

Collections Committee Report, 2003-2004
Philip A. Hastings, Chair (submitted Dec. 2004)

The Scripps Oceanographic Collections, with worldwide samples of marine organisms, sediments and rocks, are the largest and most complete university-based oceanographic collections in the world. They support research documenting and describing the earth's geological and biological diversity both past and present, provide insight into the processes that have led to the evolution of the earth and its biota, and permit assessment of past, present and future changes. The Collections are divided into five units, three biological and two geological.

Marine Vertebrates - Mostly fishes, this collection includes over 2 million specimens representing 5,300 species or 40 percent of all species of marine fishes. It is the most complete collection of deep-sea fishes anywhere and the most complete collection of eastern Pacific shore fishes.

Pelagic Invertebrates - Mainly zooplankton, this collection is unparalleled in the world, covering every ocean. It includes over 100 million specimens in over 110,000 whole plankton samples including 60,000 from the incomparable CalCOFI time series (1949 to present) from the California current, perhaps the most studied ocean region in the world.

Benthic Invertebrates - This collection includes representatives all marine invertebrate phyla, the best barnacle collection in the world and one of the best collections of deep-sea benthic invertebrates, including those that live in deep-sea trenches and near hydrothermal vents.

Cored Sediments and Microfossils - Including more than 6,600 sediment cores from all ocean basins recording 75 million years of earth's history, this collection represents the world's largest assemblage of Pacific Ocean sediment cores and specimens from all major microfossil groups.

Dredged Rocks - This collection includes sea-floor rocks from more than 3,500 dredge hauls representing all major tectonic features of the ocean, including hot spots and island chains, seamounts and abyssal plains, as well as many tons of basaltic rocks from mid-ocean ridges, and rare igneous, metamorphic and mantle rocks.

These "libraries" of rocks, sediments, organisms and communities, dating back to the early part of the last century, afford a picture of the past that is otherwise unavailable. Scientists and students from around the world make use of these collections' long-term data to answer critical questions about marine biodiversity and conservation, fisheries issues, earth history and the effects of climate change questions for which baseline historical data is key to understanding the future. The Oceanographic Collections support research fields and analytical techniques unimagined by the scientific community just a few years ago. For example, the burgeoning fields of marine genomics and pharmaceutical explorations in the sea depend upon collections for accurate identification and archiving of voucher specimens. The materials in these well-documented and well-maintained collections

represent an unparalleled repository of specimens for future application of newly developed analytical techniques and newly posed research questions. Finally, these collections, with their long histories and worldwide holdings, bring together a richness of biological and geological diversity that would otherwise be impossible to experience or comprehend. These collections and the messages they convey about earth's diversity elicit new ways of thinking about the world and the role and responsibilities of humankind. This inspiration to current and future generations is both invaluable and irreplaceable.

Current Status

The vitality the SIO Oceanographic Collections is in doubt. For several decades the annual budget of the collections has been provided by State funds via the SIO Director's Office. This has included salary support for five full time collection managers (the curators are SIO faculty members and not included in the collections' budget) and modest supplies for each collection. In 2003, budget reductions in State research funds to SIO resulted in the Director's Office decision to eliminate all funding for the collections. This cut has since been implemented and the collections now operate on funds from other sources. This removal of the five staff members from State funding also removes them from collective benefits coverage, so that in addition to their salaries, their benefits expenses must also be generated from other sources.

Response to this funding crisis has necessitated considerable time and effort on the part of the collection curators and collection managers themselves. The Staff Council Collections Committee per se has played a negligible role in these efforts to re-establish a firm financial footing for the collections. Alternative sources of funding for the SIO collections that have been pursued include: 1) UCSD, 2) grant-related funding, 3) user fees, and 4) private funds.

1) UCSD funds. A strong case has been made that funding for the collections from the UCSD upper campus is warranted given the key role that these collections play in both graduate and undergraduate education. Limited support funds have been provided via the SIO Director's office, but the amount and certitude of future UCSD funds in support of the collections is not clear. This represents a key concern because it sets the financial needs baseline from which other funding efforts operate.

2) Grant funding. Although the National Science Foundation has a program to support systematics infrastructure, it expressly does not provide support for basic operations of natural history collections. In fact, clear demonstration of an institutional commitment via provision of operational support is a requirement to receive any collection support from NSF. In the late 1990's, the three biological collections at SIO each received NSF funding to facilitate their move into Vaughan Hall under the explicit assumption that the institution had a long-term commitment to maintaining them.

The curators have begun to, where possible, include collection's staff time as part of the budget in proposals that they submit to funding agencies. These funds are generally for tasks related to specific research projects and are not usually justifiably available for support of basic collection operations. Thus at present, it is difficult to see how grant

funding will provide a stable, long-term solution to maintaining the vitality of the Oceanographic Collections.

3) User fees. The collections have begun charging outside users who request extensive information or specimens that require significant staff time and input. The curators are of the unanimous opinion that, while this may provide limited funds, it will never be a viable source of operations funding for several reasons. For example, our users (often graduate students or foreign researchers) rarely have significant funds and collections at other institutions do not have fee structures. Shifting to a fee-based system would represent a zero-sum game among these institutions, benefitting no one and adding considerable accounting burden to all. The curators will, however, whenever feasible, continue to request that support for the collections be included in any proposals from outside researchers that intend to make extensive use of these resources.

4) Private funding. The SIO Development Office has made the collections a top priority. John Steinitz has been working half-time on collections' support issues. In that capacity he has initiated a support group, "Friends of the Oceanographic Collections"] currently with over 40 members (\$1,000 each), and has solicited numerous other gifts. As of November 2004, approximately \$400,000 had been raised and these funds provide the majority of support for collections' staff at this time.

The collection curators and managers have contributed considerable time and effort to these initiatives. Among other things, this has included revamping of the collections' web sites, generating fund-raising documents and brochures, oral presentations on the role of the collections in oceanography, and numerous tours to potential donors and others (the Marine Vertebrates Collection alone provided more than 40 tours in one year). As with grant-generated support, these development efforts come at considerable cost of staff time and effort, activities that detract from their normal curatorial duties. While these efforts continue, it is difficult to see how they alone can support the SIO Collections in the long term. An endowment for the collections has been established but its current \$44,000 is far short of the \$10 million needed to maintain current operations.

Continuity

It should be noted that the five collection managers are highly trained and highly skilled employees, most with over 20 years experience with these collections. Once lost, that expertise will not be replaced should good economic times return. Thus, it is of utmost importance that the Scripps Institution of Oceanography maintain staff continuity if at all possible.