

Read Me:

Model Name: DM-14_Lake_T_HYD-WQ_Model_Example

Objective: Use EFDC+ Explorer (EE) and EFDC+ to simulate hydrodynamics and WQ in Lake Thonotosassa. These models were originally developed by DSI for use in EE training. Step-by-step guidance in how to build them are provided on our [EE Knowledge Base](#).

Model Grid: 355 horizontal grid cells 1 vertical layer for both models

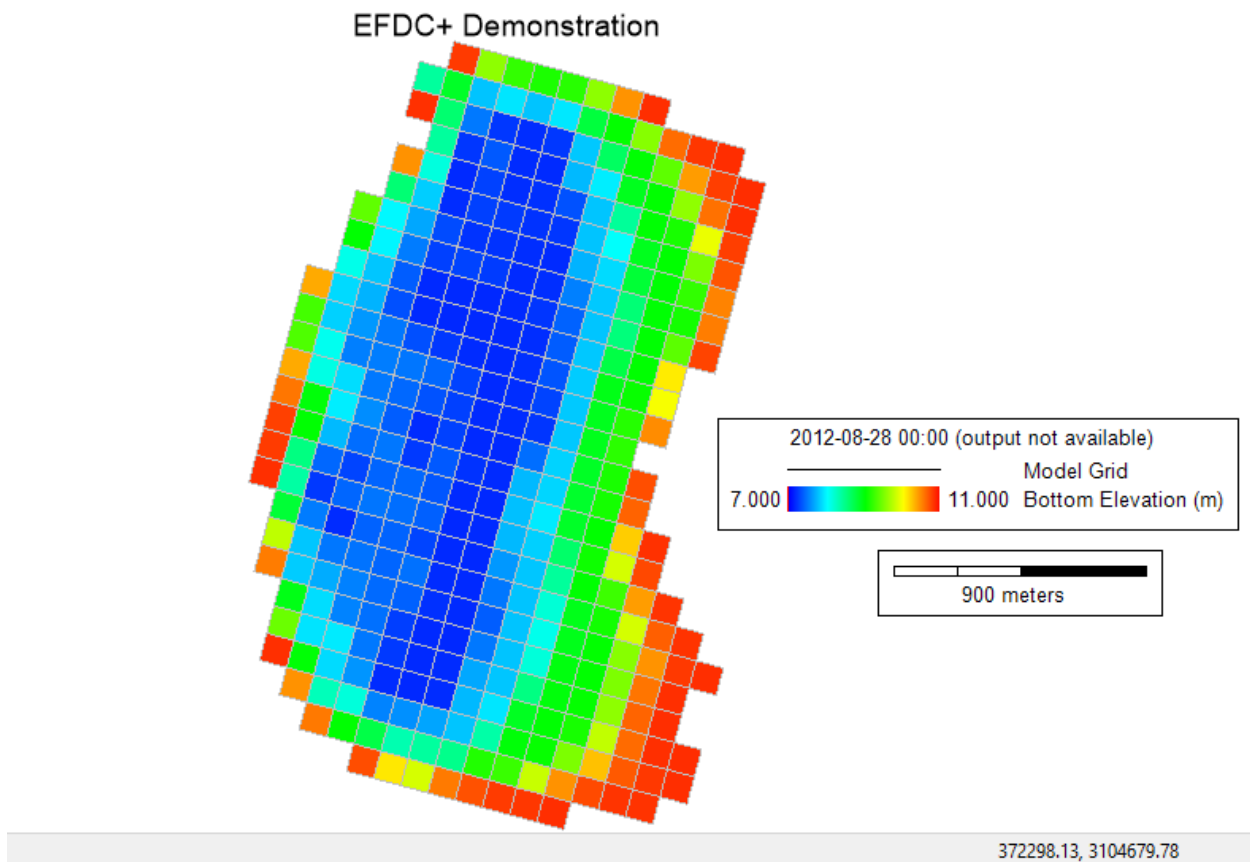


Figure 1 Model Domain of DM-14_Lake_T_HYD-WQ_Model.

Folder Structure:

Data: This folder contains data that can be used with the model. These data can be measured data or output from model or derived from analytical equations.

Model: EFDC model that can be loaded in EE to pre- and post-process.

- Hyd Model: This is hydrodynamic model
- WQ Model: This is water quality model

Grid: This folder contains grid for building the model

- Lake_T.cvl: CVL grid format, EE uses this grid type for building model
- Lake_T.kml: This file can be opened with Google Earth

Maps-Images: This folder contains the maps / images of the study area. The formats of the maps / images can be *.geo (geo-referenced file), *.jgw, *.jpg etc.

- Lake_T.jgw
- Lake_T.jpg

Test_record file: This file is just a record file that informs which EFDC+ executable was used to run the model.

Modules Activated: Hydrodynamics, temperature and water quality.

Description: This model is designed to demonstrate the impacts of temperature and water quality on a lake. The inflow boundary is configured for flow, temperature and water quality constituents at cell location I = 18, J =4.

Disclaimer: The model is provided to our users to demonstrate that EFDC_Explorer and EFDC+ can be used to better understand how to build this kind of model. The model is running as expected; however, shouldn't be considered final as the model can be modified / refined to obtain improved results.

Files in Data Folder:**Bathymetry**

- Bathymetry.dat
- Outline.p2d

Boundaries

- Atmospheric.dat
- BC_locations.dat
- Inflow.dat
- Outflow.dat
- Temperature.dat
- Winds.dat
- WQ Data-Lake2D.xls

Model Result:

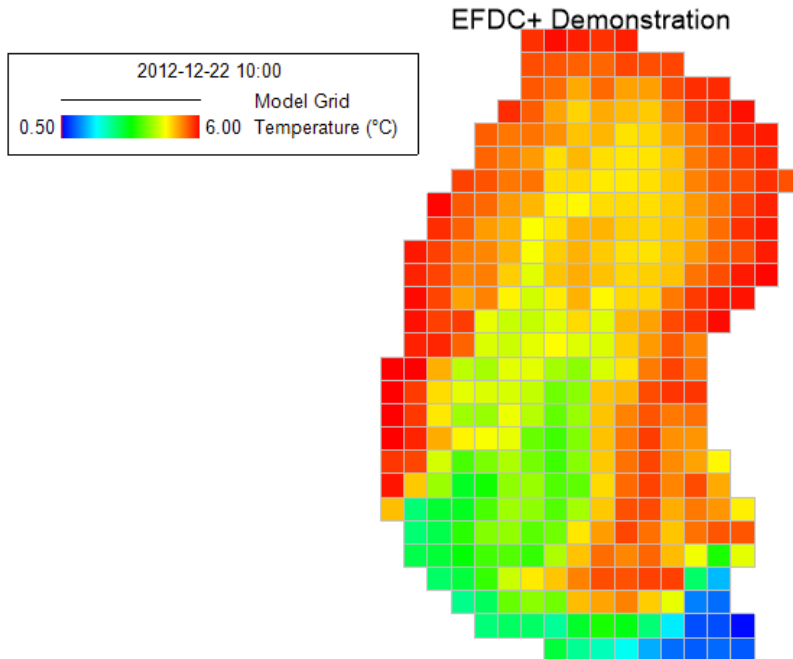


Figure 2 2DH view of water temperature from DM-14_Lake_T_HYD-WQ_Model.

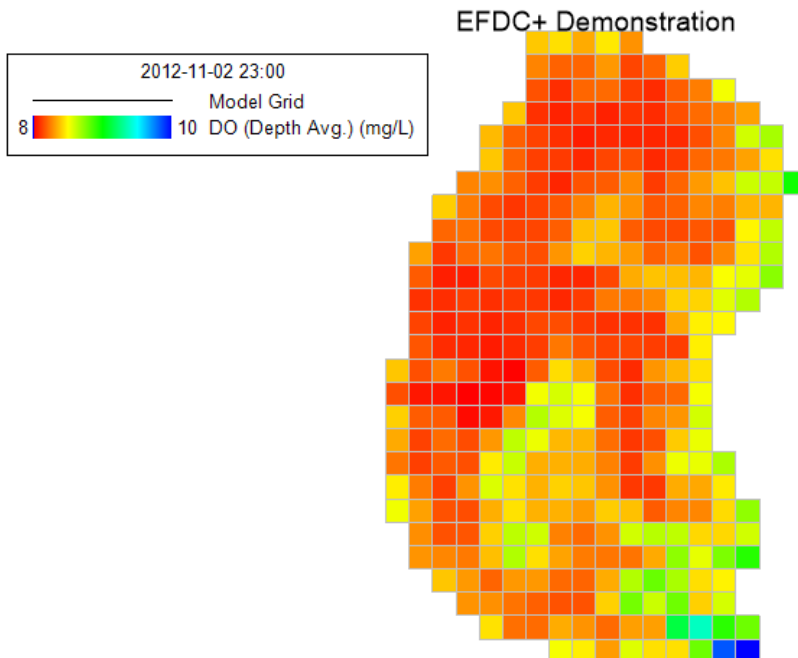


Figure 3 2DH view of Dissolved Oxygen from DM-14_Lake_T_HYD-WQ_Model.