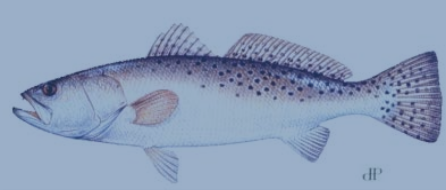


RESTORATION TARGETS FOR JUVENILE SPORTFISH IN FLORIDA BAY



Christopher Kelble, Joan Browder,
Patrick Pitts, Lindsey Visser



Outline



- Why sportfish are important?
- Methodology
- Setting Habitat Suitability Targets
- Informing & Assessing Restoration
- Future Directions



Everglades Sport Fishery



- Generates ~US \$880 Million per annum and >6,000 jobs (Fedler et al. 2009)
- Spotted Seatrout (*C. nebulosus*) 2nd most commonly caught fish in Florida Bay
- *C. nebulosus* spend entire life history in natal Bay

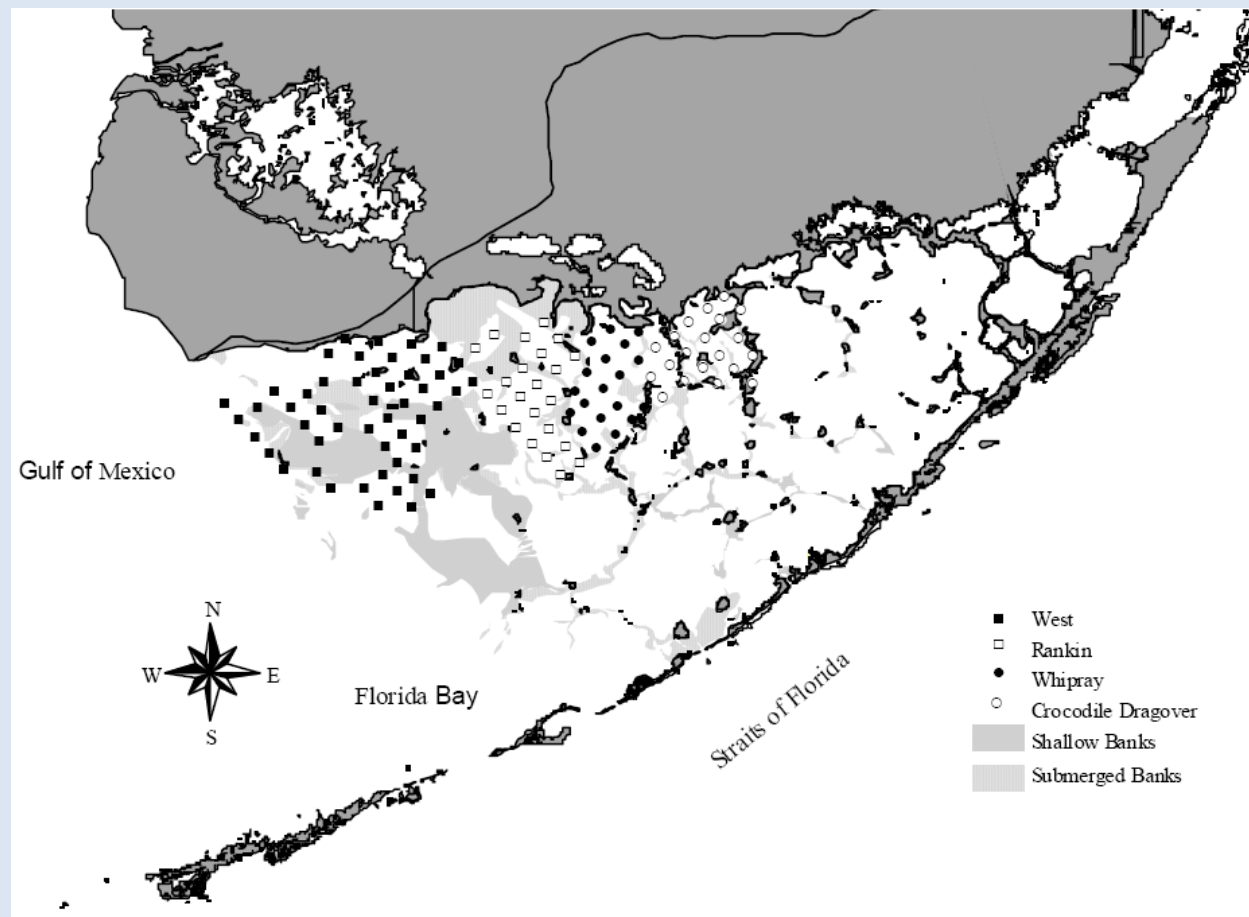




Methodology



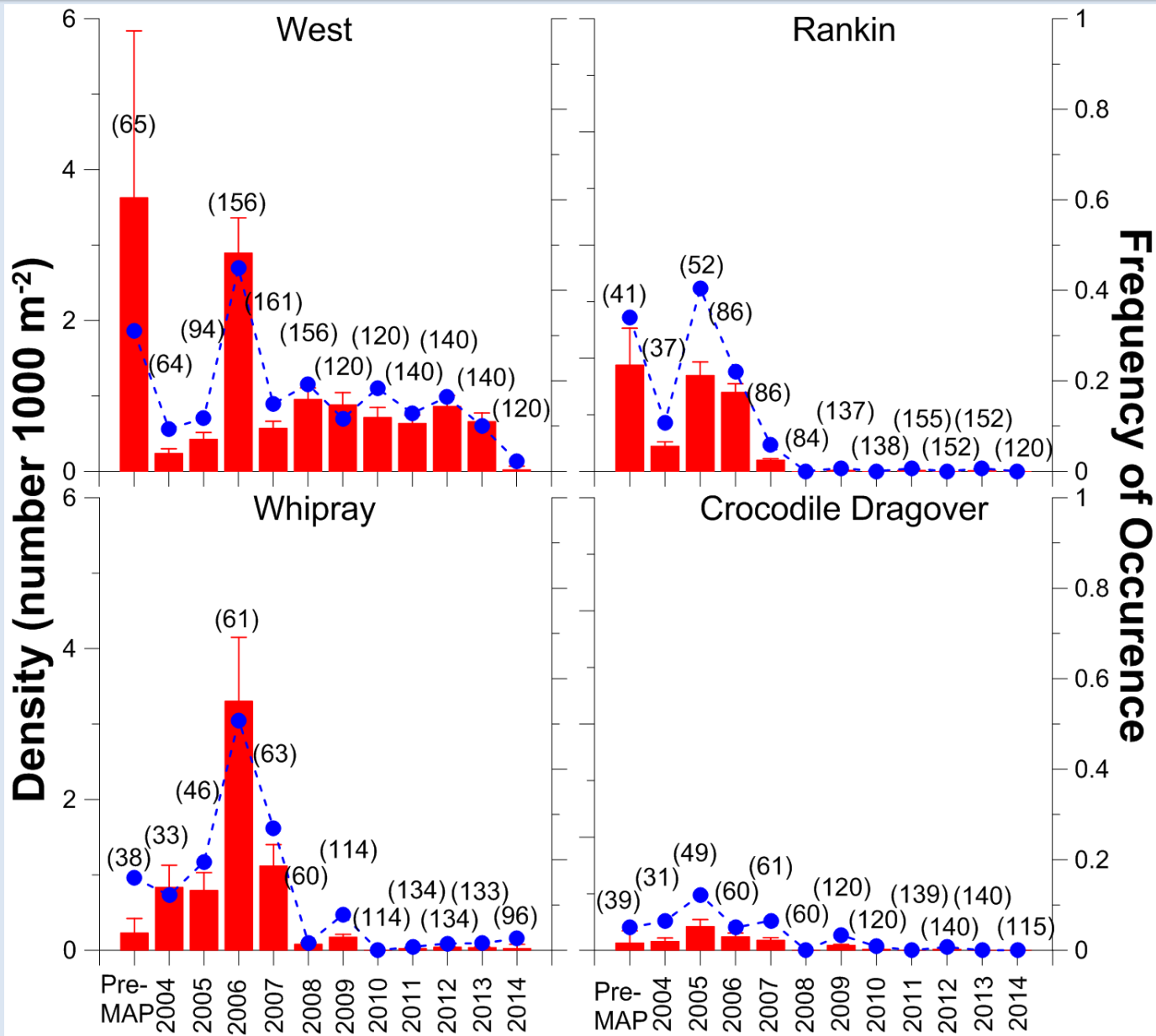
- May-Oct
- Monthly
- Otter trawls
- Seagrass, T, S
- Stratified Random Sampling
- Optimized with power analysis



Sampling: 2004-present, 1994-2001, 1984-1985

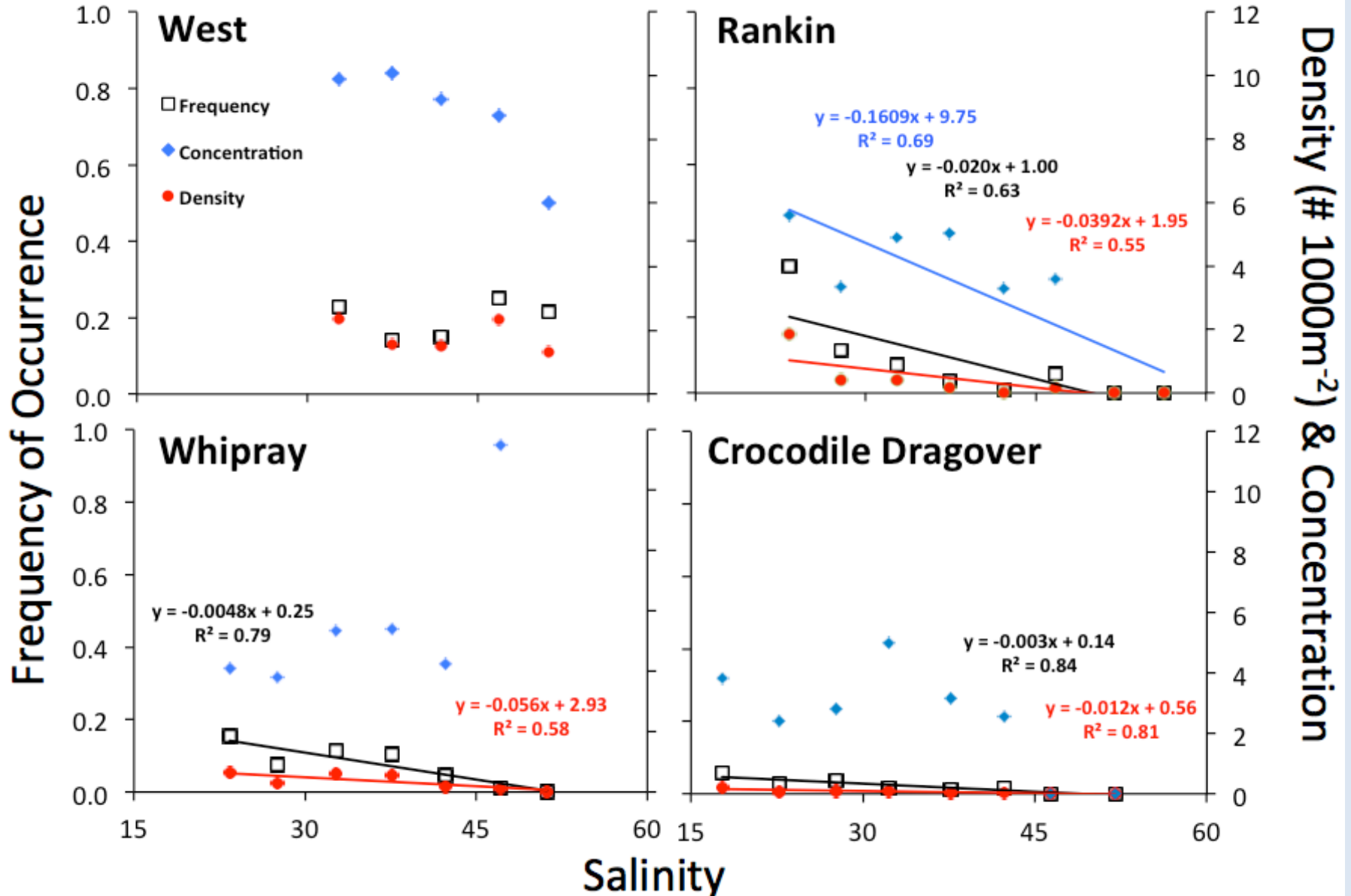


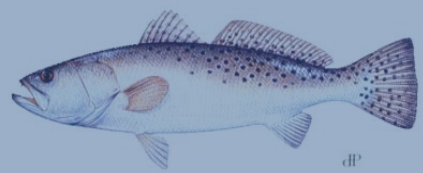
10 yr Time Series





Salinity Effect

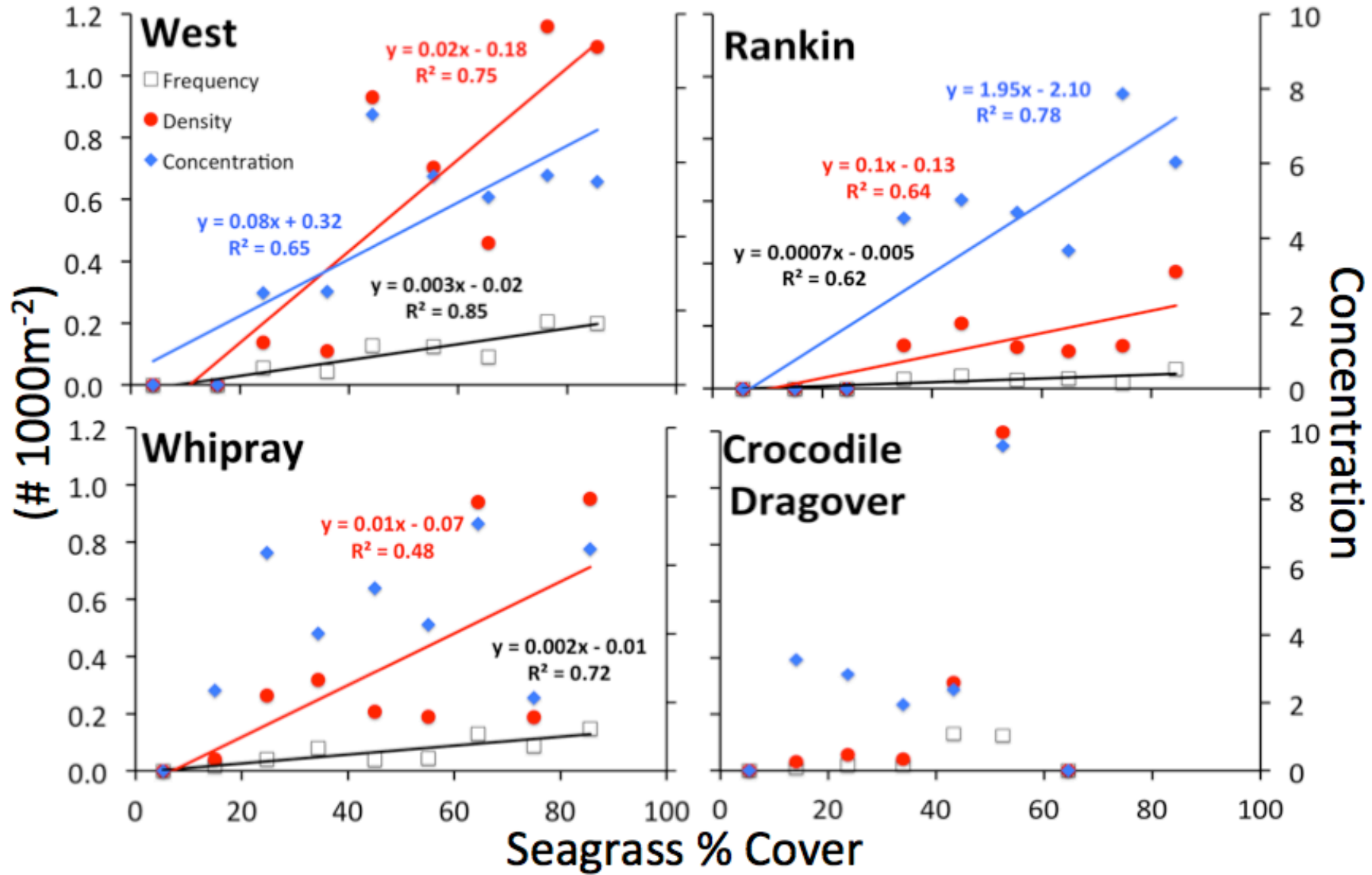




Seagrass Relationship

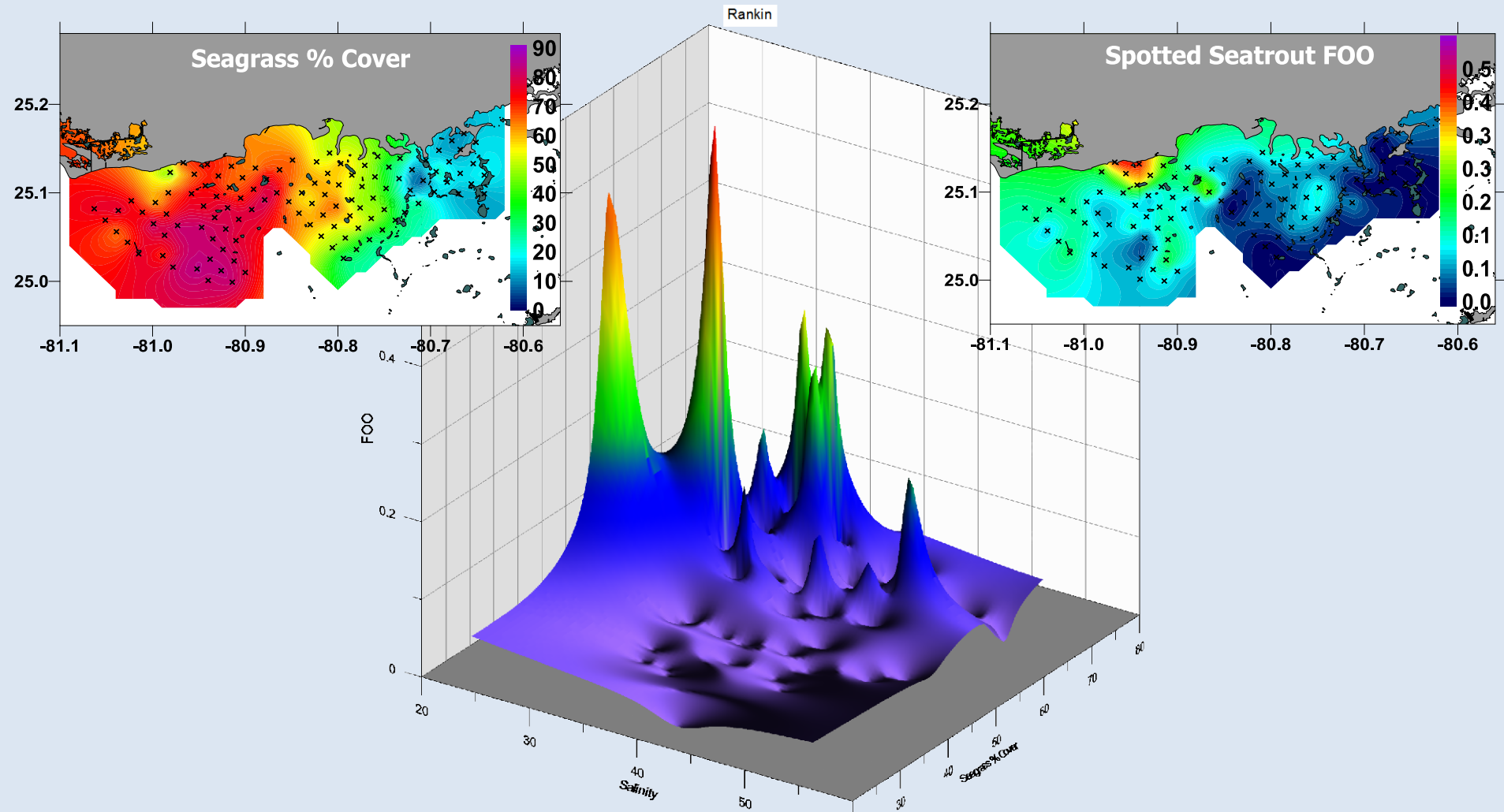


Frequency of Occurrence and Density





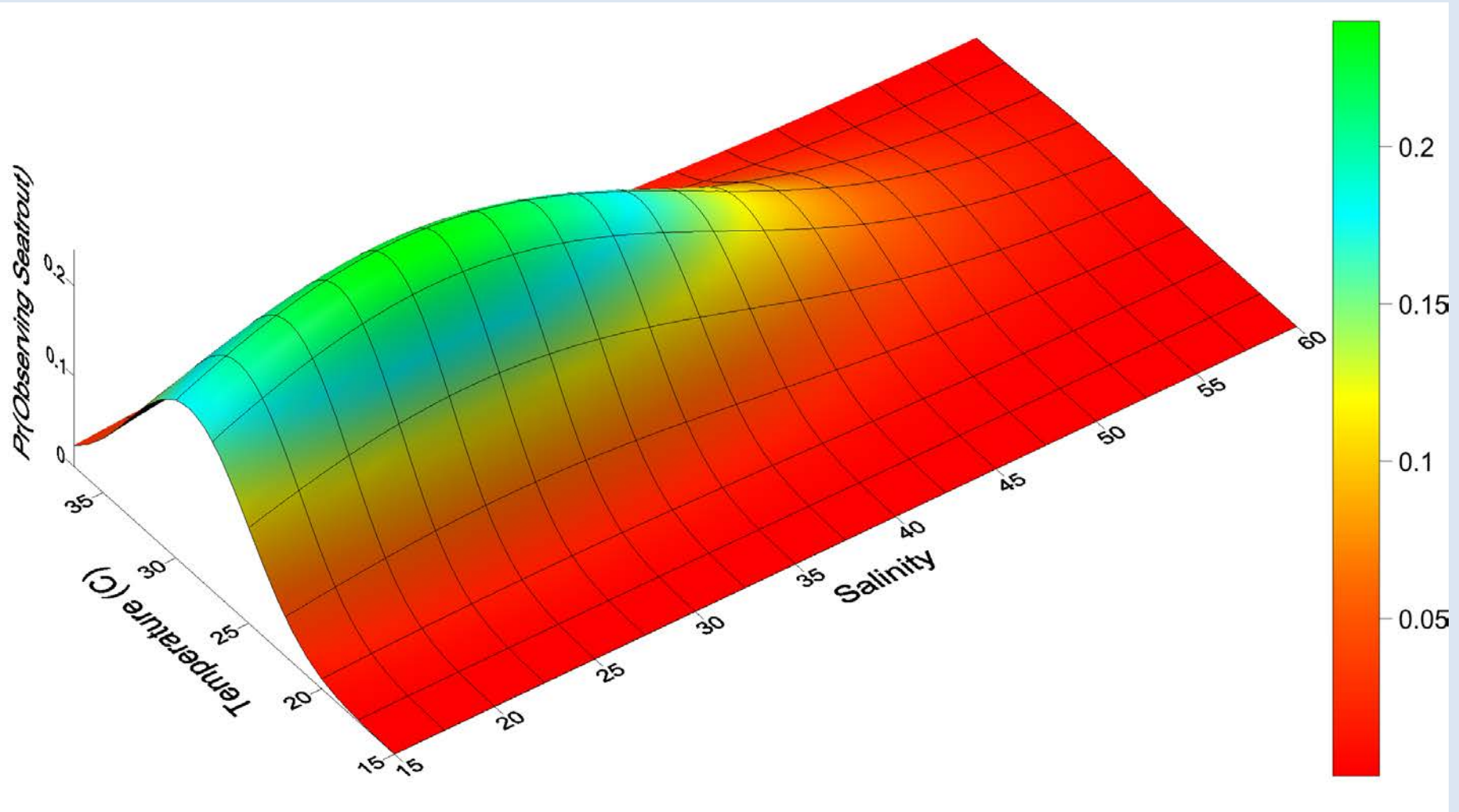
Seagrass Relationship



Lower salinities and higher seagrass percent cover correspond to higher seatrout Frequency of Occurrence.

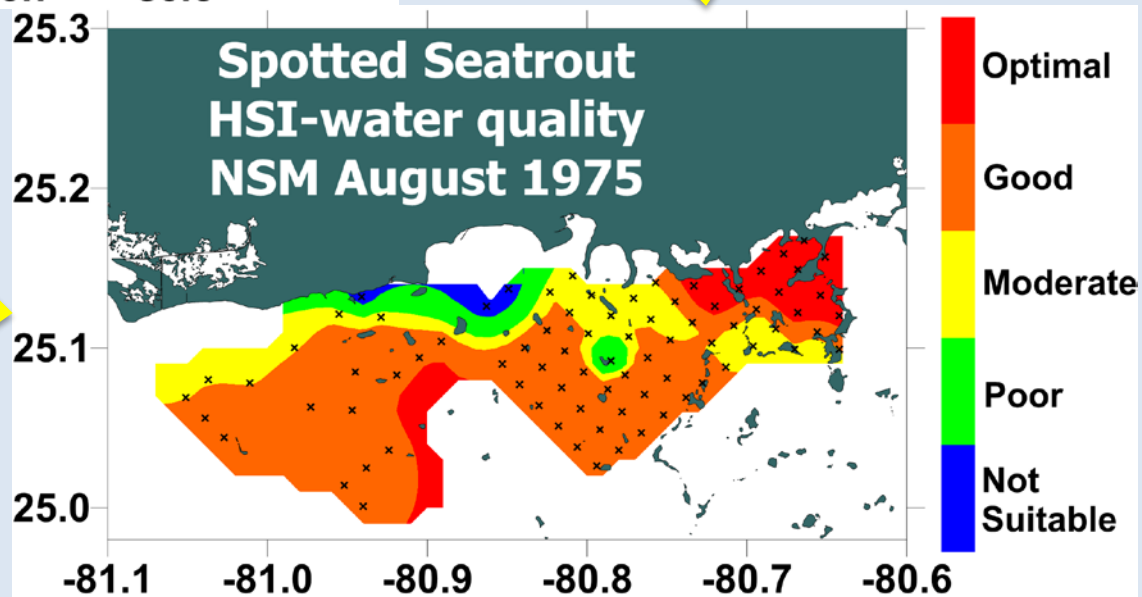
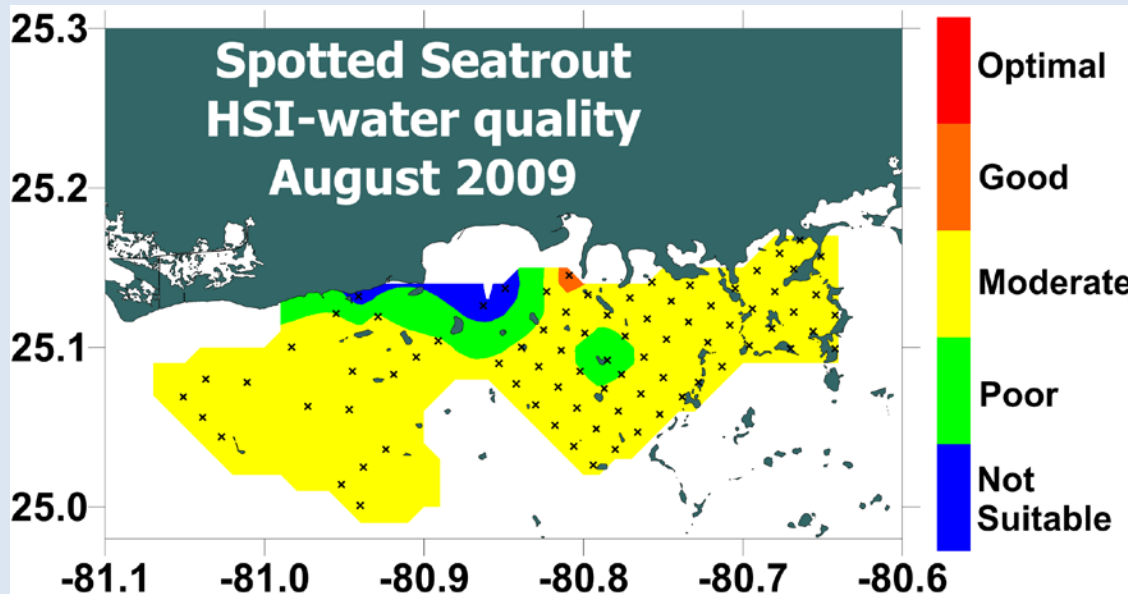


Sportfish Models



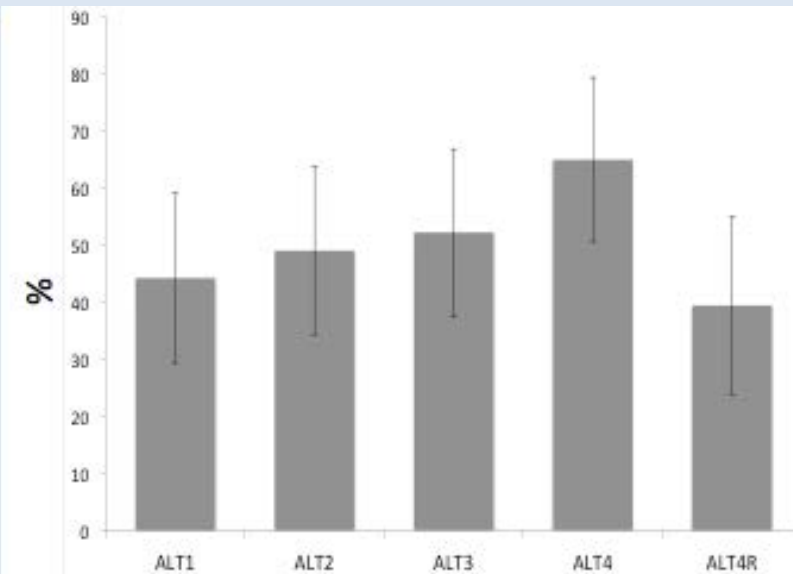
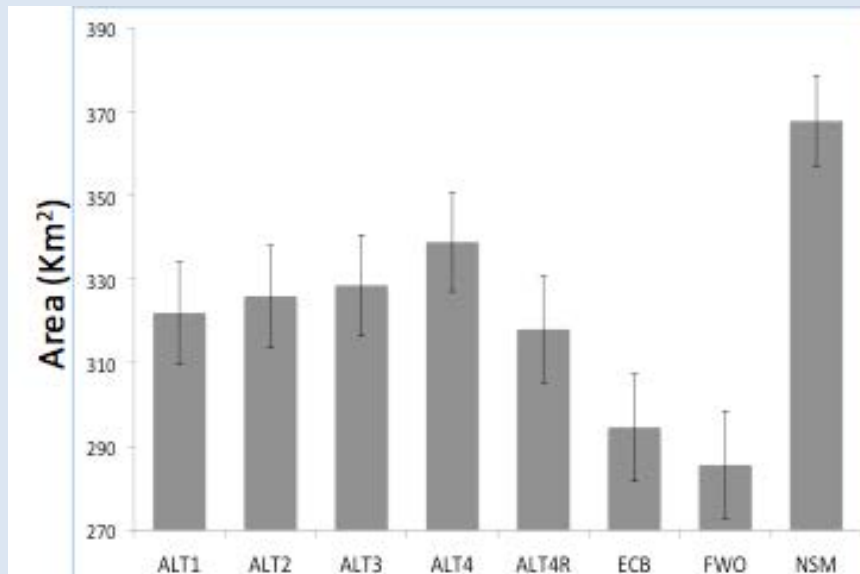
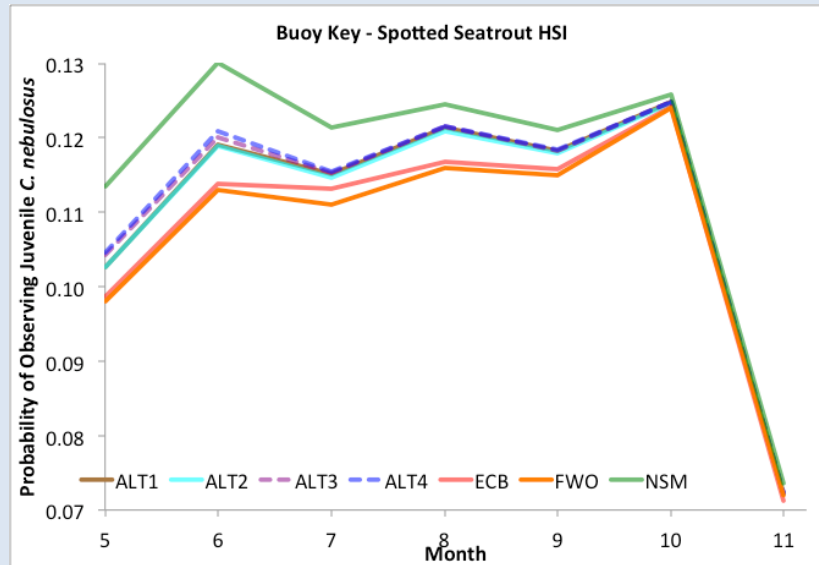


RESTORATION TARGET





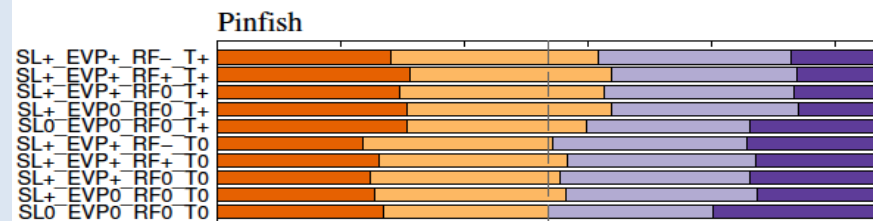
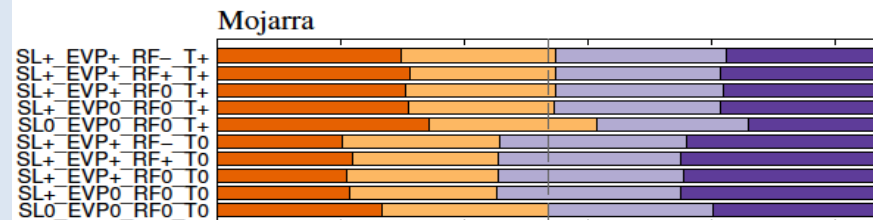
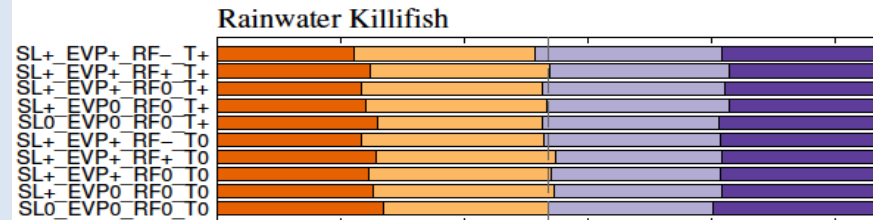
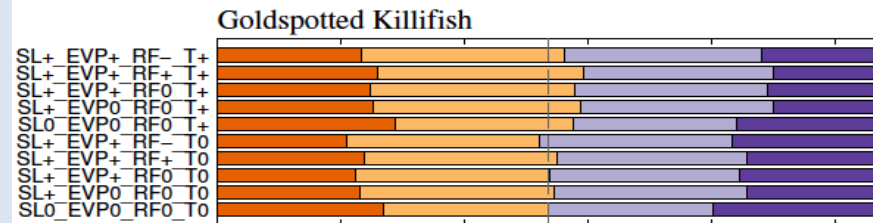
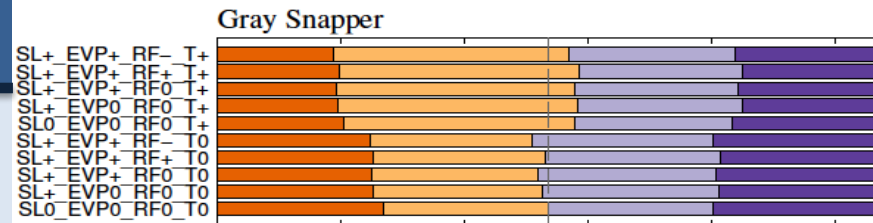
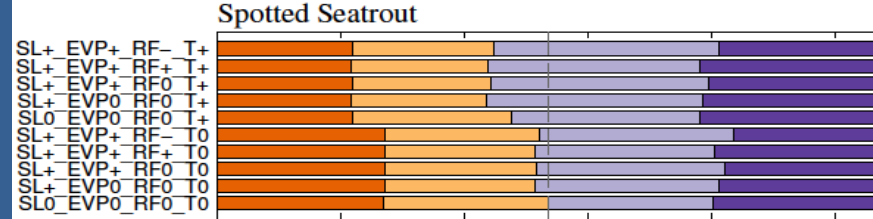
CEPP Evaluation



Climate Change Predictions

More purple = habitat improves with climate change

More Orange = habitat declines with climate change



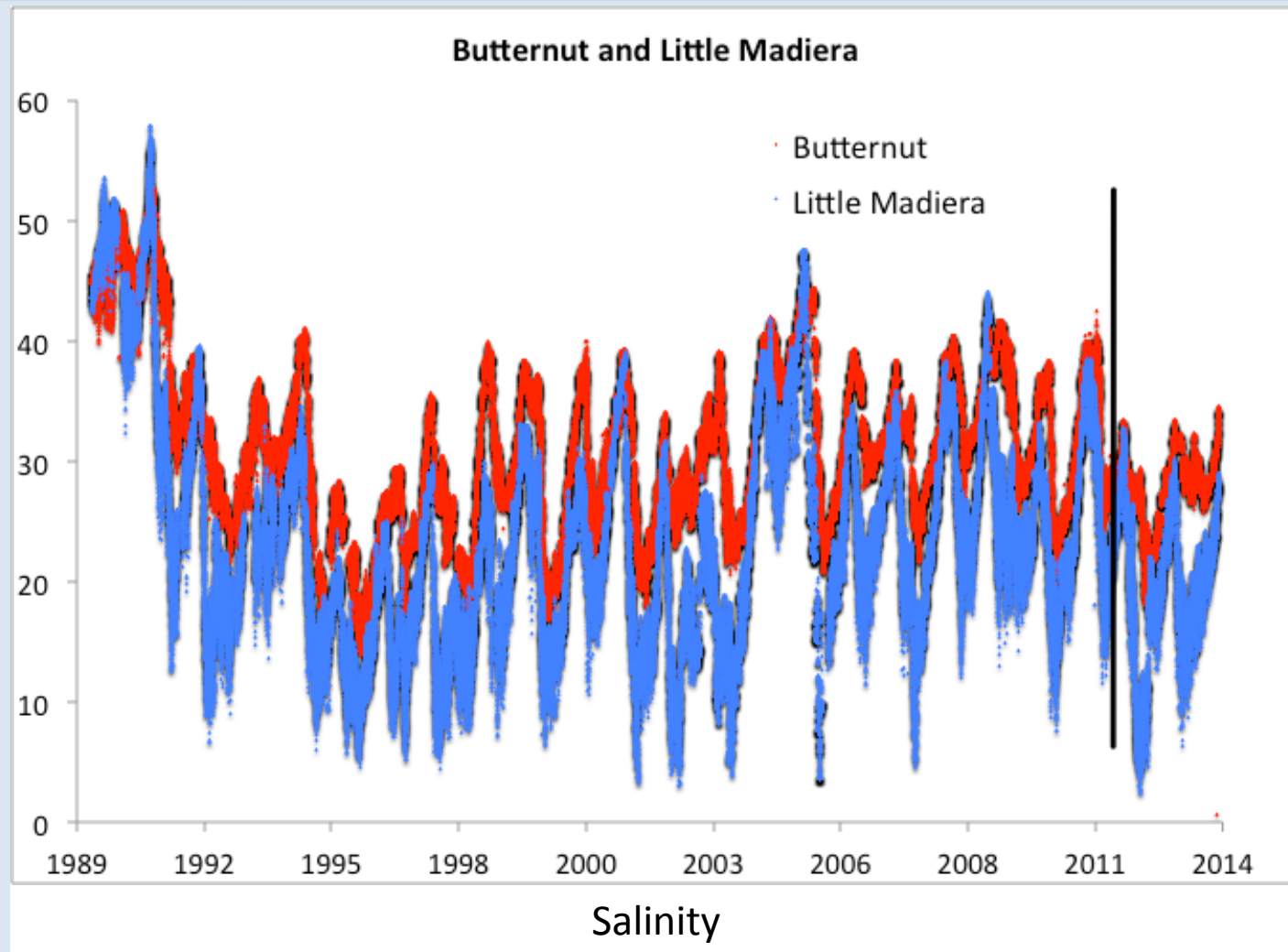


Assessing Impacts



Little Madiera
salinity lower by
1.50 to 1.76

Preliminary
analysis showed
no significant
difference in
juvenile spotted
seatrout





Next Steps



- Develop and get Performance Measure adopted by CERP in 2016
- Determine the full impacts of C-111 via BACIP
- Investigate interactive impact of climate change and CERP given 30yr time horizon
- Incorporate anticipated changes in seagrass distributions and water quality



Conclusion



- Results support both hypotheses related to juvenile sportfish and laboratory experiments on juvenile spotted seatrout
- Already being used to both assess CERP impacts and evaluate the effects of the next increment of CERP
 - It was also key to the ecosystem services valuation study conducted for CEPP
- Models have proven effective, but show confounding results that need to be rectified by more advanced ecosystem model(s)



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