

2009 Year in Review



Herring Bay in Prince William Sound. PWS was imaged (2004, 2007) and mapped (2009) by the ShoreZone project on the 20th anniversary of the *Exxon Valdez* oil spill. (photo by Mandy Lindeberg, NOAA).

Prince William Sound Mapping - on 24 March 2009, the 20th anniversary of the *Exxon Valdez* grounding, Coastal & Ocean Resources Inc. submitted the PWS mapping dataset and summary report. This involved a three year program of first imaging the 5,600 km of shoreline in Prince William Sound, mapping the geomorphic and biological coastal features and compiling a summary report on the mapping effort. The report is presently clearing the Trustee Council review process. [Program support by the *Exxon Valdez* Oil Spill Trustee Council, the Prince William Sound RCAC, and NOAA/NMFS]

2009 Alaska Marine Science Symposium - The preliminary results of the Prince William Sound ShoreZone mapping were presented by Dr. Jodi Harney of Coastal & Ocean Resources. Over 5,585 km of mapping data was presented at the Symposium, including data on sound-wide distribution of sensitive marine habitats such as Salt Marsh (occurs on 32% of the shoreline), eelgrass (45%) and canopy kelps (~2%). One of the questions following the presentation was from Clarence Pautzke, Executive Director of the North Pacific Research Board:

“you mean you can download all that imagery and all that data from the ShoreZone website?”

The answer would be a **sweeeet** yes !

Cook Inlet Aerial Imaging Surveys – the Cook Inlet Regional Citizens Advisory Council (CIRCAC) contracted a survey of the entire shoreline of Cook Inlet during the June low-tide series. Dr. Jodi Harney coordinated the surveys and Mandy Lindeberg of NOAA directed the biological observation program. Over 2,428 km of shoreline were imaged in high definition video, and Mandy shot an amazing 13,000 georeferenced high resolution still photos. In one marathon day, the team was able to use delayed tides in the upper Inlet to image over 700 km of shoreline, all with tides of less than 1m in height. The support of CIRCAC and their Science Director, Sue Saupe, was fantastic !

Enterprise Database Development - 2009 marked an important juncture in data handling within the ShoreZone program - the development of an SQL database designed specifically to handle the growing Alaska ShoreZone dataset. Previously, individual mapping programs were provided to clients in Arc and Access databases. But as these various datasets are stitched together into a comprehensive Alaska coverage, now in the range of 40,000 km of shoreline, the need for more robust data handling became critical. Jodi Harney conceived and managed the SQL database development and was assisted by Mary Morris with the Archipelago Marine Research IT team. We now have a comprehensive, state-wide dataset and a weekly replication routine that allows mapping at independent sites to occur “seamlessly.” It doesn’t sound sexy but it is really, really important ! [the support of Alaska Department of Natural Resources (DNR), NOAA/NMFS, and the Nature Conservancy (TNC) is appreciated]

Field Verification Report of ShoreZone – in 2008, researchers field checked forty shore segments in Sitka Sound that had been previously mapped in ShoreZone. The comparative data are useful for defining confidence levels associated with attributes documented in ShoreZone. The study helps define confidence levels in mapping, where some resources are clearly documented better than other resources. The report is available for download at shore.org. [funded by NOAA/NMFS, TNC, DNR Coastal Impact Assistance Program, MMS].

NOAA's ShoreZone Website – the ShoreZone website is arguably the *soul* of the ShoreZone program as it is the interface between the data collectors and the user community. At the present time, internet users can access over 3 million, low-tide images of the Alaskan shoreline and literally fly the shoreline from Ketchikan to Bristol Bay. Much of the ShoreZone data can be displayed and downloaded from this site. So if you are working in Kalamazoo on Alaska coastal fish habitat (e.g, herring spawn habitat) some critical habitat data is only a few clicks away via this website.

The site is currently using ArcIMS to display coastal imagery and data but new ArcGIS Server engines, *beta*-tested the last six months, will offer a simpler interface, satellite imagery backdrops and faster access. The new site is also Mac friendly. This site has been supported totally by NOAA/NMFS and managed by Steve Lewis and Jim Noel of NOAA.

SE Alaska Imaging Survey, based in Kake - In all, the team surveyed 1,130 miles (1,819 km) of shoreline, collected 17 hr of imagery and shot over 14,000 high-resolution photos (shot by Mary Morris). Field program coordinator John Harper noted:

"We use a helicopter to collect the imagery as it is much less weather dependent. At some points during this survey, the cloud ceiling was less 200 feet – fixed wing planes could not fly for several days. And it is very difficult for satellites to collect appropriate imagery because tides are low early in the morning, and they can not see through the clouds."

The survey was sponsored by the National Marine Fisheries Service (NMFS/NOAA) of Juneau and personnel from TNC also assisted.

Cook Inlet, Katmai, Kodiak, Kenai Video Library – to take advantage of the new, high definition videography of Cook Inlet that was collected during 2009, CIRCAC asked for the video to be loaded onto hard-drives to facilitate access for spill response operations. Coastal & Oceans worked with Clover Point Cartographics to develop a customized Flash video player, to link the videography to trackline satellite maps and to convert all the 113 hr video imagery to Flash video files. Sue Saupe of CIRCAC now has a "spill response laptop" full of georeferenced, high def video. Sue commented:

"it's great – I want to see a piece of shoreline over here, I click on the map and the video starts playing instantly. If I want to move up the coast three miles, I just click there and start flying at my click point. And I am a few clicks away from our 13,000 still photos of Cook Inlet!"



Sean Daley (geomorphologist) imaging SE Alaska shoreline (photo by Mary Morris)

SE Alaska Mapping Program – to finish out 2009, Coastal & Oceans delivered a large installment of shoreline mapping (6,000 km) for SE Alaska on December 31st. This data includes large parts of Baranof, Prince of Wales and Dall Islands and will be web-posted during the coming weeks. This leaves about 11,000 km of the 30,000 km of shoreline in SE unmapped. [funded by NOAA/NMFS].

Ground Station Website – over the past seven years there have been over 400 ground stations surveyed to inventory intertidal biota and to relate those inventories to ShoreZone mapping. There are thousands of species observations and detailed photos of the biota. The ground station observations provide important validation of the aerial mapping data. CIRCAC has provided funding to develop a web accessible database of the observations and photos. Look for updates and links on the *ShoreZone.org*

2009 Coastal America Spirit Award – the Alaska ShoreZone partnership team was awarded the 2009 Coastal America Spirit Award for "an effort unprecedented in size and scope with over 30 partners having participated in the effort. More than 45,000 km of shoreline imagery have been collected in south central, southeast, and western Alaska."

More Info . . .

The NOAA website:

<http://alaskafisheries.noaa.gov/habitat/shorezone/szintro.htm>
for "flying the coastline", imagery, data, reports, fish atlas

ShoreZone.org website

<http://www.shorezone.org/>

for links, downloads of reports, Events Page (new)