iamslic-03.txt Digitizing Historical Oceanographic Expedition Content

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ABSTRACT: The Scripps Institution of Oceanography (SIO) Archives has been digitizing a large body of archival content relating to historic SIO expeditions, through two digital library grant projects. After World War II, SIO scientists sailed the oceans of the world to study the seas, marine life and the geology of the sea floor. The SIO Archives has a rich collection of materials relating to these expeditions, which have long been of considerable interest to users, but difficult to access. These digital library projects are making these materials available as images, page scans, and encoded text, where relevant. Metadata has been developed to meet internal needs as well as external user needs, and also the needs of digital library project partners. Time-consuming reference service and access to these materials is being greatly facilitated by digitization.

KEYWORDS from ASFA: Digital records; Archives; Libraries; Imagery; Documents; Expedition reports; Audiovisual materials .....

Imagery, documents, and other materials relating to the history of an institution are steadily compiled by the institution, the staff, and their descendants. The Scripps Institution of Oceanography (SIO) Archives of the SIO Library was functioning as an entity long before Deborah Day, its first professional archivist, was hired in 1981. Today we find ourselves with over 80,000 images relating to the history of SIO, and project continued growth with retirements and deaths. Requests for images have changed dramatically in recent years, with demand broadening among user communities, and demand increasing for digital images. With demand increasing, reference service for materials in physical format involves an increasing percentage of repeat requests for the same materials, with the physical medium of those materials requiring timeconsuming handling and procedure to process those requests. Even once digitized, constructing and maintaining a digital asset management system is imperative to gain a time savings from their digitization. Grant funded projects, though having their imperfections as a means to an end, provide a mechanism to reshape for new demands and priorities, by establishing infrastructure, policies and procedures, and by opening up an opportunity to capitalize on staffing turnover and change.

In addition to other resources, two grant funded digital library projects have

enabled the SIO Archives to create a digital library infrastructure on which to build its ongoing digital library program. Started with over 5,000 images, page scans, encoded texts, audio, and video, this digital library initially focused on historic SIO scientific expeditions back to 1907 due to a demonstrable high interest in them as well as the likelihood of receiving grant funding. As SIO Archives moves beyond a grant-funded digital library Digitization is now expanding out to encompass items selected by the SIO Archivist and known to be of high user interest. Scanned items include 35mm transparencies, prints, panoramas, correspondence, news clippings, and ships' logs. Encoded text encompasses expedition reports and several key texts on SIO history. Audio and video is initially modest, encompassing a news media video clip of past SIO Director Roger Revelle, as well as an oral history of Revelle incorporating a Quicktime slide show of historic images. Scanning and image standards were set in accordance with California Digital Library Digital Image Format Standards. 35mm slides, smaller prints, and negatives were captured at 3,072 pixels on the long-side for the uncompressed TIFs.  $4 \times 5$  to  $8 \times 10$  inch prints were captured at 6,144 pixels on the long- side. Three derivative versions of each image were produced: a thumbnail JPEG (192 pixels long-side); a medium resolution JPEG (768 pixels long-side); and, a high resolution JPEG (1536 pixels long-side). The SIO Archives presents the user on the CONTENTdm system a thumbnail (automatically generated by CONTENTdm) and that medium resolution JPEG. Many users seeking images for PowerPoint presentations are satisfied with this medium resolution JPEG. All images are stored behind the scenes on a UCSD Libraries digital asset management service, from which staff can retrieve images for various needs. No image editing (sharpening, cropping, color correction) is done. The images are intended to be digital surrogates of the originals, having scratches, tears, stains, marks, and various flaws as in the original. During the selection process, the SIO Archives used a MS Access database to enter basic descriptive, technical, and administrative metadata for each item. Since the items were shipped in batches to an external vendor for scanning, with processing work involving several staff, it was important to create a record to track items, starting from the initial selection by the SIO Archivist. Full metadata is added when time allows, and before the images are made publicly available. The Access database is exported to ASCII delimited text and imported into the CONTENTdm database, which is used for public display. Of the fifty-six metadata elements, only eighteen display to the public.

Fifty-six metadata elements were adopted and now serve as the standard for the description of digital objects for the SIO Archives. The metadata addressed specific needs of each of the two grants. Metadata was designed for SIO Archives' ongoing digital library needs, accommodating needs beyond the two grant projects, and relying on existing standards where applicable. The considerable experience of the Archivist in serving users was used, and common types of user requests are well known and a major consideration in designing metadata. Not all fields are mandatory, and the fields corresponding to the Dublin Core were specified. The metadata design for digital objects at SIO Archives can inform similar digital library projects at other marine science

libraries and archives so we will outline some fields and associated issues.

Object location and identity information within the SIO Archives or SIO Library collection constitutes fourteen fields of metadata. Collection Title corresponds to the Dublin Core Source field. The Title (of item) field corresponds to the Dublin Core field of the same name. Not all items have titles, yet the SIO Archivist or others know what is depicted or represented in the item, e.g. who is in the photo. Title information that is external to what is noted on the item itself is bracketed in the Title field.

The Creator field corresponds to the Dublin Core field of the same name, being the name and role of person/organization creating an object, e.g. Jane Smith, photographer.

The Notes field provides information transcribed from or supplied for the item, e.g. "Editor has used blue pencil to mark cropped edges for publication." The images are digital surrogates of the originals, having flaws as in the original.

Date (of item) field corresponds to the Dublin Core field of the same name, and is item normalized as ISO 8601: YYYY-MM-DD, YYYY-MM, or YYYY.

The Format field corresponds to the Dublin Core field of the same name, being the physical or digital manifestation of the item, e.g. jpeg, quicktime. The entry for this field is selected from the Internet Assigned Numbers Authority (IANA) official registry of Multipurpose Internet Mail Extensions (MIME) media types: see http://www.iana.org/assignments/media-types/index.html

The Source Type field corresponds to the Dublin Core Type field and is the nature or genre of the item, e.g. image, sound, text. The entry for this field is selected from the Dublin Core Metadata Initiative (DCMI) Type Vocabulary:

see http://dublincore.org/documents/dcmi-type-vocabulary/

The Document Type field records the data type of the original source: Expedition Report, Bibliography of Scientific Paper, Published Scientific Paper, Manuscript, Photograph, Track Chart, Seaman's Narrative, Ships Log, Biography of Key Scientist, Drawings of Instrument, Newspaper Clipping.

Several fields describe the physical nature or characteristic of an item. The Genre field is assigned to the item from Library of Congress Subject Headings (LCSH), describing the category or characteristic of an item, including logbooks, maps, nautical charts, clippings, drawings, caricatures and cartoons, portraits and posters. Some local genre headings were derived from the Library of Congress Thesaurus for Graphic Materials II: Genre and Physical Characteristic Terms (TGM II), and include cruise certificates, shipboard

communication, aerial photographs, underwater photographs, and trick photographs. The Physical Description field corresponds to the Dublin Core Description field and physically describes the item, e.g. Color Kodachrome slide. Other physically descriptive fields are Source Dimensions, Original Format, and Number of Pages. The Language field corresponds to the Dublin Core language field used for text objects.

See http://lcweb.loc.gov/rr/print/tgm2/

Geospatial fields are several and thorough, encompassing terrestrial locations, named undersea features, and ocean areas. The Subject Topside field describes a terrestrial geographic location for the item, using terms from a controlled vocabulary, the Alexandria Digital Library Gazetteer

See http://testbed.alexandria.ucsb.edu/gazclient/index.jsp

Incorporation of the ADL Gazetteer location terms into our metadata results in usage in accordance with US Geological Survey and US National Imagery and Mapping Agency terminology, and ensures interoperability with other University of California and National Science Foundation funded digital library endeavors.

The Location Depicted field corresponds to the Dublin Core Coverage field, utilizing LCSH terms and providing correspondence with our library cataloged materials. There can be differences between ADL/USGS/NIMA and LCSH, e.g. Samoan Islands and Samoa Islands respectively.

The IHO Number and IHO Location fields correspond to grid numbers and names from the 3rd edition (1953) of the International Hydrographic Organization Special Publication 23 Limits of Oceans and Seas, which records the designations and boundaries of oceans and seas in the world. These fields were added for geospatial cross-referencing between our archival holdings and SIO's Geological Data Center's data holdings.

See http://nsdl.sdsc.edu/

Latitude/longitude polygons for these IHO ocean areas will allow cross referencing between archives holdings and data holdings for the same ocean area. Ocean data holdings are much more granular than archival items from the same ocean area. Exact latitude and longitude is rarely known for an archival item, and typically we know only broad ocean areas for archival items. When the exact latitude and longitude is known, it is added to the Notes field. There needed to be a geospatial bridge between ocean-related data and archives holdings for SIO expeditions, and the IHO grids were selected as a standard and as being practical. For archival items associated with a terrestrial location, they cannot be assigned an exact latitude/longitude either.

The Subject GEBCO field is used for names of underwater features associated with an archival item, using the GEBCO Gazetteer of Undersea Feature Names, by the

General Bathymetric Chart of the Oceans (GEBCO) of the Intergovernmental Oceanographic Commission and the International Hydrographic Organization. See http://www.ngdc.noaa.gov/mgg/gebco/underseafeatures.html

Subject fields are several. The Aquatic Sciences and Fisheries Abstracts (ASFA) Thesaurus was considered and not selected for subject indexing. Long experience with serving users was a major factor in this decision. The ASFA Thesaurus was far more precise than needed for almost all past user inquiries, and would consume more cataloging time to utilize. If we used ASFA terms to catalog our digital archival items, they would not map to the Library of Congress Subject headings used for items cataloged in our library collection. There is considerable content residing in the cataloged library collection that is of historical interest and complements archival materials. There we want to map to library catalog records from our archival metadata.

The Subject LCSH field corresponds to the Dublin Core Subject field, utilizing LCSH terms describing subject content of the item. An internal document outlines SIO Archives practice and preferences for subject cataloging its digital objects using LCSH and local subject headings. Local headings are specified where LCSH is insufficient to describe significant holdings in Archives, e.g. "Crossing the Equator" for equator crossing ceremonies; "Oceanographic research ships -- Interiors" for interior photos of research ships; a subject heading subdivision "Press conferences."

The Subject Person field is used for the name(s) of individual(s) depicted in an item, with name authority being the same as used in the library catalog.

Expeditions with multiple vessels were divided into cruises, with a cruise representing the track of each individual vessel. Lengthy cruises were divided into legs, which represented the work of the vessel between two points. Several fields parse out expedition and ship information, with their authorities being library cataloged name authority, an SIO technical report listing expeditions and cruises, a Cruise Index maintained by SIO's Geological Data Center, and the names that the University- National Oceanographic Laboratory System (UNOLS) uses to refer to its research ships, which include SIO's ships.

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See http://repositories.cdlib.org/sio/reference/77-13/ See
http://gdcmp1.ucsd.edu/gdc/cruises/cruise.index See
http://www.unols.org/images/ships/shipimages.html
```

A Subject Category field is used to provide effective and simplified access for items from grant project partners. The UCSD Libraries partnered with the San Diego Historical Society in the grant funded California Explores the Ocean project. Their visual collections are made easily accessible to the general public through fourteen broad subject heading terms which were assigned to each image: Aerial Views; Beaches; Diving; Events; Fishing; Fishing Industry; Harbors; Navigation And Communication; Ocean Life; Ocean Resources;

Oceanography; People; Scientific Equipment; Vessels. This list was developed using the Library of Congress Thesaurus for Graphic Materials (TGM), using headings from TGM I and II. If TGM did not provide each archivist with what they needed, a heading was made up (for example: TGM uses the term BOATS, which was considered too narrow, thus the term VESSELS was chosen). These fourteen categories serve as a predefined search which can be used to query one collection or both simultaneously.

Seventeen fields record copyright information or technical information about the digital object and its creation, with three fields being Dublin Core: Item Rights, Item Publisher, and Filename. Item Rights is a key field because it establishes who owns the image and thus may grant permission to reproduce the image. Rights and granting permission is clear when the Archives has a recorded deed of gift for the items (or knows that rights were not granted). However items reside or arrive in the SIO Archives without deeds of gift. This is particularly a problem for early images documenting the history of SIO, i.e. studio portraits of turn of the century scientists. The descendants of the photographer cannot be located. If the Archives cannot find or determine the rightful owner, can it still digitize a slide for public display, or give a scan to the SIO Director's Office for publishing in their quarterly news magazine? For images without deed of gift, SIO Archives has to document the steps it followed in unsuccessfully locating the image owner if SIO Archives decides to grant permission to use that image. We may need to expand our metadata to better record our due diligence in determining rights for images without deed of gift. We will need our trail of effort recorded if our rights to an image are contested in the future.

SIO Archives is well poised to capitalize on its initial grant funded efforts and the supporting infrastructure of the UCSD Libraries, and to re-shape itself to better meet contemporary needs. Having an digital object management system with 5,000 images and other digital objects in place has already heightened awareness of our images among our users. Images are of highest interest to everyone, which is not a surprise. The SIO Director's Office has many images that it holds onto for its use, and that are unknown to the larger institution. When the SIO Photo Lab operation was discontinued, the Director's Office held onto the color images from the Photo Lab, and SIO Archives was given the black and white images. Thus much is hidden to the larger institution are not readily available for use. With a digital object management system easily available to both the Director's Office and to the institution, we anticipate an increased acquisition rate of images from our institution, since we are now situating ourselves to be the best managed and logical home for institutional imagery.



# Digitizing Historic Oceanographic Expedition Content

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•80,000 photos & growing. Imagery requests outstripping staff. No infrastructure for repeat image requests, which are now mostly digital requests.

•UL targeted oceanography among other objectives. High interest materials likely to be funded by grants. Settled on historic expeditions dating back to 1907.

•Grants have now digitized over 5,000 images (35mm transparencies, prints, panoramas), page scans (ships' logs, news clippings, correspondence), encoded texts (expedition reports, SIO histories, The Oceans), audio (oral history), and video (TV interview).

•Capitalized on opportunities. Lined up additional funds. Learned about encoded text & did more encoded texts than planned. Learned about Quicktime VR & did 2 historic SIO panoramas outside grant projects.







#### CONTENT

#### Letter to Office of the Special Assistant for Fisheries and Wildlife to the Unde

#### Select a title below:

- 1. Page 1
- 2. Page 2
- 3. Page 3
- 4. Page 4
- 5. Page 5

#### Show document description

### UNIVERSITY OF CALIFORNIA

SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA, CALIFORNIA

March 6, 1967

Office of the Special Assistant for Fisheries and Wildlife to the Under Secretary (M/FW) Department of State Washington, D.C. 20520

Dear Sir:

In accordance with the provisions given in Interagency Committee on Oceanography Pamphlet 25 (January 1966), I am enclosing information about Scripps Institution of Oceanography's NOVA Expedition, a twoship operation in the Southwest Pacific on R/V ARGO and R/V HORIZON. The information listed below is outlined as per Appendix B of the above pamphlet.

1. Name of ships, affiliation A.,

> R/V HORIZON: Scripps Institution of Oceanography U.S. Public Vessel - on loan to Scripps R/V ARGO: by U.S. Navy

2. Itinerary: See enclosed expedition plan.

3. Purpose: See enclosed expedition plan.

4. Port calls for personnel changes and supplies.

5. No special facilities needed.

6. Ships' agents: See attached agent list.

7.

HORIZON ARGO

Name	e of	Master:	Capt.	Ν.	Ferris	Capt. A. Phinney
No.	in	crew:		19		33
No.	in	scientific party:		17		24

### **Expedition Report : encoded text**



### The Oceans: encoded text





Search this Book:

Go

The Oceans, Their Physics, Chemistry, and General Biology

### by H.U. Sverdrup, Martin W. Johnson and Richard H. Fleming

### Contents

- <u>Preface</u>
- <u>Contents</u>
- Introduction
- The Earth and the Ocean Basins
- Physical Properties of Sea Water
- General Distribution of Temperature, Salinity, and Density
- Theory of Distribution of Variables in the Sea
- <u>Chemistry of Sea Water</u>
- Organisms and the Composition of Sea Water
- The Sea as a Biological Environment
- Donulations of the Sea

# SIO in 1916: Quicktime VR



### Captioned oral history with slide show

48mb, 1 hour 13 minute QuickTime movie - *older computers may have difficulty playing*. Requires current version of QuickTime [click to download]



on off

on off

Interview with Roger Revelle (1909-1991) Recorded August 13 and 14, 1985 Interview conducted by Sarah Sharp Transcription by Regional Oral History Office at UC Berkeley Images selected by Deborah Day, SIO Archives Presentation & Captioning by Shared History

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Chapters (click here)



Click right-pointing triangle to play. For best results, wait for several megabytes to download before playing.

Click down-pointing triangle and select "Save as QuickTime Movie..." to save to your hard drive (available after movie download is complete).

### Building an infrastructure via grants



•Set scanning & image standards. Scan several sizes & resolutions. No image editing; images are digital surrogates. All images on internal UCSD Libraries server. No public access to TIFs.

•CONTENTdm for UCSD Libraries public image server. Select one med res image for public display, suitable for PowerPoint, a common user request. Surrogate records link to non-CONTENTdm items, e.g. panoramas.

•Access database for selection, tracking, metadata creation. 56 metadata fields with mandatory fields specified incl. Dublin Core. 18 fields display to public.

•Metadata designed for needs of 2 grants: general public interest in ocean; geospatial correlation with SIO datasets.

• Metadata designed for SIO Archives' **ongoing** digital library needs, based on experience, collection, and user needs.

### CEO presents an expedition view

# CALIF PRNIA search about this site home Explores the Ocean A collaboration of the University of California, San Diego Libraries and the San Diego Historical Society Expeditions Photographs & Other Media Fish Bulletin Publications & Other Resources Contributors

### EXPEDITIONS

Expeditions

Institution of

1939 Gulf of

1950 MidPac
 Expedition
 1952 Capricorn

Expedition

Expedition

Expedition

Cruise

1957-1958

Downwind Expedition

Expedition

1962 Lusiad

Expedition

1967 Nova

Expedition

1959-1961 Naga

1959 Vermillion

Sea Expedition

1952 Shellback

1953 Transpac

1955 NORPAC

California Expedition 1940 Gulf of California Expedition

Oceanography

Scripps

Scripps Institution of Oceanography built a fleet of ships, and after World War II its scientists sailed the oceans of the world to study the seas, marine life and the geology of the sea floor. See what they did, where they went, what they saw, what they found, and what they published.



#### Scripps Institution of Oceanography



#### 1939 Gulf of California Expedition First hydrographic survey of the Gulf of California.



#### 1940 Gulf of California Expedition

This expedition followed up on the findings of the 1939 Expedition.



#### 1950 MidPac Expedition

Discovered the Mid-Pacific Mountain Range on the bottom of the Pacific.



#### 1952 Capricorn Expedition

Used scuba divers to explore the Pacific seafloor and studied the 35,400 foot deep Tonga Trench.





R/V Horizon by H. W. Menard

### Framework of expedition content



### **Expedition content**

CALIF?		search about this site home
Expeditions   Photogr	aphs & Other Media   Fish Bulletin   Publications & Other Resources	Contributors
Photographs & Other Media	SEARCH RESULTS Your search retrieved 243 matching item(s).	Search Search by keyword (category list)
San Diego Historical Society Oral Histories	Click on the thumbnail or title to view the item and corresponding description. <b>Search Tips</b>	Collection
Scripps Institution of Oceanography	<ul> <li>Use quotation marks to search for exact phrases.</li> <li>Search terms are not case sensitive.</li> <li>Truncation: whal* finds whale, whales, whaling, etc.</li> <li>It's not necessary to use "and" between keywords.</li> </ul>	Advanced Search
<ul> <li>Expedition Photographs</li> <li>Letters, Clippings, Ships' Logs</li> <li>Oral Histories</li> </ul>		
Image Use & Copyright San Diego Historical Society	73. Galley & crew's mess, K/M Samudera, Indopac Leg 13 74. Gary Sullivan & 133 lb charge, Indopac Leg 5 75. George G. Sk Kieckhefer [maki explosives charg	hor and Bob ng up e]
■ SIO Archives		

76. George G. Shor and Gary 77. George G. Shor making up 78. George Shor and ben Sullivan [making up explosives explosives charge charge]

Chao with explosives (133 lb), Indopac Leg 5

Page 13 of 41 Prev Next < <u>11 12 13 14 15 16 17 18 19 20 ></u>

### Search across content via CONTENTdm

CONTENTdm Search	Hom	e Browse Search	ı My Favorites He	
ollection: California Explores	the Ocean-SIO Archives	s		
<ul> <li>Enter search terms in one or more fie the right to find indexed words for each for phrases.</li> </ul>	lds or use the "Browse Terms" box field. Use quotation marks to searc	on B ch Sele -ch	Browse Terms Select field to match terms -choose-	
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Click on a thumbnail to view the full-si	zed item and corresponding descrip	otion		
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### Some Metadata Fields



• Many of our 58 fields are expected; some developed for special needs:

• **Document Type field** = data type of the original source: Expedition Report, Bibliography of Scientific Paper, Published Scientific Paper, Manuscript, Photograph, Track Chart, Seaman's Narrative, Ships Log, Biography of Key Scientist, Drawings of Instrument, Newspaper Clipping.

• **Genre field** = category or characteristic of an item using LCSH or local: logbooks, maps, nautical charts, clippings, drawings, caricatures and cartoons, portraits and posters.

•Local genre headings derived from LC Thesaurus for Graphic Materials II: Genre and Physical Characteristic Terms (TGM II): headings include cruise certificates, shipboard communication, aerial photographs, underwater photographs, trick photographs.

### **Geospatial Metadata Fields**



•Terrestrial locations from Alexandria Digital Library Gazetteer, includes terms from US Geological Survey, US National Imagery & Mapping Agency; ensures interoperability with other UC and NSF digital library endeavors

•Terrestrial locations from LCSH; map to the considerable SIO historical information in cataloged library collection.

- •Differences: Samoa Islands (LCSH); Samoan Islands (ADL/USGS/NIMA)
- Underwater features from GEBCO Gazetteer of Undersea Feature Names

•International Hydrographic Orgn Special Publication 23, Limits of Oceans and Seas: designations & boundaries of oceans & seas in the world

•Use IHO numbers and names for interoperability with SIO Geological Data Center ....data usually more granular than archival materials

### IHO Limits of Oceans and Seas



•IHO latitude/longitude polygons digitized by US National Geophysical Data Center

# Subject Metadata Fields



•ASFA Thesaurus considered & not selected. Already use LCSH for archival collection records & library collection, so our digital content maps well with LCSH. Need general headings only, so LCSH works well & is familiar.

•Internal documents outline practice & preference for metadata and subject cataloging our digital objects using LCSH & local subject headings

• Local headings for significant holdings, e.g. "Crossing the Equator" for equator crossing ceremonies; "Oceanographic research ships -- Interiors" for interior photos of research ships; a subject heading subdivision "Press conferences."

•Expeditions divided into cruises and legs, which are referenced to a technical report authority list. Maps to SIO Geological Data Center Cruise Index and datasets.

• Use UNOLS ship names.



•Provides quick access & intended for general public interest alongside content from San Diego Historical Society grant partner

•14 broad headings from TGM I & II, or local variant, e.g. Vessels, instead of Boats

• Used for predefined query against CONTENTdm database.

•Aerial Views; Beaches; Diving; Events; Fishing; Fishing Industry; Harbors; Navigation And Communication; Ocean Life; Ocean Resources; Oceanography; People; Scientific Equipment; Vessels

# **Copyright & Technical Fields**



•17 fields record copyright or technical information about the digital object and its creation

•Rights & granting permission is clear when Archives has a recorded deed of gift, OR knows that rights were not granted.

•Many items exist in collection without a recorded deed of gift, particularly early SIO images & studio portraits of early SIO scientists.

•Expand copyright metadata to document the steps we followed in unsuccessfully locating the image owner **IF** we decide to grant permission to use that image?

• Due diligence: Need our trail of effort recorded if our rights to an image are contested in the future?

Infrastructure built by grants.... now what?



•Successful request during incredibly tight budget time to re-purpose library reference assistant FTE to Digital Archives Technician (combined with Computing Support duties). Fully equipped position starts 8 Oct '03.

•Utilize scanning vendor experience to process large batches when funds available. Scan in-house to meet user requests and chip away at high interest items.

•Work away at high-interest images & documents that will not attract grant support, e.g. extensive portrait file; materials about founding of SIO as Marine Biological Association of San Diego

•Well positioned as photo repository & image management system for SIO. More awareness of holdings should lead to increased acquisition rate.

•Gather more images from SIO Director's Office, which is holding onto color photos from disbanded Photo Lab, with no image management system on their horizon.