



Community and Environmental Compliance Standard Operating Procedures (CECSOP) for R/V *Sikuliaq* Research Operations

Version 2.0, February 16, 2022

The research vessel [Sikuliaq](#) is owned by the [National Science Foundation](#) (NSF)¹ and operated through a Cooperative Agreement with the [College of Fisheries and Ocean Sciences](#) (CFOS) at the [University of Alaska Fairbanks](#) (UAF). As part of the U.S. Academic Research Fleet, the vessel is used by scientists from the U.S. and international oceanographic community through the [University-National Oceanographic Laboratory System](#) (UNOLS).

R/V *Sikuliaq* is designed to support a wide variety of research activities, some of which come under U.S. federal environmental regulations. Furthermore, R/V *Sikuliaq* operates in Arctic and subarctic regions where Alaska Native peoples rely on maritime subsistence harvest activities. Given the importance of food security to these communities, it is essential to avoid conflicts between research vessel activities and community subsistence harvests. This involves communicating ship research activities to coastal communities in the northern Bering, Chukchi, and Beaufort Seas (Figure 1) and, in rare cases, modifying research plans where subsistence activities may simultaneously occur.

This Community and Environmental Compliance Standard Operating Procedures (CECSOP) manual is intended to provide guidance and explain standard operating procedures to Principal Investigators (PIs) who intend to use R/V *Sikuliaq* to conduct research activities. These standard operating procedures (SOP) support good practices for community engagement and environmental compliance while facilitating use of R/V *Sikuliaq*.

Specifically, this CECSOP document:

- Articulates the standard operating procedures aboard R/V *Sikuliaq*, from pre-cruise to post-cruise;
- Provides guidance to researchers utilizing R/V *Sikuliaq* on how to identify, communicate, and mitigate potential time/area conflicts with subsistence harvest areas, activities, and resources;
- Guides appropriate and necessary communication with potentially interested coastal communities, tribal leaders, Alaska Native organizations, co-management organizations, and others;

¹ See Appendix A for a full list of acronyms used in this document.

- Explains environmental compliance procedures to ensure PI and ship compliance with applicable federal regulations such as the National Environmental Policy Act (NEPA), the Marine Mammal Protection Act (MMPA), and the Endangered Species Act (ESA);
- Describes the roles and responsibilities of individuals involved in these processes.

Updates in the 2021 Revision

The CECSOP is a living document designed to enhance cruise success. The original CECSOP took into consideration the [Arctic Waterways Safety Committee](#) Standard of Care for Research Cruise Operations.² The 2021 revision includes new guidance and recommendations that are based on discussions at [Alaska Eskimo Whaling Commission](#) (AEWC) meetings and feedback from PIs who have used R/V *Sikuliaq*, the Arctic Icebreaker Coordinating Committee, and interested parties in northern and northwestern Alaskan coastal communities.

This version expands sections on communications, outreach, and the role of the R/V *Sikuliaq* Science Liaison (SSL); provides hyperlinks to the R/V *Sikuliaq* Science Operations website; contains additional maps where marine subsistence harvest activities occur; and includes minor revisions throughout that clarify the responsibilities of PIs.

General guidance for R/V *Sikuliaq* research activities is described in Section I. The standard operating procedures are described and organized as pre-cruise, cruise, and post-cruise activities in Section II. Section III explains personnel roles and responsibilities.

While these procedures reflect current good practices, each maritime research activity is unique and may require additional or modified procedures to successfully achieve the research goals. UAF and CFOS personnel who manage R/V *Sikuliaq* are dedicated to assisting and supporting PIs in complying with these or modified SOPs as well as operating conflict-free with Alaska's subarctic and Arctic coastal communities.

Section I: General Guidance for Research Activities

Research activities should be planned to avoid impacts on or time/area conflicts with maritime subsistence harvest areas, activities, and marine resources (see Appendix B for available information on general maritime subsistence resources, migration periods, and harvest activities). Failure to do so may put both the maritime subsistence activities and the research activities at risk.

Discussions will be needed with potentially affected coastal communities if funded research activities cannot avoid impacts on and time/area conflicts with maritime harvest areas, activities, and resources. In particular, conflicts may occur when:

- Research is to be conducted within 50 nm of Utqiaġvik or within 30 nm of other coastal villages or established whaling camps (Figure 1).

²The Arctic Waterways Safety Committee Standard of Care for Research Cruise Operations Draft 22 Feb 2017 Version.

- Research is to be conducted within a distance of 12 nm (U.S. territorial limit) from the rest of the Arctic coastline.³

However, subsistence hunting depends on various environmental factors, and at times hunting activities go beyond these noted distances. Therefore, communication with local communities before, during, and after research activities is imperative.

Notice of simple transit without research activities through the Bering Strait will be conveyed to any interested parties by the Marine Superintendent (MS). PIs will be notified by the MS if further action is necessary for transits. Otherwise, PI communication responsibilities are focused on the period of research operations.

PIs will work with the SSL **to best communicate Arctic research being conducted from R/V *Sikuliaq***. The SSL will work with PIs on pre-cruise presentations to organizations such as the AEWCC and will provide the PI and/or Chief Scientist an email distribution list for daily communications while the ship is underway during research operations. The SSL may work with PIs, Alaska Sea Grant Marine Advisory Program (MAP) agents, UAF rural campuses, tribal governments, and coastal communities in the vicinity of the research activities to facilitate a dialogue. For example, PIs may work with the SSL and regional MAP agents to participate in the popular Strait Science lecture series in Nome, which is covered by media outlets in the Bering Strait region.

³The distances listed here are guidelines recommended by the communities represented in the Alaska Eskimo Whaling Commission and were included in the Arctic Waterways Safety Committee Standards of Care Research Survey Operations (adopted December 5, 2018).

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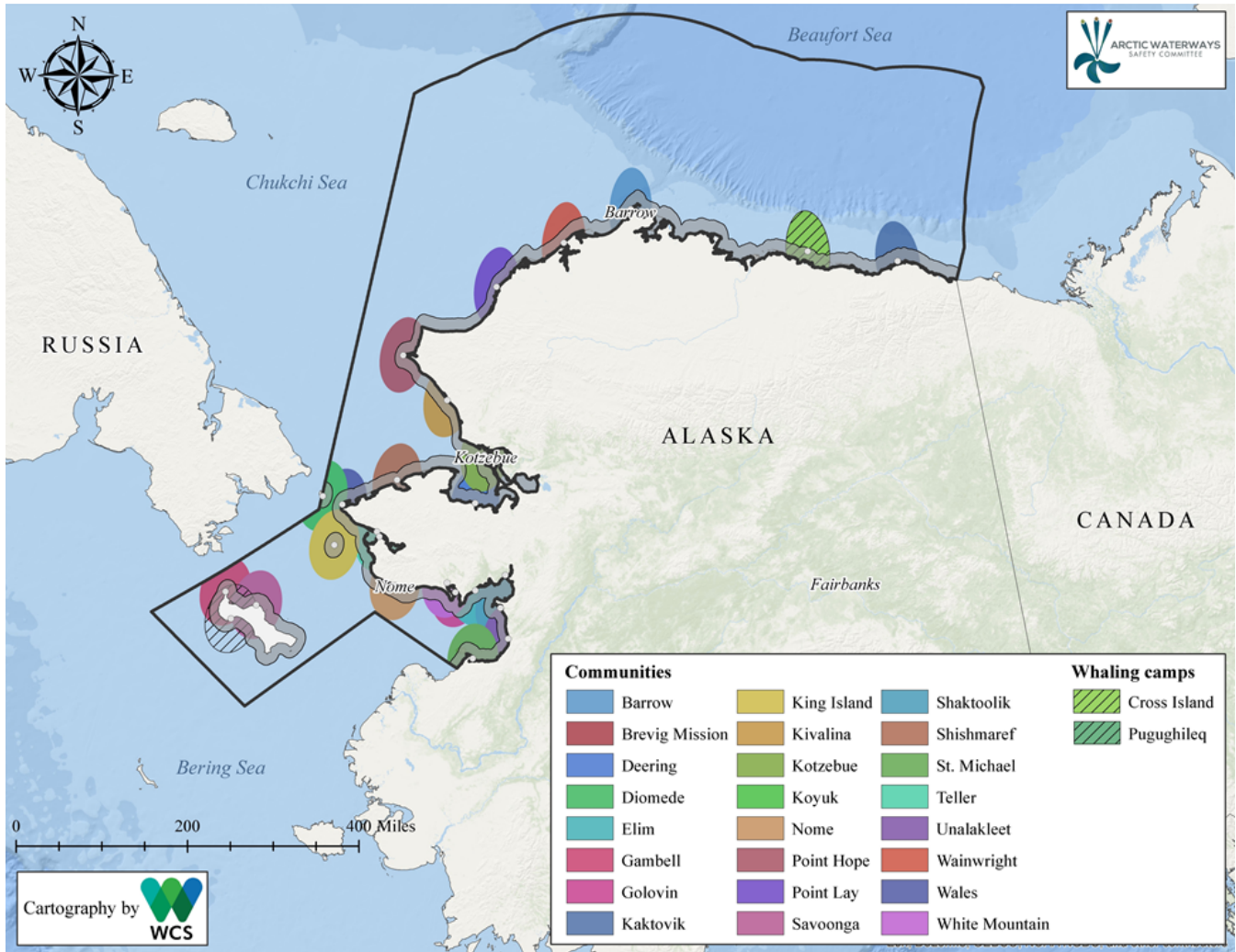


Figure 1. Arctic villages and coastal areas of concern per the Alaska Waterway Safety Committee Standards of Care for Research Cruise Operations (adopted December 5, 2018). Although not included in this graphic, Nuiqsut is also recognized as having a 30 nm boundary associated with the Colville River delta.

Section II: Standard Operating Procedures

Pre-Cruise Actions

Cruise Plan

PIs interested in using R/V *Sikuliaq* should review the most updated version of the CECSOP (this document) and other Arctic cruise planning protocols available on the [Cruise Planning Timeline](#) page of the [R/V *Sikuliaq* Science Operations website](#) prior to using the vessel.

For additional guidance or clarification on conducting research in the region relative to maritime subsistence issues, PIs are encouraged to contact the CFOS Associate Dean for Research (ADR) and the SSL. The ADR and SSL will work with Alaska Sea Grant MAP agents, UAF rural campuses, tribal governments, and coastal communities to mitigate concerns and provide regionally relevant communications.

For information and consultation regarding vessel capabilities and limitations, PIs should contact the MS and the Science Operations Manager.

NSF Environmental Compliance

The National Science Foundation is the owner of R/V *Sikuliaq* and oversees environmental compliance from all ship users regardless of sponsoring agency. Once a research activity has been scheduled on the vessel, the SSL or the NSF Environmental Compliance Officer (ECO) will send the NSF Organization Environmental Compliance (NSF EC) Checklist to the PI. The NSF environmental compliance process, including compliance with federal environmental regulations and any necessary consultations, must be completed prior to cruise commencement.

Within three weeks of receiving the NSF EC Checklist, PIs should complete it for all planned research activities to be conducted during the cruise; have it signed by their institution's Authorized Organizational Representative, which indicates institutional concurrence; and **return it to the SSL**. The SSL will coordinate review of the checklist and any associated documentation with the NSF ECO to determine if additional steps are necessary to comply with environmental regulations.

The potential environmental impacts of any ancillary projects proposed to be conducted during the cruise also need to be considered. If a research activity is sponsored by a federal agency other than NSF, any associated environmental compliance documentation for that agency should also be provided with the NSF EC Checklist to the SSL. Providing this documentation concurrently can streamline the NSF environmental compliance process.

Compliance with the required environmental regulations can be a lengthy process. For example, formal authorizations associated with the MMPA take a minimum of 120 days and formal consultations associated with the ESA take a minimum of 135 days. Informal consultations under the ESA can take a minimum of 60 days.

The NSF ECO will confirm with the SSL when the NSF environmental compliance process is complete. **The cruise may not commence until the environmental compliance process, including compliance with federal environmental regulations and any necessary consultations, is complete.**

NSF retains the discretion to deny any research activities from going forward if environmental or subsistence concerns are revealed and not resolved during the environmental compliance process. PIs should not rely on the scheduling of the cruise as an indicator that NSF cannot or will not cancel the cruise for concerns revealed during the environmental compliance process.

Project Summaries and Presentations

Within two weeks after the PIs have been informed of an award recommendation by a sponsoring agency/organization, the PIs will provide the ADR and SSL with a one-page project summary that will be used to communicate the proposed research to Arctic and subarctic communities. To create this summary, PIs should complete the [R/V *Sikuliaq* Arctic Field Plan Form](#), which can be requested from the SSL or found on the R/V *Sikuliaq* Science Operations website. PIs should contact the SSL for examples and guidance.

Alaskan coastal communities are the main audience for this summary. The project summary is used to present the research objectives, general research activities, location and timing of the research, and a map at regional meetings with representatives of these communities (e.g., AEWC), and may be transmitted to other community representatives. The PIs will work with the ADR, NSF, and the SSL on how to best communicate their research plans to this audience.

The PIs will also work with the SSL to develop a short PowerPoint or slide presentation based on the project summary. The presentation will be concise, highlight the societal benefits of the proposed research, and avoid using scientific jargon. As with the project summary, PIs will work with the SSL to follow standardized formatting that is consistent with UAF R/V *Sikuliaq* branding and provide the appropriate level of detail for the target audience. The ADR, NSF, and the SSL will be available to assist PIs on how to best communicate their research plans.

The PIs, or a qualified designee,⁴ will present their proposed research activities at meetings with potentially affected stakeholders, where input will be sought as to whether the funded research activity has the potential to impact maritime subsistence activities and/or marine resources. The PI or designee will be accompanied by the ADR and/or other *Sikuliaq* representatives (MS, SSL). If not physically present at meetings, the PIs may need to be available remotely to provide assistance to the qualified designee during meetings.

If members of potentially affected communities express concern regarding possible impacts to maritime subsistence harvest areas, activities, and resources, the PIs or qualified designee may need to attend additional meetings to discuss monitoring and mitigation measures. If necessary, a modified research pre-cruise plan and presentation incorporating agreed-upon monitoring/mitigation measures will be presented at a subsequent meeting. The ADR and SSL will coordinate and assist PIs with this effort. For NSF-funded projects, NSF Program Officers are aware that additional travel funds may be needed for these purposes. For non-NSF projects, PIs should consult with their funding entities.

⁴ In this document, a “qualified designee” is defined as someone capable of discussing and answering questions about the proposed research, techniques, methodologies, cruise routing, and tracks.

Cruise Actions

The Captain and crew of R/V *Sikulialq* will comply with all applicable international, federal, state, and local regulations and UNOLS⁵ Research Vessel Safety Standards, and will navigate the vessel responsibly, including when in the vicinity of marine mammals.

For research activities that will not involve impacts on or time/area conflicts with maritime subsistence harvest areas, activities, and/or resources, no special monitoring or mitigation measures will be warranted unless required by other regulatory requirements, such as by the ESA.

For research activities that may involve potential impacts on or time/area conflicts with maritime subsistence harvest areas, activities, and/or resources, additional monitoring/mitigation measures agreed upon during Pre-Cruise Actions will be implemented during cruise operations. This may include having a Protected Species Observer (PSO) and/or Local Expert (LE) onboard. The vessel user (e.g., the PI or researcher from the funding entity) will pay for the PSO and LE if either or both are required.

A PSO, who is typically approved by a federal regulatory agency such as the National Marine Fisheries Service, can identify, document, and report on marine mammal observations per MMPA authorization or ESA consultation requirements. A PSO is typically responsible for enforcing monitoring and mitigation measures and any formal reporting requirements identified in permits or authorizations, such as those issued pursuant to the MMPA and ESA.

An LE will observe or participate in research activities, interact with the research team, provide assistance to the Chief Scientist with daily reports to stakeholders and interested parties, and communicate about the research cruise to Alaskan communities. All LE personnel will be asked to provide documentation of their communication efforts to local communities during and after the cruise (e.g., written reports, access to social media, etc.). Whether an LE is needed will be determined during discussions with local communities. The SSL can advise on this as well. Regardless of whether a PSO or LE is actually required, researchers are encouraged to retain the services of an LE from subsistence hunting villages on Arctic cruises whenever possible.

The Captain, PI, or Chief Scientist will send a daily email update to interested parties while R/V *Sikulialq* is in the Arctic. These emails will commence on the first day the vessel departs Nome or—if in transit heading north—reaches the St. Lawrence Island area. Emails will discontinue when the voyage returns to Nome or has moved south of St. Lawrence Island.

The Captain is responsible for all official communications coming from the ship, and will confer with the PIs or Chief Scientist to decide who will be responsible for compiling and sending these communications. The daily emails will report the location, speed, direction, local weather conditions, sea ice conditions, marine mammal sightings, purpose of activity, any significant deviation to planned operations/transit, and a map showing the ship's route. Marine technicians and other personnel onboard will assist in providing this information. The SSL is responsible for managing and providing the distribution list.

⁵ R/V *Sikulialq* is scheduled through UNOLS.

Post-Cruise Actions

PIs are encouraged to submit a post-cruise summary to the ADR and SSL within 90 days of the cruise completion. Copies of the cruise summary can be made available upon request.

If a PSO and/or LE participated during the cruise, a final report by each will be compiled within 90 days of cruise completion for submission to the ADR and SSL. These reports will also be posted on the R/V *Sikuliaq* Science Operations website. These reports may be incorporated into the PI's Post-Cruise Summary for the research activity. PSOs will also be responsible for preparing and submitting any formal reports required by permits or authorizations, such as per the MMPA and ESA.

A summary of past-year research cruise activities involving R/V *Sikuliaq* will be presented by PIs or their qualified designee at meetings (e.g., AEWC meetings) as appropriate. Outreach to communities or organizations can be facilitated by the SSL. PIs are strongly encouraged to highlight preliminary research results and how they benefit coastal communities. If the project required mitigation to avoid impacts to subsistence hunt activities or resources (as determined prior to the cruise), the PIs or their designee should highlight these along with any areas for improvements. The SSL will work with the PIs to ensure the presentations are concise, conform with standard formats, and provide the appropriate level of detail for the target audience.

Section III: Personnel Roles and Responsibilities

The following are general descriptions (not all-inclusive) of the roles and responsibilities of individuals associated with research cruises conducted on R/V *Sikuliaq*.

CFOS Associate Dean for Research (ADR)

The CFOS Associate Dean for Research is the single point of contact for issues related to maritime subsistence harvests and environmental compliance. The ADR will maintain close contact with the MS as well as communicate and coordinate with the SSL, NSF, and the PIs. The ADR will also coordinate with the SSL to review and distribute the PIs' one-page research summaries and presentations, and may present *Sikuliaq*-based research at appropriate meetings.

CFOS Dean

The Dean of CFOS has overall responsibility for CFOS personnel and facilities, including R/V *Sikuliaq* operations. As required, the Dean will work closely with the ADR, MS, SSL, and NSF in support of R/V *Sikuliaq* outreach activities and in accordance with the CECSOP.

CFOS Public Information Officer and R/V *Sikuliaq* Science Liaison (SSL)

The CFOS Public Information Officer acts as the R/V *Sikuliaq* Science Liaison. The SSL will assist the ADR in coordinating and working with local communities, NSF, and the PIs. The SSL will provide the CECSOP document to researchers using R/V *Sikuliaq* in the Arctic and subarctic. Once a cruise is scheduled, the SSL will provide PIs with the NSF EC Checklist, which can also be found on the R/V *Sikuliaq* Science Operations website. The SSL

coordinates review of the NSF EC Checklist and any associated documentation with the NSF ECO. Prior to the cruise, the SSL will assist PIs with the one-page project summaries and oral presentations of their proposed research and research results to potentially affected communities. The SSL manages and provides the distribution list for email updates sent by the Captain, PIs, or Chief Scientist during the cruise. The SSL also manages R/V *Sikuliaq* social media accounts and works with PIs, marine technicians, or a member of the science party to obtain content for social media posts during the cruise.

Local Expert (LE)

The Local Expert will record and communicate any observations relevant to subsistence hunting and cultural resources to designated tribal office(s) or local contact(s) during the cruise. Qualifications for an LE will be determined during negotiations with coastal communities. Local Experts will be subject to the regular code of conduct and UNOLS standards while on board the vessel. PIs are responsible for hiring, training and funding Local Experts.

Marine Superintendent (MS)

The Marine Superintendent will review all cruise plans and post-cruise reports in conjunction with the ADR. The MS will also work with the NSF ECO to ensure the NSF compliance process is properly completed prior to cruise commencement. The MS participates in the UNOLS Arctic Icebreaker Coordinating Committee activities and will report *Sikuliaq* activities to this group. The MS may also participate in other relevant meetings (e.g., AEWC) as deemed appropriate by the CFOS Dean and/or ADR.

NSF Environmental Compliance Officer (NSF ECO)

The NSF Environmental Compliance Officer will coordinate with the SSL to review the NSF EC Checklist and any supporting information provided by the PI. The NSF ECO will confirm with the MS when the NSF environmental compliance process is complete. The NSF ECO is also available to clarify any questions regarding compliance with federal environmental regulations and processes.

Principal Investigator (PI)

Principal Investigators are responsible for ensuring that their research complies with NSF and R/V *Sikuliaq* policies and procedures, including those outlined in this CECSOP. PIs are responsible for completing and submitting the NSF EC Checklist and the UAF Pre- and Post-Cruise Reports, and for obtaining any necessary permits⁶ for the proposed activities (e.g., North Slope Borough Study Permit). Prior to the cruise, PIs are responsible for providing a one-page summary and short PowerPoint or slide presentation of their proposed research to the SSL. The PIs will communicate their research plans at meetings with potentially affected communities, such as AEWC meetings, as outlined in Section II. PIs are responsible for attending these meetings

⁶ The term “permit” is often colloquially used in reference to all environmental compliance activities, including federal authorization received under a federal regulation such as the MMPA or ESA. Obtaining “a permit,” however, may not satisfy NSF’s federal environmental compliance responsibilities, such as compliance with NEPA, MMPA, and ESA, nor the resulting associated decisions and authorizations. Additionally, authorization is often necessary for proposed activities (e.g., construction) to be conducted on federal, state, and local government lands. If applicable, the PIs are responsible for obtaining needed permits (authorizations) from the appropriate governing agencies (e.g., Bureau of Land Management, National Park Service, North Slope Borough).

if possible, and for providing additional requested presentations. While R/V *Sikuliaq* is supporting research and transiting through Arctic waters, PIs are responsible for personally sending or facilitating daily email updates to a distribution list maintained by the SSL, as outlined in Section II.

Protected Species Observer (PSO)

Protected Species Observers participate during some cruises to assist with monitoring for marine species. PSOs will record any marine species observed during the cruise during daylight hours, and are typically responsible for enforcing monitoring and mitigation measures and any formal reporting requirements identified in permits or authorizations, such as per the MMPA and ESA. During the pre-cruise environmental compliance process, the National Marine Fisheries Service and the U.S. Fish and Wildlife Service determine whether or not PSOs are required. Certified PSOs undergo training that meets standards set forth in federal regulations. Funding for PSOs is the responsibility of the PIs or Chief Scientist.

R/V *Sikuliaq* Captain and Crew

The Captain of R/V *Sikuliaq* has authority over the vessel and ensures compliance with all applicable regulations and UNOLS Research Vessel Safety Standards. The Captain has the right to refuse to perform any activities that are not contained within the agreed-upon cruise plan if deemed contrary to the processes laid out in this document or determined to be unsafe. The Captain and crew of R/V *Sikuliaq* ensure safe navigation of the vessel, including in the vicinity of marine species and other marine resources. The Captain will consult with the PI or Chief Scientist to determine who will compile email updates sent to interested parties while the ship is in the Bering Strait region and Arctic waters, as outlined in Section II. Marine technicians and other personnel onboard will assist in providing this information. The Captain and crew will work directly with the SSL, other coastal UAF programs, and rural campuses regarding additional communications and outreach needs.

R/V *Sikuliaq* Science Operations Manager

The *Sikuliaq* Science Operations Manager is responsible for the vessel's science and communication systems. The Science Operations Manager coordinates pre-cruise planning of science activities with PIs, reviews cruise plans, and reviews post-cruise reports.

Appendix A. Acronyms

ADR: Associate Dean for Research (College of Fisheries and Ocean Sciences)

AEWC: Alaska Eskimo Whaling Commission

CECSOP: Community and Environmental Compliance Standard Operating Procedures

CFOS: College of Fisheries and Ocean Sciences

ESA: Endangered Species Act

LE: Local Expert

MAP: Marine Advisory Program (Alaska Sea Grant)

MMPA: Marine Mammal Protection Act

MS: Marine Superintendent

NEPA: National Environmental Policy Act

NSF: National Science Foundation

NSF EC: Organization Environmental Compliance

NSF ECO: NSF Division of Ocean Sciences Environmental Compliance Officer

PI: Principal Investigator

PSO: Protected Species Observer

SOP: Standard Operating Procedures

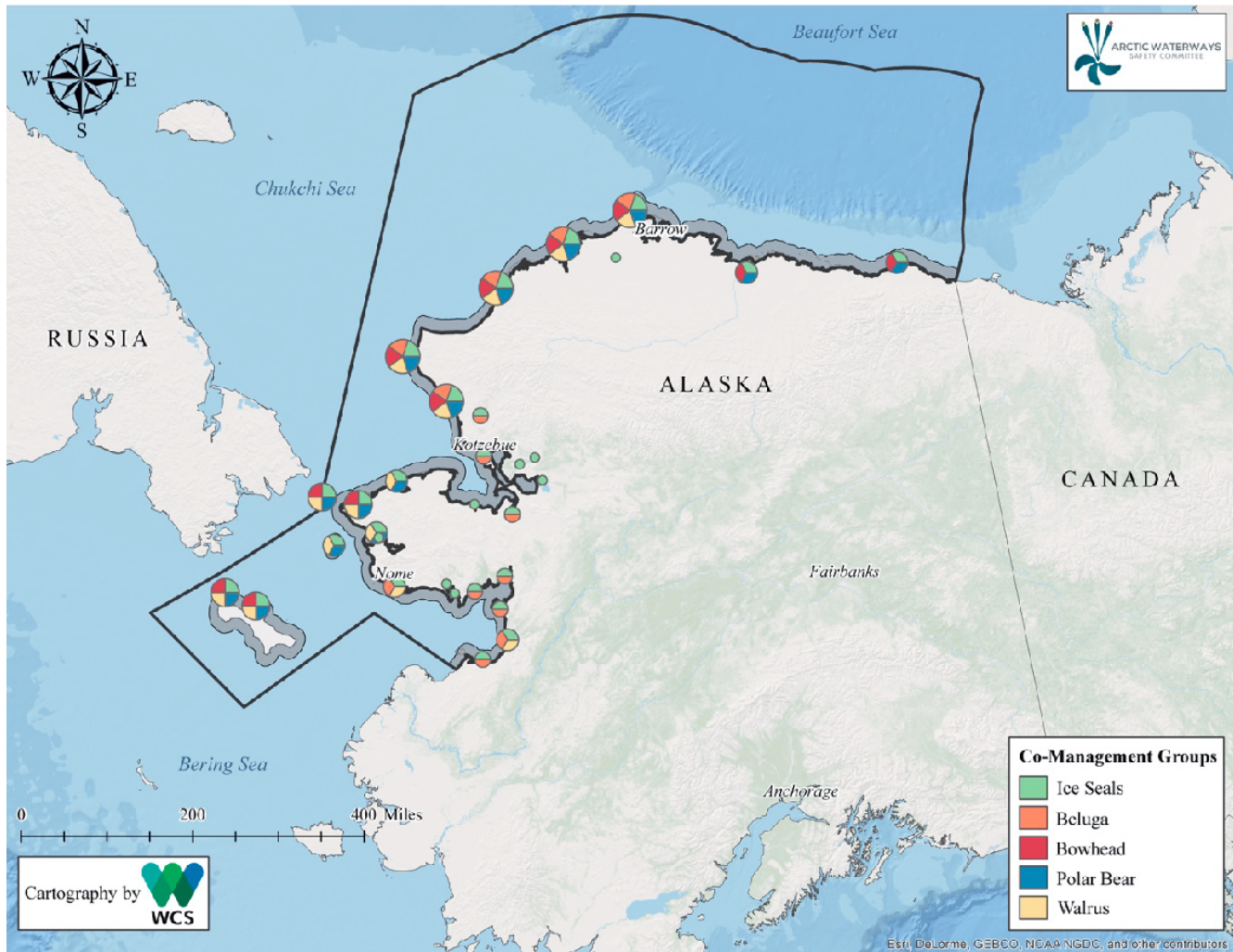
SSL: R/V *Sikuliaq* Science Liaison

UAF: University of Alaska Fairbanks

UNOLS: University-National Oceanographic Laboratory System

Appendix B. Maps

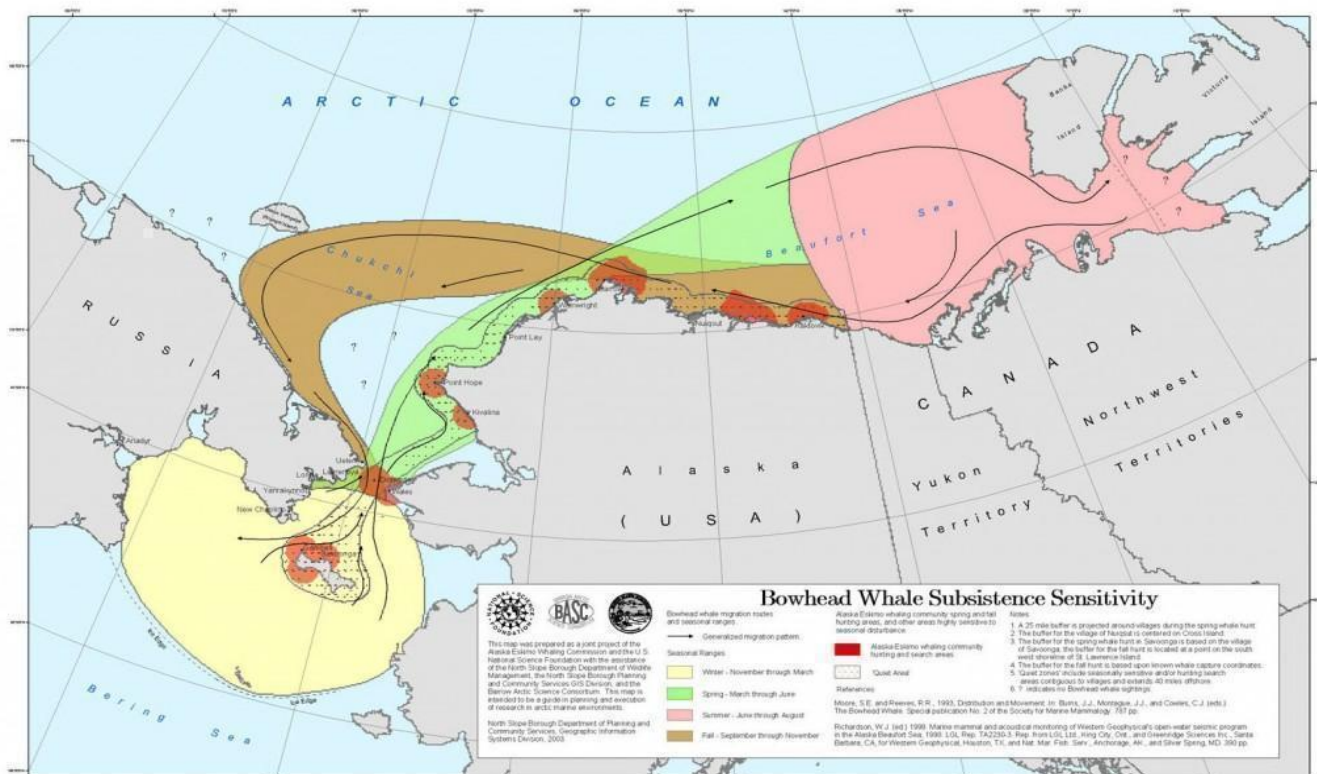
The following maps show some of the subsistence use areas and animals of interest. This is not an exhaustive list. For larger images, please go to the links provided.



Alaska Native marine mammal co-management within the Arctic Waterways Safety Committee's area. A 12 nautical mile buffer is shown along the coast for scale. Source: Arctic Waterways Safety Plan (adopted December 5, 2018).

Source: <http://www.arcticwaterways.org/safety-plan.html>

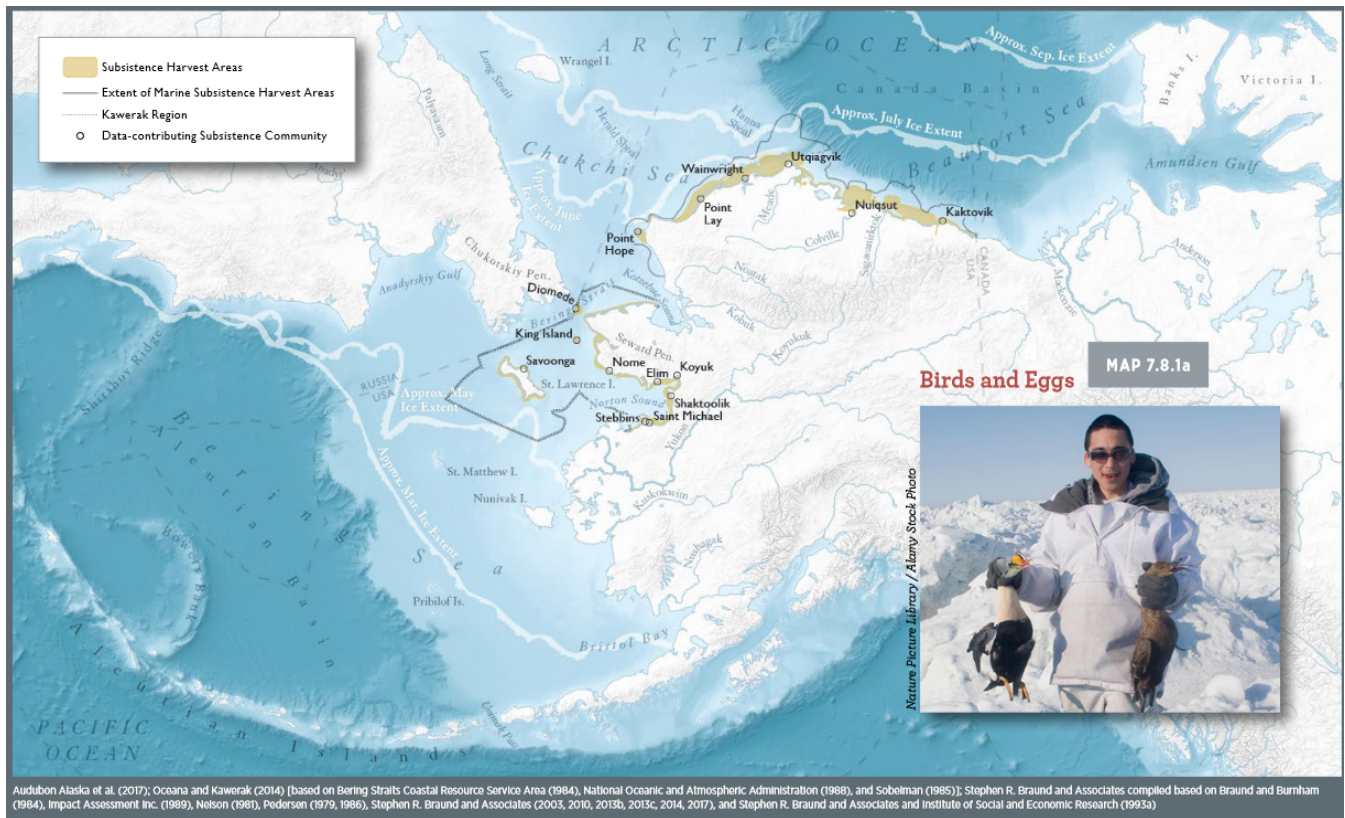
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Sensitive areas for bowhead whale subsistence activities, with arrows indicating migration paths.

Source: http://icefloe.net/files/Bowhead_Whale_Subistence_Sensitivity.jpg

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Coastal areas of subsistence harvest of birds and eggs.

Source: http://ak.audubon.org/sites/default/files/a07_human_uses_web.pdf

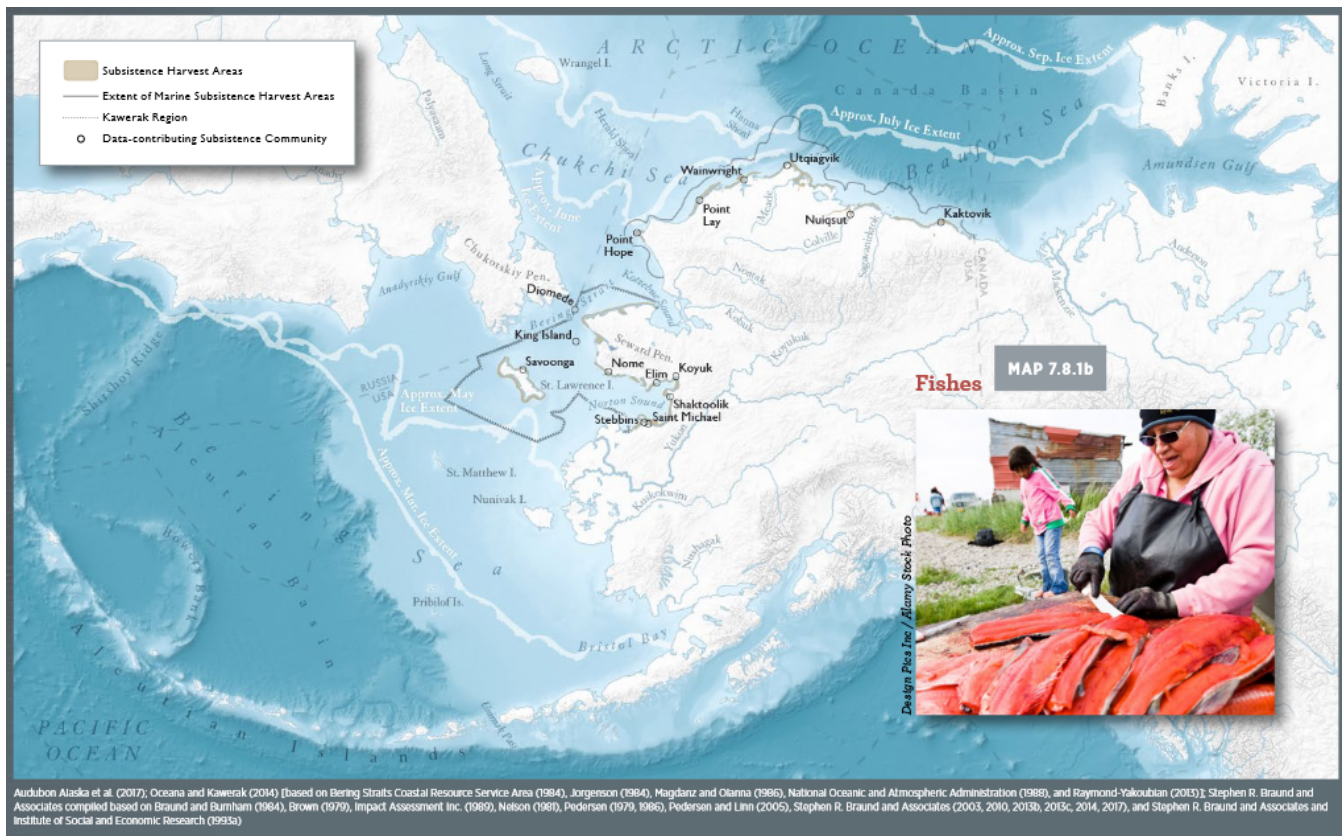
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Coastal areas of subsistence harvest of marine invertebrates.

Source: http://ak.audubon.org/sites/default/files/a07_human_uses_web.pdf

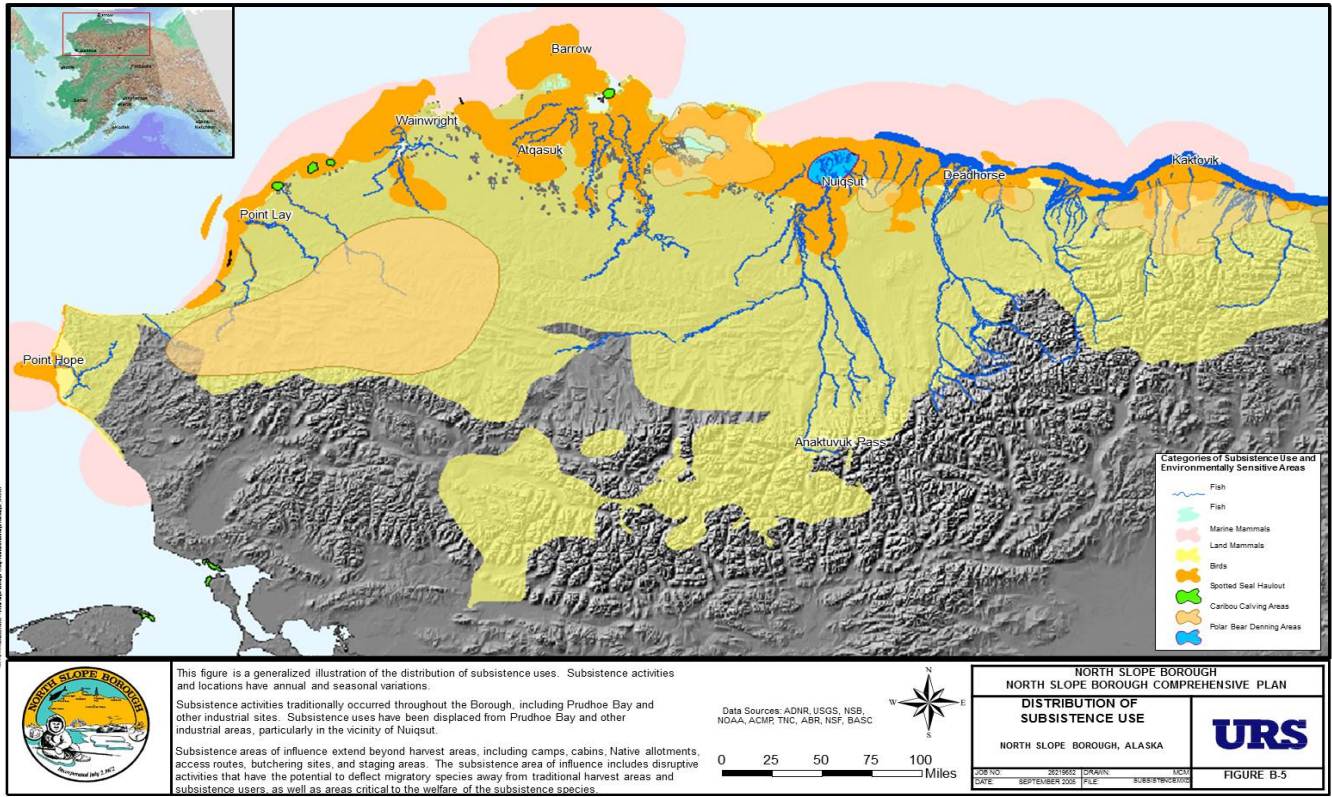
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Coastal areas of subsistence harvest of fishes.

Source: http://ak.audubon.org/sites/default/files/a07_human_uses_web.pdf

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Categories of subsistence use and environmentally sensitive areas in northern Alaska.

Source: <http://www.north-slope.org/assets/images/uploads/b5.pdf>