In October, 1979, the Department of the Interior, Environmental Studies Program of the Bureau of Ocean Energy Management (BOEM) contracted with the National Museum of Natural History’s (NMNH), Department of Invertebrate Zoology (IZ) to provide professional collection management services for the long-term curation of its marine invertebrate specimens taken during the environmental baseline surveys of various oil and gas lease sites on the US East and Gulf Coasts. These began in 1973, sampled existing biological communities along the continental shelf to document their composition and to help predict the potential impacts of future oil spills.

The BOEM collections amassed during these intensive surveys were comprehensive and unusually well documented. They presented the biodiversity research community with a veritable treasure trove of research material. As evidence of the composition and natural history of marine invertebrate communities at specific times and places, these collections were important complements to Invertebrate Zoology’s existing programmatic collections, especially those from the US Fish Commission research vessel Atlantis. BOEM and NMNH both appraised the potential research values of these collections and collaborated on the creation of a project that would help ensure these invaluable collections would be cared for and made accessible for future research. As of November 2008, more than 220,000 specimen lots have been curated into the Invertebrate Zoology collection. These BOEM specimens represent almost 20% of the invertebrate collection records in our on-line catalog database (http://collections.nmnh.si.edu/search/iz).

Not only has this collaboration benefitted the research missions of both BOEM and NMNH, it has also provided valuable educational and career development opportunities for the project’s staff. From its start in 1979 through today, a total of 44 Museum Technicians and 2 student volunteers have worked on the project, most doing cataloging and basic curation. Of these 44 Museum Technicians, 6 resigned from the project and successfully completed PhD programs in ecology or systematics and 14 resigned from the project to pursue permanent careers at the Smithsonian Institution (12 at NMNH, 1 at the Smithsonian Environmental Research Center (SERC) and 1 at the National Zoo). A total of 30 of these 44 project technicians are successfully pursuing scientific careers. The remaining 14 project technicians have pursued diverse careers including one who is a Fairfield County Emergency Medical Technician (who worked the rescue operations at the Pentagon on 9-11), one who is an analyst with the CIA, and one who is an Information Technology specialist.

Cataloging Process

STEP 1: Sorting
Specimens are sorted taxonomically, by order, family, and number, and by collecting dates. Unavailable specimen lots with incomplete data are documented and left undiscarded.

STEP 2: Data Capture
Taxonomic and location data from each specimen lot are entered into the NMNH database. Labels are then printed using the Capabilities thermal printer.

STEP 3: Vialing/Jarring
Each is placed in a 415 ml appropriately sized jar or vial with a corresponding label. Specimens are currently stored 70% ethanol. Larger specimens are placed directly in an appropriate container which is placed into a large archival container.

MAPTEP
The MAPTEP (Marine Geological Process Trends in Ecosystems Monitoring Project) was conducted from 1991-1998 to understand and monitor changes in the species composition, biogeography, and habitat structure of the West and East coasts of the United States. The project reported on the changes in the species composition and habitat structure of the invertebrate populations from 13 stations along the continental shelf.

POSP

SOCAL
The Southern California Bight Study is a comprehensive investigation of all major habitats of the sea floor of the California Bight during the years 1987-1988. The investigation is composed of three phases: (1) studies of the physical oceanography, biology, and ecology of the benthic invertebrates during the summer of 1987; (2) studies of the benthic invertebrates during the winter of 1987-1988; and (3) studies of the invertebrates and habitat structure during the summer of 1988. The study was supported by the National Science Foundation and the National Oceanic and Atmospheric Administration.

Future Focus

DATA MANAGEMENT - BOEM continues to improve the accessibility of project related specimen data and will continue. Currently, BOEM program specimen data are not well-documented (IZ’s Collection Cataloging and through OBIS).

COLLECTION ACQUISITION - As additional new material is acquired, we will endeavor to acquire material from the IZ’s collection and to add NMNH’s existing collections.

CATALOGING - Cataloging will continue to be the foundation of our project. As new type, voucher specimens and specimens of significant immediate research interest will have the highest priority.

COLLECTION CURATION - Routine maintenance and physical condition of program specimens in the holdings areas will continue. Fluid levels and container integrity will be monitored and detailed inventories of the collection will be maintained.

SORTING - There are substantial backing of "fine-sorting" (sorting to lowest practicable level - typically order or family) for Department of Invertebrate Zoology collections in all areas. Sorting practices will be determined based on the research needs of BOEM and NMNH staff and colleagues and to the interests of the scientific community.

IDENTIFICATION - Based on preliminary surveys of the collection it appears that a significant number of specimens are representatives of undescribed taxa. If funds are available with the project’s budget we will attempt at this a priority to begin testing a small portion of the collection for the presence of undescribed taxa.

BOEM Programs

ALSB: Atlantic Slope and Rise Program
BIMP: Georgia Benthic Infauna Monitoring Program
CARB: Central Atlantic Benchmark Program
CAMP: California Monitoring Program
CAF: Central and Northern California Raritance Program
CARRS: Canyon and Slope Processes Study
CGB: Central Gulf Platform Study
CHEMO: Chemosynthetic Ecosystem Study
CGPS: Central Gulf Platform Study
DGMB: Deepwater Program: Northern Gulf of Mexico Continental Slope Habitats and Benthic Ecology
LMRS: South Atlantic Outer Continental Shelf Living Marine Resources Study
LOPH: Deepwater Program: Chronobiosis of Gulf of Mexico Deepwater hard Bottom Communities with Emphasis on Lophelia pertusa
MAFLA: Mississippi, Alabama, Florida Survey
MAMES: Mississippi-Alabama Marine Ecosystem Study
MAPPING: Mississippi-Alabama Platform Trend Ecosystem-Monitoring Program
NEEB: New England Environmental Benchmark Program
NGOMCS: Northern Gulf of Mexico Continental Shelf Study
POMP: Petroleum Oil-Spill Program
SAP: South Atlantic Benchmark Program
SAR: South Atlantic Benchmark Program
SOFLA: Southeast Florida Shelf Ecosystem Study
STOC: South Texas Outer Continental Shelf Study
WASP: Deepwater Program: Archaeological and Biological Analysis of WASH Ships in the Gulf of Mexico: A Pilot Study of the Artificial Reef in Deep Water (Deep Wrecks)