Demo Example Results

Default User

July 27, 2025

1 Global parameters

1.1 Global Warming Potentials (GWPs) over 100 years

GWP100 for CO_2: 1.0

GWP100 for CH_4: 34.0

GWP100 for N_2O: 298.0

1.2 Unit conversion factors

Conversion from mg CO_2-C m^{-2} d^{-1} to g $CO_{2,eq}$ m^{-2} yr^{-1}: 3.667

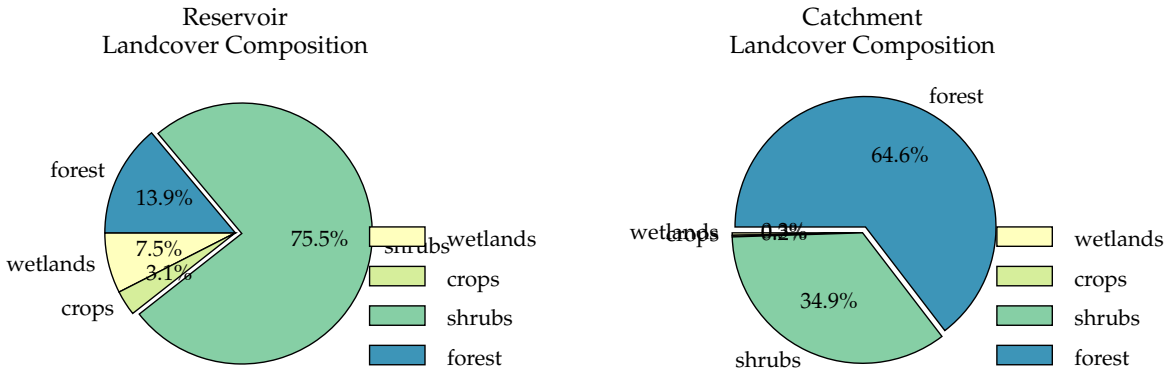
Conversion from mg CH_4 m^{-2} d^{-1} to g $CO_{2,eq}$ m^{-2} yr^{-1}: 16.55

Conversion from μg N_2O m^{-2} d^{-1} to g $CO_{2,eq}$ m^{-2} yr^{-1}: 0.1709

2 Kabaung

2.1 Inputs

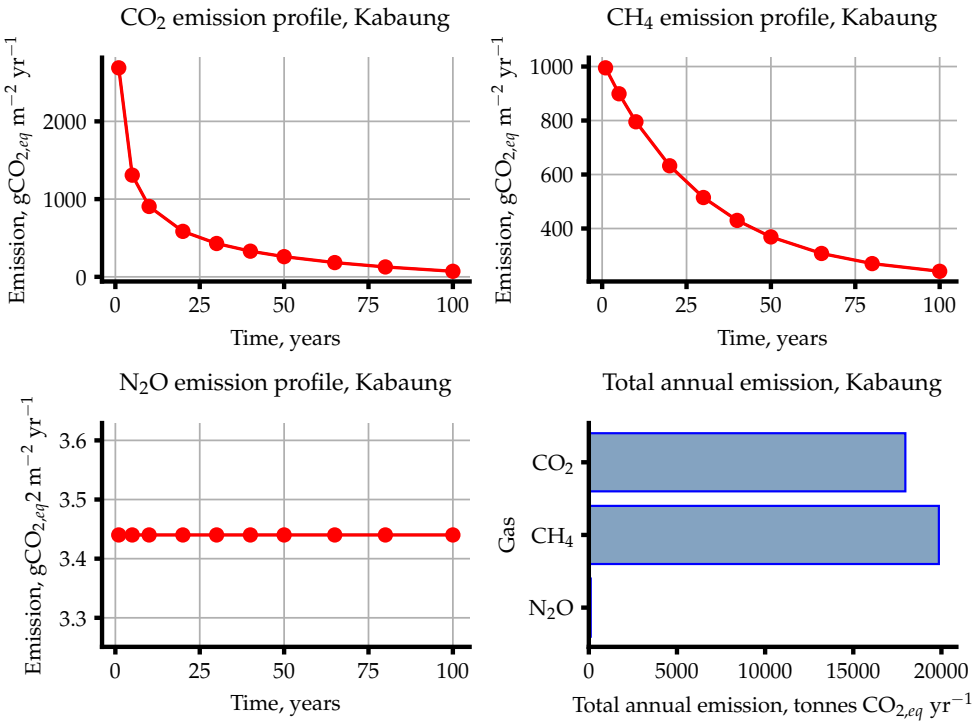
Input Name	Unit	Value(s)
Reservoir ID		35
Reservoir type		unknown
Reservoir coordinates (lat/lon)	^{o}	LAT: 18.8967, LON: 96.2208
Monthly Temperatures	^{o}C	21.6, 23.7, 27.2, 30.1, 29.3, 26.9, 26.5, 26.5, 27.0, 27.3, 25.4, 22.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
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, 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	kWh m^{-2} d^{-1}	5.030
Mean monthly horizontal radiance: May - Sept	kWh m^{-2} d^{-1}	4.340
Mean monthly horizontal radiance: Nov - Mar	kWh m^{-2} d^{-1}	5.458
Mean monthly wind speed	m s^{-1}	1.000
Water intake depth below surface	m	N/A



2.2 Outputs

Name	Unit	Value
CO_2 diffusion flux	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	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	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	334.9
Net CO_2 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	406.3
Total CO_2 emission per year	$tCO_{2,eq}\ yr^{-1}$	17 950
Total CO_2 emission per lifetime	$ktCO_{2,eq}$	1795
CH_4 emission via diffusion	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	238.7
CH_4 emission via ebullition	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	210.6
CH_4 emission via degassing	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Pre-impounment CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Net CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	449.3
Total CH_4 emission per year	$tCO_{2,eq}\ yr^{-1}$	19 850
Total CH_4 emission per lifetime	$ktCO_{2,eq}$	1985
Net N_2O emission, method A	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	3.440
Net N_2O emission, method B	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	1.498
Net N_2O emission, mean value	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	2.469
Total N_2O emission per year	$tCO_{2,eq}\ yr^{-1}$	152.0
Total N_2O emission per lifetime	$ktCO_{2,eq}$	15.20
CO_2+CH_4 net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	855.5
CO_2+CH_4+N_2O net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	858.0

2.3 Emission plots



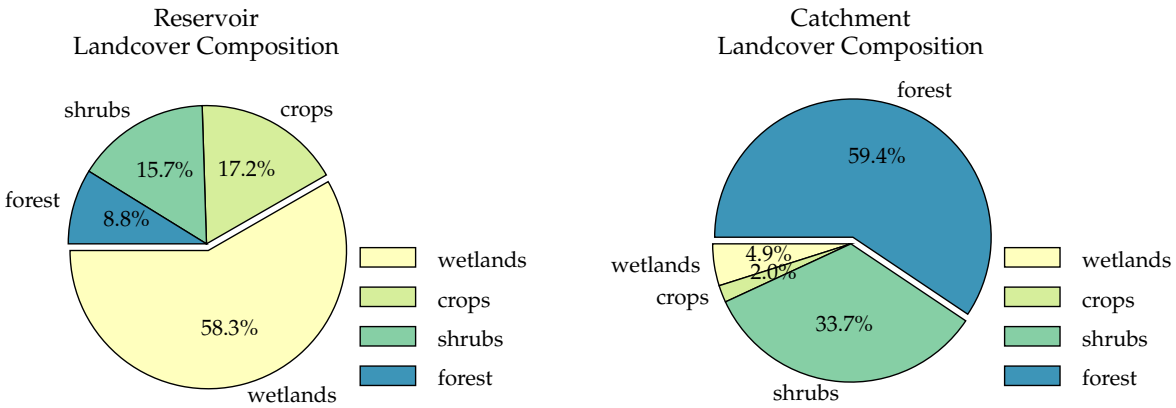
2.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	μg L^{-1}	198.2
Retention coefficient	-	0.4606
Influent total N concentration	μg L^{-1}	113.4
Reservoir TN concentration	μg L^{-1}	61.08
Reservoir TP concentration	μg L^{-1}	110.0
Percentage of reservoir's surface area that is littoral	%	14.18
Mean radiance at the reservoir	kWh m^{-2} d^{-1}	5.030
Cumulative global horizontal radiance at the reservoir	kWh m^{-2} d^{-1}	60.36
Bottom (hypolimnion) temperature in the reservoir	^{o}C	24.88
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	^{o}C	28.48
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	2.054
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

3 Kun Chaung

3.1 Inputs

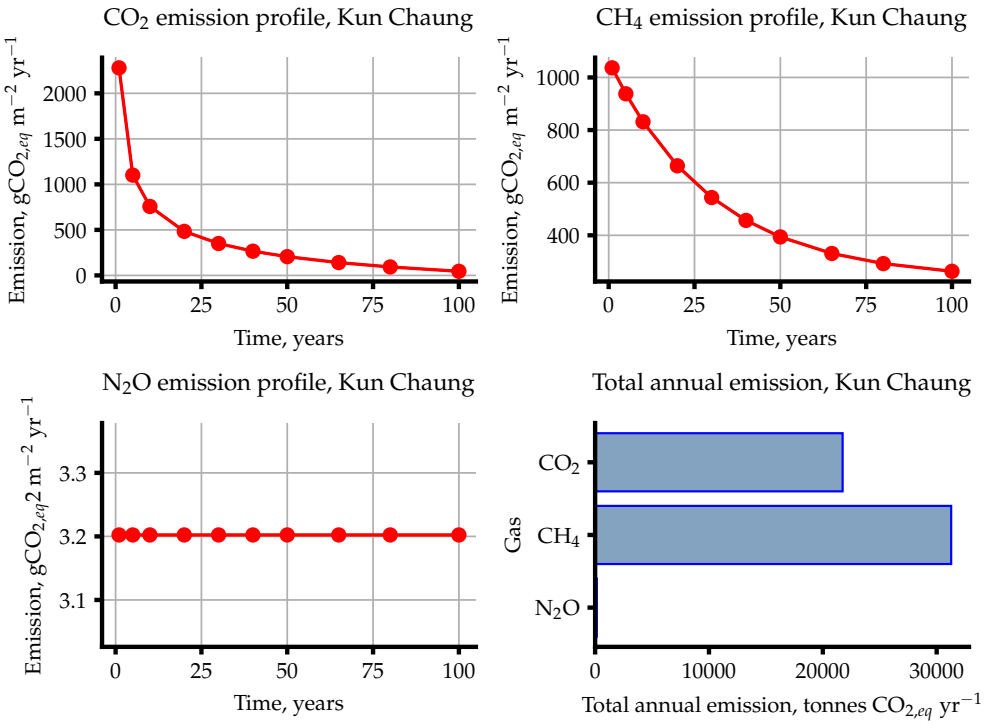
Input Name	Unit	Value(s)
Reservoir ID		47
Reservoir type		unknown
Reservoir coordinates (lat/lon)	^{o}	LAT: 18.4204, LON: 96.3639
Monthly Temperatures	^{o}C	21.6, 23.6, 26.9, 29.7, 29.0, 26.7, 26.2, 26.2, 26.8, 27.1, 25.3, 22.3
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
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, 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	kWh m^{-2} d^{-1}	5.030
Mean monthly horizontal radiance: May - Sept	kWh m^{-2} d^{-1}	4.340
Mean monthly horizontal radiance: Nov - Mar	kWh m^{-2} d^{-1}	5.458
Mean monthly wind speed	m s^{-1}	0.9600
Water intake depth below surface	m	N/A



3.2 Outputs

Name	Unit	Value
CO_2 diffusion flux	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	911.8
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	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	286.0
Net CO_2 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	331.1
Total CO_2 emission per year	$tCO_{2,eq}\ yr^{-1}$	21 740
Total CO_2 emission per lifetime	$ktCO_{2,eq}$	2174
CH_4 emission via diffusion	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	244.8
CH_4 emission via ebullition	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	231.5
CH_4 emission via degassing	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Pre-impounment CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Net CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	476.4
Total CH_4 emission per year	$tCO_{2,eq}\ yr^{-1}$	31 270
Total CH_4 emission per lifetime	$ktCO_{2,eq}$	3127
Net N_2O emission, method A	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	3.202
Net N_2O emission, method B	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	1.316
Net N_2O emission, mean value	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	2.259
Total N_2O emission per year	$tCO_{2,eq}\ yr^{-1}$	210.2
Total N_2O emission per lifetime	$ktCO_{2,eq}$	21.02
CO_2+CH_4 net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	807.5
CO_2+CH_4+N_2O net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	809.8

3.3 Emission plots



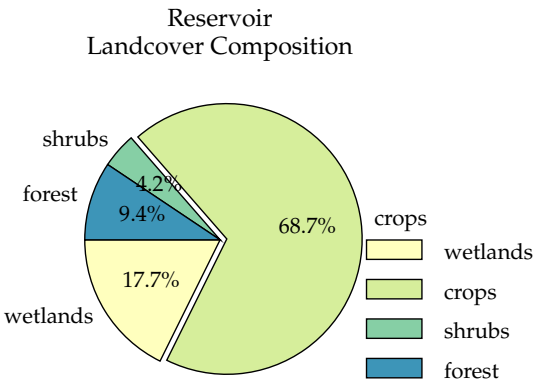
3.4 Intermediate variables

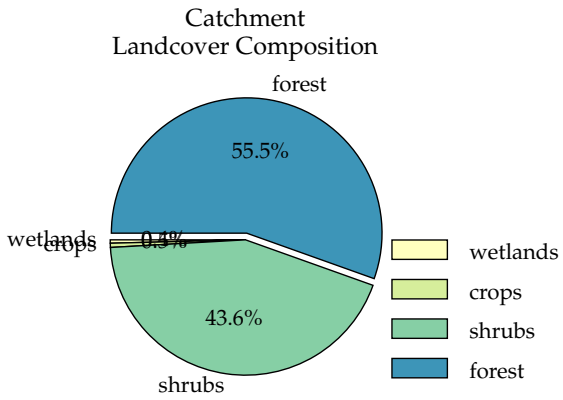
Name	Unit	Value
Influent total P concentration	μg L^{-1}	90.1
Retention coefficient	-	0.4790
Influent total N concentration	μg L^{-1}	112.6
Reservoir TN concentration	μg L^{-1}	57.89
Reservoir TP concentration	μg L^{-1}	49.97
Percentage of reservoir's surface area that is littoral	%	15.85
Mean radiance at the reservoir	kWh m^{-2} d^{-1}	5.030
Cumulative global horizontal radiance at the reservoir	kWh m^{-2} d^{-1}	60.36
Bottom (hypolimnion) temperature in the reservoir	^{o}C	24.88
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	^{o}C	28.18
Water density at the surface of the reservoir	kg m^{-3}	996.2
Thermocline depth	m	2.281
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

4 Thauk Ye Khat 2

4.1 Inputs

Input Name	Unit	Value(s)
Reservoir ID		120
Reservoir type		unknown
Reservoir coordinates (lat/lon)	^{o}	LAT: 18.9141, LON: 96.6199
Monthly Temperatures	^{o}C	21.9, 24.2, 27.5, 30.3, 29.2, 27.0, 26.6, 26.5, 27.0, 27.3, 25.5, 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	447.0
Catchment area	km^2	2160
Length of inundated river	km	12.27
Population	capita	56 450
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	1476
Mean annual evapotranspiration	mm/year	1325
Soil wetness	mm over profile	343.0
Soil Olsen P content	kgP ha^{-1}	7.836
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	171 800 000
Reservoir area	km^2	8.610
Maximum reservoir depth	m	46.00
Mean reservoir depth	m	20.00
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.177, 0.688, 0.042, 0.094, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 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}	5.243
Mean monthly horizontal radiance	kWh m^{-2} d^{-1}	5.030
Mean monthly horizontal radiance: May - Sept	kWh m^{-2} d^{-1}	4.340
Mean monthly horizontal radiance: Nov - Mar	kWh m^{-2} d^{-1}	5.458
Mean monthly wind speed	m s^{-1}	1.050
Water intake depth below surface	m	N/A

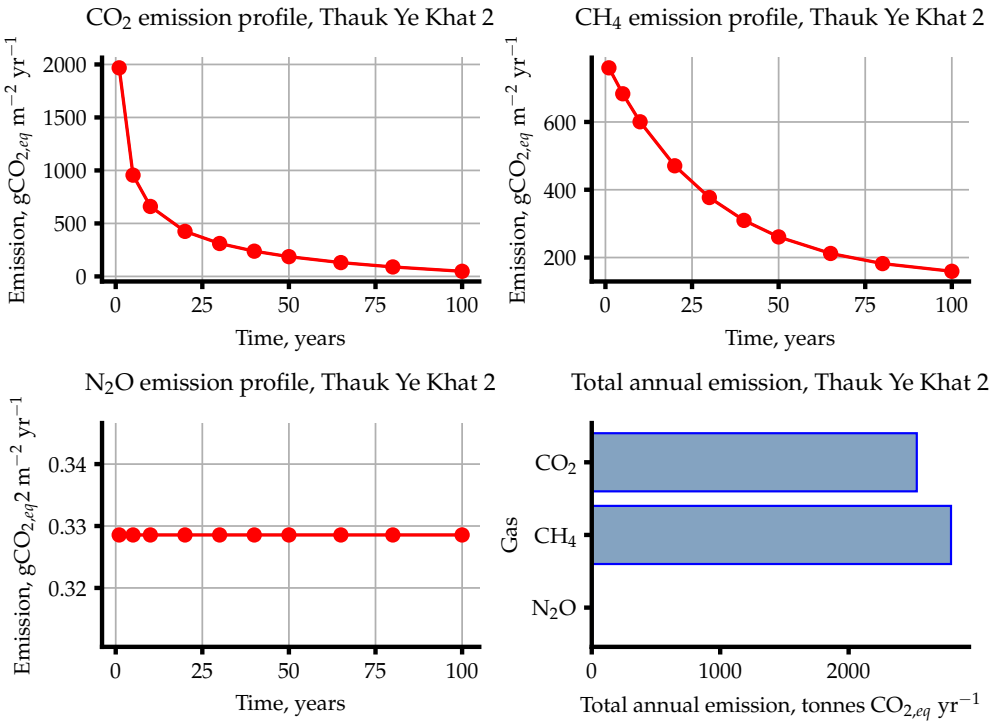




4.2 Outputs

Name	Unit	Value
CO_2 diffusion flux	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	783.3
Nonanthropogenic CO_2 diffusion flux	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	537.6
Preimpoundment CO_2 emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	−48.25
CO_2 emission minus non-anthropogenic	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	245.7
Net CO_2 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	293.9
Total CO_2 emission per year	$tCO_{2,eq}\ yr^{-1}$	2531
Total CO_2 emission per lifetime	$ktCO_{2,eq}$	253.1
CH_4 emission via diffusion	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	190.1
CH_4 emission via ebullition	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	134.8
CH_4 emission via degassing	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Pre-impounment CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Net CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	324.9
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_2O emission, method A	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.3286
Net N_2O emission, method B	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.2595
Net N_2O emission, mean value	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.2940
Total N_2O emission per year	$tCO_{2,eq}\ yr^{-1}$	2.829
Total N_2O emission per lifetime	$ktCO_{2,eq}$	0.2829
CO_2+CH_4 net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	618.8
CO_2+CH_4+N_2O net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	619.1

4.3 Emission plots



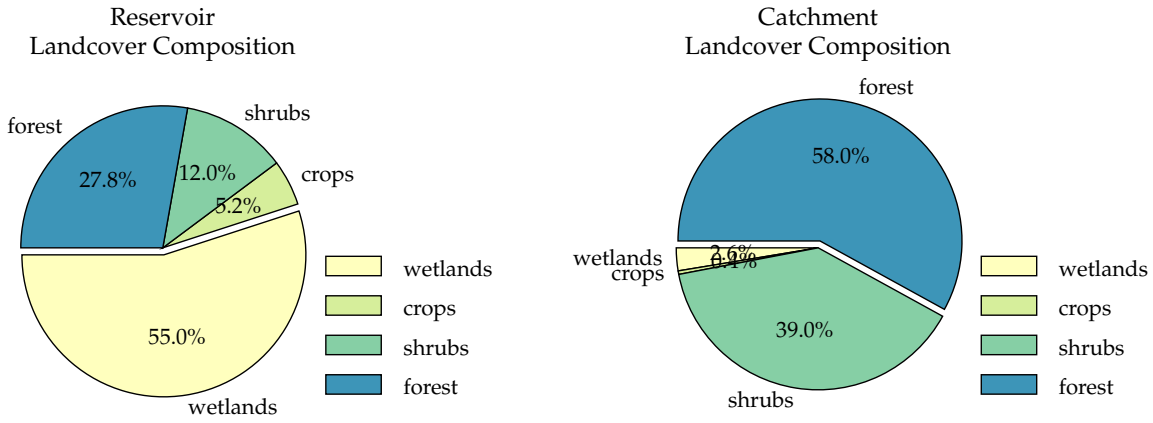
4.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	μg L^{-1}	73.52
Retention coefficient	-	0.1248
Influent total N concentration	μg L^{-1}	6.817
Reservoir TN concentration	μg L^{-1}	5.949
Reservoir TP concentration	μg L^{-1}	64.40
Percentage of reservoir's surface area that is littoral	%	8.394
Mean radiance at the reservoir	kWh m^{-2} d^{-1}	5.030
Cumulative global horizontal radiance at the reservoir	kWh m^{-2} d^{-1}	60.36
Bottom (hypolimnion) temperature in the reservoir	^{o}C	25.08
Water density at the bottom of the reservoir	kg m^{-3}	997.1
Surface (epilimnion) temperature in the reservoir	^{o}C	28.58
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	1.449
Influent total N load	kgN yr^{-1}	6583
Influent total P load	kgP yr^{-1}	70 990
Downstream TN concentration	mg L^{-1}	0.008 559

5 Phyu Chaung

5.1 Inputs

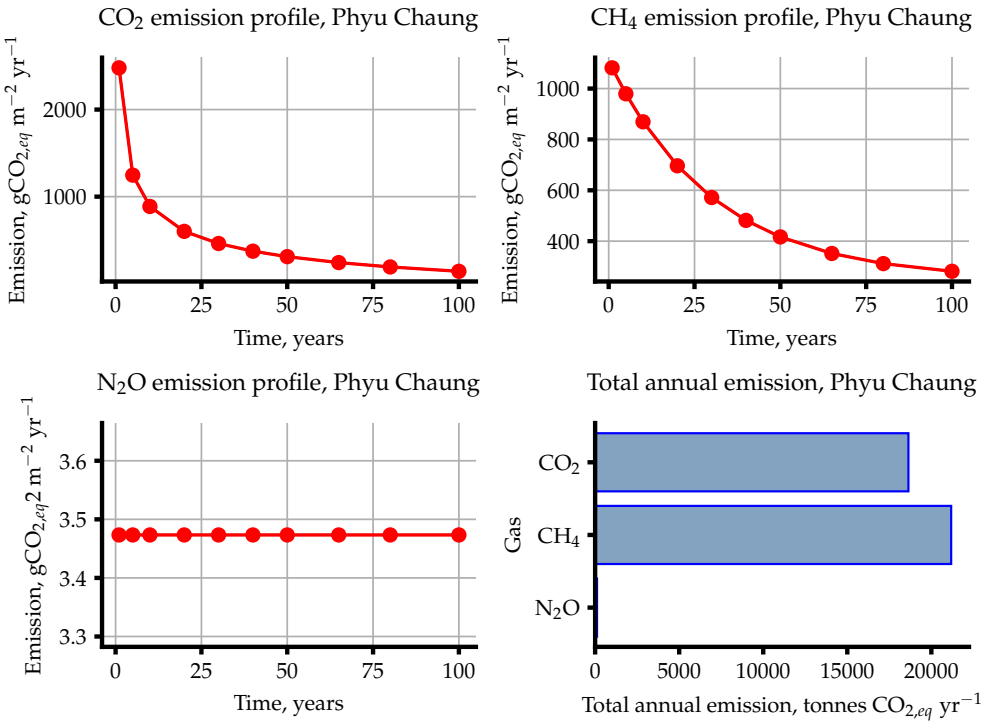
Input Name	Unit	Value(s)
Reservoir ID		101
Reservoir type		unknown
Reservoir coordinates (lat/lon)	^{o}	LAT: 18.5067, LON: 96.3519
Monthly Temperatures	^{o}C	21.3, 23.5, 26.9, 29.9, 29.0, 26.6, 26.2, 26.2, 26.7, 27.0, 25.2, 22.1
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
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, 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	kWh m^{-2} d^{-1}	5.030
Mean monthly horizontal radiance: May - Sept	kWh m^{-2} d^{-1}	4.340
Mean monthly horizontal radiance: Nov - Mar	kWh m^{-2} d^{-1}	5.458
Mean monthly wind speed	m s^{-1}	0.9900
Water intake depth below surface	m	N/A



5.2 Outputs

Name	Unit	Value
CO_2 diffusion flux	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	953.4
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	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	299.0
Net CO_2 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	441.7
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	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	253.4
CH_4 emission via ebullition	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	248.7
CH_4 emission via degassing	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Pre-impounment CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Net CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	502.0
Total CH_4 emission per year	$tCO_{2,eq}\ yr^{-1}$	21 180
Total CH_4 emission per lifetime	$ktCO_{2,eq}$	2118
Net N_2O emission, method A	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	3.473
Net N_2O emission, method B	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	1.908
Net N_2O emission, mean value	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	2.691
Total N_2O emission per year	$tCO_{2,eq}\ yr^{-1}$	146.5
Total N_2O emission per lifetime	$ktCO_{2,eq}$	14.65
CO_2+CH_4 net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	943.7
CO_2+CH_4+N_2O net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	946.4

5.3 Emission plots



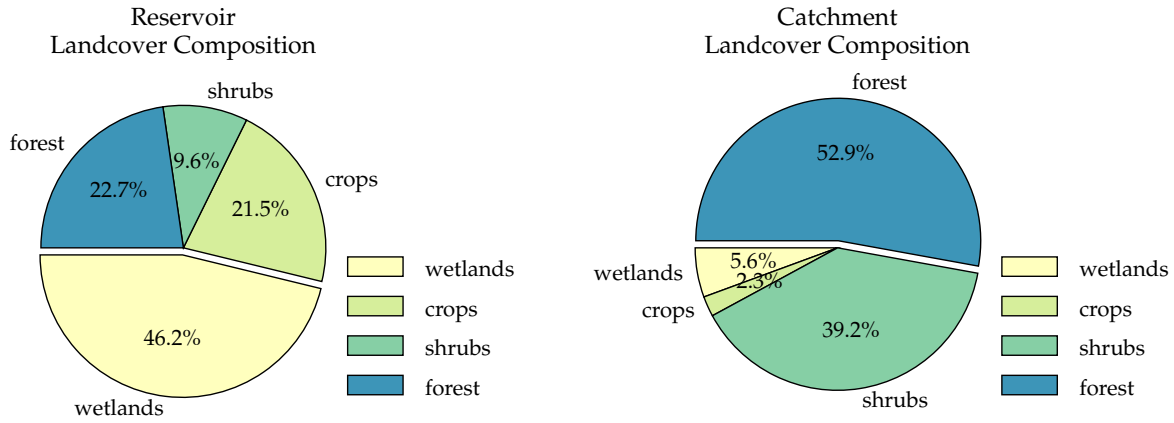
5.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	μg L^{-1}	121.2
Retention coefficient	-	0.3805
Influent total N concentration	μg L^{-1}	116.0
Reservoir TN concentration	μg L^{-1}	71.73
Reservoir TP concentration	μg L^{-1}	77.74
Percentage of reservoir's surface area that is littoral	%	17.23
Mean radiance at the reservoir	kWh m^{-2} d^{-1}	5.030
Cumulative global horizontal radiance at the reservoir	kWh m^{-2} d^{-1}	60.36
Bottom (hypolimnion) temperature in the reservoir	^{o}C	24.68
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	^{o}C	28.20
Water density at the surface of the reservoir	kg m^{-3}	996.2
Thermocline depth	m	2.042
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

6 Shwegyin

6.1 Inputs

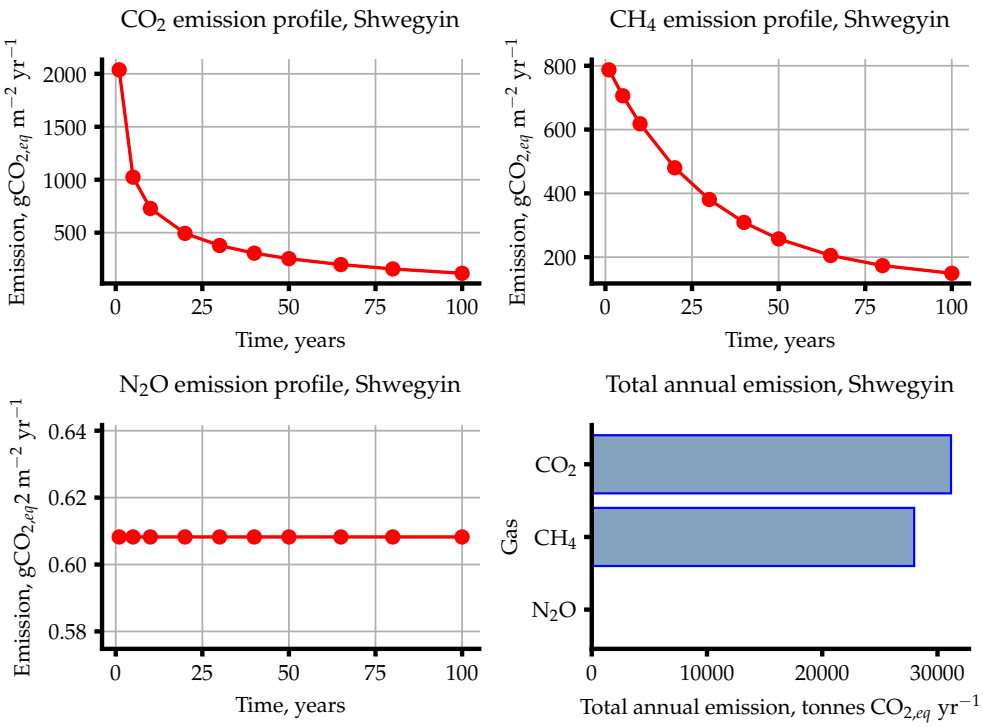
Input Name	Unit	Value(s)
Reservoir ID		107
Reservoir type		unknown
Reservoir coordinates (lat/lon)	^{o}	LAT: 17.9702, LON: 96.935
Monthly Temperatures	^{o}C	22.9, 24.7, 27.7, 30.2, 29.5, 27.3, 26.9, 26.8, 27.3, 27.6, 26.2, 23.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
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, 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	kWh m^{-2} d^{-1}	4.940
Mean monthly horizontal radiance: May - Sept	kWh m^{-2} d^{-1}	4.160
Mean monthly horizontal radiance: Nov - Mar	kWh m^{-2} d^{-1}	5.445
Mean monthly wind speed	m s^{-1}	0.9400
Water intake depth below surface	m	N/A



6.2 Outputs

Name	Unit	Value
CO_2 diffusion flux	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	783.8
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	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	245.8
Net CO_2 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	362.4
Total CO_2 emission per year	$tCO_{2,eq}\ yr^{-1}$	31 170
Total CO_2 emission per lifetime	$ktCO_{2,eq}$	3117
CH_4 emission via diffusion	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	202.0
CH_4 emission via ebullition	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	123.2
CH_4 emission via degassing	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Pre-impounment CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Net CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	325.2
Total CH_4 emission per year	$tCO_{2,eq}\ yr^{-1}$	27 980
Total CH_4 emission per lifetime	$ktCO_{2,eq}$	2798
Net N_2O emission, method A	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.6082
Net N_2O emission, method B	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.2151
Net N_2O emission, mean value	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.4117
Total N_2O emission per year	$tCO_{2,eq}\ yr^{-1}$	52.33
Total N_2O emission per lifetime	$ktCO_{2,eq}$	5.233
CO_2+CH_4 net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	687.6
CO_2+CH_4+N_2O net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	688.0

6.3 Emission plots



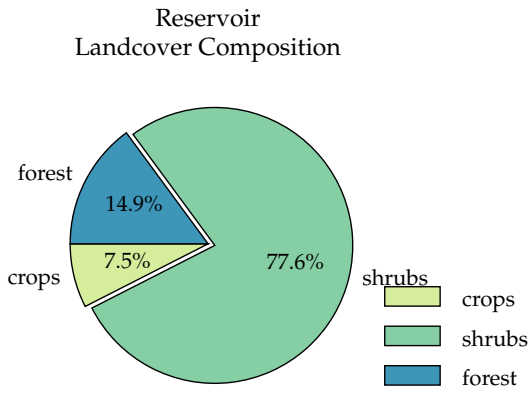
6.4 Intermediate variables

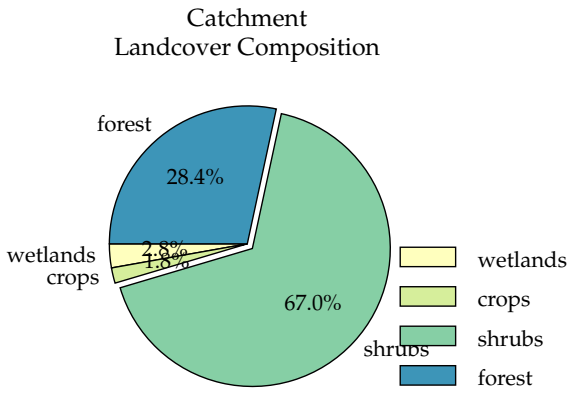
Name	Unit	Value
Influent total P concentration	μg L^{-1}	29.92
Retention coefficient	-	0.5264
Influent total N concentration	μg L^{-1}	13.97
Reservoir TN concentration	μg L^{-1}	6.473
Reservoir TP concentration	μg L^{-1}	15.16
Percentage of reservoir's surface area that is littoral	%	8.793
Mean radiance at the reservoir	kWh m^{-2} d^{-1}	4.940
Cumulative global horizontal radiance at the reservoir	kWh m^{-2} d^{-1}	59.28
Bottom (hypolimnion) temperature in the reservoir	^{o}C	25.73
Water density at the bottom of the reservoir	kg m^{-3}	996.9
Surface (epilimnion) temperature in the reservoir	^{o}C	28.75
Water density at the surface of the reservoir	kg m^{-3}	996.0
Thermocline depth	m	2.466
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

7 Belin

7.1 Inputs

Input Name	Unit	Value(s)
Reservoir ID		9
Reservoir type		unknown
Reservoir coordinates (lat/lon)	^{o}	LAT: 17.5197, LON: 97.2435
Monthly Temperatures	^{o}C	22.3, 24.0, 27.0, 29.5, 28.9, 26.8, 26.3, 26.3, 26.8, 27.1, 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	1578
Catchment area	km^2	1907
Length of inundated river	km	74.99
Population	capita	12 240
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	2619
Mean annual evapotranspiration	mm/year	1338
Soil wetness	mm over profile	527.0
Soil Olsen P content	kgP ha^{-1}	7.322
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	26 050 000 000
Reservoir area	km^2	434.9
Maximum reservoir depth	m	139.0
Mean reservoir depth	m	59.90
Inundated area fractions	-	0.0, 0.0, 0.0, 0.0, 0.0, 0.075, 0.776, 0.149, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 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}	6.040
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

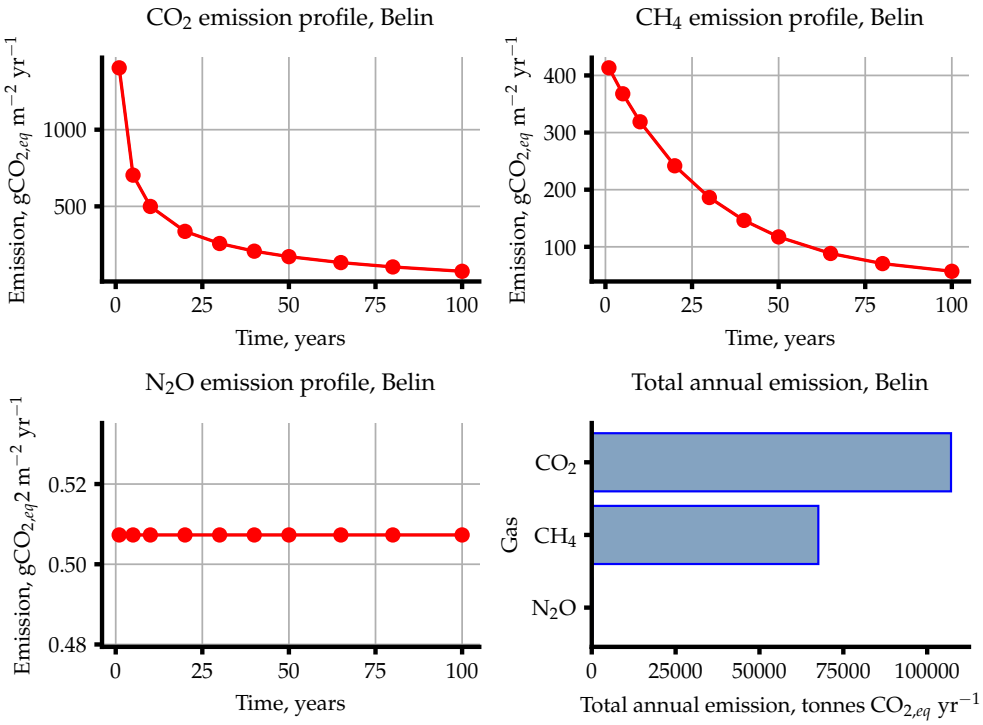




7.2 Outputs

Name	Unit	Value
CO_2 diffusion flux	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	541.4
Nonanthropogenic CO_2 diffusion flux	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	371.6
Preimpoundment CO_2 emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	−76.49
CO_2 emission minus non-anthropogenic	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	169.8
Net CO_2 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	246.3
Total CO_2 emission per year	$tCO_{2,eq}\ yr^{-1}$	107 100
Total CO_2 emission per lifetime	$ktCO_{2,eq}$	10 710
CH_4 emission via diffusion	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	112.8
CH_4 emission via ebullition	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	42.56
CH_4 emission via degassing	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Pre-impounment CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Net CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	155.3
Total CH_4 emission per year	$tCO_{2,eq}\ yr^{-1}$	67 550
Total CH_4 emission per lifetime	$ktCO_{2,eq}$	6755
Net N_2O emission, method A	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.5073
Net N_2O emission, method B	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.1043
Net N_2O emission, mean value	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.3058
Total N_2O emission per year	$tCO_{2,eq}\ yr^{-1}$	220.6
Total N_2O emission per lifetime	$ktCO_{2,eq}$	22.06
CO_2+CH_4 net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	401.6
CO_2+CH_4+N_2O net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	401.9

7.3 Emission plots



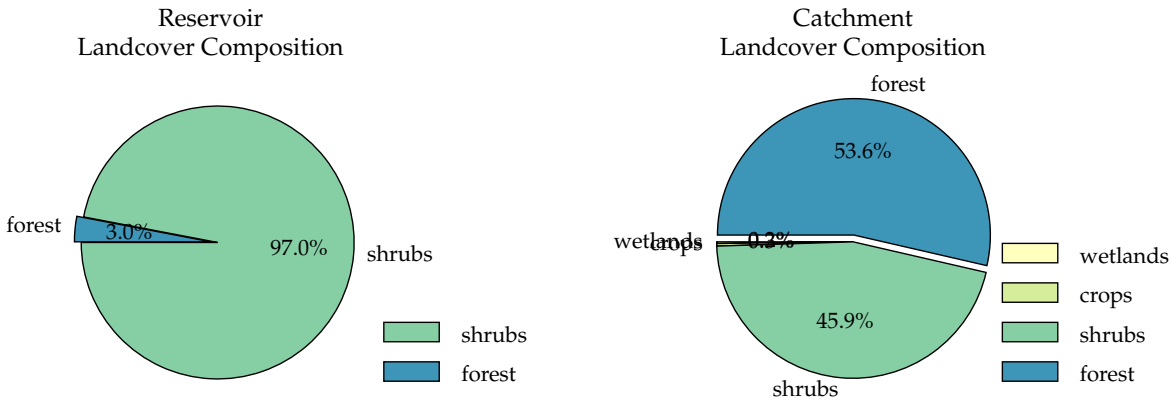
7.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	μg L^{-1}	15.60
Retention coefficient	-	0.8740
Influent total N concentration	μg L^{-1}	14.14
Reservoir TN concentration	μg L^{-1}	1.750
Reservoir TP concentration	μg L^{-1}	1.994
Percentage of reservoir's surface area that is littoral	%	2.840
Mean radiance at the reservoir	kWh m^{-2} d^{-1}	4.870
Cumulative global horizontal radiance at the reservoir	kWh m^{-2} d^{-1}	58.44
Bottom (hypolimnion) temperature in the reservoir	^{o}C	25.34
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	^{o}C	28.13
Water density at the surface of the reservoir	kg m^{-3}	996.2
Thermocline depth	m	4.339
Influent total N load	kgN yr^{-1}	42 530
Influent total P load	kgP yr^{-1}	46 920
Downstream TN concentration	mg L^{-1}	0.002 068

8 Yunzalin

8.1 Inputs

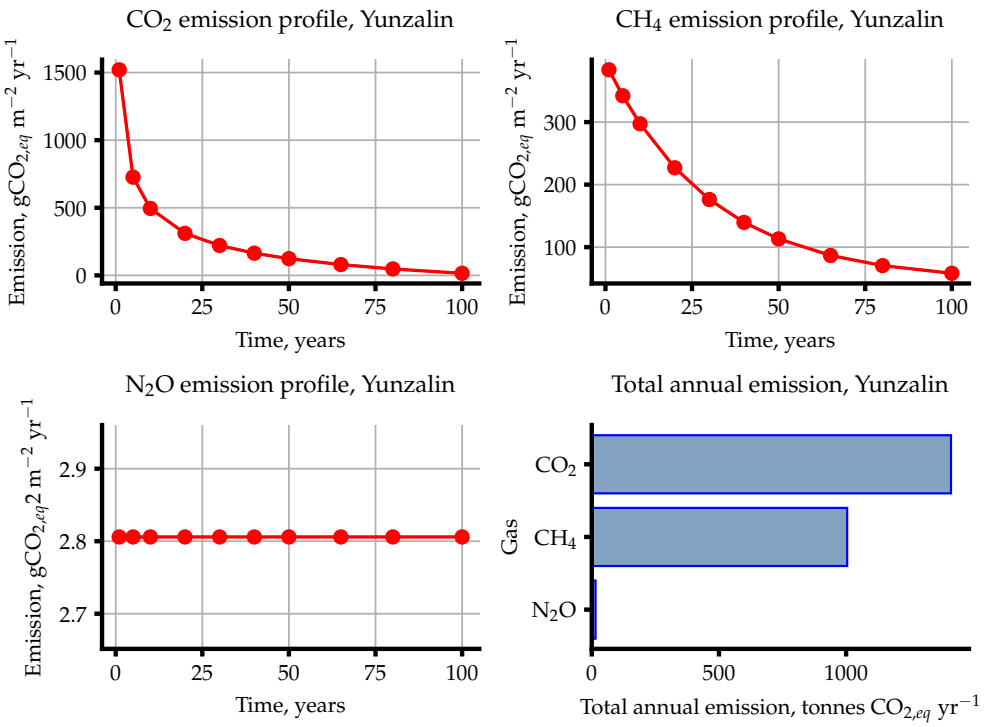
Input Name	Unit	Value(s)
Reservoir ID		152
Reservoir type		unknown
Reservoir coordinates (lat/lon)	^{o}	LAT: 18.295, LON: 97.3408
Monthly Temperatures	^{o}C	21.3, 23.3, 26.2, 28.9, 28.3, 26.3, 25.9, 25.9, 26.2, 26.1, 24.5, 21.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2, CH_4, N_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	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, 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



8.2 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	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	−15.40
CO_2 emission minus non-anthropogenic	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	192.6
Net CO_2 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	208.0
Total CO_2 emission per year	$tCO_{2,eq}\ yr^{-1}$	1412
Total CO_2 emission per lifetime	$ktCO_{2,eq}$	141.2
CH_4 emission via diffusion	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	103.0
CH_4 emission via ebullition	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	44.82
CH_4 emission via degassing	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Pre-impounment CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Net CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	147.9
Total CH_4 emission per year	$tCO_{2,eq}\ yr^{-1}$	1004
Total CH_4 emission per lifetime	$ktCO_{2,eq}$	100.4
Net N_2O emission, method A	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	2.806
Net N_2O emission, method B	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	1.601
Net N_2O emission, mean value	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	2.203
Total N_2O emission per year	$tCO_{2,eq}\ yr^{-1}$	19.05
Total N_2O emission per lifetime	$ktCO_{2,eq}$	1.905
CO_2+CH_4 net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	355.8
CO_2+CH_4+N_2O net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	358.0

8.3 Emission plots



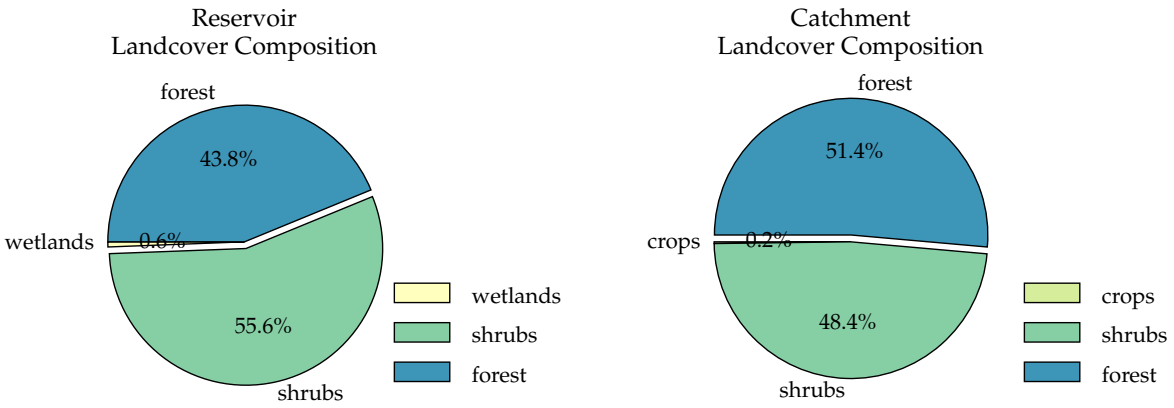
8.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	μg L^{-1}	38.34
Retention coefficient	-	0.3653
Influent total N concentration	μg L^{-1}	17.58
Reservoir TN concentration	μg L^{-1}	11.16
Reservoir TP concentration	μg L^{-1}	24.28
Percentage of reservoir's surface area that is littoral	%	2.774
Mean radiance at the reservoir	kWh m^{-2} d^{-1}	4.920
Cumulative global horizontal radiance at the reservoir	kWh m^{-2} d^{-1}	59.04
Bottom (hypolimnion) temperature in the reservoir	^{o}C	24.68
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	^{o}C	27.43
Water density at the surface of the reservoir	kg m^{-3}	996.4
Thermocline depth	m	1.551
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

9 Thauk Ye Khat 1

9.1 Inputs

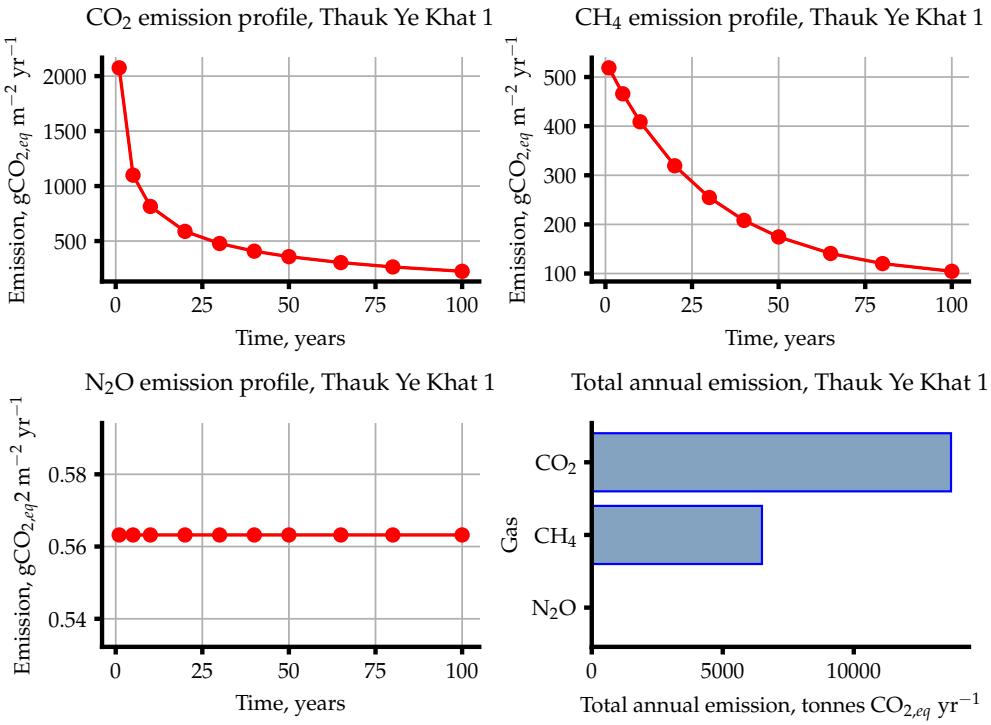
Input Name	Unit	Value(s)
Reservoir ID		151
Reservoir type		unknown
Reservoir coordinates (lat/lon)	^{o}	LAT: 18.9439, LON: 96.7188
Monthly Temperatures	^{o}C	20.8, 22.9, 26.4, 29.2, 28.5, 26.4, 26.0, 26.0, 26.5, 26.5, 24.6, 21.5
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
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, 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	kWh m^{-2} d^{-1}	5.090
Mean monthly horizontal radiance: May - Sept	kWh m^{-2} d^{-1}	4.506
Mean monthly horizontal radiance: Nov - Mar	kWh m^{-2} d^{-1}	5.442
Mean monthly wind speed	m s^{-1}	1.140
Water intake depth below surface	m	N/A



9.2 Outputs

Name	Unit	Value
CO_2 diffusion flux	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	755.0
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	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	236.8
Net CO_2 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	461.6
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	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	131.1
CH_4 emission via ebullition	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	87.55
CH_4 emission via degassing	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Pre-impounment CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Net CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	218.7
Total CH_4 emission per year	$tCO_{2,eq}\ yr^{-1}$	6496
Total CH_4 emission per lifetime	$ktCO_{2,eq}$	649.6
Net N_2O emission, method A	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.5632
Net N_2O emission, method B	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.1549
Net N_2O emission, mean value	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.3590
Total N_2O emission per year	$tCO_{2,eq}\ yr^{-1}$	16.73
Total N_2O emission per lifetime	$ktCO_{2,eq}$	1.673
CO_2+CH_4 net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	680.3
CO_2+CH_4+N_2O net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	680.7

9.3 Emission plots



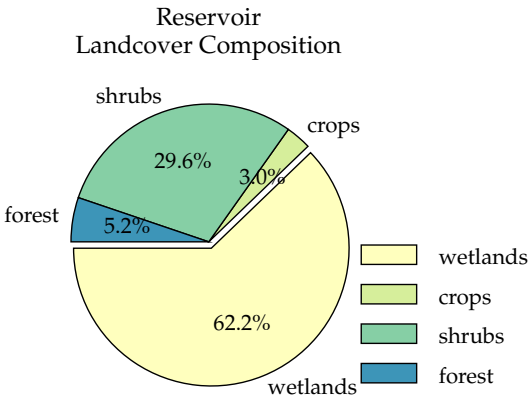
9.4 Intermediate variables

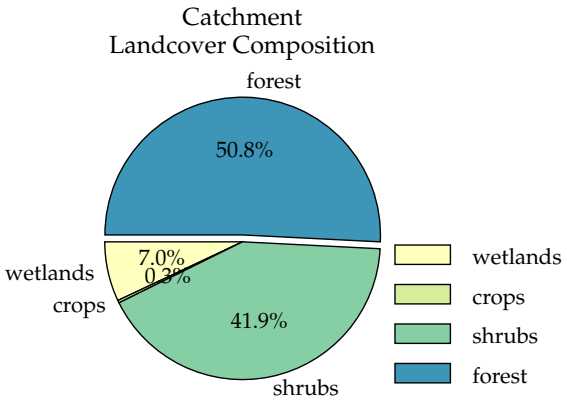
Name	Unit	Value
Influent total P concentration	μg L^{-1}	85.88
Retention coefficient	-	0.6129
Influent total N concentration	μg L^{-1}	6.471
Reservoir TN concentration	μg L^{-1}	2.505
Reservoir TP concentration	μg L^{-1}	33.55
Percentage of reservoir's surface area that is littoral	%	4.571
Mean radiance at the reservoir	kWh m^{-2} d^{-1}	5.090
Cumulative global horizontal radiance at the reservoir	kWh m^{-2} d^{-1}	61.08
Bottom (hypolimnion) temperature in the reservoir	^{o}C	24.36
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	^{o}C	27.68
Water density at the surface of the reservoir	kg m^{-3}	996.4
Thermocline depth	m	2.235
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

10 Yenwe

10.1 Inputs

Input Name	Unit	Value(s)
Reservoir ID		127
Reservoir type		unknown
Reservoir coordinates (lat/lon)	^{o}	LAT: 18.085211, LON: 96.446152
Monthly Temperatures	^{o}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, 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	kWh m^{-2} d^{-1}	5.030
Mean monthly horizontal radiance: May - Sept	kWh m^{-2} d^{-1}	4.340
Mean monthly horizontal radiance: Nov - Mar	kWh m^{-2} d^{-1}	5.458
Mean monthly wind speed	m s^{-1}	0.9300
Water intake depth below surface	m	N/A

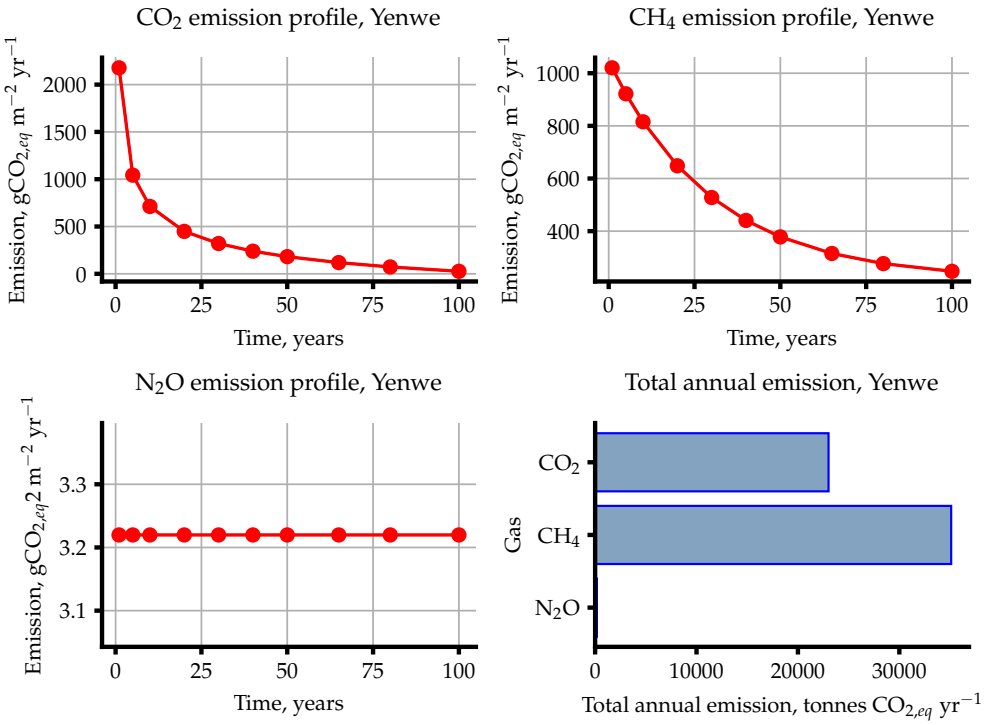




10.2 Outputs

Name	Unit	Value
CO_2 diffusion flux	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	877.5
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	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	275.2
Net CO_2 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	301.9
Total CO_2 emission per year	$tCO_{2,eq}\ yr^{-1}$	23 020
Total CO_2 emission per lifetime	$ktCO_{2,eq}$	2302
CH_4 emission via diffusion	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	244.8
CH_4 emission via ebullition	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	215.8
CH_4 emission via degassing	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Pre-impounment CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Net CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	460.5
Total CH_4 emission per year	$tCO_{2,eq}\ yr^{-1}$	35 110
Total CH_4 emission per lifetime	$ktCO_{2,eq}$	3511
Net N_2O emission, method A	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	3.220
Net N_2O emission, method B	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	1.398
Net N_2O emission, mean value	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	2.309
Total N_2O emission per year	$tCO_{2,eq}\ yr^{-1}$	245.5
Total N_2O emission per lifetime	$ktCO_{2,eq}$	24.55
CO_2+CH_4 net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	762.4
CO_2+CH_4+N_2O net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	764.8

10.3 Emission plots



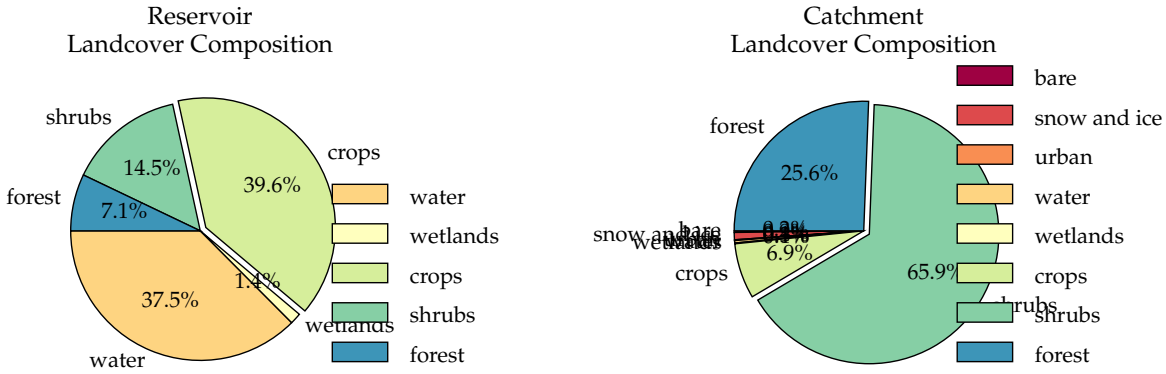
10.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	μg L^{-1}	53.34
Retention coefficient	-	0.4621
Influent total N concentration	μg L^{-1}	99.72
Reservoir TN concentration	μg L^{-1}	53.48
Reservoir TP concentration	μg L^{-1}	30.94
Percentage of reservoir's surface area that is littoral	%	14.59
Mean radiance at the reservoir	kWh m^{-2} d^{-1}	5.030
Cumulative global horizontal radiance at the reservoir	kWh m^{-2} d^{-1}	60.36
Bottom (hypolimnion) temperature in the reservoir	^{o}C	25.27
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	^{o}C	28.47
Water density at the surface of the reservoir	kg m^{-3}	996.1
Thermocline depth	m	2.313
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

11 Hutgyi

11.1 Inputs

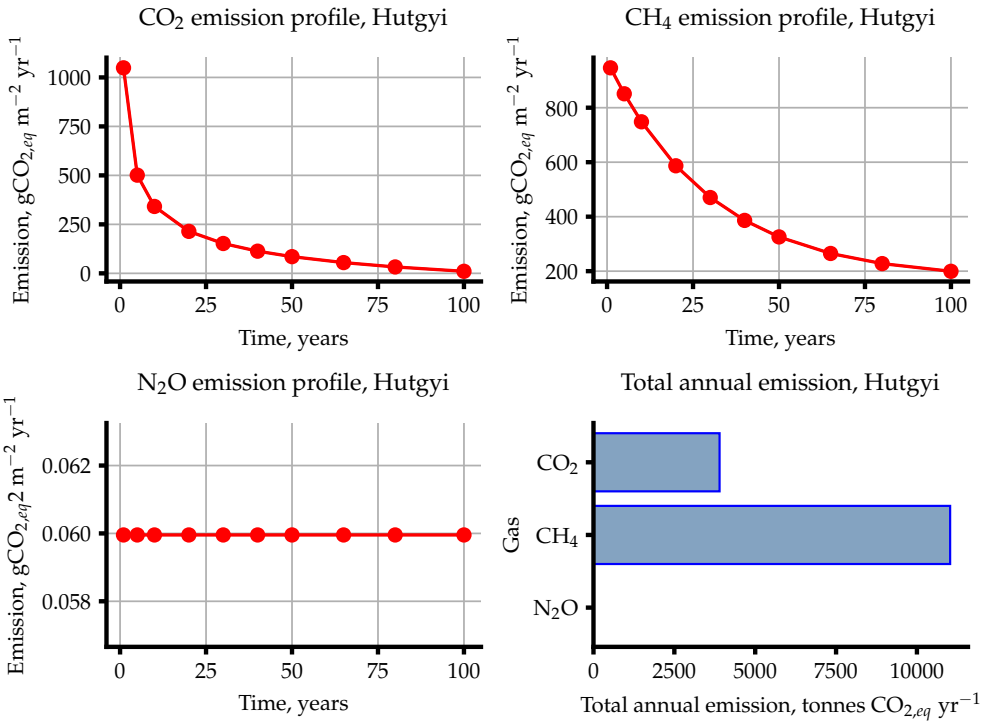
Input Name	Unit	Value(s)
Reservoir ID		33
Reservoir type		unknown
Reservoir coordinates (lat/lon)	^{o}	LAT: 17.528, LON: 97.747
Monthly Temperatures	^{o}C	22.0, 24.0, 27.2, 29.8, 28.9, 26.9, 26.4, 26.3, 26.8, 26.8, 25.3, 22.6
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 100
Calculated gas emissions	-	CO_2, CH_4, N_2O
Biogenic factors		
Biome	-	tropical moist broadleaf
Climate	-	boreal
Soil Type	-	mineral
Treatment Factor	-	primary (mechanical)
Landuse Intensity	-	low intensity
Inputs for catchment-level process calculations		
Annual runoff	mm/year	340.0
Catchment area	km^2	258 900
Length of inundated river	km	52.38
Population	capita	8 274 000
Area fractions	-	0.002, 0.009, 0.001, 0.003, 0.001, 0.069, 0.659, 0.256, 0.0
Mean catchment slope	%	29.00
Mean annual precipitation	mm/year	1036
Mean annual evapotranspiration	mm/year	896.0
Soil wetness	mm over profile	154.0
Soil Olsen P content	kgP ha^{-1}	5.845
Inputs for reservoir-level process calculations		
Reservoir volume	m^3	373 500 000
Reservoir area	km^2	27.20
Maximum reservoir depth	m	43.00
Mean reservoir depth	m	13.70
Inundated area fractions	-	0.0, 0.0, 0.0, 0.364, 0.014, 0.396, 0.141, 0.071, 0.0, 0.0, 0.0, 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, 0.004, 0.0, 0.0
Soil carbon in inundated area	kgC m^{-2}	5.756
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}	0.9600
Water intake depth below surface	m	N/A



11.2 Outputs

Name	Unit	Value
CO_2 diffusion flux	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	423.7
Nonanthropogenic CO_2 diffusion flux	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	290.8
Preimpoundment CO_2 emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	−10.41
CO_2 emission minus non-anthropogenic	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	132.9
Net CO_2 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	143.3
Total CO_2 emission per year	$tCO_{2,eq}\ yr^{-1}$	3898
Total CO_2 emission per lifetime	$ktCO_{2,eq}$	389.8
CH_4 emission via diffusion	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	236.5
CH_4 emission via ebullition	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	168.9
CH_4 emission via degassing	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Pre-impounment CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Net CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	405.4
Total CH_4 emission per year	$tCO_{2,eq}\ yr^{-1}$	11 030
Total CH_4 emission per lifetime	$ktCO_{2,eq}$	1103
Net N_2O emission, method A	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.059 95
Net N_2O emission, method B	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.066 65
Net N_2O emission, mean value	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.063 30
Total N_2O emission per year	$tCO_{2,eq}\ yr^{-1}$	1.631
Total N_2O emission per lifetime	$ktCO_{2,eq}$	0.1631
CO_2+CH_4 net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	548.7
CO_2+CH_4+N_2O net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	548.7

11.3 Emission plots



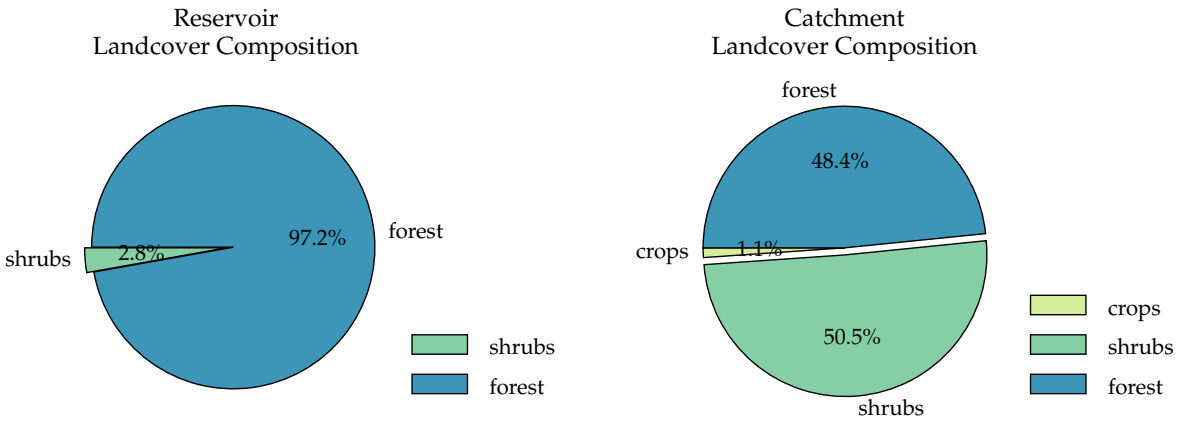
11.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	μg L^{-1}	120.3
Retention coefficient	-	0.003 387
Influent total N concentration	μg L^{-1}	2.475
Reservoir TN concentration	μg L^{-1}	2.467
Reservoir TP concentration	μg L^{-1}	119.9
Percentage of reservoir's surface area that is littoral	%	14.33
Mean radiance at the reservoir	kWh m^{-2} d^{-1}	4.870
Cumulative global horizontal radiance at the reservoir	kWh m^{-2} d^{-1}	58.44
Bottom (hypolimnion) temperature in the reservoir	^{o}C	25.14
Water density at the bottom of the reservoir	kg m^{-3}	997.0
Surface (epilimnion) temperature in the reservoir	^{o}C	28.20
Water density at the surface of the reservoir	kg m^{-3}	996.2
Thermocline depth	m	1.895
Influent total N load	kgN yr^{-1}	217 900
Influent total P load	kgP yr^{-1}	10 590 000
Downstream TN concentration	mg L^{-1}	0.002 470

12 Bawgata

12.1 Inputs

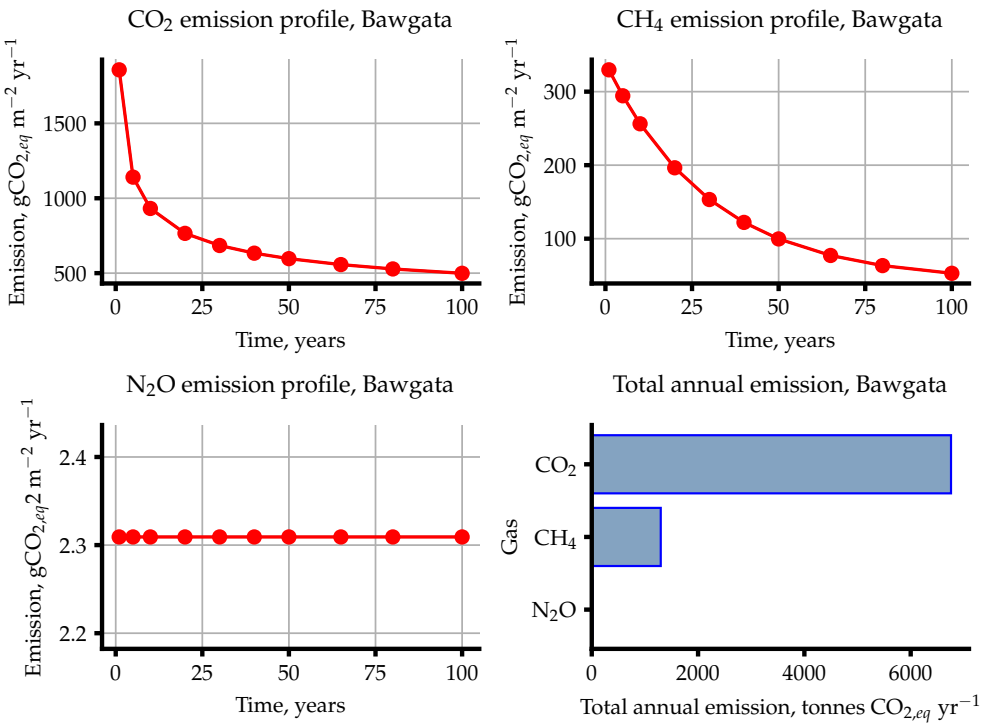
Input Name	Unit	Value(s)
Reservoir ID		8
Reservoir type		unknown
Reservoir coordinates (lat/lon)	^{o}	LAT: 18.268924, LON: 96.859766
Monthly Temperatures	^{o}C	21.2, 23.1, 25.9, 28.4, 27.8, 25.8, 25.4, 25.4, 25.9, 26.0, 24.5, 21.9
Year vector for emission profiles	yr	1, 5, 10, 20, 30, 40, 50, 65, 80, 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, 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	kWh m^{-2} d^{-1}	5.030
Mean monthly horizontal radiance: May - Sept	kWh m^{-2} d^{-1}	4.340
Mean monthly horizontal radiance: Nov - Mar	kWh m^{-2} d^{-1}	5.458
Mean monthly wind speed	m s^{-1}	0.9700
Water intake depth below surface	m	N/A



12.2 Outputs

Name	Unit	Value
CO_2 diffusion flux	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	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	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	173.8
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	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	87.63
CH_4 emission via ebullition	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	41.57
CH_4 emission via degassing	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Pre-impounment CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.0
Net CH_4 emission	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	129.2
Total CH_4 emission per year	$tCO_{2,eq}\ yr^{-1}$	1298
Total CH_4 emission per lifetime	$ktCO_{2,eq}$	129.8
Net N_2O emission, method A	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	2.309
Net N_2O emission, method B	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	0.4840
Net N_2O emission, mean value	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	1.397
Total N_2O emission per year	$tCO_{2,eq}\ yr^{-1}$	23.20
Total N_2O emission per lifetime	$ktCO_{2,eq}$	2.320
CO_2+CH_4 net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	802.0
CO_2+CH_4+N_2O net emissions	$gCO_{2,eq}\ m^{-2}\ yr^{-1}$	803.4

12.3 Emission plots



12.4 Intermediate variables

Name	Unit	Value
Influent total P concentration	μg L^{-1}	55.67
Retention coefficient	-	0.7689
Influent total N concentration	μg L^{-1}	22.17
Reservoir TN concentration	μg L^{-1}	5.126
Reservoir TP concentration	μg L^{-1}	13.36
Percentage of reservoir's surface area that is littoral	%	2.109
Mean radiance at the reservoir	kWh m^{-2} d^{-1}	5.030
Cumulative global horizontal radiance at the reservoir	kWh m^{-2} d^{-1}	60.36
Bottom (hypolimnion) temperature in the reservoir	^{o}C	24.62
Water density at the bottom of the reservoir	kg m^{-3}	997.2
Surface (epilimnion) temperature in the reservoir	^{o}C	27.03
Water density at the surface of the reservoir	kg m^{-3}	996.5
Thermocline depth	m	1.711
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