



Coastal Habitats in Alaska: ShoreZone Mapping and Nearshore Fish Atlas



**Auke Bay Laboratories
Alaska Fisheries Science Center:**
M. Lindeberg
S. Johnson
J. Thedinga

Alaska Regional Office:
C. Hartmann Moore
S. Lewis
K. Mabry
L. Shaw
S. Walker

Acquisitions & Grants Office:
S. Kent

**NOAA
FISHERIES
SERVICE**

NOAA

Overview

- **ShoreZone**
- **Nearshore Fish Atlas**
- **Web Products**

Issues in Alaska



Climate change



Increased vessel traffic



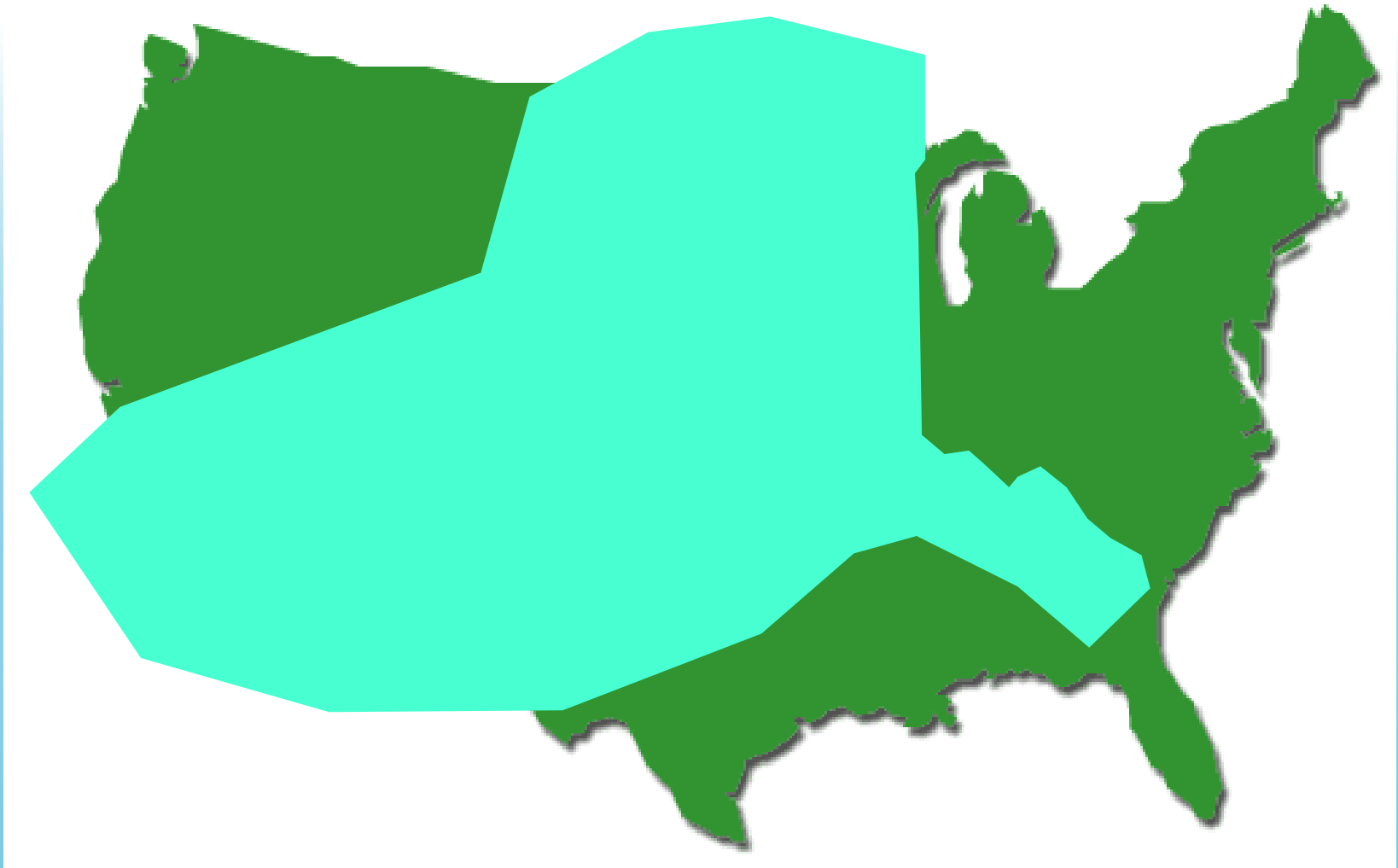
Oil and gas



Coastal Development

Alaska vs the lower continental US

Exclusive Economic Zone (EEZ) = 900,000 square miles



Challenges of nearshore research in Alaska

- Remote & rugged coastline
- 75,000 km of shoreline; twice that of lower 48
- Mosaic of habitat types
- Regional differences



Bligh Reef – *Exxon Valdez* oil spill (1989)



Lessons learned

Lack of baseline information:

- Clean-up, damage assessment, restoration, recovery
- Charts, habitat maps, imagery



Lack of detail



What is *ShoreZone*?

Standardized Coastal Habitat Mapping System



ShoreZone images and characterizes biophysical attributes in both along-shore and across-shore components in a spatially explicit environment.



wave exposure



geomorphology



sediment texture



intertidal/subtidal biota



supratidal biota



man-made features

Alaska ShoreZone Partners

“ To make physically and intellectually accessible ”



**NOAA National Marine Fisheries Service
Alaska Department of Natural Resources
The Nature Conservancy
Cook Inlet Regional Citizens Advisory Council**

Alaska Dept. of Fish and Game
Alaska Ocean Observing System
Archipelago Marine Research Ltd
Coastal and Ocean Resources Inc
Exxon Valdez Oil Spill Trustee Council
Kenai Peninsula Borough
Minerals Management Services National Park Service
North Pacific Research Board
Ocean Fund
PWS RCAC
PWS Science Center

Sitka Tribe of Alaska
The Skaggs Foundation
SEAK Petroleum Resources Organization
The Nature Conservancy
U.S. Coast Guard
U.S. Fish & Wildlife Service
U.S.D.A. Forest Service
UAF Geographic Information Network of AK

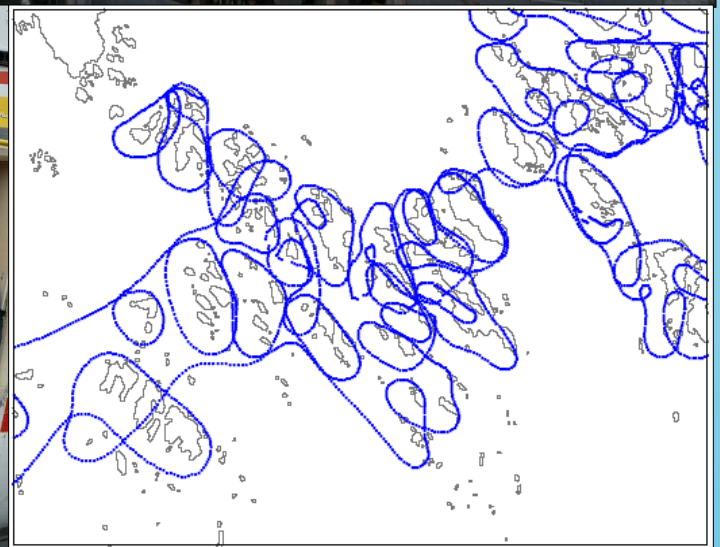


ShoreZone Method: Coastal Imagery



Mapping is based on video and still imagery:

- Low-altitude
- Oblique
- Spatially-referenced
- Collected during low tides



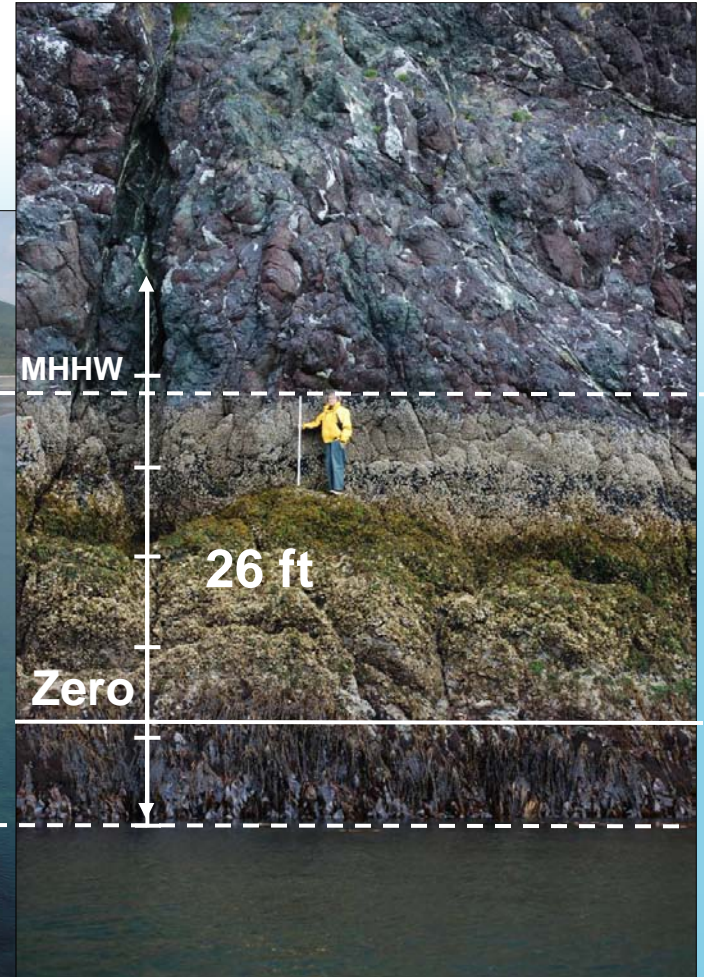
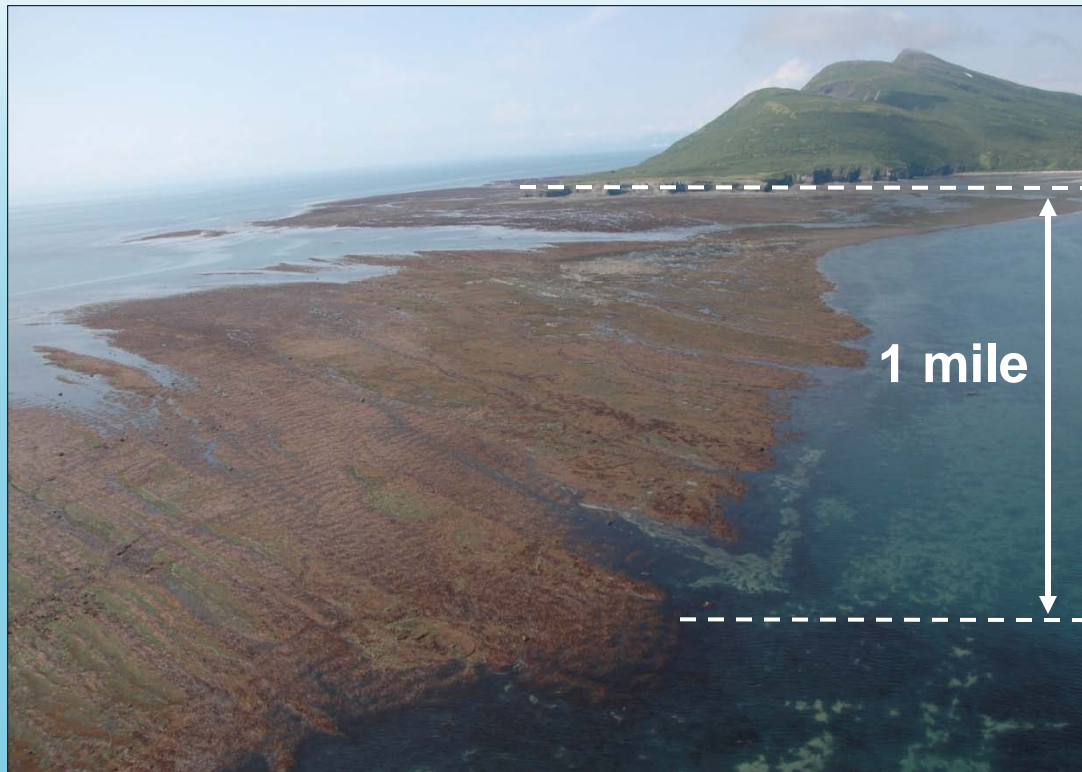
ShoreZone Method: Why image at low tide?



Cook Inlet: Tidal range, different beach profiles

Rock ramp

Rock wall



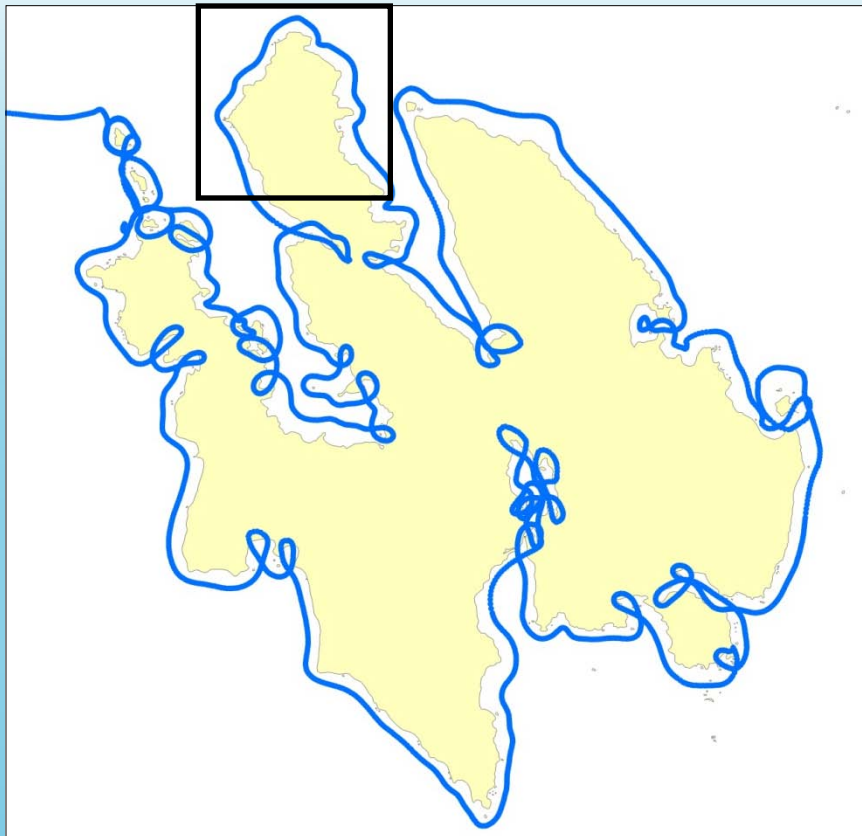
Kamishak Bay

Kachemak Bay

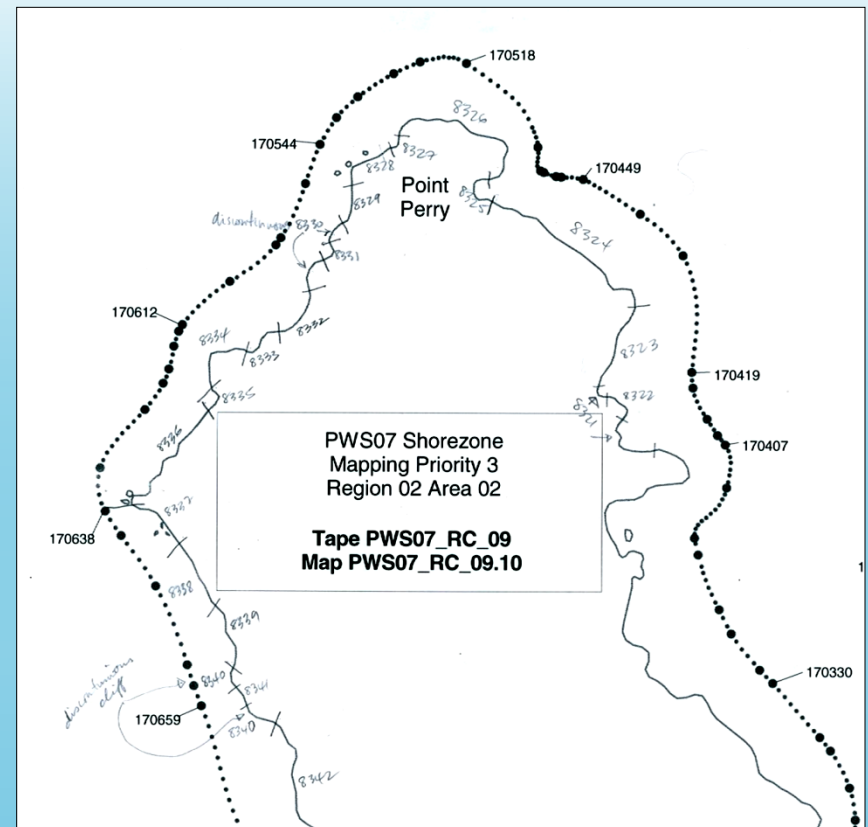
ShoreZone Method: Digital Shoreline



GPS flight trackline recorded at 1-second intervals:



Navigation trackline and imagery are used to segment digital shoreline into along-shore units:



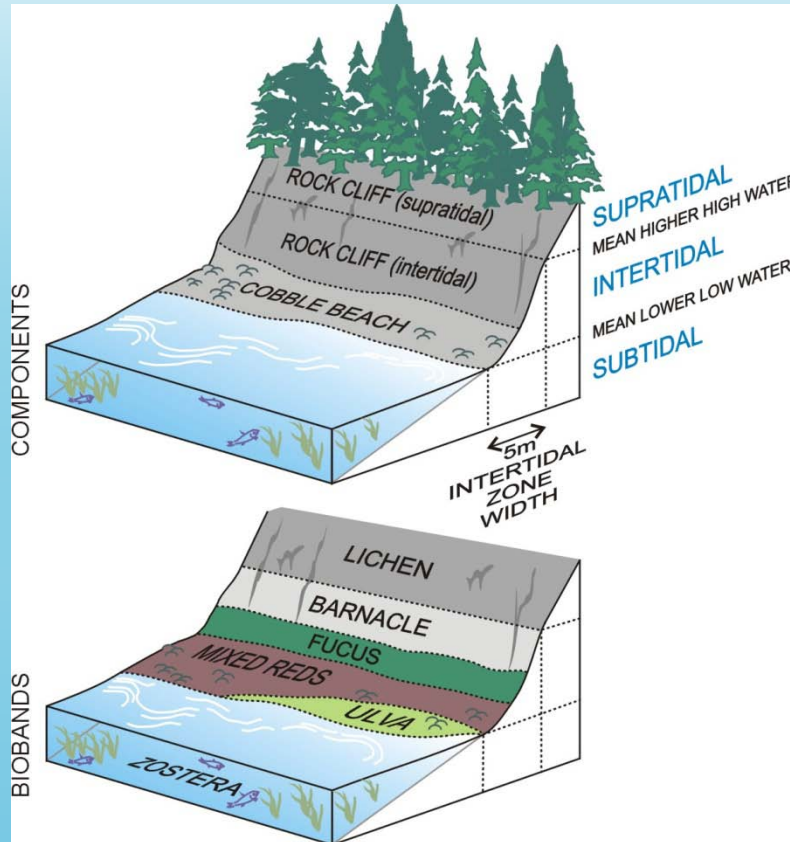
ShoreZone Method: Biophysical Mapping



Physical and biological features of across-shore zones are mapped with respect to relative tidal position

Physical (geomorphic) attributes:

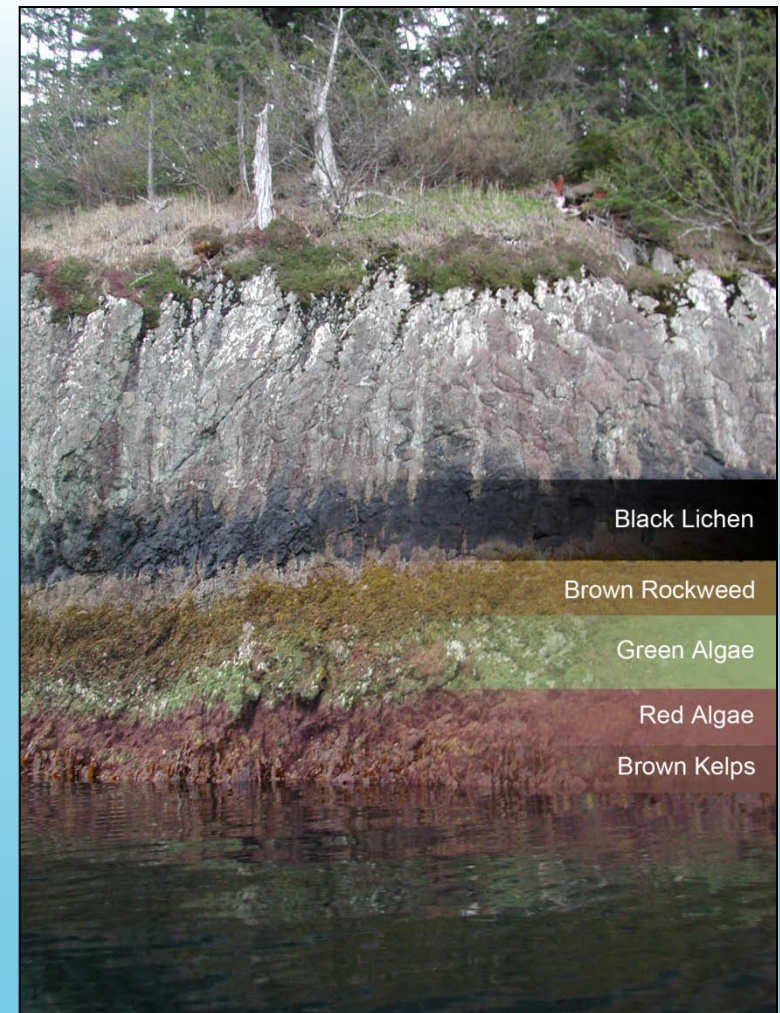
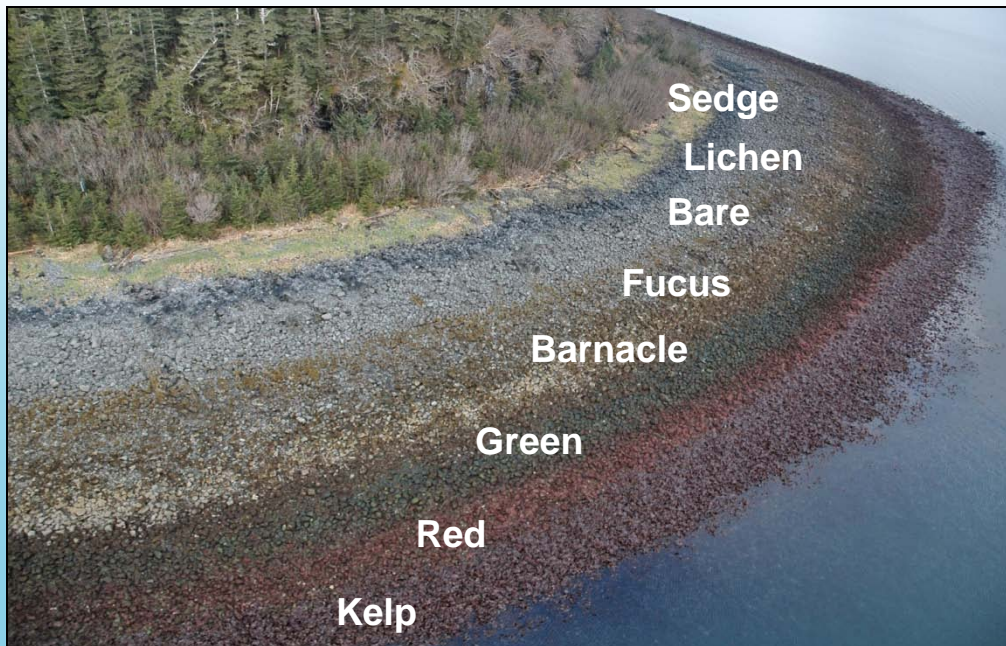
Biotic communities (“biobands”):



ShoreZone Method: Biobands



Biobands: assemblages having a characteristic color and across-shore elevation



**Different patterns with
different substrates**

ShoreZone Method: Biobands

Clues to community structure



**Red bioband =
assemblage of
many species**



ShoreZone Method: Biobands

Biology as indicators of exposure



Lichen

Fucus

Red

Kelp

= semi-protected

Sedge

Lichen

Fucus

Barnacle

Eelgrass

= protected

ShoreZone Protocols: Shore Types

Table A-2. Classification of shore types employed in ShoreZone mapping
(derived from the Howes et al. [1994] "BC Class" system in British Columbia)

SUBSTRATE	SEDIMENT	WIDTH	SLOPE	COASTAL CLASS	NO.
ROCK	N/A	WIDE (>30 m)	STEEP (>20°)	n/a	
			INCLINED (5-20°)	Rock Ramp, wide	1
			FLAT (<5°)	Rock Platform, wide	2
		NARROW (<30 m)	STEEP (>20°)	Rock Cliff	3
			INCLINED (5-20°)	Rock Ramp, narrow	4
		FLAT (<5°)	Rock Platform, narrow	5	
ROCK & SEDIMENT	GRAVEL	WIDE (>30 m)	STEEP (>20°)	n/a	
			INCLINED (5-20°)	Ramp with gravel beach, wide	6
			FLAT (<5°)	Platform with gravel beach, wide	7
		NARROW (<30 m)	STEEP (>20°)	Cliff with gravel beach	8
			INCLINED (5-20°)	Ramp with gravel beach	9
			FLAT (<5°)	Platform with gravel beach	10
	SAND & GRAVEL	WIDE (>30 m)	STEEP (>20°)	n/a	
			INCLINED (5-20°)	Ramp w gravel & sand beach, wide	11
			FLAT (<5°)	Platform with G&S beach, wide	12
		NARROW (<30 m)	STEEP (>20°)	Cliff with gravel/sand beach	13
INCLINED (5-20°)			Ramp with gravel/sand beach	14	
		FLAT (<5°)	Platform with gravel/sand beach	15	
SAND	WIDE (>30 m)	STEEP (>20°)	n/a		
		INCLINED (5-20°)	Ramp with sand beach, wide	16	
		FLAT (<5°)	Platform with sand beach, wide	17	
	NARROW (<30 m)	STEEP (>20°)	Cliff with sand beach	18	
		INCLINED (5-20°)	Ramp with sand beach, narrow	19	
		FLAT (<5°)	Platform with sand beach, narrow	20	
SEDIMENT	GRAVEL	WIDE (>30 m)	FLAT (<5°)	Gravel flat, wide	21
		NARROW (<30 m)	STEEP (>20°)	n/a	
			INCLINED (5-20°)	Gravel beach, narrow	22
			FLAT (<5°)	Gravel flat or fan	23
	SAND & GRAVEL	WIDE (>30 m)	STEEP (>20°)	n/a	
			INCLINED (5-20°)	n/a	
			FLAT (<5°)	Sand & gravel flat or fan	24
		NARROW (<30 m)	STEEP (>20°)	n/a	
			INCLINED (5-20°)	Sand & gravel beach, narrow	25
			FLAT (<5°)	Sand & gravel flat or fan	26
	SAND / MUD	WIDE (>30m)	STEEP (>20°)	n/a	
INCLINED (5-20°)			Sand beach	27	
FLAT (<5°)			Sand flat	28	
NARROW (<30m)		FLAT (<5°)	Mudflat	29	
		STEEP (>20°)	n/a		
		INCLINED (5-20°)	Sand beach	30	
		FLAT (<5°)	n/a		
ORGANICS	n/a	n/a	n/a	Estuaries	31
ANTHRO-POGENIC	Man-made	n/a	n/a	Man-made, permeable	32
		n/a	n/a	Man-made, impermeable	33
CHANNEL	Current	n/a	n/a	Channel	34
GLACIER	Ice	n/a	n/a	Glacier	35

Shore Type: Rock (BC Classes 1-5)

Southeast Alaska



Steep high cliff (Form "Cash"), fixed-wing aerial survey photo
Taiva Point, Lynn Canal (Unit 10/04/3200)



Low-tide, irregular rock platform with tidepools (Form "Pitp")
Yakobi Island (Unit 10/02/1632)

Shore Type: Rock and Sediment (BC Classes 6-20, continued)

Kodiak Archipelago



Wide (>30 m) platform (<5° slope) with gravel beach (BC Class 7)
Geese Channel (Unit 05/04/8011)



Steep cliff (>20°) with narrow (<30 m) gravel beach (BC Class 8)
Geese Channel (Unit 05/04/8030)

Shore Type: Glaciers (BC Class 35)

Southeast Alaska



Glaciers of Russel Fjord (Form "lg")

Northern Yakutat Bay (Unit 09/02/0145)
SE05_ML_4494.jpg



Glaciers of Tsaa Fjord, with high cliffs and waterfalls (Forms "lg," "Cash," and "Rm")

Icy Bay (Units 09/01/0345-0349)
SE05_ML_3976.jpg

ShoreZone: A Rigorous Geospatial Database

The screenshot displays the ArcMap interface with a map of a yellow landmass. A blue dotted line outlines a specific area on the landmass. The 'Layers' panel on the left shows the following layers:

- C:\Arc\Alaska_ShoreZone\PWS07_GIS\F
- pws07_rc_jun07_master_trackline
- pws07_unit_lines
- C:\Arc\Alaska_ShoreZone\PWS04_GIS\F
- C:\Arc\Alaska_ShoreZone\Herring
- C:\Arc\Alaska_ShoreZone\Herring\Bufile
- C:\Arc\Alaska_ShoreZone\Herring\PWS_
- C:\Arc\Alaska_ShoreZone\Shorelines\na
- ak_coast63poly_anad83
- C:\Arc\Alaska_ShoreZone\PWS07_GIS\F
- BioBand
- BioUnit
- Unit
- Xshr

The 'Attributes of pws07_unit_lines' table is displayed on the right, showing the following data:

REGION	AREAS	PHY_UNIT	PHY_IDENT	LEN
02	02	8309	020283090	7
02	02	8311	020283110	71
02	02	8312	020283120	22
02	02	8313	020283130	15
02	02	8314	020283140	64
02	02	8315	020283150	25
02	02	8318	020283180	20
02	02	8319	020283190	22
02	02	8320	020283200	14
02	02	8322	020283220	12
02	02	8323	020283230	27
02	02	8324	020283240	6
02	02	8325	020283250	12
02	02	8326	020283260	53
02	02	8327	020283270	58
02	02	8329	020283290	13
02	02	8331	020283310	7
02	02	8332	020283320	17
02	02	8333	020283330	13
02	02	8334	020283340	22
02	02	8335	020283350	6
02	02	8338	020283380	22
02	02	8339	020283390	21
02	02	8341	020283410	6
02	02	8342	020283420	50
02	02	8343	020283430	39
02	02	8344	020283440	19
02	02	8345	020283450	42
02	02	8346	020283460	36
02	02	8347	020283470	22
02	02	8348	020283480	10
02	02	8349	020283490	33

The status bar at the bottom right shows coordinates: 327498.738 1211687.066 Meters.

Summary Reports: Biobands - Eelgrass

The occurrence of each bioband mapped in Prince William Sound is summarized in Table 3.3 and Figure 3.4.

Table 3.3. Bioband abundances mapped in Prince William Sound.

Bioband Names	Code	Continuous		Patchy		Total (km)	% of Mapped
		(km)	%	(km)	%		
Dune Grass	GRA	1,467	26	845	15	2,312	41
Sedges	SED	241	4	163	3	404	7
Salt Marsh	PUC	960	17	803	14	1,763	31
Barnacle	BAR	3,445	62	1,393	25	4,838	87
Rockweed	FUC	3,486	62	1,385	25	4,871	87
Green Algae	ULV	3,011	54	1,748	31	4,759	85
Blue Mussel	BMU	188	3	745	13	933	16
Bleached Red Algae	HAL	437	8	866	16	1,303	24
Red Algae	RED	1,534	27	1,144	20	2,678	47
Alaria	ALA	452	8	246	4	698	12
Soft Brown Kelps	SBR	2,437	44	1,015	18	3,452	62
Dark Brown Kelps	CHB	161	3	132	2	293	5
Surfgrass	SUR	163	3	175	3	338	6
Eelgrass	ZOS	1,635	29	891	16	2,526	45
Dragon Kelp	ALF	5	<1	11	<1	16	<1
Bull Kelp	NER	74	1	47	1	121	2

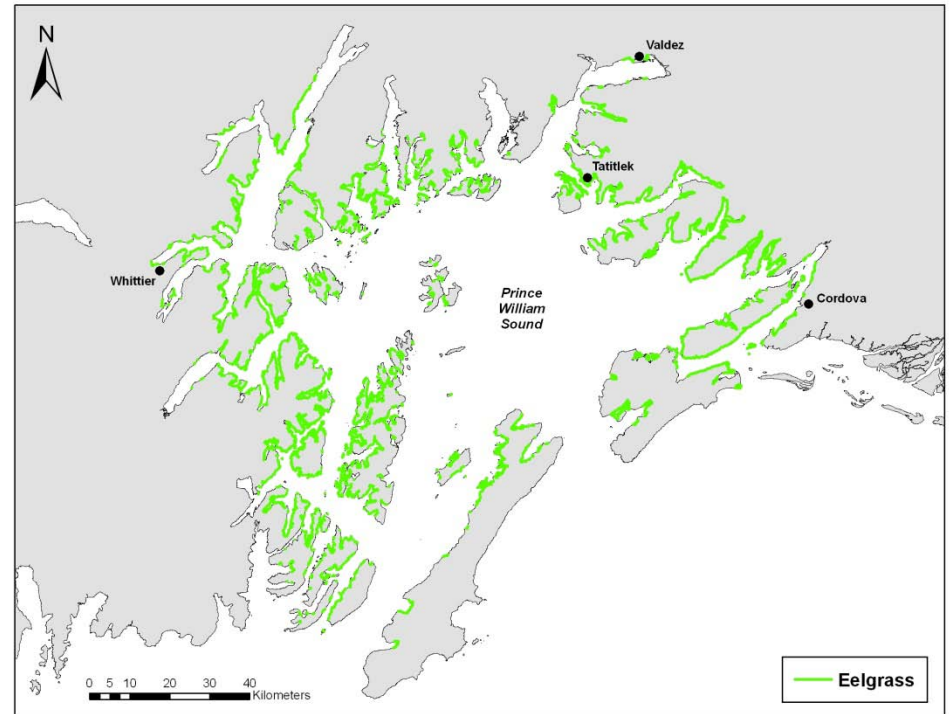
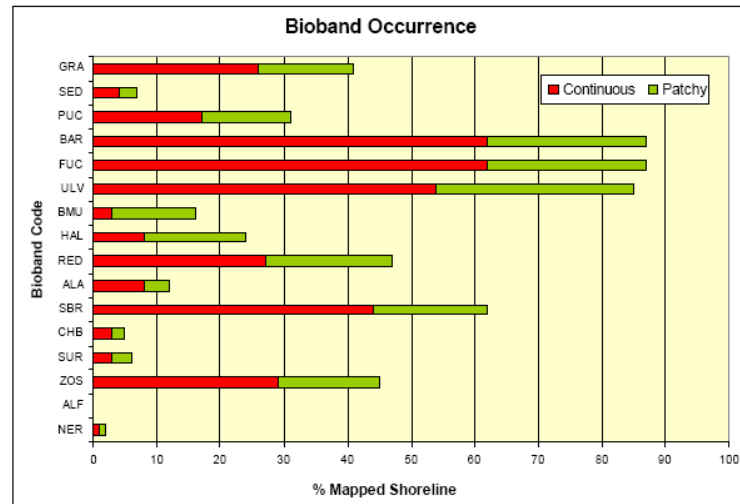


Figure 3.4. Occurrence of biobands mapped in Prince William Sound.

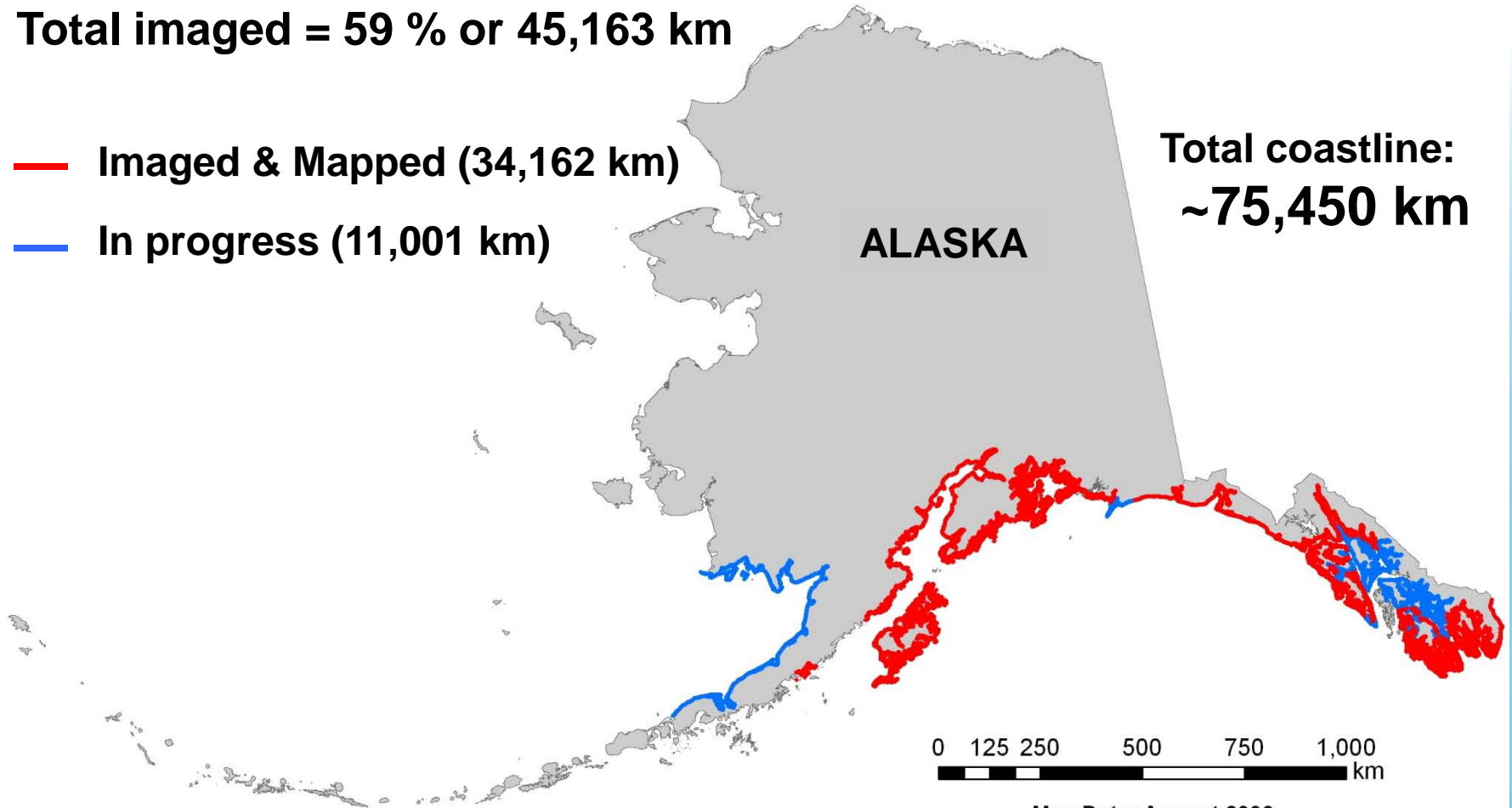
Alaska ShoreZone Progress (2009)

Total imaged = 59 % or 45,163 km

— Imaged & Mapped (34,162 km)

— In progress (11,001 km)

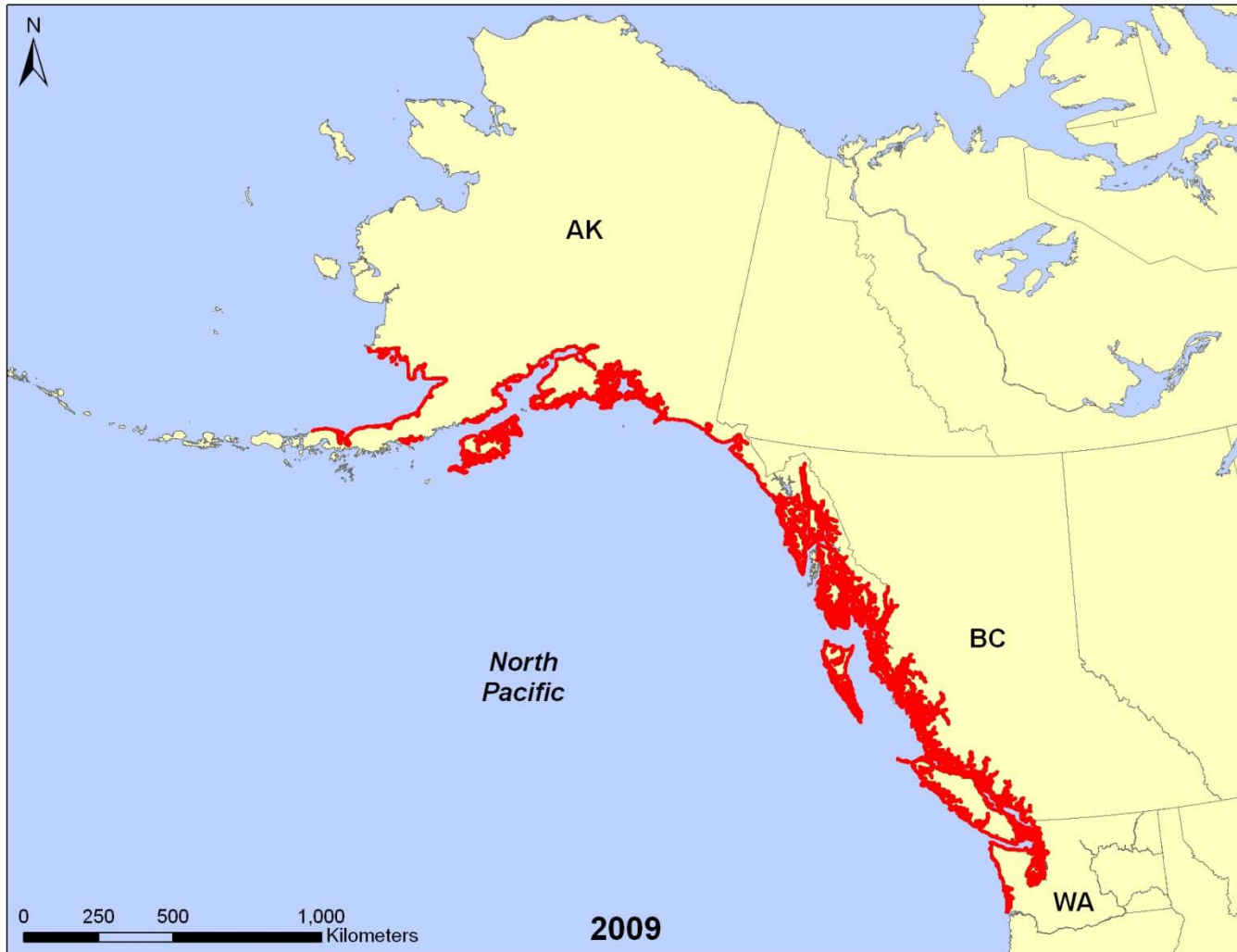
**Total coastline:
~75,450 km**



Map Date: August 2009

North Pacific ShoreZone:

Almost 100,000 km of contiguous coastline has been mapped from the Columbia River mouth to Bristol Bay, Alaska.



15 degrees
of
latitude

ShoreZone: Verification and Shore Stations

Verification Surveys



Shore Station Surveys



Applications of Alaska ShoreZone

- **First Responders**
- **Coastal Mgmt.**
- **Research**
- **Web products!**



Applications:

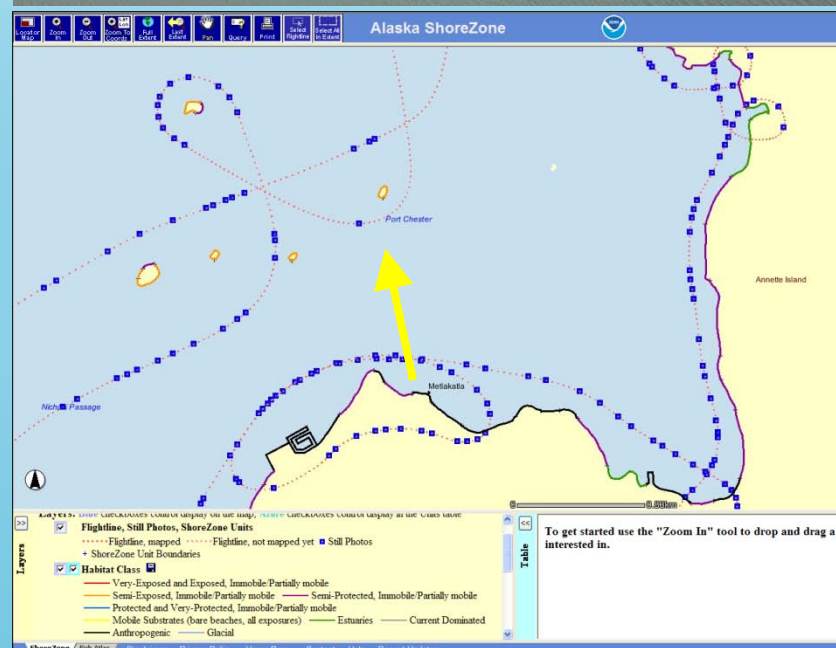
First Responders

Grounding of the ferry *Lituya*
Metlakatla Jan. 30, 2009



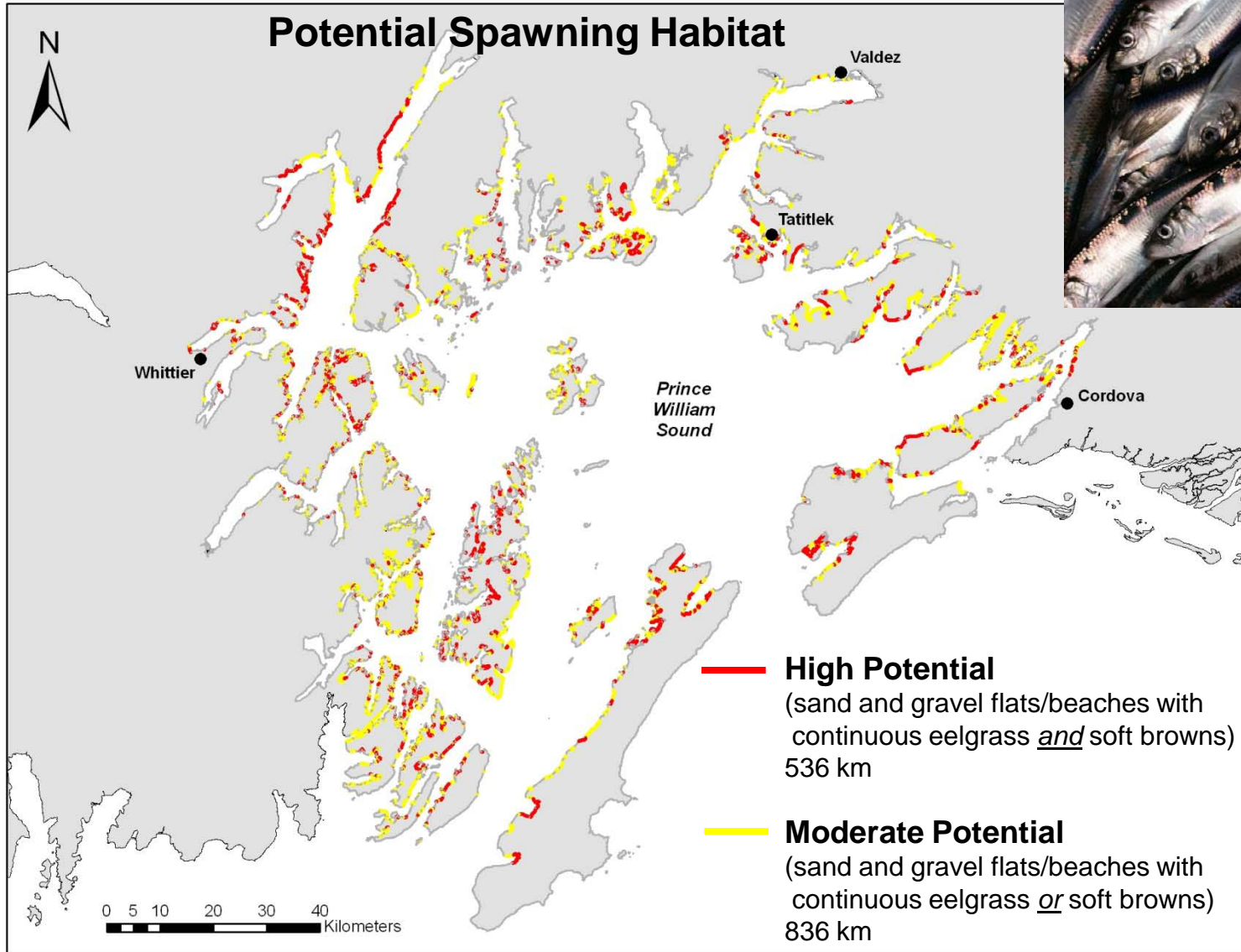
“.... *ShoreZone* provided valuable information prior to any response assets could arrive on scene. It was extremely helpful and we'll use it again next time.”

LT Chris Williammee, USGC
Incident Management Sector Juneau

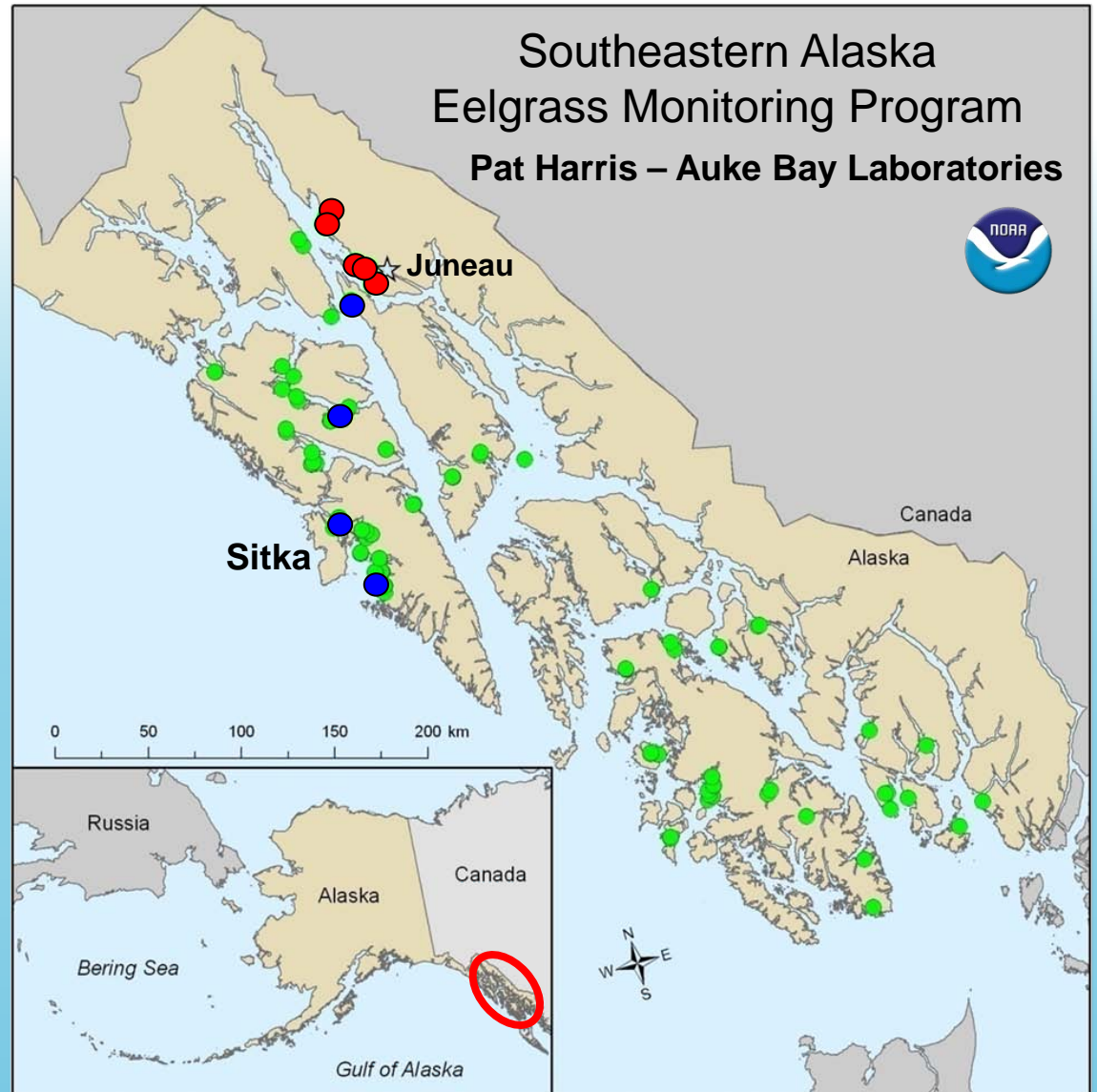
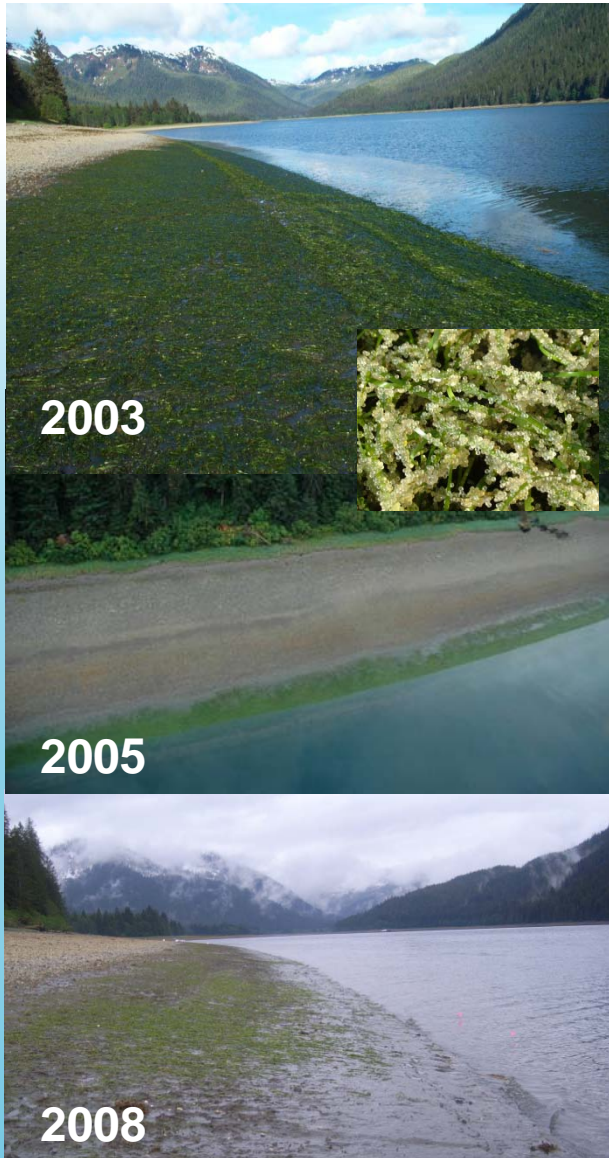


Applications:

Resource Management – Habitat Profiling for EFH



Applications: Research - monitoring



Applications: Invasive Species

Habitat Suitability Modeling

High risk areas for migration into SEAK waters



Salt Marsh Cordgrass, *Spartina*



European Green Crab,
Carcinus maenas

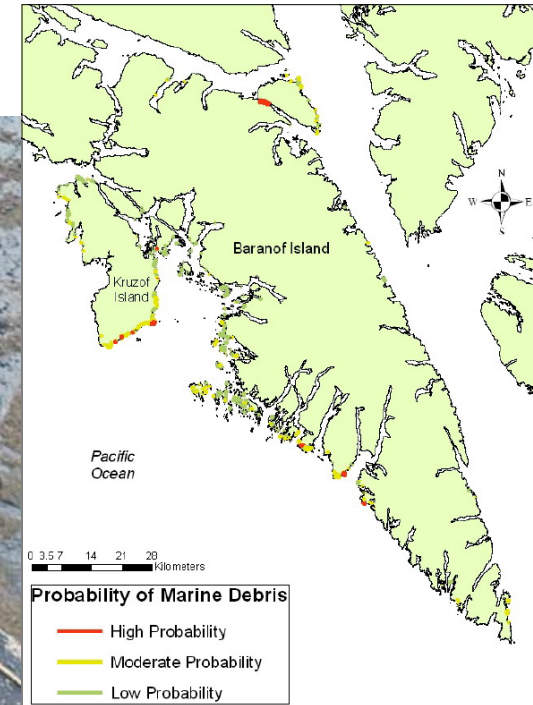
Green Crab Index



Linda Shaw - Habitat Conservation Division, Juneau AK
Coastal and Ocean Resources Inc.

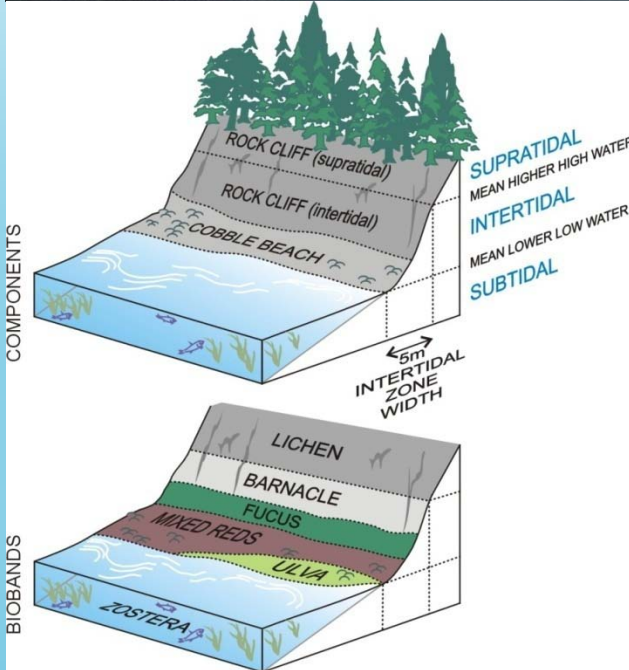
Applications: Marine Debris

Modeling catcher beaches



Applications: Marine Spatial Planning

ShoreZone



Crosswalk



Coastal and Marine Ecological Classification Standard (CMECS)



CMECS Structure

CMECS Version III broadly classifies the environment into aquatic settings, or systems differentiated by salinity, geomorphology, and depth. Within these systems are five underlying components that describe different aspects of the relevant ecology.

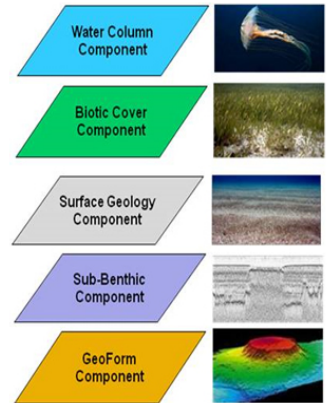
The Water Column Component- describes the structure, patterns and processes of the water column

The Biotic Cover Component- is a hierarchical classification describing the biological composition and cover of the coastal and marine benthos
The Surface Geology Component- describes the geological composition and environment of the upper few centimeters of benthic or coastal substrate, including the structural aspects of biogenic substrates such as coral reefs.

The Sub-Benthic Component- describes characteristics of the sediments and soils, providing more detailed information on the composition of the entire sediment column.

The GeoForm Component- describes the major geomorphic or structural characteristics of the coast and seafloor at various scales

These components provide a structured way to organize information about coastal and marine habitats and a standard terminology for describing them. They can be identified and mapped independently or



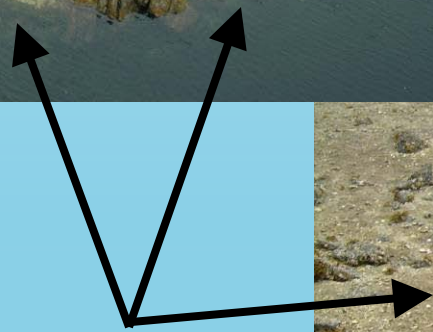
Applications:

Coastal Archaeology



Ancient Clam gardens

Fish traps



**Intertidal rock wall
Sitka Sound**



Nearshore Fish Atlas

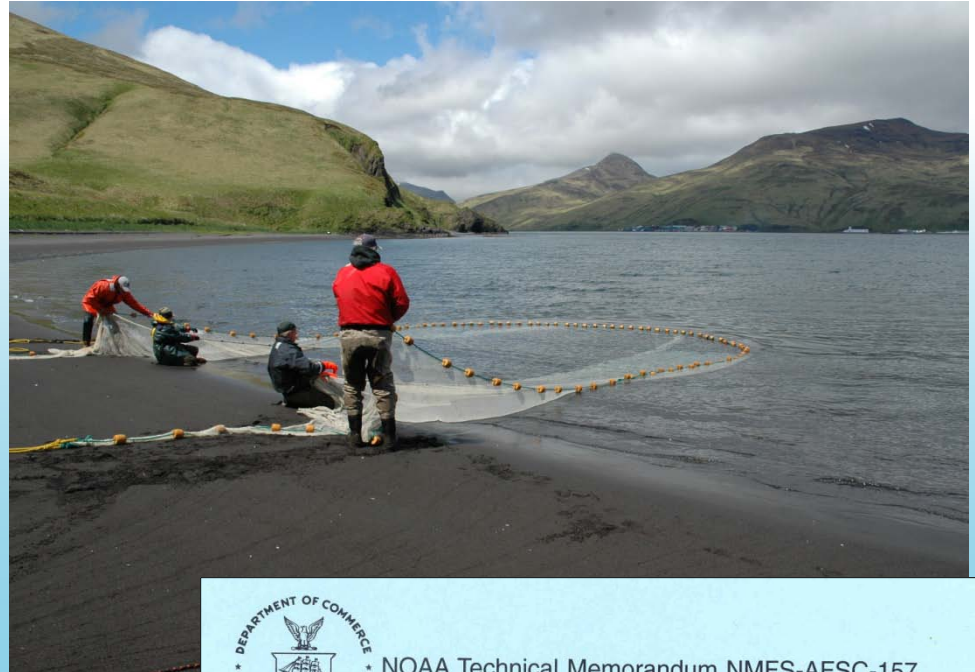
Fish distribution and habitat use



What is the Nearshore Fish Atlas?

An online database

- Spatially-explicit info on distribution & habitat use
- 1998 to present
- Integrated with online ShoreZone in 2006
- Dynamic
- Database contains:
 - 975 beach seine hauls
 - 669,409 fish
 - 104 fish species (25% FMP)
 - and growing each year



NOAA Technical Memorandum NMFS-AFSC-157

**An Atlas on the Distribution and
Habitat of Common Fishes in Shallow
Nearshore Waters of Southeastern Alaska**

by
S. W. Johnson, A. Darcie Neff, and J. F. Thedinga

Essential Fish Habitat (EFH)

- MSFCMA mandates the description of EFH for all life stages of all FMP spp.
- EFH = waters & substrates necessary for spawning, breeding, feeding, or growth.
- Identifying EFH requires info on distribution & habitat use; lacking for most FMP spp.



Shallow Nearshore Defined



Intertidal and subtidal habitats of brackish and saltwater which extend offshore to a depth of 10m

Why the shallow, nearshore?



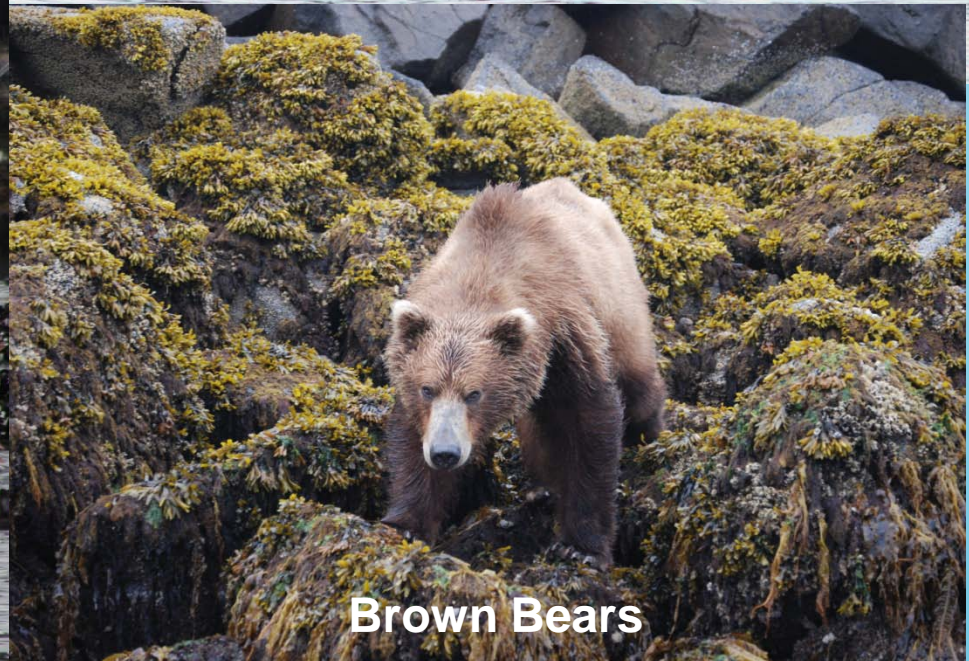
Spawning Pacific Herring



Humbback Whales



Sea Ducks



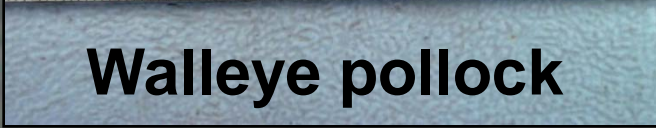
Brown Bears

Important for FMP species - especially forage fishes

Pacific cod



Walleye pollock



Chum salmon



Pacific herring



Capelin



Regional Study Areas of Alaska



Arctic



Prince William Sound

Aleutian Islands



Cook Inlet

Southeastern



Methods - sampling different habitats



Seasonal Sampling – “Deadliest Catch”



Diel Sampling



Fish Catch



Habitat



Applications: managers can track changes in fish distribution and habitat that may result from climate change

Repository for long-term datasets

- **Changes in species composition**
- **Relative abundance**



Integrated Web Products

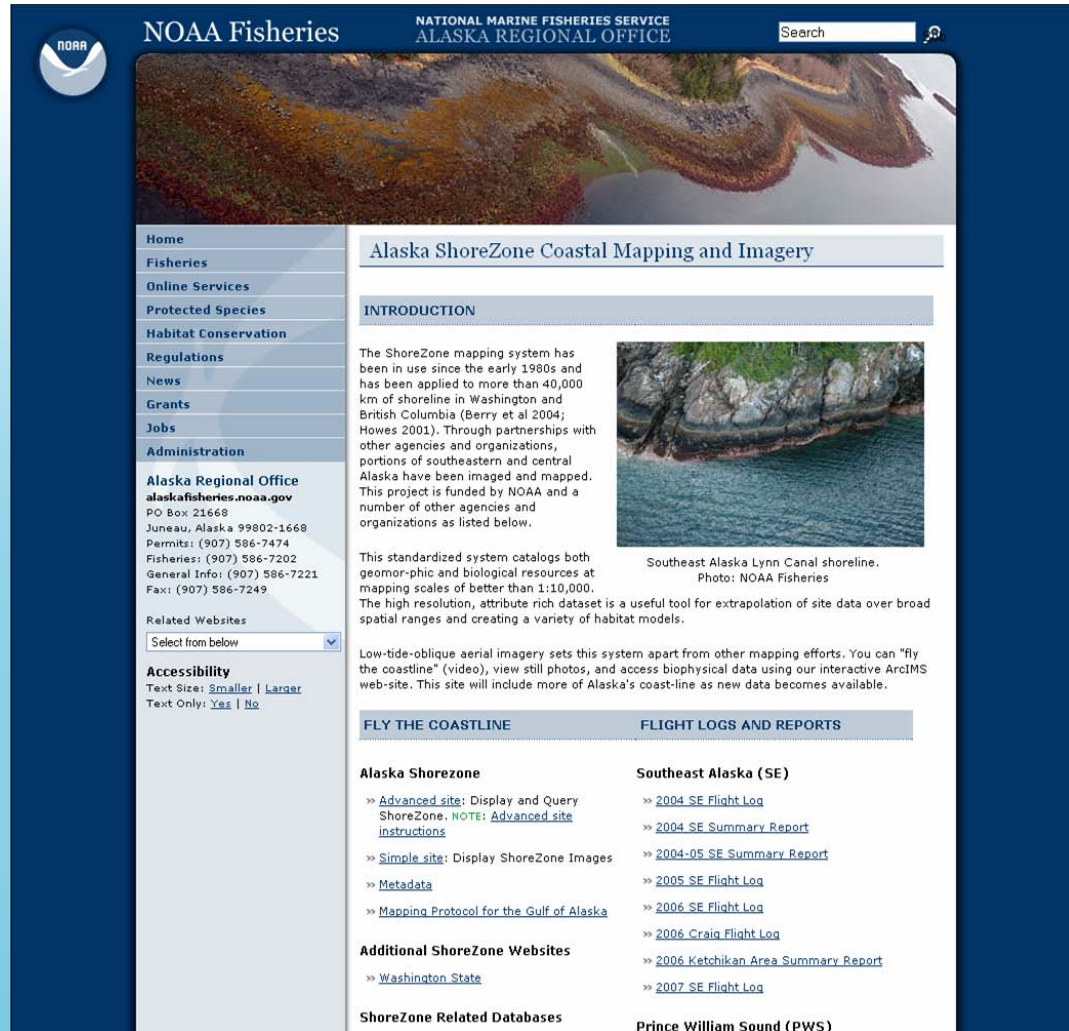
“ To make physically and intellectually accessible ”



Alaska ShoreZone Online

www.alaskafisheries.noaa.gov/maps/szintro

- A collaboration between SZ partners and NOAA AK Regional Office (Steve Lewis)
- Website is constantly being updated
- New features are being added
- Terabytes of information ~ 3 million images




NOAA Fisheries NATIONAL MARINE FISHERIES SERVICE ALASKA REGIONAL OFFICE

Search

Alaska ShoreZone Coastal Mapping and Imagery

INTRODUCTION

The ShoreZone mapping system has been in use since the early 1980s and has been applied to more than 40,000 km of shoreline in Washington and British Columbia (Berry et al 2004; Howes 2001). Through partnerships with other agencies and organizations, portions of southeastern and central Alaska have been imaged and mapped. This project is funded by NOAA and a number of other agencies and organizations as listed below.



Southeast Alaska Lynn Canal shoreline.
Photo: NOAA Fisheries

This standardized system catalogs both geomorphic and biological resources at mapping scales of better than 1:10,000. The high resolution, attribute rich dataset is a useful tool for extrapolation of site data over broad spatial ranges and creating a variety of habitat models.

Low-tide-oblique aerial imagery sets this system apart from other mapping efforts. You can "fly the coastline" (video), view still photos, and access biophysical data using our interactive ArcIMS web-site. This site will include more of Alaska's coast-line as new data becomes available.

FLY THE COASTLINE

FLIGHT LOGS AND REPORTS

Alaska Shorezone

- » [Advanced site](#): Display and Query ShoreZone. NOTE: [Advanced site instructions](#)
- » [Simple site](#): Display ShoreZone Images
- » [Metadata](#)
- » [Mapping Protocol for the Gulf of Alaska](#)

Additional ShoreZone Websites

- » [Washington State](#)

ShoreZone Related Databases

Southeast Alaska (SE)

- » [2004 SE Flight Log](#)
- » [2004 SE Summary Report](#)
- » [2004-05 SE Summary Report](#)
- » [2005 SE Flight Log](#)
- » [2006 SE Flight Log](#)
- » [2006 Craig Flight Log](#)
- » [2006 Ketchikan Area Summary Report](#)
- » [2007 SE Flight Log](#)

Prince William Sound (PWS)

Interactive Geospatial Database Online

The screenshot displays the Alaska ShoreZone web application. At the top, a navigation bar includes icons for Logoff Map, Zoom In, Zoom Out, Zoom To Coords, Full Extent, Last Extent, Pan, Query, Print, Select Rightline, and Select All In Extent. The main title is "Alaska ShoreZone".

The central focus is the "ShoreZone Query Engine" window. It is titled "Step 1: Select Unit attributes" and contains an "Exit" button. The main area of the window displays a complex SQL query:

```
((*BC_CLASS=24) AND (*PUC Is Not Null) AND (*ZOS Is Not Null) AND (*HAB_CLASS='43' Or *HAB_CLASS='53' Or *HAB_CLASS='63' Or *HAB_CLASS='33')) OR ((*BC_CLASS=24) AND (*GRA Is Not Null) AND (*ZOS Is Not Null) AND (*HAB_CLASS='43' Or *HAB_CLASS='53' Or *HAB_CLASS='63' Or *HAB_CLASS='33')) OR ((*BC_CLASS=24) AND (*SED Is Not Null) AND (*ZOS Is Not Null) AND
```

Below the query is a "Submit SQL Code" button. To the right, under "Sample Queries", a dropdown menu is open, showing "GreenCrab_Delphi (w/o HabClass)" and "GreenCrab_Delphi".

On the left side of the interface, there is a "Layers" panel with a list of map layers and their status (checked/unchecked):

- Blue che
- Flightli
- + Shore
- Habitat
- Biologi
- Oil Res
- Splash
- Salt ma
- Upper i
- Lower i
- Seagra
- S
- E
- Canopy


Below the layers panel, there is a list of attributes with checkboxes:

- Habitat Class
- BC Class
- Environmental Sensivity Index
- Biological Wave Exposure
- Oil Residency Index
- SplashZone
- Salt marsh vegetation
- Marsh grasses, herbs, sedges
- Dune Grass
- Sedges

At the bottom of the application, a footer contains the following text: "ShoreZone / Fish Atlas / Disclaimer / Privacy Policy / Home Page / Contact / Help / Recent Updates".


Nearshore Fish Atlas Online

www.alaskafisheries.noaa.gov/habitat/fishatlas



NOAA Fisheries
NATIONAL MARINE FISHERIES SERVICE
ALASKA REGIONAL OFFICE

Search



Nearshore Fish Atlas of Alaska


NEARSHORE FISH PHOTOS

The following is a partial list of species captured, mostly by beach seining. A few species (e.g., Pacific halibut, yelloweye rockfish), were captured by jigging; jig catch data will be included in a later update of this website. The photo catalog will be updated as more fish photos become available. More information about the species may be accessed through the [Fish Atlas database](#).


cods - Gadidae	ronquils - Bathymasteridae
» Arctic cod (<i>Boreogadus saida</i>)	» Northern ronquil (<i>Ronquillus jordani</i>)
» Pacific cod (<i>Gadus macrocephalus</i>)	» Searcher (<i>Bathymaster signatus</i>)
» Saffron cod (<i>Eleginus gracilis</i>)	» Smallmouth ronquil (<i>Bathymaster leurolepis</i>)
» Walleye pollock (<i>Theragra chalcogramma</i>)	
fathead sculpins - Psychrolutidae	sailfin sculpins - Hemitripterae
» Soft sculpin (<i>Psychrolutes sigalutes</i>)	» Crested sculpin (<i>Blepsias bilobus</i>)
	» Sailfin sculpin (<i>Nautichthys oculoasciatus</i>)
gobies - Gobiidae	» Silverspotted sculpin (<i>Blepsias cirrhosus</i>)
» Bay goby (<i>Lepidogobius lepidus</i>)	
» Blackeye goby (<i>Rhinogobiops nicholsii</i>)	salmonids - Salmonidae
greenlings - Hexagrammidae	» Arctic cisco (<i>Coregonus autumnalis</i>)
» Juvenile greenling (<i>Hexagrammidae</i>)	» Chinook salmon (<i>Oncorhynchus tshawytscha</i>)
» Kelp greenling (<i>Hexagrammos decagrammus</i>)	» Chum salmon (<i>Oncorhynchus keta</i>)
» Lingcod (<i>Ophiodon elongatus</i>)	» Coho salmon (<i>Oncorhynchus kisutch</i>)
» Masked greenling (<i>Hexagrammos octogrammus</i>)	» Cutthroat trout (<i>Oncorhynchus clarkii</i>)
» Painted greenling (<i>Oxylebius pictus</i>)	» Dolly Varden (<i>Salvelinus malma</i>)
» Rock greenling (<i>Hexagrammos lagocephalus</i>)	» Least cisco (<i>Coregonus sardinella</i>)
» Whitespotted greenling (<i>Hexagrammos stelleri</i>)	» Pink salmon (<i>Oncorhynchus gorbuscha</i>)
gunnels - Pholidae	» Sockeye salmon (<i>Oncorhynchus nerka</i>)
	» Steelhead trout (<i>Oncorhynchus mykiss</i>)

http://mapping.fakr.noaa.gov/?theDB=FishAtlas_de...


Common name: **Saffron cod**
Scientific name: *Eleginus gracilis*
Family: cods - Gadidae




juvenile (265 mm)



adult (365 mm)



juvenile (138 mm)



young-of-the-year (75 mm)

Nearshore Fish Atlas Online

Locator Map
Zoom In
Zoom Out
Zoom To Coordinates
Full Extent
Last Extent
Pan
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Nearshore Fish Atlas of Alaska

Chichagof Island

Crab Bay

[Atlas Home](#)

Search Database

Regions

Fish Distribution

Habitat Distribution

Locales

St. James Bay

St. John Baptist Bay

Steamer Bay

Sylburn Harbor

Tenakee Inlet

Tenakee Springs

Habitat key

- Bedrock
- Eelgrass
- Kelp
- Sand-Gravel

Layers

- Flightline, Still Photos, ShoreZone Units
 - Flightline, mapped
 - Flightline, not mapped yet
 - Still Photos
 - + ShoreZone Unit Boundaries
- Fish Atlas Locales and Sites
 - ▢ Locales
 - Bedrock sites
 - Eelgrass sites
 - Kelp sites
 - Sand-Gravel sites
- Habitat Class
- Biological Wave Exposure
- Oil Residency Index
- SplashZone
- + Salt marsh vegetation
- + Upper intertidal biobands
- + Lower intertidal biobands
- Seagrasses
 - - - Patchy
 - Continuous
- Surfgrass

0 ————— 0.00km

Tenakee Springs, southeastern Alaska

[Start Over](#) [Back](#)

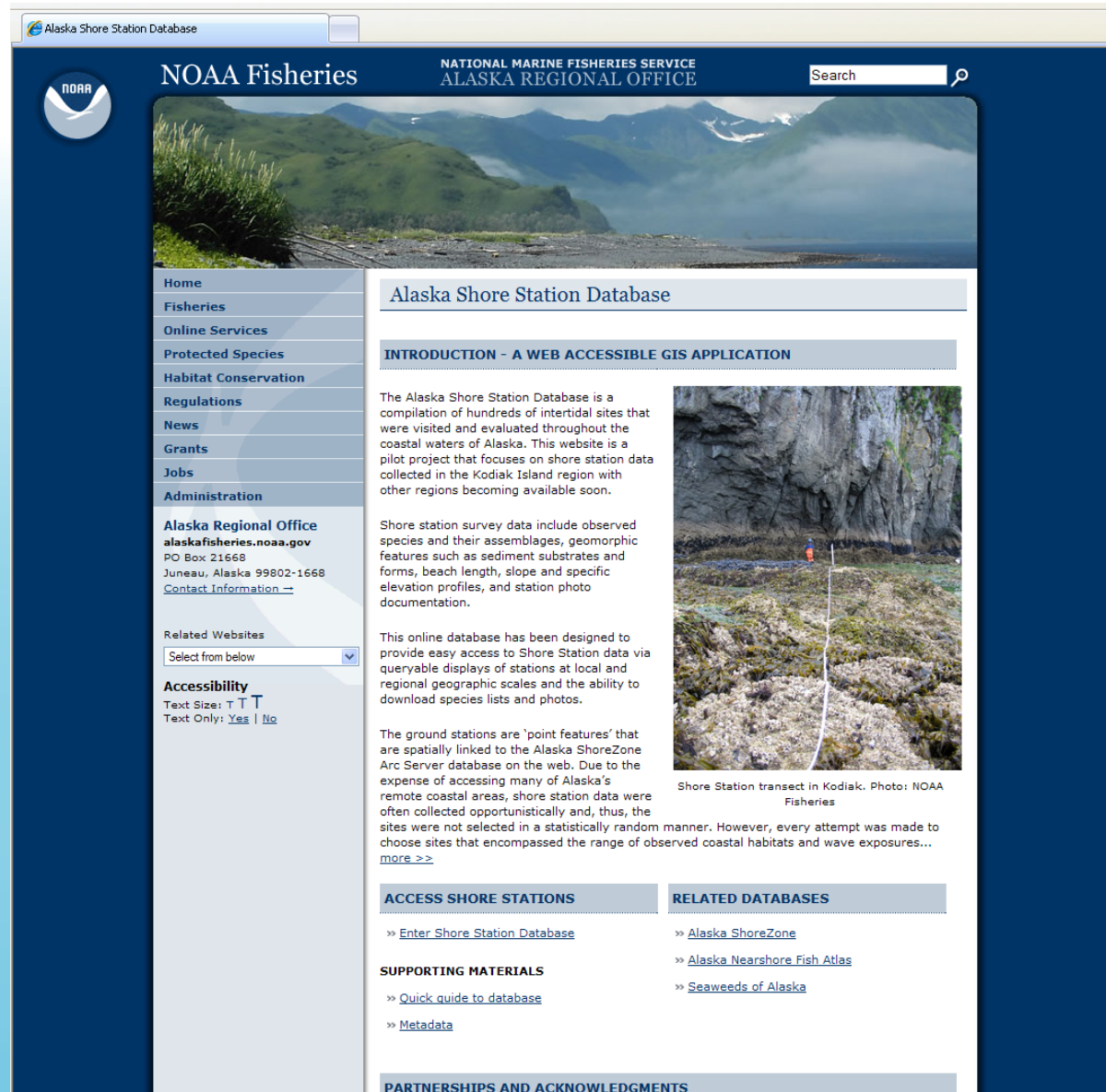
<input checked="" type="checkbox"/>	Site	SubLocale	Latitude	Longitude	Habitat	# Species	Catch	Site [▲]
<input checked="" type="checkbox"/>	B01		57.7387	135.2709	Eelgrass	19	815	
<input checked="" type="checkbox"/>	B02		57.7390	135.1819	Kelp	7	52	
<input checked="" type="checkbox"/>	B03		57.7550	135.1129	Bedrock	8	809	
<input checked="" type="checkbox"/>	B03		57.7789	135.1319	Bedrock	1	1	
<input checked="" type="checkbox"/>	B04		57.7775	135.1272	Bedrock	2	2	
<input checked="" type="checkbox"/>	B07		57.7742	135.1981	Bedrock	0	0	
<input checked="" type="checkbox"/>	B08		57.7742	135.1981	Bedrock	4	10	
<input checked="" type="checkbox"/>	B17	Crab Bay	57.7364	135.3875	Eelgrass	24	1,163	
<input checked="" type="checkbox"/>	B18	Crab Bay	57.7367	135.3836	Eelgrass	25	3,287	
<input checked="" type="checkbox"/>	B18		57.7750	135.1011	Bedrock	0	110	

[Download table](#)

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Shore Station Database

- A collaboration between NOAA Fisheries and Cook Inlet Regional Citizens Advisory Council
- Hundreds of stations throughout Gulf of Alaska.
- On the ground physical measurements and biological inventory.
- Identifies regional differences.



Alaska Shore Station Database

NOAA Fisheries NATIONAL MARINE FISHERIES SERVICE ALASKA REGIONAL OFFICE

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Alaska Regional Office
alaskafisheries.noaa.gov
PO Box: 21668
Juneau, Alaska 99802-1668
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Select from below

Accessibility
Text Size: T T T
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Alaska Shore Station Database


INTRODUCTION - A WEB ACCESSIBLE GIS APPLICATION

The Alaska Shore Station Database is a compilation of hundreds of intertidal sites that were visited and evaluated throughout the coastal waters of Alaska. This website is a pilot project that focuses on shore station data collected in the Kodiak Island region with other regions becoming available soon.

Shore station survey data include observed species and their assemblages, geomorphic features such as sediment substrates and forms, beach length, slope and specific elevation profiles, and station photo documentation.

This online database has been designed to provide easy access to Shore Station data via queryable displays of stations at local and regional geographic scales and the ability to download species lists and photos.

The ground stations are 'point features' that are spatially linked to the Alaska ShoreZone Arc Server database on the web. Due to the expense of accessing many of Alaska's remote coastal areas, shore station data were often collected opportunistically and, thus, the sites were not selected in a statistically random manner. However, every attempt was made to choose sites that encompassed the range of observed coastal habitats and wave exposures... [more >>](#)



Shore Station transect in Kodiak. Photo: NOAA Fisheries

ACCESS SHORE STATIONS

[» Enter Shore Station Database](#)

RELATED DATABASES

[» Alaska ShoreZone](#)
[» Alaska Nearshore Fish Atlas](#)
[» Seaweeds of Alaska](#)

SUPPORTING MATERIALS

[» Quick guide to database](#)
[» Metadata](#)

PARTNERSHIPS AND ACKNOWLEDGMENTS

Shore Station Database – new Arc Server

Alaska ShoreZone

Location: 152° 22.096' W 58° 37.861' N

Tools: Zoom In, Zoom Out, Pan, Full Extent, Back, Forward, Query

Shore Station -- Search Database

Regions, Locale Groups, Stations: KDK_05_013, Biota, Biobands

Shore Stations Home

Shore Stations: Station KDK_05_013

KDK_05_013; Shuyak Island, Peralvalnie Islands, Peralvalnie Passage; 58deg 38 N 152deg 21.8 W
Exposed; Ramp with gravel beach; May 23, 2005

Scientific Name	Common Name	Abun
<i>Acmaea mitra</i>	white capped limpet	C
Acrosiphonia coalita	Green Rope	F
Acrosiphonia duriuscula	Northern Green Rope	R
<i>Acrosiphonia</i> sp.	filamentous green algae	F
Alaria marginata	Ribbon Kelp	A
<i>Amphiporus imparispinosus</i>	flesh ribbon worm	F
Analiplus japonicus	Bottlebrush Seaweed	R
<i>Anthopleura xanthogrammica</i>	giant green anemone	F
<i>Aplidium</i> sp.	tunicate	C
Asciacea	tunicate	C
<i>Balanus glandula</i>	acorn barnacle	C
<i>Bossiella</i> sp.	winged coralline red alga	F

Across-shore PROFILE

PHOTOS

Download

Back

Rows restricted to:

- Algae and other plants
- Invertebrates and other animals
- All Species

Include Bioband columns [About biobands](#)

Shore Stations: Station KDK_05_013 Photos

Photo 1/24

Seaweeds of Alaska

Fucus distichus subsp. *evanescentes*

Rockweed

Authority: C. Agardh & T. Powell
North Pacific Distribution: Arctic Ocean, Bering Sea and Alaskan In. Alaska to central California, Japan, Russia.

Phylum: Ochrophyta
Class: Phaeophyceae
Order: Fucales
Family: Fucales

Former Scientific Names:
Fucus perfoliatus, *F. evanescentes*

Description: This is the common and abundant strand species in a collection to medium brown, with a abundant habitat. However, on shallow rocks with middle, which repeatedly search more or less equally (abundant branching) and distinct or habitat (specimens) or specimens nearby. Individuals grow up to 60 cm (20 in) tall. This perennial can dominate high to low intertidal rock from relative to semi-exposed habitats. Rockweed is very tolerant of fresh water and freezing temperatures.

Comments:
Fucus perfoliatus is a synonym of this species, whether this subspecies also occurs in the Arctic and western South Atlantic regions (Australia).

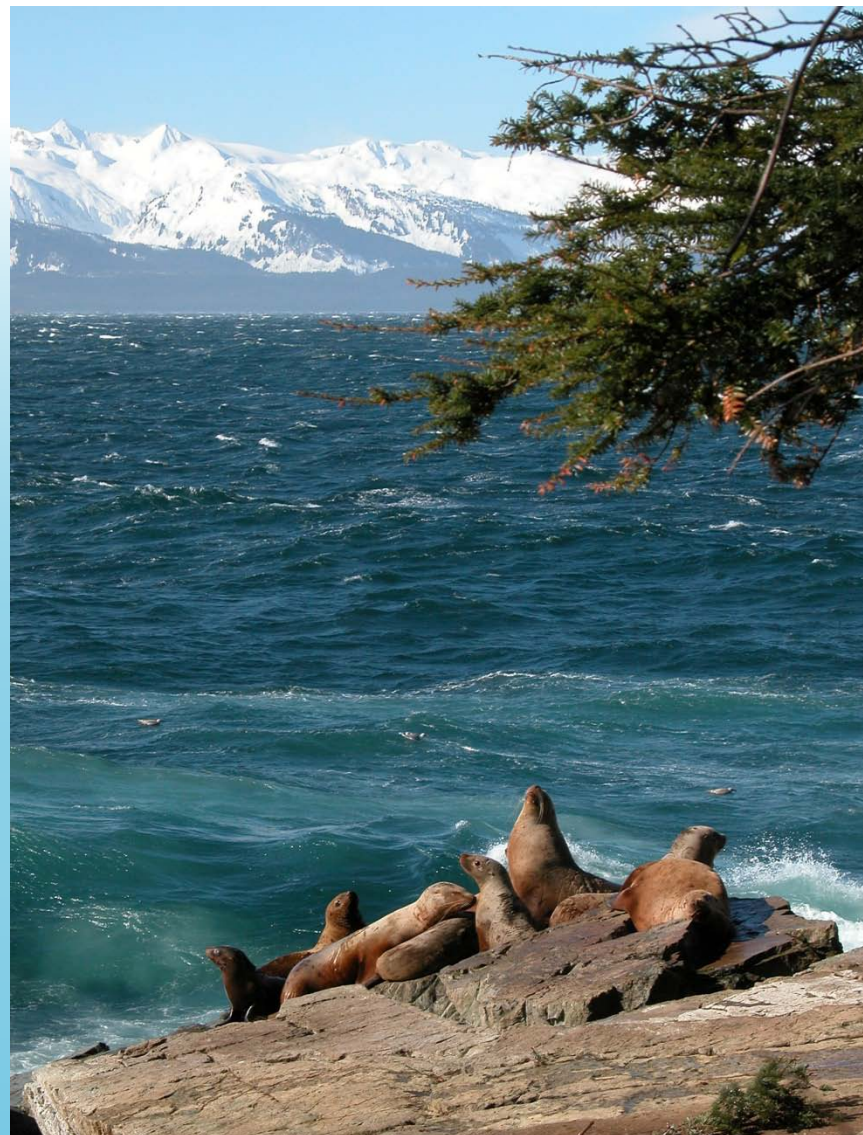
Site Settings

Start Over

Layers: Query Layers, ShoreZone Layers, Shore Station Layers, Virtual Earth, Base Layers


Who cares / Who benefits?

- **First Responders**
NOAA Hazmat, USCG, etc.
- **Habitat Managers**
EFH consults, ESA, etc.
- **Scientists**
Monitoring, new species, etc.



Exxon Valdez oil spill revisited with ShoreZone

Alaska ShoreZone

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Map Location: 146° 43.383' W 60° 53.628' N

Layers

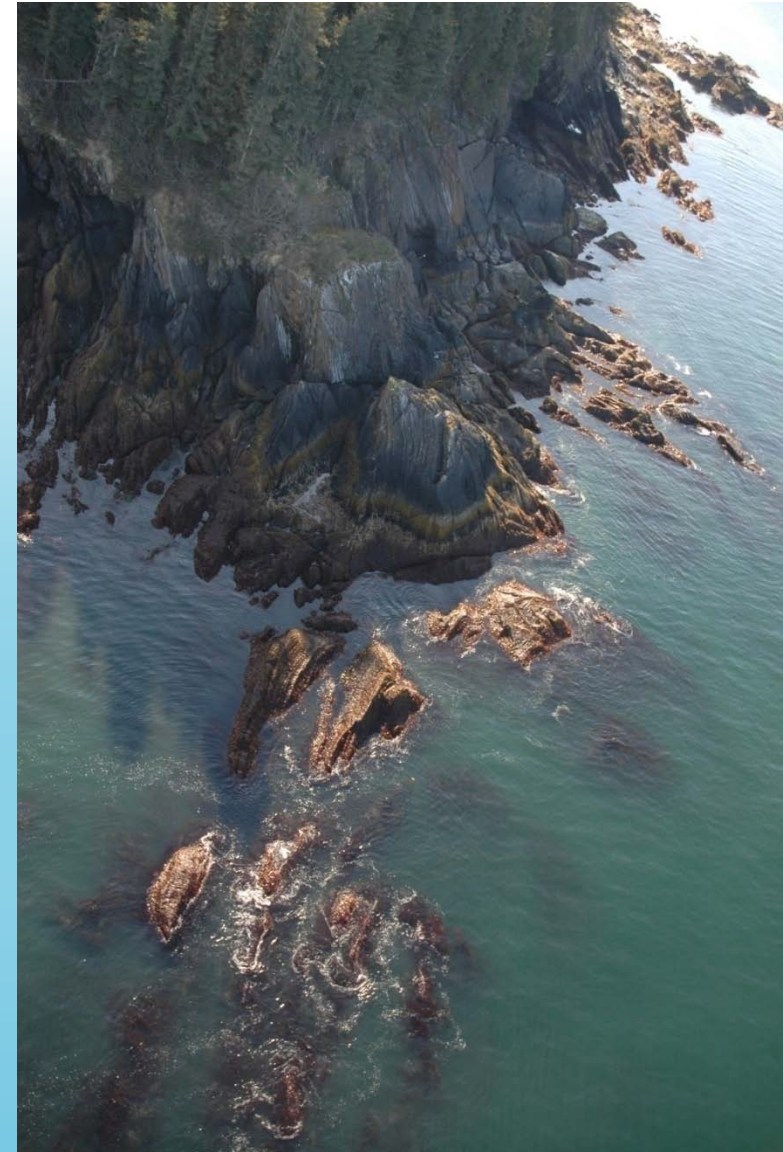
- Habitat Class
- Biological Wave Exposure
- Oil Residency Index (ORI)
- BC Class
- Environmental Sensitivity Index (ESI)
- BioBands
 - SplashZone
 - SALT MARSH VEGETATION BioBands
 - Marsh grasses, herbs, sedges
 - Dune Grass
 - Sedges
 - UPPER INTERTIDAL BioBands
 - Rockweed
 - Blue Mussels
 - LOWER INTERTIDAL BioBands
 - Red Algae
 - Alaria
 - Soft Brown Kelp
 - Dark Brown Kelp
 - SEAGRASS BioBands
 - Surfgrass
 - Eelgrass
 - CANOPY KELP BioBands
 - Dragon Kelp
 - Giant Kelp
 - Bull Kelp
 - Barnacles
 - Green Algae
 - Bleached Red Algae

Tools

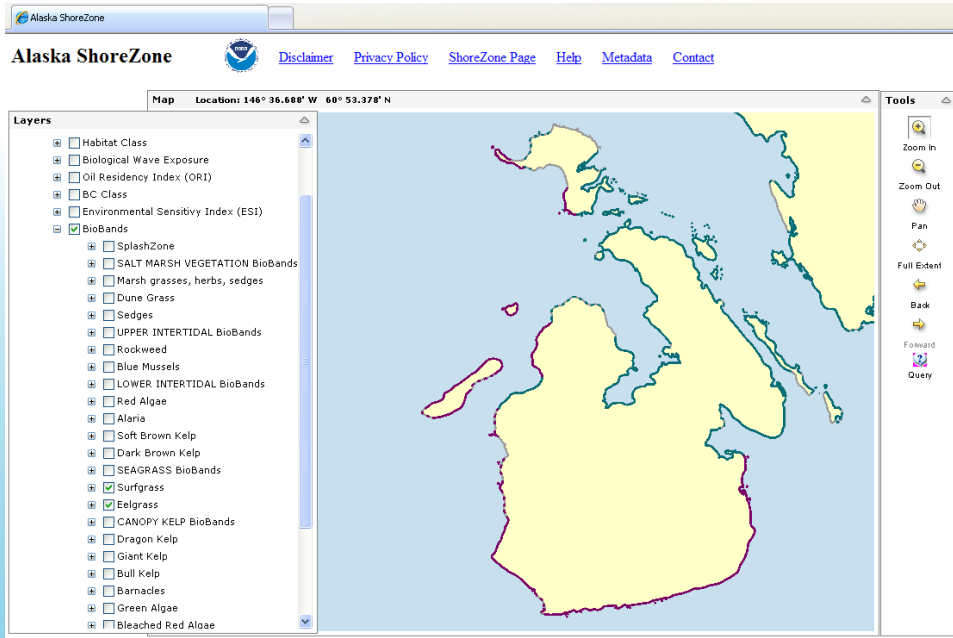
- Zoom In
- Zoom Out
- Pan
- Full Extent
- Back
- Forward
- Query



- **Oil Residency Index**



ShoreZone – a tool for many users

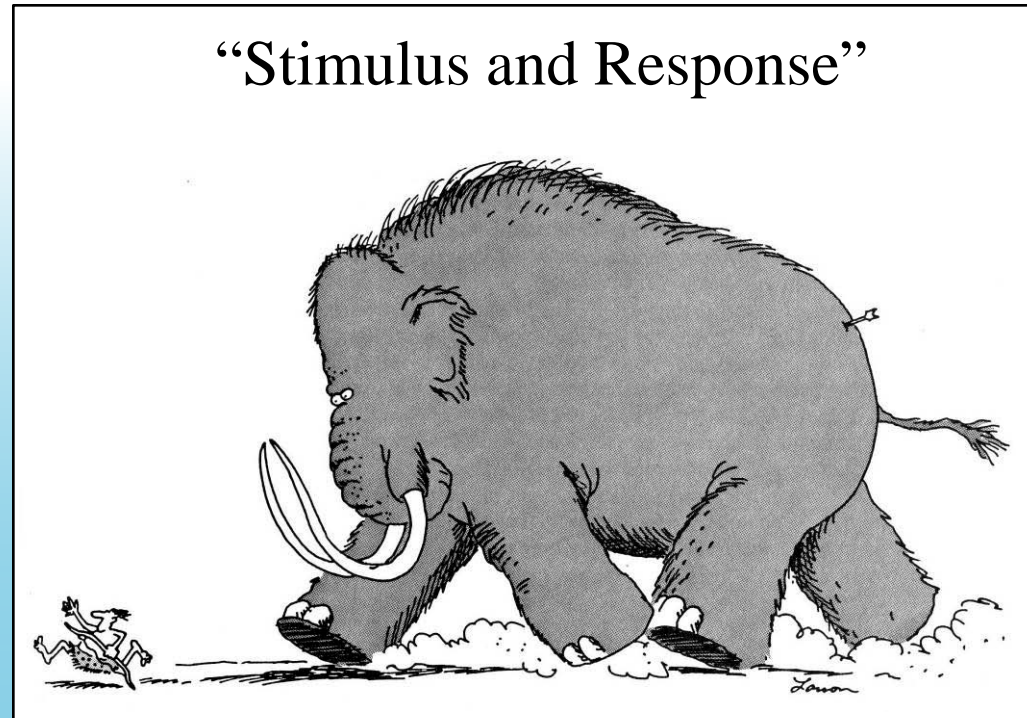


- **Sensitive Habitats**



Alaska ShoreZone – Future Needs

- **Continue mapping**
- **Web: add server nodes**
 - New Arc Server
 - GINA
 - Google Earth?
- **Communication**
 - tutorials - online & offline
- **Develop new applications**
 - first responder tools
 - International datasets



G. Larson – Far Side

- **Secure Funding**

Thank You – www.alaskafisheries.noaa.gov/maps



Alaska Fisheries Science Center
NATIONAL MARINE FISHERIES SERVICE – NOAA FISHERIES



NOAA Fisheries

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Habitat Conservation Division