

Appendix 1

Annual Report  
Restoration GIS  
March 1, 1992 - February 28, 1993  
Project Number 93062

I. Executive Summary

The Department of Natural Resources, Geographic Information Systems Project delivered a wide suite of products to the *Exxon Valdez* Oil Spill Restoration Community during the period of March 1, 1992 through February 28, 1993. The highlights include:

- Definition of the EVOS affected area, land status, and cumulative oiling maps for restoration planning
- Habitat protection and land acquisition map series
- Kachemak Bay Sale and Purchase Agreement Map
- Shoretype, oiling, and aspect model for *fucus* recovery study
- Combined physiography and bathymetry map, Prince William Sound
- Hydrography and fish streams for Afognak and Shuyak Islands
- Workshop with the Nature Conservancy and principal investigators to identify habitat restoration opportunity.

II. Product Descriptions

Definition of the Oil Spill Area - Regional Land Status Maps -

A map delineating the oil spill area of *Exxon Valdez* with general land status was prepared for publication. The map was printed as a central component of a brochure which summarizes damages and solicits public comment on the restoration process.

Enlargements of this map were requested by and delivered to the Attorney General. We understand copies of this map have also been forwarded to the Governor via the Restoration Team. Larger scale, regional maps, which also show cumulative oiling, will be prepared in time for public meetings.

## Habitat Protection, Timber Harvest, and Land Acquisition Maps -

Last fall, a project was initiated to identify those habitats which offered food and shelter to injured species, but were also slated for resource development. This primarily involved lands planned for timber harvest. Extensive meetings and a collaborated effort of staff from the restoration planning team, ADFG, ADNR Division of Forestry, and ADNR GIS produced a series of maps used in Trustee Council meetings. These maps built upon the same thematic base as the original, regional restoration map series produced the previous year.

As new information was received about these sites, more detailed views were prepared. Report format views were created by the GIS cartographic staff which isolated "parcels" on a local basis. The map series now spanned from regional to site specific views.

The Restoration Team requested other updates to this series. The updates included modifications to timber harvest boundaries, inclusion of bald eagle nest sites and seabird colonies, and new map designs. A set of 8.5" x 11" black and white maps were first produced. A second round in color was then requested and produced.

The maps were redesigned on several occasions as the ideas on acquisition moved forward. For example, the title of the series changed from "Timber Harvest Areas with General Land Status" to "Habitat Protection Acquisition Parcels." There are a total of 14 original maps. Thirty copies of each were produced for the final report distributed to the Trustee Council.

For the presentation, five poster size maps were produced: Eastern Prince William Sound, Chenega Island to Montague Island, Kachemak Bay, Afognak Island, and Southern Kodiak Island. These maps have remained in high demand, with copies reproduced for participating agencies and audiences selected by the Restoration Team. Overall, a substantial effort was directed toward the completion of maps describing this theme.

### Kachemak Bay Purchase Maps

A map summarizing the sale and purchase agreement between the State of Alaska, Seldovia Native Association, Cook Inlet Regional Corporation, and Timber Trading Company was jointly developed with the Department of Law, the Division of Parks, and the Division of Land, Land and Resources Section. The map shows which lands are affected by the sale, and the location of various timber harvest rights held by Timber Trading Company. The map was distributed to the

Department of Law and the Alaska Legislature. Funding to secure this sale is based on commitments from three sources which are all tied to the *Exxon Valdez* incident. Final approval of the agreement is now pending with the legislature.

Viewsheds from the Homer spit were created in an effort to illustrate the visual effect of timber harvest on the aesthetics of Kachemak Bay. One map was a three dimensional perspective from 8,000 feet, the second was a planimetric view showing the overlap of visible lands from the Homer Spit and timbered areas. Copies of this map were used in Trustee hearings, as well distributed to selected members of the legislature.

#### Coastal Habitat - *Fucus* Habitat Model

The habitat model Mike Stekoll and Larry Deysher have been considering consists of sheltered rocky shores, southern aspect, heavy or moderate oiling and slope greater than five percent. A rough draft was mailed last October. The results generated from the original parameters were not what they had expected.

Another set of parameters were tried and delivered in January of this year. During the symposium, discussions with Stekoll, Deysher, and Van Tamelen concluded that the southern aspect should be broadened to include more of a western aspect. Stekoll would review shoretype codes, slope would be dropped.

#### A New Physiographic View of The Sound - A Bathymetric Best

By craftfully combining the best of the bathymetric and elevation data, a complete physiographic perspective of the entire Prince William Sound was completed. The image spans the sound's deepest hole to its glaciated peaks. After seeing copies of this map at the symposium, researchers from the National Marine Fisheries Institute, who are conducting marine mammal research in the area, requested and received copies to assist them with their field work planning. The more detailed view of the original bathymetric series accompanied this request.

A summary of area calculations at 50 fathom intervals was requested by Bill Bechtol. Bechtol will be using these figures for a fish studies conference held in April.

#### Restoration Planning Group - GIS Expands at CACI Headquarters

During this past year, GIS capability was expanded at the CACI headquarters. The new staff, Jess Grunblatt, was hired to assist the oil spill restoration planning group. ADNR GIS worked closely with Jess to configure a functional system, load

a copy of the oil spill database, and in general, help raise the technical capability of the central oil spill office.

Since the complete database update, Jess has made a number of requests for data such as elevation, slope, aspect, Shuyak Island detailed land status, eagle nest updates, and updated anadromous streams for Shuyak and Afognak Islands. Frequent communication assures that the information remains consistent between the two offices. Per agreement, Jess refers data requests to this office which allows for consistent tracking and documentation handling.

#### Anadromous Streams for Afognak

Hydrography for the Afognak archipelago was completed by the DNR, Land Records Status Graphics Unit. Fisheries information from the ADFG anadromous streams catalog was transferred to these stream coverages. This data was used in the habitat acquisition project for restoration, and contributes to the fish stream database.

#### Habitat Workshop with the Nature Conservancy

GIS staff worked with the Nature Conservancy and PI's to geographically identify the most promising sites for restoration on a species by species basis. Graphic overlays developed as part of an interview process were automated on site at CACI. Further analysis of this information is pending review.

#### Township/Range for Land Acquisition

The Department of Law requested a township/range listing for selected areas considered for acquisition. A report summarizing acreage by township was provided. At a later date, the Restoration Team requested a map of these townships with current land status.

#### Timber Harvest by Year

Correspondence with Wade Wahrenbrock, Forester, ADNR Division of Forestry, to update the timber harvest data is on-going. A draft map of the timber harvest by year was created and sent to Wade for corrections. Wade will review the material and return updates. This effort maintains the most accurate cutting history for an area high on the acquisition priority list. Work with Jess Grunblatt on updating harvest boundaries from satellite data is also being coordinated for this project. Experimental maps of Afognak land cover classification, some with three dimensional drapes over an elevation model, were produced from plotfiles

created by Jess Grunblatt. For most of the island, cutting unit boundaries are crisply defined by the satellite image.

#### USFS

Exchange of data between ADNR and USFS, Bruce Williams, occurred utilizing the MOU set up between the two agencies. We have received current land status for the Chugach Forest lands and detailed cover type for the same area. In exchange, we have delivered annotation coverages and section grid coverages.

Requests for maps produced in the past continue to come in. These are generally maps to be used for public presentations or, on one case, for a college project.

Bruce Williams requested cumulative oiling maps for PWS. We have some programs very close to conclusion on this, but some final touches are needed.

#### USFWS

Tom Jennings requested PWS elevation, slope and aspect data. The tape cut for Jess will be passed to Tom. Contact with Tom has also been made concerning documentation and coordinating our final NRDA report.