DATA MANAGEMENT PLAN

Data Collection, Processing, and Analysis

The data generated by this project will be of several types:

Data type	Content	Question
Water quality data	Salinity, temperature, chl a, turbidity, and flow data from each sampling station	Q1
Oyster size-abundance	SIze-abundance data (and xanthid crab abundance) from quadrat samples	Q1
Predator monitoring	Census of predator community	Q1
Oyster survival	Monitoring of oyster survival in outplanted samples	Q2
Predation experiment results	Results (daily predation rates) of lab experiment on salinity-dependent predation	Q3
Model code	Matlab code and data files	Q4

All data files will be stored as .xlsx, .csv, or .txt files with associated metadata stored as .txt or .rtf files, and stored on a server in the Kimbro lab at Northeastern (Q1-Q2), or the Stallings lab at USF (Q3). Computer model code and simulation ouput will be generated by researchers at OSU using Matlab and R. Code will be stored in .m, .r., or .txt format; simulation results will be saved as .mat or .dat files; both will be stored on servers in the White lab at OSU. Data from all three locations will also be backed up using an enterprise cloud-based service; either Dropbox or Box.

Documentation

Metadata will be documented at the time of collection and analysis for each data component described above. For empirical data, metadata will consist of information on the origin, timing, location, and observer at the time of original data collection; metadata will be updated to include modifications, QA/QC, and transformations and the researcher responsible for these changes. For model data, metadata will be embedded in the model code and consist of documentation of changes and additions to code by each researcher. PI Kimbro will be responsible for all metadata associated with field observations and experiments; PI Stallings will be responsible ofr all metadata associated with lab experiments, and PI White will be responsible for all modeling metadata.

Products

The data products made available to the public will vary depending on the data type:

1) Data concerning Q1, Q2, and Q3 will be made available as raw data.
2) Final versions of computer model code and simulation output that are used in journal publications will be made publicly available as journal supplementary material and on GitHub. Additionally, code written for more general application of theory and techniques developed during this project will be made publicly available on GitHub.

Data Access Policy

Data and metadata described above will be made available to the public at the time of journal publication or within two years of the completion of the project. This will enable the PIs, postdoc, and graduate students sufficient time to analyze, interpret, and publish results before data are made public. Prior to being made public, data will be the intellectual property of the PIs and their home institutions. Data may be shared with collaborators from other institutions and portions of the data may be shared with interested researchers upon request. When sharing data, the PIs will request and encourage the interested users to collaborate with the original data collectors (students, postdoc, or PIs) on any new projects or publications that use those data.

We anticipate the primary users of our empirical data will be academic researchers interested in oyster reef ecology and predator-prey interactions (such as meta-analyses of NCEs) as well as nonprofit groups and agencies such as the Apalachicola National Estuarine Research Reserve interested in oyster conservation and management. For the modeling products, we expect that academic researchers may be interested in the use of computer code related to integral projection models, and model fitting.

Outside of formal data archiving, students and researchers at Northeastern, USF, and OSU will periodically report on preliminary findings in blogs, Twitter, lab Facebook pages, and other informal outreach forums. Data summaries, photos, and videos released in this manner will remain the intellectual property of the PIs and video/photo content will fall under the copyright of Northeastern, USF, or OSU, as appropriate.

Data Curation and Publication

Metadata and raw data will be made available uisng the Biological and Chemical Oceanography Data Management Office (BCO-DMO). We will register with BCO-DMO when our award begins and submit data/metadata to them on a regular basis, following the schedule outlined below in our Data Access Plan.