

XI. Contributing Data to PacIOOS

At present, the DMS is focused on data collected as part of the formal PacIOOS program. There is a recognition, however, that future viability of the program will rely on external funds. One way this can be done is by hosting data from other providers. The IOOS “model” is to provide data via standard services at no cost and with no restriction. Prioritization of hosting external data will be made based on the following:

1. Do the data fit within the PacIOOS charter, *i.e.*, does it provide useful information about the ocean environment?
2. Will the data be freely available to all users?
3. Are the data available elsewhere?
4. Is it anticipated that the data will have wide appeal?
5. Will the data require significant reformatting and/or meta-data? (the PacIOOS services are built upon netCDF and standard meta-data)

In addition to considering external data, there are two additional services that the PacIOOS DMG can provide: external projects and services hosting.

A. External Projects

The PacIOOS web site now has a place for relatively self-contained, fixed-time efforts by researchers or PacIOOS partners. The results of the project are then described on the web page along with access to the data generated. PacIOOS will host these project on a cost-per basis. The cost will be determined by the complexity involved, ranging from a static/flat web page to interactive data hosting and serving. The draft fee structure is as follows:

Web Pages

Costs for Web Pages will be determined by estimates of time required, which will be based on detailed information from PI/researcher.

- For example, the HI Sentinel Sites Projects Pages required 132.5 hours
- Initial cost estimate entails researcher providing all content and layout preferences.
 - Text content needs to be in Word or text document; Images need to be high resolution, .jpg or .png image formats preferred, .gif okay for animations, .tiff also acceptable.
 - Development of pages will not commence until all content is received from researcher.
- Cost estimate includes 2 rounds of corrections (not to exceed 5 hours total) after the site goes live.
- Cost estimate includes the cost of hosting the webpages.

Additional time (and cost) will be necessary for projects requiring the following:

- Design consultation with PacIOOS web developer.
- Dynamic scripting for plots, etc. on web pages.
- Additional corrections beyond the included 2 rounds (or 5 hours) included in the initial cost estimate.
- Ongoing maintenance or additional data/content added to data after pages are finalized.

Data Management

Costs for Data Management will be determined by estimates of time required, which will be

based on the following characteristics of the data set(s):

- Total size of data
- Static or Dynamic data
 - One-time data dump vs. multiple data dumps
- Type of data
 - Geospatial data vs. simple geophysical data
- Processing needs
 - Can the data just be input into PacIOOS systems as is, or does PacIOOS need to manipulate the data/formats to make it compatible with other elements of PacIOOS servers/data viewers
 - Does data come with metadata, documentation, projection, lat/long coordinates, bounding box, etc.
- How researcher wants the public to access the data
 - Download in original format (e.g. Waianae Ordinance Data);
 - View on PacIOOS website in plots or other formats;
 - View on PacIOOS data explorers (Voyager and/or Explorer), and/or servers
- Data Storage
 - Rate is per data stream- meaning parameter (e.g., if a project includes measurements of salinity, temperature, and turbidity, this is considered to be 3 data streams, which will result in a \$750 flat fee).

Time Frame

PacIOOS will make every effort to complete new project pages within the desired and agreed upon time frame amidst ongoing tasks and projects. Occasionally, the staff has to focus on unforeseen tasks in order to keep the program operational. If the project pages need to be completed in a rush, this may require additional fees.

Total Cost for UH Projects =

(50*hrs of programmer time) + (100*hrs of senior programmer time) + (data storage fee)

Cost estimate is a one-time fee agreed upon in consultation with researcher/client before the project commences. However, if the project requires continual maintenance and/or revisions, an additional maintenance fee may apply.

Total Cost for External Projects =

(100*hrs of programmer time) + (200*hrs of senior programmer time) + (data storage fee)

Cost estimate is a one-time fee agreed upon in consultation with researcher/client before the project commences. However, if the project requires continual maintenance and/or revisions, an additional maintenance fee may apply.

The general steps to setting up projects is:

- a. PacIOOS and researcher meet to discuss details of project.
- b. PacIOOS to write up of design brief that outlines what PacIOOS understands the project to be and what we will deliver and includes a cost estimate.
- c. Researcher gives okay to proceed.
- d. Researcher delivers all content to be provided.
- e. PacIOOS to begin project.
- f. PacIOOS to show mockups of the pages to get feedback researcher.
- g. Researcher approves mockup
- h. PacIOOS codes the pages.
- i. Researcher gives okay for pages to go live.
- j. PacIOOS makes the pages live.
- k. PacIOOS invoices researcher via RCUH revolving account.

The PacIOOS Outreach and Program Coordinator (Melissa) will manage the above through working with PIs and the DMG.

B. Service hosting

In addition to hosting data, the PacIOOS system (including hardware and software) is mature enough to be considering hosting different services. This includes things like software tools and web services developed elsewhere. At present, PacIOOS is working on three such tools:

1. A Fish Ecosystem Analysis Tool (FEAT): this is a web-based tool that allows users to query and display information about fish catch data. It was developed by PIFSC and requires a database and tomcat server. The database was originally Oracle, but this was changed to postGRES; the web server uses a tool called "FME Server" developed by Safe software. NOAA prohibited PIFSC from hosting this tool, so PacIOOS is looking into hosting it.
2. Flash Flood Tool: this was developed via a partnership between NOAA CSC and PSC, with development done by Dewberry (private contractor). This is a GIS-based application that shows areas of potential flooding. It uses proprietary data feeds (high temporal resolution) from precipitation and

stream gauges, and so it requires authenticated login. The entire system will run on the Amazon Cloud but will be linked into the PacIOOS web.

3. **Shoreline Erosion Tool:** This tool is a collaboration between PacIOOS staff (Abe Coughlin) and the Coastal Geology group in SOEST. Various estimates of sea level rise are used to produce maps of shoreline changes. These are then used to show potential set-back limits for coastal properties.