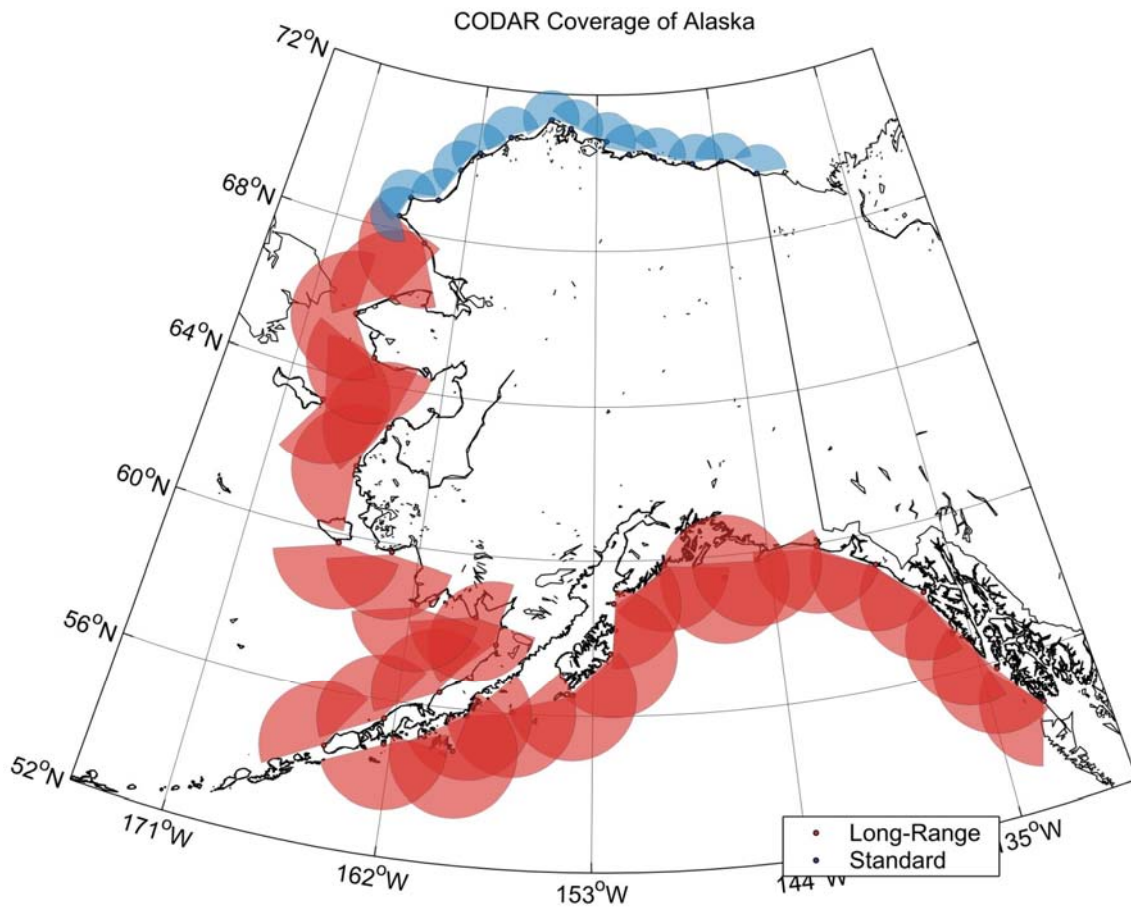


AOOS HF Radar Gap Analysis

At the current time, the AOOS region has no HF Radar installations. Outfitting the entire coastline of Alaska would take more than FY10 – 14. One example is depicted here, but it does not provide for 2-D currents on all coastlines, nor does it include the Aleutian Island arc.

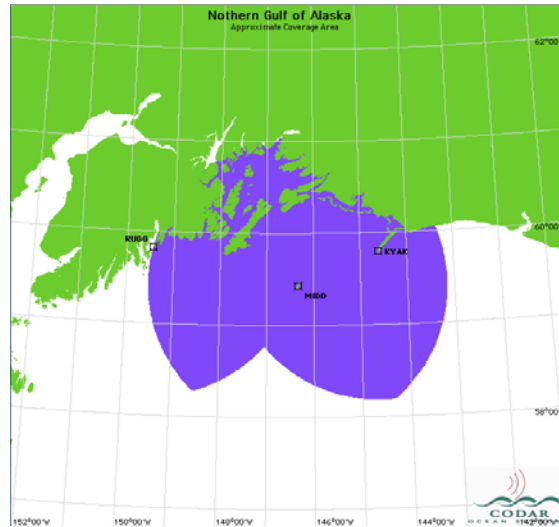


Much of the Alaskan coastline is off of the power grid and requires remote power. Research and design for a remote HF Radar deployment and power system has yet to be performed due to a lack of funding; therefore, to date, remote power options have not been perfected.

Prioritization of gaps to be filled (Coverage maps in this section do not account for land and stability angles. They are meant to merely be a visual aid.)

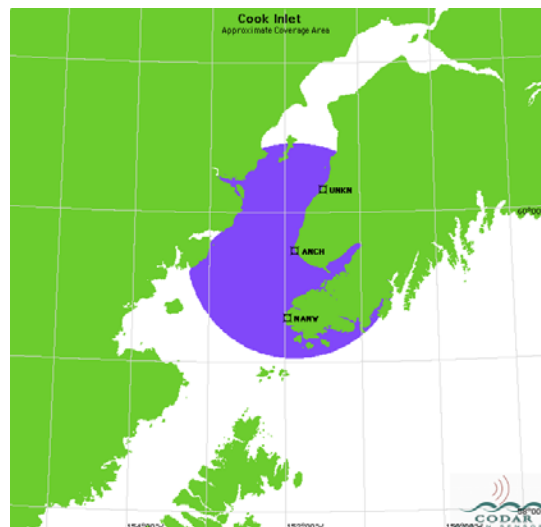
1. Northern Gulf of Alaska, offshore of Prince William Sound (year-round, 3 @ 5 MHz)

- Transportation corridor for shipping (including oil)
- Cruise Ship Route
- Alaska Marine Highway System Route
- Commercial Fishing
- Relatively unknown area for ocean current research

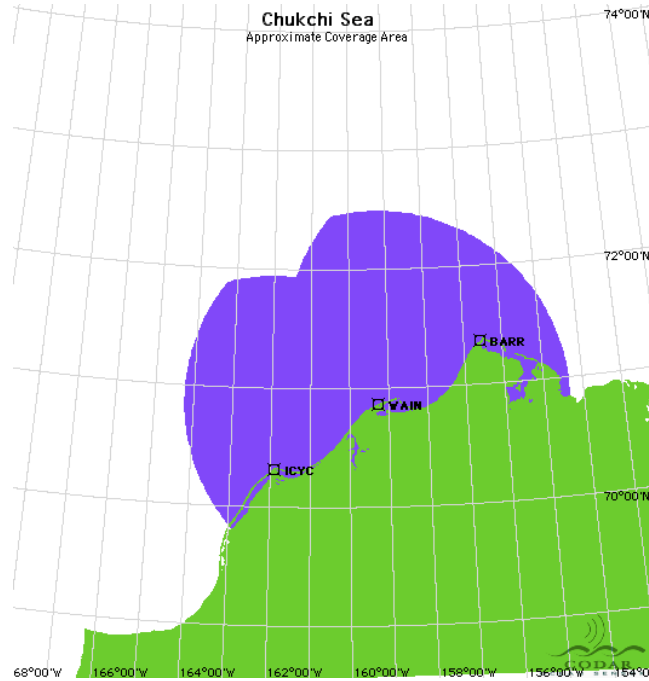


2. Cook Inlet (year-round, 3 @ 13 MHz)

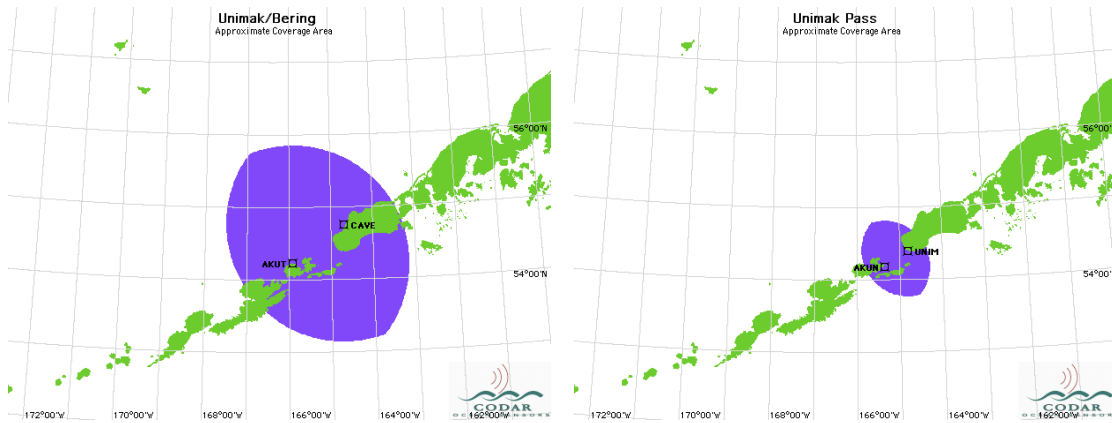
- Exceptionally large tides
- Recreational use
- Commercial/Sport Fishing
- Oil/Gas
- Major shipping lane



3. Barrow, Alaska, and southwest along the Chukchi Sea (7 months/year, 3 @ 5 MHz)
- Shipping Route which is increasing in numbers
 - Oil/Gas Exploration
 - Coastal Erosion

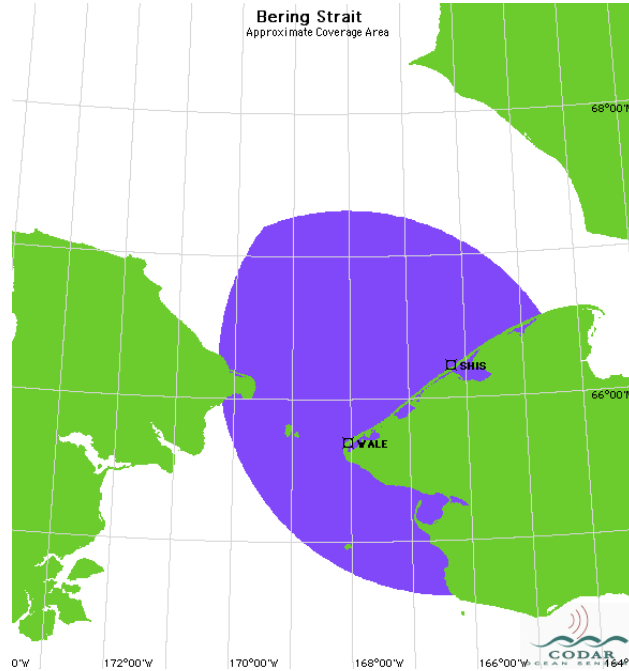


4. Unimak Pass (year-round, 2 @ 5 MHz, with 2 @ 13 MHz nested in the pass)
- On the Great Circle route from Asia (>3,500 ships/year)
 - Heavy storms
 - Ship wrecks
 - Commercial Fishing Grounds



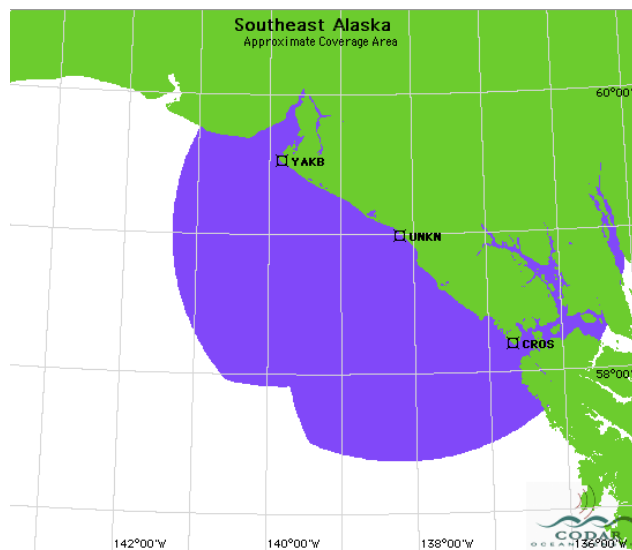
5. Bering Strait (8 months/year, 2 @ 5 MHz)

- Shipping route increasing in numbers
- Area of heavy winter storms
- Erosion is requiring engineering of the coastline and possible village relocation



6. Southeast Alaska, Yakutat Bay to Cross Sound (year-round, 3 @ 5 MHz)

- Transportation Corridor
- Alaska Marine Highway System
- Fishing



7. A roaming system for emergency response (2 @ 13 MHz)
- Contaminant Spills
 - Search and Rescue

Number and type of HFR for FY10 – 14

FY10: 3 @ 5 MHz, 3 @ 13 MHz (Northern Gulf of Alaska and Cook Inlet)

FY11: 3 @ 5 MHz (Chukchi Sea/Barrow, Alaska Region)

FY12: 2 @ 5 MHz, 2 @ 13 MHz (Bering Sea/Unimak Pass)

FY13: 2 @ 5 MHz (Bering Strait)

FY14: 3 @ 5 MHz, 2 @ 13 MHz (Southeast Alaska, Roaming Emergency System)

Annual Costs

FY10

| | |
|---|--------------------|
| Personnel Salary/Benefits | \$240,000 |
| • Northern Gulf of Alaska | |
| ○ HF Radar System | \$350,000 |
| ○ Logistics | \$100,000 |
| ○ Remote Housing, Power and Communications | <u>\$350,000</u> |
| ▪ Total | \$800,000 |
| • Cook Inlet | |
| ○ HF Radar System | \$300,000 |
| ○ Logistics | \$30,000 |
| ○ Power and Communications (assuming no remote power) | <u>\$500</u> |
| ▪ Total | \$330,500 |
| • FY10 Total | \$1,370,500 |

FY11

| | |
|---|--------------------|
| Personnel Salary/Benefits | \$200,000 |
| • Chukchi Sea/Barrow, Alaska Region | |
| ○ HF Radar System | \$350,000 |
| ○ Logistics | \$150,000 |
| ○ Remote Housing, Power, and Communications | <u>\$350,000</u> |
| ▪ Total | \$900,000 |
| • FY11 Total | \$1,100,000 |

FY12

Impossible estimate costs at this time. This would be the roughest, most remote location possible and would require dedicated Coast Guard Support.

| | |
|--------------------------|--------------------|
| • Bering Sea/Unimak Pass | |
| • FY12 Total | \$2,000,000 |

FY13

| | |
|---------------------------|-----------|
| Personnel Salary/Benefits | \$200,000 |
| • Bering Strait | |

| | |
|---|------------------|
| ○ HF Radar System | \$280,000 |
| ○ Logistics | \$100,000 |
| ○ Remote Housing, Power, and Communications | <u>\$225,000</u> |
| ▪ Total | <u>\$605,000</u> |
| • FY13 Total | <u>\$805,000</u> |

FY14

| | |
|---|--------------------|
| Personnel Salary/Benefits | \$250,000 |
| • Southeast Alaska | |
| ○ HF Radar System | \$350,000 |
| ○ Logistics | \$100,000 |
| ○ Remote Housing, Power and Communications | <u>\$350,000</u> |
| ▪ Total | <u>\$800,000</u> |
| • Roaming System | |
| ○ HF Radar System | \$300,000 |
| ○ Remote Housing, Power, and Communications | <u>\$50,000</u> |
| ▪ Total | <u>\$350,000</u> |
| • FY14 Total | <u>\$1,150,000</u> |

Cost/Benefit Analyses

None

Local/Regional Products

None