

Marine Debris Program



MARINE DEBRIS IN ALASKA

CHALLENGES, SUCCESSES, AND OBSERVATIONS

North Pacific Fishery Management Council – Ecosystem Committee

January 25, 2022

Peter Murphy – Regional Coordinator – Alaska

NOAA Marine Debris Program

(Genwest Systems, Inc.)

Outline



- 1. Marine Debris Background**
- 2. NOAA Marine Debris Program**
- 3. Alaska Debris & Context**
 - *Debris in Region*
 - *Debris Sources & Pathways*
 - *Alaska Debris Community*
- 4. Current + Highlighted Projects**
- 5. Bering Strait Debris Event**
- 6. Arctic Actions**
- 7. Action Planning**
- 8. NPFMC Opportunities for Engagement**



Marine Debris – Micro to Macro



Marine Debris – Notable Types



Plastics

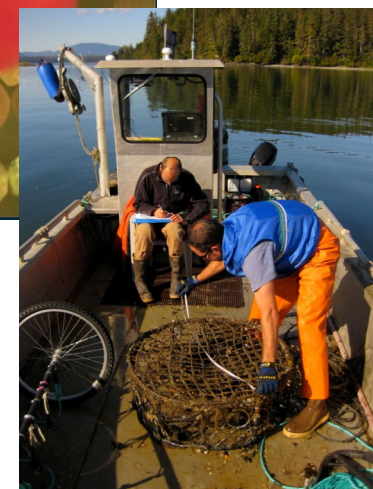
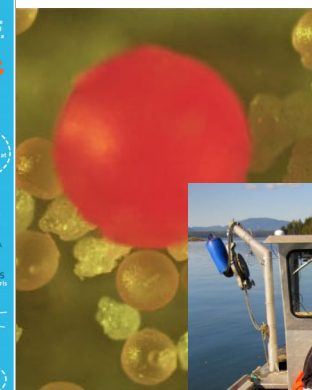
- Common form of marine debris that are non-biodegradable
- Estimated 8 million metric tons of plastic enter the ocean every year
- Break into small pieces (called microplastics)

Microplastics

- Plastics smaller than 5mm in size
- Microplastics come from multiple sources
 - Microbeads, microfibers, capsules, preproduction pellets
 - Degradation of larger plastics
- **Impacts**
 - Ingestion by animals
 - Chemical impacts

Derelict Fishing Gear

- Commercial, recreational, subsistence fishing gear that is lost, abandoned, or discarded and enters the marine environment
- Made with synthetic materials and metal
- **Impacts**
 - Entanglement



Marine Debris – What We Can Do



- **REMOVAL** – Clean up what's already out there
 - Mostly people picking up debris
 - Disposal also an important part
- **PREVENTION** – Stop more from getting in the ocean in the first place.
 - Helping people understand the issue
 - Using different tools
- **RESEARCH** – Learn more about where it comes from and what it does to the environment
 - Monitoring
 - Lab and field studies and experiments



Marine Debris Program



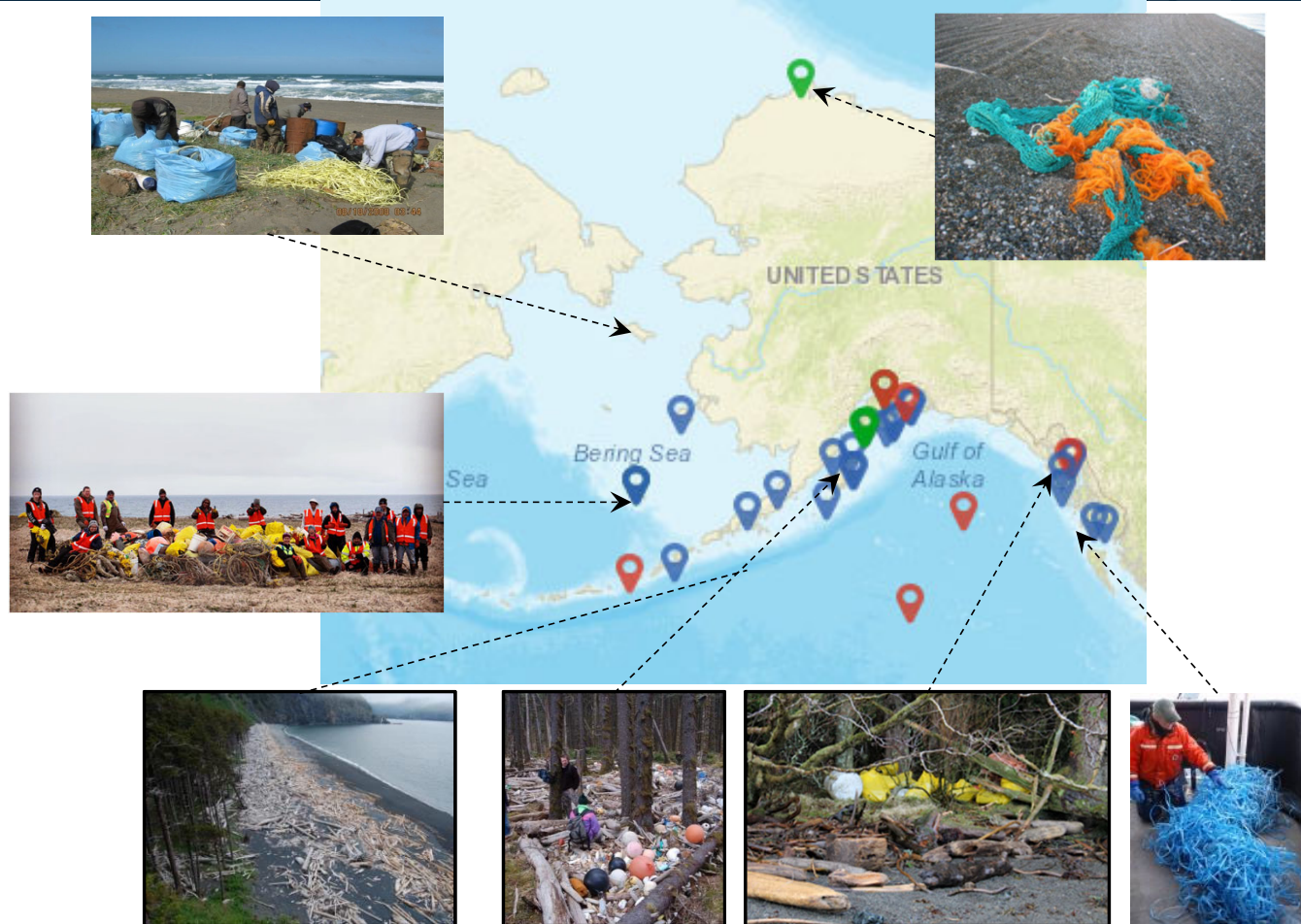
- **Origin:** Established in **2006** by Congress as the federal lead for marine debris in the US
- **Vision:** the global ocean and its coasts free from the impacts of marine debris
- **Pillars:**
 - Removal
 - Research
 - Prevention
 - Response
- **Regional Coordination**
 - Differences in debris issues, opportunities and needs
- **Grants + Funding Vehicles**
 - Removal
 - Research
 - Prevention
- **Save Our Seas 2.0**
 - Increased international engagement
 - Marine Debris Foundation



Marine Debris in Alaska - Orientation



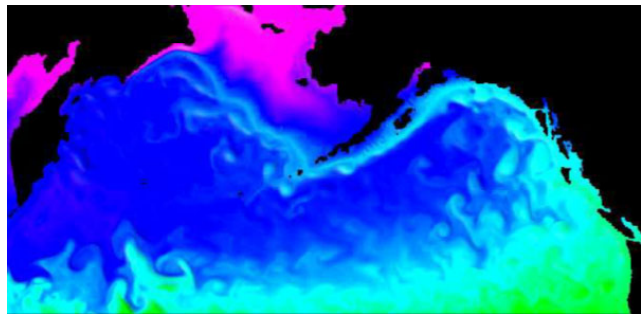
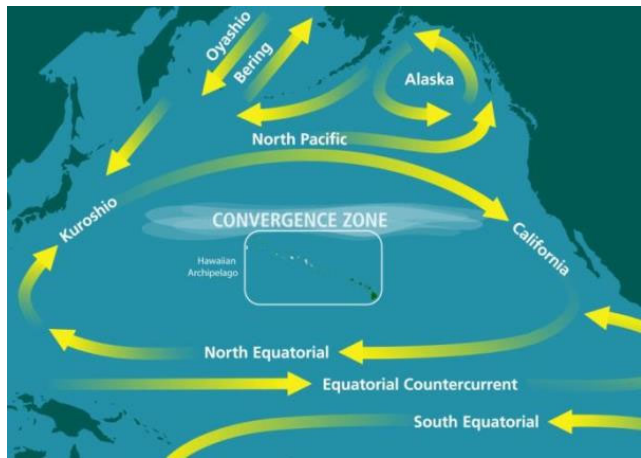
- **Quantity**
 - High, & Highly Varied
- **Location**
 - Hotspots
- **Sources**
 - Direct v. Indirect
 - Local v. Distant
- **Composition**
 - Consumer Debris
 - Fishing Gear
 - Shipping
- **Challenges**
 - Access
 - Seasonality
 - Disposal



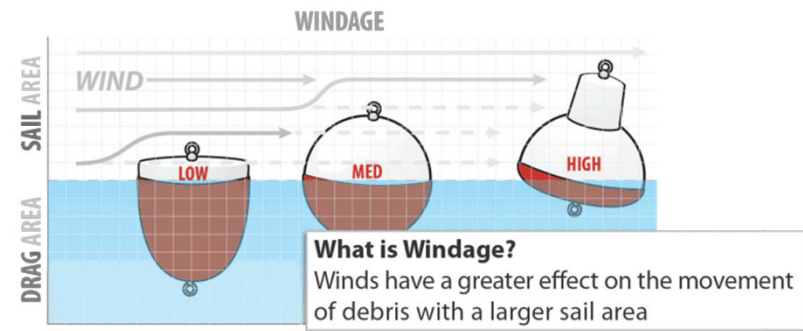
How Debris Gets to Alaska



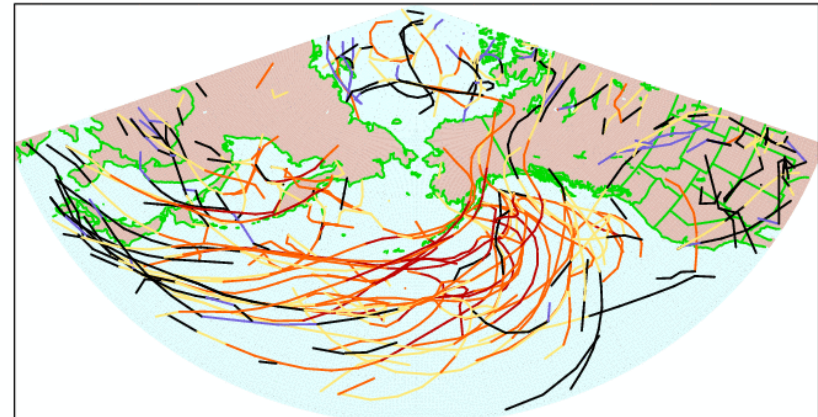
CURRENTS



WIND



Storm Tracks--GR2--JFM--2010



Alaska MD Community



Below is a sample of partners who are active in the marine debris issue, but is by no means exhaustive

- **NGO's / Small Business**

- Gulf of Alaska Keeper
- Center for Alaskan Coastal Studies
- Island Trails Network
- Airborne Technologies, Inc.
- Sitka Sound Science Center
 - *Alaska Marine Stewardship Foundation / Marine Conservation Alliance Foundation*
- CDQ – Norton Sound Economic Development Corporation, etc.
- Kawerak

- **US Federal Agencies**

- NOAA NMFS, Auke Bay Labs
- USFWS, USFS, NPS, USCG, DOI, and more!

- **State of Alaska + Local Government**

- DEC, DF&G, Boroughs, Communities
- North Slope Borough

- **Native &/or Tribal Organizations**

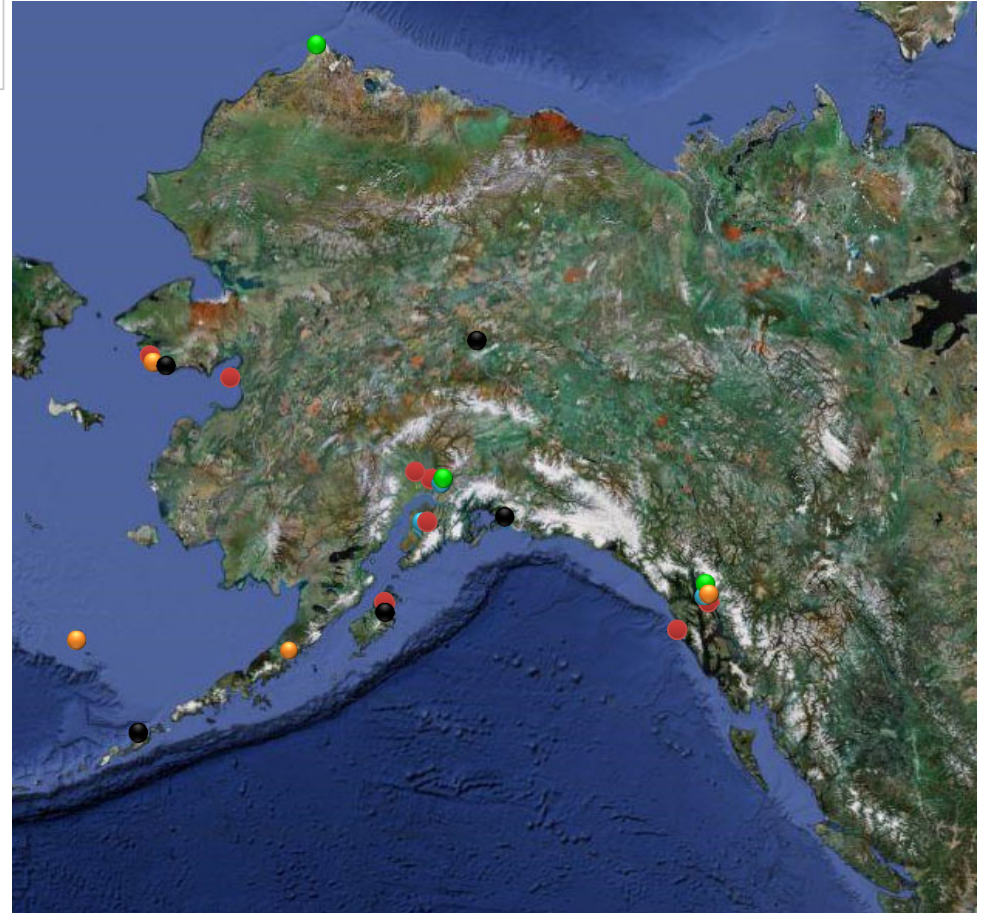
- Aleut Community of St. Paul Island
- Douglas Indian Association
- Villages, Associations, Councils, Communities

- **Academic**

- University of Alaska, Anchorage, Fairbanks
- UAF Sea Grant

- **Working Groups (not pictured)**

- PEG (Pinniped Entanglement Group)
- Abandoned & Derelict Vessels Task Force



Open + Selected Projects



Community Based Removal

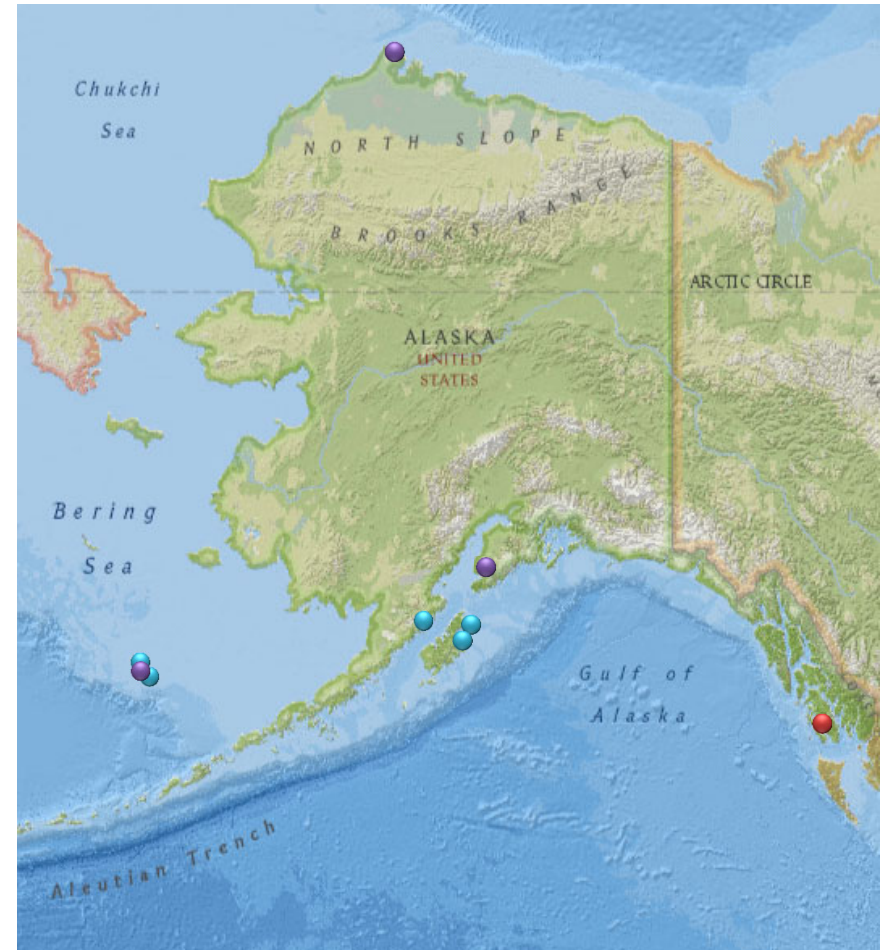
- **Pribilof Islands – Shoreline Cleanup**
 - Cleanup of sensitive habitat beaches on St. Paul, St. George, and Otter Island
- **Kodiak – Vessel-Based Cleanup**
 - Cleanup of shorelines on outlying islands by mix of volunteers and paid staff using small-large boat operations
- **Alaska Peninsula Cleanup + Disposal**
 - Removal of debris from Kodiak and Alaska peninsula beaches with accompanying research on disposal and recycling methods.

Prevention - Education & Outreach

- **North Slope Borough – Prevention**
 - Education and engagement of next generation in North Slope Borough schools with focus on local impacts and behavior change
- **Bering Sea Packing Band Pollution Prevention**
 - Local community driven prevention of packing band pollution, integrating fishing industry, native stakeholders and structures, and local community.

National Marine Sanctuaries Foundation

- **Maybeso Estuary Removal**
 - Legacy debris removal by local mine & timber partners through new Southeast Alaska partner

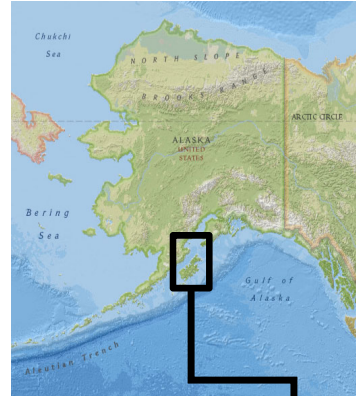


Alaska Peninsula Cleanup + Disposal



Project Summary

- **Who**
 - Ocean Plastic Recovery Project
- **What**
 - Shoreline removal from Katmai National Park
 - Using crew + debris transport vessel with skiffs for crew deployment
 - Sorting of debris in Kodiak
 - Evaluation of optimal debris disposal and processing techniques with university and industry partners
 - Western Washington University
 - Hewlett Packard
- **Where**
 - Katmai National Park + Kodiak Archipelago
- **When**
 - Cleanup in 2021*
- **Targets**
 - 504 acres cleaned
 - 50,000 lbs of debris removed
 - 4020 volunteer hours*

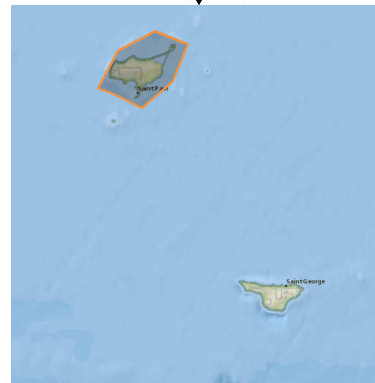


Bering Sea Packing Band Prevention



Project Summary

- **Who**
 - Aleut Community of St. Paul Island
- **What**
 - Change attitudes and behaviors for use of packing bands in Bering Sea Region
 - Collaboration with Trident Seafoods, local fishing fleet
 - Community Based Social Marketing Model
- **Where**
 - St. Paul & St. George Island
- **When**
 - 2020 - 2022*
- **Targets**
 - 2,000 lbs removed



Bering Strait Debris Event



- **Initial Sightings**

All sightings by community responders, with coordination by Kawerak and Alaska Sea Grant

- **July 2020**– St. Lawrence Island, followed by Nome
- **August – November 2020** - Additional sightings in Norton Sound and Bering Strait region

- **Debris Types**

- **Beverage / liquid containers**
- **Personal soap / hygiene products**
- **Aerosol cans, cleaner bottles**
- **Fishing-related items** (boots, bags, etc.)
- **Fresh fruit & vegetables** (St. Lawrence, Nome)
- **Russian language labeling** most frequently reported, though some Korean and other languages



Photo: R. Tokeinna

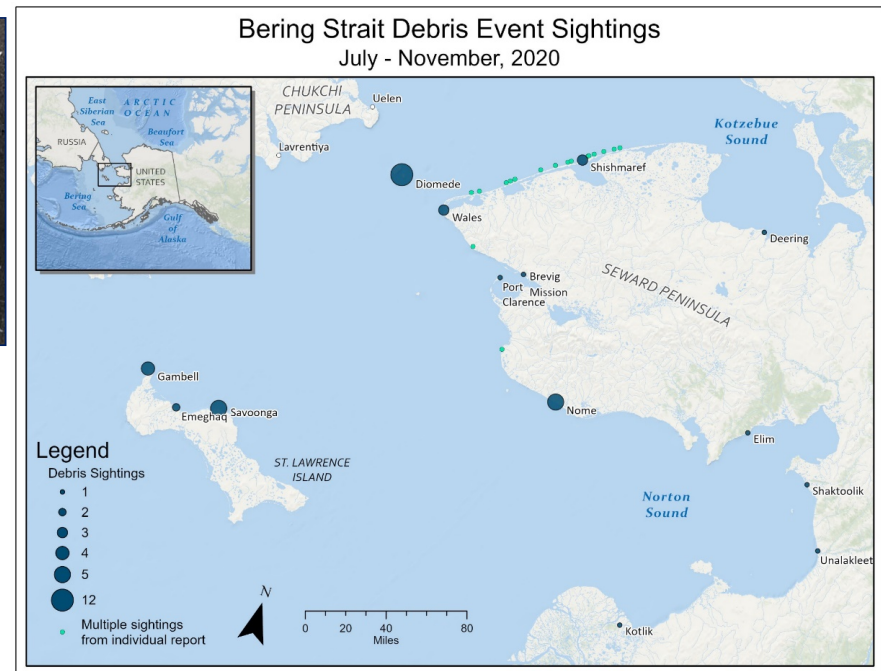


Photo: J. Erickson



Photo: S. Campbell
Anngayou



Photo: T. Petawook



Photo: M. Koonooka

Bering Strait Debris Event - Efforts



• Working Group

- Ad-hoc Response Group
 - Local Responding Individuals & Debris Community (Alaska Sea Grant, Kawerak, NSEDC)
 - State Agencies
 - Federal Agencies
- Build awareness, identify needs, and opportunities for actions.

• Reporting Systems

- Reports almost entirely from communities through Austin Ahmasuk (Kawerak) and Gay Sheffield (Alaska Sea Grant)
- Shared NOAA incident email address incident.debris@noaa.gov

• Modeling

- Hindcast model the pathways of debris to indicate approx. location and timing of introduction

**- FOREIGN TRASH ASHORE-
SEE IT, REPORT IT**

Since late July, trash with Russian and Korean writing has been washing ashore in the Bering Strait and it is traveling with the wind and currents. Coastal communities should remain watchful and report any unusual marine debris that washes up on our beaches.



PLEASE REPORT MARINE DEBRIS!

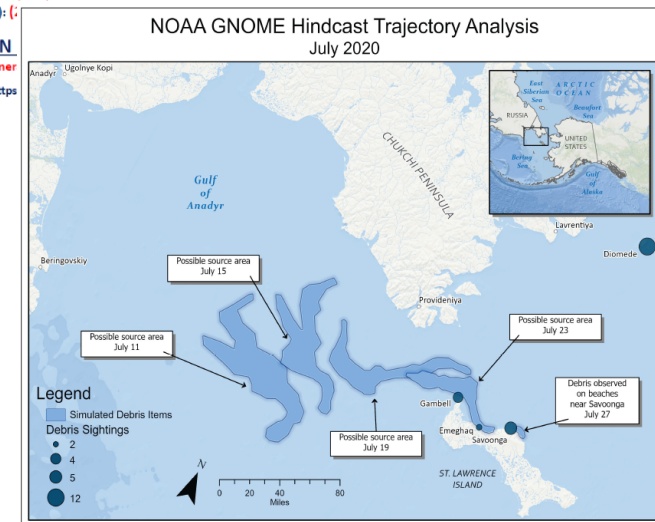
If you see unusual debris in the Bering Strait region, report it to NOAA at incident.debris@noaa.gov or contact:

- Austin Ahmasuk (Kawerak – Nome) (907) 434-0962
- Gay Sheffield (Alaska Sea Grant – Nome); (907) 434-1149
- NOAA Marine Debris Program (Seattle): (206) 461-3000

 **HOW YOU CAN**

Take photos using your cell phone or camera

For more information on marine debris: <https://www.noaa.gov/marine-debris>



Bering Strait Debris Event - Efforts



- **Debris Analysis**

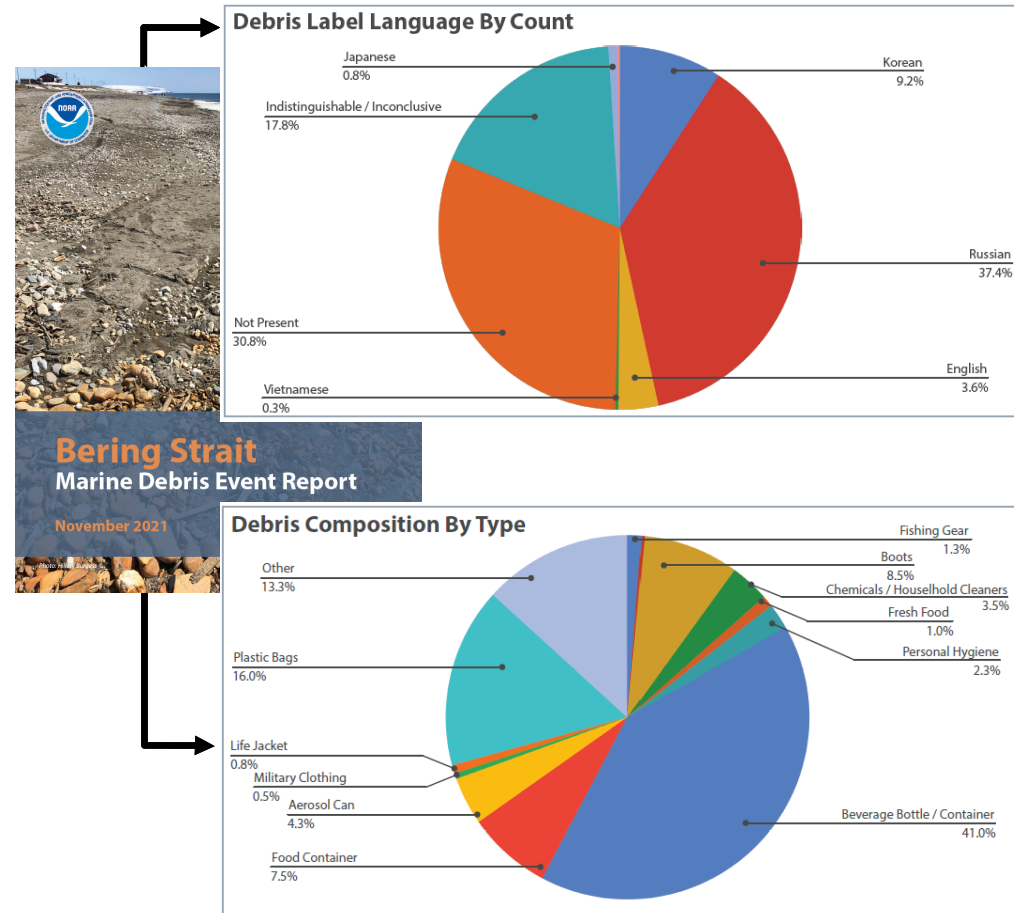
- On site cataloguing and photo documentation by initial observers plus Alaska Sea Grant
- Analysis of imagery for type, label language, etc.

- **International Engagement**

- USCG, NOAA International Affairs, US State Department to identify best communication channels
 - Investigation, awareness, prevention

- **Report**

- Requested by Bering Strait region stakeholders
- Document event, efforts in response, challenges, and identified gaps/needs



Arctic Council – Marine Litter Efforts

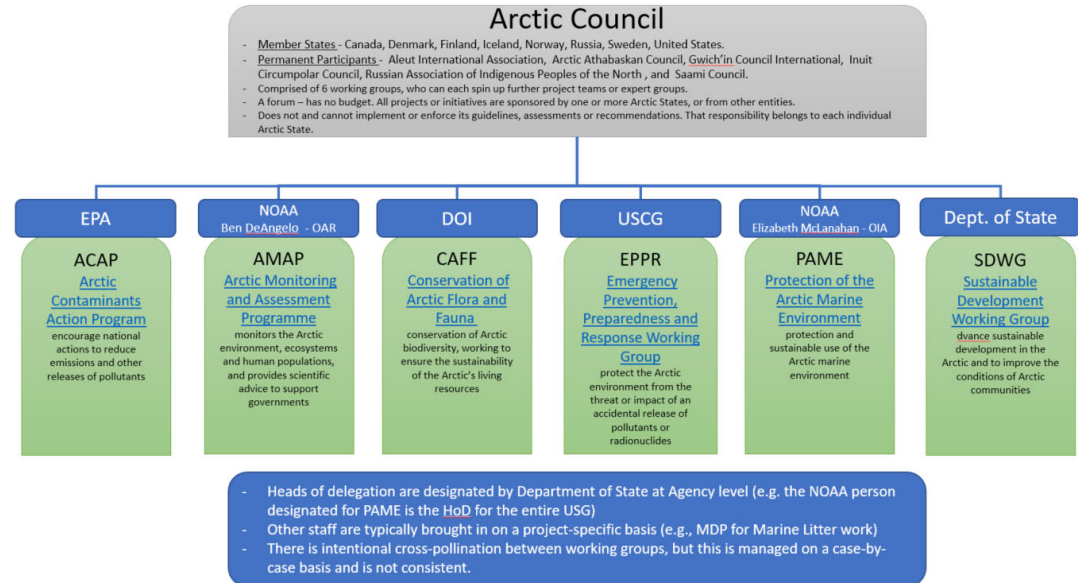


• Council Structure

- Member States + Permanent Participants + Observer Countries
- Six (6) topic-specific working groups
- Each with Head of Delegation from each member state

• Marine Litter Efforts

- AMAP
 - Monitoring Guidelines
 - Monitoring Plan
- CAFF
 - Plastics & Seabirds
- PAME
 - Desktop Study
 - **Regional Action Plan on Marine Litter in the Arctic**
- SDWG
 - Solid Waste Management in Small Arctic Communities



Action Planning – Background



Background

- Other states in Pacific and nationwide are building action plans for addressing issue of marine debris
- Plans generally not prescriptive, but capture consensus on gaps, needs and priorities into a framework for what should be done
- Plans built wherever there is interest and buy-in from MD community in the region
 - Federal / State / Local Agencies
 - NGO's
 - Tribal / Native Organizations
 - **Industry partners**

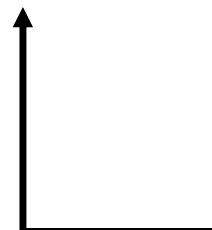


Benefits

- Collaboration and communication
- Shows coordination and consensus → helps in proposals and funding

Completed Action Plans

- **Pacific**
 - Hawaii, Oregon, Washington, California
- **National**
 - **State** - Virginia, Florida, USVI,
 - **Regional** - Southeast, Great Lakes, Gulf of Maine, Gulf of Mexico



Action Planning – Background

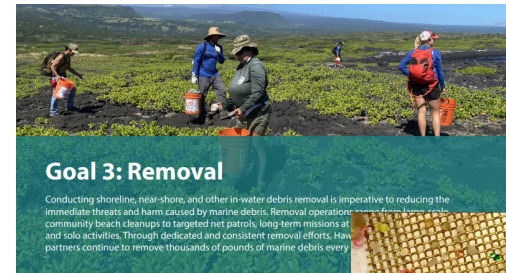


- **Organization**

- By Action
- By Debris Type

- **Key Elements**

- **Actions** – Existing actions executed or in process
- **Priorities** – Priority actions within the marine debris community, often organized by goal or by debris type, with identified leads.



Volunteer workday at Kāwā estuary on K...

Strategy 3.1. Utilize effective methods to locate marine debris acc

Action	Contributing Organization
3.1.1. Continue to support the advancement of at-sea detection	HPU CMDR
3.1.2. Hawaii State Department of Land and Natural Resources	HPU CMDR, 83
Hawaii MDAP	AR, KIRC, HAW, HW, DLNR, SCH, USFWS JCNWI, NOAA ES, MOCM



Strategy 3.1. Prevention, Education, and Outreach

Objective 3.1.1. By the end of 2026, develop education and outreach materials with coordinated messaging on microplastics and microfibers to raise public awareness of available science, data collection, research, laws, and regulations as steps leading to long-term changes in behavior.

Lead(s) and Partner(s)
Anacostia Riverkeeper, Bronx River Alliance, Clean Ocean Action, Delaware Sea Grant, George Mason University, Keep Virginia Beautiful, Maryland Sea Grant, Mid-Atlantic Regional Council on the Ocean's Mid-Atlantic Marine Debris Work Group, New Jersey Sea Grant Consortium, New York Marine Rescue Center, NOAA MDAP, University of Delaware, University of Maryland Center for Environmental Science, Chesapeake Biological Laboratory

Gulf of Maine MDAP

Consumer Debris

Chip bags and other food packaging removed from beaches in northern Massachusetts (Photo credit: NOAA)

Goal 1: Reduce consumer debris in the Gulf of Maine Region

Objective 1. Reduce the quantity of single-use plastics in the environment

Mid Atlantic MDAP

Alaska – What's Next...



- **Regional Action Planning**
- **New and Emerging Partners**
 - Add to existing strong community
- **Disposal**
 - Recycling + Sustainability
- **Integrating Emerging Technology + Techniques**
 - UAS + Remote Sensing
 - Opportunistic Data



NPFMC – Potential Collaboration Opportunities



– Action Planning

- Insight / input from industry perspective
- Provide feedback on action plan elements, priorities, and actions
 - Feasibility
 - Best approaches
- *Helps in keeping suggested actions feasible / realistic*

– Information / Collaboration

- Communications on concerns or questions on marine debris from NPFMC stakeholders



Thank You

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Potential Discussion Questions



- What questions or concerns have you heard from fishing industry stakeholders about marine debris?**
- Have there been reports of derelict fishing gear impacts to fishing?**
- Have there been questions from the public about marine debris or pollution?**
- Where in Action Planning, or in the Marine Debris issue in general, could NPFMC see itself?**