

## **DATA MANAGEMENT PLAN – CHEMICAL AND BIOLOGICAL DATA**

We will promptly publish results from this project in scientific journals, meetings and on dedicated web forums. Specifically all chemical and biological data and metadata will promptly (within 12 months or less) be made available to the community through the Biological and Chemical Oceanography Data Management Office (BCO-DMO) (<http://bcod-mo.org/resources>) and the OCB web site (<http://www.us-ocb.org/>) as well as the world Ocean Data Base (<http://www.nodc.noaa.gov/OC5/SELECT/dbsearch/dbsearch.html>), NOAA and JGOFS data bases, the PIs' web pages and any other new or existing portal that will accept the data.

**Data Types** - The data created by this project will be in the form of tables with chemical analyses, biota scores and pictures. The data will be captured in Tiff picture files and Excel Spreadsheets and comma delimited raw text fills.

**Data and Metadata Standards** - We will use the Tiff, Excel, and HTML formats to publish the results online. There are open source equivalents and data can be easily exported to these for sharing. The metadata is mainly in the form of column heading and explanatory text. These will be created by scripts and hand annotations. The metadata will be converted to HTML tags in the HTML Metadata 4 Standard. We are using this as the lowest common denominator for ease of publication and sharing. Transects will be identified on maps and photographs at the sites and shared as Tiff files via the web.

**Policies for access and sharing and provisions for appropriate protection/privacy** - We will post the data on our website <https://pmc.ucsc.edu/~apaytan/index.html>. We do not need additional resources to run this website. The data will be updated at least 2 times a year after each field excursion. The data will be publically posted and advertised in publications and provided as on line material if journals have such a resource. There will be no charge for accessing this data. We retain the right to use the data before opening it up to wider use, but once we publish a paper we will release its corresponding data. There are no ethical and privacy issues per this performance. The data is not 'personal data' in terms of the Data Protection Act 1998 (the DPA) or equivalent HIPAA requirement) and IRB Protocols do not apply in this case as there are no human subjects in the study. The data is not copyrighted and no licenses pertain to it.

**Policies and provisions for re-use, re-distribution** - There will be no permission restriction placed on the data. The intended or foreseeable uses / users of the data would be those seeking to improve or use the data in models or those who may want to apply similar tools at other sites and there are no reasons not to share or re-use data.

**Plans for archiving and Preservation of access** - We have plans for archiving data, samples, and other research products, and plans for preservation of access to them. The long-term strategy for maintaining, and archiving the data is via regular backup of website by UCSC personnel. Eventually this data will make it to UCSC for long term storage.

## **DATA MANAGEMENT PLAN – SOCIAL DATA**

**Raw sociological data** will be stored on an encrypted dedicated server to back up all original data. This data will only be accessible to the PIs and post doctoral researcher or to those whom they have delegated. We will replicate the well-established protocols developed in educational research labs for storing results of surveys. The program will use a comprehensive Excel workbook to track and oversee data analysis management by producing indexes, as well as copying, archiving, and annotating incoming data including all digital files that may result from

survey instruments. UCSC has an encrypted dedicated server to back up all the original data, which will also be stored on several portable 200+ GB hard drives that will be stored under lock and key in a dedicated lab/office space at UCSC. Personal data on human subjects, including demographics and academic achievement will be stored in a password-protected spreadsheet. IRB review and approval will precede human subjects data collection.

## **DISSEMINATION PLAN**

**Policies and provisions for re-use, re-distribution** - There will be no permission restriction placed on the data. The intended or foreseeable uses / users of the data would be those seeking to improve or use the data in models or those who may want to apply similar tools at other sites and there are no reasons not to share or re-use data.

**A dedicated page** on the Center for Integrated Water Research (CIWR) web site at UCSC will provide information, reports and articles about the program.

**Conference papers** will be prepared for delivery beginning during the second year of the project, for water management conferences, ecological economics/policy conferences as well as for professional society meetings (ASM, AGU) . These will be posted on the CIWR website as working papers.

**Journal Articles**, based on conference papers and research results, articles will be prepared, to be posted as project working papers and submitted to a range journals such as *Desalination*, *Journal AWWA*, numerous water resources journals, and interdisciplinary methodological journals such as *ES&* and *Ecological Economics*.