

Read me:

Model name: TC-12_Shellfish Farm_Test_Case

Objective: Use EFDC+ Explorer (EE) and EFDC+ to replicate the Kobayashi et al., (1997) test cases for shellfish growth in interaction with water quality described in the paper “A population dynamics model for the Japanese oyster, *Crassostrea Gigas*”. The goal is to better understand the impact of water quality to the growth of the oyster.

Model grid: 03 horizontal grid cells and one vertical layer.

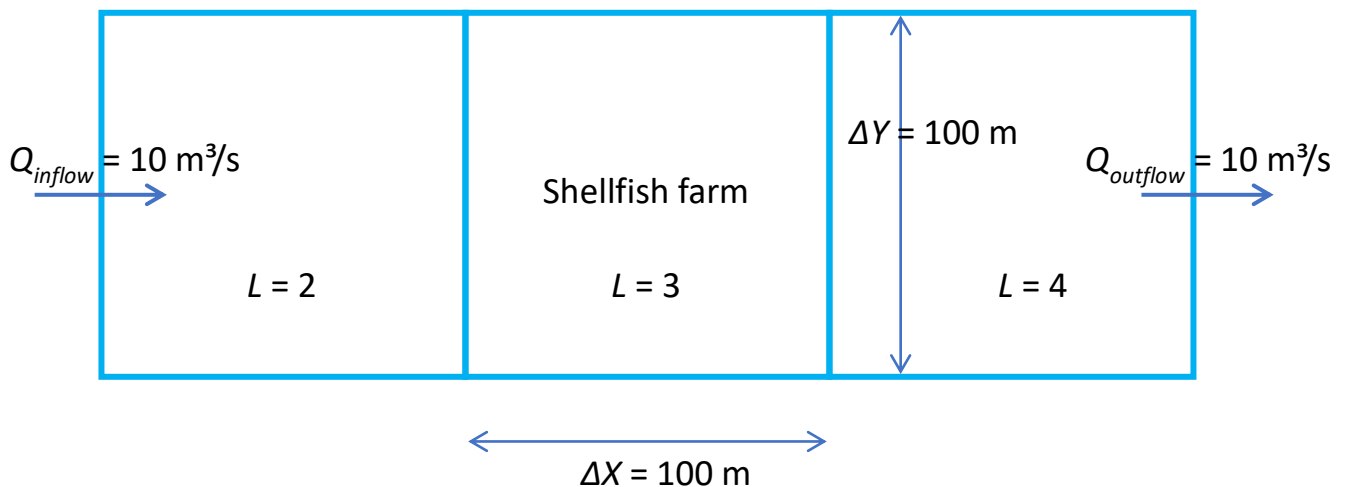


Figure 1. Model Domain of TC-12 Shellfish Farm.

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.

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

Modules Activated: Hydrodynamics, Salinity, Temperature, Water Quality, Shellfish Farm

Disclaimer: The model is provided to our users to demonstrate how EFDC_Explorer and EFDC+ can be used to simulate how the water quality impact to the growth of oyster.

Citation for the paper:

Kobayashi, M., E.E. Hofmann, E.N. Powell, J.M. Klinck, K. Kusaka (1997). A population dynamics model for the Japanese oyster, *Crassostrea Gigas*. *Aquaculture*. Vol. 149, Iss. 3–4, p. 285-321.

Cerco, C.F. and M.R. Noel (2007). Can Oyster Restoration Reverse Cultural Eutrophication in Chesapeake Bay? *Estuaries and Coasts*. Vol. 30, No. 2, p. 331–343.

Files in Data Folder:

- Data_Ch1-a.dat
- Data_Dry weight.dat
- Data_Salinity.dat
- Data_Shell Length.dat
- Data_Temperature.dat

Data sources: The data provided in the “Data” folder are derived from the journal paper mentioned above.

Model results:

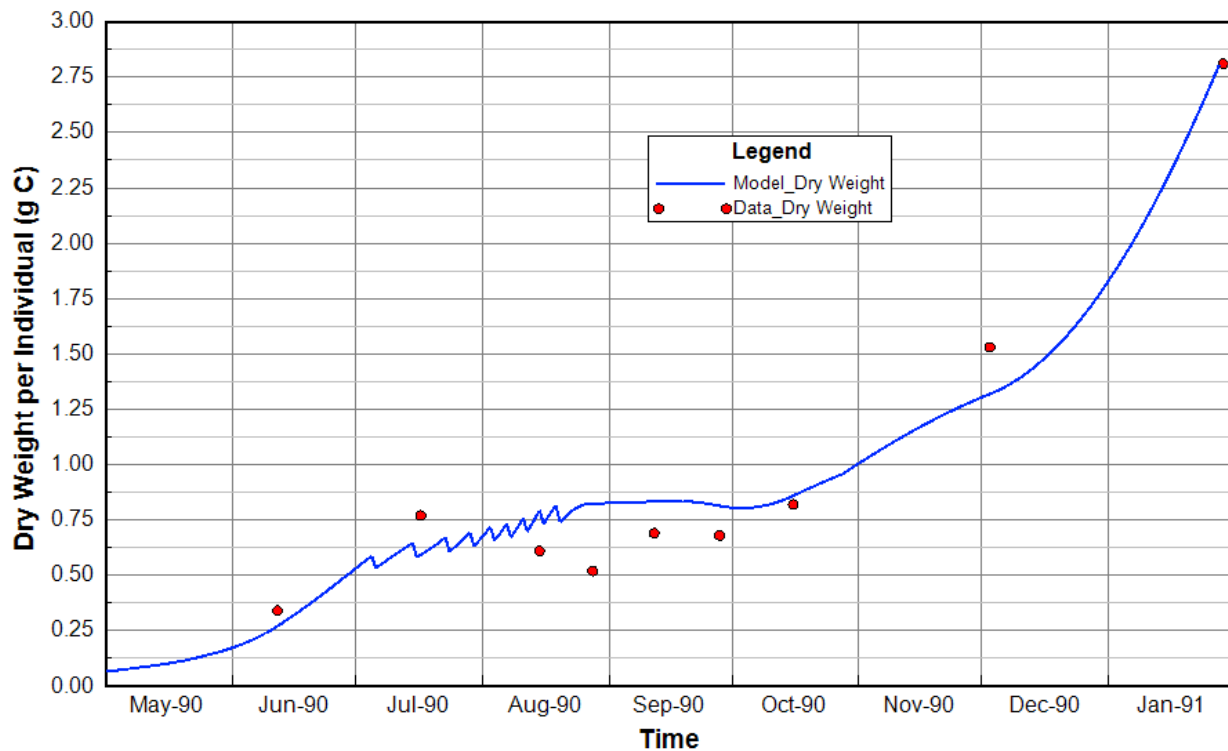


Figure 2. Dry weight comparison.

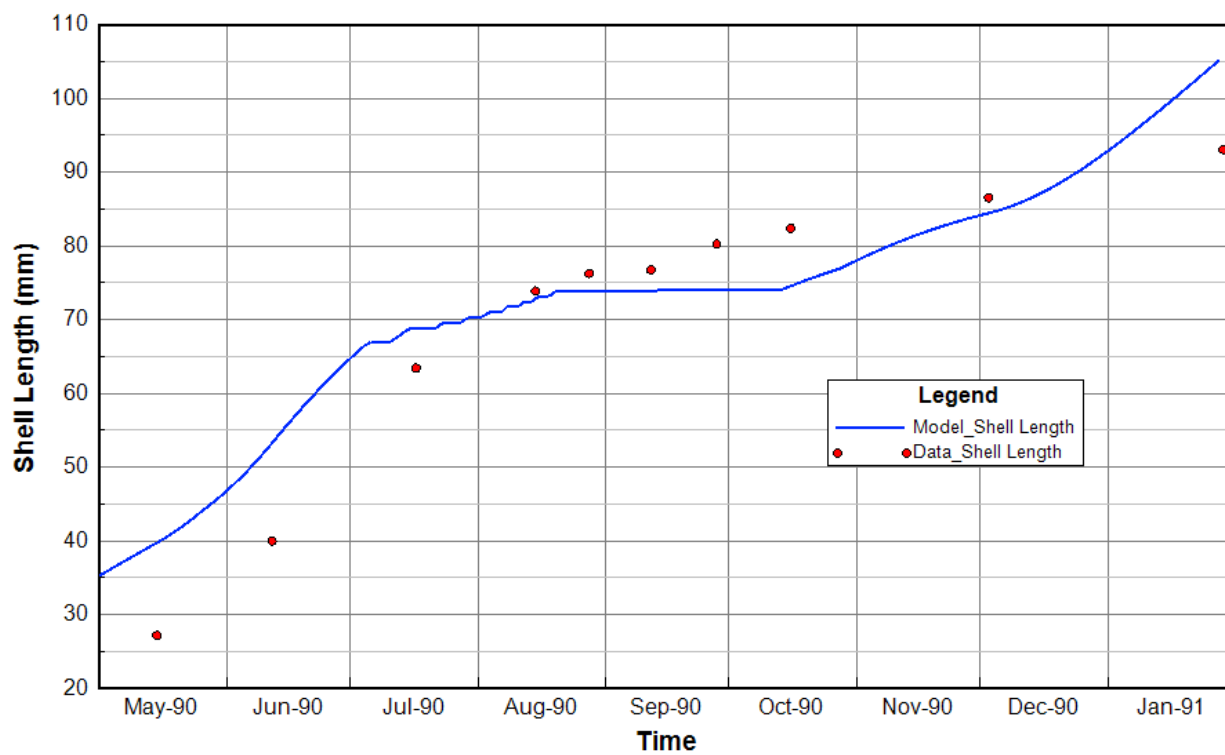


Figure 3. Dry weight comparison