

Data Management Plan

Products of Research: Data collected from this project will include coral total lipids, lipid classes, total soluble protein, total soluble carbohydrates, biomass, Chlorophyll *a*, endosymbiont cell density, $\delta^{13}\text{C}$ of the animal host, $\delta^{13}\text{C}$ of the endosymbiotic algae, and skeletal $\delta^{11}\text{B}$ from eight species of Hawaiian corals surveyed from 6 sites surrounding the island of Oahu, HI. Species include *Montipora capitata*, *Montipora flabellate*, *Montipora patula*, *Pocillopora damicornis*, *Pocillopora meandrina*, *Porites compressa*, *Porites evermanni*, and *Porites lobata*. A mesocosm experiment will also be conducted for 2 years with corals reared under 4 treatments: control, elevated temperature with ambient $p\text{CO}_2$, ambient temperature with elevated $p\text{CO}_2$, and elevated temperature with elevated $p\text{CO}_2$. Data collected from this portion of the study include all of the above variables plus photosynthesis, respiration, feeding rates, total organic carbon fluxes, and metabolic carbon budget data (i.e., CZAR, CHAR, CTAR) in four species of corals (*P. compressa*, *M. capitata*, *P. damicornis*, *P. lobata*) from three sites. In addition, any leftover sample material will be archived and stored in Grottoli's laboratory at -80°C . Typically, 25% of each coral fragment, most of the skeleton, and portions of all coral slurries remain after analyses and are archived. Archived materials have been used by Grottoli's group and in collaboration with others to produce new research findings that were not originally part of the funded project (i.e., Grottoli & Rodrigues 2011; Killbourne et al 2011; Wu & Grottoli 2010; Lavigne et al 2008, 2010; Hoenish et al 2004) and provided material for three masters and two senior thesis projects (i.e., Baumann 2013; Chrystal 2008; Wu 2004; Ringwald 2012; Borg 2010). All remaining samples will be archived and made available for collaboration.

2 & 3. Data Format, Storage, and Preservation: Data will save in excel spreadsheets, as comma delimited DAT files. DAT files will be used because they are a standard format that can be used on a variety of database and software programs including Microsoft excel. All data will be stored using standards developed for widespread usage and will include date (month, day, yr., hour, sec), treatment, species, and other relevant details. Data will initially be stored on a 1 TB WB backup drive in Grottoli's lab and on the School of Earth Sciences secure server. For long-term storage, the data will be archived with the Biological and Chemical Oceanography Data Management Office (BCO-DMO) (<http://bcodmo.org/>).

4. Data Dissemination & Policies for Data Sharing and Public Access: All data will be made publicly available through the BCO-DMO site and directly upon request following publication and after the embargo period for respective journal publications. After the project is completed all data will be made publicly available on the open access BCO-DMO repository within 2 years of project completion to allow sufficient time to prepare manuscripts.

5. Roles and Responsibilities: The data management will be the responsibility of PI Andrea Grottoli who will work with BCO-DMO to insure that the data submission and archiving plan is followed. Data will be made openly available to all collaborators and responsibility for the data will be transferred to BCO-DMO following completion of the project. Grottoli will also be responsible for the archiving and preserving of any unused sample material and making them available for collaboration.

References: *Baumann J* (MS, 2013) The Ohio State University; *Borg D* (2011) (BS Geology Senior Thesis) The Ohio State University; *Crystal AE* (M.S. 2008) The Ohio State University; *Grottoli AG, Rodrigues LJ* (2011) Coral Reefs 30(3):687-692; *Hönisch B, Hemming NG, Grottoli AG, et al.* (2004) Assessing scleractinian corals as recorders for paleo-pH: Empirical calibration and vital effects. *Geochim Cosmochim Acta* 68:3675-3685; *Killbourne KH, Moyer RP, Quinn TM, Grottoli AG* (2011) Testing coral-based tropical cyclone reconstructions: an example from Puerto Rico. *Palaeoceanogr Palaeoclimat Palaeoecol.* 307: 90-97; *LaVigne M, Matthews KA, Grottoli AG, et al.* (2010) Coral skeleton P/Ca proxy for seawater phosphate: multi-colony calibration with a contemporaneous seawater phosphate record. *Geochim Cosmochim Acta* 74:1282-1293; *LaVigne M, Field MP, Anagnostou E, Grottoli AG, Wellington GM, Sherrell RM* (2008) Skeletal P/Ca tracks upwelling in Gulf of Panamá coral: Evidence for a new seawater phosphate proxy. *Geophys Res Let* 35:L05604; *Ringwald M* (2012) (BS Geology Senior Thesis) The Ohio State University; *Wu H* (M.S., 2004) The University of Pennsylvania; *Wu H, Grottoli AG* (2010) Southern Oscillation Index recorded in coral and sclerosponge stable oxygen isotope records from the Western Pacific Warm Pool. *Coral Reefs* 29(2): 413-418.