



NOAA

# NOAA's Arctic Activities from a Hydrographic and Fleet Perspective

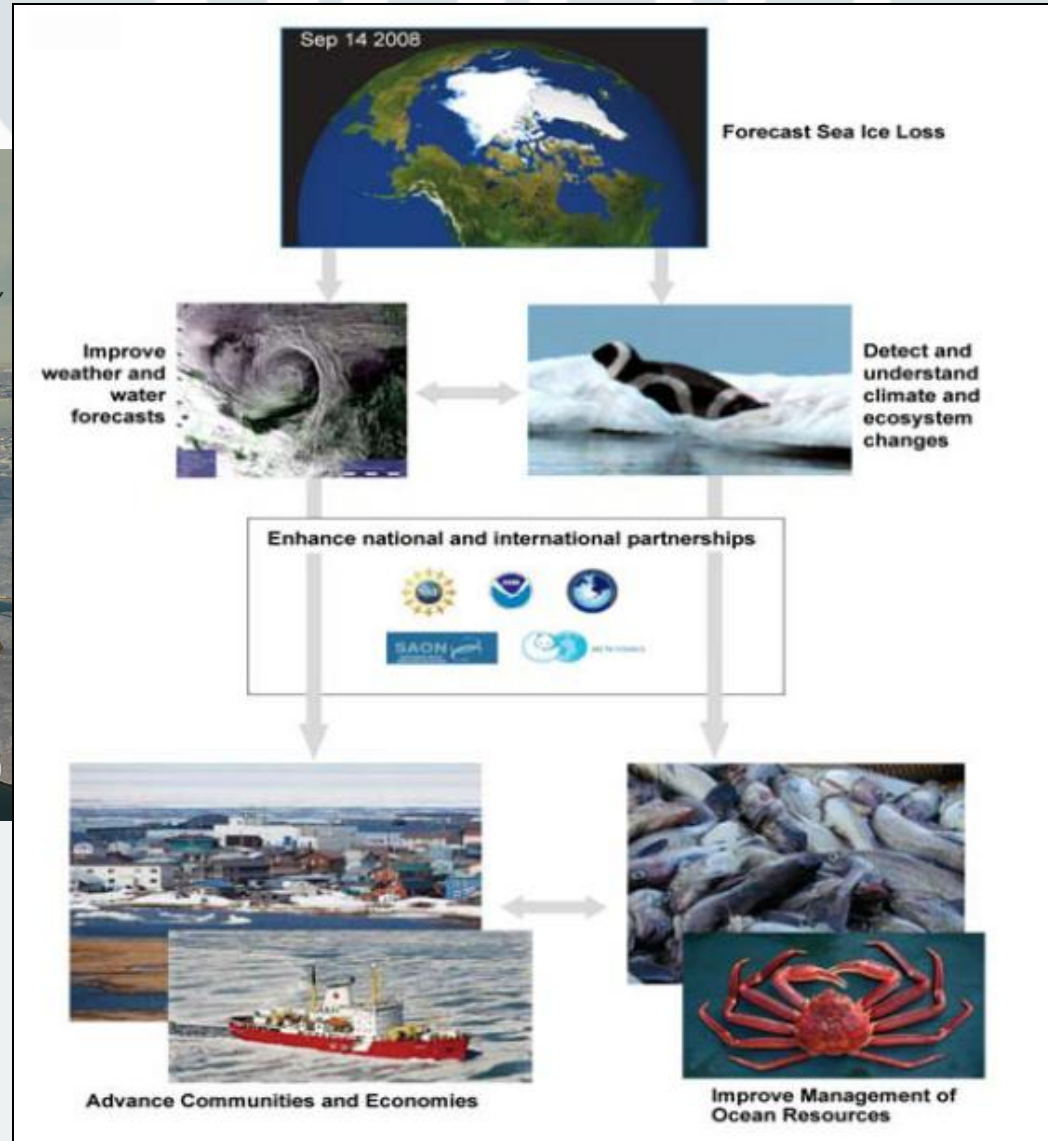
**LCDR David Zezula**

Executive Officer, NOAA Ship Fairweather

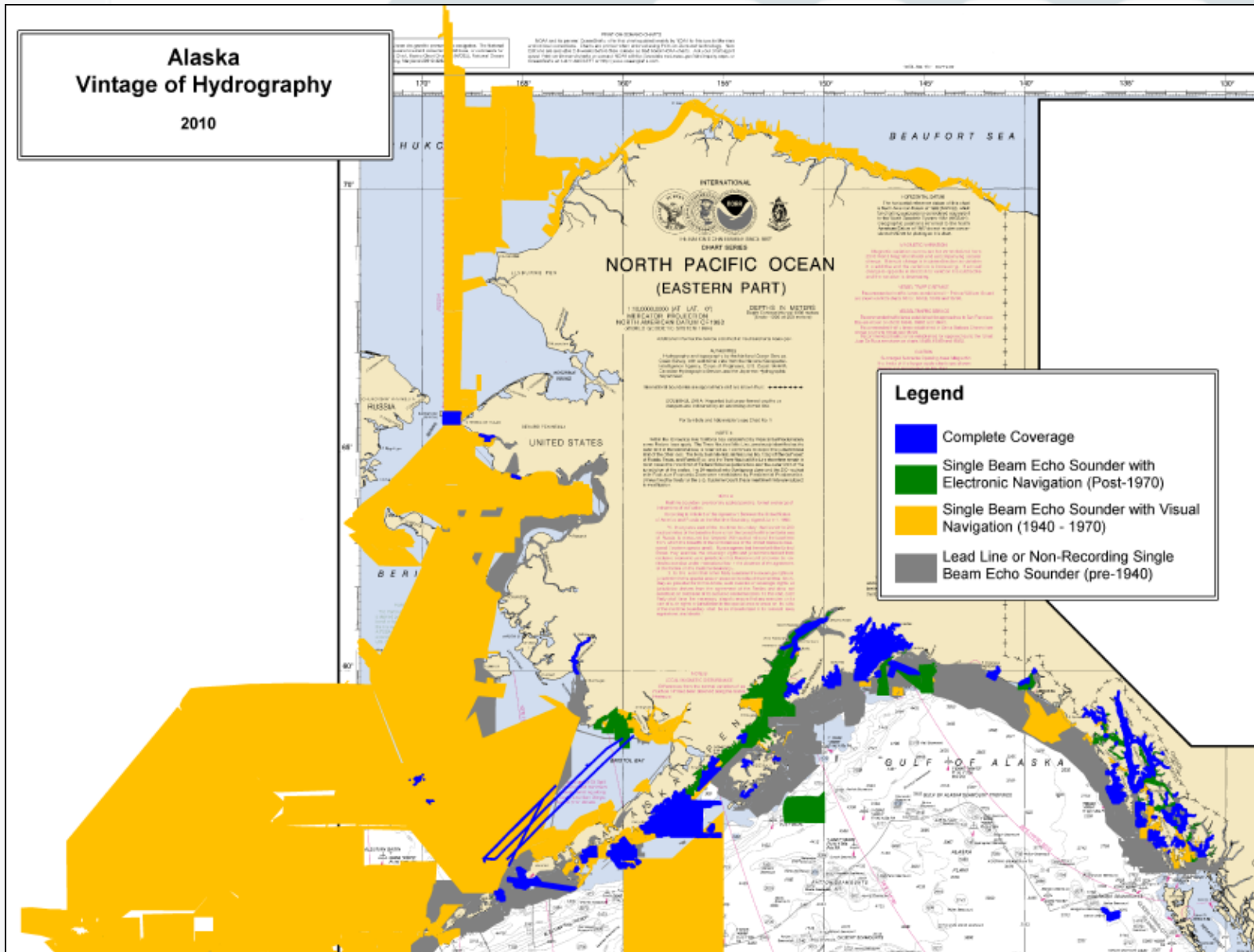
Former Coast Survey Navigation Manager, Alaska Region



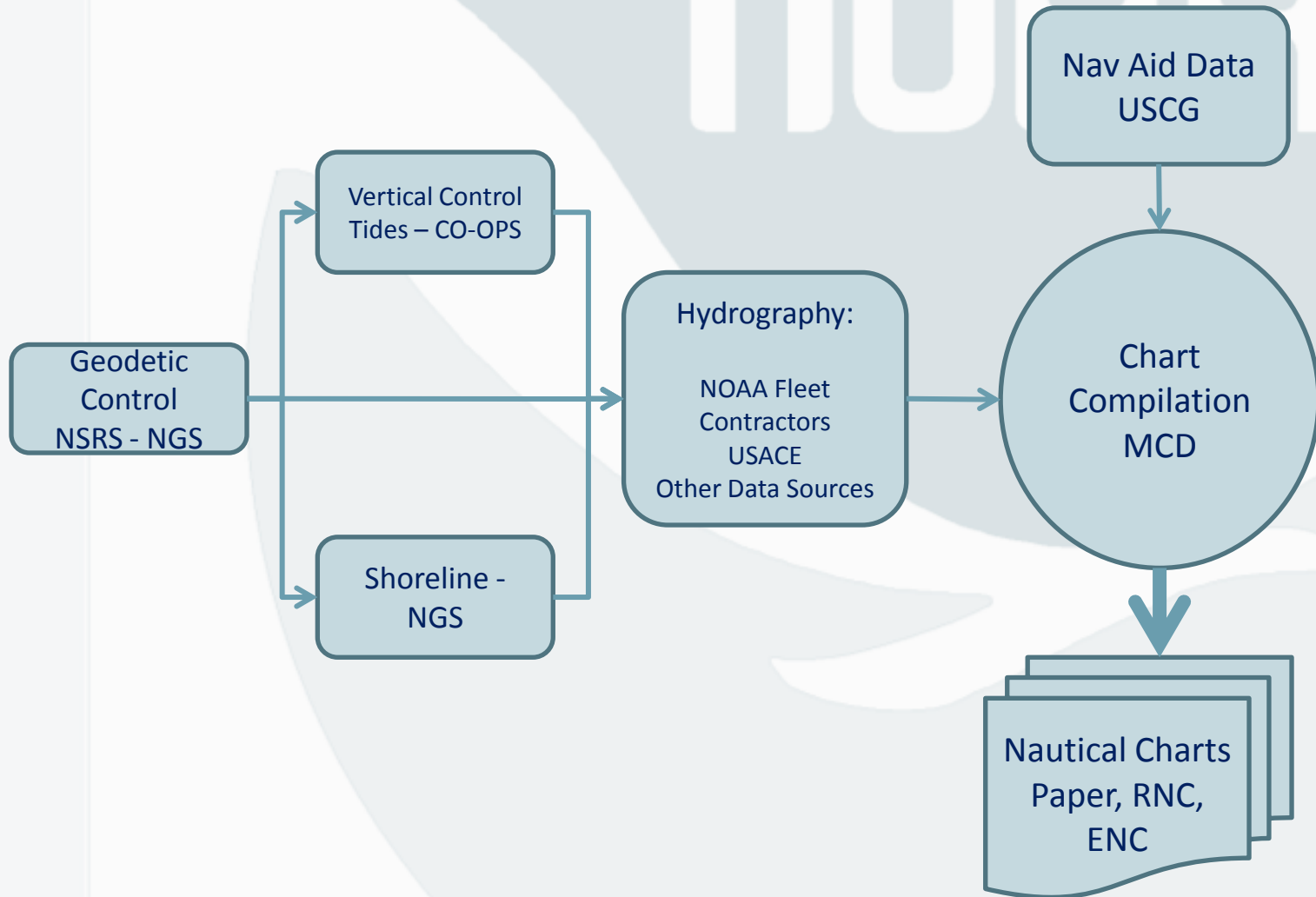
# NOAA's Arctic Vision



# Current State of Hydrography in Alaska

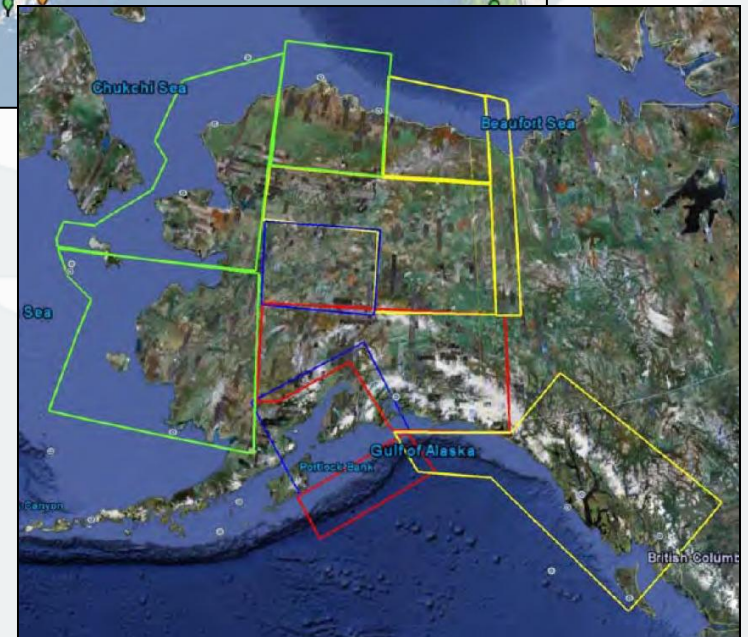
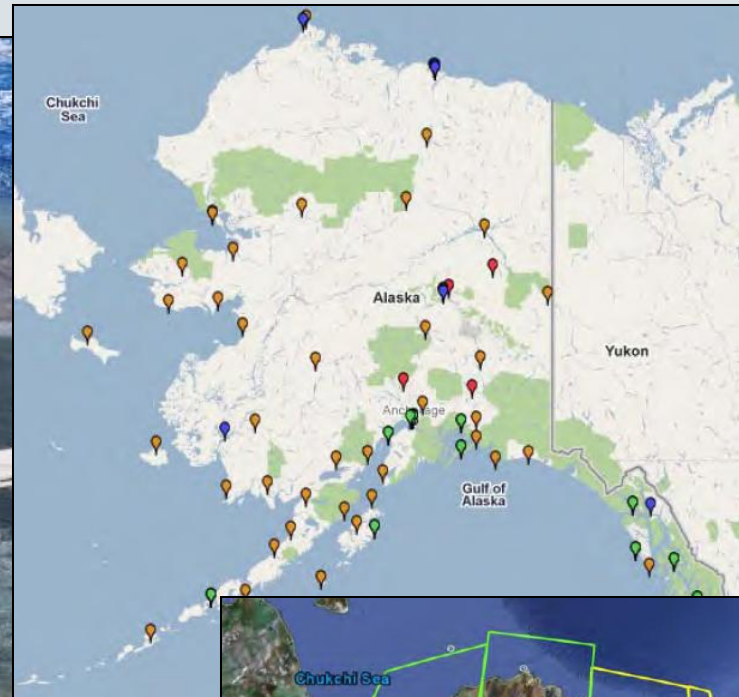
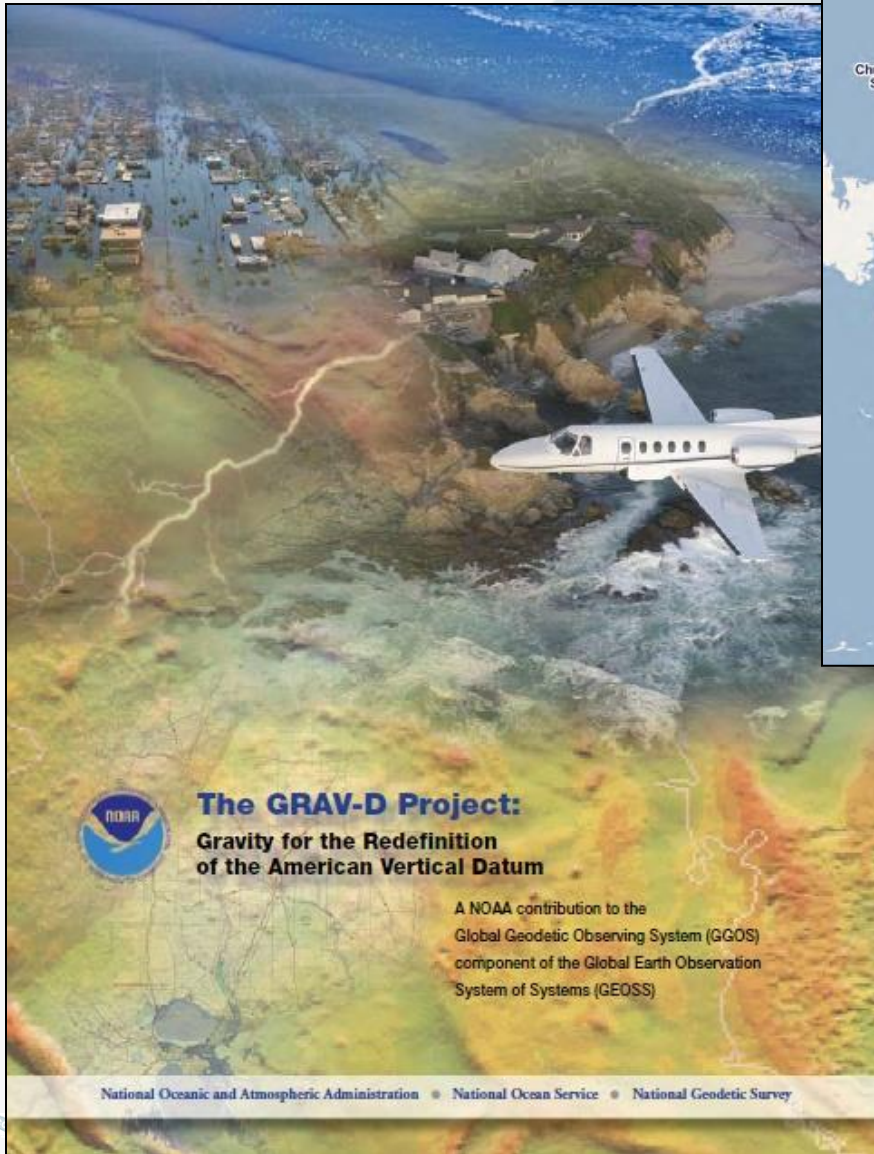


# Foundational Measurements for Building Nautical Charts

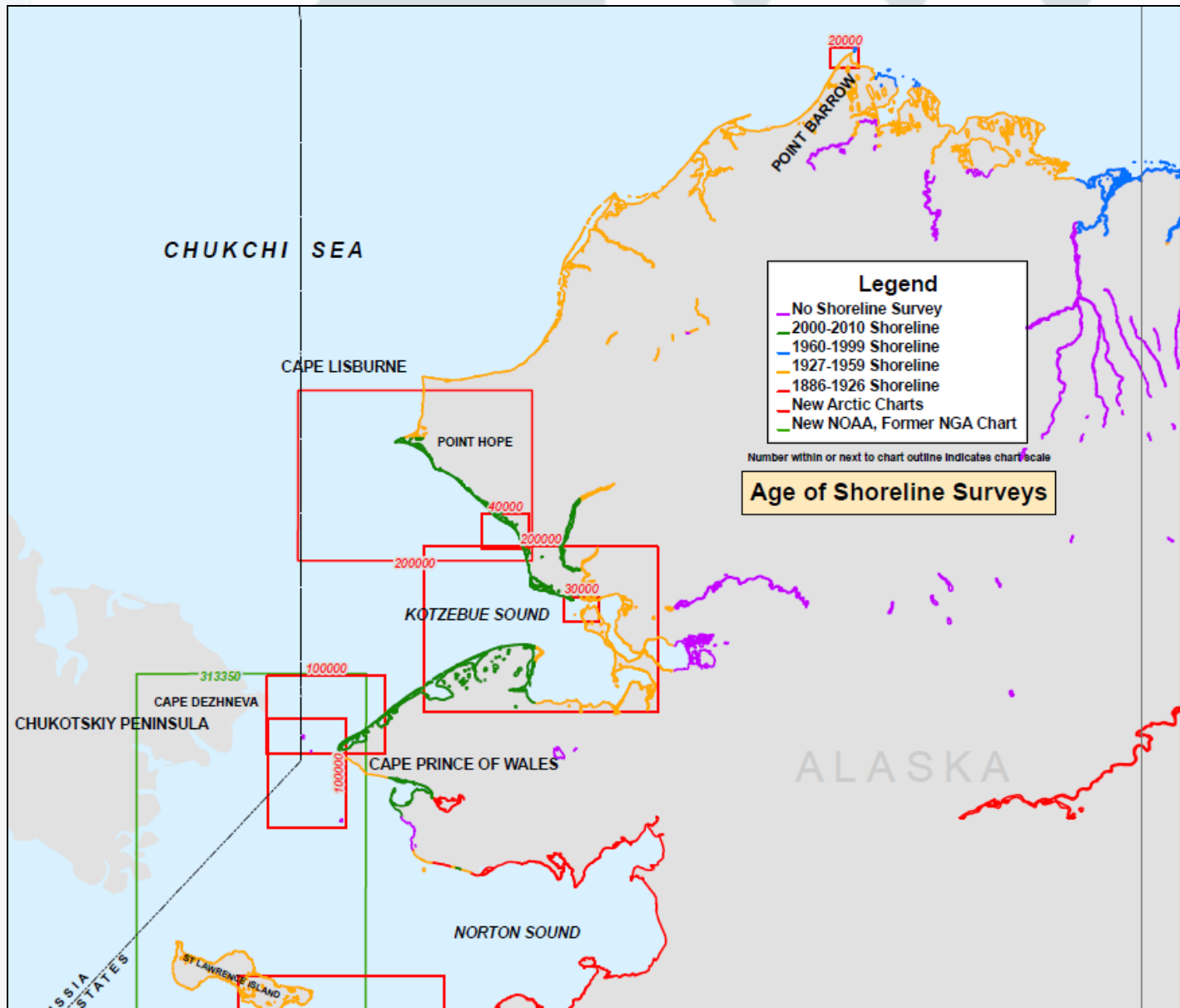




# National Spatial Reference System in the Arctic - NGS



# National Shoreline - NGS



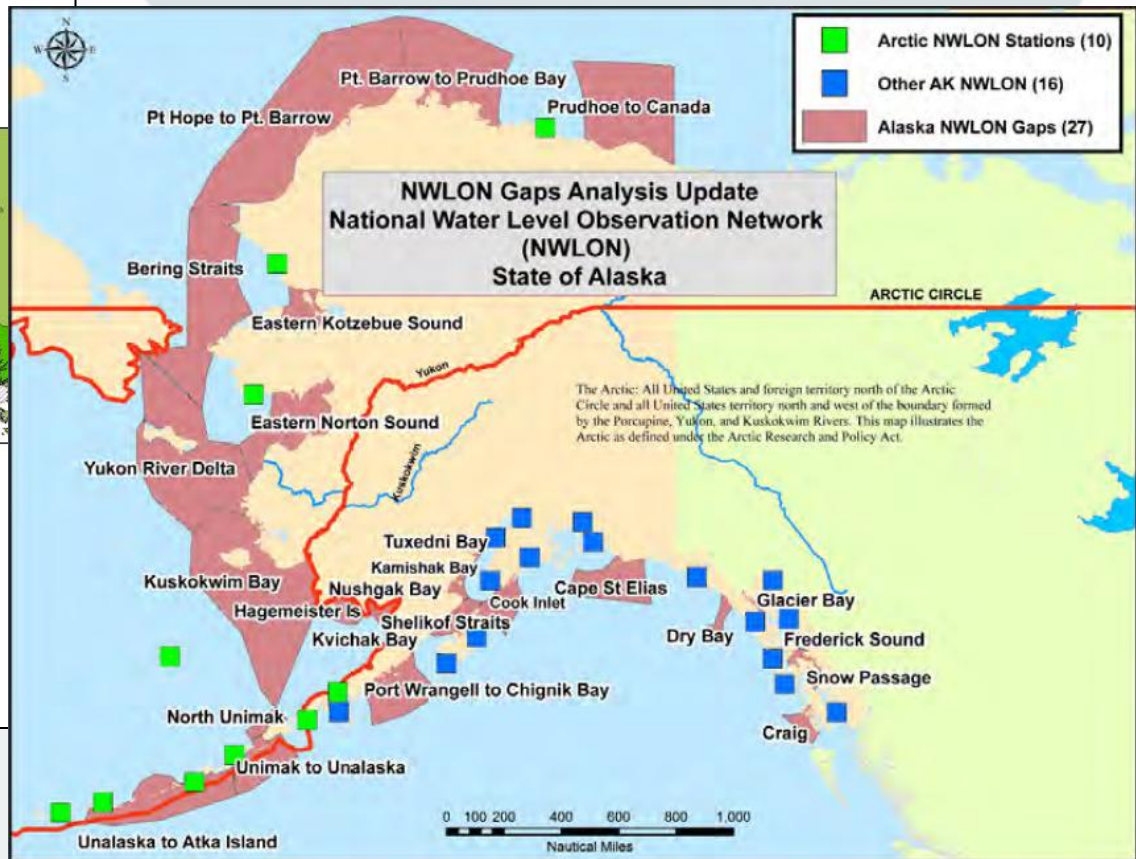
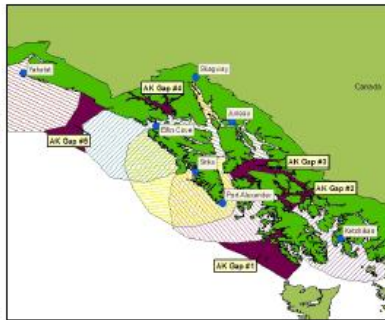
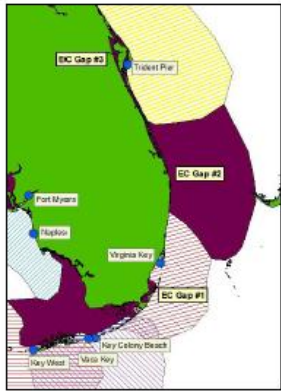


# National Water Level Observation Network – CO-OPS

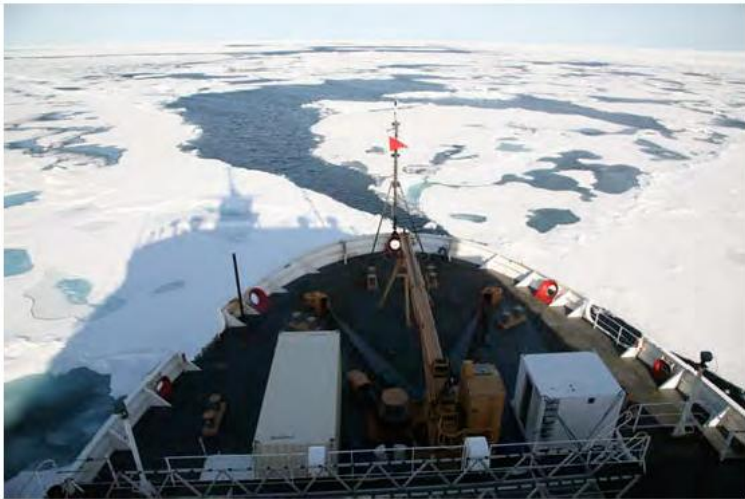


NOAA Technical Memorandum NOS CO-OPS 0048

## A Network Gaps Analysis For The National Water Level Observation Network



# Arctic Charting Plan/Emerging Priorities



## Arctic Nautical Charting Plan

**DRAFT**

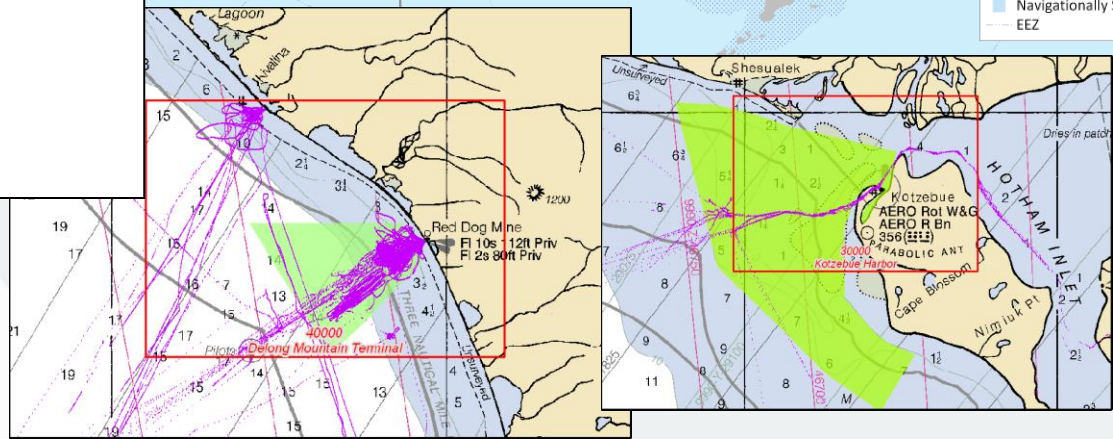
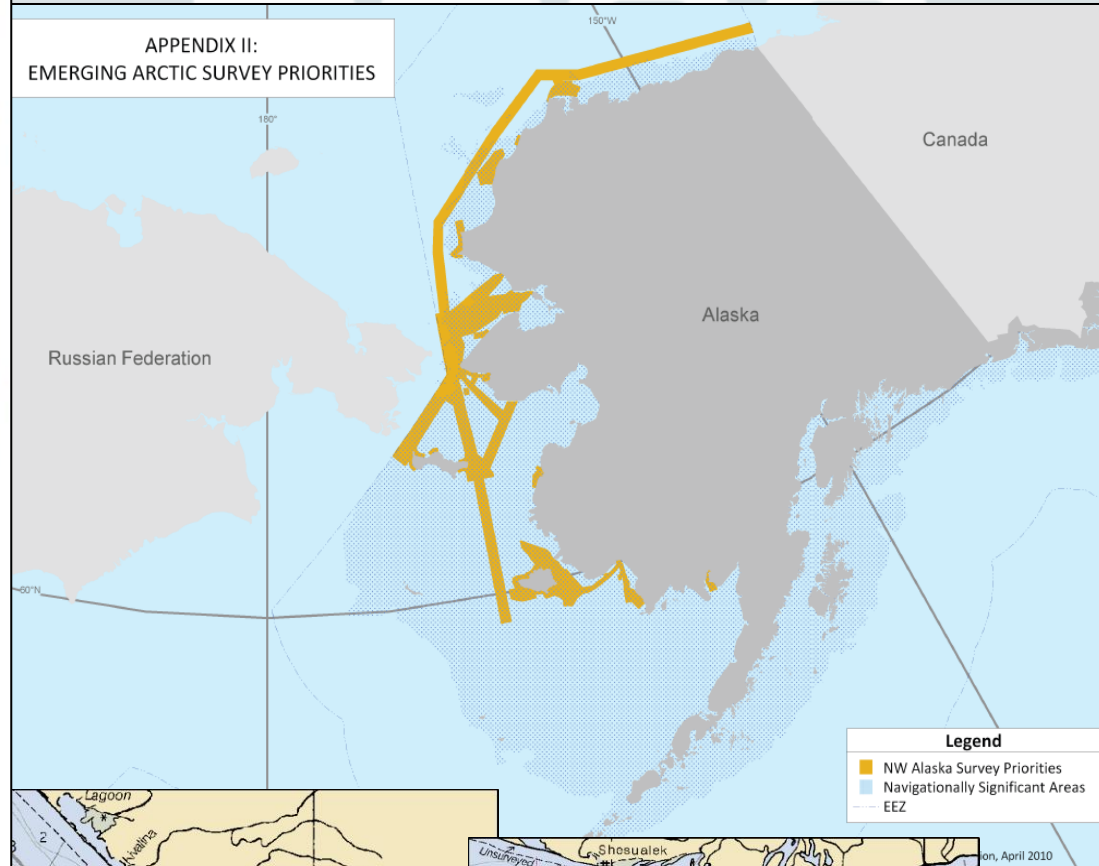
November 10, 2010

A Plan to Support Sustainable Marine Transportation in Alaska and the Arctic

Office of Coast Survey  
Marine Chart Division  
2010



### APPENDIX II: EMERGING ARCTIC SURVEY PRIORITIES



on, April 2010





# Arctic Logistics – Fleet Operations

## NOAA Vessels Supporting Arctic Research:

- Hydrographic Surveys - Fairweather Class
- Fisheries Research - Dyson Class  
& McArthur II (TAGOS)



# Hydrographic Fleet Operations

## Capacity, Speed & Endurance

Fuel: 107,000 gal  
Cruising Speed: 12 knots  
Range: 6,000 nm  
Draft: 16 ft  
Endurance: 22 days

Endurance Constraint:  
Food - Fairweather  
Fuel - Rainier

## Dutch Harbor to:

Nome:	659nm	2 d 6 hr
Kotzebue :	913nm	3 d 4 hr
Barrow:	1157nm	4 d 0 hr

## Issues:

- Lack of Arctic Port/Services, ~1/3 time is spent transiting
- Nome is Limiting –  
Pier Availability, Wx
- Fuel Availability – ULSD, 1968 EMDs
- Operations at current budget levels & a limited window
- Ship's capabilities for Arctic Ops

**NOAA Ship**

***Fairweather***

***& Rainier***



# NOAA Arctic Activities

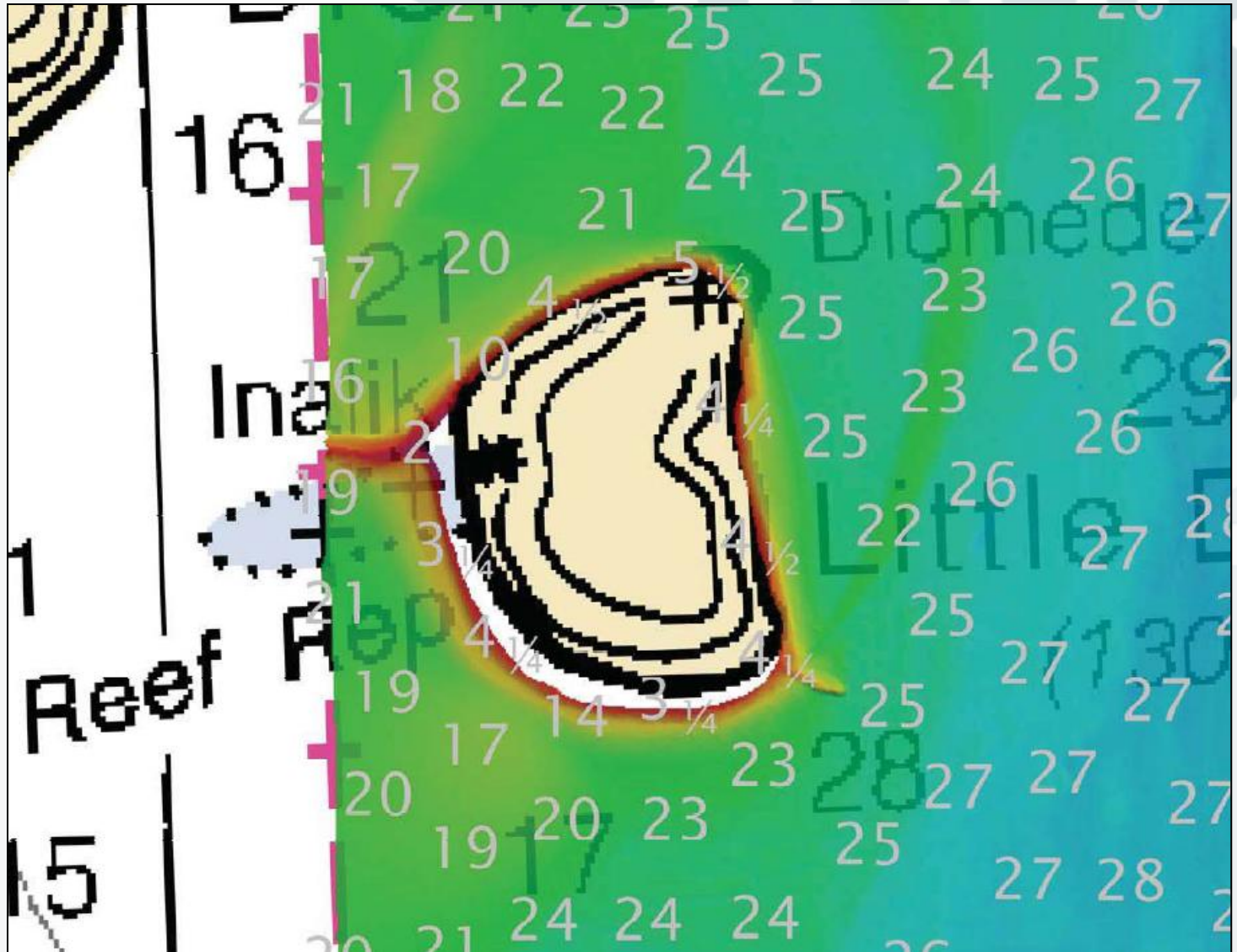
## Conclusions

- NOAA is moving forward to fill the gap in fundamental measurements.
- Hydrographic Survey Priorities will continue to be refined based on user input.
- Hydrographic Survey Operations in the Arctic will increase overall contract cost or ship budget.
- Logistical need for more ports/services in the Arctic to make effective use of limited operating season.

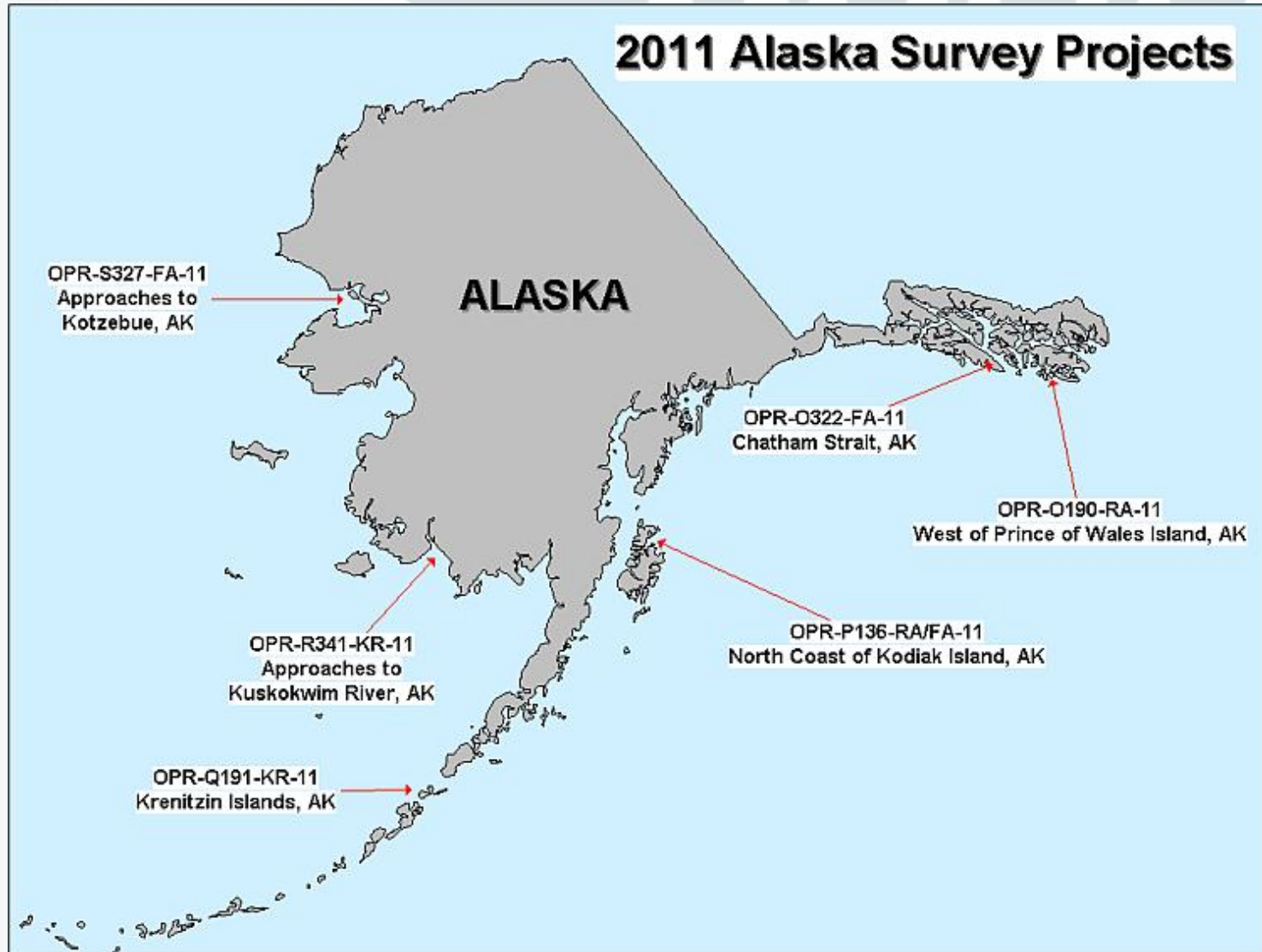




# Questions



## 2011 Alaska Survey Projects



# Fisheries Fleet Operations

# NOAA

## Capacity, Speed & Endurance

Fuel: 224,000 gal

Cruising Speed: 11 knots

Range: 8,000 nm

Draft: 15 ft

Endurance: 45 days

Endurance Constraint:  
Fuel/Stability

## Issues:

Fuel Availability – ULSD

Nome is Limiting

Pier Space, Wx

**NOAA Ship**

***McArthur II***





# Fisheries Fleet Operations

# NOAA

## Capacity, Speed & Endurance

Fuel: 110,000 gal

Cruising Speed: 12 knots

Range: 12,000 nm

Draft: 20 ft

Endurance: 40 days

Endurance Constraint: Food /Fuel

## Issues:

Nome is Not an Option – 20 ft C.D.

Staging port – Gear & Personnel

**NOAA Ship**

***Oscar Dyson***



# NOAA

Nome 4.49

Ketch 3.37

Ketch 3.45 25%

Kodiak 2.89 USCG 35%

