

cross_scale_interactions.zip Contents

File Types and Descriptions

Name	Entity Type	Externally Defined Format	Description
CSI_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.
Mendota folder			
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.
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.
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.
inflow.csv			Surface inflow GLM driver data for a baseline simulation based on observed data for Lake Mendota.
inflow_twoP.csv			Surface inflow GLM driver data for a 2× filterable reactive phosphorus (PHS_frp) land use change scenario for Lake Mendota.
inflow_fourP.csv			Surface inflow GLM driver data for a 4× filterable reactive phosphorus (PHS_frp) land use change scenario for Lake Mendota.

inflow_sixP.csv			Surface inflow GLM driver data for a 6× filterable reactive phosphorus (PHS_frp) land use change scenario for Lake Mendota.
outflow.csv			Surface outflow GLM driver data based on observed data for Lake Mendota.
Sunapee folder			
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.
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.
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.
inflow_twoP.csv			Surface inflow GLM driver data for a 2× filterable reactive phosphorus (PHS_frp) land use change scenario for Lake Sunapee.
inflow_fourP.csv			Surface inflow GLM driver data for a 4× filterable reactive phosphorus (PHS_frp) land use change scenario for Lake Sunapee.

inflow_sixP.csv			Surface inflow GLM driver data for a 6× filterable reactive phosphorus (PHS_frp) land use change scenario for Lake Sunapee.
outflow.csv			Surface outflow GLM driver data based on observed data for Lake Sunapee.

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
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, inflow_twoP.csv, inflow_fourP.csv, inflow_sixP.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