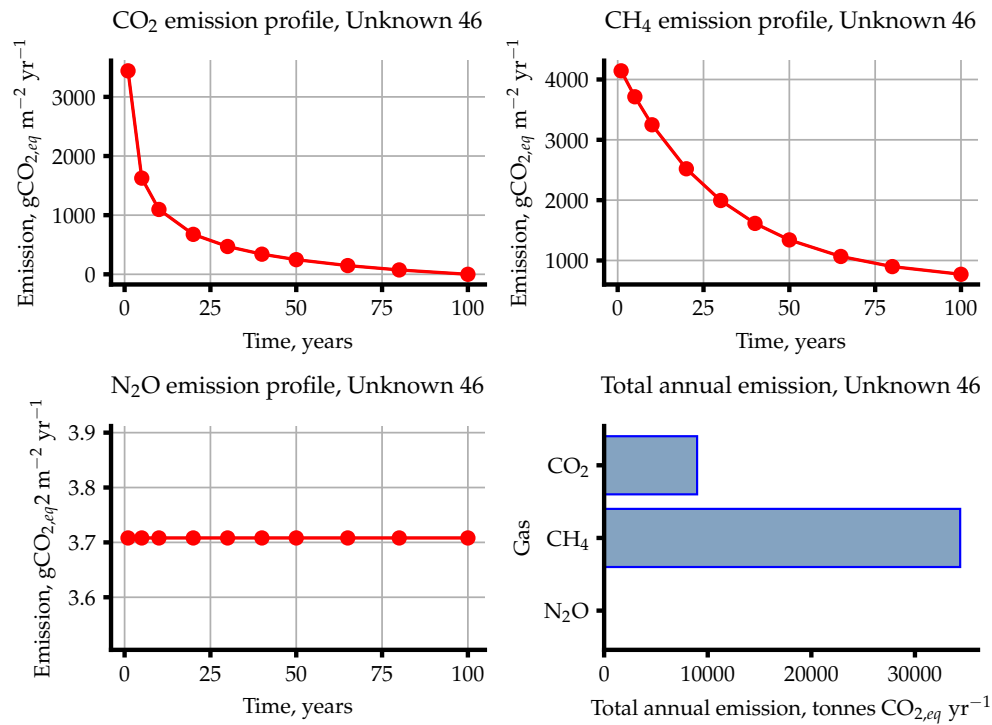
Input Name	Unit	Value(s)
Reservoir ID		9173
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.821888, LON: 96.037044
Monthly Temperatures	$^{\circ}\text{C}$	21.9, 24.1, 28.3, 31.2, 30.3, 28.8, 28.4, 28.0, 28.0, 27.5, 25.2, 21.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	98.00
Catchment area	km ²	210.4
Length of inundated river	km	3.223
Population	capita	37 500
Area fractions	-	0.0, 0.0, 0.001, 0.05, 0.0, 0.895, 0.054, 0.0, 0.0
Mean catchment slope	%	1.000
Mean annual precipitation	mm/year	897.0
Mean annual evapotranspiration	mm/year	1469
Soil wetness	mm over profile	73.00
Soil Olsen P content	kgP ha ⁻¹	2.748
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	81 500 000
Reservoir area	km ²	20.37
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	4.000
Inundated area fractions	-	0.0, 0.0, 0.02, 0.0, 0.0, 0.85, 0.06, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.08, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	4.148
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	5.160
Mean monthly horizontal radiance:	kWh m ⁻² d ⁻¹	4.957
May - Sept		
Mean monthly horizontal radiance:	kWh m ⁻² d ⁻¹	5.223
Nov - Mar		
Mean monthly wind speed	m s ⁻¹	1.210
Water intake depth below surface	m	N/A



81.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1404
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	963.5
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	440.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	440.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	8974
Total CO ₂ emission per lifetime	ktCO _{2,eq}	897.4
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	419.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	632.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	634.3
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1687
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	34 360
Total CH ₄ emission per lifetime	ktCO _{2,eq}	3436
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.708
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.7824
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.245
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	75.55
Total N ₂ O emission per lifetime	ktCO _{2,eq}	7.555
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2127
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2129

81.3 Emission plots



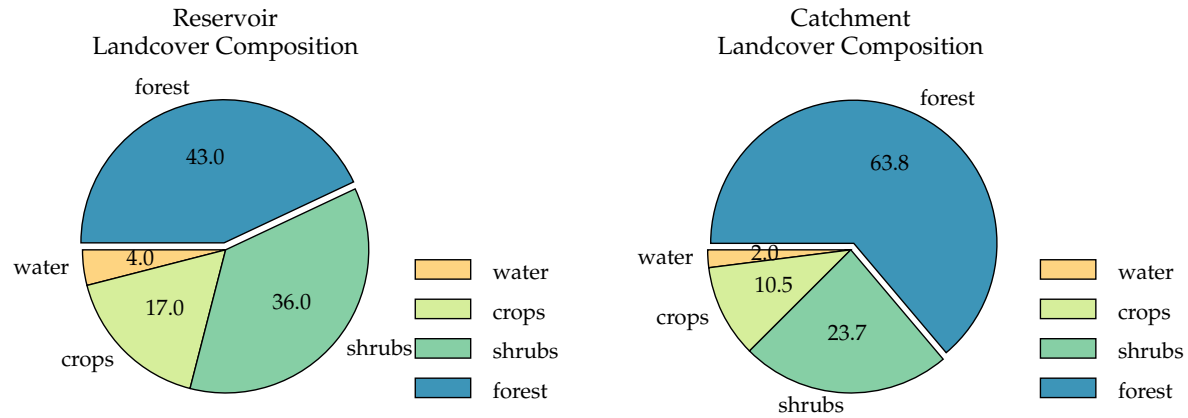
81.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1395
Retention coefficient	-	0.7599
Influent total N concentration	$\mu\text{g L}^{-1}$	724.9
Reservoir TN concentration	$\mu\text{g L}^{-1}$	174.9
Reservoir TP concentration	$\mu\text{g L}^{-1}$	365.6
Percentage of reservoir's surface area that is littoral	%	41.43
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.160
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.92
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.08
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.67
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	1.681
Influent total N load	kgN yr^{-1}	14 950
Influent total P load	kgP yr^{-1}	28 780
Downstream TN concentration	mg L^{-1}	0.1134

82 Ngalaik Dam

82.1 Inputs

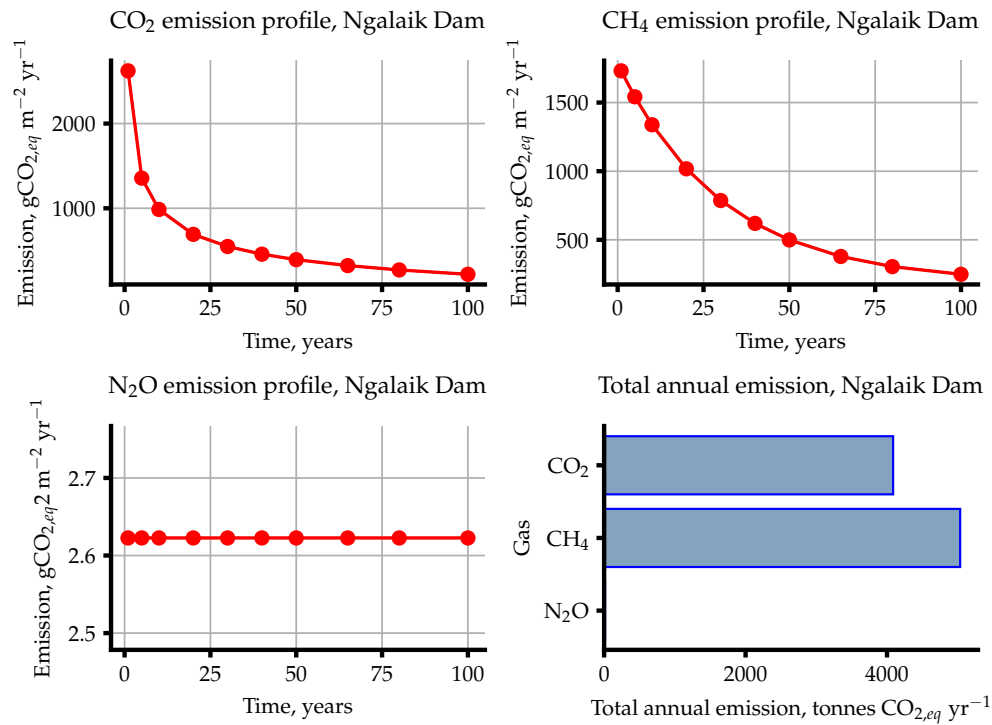
Input Name	Unit	Value(s)
Reservoir ID		9054
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.858797, LON: 96.011879
Monthly Temperatures	$^{\circ}\text{C}$	21.1, 23.4, 27.5, 30.7, 29.7, 27.5, 27.0, 26.8, 27.3, 27.1, 24.8, 21.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	103.0
Catchment area	km^2	343.5
Length of inundated river	km	5.940
Population	capita	13 930
Area fractions	-	0.0, 0.0, 0.0, 0.02, 0.0, 0.105, 0.237, 0.639, 0.0
Mean catchment slope	$\%$	7.000
Mean annual precipitation	mm/year	976.0
Mean annual evapotranspiration	mm/year	1383
Soil wetness	mm over profile	120.0
Soil Olsen P content	kgP ha^{-1}	5.448
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	93 000 000
Reservoir area	km^2	7.736
Maximum reservoir depth	m	20.00
Mean reservoir depth	m	12.02
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.17, 0.36, 0.43, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.04, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.213
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.145
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.713
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.392
Mean monthly wind speed	m s^{-1}	1.080
Water intake depth below surface	m	N/A



82.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	980.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	672.6
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-220.7
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	307.5
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	528.2
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	4086
Total CO ₂ emission per lifetime	ktCO _{2,eq}	408.6
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	202.3
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	188.0
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	260.4
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	650.8
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	5034
Total CH ₄ emission per lifetime	ktCO _{2,eq}	503.4
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.623
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.6203
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.621
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	20.29
Total N ₂ O emission per lifetime	ktCO _{2,eq}	2.029
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1179
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1181

82.3 Emission plots



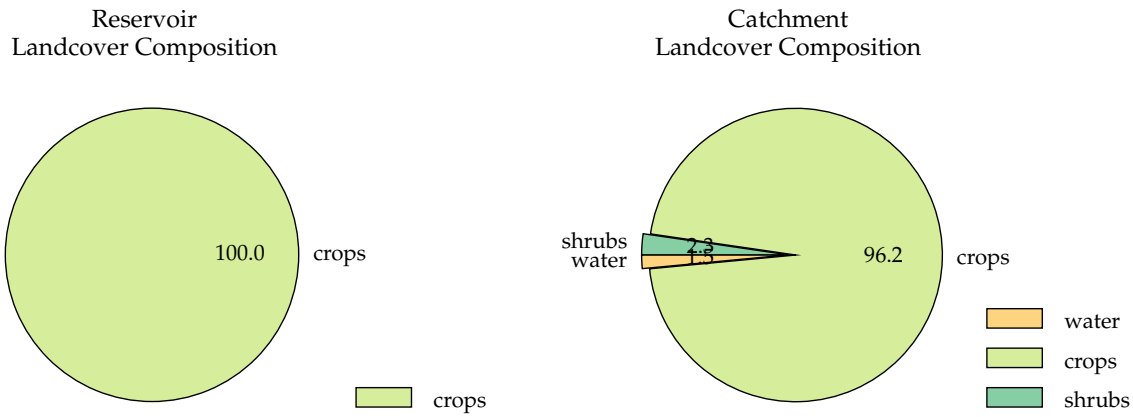
82.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	395.5
Retention coefficient	-	0.6780
Influent total N concentration	$\mu\text{g L}^{-1}$	127.2
Reservoir TN concentration	$\mu\text{g L}^{-1}$	40.90
Reservoir TP concentration	$\mu\text{g L}^{-1}$	129.1
Percentage of reservoir's surface area that is littoral	%	10.22
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.145
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.74
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.55
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.85
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.234
Influent total N load	kgN yr^{-1}	4501
Influent total P load	kgP yr^{-1}	14 000
Downstream TN concentration	mg L^{-1}	0.030 95

83 Pin

83.1 Inputs

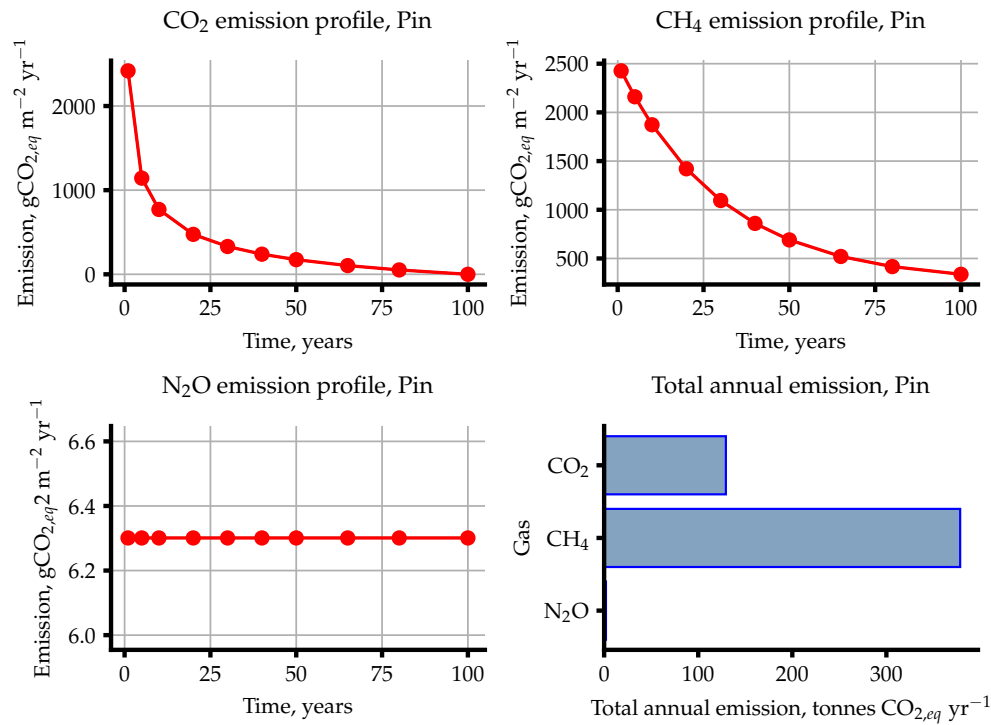
Input Name	Unit	Value(s)
Reservoir ID		9125
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.614528, LON: 95.438008
Monthly Temperatures	$^{\circ}\text{C}$	21.6, 24.0, 28.1, 31.3, 30.3, 28.4, 28.0, 27.7, 27.6, 27.1, 24.7, 21.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	137.0
Catchment area	km^2	23.30
Length of inundated river	km	0.6600
Population	capita	1846
Area fractions	-	0.0, 0.0, 0.0, 0.015, 0.0, 0.962, 0.023, 0.0, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	832.0
Mean annual evapotranspiration	mm/year	1461
Soil wetness	mm over profile	28.00
Soil Olsen P content	kgP ha^{-1}	3.805
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	2 966 000
Reservoir area	km^2	0.4180
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	7.096
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.237
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.220
Water intake depth below surface	m	N/A



83.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	986.8
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	677.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	309.6
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	309.6
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	129.4
Total CO ₂ emission per lifetime	ktCO _{2,eq}	12.94
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	244.9
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	251.8
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	408.6
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	905.3
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	378.4
Total CH ₄ emission per lifetime	ktCO _{2,eq}	37.84
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	6.301
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	3.042
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	4.672
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	2.634
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.2634
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1215
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1220

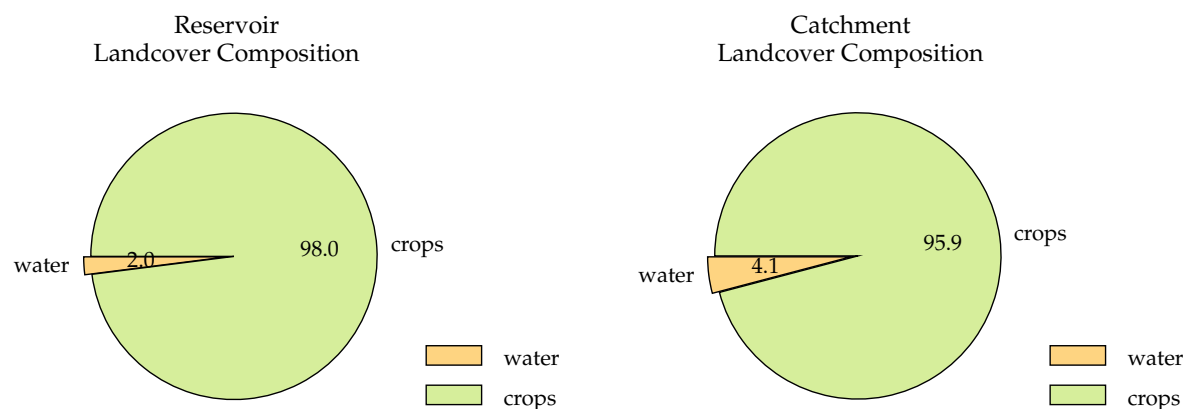
83.3 Emission plots



83.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	612.5
Retention coefficient	-	0.4267
Influent total N concentration	$\mu\text{g L}^{-1}$	386.0
Reservoir TN concentration	$\mu\text{g L}^{-1}$	221.1
Reservoir TP concentration	$\mu\text{g L}^{-1}$	355.6
Percentage of reservoir's surface area that is littoral	%	13.58
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.88
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.53
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	0.6402
Influent total N load	kgN yr^{-1}	1232
Influent total P load	kgP yr^{-1}	1955
Downstream TN concentration	mg L^{-1}	0.3094

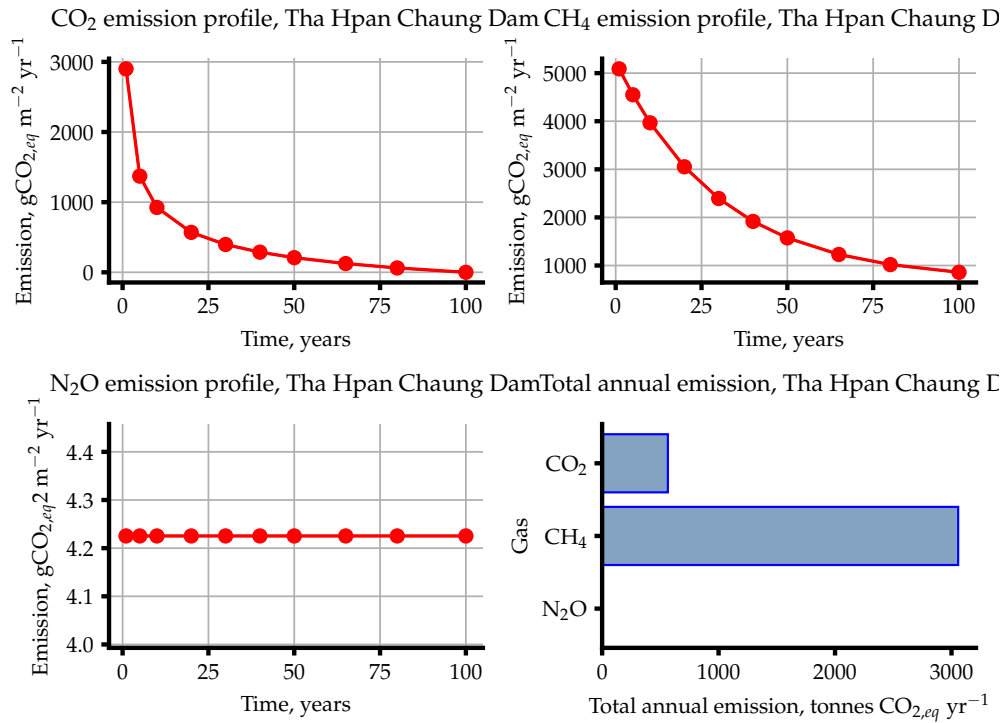
Input Name	Unit	Value(s)
Reservoir ID		9061
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.516388, LON: 95.863024
Monthly Temperatures	$^{\circ}\text{C}$	21.7, 24.1, 28.2, 31.0, 30.0, 28.2, 27.8, 27.5, 27.5, 27.1, 24.9, 21.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	119.0
Catchment area	km ²	40.81
Length of inundated river	km	2.391
Population	capita	5605
Area fractions	-	0.0, 0.0, 0.0, 0.041, 0.0, 0.959, 0.0, 0.0, 0.0
Mean catchment slope	%	3.000
Mean annual precipitation	mm/year	944.0
Mean annual evapotranspiration	mm/year	1460
Soil wetness	mm over profile	75.00
Soil Olsen P content	kgP ha ⁻¹	3.414
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	5 442 000
Reservoir area	km ²	1.520
Maximum reservoir depth	m	8.000
Mean reservoir depth	m	3.580
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.98, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.02, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	4.184
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	5.180
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	5.040
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	5.202
Mean monthly wind speed	m s ⁻¹	1.210
Water intake depth below surface	m	N/A



84.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1184
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	812.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	371.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	371.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	564.5
Total CO ₂ emission per lifetime	ktCO _{2,eq}	56.45
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	415.6
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	685.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	910.3
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2011
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	3057
Total CH ₄ emission per lifetime	ktCO _{2,eq}	305.7
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	4.225
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.769
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.997
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	6.423
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.6423
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2383
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2386

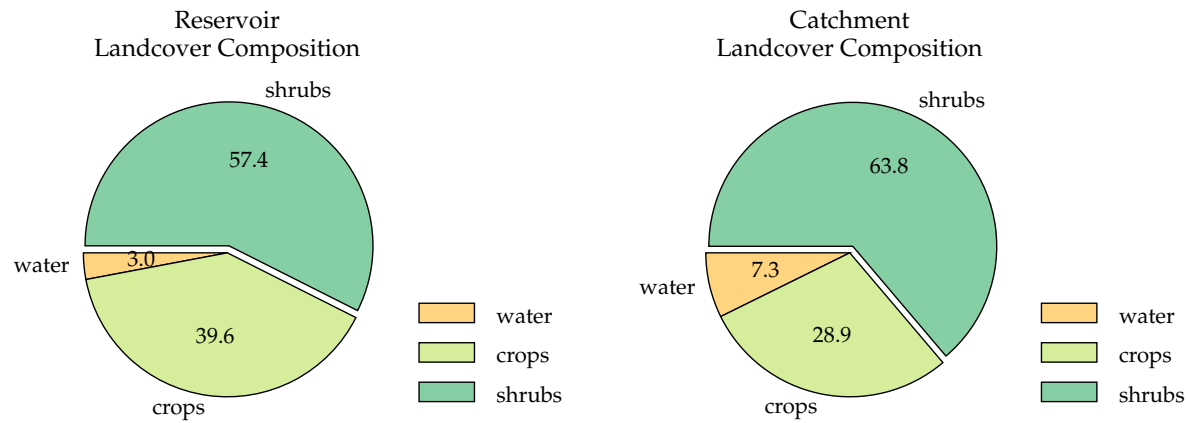
84.3 Emission plots



84.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	989.3
Retention coefficient	-	0.4730
Influent total N concentration	$\mu\text{g L}^{-1}$	524.5
Reservoir TN concentration	$\mu\text{g L}^{-1}$	276.2
Reservoir TP concentration	$\mu\text{g L}^{-1}$	537.8
Percentage of reservoir's surface area that is littoral	%	44.03
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.95
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.35
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	0.9014
Influent total N load	kgN yr^{-1}	2547
Influent total P load	kgP yr^{-1}	4805
Downstream TN concentration	mg L^{-1}	0.3686

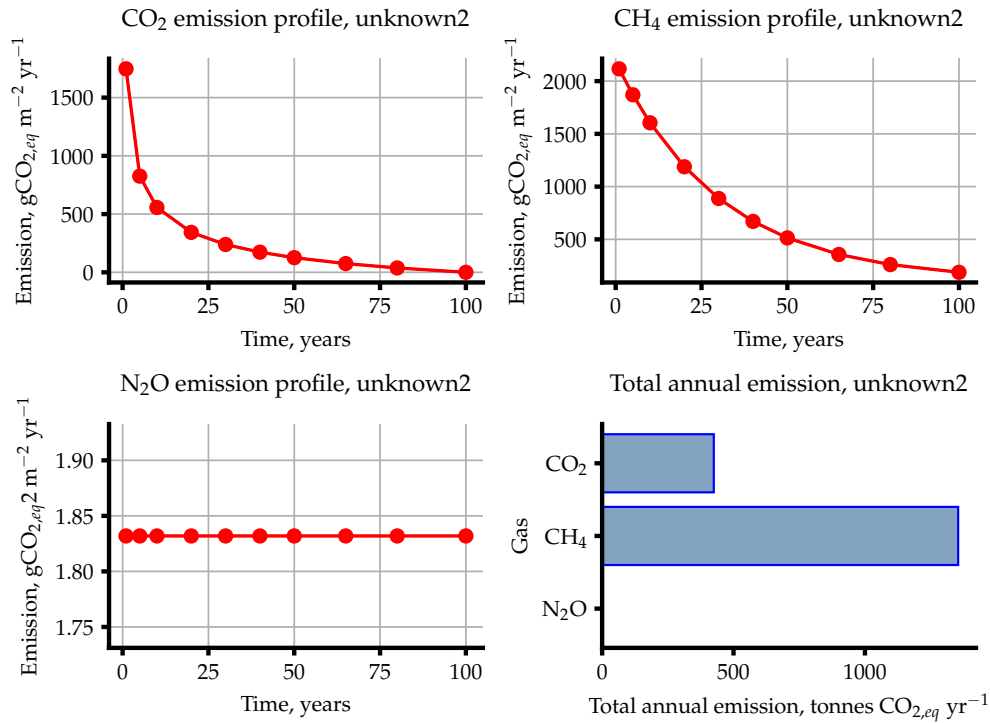
Input Name	Unit	Value(s)
Reservoir ID		9030
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.639107, LON: 96.492506
Monthly Temperatures	$^{\circ}\text{C}$	23.1, 24.8, 27.6, 30.1, 29.4, 27.2, 26.6, 26.7, 27.2, 27.6, 26.4, 23.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	2358
Catchment area	km ²	32.12
Length of inundated river	km	3.695
Population	capita	4320
Area fractions	-	0.0, 0.0, 0.0, 0.073, 0.0, 0.289, 0.638, 0.0, 0.0
Mean catchment slope	%	5.000
Mean annual precipitation	mm/year	3336
Mean annual evapotranspiration	mm/year	1349
Soil wetness	mm over profile	283.0
Soil Olsen P content	kgP ha ⁻¹	20.00
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	15 200 000
Reservoir area	km ²	1.900
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	8.000
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.4, 0.58, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.03, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	5.742
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	4.870
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	3.970
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	5.462
Mean monthly wind speed	m s ⁻¹	1.010
Water intake depth below surface	m	N/A



85.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	712.9
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	489.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	223.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	223.7
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	424.9
Total CO ₂ emission per lifetime	ktCO _{2,eq}	42.49
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	191.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	108.6
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	412.6
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	713.0
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	1355
Total CH ₄ emission per lifetime	ktCO _{2,eq}	135.5
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.832
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.440
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.636
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	3.481
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.3481
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	936.7
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	938.3

85.3 Emission plots



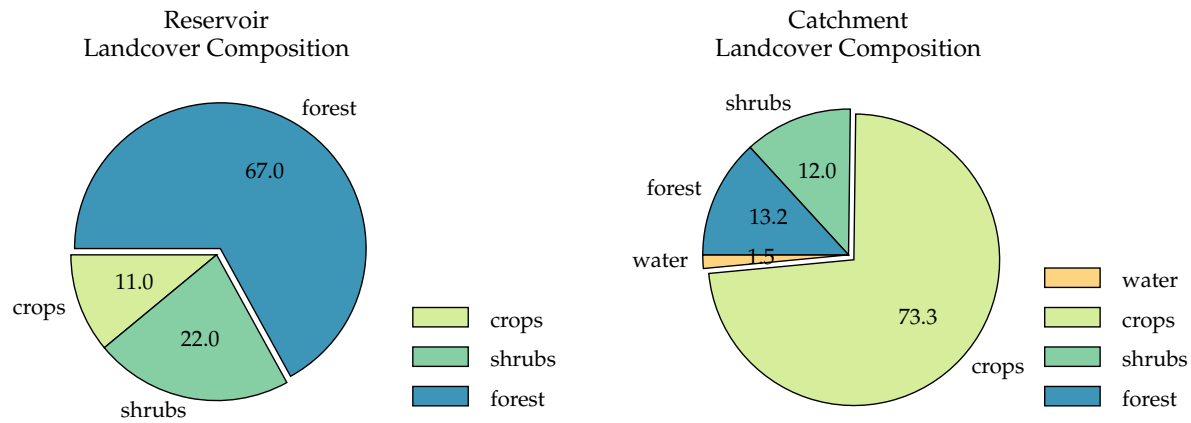
85.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	49.40
Retention coefficient	-	0.1385
Influent total N concentration	$\mu\text{g L}^{-1}$	95.06
Reservoir TN concentration	$\mu\text{g L}^{-1}$	81.29
Reservoir TP concentration	$\mu\text{g L}^{-1}$	44.60
Percentage of reservoir's surface area that is littoral	%	8.531
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.87
Water density at the bottom of the reservoir	kg m^{-3}	996.8
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.67
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	0.9950
Influent total N load	kgN yr^{-1}	7199
Influent total P load	kgP yr^{-1}	3741
Downstream TN concentration	mg L^{-1}	0.1177

86 Shwe Taung Dam

86.1 Inputs

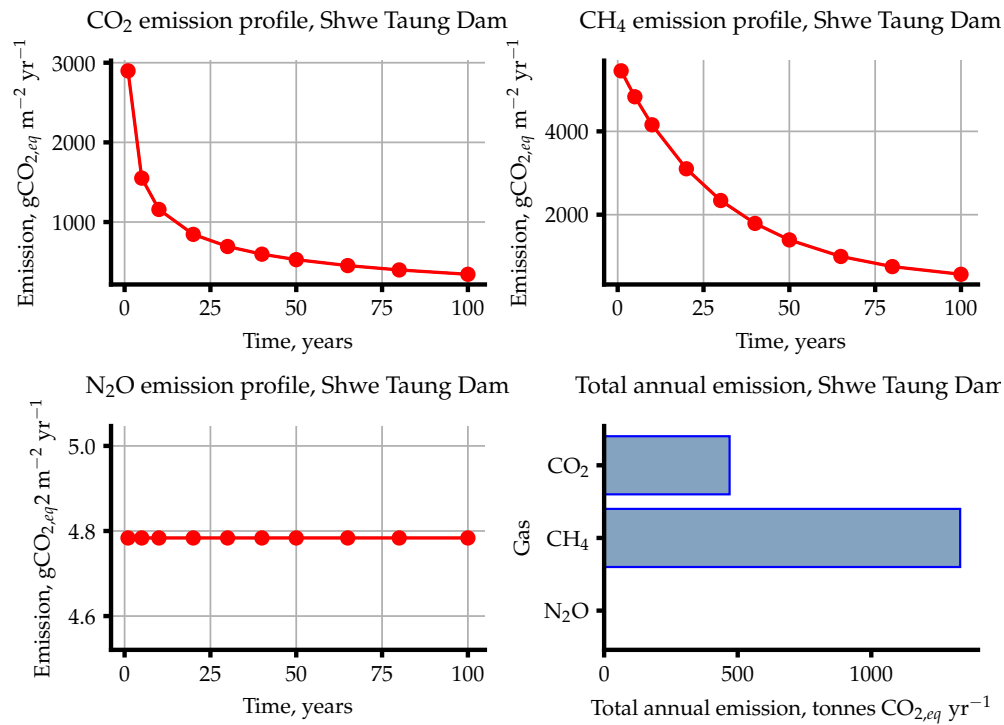
Input Name	Unit	Value(s)
Reservoir ID		9127
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.710623, LON: 95.252158
Monthly Temperatures	$^{\circ}\text{C}$	21.8, 24.0, 27.6, 30.7, 30.1, 27.8, 27.2, 27.2, 27.6, 27.7, 25.7, 22.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	395.0
Catchment area	km^2	24.60
Length of inundated river	km	1.105
Population	capita	4706
Area fractions	-	0.0, 0.0, 0.0, 0.015, 0.0, 0.733, 0.12, 0.132, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	1292
Mean annual evapotranspiration	mm/year	1359
Soil wetness	mm over profile	172.0
Soil Olsen P content	kgP ha^{-1}	6.125
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	3 080 000
Reservoir area	km^2	0.7000
Maximum reservoir depth	m	8.000
Mean reservoir depth	m	4.400
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.11, 0.22, 0.67, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.592
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.200
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.424
Mean monthly wind speed	m s^{-1}	0.8600
Water intake depth below surface	m	N/A



86.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1042
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	715.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-343.9
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	327.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	670.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	469.6
Total CO ₂ emission per lifetime	ktCO _{2,eq}	46.96
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	356.6
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	369.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1178
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1904
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	1333
Total CH ₄ emission per lifetime	ktCO _{2,eq}	133.3
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	4.784
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	3.582
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	4.183
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	3.349
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.3349
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2575
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2579

86.3 Emission plots



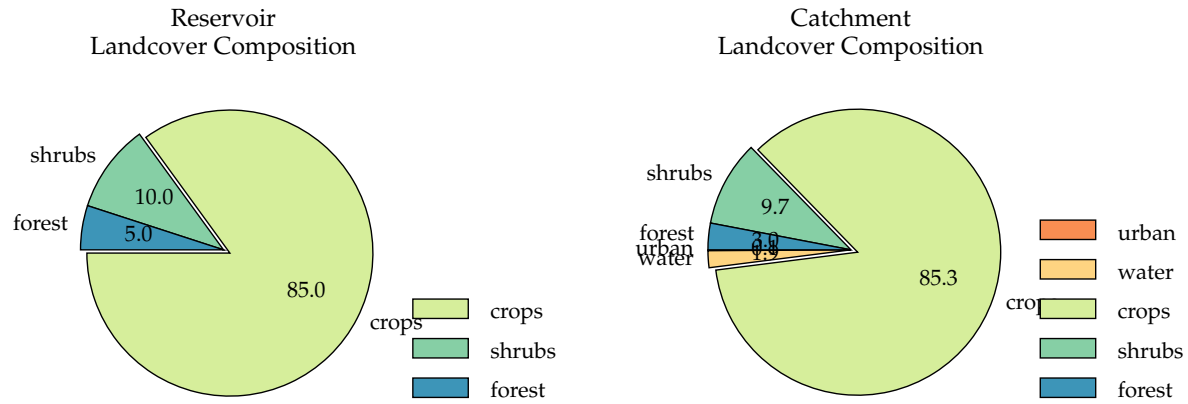
86.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	392.3
Retention coefficient	-	0.2025
Influent total N concentration	$\mu\text{g L}^{-1}$	452.3
Reservoir TN concentration	$\mu\text{g L}^{-1}$	367.8
Reservoir TP concentration	$\mu\text{g L}^{-1}$	321.2
Percentage of reservoir's surface area that is littoral	%	31.92
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.28
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.01
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.08
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	0.5507
Influent total N load	kgN yr^{-1}	4395
Influent total P load	kgP yr^{-1}	3812
Downstream TN concentration	mg L^{-1}	0.5271

87 Samon

87.1 Inputs

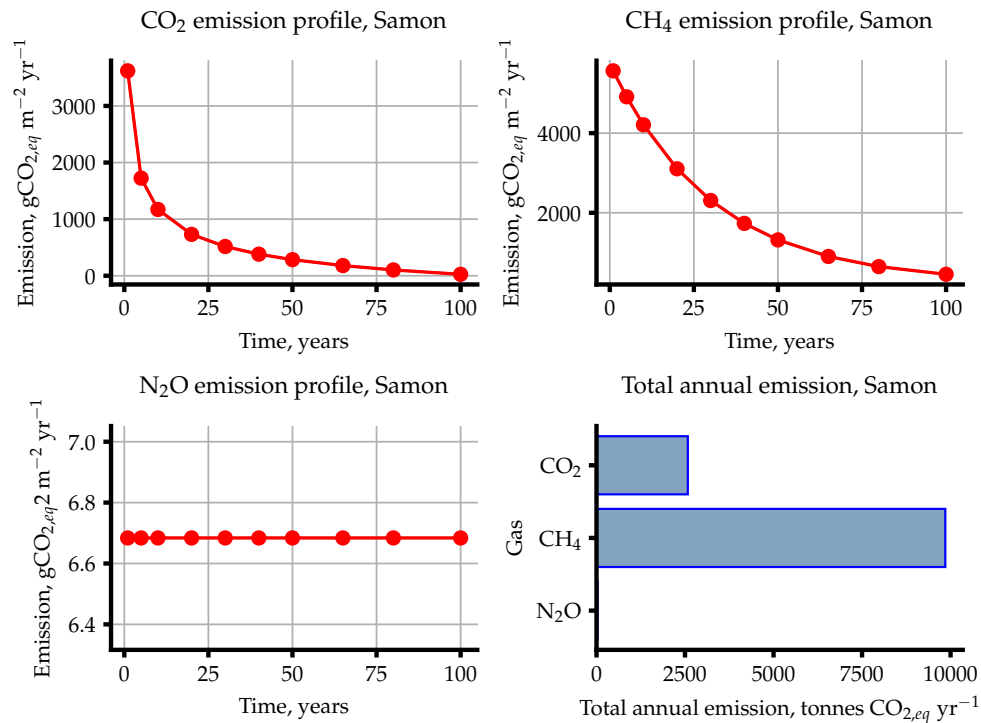
Input Name	Unit	Value(s)
Reservoir ID		9128
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.940935, LON: 96.14055
Monthly Temperatures	$^{\circ}\text{C}$	22.0, 24.3, 28.5, 31.5, 30.5, 29.1, 28.6, 28.4, 28.3, 27.8, 25.4, 22.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	130.0
Catchment area	km^2	3657
Length of inundated river	km	2.023
Population	capita	493 800
Area fractions	-	0.0, 0.0, 0.001, 0.019, 0.0, 0.853, 0.097, 0.03, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	970.0
Mean annual evapotranspiration	mm/year	1455
Soil wetness	mm over profile	84.00
Soil Olsen P content	kgP ha^{-1}	3.500
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	37 260 000
Reservoir area	km^2	5.309
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	7.000
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.85, 0.1, 0.05, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.196
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.874
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.244
Mean monthly wind speed	m s^{-1}	1.190
Water intake depth below surface	m	N/A



87.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1467
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1007
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-25.67
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	460.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	485.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2579
Total CO ₂ emission per lifetime	ktCO _{2,eq}	257.9
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	263.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	246.6
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1345
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1856
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	9851
Total CH ₄ emission per lifetime	ktCO _{2,eq}	985.1
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	6.684
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	5.503
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	6.093
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	35.48
Total N ₂ O emission per lifetime	ktCO _{2,eq}	3.548
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2341
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2347

87.3 Emission plots



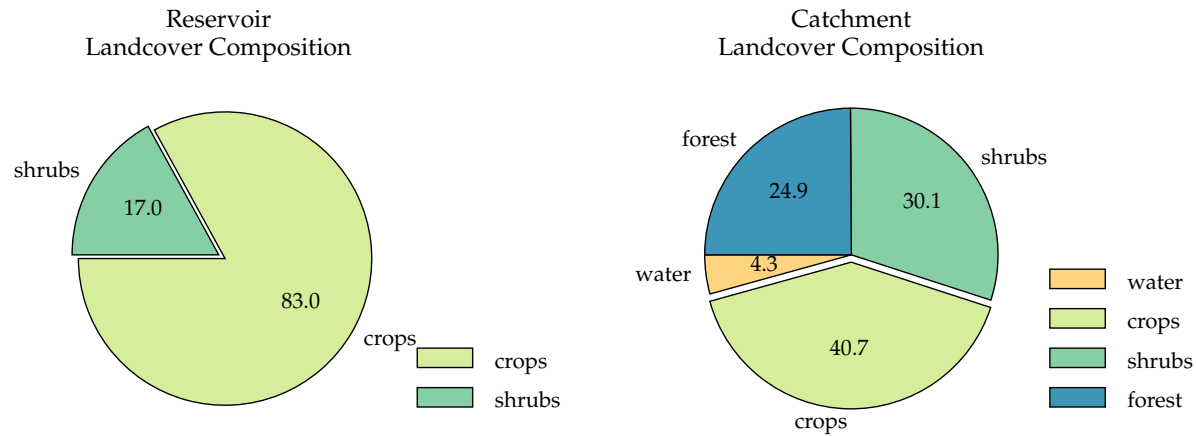
87.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	775.8
Retention coefficient	-	0.059 07
Influent total N concentration	$\mu\text{g L}^{-1}$	402.0
Reservoir TN concentration	$\mu\text{g L}^{-1}$	378.2
Reservoir TP concentration	$\mu\text{g L}^{-1}$	730.9
Percentage of reservoir's surface area that is littoral	%	14.18
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.14
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.92
Water density at the surface of the reservoir	kg m^{-3}	995.7
Thermocline depth	m	1.155
Influent total N load	kgN yr^{-1}	191 100
Influent total P load	kgP yr^{-1}	368 800
Downstream TN concentration	mg L^{-1}	0.5199

88 unknown1

88.1 Inputs

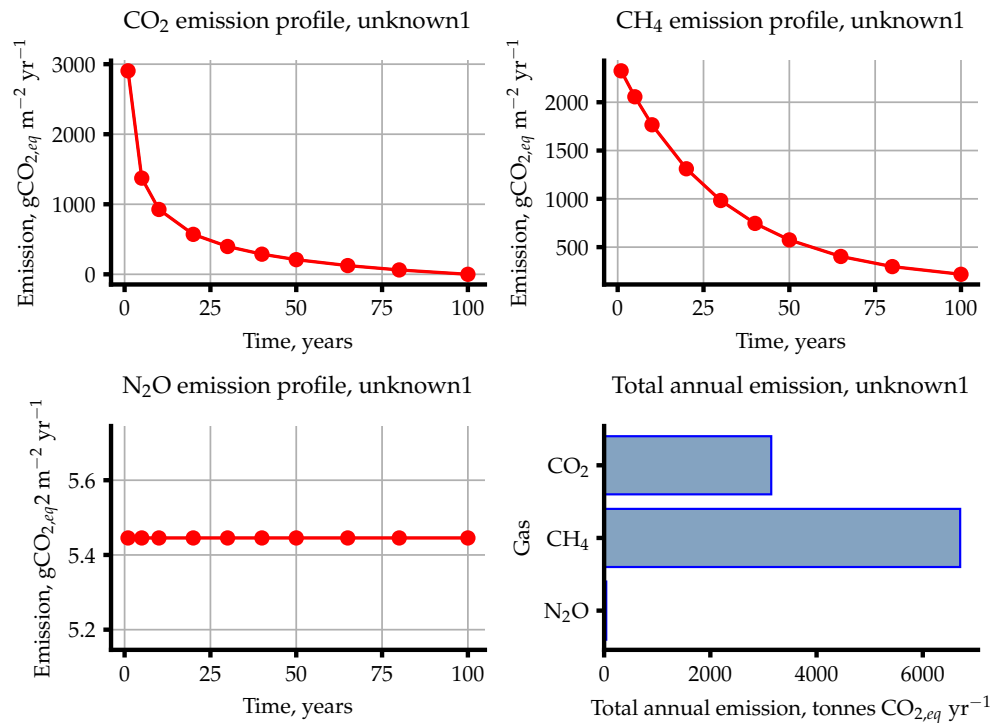
Input Name	Unit	Value(s)
Reservoir ID		9014
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.959957, LON: 95.48809
Monthly Temperatures	$^{\circ}\text{C}$	22.2, 24.5, 28.2, 31.3, 30.5, 28.1, 27.6, 27.5, 27.9, 28.0, 26.0, 22.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	181.0
Catchment area	km^2	1032
Length of inundated river	km	6.891
Population	capita	66 080
Area fractions	-	0.0, 0.0, 0.0, 0.043, 0.0, 0.407, 0.301, 0.249, 0.0
Mean catchment slope	$\%$	7.000
Mean annual precipitation	mm/year	1154
Mean annual evapotranspiration	mm/year	1375
Soil wetness	mm over profile	237.0
Soil Olsen P content	kgP ha^{-1}	4.622
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	65 690 000
Reservoir area	km^2	8.461
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	7.800
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.83, 0.17, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.761
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.200
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.424
Mean monthly wind speed	m s^{-1}	0.9900
Water intake depth below surface	m	N/A



88.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1185
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	813.5
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	371.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	371.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	3146
Total CO ₂ emission per lifetime	ktCO _{2,eq}	314.6
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	214.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	132.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	445.4
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	792.3
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	6704
Total CH ₄ emission per lifetime	ktCO _{2,eq}	670.4
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	5.445
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	4.006
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	4.726
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	46.07
Total N ₂ O emission per lifetime	ktCO _{2,eq}	4.607
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1164
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1169

88.3 Emission plots



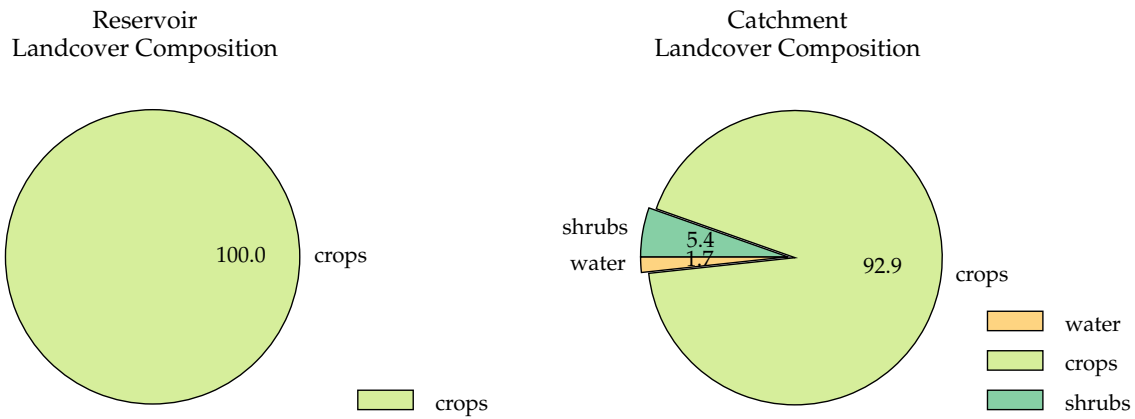
88.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	323.7
Retention coefficient	-	0.2197
Influent total N concentration	$\mu\text{g L}^{-1}$	292.2
Reservoir TN concentration	$\mu\text{g L}^{-1}$	227.1
Reservoir TP concentration	$\mu\text{g L}^{-1}$	254.2
Percentage of reservoir's surface area that is littoral	%	9.571
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.28
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.27
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.53
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	1.148
Influent total N load	kgN yr^{-1}	54 580
Influent total P load	kgP yr^{-1}	60 490
Downstream TN concentration	mg L^{-1}	0.3341

89 Ashebette

89.1 Inputs

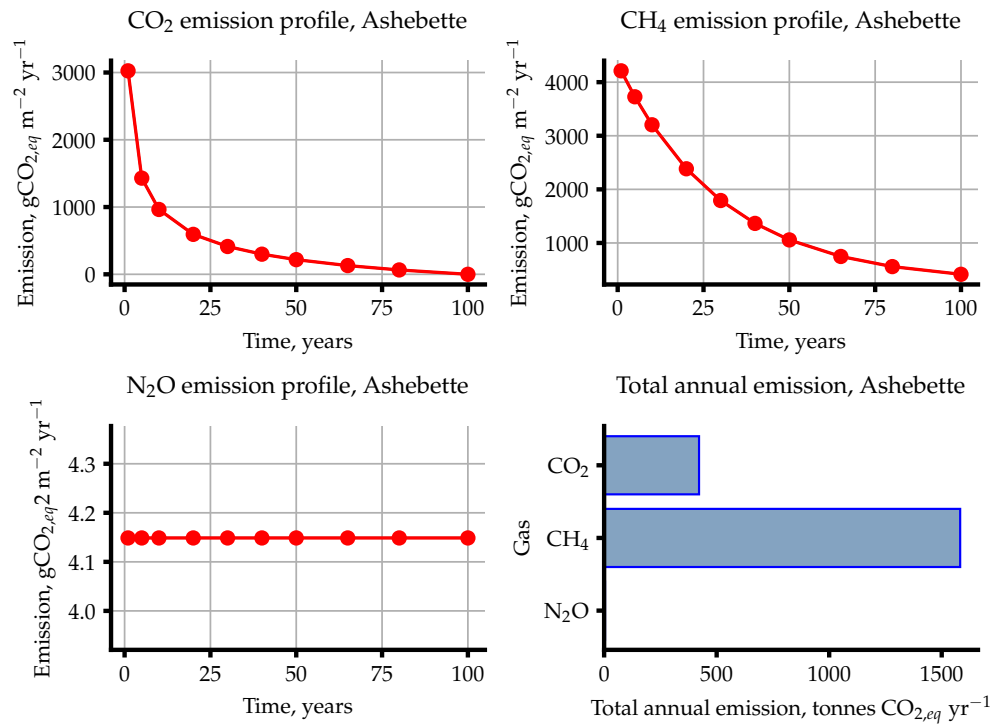
Input Name	Unit	Value(s)
Reservoir ID		9073
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.107474, LON: 95.457623
Monthly Temperatures	$^{\circ}\text{C}$	21.5, 24.2, 28.5, 31.8, 30.8, 29.2, 28.8, 28.4, 28.1, 27.4, 24.8, 21.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	142.0
Catchment area	km^2	163.9
Length of inundated river	km	1.377
Population	capita	21 050
Area fractions	-	0.0, 0.0, 0.0, 0.017, 0.0, 0.93, 0.054, 0.0, 0.0
Mean catchment slope	$\%$	6.000
Mean annual precipitation	mm/year	836.0
Mean annual evapotranspiration	mm/year	1458
Soil wetness	mm over profile	32.00
Soil Olsen P content	kgP ha^{-1}	4.745
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	8 592 000
Reservoir area	km^2	1.089
Maximum reservoir depth	m	13.00
Mean reservoir depth	m	7.900
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.698
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.240
Water intake depth below surface	m	N/A



89.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1234
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	847.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	387.3
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	387.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	421.7
Total CO ₂ emission per lifetime	ktCO _{2,eq}	42.17
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	274.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	259.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	918.6
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1453
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	1582
Total CH ₄ emission per lifetime	ktCO _{2,eq}	158.2
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	4.149
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	3.022
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.585
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	4.518
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.4518
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1840
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1844

89.3 Emission plots



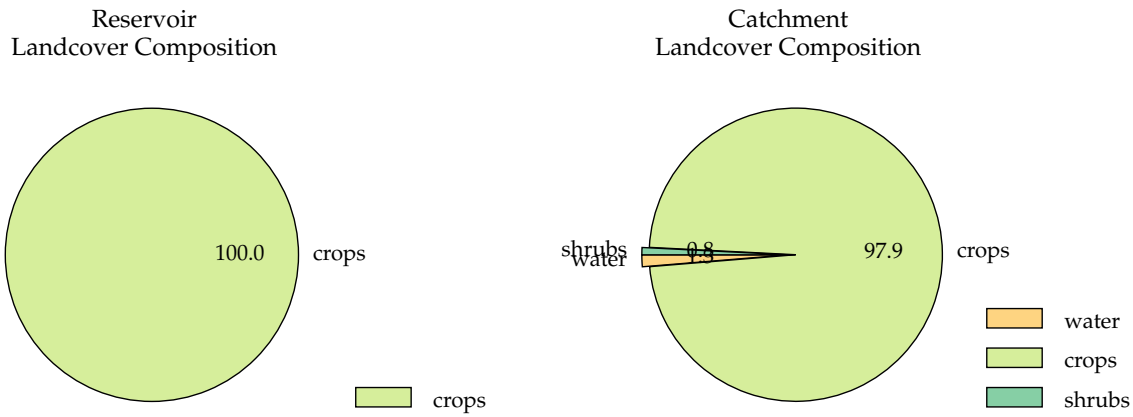
89.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	742.1
Retention coefficient	-	0.2282
Influent total N concentration	$\mu\text{g L}^{-1}$	219.1
Reservoir TN concentration	$\mu\text{g L}^{-1}$	169.0
Reservoir TP concentration	$\mu\text{g L}^{-1}$	576.0
Percentage of reservoir's surface area that is littoral	%	15.58
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.81
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.15
Water density at the surface of the reservoir	kg m^{-3}	995.6
Thermocline depth	m	0.7670
Influent total N load	kgN yr^{-1}	5100
Influent total P load	kgP yr^{-1}	17 270
Downstream TN concentration	mg L^{-1}	0.2482

90 Unknown14

90.1 Inputs

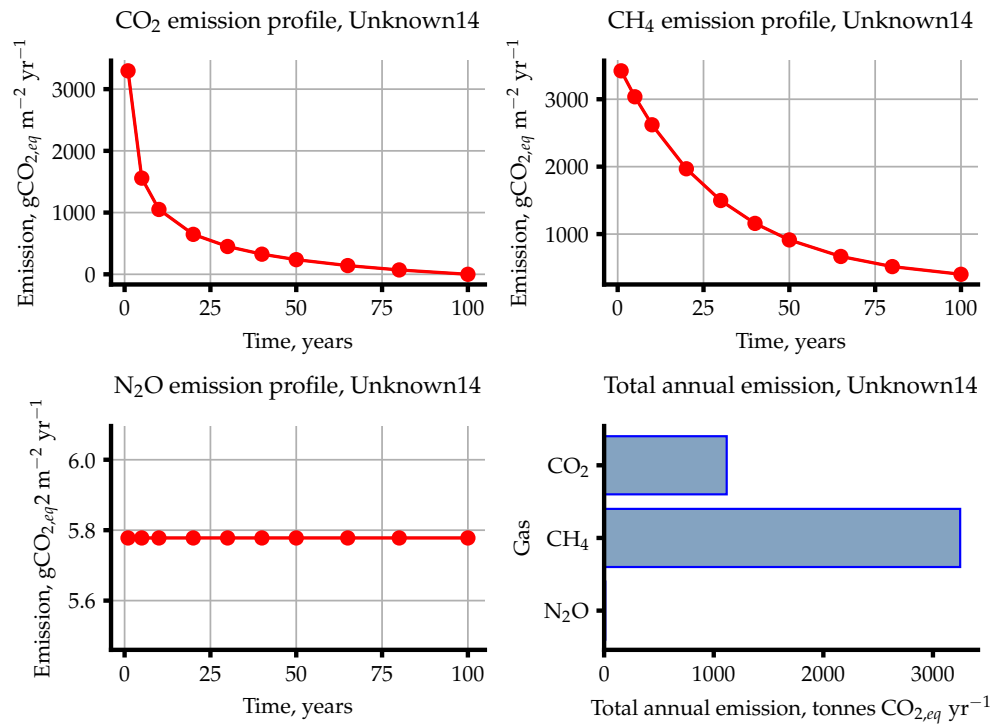
Input Name	Unit	Value(s)
Reservoir ID		9079
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.642011, LON: 95.550545
Monthly Temperatures	$^{\circ}\text{C}$	21.3, 24.0, 28.3, 31.7, 30.8, 29.7, 29.4, 28.8, 28.5, 27.6, 24.9, 21.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	125.0
Catchment area	km^2	133.7
Length of inundated river	km	3.204
Population	capita	25 320
Area fractions	-	0.0, 0.0, 0.0, 0.013, 0.0, 0.979, 0.008, 0.0, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	833.0
Mean annual evapotranspiration	mm/year	1457
Soil wetness	mm over profile	36.00
Soil Olsen P content	kgP ha^{-1}	5.816
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	20 140 000
Reservoir area	km^2	2.650
Maximum reservoir depth	m	13.00
Mean reservoir depth	m	7.600
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.349
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.190
Water intake depth below surface	m	N/A



90.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1345
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	923.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	422.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	422.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1118
Total CO ₂ emission per lifetime	ktCO _{2,eq}	111.8
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	290.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	279.8
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	655.1
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1226
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	3248
Total CH ₄ emission per lifetime	ktCO _{2,eq}	324.8
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	5.778
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.284
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	4.031
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	15.31
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.531
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1648
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1652

90.3 Emission plots



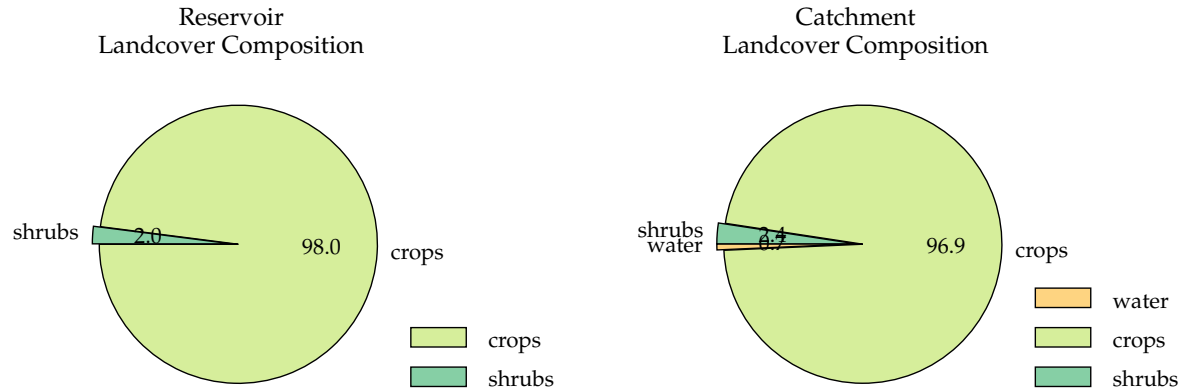
90.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1168
Retention coefficient	-	0.4911
Influent total N concentration	$\mu\text{g L}^{-1}$	341.5
Reservoir TN concentration	$\mu\text{g L}^{-1}$	173.7
Reservoir TP concentration	$\mu\text{g L}^{-1}$	604.9
Percentage of reservoir's surface area that is littoral	%	17.01
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.68
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.40
Water density at the surface of the reservoir	kg m^{-3}	995.6
Thermocline depth	m	0.8870
Influent total N load	kgN yr^{-1}	5708
Influent total P load	kgP yr^{-1}	19 520
Downstream TN concentration	mg L^{-1}	0.2261

91 Soon-Lunn Dam

91.1 Inputs

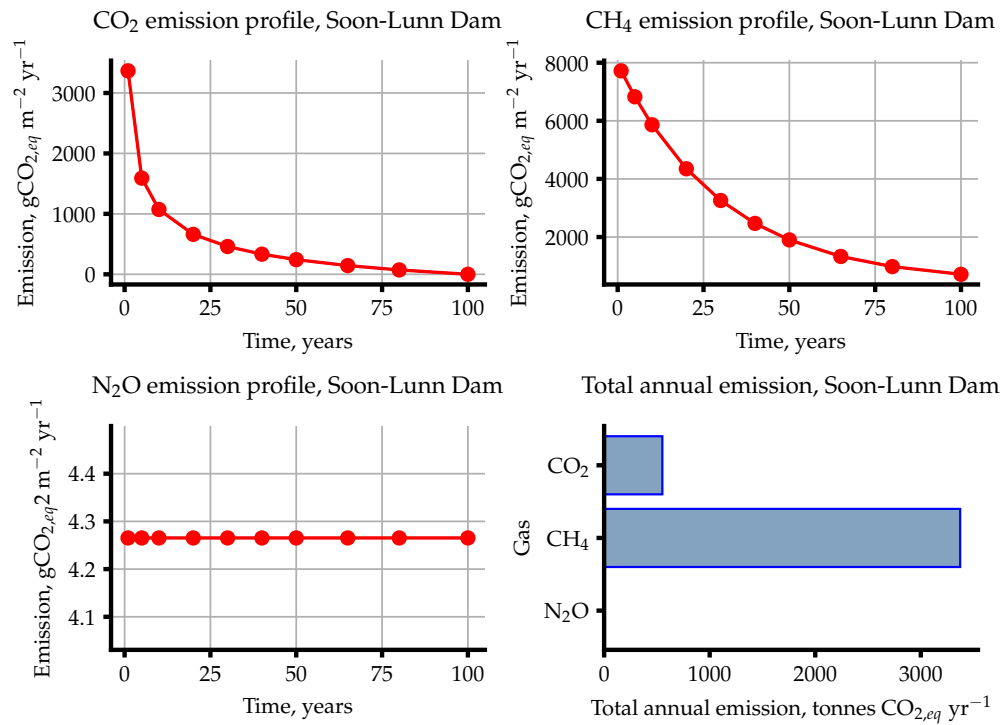
Input Name	Unit	Value(s)
Reservoir ID		9107
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.416484, LON: 95.415404
Monthly Temperatures	$^{\circ}\text{C}$	21.6, 24.4, 28.8, 32.2, 31.4, 29.9, 29.5, 29.0, 28.7, 27.9, 25.1, 21.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	135.0
Catchment area	km^2	244.7
Length of inundated river	km	1.105
Population	capita	38 110
Area fractions	-	0.0, 0.0, 0.0, 0.007, 0.0, 0.969, 0.024, 0.0, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	833.0
Mean annual evapotranspiration	mm/year	1469
Soil wetness	mm over profile	33.00
Soil Olsen P content	kgP ha^{-1}	6.750
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	5 660 000
Reservoir area	km^2	1.280
Maximum reservoir depth	m	7.000
Mean reservoir depth	m	4.400
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.97, 0.02, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.015
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.210
Water intake depth below surface	m	N/A



91.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1374
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	942.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	431.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	431.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	551.7
Total CO ₂ emission per lifetime	ktCO _{2,eq}	55.17
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	380.1
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	429.8
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1825
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2635
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	3373
Total CH ₄ emission per lifetime	ktCO _{2,eq}	337.3
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	4.265
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	3.376
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.821
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	5.460
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.5460
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3066
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3070

91.3 Emission plots



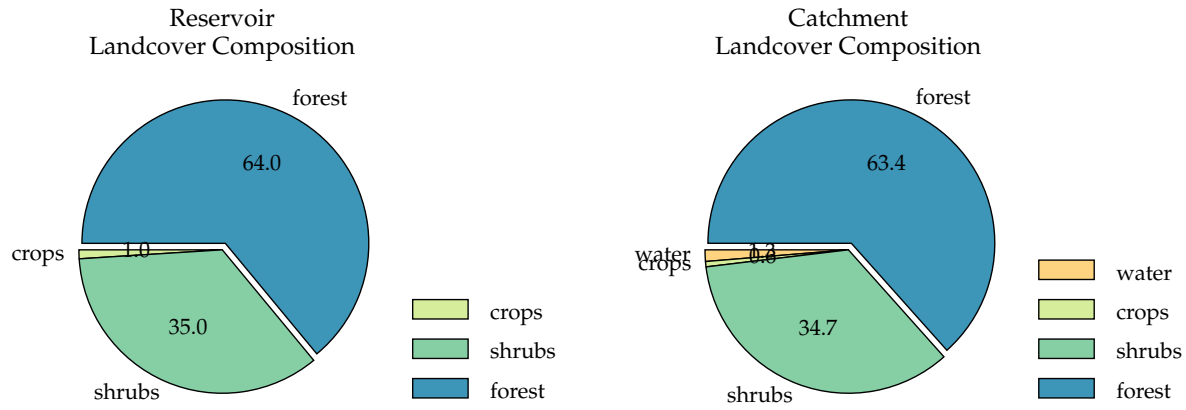
91.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	899.4
Retention coefficient	-	0.1207
Influent total N concentration	$\mu\text{g L}^{-1}$	399.4
Reservoir TN concentration	$\mu\text{g L}^{-1}$	351.2
Reservoir TP concentration	$\mu\text{g L}^{-1}$	794.5
Percentage of reservoir's surface area that is littoral	%	28.16
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.88
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.75
Water density at the surface of the reservoir	kg m^{-3}	995.4
Thermocline depth	m	0.7383
Influent total N load	kgN yr^{-1}	13 200
Influent total P load	kgP yr^{-1}	29 710
Downstream TN concentration	mg L^{-1}	0.5032

92 TaungKhinYan

92.1 Inputs

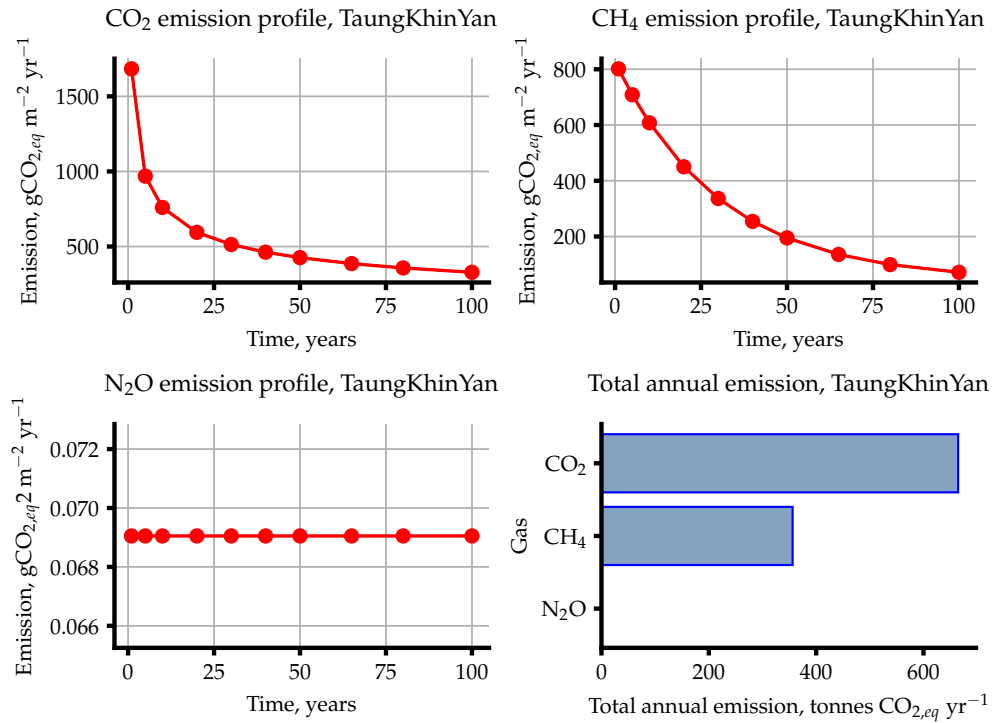
Input Name	Unit	Value(s)
Reservoir ID		9129
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.598479, LON: 94.029008
Monthly Temperatures	$^{\circ}\text{C}$	18.9, 21.3, 25.7, 28.9, 29.2, 27.8, 27.5, 26.9, 26.9, 25.7, 22.6, 19.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	690.0
Catchment area	km^2	92.52
Length of inundated river	km	1.371
Population	capita	1060
Area fractions	-	0.0, 0.0, 0.0, 0.013, 0.0, 0.006, 0.347, 0.634, 0.0
Mean catchment slope	$\%$	25.00
Mean annual precipitation	mm/year	1583
Mean annual evapotranspiration	mm/year	1261
Soil wetness	mm over profile	152.0
Soil Olsen P content	kgP ha^{-1}	7.041
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	11 890 000
Reservoir area	km^2	1.324
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	9.000
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.01, 0.35, 0.57, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.07, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.803
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.670
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.398
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.796
Mean monthly wind speed	m s^{-1}	1.080
Water intake depth below surface	m	N/A



92.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	552.8
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	379.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-328.5
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	173.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	502.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	664.6
Total CO ₂ emission per lifetime	ktCO _{2,eq}	66.46
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	116.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	41.71
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	110.4
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	269.0
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	356.1
Total CH ₄ emission per lifetime	ktCO _{2,eq}	35.61
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.069 05
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.054 41
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.061 73
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.091 42
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.009 142
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	770.9
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	771.0

92.3 Emission plots



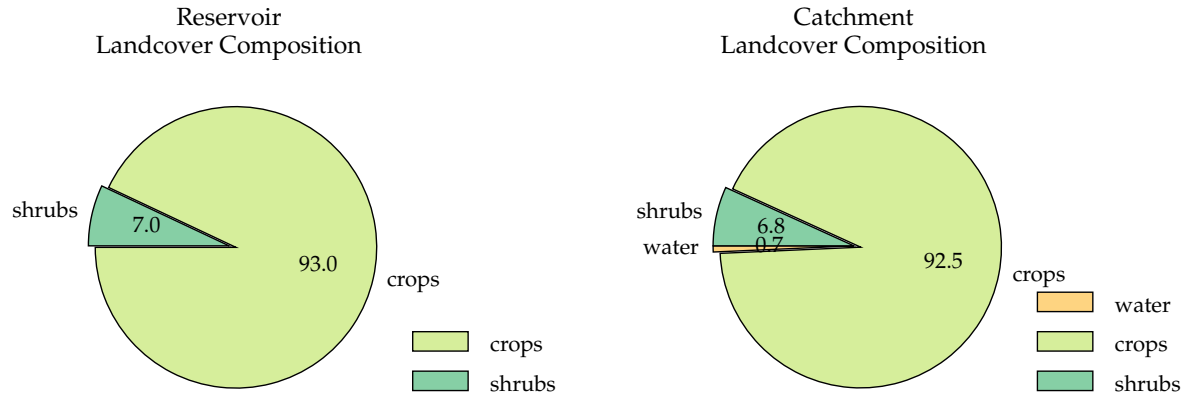
92.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	31.77
Retention coefficient	-	0.1298
Influent total N concentration	$\mu\text{g L}^{-1}$	3.184
Reservoir TN concentration	$\mu\text{g L}^{-1}$	2.771
Reservoir TP concentration	$\mu\text{g L}^{-1}$	27.78
Percentage of reservoir's surface area that is littoral	%	3.886
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.670
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	56.04
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.11
Water density at the bottom of the reservoir	kg m^{-3}	997.5
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.35
Water density at the surface of the reservoir	kg m^{-3}	996.2
Thermocline depth	m	0.7313
Influent total N load	kgN yr^{-1}	203.3
Influent total P load	kgP yr^{-1}	2028
Downstream TN concentration	mg L^{-1}	0.003981

93 SinChaung

93.1 Inputs

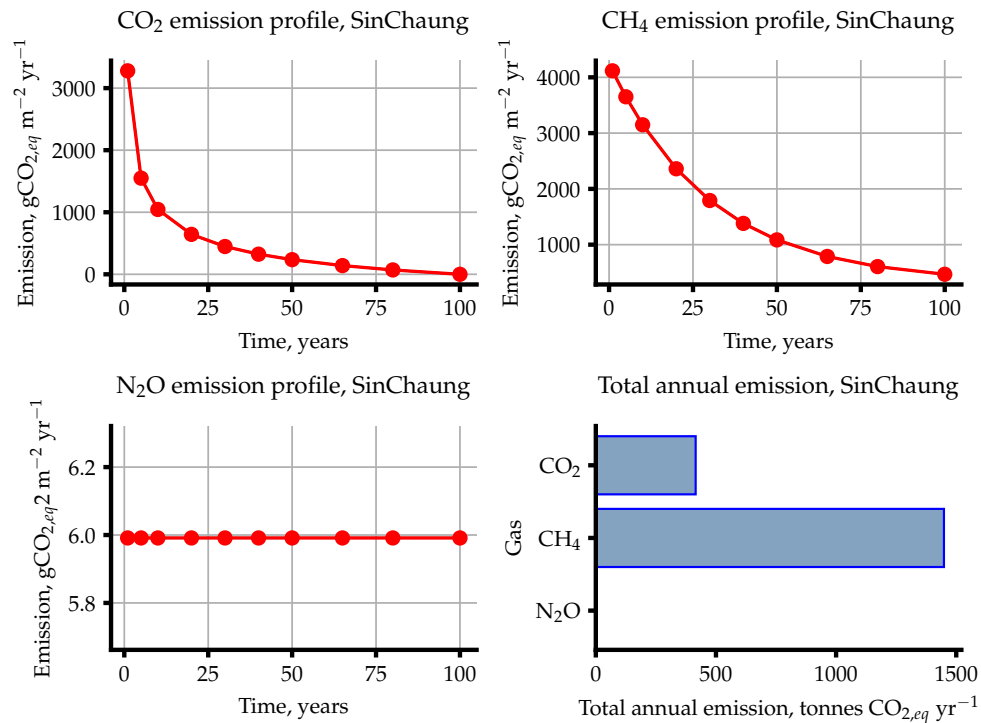
Input Name	Unit	Value(s)
Reservoir ID		9130
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.526879, LON: 95.156107
Monthly Temperatures	$^{\circ}\text{C}$	22.1, 24.7, 28.6, 32.0, 31.4, 30.1, 29.8, 29.3, 28.9, 27.9, 25.3, 22.2
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	78.00
Catchment area	km^2	60.50
Length of inundated river	km	1.236
Population	capita	8858
Area fractions	-	0.0, 0.0, 0.0, 0.007, 0.0, 0.925, 0.068, 0.0, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	696.0
Mean annual evapotranspiration	mm/year	1466
Soil wetness	mm over profile	26.00
Soil Olsen P content	kgP ha^{-1}	8.264
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	7 236 000
Reservoir area	km^2	0.9900
Maximum reservoir depth	m	14.00
Mean reservoir depth	m	7.300
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.93, 0.07, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.200
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.220
Water intake depth below surface	m	N/A



93.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1338
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	918.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	419.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	419.7
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	415.5
Total CO ₂ emission per lifetime	ktCO _{2,eq}	41.55
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	328.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	319.2
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	816.2
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1463
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	1449
Total CH ₄ emission per lifetime	ktCO _{2,eq}	144.9
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	5.991
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.963
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.977
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	5.931
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.5931
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1883
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1887

93.3 Emission plots



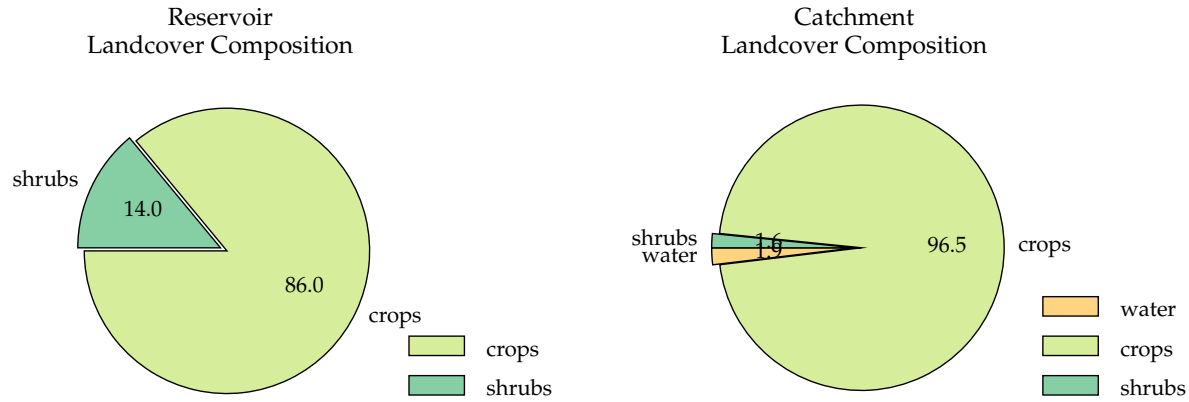
93.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1570
Retention coefficient	-	0.5512
Influent total N concentration	$\mu\text{g L}^{-1}$	386.4
Reservoir TN concentration	$\mu\text{g L}^{-1}$	173.4
Reservoir TP concentration	$\mu\text{g L}^{-1}$	714.1
Percentage of reservoir's surface area that is littoral	%	19.86
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.21
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.83
Water density at the surface of the reservoir	kg m^{-3}	995.4
Thermocline depth	m	0.7113
Influent total N load	kgN yr^{-1}	1824
Influent total P load	kgP yr^{-1}	7407
Downstream TN concentration	mg L^{-1}	0.2013

94 Natmouk

94.1 Inputs

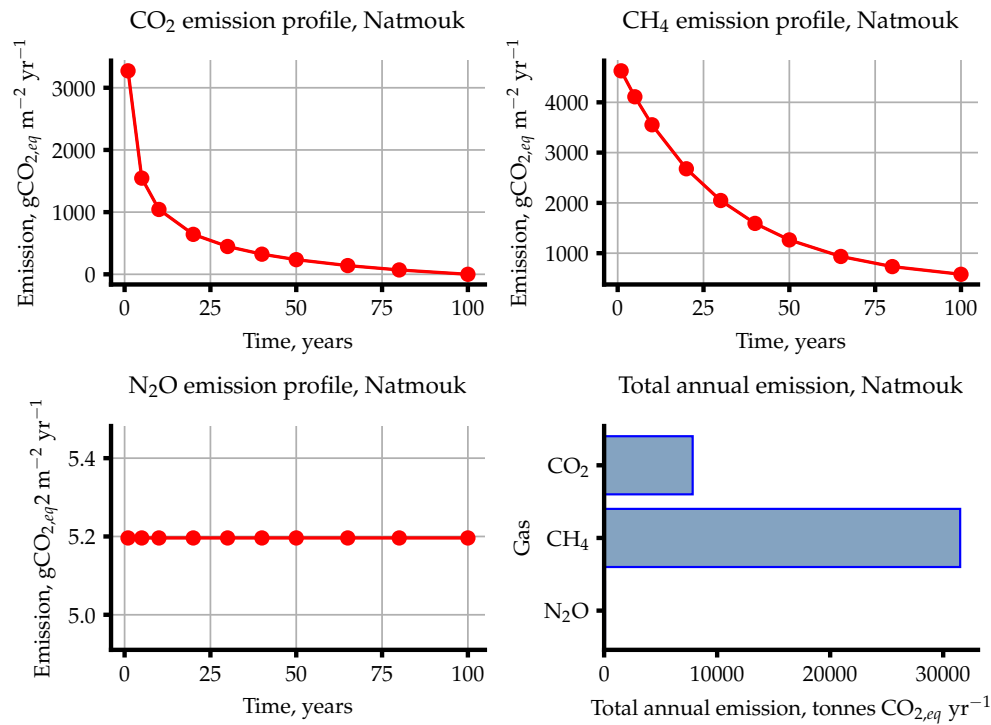
Input Name	Unit	Value(s)
Reservoir ID		9004
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.41087, LON: 95.481601
Monthly Temperatures	$^{\circ}\text{C}$	22.0, 24.3, 28.4, 31.5, 30.6, 28.6, 28.1, 27.9, 27.9, 27.4, 25.3, 22.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	127.0
Catchment area	km^2	1092
Length of inundated river	km	10.81
Population	capita	93 770
Area fractions	-	0.0, 0.0, 0.0, 0.019, 0.0, 0.966, 0.016, 0.0, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	858.0
Mean annual evapotranspiration	mm/year	1459
Soil wetness	mm over profile	40.00
Soil Olsen P content	kgP ha^{-1}	4.474
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	124 600 000
Reservoir area	km^2	18.70
Maximum reservoir depth	m	15.00
Mean reservoir depth	m	6.662
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.86, 0.14, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.369
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.190
Water intake depth below surface	m	N/A



94.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1335
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	916.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	418.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	418.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	7834
Total CO ₂ emission per lifetime	ktCO _{2,eq}	783.4
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	330.4
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	414.3
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	940.0
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1685
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	31 500
Total CH ₄ emission per lifetime	ktCO _{2,eq}	3150
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	5.196
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.570
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.883
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	97.17
Total N ₂ O emission per lifetime	ktCO _{2,eq}	9.717
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2104
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2107

94.3 Emission plots



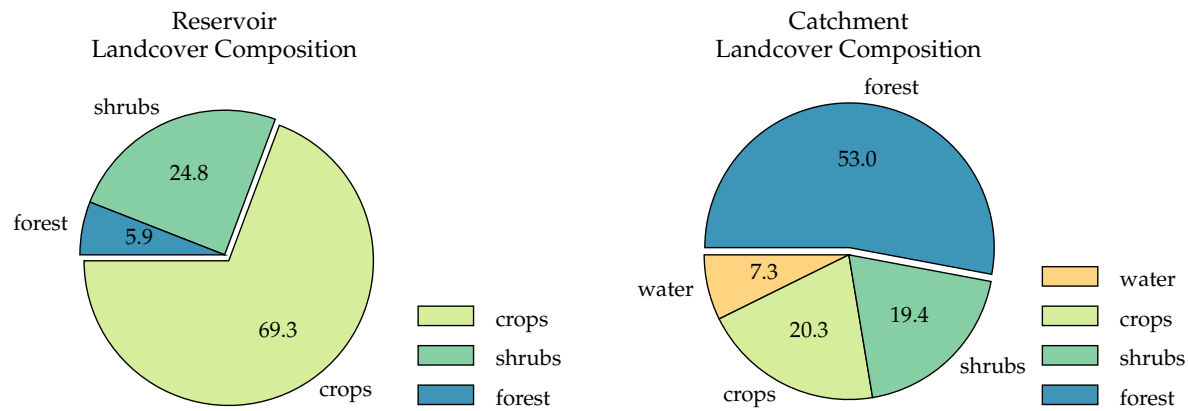
94.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	550.8
Retention coefficient	-	0.4185
Influent total N concentration	$\mu\text{g L}^{-1}$	338.0
Reservoir TN concentration	$\mu\text{g L}^{-1}$	196.9
Reservoir TP concentration	$\mu\text{g L}^{-1}$	324.9
Percentage of reservoir's surface area that is littoral	%	24.37
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.14
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.78
Water density at the surface of the reservoir	kg m^{-3}	995.7
Thermocline depth	m	1.61
Influent total N load	kgN yr^{-1}	46 870
Influent total P load	kgP yr^{-1}	76 390
Downstream TN concentration	mg L^{-1}	0.2765

95 Taungnawin

95.1 Inputs

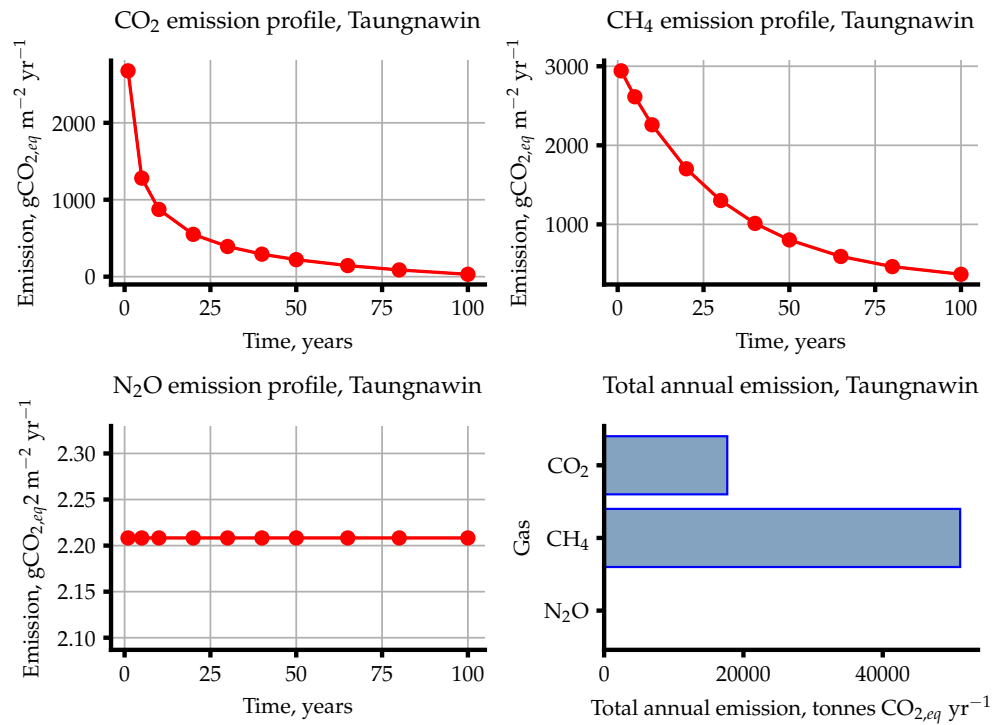
Input Name	Unit	Value(s)
Reservoir ID		9008
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.925459, LON: 95.578977
Monthly Temperatures	$^{\circ}\text{C}$	22.1, 24.2, 27.8, 30.8, 29.9, 27.6, 27.1, 27.0, 27.5, 27.7, 25.9, 22.8
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	208.0
Catchment area	km^2	676.4
Length of inundated river	km	13.12
Population	capita	41 300
Area fractions	-	0.0, 0.0, 0.0, 0.073, 0.0, 0.203, 0.194, 0.529, 0.0
Mean catchment slope	$\%$	9.000
Mean annual precipitation	mm/year	1187
Mean annual evapotranspiration	mm/year	1365
Soil wetness	mm over profile	249.0
Soil Olsen P content	kgP ha^{-1}	4.267
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	354 200 000
Reservoir area	km^2	47.85
Maximum reservoir depth	m	16.00
Mean reservoir depth	m	7.400
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.7, 0.25, 0.06, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.821
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.200
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.424
Mean monthly wind speed	m s^{-1}	0.9600
Water intake depth below surface	m	N/A



95.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1079
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	740.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-30.80
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	338.6
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	369.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	17 680
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1768
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	297.3
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	263.2
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	507.7
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1068
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	51 120
Total CH ₄ emission per lifetime	ktCO _{2,eq}	5112
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.208
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.5325
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.370
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	105.7
Total N ₂ O emission per lifetime	ktCO _{2,eq}	10.57
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1438
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1439

95.3 Emission plots



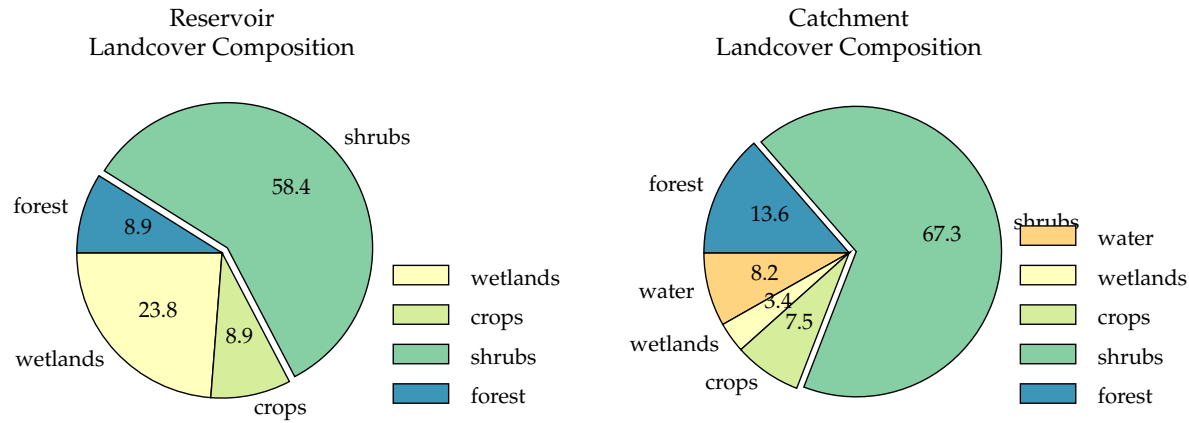
95.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	257.5
Retention coefficient	-	0.6685
Influent total N concentration	$\mu\text{g L}^{-1}$	169.9
Reservoir TN concentration	$\mu\text{g L}^{-1}$	54.09
Reservoir TP concentration	$\mu\text{g L}^{-1}$	89.54
Percentage of reservoir's surface area that is littoral	%	21.44
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.28
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.21
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.05
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.815
Influent total N load	kgN yr^{-1}	23 900
Influent total P load	kgP yr^{-1}	36 220
Downstream TN concentration	mg L^{-1}	0.044 12

96 Ngamoeyeik

96.1 Inputs

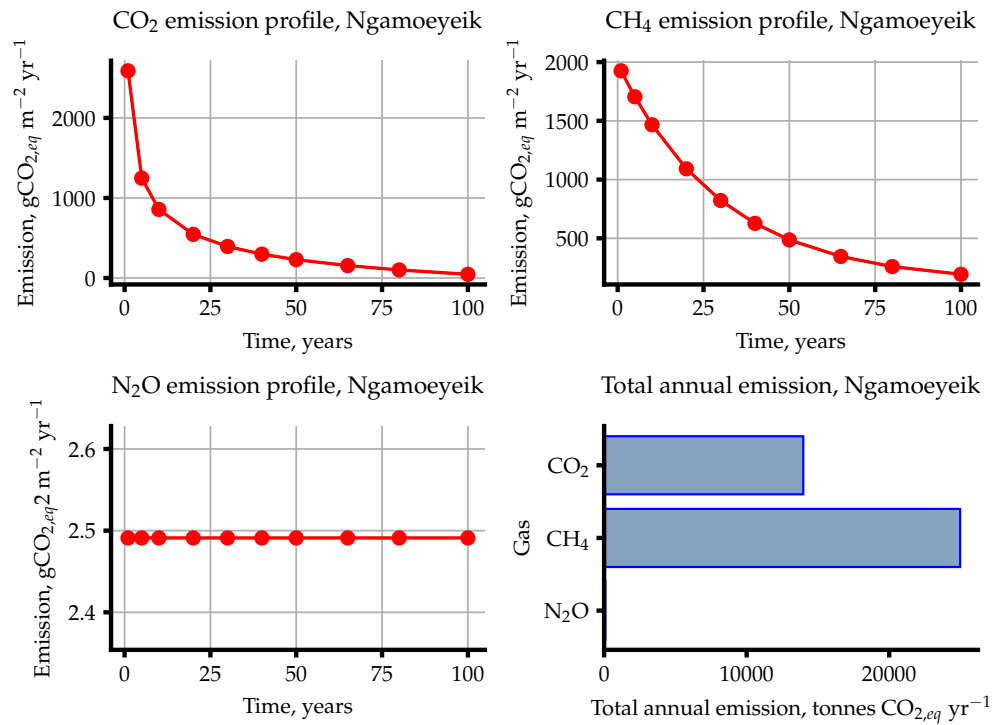
Input Name	Unit	Value(s)
Reservoir ID		9010
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.35294, LON: 96.155622
Monthly Temperatures	$^{\circ}\text{C}$	23.4, 24.9, 27.7, 30.0, 29.4, 27.2, 26.6, 26.7, 27.2, 27.6, 26.5, 23.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1843
Catchment area	km^2	450.7
Length of inundated river	km	12.45
Population	capita	82 720
Area fractions	-	0.0, 0.0, 0.0, 0.082, 0.034, 0.075, 0.672, 0.136, 0.0
Mean catchment slope	$\%$	5.000
Mean annual precipitation	mm/year	2840
Mean annual evapotranspiration	mm/year	1341
Soil wetness	mm over profile	369.0
Soil Olsen P content	kgP ha^{-1}	19.73
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	222 000 000
Reservoir area	km^2	37.60
Maximum reservoir depth	m	7.000
Mean reservoir depth	m	5.905
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.24, 0.09, 0.59, 0.09, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.169
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.970
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.462
Mean monthly wind speed	m s^{-1}	0.9700
Water intake depth below surface	m	N/A



96.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1037
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	712.0
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-46.20
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	325.5
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	371.7
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	13 970
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1397
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	206.1
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	122.8
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	335.5
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	664.4
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	24 980
Total CH ₄ emission per lifetime	ktCO _{2,eq}	2498
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.491
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.912
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.202
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	93.66
Total N ₂ O emission per lifetime	ktCO _{2,eq}	9.366
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1036
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1038

96.3 Emission plots



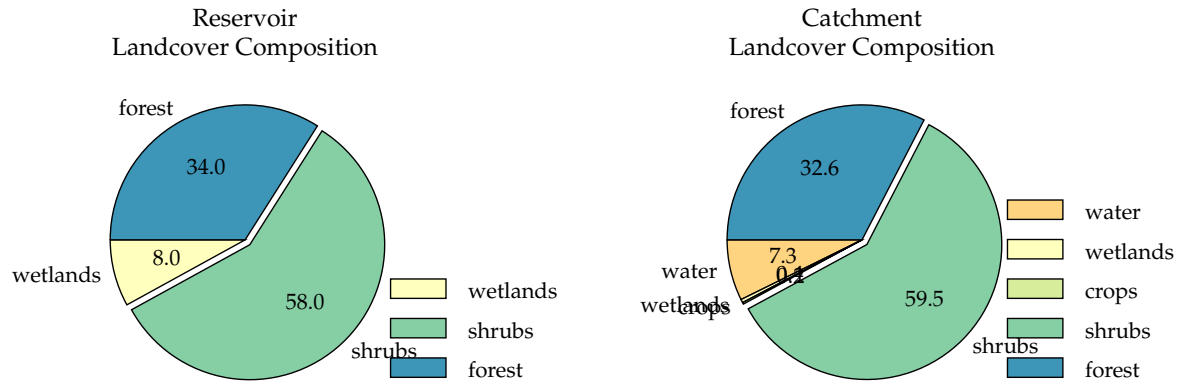
96.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	76.92
Retention coefficient	-	0.1763
Influent total N concentration	$\mu\text{g L}^{-1}$	175.7
Reservoir TN concentration	$\mu\text{g L}^{-1}$	144.5
Reservoir TP concentration	$\mu\text{g L}^{-1}$	68.29
Percentage of reservoir's surface area that is littoral	%	9.861
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.06
Water density at the bottom of the reservoir	kg m^{-3}	996.8
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.67
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	2.087
Influent total N load	kgN yr^{-1}	145 900
Influent total P load	kgP yr^{-1}	63 890
Downstream TN concentration	mg L^{-1}	0.2098

97 Da Bu Hla Dam

97.1 Inputs

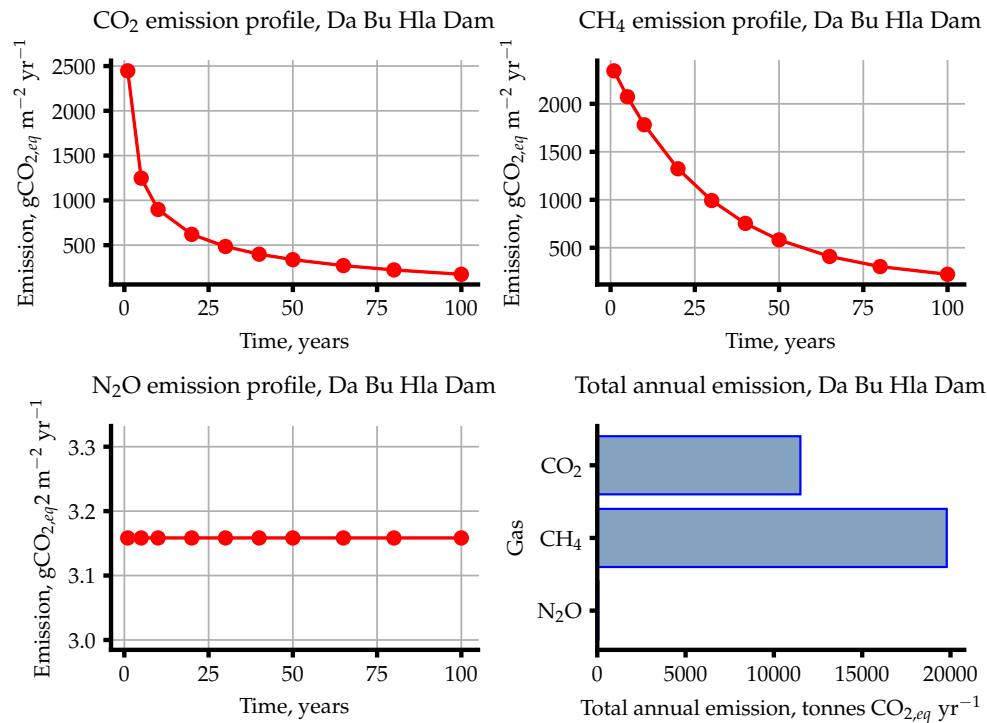
Input Name	Unit	Value(s)
Reservoir ID		9026
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.622648, LON: 96.014289
Monthly Temperatures	$^{\circ}\text{C}$	22.5, 24.4, 27.4, 30.0, 29.3, 26.9, 26.4, 26.4, 27.0, 27.4, 25.9, 23.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1609
Catchment area	km^2	229.9
Length of inundated river	km	9.408
Population	capita	36 410
Area fractions	-	0.0, 0.0, 0.0, 0.073, 0.004, 0.002, 0.595, 0.326, 0.0
Mean catchment slope	$\%$	8.000
Mean annual precipitation	mm/year	2610
Mean annual evapotranspiration	mm/year	1335
Soil wetness	mm over profile	404.0
Soil Olsen P content	kgP ha^{-1}	13.49
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	246 300 000
Reservoir area	km^2	24.71
Maximum reservoir depth	m	16.00
Mean reservoir depth	m	10.00
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.08, 0.0, 0.58, 0.34, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.014
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.840
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.927
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.446
Mean monthly wind speed	m s^{-1}	0.8700
Water intake depth below surface	m	N/A



97.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	927.1
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	636.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-174.5
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	290.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	465.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	11 500
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1150
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	215.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	136.2
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	449.0
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	800.7
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	19 790
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1979
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.158
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.881
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.520
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	78.05
Total N ₂ O emission per lifetime	ktCO _{2,eq}	7.805
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1266
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1269

97.3 Emission plots



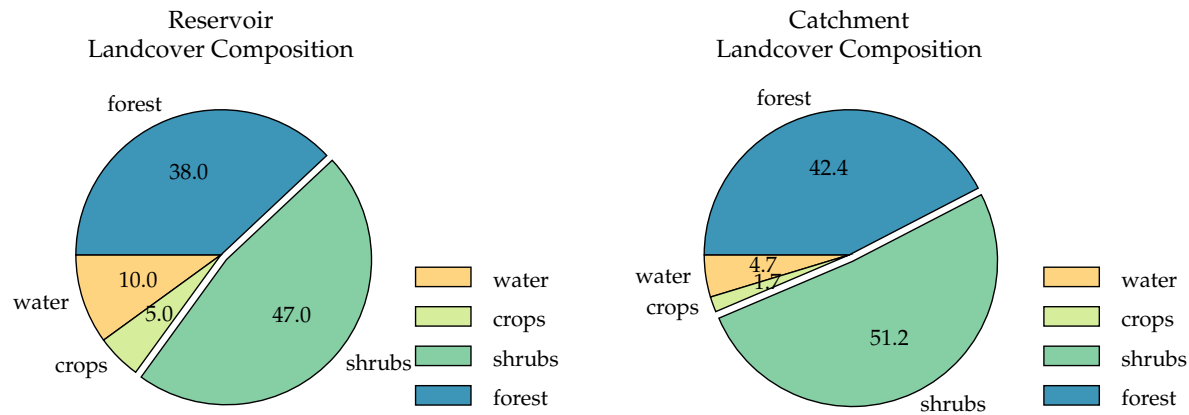
97.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	76.02
Retention coefficient	-	0.3478
Influent total N concentration	$\mu\text{g L}^{-1}$	134.7
Reservoir TN concentration	$\mu\text{g L}^{-1}$	87.85
Reservoir TP concentration	$\mu\text{g L}^{-1}$	54.65
Percentage of reservoir's surface area that is littoral	%	11.71
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.840
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.08
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.47
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.53
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.569
Influent total N load	kgN yr^{-1}	49 810
Influent total P load	kgP yr^{-1}	28 120
Downstream TN concentration	mg L^{-1}	0.1278

98 Pathi Dam

98.1 Inputs

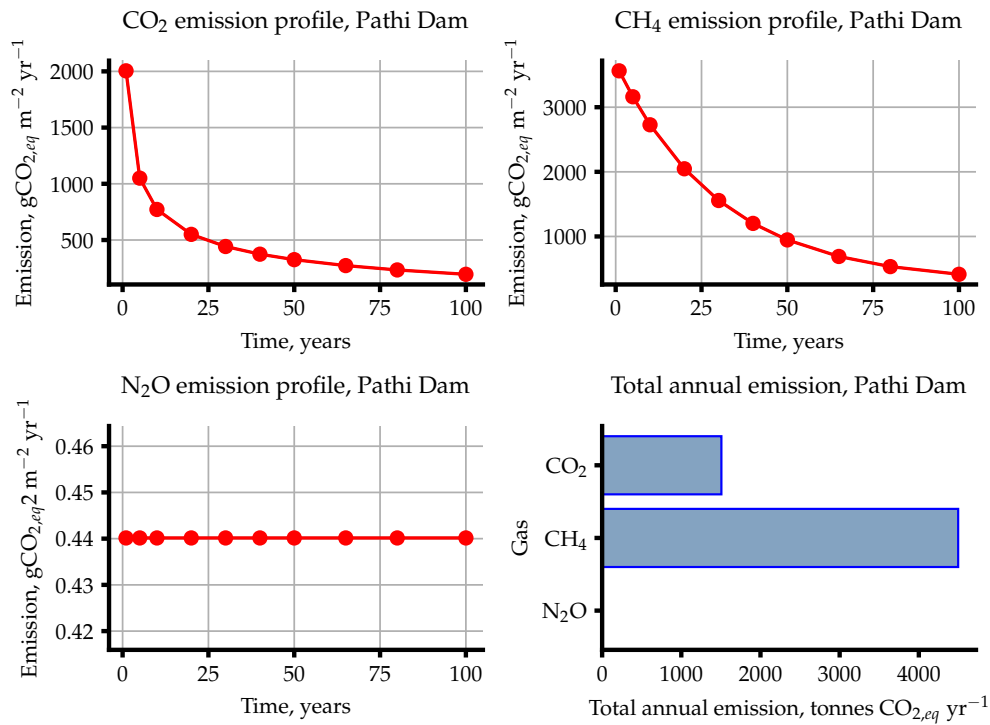
Input Name	Unit	Value(s)
Reservoir ID		9046
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.029905, LON: 96.534951
Monthly Temperatures	$^{\circ}\text{C}$	22.1, 24.5, 27.8, 30.5, 29.4, 27.2, 26.8, 26.7, 27.3, 27.5, 25.6, 22.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	633.0
Catchment area	km^2	68.79
Length of inundated river	km	2.614
Population	capita	3049
Area fractions	-	0.0, 0.0, 0.0, 0.047, 0.0, 0.017, 0.512, 0.424, 0.0
Mean catchment slope	$\%$	23.00
Mean annual precipitation	mm/year	1704
Mean annual evapotranspiration	mm/year	1338
Soil wetness	mm over profile	437.0
Soil Olsen P content	kgP ha^{-1}	10.20
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	37 620 000
Reservoir area	km^2	3.530
Maximum reservoir depth	m	27.40
Mean reservoir depth	m	10.70
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.02, 0.47, 0.38, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.1, 0.0, 0.03, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.957
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.150
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.672
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.426
Mean monthly wind speed	m s^{-1}	1.050
Water intake depth below surface	m	N/A



98.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	738.5
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	506.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-195.1
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	231.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	426.7
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1506
Total CO ₂ emission per lifetime	ktCO _{2,eq}	150.6
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	257.3
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	285.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	731.1
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1274
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	4497
Total CH ₄ emission per lifetime	ktCO _{2,eq}	449.7
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.4402
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.2236
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.3319
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.554
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1554
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1701
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1701

98.3 Emission plots



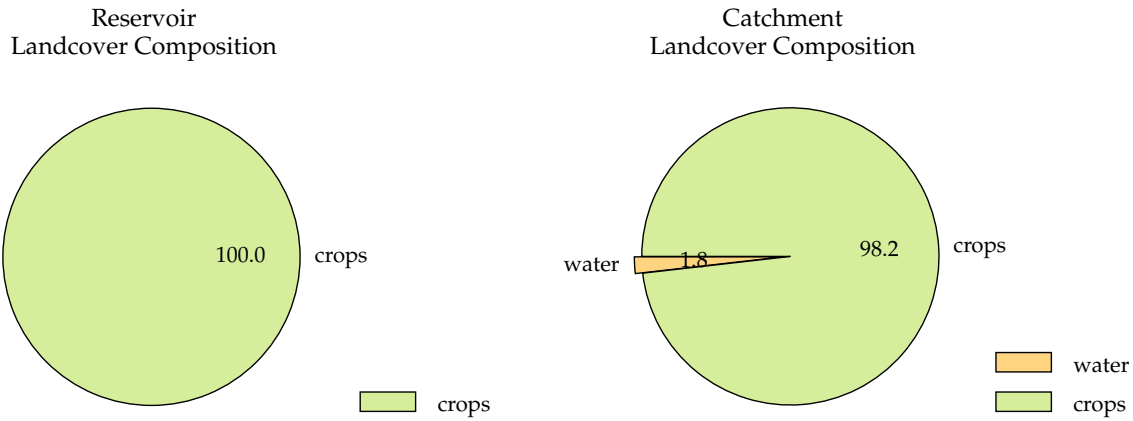
98.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	74.01
Retention coefficient	-	0.4090
Influent total N concentration	$\mu\text{g L}^{-1}$	17.83
Reservoir TN concentration	$\mu\text{g L}^{-1}$	10.52
Reservoir TP concentration	$\mu\text{g L}^{-1}$	45.22
Percentage of reservoir's surface area that is littoral	%	16.56
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.150
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.80
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.21
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.80
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.073
Influent total N load	kgN yr^{-1}	776.3
Influent total P load	kgP yr^{-1}	3223
Downstream TN concentration	mg L^{-1}	0.01493

99 Unknown9

99.1 Inputs

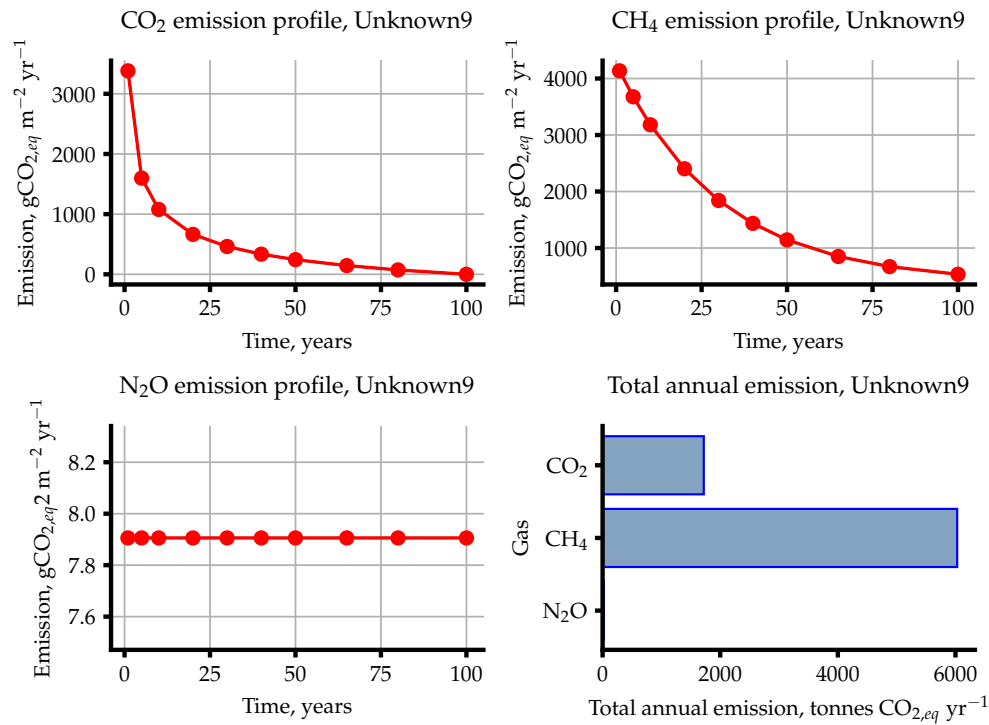
Input Name	Unit	Value(s)
Reservoir ID		9063
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.726461, LON: 95.827507
Monthly Temperatures	$^{\circ}\text{C}$	21.9, 24.3, 28.4, 31.4, 30.4, 28.7, 28.3, 27.9, 27.8, 27.3, 25.1, 21.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	128.0
Catchment area	km^2	202.2
Length of inundated river	km	3.154
Population	capita	37 120
Area fractions	-	0.0, 0.0, 0.0, 0.018, 0.0, 0.982, 0.0, 0.0, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	903.0
Mean annual evapotranspiration	mm/year	1462
Soil wetness	mm over profile	56.00
Soil Olsen P content	kgP ha^{-1}	3.811
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	27 820 000
Reservoir area	km^2	3.974
Maximum reservoir depth	m	15.00
Mean reservoir depth	m	7.000
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.98, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.02, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.802
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.220
Water intake depth below surface	m	N/A



99.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1380
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	947.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	433.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	433.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1721
Total CO ₂ emission per lifetime	ktCO _{2,eq}	172.1
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	316.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	387.2
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	813.1
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1517
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	6029
Total CH ₄ emission per lifetime	ktCO _{2,eq}	602.9
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	7.906
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	3.420
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	5.663
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	31.42
Total N ₂ O emission per lifetime	ktCO _{2,eq}	3.142
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1950
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1956

99.3 Emission plots



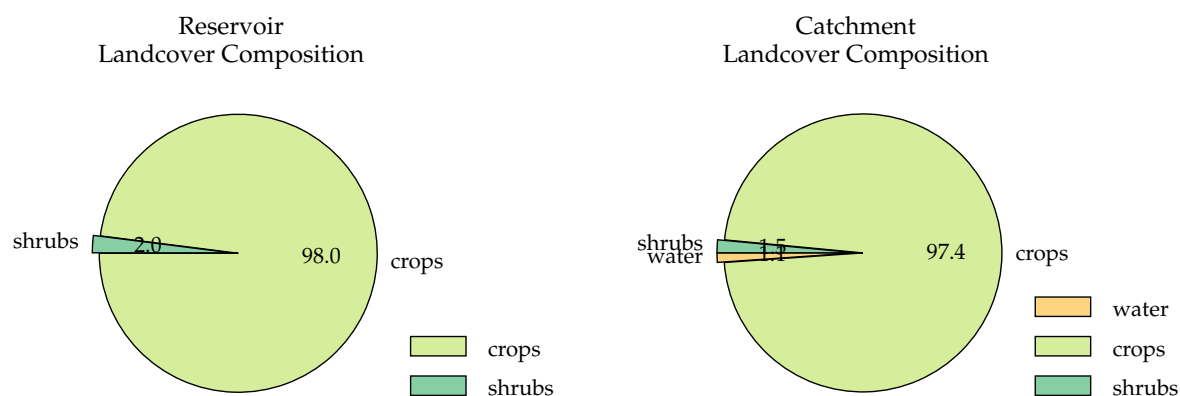
99.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1094
Retention coefficient	-	0.4626
Influent total N concentration	$\mu\text{g L}^{-1}$	499.0
Reservoir TN concentration	$\mu\text{g L}^{-1}$	268.1
Reservoir TP concentration	$\mu\text{g L}^{-1}$	598.7
Percentage of reservoir's surface area that is littoral	%	22.51
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.08
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.73
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	1.120
Influent total N load	kgN yr^{-1}	12 920
Influent total P load	kgP yr^{-1}	28 330
Downstream TN concentration	mg L^{-1}	0.3621

100 Thazi Dam

100.1 Inputs

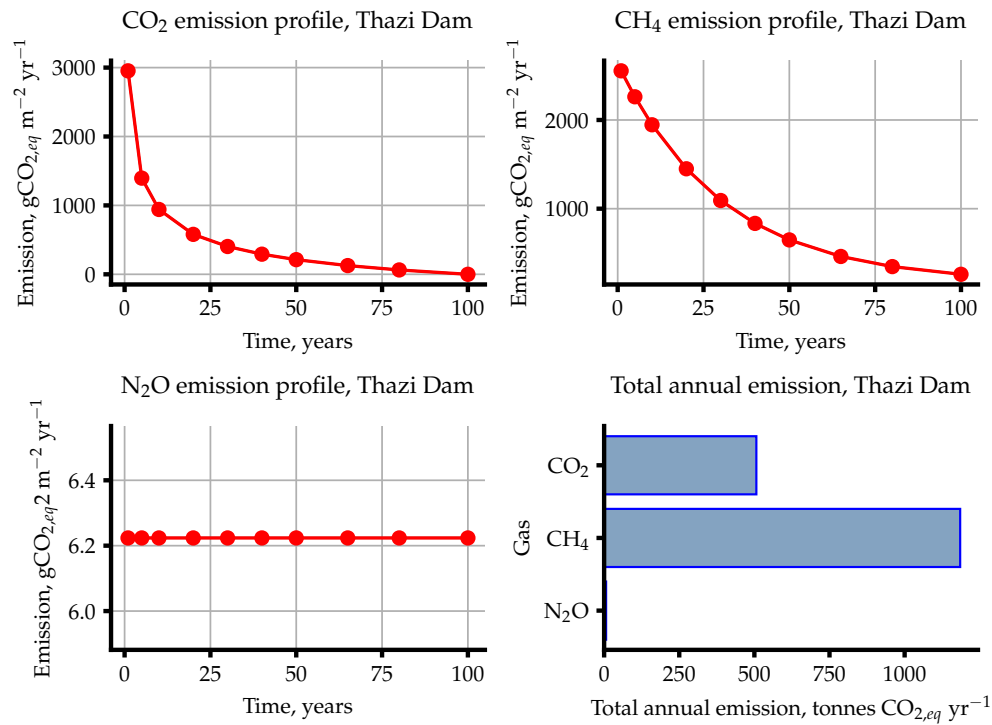
Input Name	Unit	Value(s)
Reservoir ID		9106
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.239172, LON: 95.261253
Monthly Temperatures	$^{\circ}\text{C}$	20.9, 23.7, 27.7, 31.3, 30.8, 29.8, 29.6, 28.9, 28.5, 27.2, 24.5, 21.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	166.0
Catchment area	km^2	71.93
Length of inundated river	km	1.732
Population	capita	11 050
Area fractions	-	0.0, 0.0, 0.0, 0.011, 0.0, 0.974, 0.015, 0.0, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	861.0
Mean annual evapotranspiration	mm/year	1430
Soil wetness	mm over profile	27.00
Soil Olsen P content	kgP ha^{-1}	5.750
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	8 141 000
Reservoir area	km^2	1.340
Maximum reservoir depth	m	8.000
Mean reservoir depth	m	6.100
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.89, 0.02, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.09, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.267
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.890
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.728
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.924
Mean monthly wind speed	m s^{-1}	1.160
Water intake depth below surface	m	N/A



100.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1205
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	827.0
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	378.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	378.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	506.6
Total CO ₂ emission per lifetime	ktCO _{2,eq}	50.66
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	257.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	166.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	460.0
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	884.2
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	1185
Total CH ₄ emission per lifetime	ktCO _{2,eq}	118.5
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	6.224
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	3.655
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	4.939
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	8.340
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.8340
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1262
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1267

100.3 Emission plots



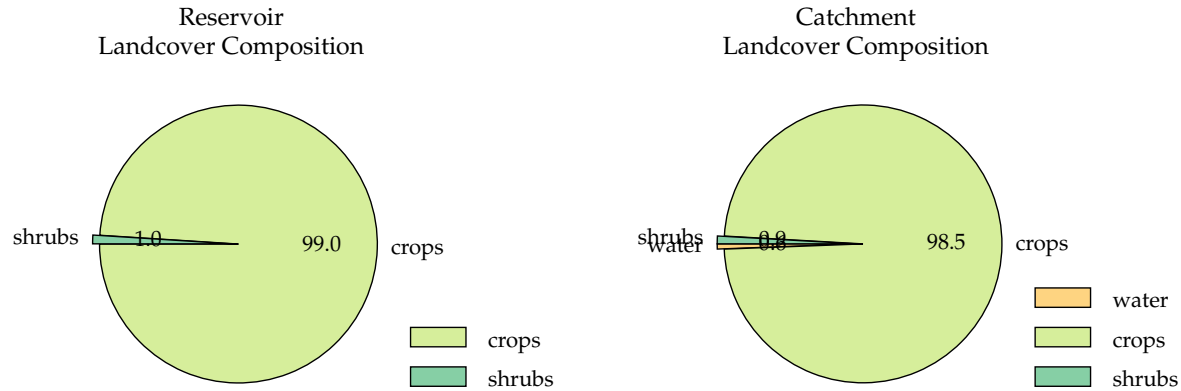
100.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	758.1
Retention coefficient	-	0.3532
Influent total N concentration	$\mu\text{g L}^{-1}$	435.2
Reservoir TN concentration	$\mu\text{g L}^{-1}$	281.4
Reservoir TP concentration	$\mu\text{g L}^{-1}$	498.2
Percentage of reservoir's surface area that is littoral	%	13.62
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.890
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.42
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.38
Water density at the surface of the reservoir	kg m^{-3}	995.6
Thermocline depth	m	0.7161
Influent total N load	kgN yr^{-1}	5196
Influent total P load	kgP yr^{-1}	9052
Downstream TN concentration	mg L^{-1}	0.4096

101 Htanzaloke

101.1 Inputs

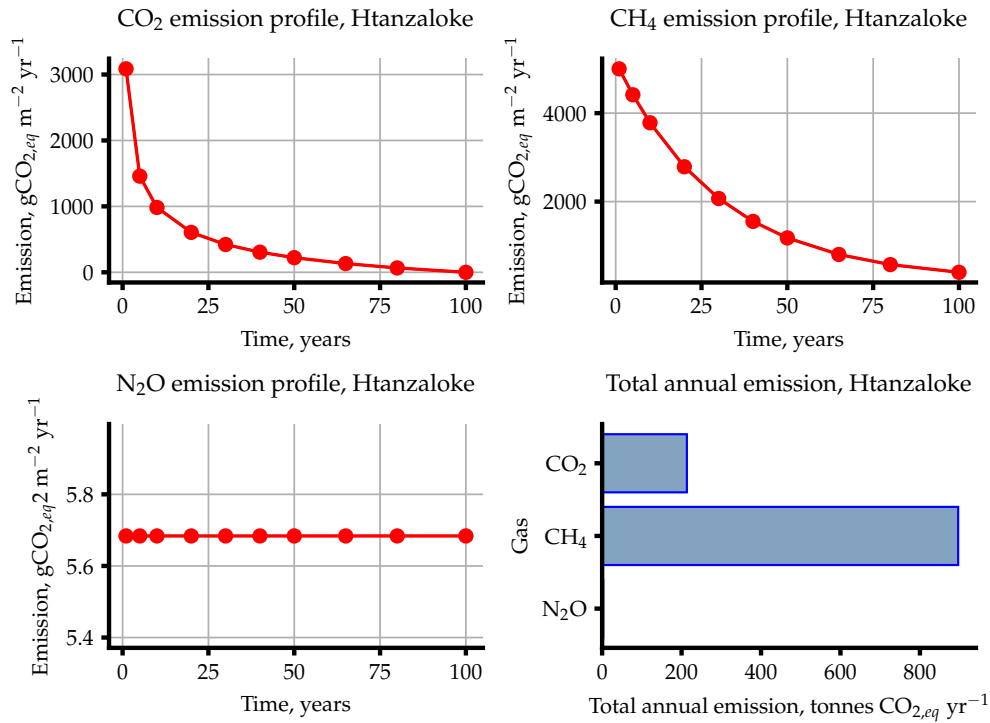
Input Name	Unit	Value(s)
Reservoir ID		9132
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.159716, LON: 95.257794
Monthly Temperatures	$^{\circ}\text{C}$	20.9, 23.8, 27.9, 31.4, 31.0, 29.9, 29.7, 29.0, 28.7, 27.4, 24.7, 21.2
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	155.0
Catchment area	km^2	94.63
Length of inundated river	km	1.869
Population	capita	25 770
Area fractions	-	0.0, 0.0, 0.0, 0.006, 0.0, 0.984, 0.009, 0.0, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	837.0
Mean annual evapotranspiration	mm/year	1439
Soil wetness	mm over profile	25.00
Soil Olsen P content	kgP ha^{-1}	6.621
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	3 454 000
Reservoir area	km^2	0.5400
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	6.396
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.98, 0.01, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	3.908
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.890
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.728
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.924
Mean monthly wind speed	m s^{-1}	1.190
Water intake depth below surface	m	N/A



101.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1259
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	864.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	395.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	395.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	213.4
Total CO ₂ emission per lifetime	ktCO _{2,eq}	21.34
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	299.1
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	213.1
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1148
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1660
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	896.3
Total CH ₄ emission per lifetime	ktCO _{2,eq}	89.63
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	5.684
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	4.405
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	5.044
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	3.069
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.3069
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2055
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2060

101.3 Emission plots



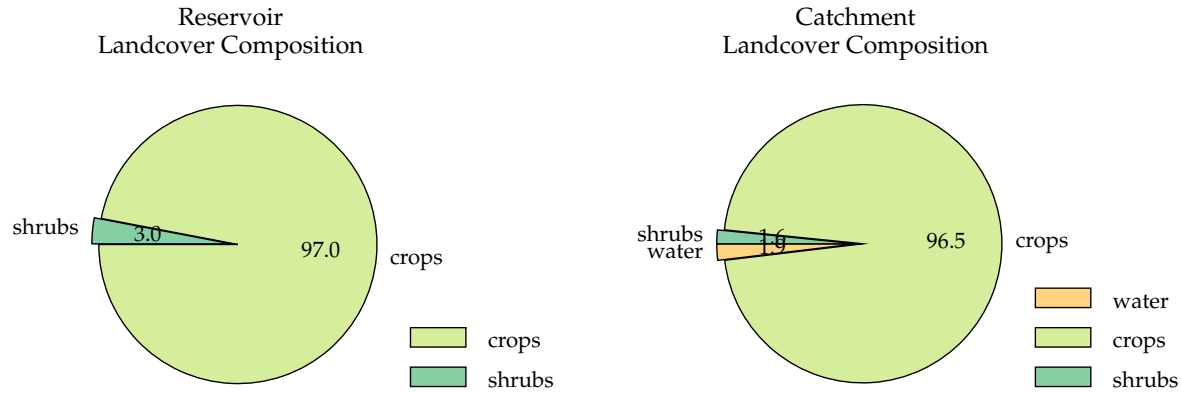
101.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1306
Retention coefficient	-	0.1587
Influent total N concentration	$\mu\text{g L}^{-1}$	368.5
Reservoir TN concentration	$\mu\text{g L}^{-1}$	310.0
Reservoir TP concentration	$\mu\text{g L}^{-1}$	1104
Percentage of reservoir's surface area that is littoral	%	18.20
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.890
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.42
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.50
Water density at the surface of the reservoir	kg m^{-3}	995.5
Thermocline depth	m	0.5786
Influent total N load	kgN yr^{-1}	5405
Influent total P load	kgP yr^{-1}	19 150
Downstream TN concentration	mg L^{-1}	0.4490

102 NatMouk

102.1 Inputs

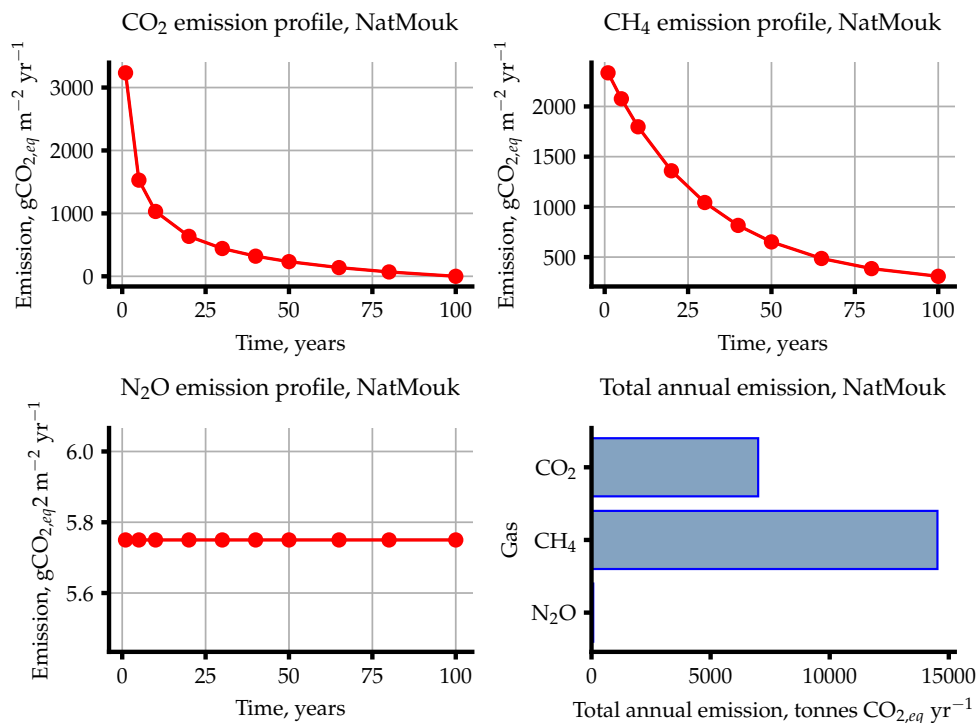
Input Name	Unit	Value(s)
Reservoir ID		9133
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.408764, LON: 95.481881
Monthly Temperatures	$^{\circ}\text{C}$	22.0, 24.3, 28.4, 31.5, 30.6, 28.6, 28.1, 27.9, 27.9, 27.4, 25.3, 22.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	127.0
Catchment area	km ²	1092
Length of inundated river	km	10.81
Population	capita	93 770
Area fractions	-	0.0, 0.0, 0.0, 0.019, 0.0, 0.966, 0.016, 0.0, 0.0
Mean catchment slope	%	4.000
Mean annual precipitation	mm/year	858.0
Mean annual evapotranspiration	mm/year	1459
Soil wetness	mm over profile	40.00
Soil Olsen P content	kgP ha ⁻¹	4.474
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	124 600 000
Reservoir area	km ²	16.90
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	7.372
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.97, 0.02, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.01, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	4.369
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	5.180
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	5.040
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	5.202
Mean monthly wind speed	m s ⁻¹	1.190
Water intake depth below surface	m	N/A



102.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1320
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	905.6
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	414.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	414.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	6997
Total CO ₂ emission per lifetime	ktCO _{2,eq}	699.7
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	238.1
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	225.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	395.6
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	859.4
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	14 520
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1452
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	5.750
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.844
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	4.297
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	97.17
Total N ₂ O emission per lifetime	ktCO _{2,eq}	9.717
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1273
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1278

102.3 Emission plots



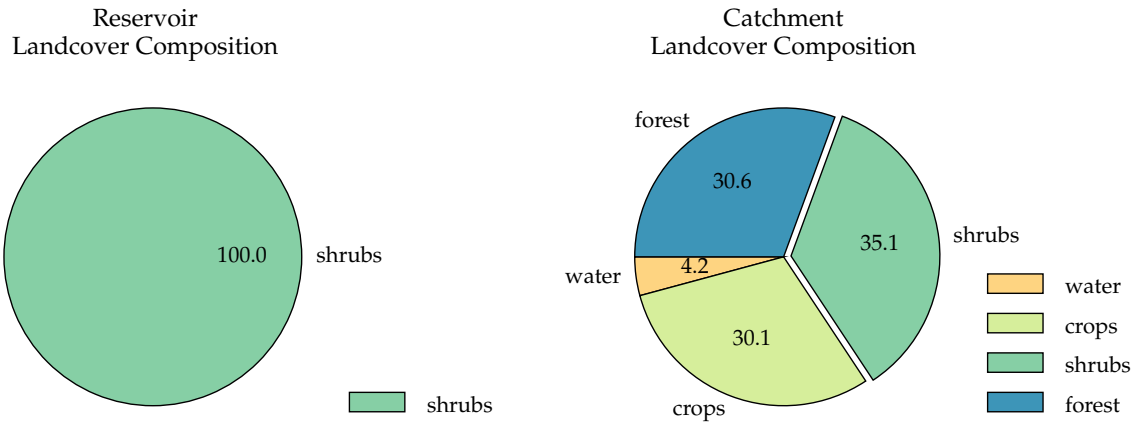
102.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	550.8
Retention coefficient	-	0.4185
Influent total N concentration	$\mu\text{g L}^{-1}$	338.0
Reservoir TN concentration	$\mu\text{g L}^{-1}$	196.5
Reservoir TP concentration	$\mu\text{g L}^{-1}$	324.6
Percentage of reservoir's surface area that is littoral	%	11.94
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.14
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.78
Water density at the surface of the reservoir	kg m^{-3}	995.7
Thermocline depth	m	1.569
Influent total N load	kgN yr^{-1}	46 870
Influent total P load	kgP yr^{-1}	76 390
Downstream TN concentration	mg L^{-1}	0.2765

103 Kintat

103.1 Inputs

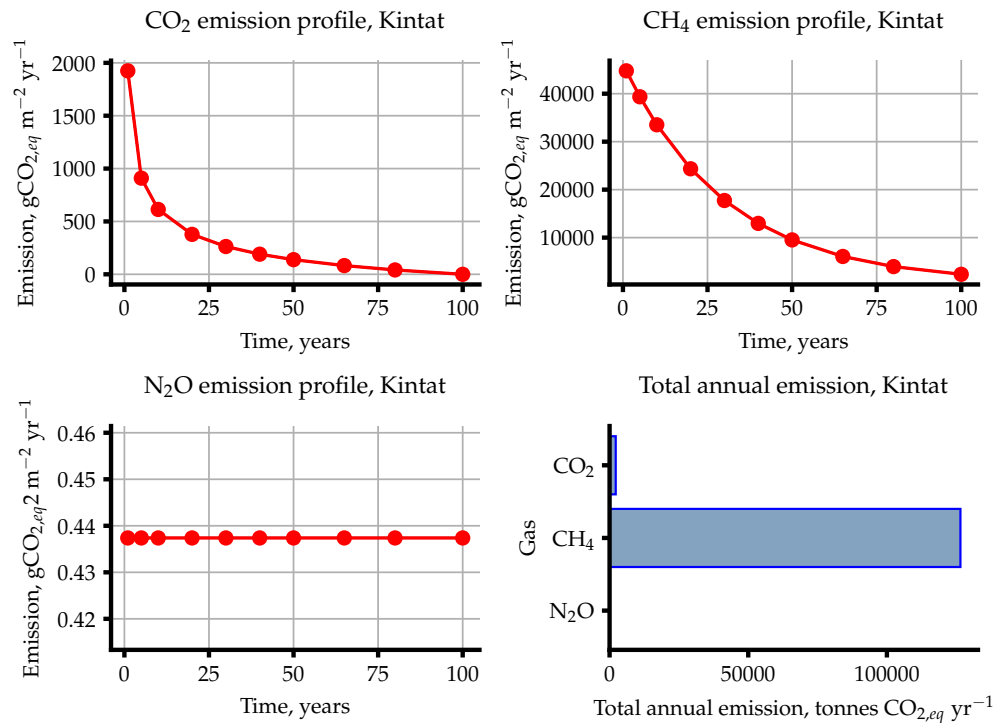
Input Name	Unit	Value(s)
Reservoir ID		9001
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 23.219707, LON: 95.36875
Monthly Temperatures	$^{\circ}\text{C}$	19.2, 21.9, 25.8, 29.4, 29.5, 28.8, 28.6, 27.9, 28.0, 26.8, 23.8, 20.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	664.0
Catchment area	km^2	10 640
Length of inundated river	km	7.643
Population	capita	530 200
Area fractions	-	0.0, 0.0, 0.0, 0.042, 0.0, 0.301, 0.351, 0.306, 0.0
Mean catchment slope	$\%$	7.000
Mean annual precipitation	mm/year	1602
Mean annual evapotranspiration	mm/year	1245
Soil wetness	mm over profile	193.0
Soil Olsen P content	kgP ha^{-1}	6.792
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	15 210 000
Reservoir area	km^2	9.018
Maximum reservoir depth	m	3.000
Mean reservoir depth	m	1.700
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.869
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.620
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.362
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.734
Mean monthly wind speed	m s^{-1}	0.9800
Water intake depth below surface	m	N/A



103.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	785.4
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	539.0
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	246.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	246.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2222
Total CO ₂ emission per lifetime	ktCO _{2,eq}	222.2
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	565.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	616.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	12 850
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	14 030
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	126 500
Total CH ₄ emission per lifetime	ktCO _{2,eq}	12 650
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.4374
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.4862
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.4618
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	3.944
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.3944
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	14 280
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	14 280

103.3 Emission plots



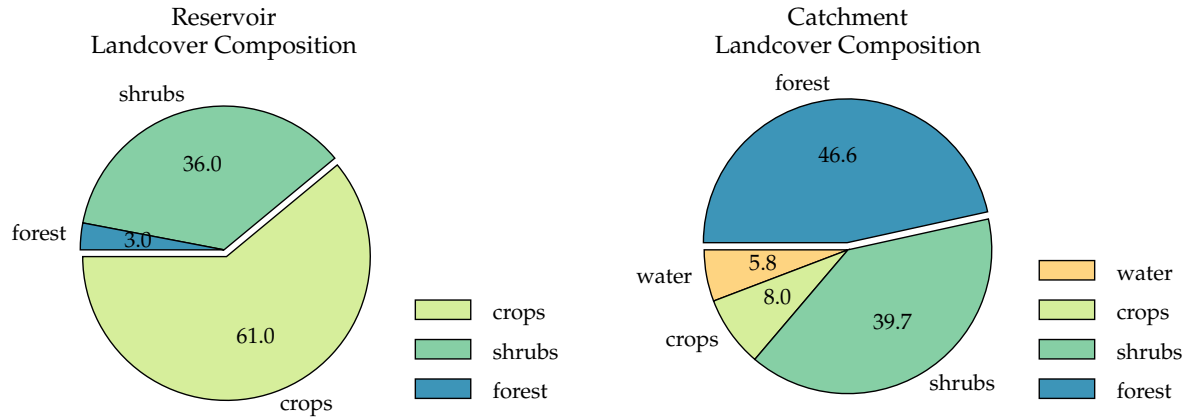
103.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	71.24
Retention coefficient	-	0.001 721
Influent total N concentration	$\mu\text{g L}^{-1}$	147.0
Reservoir TN concentration	$\mu\text{g L}^{-1}$	146.8
Reservoir TP concentration	$\mu\text{g L}^{-1}$	71.15
Percentage of reservoir's surface area that is littoral	%	100.0
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.620
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	55.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.30
Water density at the bottom of the reservoir	kg m^{-3}	997.5
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.08
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.012
Influent total N load	kgN yr^{-1}	1 039 000
Influent total P load	kgP yr^{-1}	503 200
Downstream TN concentration	mg L^{-1}	0.1469

104 Taung nyo dam

104.1 Inputs

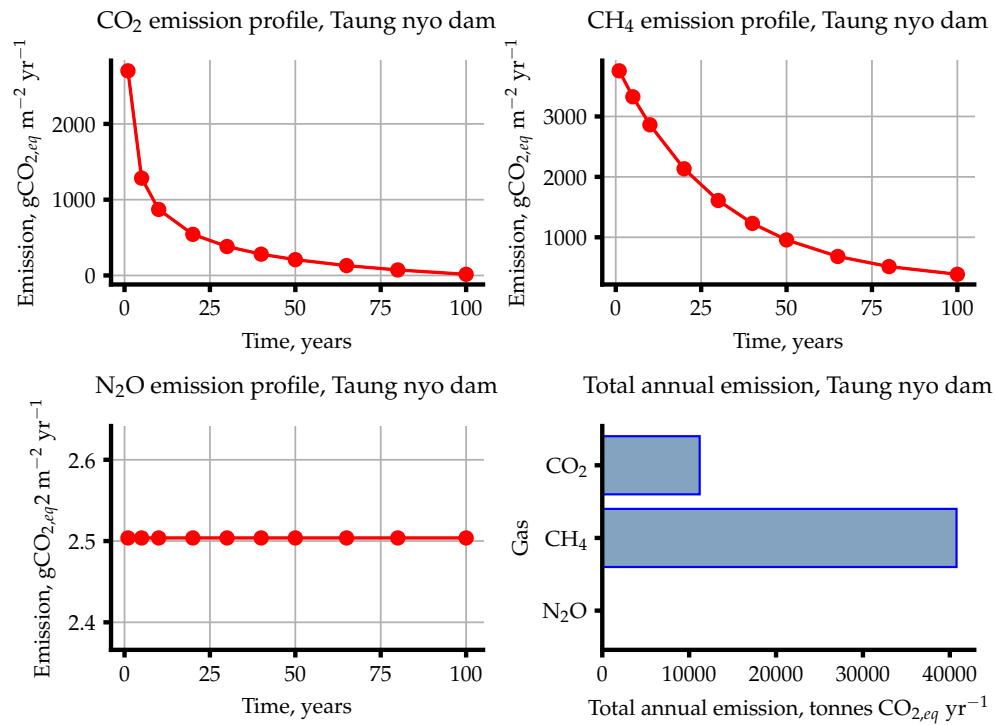
Input Name	Unit	Value(s)
Reservoir ID		9017
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.532996, LON: 95.71943
Monthly Temperatures	$^{\circ}\text{C}$	22.4, 24.6, 28.0, 30.8, 29.8, 27.4, 26.9, 26.9, 27.3, 27.6, 25.9, 23.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	481.0
Catchment area	km^2	557.0
Length of inundated river	km	15.78
Population	capita	64 490
Area fractions	-	0.0, 0.0, 0.0, 0.058, 0.0, 0.08, 0.397, 0.466, 0.0
Mean catchment slope	$\%$	10.00
Mean annual precipitation	mm/year	1481
Mean annual evapotranspiration	mm/year	1351
Soil wetness	mm over profile	297.0
Soil Olsen P content	kgP ha^{-1}	6.096
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	263 100 000
Reservoir area	km^2	31.22
Maximum reservoir depth	m	20.00
Mean reservoir depth	m	8.400
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.61, 0.36, 0.03, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.062
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.200
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.424
Mean monthly wind speed	m s^{-1}	0.9500
Water intake depth below surface	m	N/A



104.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1096
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	751.9
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	−15.40
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	343.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	359.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	11 210
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1121
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	288.4
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	249.1
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	768.7
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1306
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	40 770
Total CH ₄ emission per lifetime	ktCO _{2,eq}	4077
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.504
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.161
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.832
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	78.16
Total N ₂ O emission per lifetime	ktCO _{2,eq}	7.816
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1665
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1667

104.3 Emission plots



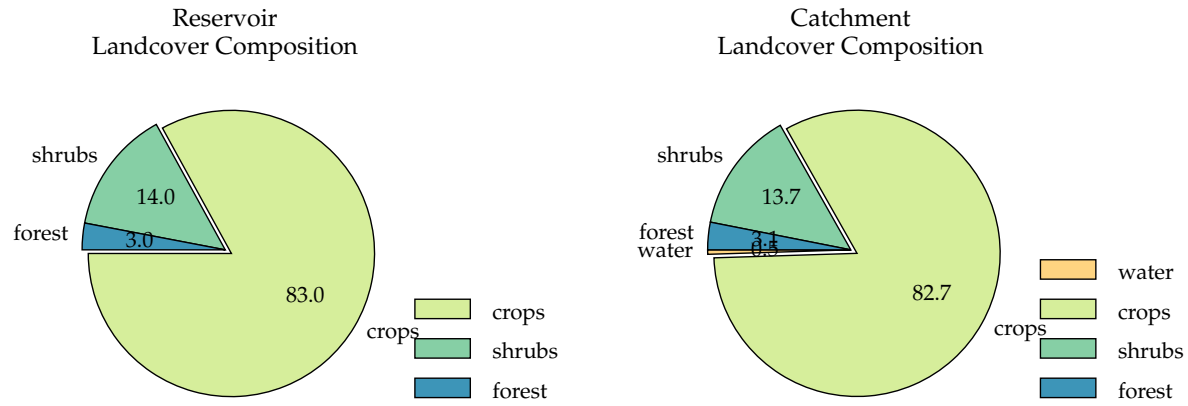
104.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	191.7
Retention coefficient	-	0.4402
Influent total N concentration	$\mu\text{g L}^{-1}$	129.9
Reservoir TN concentration	$\mu\text{g L}^{-1}$	70.33
Reservoir TP concentration	$\mu\text{g L}^{-1}$	112.1
Percentage of reservoir's surface area that is littoral	%	20.10
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.28
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.41
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.05
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.655
Influent total N load	kgN yr^{-1}	34 800
Influent total P load	kgP yr^{-1}	51 360
Downstream TN concentration	mg L^{-1}	0.1005

105 Sin Te Wa Reservoir

105.1 Inputs

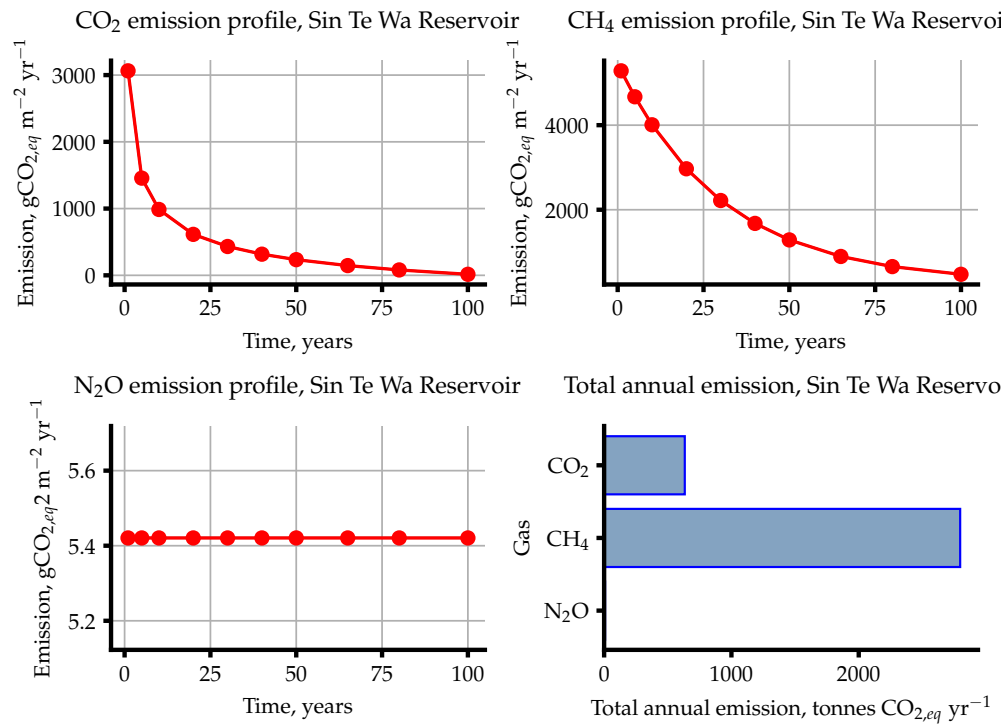
Input Name	Unit	Value(s)
Reservoir ID		9075
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.117383, LON: 95.307385
Monthly Temperatures	$^{\circ}\text{C}$	21.4, 24.1, 28.3, 31.6, 30.8, 29.1, 28.7, 28.4, 28.0, 27.2, 24.6, 21.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	142.0
Catchment area	km^2	323.4
Length of inundated river	km	1.769
Population	capita	40 370
Area fractions	-	0.0, 0.0, 0.0, 0.005, 0.0, 0.827, 0.137, 0.031, 0.0
Mean catchment slope	$\%$	5.000
Mean annual precipitation	mm/year	807.0
Mean annual evapotranspiration	mm/year	1424
Soil wetness	mm over profile	30.00
Soil Olsen P content	kgP ha^{-1}	5.608
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	14 760 000
Reservoir area	km^2	1.562
Maximum reservoir depth	m	20.00
Mean reservoir depth	m	9.400
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.83, 0.14, 0.03, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.555
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.220
Water intake depth below surface	m	N/A



105.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1244
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	853.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-15.40
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	390.2
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	405.6
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	633.6
Total CO ₂ emission per lifetime	ktCO _{2,eq}	63.36
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	280.1
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	276.1
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1234
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1791
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	2797
Total CH ₄ emission per lifetime	ktCO _{2,eq}	279.7
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	5.421
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	4.048
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	4.734
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	8.467
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.8467
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2196
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2201

105.3 Emission plots



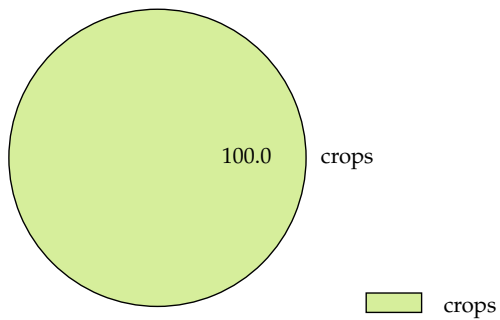
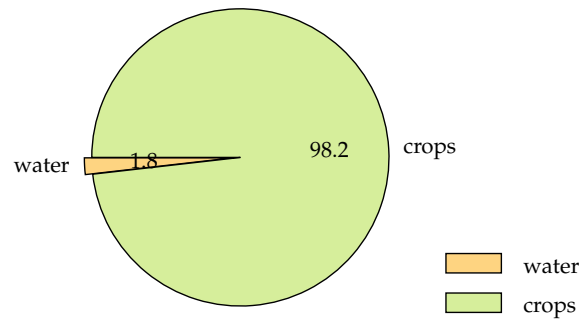
105.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	712.5
Retention coefficient	-	0.2047
Influent total N concentration	$\mu\text{g L}^{-1}$	238.6
Reservoir TN concentration	$\mu\text{g L}^{-1}$	189.7
Reservoir TP concentration	$\mu\text{g L}^{-1}$	568.9
Percentage of reservoir's surface area that is littoral	%	16.75
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.75
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.05
Water density at the surface of the reservoir	kg m^{-3}	995.7
Thermocline depth	m	0.8298
Influent total N load	kgN yr^{-1}	10 960
Influent total P load	kgP yr^{-1}	32 720
Downstream TN concentration	mg L^{-1}	0.2775

106 Unknown15

106.1 Inputs

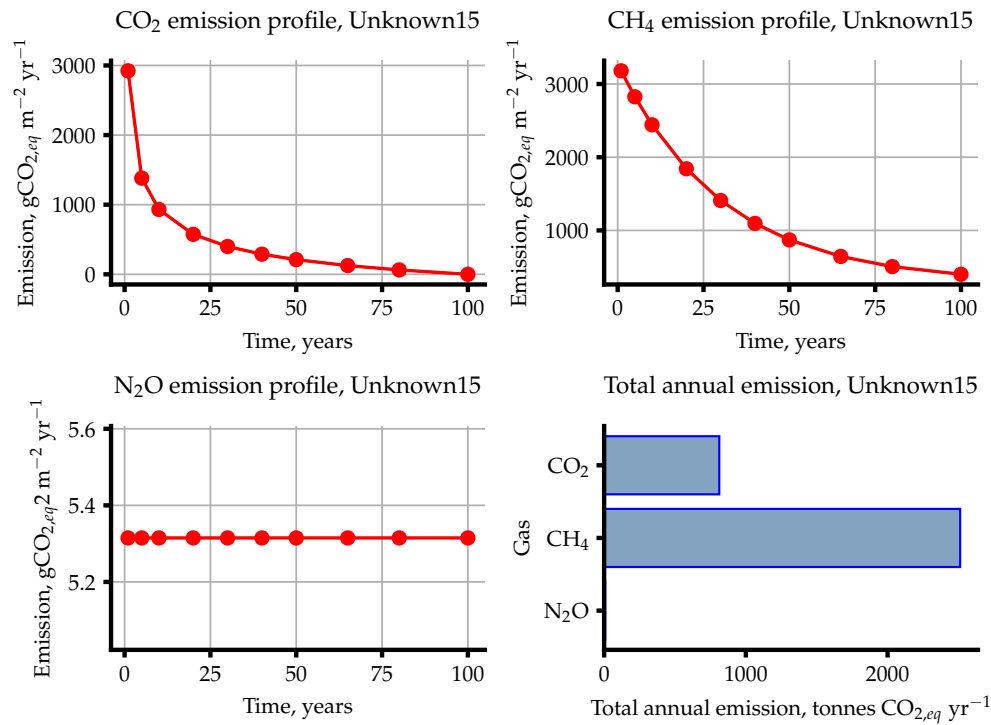
Input Name	Unit	Value(s)
Reservoir ID		9080
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.659017, LON: 95.56854
Monthly Temperatures	$^{\circ}\text{C}$	21.3, 24.1, 28.3, 31.7, 30.8, 29.6, 29.4, 28.8, 28.5, 27.6, 24.8, 21.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	119.0
Catchment area	km^2	77.81
Length of inundated river	km	2.910
Population	capita	10 170
Area fractions	-	0.0, 0.0, 0.0, 0.018, 0.0, 0.982, 0.0, 0.0, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	825.0
Mean annual evapotranspiration	mm/year	1457
Soil wetness	mm over profile	37.00
Soil Olsen P content	kgP ha^{-1}	5.997
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	16 320 000
Reservoir area	km^2	2.171
Maximum reservoir depth	m	13.00
Mean reservoir depth	m	7.500
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.133
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.200
Water intake depth below surface	m	N/A

Reservoir
Landcover CompositionCatchment
Landcover Composition

106.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1193
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	818.6
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	374.2
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	374.2
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	812.4
Total CO ₂ emission per lifetime	ktCO _{2,eq}	81.24
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	294.2
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	286.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	576.2
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1157
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	2512
Total CH ₄ emission per lifetime	ktCO _{2,eq}	251.2
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	5.315
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.576
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.445
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	11.54
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.154
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1531
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1535

106.3 Emission plots



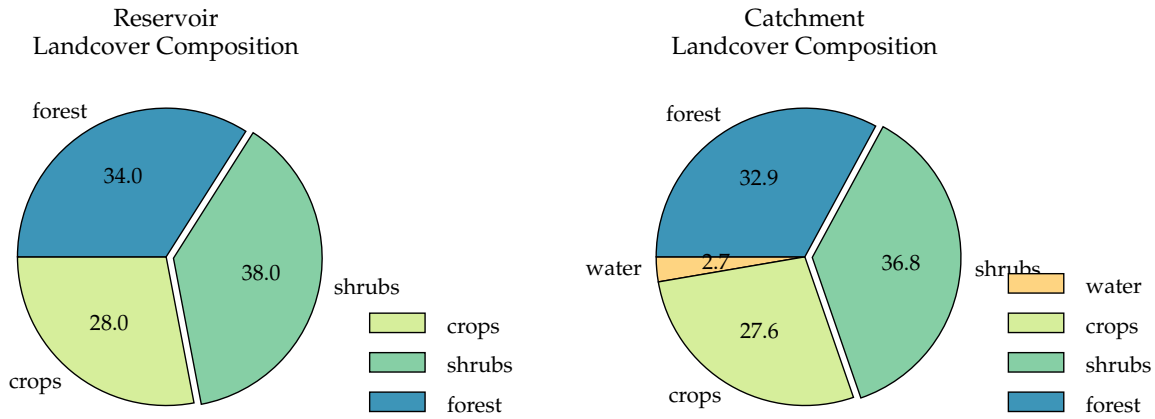
106.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	924.9
Retention coefficient	-	0.5854
Influent total N concentration	$\mu\text{g L}^{-1}$	346.5
Reservoir TN concentration	$\mu\text{g L}^{-1}$	143.6
Reservoir TP concentration	$\mu\text{g L}^{-1}$	392.6
Percentage of reservoir's surface area that is littoral	%	17.50
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.68
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.38
Water density at the surface of the reservoir	kg m^{-3}	995.6
Thermocline depth	m	0.8530
Influent total N load	kgN yr^{-1}	3209
Influent total P load	kgP yr^{-1}	8564
Downstream TN concentration	mg L^{-1}	0.1522

107 BanGon

107.1 Inputs

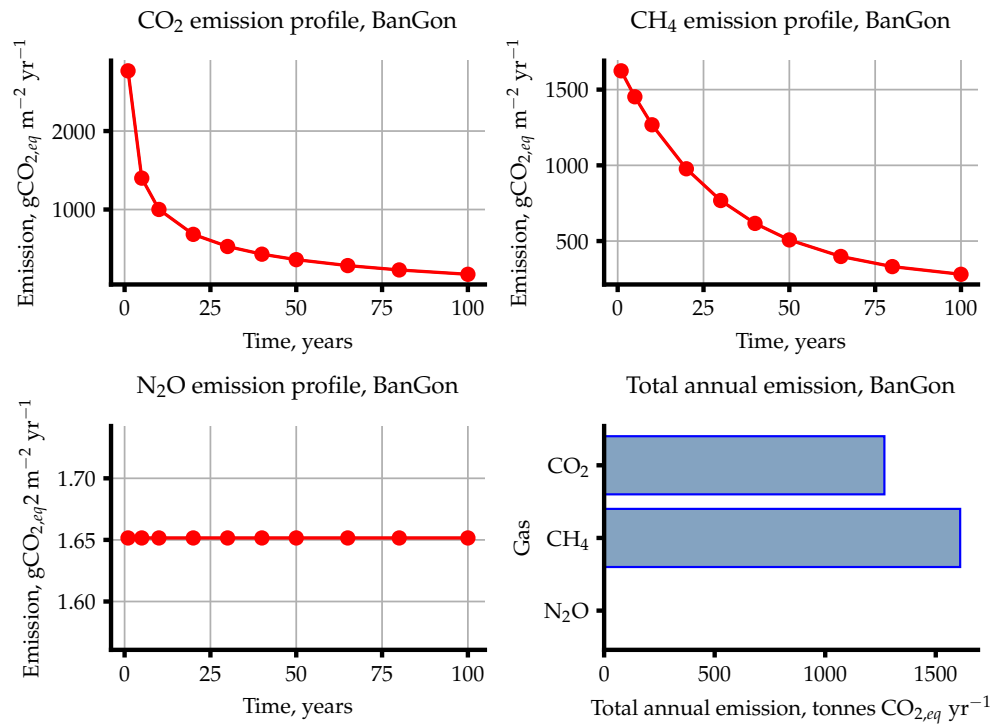
Input Name	Unit	Value(s)
Reservoir ID		9135
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.851984, LON: 95.718574
Monthly Temperatures	$^{\circ}\text{C}$	21.0, 23.5, 27.7, 30.9, 29.9, 27.6, 27.1, 26.9, 27.2, 26.9, 24.6, 21.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	84.00
Catchment area	km^2	56.12
Length of inundated river	km	1.606
Population	capita	6314
Area fractions	-	0.0, 0.0, 0.0, 0.027, 0.0, 0.276, 0.368, 0.329, 0.0
Mean catchment slope	$\%$	6.000
Mean annual precipitation	mm/year	923.0
Mean annual evapotranspiration	mm/year	1387
Soil wetness	mm over profile	102.0
Soil Olsen P content	kgP ha^{-1}	3.488
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	19 350 000
Reservoir area	km^2	2.503
Maximum reservoir depth	m	11.00
Mean reservoir depth	m	7.700
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.28, 0.38, 0.34, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.507
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.754
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.358
Mean monthly wind speed	m s^{-1}	1.060
Water intake depth below surface	m	N/A



107.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1058
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	726.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-174.5
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	331.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	506.5
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1268
Total CO ₂ emission per lifetime	ktCO _{2,eq}	126.8
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	225.3
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	225.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	192.6
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	643.4
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	1610
Total CH ₄ emission per lifetime	ktCO _{2,eq}	161.0
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.652
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.3467
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.9991
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	4.134
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.4134
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1150
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1151

107.3 Emission plots



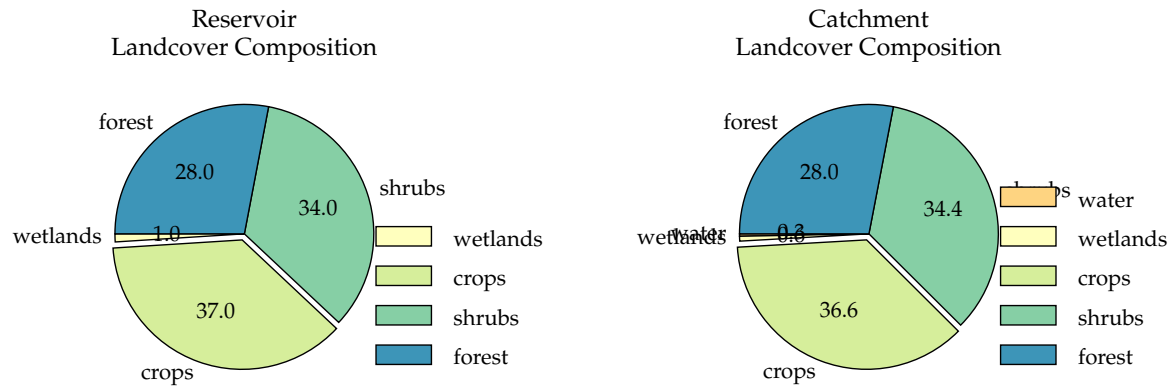
107.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1141
Retention coefficient	-	0.7668
Influent total N concentration	$\mu\text{g L}^{-1}$	172.6
Reservoir TN concentration	$\mu\text{g L}^{-1}$	40.25
Reservoir TP concentration	$\mu\text{g L}^{-1}$	276.0
Percentage of reservoir's surface area that is littoral	%	12.76
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.49
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.03
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	0.8875
Influent total N load	kgN yr^{-1}	813.7
Influent total P load	kgP yr^{-1}	5380
Downstream TN concentration	mg L^{-1}	0.026 55

108 North Yama

108.1 Inputs

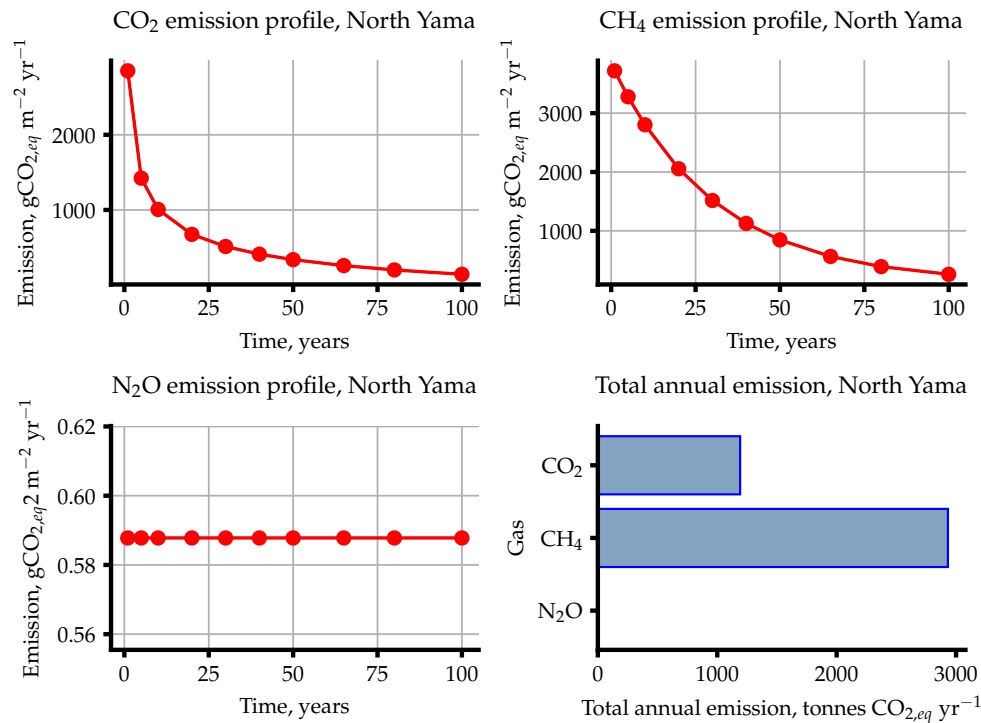
Input Name	Unit	Value(s)
Reservoir ID		9136
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.051197, LON: 94.676928
Monthly Temperatures	$^{\circ}\text{C}$	20.8, 23.3, 27.4, 30.7, 30.4, 29.1, 28.9, 28.3, 28.0, 26.8, 24.0, 20.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	242.0
Catchment area	km^2	524.9
Length of inundated river	km	1.465
Population	capita	45 450
Area fractions	-	0.0, 0.0, 0.0, 0.003, 0.006, 0.366, 0.344, 0.28, 0.0
Mean catchment slope	$\%$	14.00
Mean annual precipitation	mm/year	1019
Mean annual evapotranspiration	mm/year	1324
Soil wetness	mm over profile	70.00
Soil Olsen P content	kgP ha^{-1}	3.235
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	17 340 000
Reservoir area	km^2	2.430
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	7.135
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.01, 0.37, 0.34, 0.28, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.089
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.670
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.398
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.796
Mean monthly wind speed	m s^{-1}	1.080
Water intake depth below surface	m	N/A



108.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1105
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	758.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-143.7
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	346.6
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	490.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1192
Total CO ₂ emission per lifetime	ktCO _{2,eq}	119.2
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	241.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	119.2
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	845.8
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1206
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	2932
Total CH ₄ emission per lifetime	ktCO _{2,eq}	293.2
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.5878
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.4692
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.5285
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.428
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1428
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1697
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1697

108.3 Emission plots



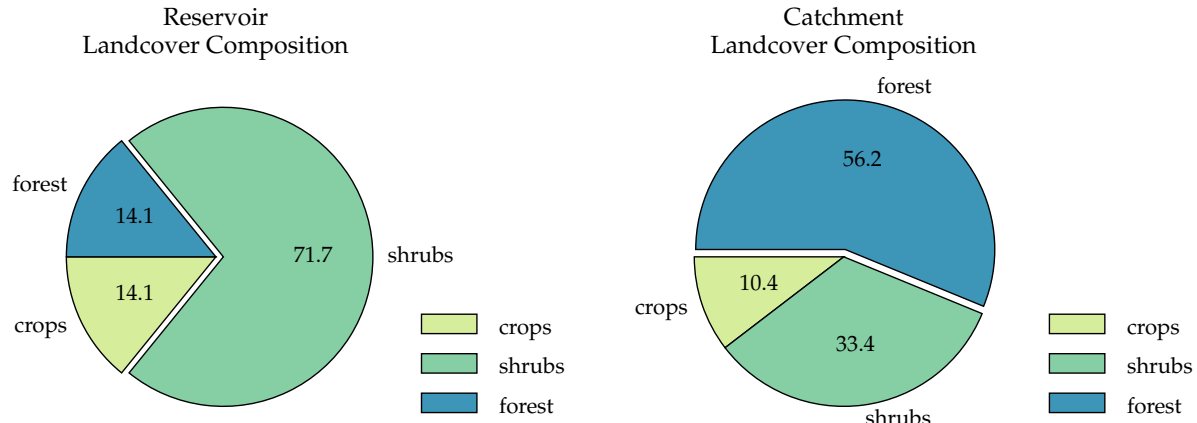
108.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	311.4
Retention coefficient	-	0.098 55
Influent total N concentration	$\mu\text{g L}^{-1}$	34.09
Reservoir TN concentration	$\mu\text{g L}^{-1}$	30.73
Reservoir TP concentration	$\mu\text{g L}^{-1}$	281.7
Percentage of reservoir's surface area that is littoral	%	13.34
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.670
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	56.04
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.29
Water density at the bottom of the reservoir	kg m^{-3}	997.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.78
Water density at the surface of the reservoir	kg m^{-3}	995.7
Thermocline depth	m	0.8118
Influent total N load	kgN yr^{-1}	4330
Influent total P load	kgP yr^{-1}	39 560
Downstream TN concentration	mg L^{-1}	0.043 72

109 Unknown30

109.1 Inputs

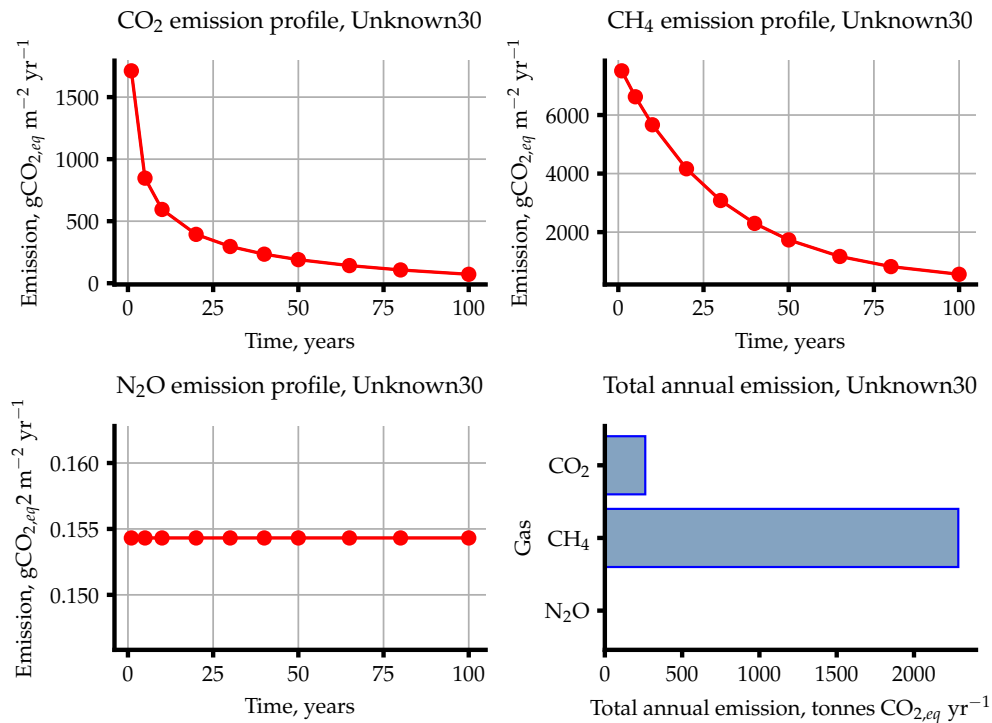
Input Name	Unit	Value(s)
Reservoir ID		9105
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.963473, LON: 94.573956
Monthly Temperatures	$^{\circ}\text{C}$	20.5, 23.1, 27.4, 30.9, 30.5, 28.1, 27.7, 27.4, 27.4, 26.9, 24.3, 20.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	728.0
Catchment area	km^2	60.34
Length of inundated river	km	2.112
Population	capita	2474
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.104, 0.334, 0.562, 0.0
Mean catchment slope	$\%$	16.00
Mean annual precipitation	mm/year	1524
Mean annual evapotranspiration	mm/year	1315
Soil wetness	mm over profile	80.00
Soil Olsen P content	kgP ha^{-1}	4.258
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	4 569 000
Reservoir area	km^2	0.9280
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	4.900
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.14, 0.71, 0.14, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.677
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.750
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.858
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.342
Mean monthly wind speed	m s^{-1}	0.9700
Water intake depth below surface	m	N/A



109.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	669.2
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	459.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-71.87
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	209.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	281.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	261.5
Total CO ₂ emission per lifetime	ktCO _{2,eq}	26.15
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	343.9
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	274.3
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1846
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2464
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	2287
Total CH ₄ emission per lifetime	ktCO _{2,eq}	228.7
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.1543
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.1242
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.1393
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.1432
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.014 32
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2746
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2746

109.3 Emission plots



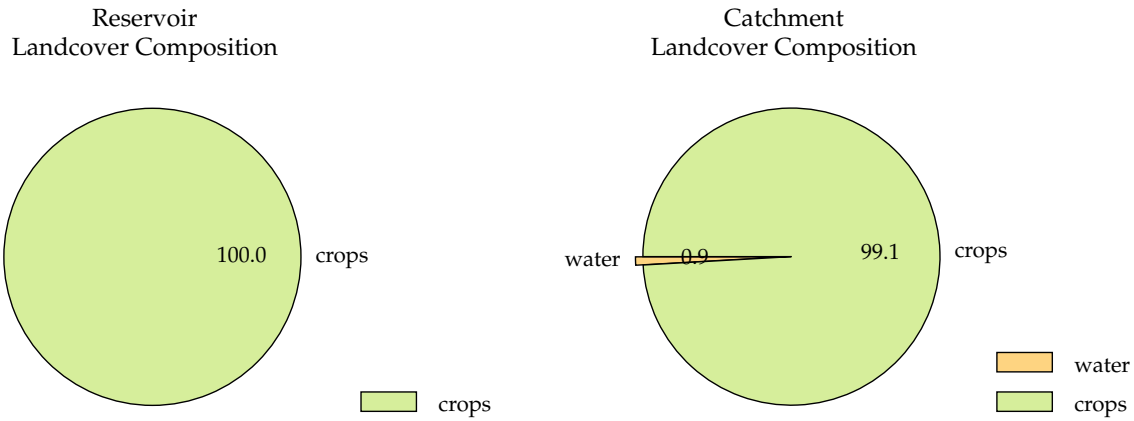
109.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	61.18
Retention coefficient	-	0.076 91
Influent total N concentration	$\mu\text{g L}^{-1}$	12.99
Reservoir TN concentration	$\mu\text{g L}^{-1}$	11.98
Reservoir TP concentration	$\mu\text{g L}^{-1}$	56.87
Percentage of reservoir's surface area that is littoral	%	31.01
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.750
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.00
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.16
Water density at the bottom of the reservoir	kg m^{-3}	997.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.30
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	0.5954
Influent total N load	kgN yr^{-1}	570.5
Influent total P load	kgP yr^{-1}	2687
Downstream TN concentration	mg L^{-1}	0.016 90

110 Nabae Kan Water

110.1 Inputs

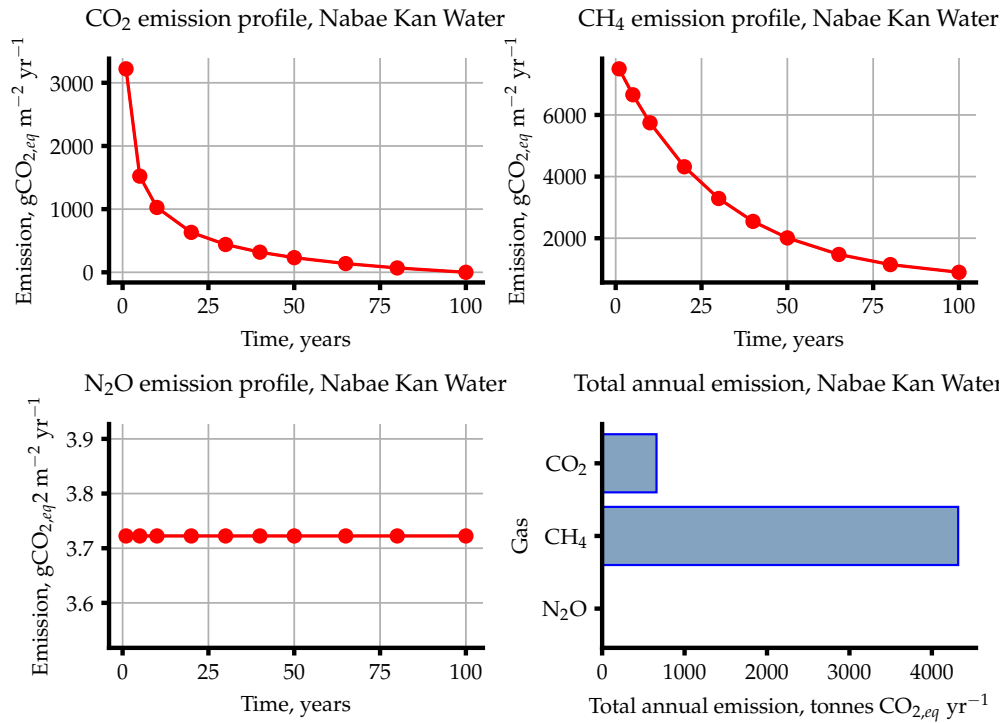
Input Name	Unit	Value(s)
Reservoir ID		9108
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.268362, LON: 95.476533
Monthly Temperatures	$^{\circ}\text{C}$	21.5, 24.2, 28.4, 31.9, 30.9, 29.4, 29.0, 28.6, 28.3, 27.5, 24.8, 21.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	139.0
Catchment area	km^2	86.23
Length of inundated river	km	1.051
Population	capita	12 800
Area fractions	-	0.0, 0.0, 0.0, 0.009, 0.0, 0.991, 0.0, 0.0, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	833.0
Mean annual evapotranspiration	mm/year	1471
Soil wetness	mm over profile	32.00
Soil Olsen P content	kgP ha^{-1}	6.354
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	6 150 000
Reservoir area	km^2	1.600
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	3.844
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.192
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.230
Water intake depth below surface	m	N/A



110.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1314
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	902.0
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	412.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	412.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	659.8
Total CO ₂ emission per lifetime	ktCO _{2,eq}	65.98
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	444.9
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	622.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1632
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2699
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	4319
Total CH ₄ emission per lifetime	ktCO _{2,eq}	431.9
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.722
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.478
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.100
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	5.956
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.5956
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3112
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3115

110.3 Emission plots



110.4 Intermediate variables

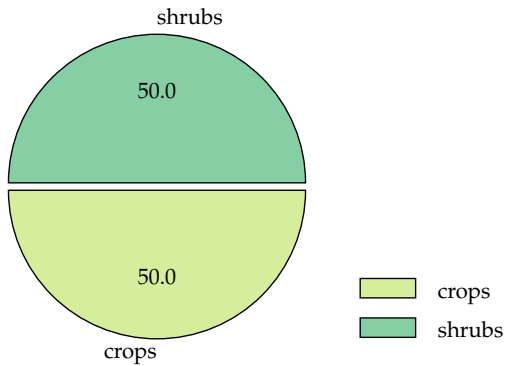
Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	873.1
Retention coefficient	-	0.2913
Influent total N concentration	$\mu\text{g L}^{-1}$	406.6
Reservoir TN concentration	$\mu\text{g L}^{-1}$	288.1
Reservoir TP concentration	$\mu\text{g L}^{-1}$	628.7
Percentage of reservoir's surface area that is littoral	%	43.52
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.81
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.30
Water density at the surface of the reservoir	kg m^{-3}	995.6
Thermocline depth	m	0.8249
Influent total N load	kgN yr^{-1}	4873
Influent total P load	kgP yr^{-1}	10 460
Downstream TN concentration	mg L^{-1}	0.4240

111 WunChaung

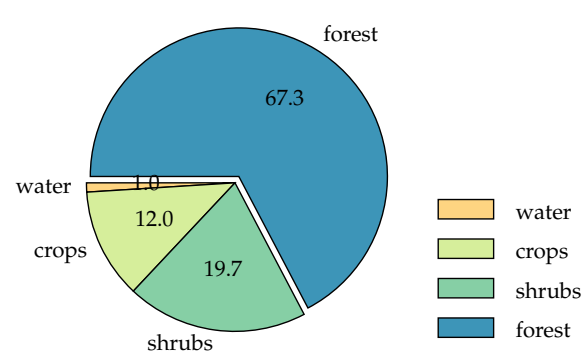
111.1 Inputs

Input Name	Unit	Value(s)
Reservoir ID		9138
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.986387, LON: 94.409438
Monthly Temperatures	$^{\circ}\text{C}$	20.3, 22.9, 26.9, 30.0, 29.7, 27.8, 27.5, 27.2, 27.0, 26.2, 23.5, 20.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	226.0
Catchment area	km^2	34.47
Length of inundated river	km	2.713
Population	capita	1946
Area fractions	-	0.0, 0.0, 0.0, 0.01, 0.0, 0.12, 0.197, 0.673, 0.0
Mean catchment slope	$\%$	11.00
Mean annual precipitation	mm/year	940.0
Mean annual evapotranspiration	mm/year	1353
Soil wetness	mm over profile	55.00
Soil Olsen P content	kgP ha^{-1}	3.808
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	2 056 000
Reservoir area	km^2	0.5000
Maximum reservoir depth	m	20.00
Mean reservoir depth	m	4.112
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.5, 0.5, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.461
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.850
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.300
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.188
Mean monthly wind speed	m s^{-1}	1.060
Water intake depth below surface	m	N/A

Reservoir
Landcover Composition



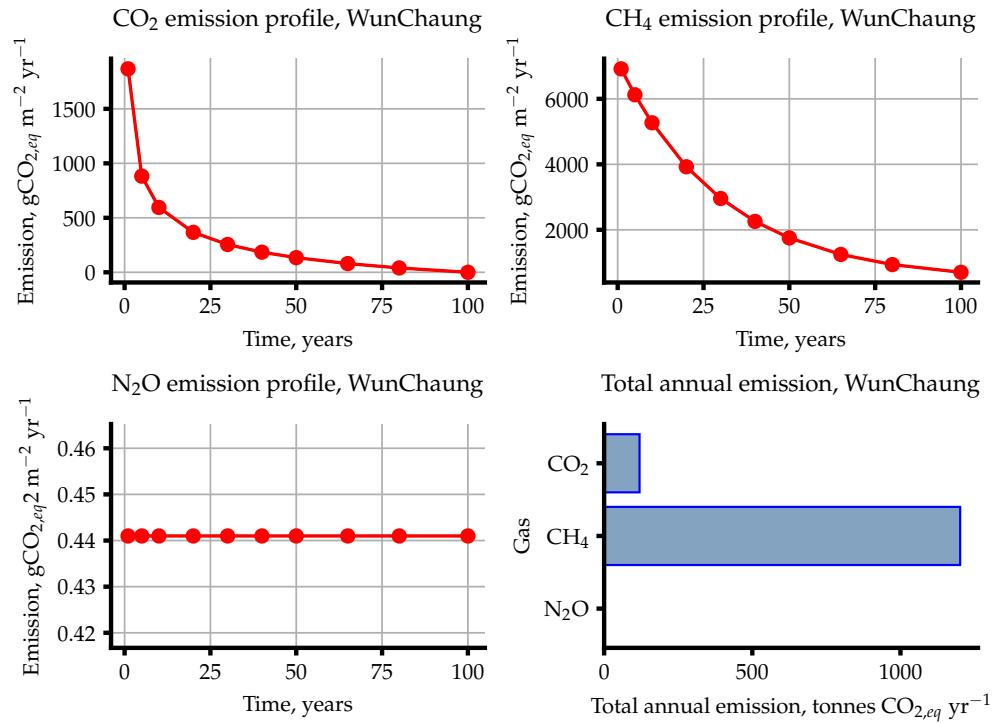
Catchment
Landcover Composition



111.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	761.9
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	522.9
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	239.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	239.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	119.5
Total CO ₂ emission per lifetime	ktCO _{2,eq}	11.95
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	391.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	448.1
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1563
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2403
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	1201
Total CH ₄ emission per lifetime	ktCO _{2,eq}	120.1
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.441
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.3380
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.3895
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.2205
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.022 05
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2642
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2642

111.3 Emission plots



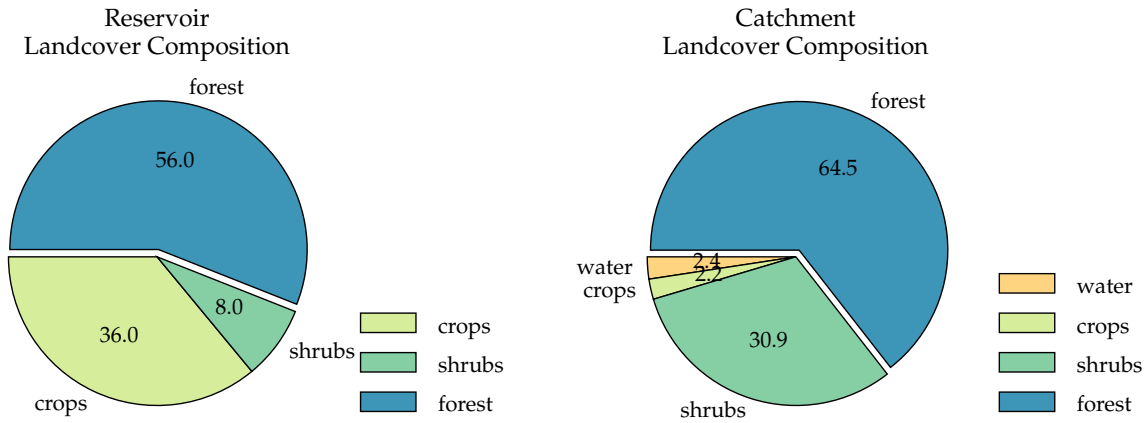
111.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	235.6
Retention coefficient	-	0.1745
Influent total N concentration	$\mu\text{g L}^{-1}$	44.50
Reservoir TN concentration	$\mu\text{g L}^{-1}$	36.52
Reservoir TP concentration	$\mu\text{g L}^{-1}$	195.6
Percentage of reservoir's surface area that is littoral	%	46.63
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.850
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.20
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.03
Water density at the bottom of the reservoir	kg m^{-3}	997.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.75
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	0.5856
Influent total N load	kgN yr^{-1}	346.7
Influent total P load	kgP yr^{-1}	1835
Downstream TN concentration	mg L^{-1}	0.05341

112 Manchaung

112.1 Inputs

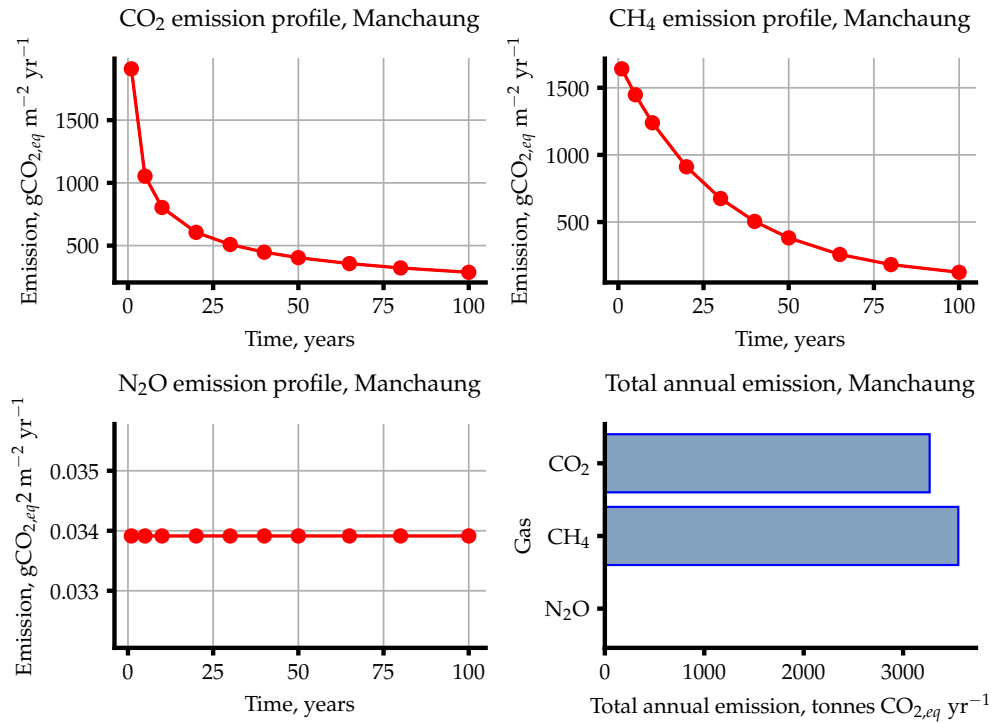
Input Name	Unit	Value(s)
Reservoir ID		9006
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.09673, LON: 94.430323
Monthly Temperatures	$^{\circ}\text{C}$	20.3, 22.8, 27.1, 30.3, 30.0, 27.9, 27.5, 27.2, 27.1, 26.7, 24.1, 20.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	985.0
Catchment area	km^2	358.6
Length of inundated river	km	5.113
Population	capita	12 260
Area fractions	-	0.0, 0.0, 0.0, 0.024, 0.0, 0.022, 0.309, 0.644, 0.0
Mean catchment slope	$\%$	32.00
Mean annual precipitation	mm/year	1815
Mean annual evapotranspiration	mm/year	1269
Soil wetness	mm over profile	120.0
Soil Olsen P content	kgP ha^{-1}	5.461
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	148 000 000
Reservoir area	km^2	6.600
Maximum reservoir depth	m	38.00
Mean reservoir depth	m	24.00
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.36, 0.08, 0.56, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.582
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.850
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.300
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.188
Mean monthly wind speed	m s^{-1}	1.000
Water intake depth below surface	m	N/A



112.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	661.6
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	454.0
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-287.5
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	207.5
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	495.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	3267
Total CO ₂ emission per lifetime	ktCO _{2,eq}	326.7
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	139.4
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	63.32
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	336.0
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	538.7
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	3555
Total CH ₄ emission per lifetime	ktCO _{2,eq}	355.5
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.033 91
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.024 00
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.028 96
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.2238
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.022 38
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1034
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1034

112.3 Emission plots



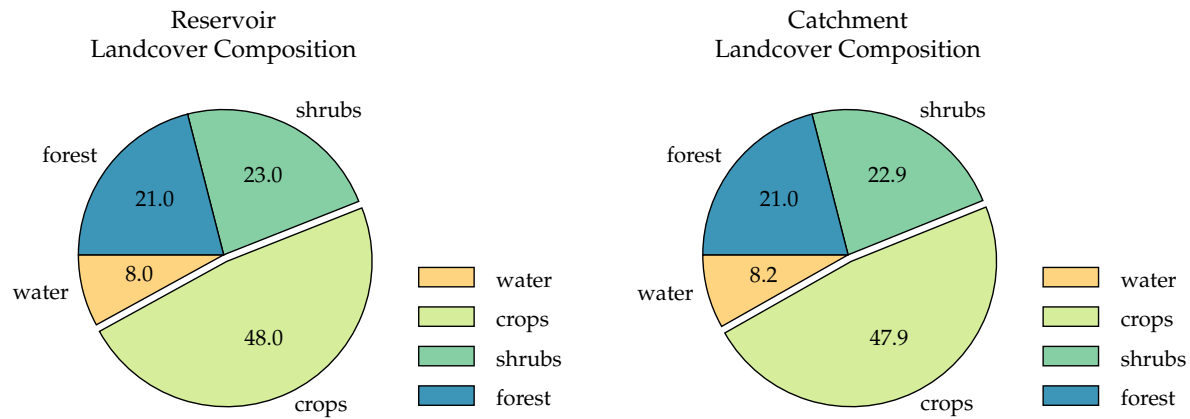
112.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	36.86
Retention coefficient	-	0.2513
Influent total N concentration	$\mu\text{g L}^{-1}$	0.6316
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.4697
Reservoir TP concentration	$\mu\text{g L}^{-1}$	27.86
Percentage of reservoir's surface area that is littoral	%	4.684
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.850
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.20
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.03
Water density at the bottom of the reservoir	kg m^{-3}	997.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.92
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.032
Influent total N load	kgN yr^{-1}	223.1
Influent total P load	kgP yr^{-1}	13 020
Downstream TN concentration	mg L^{-1}	0.000 695 7

113 Wegyi

113.1 Inputs

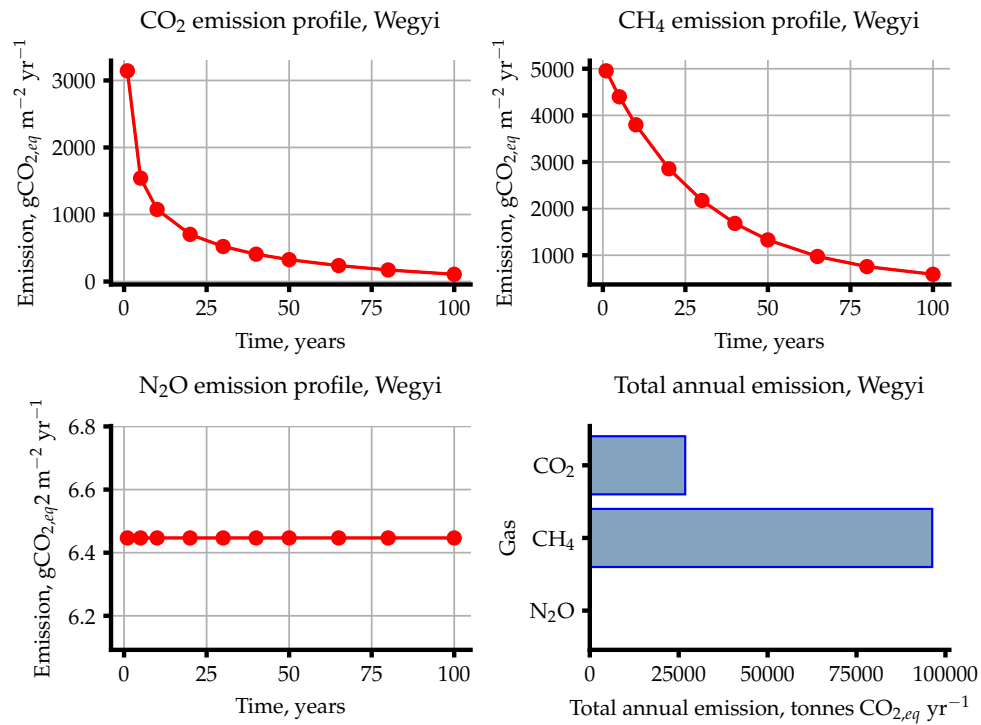
Input Name	Unit	Value(s)
Reservoir ID		9016
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.62175, LON: 95.609683
Monthly Temperatures	$^{\circ}\text{C}$	22.4, 24.6, 28.0, 30.8, 29.9, 27.5, 27.1, 27.0, 27.5, 27.7, 26.0, 23.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	346.0
Catchment area	km^2	561.3
Length of inundated river	km	13.80
Population	capita	70 630
Area fractions	-	0.0, 0.0, 0.0, 0.082, 0.0, 0.479, 0.229, 0.21, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	1333
Mean annual evapotranspiration	mm/year	1379
Soil wetness	mm over profile	257.0
Soil Olsen P content	kgP ha^{-1}	8.442
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	311 000 000
Reservoir area	km^2	54.04
Maximum reservoir depth	m	35.00
Mean reservoir depth	m	5.800
Inundated area fractions	-	0.0, 0.0, 0.0, 0.08, 0.0, 0.48, 0.23, 0.21, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.515
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.200
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.424
Mean monthly wind speed	m s^{-1}	0.9300
Water intake depth below surface	m	N/A



113.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1239
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	850.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-107.8
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	388.6
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	496.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	26 830
Total CO ₂ emission per lifetime	ktCO _{2,eq}	2683
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	381.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	412.1
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	987.7
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1782
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	96 280
Total CH ₄ emission per lifetime	ktCO _{2,eq}	9628
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	6.447
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.050
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	4.248
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	348.4
Total N ₂ O emission per lifetime	ktCO _{2,eq}	34.84
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2278
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2282

113.3 Emission plots



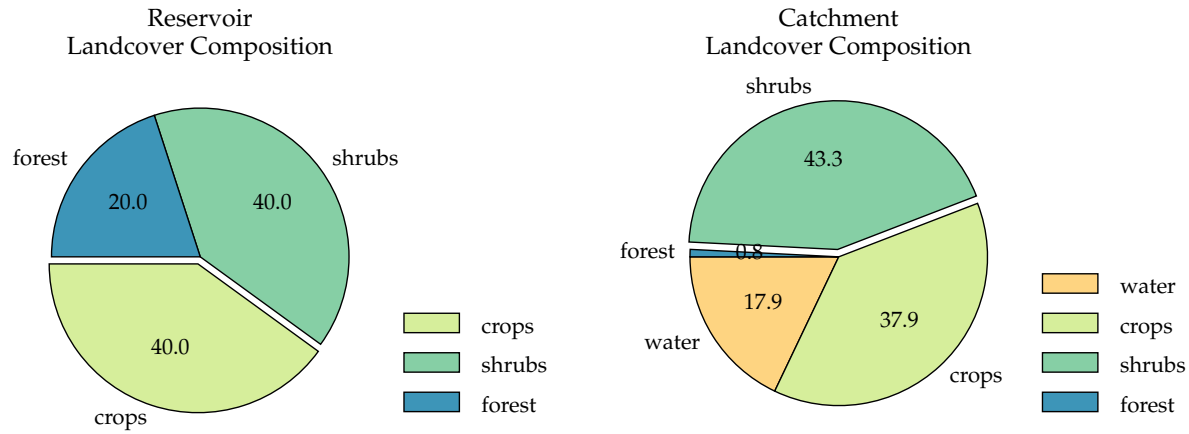
113.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	286.5
Retention coefficient	-	0.5619
Influent total N concentration	$\mu\text{g L}^{-1}$	535.0
Reservoir TN concentration	$\mu\text{g L}^{-1}$	234.4
Reservoir TP concentration	$\mu\text{g L}^{-1}$	136.9
Percentage of reservoir's surface area that is littoral	%	36.31
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.28
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.41
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.10
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	1.845
Influent total N load	kgN yr^{-1}	103 900
Influent total P load	kgP yr^{-1}	55 650
Downstream TN concentration	mg L^{-1}	0.2645

114 Zalataw reservoir

114.1 Inputs

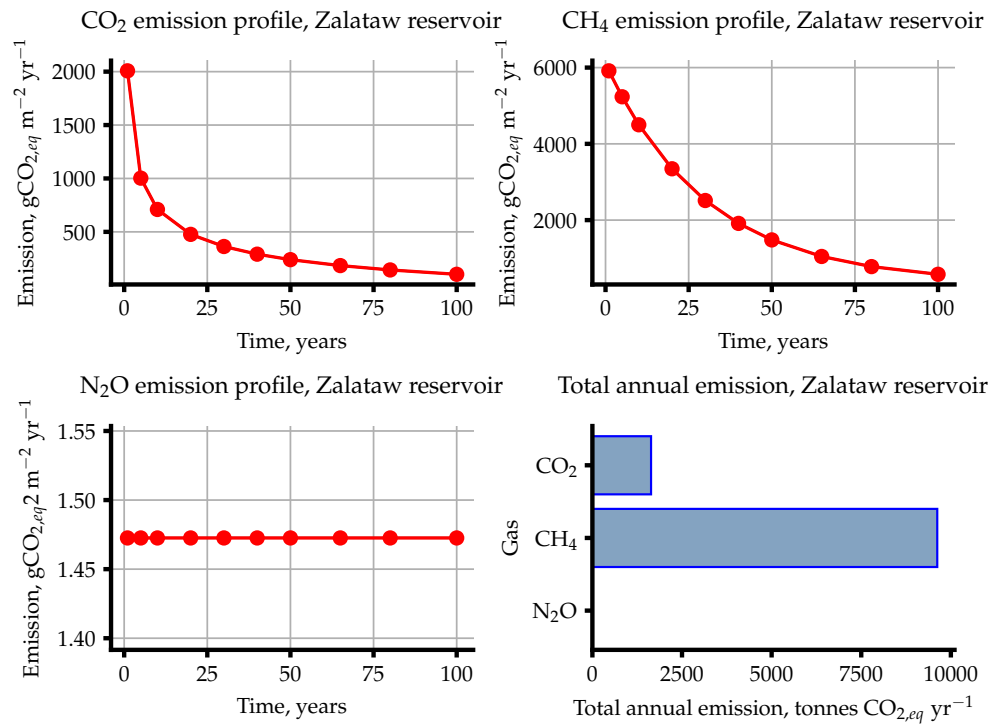
Input Name	Unit	Value(s)
Reservoir ID		9021
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.300254, LON: 96.406246
Monthly Temperatures	$^{\circ}\text{C}$	23.6, 25.1, 27.8, 30.2, 29.4, 27.2, 26.6, 26.7, 27.2, 27.7, 26.7, 24.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	2436
Catchment area	km^2	21.52
Length of inundated river	km	4.119
Population	capita	2729
Area fractions	-	0.0, 0.0, 0.0, 0.179, 0.0, 0.379, 0.433, 0.008, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	3402
Mean annual evapotranspiration	mm/year	1368
Soil wetness	mm over profile	258.0
Soil Olsen P content	kgP ha^{-1}	20.00
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	23 330 000
Reservoir area	km^2	4.722
Maximum reservoir depth	m	13.00
Mean reservoir depth	m	4.940
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.4, 0.4, 0.2, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.805
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.970
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.462
Mean monthly wind speed	m s^{-1}	1.160
Water intake depth below surface	m	N/A



114.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	777.3
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	533.5
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-102.7
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	243.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	346.5
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1636
Total CO ₂ emission per lifetime	ktCO _{2,eq}	163.6
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	371.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	359.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1306
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2037
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	9621
Total CH ₄ emission per lifetime	ktCO _{2,eq}	962.1
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.473
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.031
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.252
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	6.954
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.6954
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2384
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2385

114.3 Emission plots



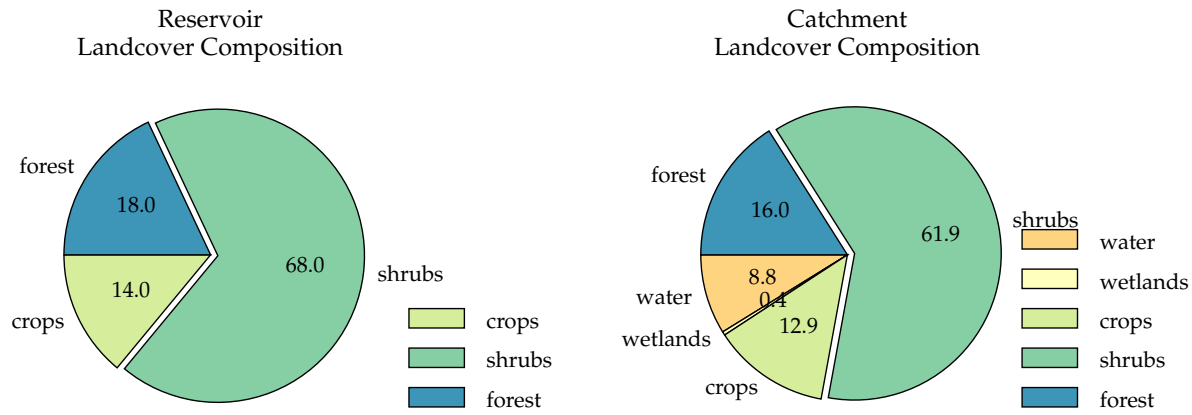
114.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	45.23
Retention coefficient	-	0.2628
Influent total N concentration	$\mu\text{g L}^{-1}$	125.3
Reservoir TN concentration	$\mu\text{g L}^{-1}$	91.83
Reservoir TP concentration	$\mu\text{g L}^{-1}$	40.70
Percentage of reservoir's surface area that is littoral	%	34.82
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.19
Water density at the bottom of the reservoir	kg m^{-3}	996.8
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.78
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.491
Influent total N load	kgN yr^{-1}	6570
Influent total P load	kgP yr^{-1}	2371
Downstream TN concentration	mg L^{-1}	0.1353

115 Baw ni Dam

115.1 Inputs

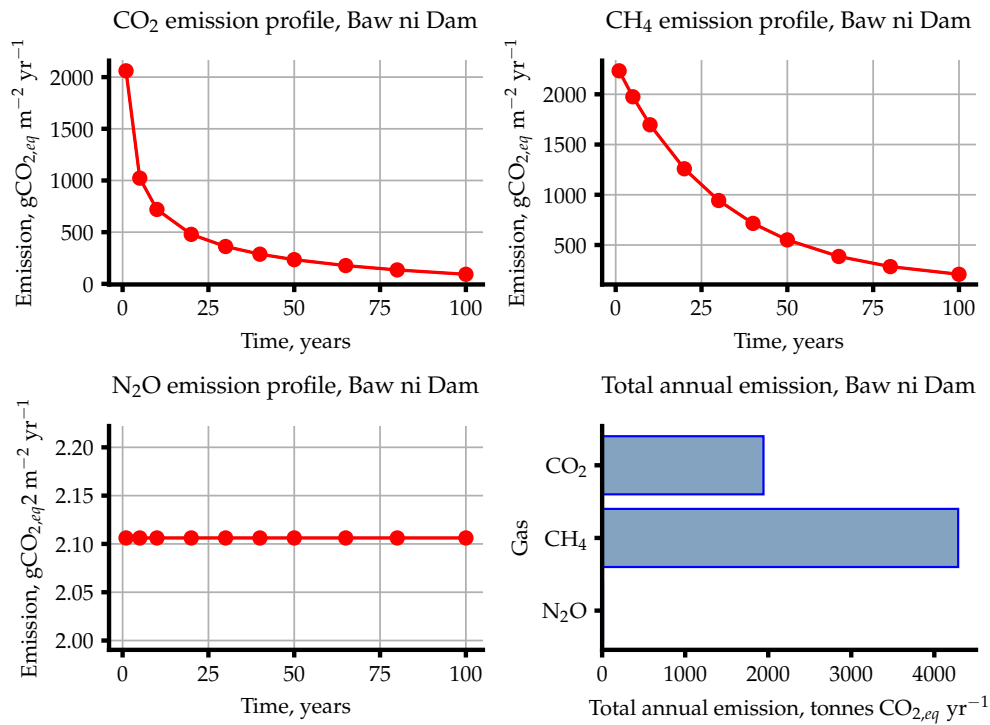
Input Name	Unit	Value(s)
Reservoir ID		9023
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.714904, LON: 96.489695
Monthly Temperatures	$^{\circ}\text{C}$	22.9, 24.6, 27.5, 30.0, 29.4, 27.1, 26.6, 26.6, 27.2, 27.6, 26.3, 23.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	2224
Catchment area	km^2	70.54
Length of inundated river	km	3.036
Population	capita	9799
Area fractions	-	0.0, 0.0, 0.0, 0.088, 0.004, 0.129, 0.618, 0.16, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	3207
Mean annual evapotranspiration	mm/year	1344
Soil wetness	mm over profile	296.0
Soil Olsen P content	kgP ha^{-1}	20.00
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	43 420 000
Reservoir area	km^2	5.642
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	7.700
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.14, 0.68, 0.18, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.137
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.970
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.462
Mean monthly wind speed	m s^{-1}	0.9700
Water intake depth below surface	m	N/A



115.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	803.2
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	551.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-92.40
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	252.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	344.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1943
Total CO ₂ emission per lifetime	ktCO _{2,eq}	194.3
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	205.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	125.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	428.8
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	759.9
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	4287
Total CH ₄ emission per lifetime	ktCO _{2,eq}	428.7
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.106
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.610
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.858
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	11.88
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.188
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1104
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1106

115.3 Emission plots



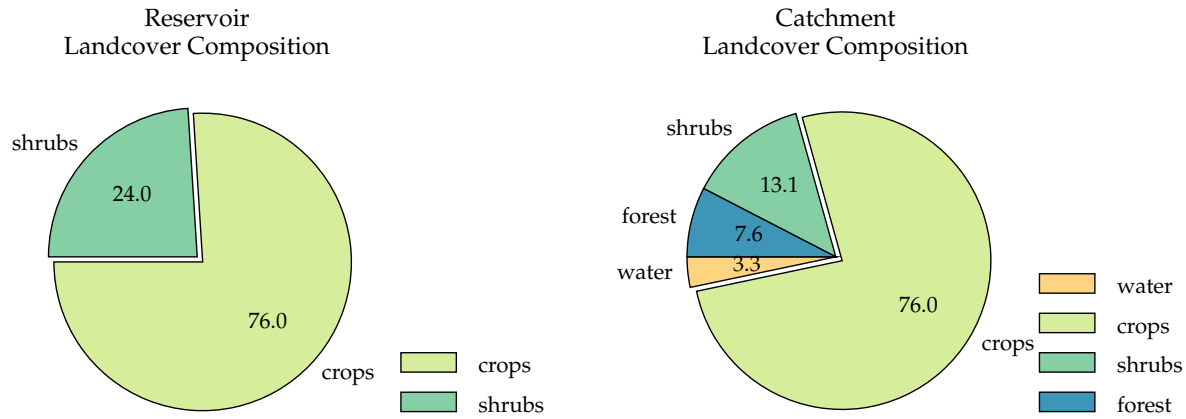
115.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	51.19
Retention coefficient	-	0.1815
Influent total N concentration	$\mu\text{g L}^{-1}$	114.0
Reservoir TN concentration	$\mu\text{g L}^{-1}$	93.19
Reservoir TP concentration	$\mu\text{g L}^{-1}$	44.79
Percentage of reservoir's surface area that is littoral	%	10.11
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.73
Water density at the bottom of the reservoir	kg m^{-3}	996.9
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.63
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.239
Influent total N load	kgN yr^{-1}	17 880
Influent total P load	kgP yr^{-1}	8031
Downstream TN concentration	mg L^{-1}	0.1354

116 Sinthe Dam

116.1 Inputs

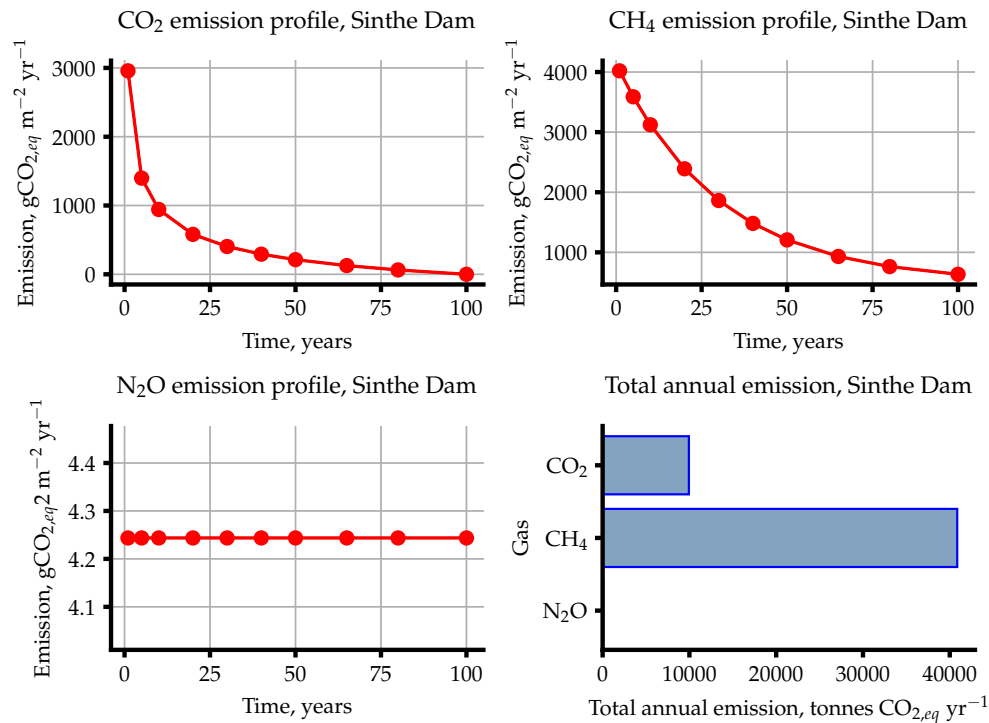
Input Name	Unit	Value(s)
Reservoir ID		9056
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.162572, LON: 96.035745
Monthly Temperatures	$^{\circ}\text{C}$	21.4, 23.7, 27.7, 30.6, 29.6, 27.6, 27.0, 26.8, 27.2, 27.0, 24.9, 21.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	103.0
Catchment area	km^2	798.2
Length of inundated river	km	10.15
Population	capita	56 060
Area fractions	-	0.0, 0.0, 0.0, 0.033, 0.0, 0.761, 0.131, 0.076, 0.0
Mean catchment slope	$\%$	5.000
Mean annual precipitation	mm/year	957.0
Mean annual evapotranspiration	mm/year	1431
Soil wetness	mm over profile	99.00
Soil Olsen P content	kgP ha^{-1}	3.517
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	176 500 000
Reservoir area	km^2	26.25
Maximum reservoir depth	m	33.20
Mean reservoir depth	m	6.724
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.76, 0.24, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.386
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.160
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.957
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.223
Mean monthly wind speed	m s^{-1}	1.130
Water intake depth below surface	m	N/A



116.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1207
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	828.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	378.6
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	378.6
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	9939
Total CO ₂ emission per lifetime	ktCO _{2,eq}	993.9
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	338.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	495.8
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	722.1
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1557
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	40 860
Total CH ₄ emission per lifetime	ktCO _{2,eq}	4086
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	4.244
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.111
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.677
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	111.4
Total N ₂ O emission per lifetime	ktCO _{2,eq}	11.14
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1935
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1938

116.3 Emission plots



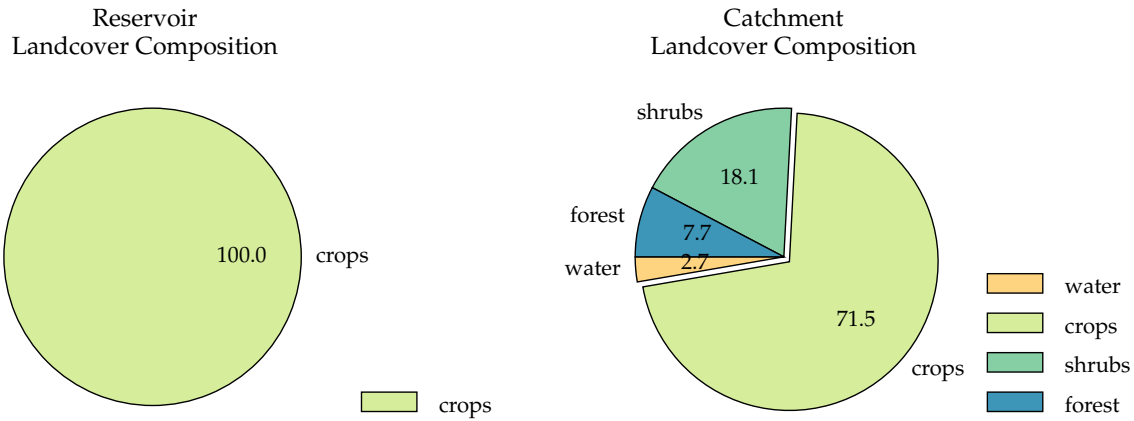
116.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	600.5
Retention coefficient	-	0.6323
Influent total N concentration	$\mu\text{g L}^{-1}$	332.7
Reservoir TN concentration	$\mu\text{g L}^{-1}$	122.3
Reservoir TP concentration	$\mu\text{g L}^{-1}$	226.5
Percentage of reservoir's surface area that is littoral	%	31.13
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.160
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.92
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.75
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.88
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.784
Influent total N load	kgN yr^{-1}	27 350
Influent total P load	kgP yr^{-1}	49 370
Downstream TN concentration	mg L^{-1}	0.1105

117 Sinthay diversion Dam

117.1 Inputs

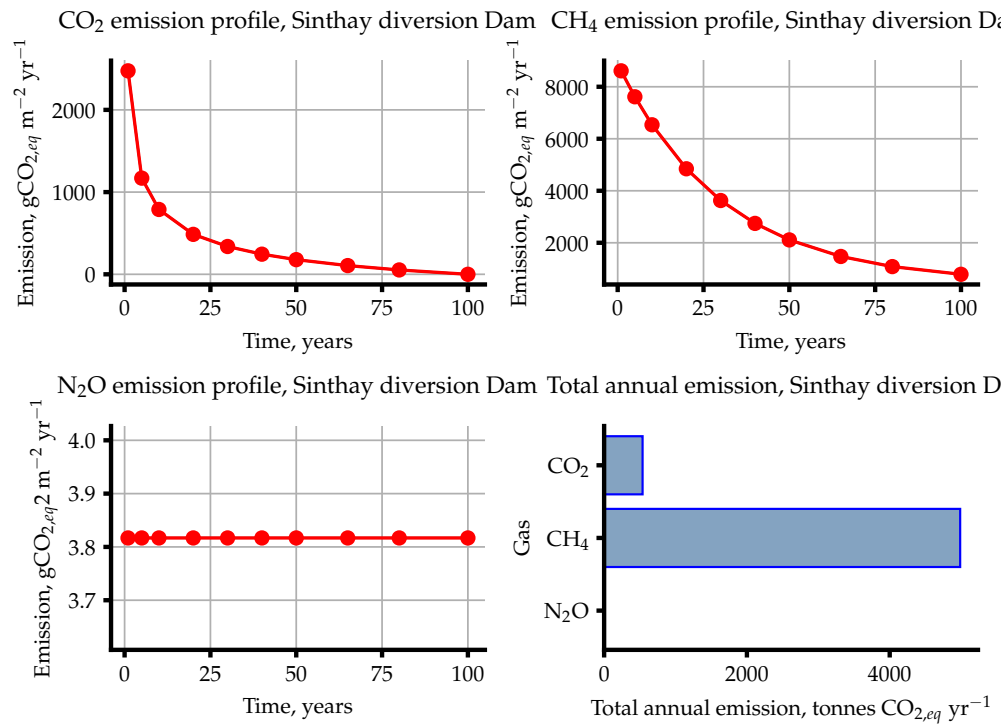
Input Name	Unit	Value(s)
Reservoir ID		9057
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.156125, LON: 96.118362
Monthly Temperatures	$^{\circ}\text{C}$	21.7, 24.1, 28.1, 31.0, 29.9, 27.9, 27.4, 27.2, 27.5, 27.2, 25.1, 21.8
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	106.0
Catchment area	km^2	1024
Length of inundated river	km	5.532
Population	capita	69 730
Area fractions	-	0.0, 0.0, 0.0, 0.027, 0.0, 0.714, 0.181, 0.077, 0.0
Mean catchment slope	$\%$	5.000
Mean annual precipitation	mm/year	970.0
Mean annual evapotranspiration	mm/year	1431
Soil wetness	mm over profile	104.0
Soil Olsen P content	kgP ha^{-1}	3.413
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	8 500 000
Reservoir area	km^2	1.700
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	5.000
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.229
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.874
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.244
Mean monthly wind speed	m s^{-1}	1.170
Water intake depth below surface	m	N/A



117.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1010
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	693.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	316.8
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	316.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	538.6
Total CO ₂ emission per lifetime	ktCO _{2,eq}	53.86
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	345.2
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	466.9
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	2121
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2933
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	4987
Total CH ₄ emission per lifetime	ktCO _{2,eq}	498.7
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.817
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	3.143
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.480
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	6.489
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.6489
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3250
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3254

117.3 Emission plots



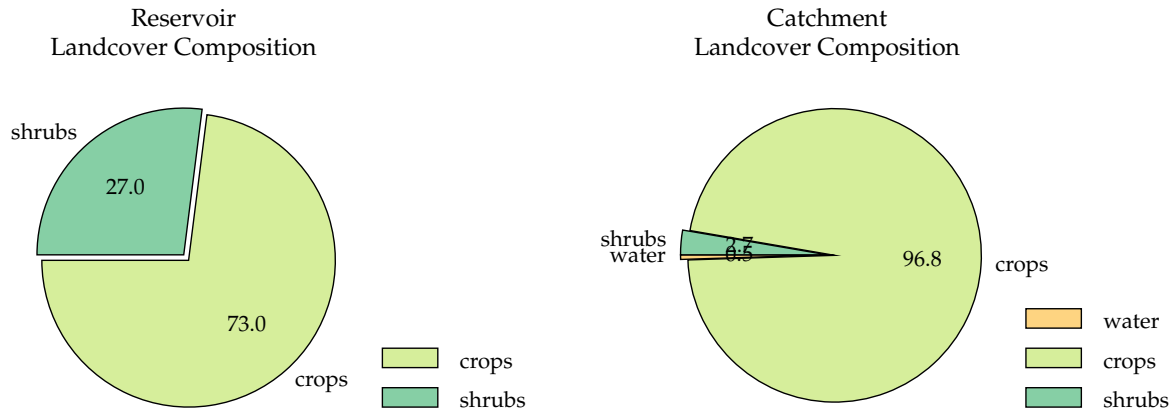
117.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	571.6
Retention coefficient	-	0.059 03
Influent total N concentration	$\mu\text{g L}^{-1}$	322.2
Reservoir TN concentration	$\mu\text{g L}^{-1}$	303.1
Reservoir TP concentration	$\mu\text{g L}^{-1}$	538.6
Percentage of reservoir's surface area that is littoral	%	30.00
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.95
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.23
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	0.9105
Influent total N load	kgN yr^{-1}	34 970
Influent total P load	kgP yr^{-1}	62 030
Downstream TN concentration	mg L^{-1}	0.4167

118 Unknown11

118.1 Inputs

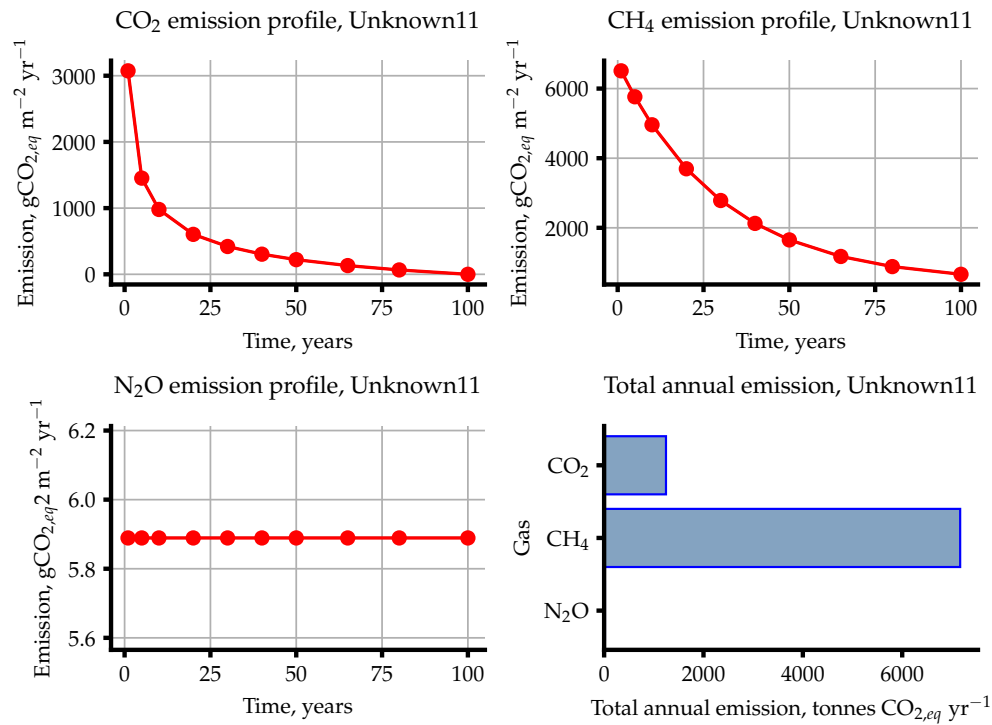
Input Name	Unit	Value(s)
Reservoir ID		9067
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.712143, LON: 95.300762
Monthly Temperatures	$^{\circ}\text{C}$	21.5, 23.9, 28.0, 31.3, 30.4, 28.5, 28.1, 27.8, 27.7, 27.0, 24.5, 21.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	138.0
Catchment area	km^2	536.2
Length of inundated river	km	2.656
Population	capita	56 170
Area fractions	-	0.0, 0.0, 0.0, 0.005, 0.0, 0.967, 0.027, 0.0, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	832.0
Mean annual evapotranspiration	mm/year	1451
Soil wetness	mm over profile	30.00
Soil Olsen P content	kgP ha^{-1}	4.579
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	23 740 000
Reservoir area	km^2	3.164
Maximum reservoir depth	m	23.00
Mean reservoir depth	m	7.500
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.73, 0.27, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.701
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.220
Water intake depth below surface	m	N/A



118.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1254
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	860.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	393.5
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	393.5
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1245
Total CO ₂ emission per lifetime	ktCO _{2,eq}	124.5
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	324.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	424.6
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1516
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2265
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	7167
Total CH ₄ emission per lifetime	ktCO _{2,eq}	716.7
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	5.889
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	4.399
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	5.144
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	18.63
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.863
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2659
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2664

118.3 Emission plots



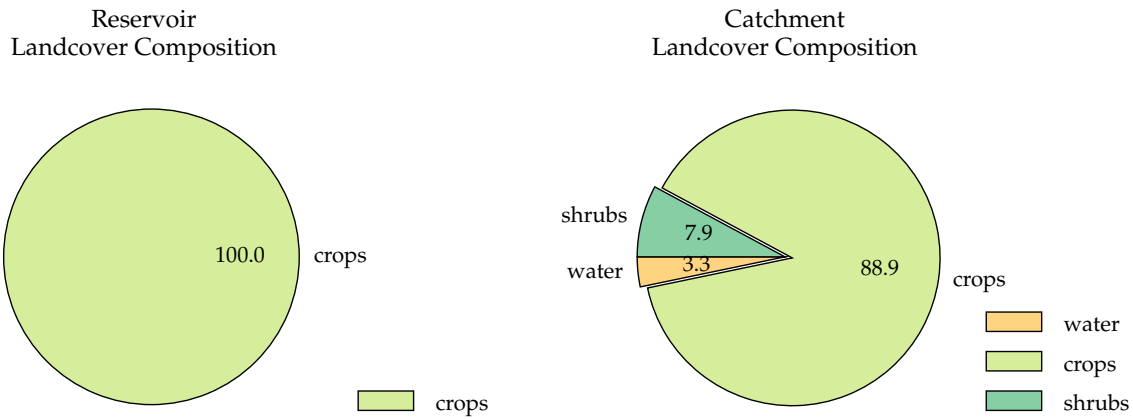
118.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	615.7
Retention coefficient	-	0.2044
Influent total N concentration	$\mu\text{g L}^{-1}$	326.5
Reservoir TN concentration	$\mu\text{g L}^{-1}$	260.1
Reservoir TP concentration	$\mu\text{g L}^{-1}$	492.2
Percentage of reservoir's surface area that is littoral	%	25.09
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.75
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.58
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	1.042
Influent total N load	kgN yr^{-1}	24 160
Influent total P load	kgP yr^{-1}	45 560
Downstream TN concentration	mg L^{-1}	0.3798

119 Thabyeyoe Dam

119.1 Inputs

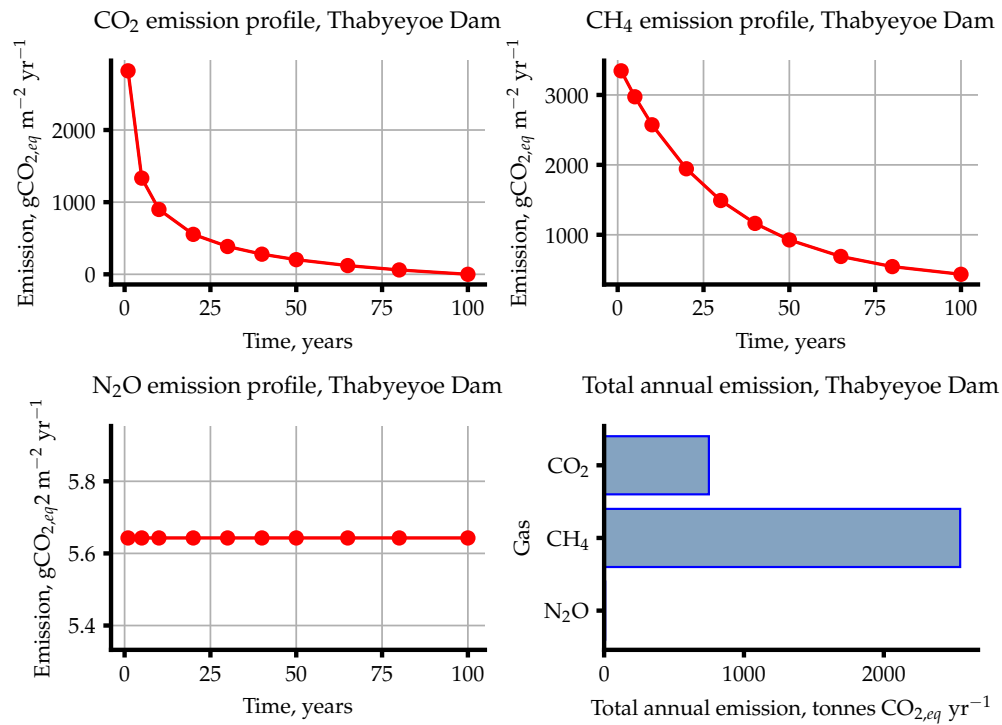
Input Name	Unit	Value(s)
Reservoir ID		9071
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.049759, LON: 95.832202
Monthly Temperatures	$^{\circ}\text{C}$	21.8, 24.3, 28.5, 31.6, 30.5, 29.1, 28.7, 28.3, 28.1, 27.4, 25.0, 21.8
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	134.0
Catchment area	km^2	65.32
Length of inundated river	km	2.512
Population	capita	7990
Area fractions	-	0.0, 0.0, 0.0, 0.032619766, 0.0, 0.888878726, 0.078501508, 0.0, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	873.0
Mean annual evapotranspiration	mm/year	1463
Soil wetness	mm over profile	46.00
Soil Olsen P content	kgP ha^{-1}	4.960
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	14 820 000
Reservoir area	km^2	2.075
Maximum reservoir depth	m	13.00
Mean reservoir depth	m	7.100
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.349
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.260
Water intake depth below surface	m	N/A



119.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1151
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	789.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	361.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	361.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	749.2
Total CO ₂ emission per lifetime	ktCO _{2,eq}	74.92
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	303.3
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	315.6
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	608.2
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1227
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	2546
Total CH ₄ emission per lifetime	ktCO _{2,eq}	254.6
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	5.643
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.720
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.682
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	11.71
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.171
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1588
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1592

119.3 Emission plots



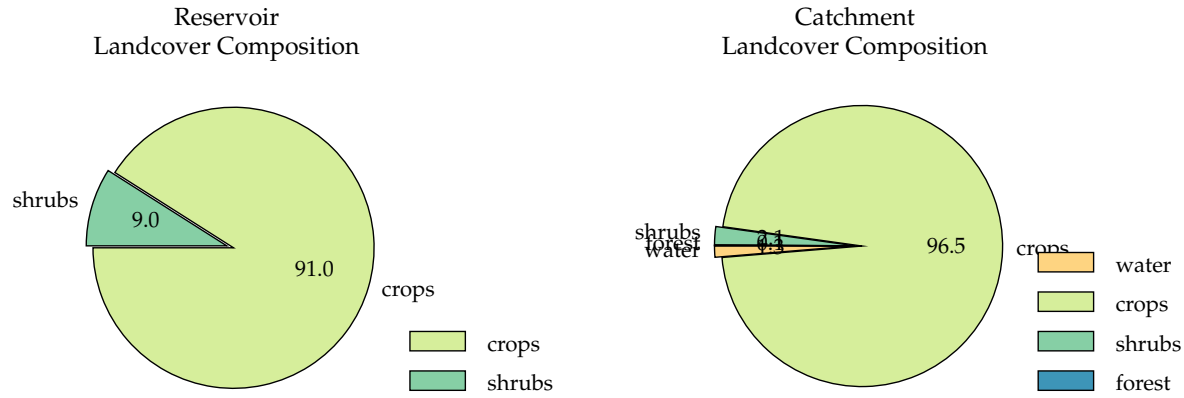
119.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	788.9
Retention coefficient	-	0.5756
Influent total N concentration	$\mu\text{g L}^{-1}$	382.6
Reservoir TN concentration	$\mu\text{g L}^{-1}$	161.7
Reservoir TP concentration	$\mu\text{g L}^{-1}$	343.7
Percentage of reservoir's surface area that is littoral	%	19.59
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.01
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.98
Water density at the surface of the reservoir	kg m^{-3}	995.7
Thermocline depth	m	0.9494
Influent total N load	kgN yr^{-1}	3348
Influent total P load	kgP yr^{-1}	6905
Downstream TN concentration	mg L^{-1}	0.1769

120 Unknown12

120.1 Inputs

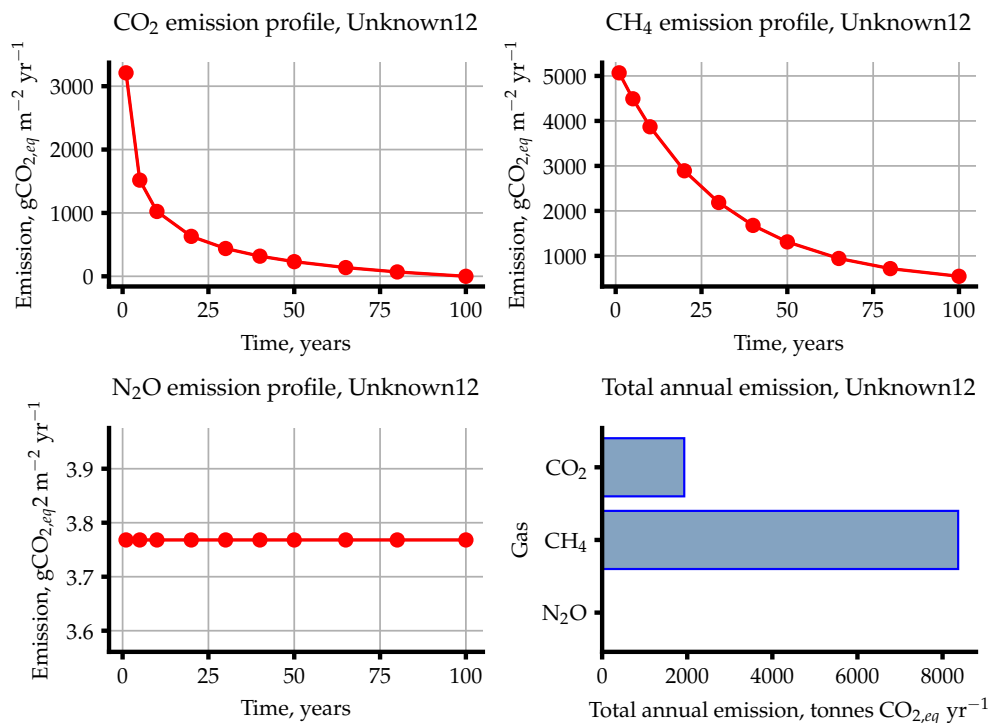
Input Name	Unit	Value(s)
Reservoir ID		9074
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.092747, LON: 95.399985
Monthly Temperatures	$^{\circ}\text{C}$	21.6, 24.3, 28.5, 31.7, 30.9, 29.2, 28.9, 28.5, 28.2, 27.5, 24.9, 21.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	140.0
Catchment area	km^2	337.3
Length of inundated river	km	4.592
Population	capita	42 090
Area fractions	-	0.0, 0.0, 0.0, 0.013, 0.0, 0.966, 0.021, 0.001, 0.0
Mean catchment slope	$\%$	6.000
Mean annual precipitation	mm/year	823.0
Mean annual evapotranspiration	mm/year	1449
Soil wetness	mm over profile	30.00
Soil Olsen P content	kgP ha^{-1}	4.776
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	33 110 000
Reservoir area	km^2	4.695
Maximum reservoir depth	m	16.00
Mean reservoir depth	m	7.100
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.91, 0.09, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.359
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.220
Water intake depth below surface	m	N/A



120.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1310
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	899.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	411.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	411.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1930
Total CO ₂ emission per lifetime	ktCO _{2,eq}	193.0
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	329.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	360.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1092
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1782
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	8367
Total CH ₄ emission per lifetime	ktCO _{2,eq}	836.7
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.768
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.180
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.974
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	17.69
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.769
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2193
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2196

120.3 Emission plots



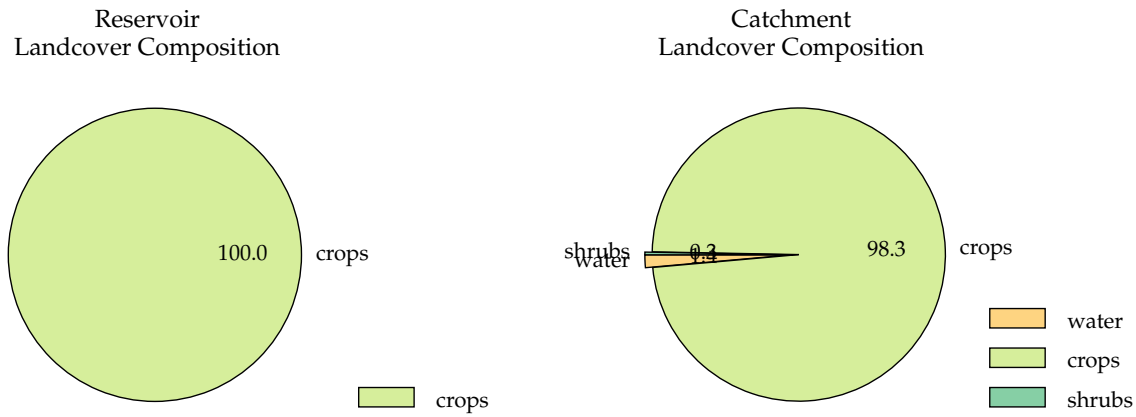
120.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	711.9
Retention coefficient	-	0.3596
Influent total N concentration	$\mu\text{g L}^{-1}$	227.3
Reservoir TN concentration	$\mu\text{g L}^{-1}$	145.7
Reservoir TP concentration	$\mu\text{g L}^{-1}$	461.4
Percentage of reservoir's surface area that is littoral	%	22.92
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.88
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.17
Water density at the surface of the reservoir	kg m^{-3}	995.6
Thermocline depth	m	1.091
Influent total N load	kgN yr^{-1}	10 740
Influent total P load	kgP yr^{-1}	33 620
Downstream TN concentration	mg L^{-1}	0.2114

121 Unknown23

121.1 Inputs

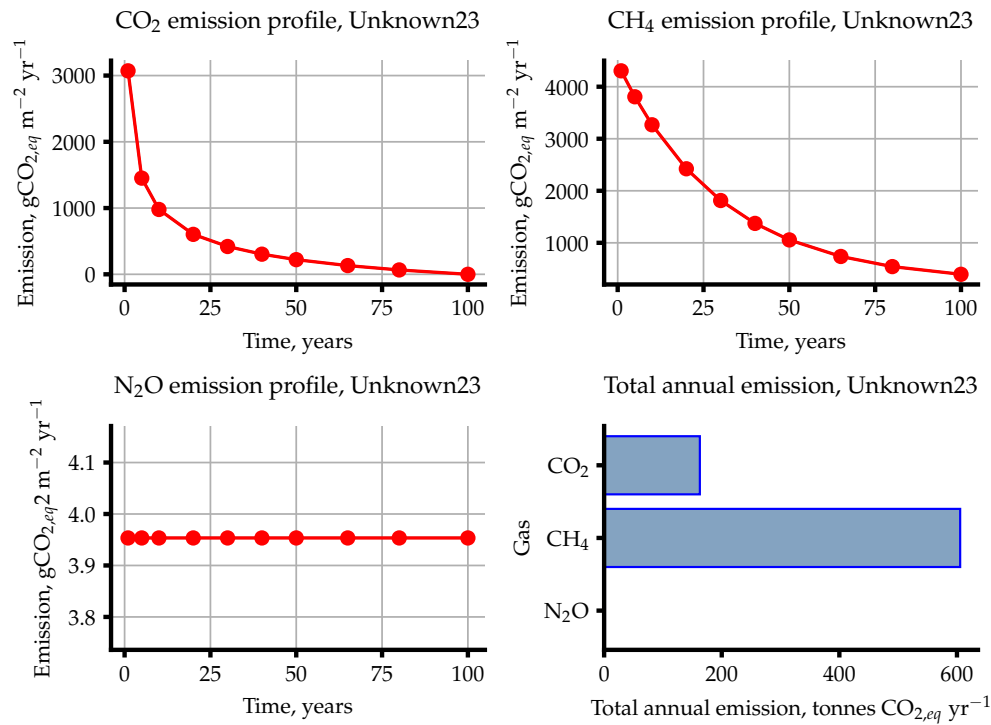
Input Name	Unit	Value(s)
Reservoir ID		9097
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.008512, LON: 95.304827
Monthly Temperatures	$^{\circ}\text{C}$	21.1, 23.9, 28.0, 31.5, 31.0, 30.0, 29.7, 29.1, 28.7, 27.5, 24.8, 21.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	135.0
Catchment area	km^2	31.84
Length of inundated river	km	1.305
Population	capita	7703
Area fractions	-	0.0, 0.0, 0.0, 0.014, 0.0, 0.983, 0.003, 0.0, 0.0
Mean catchment slope	$\%$	5.000
Mean annual precipitation	mm/year	797.0
Mean annual evapotranspiration	mm/year	1452
Soil wetness	mm over profile	23.00
Soil Olsen P content	kgP ha^{-1}	7.345
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	2 530 000
Reservoir area	km^2	0.4140
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	6.100
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.140
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.890
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.728
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.924
Mean monthly wind speed	m s^{-1}	1.210
Water intake depth below surface	m	N/A



121.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1253
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	860.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	393.2
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	393.2
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	162.8
Total CO ₂ emission per lifetime	ktCO _{2,eq}	16.28
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	317.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	234.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	910.0
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1462
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	605.4
Total CH ₄ emission per lifetime	ktCO _{2,eq}	60.54
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.953
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.493
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.223
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.637
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1637
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1856
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1859

121.3 Emission plots



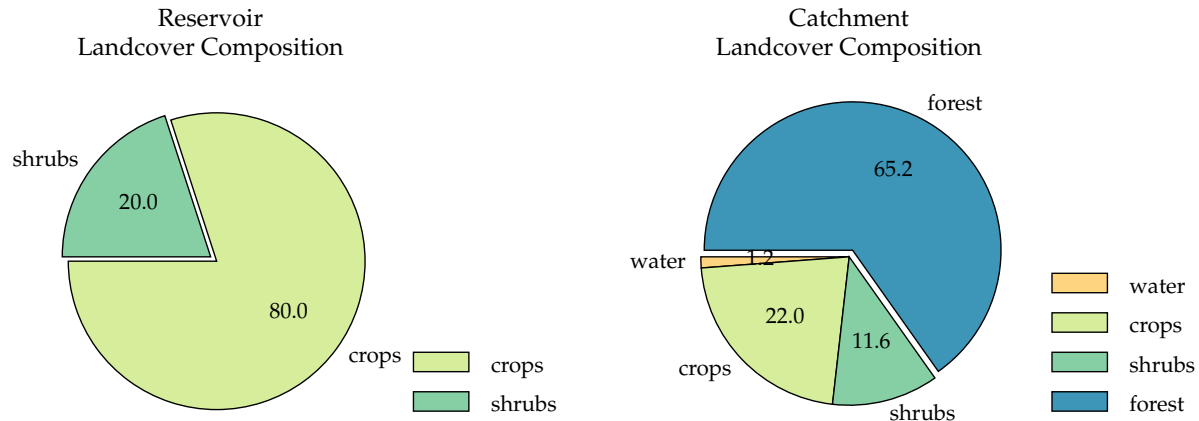
121.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1398
Retention coefficient	-	0.3205
Influent total N concentration	$\mu\text{g L}^{-1}$	272.9
Reservoir TN concentration	$\mu\text{g L}^{-1}$	185.4
Reservoir TP concentration	$\mu\text{g L}^{-1}$	961.0
Percentage of reservoir's surface area that is littoral	%	20.39
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.890
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.55
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.55
Water density at the surface of the reservoir	kg m^{-3}	995.5
Thermocline depth	m	0.5534
Influent total N load	kgN yr^{-1}	1173
Influent total P load	kgP yr^{-1}	6009
Downstream TN concentration	mg L^{-1}	0.2720

122 Saddam Dam

122.1 Inputs

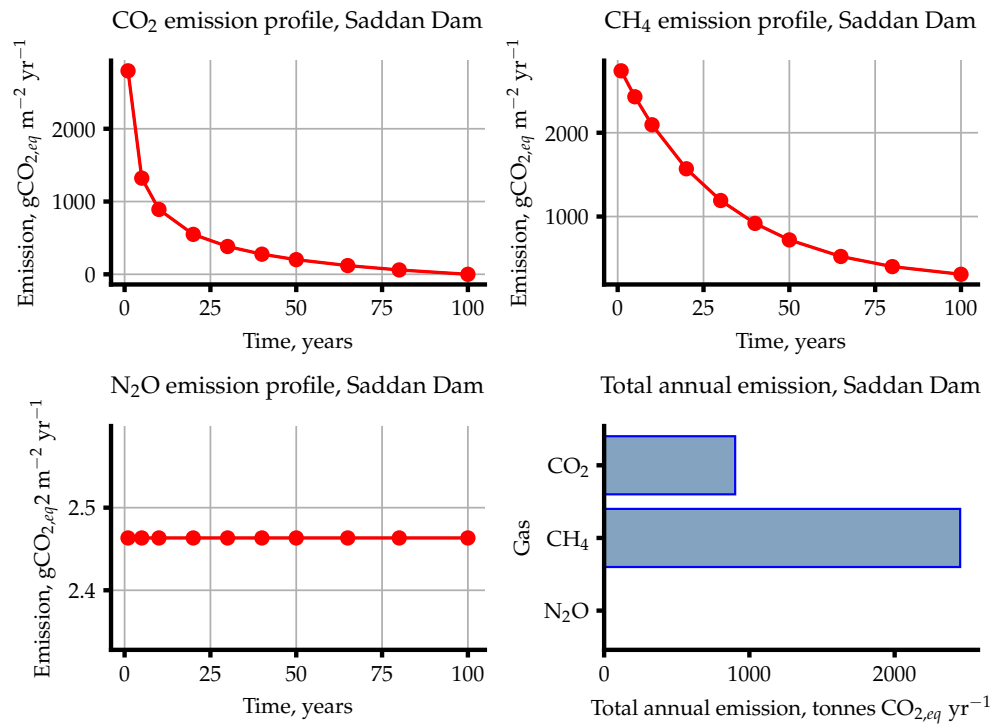
Input Name	Unit	Value(s)
Reservoir ID		9112
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.114698, LON: 95.601715
Monthly Temperatures	$^{\circ}\text{C}$	21.5, 24.0, 28.3, 31.5, 30.5, 28.3, 27.7, 27.5, 27.6, 27.3, 25.0, 21.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	96.00
Catchment area	km^2	340.2
Length of inundated river	km	5.975
Population	capita	32 300
Area fractions	-	0.0, 0.0, 0.0, 0.012, 0.0, 0.22, 0.116, 0.652, 0.0
Mean catchment slope	$\%$	8.000
Mean annual precipitation	mm/year	895.0
Mean annual evapotranspiration	mm/year	1411
Soil wetness	mm over profile	77.00
Soil Olsen P content	kgP ha^{-1}	3.926
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	30 840 000
Reservoir area	km^2	2.520
Maximum reservoir depth	m	22.00
Mean reservoir depth	m	12.24
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.8, 0.2, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.581
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.140
Water intake depth below surface	m	N/A



122.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1141
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	783.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	358.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	358.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	902.1
Total CO ₂ emission per lifetime	ktCO _{2,eq}	90.21
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	223.9
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	211.1
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	537.6
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	972.6
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	2451
Total CH ₄ emission per lifetime	ktCO _{2,eq}	245.1
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.463
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.175
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.819
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	6.208
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.6208
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1331
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1332

122.3 Emission plots



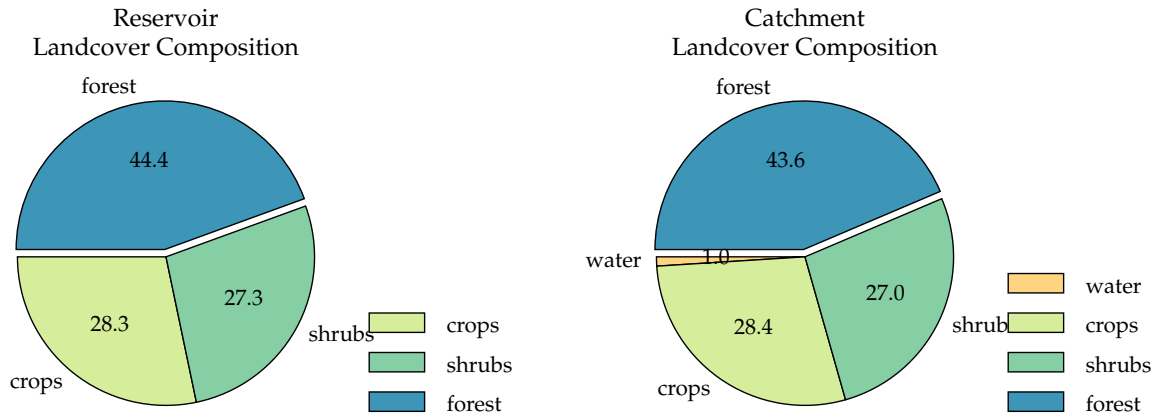
122.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	790.0
Retention coefficient	-	0.4306
Influent total N concentration	$\mu\text{g L}^{-1}$	87.63
Reservoir TN concentration	$\mu\text{g L}^{-1}$	49.66
Reservoir TP concentration	$\mu\text{g L}^{-1}$	452.2
Percentage of reservoir's surface area that is littoral	%	11.04
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.81
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.65
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	0.9180
Influent total N load	kgN yr^{-1}	2862
Influent total P load	kgP yr^{-1}	25 800
Downstream TN concentration	mg L^{-1}	0.069 53

123 NgaMin

123.1 Inputs

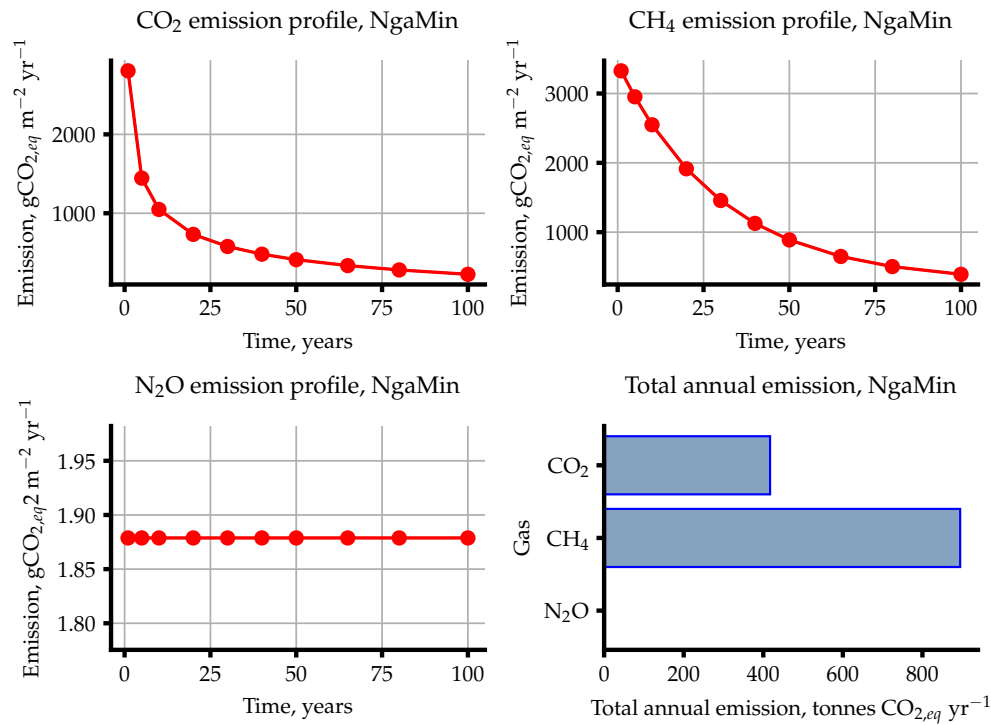
Input Name	Unit	Value(s)
Reservoir ID		9139
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.035553, LON: 95.651189
Monthly Temperatures	$^{\circ}\text{C}$	21.4, 23.9, 28.1, 31.3, 30.2, 27.9, 27.4, 27.2, 27.3, 27.0, 24.7, 21.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	90.00
Catchment area	km^2	80.06
Length of inundated river	km	2.664
Population	capita	9230
Area fractions	-	0.0, 0.0, 0.0, 0.01, 0.0, 0.284, 0.27, 0.436, 0.0
Mean catchment slope	$\%$	10.00
Mean annual precipitation	mm/year	898.0
Mean annual evapotranspiration	mm/year	1399
Soil wetness	mm over profile	84.00
Soil Olsen P content	kgP ha^{-1}	4.260
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	9 559 000
Reservoir area	km^2	0.7500
Maximum reservoir depth	m	37.00
Mean reservoir depth	m	12.75
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.28, 0.27, 0.44, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.579
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.130
Water intake depth below surface	m	N/A



123.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1053
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	722.5
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-225.9
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	330.3
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	556.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	417.1
Total CO ₂ emission per lifetime	ktCO _{2,eq}	41.71
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	249.4
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	271.9
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	671.8
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1193
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	894.8
Total CH ₄ emission per lifetime	ktCO _{2,eq}	89.48
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.879
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.6882
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.283
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.409
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1409
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1749
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1751

123.3 Emission plots



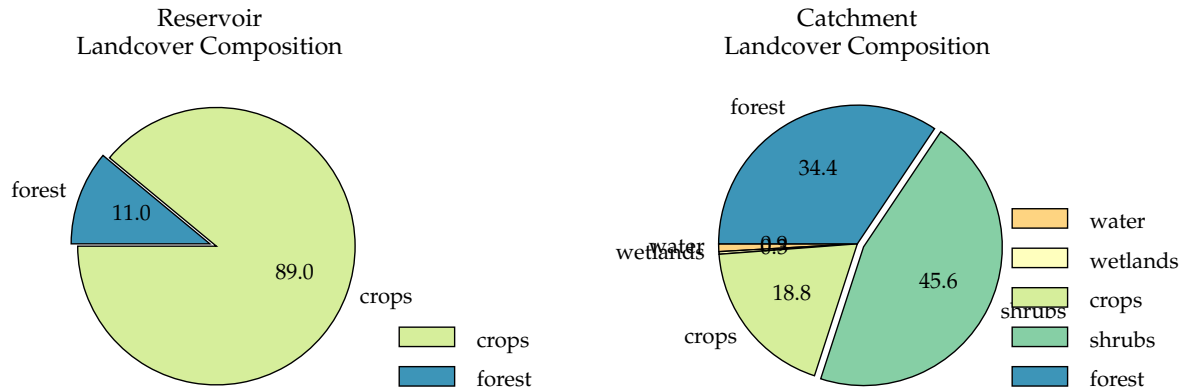
123.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1060
Retention coefficient	-	0.5152
Influent total N concentration	$\mu\text{g L}^{-1}$	67.33
Reservoir TN concentration	$\mu\text{g L}^{-1}$	32.64
Reservoir TP concentration	$\mu\text{g L}^{-1}$	517.9
Percentage of reservoir's surface area that is littoral	%	14.86
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.75
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.38
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	0.6894
Influent total N load	kgN yr^{-1}	485.1
Influent total P load	kgP yr^{-1}	7639
Downstream TN concentration	mg L^{-1}	0.04084

124 Mazin Dam

124.1 Inputs

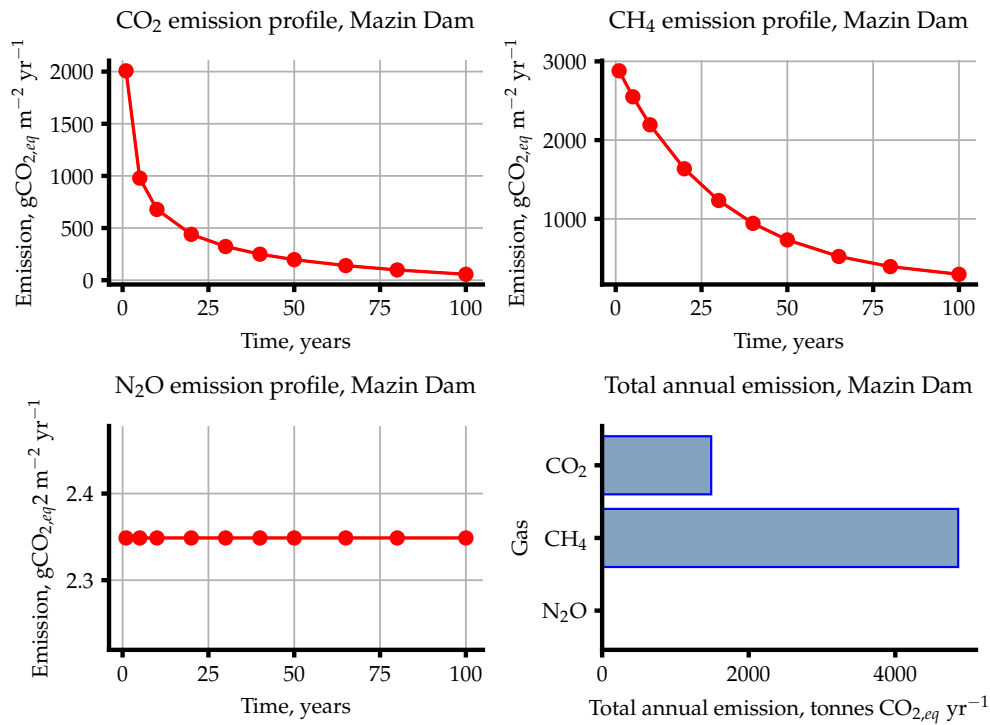
Input Name	Unit	Value(s)
Reservoir ID		9022
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.33991, LON: 96.438335
Monthly Temperatures	$^{\circ}\text{C}$	23.5, 25.0, 27.8, 30.2, 29.4, 27.2, 26.6, 26.7, 27.2, 27.7, 26.7, 24.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1777
Catchment area	km^2	28.19
Length of inundated river	km	4.141
Population	capita	3549
Area fractions	-	0.0, 0.0, 0.0, 0.009, 0.003, 0.188, 0.456, 0.344, 0.0
Mean catchment slope	$\%$	6.000
Mean annual precipitation	mm/year	2771
Mean annual evapotranspiration	mm/year	1341
Soil wetness	mm over profile	343.0
Soil Olsen P content	kgP ha^{-1}	15.25
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	32 300 000
Reservoir area	km^2	4.860
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	6.646
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.89, 0.0, 0.11, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.891
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.970
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.462
Mean monthly wind speed	m s^{-1}	1.120
Water intake depth below surface	m	N/A



124.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	796.2
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	546.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-56.47
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	249.8
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	306.2
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1488
Total CO ₂ emission per lifetime	ktCO _{2,eq}	148.8
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	263.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	190.1
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	546.4
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	999.6
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	4858
Total CH ₄ emission per lifetime	ktCO _{2,eq}	485.8
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.349
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.425
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.887
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	11.42
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.142
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1306
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1308

124.3 Emission plots



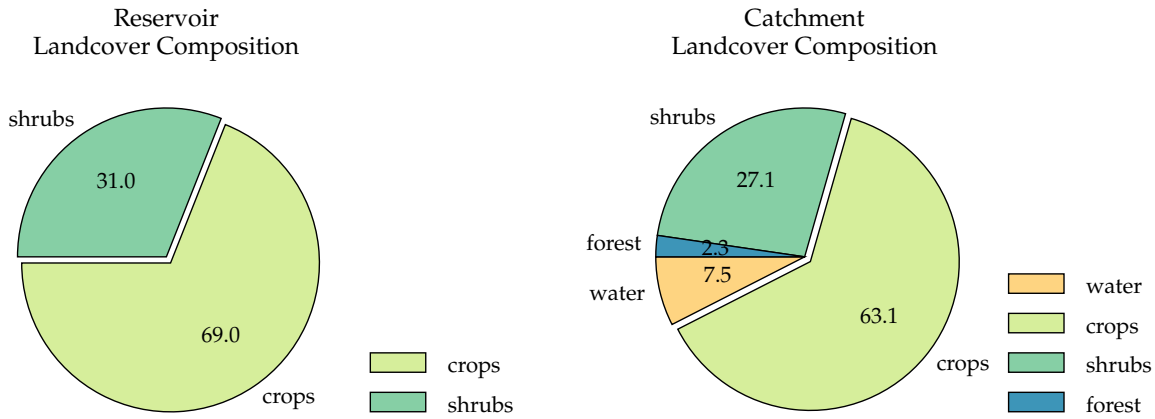
124.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	59.57
Retention coefficient	-	0.3406
Influent total N concentration	$\mu\text{g L}^{-1}$	150.3
Reservoir TN concentration	$\mu\text{g L}^{-1}$	84.88
Reservoir TP concentration	$\mu\text{g L}^{-1}$	44.63
Percentage of reservoir's surface area that is littoral	%	16.47
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.13
Water density at the bottom of the reservoir	kg m^{-3}	996.8
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.78
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.433
Influent total N load	kgN yr^{-1}	7529
Influent total P load	kgP yr^{-1}	2984
Downstream TN concentration	mg L^{-1}	0.1442

125 Nyaung Kaing Dam

125.1 Inputs

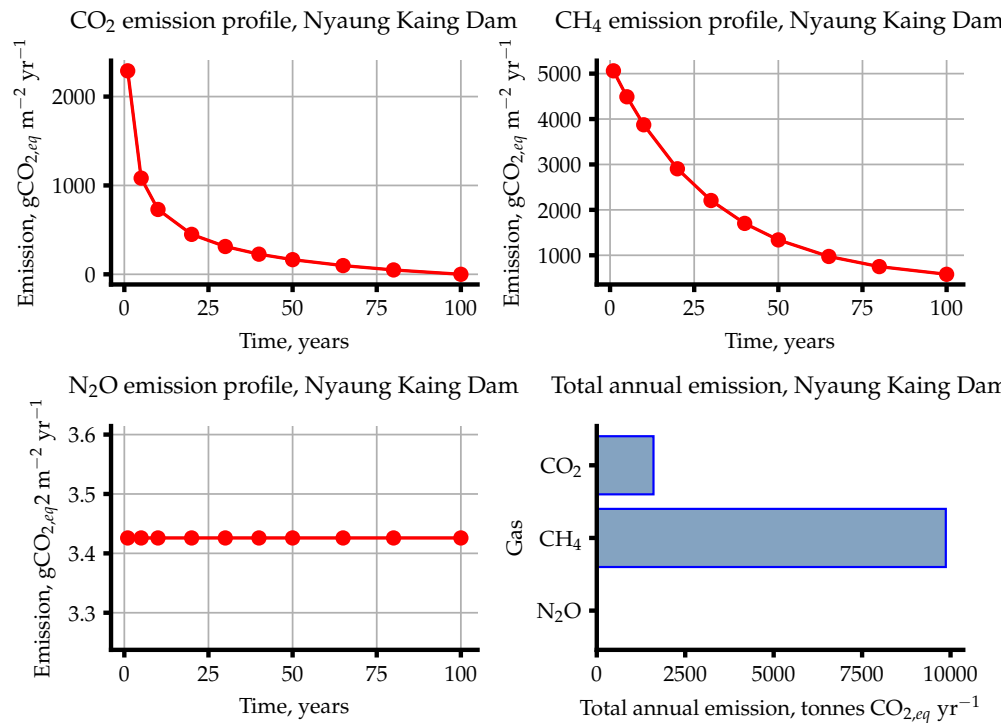
Input Name	Unit	Value(s)
Reservoir ID		9040
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.793366, LON: 95.143083
Monthly Temperatures	$^{\circ}\text{C}$	21.8, 24.1, 27.9, 31.1, 30.5, 28.1, 27.5, 27.4, 27.8, 27.8, 25.7, 22.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	495.0
Catchment area	km^2	77.82
Length of inundated river	km	4.427
Population	capita	4026
Area fractions	-	0.0, 0.0, 0.0, 0.075, 0.0, 0.63, 0.271, 0.023, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	1357
Mean annual evapotranspiration	mm/year	1366
Soil wetness	mm over profile	129.0
Soil Olsen P content	kgP ha^{-1}	5.927
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	21 700 000
Reservoir area	km^2	5.470
Maximum reservoir depth	m	7.000
Mean reservoir depth	m	3.967
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.69, 0.31, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.663
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.200
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.424
Mean monthly wind speed	m s^{-1}	0.8400
Water intake depth below surface	m	N/A



125.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	934.4
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	641.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	293.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	293.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1603
Total CO ₂ emission per lifetime	ktCO _{2,eq}	160.3
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	380.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	397.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1025
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1804
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	9866
Total CH ₄ emission per lifetime	ktCO _{2,eq}	986.6
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.426
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.219
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.822
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	18.74
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.874
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2097
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2100

125.3 Emission plots



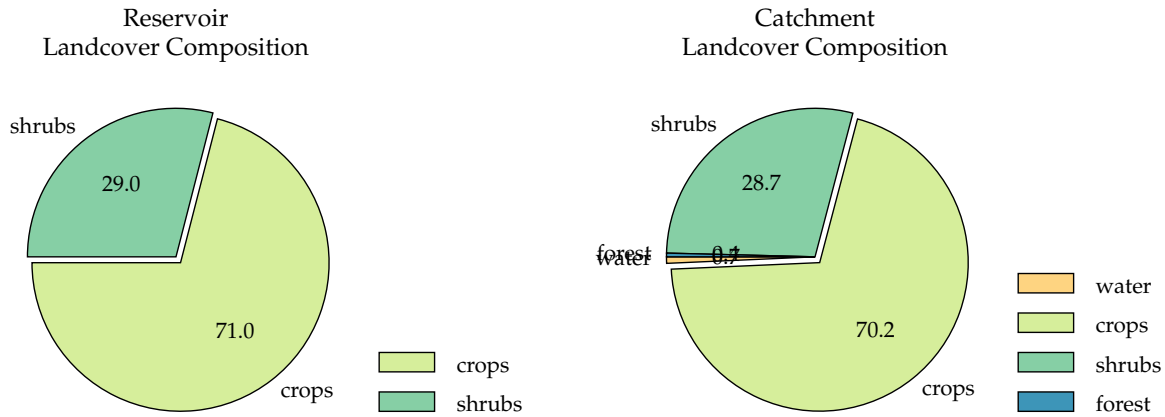
125.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	117.9
Retention coefficient	-	0.311
Influent total N concentration	$\mu\text{g L}^{-1}$	366.6
Reservoir TN concentration	$\mu\text{g L}^{-1}$	251.4
Reservoir TP concentration	$\mu\text{g L}^{-1}$	85.01
Percentage of reservoir's surface area that is littoral	%	34.80
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.28
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.01
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.40
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	0.8626
Influent total N load	kgN yr^{-1}	14 120
Influent total P load	kgP yr^{-1}	4542
Downstream TN concentration	mg L^{-1}	0.3681

126 South Yama

126.1 Inputs

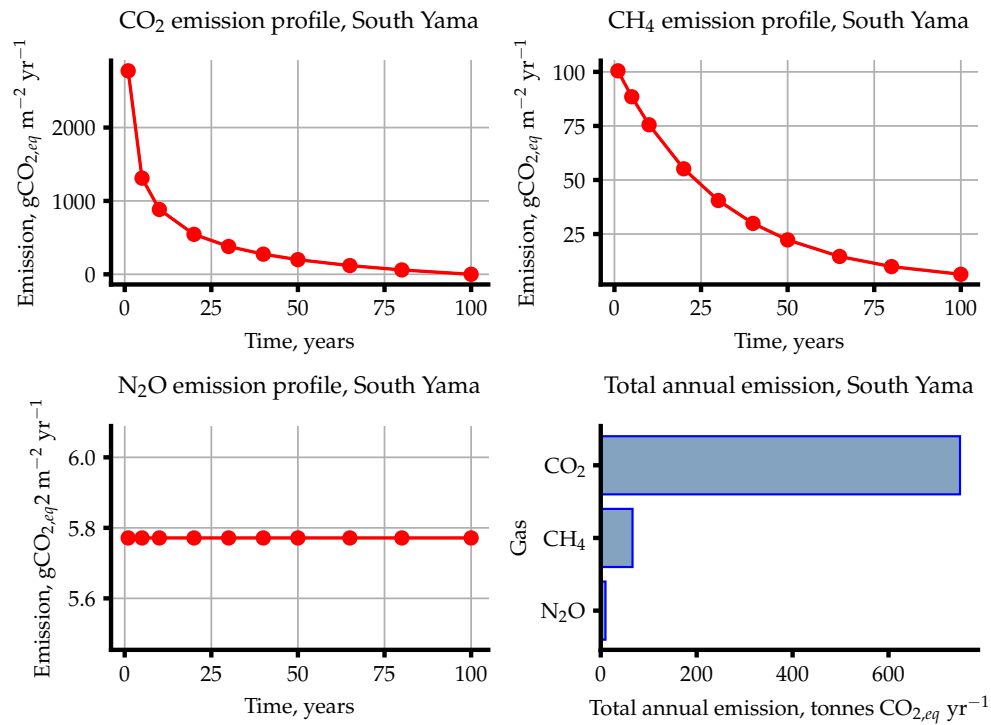
Input Name	Unit	Value(s)
Reservoir ID		9140
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.820499, LON: 94.735858
Monthly Temperatures	$^{\circ}\text{C}$	20.8, 23.3, 27.4, 30.7, 30.2, 28.9, 28.7, 28.2, 27.8, 26.7, 23.8, 20.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	146.0
Catchment area	km^2	237.6
Length of inundated river	km	2.019
Population	capita	22 810
Area fractions	-	0.0, 0.0, 0.0, 0.007, 0.0, 0.702, 0.287, 0.004, 0.0
Mean catchment slope	$\%$	5.000
Mean annual precipitation	mm/year	872.0
Mean annual evapotranspiration	mm/year	1385
Soil wetness	mm over profile	43.00
Soil Olsen P content	kgP ha^{-1}	4.556
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	21 030 000
Reservoir area	km^2	2.110
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	9.965
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.66, 0.29, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.05, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.352
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.760
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.438
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.956
Mean monthly wind speed	m s^{-1}	1.130
Water intake depth below surface	m	N/A



126.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1132
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	776.6
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	355.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	355.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	749.1
Total CO ₂ emission per lifetime	ktCO _{2,eq}	74.91
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	27.77
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	2.522
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1.106
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	31.40
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	66.25
Total CH ₄ emission per lifetime	ktCO _{2,eq}	6.625
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	5.771
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	3.592
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	4.682
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	12.18
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.218
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	386.4
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	391.1

126.3 Emission plots



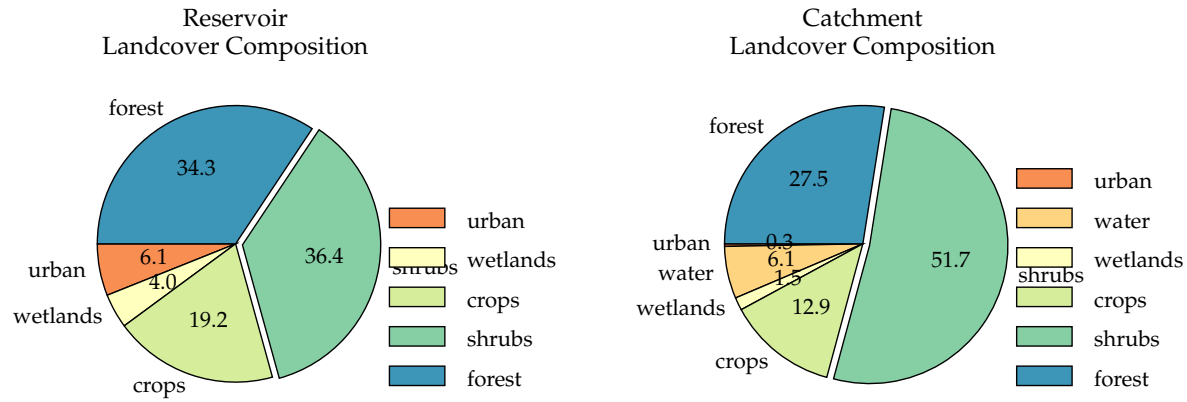
126.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	582.6
Retention coefficient	-	0.3269
Influent total N concentration	$\mu\text{g L}^{-1}$	244.6
Reservoir TN concentration	$\mu\text{g L}^{-1}$	164.7
Reservoir TP concentration	$\mu\text{g L}^{-1}$	394.9
Percentage of reservoir's surface area that is littoral	%	0.1238
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.760
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.12
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.29
Water density at the bottom of the reservoir	kg m^{-3}	997.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.63
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	0.8325
Influent total N load	kgN yr^{-1}	8485
Influent total P load	kgP yr^{-1}	20 210
Downstream TN concentration	mg L^{-1}	0.2412

127 Hmyagyaung

127.1 Inputs

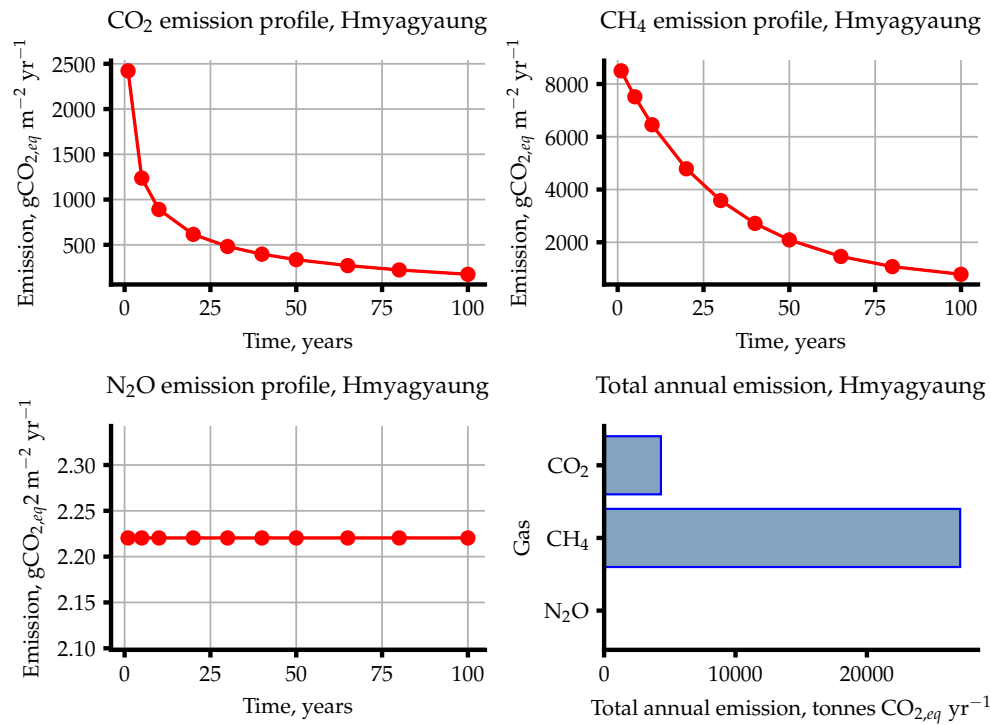
Input Name	Unit	Value(s)
Reservoir ID		9035
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.815664, LON: 95.866023
Monthly Temperatures	$^{\circ}\text{C}$	22.8, 24.9, 28.2, 30.6, 29.7, 27.3, 26.9, 26.8, 27.3, 27.6, 26.1, 23.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1312
Catchment area	km^2	90.52
Length of inundated river	km	6.676
Population	capita	9590
Area fractions	-	0.0, 0.0, 0.003, 0.061, 0.015, 0.129, 0.517, 0.275, 0.0
Mean catchment slope	$\%$	5.000
Mean annual precipitation	mm/year	2309
Mean annual evapotranspiration	mm/year	1345
Soil wetness	mm over profile	364.0
Soil Olsen P content	kgP ha^{-1}	9.872
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	32 730 000
Reservoir area	km^2	9.351
Maximum reservoir depth	m	17.00
Mean reservoir depth	m	3.500
Inundated area fractions	-	0.0, 0.0, 0.06, 0.0, 0.04, 0.19, 0.36, 0.34, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.429
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.810
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.884
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.430
Mean monthly wind speed	m s^{-1}	0.8600
Water intake depth below surface	m	N/A



127.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	917.2
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	629.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-174.5
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	287.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	462.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	4323
Total CO ₂ emission per lifetime	ktCO _{2,eq}	432.3
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	450.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	469.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1977
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2898
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	27 100
Total CH ₄ emission per lifetime	ktCO _{2,eq}	2710
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.220
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.725
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.973
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	20.76
Total N ₂ O emission per lifetime	ktCO _{2,eq}	2.076
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3360
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3362

127.3 Emission plots



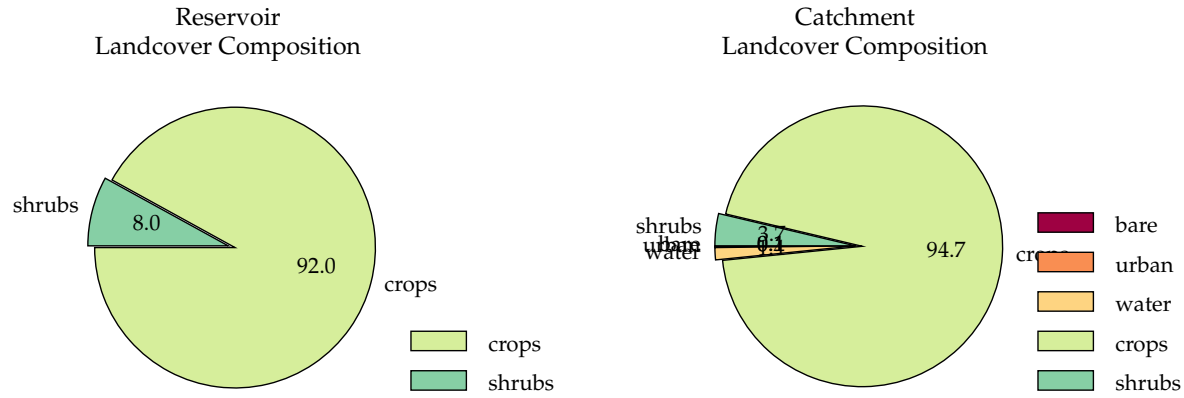
127.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	69.43
Retention coefficient	-	0.1808
Influent total N concentration	$\mu\text{g L}^{-1}$	268.3
Reservoir TN concentration	$\mu\text{g L}^{-1}$	218.1
Reservoir TP concentration	$\mu\text{g L}^{-1}$	60.94
Percentage of reservoir's surface area that is littoral	%	52.71
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.810
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.72
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.67
Water density at the bottom of the reservoir	kg m^{-3}	996.9
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.03
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.152
Influent total N load	kgN yr^{-1}	31 860
Influent total P load	kgP yr^{-1}	8245
Downstream TN concentration	mg L^{-1}	0.3141

128 Zidaw Dam

128.1 Inputs

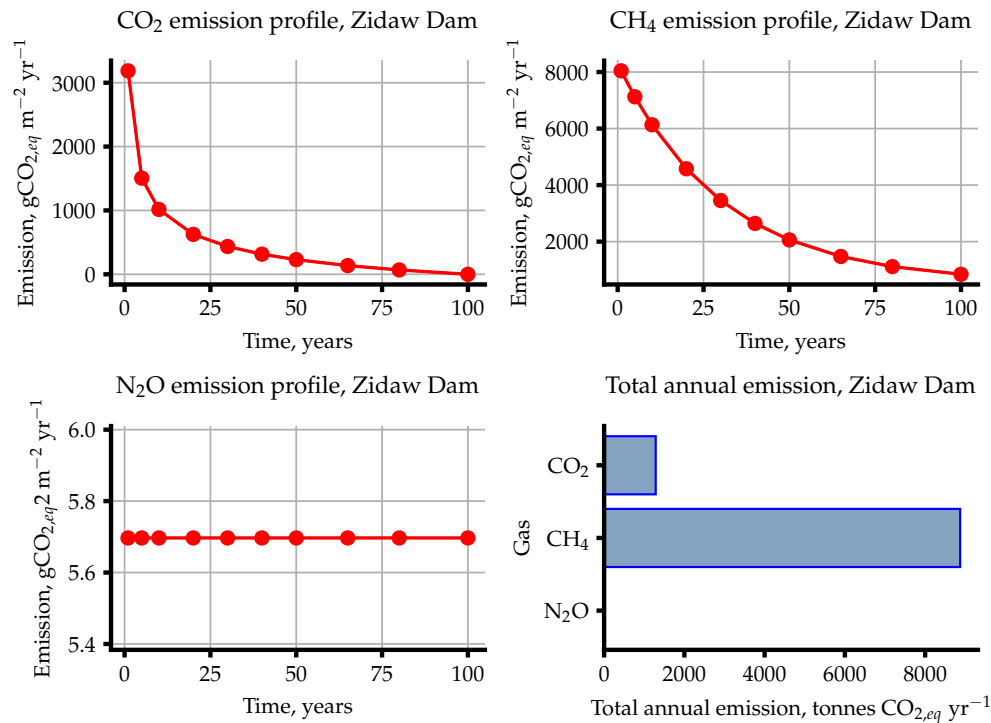
Input Name	Unit	Value(s)
Reservoir ID		9076
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.288633, LON: 95.783778
Monthly Temperatures	$^{\circ}\text{C}$	21.8, 24.2, 28.3, 31.5, 30.6, 29.3, 29.0, 28.5, 28.3, 27.6, 25.1, 21.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	137.0
Catchment area	km^2	285.9
Length of inundated river	km	3.579
Population	capita	32 510
Area fractions	-	0.001, 0.0, 0.001, 0.014, 0.0, 0.947, 0.037, 0.0, 0.0
Mean catchment slope	$\%$	2.000
Mean annual precipitation	mm/year	872.0
Mean annual evapotranspiration	mm/year	1467
Soil wetness	mm over profile	44.00
Soil Olsen P content	kgP ha^{-1}	5.515
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	15 480 000
Reservoir area	km^2	3.152
Maximum reservoir depth	m	16.00
Mean reservoir depth	m	4.900
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.92, 0.08, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.382
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.210
Water intake depth below surface	m	N/A



128.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1300
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	892.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	407.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	407.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1286
Total CO ₂ emission per lifetime	ktCO _{2,eq}	128.6
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	412.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	548.9
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1853
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2815
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	8873
Total CH ₄ emission per lifetime	ktCO _{2,eq}	887.3
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	5.697
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	4.090
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	4.893
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	17.96
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.796
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3223
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3228

128.3 Emission plots



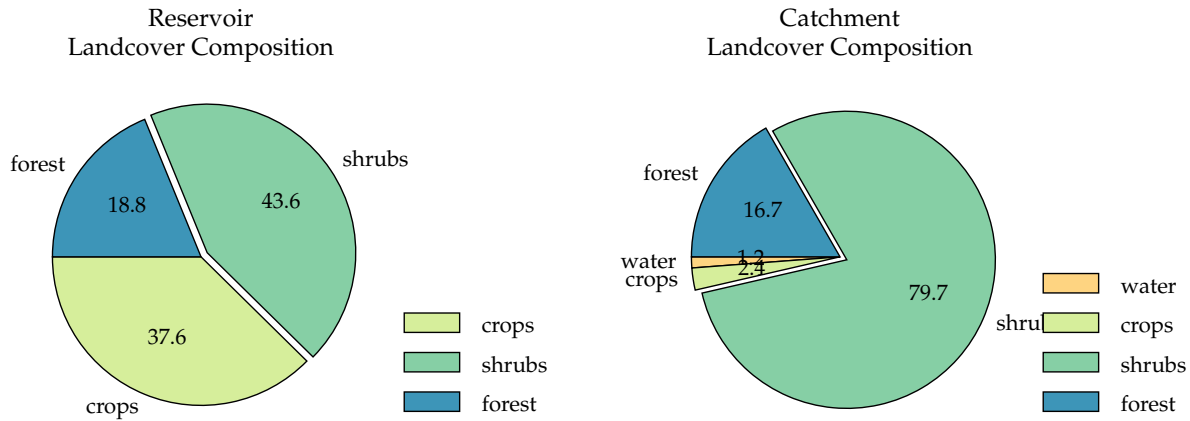
128.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	682.3
Retention coefficient	-	0.2404
Influent total N concentration	$\mu\text{g L}^{-1}$	484.0
Reservoir TN concentration	$\mu\text{g L}^{-1}$	367.7
Reservoir TP concentration	$\mu\text{g L}^{-1}$	523.1
Percentage of reservoir's surface area that is littoral	%	37.52
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.01
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.10
Water density at the surface of the reservoir	kg m^{-3}	995.6
Thermocline depth	m	0.9985
Influent total N load	kgN yr^{-1}	18 960
Influent total P load	kgP yr^{-1}	26 730
Downstream TN concentration	mg L^{-1}	0.5402

129 Unknown20

129.1 Inputs

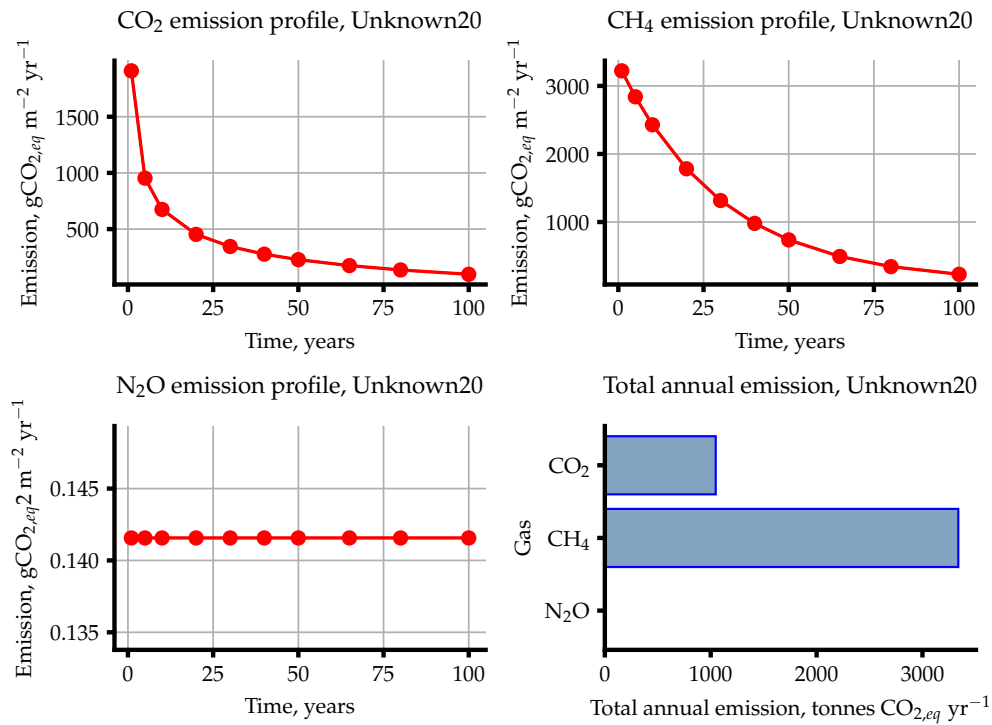
Input Name	Unit	Value(s)
Reservoir ID		9088
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.849712, LON: 95.036759
Monthly Temperatures	$^{\circ}\text{C}$	22.4, 24.6, 27.5, 29.9, 29.2, 27.1, 26.6, 26.6, 27.0, 27.3, 25.7, 23.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1806
Catchment area	km^2	134.6
Length of inundated river	km	5.489
Population	capita	15 860
Area fractions	-	0.0, 0.0, 0.0, 0.012, 0.0, 0.024, 0.798, 0.167, 0.0
Mean catchment slope	$\%$	22.00
Mean annual precipitation	mm/year	2684
Mean annual evapotranspiration	mm/year	1303
Soil wetness	mm over profile	179.0
Soil Olsen P content	kgP ha^{-1}	6.410
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	64 670 000
Reservoir area	km^2	3.179
Maximum reservoir depth	m	43.00
Mean reservoir depth	m	20.30
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.38, 0.44, 0.19, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.237
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.930
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.907
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.580
Mean monthly wind speed	m s^{-1}	0.9200
Water intake depth below surface	m	N/A



129.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	739.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	507.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-97.53
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	231.8
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	329.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1047
Total CO ₂ emission per lifetime	ktCO _{2,eq}	104.7
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	178.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	109.3
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	762.1
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1050
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	3338
Total CH ₄ emission per lifetime	ktCO _{2,eq}	333.8
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.1416
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.1084
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.1250
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.4500
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.045 00
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1380
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1380

129.3 Emission plots



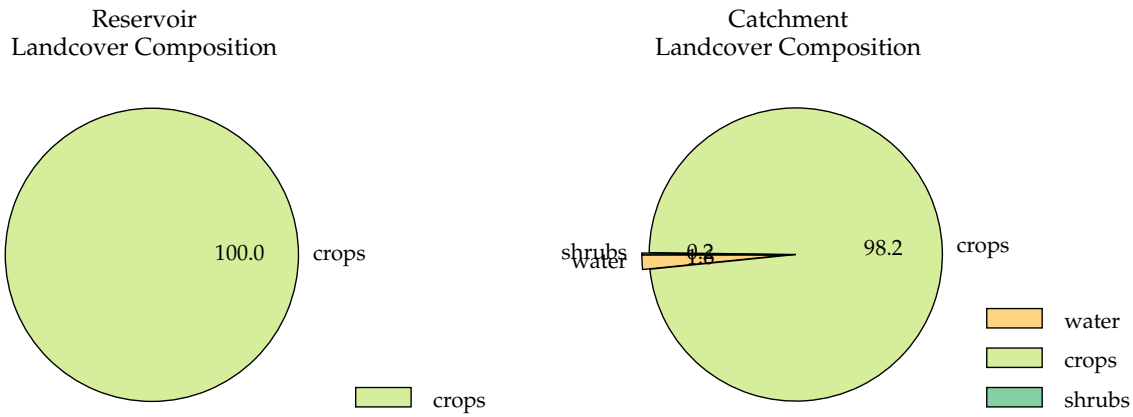
129.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	55.78
Retention coefficient	-	0.1756
Influent total N concentration	$\mu\text{g L}^{-1}$	2.888
Reservoir TN concentration	$\mu\text{g L}^{-1}$	2.359
Reservoir TP concentration	$\mu\text{g L}^{-1}$	46.78
Percentage of reservoir's surface area that is littoral	%	7.769
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.930
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.41
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.47
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	0.9920
Influent total N load	kgN yr^{-1}	702.2
Influent total P load	kgP yr^{-1}	13 560
Downstream TN concentration	mg L^{-1}	0.003 462

130 Unknown26

130.1 Inputs

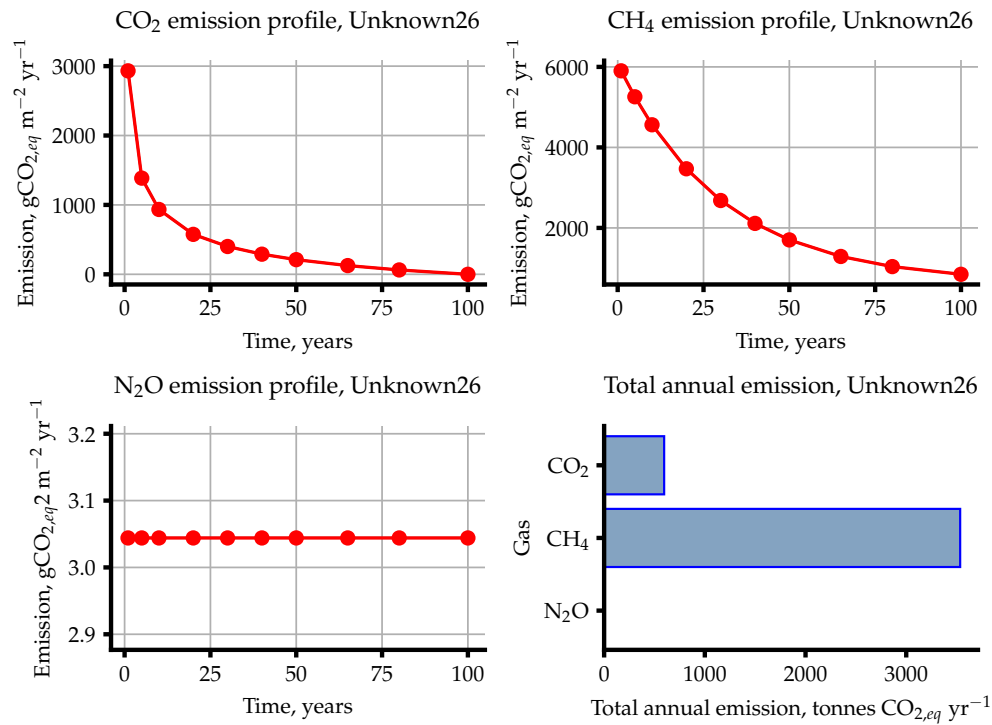
Input Name	Unit	Value(s)
Reservoir ID		9101
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.672422, LON: 95.718735
Monthly Temperatures	$^{\circ}\text{C}$	21.0, 23.9, 28.2, 31.5, 30.6, 29.5, 29.2, 28.6, 28.3, 27.3, 24.6, 21.2
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	123.0
Catchment area	km^2	39.71
Length of inundated river	km	2.212
Population	capita	4893
Area fractions	-	0.0, 0.0, 0.0, 0.016, 0.0, 0.982, 0.002, 0.0, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	861.0
Mean annual evapotranspiration	mm/year	1450
Soil wetness	mm over profile	47.00
Soil Olsen P content	kgP ha^{-1}	5.532
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	6 134 000
Reservoir area	km^2	1.588
Maximum reservoir depth	m	12.00
Mean reservoir depth	m	3.900
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.227
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.200
Water intake depth below surface	m	N/A



130.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1197
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	821.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	375.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	375.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	596.1
Total CO ₂ emission per lifetime	ktCO _{2,eq}	59.61
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	444.1
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	640.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1142
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2226
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	3536
Total CH ₄ emission per lifetime	ktCO _{2,eq}	353.6
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.044
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.165
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.104
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	4.834
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.4834
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2602
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2604

130.3 Emission plots



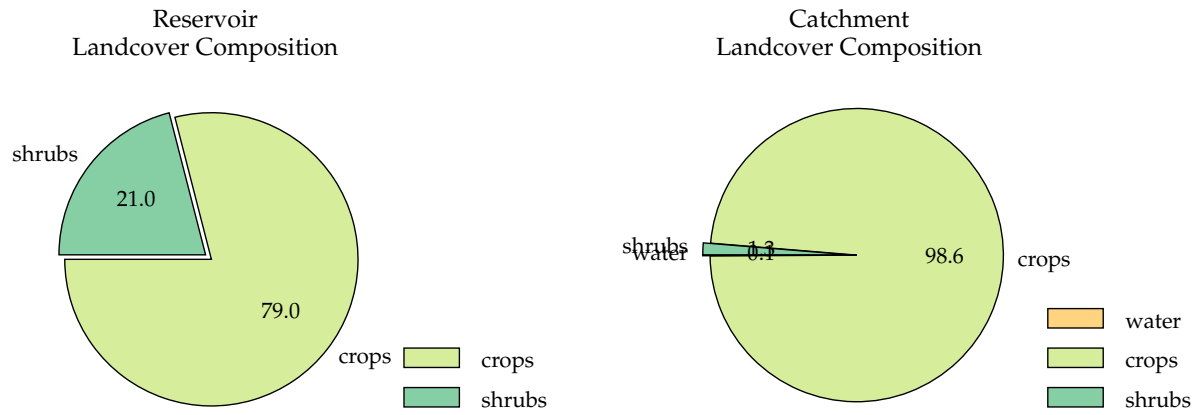
130.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	887.7
Retention coefficient	-	0.5015
Influent total N concentration	$\mu\text{g L}^{-1}$	356.5
Reservoir TN concentration	$\mu\text{g L}^{-1}$	177.6
Reservoir TP concentration	$\mu\text{g L}^{-1}$	457.2
Percentage of reservoir's surface area that is littoral	%	44.98
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.49
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.20
Water density at the surface of the reservoir	kg m^{-3}	995.6
Thermocline depth	m	0.7900
Influent total N load	kgN yr^{-1}	1741
Influent total P load	kgP yr^{-1}	4335
Downstream TN concentration	mg L^{-1}	0.2275

131 Yae Ka Moe

131.1 Inputs

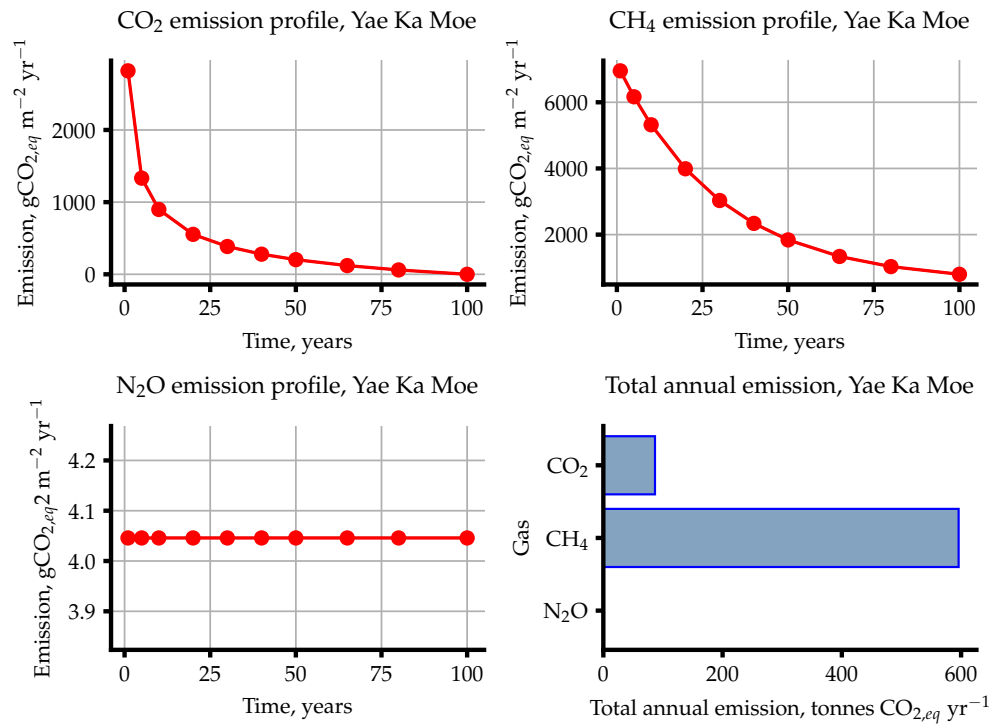
Input Name	Unit	Value(s)
Reservoir ID		9110
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.011184, LON: 95.730396
Monthly Temperatures	$^{\circ}\text{C}$	21.7, 24.1, 28.3, 31.4, 30.4, 28.8, 28.5, 28.1, 27.9, 27.2, 24.8, 21.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	135.0
Catchment area	km^2	23.65
Length of inundated river	km	0.2480
Population	capita	3422
Area fractions	-	0.0, 0.0, 0.0, 0.001, 0.0, 0.986, 0.013, 0.0, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	870.0
Mean annual evapotranspiration	mm/year	1461
Soil wetness	mm over profile	44.00
Soil Olsen P content	kgP ha^{-1}	4.858
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	960 000
Reservoir area	km^2	0.2400
Maximum reservoir depth	m	8.000
Mean reservoir depth	m	4.000
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.79, 0.21, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.207
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.260
Water intake depth below surface	m	N/A



131.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1150
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	789.5
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	360.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	360.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	86.62
Total CO ₂ emission per lifetime	ktCO _{2,eq}	8.662
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	400.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	548.6
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1534
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2483
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	595.9
Total CH ₄ emission per lifetime	ktCO _{2,eq}	59.59
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	4.046
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	3.051
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.549
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.9710
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.097 10
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2844
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2847

131.3 Emission plots



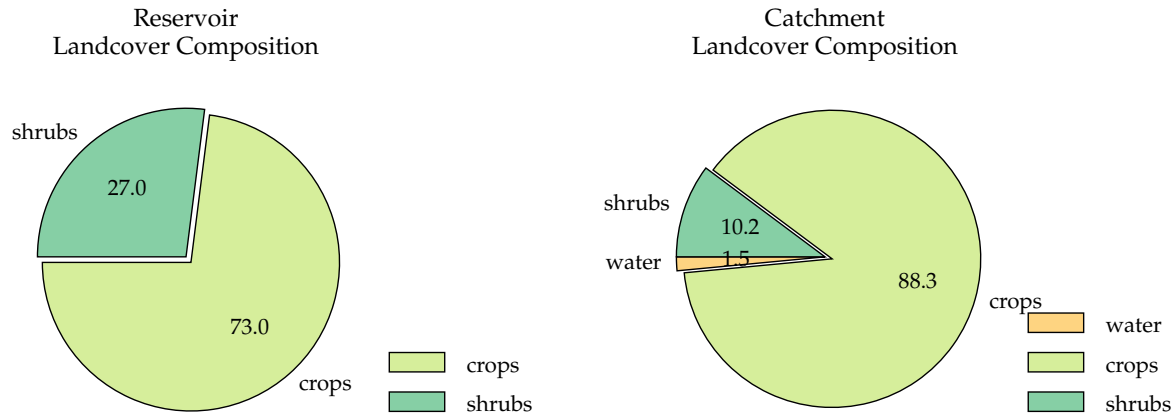
131.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	942.2
Retention coefficient	-	0.1941
Influent total N concentration	$\mu\text{g L}^{-1}$	420.3
Reservoir TN concentration	$\mu\text{g L}^{-1}$	339.5
Reservoir TP concentration	$\mu\text{g L}^{-1}$	765.6
Percentage of reservoir's surface area that is littoral	%	37.50
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.88
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.78
Water density at the surface of the reservoir	kg m^{-3}	995.7
Thermocline depth	m	0.5593
Influent total N load	kgN yr^{-1}	1342
Influent total P load	kgP yr^{-1}	3008
Downstream TN concentration	mg L^{-1}	0.4945

132 Palin

132.1 Inputs

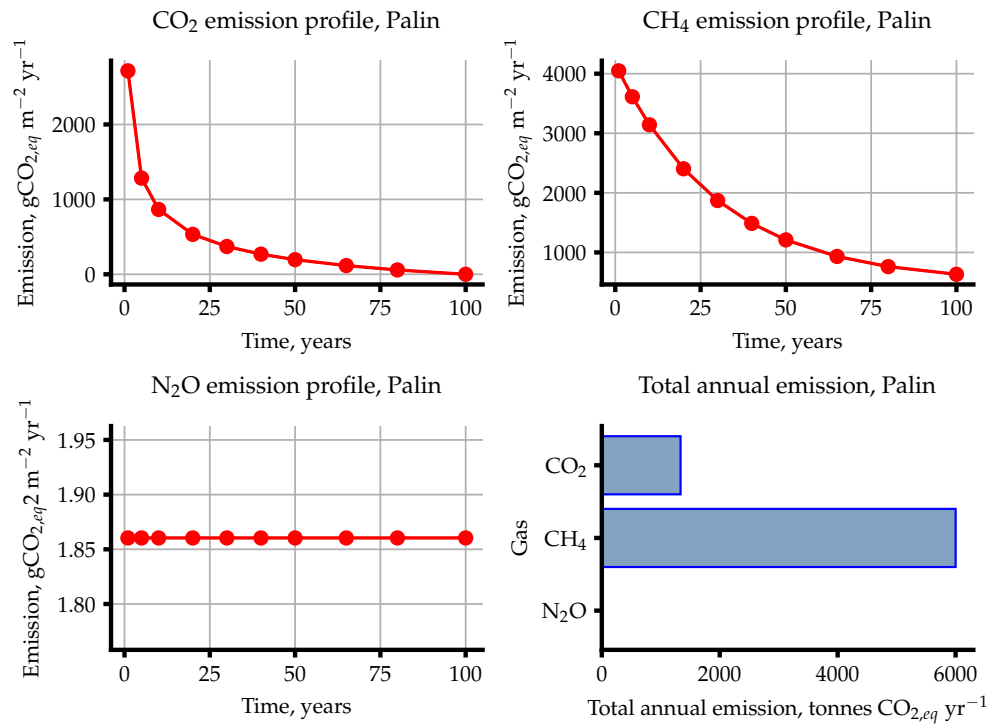
Input Name	Unit	Value(s)
Reservoir ID		9141
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.291987, LON: 95.525047
Monthly Temperatures	$^{\circ}\text{C}$	21.9, 24.4, 28.6, 31.7, 30.6, 28.5, 27.9, 27.7, 27.7, 27.2, 25.0, 21.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	102.0
Catchment area	km ²	79.33
Length of inundated river	km	2.293
Population	capita	6735
Area fractions	-	0.0, 0.0, 0.0, 0.015, 0.0, 0.883, 0.102, 0.0, 0.0
Mean catchment slope	%	7.000
Mean annual precipitation	mm/year	853.0
Mean annual evapotranspiration	mm/year	1446
Soil wetness	mm over profile	48.00
Soil Olsen P content	kgP ha ⁻¹	4.848
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	23 990 000
Reservoir area	km ²	3.841
Maximum reservoir depth	m	19.00
Mean reservoir depth	m	6.200
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.73, 0.27, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	4.144
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	5.180
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	5.040
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	5.202
Mean monthly wind speed	m s ⁻¹	1.190
Water intake depth below surface	m	N/A



132.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1108
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	760.6
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	347.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	347.7
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1336
Total CO ₂ emission per lifetime	ktCO _{2,eq}	133.6
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	360.6
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	492.6
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	709.0
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1562
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	6001
Total CH ₄ emission per lifetime	ktCO _{2,eq}	600.1
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.860
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.4201
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.140
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	7.146
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.7146
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1910
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1911

132.3 Emission plots



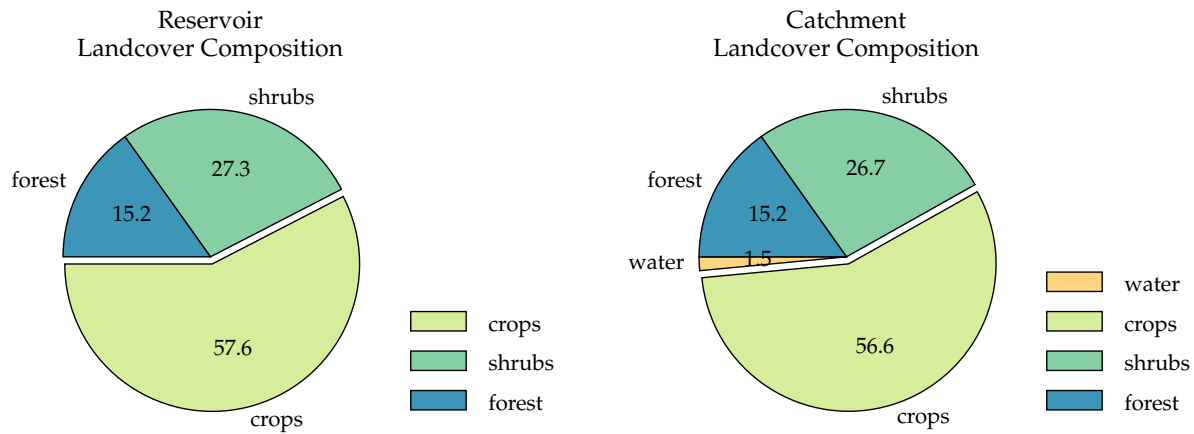
132.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	790.3
Retention coefficient	-	0.7037
Influent total N concentration	$\mu\text{g L}^{-1}$	187.0
Reservoir TN concentration	$\mu\text{g L}^{-1}$	55.88
Reservoir TP concentration	$\mu\text{g L}^{-1}$	242.9
Percentage of reservoir's surface area that is littoral	%	29.87
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.08
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.85
Water density at the surface of the reservoir	kg m^{-3}	995.7
Thermocline depth	m	1.067
Influent total N load	kgN yr^{-1}	1513
Influent total P load	kgP yr^{-1}	6394
Downstream TN concentration	mg L^{-1}	0.038 29

133 SanChuang

133.1 Inputs

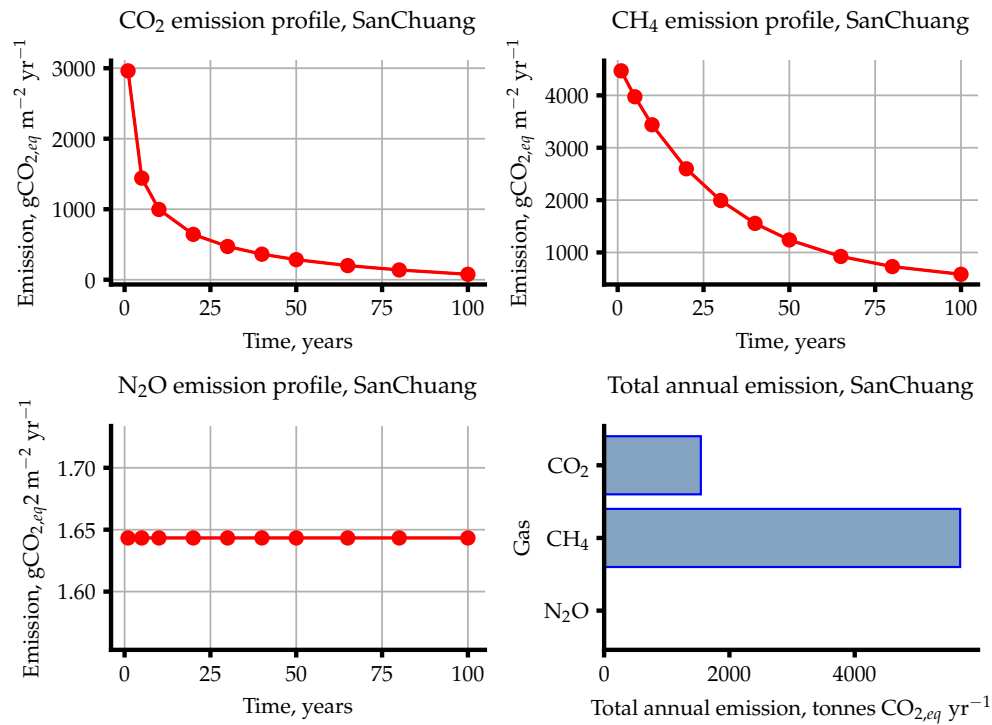
Input Name	Unit	Value(s)
Reservoir ID		9142
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.168189, LON: 95.584592
Monthly Temperatures	$^{\circ}\text{C}$	21.6, 24.1, 28.3, 31.4, 30.5, 28.3, 27.8, 27.5, 27.7, 27.3, 25.0, 21.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	107.0
Catchment area	km^2	189.1
Length of inundated river	km	3.081
Population	capita	16 600
Area fractions	-	0.0, 0.0, 0.0, 0.015, 0.0, 0.567, 0.267, 0.152, 0.0
Mean catchment slope	$\%$	9.000
Mean annual precipitation	mm/year	884.0
Mean annual evapotranspiration	mm/year	1418
Soil wetness	mm over profile	64.00
Soil Olsen P content	kgP ha^{-1}	5.568
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	26 120 000
Reservoir area	km^2	3.458
Maximum reservoir depth	m	24.00
Mean reservoir depth	m	7.600
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.57, 0.27, 0.15, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.196
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.110
Water intake depth below surface	m	N/A



133.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1178
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	808.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-77.00
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	369.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	446.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1544
Total CO ₂ emission per lifetime	ktCO _{2,eq}	154.4
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	326.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	423.9
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	892.9
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1643
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	5683
Total CH ₄ emission per lifetime	ktCO _{2,eq}	568.3
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.643
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.6150
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.129
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	5.683
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.5683
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2090
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2091

133.3 Emission plots



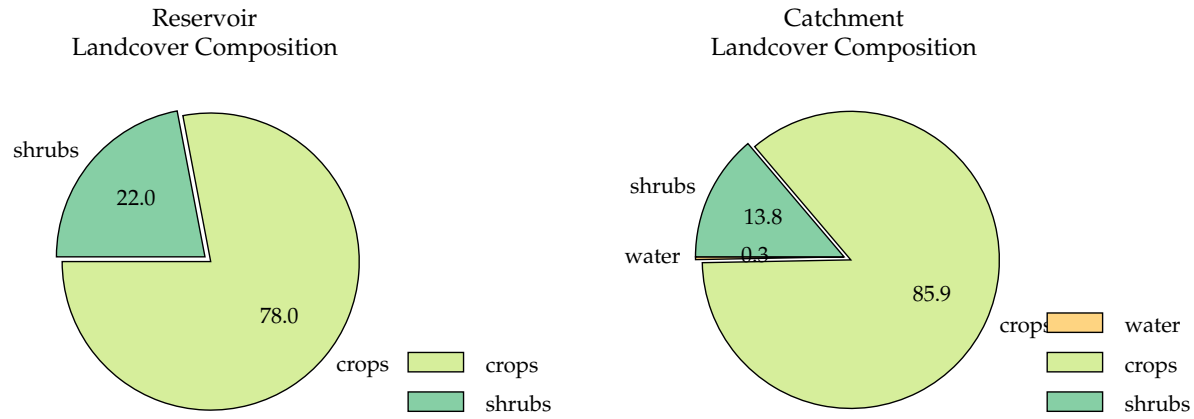
133.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	736.0
Retention coefficient	-	0.5084
Influent total N concentration	$\mu\text{g L}^{-1}$	98.86
Reservoir TN concentration	$\mu\text{g L}^{-1}$	48.60
Reservoir TP concentration	$\mu\text{g L}^{-1}$	367.0
Percentage of reservoir's surface area that is littoral	%	25.03
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.88
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.63
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	0.9764
Influent total N load	kgN yr^{-1}	2000
Influent total P load	kgP yr^{-1}	14 890
Downstream TN concentration	mg L^{-1}	0.061 53

134 KyetMauk

134.1 Inputs

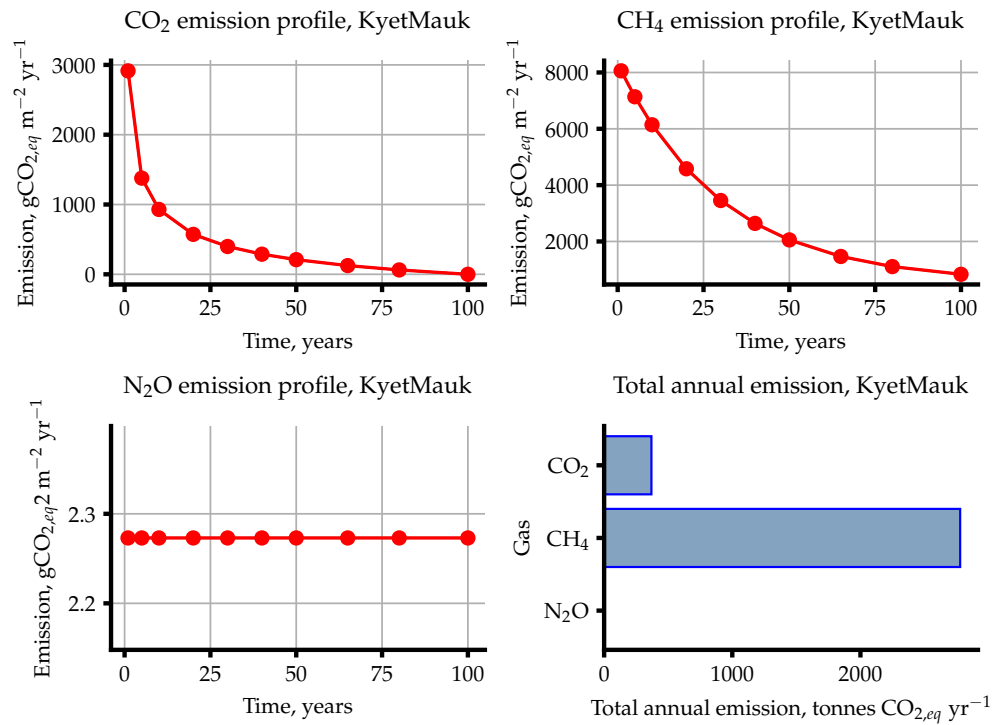
Input Name	Unit	Value(s)
Reservoir ID		9144
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.700636, LON: 94.822381
Monthly Temperatures	$^{\circ}\text{C}$	20.9, 23.4, 27.4, 30.7, 30.1, 28.8, 28.6, 28.1, 27.7, 26.7, 23.9, 20.8
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	111.0
Catchment area	km^2	77.59
Length of inundated river	km	1.339
Population	capita	7590
Area fractions	-	0.0, 0.0, 0.0, 0.003, 0.0, 0.859, 0.138, 0.0, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	786.0
Mean annual evapotranspiration	mm/year	1412
Soil wetness	mm over profile	31.00
Soil Olsen P content	kgP ha^{-1}	7.413
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	2 241 000
Reservoir area	km^2	0.9890
Maximum reservoir depth	m	6.000
Mean reservoir depth	m	2.300
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.78, 0.22, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.103
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.760
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.438
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.956
Mean monthly wind speed	m s^{-1}	1.120
Water intake depth below surface	m	N/A



134.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1190
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	816.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	373.2
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	373.2
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	369.1
Total CO ₂ emission per lifetime	ktCO _{2,eq}	36.91
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	499.4
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	537.6
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1772
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2809
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	2778
Total CH ₄ emission per lifetime	ktCO _{2,eq}	277.8
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.273
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.745
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.009
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	2.248
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.2248
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3182
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3184

134.3 Emission plots



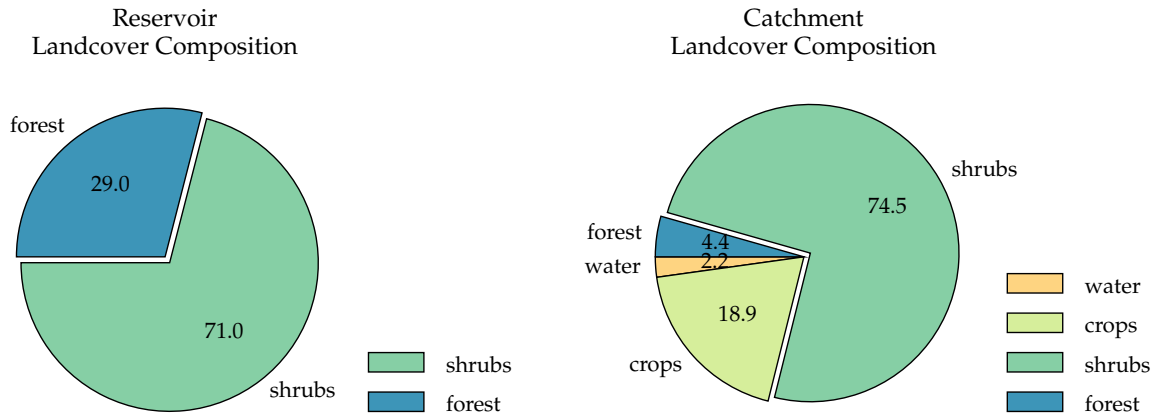
134.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	807.9
Retention coefficient	-	0.1725
Influent total N concentration	$\mu\text{g L}^{-1}$	416.4
Reservoir TN concentration	$\mu\text{g L}^{-1}$	344.9
Reservoir TP concentration	$\mu\text{g L}^{-1}$	675.2
Percentage of reservoir's surface area that is littoral	%	67.21
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.760
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.12
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.36
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.55
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	0.6921
Influent total N load	kgN yr^{-1}	3586
Influent total P load	kgP yr^{-1}	6958
Downstream TN concentration	mg L^{-1}	0.5006

135 Unknown40

135.1 Inputs

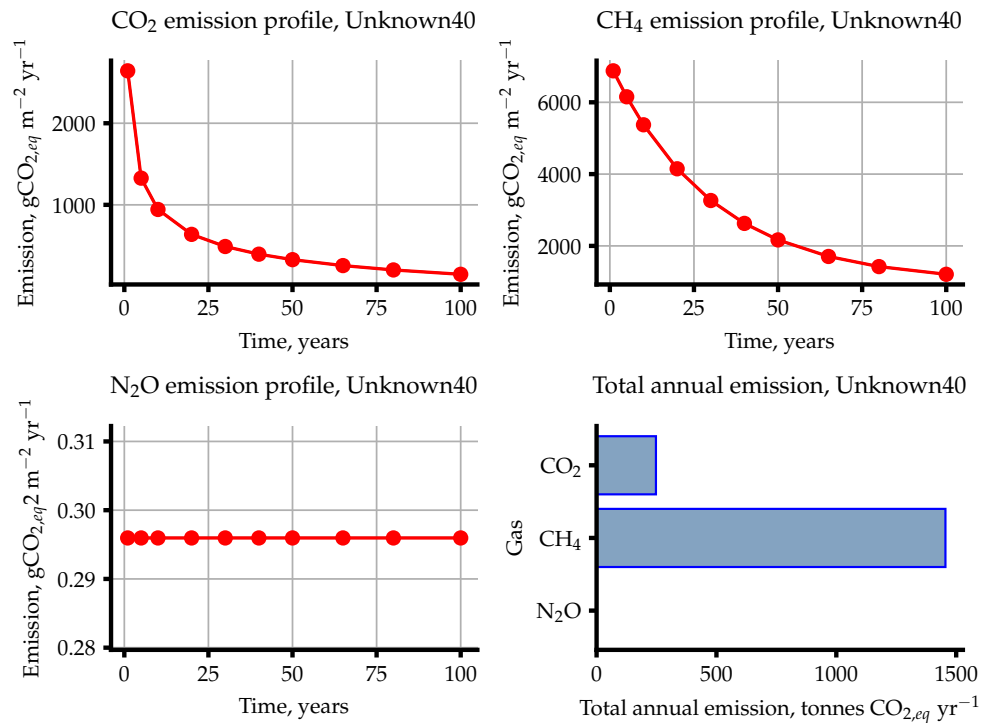
Input Name	Unit	Value(s)
Reservoir ID		9145
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.651747, LON: 95.252095
Monthly Temperatures	$^{\circ}\text{C}$	22.0, 24.3, 28.1, 31.1, 30.3, 28.0, 27.4, 27.4, 27.7, 27.7, 25.8, 22.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	446.0
Catchment area	km^2	8.541
Length of inundated river	km	1.703
Population	capita	1434
Area fractions	-	0.0, 0.0, 0.0, 0.022, 0.0, 0.189, 0.744, 0.044, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	1347
Mean annual evapotranspiration	mm/year	1365
Soil wetness	mm over profile	172.0
Soil Olsen P content	kgP ha^{-1}	6.356
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	235 600
Reservoir area	km^2	0.5290
Maximum reservoir depth	m	1.000
Mean reservoir depth	m	0.4000
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.71, 0.29, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.451
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.200
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.424
Mean monthly wind speed	m s^{-1}	0.8600
Water intake depth below surface	m	N/A



135.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1017
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	698.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-148.9
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	319.2
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	468.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	247.6
Total CO ₂ emission per lifetime	ktCO _{2,eq}	24.76
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	617.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	976.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1157
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2751
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	1455
Total CH ₄ emission per lifetime	ktCO _{2,eq}	145.5
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.2960
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.2552
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.2756
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.1566
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.015 66
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3219
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3219

135.3 Emission plots



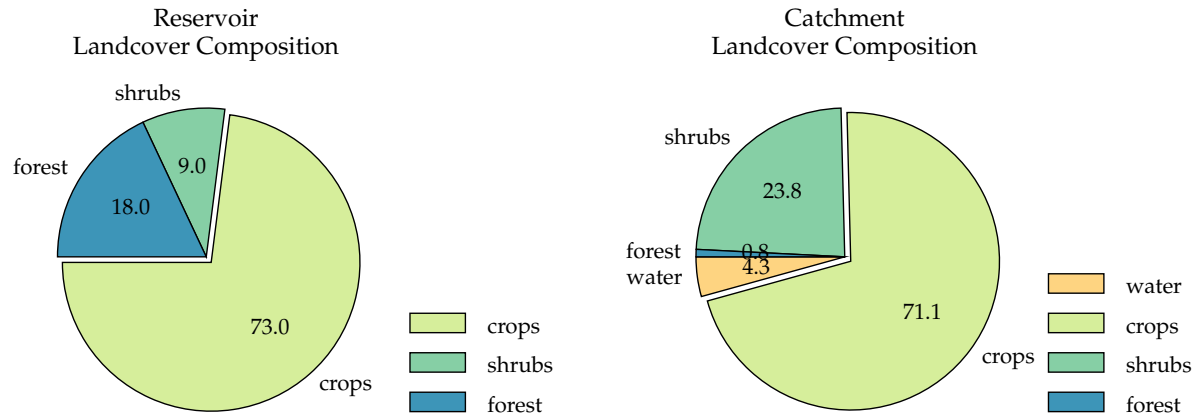
135.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	316.7
Retention coefficient	-	0.047 20
Influent total N concentration	$\mu\text{g L}^{-1}$	293.2
Reservoir TN concentration	$\mu\text{g L}^{-1}$	283.1
Reservoir TP concentration	$\mu\text{g L}^{-1}$	318.7
Percentage of reservoir's surface area that is littoral	%	100.0
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.28
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.14
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.38
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	0.5011
Influent total N load	kgN yr^{-1}	1117
Influent total P load	kgP yr^{-1}	1206
Downstream TN concentration	mg L^{-1}	0.3657

136 Kanggyigone

136.1 Inputs

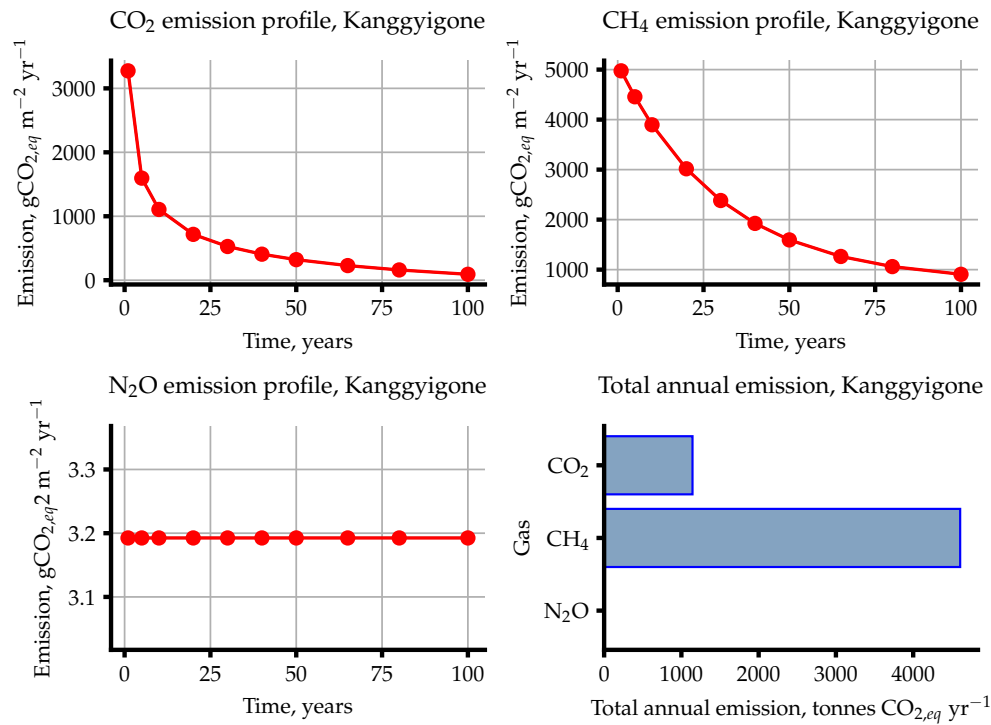
Input Name	Unit	Value(s)
Reservoir ID		9170
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.043285, LON: 95.30866
Monthly Temperatures	$^{\circ}\text{C}$	21.6, 24.1, 28.2, 31.4, 30.6, 28.2, 27.6, 27.6, 27.9, 27.8, 25.6, 22.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	127.0
Catchment area	km^2	23.13
Length of inundated river	km	2.550
Population	capita	6164
Area fractions	-	0.0, 0.0, 0.0, 0.043, 0.0, 0.711, 0.238, 0.008, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	1028
Mean annual evapotranspiration	mm/year	1392
Soil wetness	mm over profile	146.0
Soil Olsen P content	kgP ha^{-1}	3.793
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	7 473 000
Reservoir area	km^2	2.289
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	3.300
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.73, 0.09, 0.18, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.347
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.754
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.358
Mean monthly wind speed	m s^{-1}	0.9600
Water intake depth below surface	m	N/A



136.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1298
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	891.0
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-92.40
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	407.3
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	499.7
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1144
Total CO ₂ emission per lifetime	ktCO _{2,eq}	114.4
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	460.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	740.0
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	812.3
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2013
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	4608
Total CH ₄ emission per lifetime	ktCO _{2,eq}	460.8
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.193
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.7661
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.979
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	7.308
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.7308
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2513
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2515

136.3 Emission plots



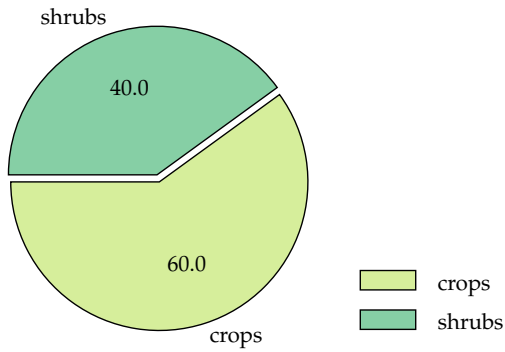
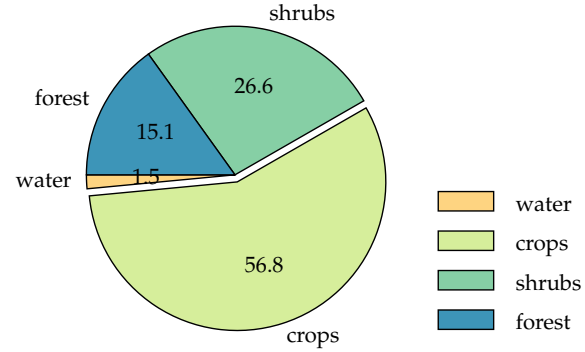
136.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1624
Retention coefficient	-	0.6708
Influent total N concentration	$\mu\text{g L}^{-1}$	559.9
Reservoir TN concentration	$\mu\text{g L}^{-1}$	183.9
Reservoir TP concentration	$\mu\text{g L}^{-1}$	586.8
Percentage of reservoir's surface area that is littoral	%	51.53
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.88
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.60
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	0.7639
Influent total N load	kgN yr^{-1}	1645
Influent total P load	kgP yr^{-1}	4770
Downstream TN concentration	mg L^{-1}	0.1432

137 Sunchaung

137.1 Inputs

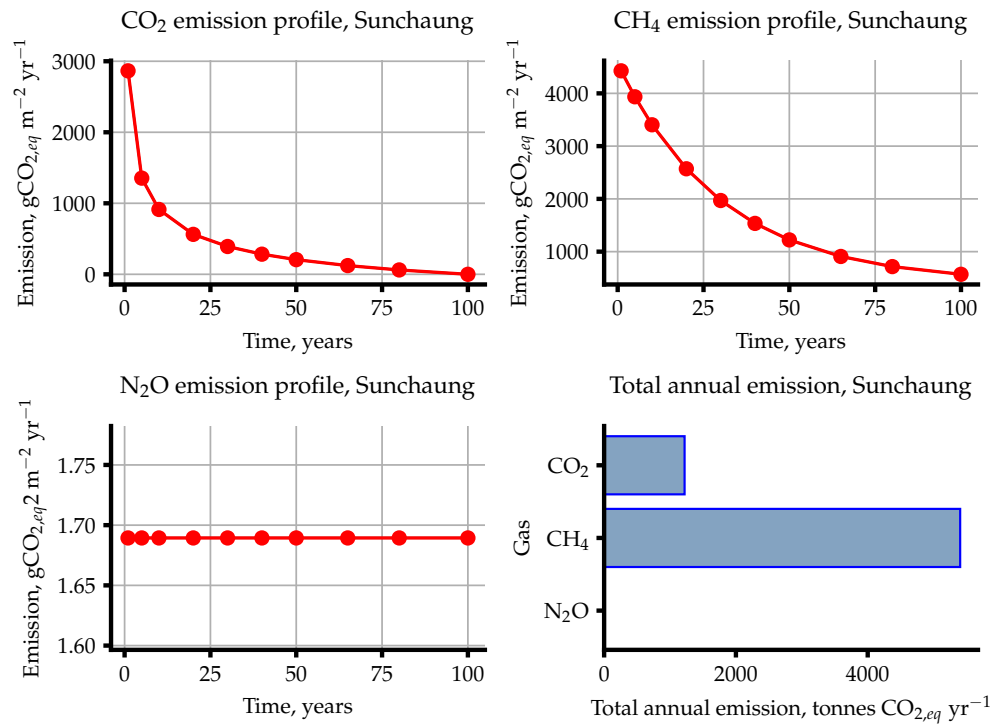
Input Name	Unit	Value(s)
Reservoir ID		9005
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.167638, LON: 95.583023
Monthly Temperatures	$^{\circ}\text{C}$	21.6, 24.1, 28.3, 31.5, 30.5, 28.3, 27.8, 27.6, 27.7, 27.3, 25.0, 21.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	107.0
Catchment area	km^2	189.5
Length of inundated river	km	3.322
Population	capita	16 650
Area fractions	-	0.0, 0.0, 0.0, 0.015, 0.0, 0.568, 0.266, 0.151, 0.0
Mean catchment slope	$\%$	9.000
Mean annual precipitation	mm/year	884.0
Mean annual evapotranspiration	mm/year	1418
Soil wetness	mm over profile	64.00
Soil Olsen P content	kgP ha^{-1}	5.568
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	25 750 000
Reservoir area	km^2	3.329
Maximum reservoir depth	m	23.00
Mean reservoir depth	m	7.700
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.6, 0.4, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.081
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.120
Water intake depth below surface	m	N/A

Reservoir
Landcover CompositionCatchment
Landcover Composition

137.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1169
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	802.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	366.8
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	366.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1221
Total CO ₂ emission per lifetime	ktCO _{2,eq}	122.1
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	322.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	412.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	887.8
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1623
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	5403
Total CH ₄ emission per lifetime	ktCO _{2,eq}	540.3
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.689
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.6406
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.165
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	5.624
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.5624
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1990
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1991

137.3 Emission plots



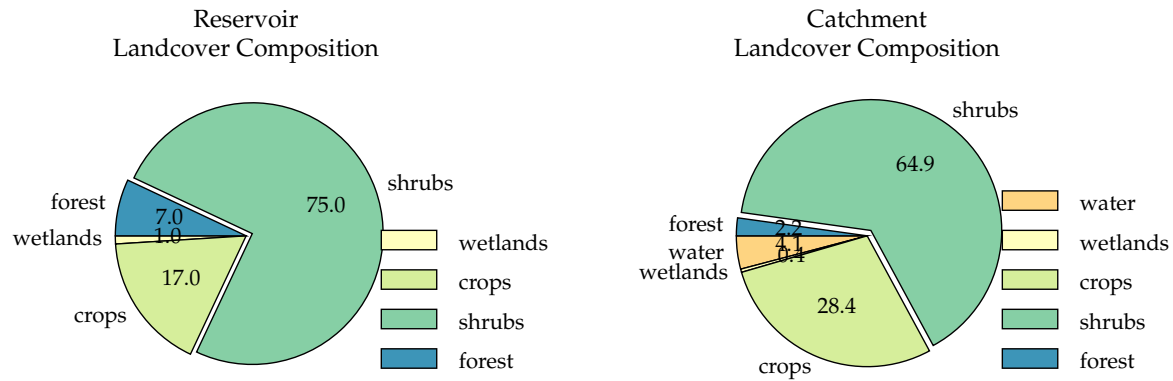
137.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	736.2
Retention coefficient	-	0.5042
Influent total N concentration	$\mu\text{g L}^{-1}$	98.97
Reservoir TN concentration	$\mu\text{g L}^{-1}$	49.03
Reservoir TP concentration	$\mu\text{g L}^{-1}$	369.8
Percentage of reservoir's surface area that is littoral	%	24.25
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.88
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.65
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	0.9730
Influent total N load	kgN yr^{-1}	2007
Influent total P load	kgP yr^{-1}	14 930
Downstream TN concentration	mg L^{-1}	0.062 54

138 La Gun Byin Dam

138.1 Inputs

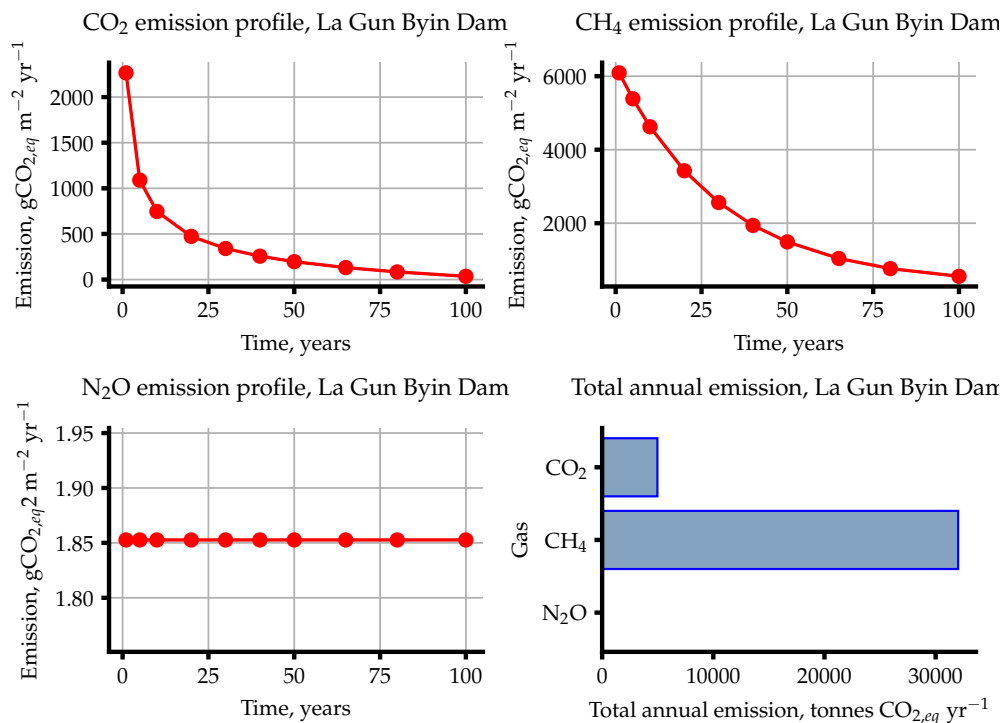
Input Name	Unit	Value(s)
Reservoir ID		9019
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.25235, LON: 96.314195
Monthly Temperatures	$^{\circ}\text{C}$	23.6, 25.1, 27.9, 30.2, 29.5, 27.2, 26.6, 26.7, 27.2, 27.7, 26.6, 24.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	2247
Catchment area	km^2	116.4
Length of inundated river	km	10.27
Population	capita	17 730
Area fractions	-	0.0, 0.0, 0.0, 0.041, 0.004, 0.284, 0.649, 0.022, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	3224
Mean annual evapotranspiration	mm/year	1362
Soil wetness	mm over profile	283.0
Soil Olsen P content	kgP ha^{-1}	20.00
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	80 670 000
Reservoir area	km^2	15.47
Maximum reservoir depth	m	12.00
Mean reservoir depth	m	5.200
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.01, 0.17, 0.75, 0.07, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.309
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.970
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.462
Mean monthly wind speed	m s^{-1}	1.150
Water intake depth below surface	m	N/A



138.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	909.9
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	624.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-35.93
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	285.5
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	321.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	4972
Total CO ₂ emission per lifetime	ktCO _{2,eq}	497.2
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	354.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	328.9
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1387
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2070
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	32 030
Total CH ₄ emission per lifetime	ktCO _{2,eq}	3203
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.853
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.399
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.626
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	28.66
Total N ₂ O emission per lifetime	ktCO _{2,eq}	2.866
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2392
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2393

138.3 Emission plots



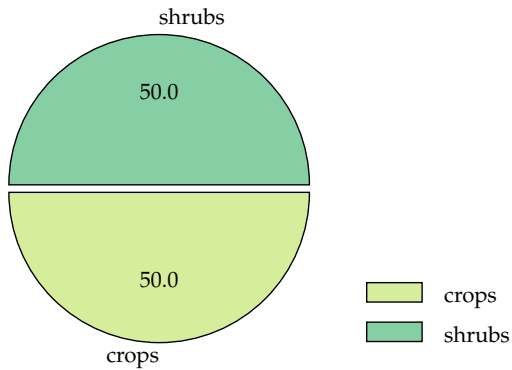
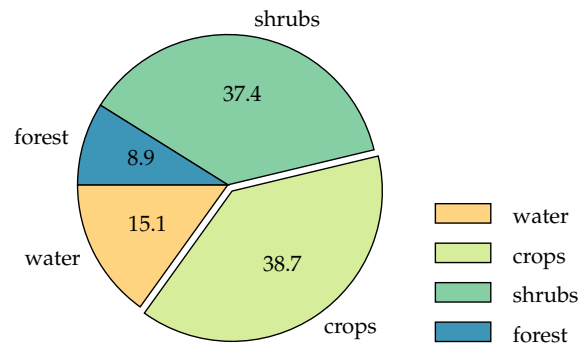
138.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	55.94
Retention coefficient	-	0.1981
Influent total N concentration	$\mu\text{g L}^{-1}$	148.4
Reservoir TN concentration	$\mu\text{g L}^{-1}$	121.2
Reservoir TP concentration	$\mu\text{g L}^{-1}$	50.42
Percentage of reservoir's surface area that is littoral	%	31.35
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.19
Water density at the bottom of the reservoir	kg m^{-3}	996.8
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.83
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.969
Influent total N load	kgN yr^{-1}	38 810
Influent total P load	kgP yr^{-1}	14 630
Downstream TN concentration	mg L^{-1}	0.1730

139 Yay Ni Dam

139.1 Inputs

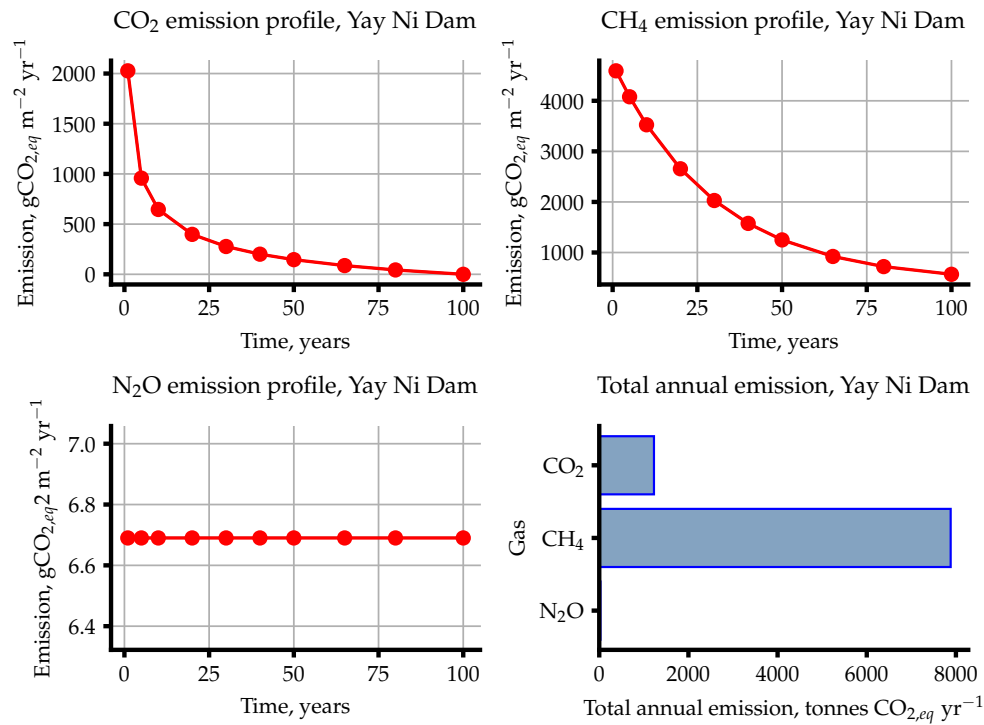
Input Name	Unit	Value(s)
Reservoir ID		9044
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.844781, LON: 96.313568
Monthly Temperatures	$^{\circ}\text{C}$	22.3, 24.6, 28.0, 30.8, 29.7, 27.3, 26.9, 26.8, 27.4, 27.7, 26.0, 23.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	919.0
Catchment area	km^2	33.72
Length of inundated river	km	2.888
Population	capita	3085
Area fractions	-	0.0, 0.0, 0.0, 0.151, 0.0, 0.387, 0.374, 0.089, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	2020
Mean annual evapotranspiration	mm/year	1372
Soil wetness	mm over profile	415.0
Soil Olsen P content	kgP ha^{-1}	7.500
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	25 040 000
Reservoir area	km^2	4.729
Maximum reservoir depth	m	12.00
Mean reservoir depth	m	5.300
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.5, 0.5, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.846
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.030
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.340
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.458
Mean monthly wind speed	m s^{-1}	1.030
Water intake depth below surface	m	N/A

Reservoir
Landcover CompositionCatchment
Landcover Composition

139.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	827.1
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	567.6
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	259.5
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	259.5
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1227
Total CO ₂ emission per lifetime	ktCO _{2,eq}	122.7
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	348.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	404.2
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	913.9
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1667
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	7882
Total CH ₄ emission per lifetime	ktCO _{2,eq}	788.2
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	6.690
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	4.554
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	5.622
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	31.64
Total N ₂ O emission per lifetime	ktCO _{2,eq}	3.164
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1926
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1932

139.3 Emission plots



139.4 Intermediate variables

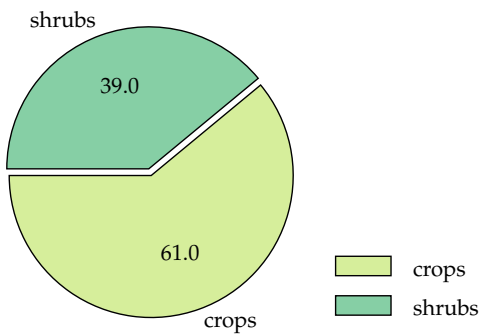
Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	92.27
Retention coefficient	-	0.3929
Influent total N concentration	$\mu\text{g L}^{-1}$	695.2
Reservoir TN concentration	$\mu\text{g L}^{-1}$	413.9
Reservoir TP concentration	$\mu\text{g L}^{-1}$	62.19
Percentage of reservoir's surface area that is littoral	%	30.49
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.030
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	60.36
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.34
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.05
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.11
Influent total N load	kgN yr^{-1}	21 540
Influent total P load	kgP yr^{-1}	2859
Downstream TN concentration	mg L^{-1}	0.4712

140 Swa Chaung Dam

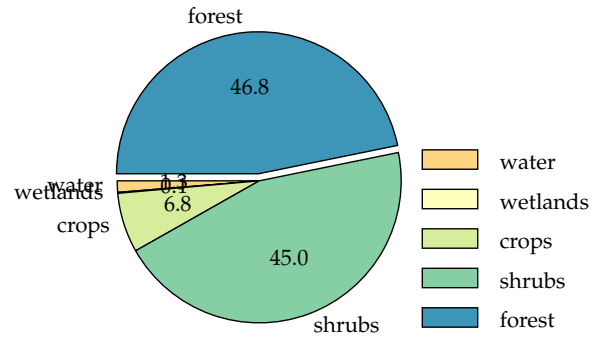
140.1 Inputs

Input Name	Unit	Value(s)
Reservoir ID		9045
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.191967, LON: 96.20622
Monthly Temperatures	$^{\circ}\text{C}$	21.9, 24.2, 27.6, 30.5, 29.6, 27.4, 26.9, 26.8, 27.4, 27.5, 25.7, 22.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	278.0
Catchment area	km^2	1063
Length of inundated river	km	7.801
Population	capita	82 630
Area fractions	-	0.0, 0.0, 0.0, 0.013, 0.001, 0.068, 0.45, 0.468, 0.0
Mean catchment slope	$\%$	10.00
Mean annual precipitation	mm/year	1292
Mean annual evapotranspiration	mm/year	1356
Soil wetness	mm over profile	258.0
Soil Olsen P content	kgP ha^{-1}	4.588
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	75 610 000
Reservoir area	km^2	11.86
Maximum reservoir depth	m	16.00
Mean reservoir depth	m	6.400
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.61, 0.39, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.412
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.150
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.672
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.426
Mean monthly wind speed	m s^{-1}	1.060
Water intake depth below surface	m	N/A

Reservoir
Landcover Composition



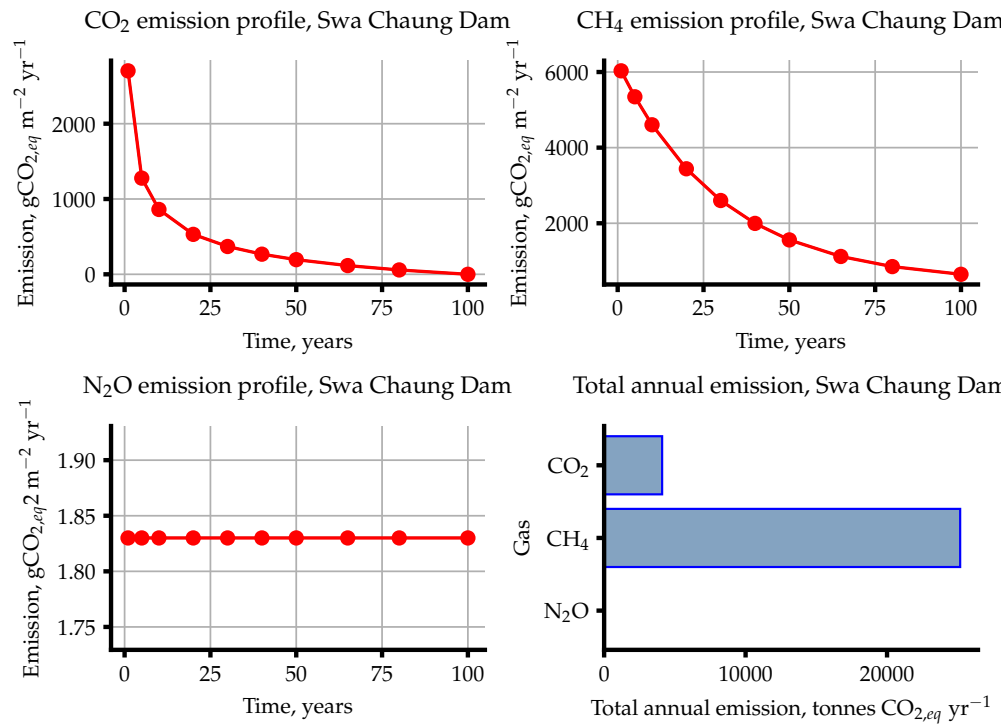
Catchment
Landcover Composition



140.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1103
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	756.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	345.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	345.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	4101
Total CO ₂ emission per lifetime	ktCO _{2,eq}	410.1
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	321.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	429.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1372
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2123
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	25 170
Total CH ₄ emission per lifetime	ktCO _{2,eq}	2517
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.830
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.407
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.619
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	21.70
Total N ₂ O emission per lifetime	ktCO _{2,eq}	2.170
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2469
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2471

140.3 Emission plots



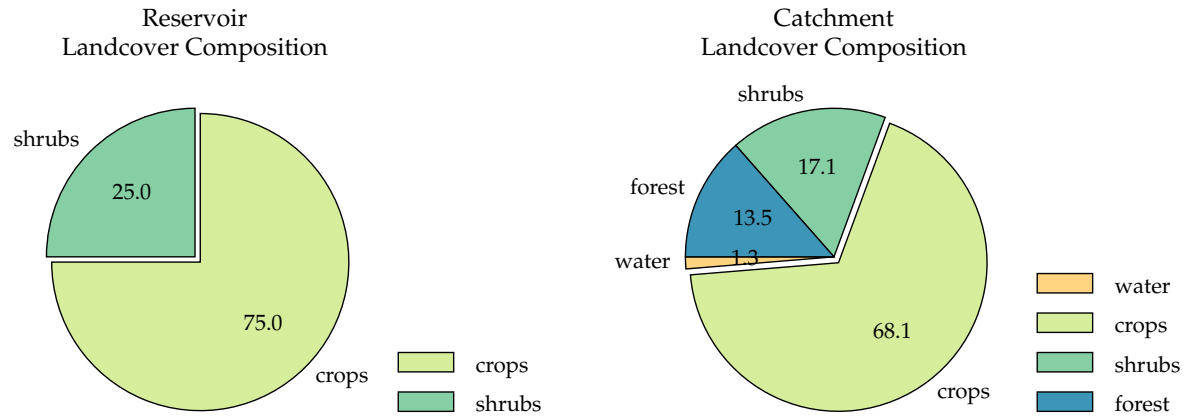
140.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	244.7
Retention coefficient	-	0.1701
Influent total N concentration	$\mu\text{g L}^{-1}$	119.1
Reservoir TN concentration	$\mu\text{g L}^{-1}$	98.18
Reservoir TP concentration	$\mu\text{g L}^{-1}$	204.7
Percentage of reservoir's surface area that is littoral	%	26.76
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.150
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.80
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.08
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.80
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.442
Influent total N load	kgN yr^{-1}	35 180
Influent total P load	kgP yr^{-1}	72 310
Downstream TN concentration	mg L^{-1}	0.1435

141 Yan Pel Dam

141.1 Inputs

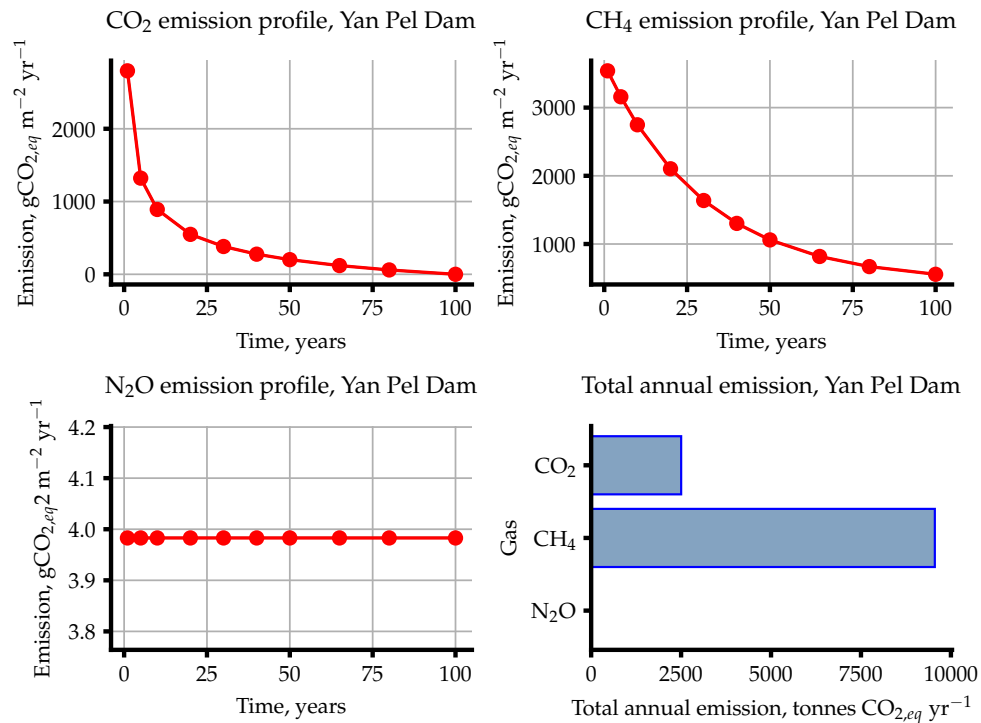
Input Name	Unit	Value(s)
Reservoir ID		9055
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.790552, LON: 95.516328
Monthly Temperatures	$^{\circ}\text{C}$	21.7, 24.1, 28.3, 31.5, 30.6, 28.4, 27.8, 27.6, 27.8, 27.6, 25.4, 22.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	60.00
Catchment area	km^2	201.4
Length of inundated river	km	5.693
Population	capita	11 800
Area fractions	-	0.0, 0.0, 0.0, 0.013, 0.0, 0.681, 0.171, 0.135, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	892.0
Mean annual evapotranspiration	mm/year	1409
Soil wetness	mm over profile	98.00
Soil Olsen P content	kgP ha^{-1}	3.494
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	44 730 000
Reservoir area	km^2	6.989
Maximum reservoir depth	m	17.00
Mean reservoir depth	m	6.400
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.75, 0.25, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	3.790
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.754
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.358
Mean monthly wind speed	m s^{-1}	1.110
Water intake depth below surface	m	N/A



141.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1141
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	783.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	358.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	358.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2502
Total CO ₂ emission per lifetime	ktCO _{2,eq}	250.2
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	345.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	433.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	587.6
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1367
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	9553
Total CH ₄ emission per lifetime	ktCO _{2,eq}	955.3
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.983
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.8493
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.416
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	27.84
Total N ₂ O emission per lifetime	ktCO _{2,eq}	2.784
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1725
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1727

141.3 Emission plots



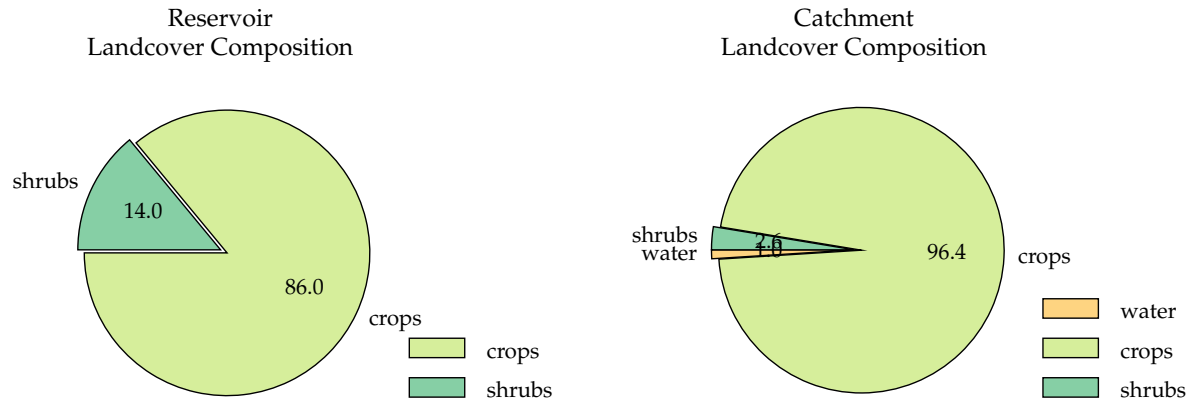
141.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	978.1
Retention coefficient	-	0.7478
Influent total N concentration	$\mu\text{g L}^{-1}$	460.7
Reservoir TN concentration	$\mu\text{g L}^{-1}$	115.9
Reservoir TP concentration	$\mu\text{g L}^{-1}$	252.7
Percentage of reservoir's surface area that is littoral	%	27.50
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.95
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.70
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	1.162
Influent total N load	kgN yr^{-1}	5567
Influent total P load	kgP yr^{-1}	11 820
Downstream TN concentration	mg L^{-1}	0.074 98

142 Tha Put Pin Te

142.1 Inputs

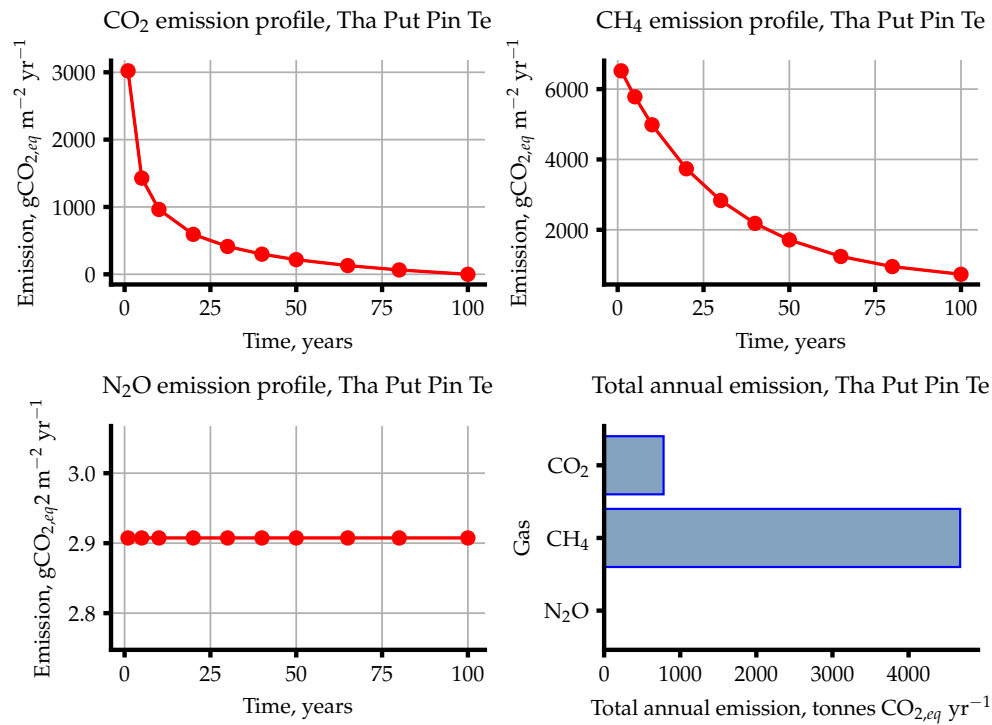
Input Name	Unit	Value(s)
Reservoir ID		9072
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.077003, LON: 95.469453
Monthly Temperatures	$^{\circ}\text{C}$	21.4, 24.1, 28.3, 31.6, 30.7, 29.0, 28.6, 28.3, 28.0, 27.3, 24.7, 21.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	144.0
Catchment area	km^2	135.7
Length of inundated river	km	3.070
Population	capita	16 790
Area fractions	-	0.0, 0.0, 0.0, 0.01, 0.0, 0.964, 0.026, 0.0, 0.0
Mean catchment slope	$\%$	6.000
Mean annual precipitation	mm/year	839.0
Mean annual evapotranspiration	mm/year	1455
Soil wetness	mm over profile	32.00
Soil Olsen P content	kgP ha^{-1}	4.551
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	10 900 000
Reservoir area	km^2	2.019
Maximum reservoir depth	m	16.00
Mean reservoir depth	m	5.400
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.86, 0.14, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.624
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.240
Water intake depth below surface	m	N/A



142.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1233
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	846.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	386.8
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	386.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	781.0
Total CO ₂ emission per lifetime	ktCO _{2,eq}	78.1
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	383.9
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	498.0
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1435
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2317
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	4678
Total CH ₄ emission per lifetime	ktCO _{2,eq}	467.8
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.907
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.875
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.391
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	5.870
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.5870
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2704
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2706

142.3 Emission plots



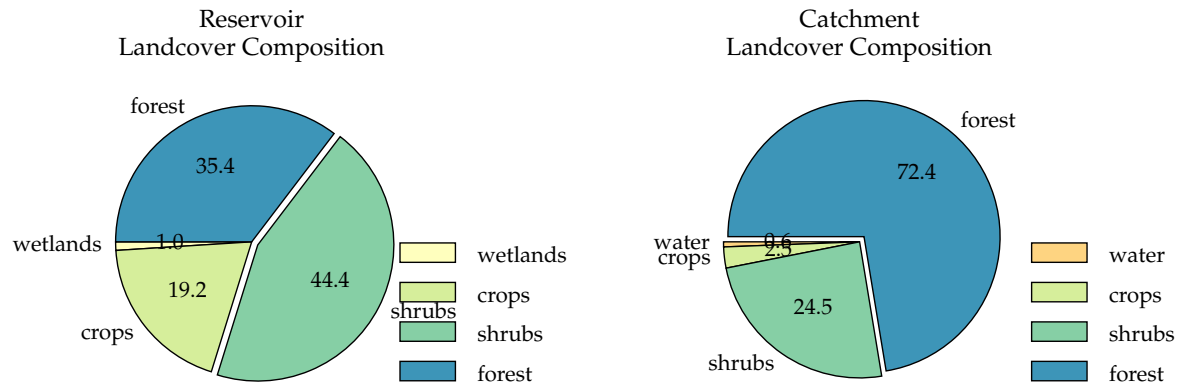
142.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	715.4
Retention coefficient	-	0.3089
Influent total N concentration	$\mu\text{g L}^{-1}$	226.6
Reservoir TN concentration	$\mu\text{g L}^{-1}$	156.9
Reservoir TP concentration	$\mu\text{g L}^{-1}$	500.5
Percentage of reservoir's surface area that is littoral	%	33.47
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.75
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.98
Water density at the surface of the reservoir	kg m^{-3}	995.7
Thermocline depth	m	0.9064
Influent total N load	kgN yr^{-1}	4428
Influent total P load	kgP yr^{-1}	13 980
Downstream TN concentration	mg L^{-1}	0.2301

143 Unknown16

143.1 Inputs

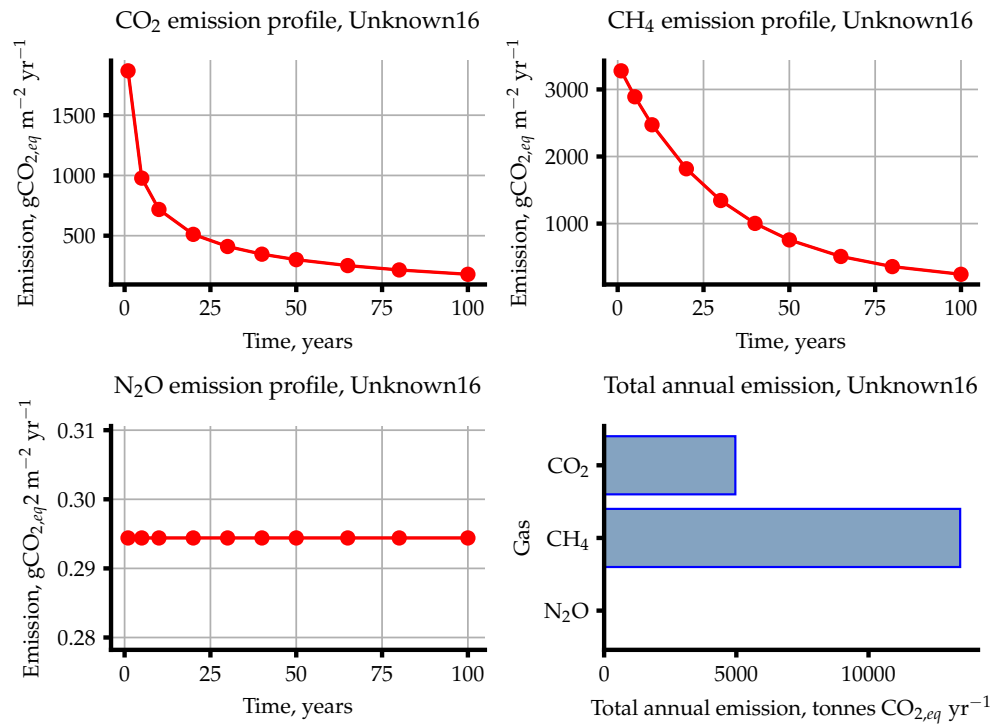
Input Name	Unit	Value(s)
Reservoir ID		9081
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.86816, LON: 94.36857
Monthly Temperatures	$^{\circ}\text{C}$	20.2, 22.8, 26.9, 29.8, 29.5, 27.7, 27.3, 27.2, 26.9, 26.2, 23.5, 20.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	620.0
Catchment area	km^2	1016
Length of inundated river	km	15.14
Population	capita	24 140
Area fractions	-	0.0, 0.0, 0.0, 0.006, 0.0, 0.025, 0.245, 0.724, 0.0
Mean catchment slope	$\%$	21.00
Mean annual precipitation	mm/year	1392
Mean annual evapotranspiration	mm/year	1273
Soil wetness	mm over profile	108.0
Soil Olsen P content	kgP ha^{-1}	5.610
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	251 200 000
Reservoir area	km^2	12.54
Maximum reservoir depth	m	62.00
Mean reservoir depth	m	20.00
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.01, 0.19, 0.44, 0.35, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.592
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.850
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.300
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.188
Mean monthly wind speed	m s^{-1}	1.010
Water intake depth below surface	m	N/A



143.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	689.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	472.9
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-179.7
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	216.2
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	395.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	4963
Total CO ₂ emission per lifetime	ktCO _{2,eq}	496.3
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	190.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	119.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	764.3
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1074
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	13 470
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1347
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.2944
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.2109
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.2526
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	3.691
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.3691
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1470
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1470

143.3 Emission plots



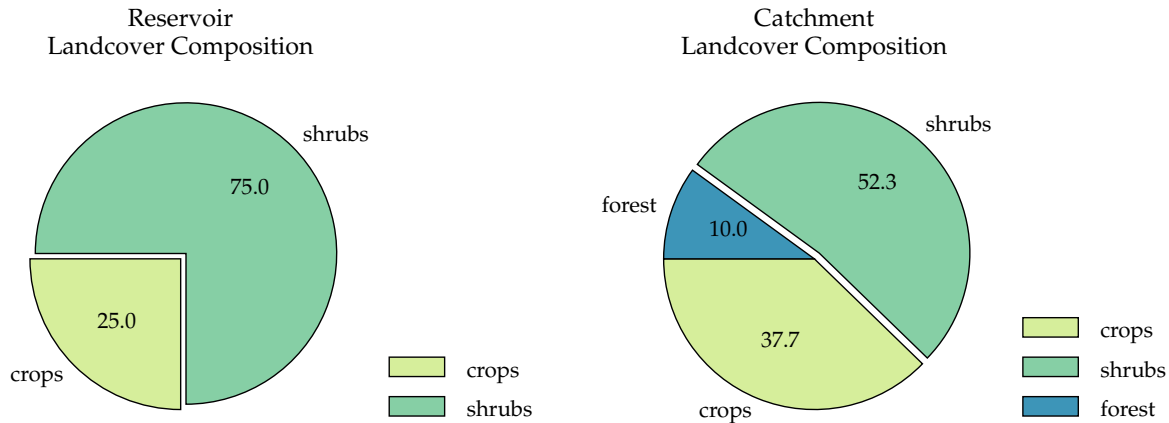
143.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	45.46
Retention coefficient	-	0.2420
Influent total N concentration	$\mu\text{g L}^{-1}$	6.130
Reservoir TN concentration	$\mu\text{g L}^{-1}$	4.636
Reservoir TP concentration	$\mu\text{g L}^{-1}$	34.60
Percentage of reservoir's surface area that is littoral	%	9.891
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.850
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.20
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.96
Water density at the bottom of the reservoir	kg m^{-3}	997.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.58
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.266
Influent total N load	kgN yr^{-1}	3863
Influent total P load	kgP yr^{-1}	28 650
Downstream TN concentration	mg L^{-1}	0.006 830

144 Unknown18

144.1 Inputs

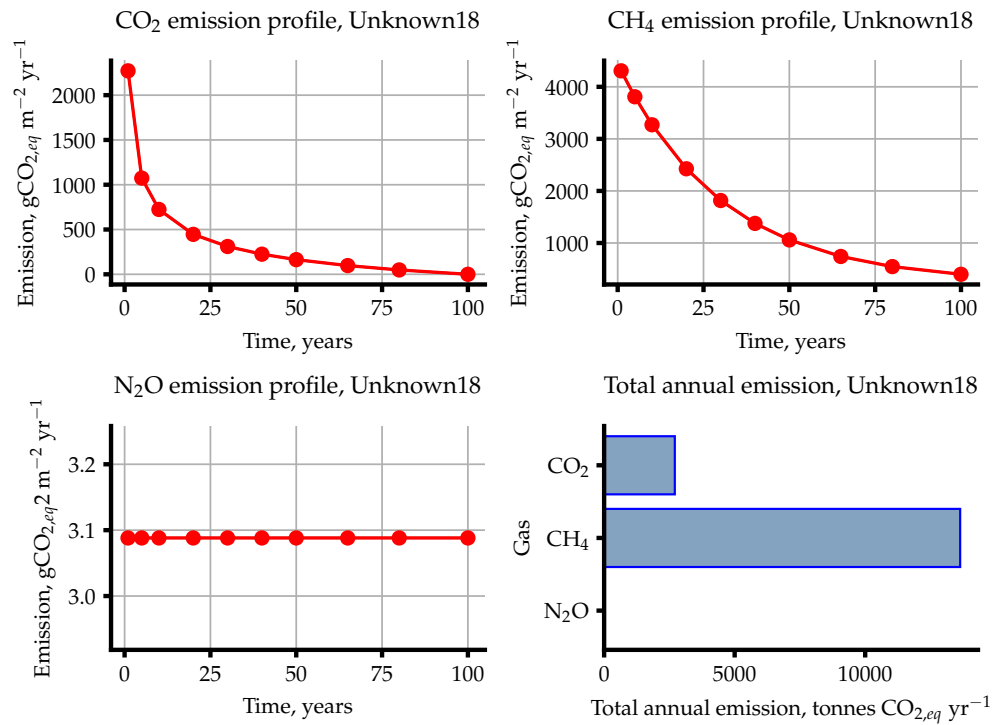
Input Name	Unit	Value(s)
Reservoir ID		9085
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 23.089825, LON: 95.663853
Monthly Temperatures	$^{\circ}\text{C}$	19.3, 22.3, 26.2, 29.9, 29.5, 28.8, 28.5, 27.8, 27.8, 26.5, 23.8, 20.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	393.0
Catchment area	km^2	166.4
Length of inundated river	km	8.414
Population	capita	11 130
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.377, 0.522, 0.1, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	1291
Mean annual evapotranspiration	mm/year	1331
Soil wetness	mm over profile	129.0
Soil Olsen P content	kgP ha^{-1}	4.894
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	50 260 000
Reservoir area	km^2	9.311
Maximum reservoir depth	m	15.00
Mean reservoir depth	m	5.400
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.25, 0.75, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.416
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.620
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.362
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.734
Mean monthly wind speed	m s^{-1}	1.030
Water intake depth below surface	m	N/A



144.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	927.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	636.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	290.8
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	290.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2708
Total CO ₂ emission per lifetime	ktCO _{2,eq}	270.8
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	340.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	238.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	885.9
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1465
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	13 640
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1364
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.088
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.695
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.391
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	28.75
Total N ₂ O emission per lifetime	ktCO _{2,eq}	2.875
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1756
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1758

144.3 Emission plots



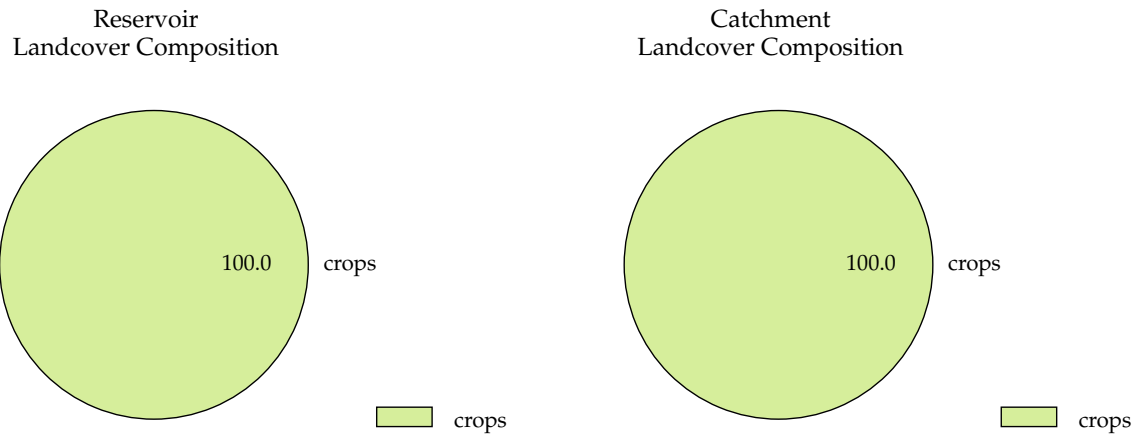
144.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	173.1
Retention coefficient	-	0.3811
Influent total N concentration	$\mu\text{g L}^{-1}$	245.0
Reservoir TN concentration	$\mu\text{g L}^{-1}$	152.9
Reservoir TP concentration	$\mu\text{g L}^{-1}$	111.2
Percentage of reservoir's surface area that is littoral	%	32.75
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.620
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	55.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.37
Water density at the bottom of the reservoir	kg m^{-3}	997.5
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.18
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	1.068
Influent total N load	kgN yr^{-1}	16 020
Influent total P load	kgP yr^{-1}	11 320
Downstream TN concentration	mg L^{-1}	0.2180

145 Kyin Tinar Dam

145.1 Inputs

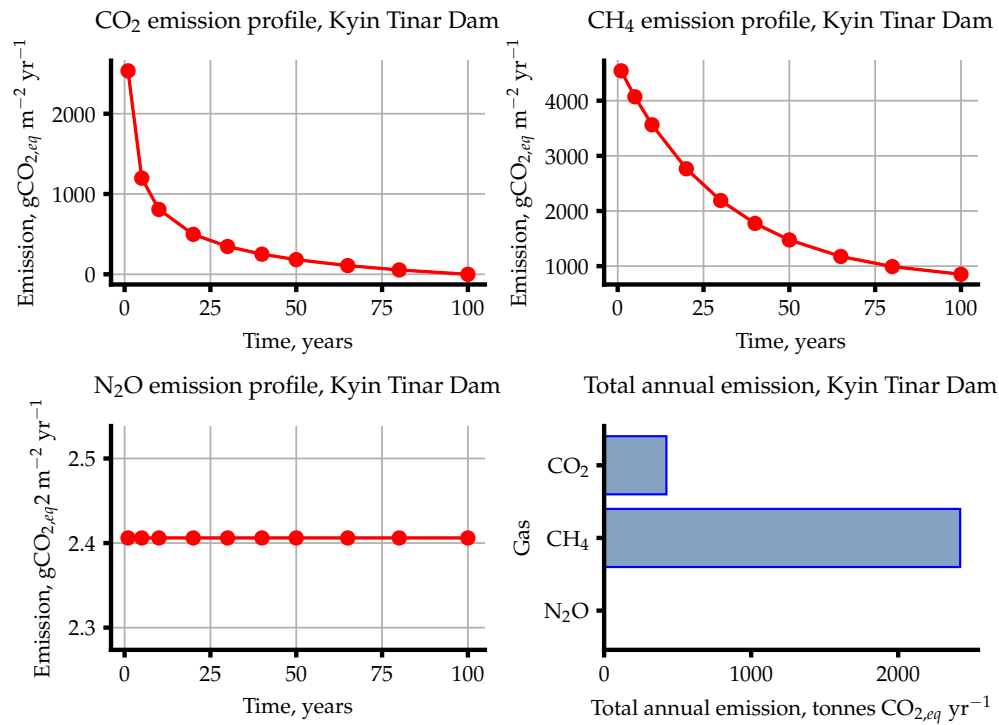
Input Name	Unit	Value(s)
Reservoir ID		9109
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.054227, LON: 95.657747
Monthly Temperatures	$^{\circ}\text{C}$	21.2, 23.8, 28.0, 31.2, 30.1, 28.5, 28.2, 27.8, 27.5, 26.8, 24.3, 21.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	135.0
Catchment area	km^2	11.82
Length of inundated river	km	0.6320
Population	capita	1205
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0
Mean catchment slope	%	3.000
Mean annual precipitation	mm/year	858.0
Mean annual evapotranspiration	mm/year	1461
Soil wetness	mm over profile	42.00
Soil Olsen P content	kgP ha^{-1}	4.969
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	4 470 000
Reservoir area	km^2	1.306
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	3.400
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.686
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.270
Water intake depth below surface	m	N/A



145.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1034
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	709.6
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	324.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	324.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	423.7
Total CO ₂ emission per lifetime	ktCO _{2,eq}	42.37
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	439.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	700.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	714.2
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1854
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	2422
Total CH ₄ emission per lifetime	ktCO _{2,eq}	242.2
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.406
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.5546
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.480
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	3.142
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.3142
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2179
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2180

145.3 Emission plots



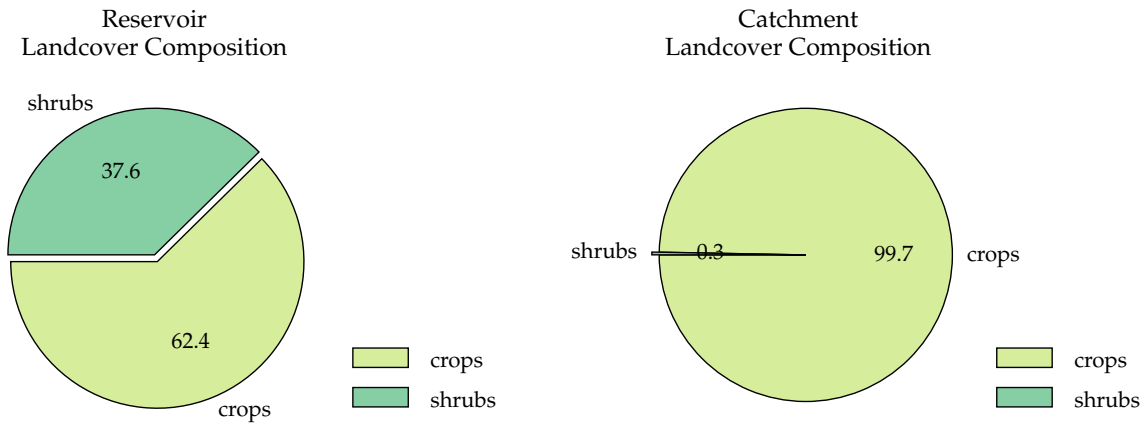
145.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	774.6
Retention coefficient	-	0.6917
Influent total N concentration	$\mu\text{g L}^{-1}$	425.7
Reservoir TN concentration	$\mu\text{g L}^{-1}$	131.2
Reservoir TP concentration	$\mu\text{g L}^{-1}$	260.1
Percentage of reservoir's surface area that is littoral	%	49.96
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.55
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.50
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	0.861
Influent total N load	kgN yr^{-1}	679.3
Influent total P load	kgP yr^{-1}	1236
Downstream TN concentration	mg L^{-1}	0.094 28

146 LayDaingZin

146.1 Inputs

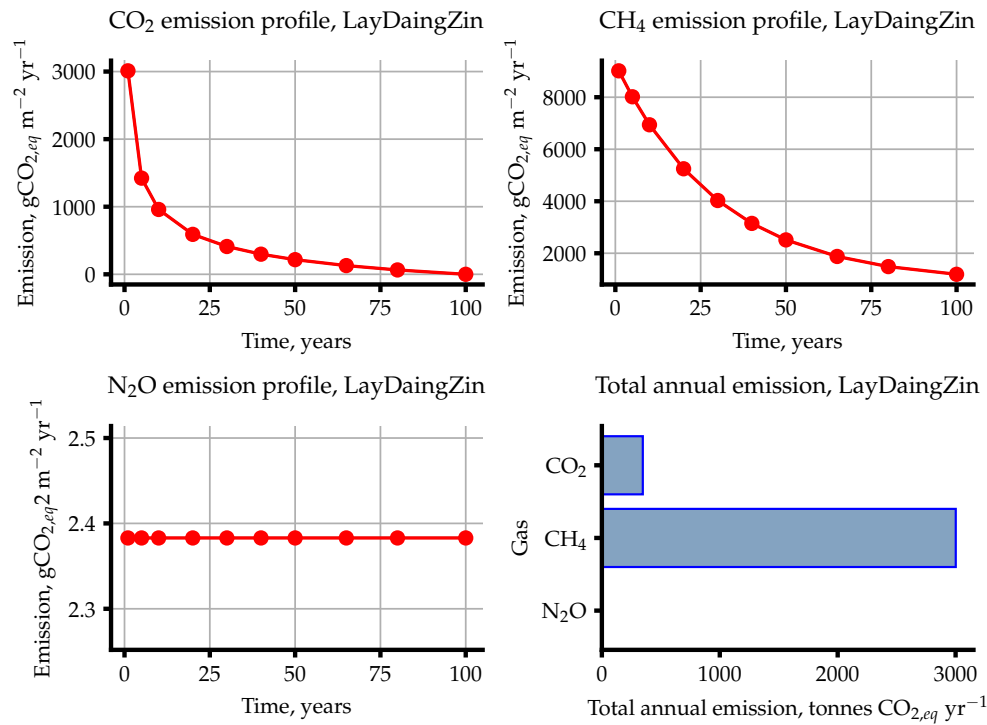
Input Name	Unit	Value(s)
Reservoir ID		9146
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.445161, LON: 95.156392
Monthly Temperatures	$^{\circ}\text{C}$	21.6, 24.0, 28.2, 31.6, 30.8, 28.7, 28.3, 28.0, 27.8, 27.3, 24.9, 21.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	95.00
Catchment area	km^2	87.48
Length of inundated river	km	2.262
Population	capita	8362
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.997, 0.003, 0.0, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	766.0
Mean annual evapotranspiration	mm/year	1459
Soil wetness	mm over profile	28.00
Soil Olsen P content	kgP ha^{-1}	4.668
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	2 549 000
Reservoir area	km^2	0.9010
Maximum reservoir depth	m	8.000
Mean reservoir depth	m	2.800
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.63, 0.38, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.582
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.170
Water intake depth below surface	m	N/A



146.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1229
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	843.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	385.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	385.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	347.3
Total CO ₂ emission per lifetime	ktCO _{2,eq}	34.73
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	490.9
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	869.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1971
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	3331
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	3001
Total CH ₄ emission per lifetime	ktCO _{2,eq}	300.1
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.383
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.792
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.088
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	2.147
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.2147
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3717
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3719

146.3 Emission plots



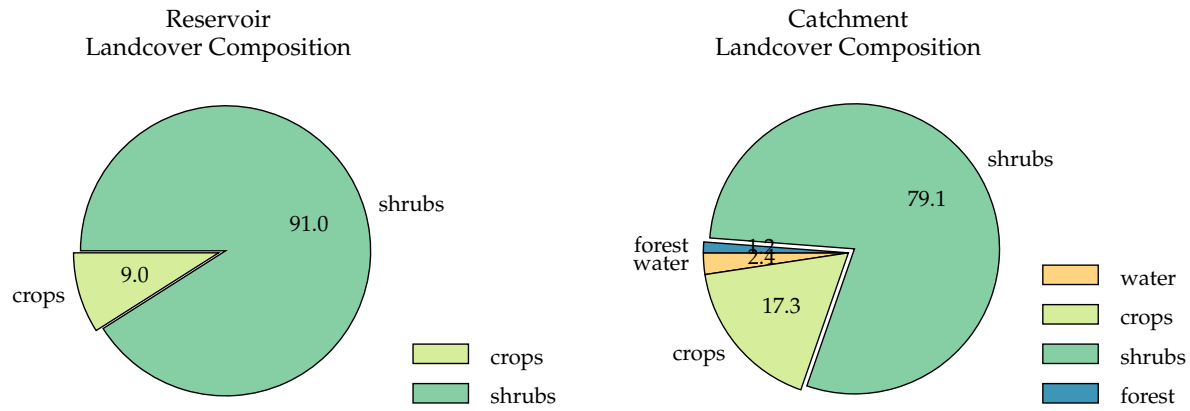
146.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	912.7
Retention coefficient	-	0.1973
Influent total N concentration	$\mu\text{g L}^{-1}$	350.0
Reservoir TN concentration	$\mu\text{g L}^{-1}$	282.1
Reservoir TP concentration	$\mu\text{g L}^{-1}$	738.4
Percentage of reservoir's surface area that is littoral	%	58.22
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.88
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.85
Water density at the surface of the reservoir	kg m^{-3}	995.7
Thermocline depth	m	0.7169
Influent total N load	kgN yr^{-1}	2909
Influent total P load	kgP yr^{-1}	7584
Downstream TN concentration	mg L^{-1}	0.4104

147 Sinlan

147.1 Inputs

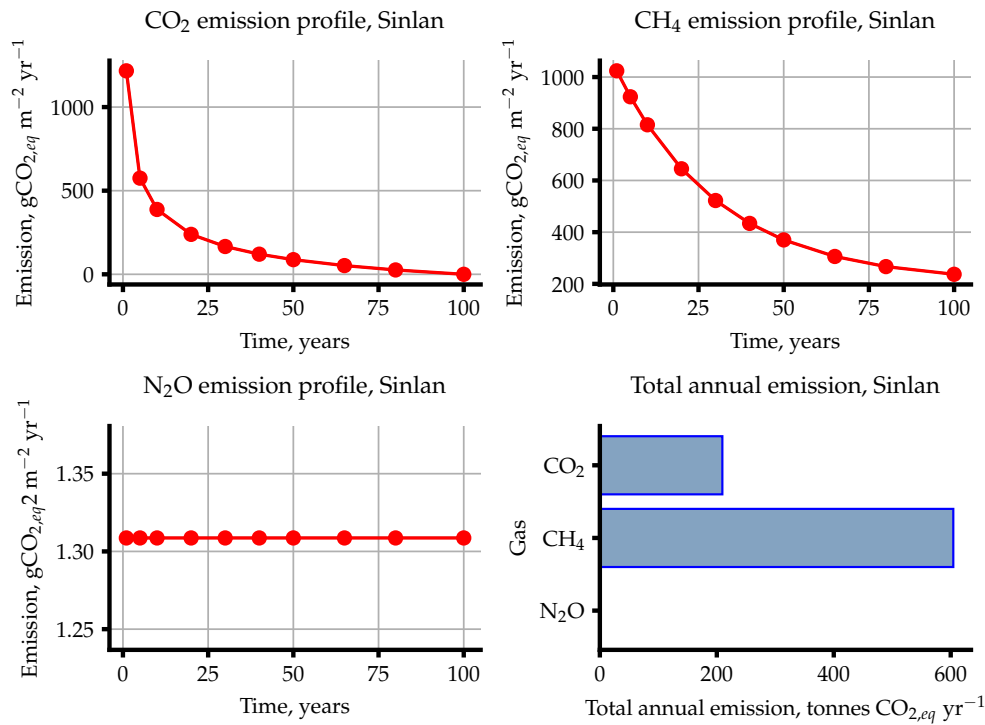
Input Name	Unit	Value(s)
Reservoir ID		9147
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.073621, LON: 96.435907
Monthly Temperatures	$^{\circ}\text{C}$	14.7, 16.8, 20.6, 23.9, 23.6, 23.3, 23.0, 22.7, 22.6, 21.4, 18.5, 15.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	892.0
Catchment area	km^2	14.52
Length of inundated river	km	2.480
Population	capita	1552
Area fractions	-	0.0, 0.0, 0.0, 0.024, 0.0, 0.173, 0.792, 0.012, 0.0
Mean catchment slope	$\%$	10.00
Mean annual precipitation	mm/year	1780
Mean annual evapotranspiration	mm/year	1184
Soil wetness	mm over profile	160.0
Soil Olsen P content	kgP ha^{-1}	5.311
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	14 460 000
Reservoir area	km^2	1.345
Maximum reservoir depth	m	30.00
Mean reservoir depth	m	10.80
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.09, 0.91, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.361
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.900
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.656
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.992
Mean monthly wind speed	m s^{-1}	1.150
Water intake depth below surface	m	N/A



147.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	496.5
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	340.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	155.8
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	155.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	209.5
Total CO ₂ emission per lifetime	ktCO _{2,eq}	20.95
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	138.2
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	204.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	106.4
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	449.4
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	604.4
Total CH ₄ emission per lifetime	ktCO _{2,eq}	60.44
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.309
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.5494
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.9290
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.760
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1760
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	605.2
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	606.1

147.3 Emission plots



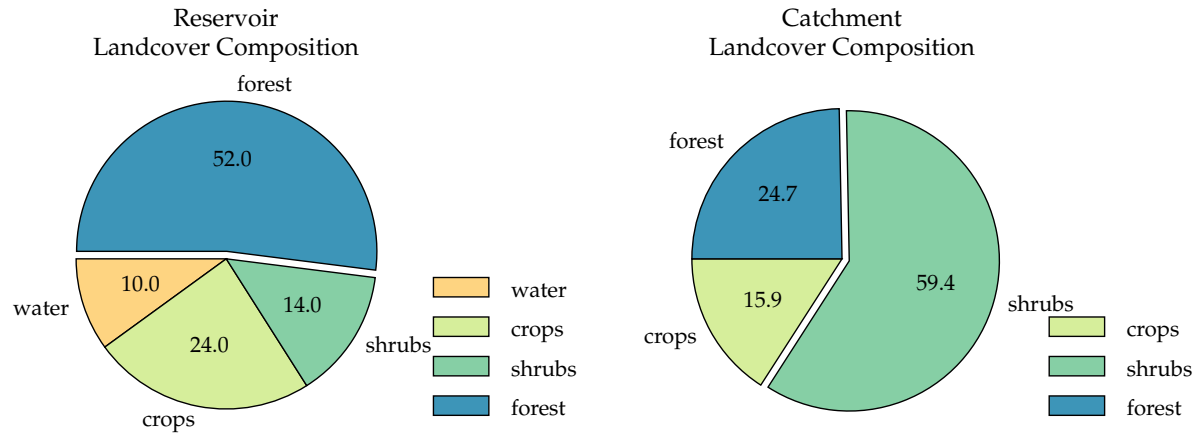
147.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	112.3
Retention coefficient	-	0.4721
Influent total N concentration	$\mu\text{g L}^{-1}$	54.06
Reservoir TN concentration	$\mu\text{g L}^{-1}$	28.79
Reservoir TP concentration	$\mu\text{g L}^{-1}$	63.70
Percentage of reservoir's surface area that is littoral	%	17.08
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.900
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.80
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	20.35
Water density at the bottom of the reservoir	kg m^{-3}	998.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.45
Water density at the surface of the reservoir	kg m^{-3}	997.5
Thermocline depth	m	1.106
Influent total N load	kgN yr^{-1}	700.1
Influent total P load	kgP yr^{-1}	1455
Downstream TN concentration	mg L^{-1}	0.038 09

148 Unknown34

148.1 Inputs

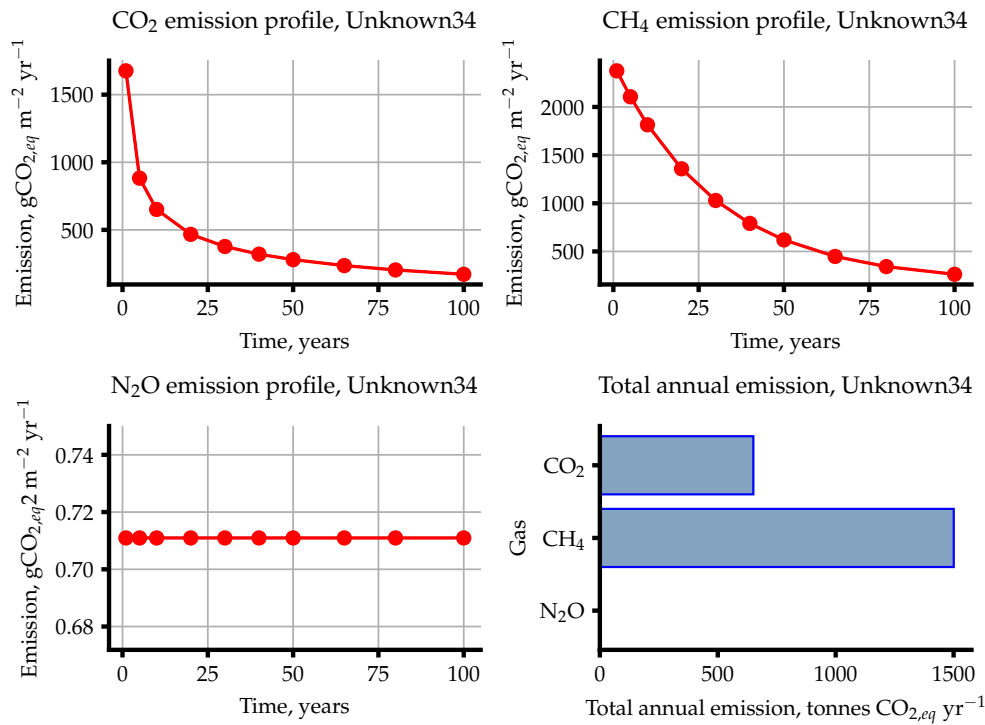
Input Name	Unit	Value(s)
Reservoir ID		9148
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.938499, LON: 97.796079
Monthly Temperatures	$^{\circ}\text{C}$	15.1, 17.1, 19.6, 23.8, 24.8, 25.0, 24.6, 24.5, 24.3, 22.6, 19.3, 16.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	436.0
Catchment area	km^2	835.8
Length of inundated river	km	3.747
Population	capita	74 890
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.159, 0.594, 0.247, 0.0
Mean catchment slope	$\%$	16.00
Mean annual precipitation	mm/year	1407
Mean annual evapotranspiration	mm/year	1235
Soil wetness	mm over profile	214.0
Soil Olsen P content	kgP ha^{-1}	4.376
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	18 800 000
Reservoir area	km^2	1.787
Maximum reservoir depth	m	29.00
Mean reservoir depth	m	10.50
Inundated area fractions	-	0.0, 0.0, 0.0, 0.1, 0.0, 0.24, 0.14, 0.52, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.539
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.780
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.472
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.946
Mean monthly wind speed	m s^{-1}	1.050
Water intake depth below surface	m	N/A



148.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	614.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	421.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-171.6
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	192.6
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	364.2
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	650.9
Total CO ₂ emission per lifetime	ktCO _{2,eq}	65.09
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	156.1
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	175.9
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	507.7
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	839.8
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	1501
Total CH ₄ emission per lifetime	ktCO _{2,eq}	150.1
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.711
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.6457
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.6784
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.270
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1270
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1204
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1205

148.3 Emission plots



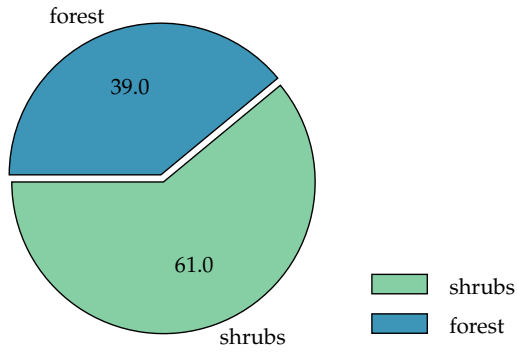
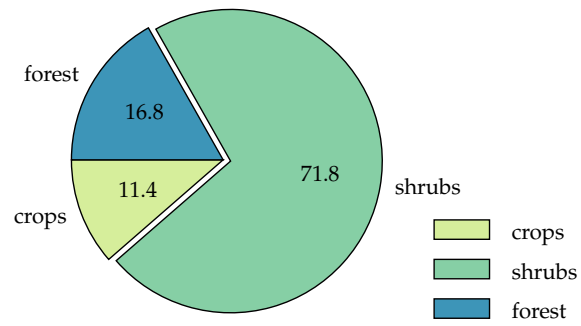
148.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	182.8
Retention coefficient	-	0.039 68
Influent total N concentration	$\mu\text{g L}^{-1}$	31.38
Reservoir TN concentration	$\mu\text{g L}^{-1}$	30.13
Reservoir TP concentration	$\mu\text{g L}^{-1}$	175.8
Percentage of reservoir's surface area that is littoral	%	17.50
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.780
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.36
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	20.61
Water density at the bottom of the reservoir	kg m^{-3}	998.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.73
Water density at the surface of the reservoir	kg m^{-3}	997.1
Thermocline depth	m	0.9240
Influent total N load	kgN yr^{-1}	11 430
Influent total P load	kgP yr^{-1}	66 600
Downstream TN concentration	mg L^{-1}	0.037 38

149 Kalihtaw dam

149.1 Inputs

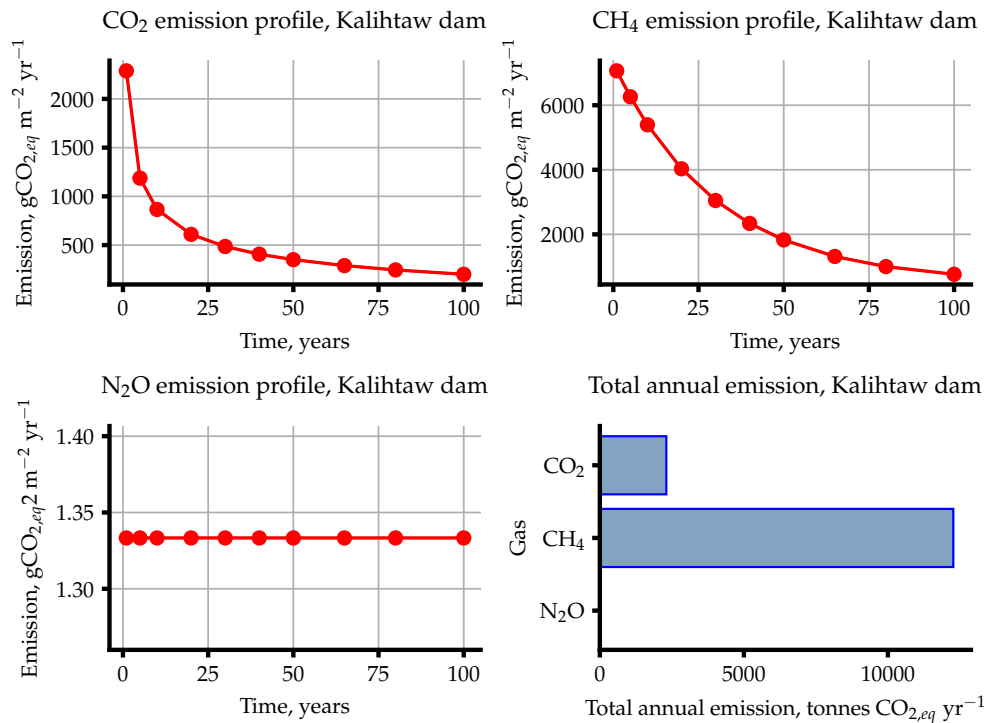
Input Name	Unit	Value(s)
Reservoir ID		9018
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.240909, LON: 96.123725
Monthly Temperatures	$^{\circ}\text{C}$	23.2, 24.9, 27.8, 30.2, 29.3, 27.0, 26.5, 26.5, 27.0, 27.4, 26.3, 23.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1848
Catchment area	km^2	24.39
Length of inundated river	km	3.766
Population	capita	3862
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.114, 0.718, 0.168, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	2834
Mean annual evapotranspiration	mm/year	1353
Soil wetness	mm over profile	316.0
Soil Olsen P content	kgP ha^{-1}	20.00
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	16 670 000
Reservoir area	km^2	4.937
Maximum reservoir depth	m	12.00
Mean reservoir depth	m	3.400
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.61, 0.39, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.568
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.970
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.462
Mean monthly wind speed	m s^{-1}	1.060
Water intake depth below surface	m	N/A

Reservoir
Landcover CompositionCatchment
Landcover Composition

149.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	852.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	584.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-200.2
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	267.3
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	467.5
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2308
Total CO ₂ emission per lifetime	ktCO _{2,eq}	230.8
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	436.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	503.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1545
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2485
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	12 270
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1227
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.333
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.9741
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.154
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	6.583
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.6583
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2953
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2954

149.3 Emission plots

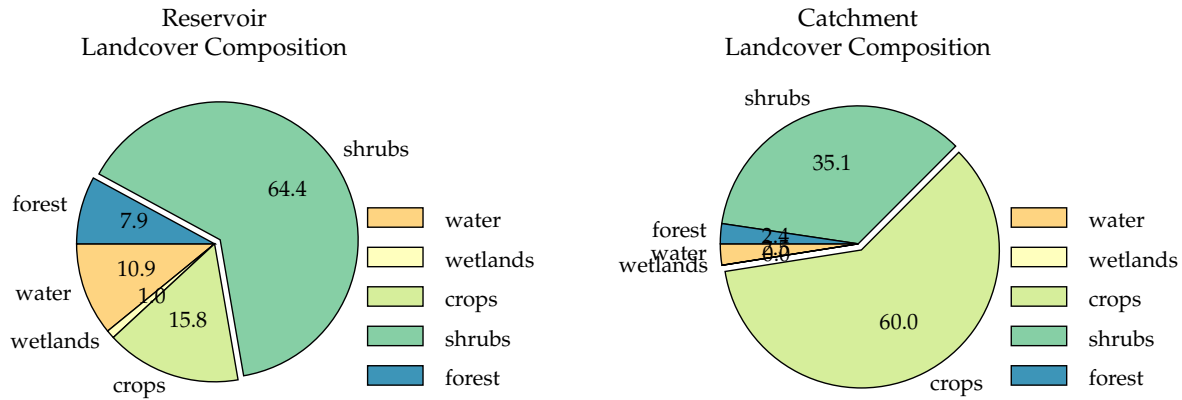


149.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	70.38
Retention coefficient	-	0.2285
Influent total N concentration	$\mu\text{g L}^{-1}$	165.1
Reservoir TN concentration	$\mu\text{g L}^{-1}$	131.4
Reservoir TP concentration	$\mu\text{g L}^{-1}$	66.06
Percentage of reservoir's surface area that is littoral	%	51.70
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.93
Water density at the bottom of the reservoir	kg m^{-3}	996.8
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.67
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.341
Influent total N load	kgN yr^{-1}	7443
Influent total P load	kgP yr^{-1}	3172
Downstream TN concentration	mg L^{-1}	0.1864

150.1 Inputs

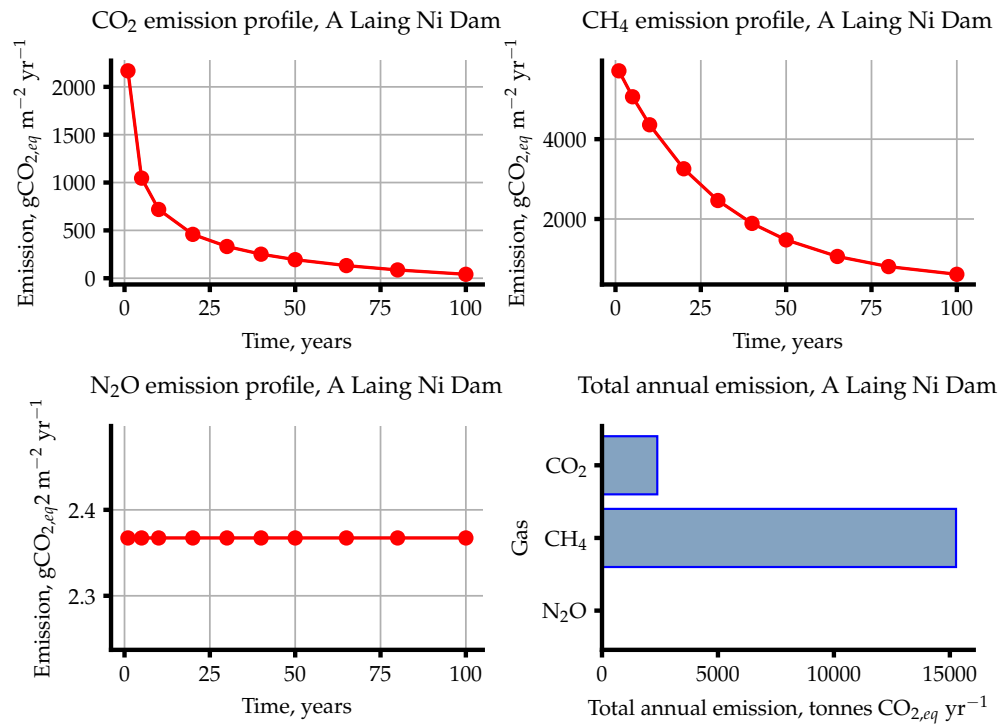
Input Name	Unit	Value(s)
Reservoir ID		9020
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.263587, LON: 96.349963
Monthly Temperatures	$^{\circ}\text{C}$	23.8, 25.2, 27.9, 30.2, 29.5, 27.3, 26.7, 26.7, 27.2, 27.7, 26.8, 24.2
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	2238
Catchment area	km ²	21.52
Length of inundated river	km	7.773
Population	capita	3250
Area fractions	-	0.0, 0.0, 0.0, 0.025, 9.29e-05, 0.604994006, 0.354005994, 0.02370553, 0.0
Mean catchment slope	%	2.000
Mean annual precipitation	mm/year	3211
Mean annual evapotranspiration	mm/year	1373
Soil wetness	mm over profile	270.0
Soil Olsen P content	kgP ha ⁻¹	20.00
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	33 220 000
Reservoir area	km ²	7.608
Maximum reservoir depth	m	13.00
Mean reservoir depth	m	4.400
Inundated area fractions	-	0.0, 0.0, 0.0, 0.08, 0.01, 0.16, 0.65, 0.08, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.03, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	5.855
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	4.870
Mean monthly horizontal radiance: May - Sept	kWh m ⁻² d ⁻¹	3.970
Mean monthly horizontal radiance: Nov - Mar	kWh m ⁻² d ⁻¹	5.462
Mean monthly wind speed	m s ⁻¹	1.210
Water intake depth below surface	m	N/A



150.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	867.8
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	595.5
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-41.07
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	272.2
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	313.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2384
Total CO ₂ emission per lifetime	ktCO _{2,eq}	238.4
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	399.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	405.8
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1201
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2006
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	15 270
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1527
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.367
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.412
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.890
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	18.01
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.801
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2320
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2322

150.3 Emission plots



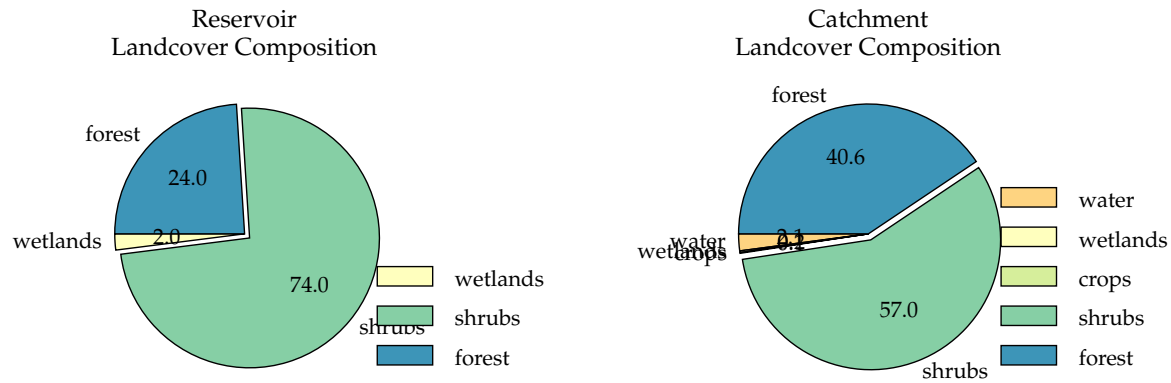
150.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	58.49
Retention coefficient	-	0.3559
Influent total N concentration	$\mu\text{g L}^{-1}$	235.6
Reservoir TN concentration	$\mu\text{g L}^{-1}$	196.4
Reservoir TP concentration	$\mu\text{g L}^{-1}$	54.80
Percentage of reservoir's surface area that is littoral	%	40.12
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.32
Water density at the bottom of the reservoir	kg m^{-3}	996.7
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.83
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.778
Influent total N load	kgN yr^{-1}	11 350
Influent total P load	kgP yr^{-1}	2817
Downstream TN concentration	mg L^{-1}	0.2159

151 Baingda Dam

151.1 Inputs

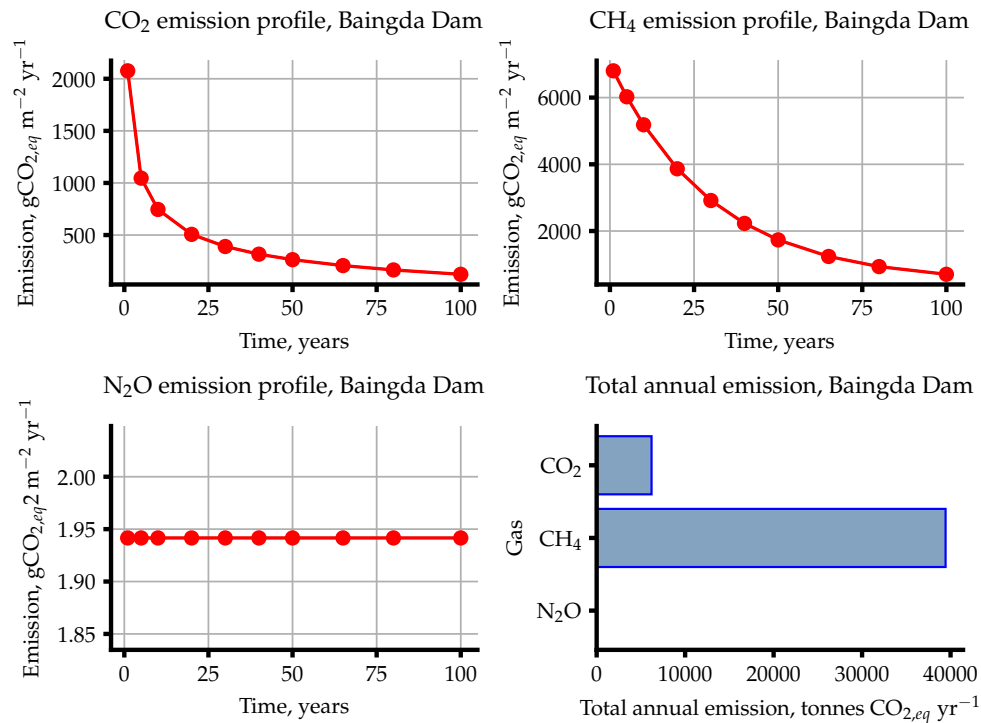
Input Name	Unit	Value(s)
Reservoir ID		9025
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.00967, LON: 96.361
Monthly Temperatures	$^{\circ}\text{C}$	21.9, 23.8, 26.8, 29.5, 29.0, 26.6, 26.2, 26.2, 26.7, 27.1, 25.5, 22.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1613
Catchment area	km^2	235.8
Length of inundated river	km	14.26
Population	capita	18 660
Area fractions	-	0.0, 0.0, 0.0, 0.021, 0.002, 0.001, 0.57, 0.406, 0.0
Mean catchment slope	$\%$	5.000
Mean annual precipitation	mm/year	2616
Mean annual evapotranspiration	mm/year	1336
Soil wetness	mm over profile	354.0
Soil Olsen P content	kgP ha^{-1}	13.03
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	77 500 000
Reservoir area	km^2	16.63
Maximum reservoir depth	m	17.00
Mean reservoir depth	m	4.700
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.02, 0.0, 0.74, 0.24, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.043
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.950
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.155
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.460
Mean monthly wind speed	m s^{-1}	0.9000
Water intake depth below surface	m	N/A



151.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	797.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	546.9
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-123.2
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	250.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	373.2
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	6205
Total CO ₂ emission per lifetime	ktCO _{2,eq}	620.5
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	362.2
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	452.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1557
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2372
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	39 440
Total CH ₄ emission per lifetime	ktCO _{2,eq}	3944
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.942
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.557
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.749
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	32.28
Total N ₂ O emission per lifetime	ktCO _{2,eq}	3.228
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2745
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2747

151.3 Emission plots



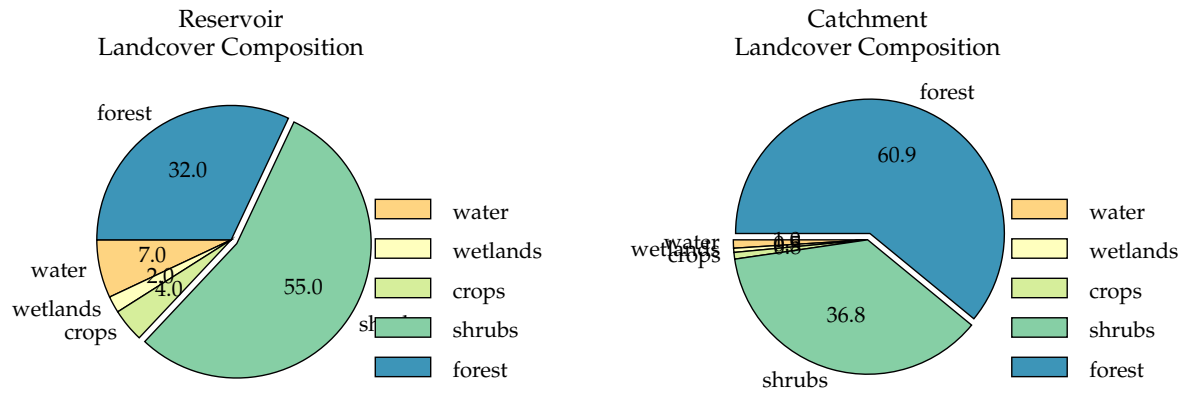
151.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	43.46
Retention coefficient	-	0.1403
Influent total N concentration	$\mu\text{g L}^{-1}$	176.6
Reservoir TN concentration	$\mu\text{g L}^{-1}$	151.8
Reservoir TP concentration	$\mu\text{g L}^{-1}$	39.34
Percentage of reservoir's surface area that is littoral	%	39.84
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.950
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.40
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.08
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.1
Water density at the surface of the reservoir	kg m^{-3}	996.2
Thermocline depth	m	1.489
Influent total N load	kgN yr^{-1}	67 150
Influent total P load	kgP yr^{-1}	16 530
Downstream TN concentration	mg L^{-1}	0.2138

152 Thone Sal Dam

152.1 Inputs

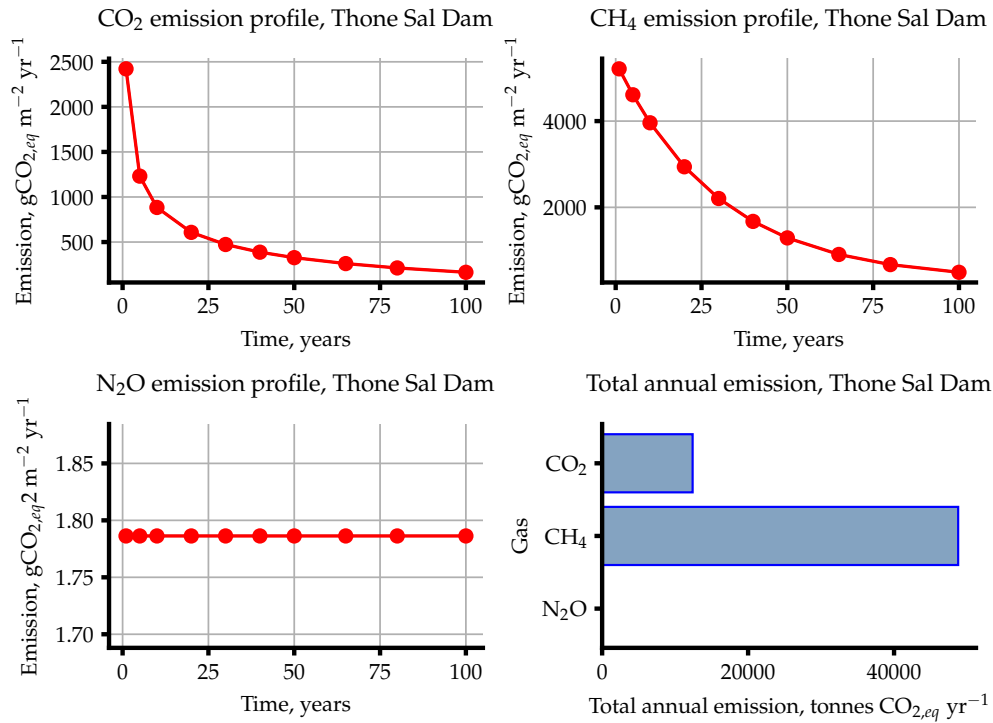
Input Name	Unit	Value(s)
Reservoir ID		9034
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.738583, LON: 95.951584
Monthly Temperatures	$^{\circ}\text{C}$	22.5, 24.5, 27.6, 30.1, 29.4, 27.0, 26.5, 26.5, 27.0, 27.4, 25.8, 23.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1394
Catchment area	km^2	215.2
Length of inundated river	km	16.13
Population	capita	26 220
Area fractions	-	0.0, 0.0, 0.0, 0.01, 0.005, 0.008, 0.368, 0.61, 0.0
Mean catchment slope	$\%$	10.00
Mean annual precipitation	mm/year	2395
Mean annual evapotranspiration	mm/year	1334
Soil wetness	mm over profile	401.0
Soil Olsen P content	kgP ha^{-1}	8.494
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	191 300 000
Reservoir area	km^2	27.35
Maximum reservoir depth	m	32.00
Mean reservoir depth	m	7.000
Inundated area fractions	-	0.0, 0.0, 0.0, 0.06, 0.02, 0.04, 0.55, 0.32, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.01, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.196
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.840
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.927
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.446
Mean monthly wind speed	m s^{-1}	0.8600
Water intake depth below surface	m	N/A



152.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	921.3
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	632.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-164.3
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	289.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	453.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	12 400
Total CO ₂ emission per lifetime	ktCO _{2,eq}	1240
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	332.3
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	300.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1151
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1783
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	48 780
Total CH ₄ emission per lifetime	ktCO _{2,eq}	4878
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.786
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.087
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.437
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	48.86
Total N ₂ O emission per lifetime	ktCO _{2,eq}	4.886
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2237
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2238

152.3 Emission plots



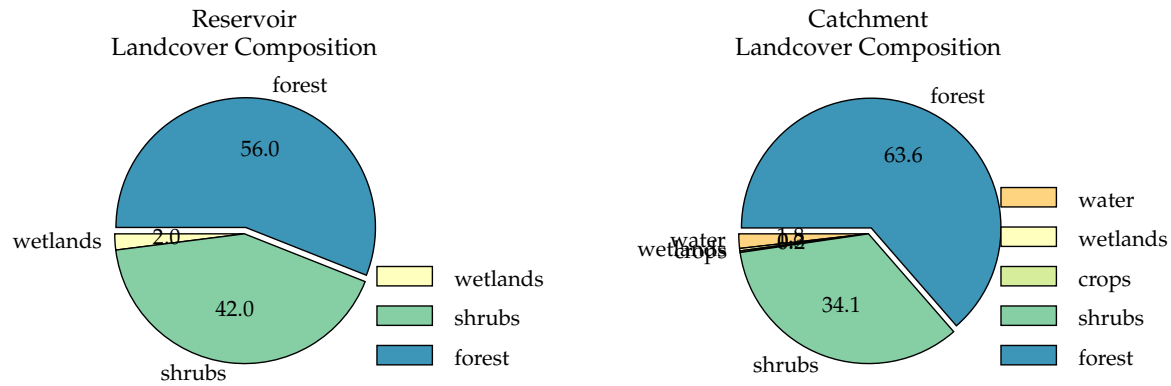
152.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	68.05
Retention coefficient	-	0.3381
Influent total N concentration	$\mu\text{g L}^{-1}$	108.3
Reservoir TN concentration	$\mu\text{g L}^{-1}$	71.30
Reservoir TP concentration	$\mu\text{g L}^{-1}$	50.30
Percentage of reservoir's surface area that is littoral	%	29.64
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.840
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.08
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.47
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.63
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.564
Influent total N load	kgN yr^{-1}	32 470
Influent total P load	kgP yr^{-1}	20 410
Downstream TN concentration	mg L^{-1}	0.1046

153 Kantin Beelin Dam

153.1 Inputs

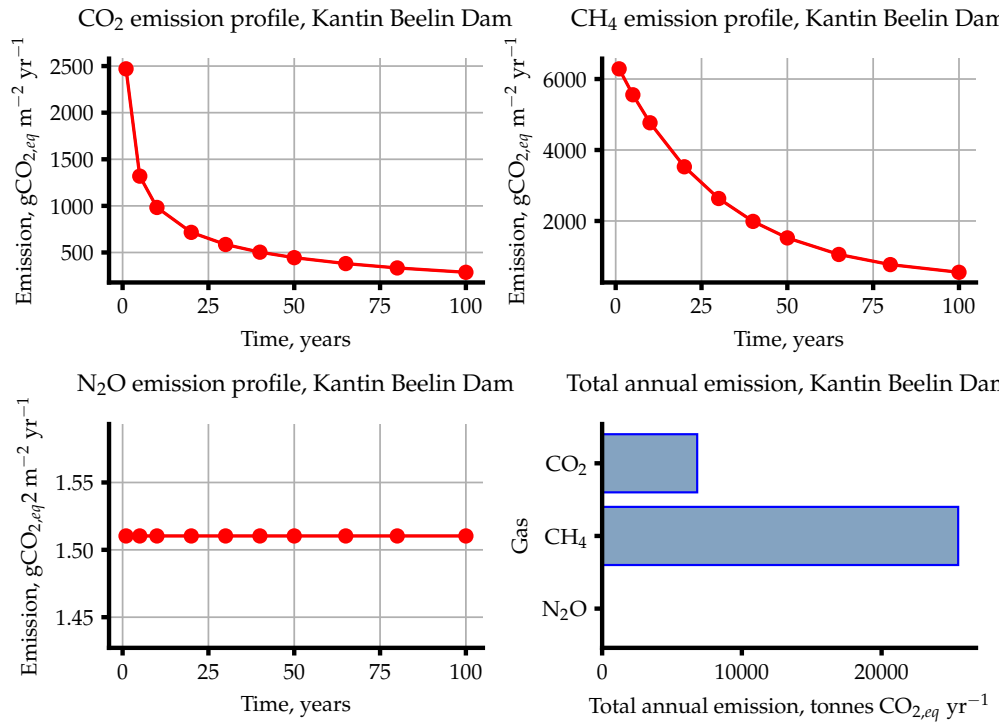
Input Name	Unit	Value(s)
Reservoir ID		9036
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.95705, LON: 95.887415
Monthly Temperatures	$^{\circ}\text{C}$	22.2, 24.4, 27.8, 30.3, 29.5, 27.0, 26.5, 26.5, 27.1, 27.3, 25.7, 22.8
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1226
Catchment area	km^2	204.6
Length of inundated river	km	10.81
Population	capita	22 630
Area fractions	-	0.0, 0.0, 0.0, 0.018, 0.003, 0.002, 0.341, 0.636, 0.0
Mean catchment slope	$\%$	11.00
Mean annual precipitation	mm/year	2227
Mean annual evapotranspiration	mm/year	1337
Soil wetness	mm over profile	389.0
Soil Olsen P content	kgP ha^{-1}	6.626
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	79 450 000
Reservoir area	km^2	12.00
Maximum reservoir depth	m	25.00
Mean reservoir depth	m	6.600
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.02, 0.0, 0.42, 0.56, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.302
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.875
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.042
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.427
Mean monthly wind speed	m s^{-1}	0.8900
Water intake depth below surface	m	N/A



153.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	890.8
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	611.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-287.5
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	279.5
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	566.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	6802
Total CO ₂ emission per lifetime	ktCO _{2,eq}	680.2
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	334.6
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	318.9
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1470
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2123
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	25 480
Total CH ₄ emission per lifetime	ktCO _{2,eq}	2548
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.510
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.131
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.321
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	18.12
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.812
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2690
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2692

153.3 Emission plots



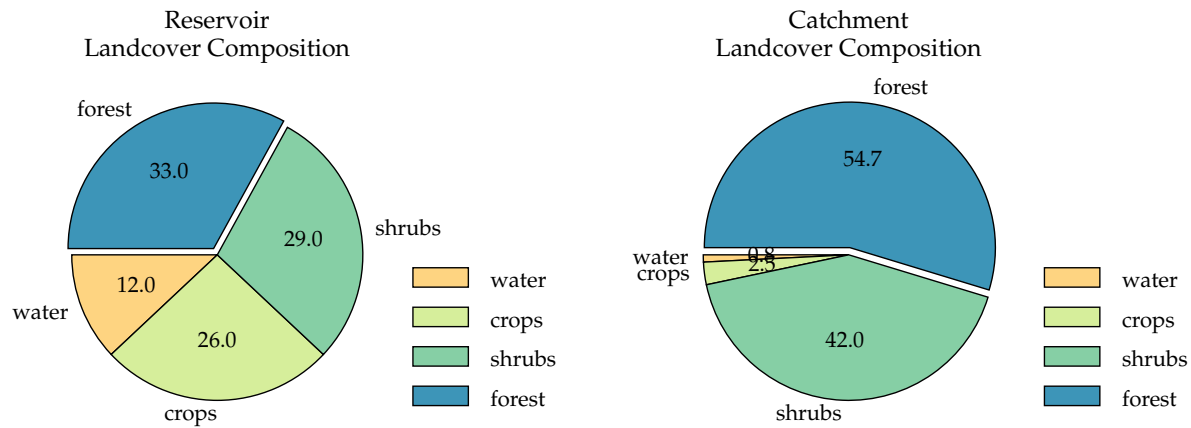
153.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	70.69
Retention coefficient	-	0.2024
Influent total N concentration	$\mu\text{g L}^{-1}$	94.92
Reservoir TN concentration	$\mu\text{g L}^{-1}$	75.72
Reservoir TP concentration	$\mu\text{g L}^{-1}$	59.27
Percentage of reservoir's surface area that is littoral	%	29.98
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.875
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.50
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.27
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.72
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.260
Influent total N load	kgN yr^{-1}	23 810
Influent total P load	kgP yr^{-1}	17 730
Downstream TN concentration	mg L^{-1}	0.1106

154 Min Hla Dam

154.1 Inputs

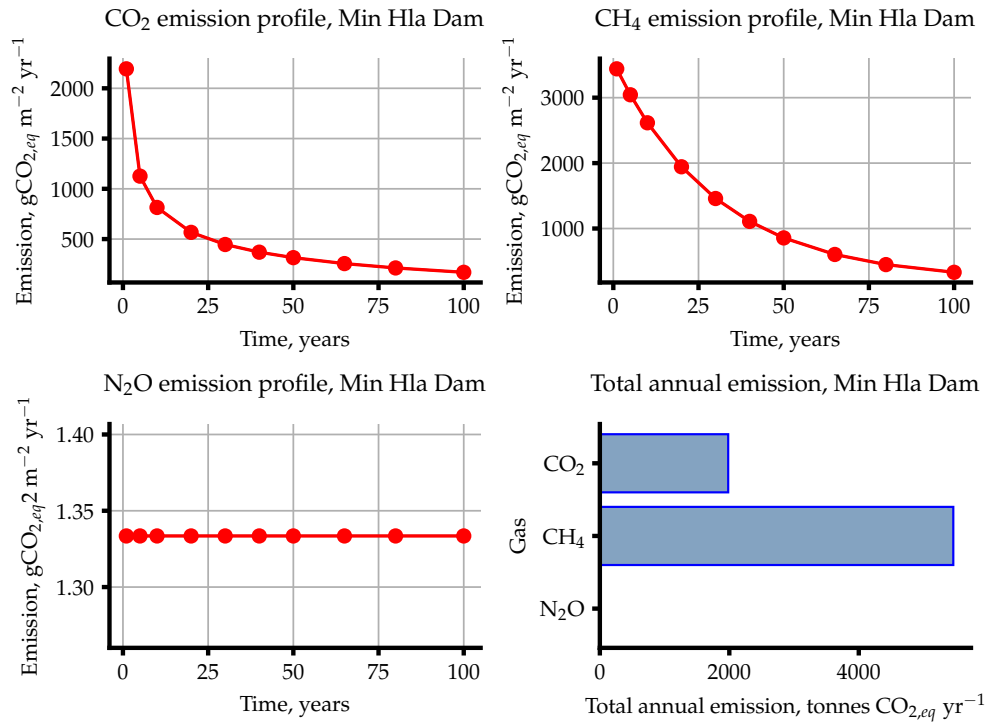
Input Name	Unit	Value(s)
Reservoir ID		9037
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.117048, LON: 95.909335
Monthly Temperatures	$^{\circ}\text{C}$	22.1, 24.3, 27.6, 30.2, 29.4, 26.9, 26.5, 26.5, 27.0, 27.2, 25.5, 22.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1013
Catchment area	km^2	68.55
Length of inundated river	km	2.787
Population	capita	8326
Area fractions	-	0.0, 0.0, 0.0, 0.008, 0.0, 0.025, 0.42, 0.547, 0.0
Mean catchment slope	$\%$	15.00
Mean annual precipitation	mm/year	2013
Mean annual evapotranspiration	mm/year	1335
Soil wetness	mm over profile	372.0
Soil Olsen P content	kgP ha^{-1}	4.810
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	53 030 000
Reservoir area	km^2	4.627
Maximum reservoir depth	m	31.00
Mean reservoir depth	m	11.50
Inundated area fractions	-	0.0, 0.0, 0.0, 0.02, 0.0, 0.26, 0.29, 0.33, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.1, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.785
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.200
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.424
Mean monthly wind speed	m s^{-1}	0.9100
Water intake depth below surface	m	N/A



154.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	826.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	566.9
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	−169.4
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	259.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	428.5
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1983
Total CO ₂ emission per lifetime	ktCO _{2,eq}	198.3
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	246.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	203.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	729.8
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1180
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	5460
Total CH ₄ emission per lifetime	ktCO _{2,eq}	546.0
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.333
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.7340
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.034
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	6.170
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.6170
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1609
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1610

154.3 Emission plots



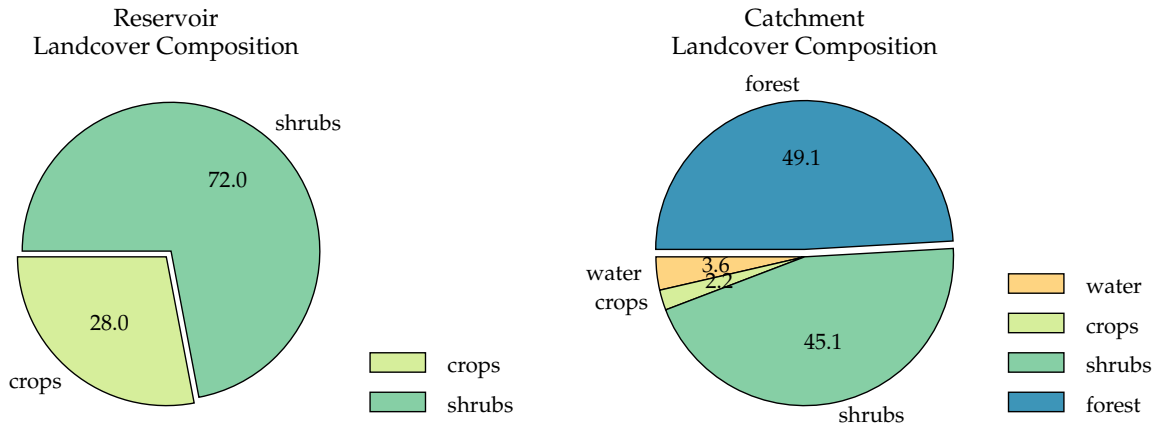
154.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	95.26
Retention coefficient	-	0.3796
Influent total N concentration	$\mu\text{g L}^{-1}$	49.77
Reservoir TN concentration	$\mu\text{g L}^{-1}$	30.33
Reservoir TP concentration	$\mu\text{g L}^{-1}$	62.35
Percentage of reservoir's surface area that is littoral	%	15.85
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.28
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.21
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.60
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.026
Influent total N load	kgN yr^{-1}	3456
Influent total P load	kgP yr^{-1}	6615
Downstream TN concentration	mg L^{-1}	0.044 47

155 Gamone Dam

155.1 Inputs

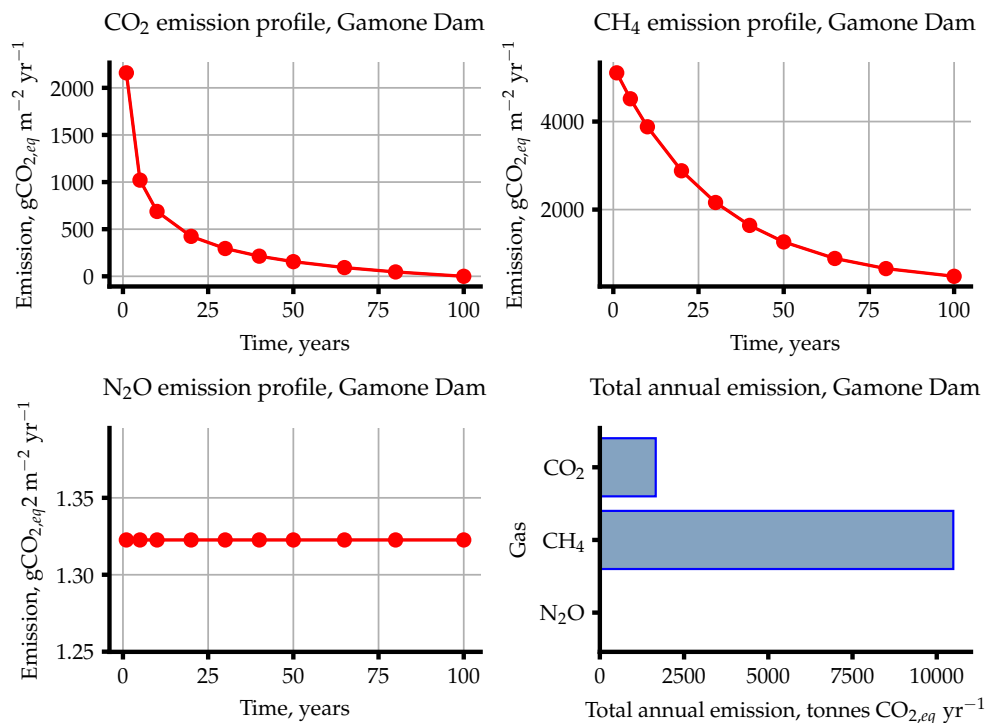
Input Name	Unit	Value(s)
Reservoir ID		9038
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.279956, LON: 95.852936
Monthly Temperatures	$^{\circ}\text{C}$	22.3, 24.5, 28.1, 30.7, 29.8, 27.3, 26.8, 26.8, 27.3, 27.5, 25.9, 23.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	864.0
Catchment area	km^2	93.98
Length of inundated river	km	4.676
Population	capita	10 160
Area fractions	-	0.0, 0.0, 0.0, 0.036, 0.0, 0.022, 0.451, 0.491, 0.0
Mean catchment slope	$\%$	13.00
Mean annual precipitation	mm/year	1865
Mean annual evapotranspiration	mm/year	1340
Soil wetness	mm over profile	349.0
Soil Olsen P content	kgP ha^{-1}	4.629
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	47 520 000
Reservoir area	km^2	6.001
Maximum reservoir depth	m	26.00
Mean reservoir depth	m	7.900
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.28, 0.72, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.469
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.200
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.424
Mean monthly wind speed	m s^{-1}	0.9300
Water intake depth below surface	m	N/A



155.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	881.1
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	604.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	276.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	276.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1659
Total CO ₂ emission per lifetime	ktCO _{2,eq}	165.9
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	313.9
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	294.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1140
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1748
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	10 490
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1049
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.323
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.8363
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.079
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	7.937
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.7937
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2025
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2026

155.3 Emission plots



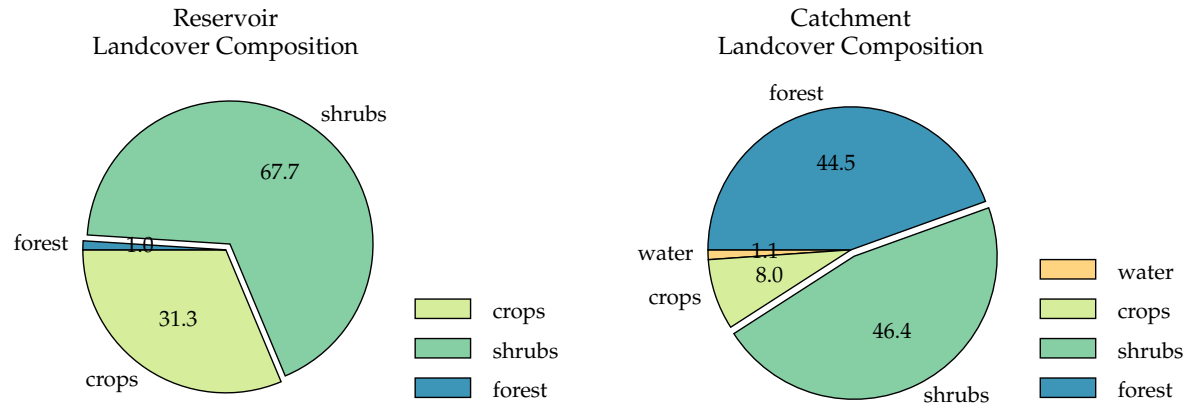
155.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	101.7
Retention coefficient	-	0.3192
Influent total N concentration	$\mu\text{g L}^{-1}$	70.46
Reservoir TN concentration	$\mu\text{g L}^{-1}$	47.09
Reservoir TP concentration	$\mu\text{g L}^{-1}$	72.18
Percentage of reservoir's surface area that is littoral	%	24.49
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.28
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.34
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.03
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.068
Influent total N load	kgN yr^{-1}	5721
Influent total P load	kgP yr^{-1}	8255
Downstream TN concentration	mg L^{-1}	0.070 37

156 Bawbin Dam

156.1 Inputs

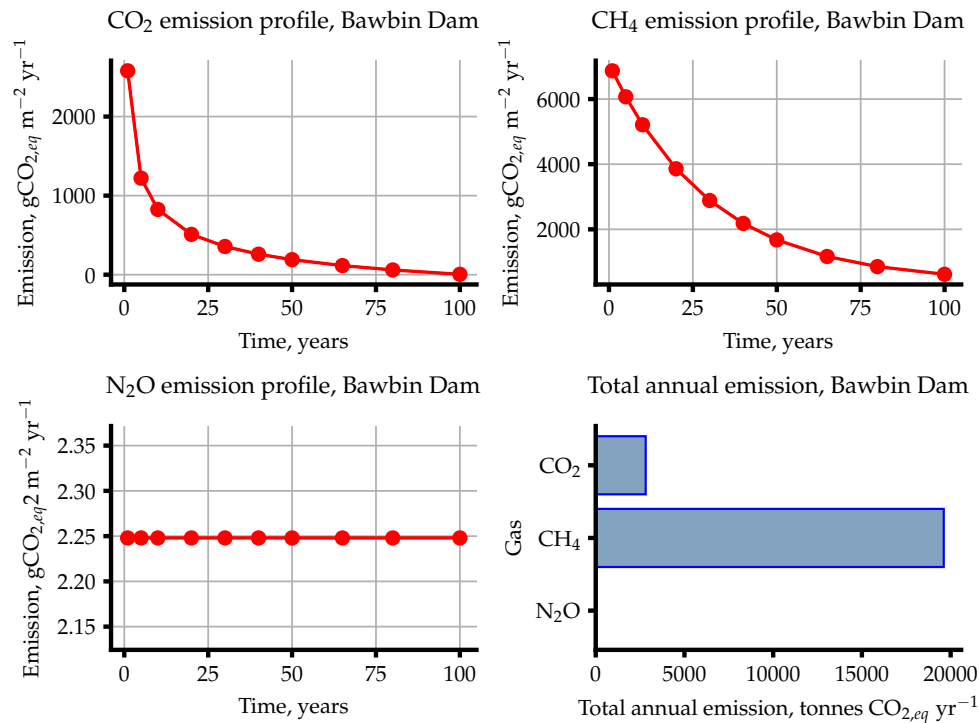
Input Name	Unit	Value(s)
Reservoir ID		9039
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.361146, LON: 95.795807
Monthly Temperatures	$^{\circ}\text{C}$	22.3, 24.5, 28.0, 30.8, 29.8, 27.4, 26.9, 26.8, 27.3, 27.6, 25.9, 23.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	662.0
Catchment area	km^2	248.2
Length of inundated river	km	3.934
Population	capita	32 240
Area fractions	-	0.0, 0.0, 0.0, 0.011, 0.0, 0.08, 0.464, 0.445, 0.0
Mean catchment slope	$\%$	9.000
Mean annual precipitation	mm/year	1664
Mean annual evapotranspiration	mm/year	1356
Soil wetness	mm over profile	313.0
Soil Olsen P content	kgP ha^{-1}	6.510
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	52 900 000
Reservoir area	km^2	8.418
Maximum reservoir depth	m	24.00
Mean reservoir depth	m	6.300
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.31, 0.67, 0.01, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.848
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.200
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.424
Mean monthly wind speed	m s^{-1}	0.9300
Water intake depth below surface	m	N/A



156.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1050
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	720.6
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-5.133
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	329.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	334.6
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2816
Total CO ₂ emission per lifetime	ktCO _{2,eq}	281.6
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	352.4
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	363.0
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1614
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2330
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	19 610
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1961
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.248
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.679
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.963
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	18.92
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.892
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2664
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2666

156.3 Emission plots



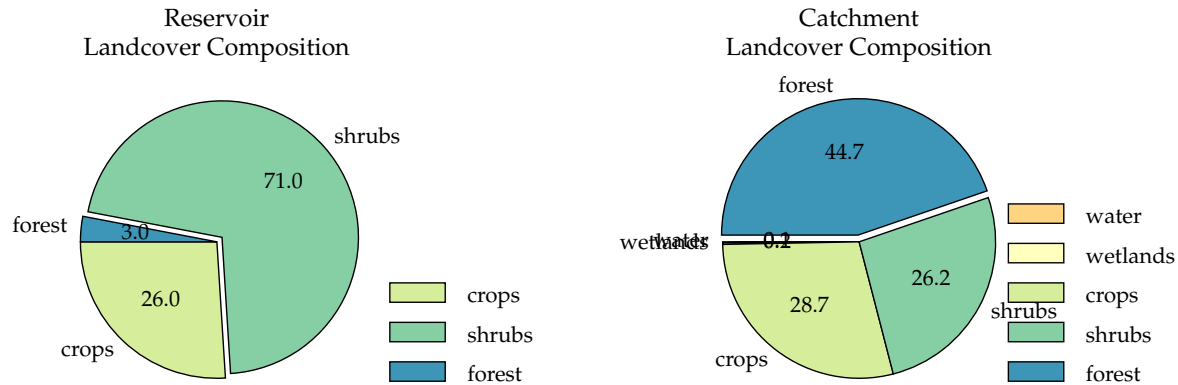
156.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	156.4
Retention coefficient	-	0.2050
Influent total N concentration	$\mu\text{g L}^{-1}$	148.8
Reservoir TN concentration	$\mu\text{g L}^{-1}$	117.3
Reservoir TP concentration	$\mu\text{g L}^{-1}$	127.6
Percentage of reservoir's surface area that is littoral	%	31.28
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.28
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.34
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.05
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.158
Influent total N load	kgN yr^{-1}	24 460
Influent total P load	kgP yr^{-1}	25 700
Downstream TN concentration	mg L^{-1}	0.1730

157 Yan Aung Myin Dam

157.1 Inputs

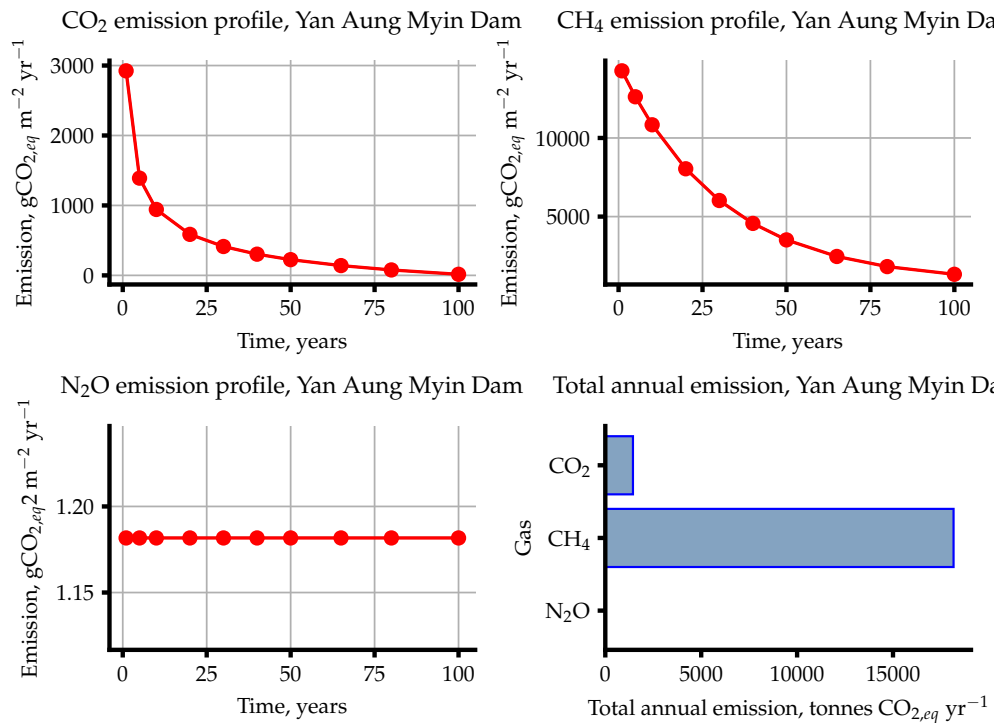
Input Name	Unit	Value(s)
Reservoir ID		9051
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.680432, LON: 96.103469
Monthly Temperatures	$^{\circ}\text{C}$	22.1, 24.4, 28.2, 31.1, 30.0, 27.9, 27.4, 27.2, 27.7, 27.6, 25.6, 22.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	132.0
Catchment area	km^2	1550
Length of inundated river	km	2.907
Population	capita	91 360
Area fractions	-	0.0, 0.0, 0.0, 0.001, 0.002, 0.287, 0.262, 0.447, 0.0
Mean catchment slope	$\%$	7.000
Mean annual precipitation	mm/year	1056
Mean annual evapotranspiration	mm/year	1381
Soil wetness	mm over profile	157.0
Soil Olsen P content	kgP ha^{-1}	4.691
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	11 240 000
Reservoir area	km^2	3.719
Maximum reservoir depth	m	9.000
Mean reservoir depth	m	3.000
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.26, 0.71, 0.03, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.606
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.150
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.672
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.426
Mean monthly wind speed	m s^{-1}	1.100
Water intake depth below surface	m	N/A



157.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1187
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	814.6
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-15.40
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	372.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	387.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1442
Total CO ₂ emission per lifetime	ktCO _{2,eq}	144.2
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	467.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	800.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	3614
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	4882
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	18 160
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1816
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.182
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.053
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.117
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	4.395
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.4395
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	5270
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	5271

157.3 Emission plots



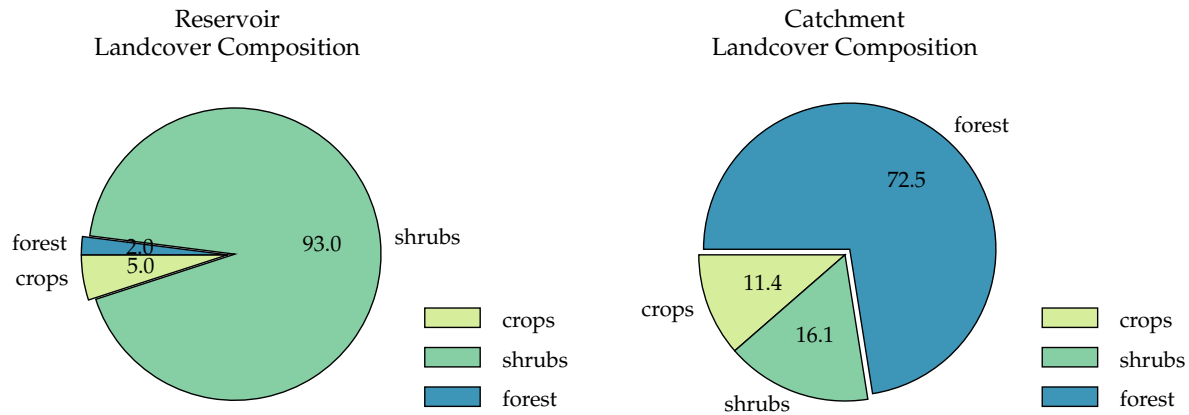
157.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	406.5
Retention coefficient	-	0.042 13
Influent total N concentration	$\mu\text{g L}^{-1}$	178.2
Reservoir TN concentration	$\mu\text{g L}^{-1}$	170.7
Reservoir TP concentration	$\mu\text{g L}^{-1}$	389.9
Percentage of reservoir's surface area that is littoral	%	55.56
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.150
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.80
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.21
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.30
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	1.062
Influent total N load	kgN yr^{-1}	36 450
Influent total P load	kgP yr^{-1}	83 170
Downstream TN concentration	mg L^{-1}	0.2160

158 Chaungmagyi Dam

158.1 Inputs

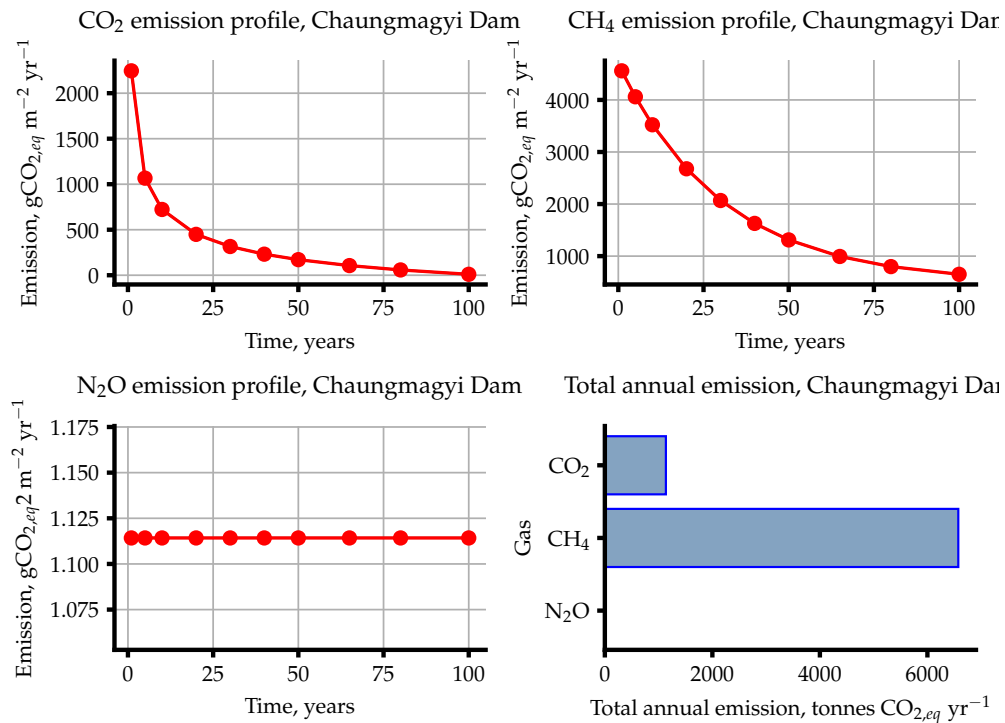
Input Name	Unit	Value(s)
Reservoir ID		9052
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.793821, LON: 96.100037
Monthly Temperatures	$^{\circ}\text{C}$	21.6, 23.9, 27.9, 30.9, 29.9, 27.6, 27.1, 27.0, 27.5, 27.4, 25.3, 21.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	175.0
Catchment area	km^2	113.8
Length of inundated river	km	3.929
Population	capita	4221
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.114, 0.161, 0.725, 0.0
Mean catchment slope	$\%$	10.00
Mean annual precipitation	mm/year	1121
Mean annual evapotranspiration	mm/year	1389
Soil wetness	mm over profile	166.0
Soil Olsen P content	kgP ha^{-1}	3.642
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	22 130 000
Reservoir area	km^2	3.830
Maximum reservoir depth	m	17.00
Mean reservoir depth	m	5.800
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.05, 0.93, 0.02, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.747
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.150
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.672
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.426
Mean monthly wind speed	m s^{-1}	1.100
Water intake depth below surface	m	N/A



158.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	912.2
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	626.0
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-10.27
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	286.2
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	296.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1135
Total CO ₂ emission per lifetime	ktCO _{2,eq}	113.5
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	348.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	490.6
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	877.5
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1717
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	6575
Total CH ₄ emission per lifetime	ktCO _{2,eq}	657.5
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.114
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.4696
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.7919
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	4.268
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.4268
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2013
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2014

158.3 Emission plots



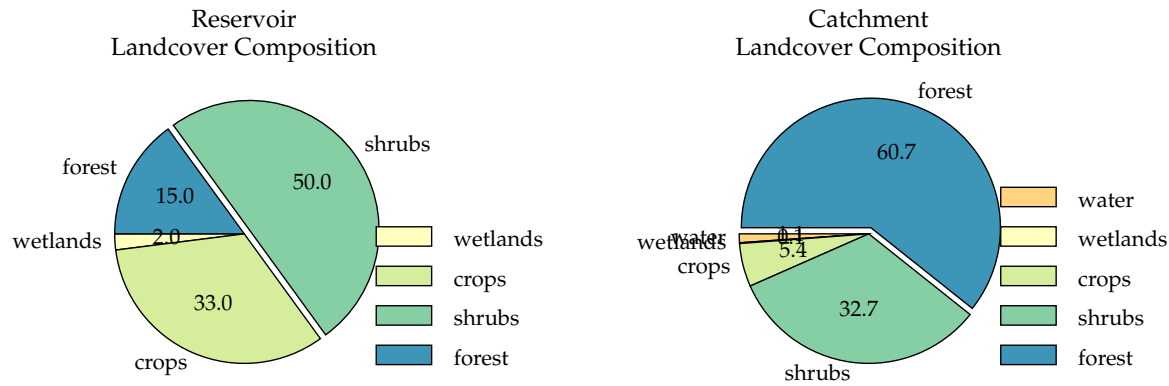
158.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	219.1
Retention coefficient	-	0.4709
Influent total N concentration	$\mu\text{g L}^{-1}$	85.57
Reservoir TN concentration	$\mu\text{g L}^{-1}$	45.38
Reservoir TP concentration	$\mu\text{g L}^{-1}$	117.3
Percentage of reservoir's surface area that is littoral	%	31.27
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.150
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.80
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.88
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.07
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.061
Influent total N load	kgN yr^{-1}	1705
Influent total P load	kgP yr^{-1}	4365
Downstream TN concentration	mg L^{-1}	0.060 53

159 Kon Chaung

159.1 Inputs

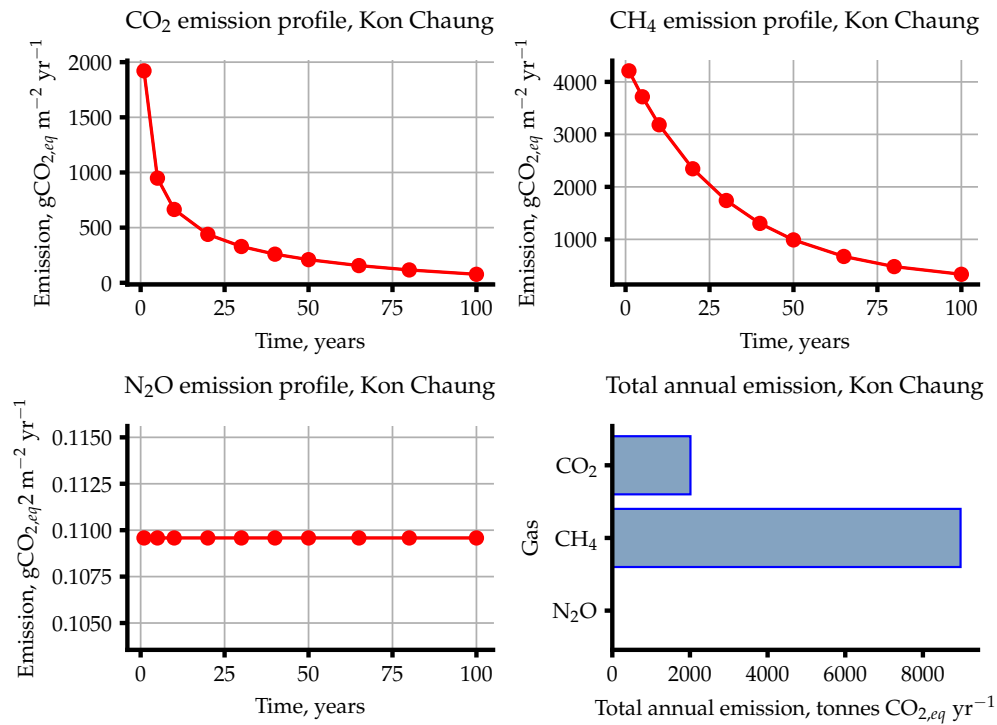
Input Name	Unit	Value(s)
Reservoir ID		9091
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.364904, LON: 95.038618
Monthly Temperatures	$^{\circ}\text{C}$	22.0, 24.3, 27.6, 30.3, 29.7, 27.6, 27.0, 27.0, 27.4, 27.5, 25.7, 22.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1470
Catchment area	km^2	162.6
Length of inundated river	km	4.654
Population	capita	12 150
Area fractions	-	0.0, 0.0, 0.0, 0.011, 0.001, 0.054, 0.327, 0.607, 0.0
Mean catchment slope	$\%$	22.00
Mean annual precipitation	mm/year	2337
Mean annual evapotranspiration	mm/year	1297
Soil wetness	mm over profile	167.0
Soil Olsen P content	kgP ha^{-1}	6.530
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	81 210 000
Reservoir area	km^2	6.429
Maximum reservoir depth	m	30.00
Mean reservoir depth	m	12.60
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.02, 0.33, 0.5, 0.15, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.668
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.930
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.058
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.482
Mean monthly wind speed	m s^{-1}	0.8900
Water intake depth below surface	m	N/A



159.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	752.6
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	516.5
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-77.00
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	236.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	313.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2013
Total CO ₂ emission per lifetime	ktCO _{2,eq}	201.3
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	236.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	175.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	983.0
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1395
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	8970
Total CH ₄ emission per lifetime	ktCO _{2,eq}	897.0
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.1096
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.081 07
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.095 32
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.7045
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.070 45
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1708
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1708

159.3 Emission plots



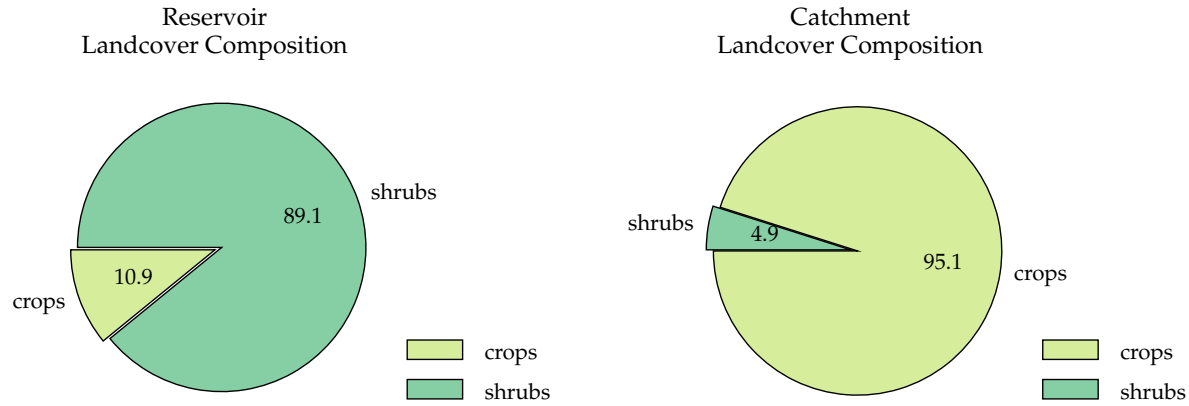
159.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	43.86
Retention coefficient	-	0.2140
Influent total N concentration	$\mu\text{g L}^{-1}$	3.610
Reservoir TN concentration	$\mu\text{g L}^{-1}$	2.804
Reservoir TP concentration	$\mu\text{g L}^{-1}$	35.35
Percentage of reservoir's surface area that is littoral	%	13.54
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.930
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.14
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.80
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.047
Influent total N load	kgN yr^{-1}	862.7
Influent total P load	kgP yr^{-1}	10 480
Downstream TN concentration	mg L^{-1}	0.004 157

160 Unknown28

160.1 Inputs

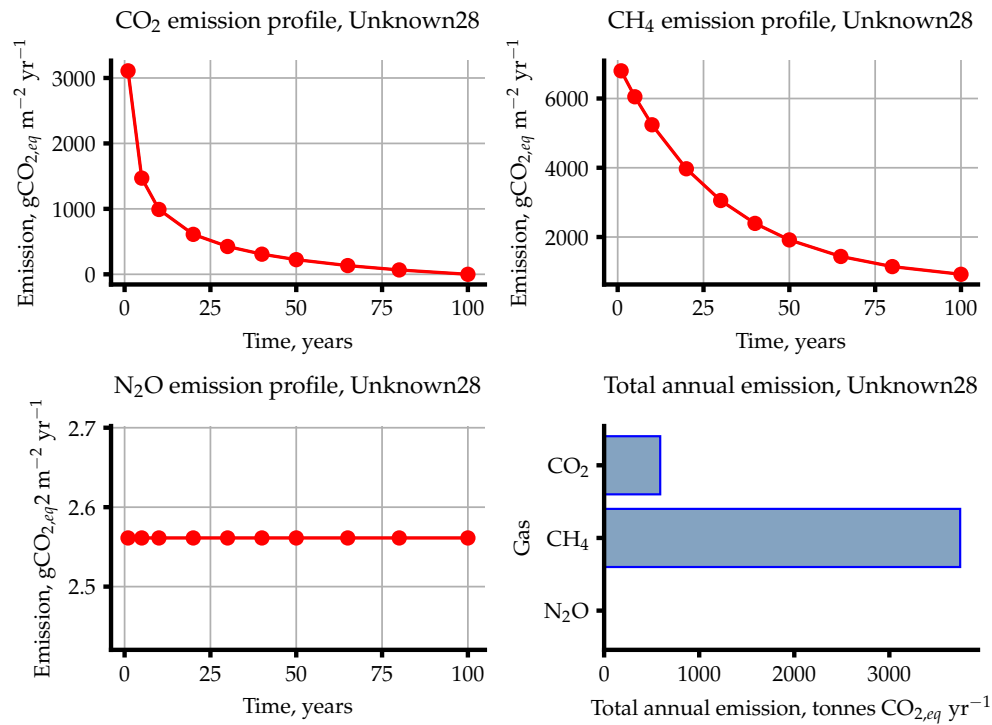
Input Name	Unit	Value(s)
Reservoir ID		9103
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.812153, LON: 95.589619
Monthly Temperatures	$^{\circ}\text{C}$	21.4, 24.2, 28.5, 32.0, 31.2, 30.2, 29.9, 29.3, 29.0, 28.0, 25.3, 21.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	104.0
Catchment area	km^2	38.08
Length of inundated river	km	2.546
Population	capita	4630
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.951, 0.049, 0.0, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	791.0
Mean annual evapotranspiration	mm/year	1464
Soil wetness	mm over profile	33.00
Soil Olsen P content	kgP ha^{-1}	6.721
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	5 132 000
Reservoir area	km^2	1.482
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	3.500
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.11, 0.9, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.003
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.210
Water intake depth below surface	m	N/A



160.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1269
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	870.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	398.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	398.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	589.9
Total CO ₂ emission per lifetime	ktCO _{2,eq}	58.99
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	490.4
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	682.2
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1354
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2527
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	3745
Total CH ₄ emission per lifetime	ktCO _{2,eq}	374.5
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.561
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.9557
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.758
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	3.796
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.3796
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2925
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2927

160.3 Emission plots



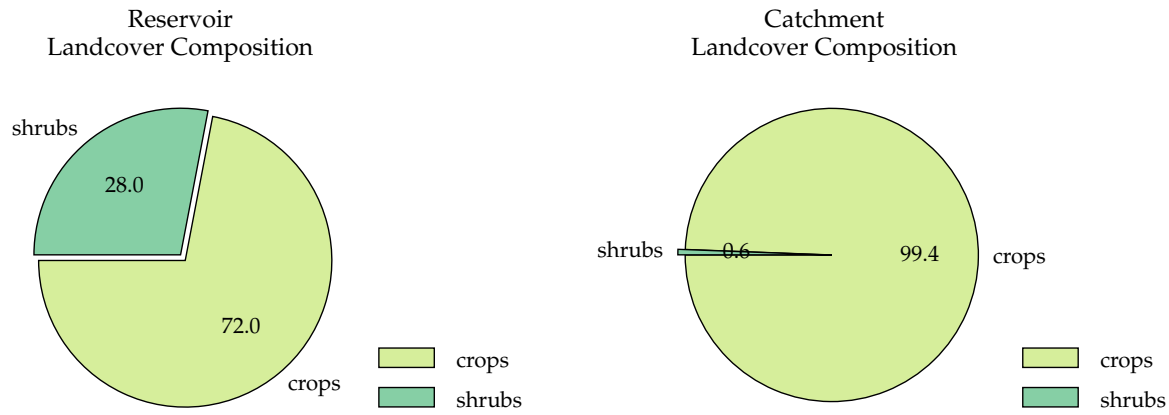
160.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1047
Retention coefficient	-	0.5094
Influent total N concentration	$\mu\text{g L}^{-1}$	336.4
Reservoir TN concentration	$\mu\text{g L}^{-1}$	171.1
Reservoir TP concentration	$\mu\text{g L}^{-1}$	529.7
Percentage of reservoir's surface area that is littoral	%	48.44
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.75
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.83
Water density at the surface of the reservoir	kg m^{-3}	995.4
Thermocline depth	m	0.7530
Influent total N load	kgN yr^{-1}	1332
Influent total P load	kgP yr^{-1}	4147
Downstream TN concentration	mg L^{-1}	0.2086

161 NaGa (DaunNay)

161.1 Inputs

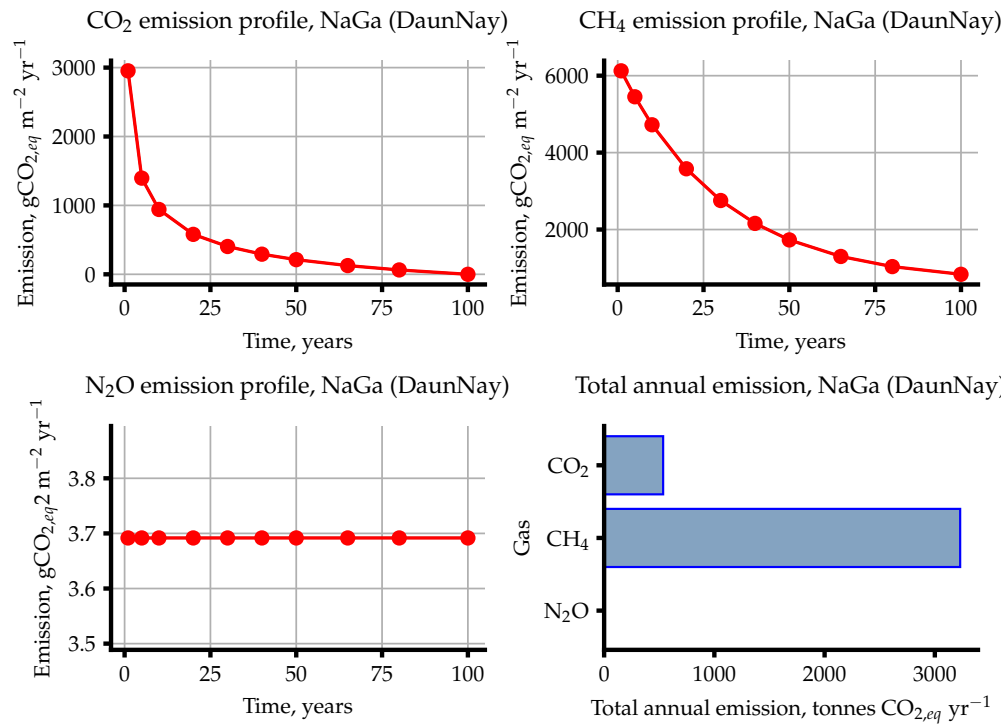
Input Name	Unit	Value(s)
Reservoir ID		9149
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.394074, LON: 95.168469
Monthly Temperatures	$^{\circ}\text{C}$	21.6, 24.0, 28.2, 31.6, 30.9, 28.7, 28.3, 28.1, 27.9, 27.4, 25.0, 21.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	91.00
Catchment area	km^2	83.70
Length of inundated river	km	2.125
Population	capita	7042
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.994, 0.006, 0.0, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	768.0
Mean annual evapotranspiration	mm/year	1458
Soil wetness	mm over profile	29.00
Soil Olsen P content	kgP ha^{-1}	4.451
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	6 430 000
Reservoir area	km^2	1.416
Maximum reservoir depth	m	13.00
Mean reservoir depth	m	4.500
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.72, 0.28, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.309
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.160
Water intake depth below surface	m	N/A



161.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1205
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	827.0
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	378.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	378.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	535.4
Total CO ₂ emission per lifetime	ktCO _{2,eq}	53.54
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	411.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	619.3
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1251
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2281
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	3230
Total CH ₄ emission per lifetime	ktCO _{2,eq}	323.0
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.692
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.906
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.799
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	5.228
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.5228
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2659
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2662

161.3 Emission plots



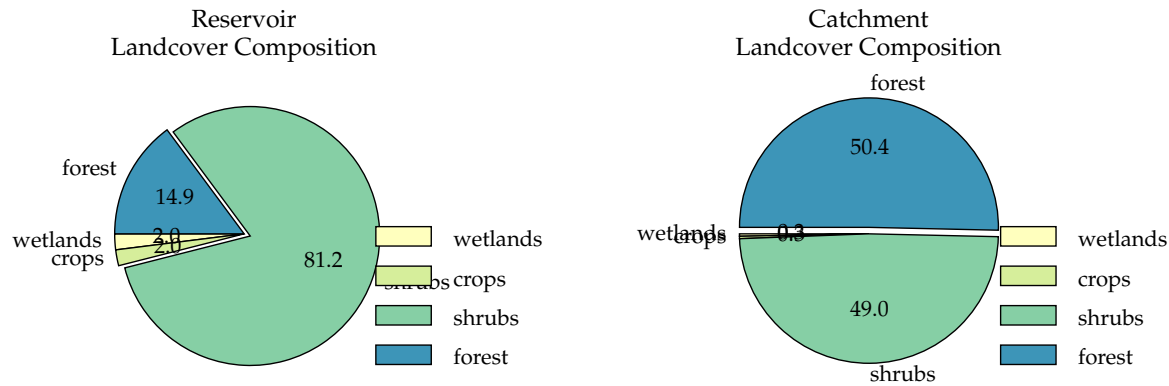
161.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	872.9
Retention coefficient	-	0.4034
Influent total N concentration	$\mu\text{g L}^{-1}$	350.3
Reservoir TN concentration	$\mu\text{g L}^{-1}$	210.1
Reservoir TP concentration	$\mu\text{g L}^{-1}$	527.4
Percentage of reservoir's surface area that is littoral	%	39.08
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.88
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.88
Water density at the surface of the reservoir	kg m^{-3}	995.7
Thermocline depth	m	0.7936
Influent total N load	kgN yr^{-1}	2668
Influent total P load	kgP yr^{-1}	6648
Downstream TN concentration	mg L^{-1}	0.2971

162 Kawliya Dam

162.1 Inputs

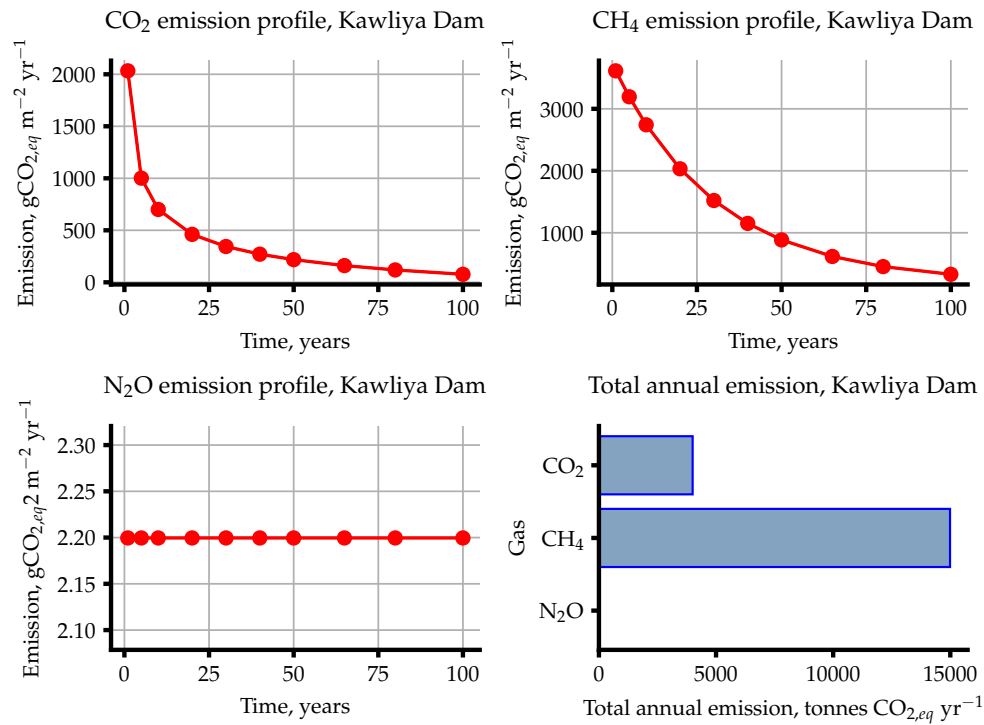
Input Name	Unit	Value(s)
Reservoir ID		9033
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.856081, LON: 96.452257
Monthly Temperatures	$^{\circ}\text{C}$	22.5, 24.2, 27.2, 29.8, 29.2, 26.9, 26.5, 26.4, 27.0, 27.4, 26.0, 23.2
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1948
Catchment area	km^2	116.2
Length of inundated river	km	8.563
Population	capita	14 310
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.003, 0.003, 0.49, 0.503, 0.0
Mean catchment slope	$\%$	6.000
Mean annual precipitation	mm/year	2943
Mean annual evapotranspiration	mm/year	1339
Soil wetness	mm over profile	323.0
Soil Olsen P content	kgP ha^{-1}	18.46
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	116 000 000
Reservoir area	km^2	12.22
Maximum reservoir depth	m	21.00
Mean reservoir depth	m	9.500
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.02, 0.02, 0.82, 0.15, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.846
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.970
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.462
Mean monthly wind speed	m s^{-1}	0.9000
Water intake depth below surface	m	N/A



162.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	798.2
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	547.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-77.00
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	250.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	327.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	4000
Total CO ₂ emission per lifetime	ktCO _{2,eq}	400.0
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	254.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	195.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	776.7
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1227
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	14 990
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1499
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.200
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.468
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.834
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	26.87
Total N ₂ O emission per lifetime	ktCO _{2,eq}	2.687
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1554
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1556

162.3 Emission plots



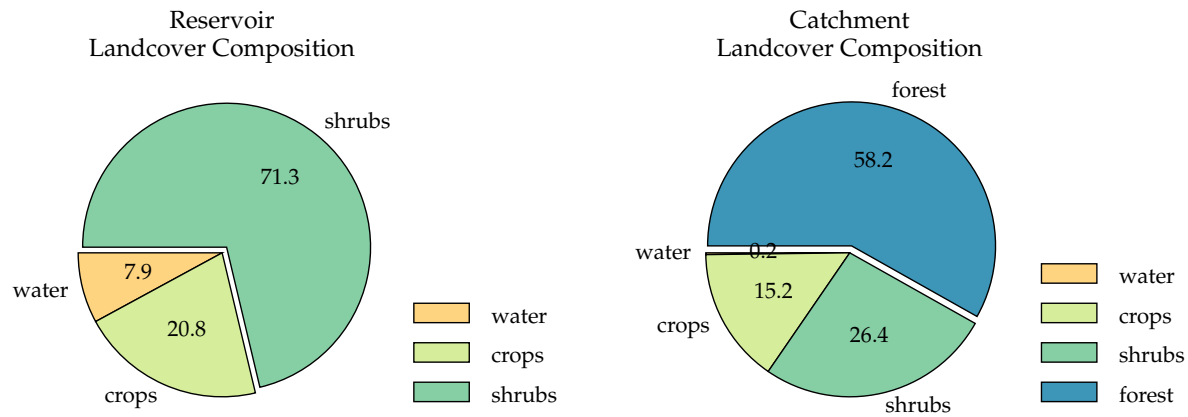
162.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	50.22
Retention coefficient	-	0.2910
Influent total N concentration	$\mu\text{g L}^{-1}$	97.42
Reservoir TN concentration	$\mu\text{g L}^{-1}$	68.92
Reservoir TP concentration	$\mu\text{g L}^{-1}$	38.76
Percentage of reservoir's surface area that is littoral	%	17.02
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.47
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.40
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.391
Influent total N load	kgN yr^{-1}	22 060
Influent total P load	kgP yr^{-1}	11 370
Downstream TN concentration	mg L^{-1}	0.1014

163 unknown5

163.1 Inputs

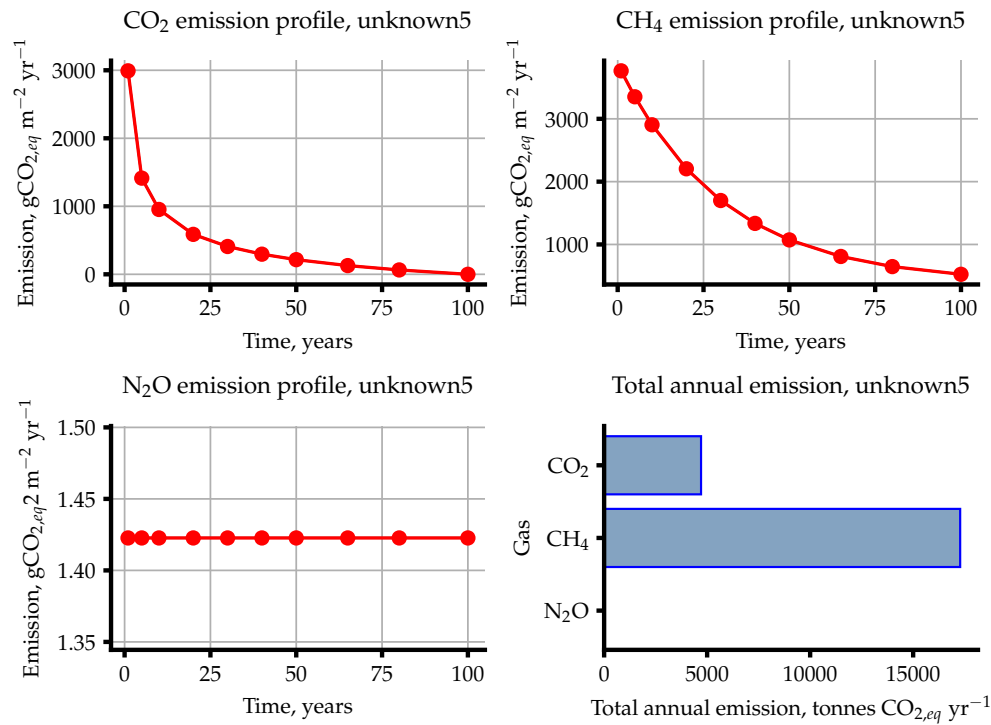
Input Name	Unit	Value(s)
Reservoir ID		9043
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.31374, LON: 95.527242
Monthly Temperatures	$^{\circ}\text{C}$	21.6, 24.2, 28.4, 31.7, 30.6, 28.1, 27.5, 27.4, 27.6, 27.6, 25.3, 22.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	75.00
Catchment area	km^2	451.2
Length of inundated river	km	11.93
Population	capita	34 820
Area fractions	-	0.0, 0.0, 0.0, 0.002, 0.0, 0.152, 0.264, 0.581, 0.0
Mean catchment slope	$\%$	9.000
Mean annual precipitation	mm/year	970.0
Mean annual evapotranspiration	mm/year	1367
Soil wetness	mm over profile	149.0
Soil Olsen P content	kgP ha^{-1}	3.680
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	101 100 000
Reservoir area	km^2	12.28
Maximum reservoir depth	m	30.00
Mean reservoir depth	m	8.200
Inundated area fractions	-	0.0, 0.0, 0.0, 0.03, 0.0, 0.21, 0.72, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.05, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.683
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.754
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.358
Mean monthly wind speed	m s^{-1}	1.010
Water intake depth below surface	m	N/A



163.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1221
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	837.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	383.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	383.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	4704
Total CO ₂ emission per lifetime	ktCO _{2,eq}	470.4
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	325.6
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	392.0
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	689.5
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1407
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	17 280
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1728
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.423
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.3204
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.8715
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	17.47
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.747
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1790
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1791

163.3 Emission plots



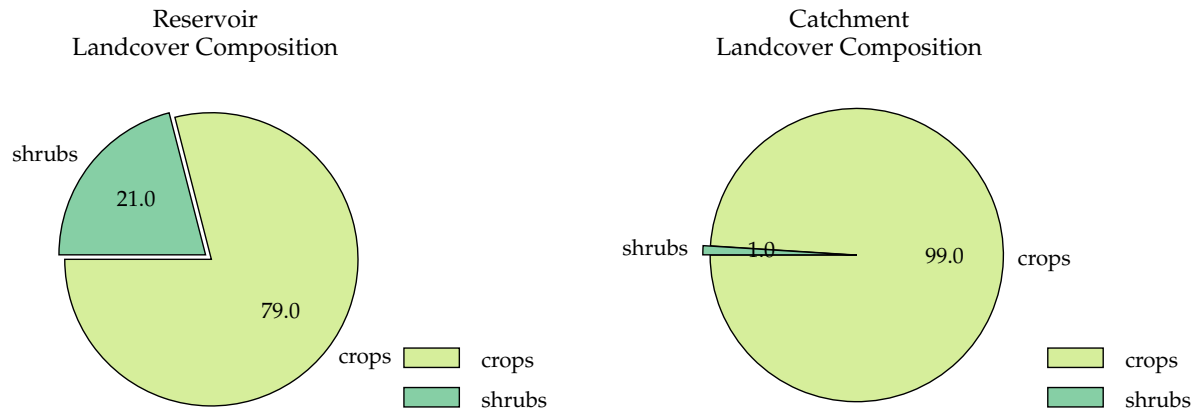
163.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	877.7
Retention coefficient	-	0.7054
Influent total N concentration	$\mu\text{g L}^{-1}$	109.1
Reservoir TN concentration	$\mu\text{g L}^{-1}$	32.08
Reservoir TP concentration	$\mu\text{g L}^{-1}$	263.4
Percentage of reservoir's surface area that is littoral	%	24.43
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.88
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.70
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	1.209
Influent total N load	kgN yr^{-1}	3691
Influent total P load	kgP yr^{-1}	29 710
Downstream TN concentration	mg L^{-1}	0.022 09

164 Tya Pya Pin

164.1 Inputs

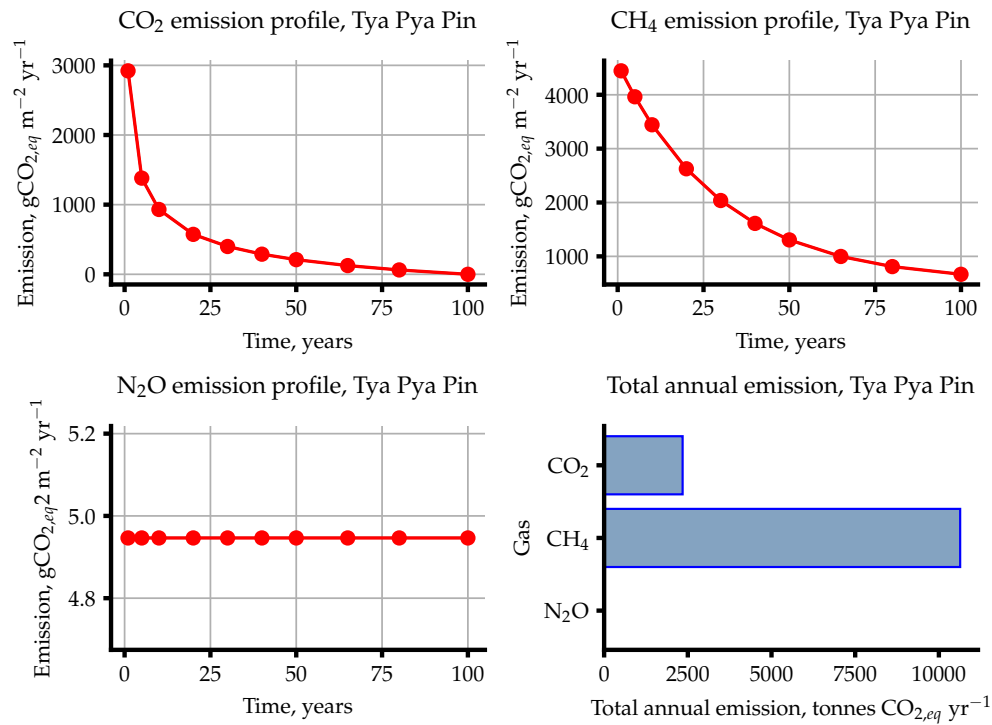
Input Name	Unit	Value(s)
Reservoir ID		9069
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.969521, LON: 95.713399
Monthly Temperatures	$^{\circ}\text{C}$	21.6, 24.0, 28.2, 31.4, 30.3, 28.7, 28.3, 28.0, 27.7, 27.1, 24.7, 21.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	136.0
Catchment area	km^2	147.7
Length of inundated river	km	4.275
Population	capita	16 750
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.99, 0.01, 0.0, 0.0
Mean catchment slope	%	3.000
Mean annual precipitation	mm/year	869.0
Mean annual evapotranspiration	mm/year	1461
Soil wetness	mm over profile	44.00
Soil Olsen P content	kgP ha^{-1}	4.873
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	36 260 000
Reservoir area	km^2	6.270
Maximum reservoir depth	m	17.00
Mean reservoir depth	m	5.800
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.79, 0.21, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.186
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.250
Water intake depth below surface	m	N/A



164.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1192
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	818.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	374.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	374.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2345
Total CO ₂ emission per lifetime	ktCO _{2,eq}	234.5
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	363.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	512.2
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	820.5
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1696
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	10 640
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1064
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	4.946
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.443
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.195
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	31.01
Total N ₂ O emission per lifetime	ktCO _{2,eq}	3.101
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2070
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2074

164.3 Emission plots



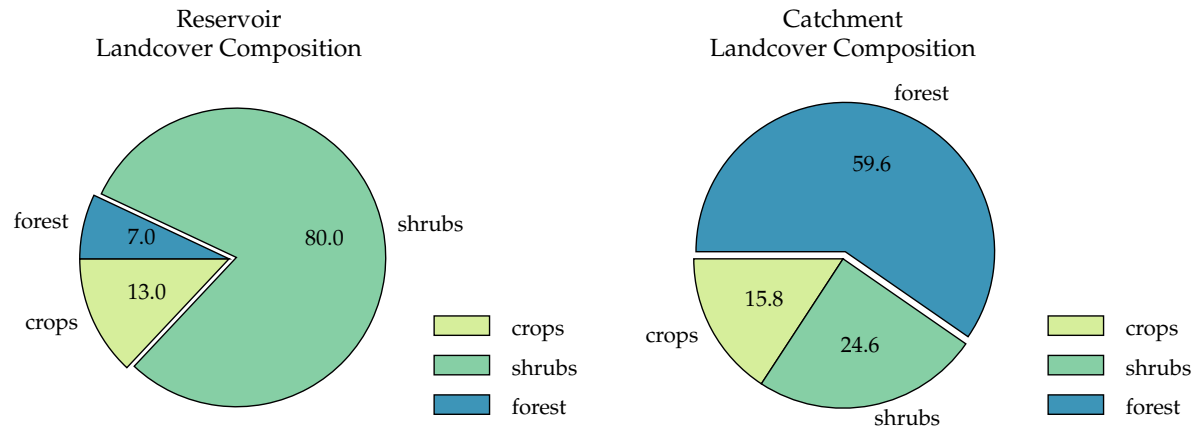
164.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	704.4
Retention coefficient	-	0.5911
Influent total N concentration	$\mu\text{g L}^{-1}$	422.4
Reservoir TN concentration	$\mu\text{g L}^{-1}$	174.4
Reservoir TP concentration	$\mu\text{g L}^{-1}$	298.4
Percentage of reservoir's surface area that is littoral	%	31.27
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.81
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.68
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	1.261
Influent total N load	kgN yr^{-1}	8488
Influent total P load	kgP yr^{-1}	14 150
Downstream TN concentration	mg L^{-1}	0.1798

165 Kha War Reservoir

165.1 Inputs

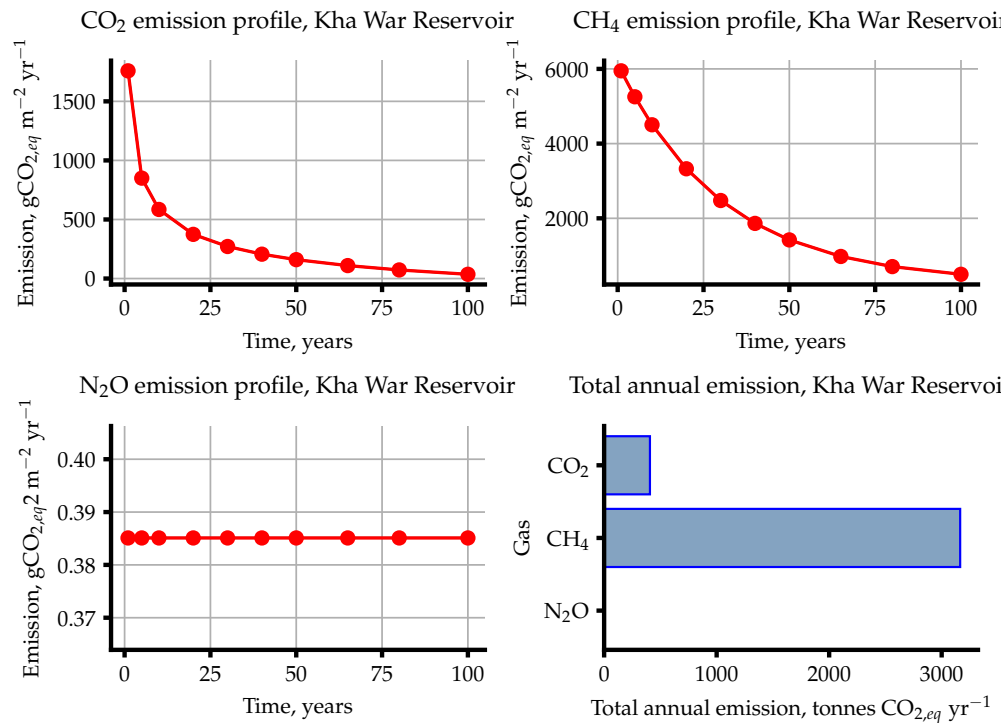
Input Name	Unit	Value(s)
Reservoir ID		9092
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.449987, LON: 95.010258
Monthly Temperatures	$^{\circ}\text{C}$	21.9, 24.3, 27.6, 30.3, 29.8, 27.6, 27.1, 27.0, 27.4, 27.5, 25.6, 22.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1194
Catchment area	km^2	45.61
Length of inundated river	km	1.744
Population	capita	2562
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.158, 0.246, 0.597, 0.0
Mean catchment slope	$\%$	13.00
Mean annual precipitation	mm/year	2043
Mean annual evapotranspiration	mm/year	1330
Soil wetness	mm over profile	136.0
Soil Olsen P content	kgP ha^{-1}	4.430
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	11 470 000
Reservoir area	km^2	1.588
Maximum reservoir depth	m	17.00
Mean reservoir depth	m	7.200
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.13, 0.8, 0.07, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.126
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.930
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.058
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.482
Mean monthly wind speed	m s^{-1}	0.8700
Water intake depth below surface	m	N/A



165.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	702.8
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	482.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-35.93
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	220.5
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	256.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	407.2
Total CO ₂ emission per lifetime	ktCO _{2,eq}	40.72
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	303.3
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	277.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1412
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1993
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	3164
Total CH ₄ emission per lifetime	ktCO _{2,eq}	316.4
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.3851
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.3011
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.3431
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.6115
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.061 15
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2249
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2249

165.3 Emission plots



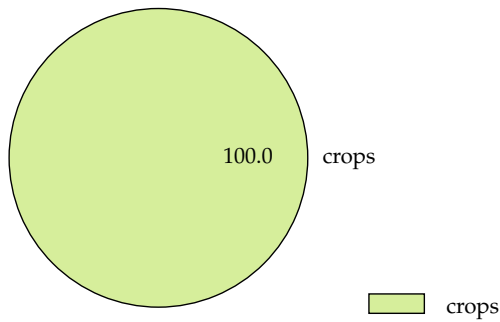
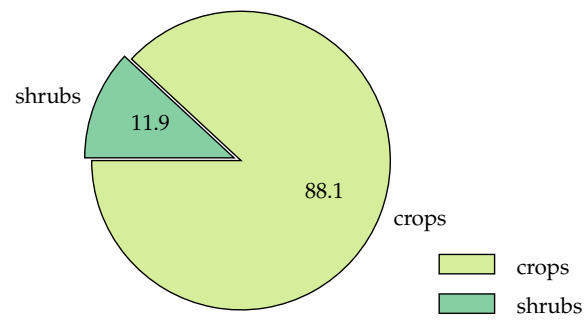
165.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	45.76
Retention coefficient	-	0.1443
Influent total N concentration	$\mu\text{g L}^{-1}$	22.10
Reservoir TN concentration	$\mu\text{g L}^{-1}$	18.93
Reservoir TP concentration	$\mu\text{g L}^{-1}$	39.91
Percentage of reservoir's surface area that is littoral	%	23.22
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.930
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.08
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.83
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	0.7132
Influent total N load	kgN yr^{-1}	1204
Influent total P load	kgP yr^{-1}	2492
Downstream TN concentration	mg L^{-1}	0.027 28

166 PweTha

166.1 Inputs

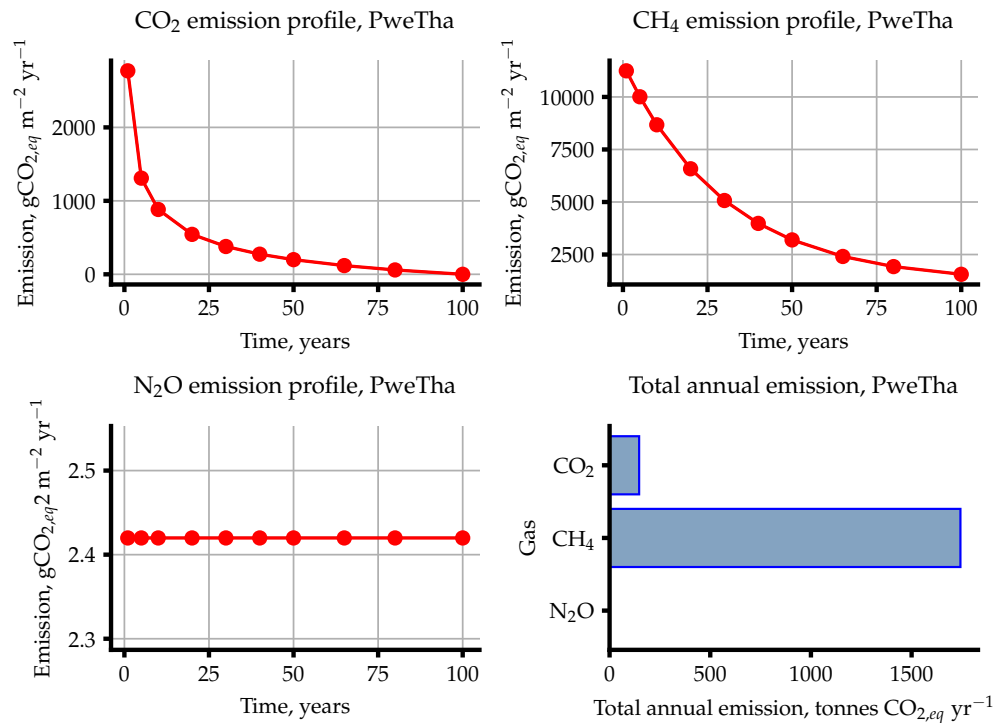
Input Name	Unit	Value(s)
Reservoir ID		9151
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.121394, LON: 95.245239
Monthly Temperatures	$^{\circ}\text{C}$	21.5, 24.1, 28.3, 31.6, 30.7, 28.3, 27.6, 27.6, 27.9, 27.8, 25.6, 22.2
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	134.0
Catchment area	km^2	30.63
Length of inundated river	km	1.349
Population	capita	2884
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.881, 0.119, 0.0, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	1025
Mean annual evapotranspiration	mm/year	1391
Soil wetness	mm over profile	137.0
Soil Olsen P content	kgP ha^{-1}	3.796
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	648 800
Reservoir area	km^2	0.4140
Maximum reservoir depth	m	4.000
Mean reservoir depth	m	1.600
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.006
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.754
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.358
Mean monthly wind speed	m s^{-1}	0.9500
Water intake depth below surface	m	N/A

Reservoir
Landcover CompositionCatchment
Landcover Composition

166.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1130
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	775.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	354.6
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	354.6
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	146.8
Total CO ₂ emission per lifetime	ktCO _{2,eq}	14.68
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	591.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	1162
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	2456
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	4209
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	1743
Total CH ₄ emission per lifetime	ktCO _{2,eq}	174.3
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.420
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.923
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.171
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.002
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1002
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	4564
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	4566

166.3 Emission plots



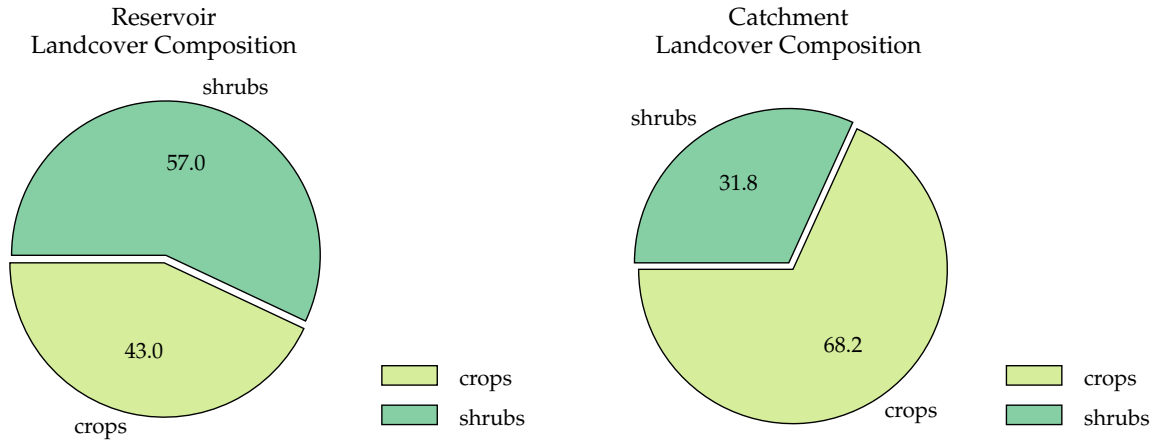
166.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	689.7
Retention coefficient	-	0.1124
Influent total N concentration	$\mu\text{g L}^{-1}$	639.5
Reservoir TN concentration	$\mu\text{g L}^{-1}$	566.6
Reservoir TP concentration	$\mu\text{g L}^{-1}$	618.4
Percentage of reservoir's surface area that is littoral	%	87.50
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.81
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.72
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	0.4830
Influent total N load	kgN yr^{-1}	2625
Influent total P load	kgP yr^{-1}	2831
Downstream TN concentration	mg L^{-1}	0.8108

167 Unknown21

167.1 Inputs

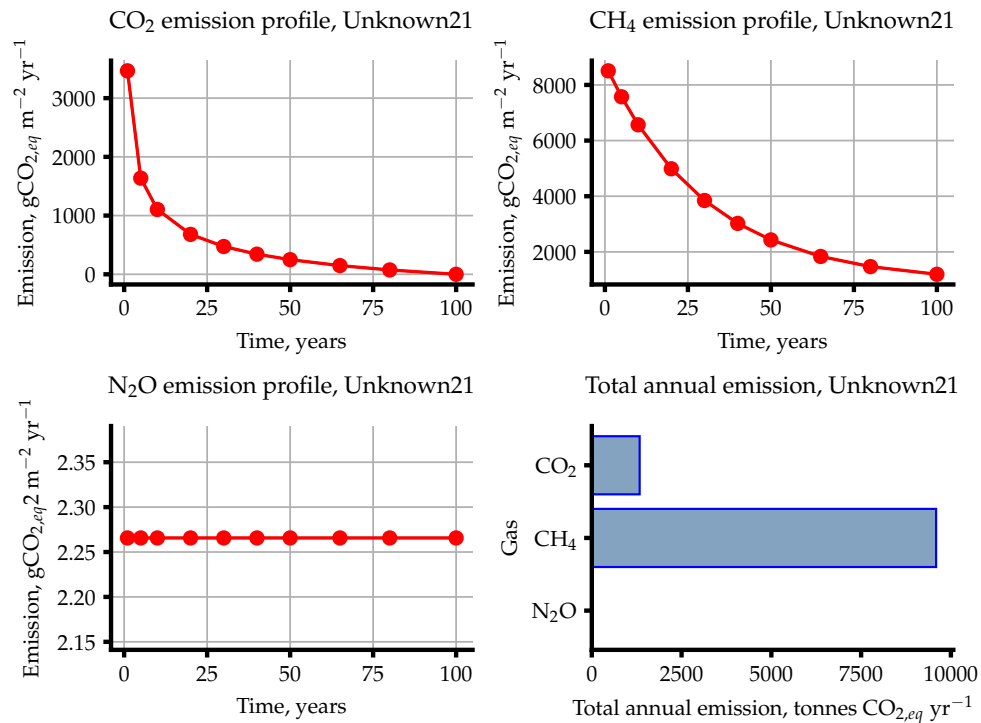
Input Name	Unit	Value(s)
Reservoir ID		9094
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.900531, LON: 95.039869
Monthly Temperatures	$^{\circ}\text{C}$	21.7, 24.1, 28.1, 31.4, 31.2, 30.0, 29.7, 29.2, 28.8, 27.7, 25.0, 21.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	121.0
Catchment area	km^2	86.82
Length of inundated river	km	3.656
Population	capita	14 670
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.682, 0.318, 0.0, 0.0
Mean catchment slope	$\%$	2.000
Mean annual precipitation	mm/year	790.0
Mean annual evapotranspiration	mm/year	1460
Soil wetness	mm over profile	24.00
Soil Olsen P content	kgP ha^{-1}	6.137
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	7 272 000
Reservoir area	km^2	3.004
Maximum reservoir depth	m	8.000
Mean reservoir depth	m	2.400
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.43, 0.57, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	3.634
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.200
Water intake depth below surface	m	N/A



167.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1414
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	970.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	443.6
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	443.6
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1333
Total CO ₂ emission per lifetime	ktCO _{2,eq}	133.3
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	554.2
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	894.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1743
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	3192
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	9588
Total CH ₄ emission per lifetime	ktCO _{2,eq}	958.8
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.266
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.320
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.793
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	6.806
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.6806
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3635
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3637

167.3 Emission plots



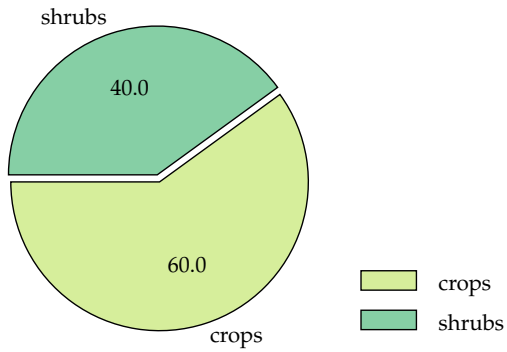
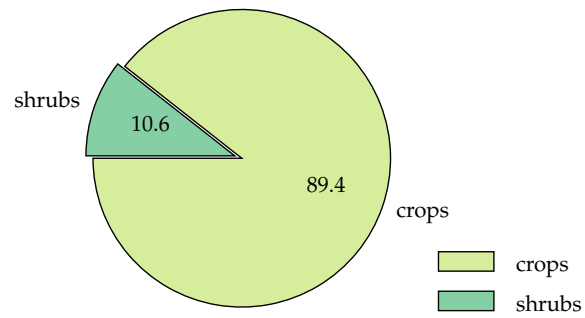
167.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1133
Retention coefficient	-	0.3567
Influent total N concentration	$\mu\text{g L}^{-1}$	397.9
Reservoir TN concentration	$\mu\text{g L}^{-1}$	258.5
Reservoir TP concentration	$\mu\text{g L}^{-1}$	750.7
Percentage of reservoir's surface area that is littoral	%	66.60
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.95
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.58
Water density at the surface of the reservoir	kg m^{-3}	995.5
Thermocline depth	m	0.9265
Influent total N load	kgN yr^{-1}	4180
Influent total P load	kgP yr^{-1}	11 900
Downstream TN concentration	mg L^{-1}	0.3721

168 Unknown22

168.1 Inputs

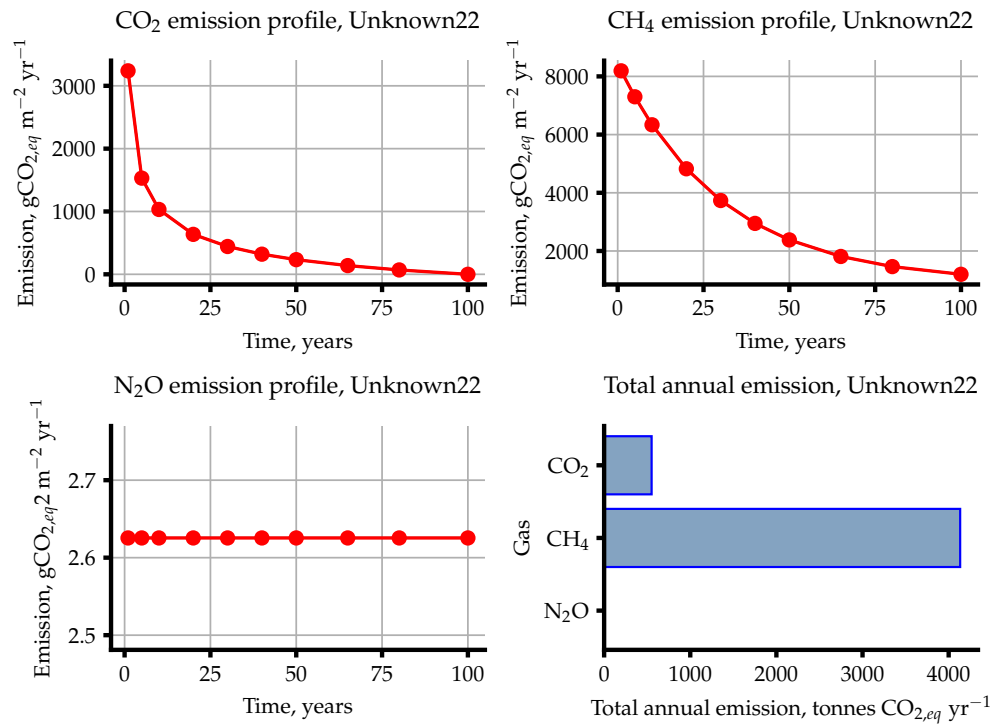
Input Name	Unit	Value(s)
Reservoir ID		9095
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.979445, LON: 95.065426
Monthly Temperatures	$^{\circ}\text{C}$	21.5, 24.0, 28.0, 31.4, 31.2, 30.0, 29.7, 29.2, 28.8, 27.6, 24.9, 21.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	128.0
Catchment area	km^2	33.05
Length of inundated river	km	1.678
Population	capita	5551
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.894, 0.106, 0.0, 0.0
Mean catchment slope	$\%$	2.000
Mean annual precipitation	mm/year	798.0
Mean annual evapotranspiration	mm/year	1457
Soil wetness	mm over profile	24.00
Soil Olsen P content	kgP ha^{-1}	6.529
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	3 002 000
Reservoir area	km^2	1.330
Maximum reservoir depth	m	7.000
Mean reservoir depth	m	2.300
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.6, 0.4, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	3.675
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.170
Water intake depth below surface	m	N/A

Reservoir
Landcover CompositionCatchment
Landcover Composition

168.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1322
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	906.9
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	414.6
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	414.6
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	551.4
Total CO ₂ emission per lifetime	ktCO _{2,eq}	55.14
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	557.6
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	912.1
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1638
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	3108
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	4134
Total CH ₄ emission per lifetime	ktCO _{2,eq}	413.4
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.625
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.508
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.067
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	3.492
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.3492
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3523
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3525

168.3 Emission plots



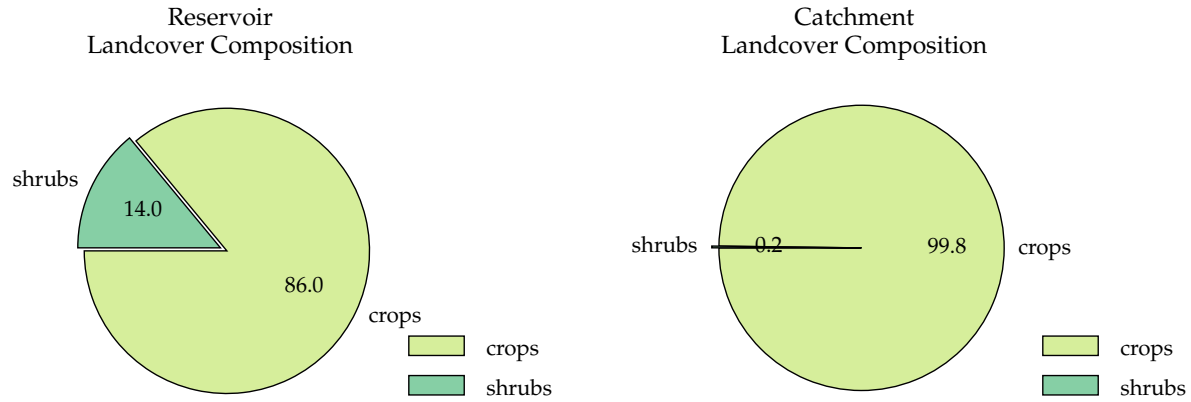
168.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1097
Retention coefficient	-	0.3624
Influent total N concentration	$\mu\text{g L}^{-1}$	495.2
Reservoir TN concentration	$\mu\text{g L}^{-1}$	319.9
Reservoir TP concentration	$\mu\text{g L}^{-1}$	723.8
Percentage of reservoir's surface area that is littoral	%	68.13
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.81
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.58
Water density at the surface of the reservoir	kg m^{-3}	995.5
Thermocline depth	m	0.7292
Influent total N load	kgN yr^{-1}	2095
Influent total P load	kgP yr^{-1}	4641
Downstream TN concentration	mg L^{-1}	0.4580

169 Let Pan Dam

169.1 Inputs

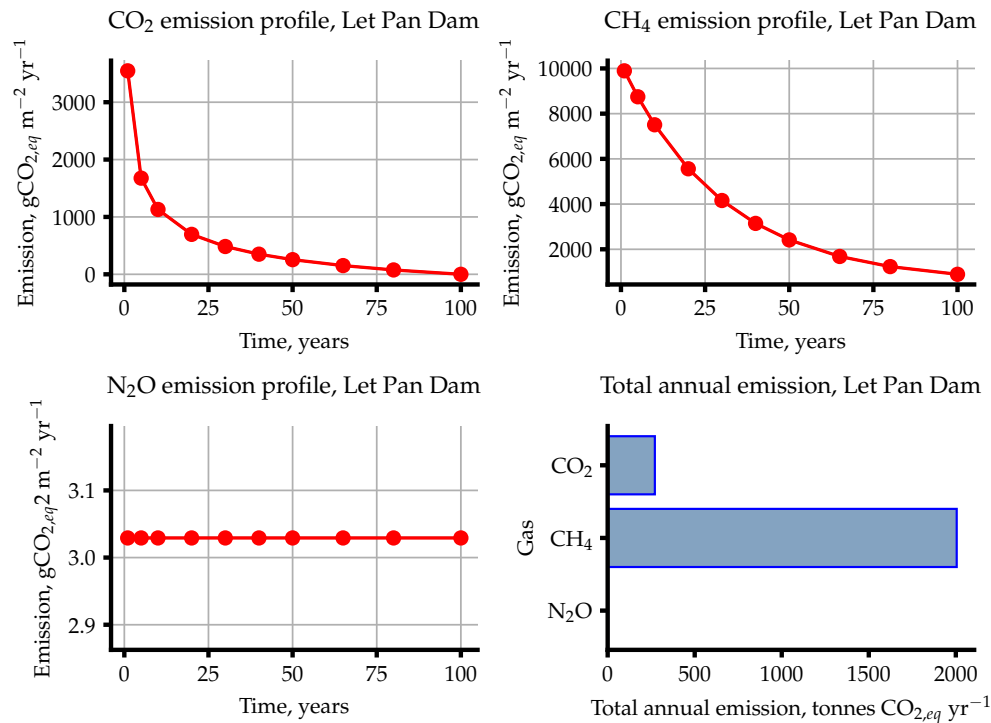
Input Name	Unit	Value(s)
Reservoir ID		9098
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.053307, LON: 95.400028
Monthly Temperatures	$^{\circ}\text{C}$	21.2, 24.0, 28.0, 31.5, 31.0, 30.0, 29.7, 29.1, 28.7, 27.4, 24.8, 21.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	147.0
Catchment area	km^2	45.15
Length of inundated river	km	1.621
Population	capita	17 680
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.998, 0.002, 0.0, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	821.0
Mean annual evapotranspiration	mm/year	1443
Soil wetness	mm over profile	24.00
Soil Olsen P content	kgP ha^{-1}	5.929
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	1 997 000
Reservoir area	km^2	0.5970
Maximum reservoir depth	m	11.00
Mean reservoir depth	m	3.300
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.86, 0.14, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.119
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.890
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.728
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.924
Mean monthly wind speed	m s^{-1}	1.210
Water intake depth below surface	m	N/A



169.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1447
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	993.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	454.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	454.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	271.1
Total CO ₂ emission per lifetime	ktCO _{2,eq}	27.11
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	490.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	524.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	2344
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	3359
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	2005
Total CH ₄ emission per lifetime	ktCO _{2,eq}	200.5
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.029
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.284
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.657
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.808
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1808
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3813
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3815

169.3 Emission plots



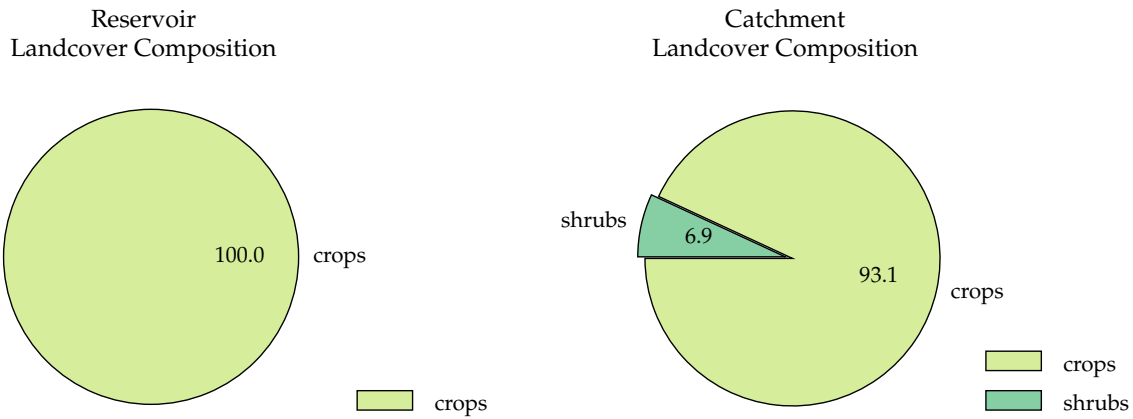
169.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1940
Retention coefficient	-	0.1942
Influent total N concentration	$\mu\text{g L}^{-1}$	376.4
Reservoir TN concentration	$\mu\text{g L}^{-1}$	303.9
Reservoir TP concentration	$\mu\text{g L}^{-1}$	1582
Percentage of reservoir's surface area that is littoral	%	52.43
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.890
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.62
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.55
Water density at the surface of the reservoir	kg m^{-3}	995.5
Thermocline depth	m	0.6094
Influent total N load	kgN yr^{-1}	2498
Influent total P load	kgP yr^{-1}	12 870
Downstream TN concentration	mg L^{-1}	0.4428

170 Unknown27

170.1 Inputs

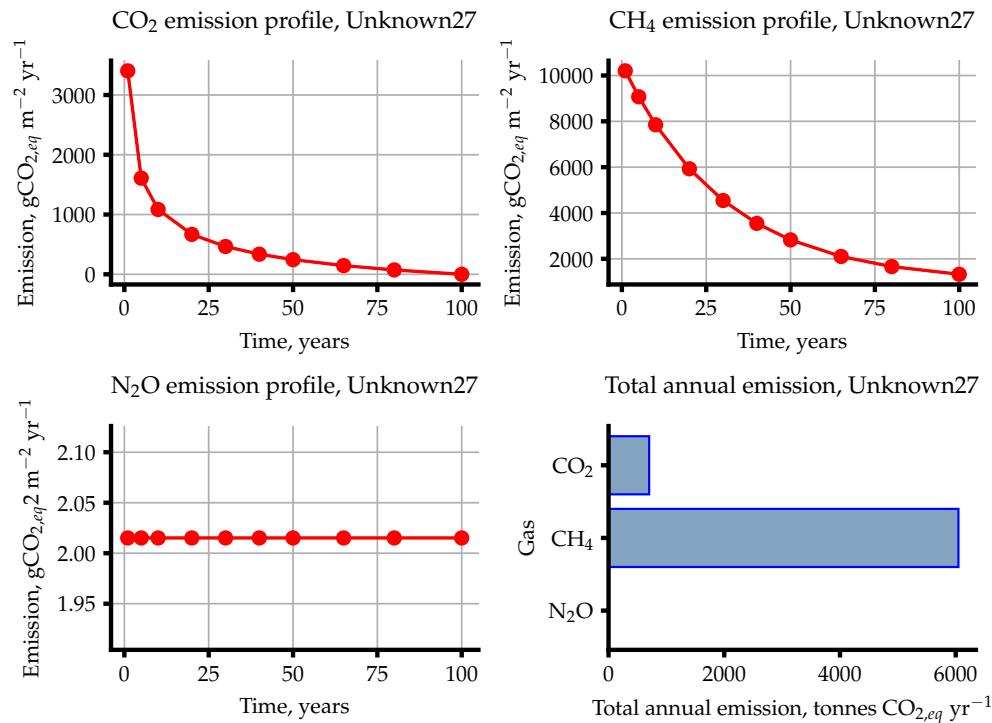
Input Name	Unit	Value(s)
Reservoir ID		9102
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.738858, LON: 95.847322
Monthly Temperatures	$^{\circ}\text{C}$	21.4, 24.2, 28.5, 31.7, 30.8, 29.9, 29.6, 29.0, 28.6, 27.7, 25.1, 21.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	107.0
Catchment area	km^2	92.35
Length of inundated river	km	2.377
Population	capita	12 010
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.931, 0.069, 0.0, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	848.0
Mean annual evapotranspiration	mm/year	1452
Soil wetness	mm over profile	51.00
Soil Olsen P content	kgP ha^{-1}	5.338
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	3 390 000
Reservoir area	km^2	1.611
Maximum reservoir depth	m	6.000
Mean reservoir depth	m	2.100
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.287
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.200
Water intake depth below surface	m	N/A



170.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1389
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	953.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	435.8
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	435.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	702.0
Total CO ₂ emission per lifetime	ktCO _{2,eq}	70.20
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	573.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	960.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	2219
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	3754
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	6047
Total CH ₄ emission per lifetime	ktCO _{2,eq}	604.7
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.015
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.489
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.752
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	3.246
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.3246
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	4189
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	4191

170.3 Emission plots



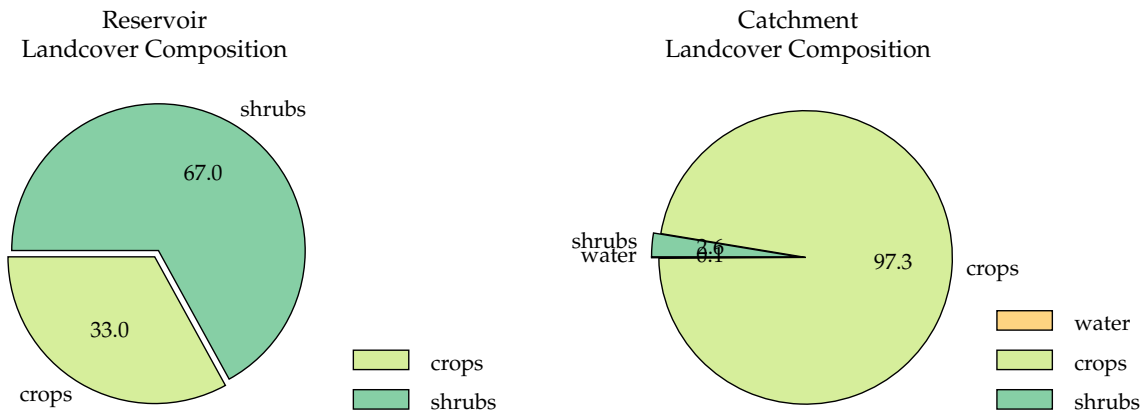
170.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1024
Retention coefficient	-	0.2155
Influent total N concentration	$\mu\text{g L}^{-1}$	398.7
Reservoir TN concentration	$\mu\text{g L}^{-1}$	312.3
Reservoir TP concentration	$\mu\text{g L}^{-1}$	815.0
Percentage of reservoir's surface area that is littoral	%	72.40
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.75
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.50
Water density at the surface of the reservoir	kg m^{-3}	995.5
Thermocline depth	m	0.7863
Influent total N load	kgN yr^{-1}	3939
Influent total P load	kgP yr^{-1}	10 120
Downstream TN concentration	mg L^{-1}	0.4582

171 Taung Yay Dam

171.1 Inputs

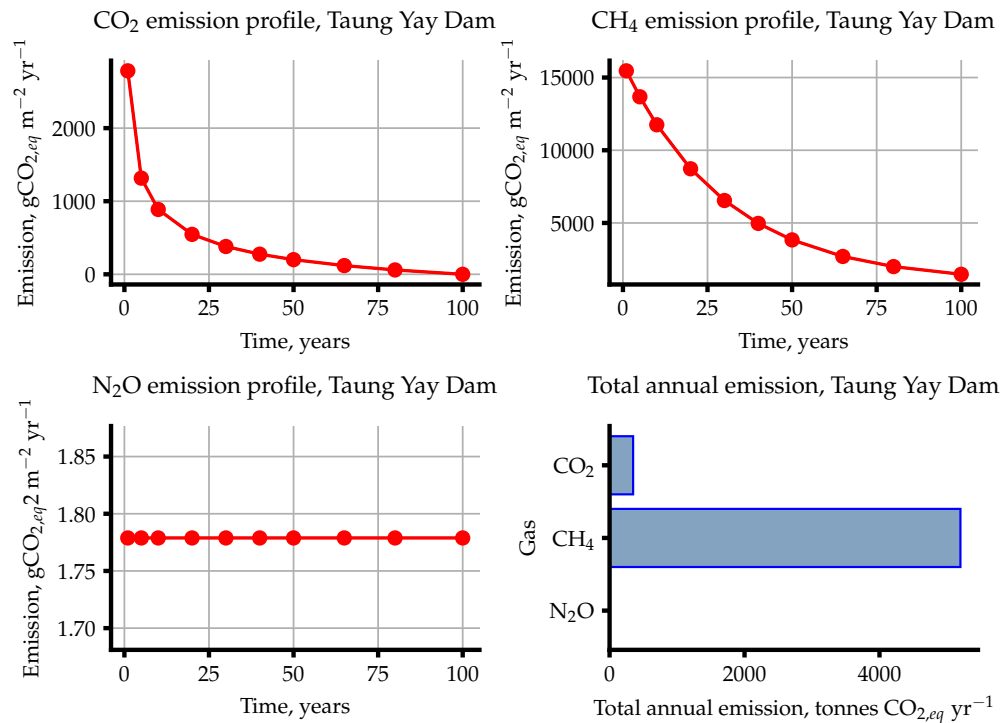
Input Name	Unit	Value(s)
Reservoir ID		9111
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.775317, LON: 95.341474
Monthly Temperatures	$^{\circ}\text{C}$	21.4, 23.8, 27.9, 31.2, 30.2, 28.3, 27.9, 27.6, 27.4, 26.8, 24.4, 21.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	141.0
Catchment area	km^2	474.0
Length of inundated river	km	1.388
Population	capita	48 920
Area fractions	-	0.0, 0.0, 0.0, 0.001, 0.0, 0.973, 0.026, 0.0, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	835.0
Mean annual evapotranspiration	mm/year	1450
Soil wetness	mm over profile	30.00
Soil Olsen P content	kgP ha^{-1}	4.548
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	2 681 000
Reservoir area	km^2	0.9790
Maximum reservoir depth	m	8.000
Mean reservoir depth	m	2.700
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.33, 0.67, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.523
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.250
Water intake depth below surface	m	N/A



171.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1136
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	779.6
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	356.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	356.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	348.9
Total CO ₂ emission per lifetime	ktCO _{2,eq}	34.89
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	477.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	895.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	3939
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	5311
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	5199
Total CH ₄ emission per lifetime	ktCO _{2,eq}	519.9
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.779
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.758
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.769
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.741
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1741
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	5667
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	5669

171.3 Emission plots



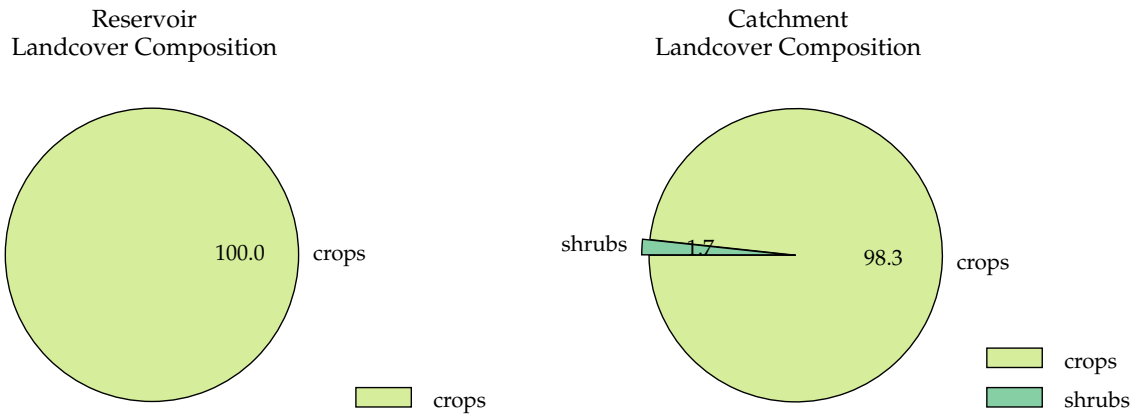
171.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	598.8
Retention coefficient	-	0.031 14
Influent total N concentration	$\mu\text{g L}^{-1}$	327.8
Reservoir TN concentration	$\mu\text{g L}^{-1}$	318.1
Reservoir TP concentration	$\mu\text{g L}^{-1}$	581.1
Percentage of reservoir's surface area that is littoral	%	60.25
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.75
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.40
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	0.8128
Influent total N load	kgN yr^{-1}	21 910
Influent total P load	kgP yr^{-1}	40 020
Downstream TN concentration	mg L^{-1}	0.3612

172 TwinMa

172.1 Inputs

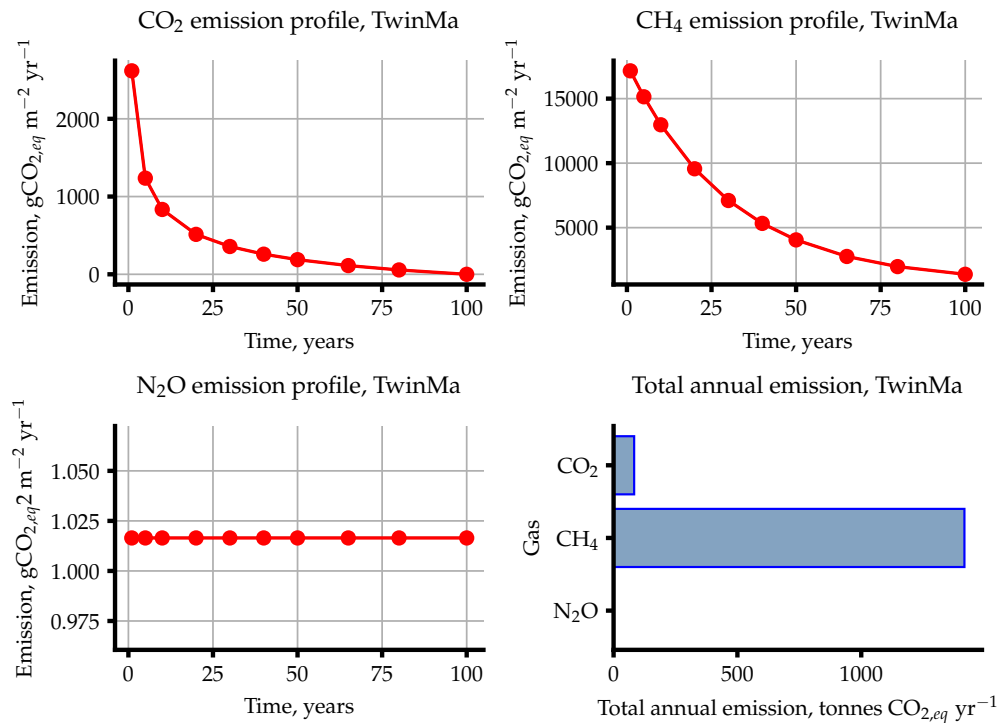
Input Name	Unit	Value(s)
Reservoir ID		9154
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.435892, LON: 94.789833
Monthly Temperatures	$^{\circ}\text{C}$	21.2, 23.7, 27.6, 30.8, 30.4, 28.8, 28.5, 28.2, 27.7, 26.8, 24.1, 21.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	110.0
Catchment area	km^2	166.0
Length of inundated river	km	0.5320
Population	capita	16 800
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.983, 0.017, 0.0, 0.0
Mean catchment slope	$\%$	2.000
Mean annual precipitation	mm/year	767.0
Mean annual evapotranspiration	mm/year	1424
Soil wetness	mm over profile	30.00
Soil Olsen P content	kgP ha^{-1}	6.491
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	248 300
Reservoir area	km^2	0.2480
Maximum reservoir depth	m	5.000
Mean reservoir depth	m	1.000
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	3.906
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.760
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.438
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.956
Mean monthly wind speed	m s^{-1}	1.190
Water intake depth below surface	m	N/A



172.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1068
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	732.9
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	335.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	335.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	83.09
Total CO ₂ emission per lifetime	ktCO _{2,eq}	8.309
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	600.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	737.6
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	4374
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	5712
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	1417
Total CH ₄ emission per lifetime	ktCO _{2,eq}	141.7
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.016
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.130
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.073
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.2521
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.025 21
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	6047
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	6048

172.3 Emission plots



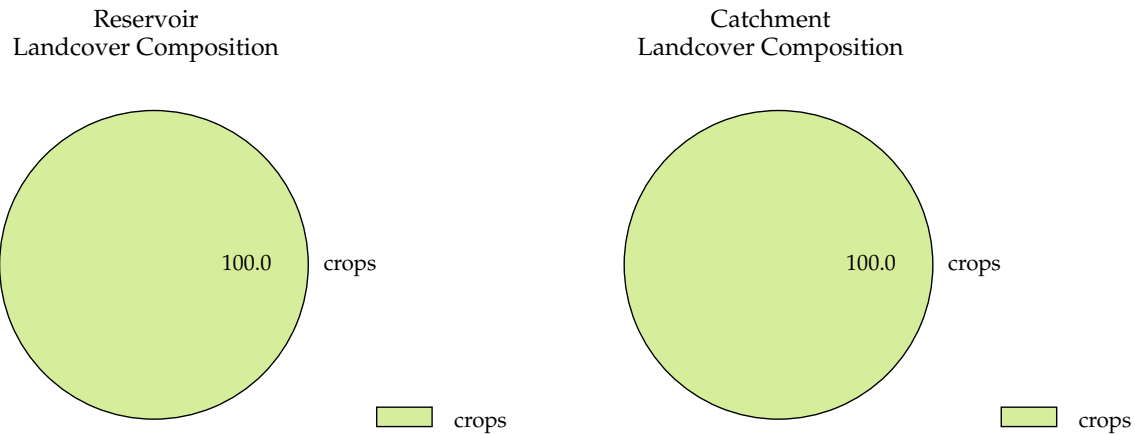
172.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	794.1
Retention coefficient	-	0.010 78
Influent total N concentration	$\mu\text{g L}^{-1}$	575.6
Reservoir TN concentration	$\mu\text{g L}^{-1}$	569.4
Reservoir TP concentration	$\mu\text{g L}^{-1}$	786.5
Percentage of reservoir's surface area that is littoral	%	97.44
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.760
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.12
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.55
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.63
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	0.5253
Influent total N load	kgN yr^{-1}	10 510
Influent total P load	kgP yr^{-1}	14 500
Downstream TN concentration	mg L^{-1}	0.5719

173 ThitKyiTaw

173.1 Inputs

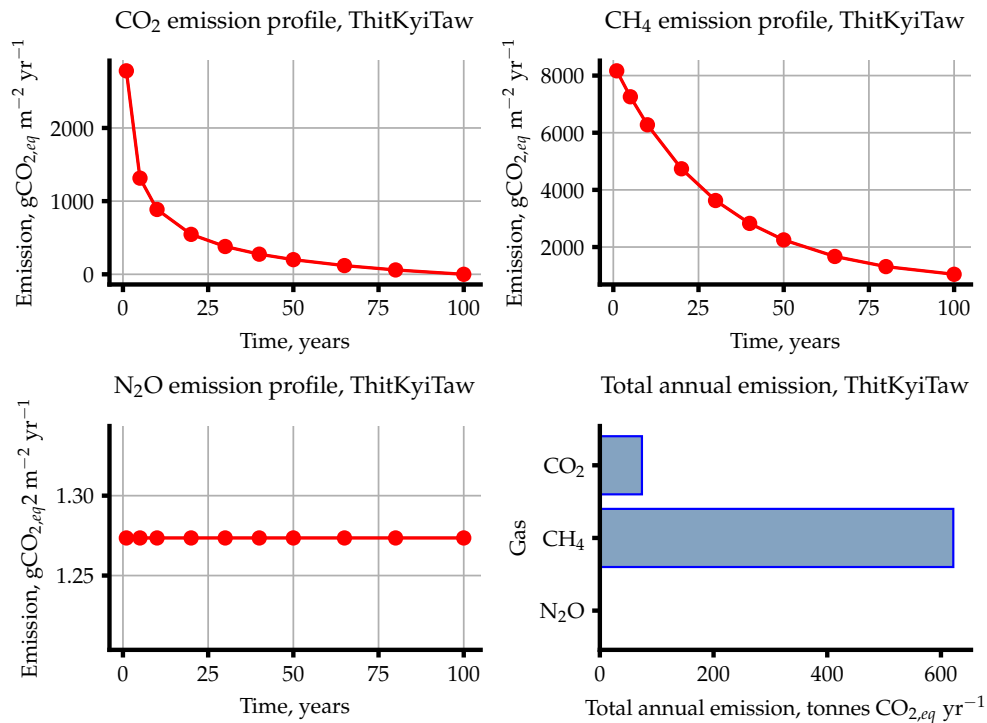
Input Name	Unit	Value(s)
Reservoir ID		9155
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.522069, LON: 94.877575
Monthly Temperatures	$^{\circ}\text{C}$	21.0, 23.5, 27.4, 30.7, 30.1, 28.7, 28.5, 28.1, 27.7, 26.7, 24.0, 21.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	102.0
Catchment area	km^2	11.58
Length of inundated river	km	0.2530
Population	capita	1127
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	749.0
Mean annual evapotranspiration	mm/year	1428
Soil wetness	mm over profile	29.00
Soil Olsen P content	kgP ha^{-1}	7.277
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	223 300
Reservoir area	km^2	0.2080
Maximum reservoir depth	m	3.000
Mean reservoir depth	m	1.100
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.135
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.760
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.438
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.956
Mean monthly wind speed	m s^{-1}	1.210
Water intake depth below surface	m	N/A



173.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1135
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	778.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	356.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	356.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	74.05
Total CO ₂ emission per lifetime	ktCO _{2,eq}	7.405
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	599.6
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	754.1
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1635
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2989
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	621.7
Total CH ₄ emission per lifetime	ktCO _{2,eq}	62.17
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.274
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.003
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.138
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.2649
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.026 49
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3345
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3346

173.3 Emission plots



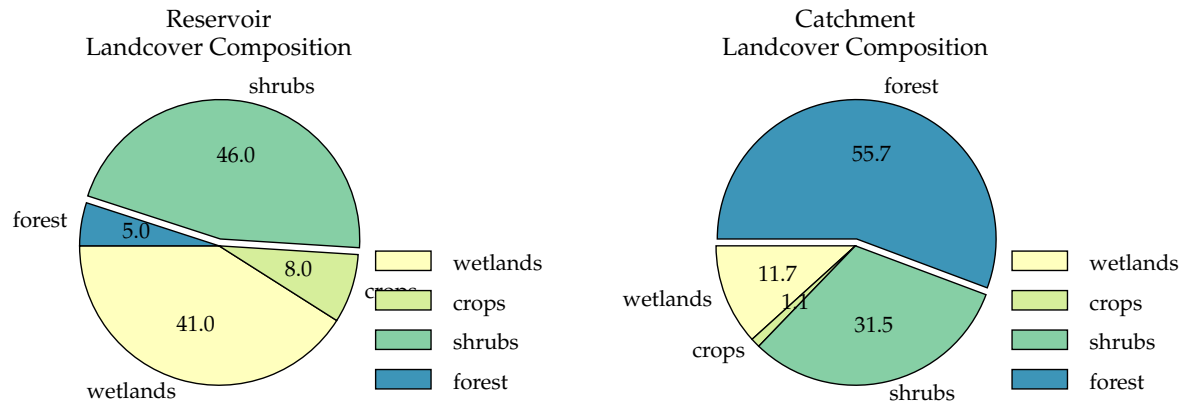
173.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	996.9
Retention coefficient	-	0.1315
Influent total N concentration	$\mu\text{g L}^{-1}$	491.5
Reservoir TN concentration	$\mu\text{g L}^{-1}$	426.9
Reservoir TP concentration	$\mu\text{g L}^{-1}$	877.1
Percentage of reservoir's surface area that is littoral	%	100.0
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.760
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.12
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.49
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.50
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	0.5151
Influent total N load	kgN yr^{-1}	580.7
Influent total P load	kgP yr^{-1}	1178
Downstream TN concentration	mg L^{-1}	0.6135

174 Mahuyar Dam

174.1 Inputs

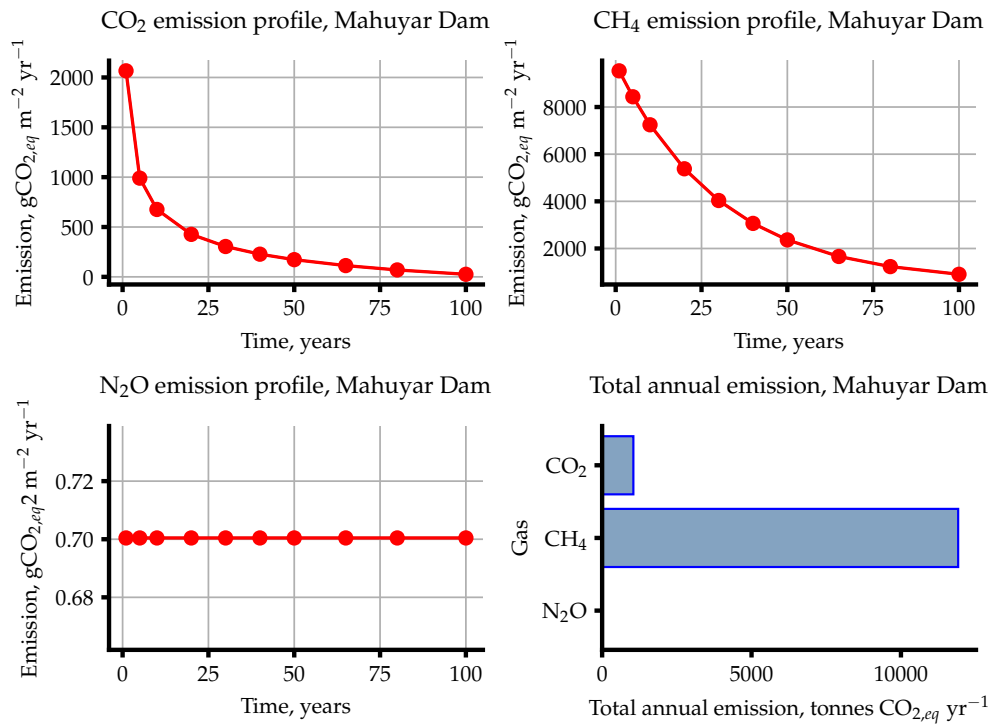
Input Name	Unit	Value(s)
Reservoir ID		9024
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.491424, LON: 96.189663
Monthly Temperatures	$^{\circ}\text{C}$	22.5, 24.2, 27.2, 29.8, 29.2, 26.8, 26.3, 26.4, 26.9, 27.3, 25.9, 23.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1861
Catchment area	km^2	49.33
Length of inundated river	km	5.182
Population	capita	9105
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.117, 0.011, 0.315, 0.557, 0.0
Mean catchment slope	$\%$	8.000
Mean annual precipitation	mm/year	2856
Mean annual evapotranspiration	mm/year	1336
Soil wetness	mm over profile	371.0
Soil Olsen P content	kgP ha^{-1}	19.05
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	11 190 000
Reservoir area	km^2	3.644
Maximum reservoir depth	m	15.00
Mean reservoir depth	m	3.100
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.41, 0.08, 0.46, 0.05, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.317
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.970
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.462
Mean monthly wind speed	m s^{-1}	0.9200
Water intake depth below surface	m	N/A



174.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	832.8
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	571.5
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-25.67
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	261.3
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	286.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1046
Total CO ₂ emission per lifetime	ktCO _{2,eq}	104.6
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	442.6
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	551.6
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	2275
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	3270
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	11 910
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1191
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.7004
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.5615
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.631
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	2.552
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.2552
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3557
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3557

174.3 Emission plots



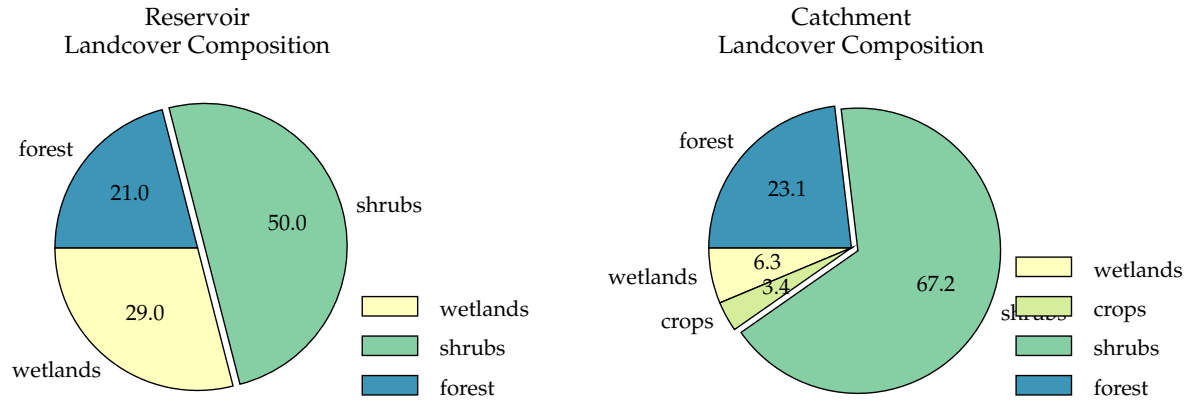
174.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	73.03
Retention coefficient	-	0.088 94
Influent total N concentration	$\mu\text{g L}^{-1}$	94.48
Reservoir TN concentration	$\mu\text{g L}^{-1}$	85.58
Reservoir TP concentration	$\mu\text{g L}^{-1}$	71.01
Percentage of reservoir's surface area that is littoral	%	57.54
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.47
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.38
Water density at the surface of the reservoir	kg m^{-3}	996.2
Thermocline depth	m	1.056
Influent total N load	kgN yr^{-1}	8673
Influent total P load	kgP yr^{-1}	6704
Downstream TN concentration	mg L^{-1}	0.1219

175 Paung Laung Dam

175.1 Inputs

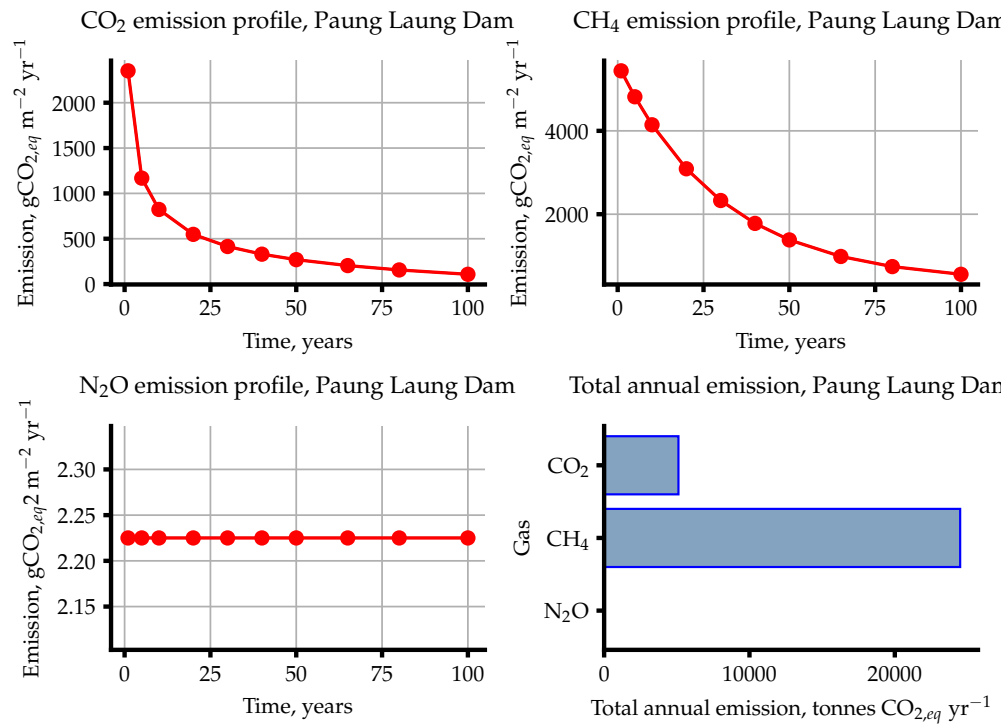
Input Name	Unit	Value(s)
Reservoir ID		9027
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.508499, LON: 96.095871
Monthly Temperatures	$^{\circ}\text{C}$	22.5, 24.2, 27.2, 29.8, 29.1, 26.8, 26.3, 26.3, 26.9, 27.3, 25.9, 23.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1752
Catchment area	km^2	88.83
Length of inundated river	km	7.062
Population	capita	15 160
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.063, 0.034, 0.671, 0.231, 0.0
Mean catchment slope	$\%$	6.000
Mean annual precipitation	mm/year	2753
Mean annual evapotranspiration	mm/year	1336
Soil wetness	mm over profile	397.0
Soil Olsen P content	kgP ha^{-1}	19.50
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	69 390 000
Reservoir area	km^2	12.94
Maximum reservoir depth	m	18.00
Mean reservoir depth	m	5.400
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.29, 0.0, 0.5, 0.21, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.326
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.970
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.462
Mean monthly wind speed	m s^{-1}	0.9000
Water intake depth below surface	m	N/A



175.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	915.6
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	628.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-107.8
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	287.2
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	395.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	5113
Total CO ₂ emission per lifetime	ktCO _{2,eq}	511.3
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	349.9
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	358.2
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1184
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1892
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	24 500
Total CH ₄ emission per lifetime	ktCO _{2,eq}	2450
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.225
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.554
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.889
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	28.80
Total N ₂ O emission per lifetime	ktCO _{2,eq}	2.880
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2288
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2289

175.3 Emission plots



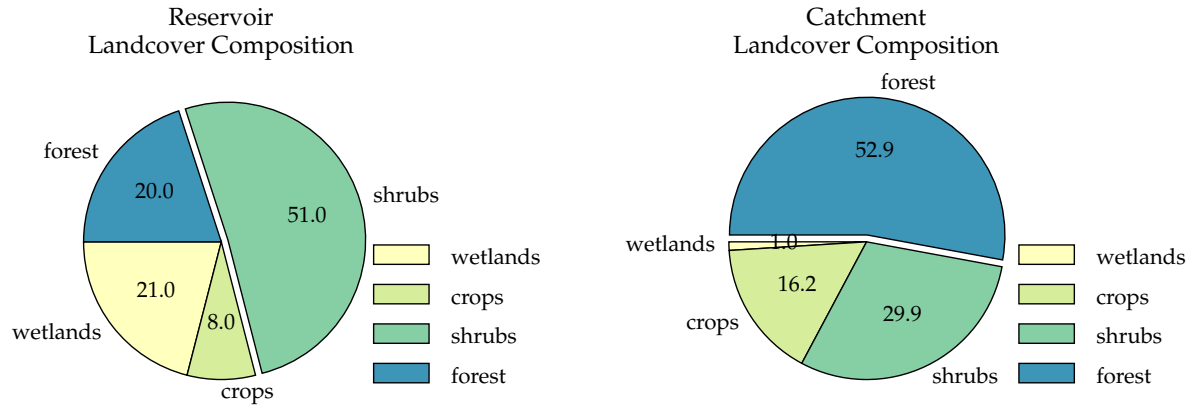
175.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	76.38
Retention coefficient	-	0.2632
Influent total N concentration	$\mu\text{g L}^{-1}$	174.1
Reservoir TN concentration	$\mu\text{g L}^{-1}$	129.1
Reservoir TP concentration	$\mu\text{g L}^{-1}$	64.63
Percentage of reservoir's surface area that is littoral	%	34.65
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.47
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.35
Water density at the surface of the reservoir	kg m^{-3}	996.2
Thermocline depth	m	1.424
Influent total N load	kgN yr^{-1}	27 100
Influent total P load	kgP yr^{-1}	11 890
Downstream TN concentration	mg L^{-1}	0.1883

176 Pa Del Dam

176.1 Inputs

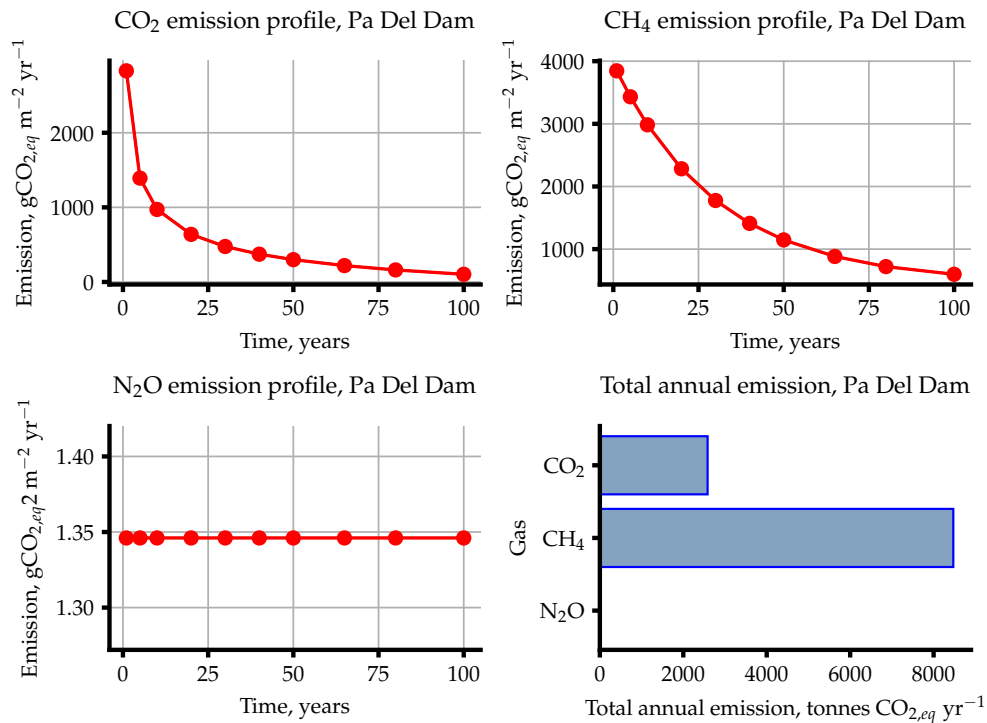
Input Name	Unit	Value(s)
Reservoir ID		9042
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.212484, LON: 95.610146
Monthly Temperatures	$^{\circ}\text{C}$	21.3, 23.9, 28.1, 31.5, 30.2, 27.7, 27.1, 27.0, 27.4, 27.3, 25.1, 21.8
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	81.00
Catchment area	km^2	168.2
Length of inundated river	km	6.460
Population	capita	13 000
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.01, 0.162, 0.299, 0.529, 0.0
Mean catchment slope	$\%$	9.000
Mean annual precipitation	mm/year	999.0
Mean annual evapotranspiration	mm/year	1369
Soil wetness	mm over profile	173.0
Soil Olsen P content	kgP ha^{-1}	3.805
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	37 340 000
Reservoir area	km^2	5.716
Maximum reservoir depth	m	23.00
Mean reservoir depth	m	6.500
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.21, 0.08, 0.51, 0.2, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.163
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.754
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.358
Mean monthly wind speed	m s^{-1}	1.000
Water intake depth below surface	m	N/A



176.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1113
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	763.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-102.7
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	349.2
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	451.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2583
Total CO ₂ emission per lifetime	ktCO _{2,eq}	258.3
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	345.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	465.1
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	672.0
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1482
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	8472
Total CH ₄ emission per lifetime	ktCO _{2,eq}	847.2
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.346
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.3129
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.8295
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	7.694
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.7694
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1934
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1935

176.3 Emission plots



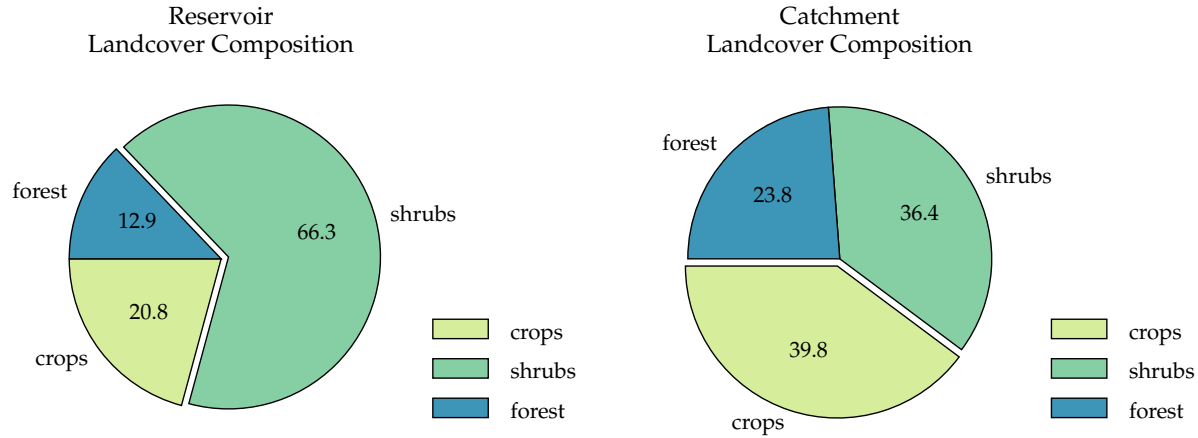
176.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	836.9
Retention coefficient	-	0.6870
Influent total N concentration	$\mu\text{g L}^{-1}$	123.1
Reservoir TN concentration	$\mu\text{g L}^{-1}$	38.65
Reservoir TP concentration	$\mu\text{g L}^{-1}$	268.6
Percentage of reservoir's surface area that is littoral	%	29.87
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.68
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.38
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	1.007
Influent total N load	kgN yr^{-1}	1677
Influent total P load	kgP yr^{-1}	11 400
Downstream TN concentration	mg L^{-1}	0.028 15

177 Thae Phyu Dam

177.1 Inputs

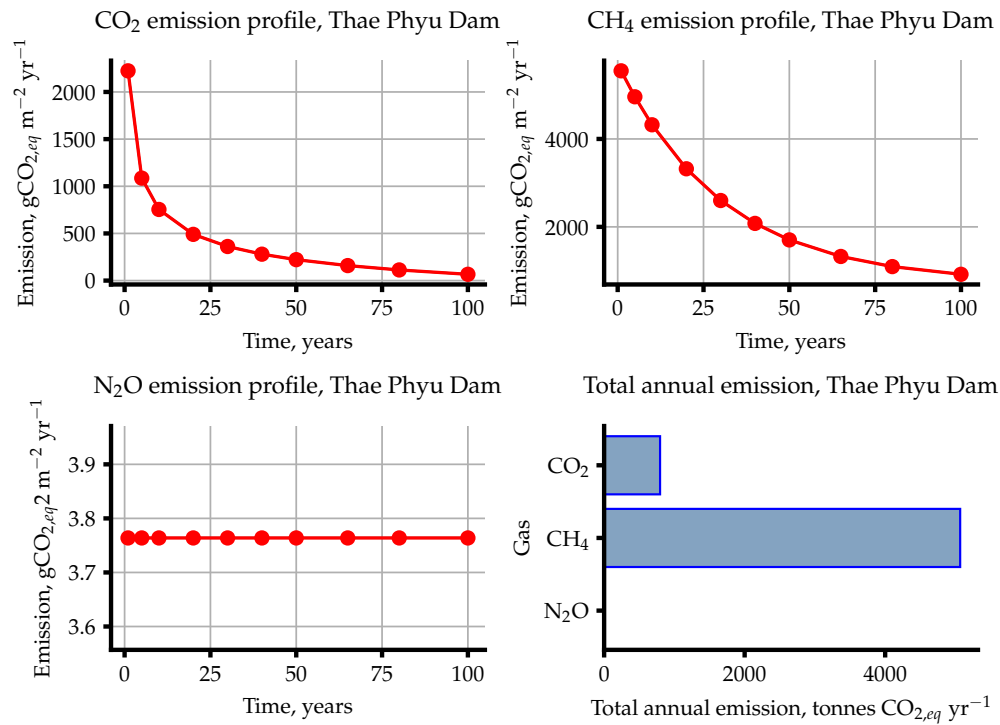
Input Name	Unit	Value(s)
Reservoir ID		9048
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.556596, LON: 96.101268
Monthly Temperatures	$^{\circ}\text{C}$	21.9, 24.3, 28.2, 31.1, 29.9, 27.7, 27.2, 27.0, 27.5, 27.4, 25.4, 22.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	269.0
Catchment area	km^2	26.50
Length of inundated river	km	3.965
Population	capita	1269
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.398, 0.364, 0.238, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	1280
Mean annual evapotranspiration	mm/year	1411
Soil wetness	mm over profile	218.0
Soil Olsen P content	kgP ha^{-1}	3.979
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	7 846 000
Reservoir area	km^2	2.322
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	3.400
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.21, 0.67, 0.13, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.420
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.150
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.672
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.426
Mean monthly wind speed	m s^{-1}	1.080
Water intake depth below surface	m	N/A



177.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	880.3
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	604.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-66.73
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	276.2
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	342.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	796.2
Total CO ₂ emission per lifetime	ktCO _{2,eq}	79.62
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	438.3
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	731.2
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1013
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2182
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	5068
Total CH ₄ emission per lifetime	ktCO _{2,eq}	506.8
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.764
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.603
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.683
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	8.740
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.8740
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2525
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2528

177.3 Emission plots



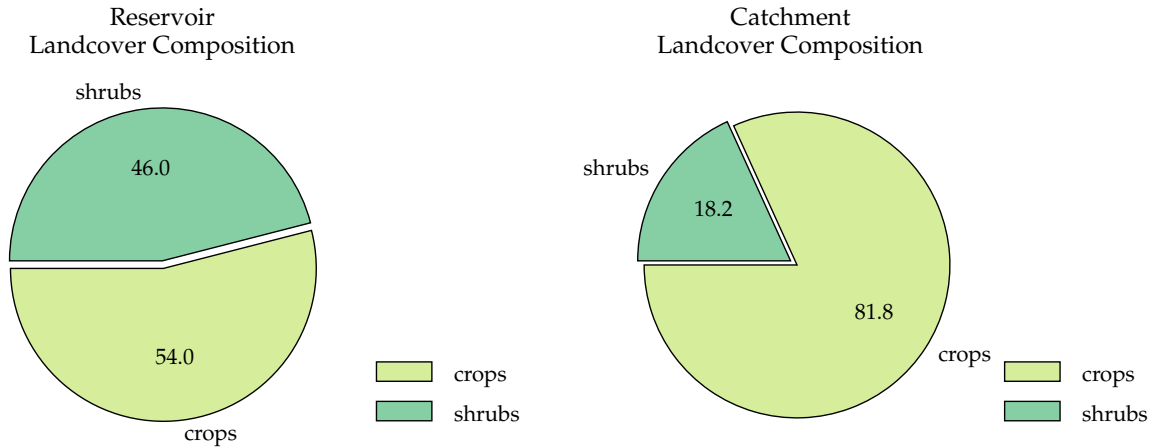
177.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	216.3
Retention coefficient	-	0.4686
Influent total N concentration	$\mu\text{g L}^{-1}$	495.2
Reservoir TN concentration	$\mu\text{g L}^{-1}$	268.3
Reservoir TP concentration	$\mu\text{g L}^{-1}$	121.3
Percentage of reservoir's surface area that is littoral	%	49.96
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.150
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.80
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.08
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.23
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	0.9218
Influent total N load	kgN yr^{-1}	3530
Influent total P load	kgP yr^{-1}	1542
Downstream TN concentration	mg L^{-1}	0.3518

178 Unknown6

178.1 Inputs

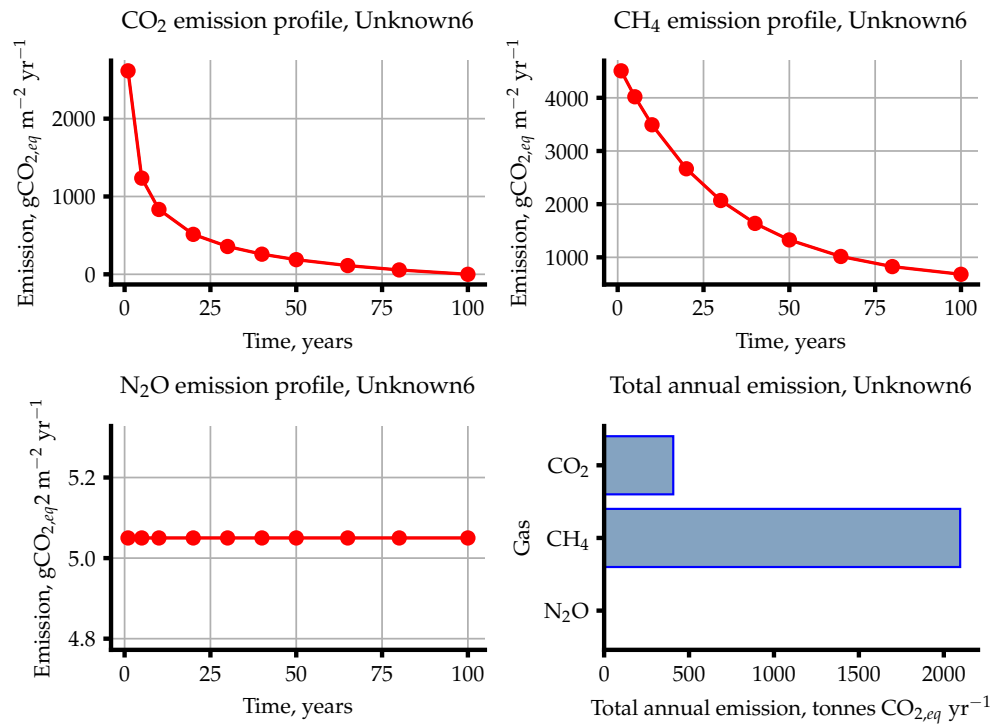
Input Name	Unit	Value(s)
Reservoir ID		9058
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.274629, LON: 96.077679
Monthly Temperatures	$^{\circ}\text{C}$	21.4, 23.8, 27.9, 30.7, 29.6, 27.8, 27.2, 27.0, 27.3, 26.9, 24.7, 21.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	114.0
Catchment area	km^2	50.93
Length of inundated river	km	2.566
Population	capita	4882
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.818, 0.182, 0.0, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	1008
Mean annual evapotranspiration	mm/year	1444
Soil wetness	mm over profile	112.0
Soil Olsen P content	kgP ha^{-1}	3.319
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	6 168 000
Reservoir area	km^2	1.216
Maximum reservoir depth	m	14.00
Mean reservoir depth	m	5.100
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.54, 0.46, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.183
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.874
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.244
Mean monthly wind speed	m s^{-1}	1.180
Water intake depth below surface	m	N/A



178.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1067
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	732.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	334.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	334.7
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	407.0
Total CO ₂ emission per lifetime	ktCO _{2,eq}	40.70
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	357.2
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	524.0
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	842.8
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1724
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	2096
Total CH ₄ emission per lifetime	ktCO _{2,eq}	209.6
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	5.050
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.205
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.627
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	6.141
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.6141
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2059
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2062

178.3 Emission plots



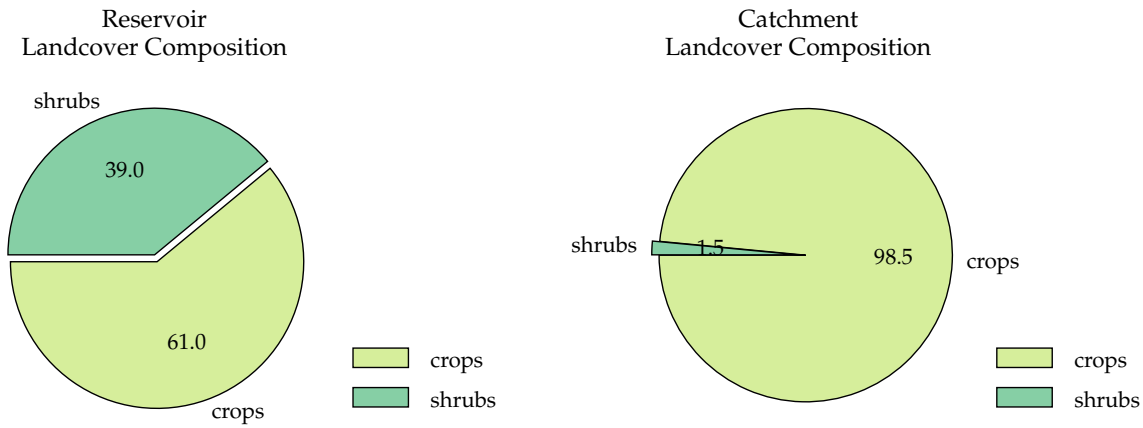
178.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	796.7
Retention coefficient	-	0.4597
Influent total N concentration	$\mu\text{g L}^{-1}$	439.3
Reservoir TN concentration	$\mu\text{g L}^{-1}$	239.1
Reservoir TP concentration	$\mu\text{g L}^{-1}$	438.2
Percentage of reservoir's surface area that is littoral	%	34.35
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.75
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.00
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	0.8506
Influent total N load	kgN yr^{-1}	2551
Influent total P load	kgP yr^{-1}	4626
Downstream TN concentration	mg L^{-1}	0.3215

179 Unknown10

179.1 Inputs

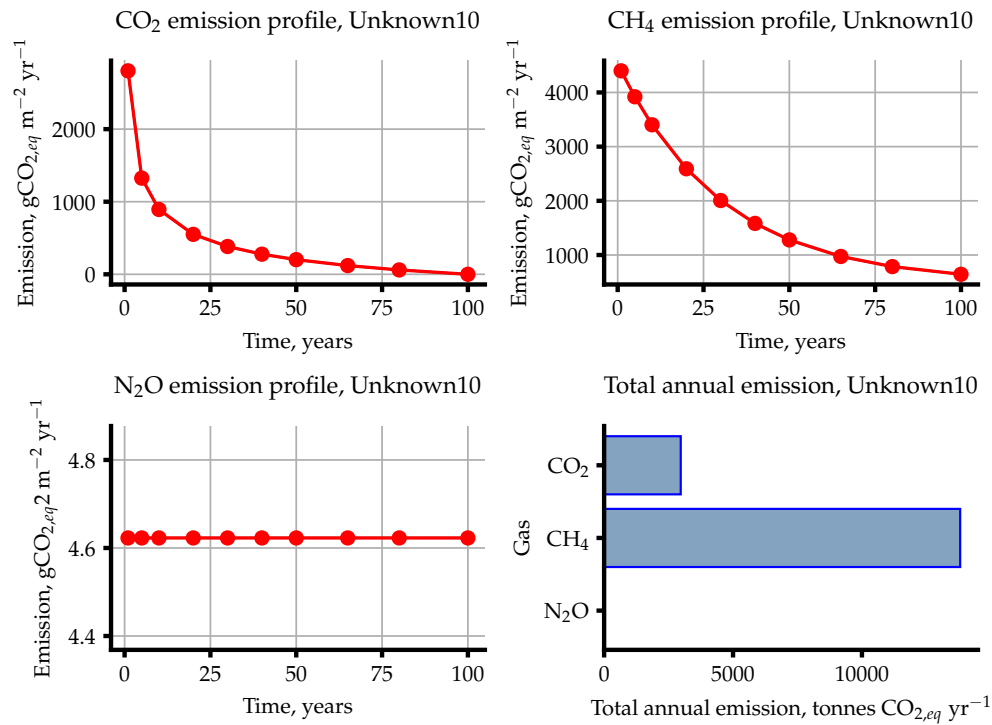
Input Name	Unit	Value(s)
Reservoir ID		9066
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.703356, LON: 95.463418
Monthly Temperatures	$^{\circ}\text{C}$	21.4, 23.7, 27.8, 31.0, 30.1, 28.2, 27.8, 27.5, 27.4, 26.9, 24.5, 21.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	149.0
Catchment area	km^2	244.3
Length of inundated river	km	5.771
Population	capita	24 300
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.985, 0.015, 0.0, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	851.0
Mean annual evapotranspiration	mm/year	1448
Soil wetness	mm over profile	31.00
Soil Olsen P content	kgP ha^{-1}	4.355
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	54 360 000
Reservoir area	km^2	8.280
Maximum reservoir depth	m	24.00
Mean reservoir depth	m	6.600
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.61, 0.39, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.007
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.240
Water intake depth below surface	m	N/A



179.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1144
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	785.0
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	358.8
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	358.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2971
Total CO ₂ emission per lifetime	ktCO _{2,eq}	297.1
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	341.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	489.9
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	836.1
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1668
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	13 810
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1381
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	4.623
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.545
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.084
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	38.28
Total N ₂ O emission per lifetime	ktCO _{2,eq}	3.828
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2027
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2030

179.3 Emission plots



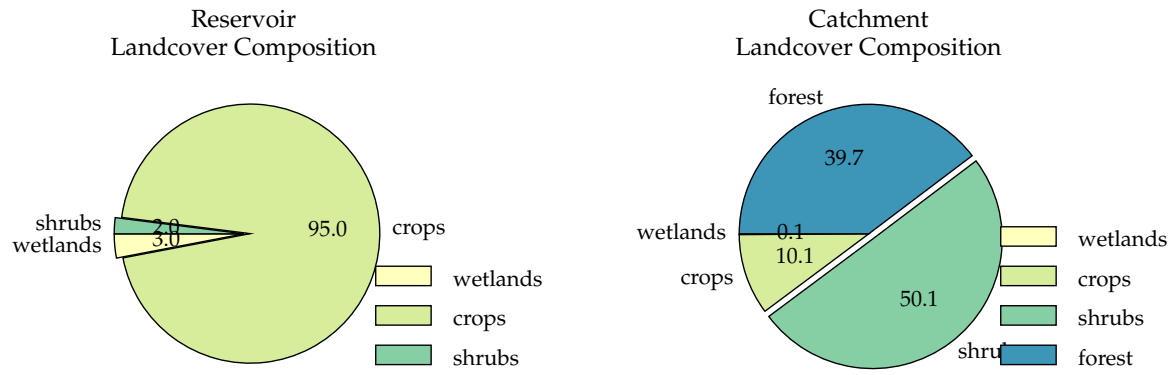
179.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	566.7
Retention coefficient	-	0.5447
Influent total N concentration	$\mu\text{g L}^{-1}$	329.9
Reservoir TN concentration	$\mu\text{g L}^{-1}$	152.3
Reservoir TP concentration	$\mu\text{g L}^{-1}$	265.1
Percentage of reservoir's surface area that is littoral	%	29.67
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.68
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.28
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	1.386
Influent total N load	kgN yr^{-1}	12 010
Influent total P load	kgP yr^{-1}	20 630
Downstream TN concentration	mg L^{-1}	0.1770

180 Ma Mya

180.1 Inputs

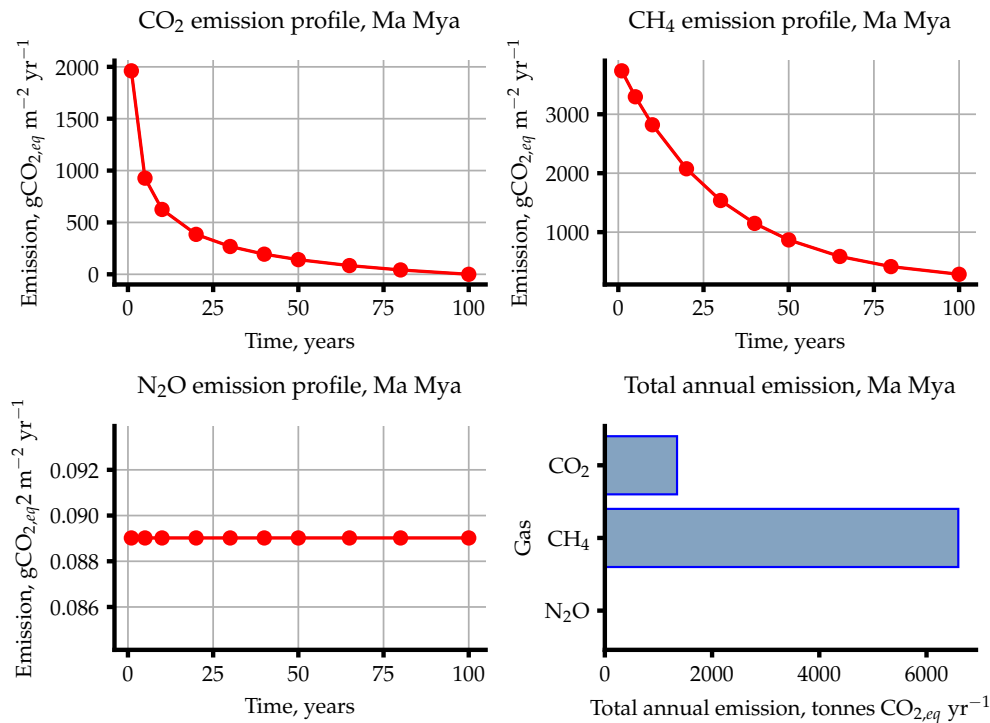
Input Name	Unit	Value(s)
Reservoir ID		9090
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 18.102443, LON: 95.07944
Monthly Temperatures	$^{\circ}\text{C}$	22.3, 24.6, 27.7, 30.2, 29.5, 27.3, 26.8, 26.8, 27.2, 27.4, 25.7, 23.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1648
Catchment area	km^2	160.8
Length of inundated river	km	4.052
Population	capita	20 670
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.001, 0.101, 0.501, 0.397, 0.0
Mean catchment slope	$\%$	24.00
Mean annual precipitation	mm/year	2514
Mean annual evapotranspiration	mm/year	1286
Soil wetness	mm over profile	168.0
Soil Olsen P content	kgP ha^{-1}	7.977
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	85 680 000
Reservoir area	km^2	5.362
Maximum reservoir depth	m	37.00
Mean reservoir depth	m	16.00
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.03, 0.95, 0.02, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.604
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.200
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.424
Mean monthly wind speed	m s^{-1}	0.8700
Water intake depth below surface	m	N/A



180.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	800.5
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	549.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	251.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	251.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1347
Total CO ₂ emission per lifetime	ktCO _{2,eq}	134.7
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	209.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	143.3
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	877.2
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1230
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	6593
Total CH ₄ emission per lifetime	ktCO _{2,eq}	659.3
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.089 02
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.066 40
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.077 71
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.4773
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.047 73
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1481
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1481

180.3 Emission plots



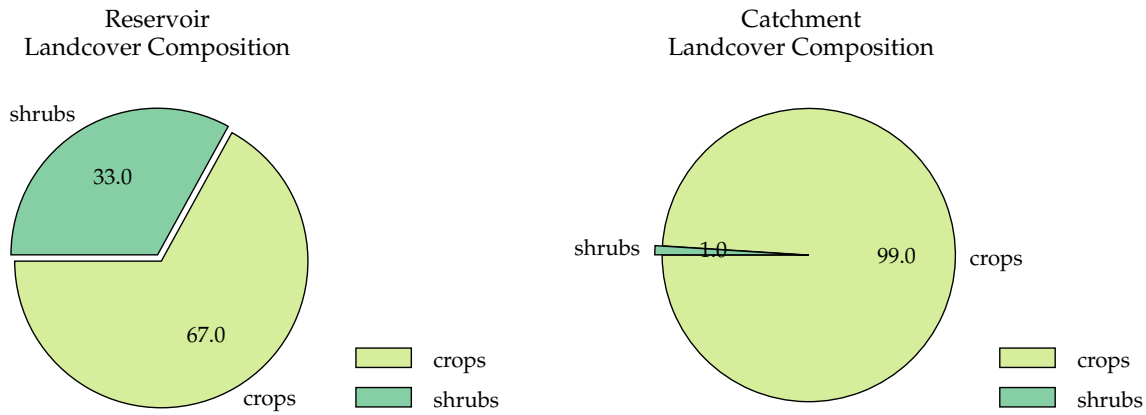
180.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	63.20
Retention coefficient	-	0.2057
Influent total N concentration	$\mu\text{g L}^{-1}$	2.317
Reservoir TN concentration	$\mu\text{g L}^{-1}$	1.784
Reservoir TP concentration	$\mu\text{g L}^{-1}$	51.47
Percentage of reservoir's surface area that is littoral	%	10.50
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.940
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	59.28
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.34
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.70
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.020
Influent total N load	kgN yr^{-1}	613.8
Influent total P load	kgP yr^{-1}	16 740
Downstream TN concentration	mg L^{-1}	0.002 692

181 Phaung Ga Tar Dam

181.1 Inputs

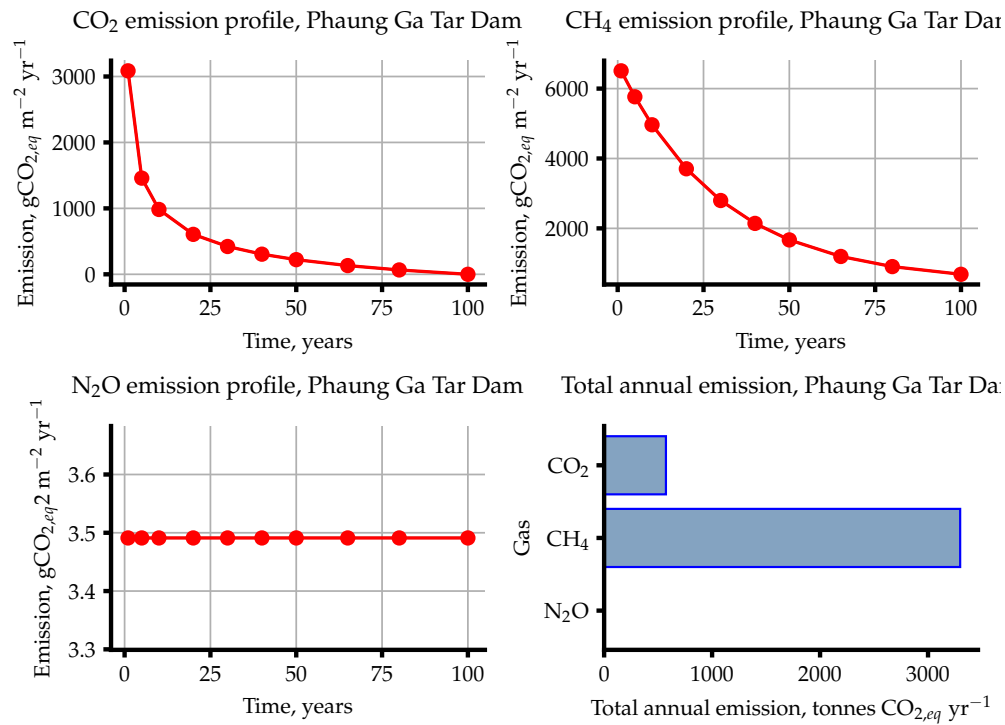
Input Name	Unit	Value(s)
Reservoir ID		9096
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.022851, LON: 95.068428
Monthly Temperatures	$^{\circ}\text{C}$	21.4, 23.9, 27.9, 31.3, 31.1, 30.0, 29.7, 29.2, 28.8, 27.6, 24.8, 21.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	139.0
Catchment area	km^2	42.39
Length of inundated river	km	1.982
Population	capita	7086
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.99, 0.01, 0.0, 0.0
Mean catchment slope	%	4.000
Mean annual precipitation	mm/year	821.0
Mean annual evapotranspiration	mm/year	1452
Soil wetness	mm over profile	25.00
Soil Olsen P content	kgP ha^{-1}	6.690
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	5 906 000
Reservoir area	km^2	1.449
Maximum reservoir depth	m	13.00
Mean reservoir depth	m	4.100
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.67, 0.33, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	3.895
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.890
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.728
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.924
Mean monthly wind speed	m s^{-1}	1.180
Water intake depth below surface	m	N/A



181.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1259
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	864.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	395.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	395.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	572.4
Total CO ₂ emission per lifetime	ktCO _{2,eq}	57.24
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	450.9
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	446.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1378
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2276
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	3298
Total CH ₄ emission per lifetime	ktCO _{2,eq}	329.8
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.491
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.593
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.542
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	5.059
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.5059
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2671
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2673

181.3 Emission plots



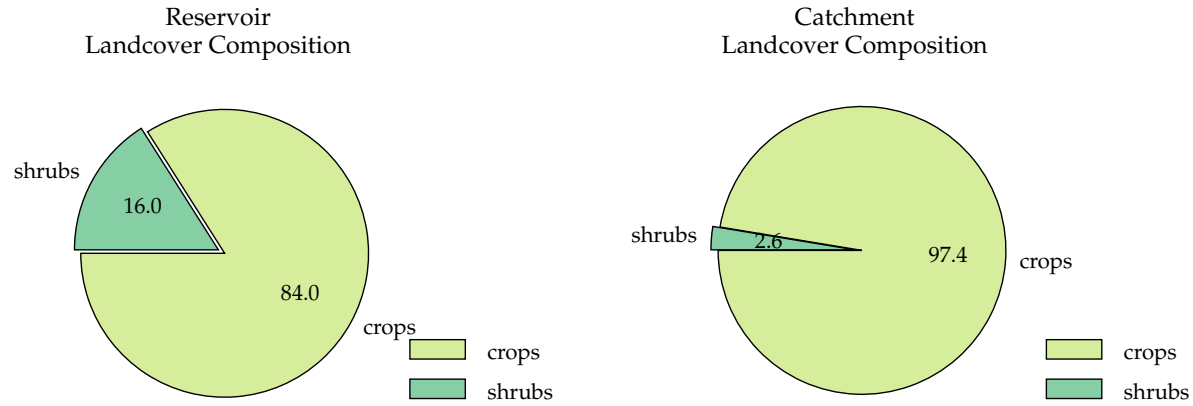
181.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	993.1
Retention coefficient	-	0.4453
Influent total N concentration	$\mu\text{g L}^{-1}$	375.3
Reservoir TN concentration	$\mu\text{g L}^{-1}$	210.7
Reservoir TP concentration	$\mu\text{g L}^{-1}$	567.1
Percentage of reservoir's surface area that is littoral	%	43.42
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.890
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.75
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.53
Water density at the surface of the reservoir	kg m^{-3}	995.5
Thermocline depth	m	0.7511
Influent total N load	kgN yr^{-1}	2211
Influent total P load	kgP yr^{-1}	5851
Downstream TN concentration	mg L^{-1}	0.2862

182 Unknown25

182.1 Inputs

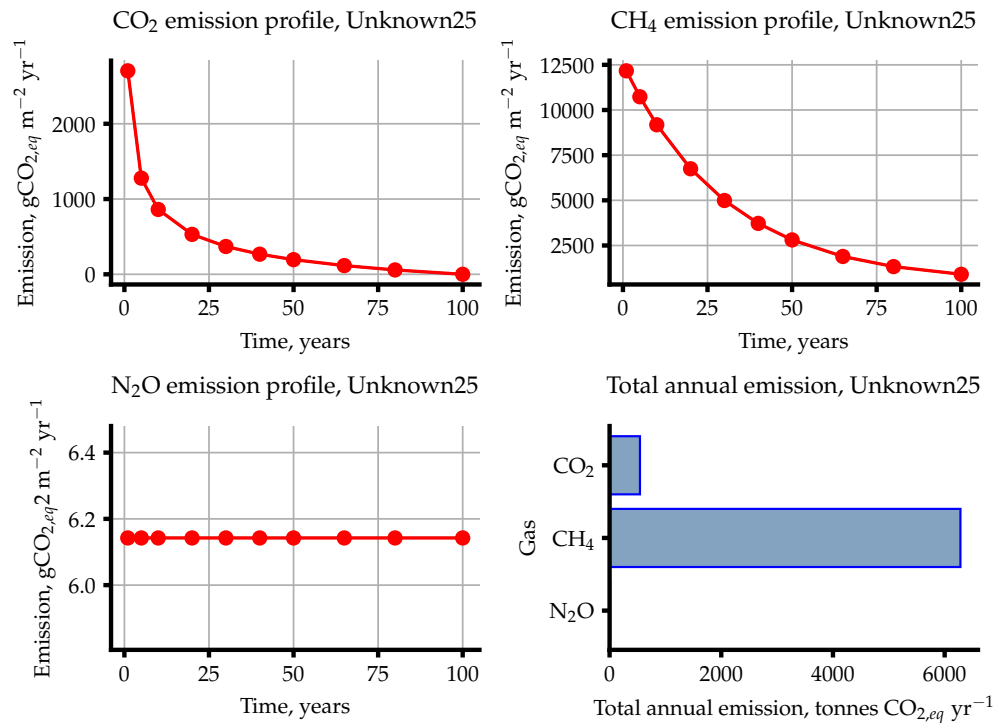
Input Name	Unit	Value(s)
Reservoir ID		9100
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.414026, LON: 95.214081
Monthly Temperatures	$^{\circ}\text{C}$	20.3, 23.2, 27.3, 30.9, 30.5, 29.4, 29.2, 28.5, 28.3, 27.0, 24.2, 20.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	218.0
Catchment area	km^2	378.3
Length of inundated river	km	2.158
Population	capita	41 240
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.974, 0.026, 0.0, 0.0
Mean catchment slope	$\%$	1.000
Mean annual precipitation	mm/year	977.0
Mean annual evapotranspiration	mm/year	1408
Soil wetness	mm over profile	41.00
Soil Olsen P content	kgP ha^{-1}	4.594
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	6 540 000
Reservoir area	km^2	1.572
Maximum reservoir depth	m	14.00
Mean reservoir depth	m	4.200
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.84, 0.16, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.544
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.890
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.728
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.924
Mean monthly wind speed	m s^{-1}	1.140
Water intake depth below surface	m	N/A



182.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1103
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	757.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	346.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	346.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	544.0
Total CO ₂ emission per lifetime	ktCO _{2,eq}	54.40
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	420.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	443.3
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	3133
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	3996
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	6282
Total CH ₄ emission per lifetime	ktCO _{2,eq}	628.2
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	6.142
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	5.054
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	5.598
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	9.656
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.9656
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	4342
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	4348

182.3 Emission plots



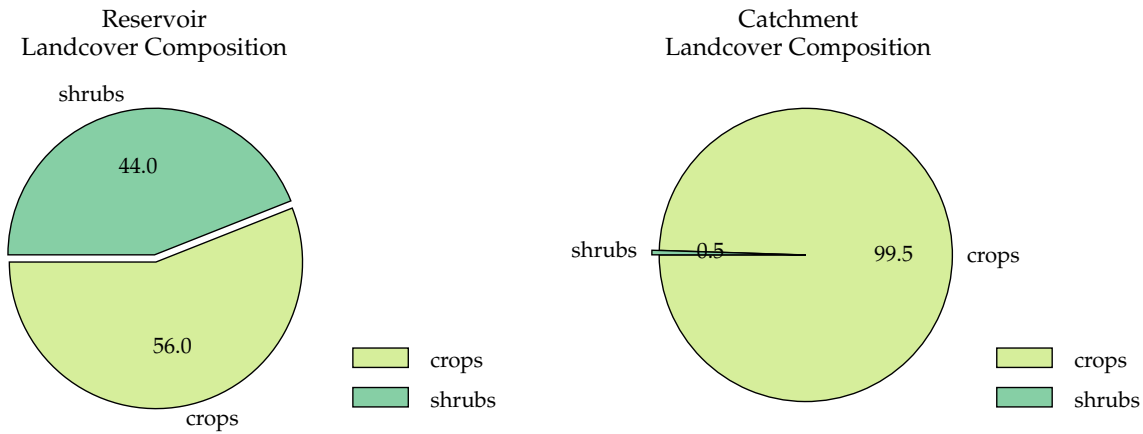
182.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	408.7
Retention coefficient	-	0.059 73
Influent total N concentration	$\mu\text{g L}^{-1}$	622.9
Reservoir TN concentration	$\mu\text{g L}^{-1}$	586.0
Reservoir TP concentration	$\mu\text{g L}^{-1}$	385.6
Percentage of reservoir's surface area that is littoral	%	43.03
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.890
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.03
Water density at the bottom of the reservoir	kg m^{-3}	997.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.00
Water density at the surface of the reservoir	kg m^{-3}	995.7
Thermocline depth	m	0.7364
Influent total N load	kgN yr^{-1}	51 370
Influent total P load	kgP yr^{-1}	33 700
Downstream TN concentration	mg L^{-1}	0.8057

183 Unknown29

183.1 Inputs

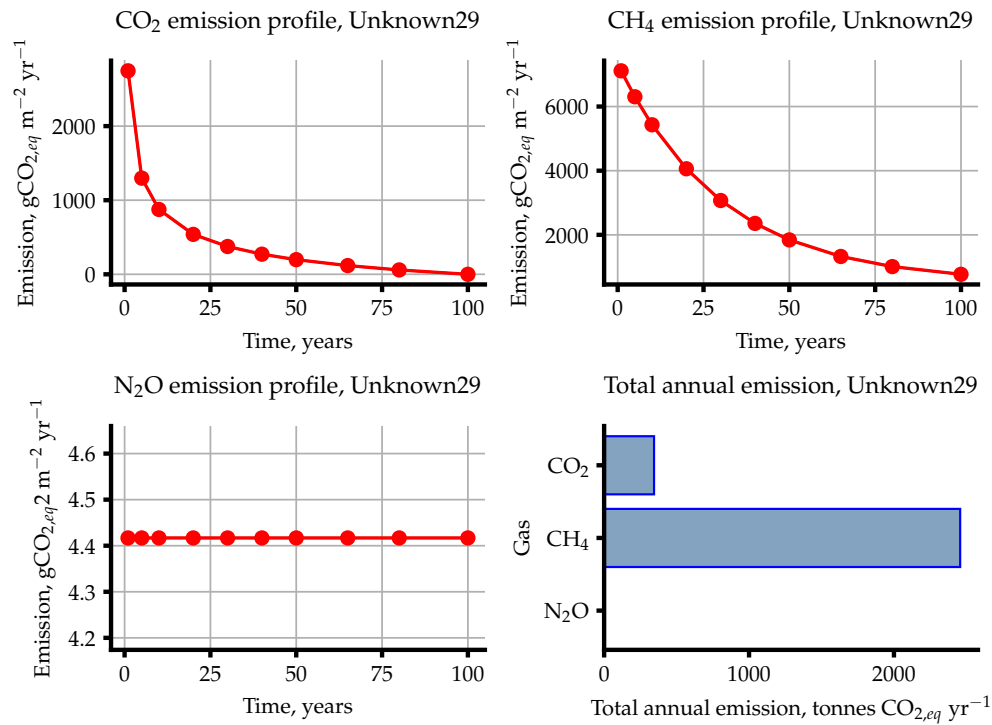
Input Name	Unit	Value(s)
Reservoir ID		9104
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.718968, LON: 95.423749
Monthly Temperatures	$^{\circ}\text{C}$	21.5, 23.8, 27.9, 31.1, 30.1, 28.3, 27.9, 27.6, 27.5, 26.9, 24.5, 21.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	150.0
Catchment area	km^2	164.2
Length of inundated river	km	1.475
Population	capita	18 610
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.995, 0.005, 0.0, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	847.0
Mean annual evapotranspiration	mm/year	1444
Soil wetness	mm over profile	30.00
Soil Olsen P content	kgP ha^{-1}	4.434
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	5 395 000
Reservoir area	km^2	0.9800
Maximum reservoir depth	m	14.00
Mean reservoir depth	m	5.500
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.56, 0.44, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.133
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.240
Water intake depth below surface	m	N/A



183.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1121
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	769.0
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	351.5
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	351.5
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	344.5
Total CO ₂ emission per lifetime	ktCO _{2,eq}	34.45
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	352.1
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	510.1
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1645
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2507
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	2457
Total CH ₄ emission per lifetime	ktCO _{2,eq}	245.7
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	4.417
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	3.444
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.930
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	4.329
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.4329
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2859
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2863

183.3 Emission plots



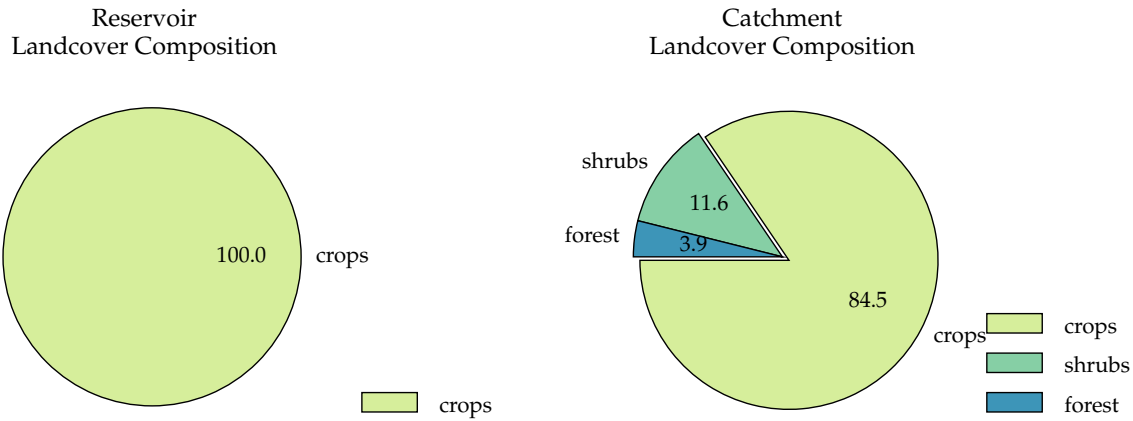
183.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	634.8
Retention coefficient	-	0.1493
Influent total N concentration	$\mu\text{g L}^{-1}$	332.6
Reservoir TN concentration	$\mu\text{g L}^{-1}$	283.7
Reservoir TP concentration	$\mu\text{g L}^{-1}$	542.6
Percentage of reservoir's surface area that is littoral	%	31.11
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.75
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.35
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	0.8112
Influent total N load	kgN yr^{-1}	8189
Influent total P load	kgP yr^{-1}	15 630
Downstream TN concentration	mg L^{-1}	0.4087

184 MyeKheTaung

184.1 Inputs

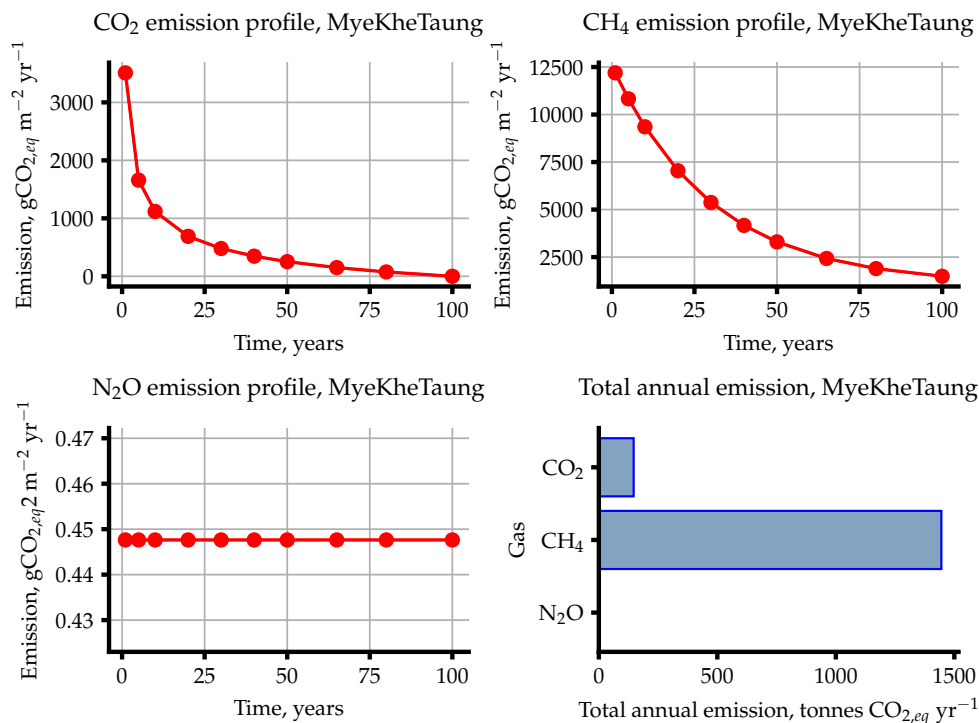
Input Name	Unit	Value(s)
Reservoir ID		9158
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.552892, LON: 95.154719
Monthly Temperatures	$^{\circ}\text{C}$	22.0, 24.6, 28.6, 32.0, 31.3, 30.0, 29.7, 29.2, 28.9, 27.8, 25.2, 22.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	77.00
Catchment area	km^2	32.14
Length of inundated river	km	0.7110
Population	capita	5815
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.845, 0.116, 0.039, 0.0
Mean catchment slope	$\%$	10.00
Mean annual precipitation	mm/year	691.0
Mean annual evapotranspiration	mm/year	1461
Soil wetness	mm over profile	25.00
Soil Olsen P content	kgP ha^{-1}	10.24
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	590 200
Reservoir area	km^2	0.3270
Maximum reservoir depth	m	5.000
Mean reservoir depth	m	1.800
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	3.826
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.210
Water intake depth below surface	m	N/A



184.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1432
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	982.9
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	449.3
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	449.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	146.9
Total CO ₂ emission per lifetime	ktCO _{2,eq}	14.69
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	618.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	1050
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	2751
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	4420
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	1445
Total CH ₄ emission per lifetime	ktCO _{2,eq}	144.5
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.4476
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.3465
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.3971
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.1464
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.01464
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	4869
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	4870

184.3 Emission plots



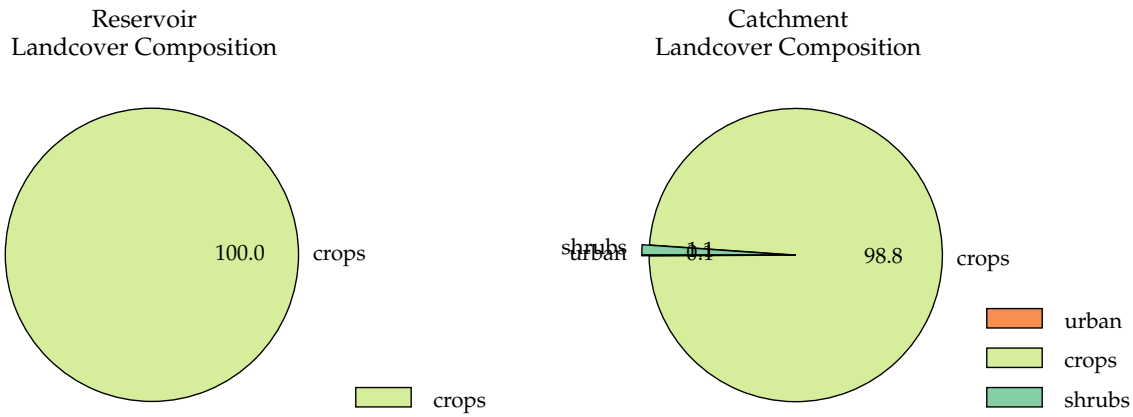
184.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1929
Retention coefficient	-	0.1604
Influent total N concentration	$\mu\text{g L}^{-1}$	102.8
Reservoir TN concentration	$\mu\text{g L}^{-1}$	86.21
Reservoir TP concentration	$\mu\text{g L}^{-1}$	1634
Percentage of reservoir's surface area that is littoral	%	80.39
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.14
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.75
Water density at the surface of the reservoir	kg m^{-3}	995.4
Thermocline depth	m	0.5359
Influent total N load	kgN yr^{-1}	254.5
Influent total P load	kgP yr^{-1}	4774
Downstream TN concentration	mg L^{-1}	0.1251

185 Ngathayauk

185.1 Inputs

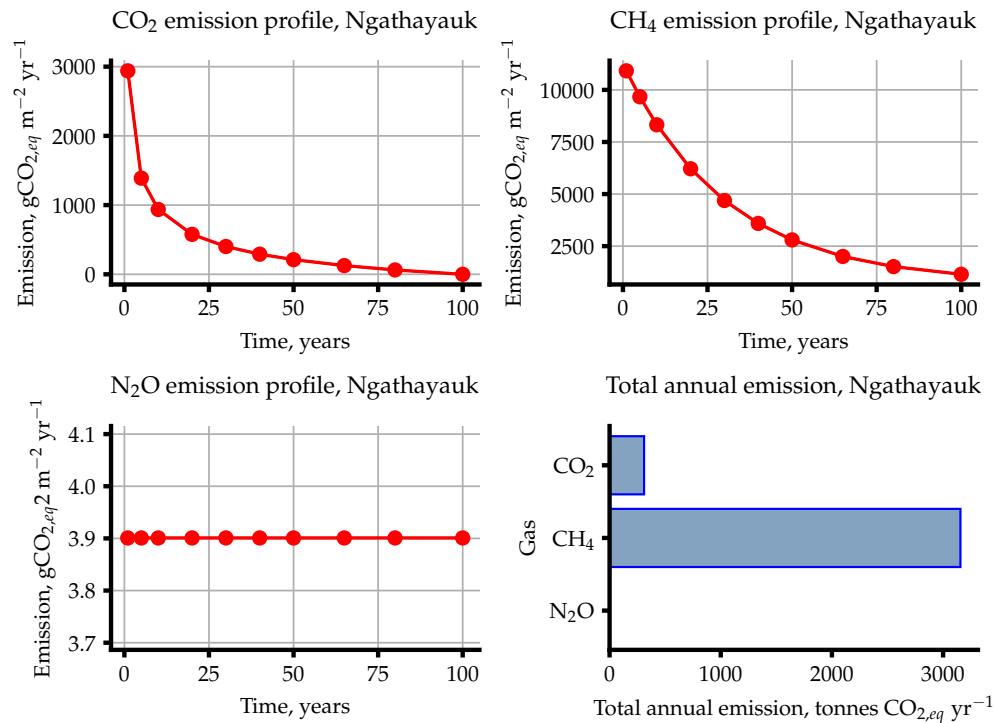
Input Name	Unit	Value(s)
Reservoir ID		9159
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.167733, LON: 95.105792
Monthly Temperatures	$^{\circ}\text{C}$	21.3, 23.9, 28.0, 31.3, 30.6, 28.9, 28.5, 28.2, 27.8, 27.1, 24.6, 21.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	120.0
Catchment area	km^2	147.6
Length of inundated river	km	1.012
Population	capita	16 120
Area fractions	-	0.0, 0.0, 0.001, 0.0, 0.0, 0.988, 0.011, 0.0, 0.0
Mean catchment slope	$\%$	2.000
Mean annual precipitation	mm/year	772.0
Mean annual evapotranspiration	mm/year	1445
Soil wetness	mm over profile	30.00
Soil Olsen P content	kgP ha^{-1}	5.636
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	2 643 000
Reservoir area	km^2	0.8250
Maximum reservoir depth	m	11.00
Mean reservoir depth	m	3.200
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	3.883
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.220
Water intake depth below surface	m	N/A



185.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1200
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	823.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	376.3
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	376.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	310.5
Total CO ₂ emission per lifetime	ktCO _{2,eq}	31.05
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	469.6
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	748.2
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	2608
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	3825
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	3156
Total CH ₄ emission per lifetime	ktCO _{2,eq}	315.6
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.901
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	3.105
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.503
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	3.218
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.3218
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	4202
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	4205

185.3 Emission plots



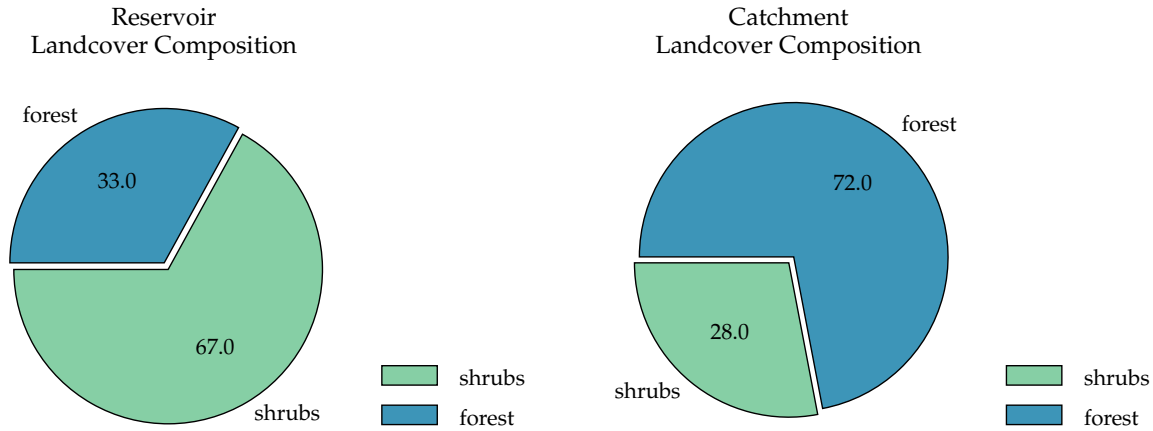
185.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	777.7
Retention coefficient	-	0.1068
Influent total N concentration	$\mu\text{g L}^{-1}$	504.0
Reservoir TN concentration	$\mu\text{g L}^{-1}$	450.2
Reservoir TP concentration	$\mu\text{g L}^{-1}$	697.9
Percentage of reservoir's surface area that is littoral	%	53.99
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.68
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.83
Water density at the surface of the reservoir	kg m^{-3}	995.7
Thermocline depth	m	0.7202
Influent total N load	kgN yr^{-1}	8927
Influent total P load	kgP yr^{-1}	13 770
Downstream TN concentration	mg L^{-1}	0.6421

186 Mali

186.1 Inputs

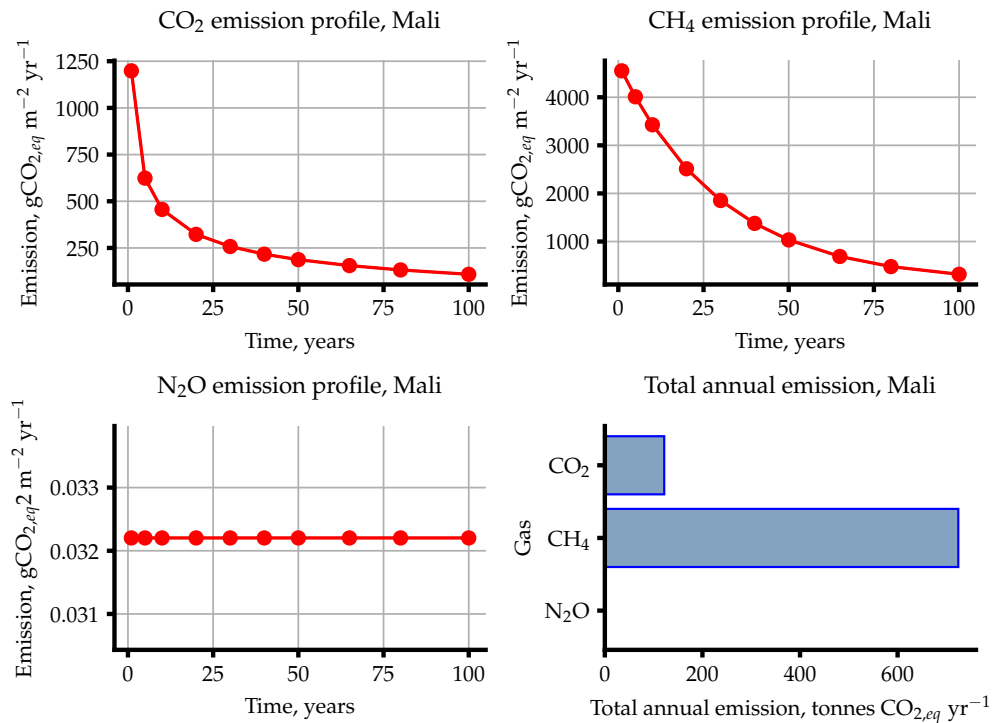
Input Name	Unit	Value(s)
Reservoir ID		9161
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 24.984804, LON: 97.613538
Monthly Temperatures	$^{\circ}\text{C}$	16.1, 18.0, 21.7, 24.5, 26.2, 26.6, 26.3, 26.4, 26.2, 24.4, 20.6, 16.8
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	981.0
Catchment area	km^2	205.2
Length of inundated river	km	1.319
Population	capita	6350
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.28, 0.72, 0.0
Mean catchment slope	%	28.00
Mean annual precipitation	mm/year	1889
Mean annual evapotranspiration	mm/year	1106
Soil wetness	mm over profile	227.0
Soil Olsen P content	kgP ha^{-1}	7.625
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	4 076 000
Reservoir area	km^2	0.4900
Maximum reservoir depth	m	19.00
Mean reservoir depth	m	8.300
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.67, 0.33, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.106
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.570
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.166
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.786
Mean monthly wind speed	m s^{-1}	0.9700
Water intake depth below surface	m	N/A



186.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	444.6
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	305.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-108.9
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	139.5
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	248.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	121.7
Total CO ₂ emission per lifetime	ktCO _{2,eq}	12.17
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	195.9
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	145.0
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1138
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1478
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	724.4
Total CH ₄ emission per lifetime	ktCO _{2,eq}	72.44
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.032 20
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.035 79
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.034 00
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.015 78
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.001 578
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1727
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1727

186.3 Emission plots



186.4 Intermediate variables

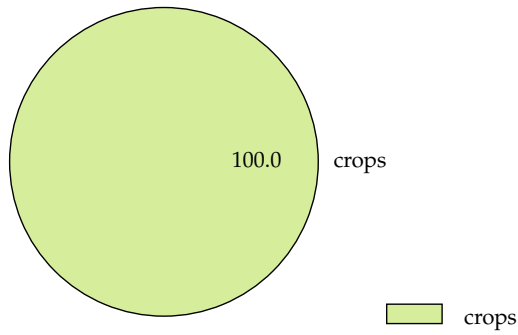
Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	33.78
Retention coefficient	-	0.015 96
Influent total N concentration	$\mu\text{g L}^{-1}$	2.194
Reservoir TN concentration	$\mu\text{g L}^{-1}$	2.159
Reservoir TP concentration	$\mu\text{g L}^{-1}$	33.27
Percentage of reservoir's surface area that is littoral	%	19.87
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.570
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	54.84
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	21.27
Water density at the bottom of the reservoir	kg m^{-3}	998.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.38
Water density at the surface of the reservoir	kg m^{-3}	996.7
Thermocline depth	m	0.5399
Influent total N load	kgN yr^{-1}	441.7
Influent total P load	kgP yr^{-1}	6798
Downstream TN concentration	mg L^{-1}	0.002 173

187 DAM0170

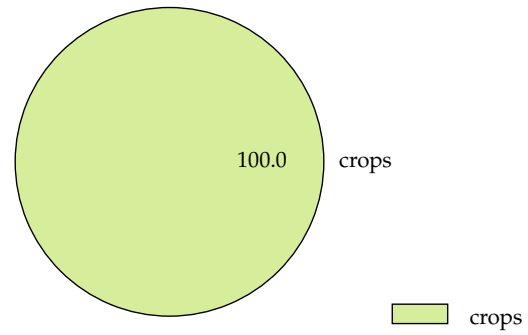
187.1 Inputs

Input Name	Unit	Value(s)
Reservoir ID		9174
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.789809, LON: 95.824455
Monthly Temperatures	$^{\circ}\text{C}$	21.9, 24.3, 28.5, 31.5, 30.4, 28.7, 28.3, 28.0, 27.8, 27.3, 24.9, 21.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	117.0
Catchment area	km^2	40.94
Length of inundated river	km	1.674
Population	capita	8929
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0
Mean catchment slope	%	2.000
Mean annual precipitation	mm/year	892.0
Mean annual evapotranspiration	mm/year	1468
Soil wetness	mm over profile	58.00
Soil Olsen P content	kgP ha^{-1}	4.310
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	8 515 000
Reservoir area	km^2	2.954
Maximum reservoir depth	m	7.000
Mean reservoir depth	m	2.900
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.075
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.250
Water intake depth below surface	m	N/A

Reservoir
Landcover Composition



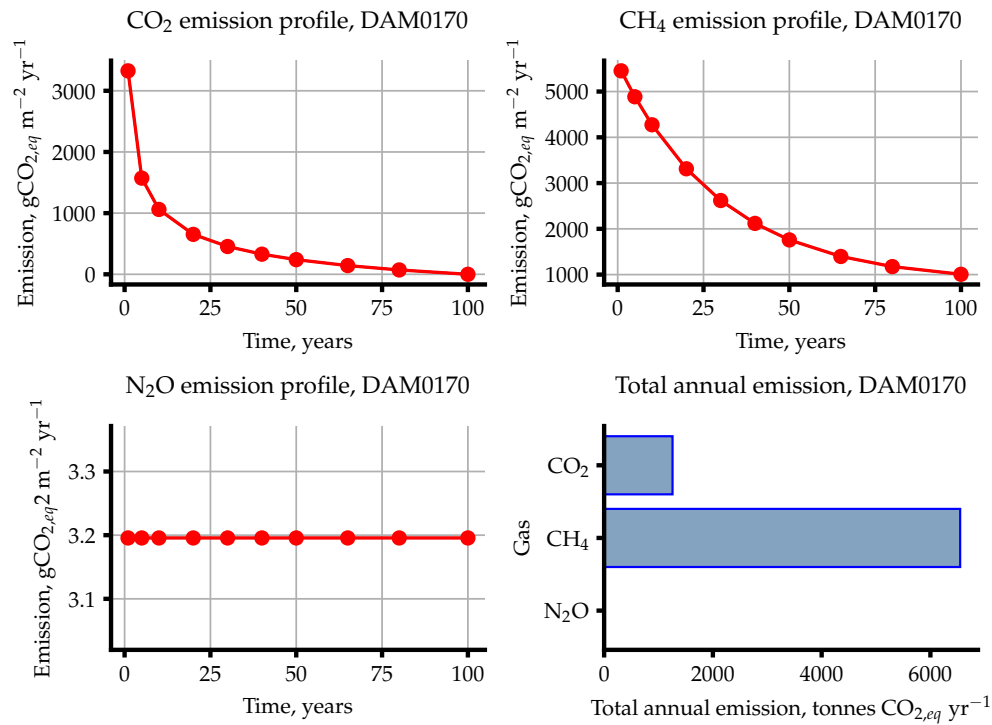
Catchment
Landcover Composition



187.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1357
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	931.5
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	425.8
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	425.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1258
Total CO ₂ emission per lifetime	ktCO _{2,eq}	125.8
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	476.9
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	824.3
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	915.3
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2216
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	6547
Total CH ₄ emission per lifetime	ktCO _{2,eq}	654.7
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.196
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.9419
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.069
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	9.440
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.9440
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2642
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2644

187.3 Emission plots



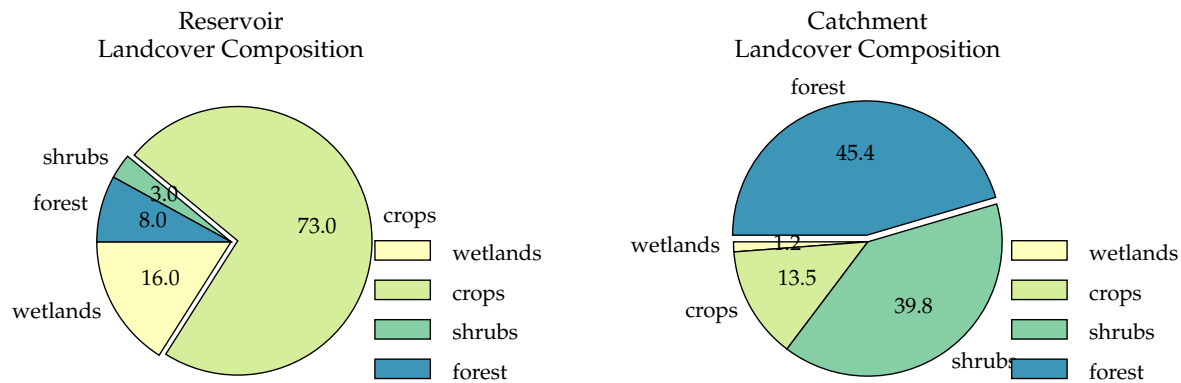
187.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1468
Retention coefficient	-	0.5875
Influent total N concentration	$\mu\text{g L}^{-1}$	544.8
Reservoir TN concentration	$\mu\text{g L}^{-1}$	224.7
Reservoir TP concentration	$\mu\text{g L}^{-1}$	646.5
Percentage of reservoir's surface area that is littoral	%	54.67
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.95
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.78
Water density at the surface of the reservoir	kg m^{-3}	995.7
Thermocline depth	m	1.046
Influent total N load	kgN yr^{-1}	2610
Influent total P load	kgP yr^{-1}	7030
Downstream TN concentration	mg L^{-1}	0.2366

188 Chaun Mange Dam

188.1 Inputs

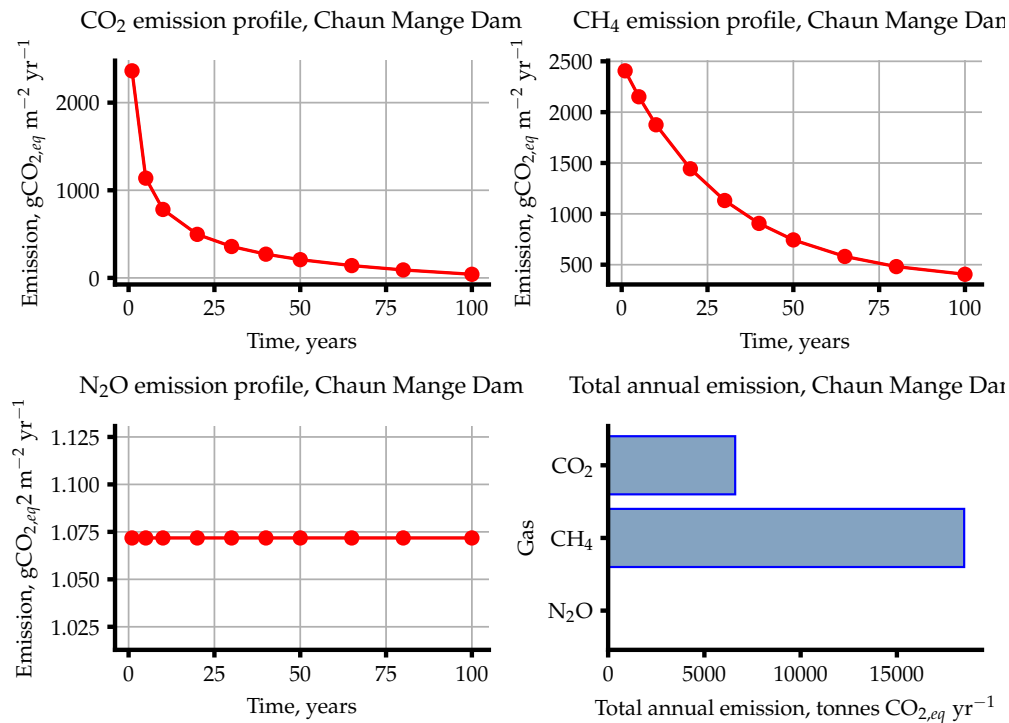
Input Name	Unit	Value(s)
Reservoir ID		9050
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.669639, LON: 95.949601
Monthly Temperatures	$^{\circ}\text{C}$	21.3, 23.5, 27.5, 30.7, 29.7, 27.5, 27.0, 26.9, 27.4, 27.2, 25.0, 21.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	104.0
Catchment area	km^2	273.0
Length of inundated river	km	10.04
Population	capita	13 760
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.012, 0.135, 0.398, 0.454, 0.0
Mean catchment slope	$\%$	7.000
Mean annual precipitation	mm/year	1004
Mean annual evapotranspiration	mm/year	1376
Soil wetness	mm over profile	138.0
Soil Olsen P content	kgP ha^{-1}	5.612
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	184 900 000
Reservoir area	km^2	19.51
Maximum reservoir depth	m	27.00
Mean reservoir depth	m	9.500
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.16, 0.73, 0.03, 0.08, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.578
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.754
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.358
Mean monthly wind speed	m s^{-1}	1.060
Water intake depth below surface	m	N/A



188.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	947.5
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	650.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-41.07
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	297.3
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	338.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	6600
Total CO ₂ emission per lifetime	ktCO _{2,eq}	660.0
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	274.1
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	323.6
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	350.3
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	948.0
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	18 490
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1849
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.072
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.2203
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.6461
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	20.91
Total N ₂ O emission per lifetime	ktCO _{2,eq}	2.091
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1286
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1287

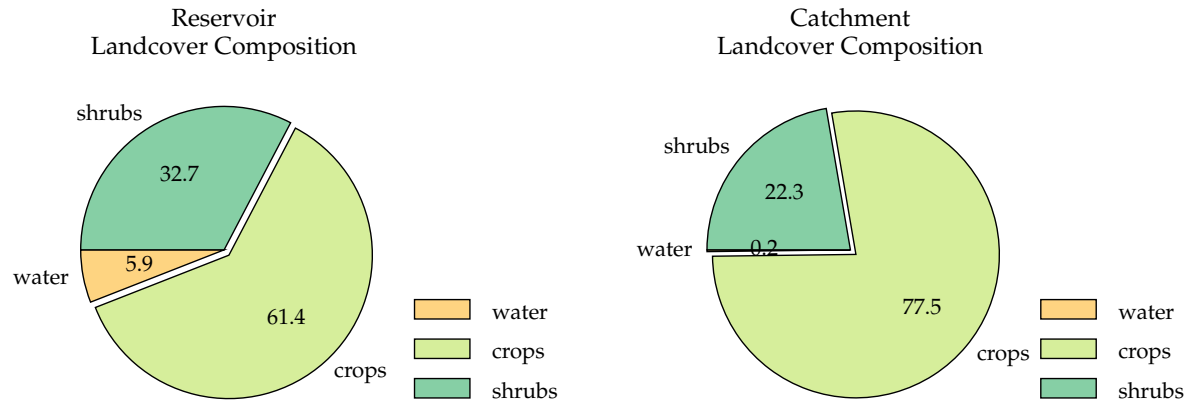
188.3 Emission plots



188.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	490.4
Retention coefficient	-	0.8391
Influent total N concentration	$\mu\text{g L}^{-1}$	142.0
Reservoir TN concentration	$\mu\text{g L}^{-1}$	21.76
Reservoir TP concentration	$\mu\text{g L}^{-1}$	82.57
Percentage of reservoir's surface area that is littoral	%	19.50
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.68
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.85
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.548
Influent total N load	kgN yr^{-1}	4031
Influent total P load	kgP yr^{-1}	13 920
Downstream TN concentration	mg L^{-1}	0.020 78

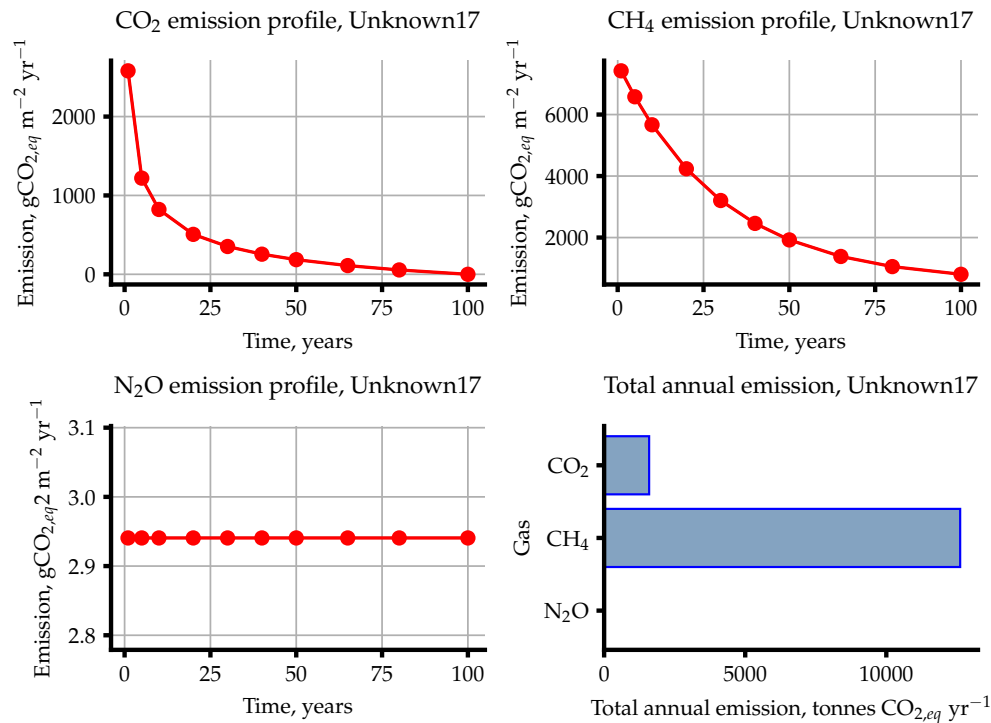
Input Name	Unit	Value(s)
Reservoir ID		9084
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 23.011746, LON: 95.636531
Monthly Temperatures	$^{\circ}\text{C}$	19.7, 22.7, 26.6, 30.3, 29.8, 29.1, 28.8, 28.1, 28.1, 26.9, 24.1, 20.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO ₂ , CH ₄ , N ₂ O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	313.0
Catchment area	km ²	111.8
Length of inundated river	km	2.312
Population	capita	7584
Area fractions	-	0.0, 0.0, 0.0, 0.002, 0.0, 0.775, 0.223, 0.0, 0.0
Mean catchment slope	%	2.000
Mean annual precipitation	mm/year	1197
Mean annual evapotranspiration	mm/year	1361
Soil wetness	mm over profile	115.0
Soil Olsen P content	kgP ha ⁻¹	4.992
Inputs for reservoir-level process calculations		
Reservoir volume	m ³	11 060 000
Reservoir area	km ²	4.829
Maximum reservoir depth	m	6.000
Mean reservoir depth	m	2.300
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.62, 0.33, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.06, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m ⁻²	5.207
Mean monthly horizontal radiance	kWh m ⁻² d ⁻¹	4.755
Mean monthly horizontal radiance:	kWh m ⁻² d ⁻¹	4.545
May - Sept		
Mean monthly horizontal radiance:	kWh m ⁻² d ⁻¹	4.829
Nov - Mar		
Mean monthly wind speed	m s ⁻¹	1.060
Water intake depth below surface	m	N/A



189.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1053
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	722.5
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	330.3
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	330.3
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1595
Total CO ₂ emission per lifetime	ktCO _{2,eq}	159.5
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	492.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	533.8
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1587
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2613
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	12 620
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1262
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.941
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.21
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.575
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	14.20
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.420
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2943
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2946

189.3 Emission plots



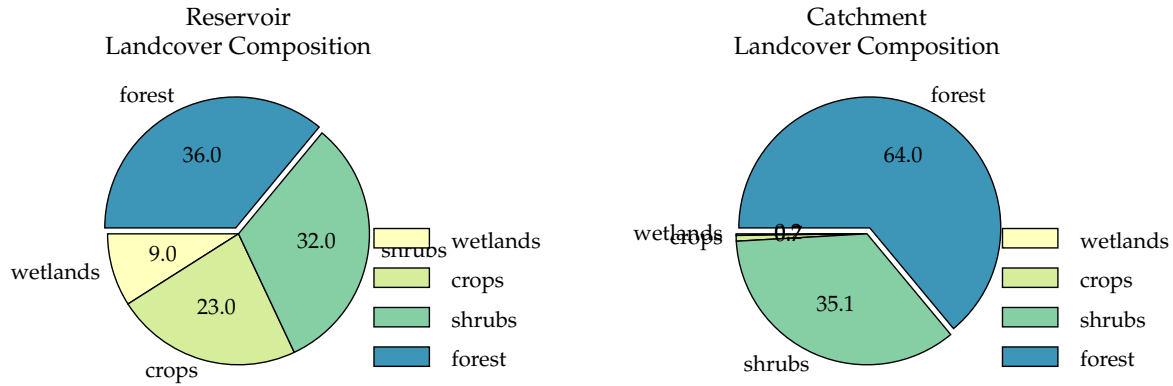
189.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	220.1
Retention coefficient	-	0.2020
Influent total N concentration	$\mu\text{g L}^{-1}$	535.7
Reservoir TN concentration	$\mu\text{g L}^{-1}$	430.6
Reservoir TP concentration	$\mu\text{g L}^{-1}$	181.3
Percentage of reservoir's surface area that is littoral	%	67.21
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.755
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.06
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.63
Water density at the bottom of the reservoir	kg m^{-3}	997.4
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.50
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	0.9224
Influent total N load	kgN yr^{-1}	18 750
Influent total P load	kgP yr^{-1}	7704
Downstream TN concentration	mg L^{-1}	0.6226

190 Maday Dam

190.1 Inputs

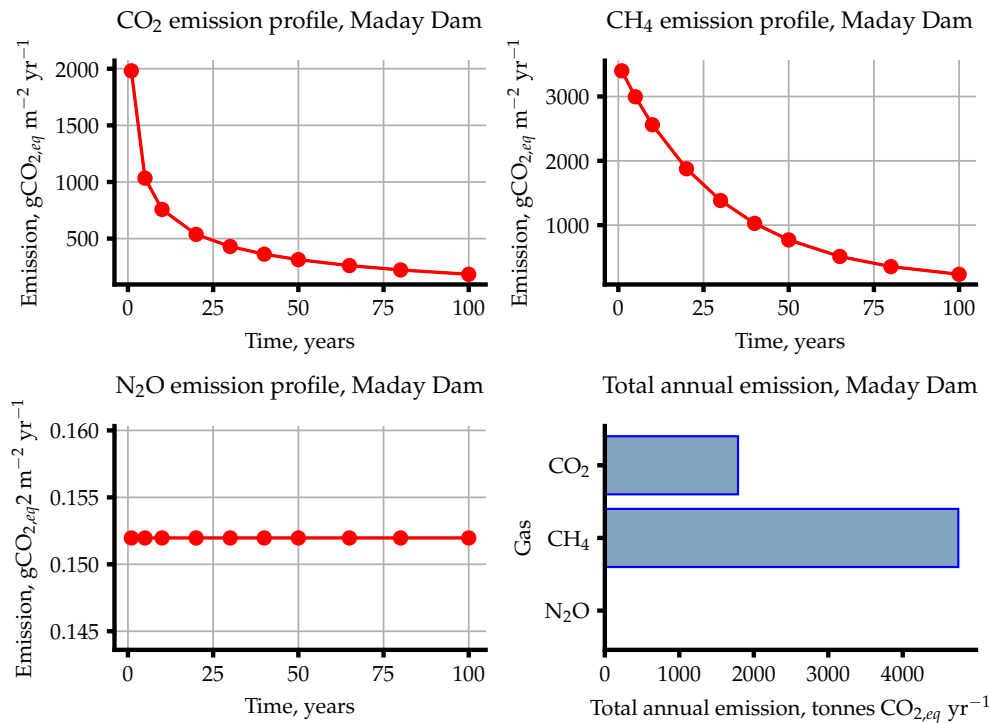
Input Name	Unit	Value(s)
Reservoir ID		9093
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.034622, LON: 94.868617
Monthly Temperatures	$^{\circ}\text{C}$	20.8, 23.3, 27.3, 30.4, 29.9, 27.7, 27.0, 27.0, 27.3, 27.1, 24.9, 21.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1006
Catchment area	km^2	203.3
Length of inundated river	km	3.924
Population	capita	11 710
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.002, 0.007, 0.351, 0.639, 0.0
Mean catchment slope	$\%$	23.00
Mean annual precipitation	mm/year	1871
Mean annual evapotranspiration	mm/year	1291
Soil wetness	mm over profile	158.0
Soil Olsen P content	kgP ha^{-1}	6.098
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	70 950 000
Reservoir area	km^2	4.310
Maximum reservoir depth	m	38.00
Mean reservoir depth	m	16.50
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.09, 0.23, 0.32, 0.36, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.628
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.750
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.858
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.342
Mean monthly wind speed	m s^{-1}	0.9300
Water intake depth below surface	m	N/A



190.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	733.2
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	503.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-184.8
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	230.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	414.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1788
Total CO ₂ emission per lifetime	ktCO _{2,eq}	178.8
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	201.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	106.1
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	793.2
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1101
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	4746
Total CH ₄ emission per lifetime	ktCO _{2,eq}	474.6
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.1520
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.1120
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.1320
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.6550
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.065 50
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1516
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1516

190.3 Emission plots



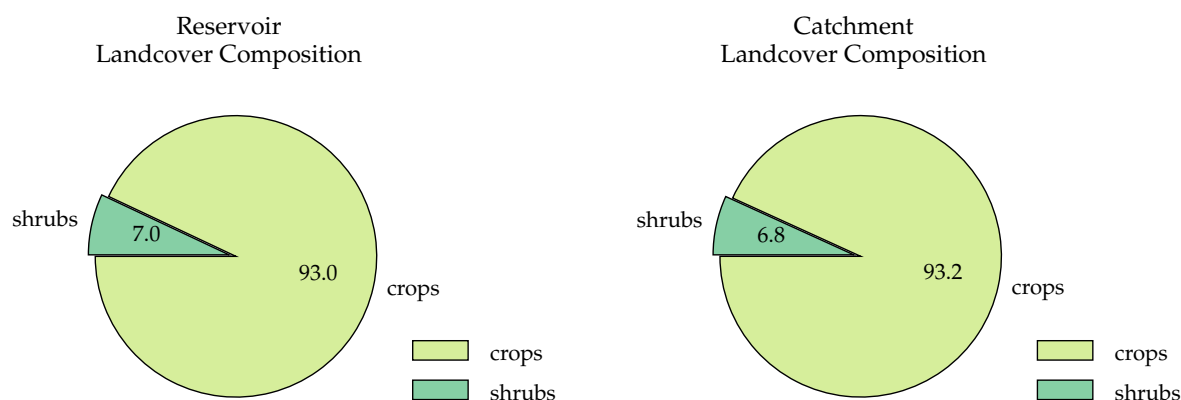
190.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	52.03
Retention coefficient	-	0.2174
Influent total N concentration	$\mu\text{g L}^{-1}$	3.843
Reservoir TN concentration	$\mu\text{g L}^{-1}$	2.992
Reservoir TP concentration	$\mu\text{g L}^{-1}$	41.19
Percentage of reservoir's surface area that is littoral	%	10.16
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.750
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.00
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.36
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.83
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	0.9016
Influent total N load	kgN yr^{-1}	786.1
Influent total P load	kgP yr^{-1}	10 640
Downstream TN concentration	mg L^{-1}	0.004 408

191 Sabae

191.1 Inputs

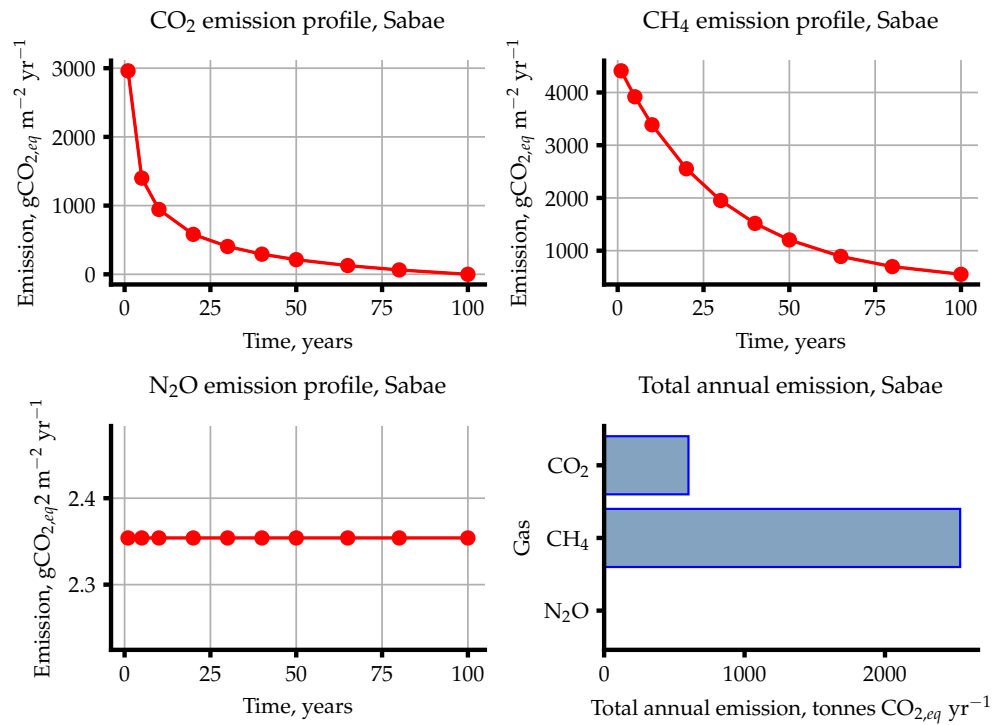
Input Name	Unit	Value(s)
Reservoir ID		9162
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.292586, LON: 94.806219
Monthly Temperatures	$^{\circ}\text{C}$	22.0, 24.3, 28.2, 31.4, 31.1, 29.4, 29.1, 28.8, 28.4, 27.6, 25.0, 22.0
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	101.0
Catchment area	km^2	13.20
Length of inundated river	km	1.186
Population	capita	2495
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.932, 0.068, 0.0, 0.0
Mean catchment slope	$\%$	2.000
Mean annual precipitation	mm/year	749.0
Mean annual evapotranspiration	mm/year	1462
Soil wetness	mm over profile	28.00
Soil Olsen P content	kgP ha^{-1}	5.860
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	5 873 000
Reservoir area	km^2	1.584
Maximum reservoir depth	m	11.00
Mean reservoir depth	m	3.700
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.93, 0.07, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.608
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.760
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.438
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.956
Mean monthly wind speed	m s^{-1}	1.190
Water intake depth below surface	m	N/A



191.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1209
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	829.4
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	379.1
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	379.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	600.5
Total CO ₂ emission per lifetime	ktCO _{2,eq}	60.05
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	461.6
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	393.9
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	744.9
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1600
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	2535
Total CH ₄ emission per lifetime	ktCO _{2,eq}	253.5
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.354
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.4905
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.422
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	3.729
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.3729
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1980
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1981

191.3 Emission plots



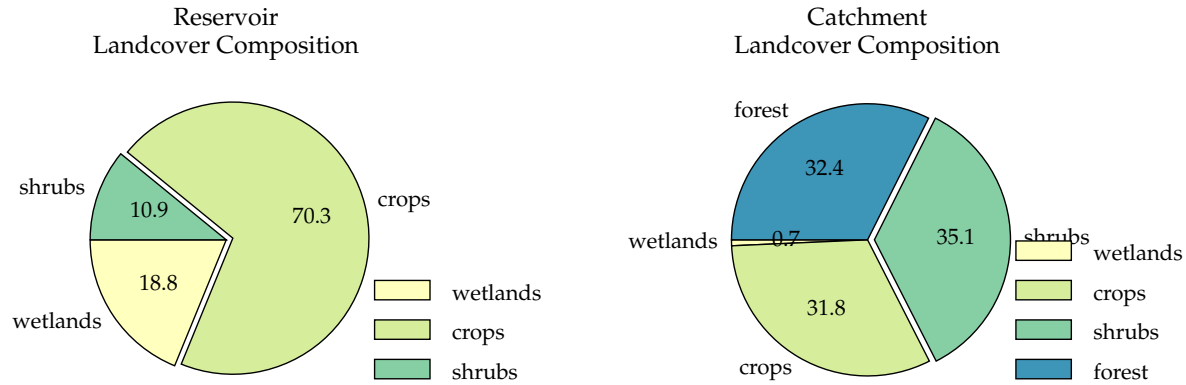
191.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1591
Retention coefficient	-	0.7792
Influent total N concentration	$\mu\text{g L}^{-1}$	546.6
Reservoir TN concentration	$\mu\text{g L}^{-1}$	120.7
Reservoir TP concentration	$\mu\text{g L}^{-1}$	390.7
Percentage of reservoir's surface area that is littoral	%	46.65
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.760
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.12
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.14
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.25
Water density at the surface of the reservoir	kg m^{-3}	995.6
Thermocline depth	m	0.8232
Influent total N load	kgN yr^{-1}	728.6
Influent total P load	kgP yr^{-1}	2121
Downstream TN concentration	mg L^{-1}	0.08216

192 North Yamar Dam

192.1 Inputs

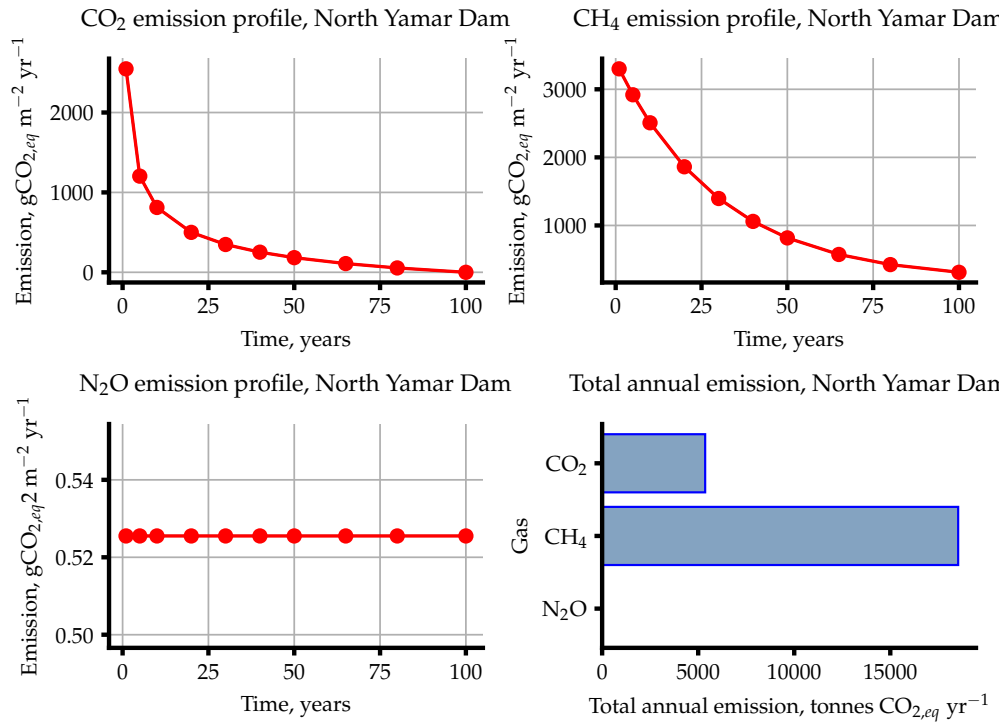
Input Name	Unit	Value(s)
Reservoir ID		9013
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.999543, LON: 94.580427
Monthly Temperatures	$^{\circ}\text{C}$	20.2, 22.7, 26.7, 29.9, 29.7, 28.3, 28.3, 27.7, 27.5, 26.3, 23.4, 20.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	254.0
Catchment area	km^2	460.7
Length of inundated river	km	11.16
Population	capita	38 500
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.007, 0.318, 0.351, 0.324, 0.0
Mean catchment slope	$\%$	15.00
Mean annual precipitation	mm/year	1031
Mean annual evapotranspiration	mm/year	1315
Soil wetness	mm over profile	73.00
Soil Olsen P content	kgP ha^{-1}	3.272
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	143 300 000
Reservoir area	km^2	16.45
Maximum reservoir depth	m	25.00
Mean reservoir depth	m	8.700
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.19, 0.71, 0.11, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.524
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.715
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.418
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.876
Mean monthly wind speed	m s^{-1}	1.070
Water intake depth below surface	m	N/A



192.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1039
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	713.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	326.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	326.0
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	5364
Total CO ₂ emission per lifetime	ktCO _{2,eq}	536.4
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	278.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	189.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	658.4
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1127
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	18 530
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1853
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.5255
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.2050
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.3653
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	8.645
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.8645
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1453
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1453

192.3 Emission plots



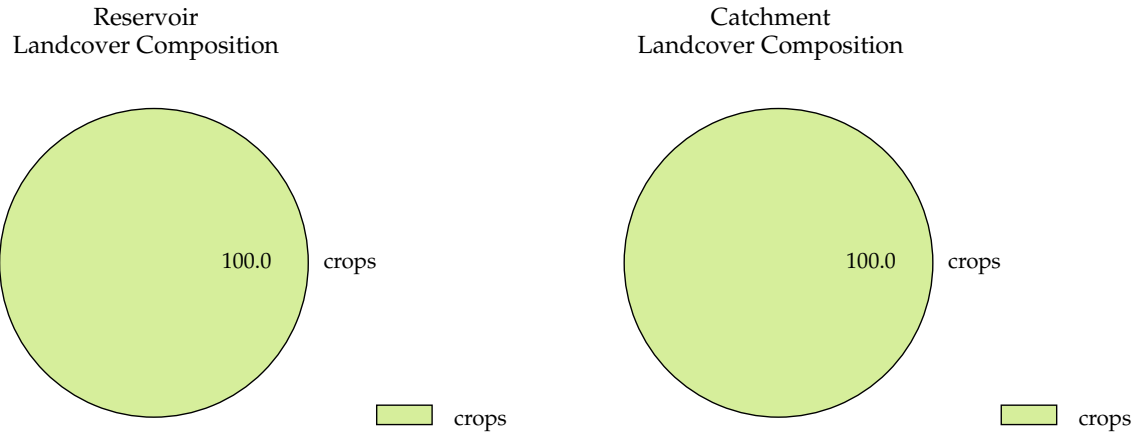
192.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	288.8
Retention coefficient	-	0.4953
Influent total N concentration	$\mu\text{g L}^{-1}$	27.16
Reservoir TN concentration	$\mu\text{g L}^{-1}$	13.50
Reservoir TP concentration	$\mu\text{g L}^{-1}$	150.0
Percentage of reservoir's surface area that is littoral	%	21.30
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.715
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	56.58
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.96
Water density at the bottom of the reservoir	kg m^{-3}	997.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.05
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.360
Influent total N load	kgN yr^{-1}	3178
Influent total P load	kgP yr^{-1}	33 790
Downstream TN concentration	mg L^{-1}	0.017 73

193 Shanmange Dam

193.1 Inputs

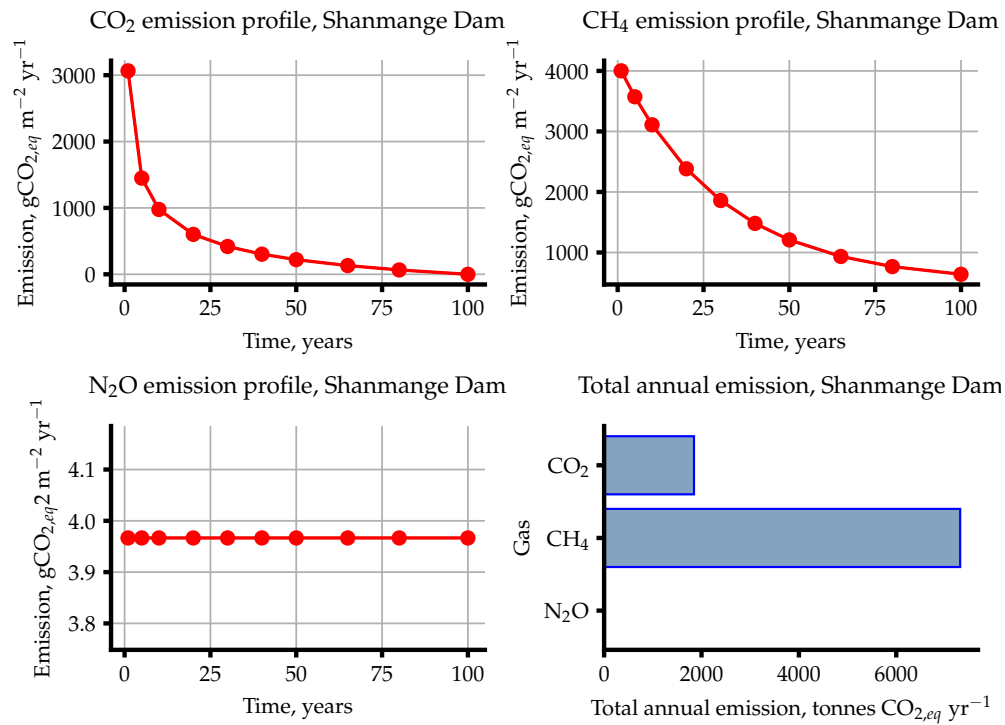
Input Name	Unit	Value(s)
Reservoir ID		9065
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.836431, LON: 95.596567
Monthly Temperatures	$^{\circ}\text{C}$	21.3, 23.7, 27.9, 31.0, 30.0, 28.3, 27.9, 27.6, 27.4, 26.7, 24.3, 21.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	150.0
Catchment area	km^2	104.5
Length of inundated river	km	4.595
Population	capita	22 250
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0
Mean catchment slope	%	4.000
Mean annual precipitation	mm/year	863.0
Mean annual evapotranspiration	mm/year	1452
Soil wetness	mm over profile	35.00
Soil Olsen P content	kgP ha^{-1}	4.875
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	26 620 000
Reservoir area	km^2	4.703
Maximum reservoir depth	m	15.00
Mean reservoir depth	m	5.700
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.106
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.260
Water intake depth below surface	m	N/A



193.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1251
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	858.5
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	392.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	392.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1846
Total CO ₂ emission per lifetime	ktCO _{2,eq}	184.6
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	345.6
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	501.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	707.6
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1555
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	7313
Total CH ₄ emission per lifetime	ktCO _{2,eq}	731.3
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	3.967
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.207
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.587
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	18.65
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.865
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1947
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1950

193.3 Emission plots



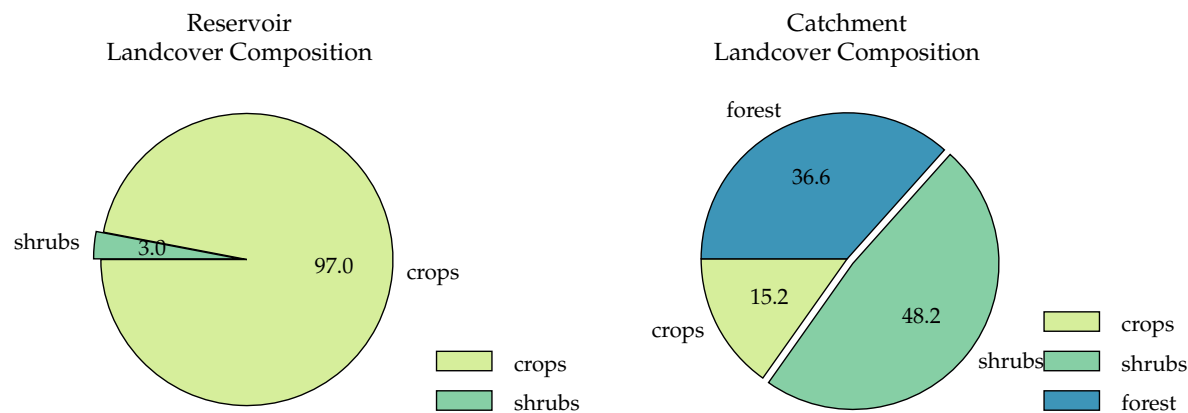
193.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1086
Retention coefficient	-	0.5763
Influent total N concentration	$\mu\text{g L}^{-1}$	339.6
Reservoir TN concentration	$\mu\text{g L}^{-1}$	143.9
Reservoir TP concentration	$\mu\text{g L}^{-1}$	479.4
Percentage of reservoir's surface area that is littoral	%	30.52
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.55
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.30
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	1.204
Influent total N load	kgN yr^{-1}	5324
Influent total P load	kgP yr^{-1}	17 020
Downstream TN concentration	mg L^{-1}	0.1565

194 Marle-Nattaung Dam

194.1 Inputs

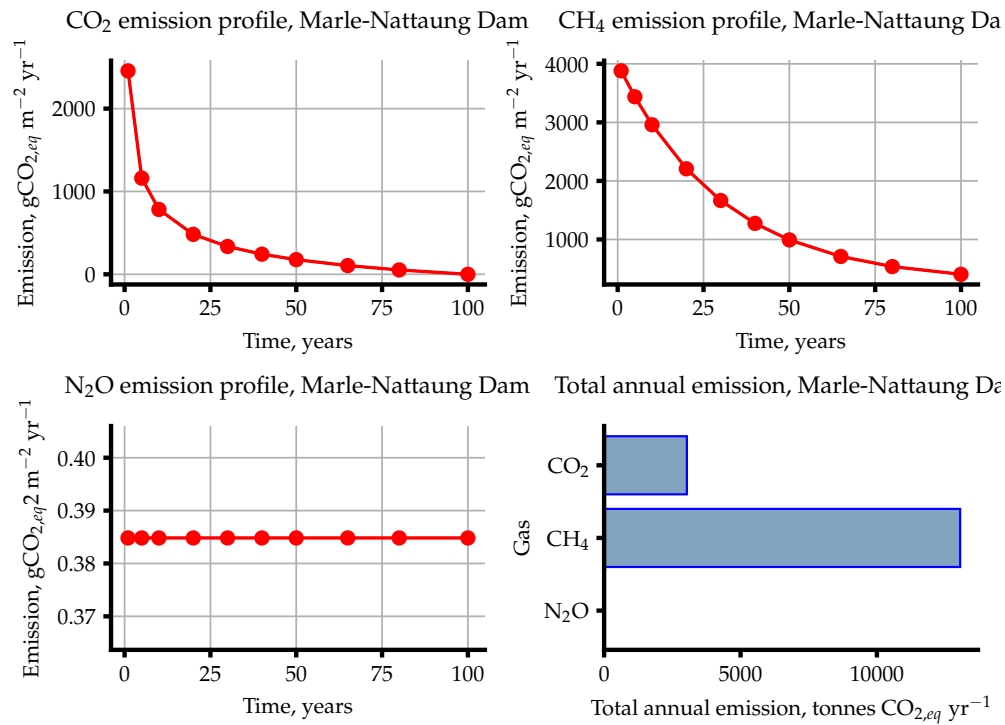
Input Name	Unit	Value(s)
Reservoir ID		9082
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.580389, LON: 96.099729
Monthly Temperatures	$^{\circ}\text{C}$	19.7, 22.9, 27.0, 30.6, 30.0, 29.0, 28.7, 28.1, 28.2, 27.0, 24.3, 20.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	351.0
Catchment area	km^2	193.2
Length of inundated river	km	5.088
Population	capita	18 500
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.152, 0.482, 0.366, 0.0
Mean catchment slope	$\%$	19.00
Mean annual precipitation	mm/year	1299
Mean annual evapotranspiration	mm/year	1300
Soil wetness	mm over profile	237.0
Soil Olsen P content	kgP ha^{-1}	4.242
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	74 560 000
Reservoir area	km^2	9.647
Maximum reservoir depth	m	20.00
Mean reservoir depth	m	7.700
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.97, 0.03, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.227
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.900
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.656
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.992
Mean monthly wind speed	m s^{-1}	1.050
Water intake depth below surface	m	N/A



194.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1002
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	687.9
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	314.5
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	314.5
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	3034
Total CO ₂ emission per lifetime	ktCO _{2,eq}	303.4
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	303.9
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	262.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	786.6
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1353
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	13 050
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1305
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.3848
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.1635
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.2742
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	3.712
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.3712
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1667
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1668

194.3 Emission plots



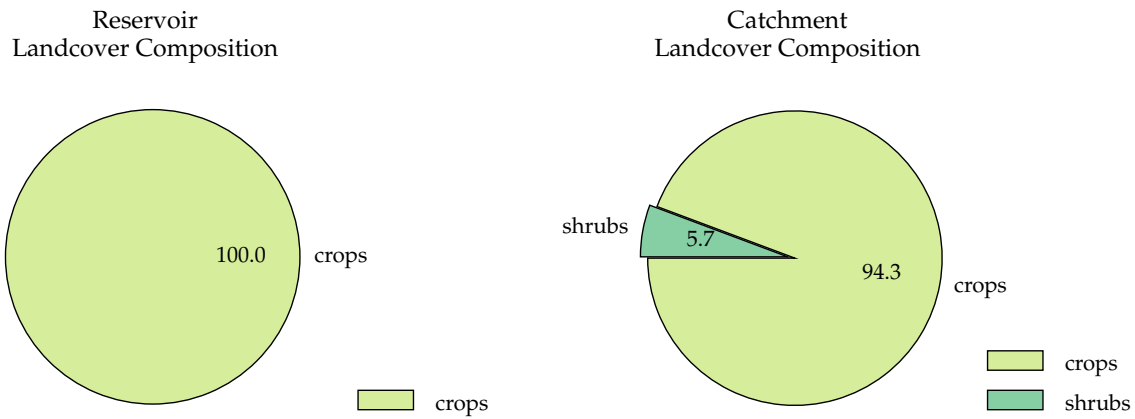
194.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	236.3
Retention coefficient	-	0.4683
Influent total N concentration	$\mu\text{g L}^{-1}$	22.06
Reservoir TN concentration	$\mu\text{g L}^{-1}$	11.21
Reservoir TP concentration	$\mu\text{g L}^{-1}$	130.3
Percentage of reservoir's surface area that is littoral	%	22.86
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.900
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.80
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.63
Water density at the bottom of the reservoir	kg m^{-3}	997.4
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.58
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	1.079
Influent total N load	kgN yr^{-1}	1496
Influent total P load	kgP yr^{-1}	16 030
Downstream TN concentration	mg L^{-1}	0.015 74

195 GweCho

195.1 Inputs

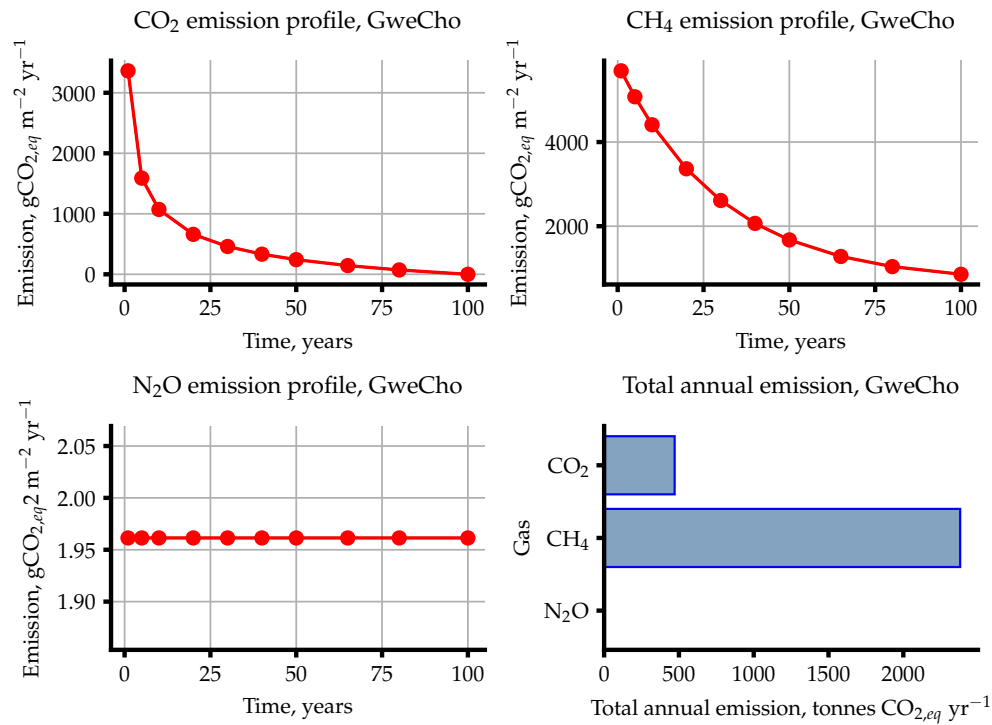
Input Name	Unit	Value(s)
Reservoir ID		9163
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.494054, LON: 95.163513
Monthly Temperatures	$^{\circ}\text{C}$	22.1, 24.7, 28.7, 32.1, 31.5, 30.1, 29.8, 29.3, 29.0, 28.0, 25.4, 22.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	75.00
Catchment area	km^2	16.98
Length of inundated river	km	0.4320
Population	capita	3389
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.943, 0.057, 0.0, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	687.0
Mean annual evapotranspiration	mm/year	1476
Soil wetness	mm over profile	25.00
Soil Olsen P content	kgP ha^{-1}	9.033
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	4 258 000
Reservoir area	km^2	1.095
Maximum reservoir depth	m	14.00
Mean reservoir depth	m	3.900
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.679
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.018
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.112
Mean monthly wind speed	m s^{-1}	1.210
Water intake depth below surface	m	N/A



195.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1372
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	941.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	430.5
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	430.5
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	471.4
Total CO ₂ emission per lifetime	ktCO _{2,eq}	47.14
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	488.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	658.3
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1027
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2174
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	2380
Total CH ₄ emission per lifetime	ktCO _{2,eq}	238.0
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.961
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.4275
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.194
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	2.148
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.2148
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2604
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2605

195.3 Emission plots



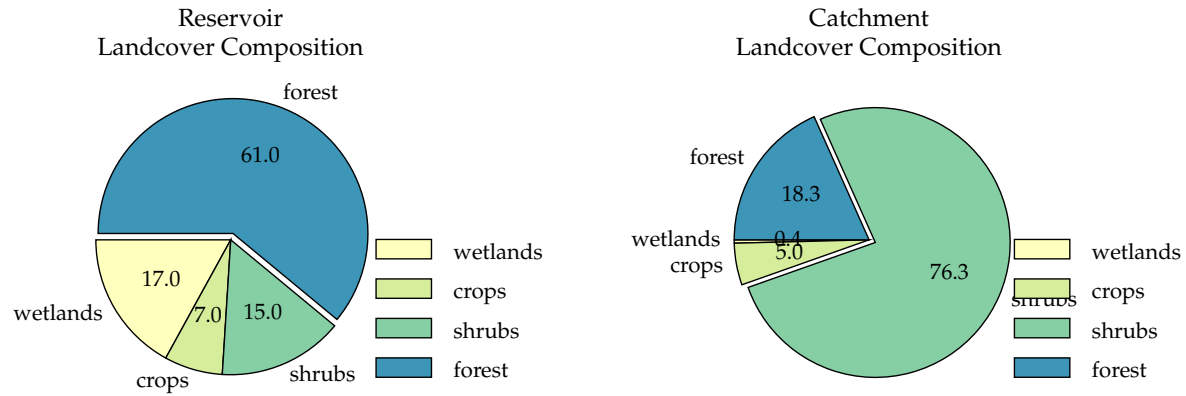
195.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	2210
Retention coefficient	-	0.7282
Influent total N concentration	$\mu\text{g L}^{-1}$	344.8
Reservoir TN concentration	$\mu\text{g L}^{-1}$	93.33
Reservoir TP concentration	$\mu\text{g L}^{-1}$	635.4
Percentage of reservoir's surface area that is littoral	%	46.45
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.120
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.21
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.88
Water density at the surface of the reservoir	kg m^{-3}	995.4
Thermocline depth	m	0.7199
Influent total N load	kgN yr^{-1}	439.0
Influent total P load	kgP yr^{-1}	2814
Downstream TN concentration	mg L^{-1}	0.061 22

196 Mone Yin

196.1 Inputs

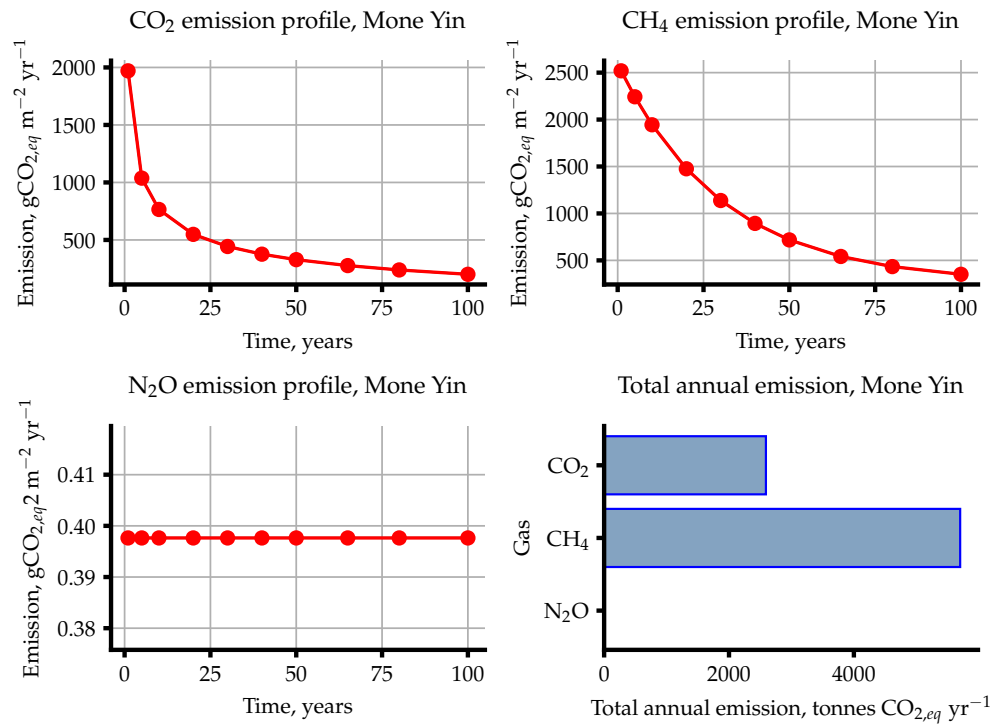
Input Name	Unit	Value(s)
Reservoir ID		9164
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 23.145681, LON: 97.578135
Monthly Temperatures	$^{\circ}\text{C}$	15.3, 17.5, 20.5, 24.9, 25.9, 26.0, 25.6, 25.5, 25.2, 23.5, 20.0, 16.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	477.0
Catchment area	km^2	260.9
Length of inundated river	km	6.294
Population	capita	18 580
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.004, 0.05, 0.762, 0.183, 0.0
Mean catchment slope	$\%$	15.00
Mean annual precipitation	mm/year	1458
Mean annual evapotranspiration	mm/year	1238
Soil wetness	mm over profile	212.0
Soil Olsen P content	kgP ha^{-1}	5.412
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	31 230 000
Reservoir area	km^2	6.057
Maximum reservoir depth	m	15.00
Mean reservoir depth	m	5.200
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.17, 0.07, 0.15, 0.61, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.496
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.660
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.328
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.852
Mean monthly wind speed	m s^{-1}	1.100
Water intake depth below surface	m	N/A



196.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	722.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	495.5
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-201.3
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	226.5
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	427.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2591
Total CO ₂ emission per lifetime	ktCO _{2,eq}	259.1
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	235.1
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	262.8
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	443.5
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	941.4
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	5702
Total CH ₄ emission per lifetime	ktCO _{2,eq}	570.2
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.3976
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.3063
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.3520
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	2.408
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.2408
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1369
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1370

196.3 Emission plots



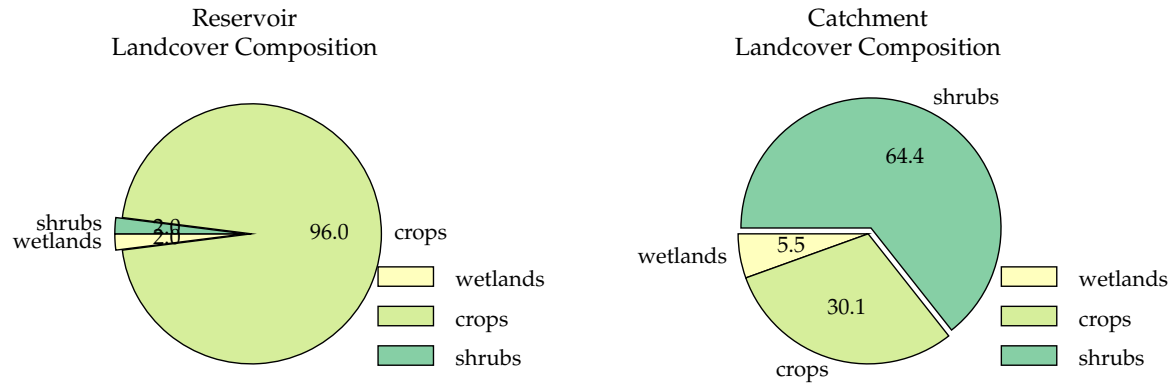
196.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	146.6
Retention coefficient	-	0.1674
Influent total N concentration	$\mu\text{g L}^{-1}$	31.99
Reservoir TN concentration	$\mu\text{g L}^{-1}$	26.62
Reservoir TP concentration	$\mu\text{g L}^{-1}$	124.5
Percentage of reservoir's surface area that is littoral	%	34.33
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.660
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	55.92
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	20.74
Water density at the bottom of the reservoir	kg m^{-3}	998.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.75
Water density at the surface of the reservoir	kg m^{-3}	996.9
Thermocline depth	m	1.174
Influent total N load	kgN yr^{-1}	3981
Influent total P load	kgP yr^{-1}	18 240
Downstream TN concentration	mg L^{-1}	0.038 66

197 BAWNatGYi

197.1 Inputs

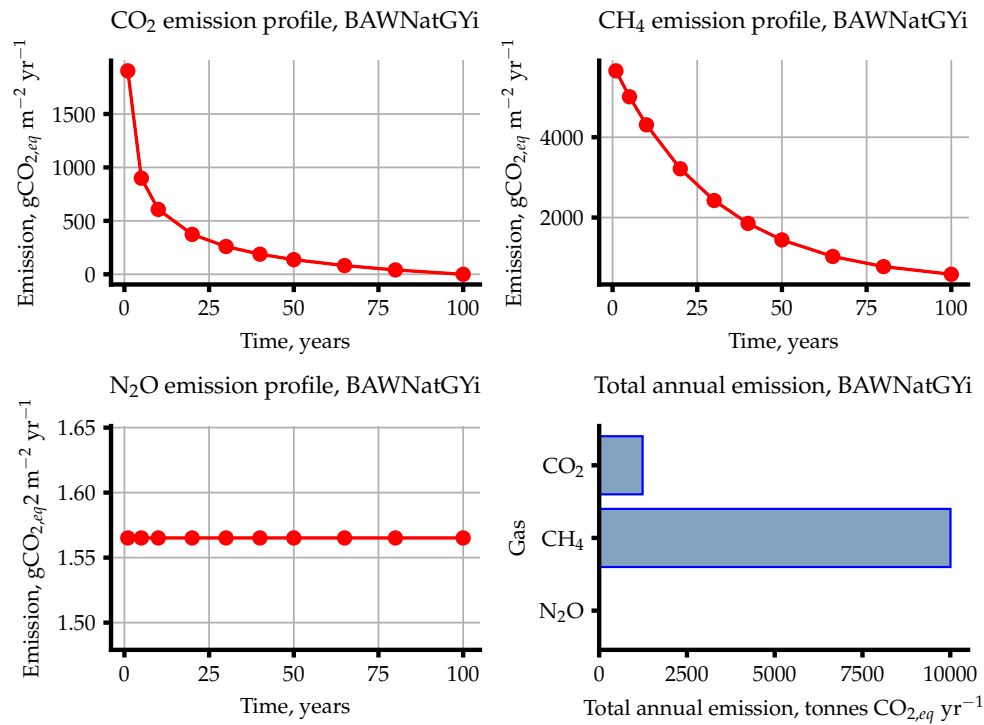
Input Name	Unit	Value(s)
Reservoir ID		9029
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.570145, LON: 96.453278
Monthly Temperatures	$^{\circ}\text{C}$	22.8, 24.4, 27.3, 29.8, 29.2, 27.0, 26.4, 26.5, 27.1, 27.4, 26.2, 23.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	2342
Catchment area	km^2	25.17
Length of inundated river	km	3.023
Population	capita	3264
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.055, 0.301, 0.643, 0.0, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	3317
Mean annual evapotranspiration	mm/year	1343
Soil wetness	mm over profile	286.0
Soil Olsen P content	kgP ha^{-1}	20.00
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	23 260 000
Reservoir area	km^2	5.075
Maximum reservoir depth	m	12.00
Mean reservoir depth	m	4.600
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.02, 0.96, 0.02, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.829
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.970
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.462
Mean monthly wind speed	m s^{-1}	0.9700
Water intake depth below surface	m	N/A



197.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	776.9
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	533.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	243.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	243.7
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1237
Total CO ₂ emission per lifetime	ktCO _{2,eq}	123.7
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	367.1
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	379.2
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1225
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1972
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	10 010
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1001
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.565
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.131
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.348
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	7.943
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.7943
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2215
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2217

197.3 Emission plots



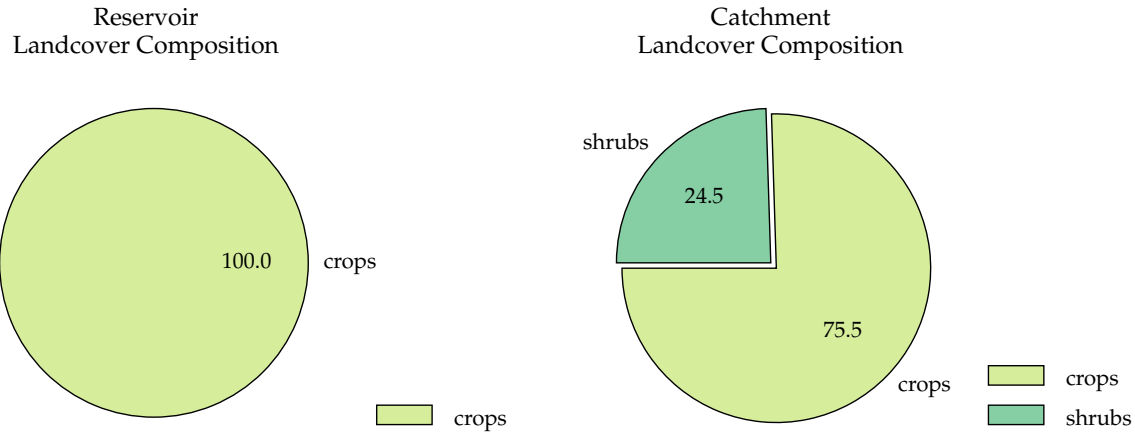
197.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	49.12
Retention coefficient	-	0.2402
Influent total N concentration	$\mu\text{g L}^{-1}$	143.4
Reservoir TN concentration	$\mu\text{g L}^{-1}$	91.31
Reservoir TP concentration	$\mu\text{g L}^{-1}$	43.90
Percentage of reservoir's surface area that is littoral	%	37.05
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.67
Water density at the bottom of the reservoir	kg m^{-3}	996.9
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.43
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.238
Influent total N load	kgN yr^{-1}	8450
Influent total P load	kgP yr^{-1}	2895
Downstream TN concentration	mg L^{-1}	0.1591

198 NgaChin

198.1 Inputs

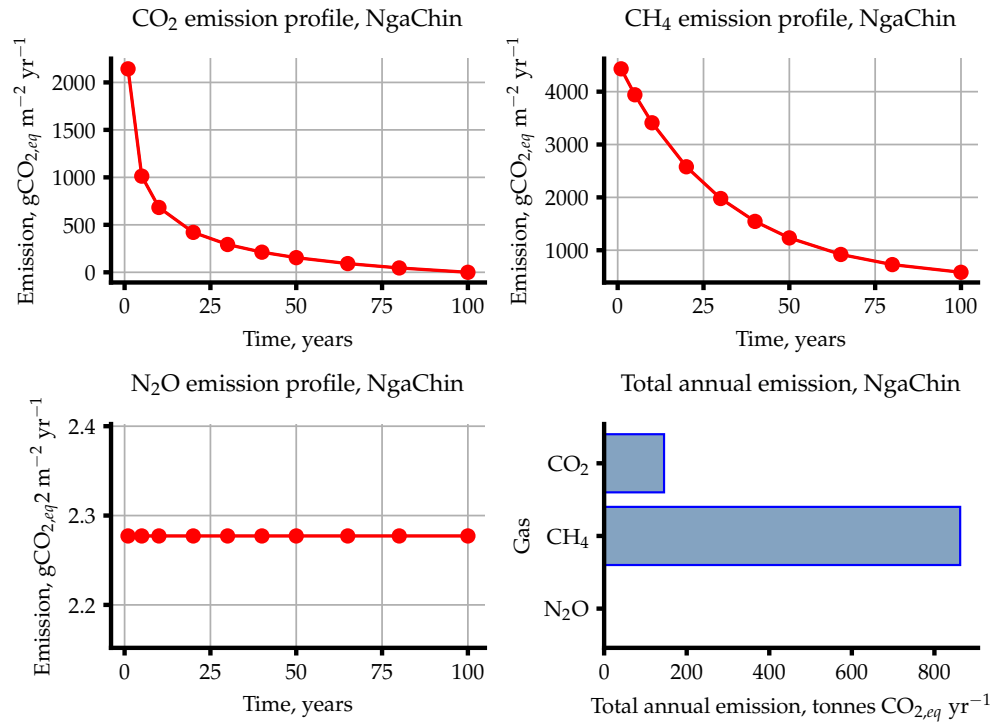
Input Name	Unit	Value(s)
Reservoir ID		9165
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.084901, LON: 94.479588
Monthly Temperatures	$^{\circ}\text{C}$	20.3, 22.9, 26.9, 29.9, 29.6, 27.7, 27.5, 27.1, 26.9, 26.1, 23.4, 20.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	173.0
Catchment area	km^2	9.413
Length of inundated river	km	0.4000
Population	capita	537.0
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.755, 0.245, 0.0, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	844.0
Mean annual evapotranspiration	mm/year	1384
Soil wetness	mm over profile	32.00
Soil Olsen P content	kgP ha^{-1}	3.460
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	1 786 000
Reservoir area	km^2	0.5290
Maximum reservoir depth	m	11.00
Mean reservoir depth	m	3.400
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.358
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.760
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.438
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.956
Mean monthly wind speed	m s^{-1}	1.080
Water intake depth below surface	m	N/A



198.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	874.5
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	600.2
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	274.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	274.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	145.1
Total CO ₂ emission per lifetime	ktCO _{2,eq}	14.51
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	404.7
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	424.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	800.9
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1630
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	862.4
Total CH ₄ emission per lifetime	ktCO _{2,eq}	86.24
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.277
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.9698
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.623
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.205
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1205
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1905
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1906

198.3 Emission plots



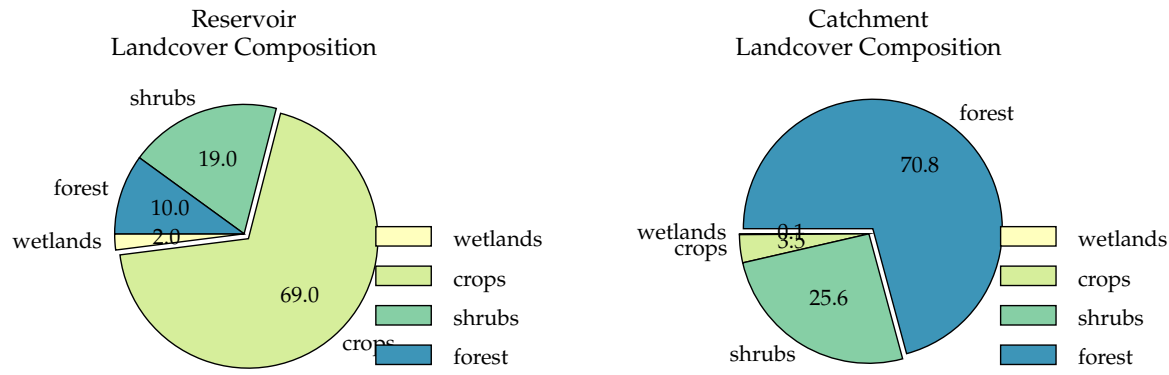
198.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	437.5
Retention coefficient	-	0.4677
Influent total N concentration	$\mu\text{g L}^{-1}$	298.9
Reservoir TN concentration	$\mu\text{g L}^{-1}$	156.7
Reservoir TP concentration	$\mu\text{g L}^{-1}$	240.8
Percentage of reservoir's surface area that is littoral	%	50.93
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.760
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.12
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.03
Water density at the bottom of the reservoir	kg m^{-3}	997.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.68
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	0.6104
Influent total N load	kgN yr^{-1}	486.7
Influent total P load	kgP yr^{-1}	712.5
Downstream TN concentration	mg L^{-1}	0.2135

199 Leway Dam

199.1 Inputs

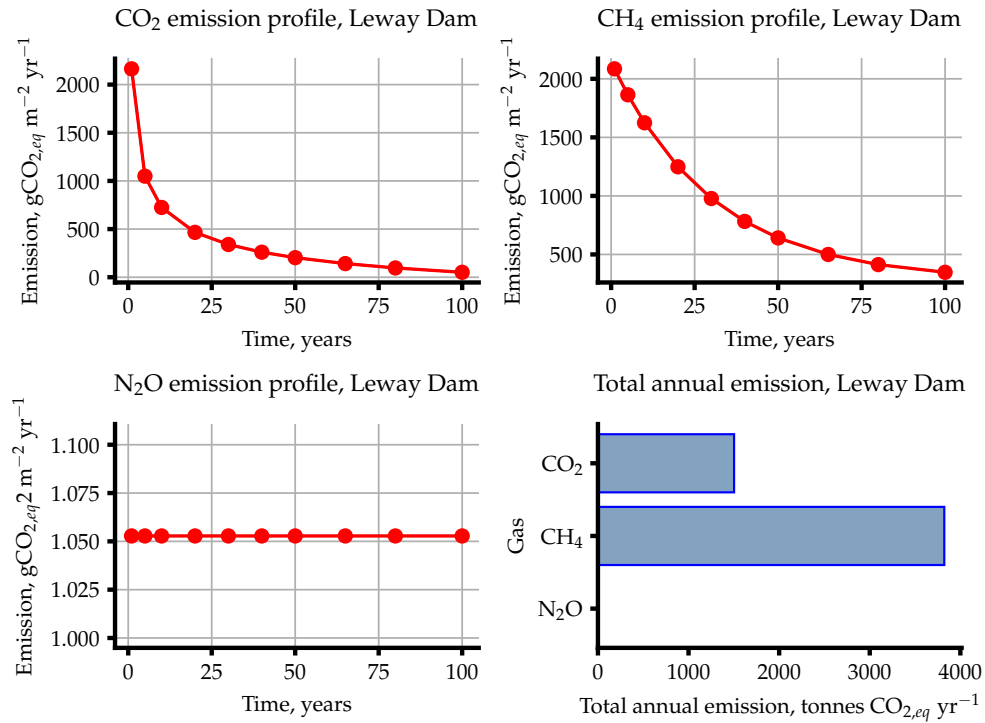
Input Name	Unit	Value(s)
Reservoir ID		9049
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.503387, LON: 95.890544
Monthly Temperatures	$^{\circ}\text{C}$	20.7, 23.1, 27.2, 30.4, 29.5, 27.1, 26.6, 26.5, 27.0, 26.8, 24.5, 21.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	94.00
Catchment area	km^2	104.2
Length of inundated river	km	4.141
Population	capita	5291
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.001, 0.035, 0.256, 0.708, 0.0
Mean catchment slope	$\%$	9.000
Mean annual precipitation	mm/year	1003
Mean annual evapotranspiration	mm/year	1352
Soil wetness	mm over profile	155.0
Soil Olsen P content	kgP ha^{-1}	4.443
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	50 250 000
Reservoir area	km^2	4.670
Maximum reservoir depth	m	27.00
Mean reservoir depth	m	10.80
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.02, 0.69, 0.19, 0.1, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.894
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.754
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.358
Mean monthly wind speed	m s^{-1}	1.040
Water intake depth below surface	m	N/A



199.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	862.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	591.6
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-51.33
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	270.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	321.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1503
Total CO ₂ emission per lifetime	ktCO _{2,eq}	150.3
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	241.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	276.2
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	300.9
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	818.6
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	3823
Total CH ₄ emission per lifetime	ktCO _{2,eq}	382.3
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.053
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.2173
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.6351
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	4.917
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.4917
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1140
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1141

199.3 Emission plots



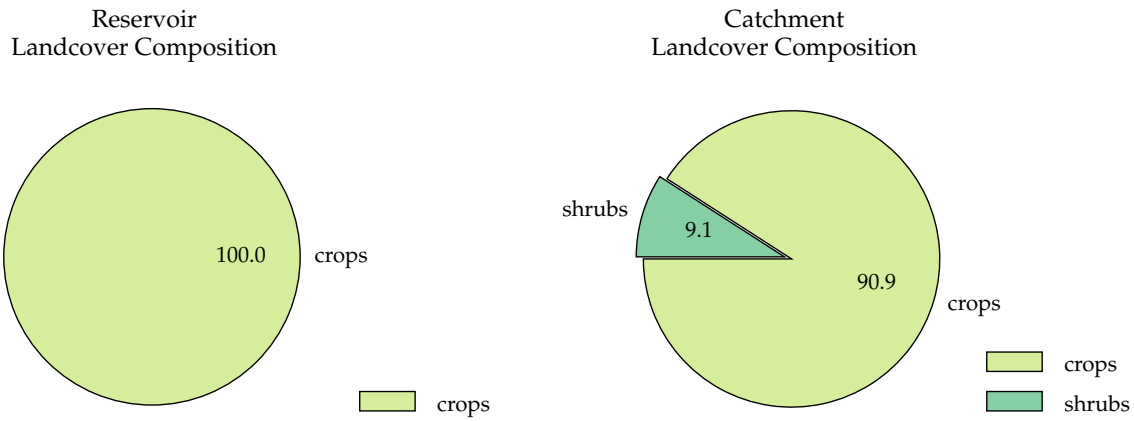
199.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	502.5
Retention coefficient	-	0.8043
Influent total N concentration	$\mu\text{g L}^{-1}$	97.16
Reservoir TN concentration	$\mu\text{g L}^{-1}$	18.41
Reservoir TP concentration	$\mu\text{g L}^{-1}$	99.36
Percentage of reservoir's surface area that is littoral	%	16.19
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.29
Water density at the bottom of the reservoir	kg m^{-3}	997.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.55
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.057
Influent total N load	kgN yr^{-1}	951.8
Influent total P load	kgP yr^{-1}	4922
Downstream TN concentration	mg L^{-1}	0.014 29

200 Lin Pann Dam

200.1 Inputs

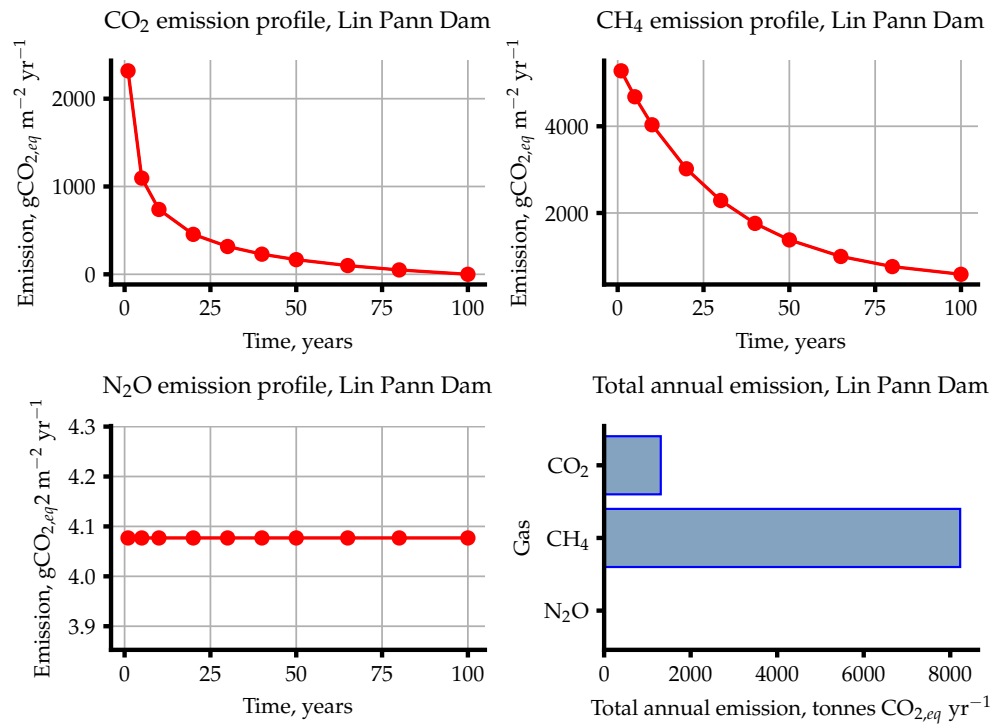
Input Name	Unit	Value(s)
Reservoir ID		9083
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 23.143681, LON: 95.525656
Monthly Temperatures	$^{\circ}\text{C}$	19.5, 22.4, 26.4, 29.9, 29.7, 29.0, 28.7, 28.0, 28.0, 26.8, 23.9, 20.2
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	378.0
Catchment area	km^2	39.46
Length of inundated river	km	0.9420
Population	capita	2484
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.909, 0.091, 0.0, 0.0
Mean catchment slope	$\%$	1.000
Mean annual precipitation	mm/year	1262
Mean annual evapotranspiration	mm/year	1353
Soil wetness	mm over profile	104.0
Soil Olsen P content	kgP ha^{-1}	5.556
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	11 750 000
Reservoir area	km^2	4.414
Maximum reservoir depth	m	7.000
Mean reservoir depth	m	2.700
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.938
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.620
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.362
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.734
Mean monthly wind speed	m s^{-1}	1.070
Water intake depth below surface	m	N/A



200.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	945.6
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	648.9
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	296.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	296.7
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1309
Total CO ₂ emission per lifetime	ktCO _{2,eq}	130.9
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	454.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	393.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1016
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1864
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	8230
Total CH ₄ emission per lifetime	ktCO _{2,eq}	823.0
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	4.077
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	2.232
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.154
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	18.00
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.800
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2161
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2164

200.3 Emission plots



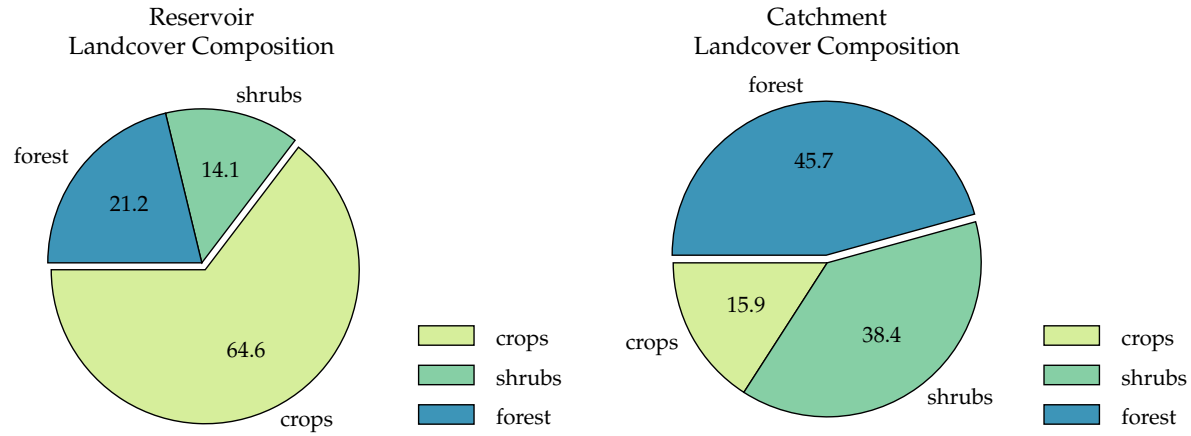
200.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	185.9
Retention coefficient	-	0.3868
Influent total N concentration	$\mu\text{g L}^{-1}$	665.6
Reservoir TN concentration	$\mu\text{g L}^{-1}$	403.2
Reservoir TP concentration	$\mu\text{g L}^{-1}$	123.7
Percentage of reservoir's surface area that is littoral	%	58.99
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.620
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	55.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.50
Water density at the bottom of the reservoir	kg m^{-3}	997.4
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.33
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	0.9165
Influent total N load	kgN yr^{-1}	9928
Influent total P load	kgP yr^{-1}	2773
Downstream TN concentration	mg L^{-1}	0.5778

201 Unknown4

201.1 Inputs

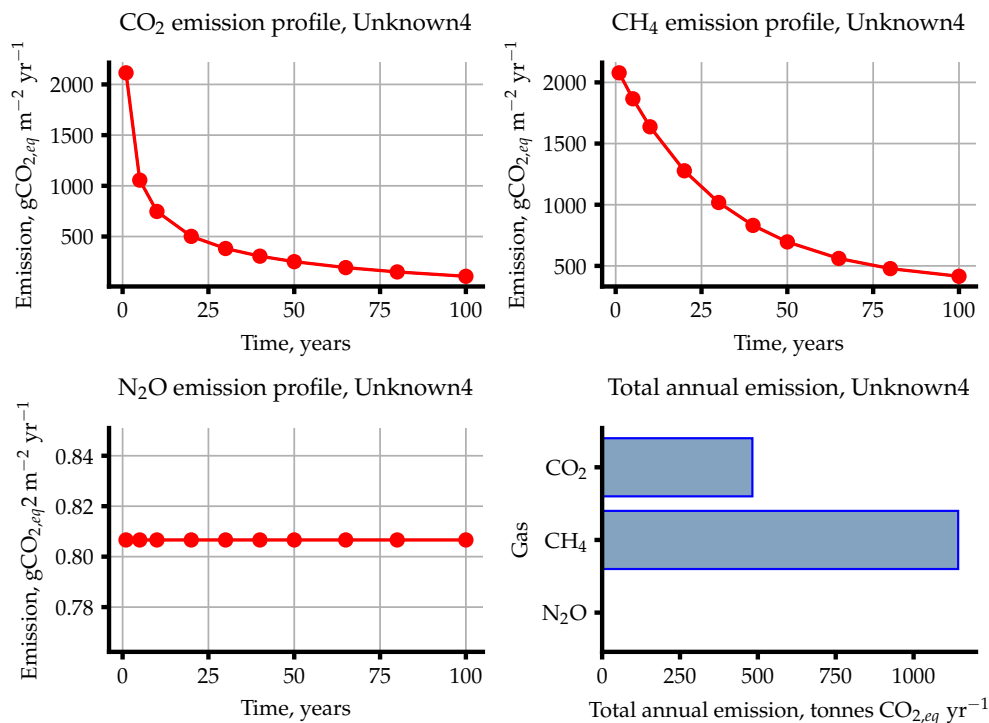
Input Name	Unit	Value(s)
Reservoir ID		9041
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 19.059652, LON: 95.616945
Monthly Temperatures	$^{\circ}\text{C}$	21.2, 23.8, 27.8, 31.0, 29.9, 27.3, 26.8, 26.7, 27.0, 27.0, 24.9, 21.7
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	85.00
Catchment area	km^2	12.17
Length of inundated river	km	0.8910
Population	capita	693.0
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.159, 0.384, 0.457, 0.0
Mean catchment slope	$\%$	7.000
Mean annual precipitation	mm/year	1022
Mean annual evapotranspiration	mm/year	1375
Soil wetness	mm over profile	197.0
Soil Olsen P content	kgP ha^{-1}	3.866
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	7 973 000
Reservoir area	km^2	1.323
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	6.000
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.64, 0.14, 0.21, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.811
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.754
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.358
Mean monthly wind speed	m s^{-1}	0.9700
Water intake depth below surface	m	N/A



201.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	818.8
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	561.9
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-107.8
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	256.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	364.7
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	482.5
Total CO ₂ emission per lifetime	ktCO _{2,eq}	48.25
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	284.6
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	346.9
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	232.6
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	864.1
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	1143
Total CH ₄ emission per lifetime	ktCO _{2,eq}	114.3
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.8066
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.1658
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.4862
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	1.067
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.1067
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1229
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1229

201.3 Emission plots



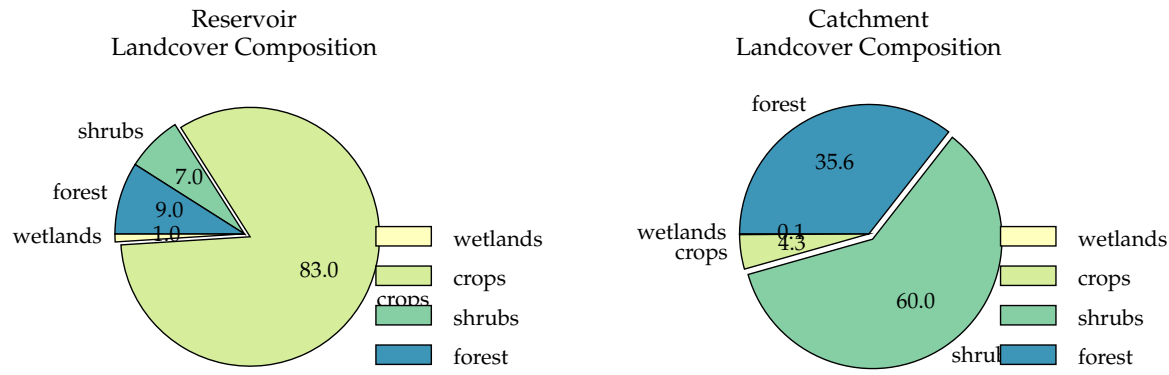
201.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	706.8
Retention coefficient	-	0.8606
Influent total N concentration	$\mu\text{g L}^{-1}$	198.8
Reservoir TN concentration	$\mu\text{g L}^{-1}$	26.04
Reservoir TP concentration	$\mu\text{g L}^{-1}$	103.5
Percentage of reservoir's surface area that is littoral	%	21.16
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.140
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	61.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.62
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.00
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	0.7041
Influent total N load	kgN yr^{-1}	205.7
Influent total P load	kgP yr^{-1}	731.2
Downstream TN concentration	mg L^{-1}	0.029 09

202 Ka Nyin Dam

202.1 Inputs

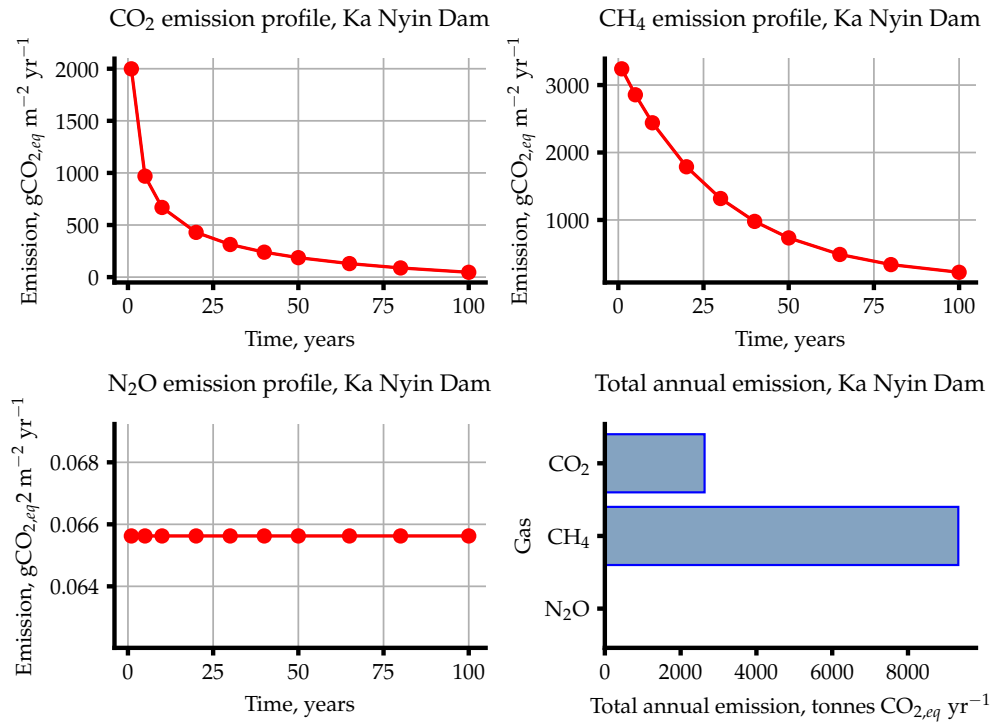
Input Name	Unit	Value(s)
Reservoir ID		9089
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.9945, LON: 95.075564
Monthly Temperatures	$^{\circ}\text{C}$	22.3, 24.6, 27.6, 30.0, 29.3, 27.2, 26.6, 26.7, 27.1, 27.3, 25.6, 22.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1828
Catchment area	km^2	334.4
Length of inundated river	km	9.521
Population	capita	42 590
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.001, 0.043, 0.601, 0.356, 0.0
Mean catchment slope	$\%$	27.00
Mean annual precipitation	mm/year	2712
Mean annual evapotranspiration	mm/year	1282
Soil wetness	mm over profile	192.0
Soil Olsen P content	kgP ha^{-1}	8.130
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	196 000 000
Reservoir area	km^2	8.885
Maximum reservoir depth	m	52.00
Mean reservoir depth	m	22.10
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.01, 0.83, 0.07, 0.09, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.836
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.875
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.042
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.427
Mean monthly wind speed	m s^{-1}	0.8900
Water intake depth below surface	m	N/A



202.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	796.9
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	546.9
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-46.20
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	250.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	296.2
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2632
Total CO ₂ emission per lifetime	ktCO _{2,eq}	263.2
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	179.0
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	100.5
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	770.3
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1050
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	9328
Total CH ₄ emission per lifetime	ktCO _{2,eq}	932.8
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.065 62
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.049 02
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.057 32
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.5831
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.058 31
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1346
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1346

202.3 Emission plots



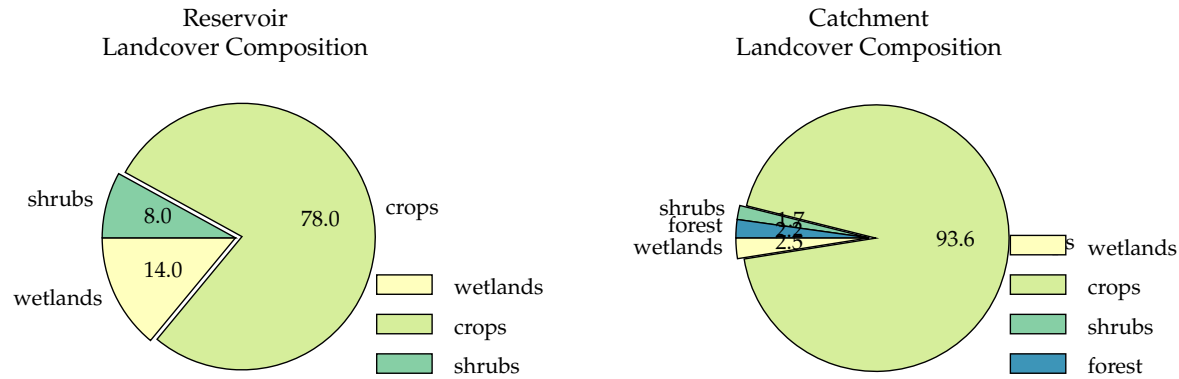
202.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	56.70
Retention coefficient	-	0.2044
Influent total N concentration	$\mu\text{g L}^{-1}$	1.237
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.9618
Reservoir TP concentration	$\mu\text{g L}^{-1}$	46.01
Percentage of reservoir's surface area that is littoral	%	7.725
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.875
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.50
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.34
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.55
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.213
Influent total N load	kgN yr^{-1}	755.9
Influent total P load	kgP yr^{-1}	34 660
Downstream TN concentration	mg L^{-1}	0.001 439

203 Ye Bok Reservoir

203.1 Inputs

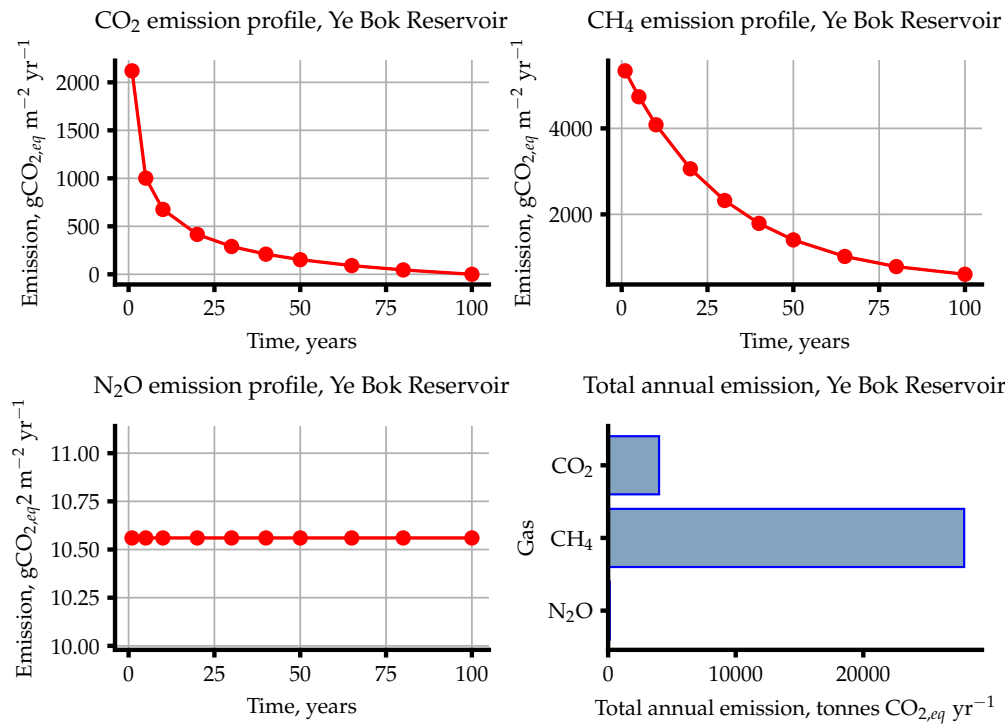
Input Name	Unit	Value(s)
Reservoir ID		9166
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.0209, LON: 97.736241
Monthly Temperatures	$^{\circ}\text{C}$	23.9, 25.9, 28.7, 30.4, 28.9, 26.9, 26.4, 26.2, 26.9, 27.4, 26.5, 24.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical dry broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1333
Catchment area	km^2	46.38
Length of inundated river	km	8.825
Population	capita	3523
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.025, 0.935, 0.017, 0.022, 0.0
Mean catchment slope	$\%$	2.000
Mean annual precipitation	mm/year	2386
Mean annual evapotranspiration	mm/year	1367
Soil wetness	mm over profile	471.0
Soil Olsen P content	kgP ha^{-1}	18.27
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	56 830 000
Reservoir area	km^2	14.71
Maximum reservoir depth	m	11.00
Mean reservoir depth	m	3.863
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.14, 0.78, 0.08, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.628
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.820
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.820
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.502
Mean monthly wind speed	m s^{-1}	0.9400
Water intake depth below surface	m	N/A



203.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	865.0
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	593.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	271.4
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	271.4
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	3992
Total CO ₂ emission per lifetime	ktCO _{2,eq}	399.2
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	416.3
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	412.3
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1068
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1897
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	27 910
Total CH ₄ emission per lifetime	ktCO _{2,eq}	2791
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	10.56
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	7.046
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	8.803
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	155.3
Total N ₂ O emission per lifetime	ktCO _{2,eq}	15.53
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2168
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2177

203.3 Emission plots



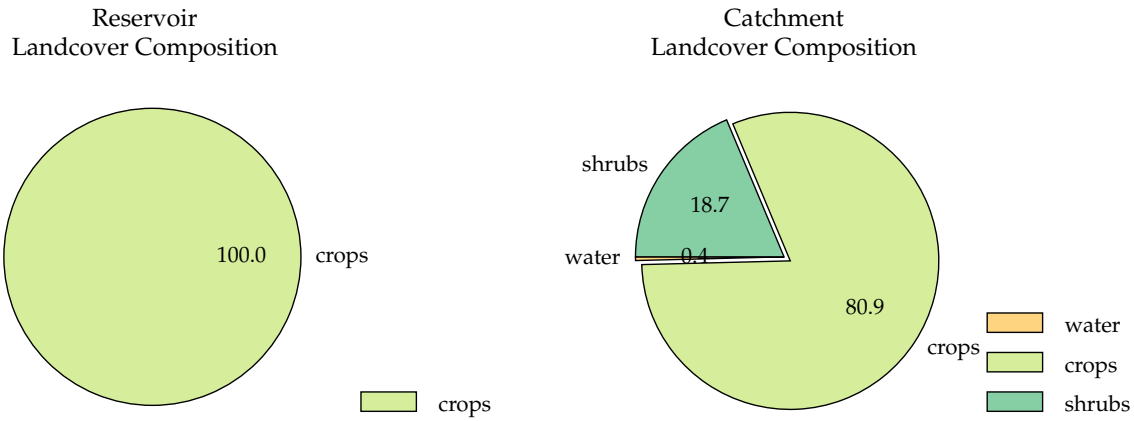
203.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	57.72
Retention coefficient	-	0.4240
Influent total N concentration	$\mu\text{g L}^{-1}$	1628
Reservoir TN concentration	$\mu\text{g L}^{-1}$	1012
Reservoir TP concentration	$\mu\text{g L}^{-1}$	44.49
Percentage of reservoir's surface area that is littoral	%	44.48
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.820
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.84
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	26.39
Water density at the bottom of the reservoir	kg m^{-3}	996.7
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.85
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	1.641
Influent total N load	kgN yr^{-1}	100 600
Influent total P load	kgP yr^{-1}	3569
Downstream TN concentration	mg L^{-1}	0.9578

204 MyaingChaung

204.1 Inputs

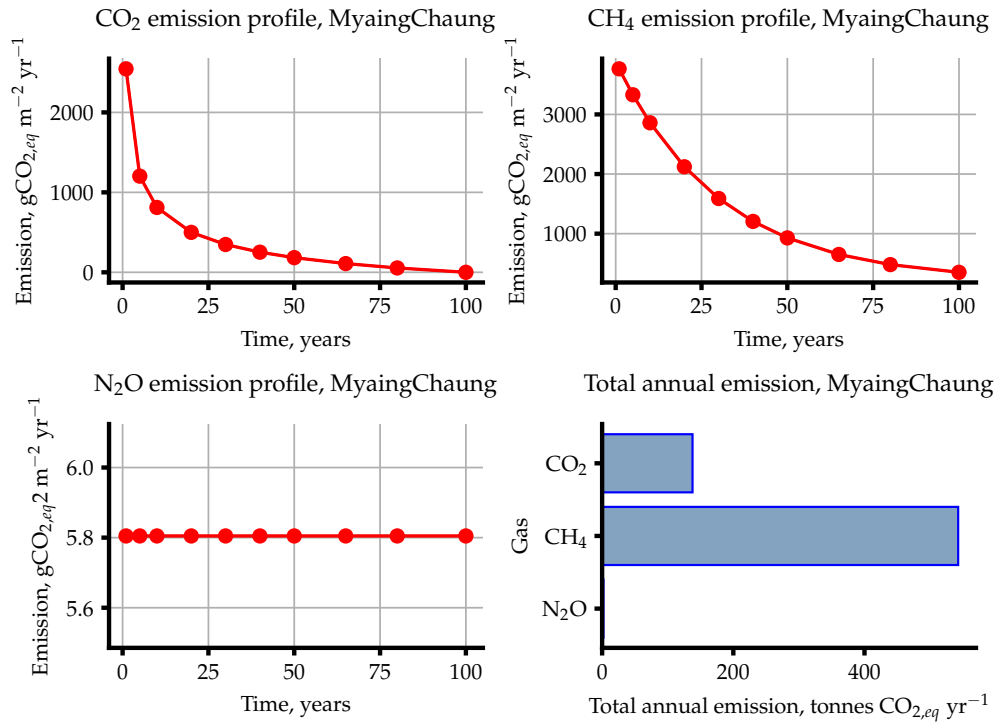
Input Name	Unit	Value(s)
Reservoir ID		9167
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 21.615553, LON: 94.816175
Monthly Temperatures	$^{\circ}\text{C}$	20.5, 23.1, 27.1, 30.3, 29.8, 28.4, 28.2, 27.7, 27.3, 26.4, 23.6, 20.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	subtropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	114.0
Catchment area	km^2	50.50
Length of inundated river	km	0.8370
Population	capita	4961
Area fractions	-	0.0, 0.0, 0.0, 0.004, 0.0, 0.81, 0.187, 0.0, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	779.0
Mean annual evapotranspiration	mm/year	1407
Soil wetness	mm over profile	31.00
Soil Olsen P content	kgP ha^{-1}	4.892
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	2 585 000
Reservoir area	km^2	0.4230
Maximum reservoir depth	m	11.00
Mean reservoir depth	m	6.100
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	3.969
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.760
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.438
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.956
Mean monthly wind speed	m s^{-1}	1.140
Water intake depth below surface	m	N/A



204.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1039
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	712.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	325.8
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	325.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	137.8
Total CO ₂ emission per lifetime	ktCO _{2,eq}	13.78
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	290.8
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	212.3
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	780.1
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1283
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	542.8
Total CH ₄ emission per lifetime	ktCO _{2,eq}	54.28
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	5.805
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	4.033
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	4.919
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	2.455
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.2455
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1609
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1614

204.3 Emission plots



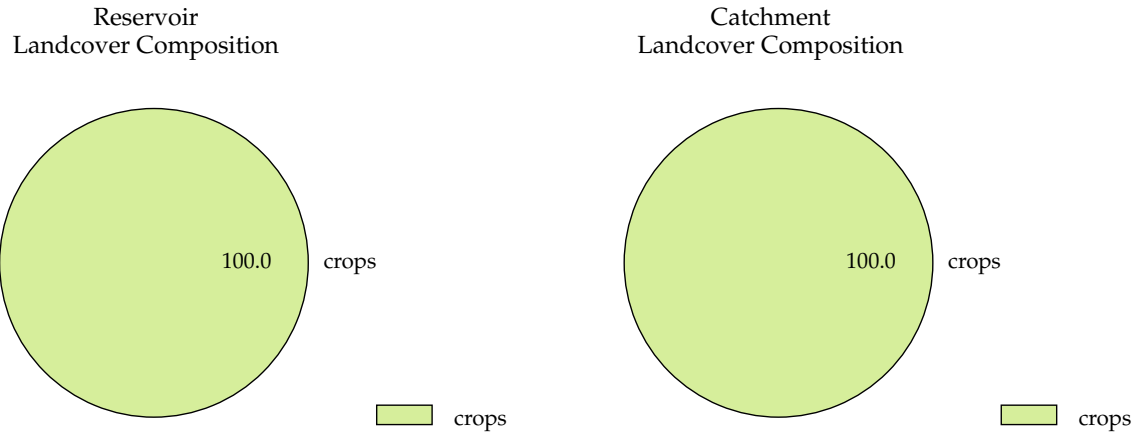
204.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	810.5
Retention coefficient	-	0.2646
Influent total N concentration	$\mu\text{g L}^{-1}$	397.3
Reservoir TN concentration	$\mu\text{g L}^{-1}$	291.7
Reservoir TP concentration	$\mu\text{g L}^{-1}$	599.9
Percentage of reservoir's surface area that is littoral	%	22.57
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.760
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	57.12
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.16
Water density at the bottom of the reservoir	kg m^{-3}	997.3
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.18
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	0.5829
Influent total N load	kgN yr^{-1}	2287
Influent total P load	kgP yr^{-1}	4666
Downstream TN concentration	mg L^{-1}	0.4301

205 Unknown8

205.1 Inputs

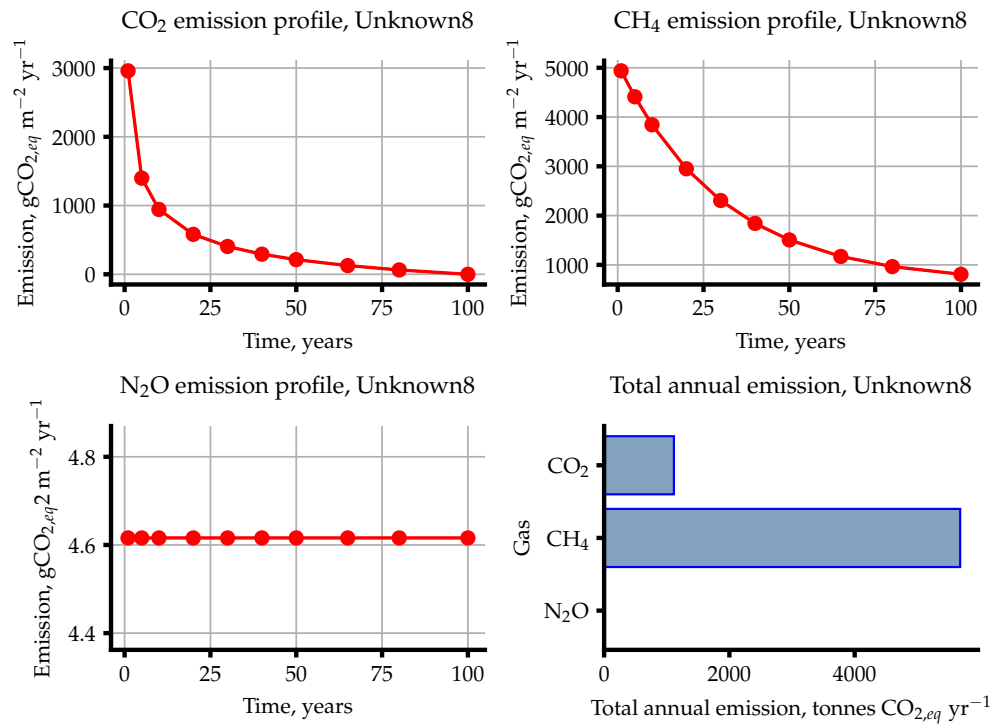
Input Name	Unit	Value(s)
Reservoir ID		9062
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 20.681671, LON: 95.885868
Monthly Temperatures	$^{\circ}\text{C}$	21.9, 24.3, 28.5, 31.4, 30.4, 28.7, 28.2, 27.9, 27.9, 27.3, 25.0, 21.8
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	112.0
Catchment area	km^2	54.43
Length of inundated river	km	3.457
Population	capita	7540
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0
Mean catchment slope	%	3.000
Mean annual precipitation	mm/year	919.0
Mean annual evapotranspiration	mm/year	1470
Soil wetness	mm over profile	70.00
Soil Olsen P content	kgP ha^{-1}	3.616
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	13 250 000
Reservoir area	km^2	2.940
Maximum reservoir depth	m	15.00
Mean reservoir depth	m	4.500
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 1.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.262
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	5.040
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.202
Mean monthly wind speed	m s^{-1}	1.240
Water intake depth below surface	m	N/A



205.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1208
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	828.9
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	378.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	378.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1114
Total CO ₂ emission per lifetime	ktCO _{2,eq}	111.4
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	415.3
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	639.6
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	878.5
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1933
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	5684
Total CH ₄ emission per lifetime	ktCO _{2,eq}	568.4
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	4.616
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.200
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.908
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	13.57
Total N ₂ O emission per lifetime	ktCO _{2,eq}	1.357
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2312
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2315

205.3 Emission plots



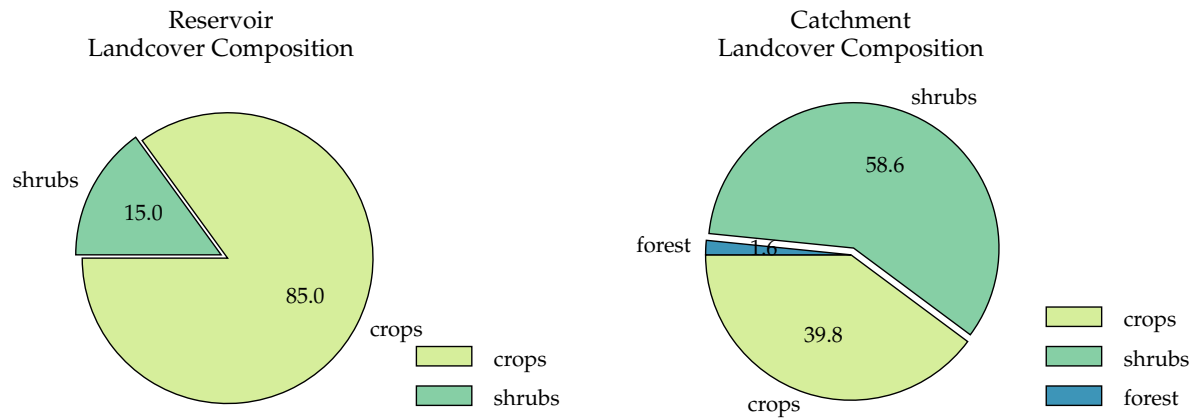
205.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	1050
Retention coefficient	-	0.6351
Influent total N concentration	$\mu\text{g L}^{-1}$	542.9
Reservoir TN concentration	$\mu\text{g L}^{-1}$	198.1
Reservoir TP concentration	$\mu\text{g L}^{-1}$	401.2
Percentage of reservoir's surface area that is littoral	%	40.59
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	5.180
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	62.16
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.01
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.75
Water density at the surface of the reservoir	kg m^{-3}	995.8
Thermocline depth	m	1.046
Influent total N load	kgN yr^{-1}	3309
Influent total P load	kgP yr^{-1}	6402
Downstream TN concentration	mg L^{-1}	0.1770

206 Unknown19

206.1 Inputs

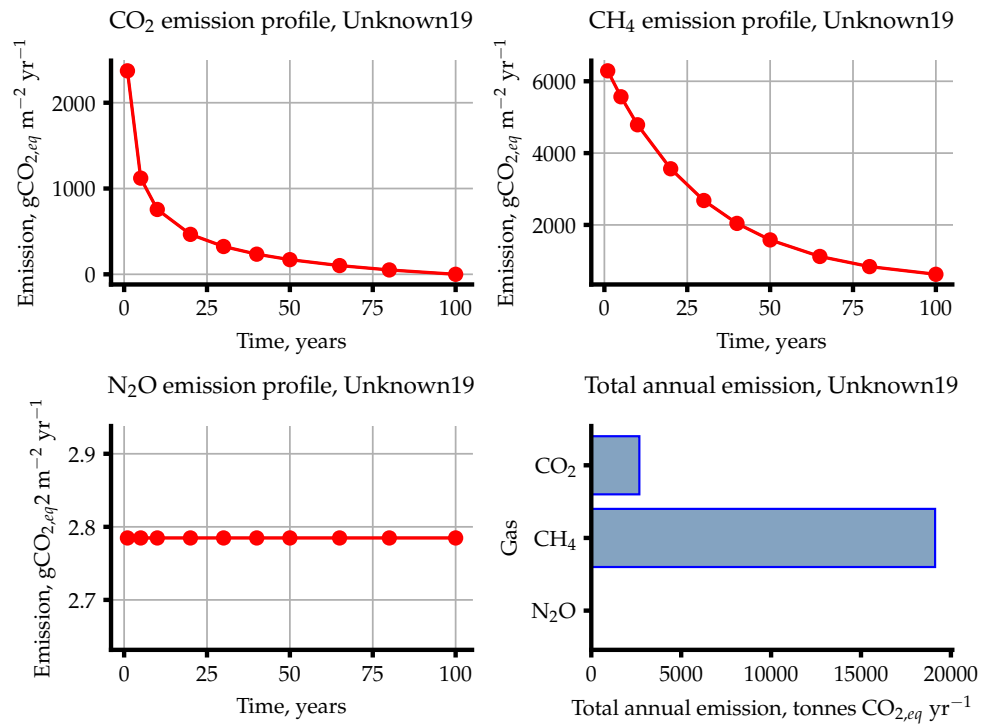
Input Name	Unit	Value(s)
Reservoir ID		9086
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 23.125912, LON: 95.582364
Monthly Temperatures	$^{\circ}\text{C}$	19.4, 22.3, 26.3, 29.9, 29.7, 29.0, 28.7, 28.0, 27.9, 26.7, 23.8, 20.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	397.0
Catchment area	km^2	135.9
Length of inundated river	km	8.089
Population	capita	9013
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.398279192, 0.585781722, 0.015939086, 0.0
Mean catchment slope	$\%$	1.000
Mean annual precipitation	mm/year	1290
Mean annual evapotranspiration	mm/year	1336
Soil wetness	mm over profile	117.0
Soil Olsen P content	kgP ha^{-1}	5.610
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	25 270 000
Reservoir area	km^2	8.803
Maximum reservoir depth	m	11.00
Mean reservoir depth	m	2.900
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.85, 0.15, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.287
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.620
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.362
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.734
Mean monthly wind speed	m s^{-1}	1.070
Water intake depth below surface	m	N/A



206.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	967.9
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	664.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	303.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	303.7
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2673
Total CO ₂ emission per lifetime	ktCO _{2,eq}	267.3
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	452.3
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	393.0
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1327
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2172
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	19 120
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1912
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	2.785
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.917
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	2.351
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	24.51
Total N ₂ O emission per lifetime	ktCO _{2,eq}	2.451
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2476
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2478

206.3 Emission plots



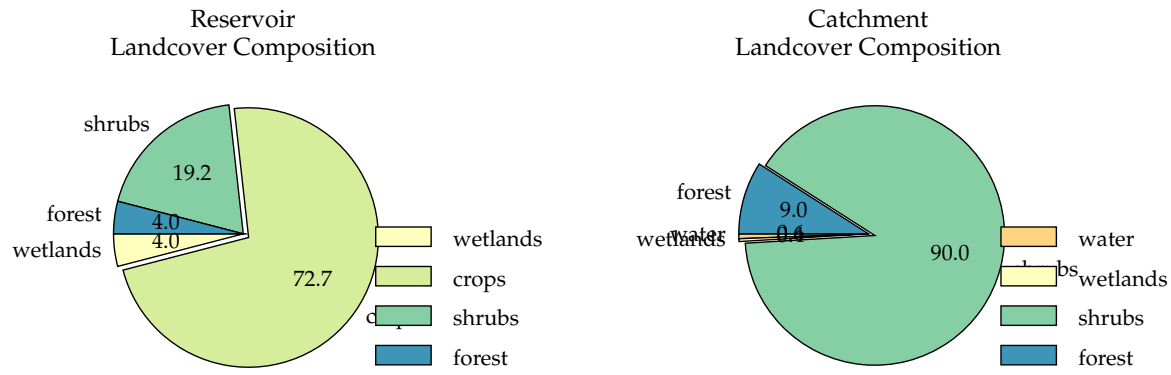
206.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	175.1
Retention coefficient	-	0.2728
Influent total N concentration	$\mu\text{g L}^{-1}$	407.5
Reservoir TN concentration	$\mu\text{g L}^{-1}$	286.7
Reservoir TP concentration	$\mu\text{g L}^{-1}$	133.4
Percentage of reservoir's surface area that is littoral	%	58.91
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.620
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	55.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	23.44
Water density at the bottom of the reservoir	kg m^{-3}	997.5
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	29.33
Water density at the surface of the reservoir	kg m^{-3}	995.9
Thermocline depth	m	1.084
Influent total N load	kgN yr^{-1}	21 990
Influent total P load	kgP yr^{-1}	9453
Downstream TN concentration	mg L^{-1}	0.4349

207 Salu Dam

207.1 Inputs

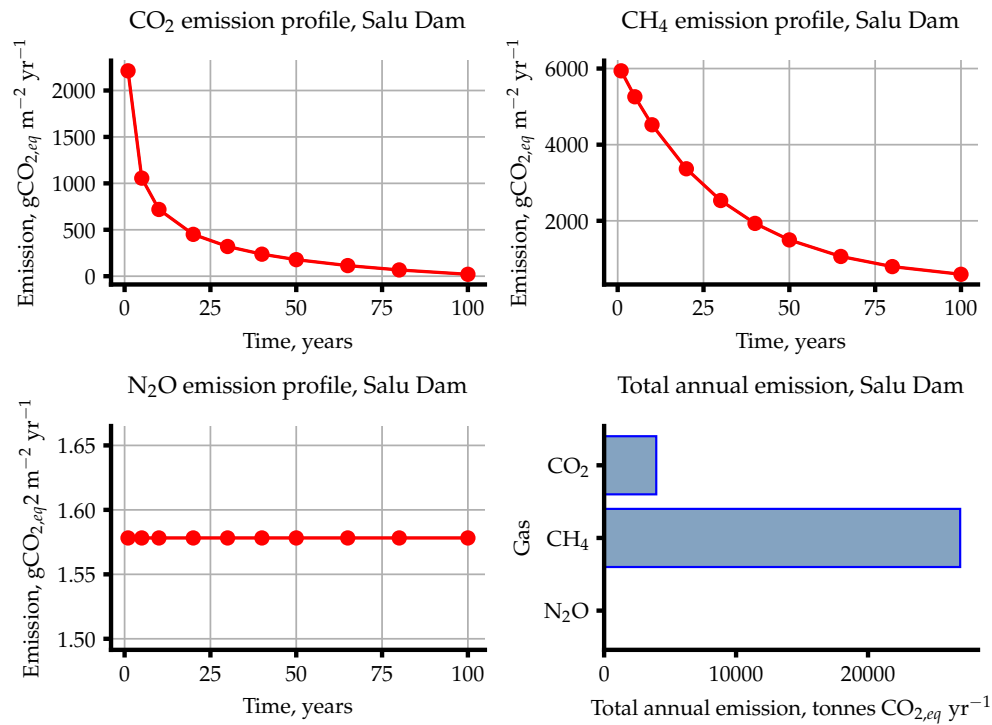
Input Name	Unit	Value(s)
Reservoir ID		9028
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.547701, LON: 96.366082
Monthly Temperatures	$^{\circ}\text{C}$	22.8, 24.5, 27.5, 30.1, 29.4, 27.1, 26.6, 26.6, 27.1, 27.5, 26.2, 23.4
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1623
Catchment area	km^2	82.52
Length of inundated river	km	8.334
Population	capita	10 390
Area fractions	-	0.0, 0.0, 0.0, 0.006, 0.0035, 0.0, 0.9, 0.0905, 0.0
Mean catchment slope	$\%$	7.000
Mean annual precipitation	mm/year	2620
Mean annual evapotranspiration	mm/year	1336
Soil wetness	mm over profile	358.0
Soil Olsen P content	kgP ha^{-1}	14.16
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	70 020 000
Reservoir area	km^2	13.12
Maximum reservoir depth	m	21.00
Mean reservoir depth	m	5.300
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.04, 0.72, 0.19, 0.04, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.133
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.970
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.462
Mean monthly wind speed	m s^{-1}	0.9400
Water intake depth below surface	m	N/A



207.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	894.2
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	613.7
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-20.53
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	280.5
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	301.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	3951
Total CO ₂ emission per lifetime	ktCO _{2,eq}	395.1
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	370.5
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	375.8
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1310
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2056
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	26 980
Total CH ₄ emission per lifetime	ktCO _{2,eq}	2698
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.578
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.046
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.312
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	20.71
Total N ₂ O emission per lifetime	ktCO _{2,eq}	2.071
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2357
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2359

207.3 Emission plots



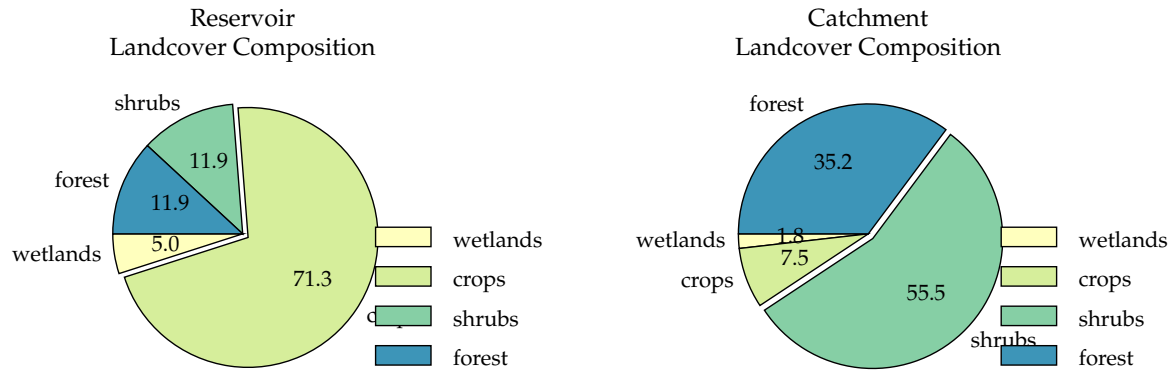
207.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	65.87
Retention coefficient	-	0.2952
Influent total N concentration	$\mu\text{g L}^{-1}$	124.5
Reservoir TN concentration	$\mu\text{g L}^{-1}$	75.94
Reservoir TP concentration	$\mu\text{g L}^{-1}$	54.74
Percentage of reservoir's surface area that is littoral	%	36.66
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.67
Water density at the bottom of the reservoir	kg m^{-3}	996.9
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.63
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.467
Influent total N load	kgN yr^{-1}	16 670
Influent total P load	kgP yr^{-1}	8822
Downstream TN concentration	mg L^{-1}	0.1288

208 unknown3

208.1 Inputs

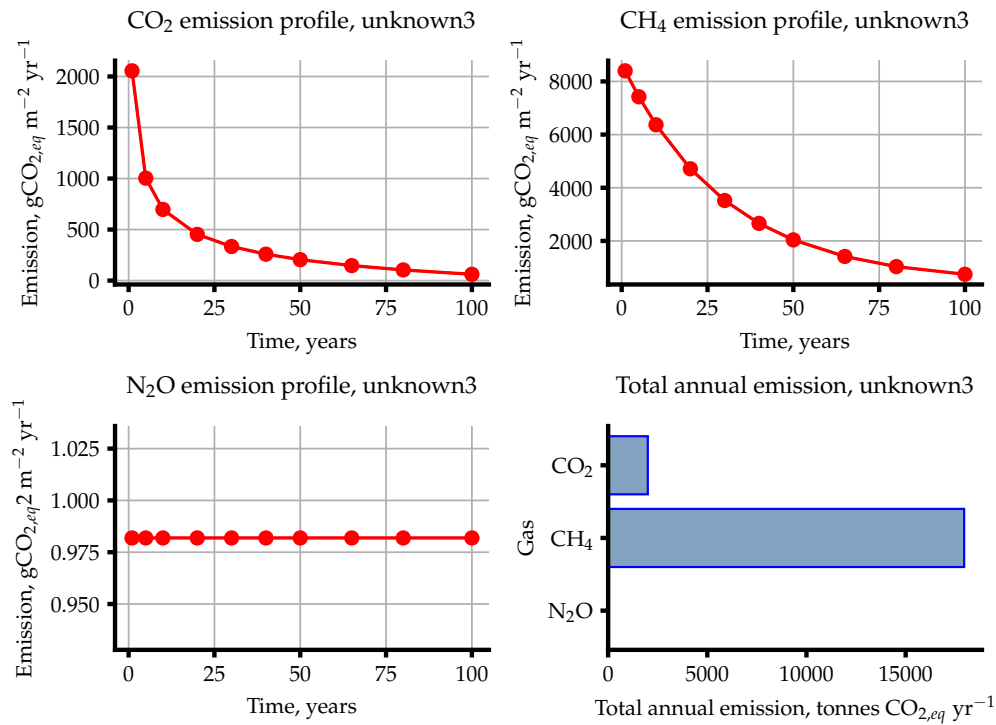
Input Name	Unit	Value(s)
Reservoir ID		9031
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.665433, LON: 96.348022
Monthly Temperatures	$^{\circ}\text{C}$	22.5, 24.2, 27.3, 29.9, 29.3, 27.0, 26.5, 26.5, 27.1, 27.4, 26.0, 23.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	2167
Catchment area	km^2	84.67
Length of inundated river	km	5.777
Population	capita	12 710
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.018, 0.075, 0.555, 0.352, 0.0
Mean catchment slope	$\%$	5.000
Mean annual precipitation	mm/year	3152
Mean annual evapotranspiration	mm/year	1340
Soil wetness	mm over profile	305.0
Soil Olsen P content	kgP ha^{-1}	20.00
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	26 230 000
Reservoir area	km^2	6.317
Maximum reservoir depth	m	14.00
Mean reservoir depth	m	4.200
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.05, 0.72, 0.12, 0.12, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.937
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.970
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.462
Mean monthly wind speed	m s^{-1}	0.9000
Water intake depth below surface	m	N/A



208.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	813.6
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	558.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-61.60
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	255.2
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	316.8
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	2001
Total CO ₂ emission per lifetime	ktCO _{2,eq}	200.1
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	392.1
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	430.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	2019
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2842
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	17 950
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1795
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.9819
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.7840
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.8829
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	6.203
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.6203
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3158
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	3159

208.3 Emission plots



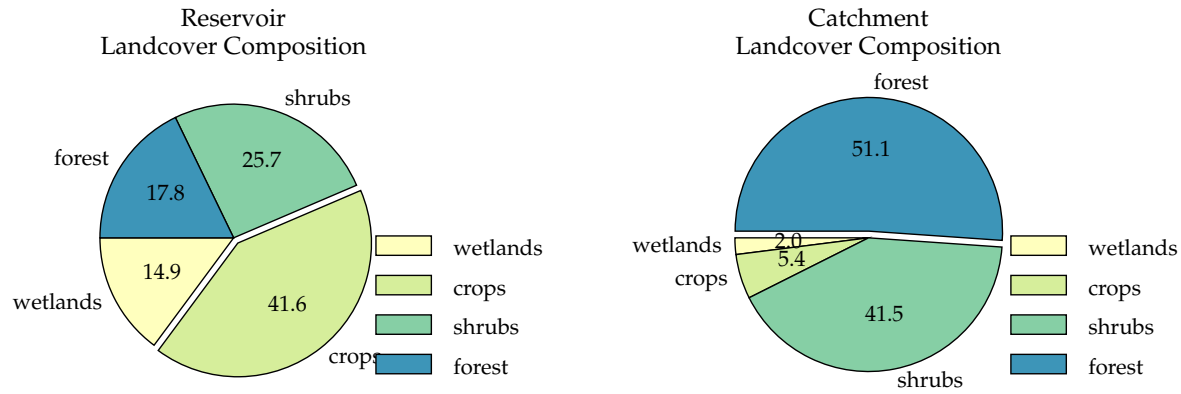
208.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	55.06
Retention coefficient	-	0.1027
Influent total N concentration	$\mu\text{g L}^{-1}$	98.02
Reservoir TN concentration	$\mu\text{g L}^{-1}$	83.23
Reservoir TP concentration	$\mu\text{g L}^{-1}$	52.33
Percentage of reservoir's surface area that is littoral	%	43.03
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.47
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.47
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.164
Influent total N load	kgN yr^{-1}	17 980
Influent total P load	kgP yr^{-1}	10 100
Downstream TN concentration	mg L^{-1}	0.1251

209 Ko Du Kwe Dam

209.1 Inputs

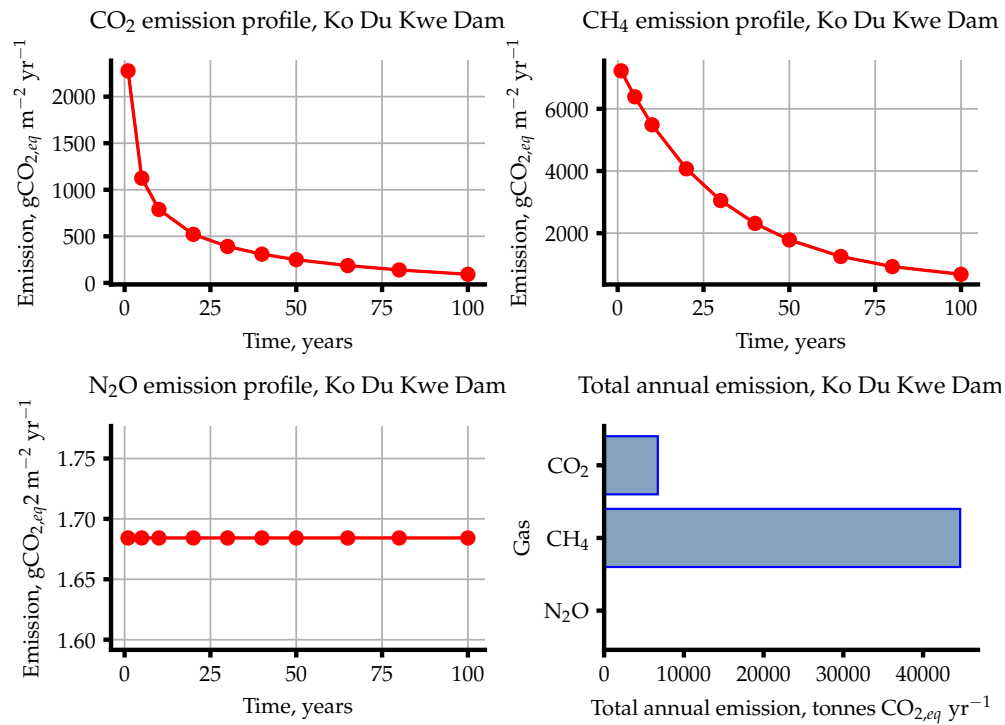
Input Name	Unit	Value(s)
Reservoir ID		9032
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 17.723025, LON: 96.284499
Monthly Temperatures	$^{\circ}\text{C}$	22.4, 24.2, 27.3, 30.0, 29.3, 26.9, 26.5, 26.5, 27.1, 27.4, 26.0, 23.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	1976
Catchment area	km^2	173.3
Length of inundated river	km	10.1
Population	capita	25 160
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.02, 0.054, 0.415, 0.511, 0.0
Mean catchment slope	$\%$	4.000
Mean annual precipitation	mm/year	2969
Mean annual evapotranspiration	mm/year	1340
Soil wetness	mm over profile	327.0
Soil Olsen P content	kgP ha^{-1}	19.54
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	85 270 000
Reservoir area	km^2	18.09
Maximum reservoir depth	m	18.00
Mean reservoir depth	m	4.700
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.15, 0.42, 0.26, 0.18, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	6.066
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	3.970
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	5.462
Mean monthly wind speed	m s^{-1}	0.8900
Water intake depth below surface	m	N/A



209.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	891.5
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	611.8
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-92.40
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	279.7
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	372.1
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	6731
Total CO ₂ emission per lifetime	ktCO _{2,eq}	673.1
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	380.4
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	407.4
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1681
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2468
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	44 650
Total CH ₄ emission per lifetime	ktCO _{2,eq}	4465
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.684
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	1.305
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	1.494
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	30.47
Total N ₂ O emission per lifetime	ktCO _{2,eq}	3.047
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2840
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2842

209.3 Emission plots



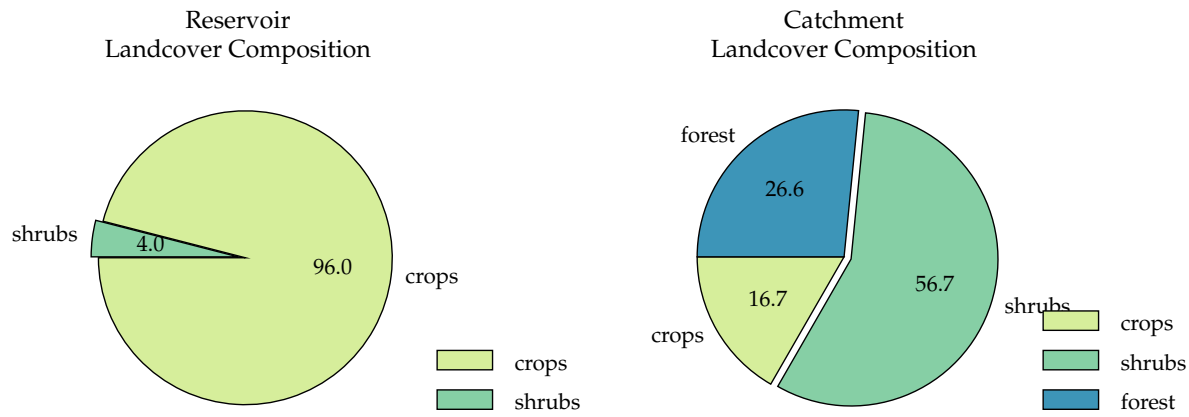
209.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	56.93
Retention coefficient	-	0.1663
Influent total N concentration	$\mu\text{g L}^{-1}$	148.9
Reservoir TN concentration	$\mu\text{g L}^{-1}$	118.7
Reservoir TP concentration	$\mu\text{g L}^{-1}$	51.79
Percentage of reservoir's surface area that is littoral	%	40.31
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.870
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	25.41
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.50
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.476
Influent total N load	kgN yr^{-1}	51 010
Influent total P load	kgP yr^{-1}	19 500
Downstream TN concentration	mg L^{-1}	0.1793

210 Pinde

210.1 Inputs

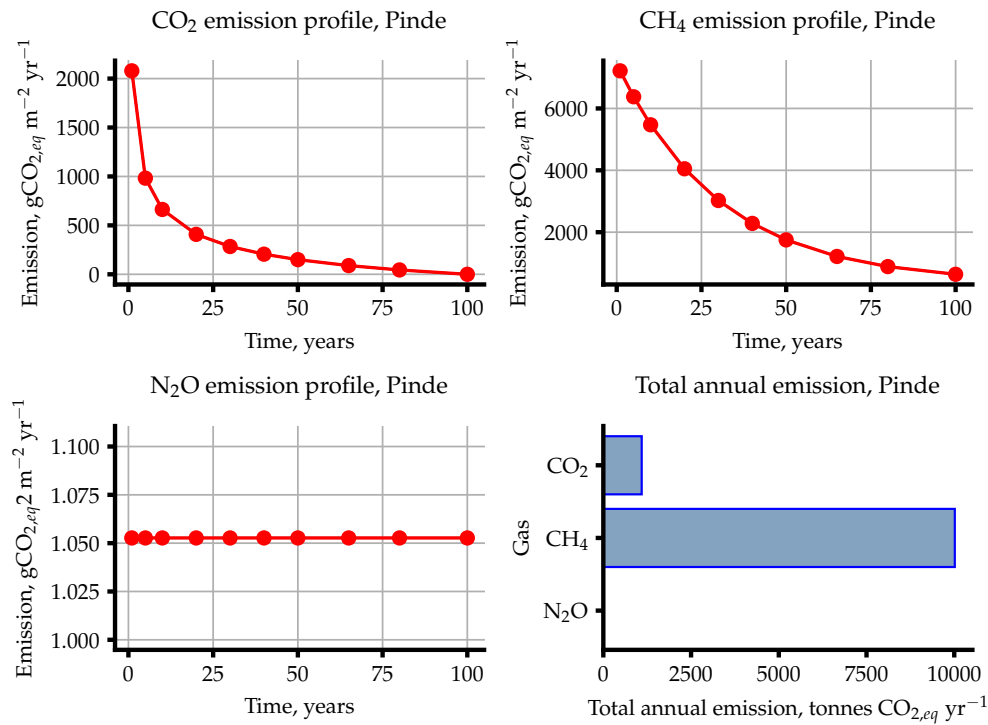
Input Name	Unit	Value(s)
Reservoir ID		9087
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 23.362084, LON: 95.659926
Monthly Temperatures	$^{\circ}\text{C}$	18.5, 21.5, 25.7, 29.3, 29.1, 28.5, 28.1, 27.6, 27.5, 26.1, 23.0, 19.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	479.0
Catchment area	km^2	162.4
Length of inundated river	km	6.167
Population	capita	11 220
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.167, 0.568, 0.266, 0.0
Mean catchment slope	$\%$	6.000
Mean annual precipitation	mm/year	1391
Mean annual evapotranspiration	mm/year	1298
Soil wetness	mm over profile	142.0
Soil Olsen P content	kgP ha^{-1}	7.007
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	13 230 000
Reservoir area	km^2	4.108
Maximum reservoir depth	m	12.00
Mean reservoir depth	m	3.200
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.96, 0.04, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.486
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.620
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.362
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.734
Mean monthly wind speed	m s^{-1}	0.9900
Water intake depth below surface	m	N/A



210.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	848.5
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	582.3
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	266.2
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	266.2
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	1094
Total CO ₂ emission per lifetime	ktCO _{2,eq}	109.4
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	409.4
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	368.8
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1660
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2438
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	10 020
Total CH ₄ emission per lifetime	ktCO _{2,eq}	1002
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	1.053
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.8338
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.9432
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	4.324
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.4324
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2704
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2705

210.3 Emission plots



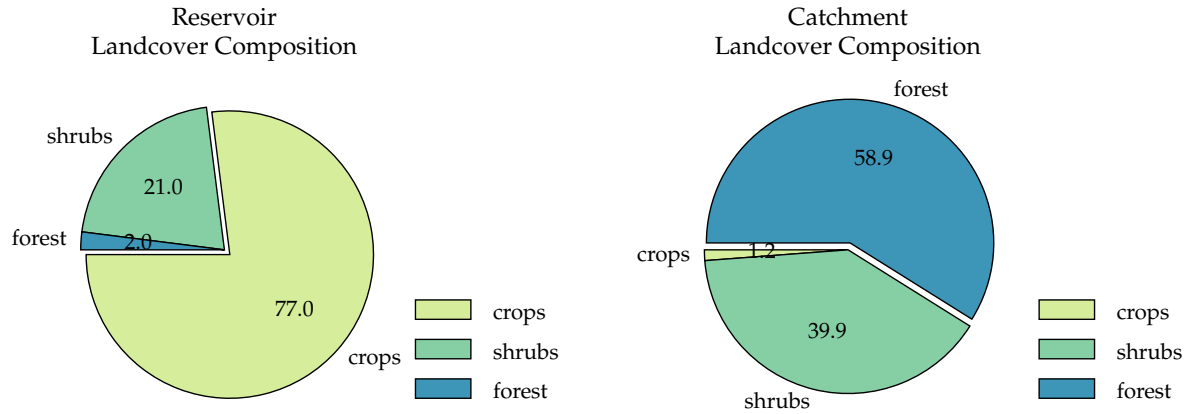
210.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	140.8
Retention coefficient	-	0.1199
Influent total N concentration	$\mu\text{g L}^{-1}$	135.4
Reservoir TN concentration	$\mu\text{g L}^{-1}$	116.6
Reservoir TP concentration	$\mu\text{g L}^{-1}$	126.0
Percentage of reservoir's surface area that is littoral	%	54.67
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.620
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	55.44
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	22.85
Water density at the bottom of the reservoir	kg m^{-3}	997.6
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	28.75
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	0.8369
Influent total N load	kgN yr^{-1}	10 540
Influent total P load	kgP yr^{-1}	10 960
Downstream TN concentration	mg L^{-1}	0.1707

211 Yazago Dam

211.1 Inputs

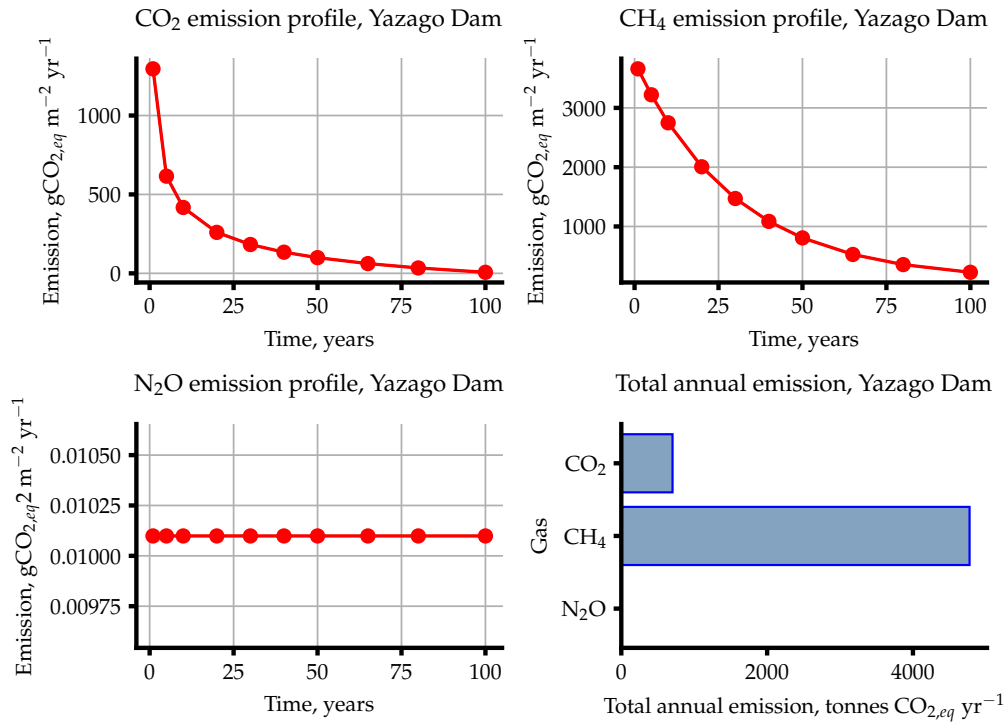
Input Name	Unit	Value(s)
Reservoir ID		9169
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 23.525486, LON: 94.094493
Monthly Temperatures	$^{\circ}\text{C}$	18.3, 20.2, 24.3, 27.6, 28.6, 27.9, 27.6, 27.1, 27.0, 25.7, 22.4, 18.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	temperate
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	996.0
Catchment area	km^2	382.1
Length of inundated river	km	3.563
Population	capita	3036
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.012, 0.399, 0.589, 0.0
Mean catchment slope	$\%$	38.00
Mean annual precipitation	mm/year	1885
Mean annual evapotranspiration	mm/year	1111
Soil wetness	mm over profile	191.0
Soil Olsen P content	kgP ha^{-1}	5.056
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	58 800 000
Reservoir area	km^2	4.094
Maximum reservoir depth	m	42.00
Mean reservoir depth	m	14.40
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.77, 0.21, 0.02, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.610
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.450
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.172
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.600
Mean monthly wind speed	m s^{-1}	0.9700
Water intake depth below surface	m	N/A



211.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	526.1
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	361.1
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	-6.600
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	165.0
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	171.6
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	702.7
Total CO ₂ emission per lifetime	ktCO _{2,eq}	70.27
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	196.6
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	86.37
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	883.7
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	1167
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	4776
Total CH ₄ emission per lifetime	ktCO _{2,eq}	477.6
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	0.0101
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	0.008 027
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	0.009 063
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	0.041 34
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.004 134
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1338
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	1338

211.3 Emission plots



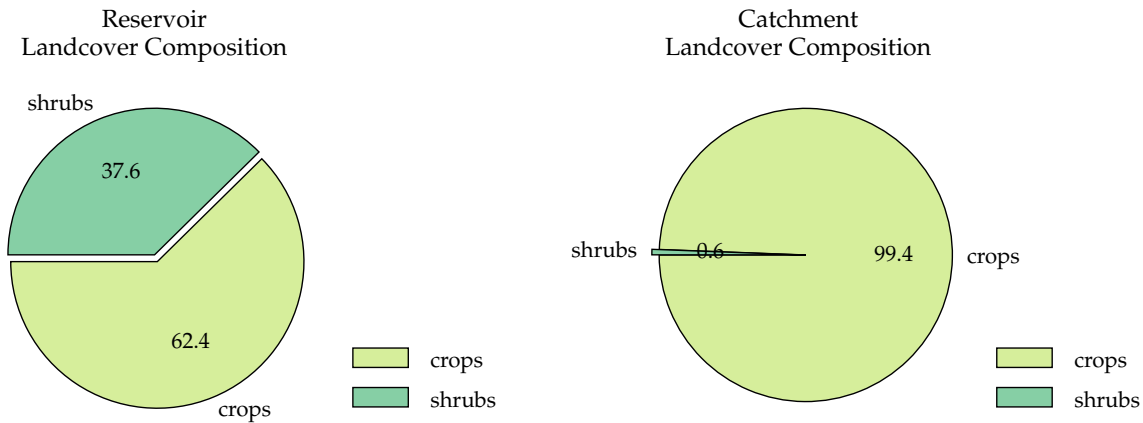
211.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	20.72
Retention coefficient	-	0.1101
Influent total N concentration	$\mu\text{g L}^{-1}$	0.2910
Reservoir TN concentration	$\mu\text{g L}^{-1}$	0.2567
Reservoir TP concentration	$\mu\text{g L}^{-1}$	18.28
Percentage of reservoir's surface area that is littoral	%	13.24
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.450
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	53.40
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	22.71
Water density at the bottom of the reservoir	kg m^{-3}	997.6
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	27.92
Water density at the surface of the reservoir	kg m^{-3}	996.3
Thermocline depth	m	0.8807
Influent total N load	kgN yr^{-1}	110.8
Influent total P load	kgP yr^{-1}	7885
Downstream TN concentration	mg L^{-1}	0.000 369 9

212 Unknown24

212.1 Inputs

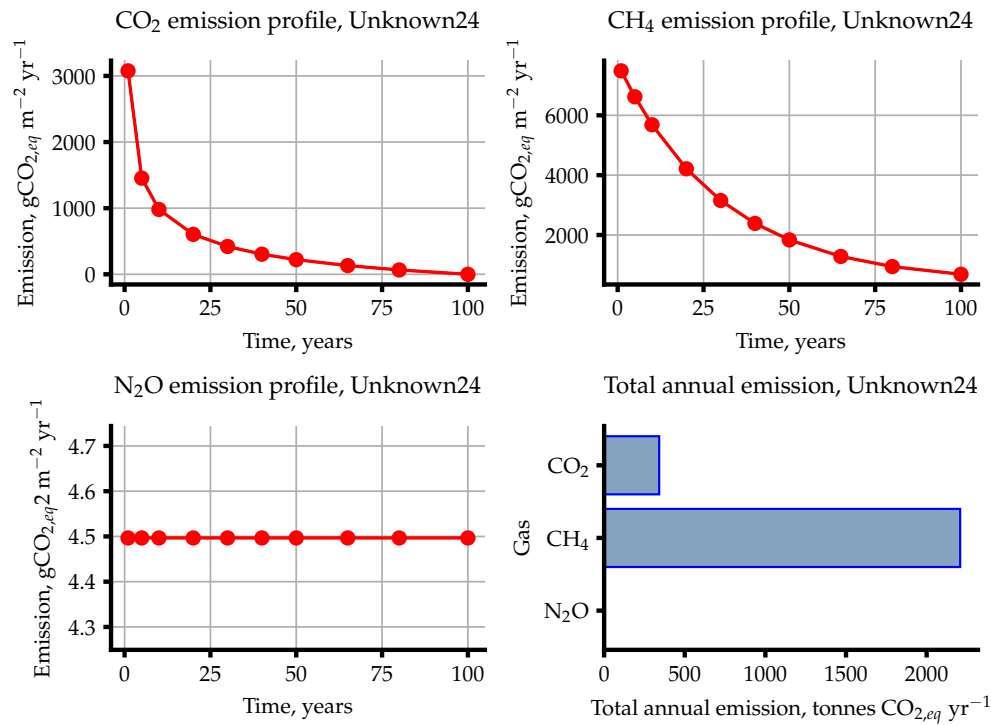
Input Name	Unit	Value(s)
Reservoir ID		9099
Reservoir type		irrigation
Reservoir coordinates (lat/lon)	$^{\circ}$	LAT: 22.154367, LON: 95.29861
Monthly Temperatures	$^{\circ}\text{C}$	20.9, 23.8, 27.8, 31.3, 30.8, 29.7, 29.5, 28.8, 28.5, 27.3, 24.6, 21.2
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2 , CH_4 , N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	tropical
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	155.0
Catchment area	km^2	67.79
Length of inundated river	km	1.843
Population	capita	12 860
Area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.994, 0.006, 0.0, 0.0
Mean catchment slope	$\%$	3.000
Mean annual precipitation	mm/year	837.0
Mean annual evapotranspiration	mm/year	1437
Soil wetness	mm over profile	25.00
Soil Olsen P content	kgP ha^{-1}	6.257
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	3 626 000
Reservoir area	km^2	0.8670
Maximum reservoir depth	m	10.00
Mean reservoir depth	m	4.200
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.63, 0.38, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	4.194
Mean monthly horizontal radiance	$\text{kWh m}^{-2} \text{d}^{-1}$	4.890
Mean monthly horizontal radiance: May - Sept	$\text{kWh m}^{-2} \text{d}^{-1}$	4.728
Mean monthly horizontal radiance: Nov - Mar	$\text{kWh m}^{-2} \text{d}^{-1}$	4.924
Mean monthly wind speed	m s^{-1}	1.200
Water intake depth below surface	m	N/A



212.2 Outputs

Name	Unit	Value
CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	1256
Nonanthropogenic CO ₂ diffusion flux	gCO _{2,eq} m ⁻² yr ⁻¹	861.6
Preimpoundment CO ₂ emissions	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
CO ₂ emission minus non-anthropogenic	gCO _{2,eq} m ⁻² yr ⁻¹	393.9
Net CO ₂ emission	gCO _{2,eq} m ⁻² yr ⁻¹	393.9
Total CO ₂ emission per year	tCO _{2,eq} yr ⁻¹	341.5
Total CO ₂ emission per lifetime	ktCO _{2,eq}	34.15
CH ₄ emission via diffusion	gCO _{2,eq} m ⁻² yr ⁻¹	417.4
CH ₄ emission via ebullition	gCO _{2,eq} m ⁻² yr ⁻¹	406.7
CH ₄ emission via degassing	gCO _{2,eq} m ⁻² yr ⁻¹	1722
Pre-impounment CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	0.0
Net CH ₄ emission	gCO _{2,eq} m ⁻² yr ⁻¹	2547
Total CH ₄ emission per year	tCO _{2,eq} yr ⁻¹	2208
Total CH ₄ emission per lifetime	ktCO _{2,eq}	220.8
Net N ₂ O emission, method A	gCO _{2,eq} m ⁻² yr ⁻¹	4.497
Net N ₂ O emission, method B	gCO _{2,eq} m ⁻² yr ⁻¹	3.318
Net N ₂ O emission, mean value	gCO _{2,eq} m ⁻² yr ⁻¹	3.907
Total N ₂ O emission per year	tCO _{2,eq} yr ⁻¹	3.899
Total N ₂ O emission per lifetime	ktCO _{2,eq}	0.3899
CO ₂ +CH ₄ net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2940
CO ₂ +CH ₄ +N ₂ O net emissions	gCO _{2,eq} m ⁻² yr ⁻¹	2944

212.3 Emission plots



212.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	$\mu\text{g L}^{-1}$	967.5
Retention coefficient	-	0.2166
Influent total N concentration	$\mu\text{g L}^{-1}$	447.6
Reservoir TN concentration	$\mu\text{g L}^{-1}$	352.4
Reservoir TP concentration	$\mu\text{g L}^{-1}$	766.3
Percentage of reservoir's surface area that is littoral	%	38.89
Mean radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	4.890
Cumulative global horizontal radiance at the reservoir	$\text{kWh m}^{-2} \text{d}^{-1}$	58.68
Bottom (hypolimnion) temperature in the reservoir	$^{\circ}\text{C}$	24.42
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	$^{\circ}\text{C}$	30.33
Water density at the surface of the reservoir	kg m^{-3}	995.6
Thermocline depth	m	0.6676
Influent total N load	kgN yr^{-1}	4703
Influent total P load	kgP yr^{-1}	10 170
Downstream TN concentration	mg L^{-1}	0.5138