



ALASKA SHOREZONE



URL <http://www.alaskafisheries.noaa.gov/maps>

Purpose of application

Alaska ShoreZone provides an online searchable inventory of oblique low-altitude aerial imagery (video and high resolution stills) of the coastal zone integrated with detailed classification of geomorphic and biological features. The standardized ShoreZone system was employed in the 1980s and 1990s to map coastal features in British Columbia and Washington State (Howes et al. 1994; Berry et al. 2004). ShoreZone was brought to Alaska in 2001 as a tool for first responders and lessons learned from the *Exxon Valdez* oil spill. Coastal habitat mapping of Alaska is a huge undertaking but the Alaska ShoreZone program has been successful through a growing list of partners including non-profit organizations, federal and state agencies. Currently the Alaska ShoreZone project provides a spatial framework for coastal habitat assessment on local and regional scales and is utilized by scientists, managers, first responders, education, and the general public.

Geographic extent

As of March 2009, Alaska ShoreZone imagery has been acquired for 44,915 km of shoreline of which 32,574 km has been mapped (~50%). Completed regions include Kodiak, Cook Inlet, Kenai Peninsula, Prince William Sound, and portions of northern and southern Southeast Alaska. The extent of ShoreZone imagery for Washington State, British Columbia, and Alaska is 84,915 km of coastline.

Target audience

Federal and state agencies, private and non-profit organizations, local and Tribal governments, universities, and the public.

Data included

Thematic data (by shore unit; downloadable in shape files):

- Shore types based on geomorphology (British Columbia Class – 35 classifications)
- Environmental Sensitivity Index (ESI – 27 classifications)
- Biological classification (Habitat Class - combines biological exposure and substrate)
- Biological communities and/or species (biobands)
- Oil Residency Index (1-5)
- Invasive Green Crab Index (0-4)

Distinguishing features

Oblique georeferenced aerial Imagery of shoreline at low tide (downloadable)

- Video (3 second intervals; two resolutions)
- Stills (resolution 300 PPI)
- Currently serving up ~ 3 million images (terabytes of data)

Nearshore Fish Atlas of Alaska

- The Alaska ShoreZone online platform was used to integrate the Nearshore Fish Atlas of Alaska. This data set spans over 10 years of beach seine catch data

containing more than 800 hauls and 98 different species of fish. The data can be queried and downloaded from the spatially explicit ShoreZone platform in a multitude of ways from lengths of individual fish, specific locations, dates, and habitat types to larger scale regional catches. Site photos and a fish photo library are also available.

Technology used

- WebGIS: ArcIMS 9.3 (upgrading to ArcGIS Server 9.3)
- Database: ArcSDE 9.3 with Oracle 10.2 (upgrading with Microsoft SQL Server 2005)
- Server: IIS with JRun 4.0
- Other: ASP (upgrading to ASP.NET 2.0)
- NOAA is partnering with the University of Alaska Fairbanks Super Computing Center, Geographical Information Network Alaska (GINA) to help serve up imagery and have redundancy.

Atlas support

The Alaska ShoreZone product is served up and managed by the Alaska Regional Office Analytical Team, NOAA Fisheries. Coastal imagery and ShoreZone habitat mapping are produced by Coastal and Ocean Resources, Inc. and Archipelago Marine Research, LTD. The Alaska ShoreZone partner funds are managed by a combination of the Alaska Regional Office, NOAA Fisheries and The Nature Conservancy.

Challenges encountered

- Keeping up with upgrades, compatibility, and changing personnel.
- Data management and QA/QC between partners
- Pressures to add other data sets regardless of funding or function.
- Managing small contributions from multiple agencies and organizations.
- Securing long term funding.

Lessons learned

- Develop specific tools for partners/users and funding and support will follow.
- Communicating product to new users and potential partners.
- Underestimating in-kind services by partners.
- Underestimating supply and demand.

Future directions

- In the middle of upgrading technology for web product.
- Continue imagery and mapping until Alaska's coastline is complete.
- Develop specific tools for user groups such as first responders.
- Add supporting data sets such as the Alaska Shore Station database (on the beach).
- Develop an International ShoreZone data set so management issues across borders and large scale comparisons can be made from Washington State, British Columbia, and Alaska.