

macroscale_feedbacks.zip Contents

File Types and Descriptions

| Name | Entity Type | Externally Defined Format | Description |
|---------------------------|-------------|---------------------------|--|
| MSF_R_Script.R | text/x-rsrc | application/R | Script that outlines the Activity A, B, and C steps that students complete as part of the module. |
| Lake_Characteristics | | application/vnd.ms-excel | File with site information and physical characteristics of each lake. Tabs for each lake include long-term annual climate data used in the module. Save as .xlsx to run in script. |
| Variable_Name_Metadata | | application/vnd.ms-excel | File which includes information about the variables, units, and formats for each of the data files used during the module. |
| Lakes/FallingCreek folder | | | |
| aed2.nml | text/x-rsrc | application/GLM | File to configure lake biogeochemical parameters for Aquatic Ecodynamics (AED) to simulate oxygen, carbon, phosphorus, and nitrogen dynamics, among others for Falling Creek Reservoir. Save as .nml to run. |
| aed2_phyto_pars.nml | text/x-rsrc | application/GLM | File to configure lake phytoplankton parameters for AED for Falling Creek Reservoir. Save as .nml to run. |
| aed2_zoop_pars.nml | text/x-rsrc | application/GLM | File to configure lake zooplankton parameters for AED for Falling Creek Reservoir. Save as .nml to run. |
| glm2.nml | text/x-rsrc | application/GLM | File to configure lake characteristics, meteorological driver data, and physical response variables for the Falling Creek Reservoir General Lake Model (GLM). Save as .nml to run. |
| met_hourly.csv | | | Meteorological GLM driver data for a baseline simulation based on observed data for Falling Creek Reservoir. |
| met_hourly_plus2.csv | | | Meteorological GLM driver data for a year-round +2°C climate scenario for Falling Creek Reservoir. |
| met_hourly_plus4.csv | | | Meteorological GLM driver data for a year- |

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| | | | round +4°C climate scenario for Falling Creek Reservoir. |
| met_hourly_plus6.csv | | | Meteorological GLM driver data for a year-round +6°C climate scenario for Falling Creek Reservoir. |
| inflow.csv | | | Surface inflow GLM driver data for a baseline simulation based on observed data for Falling Creek Reservoir. |
| outflow.csv | | | Surface outflow GLM driver data based on observed data for Falling Creek Reservoir. |
| Lakes/Mendota folder | | | |
| aed2.nml | text/x-rsrc | application/GLM | File to configure lake biogeochemical parameters for Aquatic Ecodynamics (AED) to simulate oxygen, carbon, phosphorus, and nitrogen dynamics, among others for Lake Mendota. Save as .nml to run. |
| aed2_phyto_pars.nml | text/x-rsrc | application/GLM | File to configure lake phytoplankton parameters for AED for Lake Mendota. Save as .nml to run. |
| aed2_zoop_pars.nml | text/x-rsrc | application/GLM | File to configure lake zooplankton parameters for AED for Lake Mendota. Save as .nml to run. |
| glm2.nml | text/x-rsrc | application/GLM | File to configure lake characteristics, meteorological driver data, and physical response variables for the Lake Mendota General Lake Model (GLM). Save as .nml to run. |
| met_hourly.csv | | | Meteorological GLM driver data for a baseline simulation based on observed data for Lake Mendota. |
| met_hourly_plus2.csv | | | Meteorological GLM driver data for a year-round +2°C climate scenario for Lake Mendota. |
| met_hourly_plus4.csv | | | Meteorological GLM driver data for a year-round +4°C climate scenario for Lake Mendota. |
| met_hourly_plus6.csv | | | Meteorological GLM driver data for a year-round +6°C climate scenario for Lake Mendota. |

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| inflow.csv | | | Surface inflow GLM driver data for a baseline simulation based on observed data for Lake Mendota. |
| outflow.csv | | | Surface outflow GLM driver data based on observed data for Lake Mendota. |
| Lakes/Sunapee folder | | | |
| aed2.nml | text/x-rsrc | application/GLM | File to configure lake biogeochemical parameters for Aquatic Ecodynamics (AED) to simulate oxygen, carbon, phosphorus, and nitrogen dynamics, among others for Lake Sunapee. Save as .nml to run. |
| aed2_phyto_pars.nml | text/x-rsrc | application/GLM | File to configure lake phytoplankton parameters for AED for Lake Sunapee. Save as .nml to run. |
| aed2_zoop_pars.nml | text/x-rsrc | application/GLM | File to configure lake zooplankton parameters for AED for Lake Sunapee. Save as .nml to run. |
| glm2.nml | text/x-rsrc | application/GLM | File to configure lake characteristics, meteorological driver data, and physical response variables for the Lake Sunapee General Lake Model (GLM). Save as .nml to run. |
| met_hourly.csv | | | Meteorological GLM driver data for a baseline simulation based on observed data for Lake Sunapee. |
| met_hourly_plus2.csv | | | Meteorological GLM driver data for a year-round +2°C climate scenario for Lake Sunapee. |
| met_hourly_plus4.csv | | | Meteorological GLM driver data for a year-round +4°C climate scenario for Lake Sunapee. |
| met_hourly_plus6.csv | | | Meteorological GLM driver data for a year-round +6°C climate scenario for Lake Sunapee. |
| inflow.csv | | | Surface inflow GLM driver data for a baseline simulation based on observed data for Lake Sunapee. |
| outflow.csv | | | Surface outflow GLM driver data based on observed data for Lake Sunapee. |

| Lakes/Toolik folder | | | |
|----------------------|-------------|-----------------|--|
| aed2.nml | text/x-rsrc | application/GLM | File to configure lake biogeochemical parameters for Aquatic Ecodynamics (AED) to simulate oxygen, carbon, phosphorus, and nitrogen dynamics, among others for Toolik Lake. Save as .nml to run. |
| aed2_phyto_pars.nml | text/x-rsrc | application/GLM | File to configure lake phytoplankton parameters for AED for Toolik Lake. Save as .nml to run. |
| aed2_zoop_pars.nml | text/x-rsrc | application/GLM | File to configure lake zooplankton parameters for AED for Toolik Lake. Save as .nml to run. |
| glm2.nml | text/x-rsrc | application/GLM | File to configure lake characteristics, meteorological driver data, and physical response variables for the Toolik Lake General Lake Model (GLM). Save as .nml to run. |
| met_hourly.csv | | | Meteorological GLM driver data for a baseline simulation based on observed data for Toolik Lake. |
| met_hourly_plus2.csv | | | Meteorological GLM driver data for a year-round +2°C climate scenario for Toolik Lake. |
| met_hourly_plus4.csv | | | Meteorological GLM driver data for a year-round +4°C climate scenario for Toolik Lake. |
| met_hourly_plus6.csv | | | Meteorological GLM driver data for a year-round +6°C climate scenario for Toolik Lake. |
| inflow.csv | | | Surface inflow GLM driver data for a baseline simulation based on observed data for Toolik Lake. |
| outflow.csv | | | Surface outflow GLM driver data based on observed data for Toolik Lake. |

Data Table Structure

met_hourly.csv, met_hourly_plus2.csv, met_hourly_plus4.csv, met_hourly_plus6.csv

| Column name | Description | Unit or code explanation or date format | Empty value code |
|-------------|---------------------------|---|------------------|
| time | Date and time of sampling | YYYY-MM-DD HH:MM:SS | NA |

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|-----------|------------------------------|---------------------|----|
| ShortWave | Short wave radiation | wattsPerSquareMeter | NA |
| LongWave | Long wave radiation | wattsPerSquareMeter | NA |
| AirTemp | Air temperature | celsius | NA |
| RelHum | Relative humidity in percent | dimensionless | NA |
| WindSpeed | Wind speed | metersPerSecond | NA |
| Rain | Hourly rain accumulation | metersPerDay | NA |
| Snow | Hourly snow accumulation | metersPerDay | NA |

inflow.csv

| Column name | Description | Unit or code explanation or date format | Empty value code |
|-------------|---|---|------------------|
| time | Date and time of sampling | YYYY-MM-DD HH:MM:SS | NA |
| FLOW | Stream inflow rate | cubicMetersPerSecond | NA |
| SALT | Inflow stream salinity | milligramsPerLiter | NA |
| TEMP | Inflow water temperature | celsius | NA |
| OGM_don | Inflow dissolved organic nitrogen concentration | millimolesPerCubicMeter | NA |
| NIT_nit | Inflow nitrate concentration | millimolesPerCubicMeter | NA |
| NIT_amm | Inflow ammonium concentration | millimolesPerCubicMeter | NA |
| PHS_frp | Inflow filterable reactive phosphorus concentration | millimolesPerCubicMeter | NA |

outflow.csv

| Column name | Description | Unit or code explanation or date format | Empty value code |
|-------------|---------------------------|---|------------------|
| time | Date and time of sampling | YYYY-MM-DD HH:MM:SS | NA |
| FLOW | Stream inflow rate | cubicMetersPerSecond | NA |