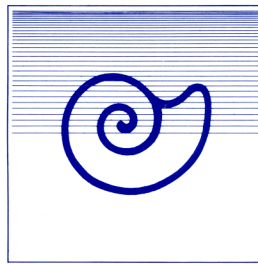


Year end report on progress and expenditures for project  
“Historical Ecology of Coastal Wetlands of the Northern Gulf  
of California”. 2007 Mia J. Tegner Memorial Research Grant  
in Marine Environmental History and Historical Marine  
Ecology



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We documented the historical and current use and condition of each of the 8 coastal wetlands in the Northern Gulf of California, along the coast of Sonora, Mexico through three types of sources:

**Interviews** We conducted 48 semi-structured interviews of fishermen and oyster producers in three communities of the Northern Gulf, Golfo de Santa Clara, Puerto Peñasco and Ejido Campodónico. We used participatory resource mapping to obtain a broad understanding of current and historical distribution of fishing activities, and of present and past reproductive and nursery areas within each coastal wetland. We integrated the participatory maps into a Geographic Information System (GIS) and are currently analyzing fishing and nursery areas in each wetland. We still need to analyze interview data and incorporate it into the GIS.

**Experts** We interviewed 10 scientists who have worked in the region to inquire about changes in different aspects of wetland function, including primary productivity, biodiversity, coastal morphology and hydrology.

**Documentation** We obtained and reviewed documents, historical and current maps, photographs, aerial and remote sensing images of the area.

Project participants included Hem Nalini Morzaria Luna, as Principal Investigator. P.B.M. Mabilia Urquidi Gaume as Research Assistant and B.M. Christian Alva, B.M. Abigail Iris Maldonado, and P.B.M. Sandra Reyes Fiol as field assistants.

This project allowed us to organize background information on coastal wetlands in the region. We will make this information available to interested researchers as it can be an important tool for future projects. Among the products we have generated are:

1. Historical maps. Collection of 79 maps in digital format, dating between 1507 and 1965. The maps document the discoveries and changing cartography of the Peninsula of Baja California, the Gulf of California and Sonora.
2. Inventory of aerial and remote sensing images. Collection of 157 aerial and remote sensing images, dating between 1965-2008. The images cover the coastline between La Salina (31°29'53" N; 114°09'52" W) to the North and Estero San Francisquito (31°53'50" N; 113°06'09" W) to the South. Only a portion of these images can be freely distributed due to copyright restrictions.
3. Historic time line. Summary of events between 300 and 2008 CE at the national, regional, local and site scales which have influenced coastal wetlands in the Northern Gulf.
4. Bibliographic database of relevant literature. We identified 170 document sources relevant to wetlands in the Northern Gulf dating back to 1935. The data base will be available in Zotero and BibTex formats.
5. Inventory of spatial data layers. Collection of shape files created by previous projects, including layers depicting the coastline, changes in roads within wetlands, population centers, etc.

The products will be distributed in electronic format starting in spring 2009, as we are still working on the corresponding documentation. These products can be easily updated as new information becomes available. With the data produced during the project, we expect to generate publications on overall changes in wetland environmental condition and on the historical changes in fishing and nursery areas. A preliminary analysis suggests that species composition as well as fishing and nursery areas have shifted or even disappeared within wetlands, even where impacts from development are absent or relatively recent, pointing to impacts from commercial fishing activities in the Northern Gulf. We will present the results of the project at the meeting of the Coastal and Estuarine Research Federation, in Portland, OR on November 2009.

I thank the Marine Conservation Biology Institute for the opportunity to carry out this project. A summary of expenditures is included in Table 1. A detailed record can be provided upon request.