



Update of Loxahatchee Hydrodynamic/Salinity Modeling Performance Measure

**Detong Sun
Coastal Ecosystem**

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Objectives

- Simulation of estuary response to different flow scenarios. Seven scenarios: 2014 base, 2070 future without project, Alternatives 2, 5, 10, 12 and 13
- Computation of salinity in the estuary
- Computation of stage in the river and floodplain
- Evaluation of performance measures for each scenario



Methodology

- Use a three-dimensional hydrodynamic model to simulate the scenarios
- Daily salinity and hourly stage from the model output used for VEC PM evaluation
- For salinity related VEC PM (five zones), compute:
 - a. Percentage of area that meets the criteria for each zone (a time series)
 - b. Percentage of time that meets the criteria for each zone (a map is generated)

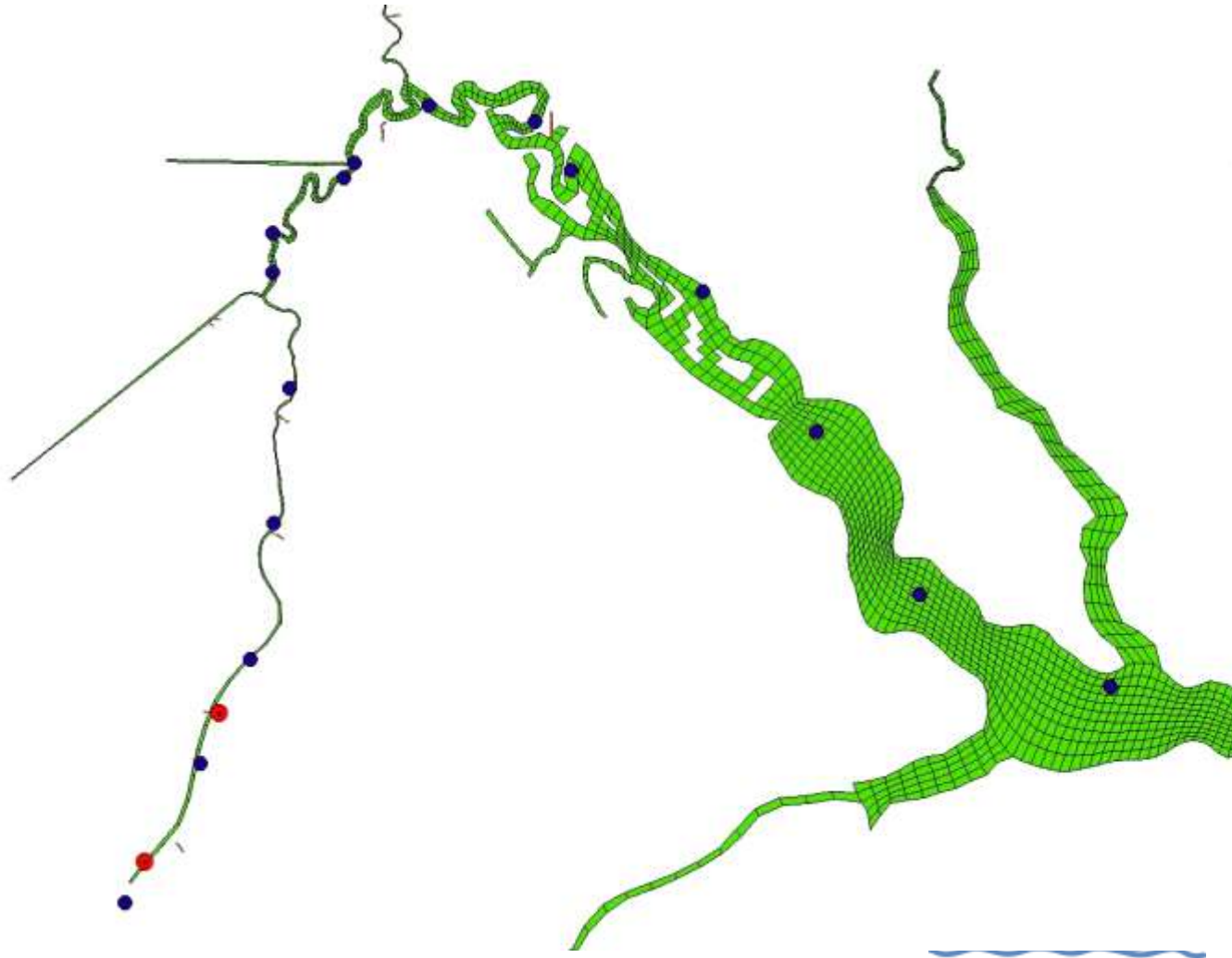


Methodology

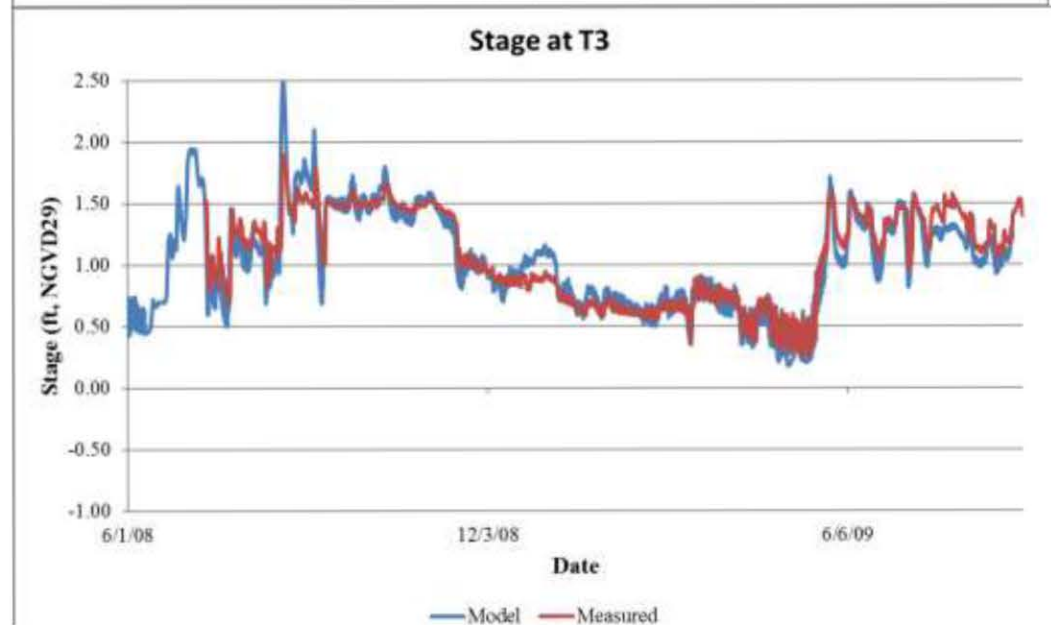
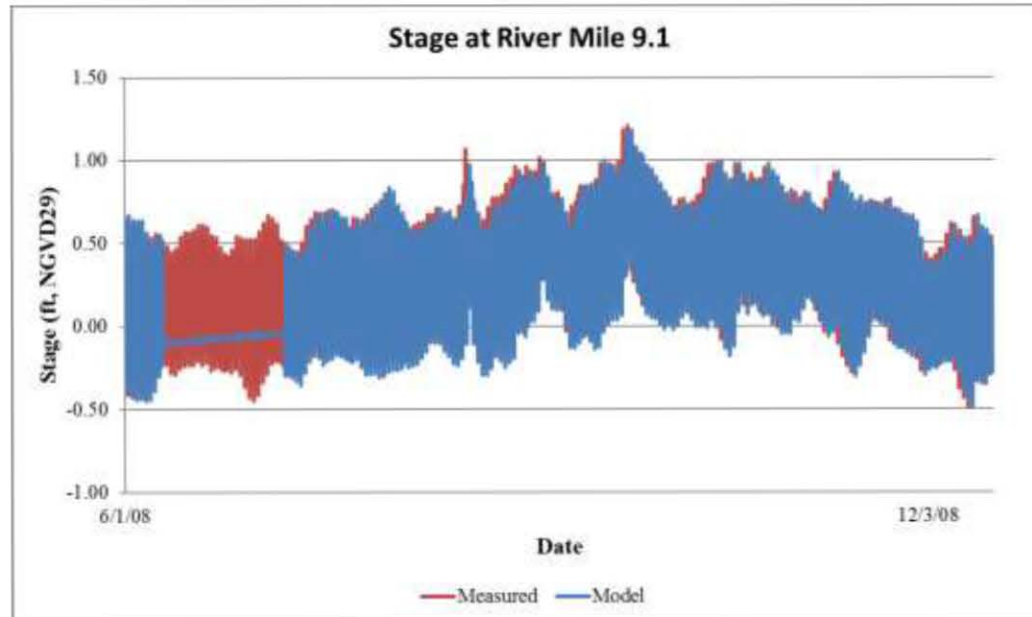
- For the river floodplain, specific metrics still TBD
Model provides basic information:
 - percentage of area inundated at any given time
 - number of days inundated for any given period
- Total habitat units can be calculated separately for the river floodplain and the other five zones



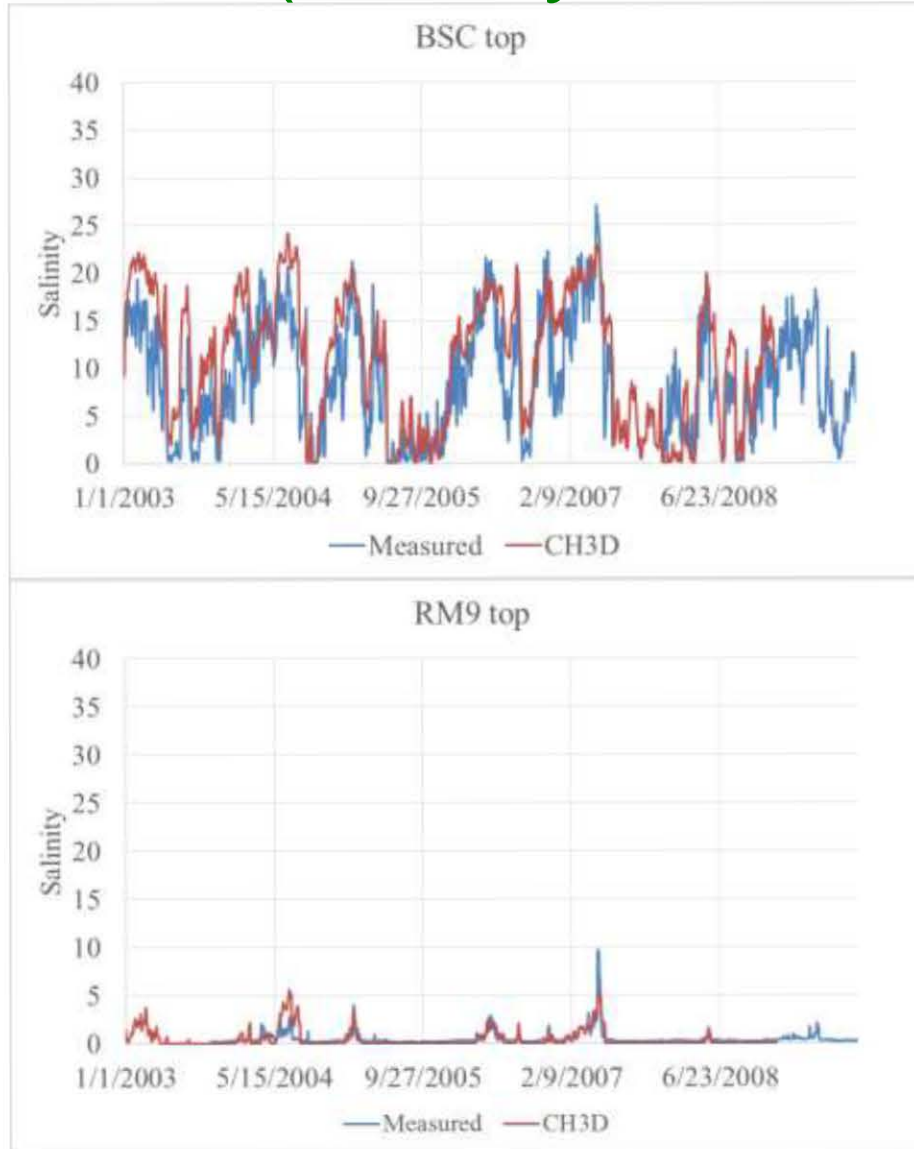
CH3D Model Grid (2175 cells)



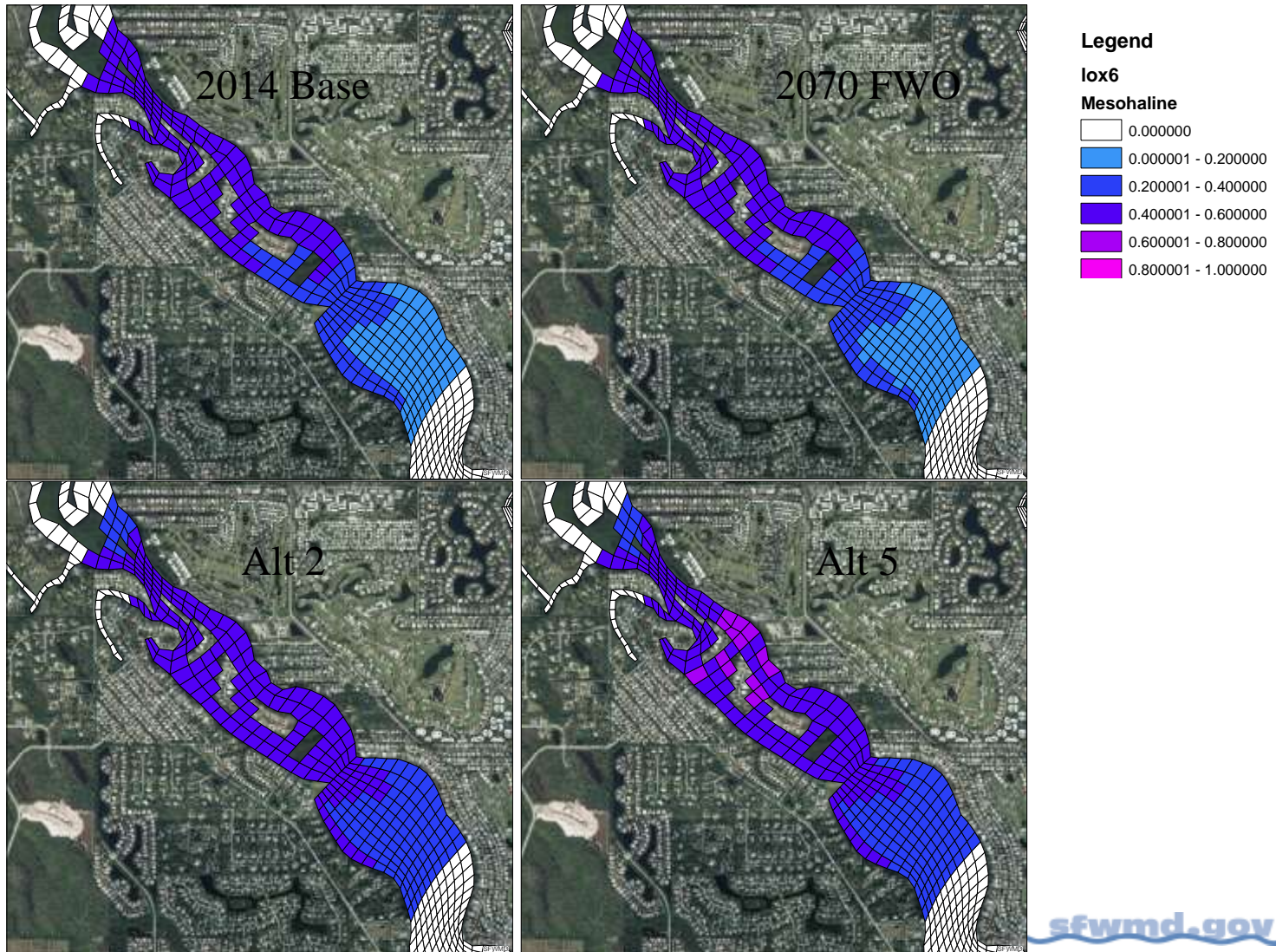
CH3D (stage validation)

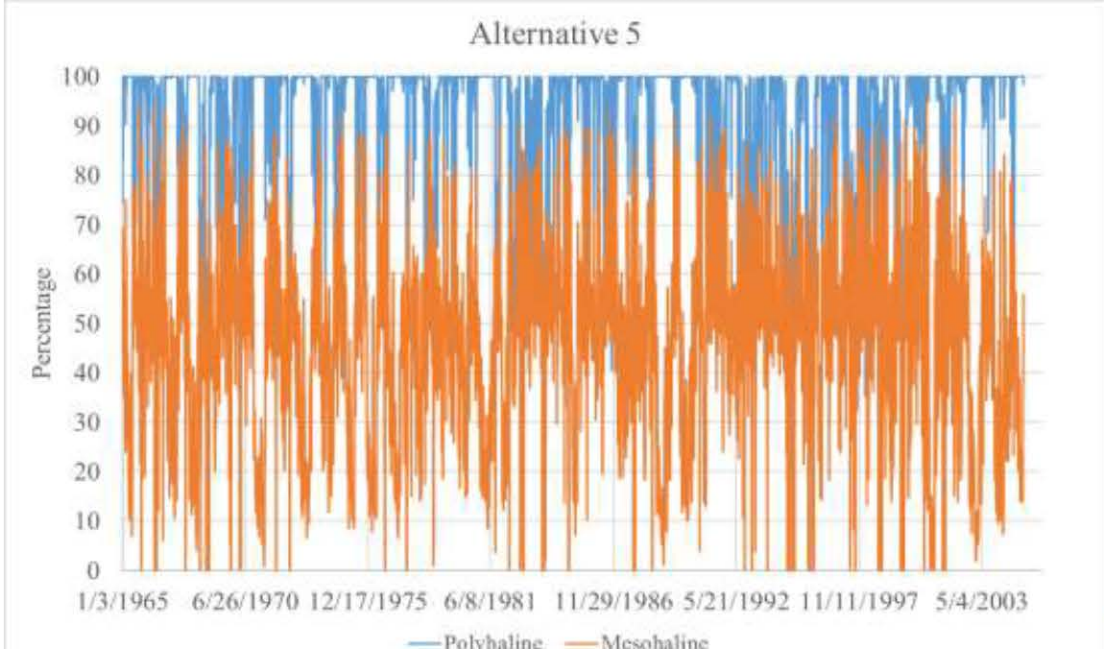
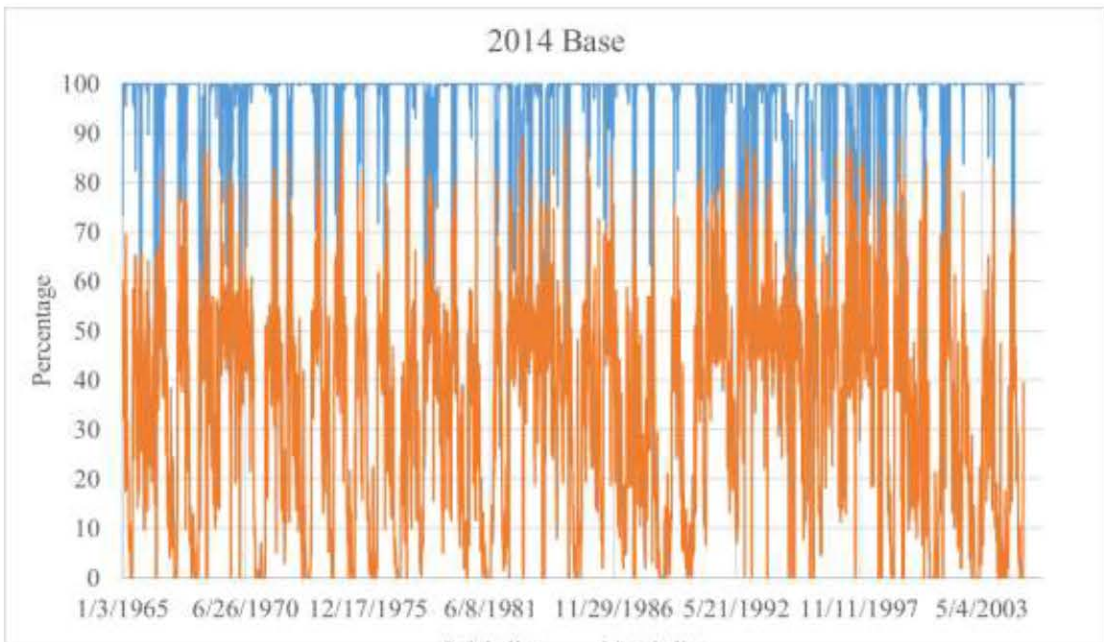


CH3D (salinity validation)

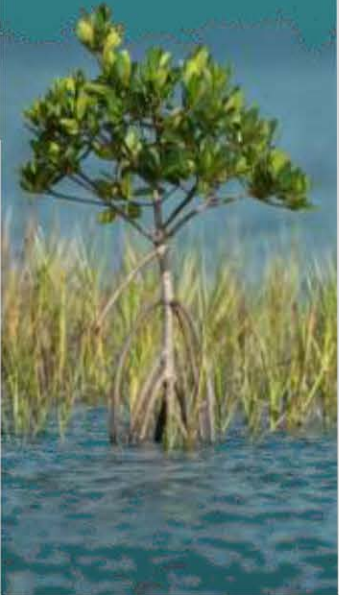
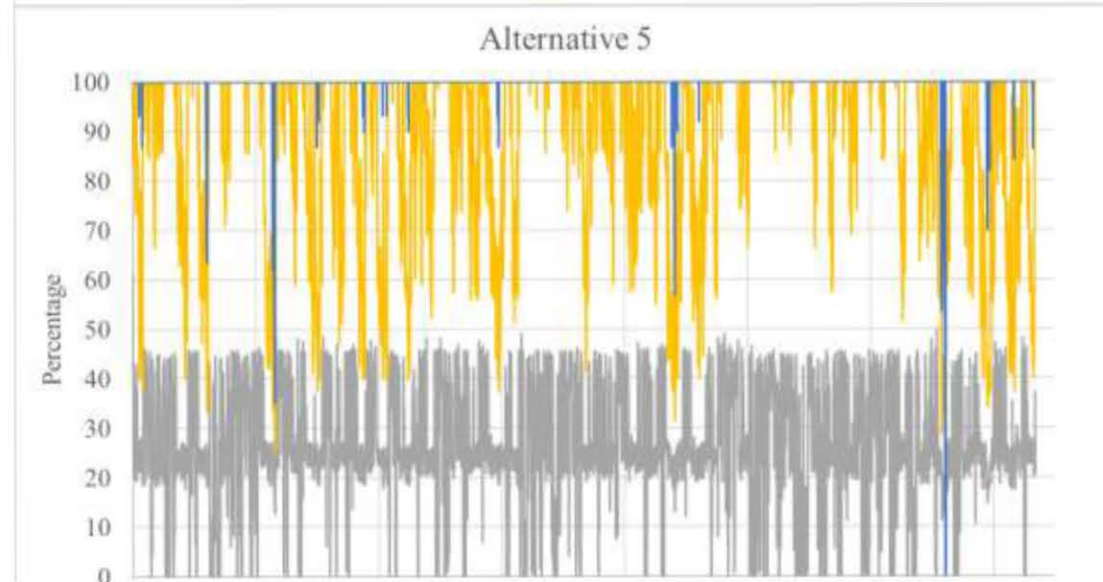
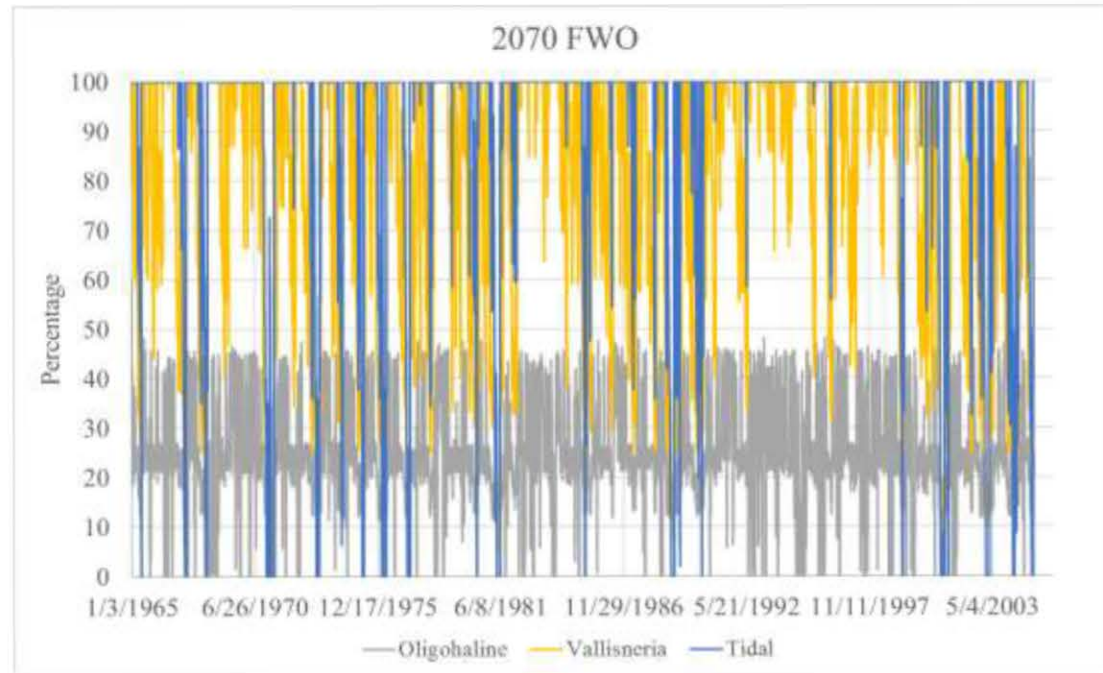


Percentage of time meet criteria (Mesohaline Zone)





Percentage of area meets criteria



Total Habitat Unit (HU)

$$THU = \sum_{ij} r_{ij} A_{ij}$$

Scenario	Total habitat un
2014 Base	
2070 FWO	
Alt 2	
Alt 5	
Alt 10	
Alt 12	
Alt 13	



Riverine Floodplain

