

1. Data Policy Compliance

The project investigator will comply with the data management and dissemination policies described in the NSF Division of Ocean Science (OCE) sample (NSF 17-037). They will use the Biological and Chemical Oceanography Data Management Office as the primary repository

2. Data types

The project will produce several observational and experimental datasets, described in the list below. Data will be collected off the south eastern coast of Florida over a one-year period. A. Animal movements: Acoustically tagged fish will be detected on bottom mounted listening stations (VR2W). VR2Ws are downloaded and produce VUE data files which can be viewed on VUE software (Vemco Ltd., <https://www.vemco.com/downloads/>). Data consists of receiver number, acoustic transmitter number, date, time of detection, fish activity (acceleration ms^{-2}) and swimming depth (pressure m). Data will also be maintained as ASCII files in an Access database. Metadata (receiver lat and long, acoustic receiver performance) will also be saved as separate VUE files. Repository: BCO-DMO B. Fish foraging rates: Goatfish and grunt foraging rates will be measured by divers and stored as excel files. Fish survey data will also be maintained in an Access database. Repository: BCO-DMO C. Grouper acoustic (sonar) surveys: During surveys, acoustic data (38, 70, and 120 kHz) will be collected at each station and derive data on the abundance, distribution and behavior of Goliath Grouper and prey species. Ship's georeferenced data, including ship operation location, will be collected in the form of ASCII, formatted binary files, and GIS files. Acoustic survey data will be collected and saved as .RAW files in the field. Repository: BCO-DMO

3. Data and metadata standards

Field observation data will be stored in flat ASCII files, which can be read easily by different software packages. Acoustic tracking data will also be stored in a VUE database. Data will include location, acoustic transmitter number, and date and time of detection, acceleration, depth. Fish surveys include location and species-specific foraging rates, and date. Acoustic survey data from the EK80 system will be stored in the proprietary Simrad file format (RAW) but is interpretable by common acoustic processing software (Echoview, LSSS, ESP3). The RAW files will be processed, and converted to JPEG/TIFF files. Metadata will be maintained using the BCO-DMO metadata database and include description of site locations and abiotic conditions. Acoustic telemetry includes performance data for each receiver so that acoustic noise can be calculated (impacting performance). Quality flags will be assigned according to the ODS IODE Quality Flag Scheme.

4. Data storage and access

The investigator will store data on laboratory computers that are backed up by the central IT organization at Florida International University. Data will also be uploaded to a dropbox account maintained by the PI. The PI will also purchase 1TB hard drives so that all data can be backed up and stored on external hard drives weekly. Acoustic survey data generated will be managed by Florida International University (FIU) and deposited within the University sponsored Google Archive for

accessibility through the institutional repository. Additionally, and consistent with previous projects undertaken Co-PI Boswell, relevant data sets will also be archived following standards set by GRIIDC and stored in a local NAS system managed by the Marine Acoustics and Ecology Lab at FIU. An estimated 250 GB of data will be collected during each survey. All datasets that have documented, formatted and quality-controlled information will be organized into data packages as described above for archiving within FIUs Google Archive as well as NCEI (for acoustic data) repositories. 2

5. Mechanisms and policies for access and sharing

Data will be provided to the Biological and Chemical Oceanography Data Management Office (BCODMO) as an excel spreadsheet, csv, access, or TIFF file, two years after data collection. Metadata will be provided using the BCO-DMO Dataset Metadata submission form. Data packages from NCEI will be made publicly available and will be associated with a digital object identifier (DOI). The PI will work with BCO-DMO data managers to make data project data available and online in compliance with the NSF OCE Sample and Data Policy. All research off south Florida will require a Special Activities License from Florida Fish and Wildlife Conservation Commission. A requirement of permitting is that summaries of collected data are provided to FWC at the end of the project. Data will likely be used for meta-analysis of animal movements and by other community ecologists investigating reef-scape processes.

6. Archiving plans

After data contributed to BCO-DMO are online and fully documented, BCO-DMO ensures that data are archived properly at the appropriate National Data Center for long-term archive preservation. The PI will work with BCO-DMO to ensure data are archived appropriately and that proper and complete documentation are archived along with the data.

7. Roles and Responsibility

The PI Yannis Papastamatiou will be responsible for ensuring compliance with the Data Management Plan. The PI and Co-PI's will ensure that all data collected in the field is maintained and backed up.