



Alaska Regional Response Team



September 10, 2026



Alaska Regional Response Team



Land Acknowledgement

Meeting Purpose and “Rules”

- This is a business meeting of the **ARRT**
 - Questions and discussions is for ARRT Members and OSCs
- Items discussed that are the responsibility or content of the Area Committees will be **referred to appropriate Area Committee** and not included in the meeting discussion, except for how the ARRT can provide support, if requested/needed
- While open to the public, it is not a public meeting
 - As time allows, questions may be taken from the public. Please type questions in the Chat box. Non-ARRT members are invited to sign up for Public Comment.



Meeting Sign-In

www.AlaskaRRT.org

Tips: Using Teams

- Change your name to, FULL NAME and AGENCY

**Please mute your mic &
turn off video,
except when speaking**

MORNING AGENDA

**9:00 INTRODUCTIONS AND REVIEW ACTIONS
 SINCE LAST MEETING**

9:40 ARRT COMMITTEE REPORTS (10 Minutes Each)

10:40-10:50 BREAK

10:50 AREA COMMITTEE REPORTS (10 Minutes Each)

11:30 LUNCH (Until 1:00)

INTRODUCTIONS & REPORT FROM TRI-CHAIRS



Alaska Regional Response Team



MEMBER ROLL CALL

ARRT Coordinators will facilitate ARRT member and FOSC/SOSC roll call.

For other attendees and members of the public, please state your name and agency when going around the room.



New Members, OSCs, Area Planners



Shannon Miller, Alaska Department of Environmental Conservation

CAPT Ginny Nadolny, Sector Southeast Sector Commander

CDR Matthew Meacham, MSU Valdez Commanding Officer

LT Daniel Piscoya, MSU Valdez Response Department Head

CDR Andrew Phipps, Sector Western Alaska Response Department Head

LT Isaiah Rodriguez, Sector Western Alaska EMD

MSTSC Nicholas Johnston, Sector Western Alaska EMD

SINCE LAST MEETING (June 2026)

Alaska Regional Response Team

- MSU Valdez ACP is signed and available on DEC's website.
- Southeast ACP is undergoing Amer ADA review.
- Science & Technology Committee (Ms. Sanden/NOAA) completed Phase 1 of Dispersant Use Guidelines Update – presenting at Fall ARRT.
- Cultural Resource Committee – Cultural Resource Guidelines discussion at Fall ARRT and under review by Tri-chairs.

ARRT Staffing Changes

USCG

- CAPT Joel Carse, Sector Western Alaska & U.S. Arctic
- CAPT Ginny Nadolny, Sector Southeast Alaska
- CDR Matthew Meacham, MSU Valdez

DEC

- New DEC tri-Chair – Shannon Miller

EPA

- EPA still working on hiring Planner/ARRT Coordinator position previously filled by Ms. Mary Goolie.

Other Goings On:

- CG Arctic District (CGD-A) – CAN US Joint Contingency Plan (JCP) Arctic Annex (TTX) and Joint Response Team meeting – 9/10 Dec '26 in Anchorage;
- CGD-A -CAN US JCP Dixon Entrance Annex Update started Summer 2026 with Canadian CG Western Region;
- CGD-A – CAN US JCP Dixon Entrance Annex Seminar and Joint Response Team meeting in Ketchikan or Juneau Apr 2027;
- CGD-A – RUS (Russian) US JCP Workshop – target Dec or Apr 27;
- Navy SUPSALV – Equipment Deployment in Seward, AK Aug 26 with CGD-A District Response Advisory Team (DRAT);
- EPA - Region 10 ESF-10 Mission Assignment for Household Hazardous Materials (HHM) work at Spokane Wildfires
- DEC Staff have conducted follow up visits to several Western Alaska communities affected by Typhoon Halong;
- And, DEC has supported 33 different homeowners throughout the state with the spill cleanups of their home heating oil tanks since late 2025.

ALASKA REGIONAL RESPONSE TEAM COMMITTEES



Alaska Regional Response Team





WILDLIFE PROTECTION COMMITTEE CULTURAL RESOURCES COMMITTEE

LISA FOX – U.S. DEPARTMENT OF THE INTERIOR

WILDLIFE PROTECTION COMMITTEE (WPC)

The WPC maintains the Wildlife Protection Guidelines for Oil Spill Response in Alaska (WPG)

- Last Year, member agencies met to review the WPC Charter
- Review/revisions completed and reviewed by WPC advisors
- Charter revisions clarify membership/advisor roles
- Tri-Chair approval completed May 2026
- Next meeting TBD



Alaska Regional Response Team Wildlife Protection Committee Charter

Purpose:

The Alaska Regional Response Team (RRT) Wildlife Protection Committee (Committee) assists the Alaska RRT in fulfilling requirements set forth in the *National Contingency Plan* (NCP) (40 CFR 300.210), namely that the Alaska RRT's Area Contingency Plans include: "...coordinated, immediate and effective protection, rescue, and rehabilitation of, and minimization of risk of injury to...wildlife resources and habitat." (40 CFR 300.210(c)(4)(i)).

To fulfill NCP requirements and at the request of the Alaska RRT, the Committee prepares, maintains, and revises as necessary, the *Wildlife Protection Guidelines for Oil Spill Response in Alaska* (WPG), which addresses primary, secondary, and tertiary wildlife response actions for oiled (or potentially oiled) migratory birds, marine mammals, and terrestrial mammals. The WPG is incorporated as Appendix IV of the *Alaska Regional Contingency Plan*. The WPG is also referenced in the four Alaska Area Contingency Plans.

WPC

Member Agencies:

- Alaska Department of Fish & Game
- Department of the Interior
Office of Environmental Policy & Compliance (OEPC)
- Department of the Interior
U.S. Fish & Wildlife Service
- U.S. Department of Commerce
NOAA Fisheries

Advisors:

- Alaska Clean Seas
- Alaska Department of Environmental Conservation
- Alaska Sea Life Center
- Aleutian Pribilof Islands Association
- Alyeska Pipeline Service Company
- Bureau of Ocean Energy Management
- Chugach Regional Resources Commission
- Cook Inlet Regional Citizens Advisory Council
- Defenders of Wildlife
- International Bird Rescue
- National Oceanic & Atmospheric Administration
- U.S. Coast Guard – Multiple Sectors/Divisions
- U.S.D.A. - Animal & Plant Health Inspection Service
- U.S. Forest Service

CULTURAL RESOURCES COMMITTEE (CRC)

Update: Alaska Historic Properties Protection Implementation Guidelines for FOSCs

- All comments on the revised “***Alaska Implementation Guidelines***” have been recorded / addressed
- “Proposed Final” version has been distributed to CRC / Tri-Chairs
- Next steps:
 - Tribal contacts announcement
 - Public review
 - Publication on Alaska RRT website

CRC REPRESENTATION

Co-Chairs:

Alaska State Historic Preservation Office (SHPO)

Department of the Interior - OEPC

- Bureau of Indian Affairs
- Bureau of Land Management
- National Park Service
- U.S. Fish & Wildlife Service
- Aleutian Pribilof Islands Association, Unangax̂ Heritage Library
- Alutiiq Museum, Kodiak
- Alaska Department of Environmental Conservation
- Alyeska Pipeline Service Company

- Chickaloon Village Traditional Council
- Environmental Protection Agency
- National Oceanic & Atmospheric Administration
- Native Village of Kotzebue
- Oil Spill Recovery Institute
- Prince William Sound Regional Citizens' Advisory Council
- Sitka Tribe of Alaska
- U.S. Forest Service
- U.S. Air Force
- U.S. Army
- U.S. Coast Guard – Arctic District / Various Divisions

CONTACTS

- **Alaska Department of Fish & Game**
jeanette.alas@alaska.gov
- **NOAA Fisheries:**
sadie.wright@noaa.gov
david.gann@noaa.gov
- **State Historic Preservation Office:**
sarah.meitl@alaska.gov
nick.schmuck@alaska.gov
- **U.S. Fish & Wildlife Service:**
bridget_crokus@fws.gov
Emilia_bartnick@fws.gov
- **U.S. Department of the Interior:**
lisa_fox@ios.doi.gov



*South Kodiak Island
2026*



SCIENCE AND TECHNOLOGY COMMITTEE REPORT

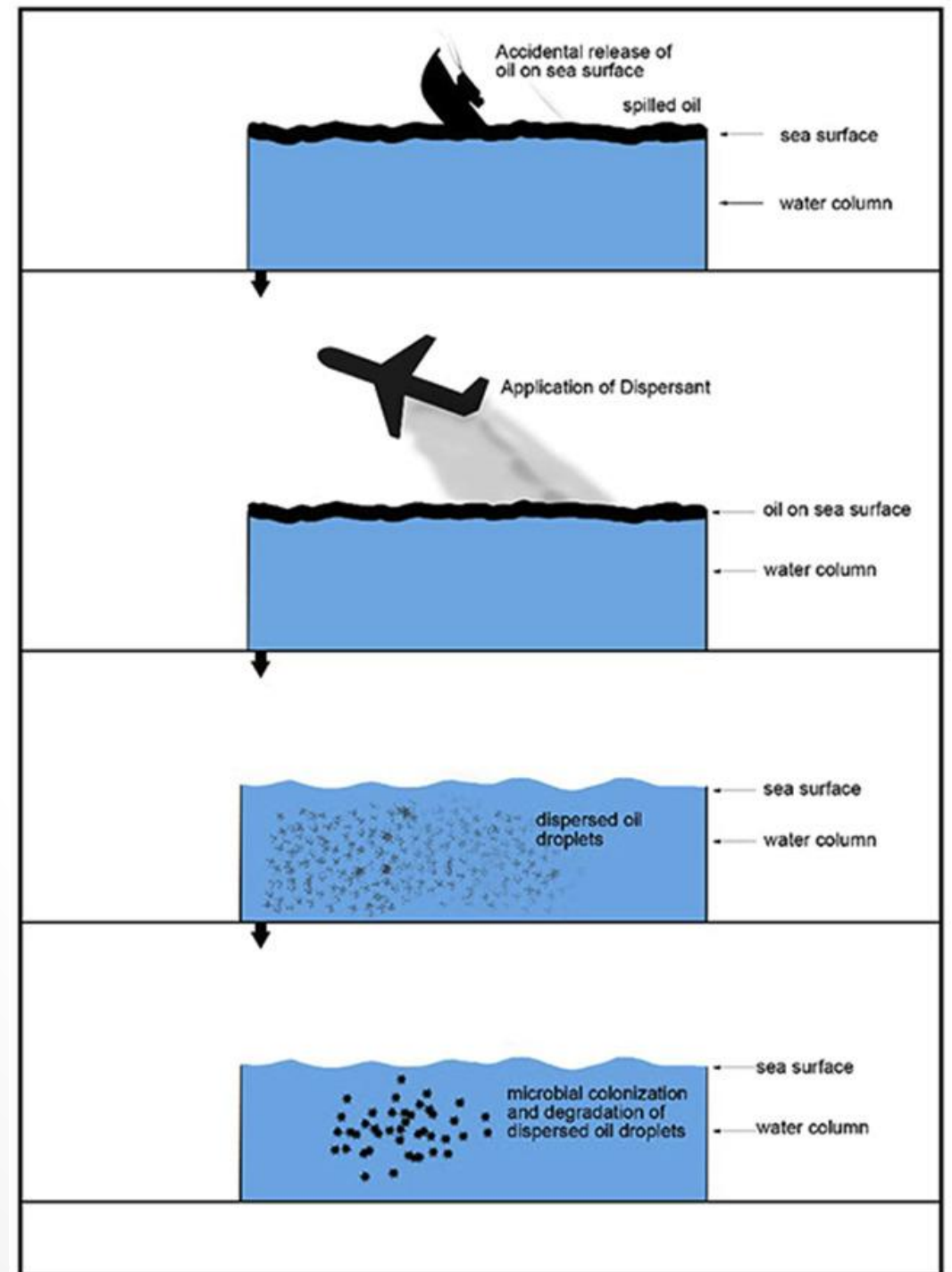
COMMITTEE MEMBERS

- Liza Sanden (DOC/NOAA)
 - liza.sanden@noaa.gov
- Mike Donnellan (ADEC)
 - mike.donnellan@alaska.gov
- Sara Benovic (DOD/ Navy)
 - sara.l.benovic.civ@us.navy.mil
- April Charnota (DOT/ PHMSA)
 - april.charnota@dot.gov

DISPERSANT USE PLAN UPDATE

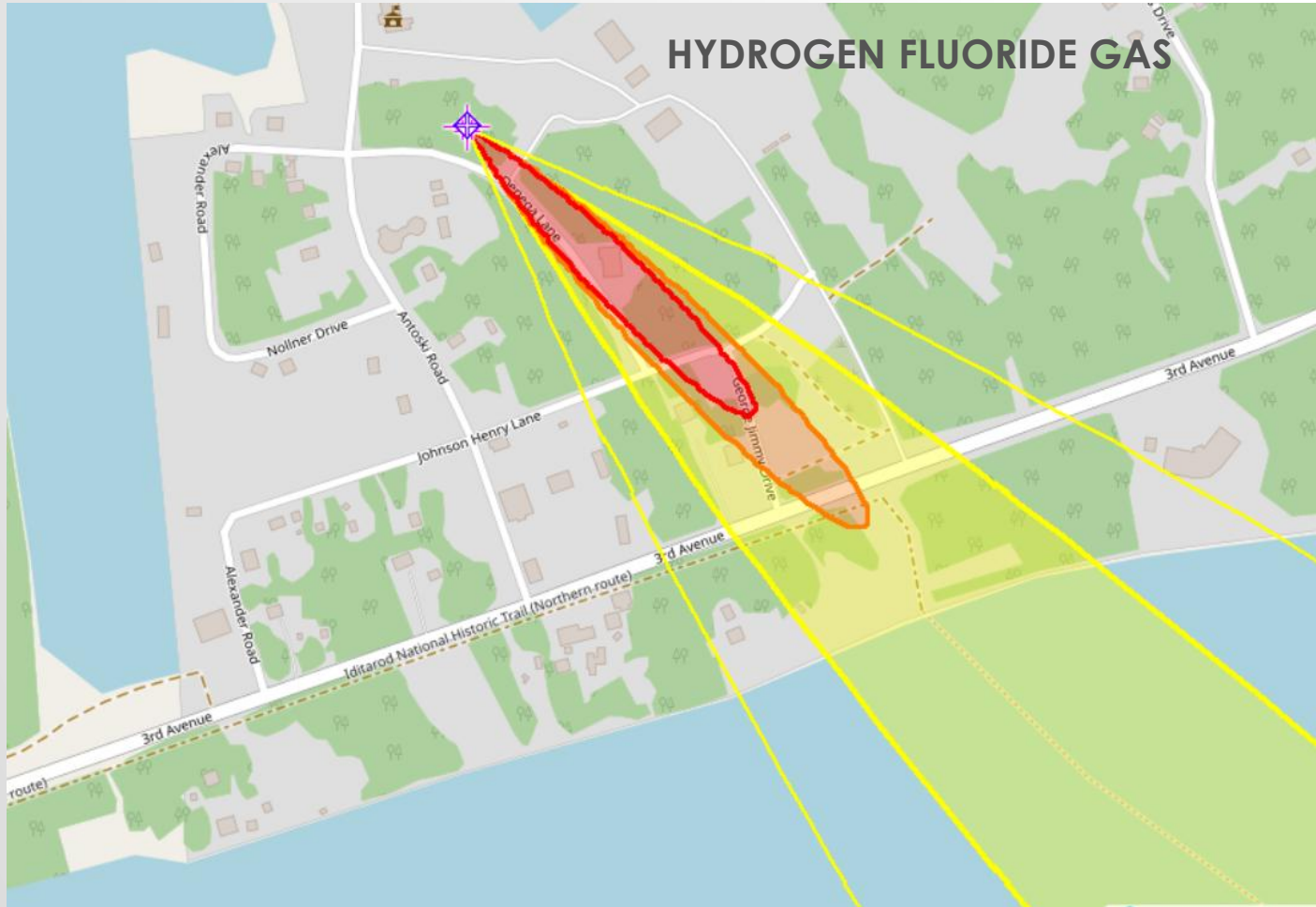
- Phase 1: Done.
- Phase 2 – Full Review of the Dispersant Use Plan, Modification with Public Review.
 - Email Liza.sanden@noaa.gov to serve on working group

Image: Yaw Kwakye Adofo, Emmanuel Nyankson, Benjamin Agyei-Tuffour, Dispersants as an oil spill clean-up technique in the marine environment: A review, Heliyon, Volume 8, Issue 8, 2022.
<https://www.sciencedirect.com/science/article/pii/S240584402201441>



LITHIUM ION BATTERY RESPONSE

- Supporting Alaska Inland Area Committee, Lithium Ion Battery Working Group
- Focus on rural Alaska
- Coordinating with other state agencies, committees, working groups

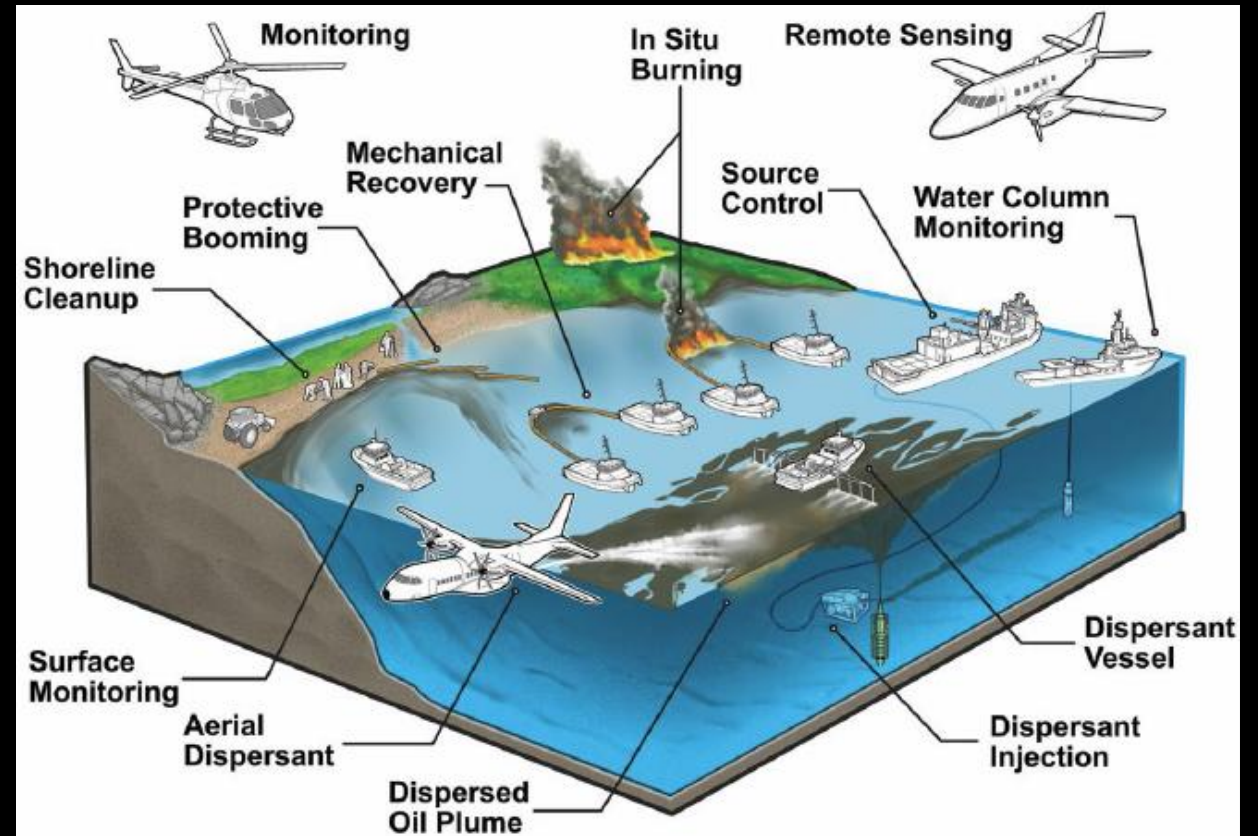


ALOHA aerial plume model of Hydrogen Fluoride gas produced by 500 kWh Lithium Ion battery energy storage system. Figure from NOAA SSC presentation on Lithium Ion battery emergencies.

IN SITU BURNING GUIDELINES UPDATE

In Situ Burning Guidelines: Repeat Phase 1 & 2 the Dispersant Use Plan for ISB

Timeline ??? 2027-2028





STATEWIDE PLANNING COMMITTEE

Statewide Planning Committee members

ARRT Coordinators

- **EPA:** Stephen Nguyen
- **USCG D17:** Angella Gebert
- **ADEC:** Ytamar Rodriguez

USCG Area Secretaries and ADEC/EPA Area Planners

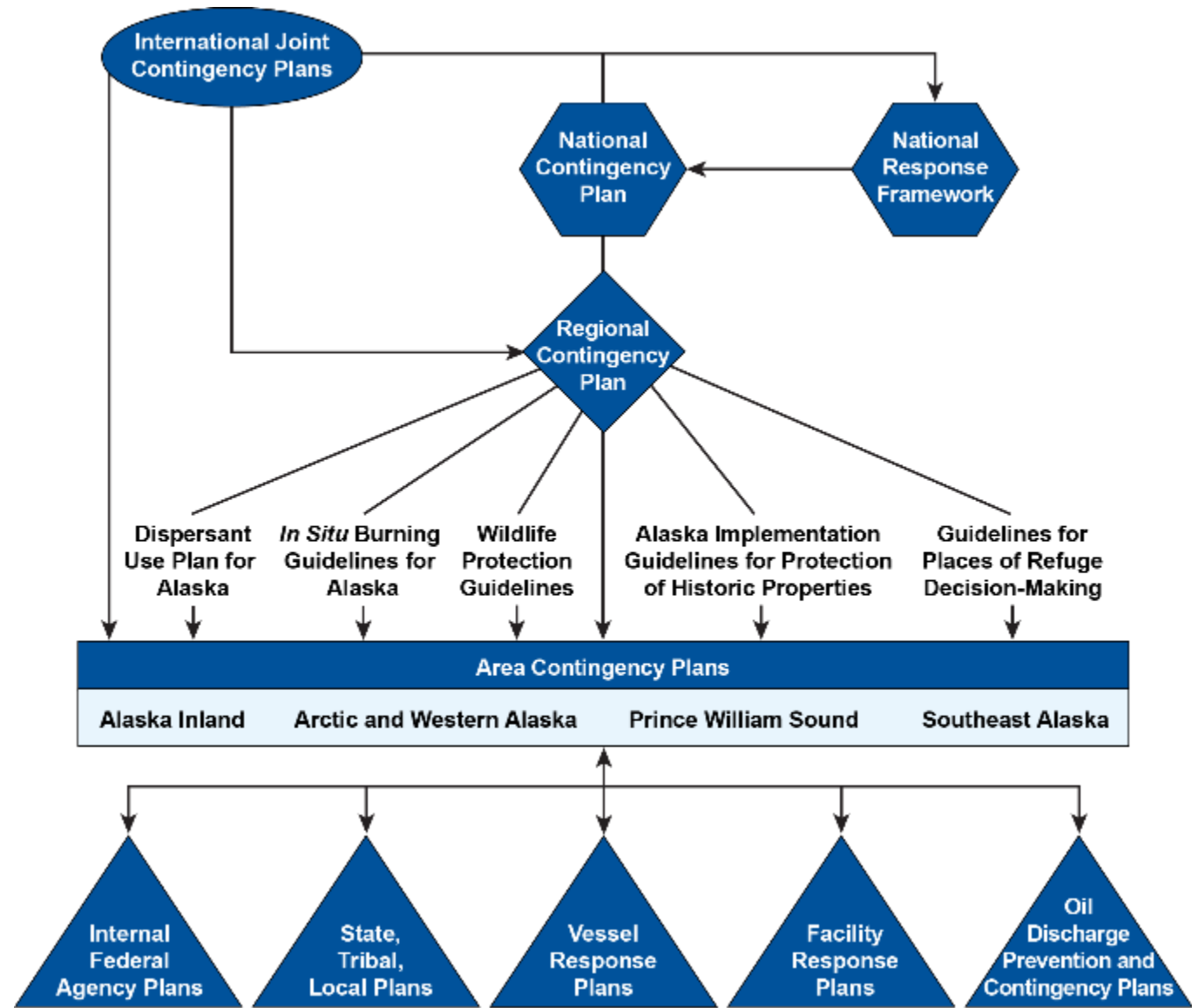
- **USCG PWS:** LT Bradley Ragan & Daniel Piscoya
- **USCG SEAK:** Raymond Reichl
- **USCG AWA:** LCDR Amanda Faulkner & MSTCS Nicholas Johnston
- **ADEC:** Julie Liford-Parker
- **EPA:** Vacant

Statewide Planning Committee Activity

- Monthly SPC Meetings
- Upcoming ACP Reviews: South East Alaska is undergoing ADA compliance.
- Outreach: Biennial newsletter
- Recommending & and coordinating ADEC and ARRT Website Updates

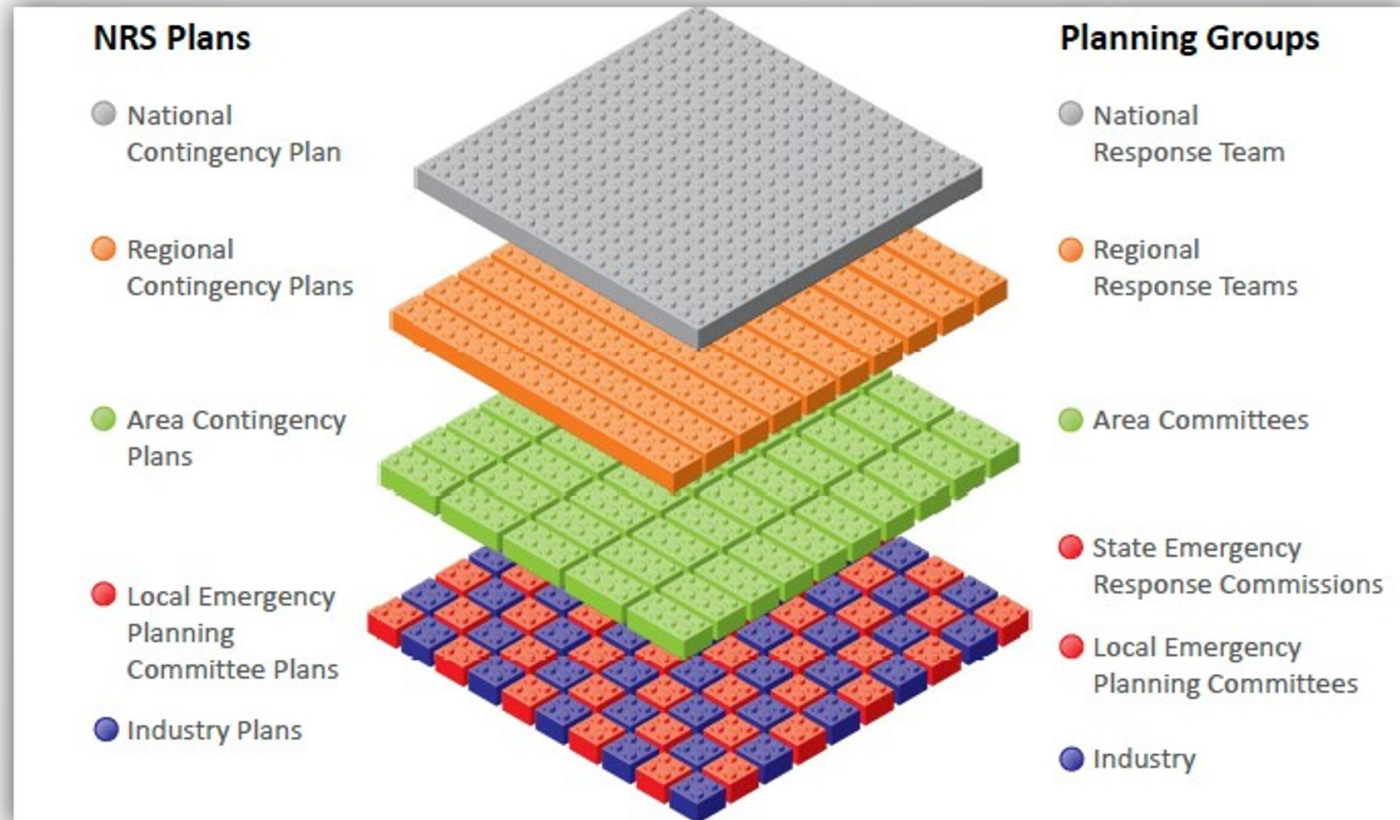
Overall: Interagency coordination of planning efforts

Plan Relationships



21P-0084

NRS PLANS AND PLANNING GROUPS

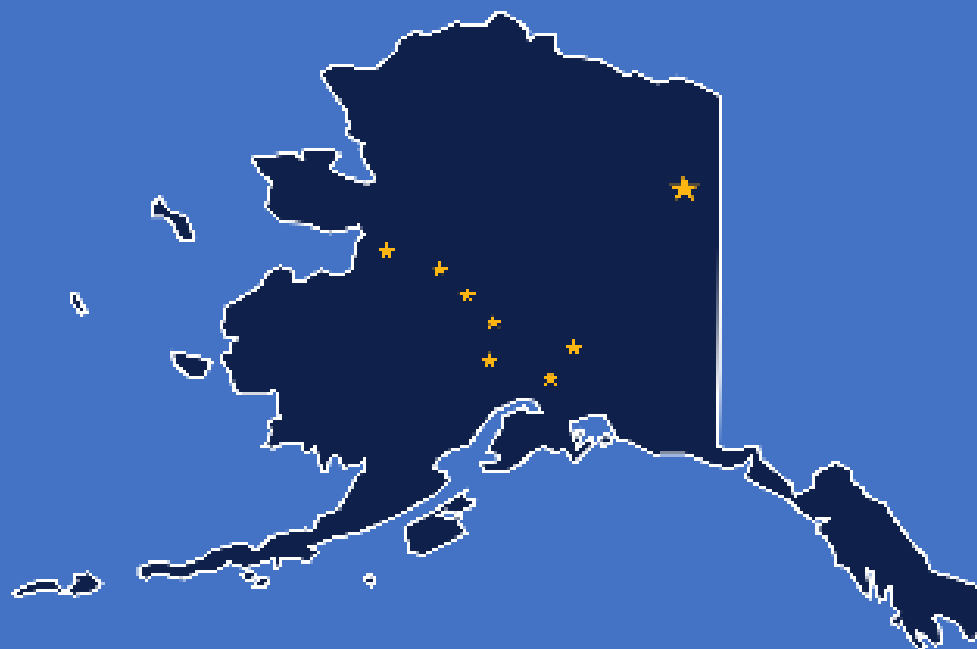


Regional Contingency Plan

- Planner Centric
- Region-wide policy issues
- Updates: ARRT

Area Contingency Plan

- Responder Centric
- Area resources and procedures
- Updates: Area Committee





BREAK

Please Don't Forget to
SIGN IN



ALASKA REGIONAL RESPONSE TEAM AREA COMMITTEE REPORTS



Alaska Regional Response Team





PRINCE WILLIAM SOUND AREA COMMITTEE

Report to Alaska Regional Response Team
September 10, 2026

LT Brad Ragan, USCG, Julie Liford-Parker, DEC

AREA COMMITTEE UPDATE

- Fairwater Alaska Tankers (previously Crowley)
 - FSE 5/12 - 5/14/2026 completed.
- Valdez Marine Terminal Otter Hospital Equipment Deployment Ex completed 8/15/2026
- Shoreside Cordova exercise completed 4/21/2026
- Next Area Committee Meeting:
 - October 8, 2026, Thursday (at Valdez PWSC and Virtual)
- Planning starting for Hilcorp PWS Shippers Exercise May 2027

AREA CONTINGENCY PLAN UPDATE

- Current Version of the PWS Area Plan has been updated, approved and posted on DEC website (version 2026.0)
 - <https://dec.alaska.gov/spar/ppr/contingency-plans/response-plans/prince-william-sound-area/>
- Plan updates: Next year's revision will include development of pending sections, as well as inputs which were received during or after the public comment period for version 2026.0.

CASE SUMMARY/ENFORCEMENT

- June 27, 2026
- SERVS 22-foot vessel capsized while conducting non-response related operations near their facilities. Operations personnel were able to stabilize the vessel to prevent it fully sinking and secured it at their small boat harbor. AMR was dispatched and righted/salvaged the vessel using the cranes in the Valdez harbor. No major discharges occurred.
- August 1, 2026
 - 24 foot Recreational Vessel sunk between Lone Island and Naked Island in 1200 feet of water. The vessel had a 40 gal potential discharge, and was deemed non-salvageable.
- Alaska Home Heating Oil Tank Program recap
 - Statistics of who has been assisted:
 - State Funding

SPECIAL ANNOUNCEMENTS

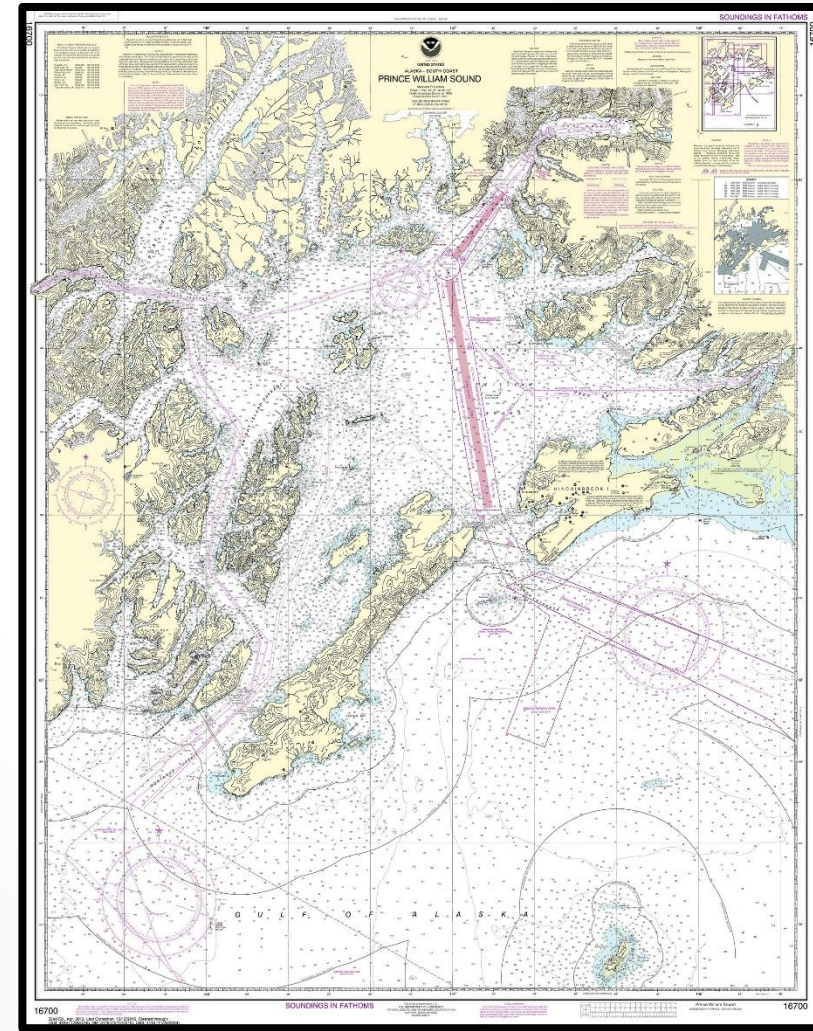
- Welcome to Commander Matthew Meacham, USCG, COTP Prince William Sound effective June 26, 2026.
- The USCG civilian PWS Planning Position is currently vacant.
- Director of the Division of Spill Prevention and Response (SPAR) Shannon Miller effective July 27, 2026

AREA COMMITTEE NEEDS FOR ALASKA RRT SUPPORT

- None at this time



PWS Commercial Salmon Fishery



PWS Nautical Chart

AREA COMMITTEE CONTACTS

ADEC Area Planning website:

<http://alaska.gov/go/7EKN>

Contact us:

Matthew.K.Meacham@uscg.mil

Anna.Carey@alaska.gov

Bradley.L.Ragan@uscg.mil

DEC.planning@alaska.gov

*Julie Liford-Parker



VMT Equipment Deployment Exercise.
Self-Propelled Skimmer, Boom and Support Vessels



SOUTHEAST ALASKA AREA COMMITTEE

Report to Alaska Regional Response Team
September 2026

LT Brian Moneghan (USCG)

AREA COMMITTEE UPDATE

Most recent meeting: June 24 2026

📍 Ketchikan, AK

Agenda Items:

- Scientific Support and Regional Preparedness Coordinator Support
- Oil Spill Response Capacity, Training, and Partnership Development for Glacier Bay National Park
- National Weather Service Juneau Summer Forecasting Discussion

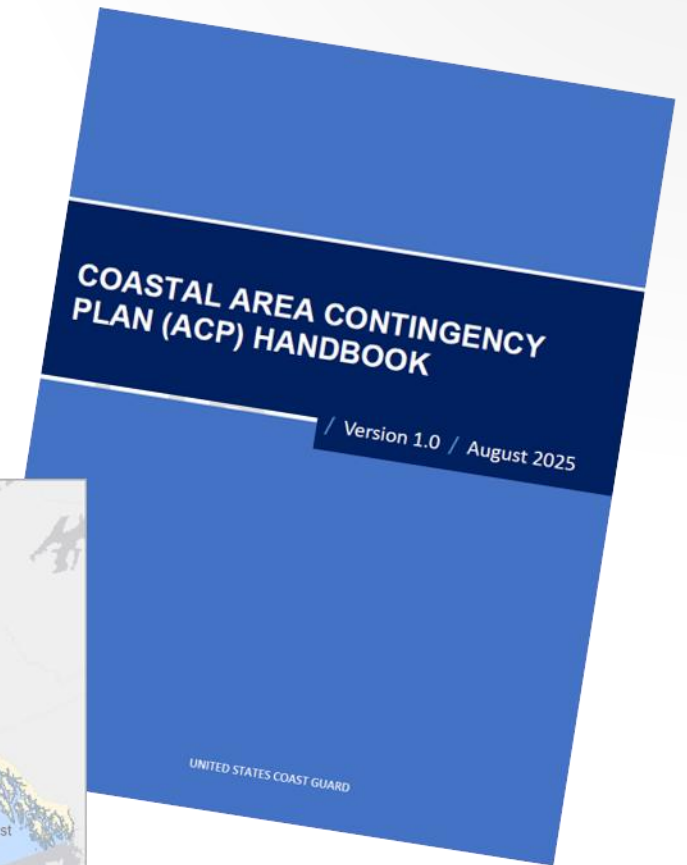
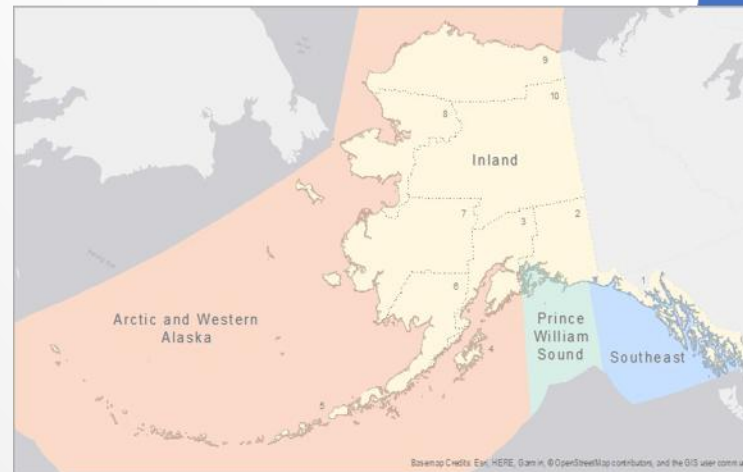
Next meeting: October 21, 2026

📍 Juneau, AK

* GRS Subcommittee is meeting monthly with last meeting on July 23, 2026, and next meeting is August 20th, 2026, in Juneau AK

AREA CONTINGENCY PLAN UPDATE

- Last major update: March 2021
- Updates in alignment with the new Coastal Zone ACP Sponsorship Model are in progress
- SEAK's ACP update is anticipated for October 2026



JUNEAU GLACIER LAKE OUTBURST FLOOD 2026 UNIFIED COMMAND RESPONSE

- August 7th: in anticipation of Mendenhall River reaching flooding, DEC and USCG conducted an initial Shoreline Cleanup and Assessment Technique (SCAT) surveys along the Mendenhall River.
- August 12: National Weather Service confirmed the outburst was underway
- August 13: Mendenhall Lake gauge crested at 14.7 ft. Barriers held and largely contained the inundation.
- August 13: SCAT surveys repeated with no spills of oil observed



CASE SUMMARY/ ENFORCEMENT

- Pollution Reports: 63
- Federal Projects: 0
- LOWs issued: 6
- NOVs issued: 1



AREA COMMITTEE NEEDS FOR ALASKA RRT SUPPORT

- Continued support for improving and updating our Area Contingency Plan in accordance with CG-MER guidelines.



AREA COMMITTEE CONTACTS

ADEC Area Planning website:

<http://alaska.gov/go/7EKN>



August 2026: Pre-GLOF SCAT Survey, Juneau, AK



ARCTIC AND WESTERN ALASKA AREA COMMITTEE

REPORT TO ALASKA REGIONAL RESPONSE TEAM
10SEP 2026

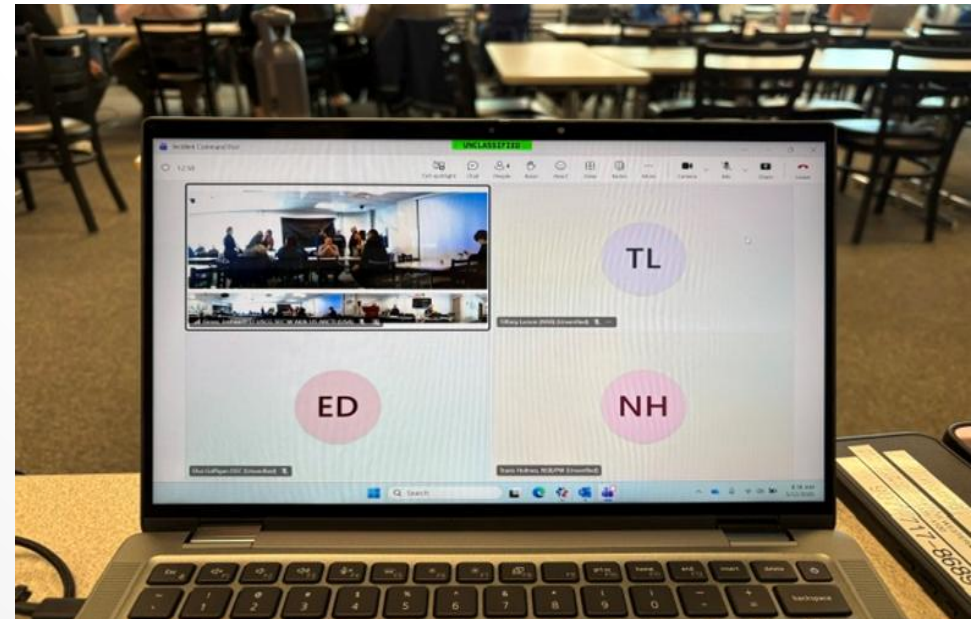
AREA COMMITTEE UPDATE

AWA AC Meeting

- 05 November
- 550W 7th Ave, Suite 280. AK Dept. of Transportation and Public Facilities

Training & Exercises:

- JBER Joint Exercise– JBER – 10-13 AUG
- Hilcorp – MAD Prudhoe Bay FE– 18, 20 AUG
- Marathon – Kenai Pipeline FSE – 20 AUG
- U.S. Air Force – JBER – 11-12 AUG
- Crowley Fuel LLC FE – Nome – 07 OCT
- USCG SEC WAK MOL TTX – Anchorage – 04 NOV
- USCG SEC WAK Seminar – AURORA – 15-16 DEC
- CANUS Arctic Exercise – Anchorage – DEC



AREA CONTINGENCY PLAN UPDATE

- The CY25 ACP revision is published on the ADEC website. [Arctic & Western Alaska Area | AK Dept. of Environmental Conservation](#)
- **CY2026 ACP Update:**
 - Area Secretaries have completed drafting 9 “pending development” sections of the ACP for the 2026 and starting the process for final review.
 - 1330 – AC Meetings
 - 1340 – Annual Report
 - 1410 – ACP Annual Update, Review and Approval Process
 - 1520 – Facility Response Plans
 - 1560 – RCPs
 - 1570 – International Plans
 - 1600 – ACP Relationship to NRF
 - 1700 – ACP Relationship to NIMS
 - 1800 – ACP Relationship to MTS Focused Response Plans

CASE SUMMARY: F/V ARCTIC SEA GROUNDING

- 18JUN26-21JUN26: Resolve Marine returned to St. George to conduct removal of remaining fuel onboard. Previously identified #2 starboard tank that contained 5,800 gallons of fuel was found full of sea water. All other tanks were similarly full of sea water or empty. Dive team conducted an assessment and found the hull had significant cracks on the port and starboard side appx amidship.
- Complete loss of all products onboard at the time of the incident- estimate 51,000+ gallons of fuels.
- Responsible party has contracted Resolve Marine for wreck removal to begin mid-August.



CASE SUMMARY: TRADING BAY SHEEN

- 24AUG26–26AUG26: A sheen was reported by a pilot on the west side of Cook Inlet near the decommissioned Spark Platform at approximately 1430. All pipeline infrastructure in the vicinity was secured as a precaution. A Unified Command consisting of the Hilcorp Alaska, DEC & USCG was established. Hilcorp inspectors surveyed the Spark Platform and found no evidence of a source. On August 25th and 26th four overflights were conducted with agency observers on board that observed no sheen. The Alaska Response Corporation supported aerial observations and had a vessel on scene that was also unable to locate any sheen.
- 27AUG26: Unified Command stood down the Incident Management Team and transitioned operations to a monitoring and investigation phase after response crews confirmed no visible or recoverable product remained on the water.
- Status / Disposition: Source and volume of the initial sheen remained undetermined; no environmental impact was detected, and line restart protocols were initiated under regulatory oversight.



SPECIAL ANNOUNCEMENTS

NSTR



AREA COMMITTEE SUPPORT REQUESTS FOR ARRT

NSTR



AREA COMMITTEE CONTACTS

ADEC Area Planning website:
<http://alaska.gov/go/7EKN>

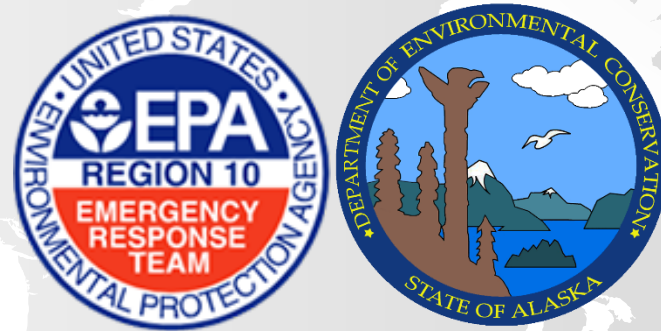
Contact us:

Ms. Julie Liford-Parker
Julie.Parker@alaska.gov

MSTCS Nicholas Johnston
Nicholas.d.johnston@uscg.mil

LCDR Amanda Faulkner
Amanda.K.Faulkner@uscg.mil





INLAND AREA COMMITTEE

Report to Alaska Regional Response Team

SPECIAL ANNOUNCEMENTS

No report due to active response to wildfires





LUNCH

Meeting will restart at 1:00 PM (AKST)

- **If you want to offer a public comment, sign up in “Chat” or the sign-up sheet located in the room**
- **Must sign up by the end of this lunch break.**

WELCOME BACK

Member sign in



www.AlaskaRRT.org

Contact info: Bob
Clatterbuck, NTSB Branch
Chief for Hazardous
Materials Accident
Investigation. E-Mail:
robert.clatterbuck@ntsb.gov

Cell: 202-744-4692

AFTERNOON AGENDA

1:00 OSRI: An Overview (45 Minutes)

1:45 Vessel Traffic and Modelled Predicted Worst-Case Discharge (30 Minutes)

2:15-2:30 BREAK

2:30 Tools for Visualizing Coastal Flood Risk in Alaska (30 Minutes)

3:00 Monitoring Permafrost Degradation: Remote Sensing Insights on Infrastructure, Wildfires and Community Impacts (45 Minutes)



Supporting Federal and State On-Scene Coordinators

ALASKA RRT

The logo for the Alaska Rapid Response Team (ALASKA RRT). It features a blue globe with a map of Alaska highlighted in green. The text "Supporting Federal and State On-Scene Coordinators" is written in a curved path above the globe. Below the globe, the text "ALASKA RRT" is written in large, bold, blue capital letters.

OSRI: AN OVERVIEW



OIL SPILL RECOVERY INSTITUTE
CORDOVA, ALASKA

Oil Spill Recovery Institute (OSRI)

Heather A. Parker

Research Program Manager

Alaska Regional Response Team Meeting - Anchorage

10SEP2026

www.osri.us

Discussion Topics

- What is OSRI?
- What does OSRI do?
- OSRI 4 Strategic Goals
- How does OSRI collaborate?
- Recent Projects of Note
- Future Directions
- OSRI Collaborations
- OSRI Newly Funded Project – ICS Based Community Engagement Tool

What is OSRI? (1 of 2)

Oil Spill Recovery Institute

- Non-profit organization, managed by the Prince William Sound Science Center out of Cordova, AK, which provides funding each year for oil spill related projects and studies
- FOCUS: Arctic and Sub-Arctic Regions



Source: NBC.com

What is OSRI? (2 of 2) – OPA 90



TITLE V—PRINCE WILLIAM SOUND PROVISIONS SEC. 5001.

OIL SPILL RECOVERY INSTITUTE. (a) ESTABLISHMENT OF INSTITUTE.—

The Secretary of Commerce shall provide for the establishment of a Prince William Sound Oil Spill Recovery Institute (hereinafter in this section referred to as the “Institute”) through the Prince William Sound Science and Technology Institute located in Cordova, Alaska. (b)

FUNCTIONS.—The Institute shall conduct research and carry out educational and demonstration projects designed to—

- (1) identify and develop the best available techniques, equipment, and materials for dealing with oil spills in the arctic and subarctic marine environment;
- (2) and (2) complement Federal and State damage assessment efforts and determine, document, assess, and understand the long-range effects of Arctic or Subarctic oil spills on the natural resources of Prince William Sound and its adjacent waters (as generally depicted on the map entitled “EXXON VALDEZ oil spill dated March 1990”), and the environment, the economy, and the lifestyle and well-being of the people who are dependent on them, except that the Institute shall not conduct studies or make recommendations on any matter which is not directly related to Arctic or Subarctic oil spills or the effects thereof.



Source: response.restoration.noaa.gov

What does OSRI do?

- OSRI receives funds every year to give as grants to fund a range of marine oil-spill research, demonstration, and education projects
 - Funds come from the interest earned off a deposit from the Oil Spill Liability Trust Fund (OSLTF)
- OSRI runs on a yearly cycle, aligning with Federal Fiscal Year (FY) calendar (01OCT to 30SEP)
- Every year, OSRI solicits for study/project ideas in the spring and the Scientific and Technology Committee (STC) and RPM review those and forwards some for consideration for possible funding.
- An Annual Work Plan Committee is established to further refine those ideas into potential studies/projects starting the next FY, with an estimated budget
 - These are written up into the draft Annual Work Plan for the coming FY
- This draft Annual Work Plan is presented to the OSRI Advisory Board at their annual fall meeting for review and approval.
- Once the Advisory Board approves the draft Annual Work Plan, Requests for Proposals are sent out for each of the new Study Ideas approved for the coming FY.
- Proposals are reviewed and selected by the STC and RPM. Contracts are then established for the selected studies/projects and grant funds are disbursed on a reimbursable basis.

OSRI's Advisory Board is comprised of representation mandated by OPA 90:

State of Alaska Agencies

- Department of Fish and Game (one representative appointed by the Commissioner)
- Department of Environmental Conservation (one representative appointed by the Commissioner)
- Department of Natural Resources (one representative appointed by the Commissioner)

Federal Agencies

- Department of Commerce (one representative appointed by the Secretary)
- Department of the Interior (one representative appointed by the Secretary)
- U.S. Coast Guard / Department of Transportation (one representative appointed by the Secretary or Commandant)

Industry and Community Organizations

- Fishing Industry (two representatives appointed by the Governor of Alaska from communities affected by the *Exxon Valdez* oil spill)
- Alaska Native Communities / Entities (two representatives from Native entities affected by the *Exxon Valdez* oil spill, with at least one representing the Prince William Sound region)
- Oil and Gas Industry (two representatives added under standard board structures/amendments)

At-Large Public/Community Representatives (two representatives)

- Non-Voting Academic/Research Members
- University of Alaska Fairbanks / Institute of Marine Science (one non-voting member)

Prince William Sound Science Center (one non-voting member)

OSRI 4 Strategic Goals

1. Understand

- *Attain an interdisciplinary understanding of Arctic and Subarctic marine environments related to: oil spill prevention and response; ecological baseline conditions; the source, transport, fate, and effects of spilled oil; damage assessment; and environmental recovery following a spill.*

2. Respond

- *Enhance oil spill response and mitigation capabilities in the Arctic and Subarctic marine environments.*

3. Inform

- *Share information and educate about the issues of oil spill prevention, response, and impacts.*

4. Partner

- Partner with organizations and communities to leverage funding, facilities, knowledge, and experience.
 - Coordinate with other efforts related to OSRI's mission
 - Seek out new partnership opportunities

OSRI STRATEGIC GOALS



How does OSRI collaborate?

Partnerships is a critical foundation to OSRI's mission

- OSRI partners with other agencies, universities, nonprofits, etc when funding studies/projects – usually get better results
- OSRI is represented on a number of key committees, groups, councils etc in Alaska, WA, OR and Canada, including:
 - North Pacific Research Board
 - Multi-Partner Research Initiative: Canadian-led group of international experts and scientists focusing on oil spill studies
 - Pac States BC Task Force R&D Group
 - Alaska RRT
 - Prince William Sound Regional Citizens Advisory Committee
 - Cook Inlet Regional Citizens Advisory Committee
 - Industry Technical Advisory Committee (ITAC): led by Oil Spill Response Ltd.



Source: pwssc.org

How does OSRI collaborate? (2)

OSRI partners regularly on studies, projects and other activities with:

- **CRRC** (Coastal Response Research Center)
- **USCG: GLCOE** (Great Lakes Center of Expertise) and USCG **R and D Center**
- **BSEE** (Bureau of Safety and Environmental Enforcement) and **BOEM** (Bureau of Ocean Energy Management) – *now MMA*
- Univ of Alaska Anchorage and UA Fairbanks
- Others

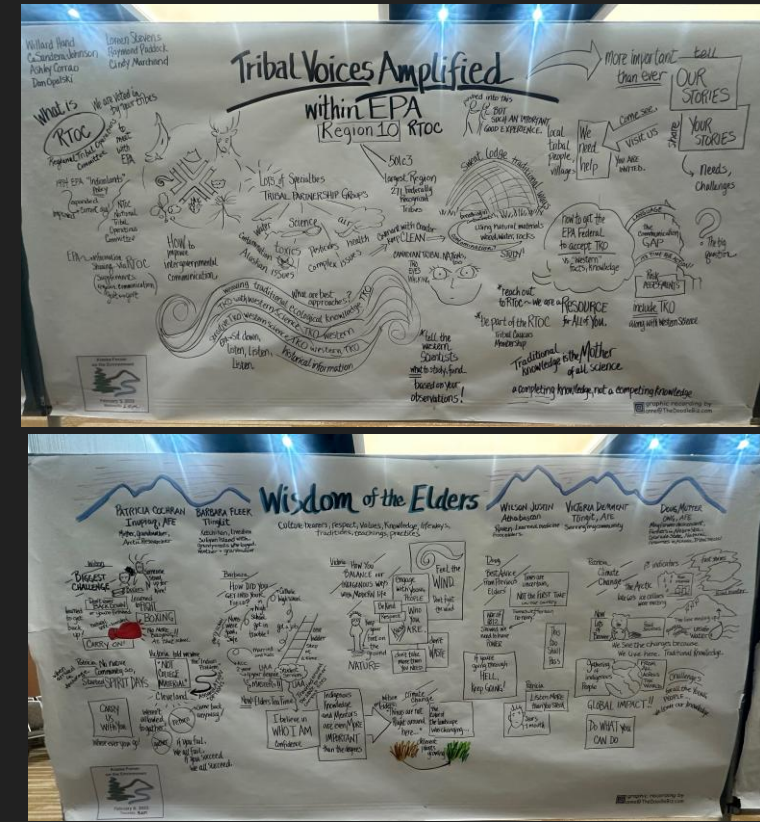


Source: USCG

How does OSRI collaborate? (3)

Conferences and Annual Meetings

- OSRI funds key annual conferences and meetings:
 - **Alaska Marine Science Symposium (AMSS)**
 - **Alaska Forum** (AF – formerly AFE)
 - **IOSSC 2026** (International Oil Spill Science Conference) – Montreal CN
 - **Clean Americas Nov 2026** – Dallas, TX
- OSRI leads panel sessions at these and other conferences to highlight some of its projects/studies and provides opportunities for PIs from OSRI-funded studies to share and disseminate their information.



Alaska Forum

Recent Projects of Note www.osri.us



- Evaluation of In-Situ Response Options
- Coordination of Oil Spill Research Activities Between the Multi-Partner Research initiative (MPRI) of Canada and US Research Efforts
- Beluga whispers: Filtering beluga dietary patterns through eDNA and passive acoustics
- Oceanography of Cook Inlet Tide Rips
- Impact of below-freezing air temperature on the formation and stability of oil emulsion
- Toxicity of Photoproducts from Complex Organic Compounds on Early Life Stage Fish
- Airborne Fluorosensor
- Oil-on-Water Measurements
- Sea ice modeling
- Food Safety/Security

Future Directions: FY2026 New Projects

GOAL 1: Understand:

- Trajectory Analysis Planner for Alaska
- Bering Strait Oil Spill Risk Analysis
- Community Engagement ICS tools (CEDOC)

GOAL 2: Respond:

- Remote Sensing of Oil in Shoreline Substrates
- Oil Thickness Using Near and Mid-IR

GOAL 3: Inform:

- 3 Graduate Fellowships
 - *Sunken oil formation as a product of oil and shoreline sediment interactions*
 - *Ecological interactions: Spatial and temporal distributions of Pacific herring and pink salmon in Prince William Sound*
 - *Migratory and winter movements and distribution of Pribilof Island black-legged kittiwakes and thick-billed murre*
- Headwaters 2 Ocean Classroom Education Program for K-12 Cordova schools
- Science of Oil Spills Training: Online version

GOAL 4: Partner:

- Continuing engagement and collaboration with existing partnerships and developing new ones.

Future Directions:(2)

OSRI 5-year Research Plan 2026-2030

- Indigenous People Engagement – *upcoming focus*
 - “Braiding” of Traditional Knowledge and Western Scientific Knowledge
 - Meaningful Engagement in
 - Spill Preparedness
 - Spill Response
 - OSRI is interested projects, workshops and other opportunities to explore Meaningful Engagement with Indigenous People

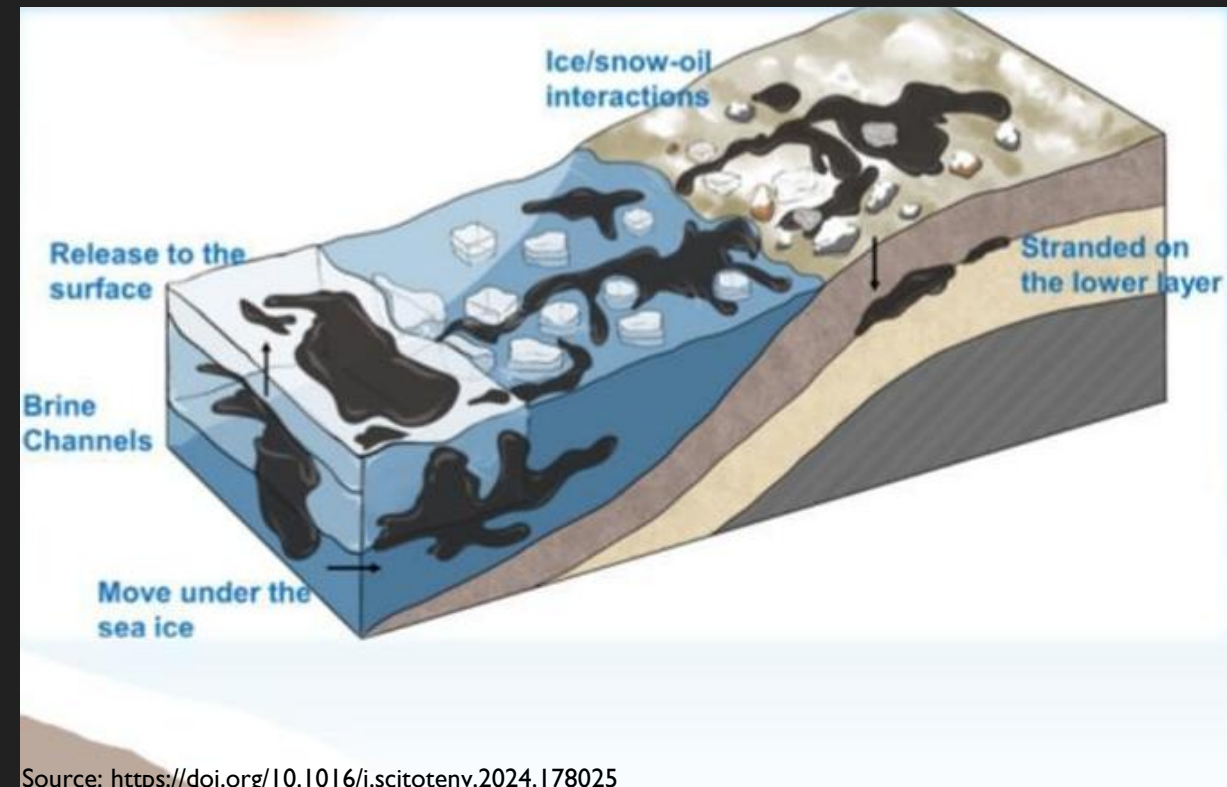


Source: response.restoration.noaa.gov

OSRI Key Collaborations

OSRI Collaborates with:

- Federal Agencies
- AK State Agencies
- Organizations (CRRC, RCACs, OSTF, others)
- Alaska Native Organizations
- Bi-National Partners (Canadian agencies, organizations)
- International Partners (Arctic groups and organizations with Arctic/SubArctic focus)
- *Continues to seek New Partnerships*



Source: <https://doi.org/10.1016/j.scitotenv.2024.178025>

New: OSRI FY26 Phase II (1 of 4)

Advancing the CEDOC Framework

WHAT.....

- OSRI is working with ADAC-Arctic and Virginia Tech on refining an ICS-based tool for Community Engagement:
 - **Community Engagement & Dynamics Observation Checklist (CEDOC)**
- *ICS-Integrated Framework for Public Welfare Protection During Oil and Hazardous Substance Spill Response*
- CEDOC deliberately mirrors the Shoreline Cleanup Assessment Technique (SCAT): a field methodology response personnel and Incident Command already understand.

OSRI FY26 Phase II (2 of 4)

Advancing the CEDOC Framework

HOW.....

- CEDOC assesses seven standardized elements of community welfare:
 - environmental damage,
 - economic effects,
 - cultural and community identity,
 - physical/mental health and behavioral response,
 - community cohesion and trust,
 - spill response and bureaucratic processes, and
 - communication/media effects
- Scoring each on a 0–10 scale and rolling results into a Green-Amber-Red rating adapted from the USCG's GAR model
- Data synthesized by the Assistant Liaison Officer, Community Engagement & Dynamics (ALOF-C) via a new ICS Form 232b (Public Welfare Review Summary) and routed into IAP each operational period
- Monitoring organization scales with incident complexity and gives UC/IC a rapid, repeatable, and auditable process for identifying actionable community and infrastructure strain
- This is a particular concern in remote Alaska communities, where a sudden influx of response personnel can quickly outpace local lodging, fuel, medical, communications, and other capacities

Indicator	Score 0 – 10 [Low to High]	Sources of Information				
		A. Observations in Formal Public Forums [e.g., Town Hall Meetings, Open Houses, PIO Briefings]	B. Observations in Informal Public Settings [e.g., Claims Offices]	C. Observations from Regional Stakeholder Committee Members [In Alaska]	D. Conversations with Community Representatives / Entities	E. Scan of Local, Regional, & National Media Sources [e.g., Print & Online Media, Television, Radio, Social Media, Instagram, Facebook]
4.1 Reports of physical symptoms among community / Tribal members / cleanup workers (e.g., headaches, respiratory issues)		☐	☐	☐	☐	☐
4.2 Public expressions of stress, anxiety, anger, grief, or hopelessness		☐	☐	☐	☐	☐
4.3 Reports of high levels of anxiety, depression, or trauma among community / Tribal members		☐	☐	☐	☐	☐
4.4 Reports of increased substance use among community / Tribal members		☐	☐	☐	☐	☐
4.5 Reports of increased sexual harassment / assault, hate crimes, domestic violence, or other types of violent crime in the community		☐	☐	☐	☐	☐
4.6 Increased demand for health or mental health services in the community		☐	☐	☐	☐	☐
Average Indicator Score:		Additional Observations / Sources: _____				

OSRI FY26 Phase II (3 of 4)

Advancing the CEDOC Framework

WHY.....

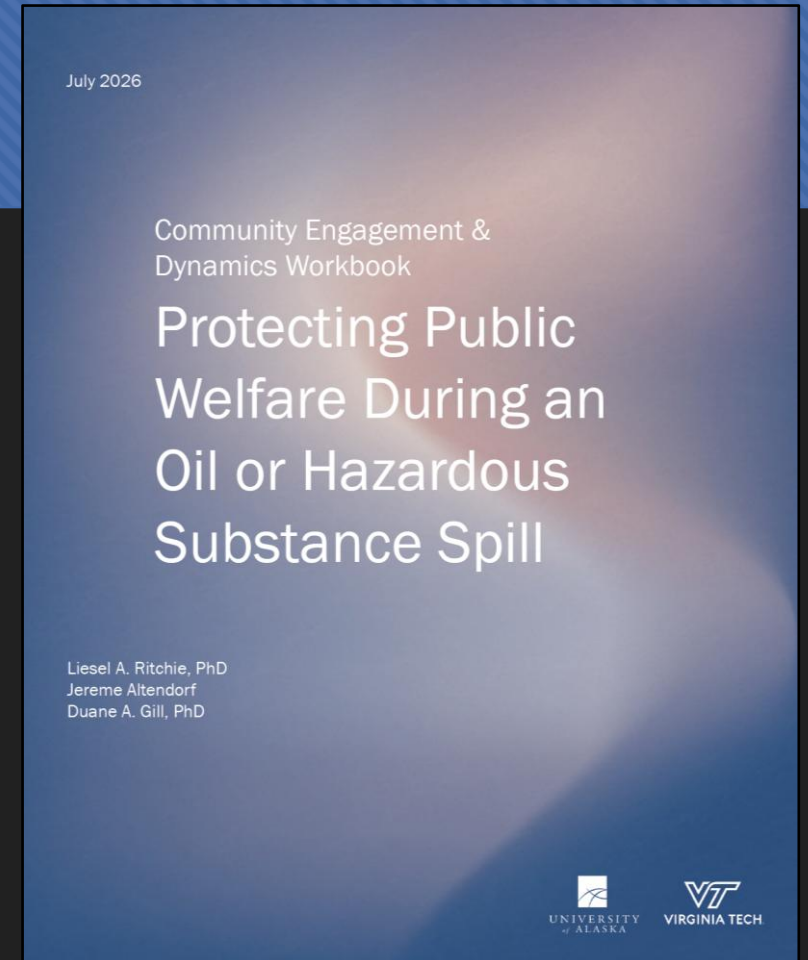
- The Clean Water Act (33 U.S.C. § 1321), the Oil Pollution Act of 1990 (33 U.S.C. § 2702 et seq.), CERCLA as amended by SARA (42 U.S.C. § 9604), and the NCP itself (40 CFR §§ 300.155, 300.317, 300.320, 300.322) direct the OSC to protect public welfare and to evaluate substantial welfare threats, but none of these authorities prescribe a method for doing so, or a definition of public welfare.
- OSCs are required to collect and manage this information during a response but consistent, ICS-based tools do not yet exist.

OSRI FY26 Phase II (4 of 4)

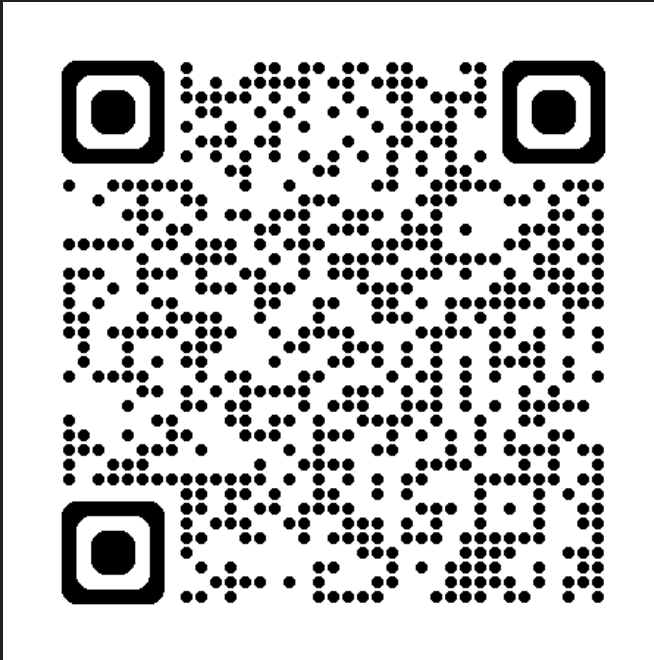
Advancing the CEDOC Framework

STATUS.....

- The CEDW v1.0 is substantively complete, with the full CEDOC instrument (Appendix A), the ICS Form 232b (Appendix B), and the legal and historical foundations of public welfare in spill response law (Appendix D)
- *This OSRI-funded Phase II is OSRI's first involvement in the CEDW/CEDOC project and advances the work already completed by funding additional listening sessions, interviews, and surveys with Alaska Native Tribal communities and other Alaska stakeholders*
- Goal: incorporate direct community feedback to refine the CEDOC and build buy-in for statewide adoption
- ARRT: Awareness and any feedback, as time and schedules allow



Questions?



<https://osri.us>



VESSEL TRAFFIC AND MODELLED PREDICTED WORST-CASE DISCHARGE

Vessel traffic and distribution of predicted Worst-Case Discharge oil volumes along Alaska's 10 coastal National Parks



Lisa Docken

Coastal & Oceans Coordinator

Alaska Regional Office

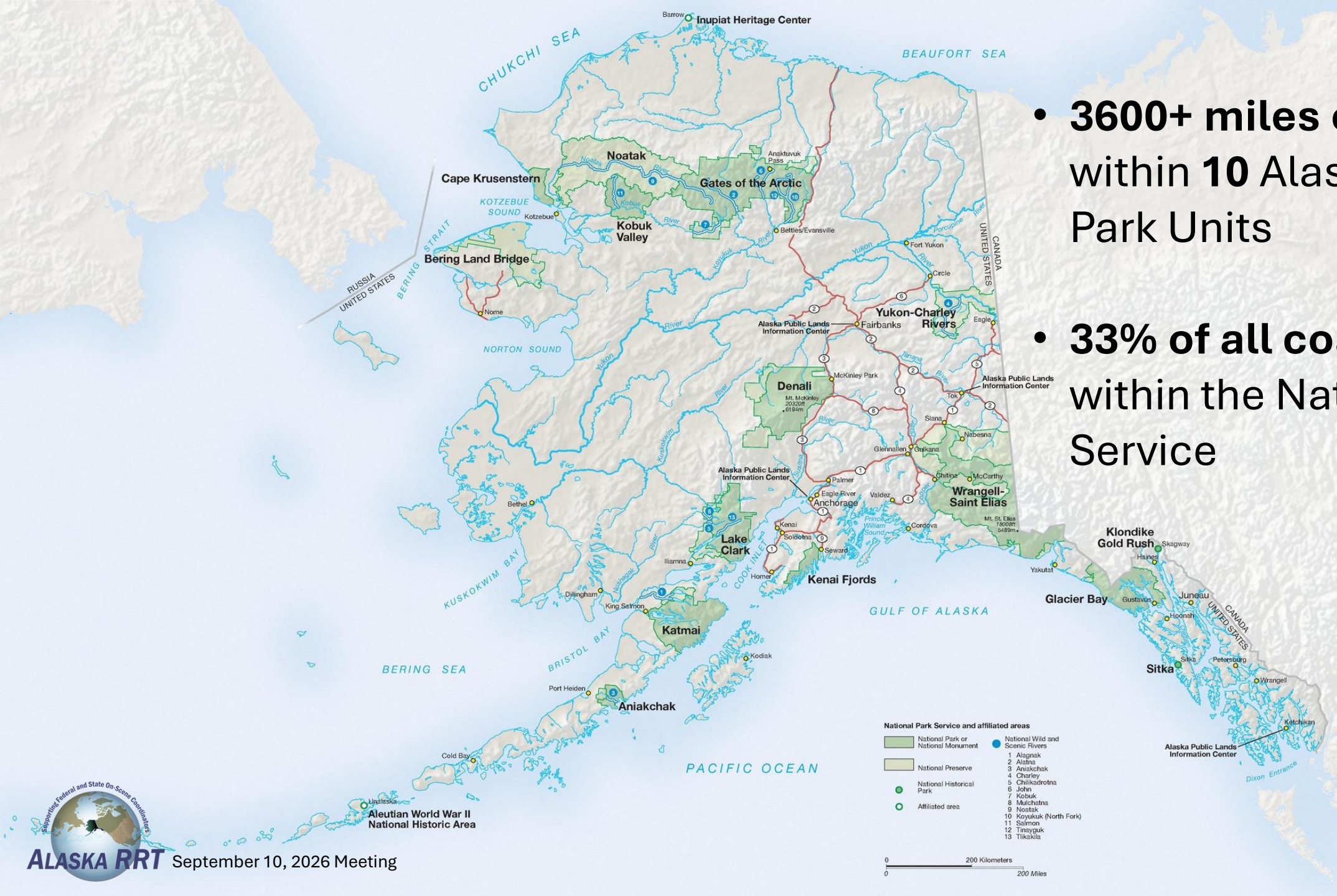
National Park Service



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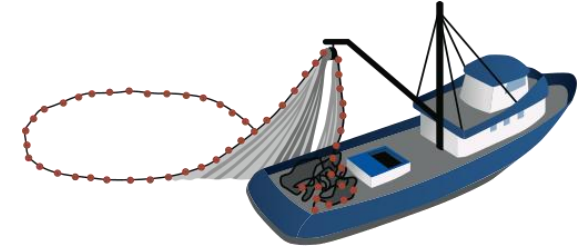
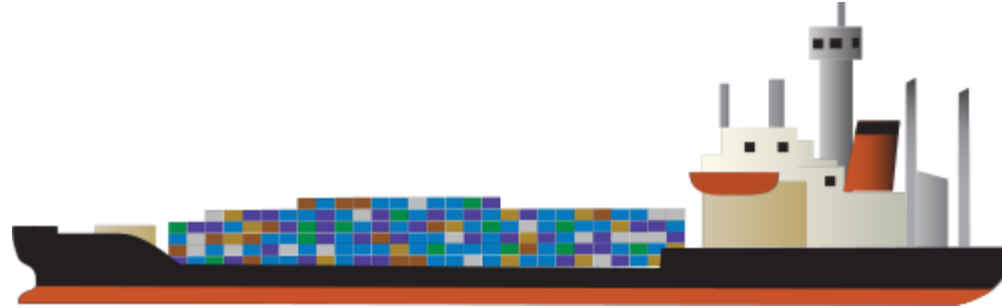


- **3600+ miles of coastline** within **10** Alaska coastal Park Units
- **33% of all coastlines** within the National Park Service



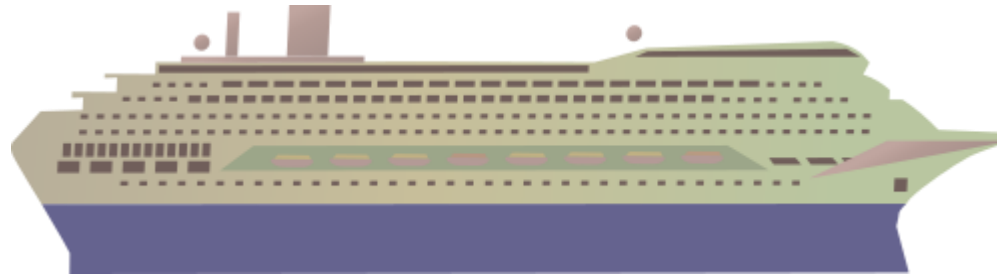
Vessel traffic is increasing in Alaska waters

↑ 58%



(2015-2020)

↑ 35.8%



(2019-2023)



The National Park Service preserves unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations. The National Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.—National Park Service Organic Act; August 25, 1916



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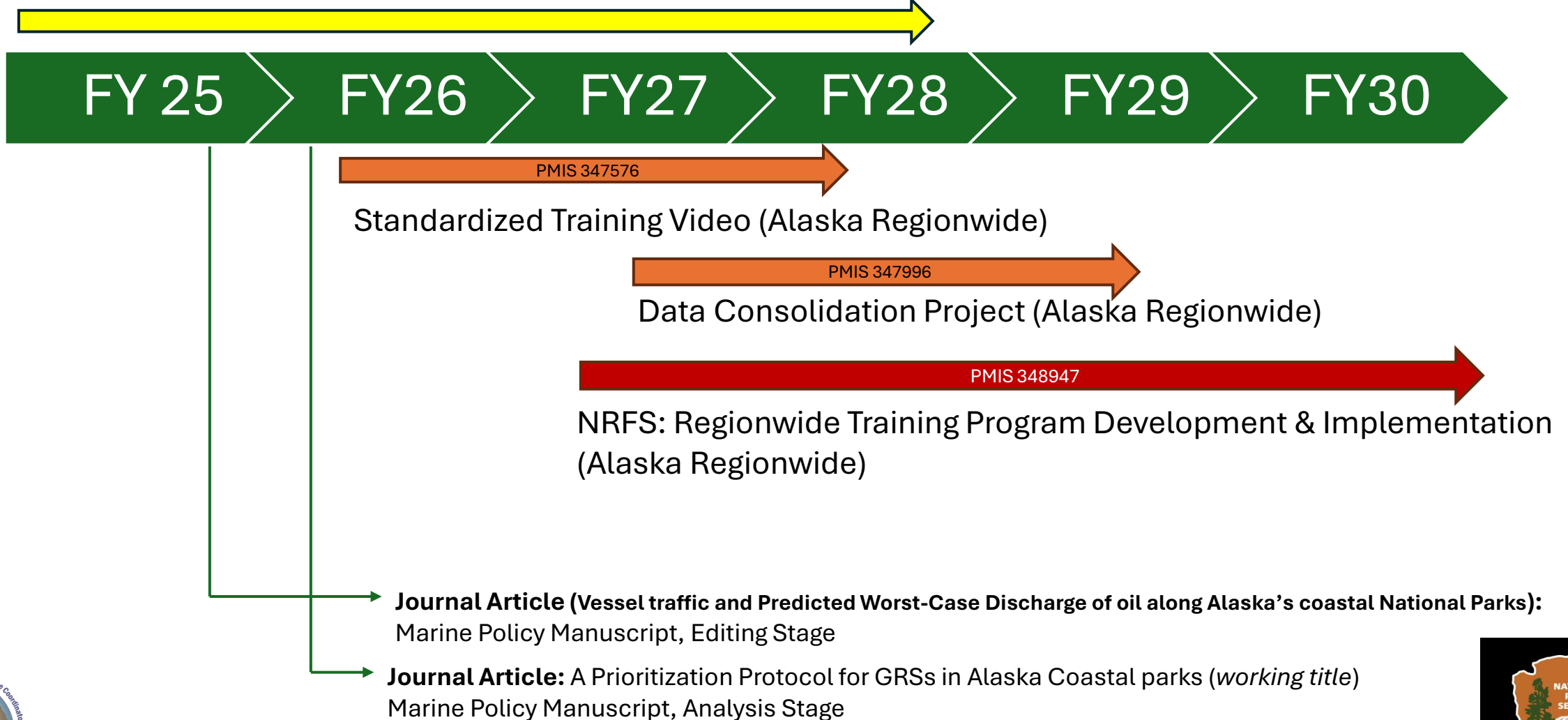
Outline

- AK Region Marine Oil Spill Preparedness Program
- AOIs
- AIS Data Consolidation
- Vessel Types and Vessel Counts
- Calculating WCD
- Spatial Distribution of WCD volumes
- Heat Maps and Park Relevant 'Hot Spots'
- QR Code for anonymous feedback



NPS AK Region Marine Oil Spill Preparedness Program

Glacier Bay National Park & Preserve Preparedness Program + Tabletops



Setting Areas of Interest (AOIs)

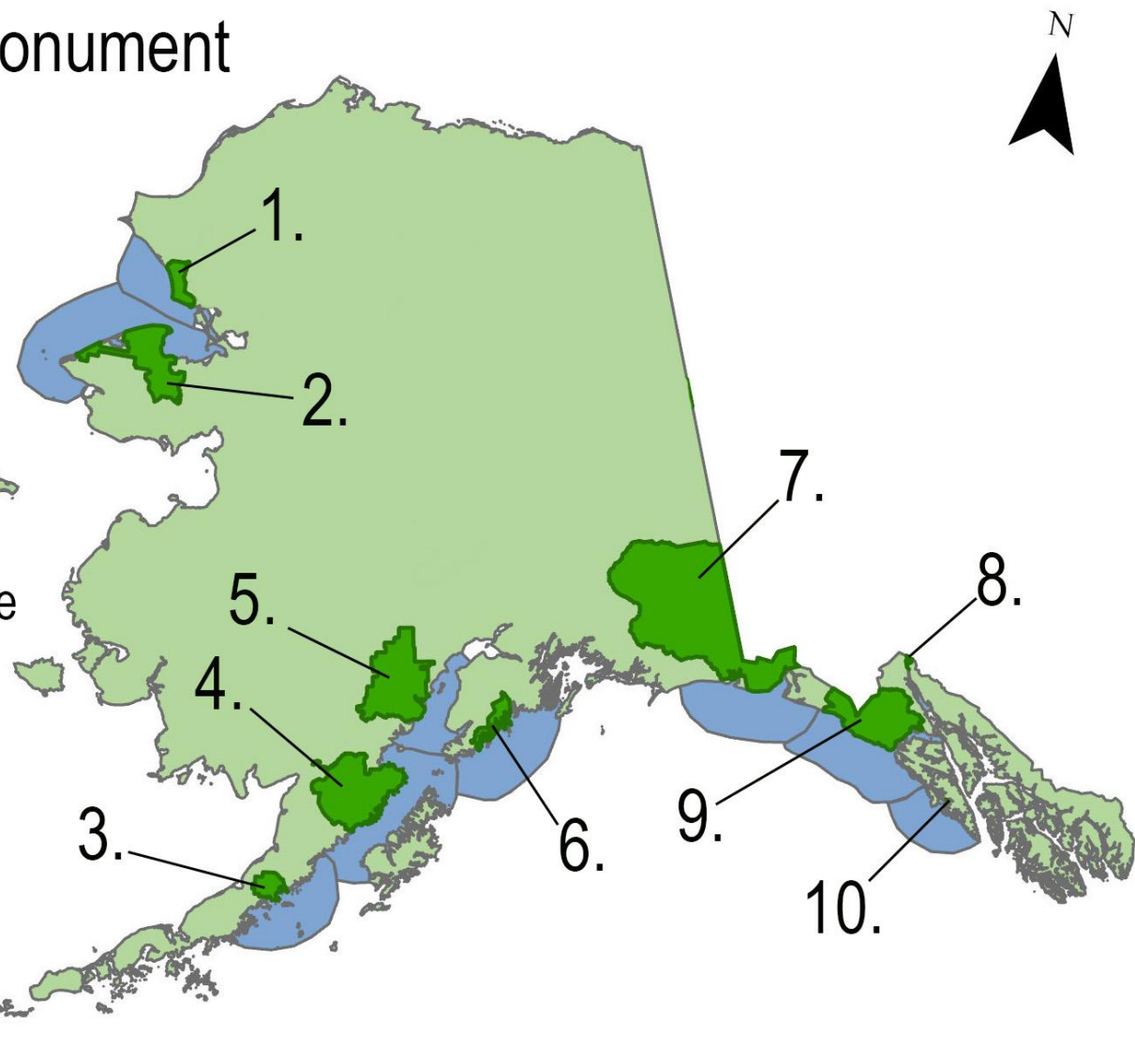


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-  National Park, Preserve or Monument
-  Area of Interest (AOI)

1. Cape Krusenstern National Monument
2. Bering Land Bridge National Preserve
3. Aniakchak National Preserve
4. Katmai National Park & Preserve
5. Lake Clark National Park & Preserve
6. Kenai Fjords National Park
7. Wrangell-St. Elias National Park & Preserve
8. Klondike Gold Rush National Historic Park
9. Glacier Bay National Park & Preserve
10. Sitka National Historical Park



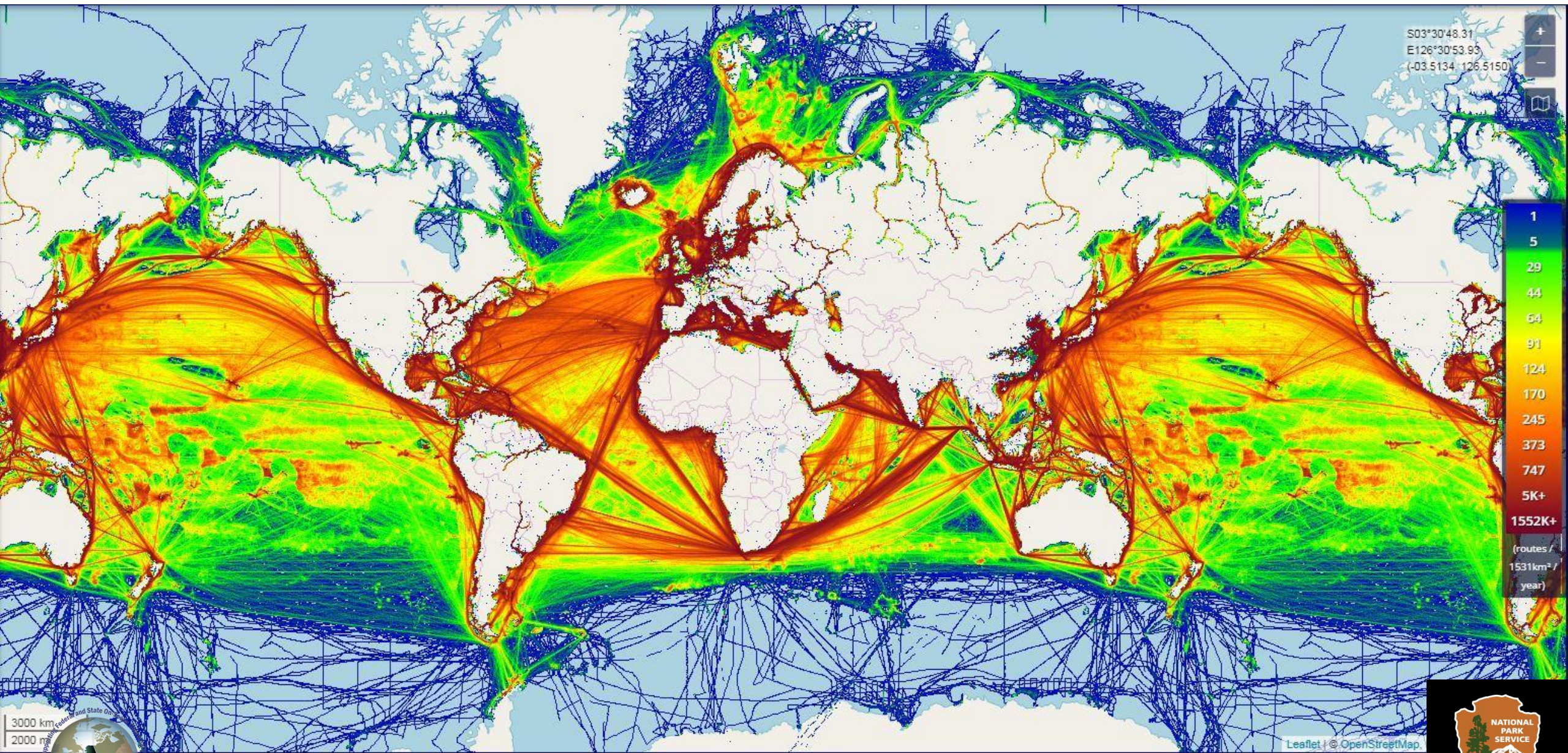

0 200 Kilometers

ALS data consolidation by AOI



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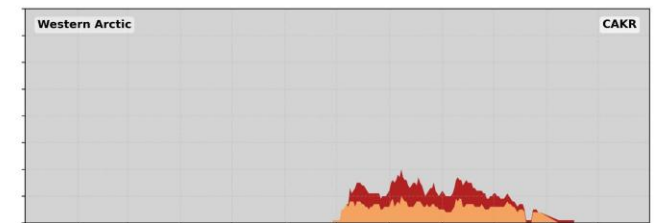
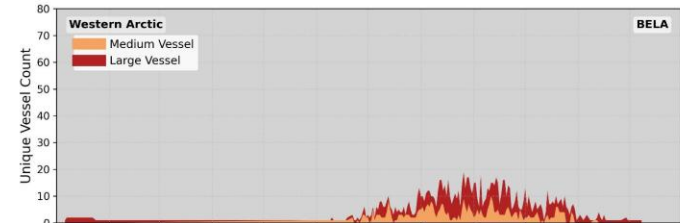
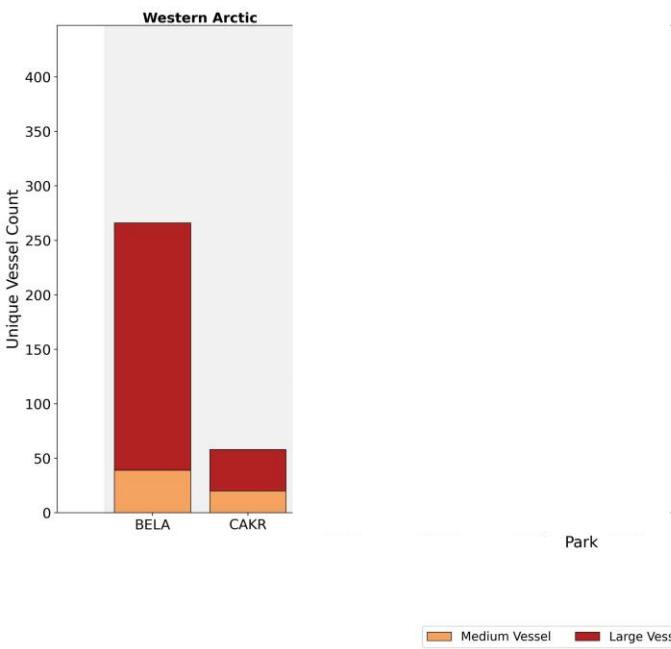


Table 3. Final complete dataset summary of 2024 AIS data for each coastal park in Alaska

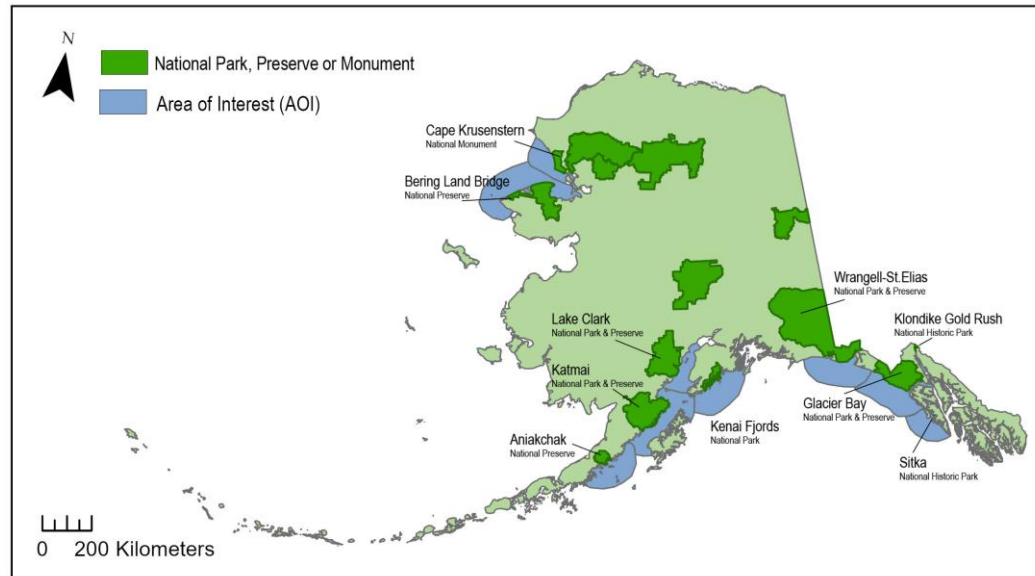
National Park	Original number vessel detections	Detections removed*(%)	Final number vessel detections	Total unique vessel count	Unique vessel count (length ≥ 19.81 m)
Aniakchak National Preserve	111,748	5.34	105,770	459	338
Bering Land Bridge National Preserve	53,259	0.60	52,943	299	273
Cape Krusenstern National Monument	166,694	0.00	166,688	146	59
Glacier Bay National Park & Preserve	584,154	13.56	504,916	926	392
Katmai National Park & Preserve	474,509	13.40	410,885	617	447
Kenai Fjords National Park	1,181,454	10.10	1,061,920	646	400
Klondike Gold Rush National Historic Park	415,582	13.15	360,916	289	123
Lake Clark National Park & Preserve	1,430,148	12.65	1,249,183	119	31
Sitka National Historic Park	2,078,793	3.74	2,000,996	772	454
Wrangell-St. Elias National Park & Preserve	337,702	28.19	242,508	333	179
Total	6,701,165	8.12	6,156,725	2233	1221

Vessel Types and Vessel Count





Medium vessel 20-40m, Large vessel > 40m



2024-01 2024-02 2024-03 2024-04 2024-05 2024-06 2024-07 2024-08 2024-09 2024-10 2024-11 2024-12 2024-01 2024-02 2024-03 2024-04 2024-05 2024-06 2024-07 2024-08 2024-09 2024-10 2024-11 2024-12



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Calculating WCD



Calculating Worst-Case Discharge (WCD)

(Power-law): $WCD = e^{a(t)} \cdot Length^{b(t)} + Breadth^{c(t)}$

Vessel Type
Cargo (non-petroleum carrier)
Cargo (petroleum carrier)
Cargo(LPG/LNG)
Fishing
Passenger

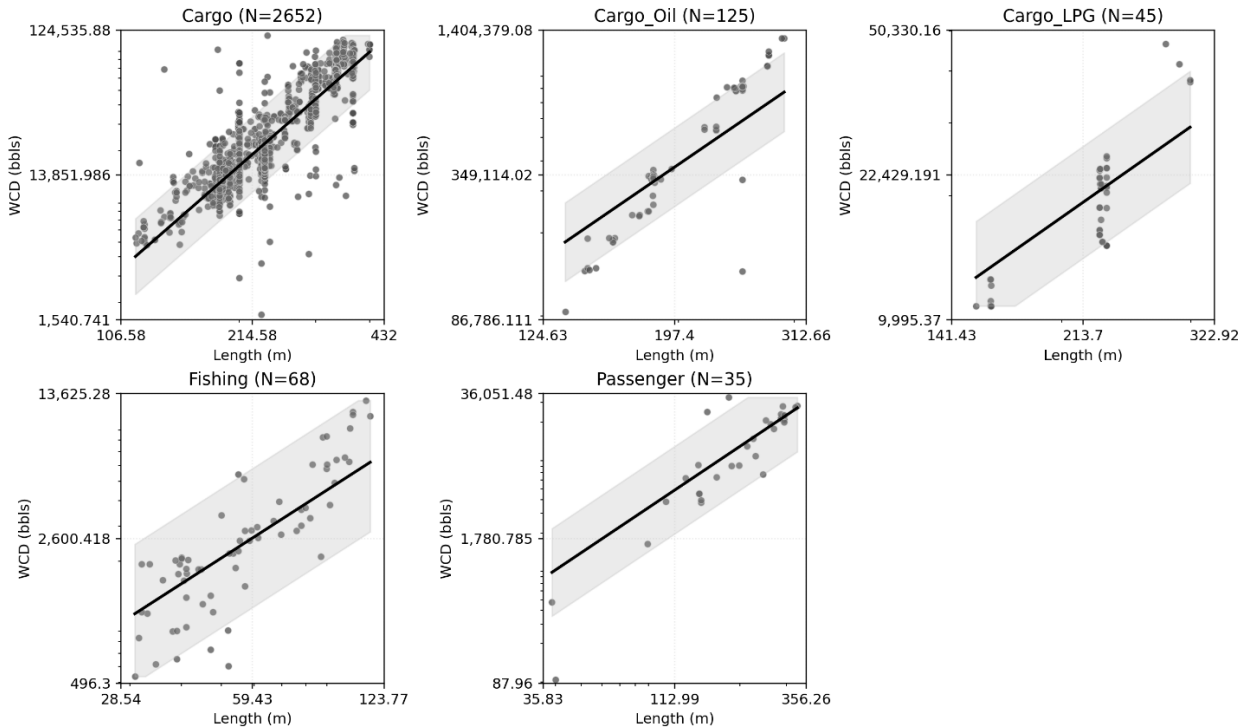
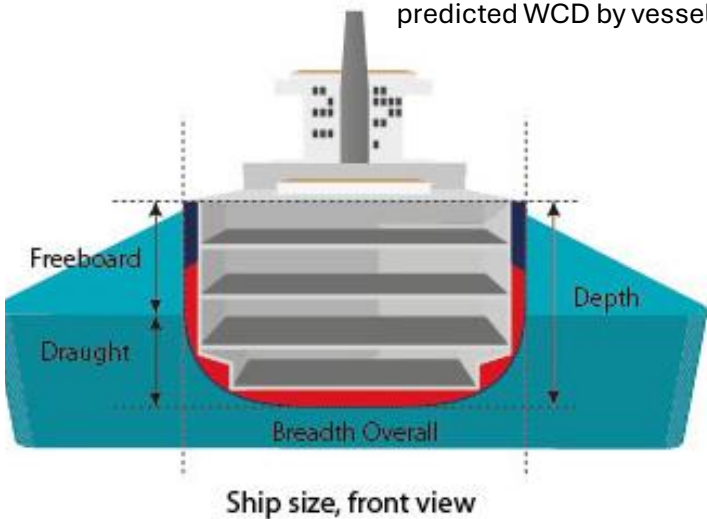
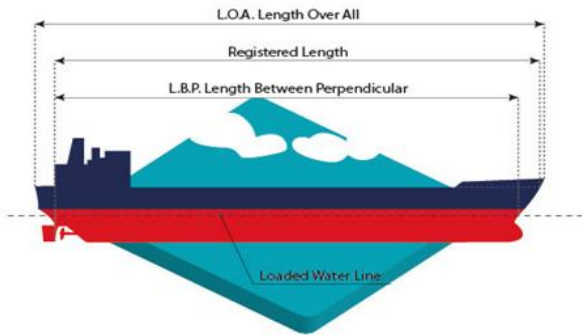
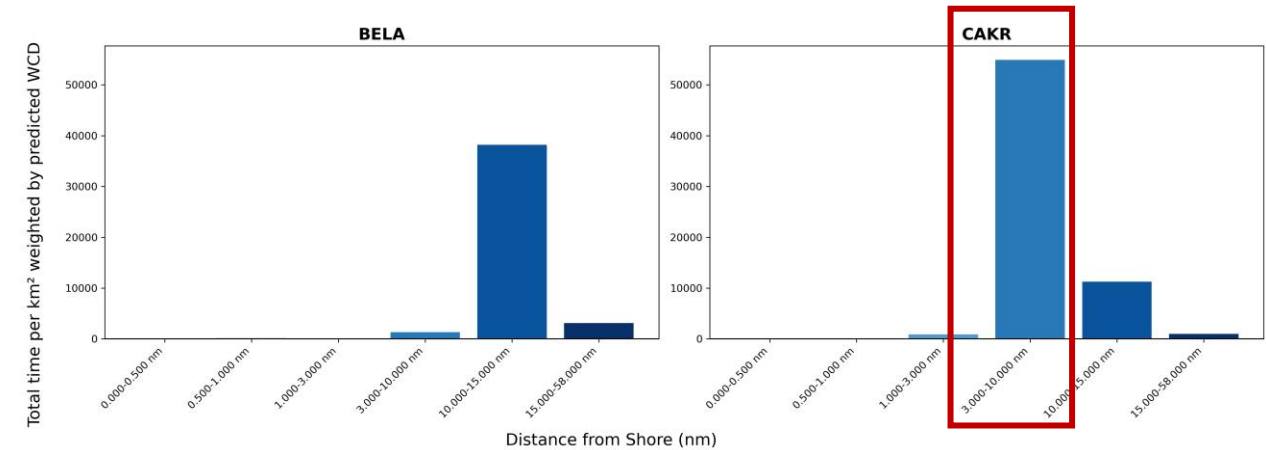
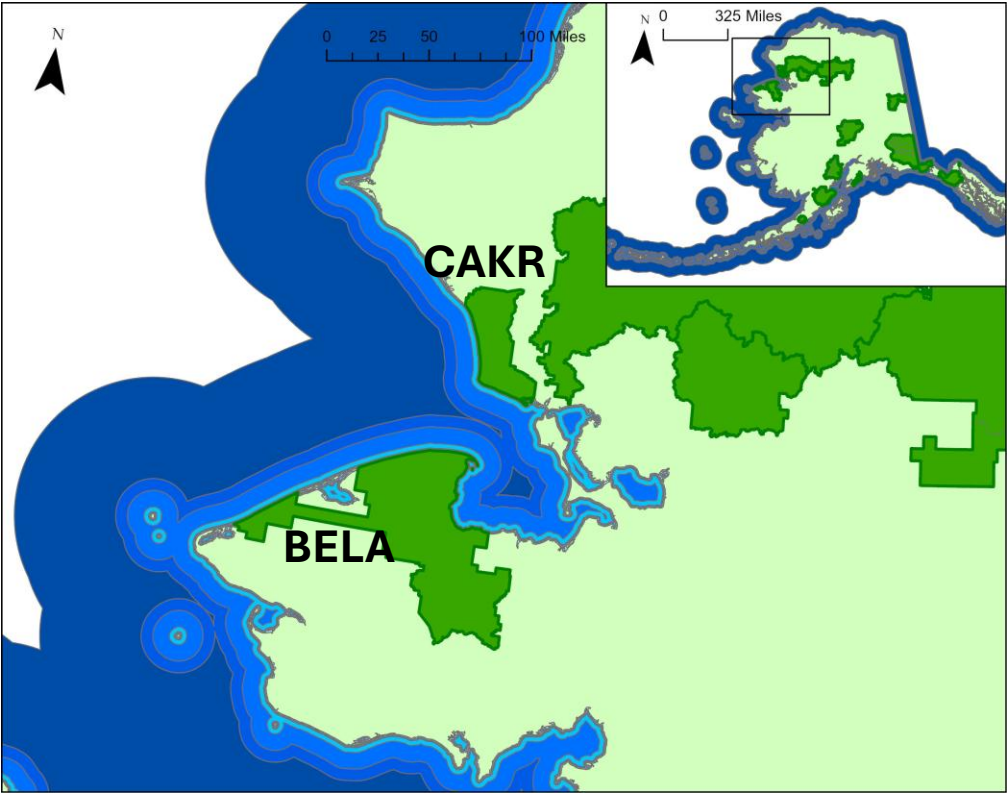
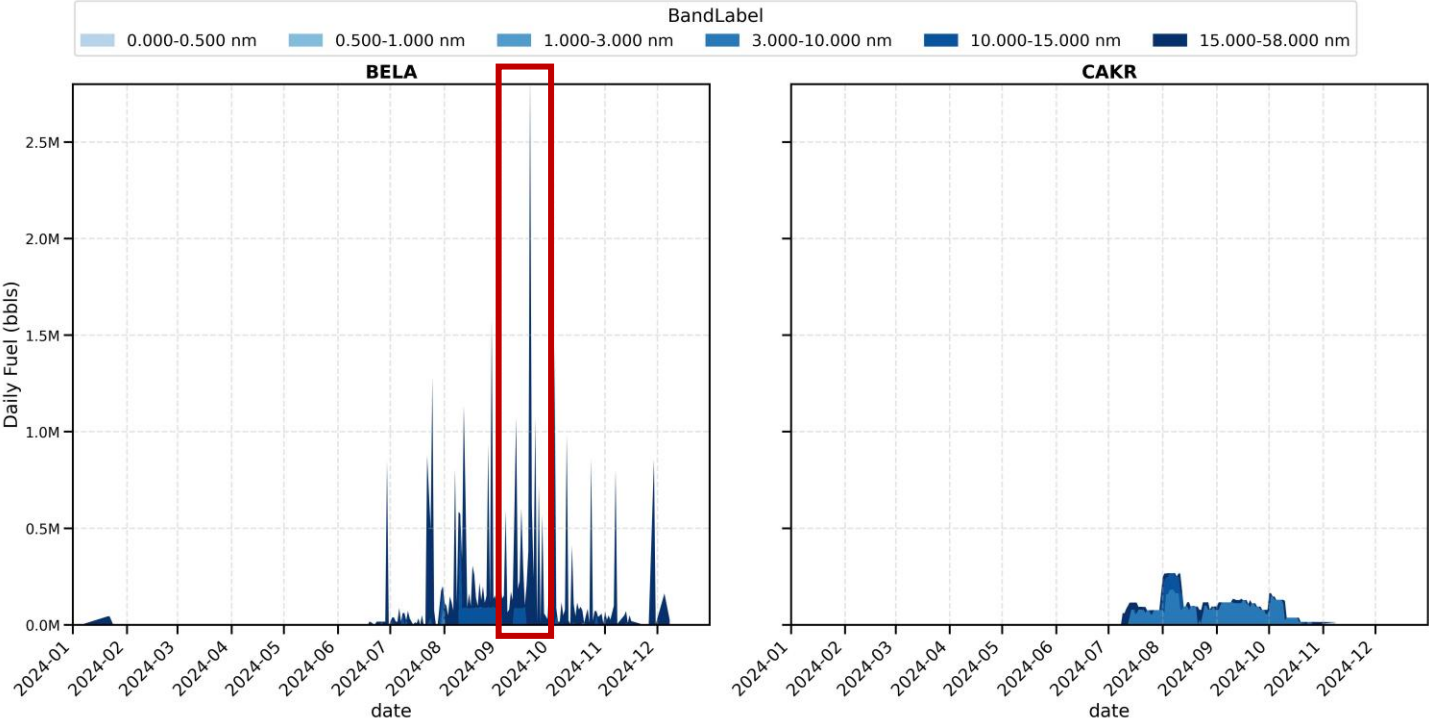


Figure. Representative data set of WCD volume by vessel length used to generate models for predicted WCD by vessel types.



Spatial Distribution of WCD volumes

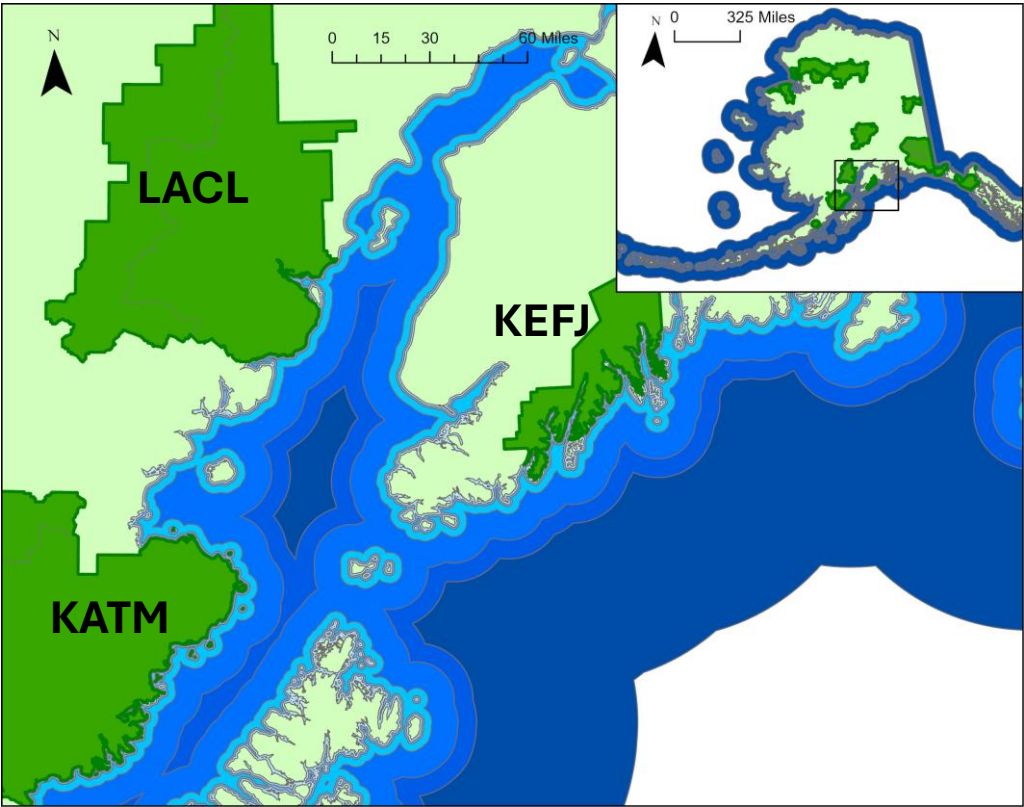
Western Arctic Parks



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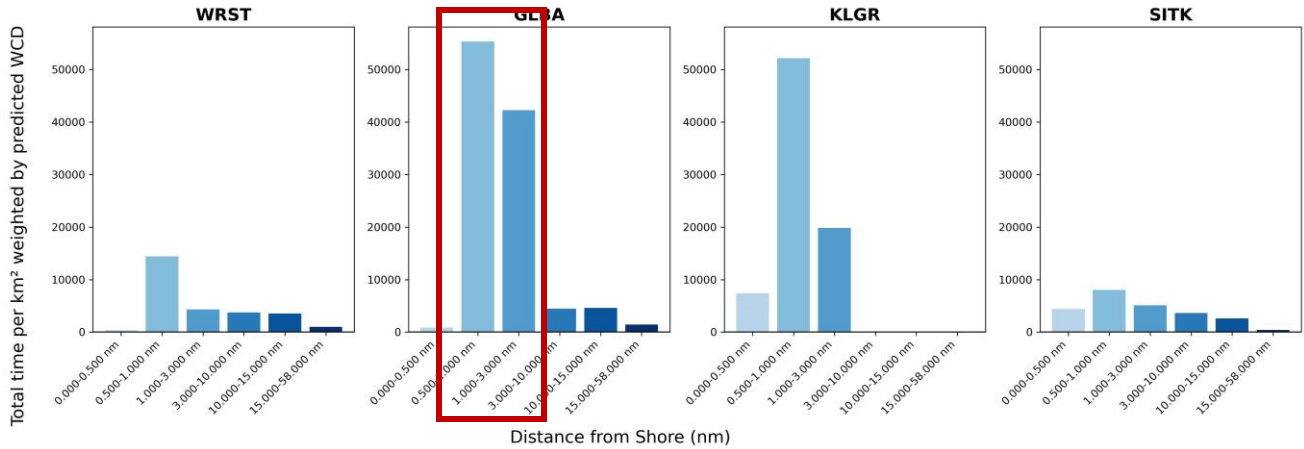
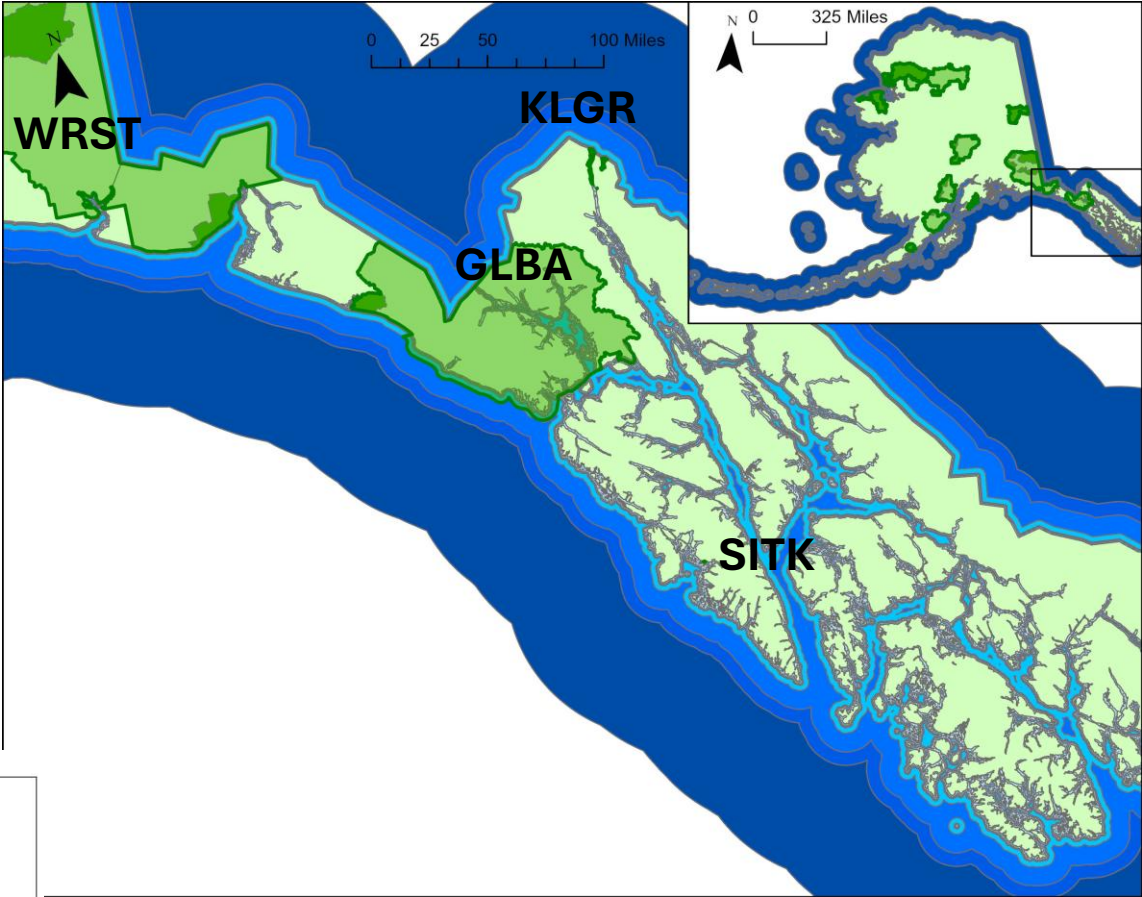
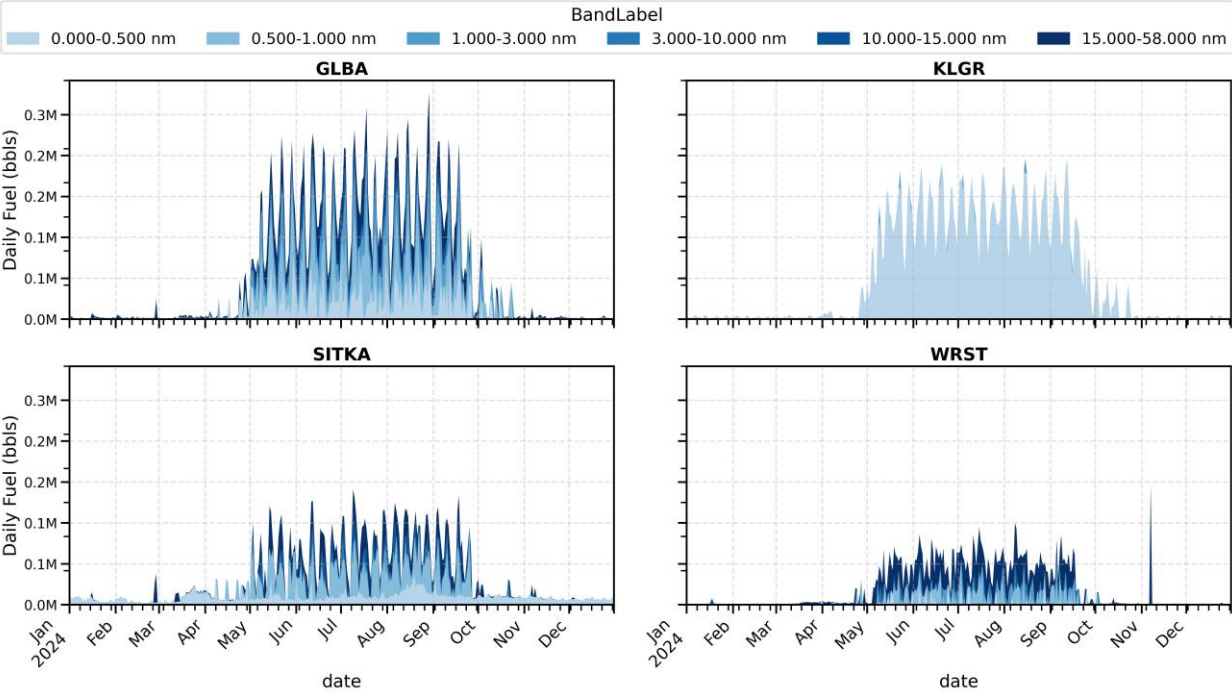
Southwest Parks



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Southeast Parks



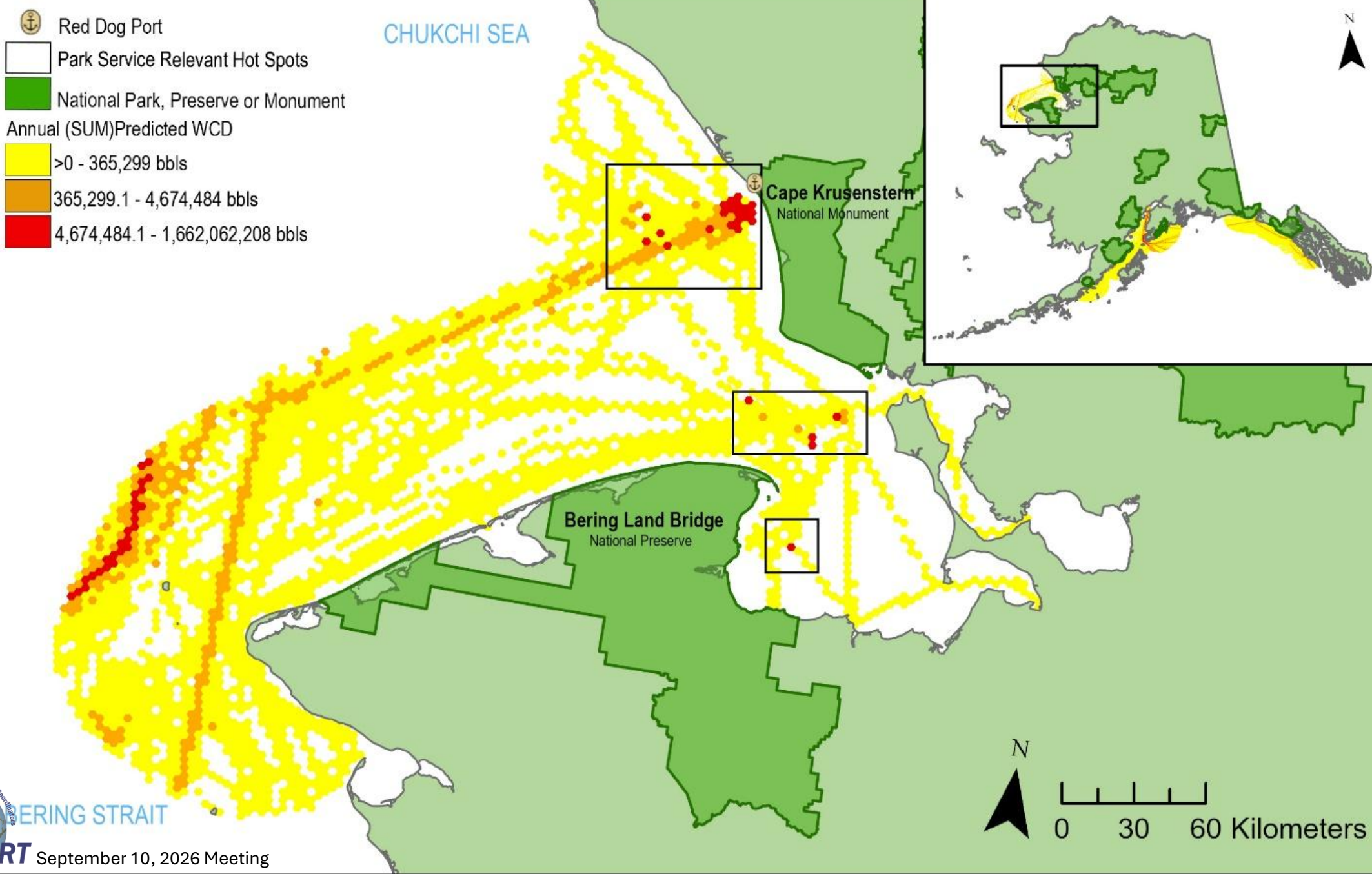
Heat Maps

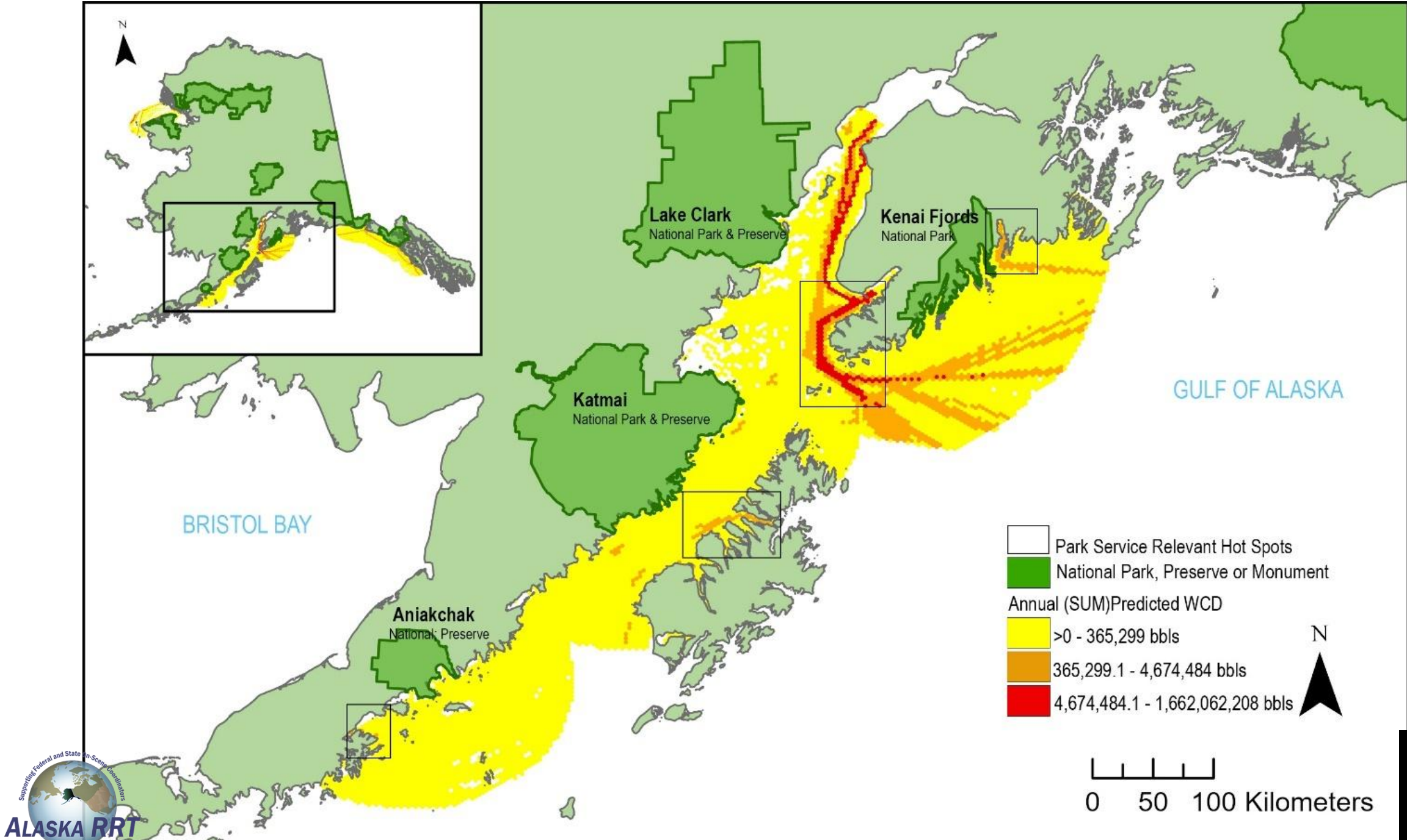
How much oil where and for how long?

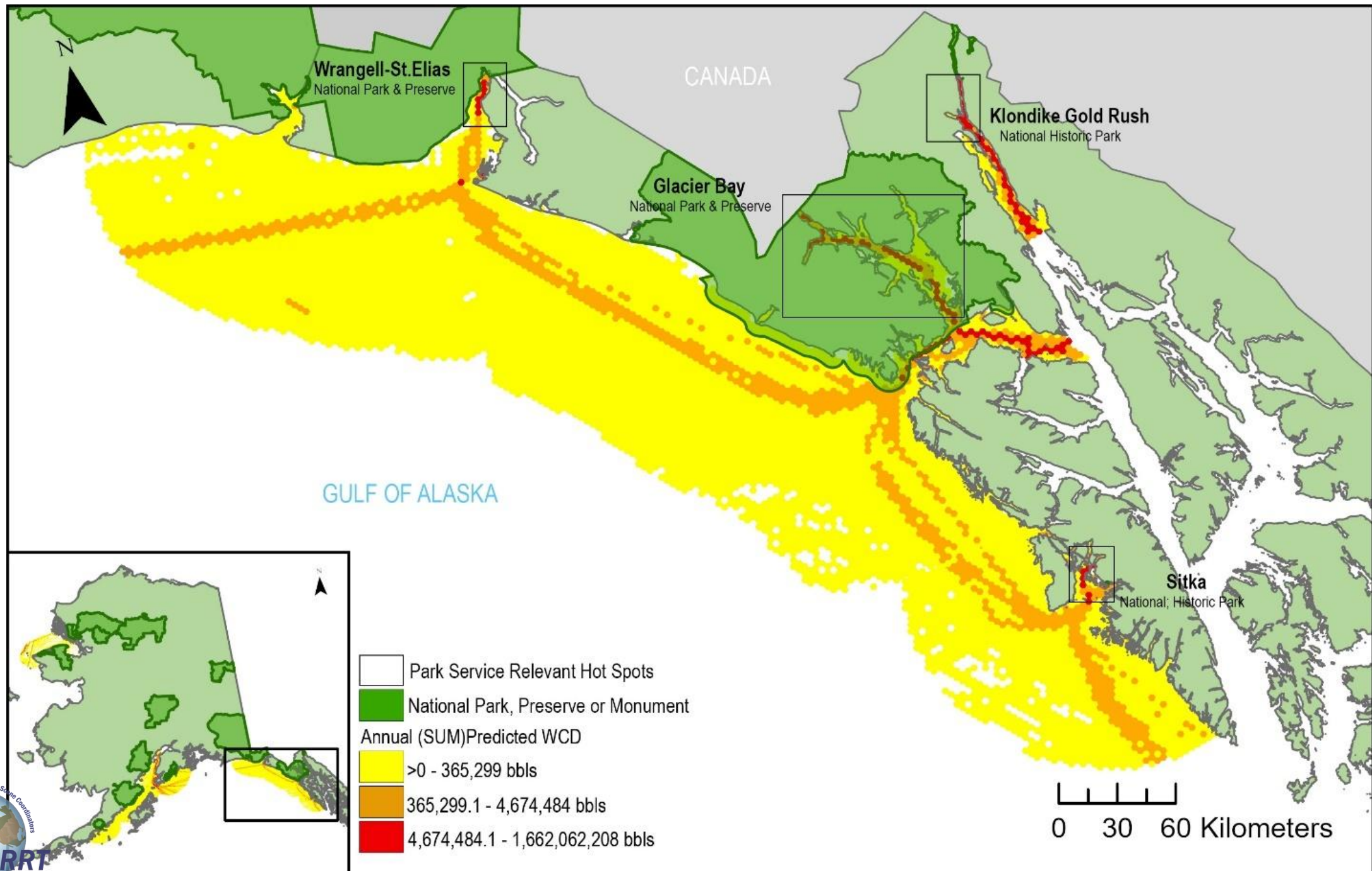


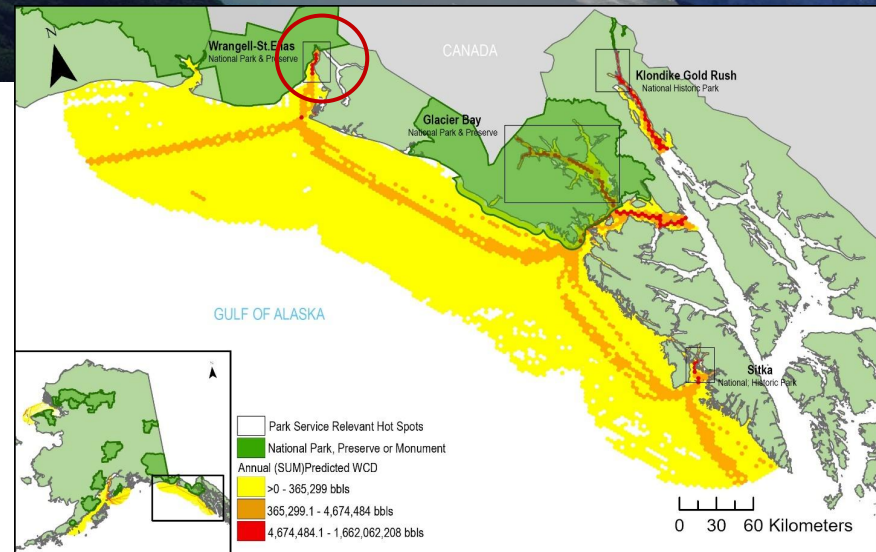
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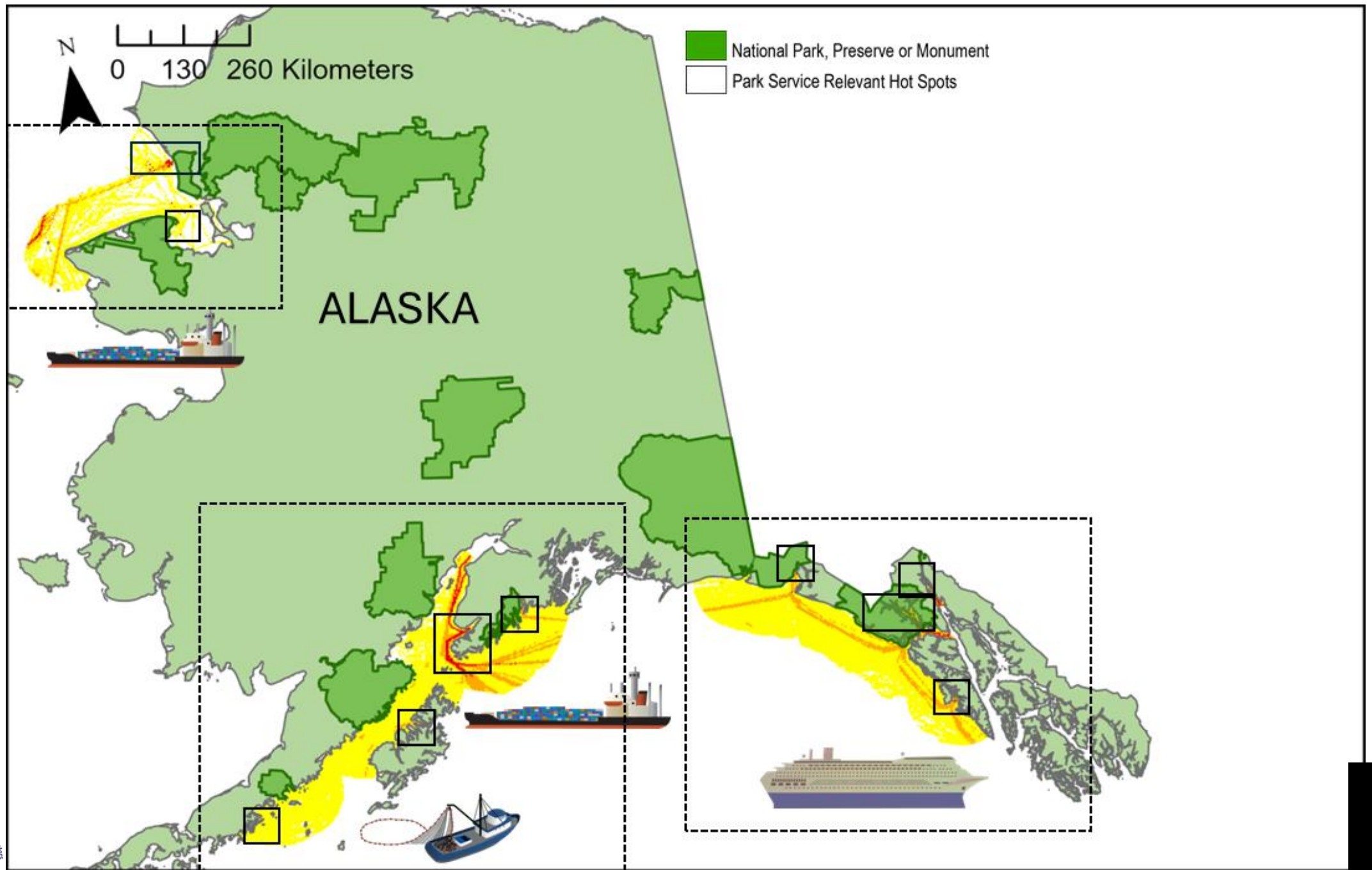


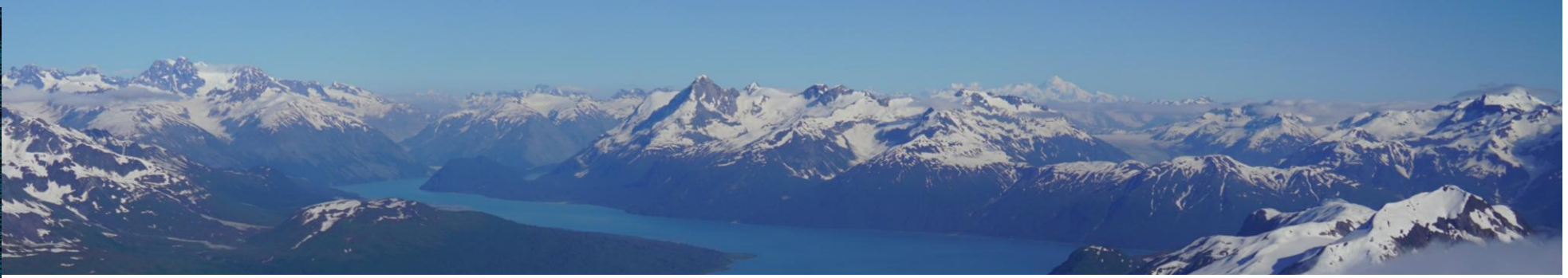
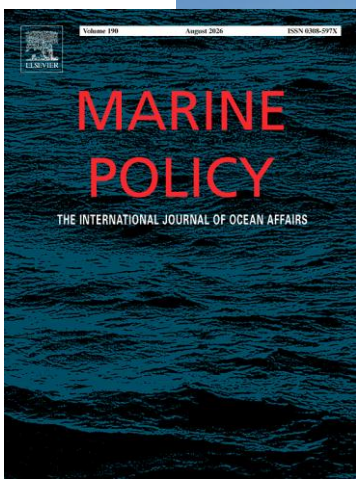












Next steps:

Leveraging what we see in vessel traffic for management and decision-making

1. NPS Internal preparedness training- using realistic scenarios for tabletop exercises for each coastal park
2. External partnership engagement in preparedness efforts (federal, state, local community and vessel operators)
3. Prioritization for monitoring equipment for earthquakes, landslides and tsunami warning
4. Public safety messaging....
5. Review of Geographical Response Strategies along park coastline

What do you think? What areas of this study are helpful to your work and what may be missing? What could be improved? All feedback is anonymous.

Taking note of the Unknowns:

- LPG/LNG non-tank vessels- product volumes
- Barge contents pulled by tugs
- Need to consider trends over time. And changes to vessel size.

Lisa_docken@nps.gov



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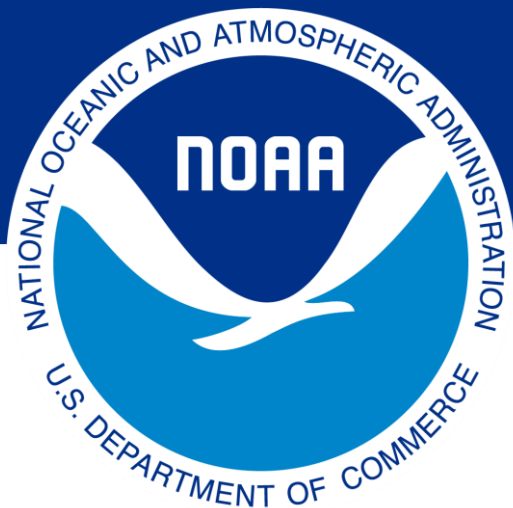


GLBA cruise ship 2024





TOOLS FOR VISUALIZING COASTAL FLOOD RISK IN ALASKA



NOAA Office for Coastal Management

Sea Level Rise Tools

Harper Baldwin

PRESENTATION OUTLINE

Coastal Flooding Tools in Alaska

- **Office for Coastal Management Tool: Sea Level Rise Viewer**
- Office for Coastal Management Tool: Sea Level Calculator
- Other federal and state tools with similar functionality:
 - State of Alaska DGGS' AK-FIT
 - USGS CoSMoS
 - Comparison of functionality and coverage

NOAA Office for Coastal Management (OCM)

Digital Coast



Dana Brown
*Alaska Regional
Geospatial Coordinator*



Harper Baldwin
Geospatial Analyst



Billy Brooks
Physical Scientist

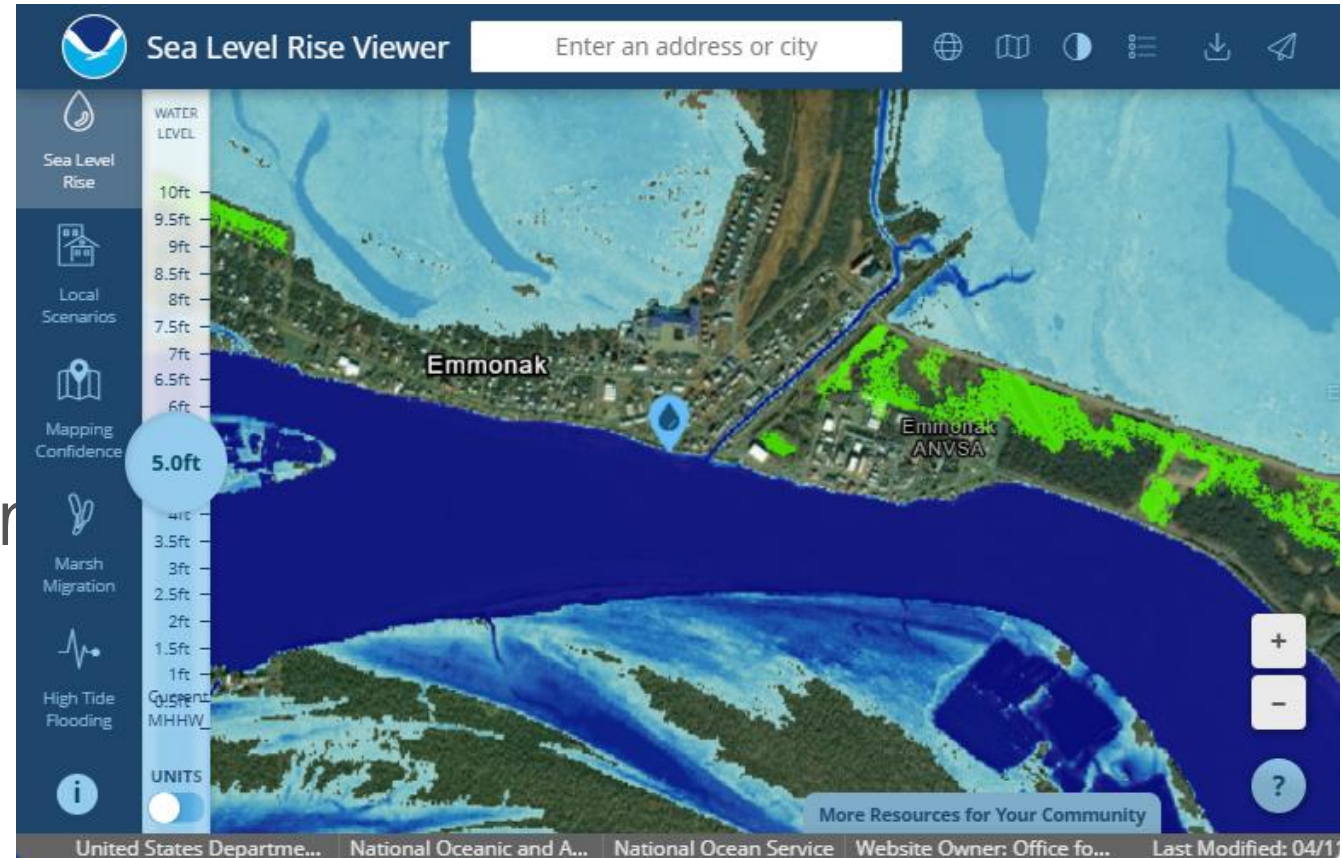


Doug Marcy
*Coastal Hazards
Specialist*

Sea Level Rise Viewer

Visualize coastal flooding and sea level rise

- Screening-level planning and decision-support tool
- Modified “bathtub-style” approach with hydrologic connectivity
- Flood extent and depth for user-selected water levels
- Integrated with local sea level rise projections

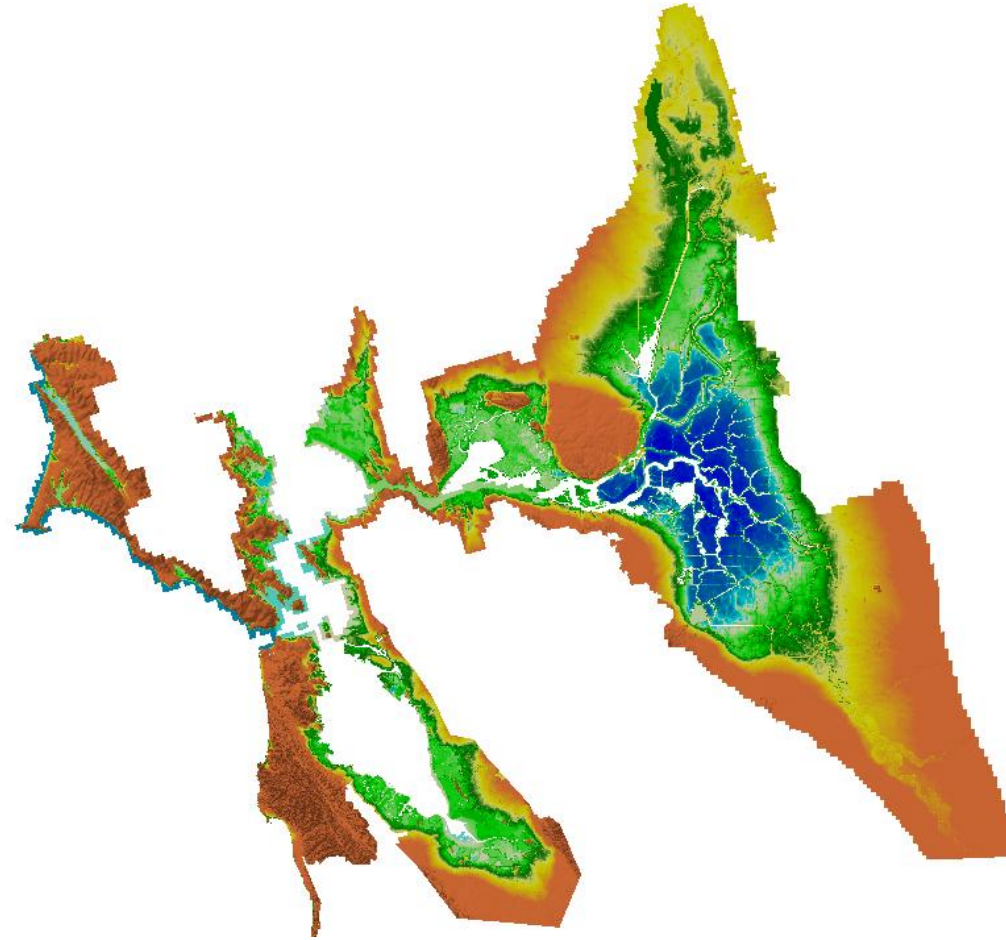


Emmonak, Alaska
coast.noaa.gov/slr

Source Data

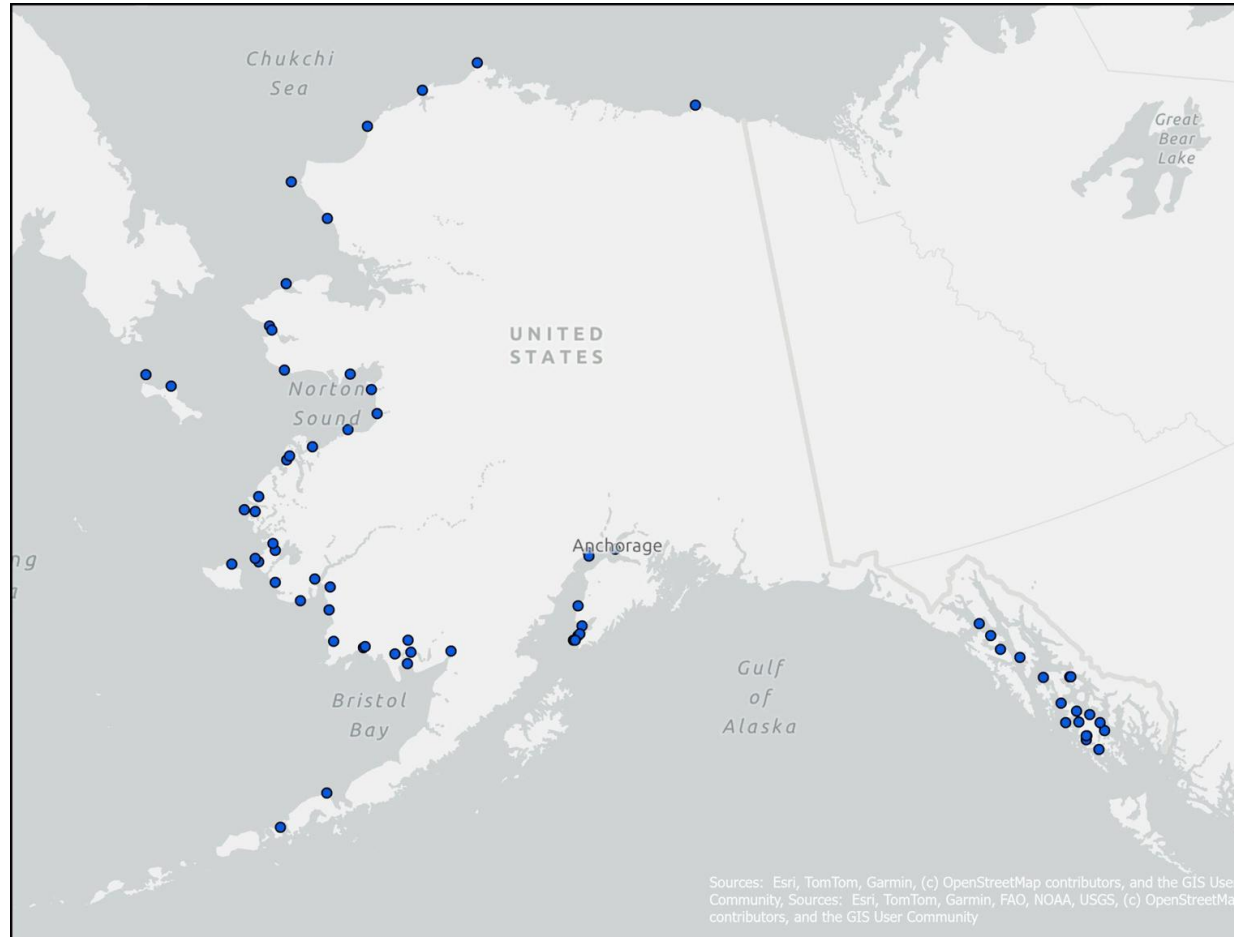
Best-available elevation datasets

- Lidar-based digital elevation models
- Seamless at 3-meter resolution
- Meet our requirements
 - Quality level 2 or 1 lidar (2 to 8 points per square meter)
 - Hydroconnectivity
 - Vertical consistency
- NOAA VDatum mean higher high water surface



Alaska Data Availability

69 communities currently mapped, ~110 mapped by end of FY28



SEA LEVEL RISE VIEWER DEMO



Sea Level Rise Viewer



Sea Level Rise

View sea level rise and potential coastal flooding impact areas and relative depth.



GET STARTED

Disclaimer

The data and maps in this tool illustrate the scale of potential flooding, not the exact location, and do not account for erosion, subsidence, or future construction. Water levels are shown as they would appear during the highest high tides (excludes wind-driven tides). As with all remotely sensed data, all features should be verified with a site visit. The data and maps in this tool are provided "as is" without warranty to their performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of these data is assumed by the user. This tool should be used strictly as a planning reference tool and should not be used for navigation, permitting, or other legal purposes.

DATA UPDATES



Hooper Bay with water level at mean higher high water MHHW (baseline)

WATER
LEVEL

10ft
9.5ft
9ft
8.5ft
8ft
7.5ft
7ft
6.5ft
6ft
5.5ft
5ft
4.5ft
4ft
3.5ft
3ft
2.5ft
2ft
1.5ft
1ft



Sea Level
Rise



Local
Scenarios



Mapping
Confidence

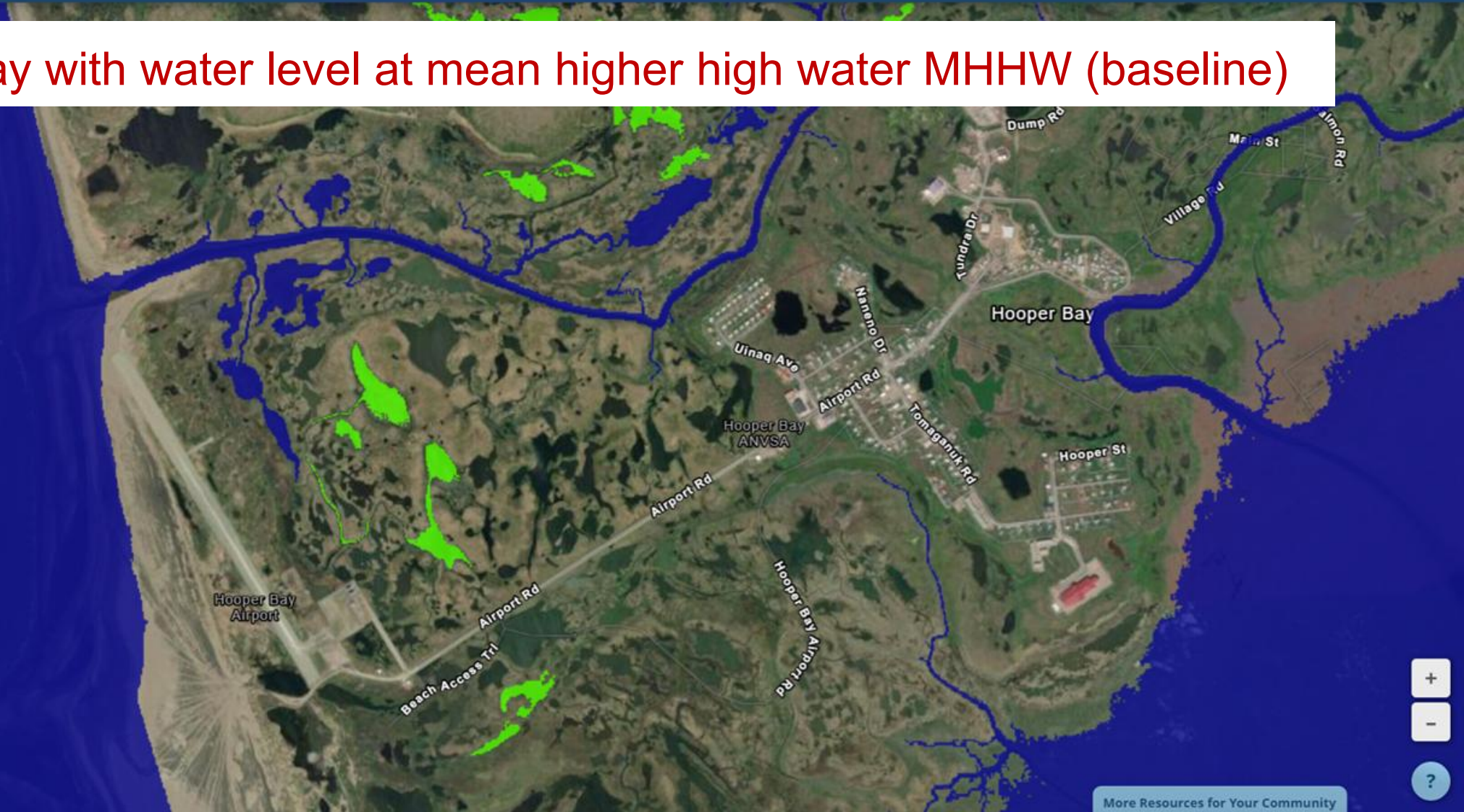


Marsh
Migration



High Tide
Flooding

MHHW



More Resources for Your Community



WATER
LEVEL

10ft

9.5ft

9ft

8.5ft

8ft

7.5ft

7ft

6.5ft

6.0ft

5ft

4.5ft

4ft

3.5ft

3ft

2.5ft

2ft

1.5ft

1ft

0.5ft

Current

MHHW

UNITS

Sea Level Rise

Local Scenarios

Mapping Confidence

Marsh Migration

High Tide Flooding



Adjust water level from 0-10ft MHHW with bar to the left



More Resources for Your Community



WATER LEVEL

VIEW BY SCENARIO

VIEW BY YEAR

Scenario Year

2022 Projections

HIDE GRID

2100

2080

2060

2040

2020

2000

High : 6.17ft

Intermediate High : 4.43ft

Intermediate : 2.92ft

Intermediate Low : 1.51ft

Low : 0.89ft

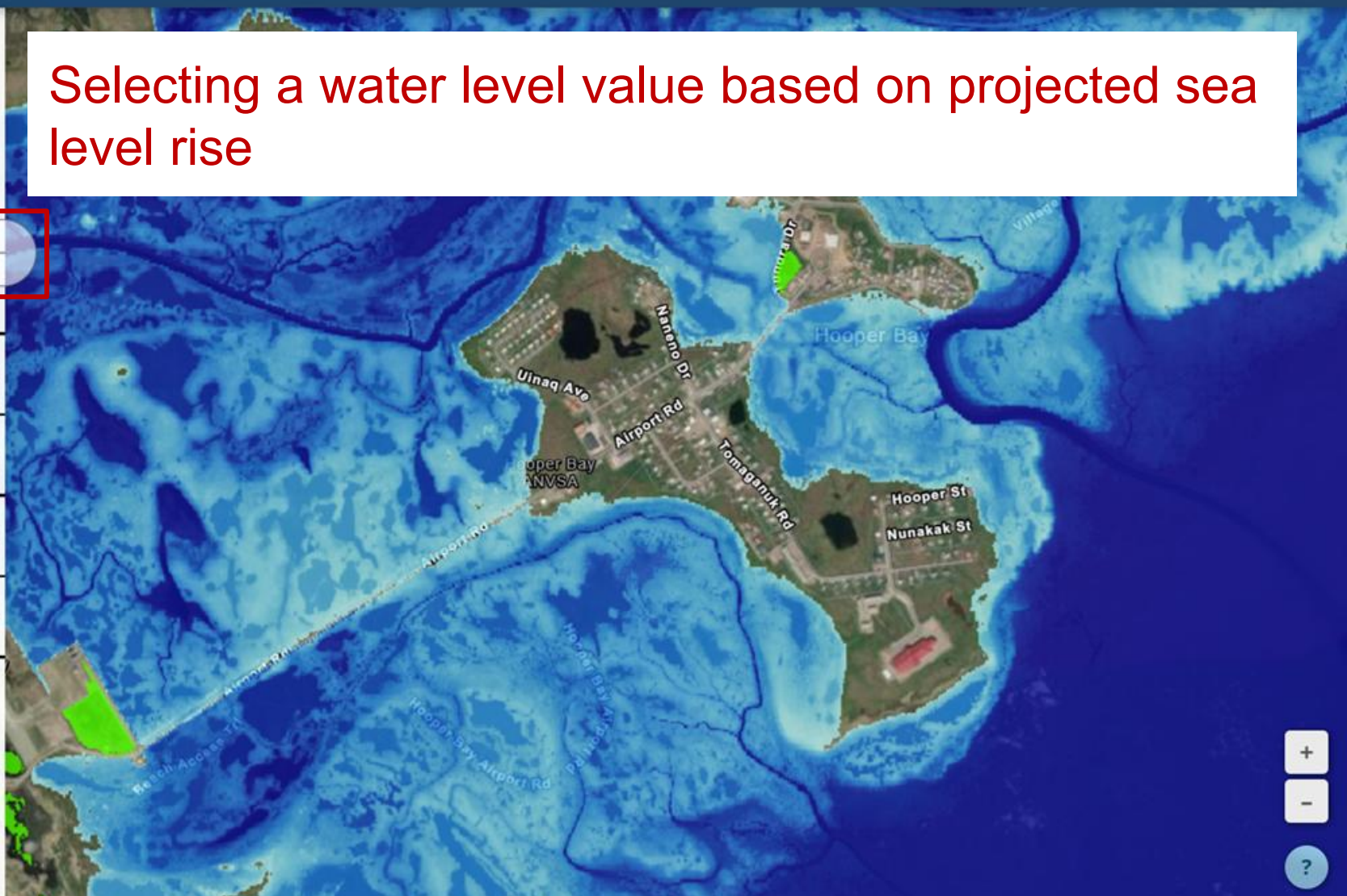
PSMSL ID: 1002801940

IN YEAR 2100

OBSERVATION EXTRAPOLATION: NOT AVAILABLE AFTER 2050

UNITS

Selecting a water level value based on projected sea level rise





Hooper Bay with water level 4.5 feet above MHHW

WATER
LEVEL

10ft

9.5ft

9ft

8.5ft

8ft

7.5ft

7ft

6.5ft

6ft

5.5ft

5ft

4.5ft

3.5ft

3ft

2.5ft

2ft

1.5ft

1ft

0.5ft

Current

MHHW

UNITS

☐



Sea Level
Rise



Local
Scenarios



Mapping
Confidence



Marsh
Migration



High Tide
Flooding



More Resources for Your Community



Sea Level
Rise



Local
Scenarios



Mapping
Confidence



Marsh
Migration



High Tide
Flooding



WATER
LEVEL

10ft

9ft

8ft

7ft

6ft

5ft

4ft

3ft

2ft

1ft

Current
MHHW

UNITS

Mapping confidence at 4 ft above MHHW

Unshaded = high confidence dry

Blue = high confidence of inundation

Orange = uncertain





Typhoon Halong height 6 feet above MHHW

WATER LEVEL

10ft

9.5ft

9ft

8.5ft

8ft

7.5ft

7ft

6.5ft

6.0ft

5ft

4.5ft

4ft

3.5ft

3ft

2.5ft

2ft

1.5ft

1ft

0.5ft

Current

MHHW



Sea Level Rise



Local Scenarios



Mapping Confidence



Marsh Migration



High Tide Flooding



UNITS



More Resources for Your Community



Typhoon Merbok height 10 feet above MHHW

WATER
LEVEL

10.0ft

9ft

8.5ft

8ft

7.5ft

7ft

6.5ft

6ft

5.5ft

5ft

4.5ft

4ft

3.5ft

3ft

2.5ft

2ft

1.5ft

1ft

0.5ft
Current
MHHW

UNITS



Sea Level
Rise



Local
Scenarios



Mapping
Confidence



Marsh
Migration

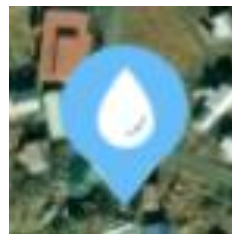


High Tide
Flooding

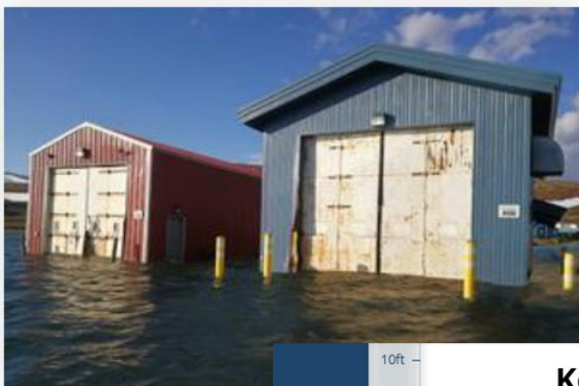


More Resources for Your Community

Photo Simulations of Sea Level Rise



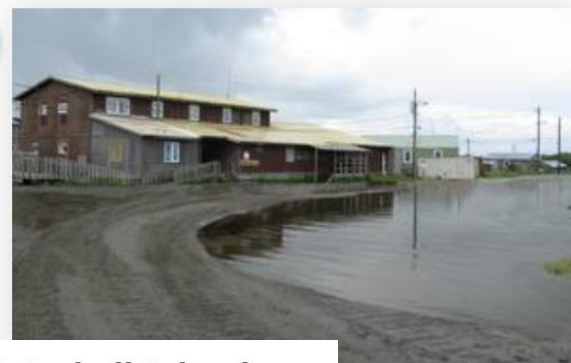
Scammon Bay Airport



Alakanuk Post Office



Emmonak Community Center



Kotlik Post Office



James C. Isabell School



Data Access

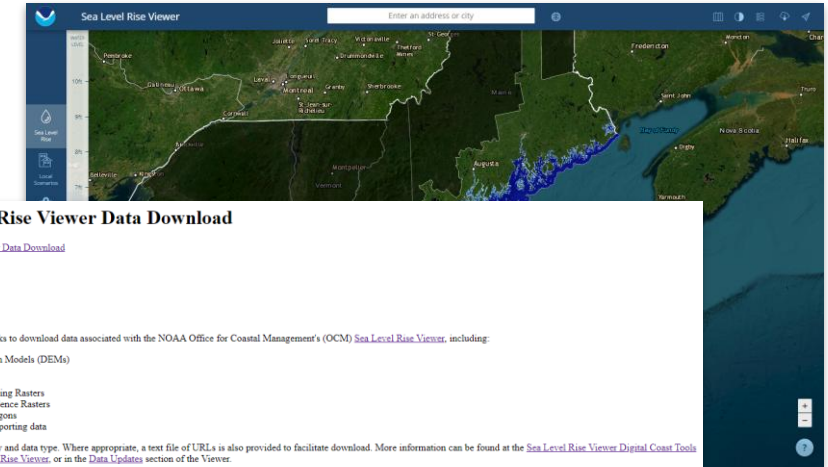
Web-based and downloadable

- Web mapping tool
- Data download
 - Digital elevation models
 - Sea level rise inundation
- Map services
- Mapping methods documentation

ch.s.coast.noaa.gov/htdata/Inundation/SLR/BulkDownload

coast.noaa.gov/arcgis/rest/services/dc_slr

coast.noaa.gov/digitalcoast/tools/slr.html



Sea Level Rise Viewer Data Download

[Sea Level Rise Viewer Data Download](#)



This page provides links to download data associated with the NOAA Office for Coastal Management's (OCM) [Sea Level Rise Viewer](#), including:

- Digital Elevation Models (DEMs)
- Depth Rasters
- Extent Rasters
- High Tide Flooding Rasters
- Mapping Confidence Rasters
- Inundation Polygons
- Ancillary or supporting data

Navigate by geography and data type. Where appropriate, a text file of URLs is also provided to facilitate download. More information can be found at the [Sea Level Rise Viewer Digital Coast Tools Page](#), in the [Sea Level Rise Viewer](#), or in the [Data Updates](#) section of the Viewer.

Subdirectories

[Ancillary](#)
[DEMs](#)
[Depth_Rasters](#)
[Extent_Rasters](#)
[High_Tide_Flooding](#)
[Mapping_Confidence](#)
[Sea_Level_Rise_Vectors](#)
[Tidal_Surfaces](#)

Organizational Information

- [Privacy Policy](#)
- [Disclaimer](#)
- [USA.gov](#)
- [National Oceanic & Atmospheric Administration](#)
- [United States Department of Commerce](#)

ArcGIS REST Services Directory

[Home](#) > [services](#) > [dc_slr](#) > [slr_3ft \(MapServer\)](#)

[Help](#) | [API Reference](#)

[JSON](#) | [SOAP](#) | [WMS](#) | [WMTS](#)

dc_slr/slr_3ft (MapServer)

View In: [ArcGIS JavaScript](#) [ArcGIS Online Map Viewer](#) [ArcGIS Earth](#) [ArcGIS Pro](#)

Service Description: 3ft Sea Level Rise Inundation This dataset was created as part of the National Oceanic and Atmospheric Administration Office for Coastal Management's efforts to create an online mapping viewer depicting potential sea level rise and its associated impacts on the nation's coastal areas. The purpose of the mapping viewer is to provide coastal managers and scientists with a preliminary look at sea level rise and coastal flooding impacts. The viewer is a screening-level tool that uses nationally consistent data sets and analyses. Data and maps provided can be used at several scales to help gauge trends and prioritize actions for different scenarios. The purpose of this dataset is to show potential sea level rise inundation of 3 ft above current Mean Higher High Water (MHHW) for the area. Tiles have been cached down to Level ID 15 (1:18,055). This dataset illustrates the scale of potential flooding, not the exact location, and does not account for erosion, subsidence, or future construction. Inundation is shown as it would appear during the highest high tides (excludes wind driven tides) with the sea level rise amount. The dataset should be used only as a screening-level tool for management decisions. As with all remotely sensed data, all features should be verified with a site visit. The dataset is provided "as is," without warranty to its performance, merchantable state, or fitness for any particular purpose. The entire risk associated with the results and performance of this dataset is assumed by the user. This dataset should be used strictly as a planning reference and not for navigation, permitting, or other legal purposes. For more information visit the Sea Level Rise Impacts Viewer (<http://coast.noaa.gov/slr>).

Map Name: Layers

[Legend](#)

[All Layers and Tables](#)

[Dynamic Legend](#)

[Dynamic All Layers](#)

Support

Resources and training opportunities

- Technical support
 - Regional geospatial coordinators
 - Inundation team
- Coastal Inundation Mapping Training
happening this month in Anchorage (9/24-9/25) and Fairbanks (9/28-9/29)
 - Two-day in-person training; lectures and exercises
 - Vertical datums, elevation data, inundation mapping
 - Reach out to Dana Brown (dana.brown@noaa.gov) to register

Exercise 10

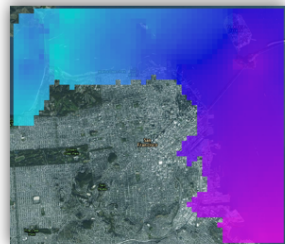
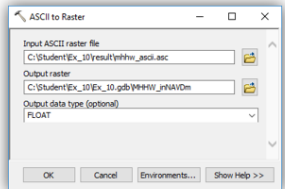
Mapping Sea Level Rise Using a Modeled Tidal Surface – Part 1

2. Create a MHHW Water Surface Using VDatum

- ☐ Convert the output ASCII grid from VDatum into the raster's original format. In ArcMap, open the ASCII to Raster tool under ArcToolbox, Conversion Tools, To Raster. Set the following parameters in the ASCII to Raster dialogue.

- Input ASCII raster file: C:\Student\Ex_10\result\mhhw_ascii.asc
- Output raster: C:\Student\Ex_10\Ex_10.gdb\MHHW_inNAVDm
- Output data type: FLOAT

- ☐ Click OK to run the tool. **MHHW_inNAVDm** will be added to the table of contents. To highlight the variability of MHHW for the area, change the **symbolology** of the result to something more colorful.
- ☐ Observe the difference in MHHW across the study area. It may not be much, but when mapping larger areas that have a greater difference, it becomes even more important to capture tidal variability, which can be significant.
- ☐ Observe where VDatum performed conversions and where it did not. We know that MHHW doesn't necessarily stop where a model says it stops, so there is a need to extrapolate the VDatum conversion value inland so that our water surface representing MHHW variability covers the entire area.



Coastal Inundation Mapping



PRESENTATION OUTLINE

Coastal Flooding Tools in Alaska

- Office for Coastal Management Tool: Sea Level Rise Viewer
- **Office for Coastal Management Tool: Sea Level Calculator**
- Other federal and state tools with similar functionality:
 - State of Alaska DGGS' AK-FIT
 - USGS CoSMoS
 - Comparison of functionality and coverage

Sea Level CALCULATOR

Go-to resource for local data and information



Future Sea Levels



**Changes in Flood
Frequency**



**Extreme Water
Levels**



**Observed Sea
Level Trends**

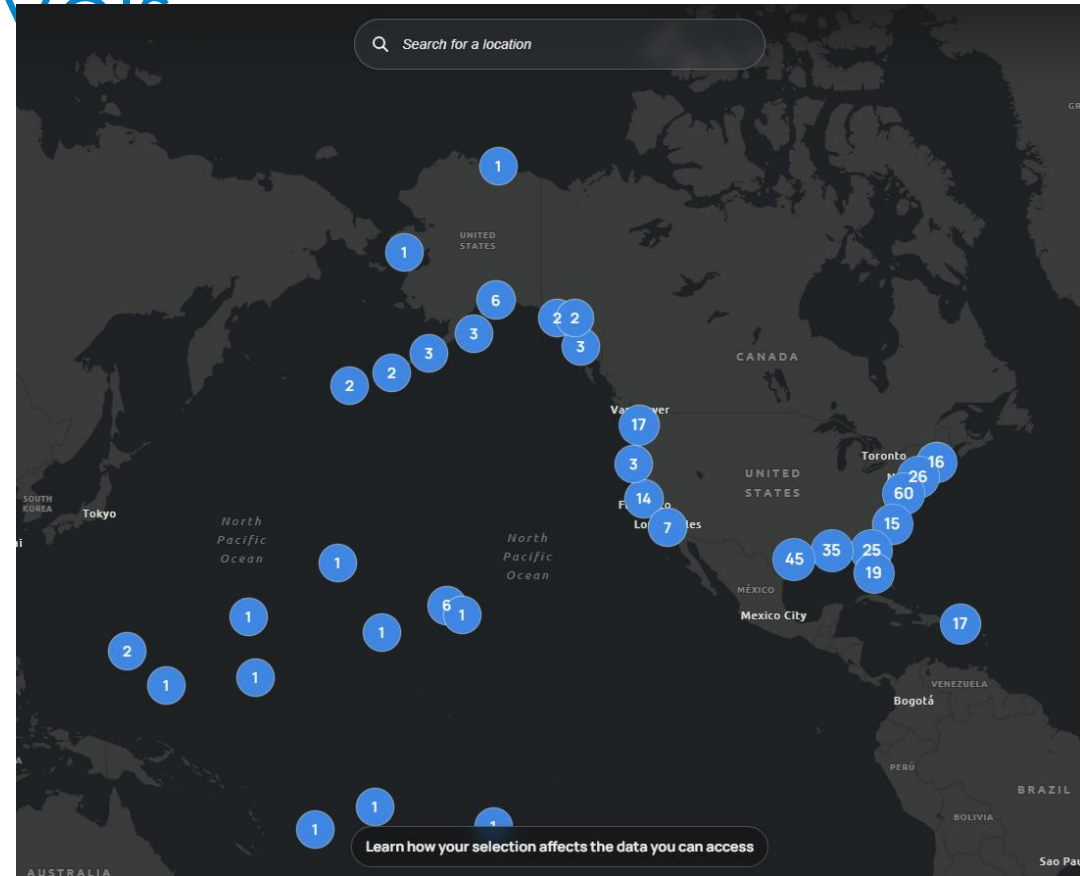


Seasonal Variation

BACKGROUND

Equipping technical end-users with data on future water levels

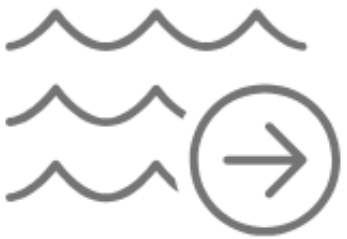
- Developed by CO-OPS and OCM to analyze water level trends at long-term tide gauges
- Data originates from NOAA and NASA 2022 Sea Level Rise Technical Report
- Provides functionality of existing tools in one website
- Delivers localized, best-available data and graphics in 5 quickviews



coast.noaa.gov/sealevelcalculator

Sea Level CALCULATOR

Go-to resource for local data and information



Future Sea Levels



Changes in Flood
Frequency



Extreme Water
Levels



Observed Sea
Level Trends

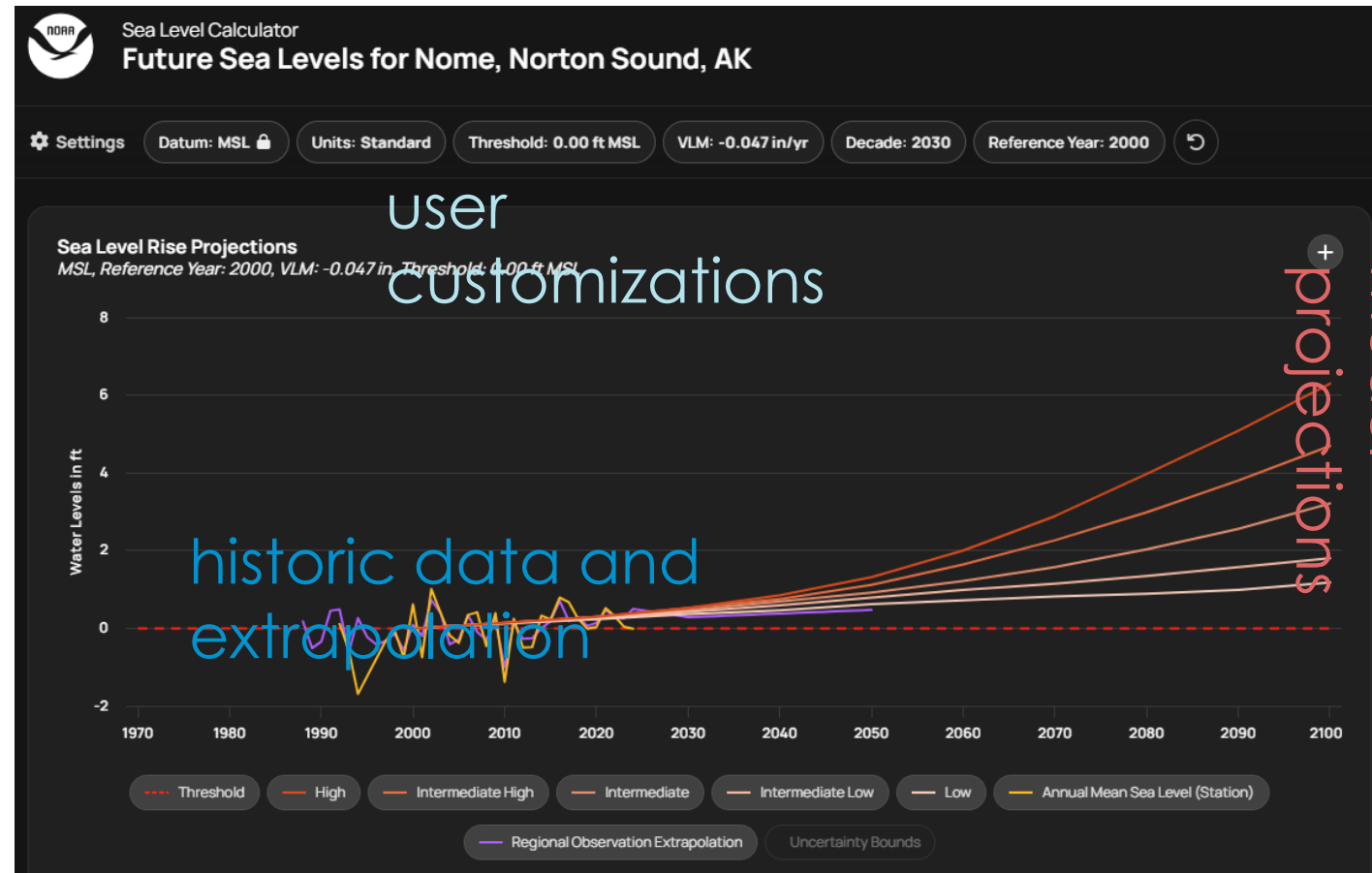


Seasonal Variation

QUICKVIEW 1: FUTURE SEA LEVELS

Explore sea level projections

- Visualize sea level projections by scenario
- Manually adjust datums, units, thresholds, vertical land motion
- Connect to Sea Level Rise Viewer to visualize impacts by year and scenario in area of interest



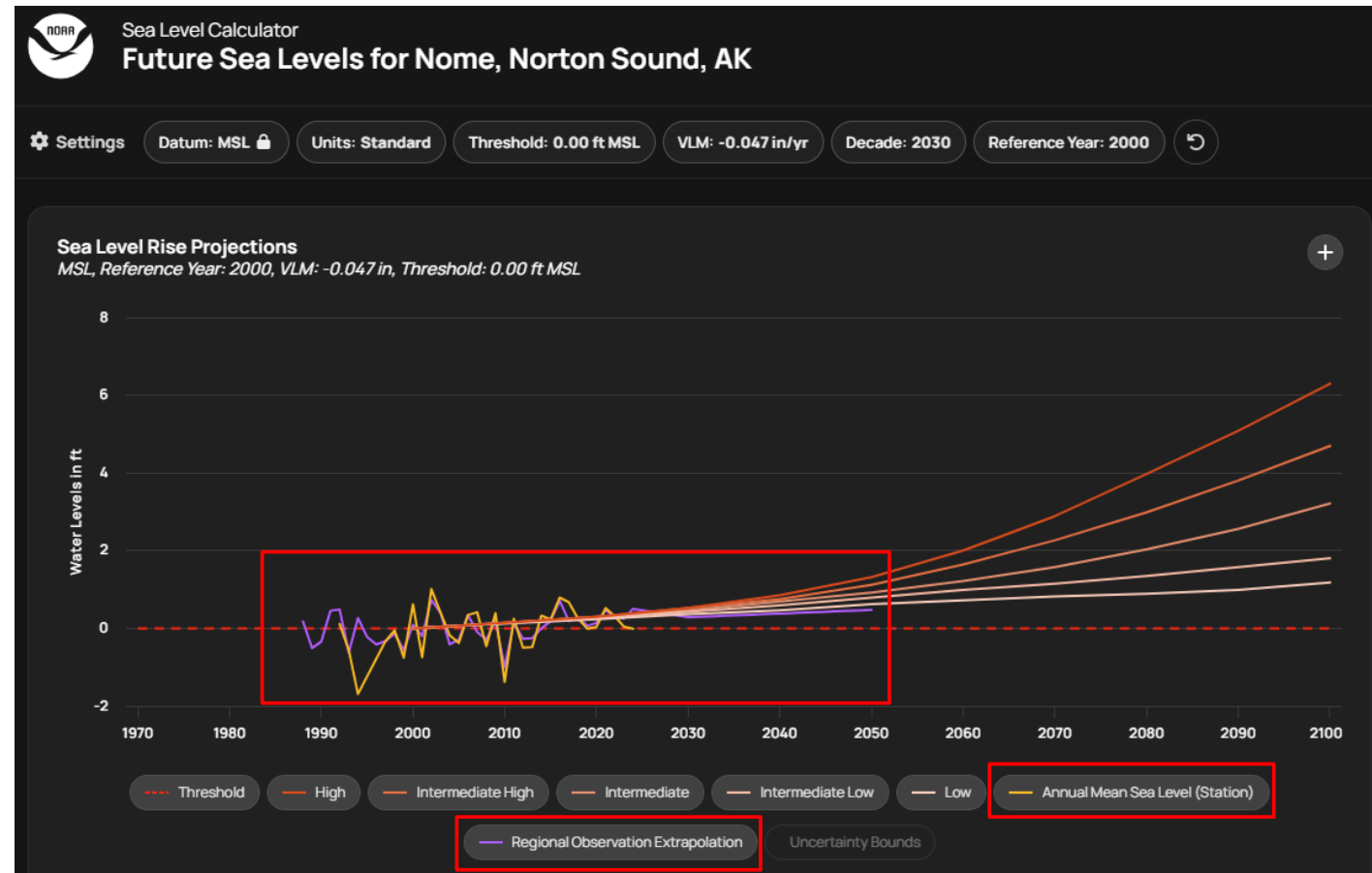
Nome, Alaska

coast.noaa.gov/sealevelcalculator

QUICKVIEW 1: FUTURE SEA LEVELS

Explore sea level projections

- Gauge (yellow) and regional (purple) observed water levels



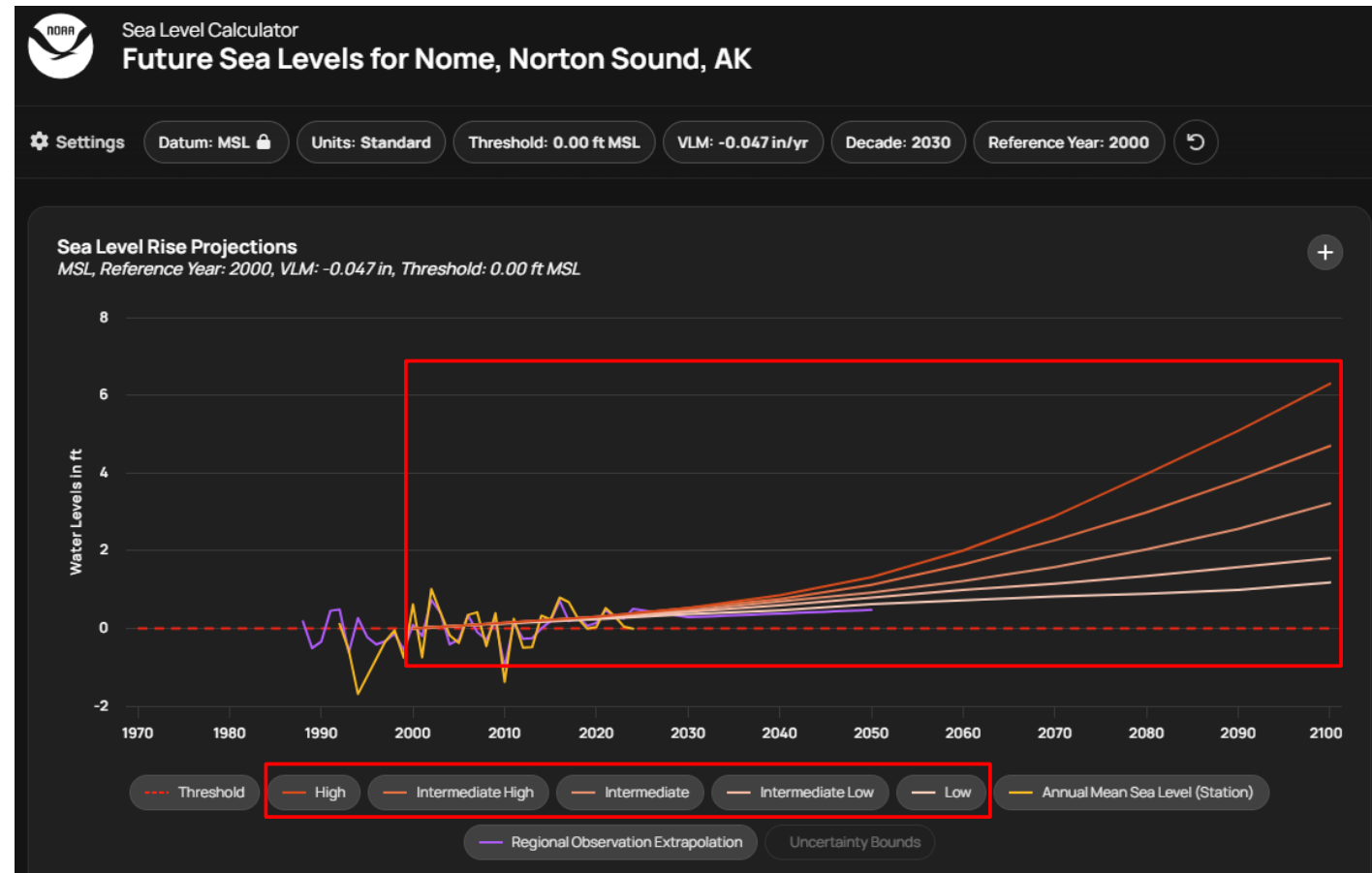
Nome, Alaska

coast.noaa.gov/sealevelcalculator

QUICKVIEW 1: FUTURE SEA LEVELS

Explore sea level projections

- Sea level rise scenario values extend to from 2000 to 2100 in red hues



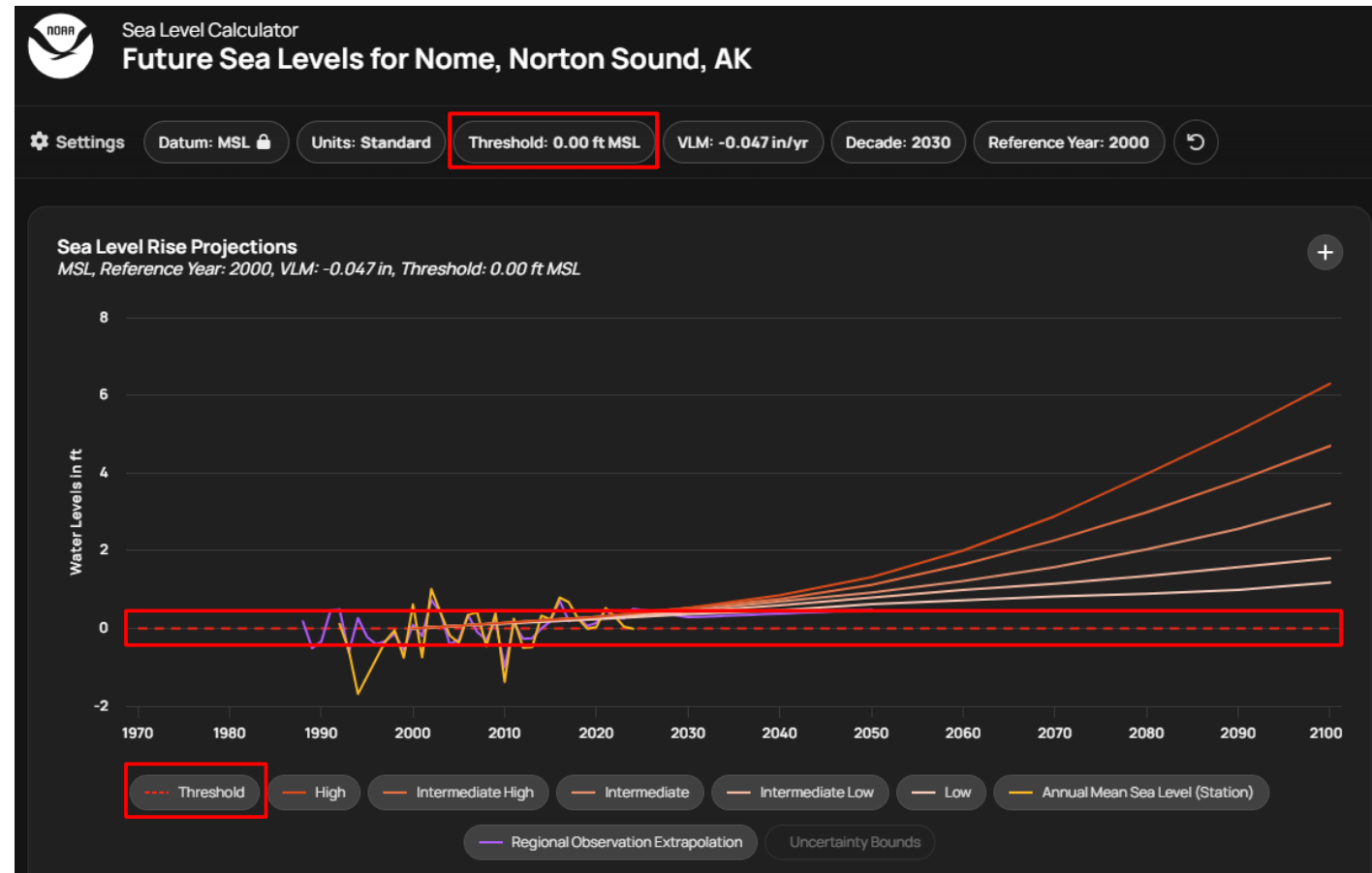
Nome, Alaska

coast.noaa.gov/sealevelcalculator

QUICKVIEW 1: FUTURE SEA LEVELS

Explore sea level projections

- Threshold can be reset to visualize projected date of impact to critical infrastructure



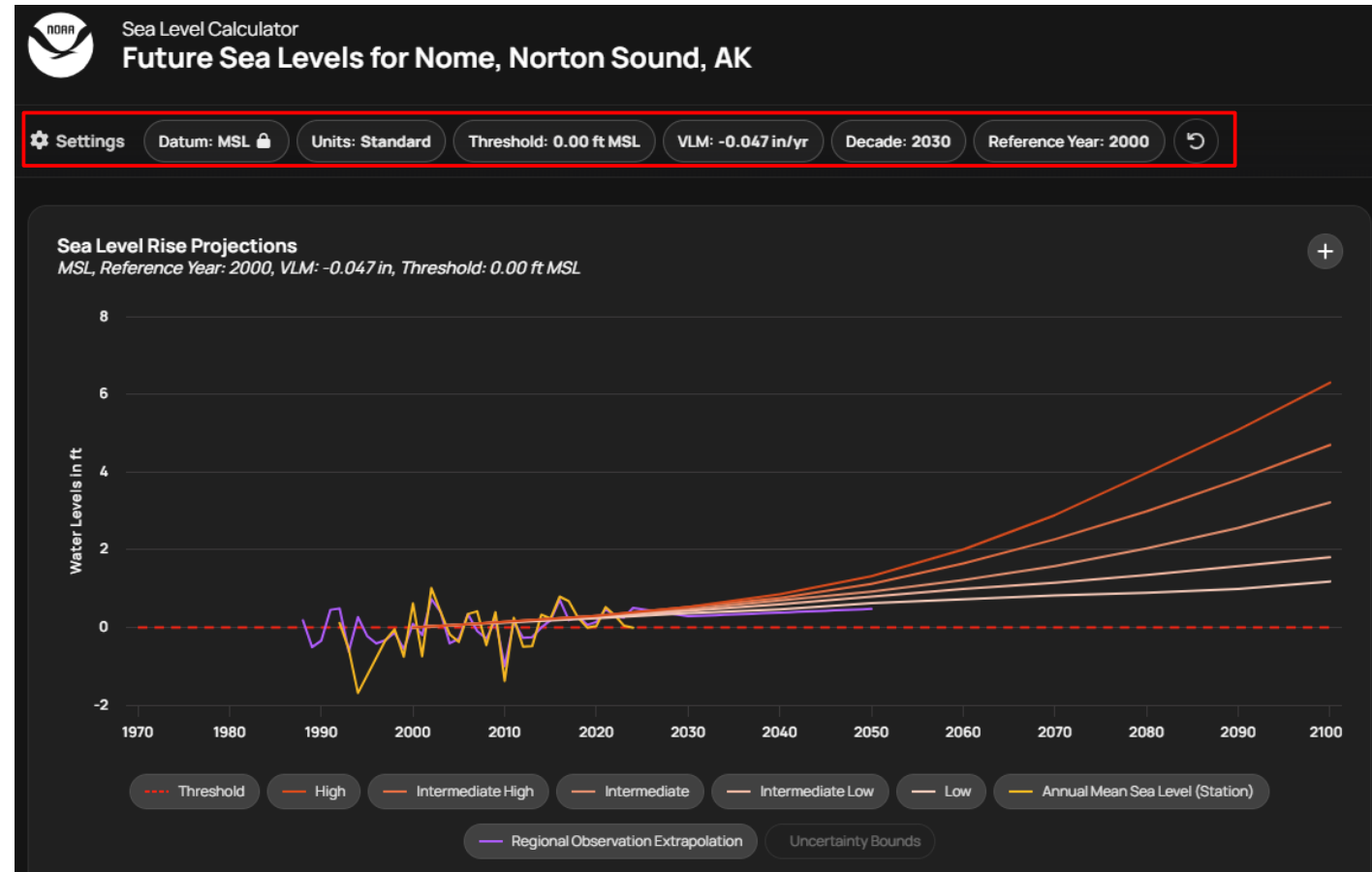
Nome, Alaska

coast.noaa.gov/sealevelcalculator

QUICKVIEW 1: FUTURE SEA LEVELS

Explore sea level projections

- Datum, vertical land motion, reference year, and threshold can be altered for individual purposes



Nome, Alaska

coast.noaa.gov/sealevelcalculator

Sea Level CALCULATOR

Go-to resource for local data and information



Future Sea Levels



Changes in Flood
Frequency



**Extreme Water
Levels**



Observed Sea
Level Trends



Seasonal Variation

QUICKVIEW 2: EXTREME WATER LEVELS

View **past extreme water levels** and exceedance probability

- Top 10 water level events since gauge installation listed with event name where possible

Top 10 Events by Water Level (MHHW ft)			
Event	Source	Height	Date
Coastal Low Pressure	Observed Peak Water Level	4.77 ft	January 1, 1987
Coastal Low Pressure	Observed Peak Water Level	4.56 ft	November 11, 1981
To Be Determined	Inferred Water Level	4.37 ft	November 21, 1972
Coastal Low Pressure & Onshore Winds	Observed Peak Water Level	4.29 ft	November 5, 2002
Coastal Low Pressure	Observed Peak Water Level	4.06 ft	January 9, 1986
Onshore Winds	Observed Peak Water Level	4.04 ft	November 25, 2007
Coastal Low Pressure	Observed Peak Water Level	3.96 ft	October 24, 1980
Coastal Low Pressure	Observed Peak Water Level	3.95 ft	January 22, 1988
Coastal Low Pressure	Observed Peak Water Level	3.94 ft	November 22, 1984
Coastal Low Pressure	Observed Peak Water Level	3.75 ft	November 3, 1994

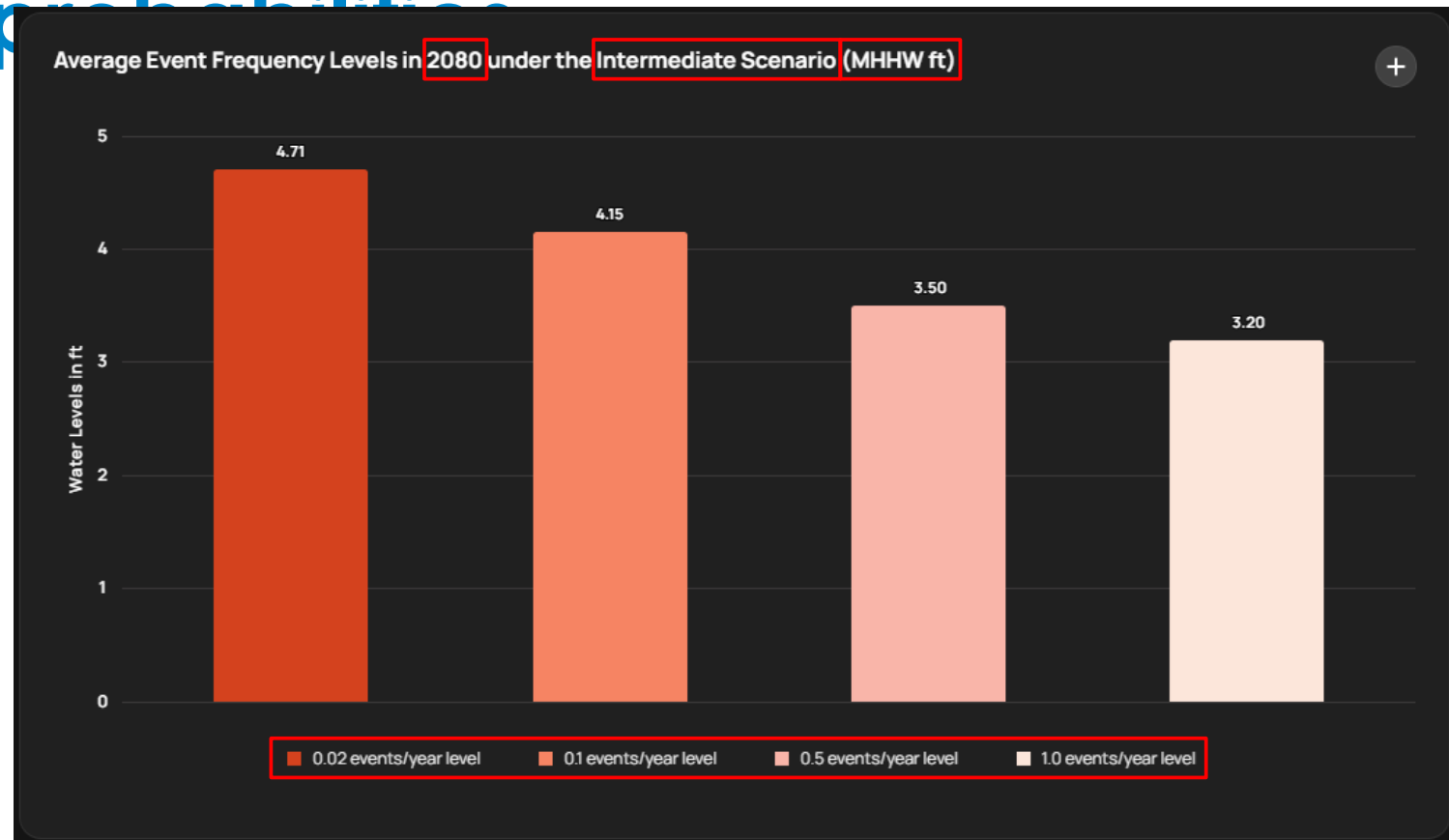
Seward, Alaska

coast.noaa.gov/sealevelcalculator

QUICKVIEW 2: EXTREME WATER LEVELS

View past extreme water levels and **exceedance**

- Explore how extreme water levels may change over time using sea level rise scenarios
- Customize decade of interest, sea level rise scenario, datum, and units
- 1, 0.5, 0.1, and 0.02 exceedance probabilities displayed (1-, 2-, 10-, and 50-year floods)



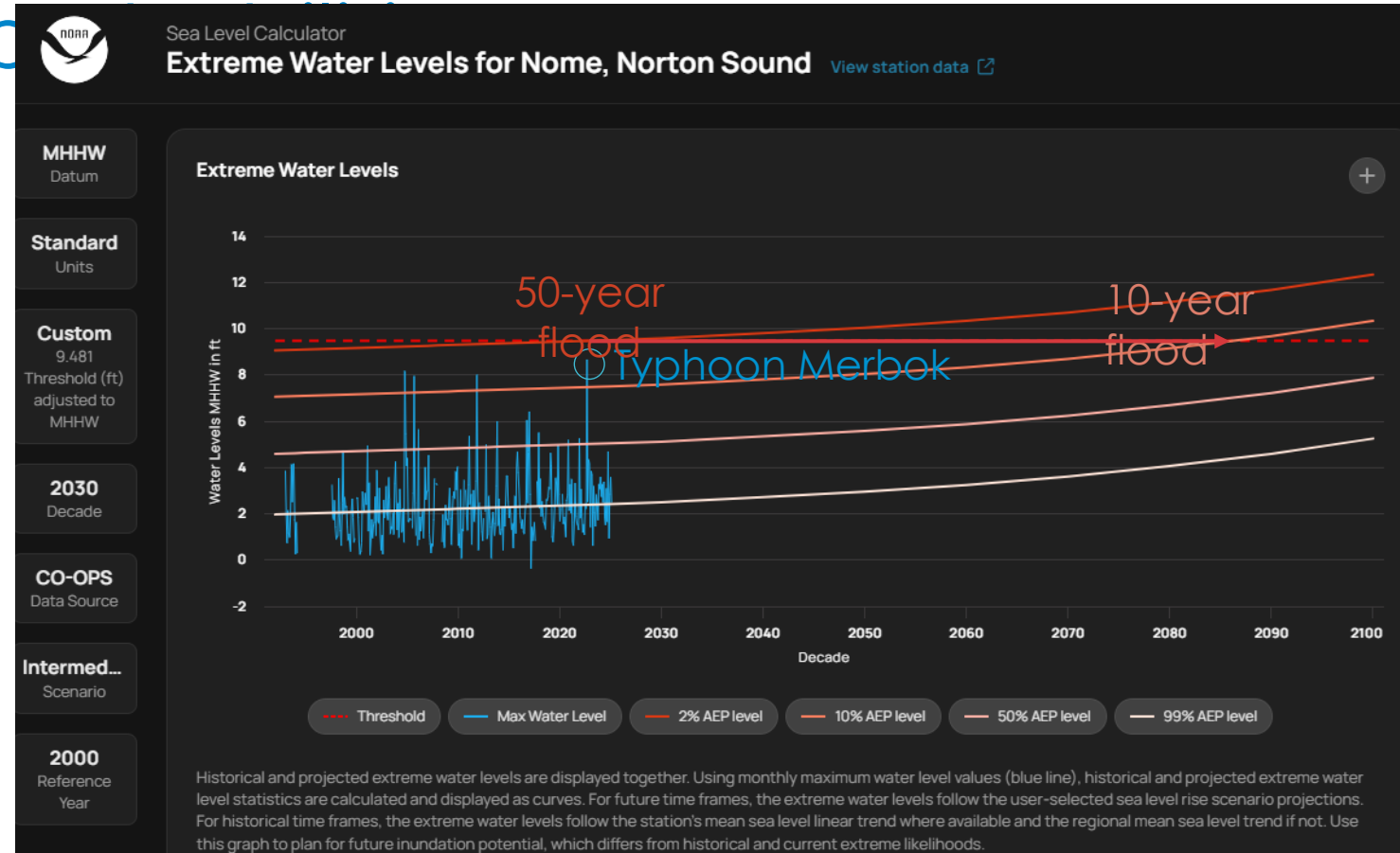
Seward, Alaska

coast.noaa.gov/sealevelcalculator

QUICKVIEW 2: EXTREME WATER LEVELS

View past extreme water levels and exceedance

- Together, information on past water levels and future exceedance probabilities allows for risk assessment
- Example: Typhoon Merbok was ~0.02 exceedance probability (50-year flood); in ~2085, a flood this size is 0.1 exceedance probability (10-year flood)

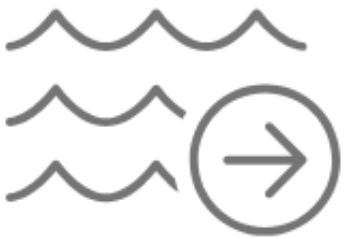


Nome, Alaska

coast.noaa.gov/sealevelcalculator

Sea Level CALCULATOR

Go-to resource for local data and information



Future Sea Levels



**Changes in Flood
Frequency**

*Not available in
Alaska*



**Extreme Water
Levels**



**Observed Sea
Level Trends**



Seasonal Variation

*Available in Alaska – please reach out
with questions*

PRESENTATION OUTLINE

Coastal Flooding Tools in Alaska

- Office for Coastal Management Tool: Sea Level Rise Viewer
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- Other federal and state tools with similar functionality:
 - **State of Alaska DGGS' AK-FIT**
 - USGS CoSMoS
 - Comparison of functionality and coverage

Alaska Data Availability

Community	CoSMoS/ HERA	SLR Viewer	AK-FIT	Community	CoSMoS/ HERA	SLR Viewer	AK-FIT	Community	CoSMoS/ HERA	SLR Viewer	AK-FIT
Akiachak		Coming Soon		Ivanof Bay		Coming Soon		Point Lay		Available	Available
Alakanuk		Available	Available	Juneau		Coming Soon		Port Alexander		Coming Soon	
Aleknagik		Available		Kake		Available		Port Graham		Available	
Anchorage		Available		Kaktovik		Available		Port Heiden		Coming Soon	
Angoon		Available		Kasaan		Available		Quinhagak		Available	Available
Beluga		Available		Kipnuk			Available	Saint Michael	Coming Soon	Coming Soon	Available
Bethel		Coming Soon		Kivalina	Coming Soon	Available	Available	Saint Paul	Coming Soon		
Big Salt		Available		Klawock		Available		Savoonga		Available	Available
Buckland		Coming Soon		Kongiganak			Available	Scammon Bay		Available	Available
Brevig Mission	Available	Available	Available	Kotlik		Available	Available	Selawik		Coming Soon	
Cheformak		Available		Kotzebue	Coming Soon	Coming Soon	Available	Seldovia		Available	
Chevak		Available	Available	Koyuk	Coming Soon	Coming Soon		Seldovia Village		Available	
Chignik		Coming Soon		Kupreanof		Available		Seward		Coming Soon	
Chignik Lagoon		Coming Soon		Kwethluk		Coming Soon		Shaktoolik	Available	Available	Available
Coffman Cove		Available		Kwigillingok		Available	Available	Shishmaref	Coming Soon	Available	Available
Cold Bay		Available		Levelock		Available		Sitka		Coming Soon	
Craig		Available		Manokotak		Available		Skagway		Coming Soon	
Deering	Coming Soon		Available	Mat-Su Borough		Coming Soon		Stebbins	Coming Soon	Coming Soon	Available
Dillingham		Available		Mekoryuk	Coming Soon	Available		Teller	Available	Available	Available
Diomedede		Coming Soon	Available	Mertarvik		Available		Tenakee Springs		Available	
Edna Bay		Available		Nanwalek		Available		Thorne Bay		Available	
Eek		Available		Napakia		Coming Soon	Available	Togiak		Available	
Egegik		Coming Soon		Napaskiak		Coming Soon		Toksook Bay		Available	Available
Ekuk		Available		Naukati Bay		Available		Tuntutuliak		Available	Available
Elfin Cove		Coming Soon		Nelson Lagoon	Coming Soon	Available		Tununak		Available	Available
Elim	Available	Available	Available	Newtok		Available		Twin Hills		Available	
Emmonak		Available	Available	Ninilchik		Available		Tyonek		Available	
Gambell	Coming Soon	Available	Available	Nome	Available	Available	Available	Ugashik		Coming Soon	
Golovin	Available	Coming Soon	Available	Nunam Iqua		Coming Soon		Unalakleet	Available	Available	
Goodnews Bay		Available		Oscarville		Coming Soon		Utqiagvik	Available	Available	Available
Gustavus		Available		Pelican		Coming Soon		Wainwright		Available	Available
Homer		Available		Perryville		Coming Soon		Wales	Coming Soon	Coming Soon	Available
Hoonah		Available		Petersburg Borough		Available		Whale Pass		Available	
Hooper Bay	Coming Soon	Available	Available	Pilot Point		Coming Soon		White Mountain		Coming Soon	
Hydaburg		Available		Point Baker		Available		Yakutat		Coming Soon	
Hyder		Coming Soon		Point Hope		Available	Available				

COASTAL HAZARDS PROGRAM



Nora Nieminski, Ph.D.
Geological Scientist, Program Manager



Anika Pinzner, Ph.D.
Geologist



Keith (KC) Horen
GIS Analyst



Lucy Waghorn, M.S.
Geologist



Kristina Rossavik, M.S.
Geologist



Alaska Flood Inundation Tool (AK-FIT)

Still Water Inundation Model (SWIM)



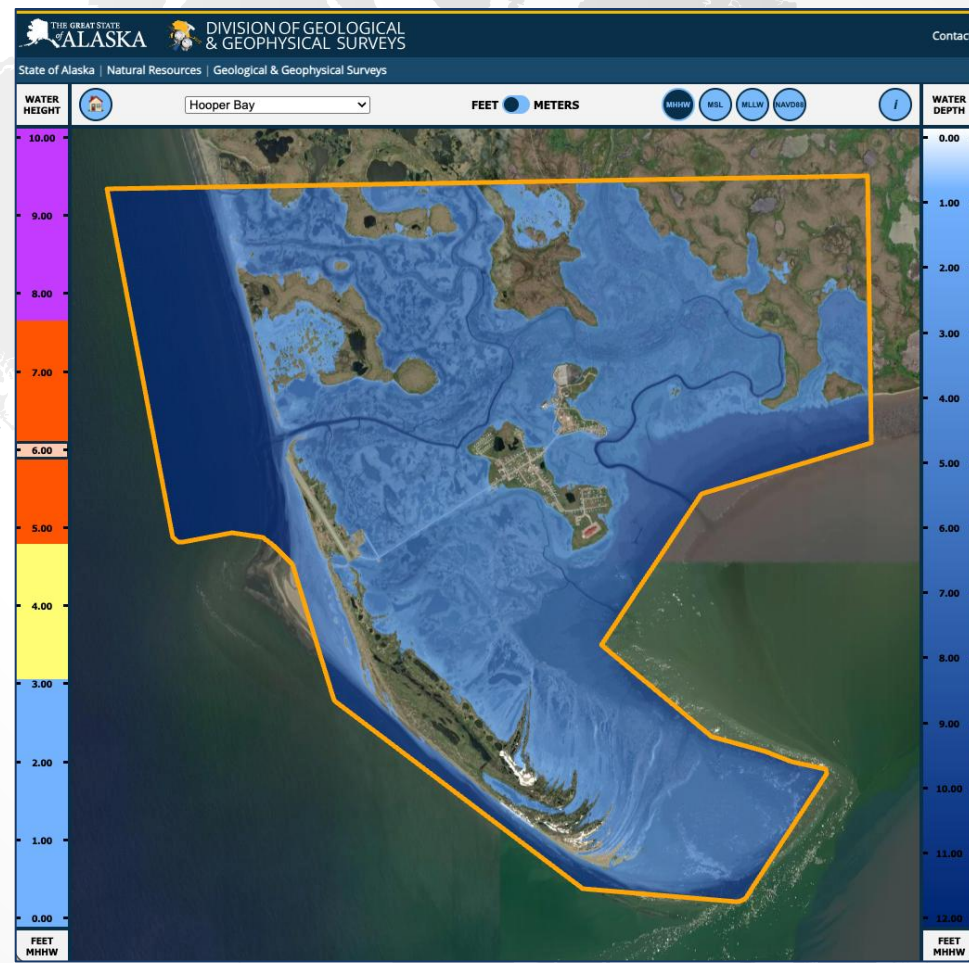
STILLWATER INUNDATION MODELING WITH HYDROLOGICAL CONNECTIVITY

Keith C. Horen

2024
STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS



AK Flood Inundation Tool



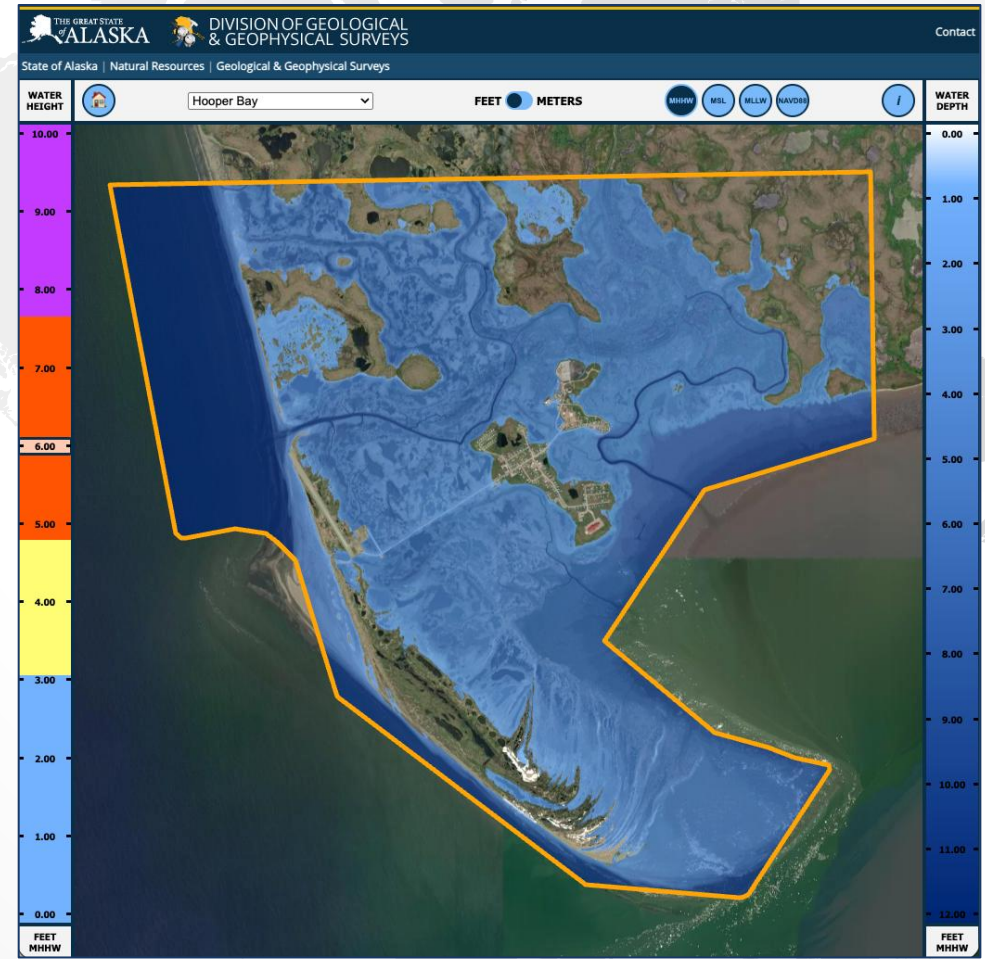
STATE OF ALASKA

DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

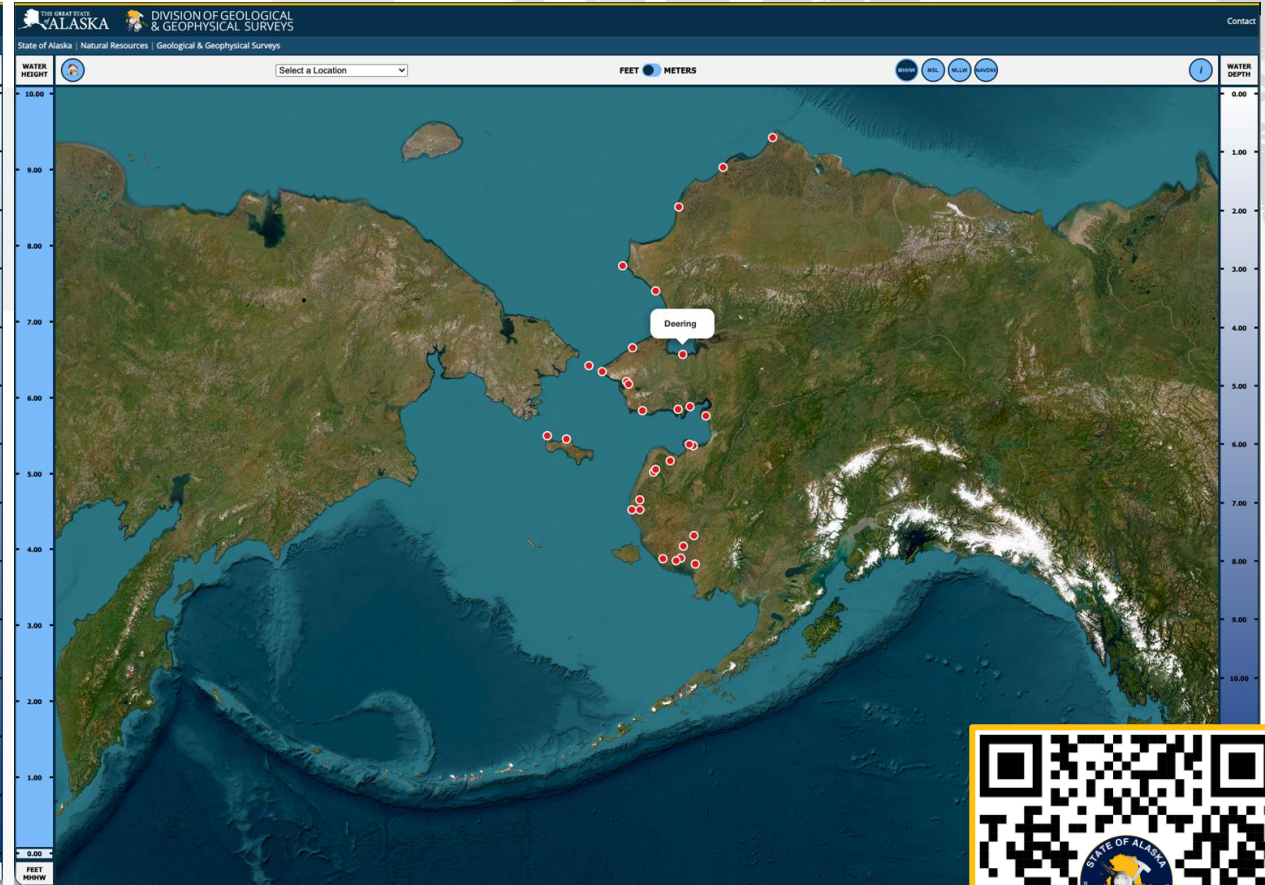
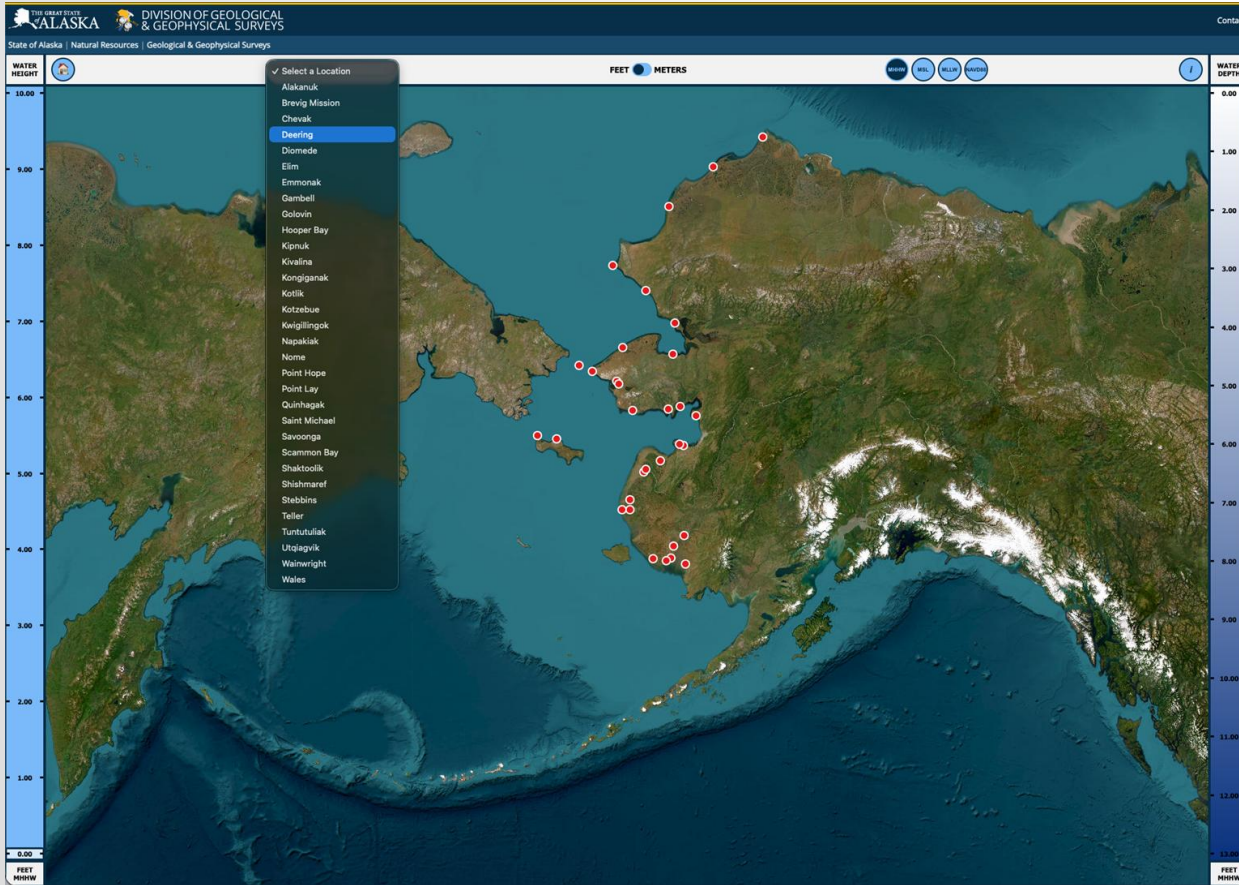
Alaska Flood Inundation Tool (AK-FIT)

- Planning and decision-support tool designed for Alaska
- Enhanced “bathtub-style” modeling with hydrologic connectivity (SWIM)
- Shows flood extent and depth for user-selected water levels
- Includes community-specific flood categories and infrastructure impacts
- Fast & mobile-friendly

AK Flood Inundation Tool



Alaska Flood Inundation Tool (AK-FIT)



Alaska Flood Inundation Tool (AK-FIT)



Alaska Flood Inundation Tool (AK-FIT)



PRESENTATION OUTLINE

Coastal Flooding Tools in Alaska

- Office for Coastal Management Tool: Sea Level Rise Viewer
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 - **USGS CoSMoS**
 - Comparison of functionality and coverage

USGS COASTAL MARINE HAZARDS AND RESOURCES PROGRAM

DYNAMIC FLOOD MODELING

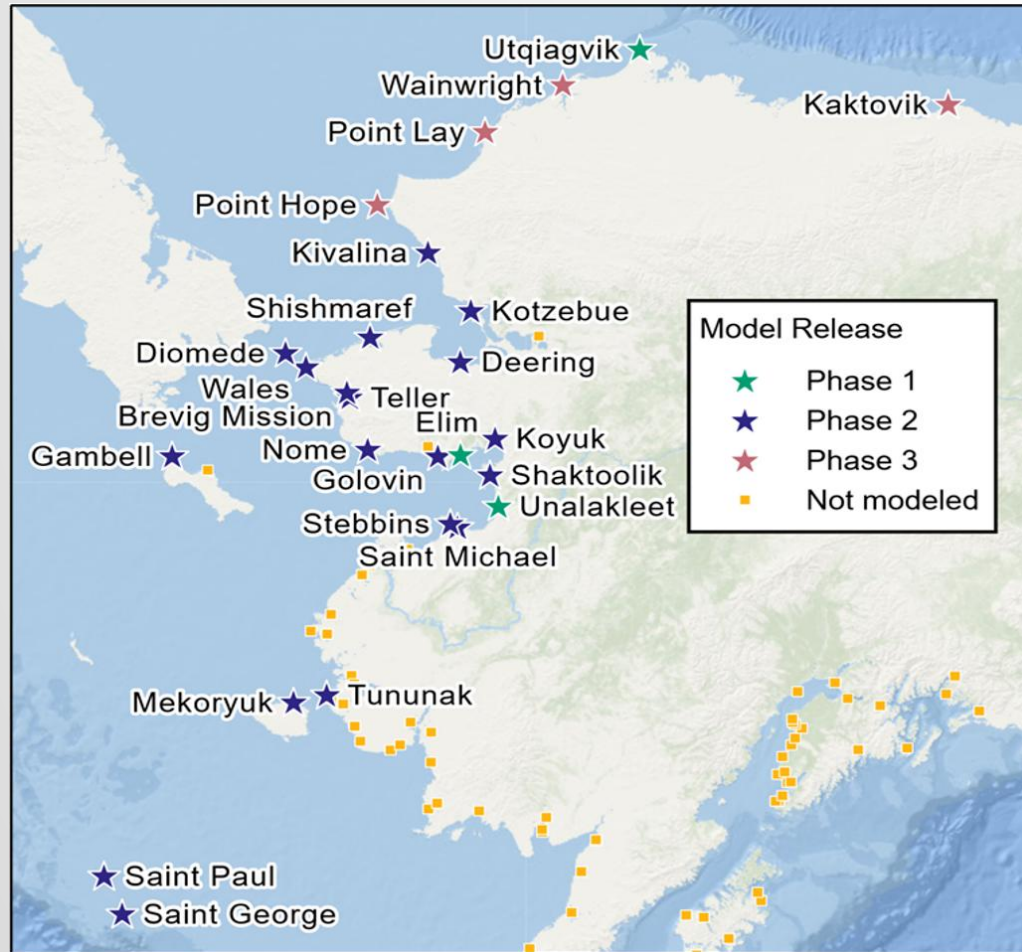
USGS Team: Li Erikson (PI), Ann Gibbs, Maya Hayden, Anita Engelstad, Alex Nereson, Kees Nederhoff (Deltares)



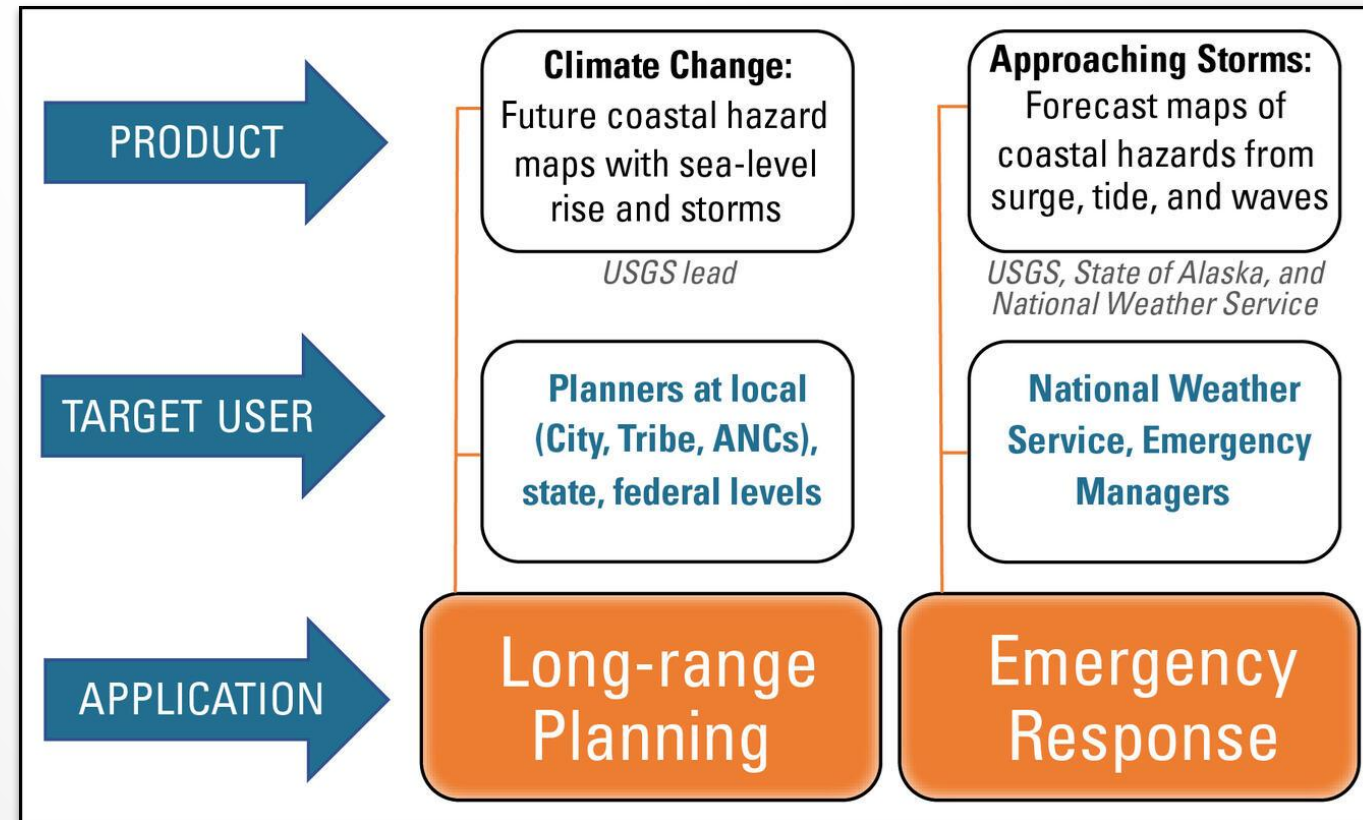
Supported by FY23 Merbok Disaster Relief Supplemental, USGS Climate Adaptation Science Center (CASC), and USGS Coastal Marine Hazards and Resources Program

Quantify and communicate flood hazard exposure

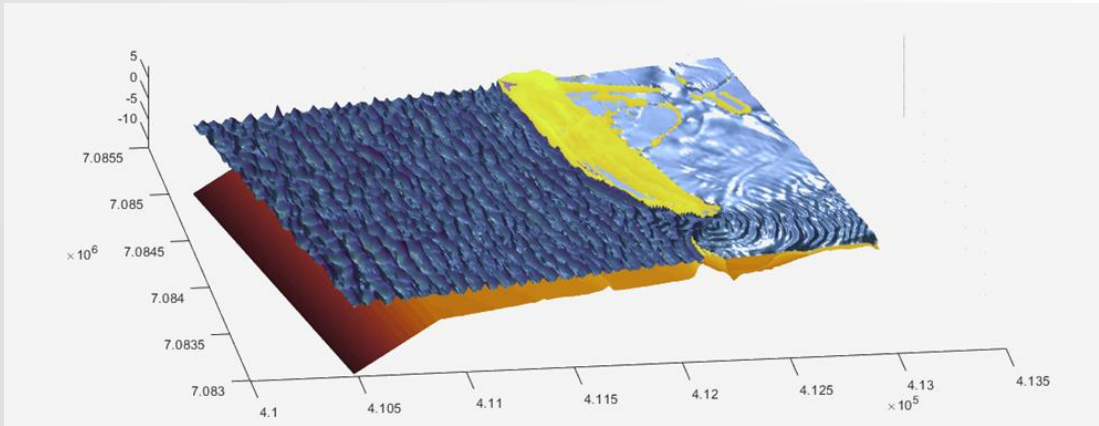
The USGS is developing two actionable, user-centered products for over 20 communities along the west and north coasts of Alaska



Coastal flooding and erosion at relevant times scales



Quantifying flood hazards



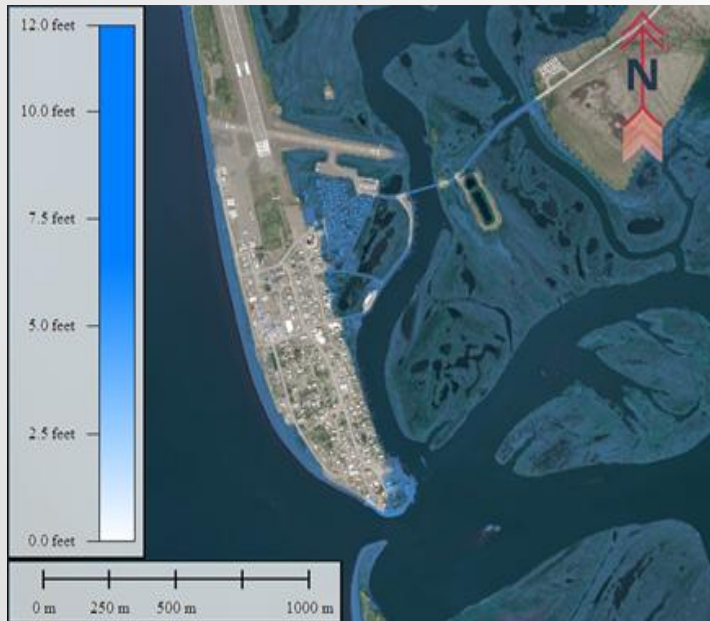
Bath-tub models	Dynamic models
PROS: • once the TBDEM is complete, they are fast to run (order of minutes) • Can maintain hydraulic connectivity using very high-resolution topography data (~1m or finer)	PROS: • accounts for relevant physical processes (such as friction, wave overtopping, riverine/coastal interactions, etc.) • Provides info on hazardous water velocities, erosion, and flood duration
CONS: • tends to over-estimate flooding from stormtides (due to a lack of friction & the temporary nature of stormtides) • under-estimates flooding where and when waves are important	CONS: • longer run-times (hours to days) • requires some advanced training to set up models • resolution is typically limited to >5m (although post-processing is used to incorporate finer resolution data)

Quantifying flood hazards

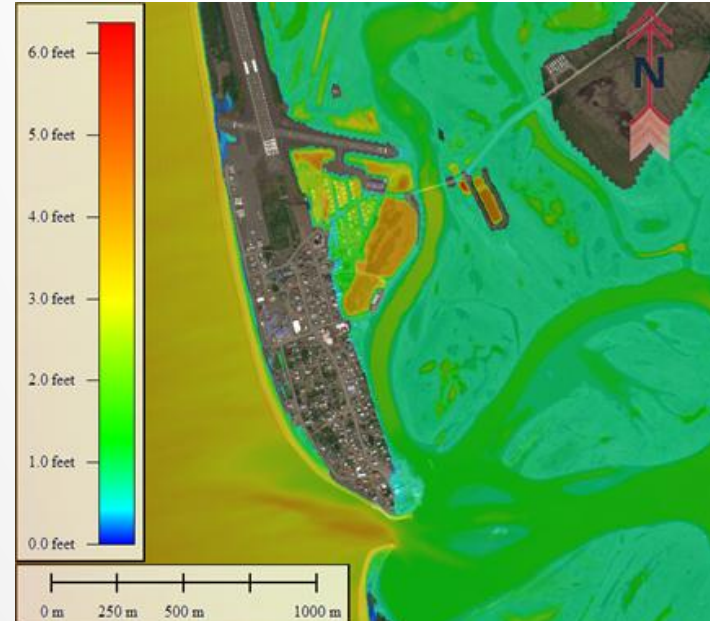
Dynamic flood models



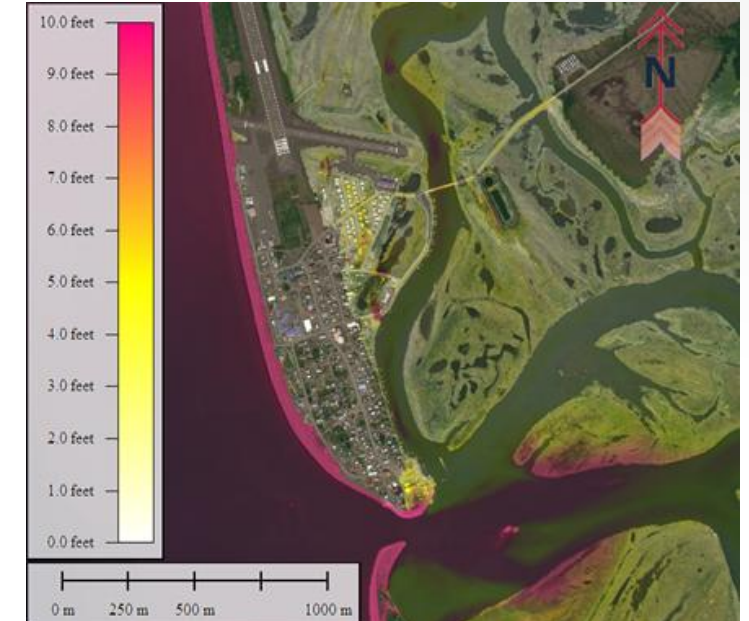
flood extents/depths



max velocities



max wave heights



No Storm	Annual	10-Year	20-Year	50-Year	100-Year
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Coastal storm (frequency)

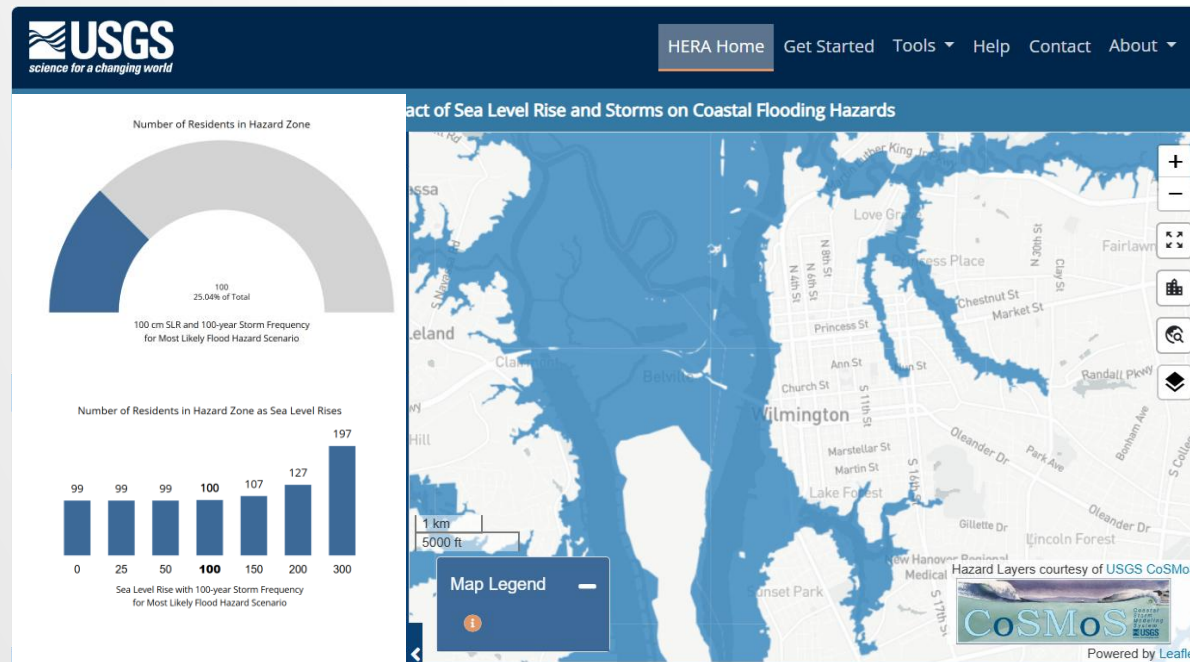
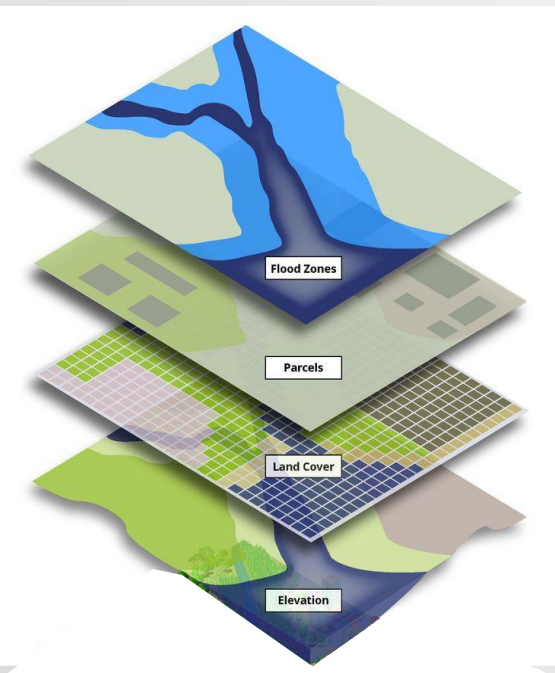
None	50	100	150	200	300
------	----	-----	-----	-----	-----

Sea level rise, cm

QUANTIFYING COMMUNITY EXPOSURE

Hazard Exposure Reporting and Analytics (HERA)

Map, estimate, and compare community exposure to coastal hazards



- People
- Economic assets
- Critical facilities
- Infrastructure
- Land cover



PRESENTATION OUTLINE

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 - USGS CoSMoS
 - **Comparison of functionality and coverage**

GEOSPATIAL FLOOD HAZARD TOOLS COMPARISON

	Sea Level Rise Viewer (NOAA)	AK-FIT (DGGS + USGS)	Dynamic models/HERA (USGS)
Method	Hydro-conditioned enhanced bathtub model*	<u>Still-Water Inundation Model</u> (SWIM)*	CoSMoS; dynamic including waves (+erosion, flood extent, depth, flood severity)
Geography	69 communities (~40 more forthcoming)	34 communities (more forthcoming)	8 communities (~13 more forthcoming)
Source data	QL1 or QL2 lidar datasets	Best available digital elevation model (topobathy, lidar DTM, photogrammetric DSM, etc.)	Best available topobathy DEM
Resolution	3m	<10cm to 1m	1m
Primary function	Hazard visualization	Hazard visualization	Hazard + risk assessment
Primary use	Long-term planning	Emergency preparedness	Long-term planning

**Similar output, different methodology*

Alaska Data Availability

Community	CoSMoS/ HERA	SLR Viewer	AK-FIT	Community	CoSMoS/ HERA	SLR Viewer	AK-FIT	Community	CoSMoS/ HERA	SLR Viewer	AK-FIT
Akiachak		Coming Soon		Ivanof Bay		Coming Soon		Point Lay		Available	Available
Alakanuk		Available	Available	Juneau		Coming Soon		Port Alexander		Coming Soon	
Aleknagik		Available		Kake		Available		Port Graham		Available	
Anchorage		Available		Kaktovik		Available		Port Heiden		Coming Soon	
Angoon		Available		Kasaan		Available		Quinhagak		Available	Available
Beluga		Available		Kipnuk			Available	Saint Michael	Coming Soon	Coming Soon	Available
Bethel		Coming Soon		Kivalina	Coming Soon	Available	Available	Saint Paul	Coming Soon		
Big Salt		Available		Klawock		Available		Savoonga		Available	Available
Buckland		Coming Soon		Kongiganak			Available	Scammon Bay		Available	Available
Brevig Mission	Available	Available	Available	Kotlik		Available	Available	Selawik		Coming Soon	
Cheformak		Available		Kotzebue	Coming Soon	Coming Soon	Available	Seldovia		Available	
Chevak		Available	Available	Koyuk	Coming Soon	Coming Soon		Seldovia Village		Available	
Chignik		Coming Soon		Kupreanof		Available		Seward		Coming Soon	
Chignik Lagoon		Coming Soon		Kwethluk		Coming Soon		Shaktoolik	Available	Available	Available
Coffman Cove		Available		Kwigillingok		Available	Available	Shishmaref	Coming Soon	Available	Available
Cold Bay		Available		Levelock		Available		Sitka		Coming Soon	
Craig		Available		Manokotak		Available		Skagway		Coming Soon	
Deering	Coming Soon		Available	Mat-Su Borough		Coming Soon		Stebbins	Coming Soon	Coming Soon	Available
Dillingham		Available		Mekoryuk	Coming Soon	Available		Teller	Available	Available	Available
Diomedes		Coming Soon	Available	Mertarvik		Available		Tenakee Springs		Available	
Edna Bay		Available		Nanwalek		Available		Thorne Bay		Available	
Eek		Available		Napakia		Coming Soon	Available	Togiak		Available	
Egegik		Coming Soon		Napaskiak		Coming Soon		Toksook Bay		Available	Available
Ekuk		Available		Naukati Bay		Available		Tuntutuliak		Available	Available
Elfin Cove		Coming Soon		Nelson Lagoon	Coming Soon	Available		Tununak		Available	Available
Elim	Available	Available	Available	Newtok		Available		Twin Hills		Available	
Emmonak		Available	Available	Ninilchik		Available		Tyonek		Available	
Gambell	Coming Soon	Available	Available	Nome	Available	Available	Available	Ugashik		Coming Soon	
Golovin	Available	Coming Soon	Available	Nunam Iqua		Coming Soon		Unalakleet	Available	Available	
Goodnews Bay		Available		Oscarville		Coming Soon		Utqiagvik	Available	Available	Available
Gustavus		Available		Pelican		Coming Soon		Wainwright		Available	Available
Homer		Available		Perryville		Coming Soon		Wales	Coming Soon	Coming Soon	Available
Hoonah		Available		Petersburg Borough		Available		Whale Pass		Available	
Hooper Bay	Coming Soon	Available	Available	Pilot Point		Coming Soon		White Mountain		Coming Soon	
Hydaburg		Available		Point Baker		Available		Yakutat		Coming Soon	
Hyder		Coming Soon		Point Hope		Available	Available				

THANK YOU!



NOAA OCM, Sea Level Rise Viewer

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MONITORING PERMAFROST
DEGRADATION: REMOVE SENSING
INSIGHTS ON INFRASTRUCTURE,
WILDFIRES AND COMMUNITY IMPACTS



PUBLIC COMMENT

NEXT RRT MEETINGS

- **March 3-4, 2027**
- **Sept 15-16, 2027**



REVIEW OF PARKING LOT ISSUES & CLOSING REMARKS