

Message to vessel operators and visitors to tidewater glacier fjords

Increasing evidence suggests that existing marine mammal approach guidelines* are not adequately protecting harbor seals from disturbance in Alaska's glacial fjords.

Research by federal and state biologists indicates that a **greater separation between vessels and seals is needed** in sensitive areas to conserve the value of these unique habitats where seals rest, give birth, nurse young, and molt.

This brochure is meant to inform vessel operators and the public about new approach guidelines for seals in glacial areas, the science of seals and disturbance that underpin these guidelines, and background on tidewater glacial sites as valuable habitats for seals.

These guidelines **are voluntary but strongly recommended** to help vessels comply with the Marine Mammal Protection Act.



"...efforts should be made to protect essential habitats, including the rookeries, mating grounds, and areas of similar significance for each species of marine mammal from the adverse effect of man's actions."

Marine Mammal Protection Act of 1972

*Vessel approach guidelines for viewing marine mammals in Alaska can be found at <https://alaskafisheries.noaa.gov/pr/mm-viewing-guide>.



Recommendations for Vessel Operators

Based on research by federal and state agencies, NOAA Fisheries recommends the following guidelines for **ALL VESSEL TYPES** and at **ALL GLACIAL AREAS***. It may not be practicable to follow every guideline on each visit, but vessel operators should exercise caution to minimize disturbance to seals.

Guidelines for All Glacial Areas* (year-round)

- All vessels (kayaks to cruise ships) should strive to maintain 500 yds (about 0.25 mi) from seals without compromising safe navigation. Make an approach plan to avoid surprising seals. Be equally cautious to reduce disturbance when departing the fjord as arriving.
- Minimize wake, avoid abrupt changes in course or engine pitch, and avoid loud noises (such as ice collisions) in the vicinity of seals. Consider avoiding use of PA systems on outer decks.
- Try to avoid traveling through thick ice, which provides habitat for birthing and nursing of pups. The absence of seals on the ice doesn't mean the area isn't being used.
- Time visits when feasible to minimize overlap with the peak numbers of seals hauled out midday. Research shows most seals are hauled out and vulnerable to disturbance between 9 am and 4 pm.

* Except Glacier Bay National Park which maintains its own harbor seal protections



Legal Protections for Seals

An activity that disrupts normal seal behavior may constitute a "take" which is not allowed under the Marine Mammal Protection Act (MMPA). A take is defined in the MMPA as "to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal," and the term "harassment" includes any activity which "has the potential to disturb a marine mammal or marine mammal stock in the wild by **causing disruption of behavioral patterns**, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering." Thus, vessel activity that causes seals to flush from the ice into the water may constitute harassment.

To avoid takes, vessels should strive not to cause a change in the behavior of marine mammals. These guidelines are designed to reduce the potential for vessels engaged in glacier or wildlife viewing to inadvertently disturb harbor seals. NOAA is promoting voluntary guidelines to minimize disturbance to seals in sensitive glacial habitats. **Monitoring will determine if this voluntary approach is providing a sufficient level of protection for seals.**



Photos courtesy of D. E. Withrow and J. K. Jansen, NOAA



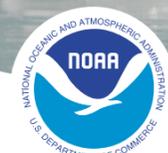
The National Marine Fisheries Service (NOAA Fisheries Service) is an agency within the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce

The mission of the NOAA Fisheries Service is to provide stewardship of the nation's living marine resources through science-based conservation and management and promotion of healthy ecosystems

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Alaska Harbor Seal

Approach Guidelines in Glacial Fjords



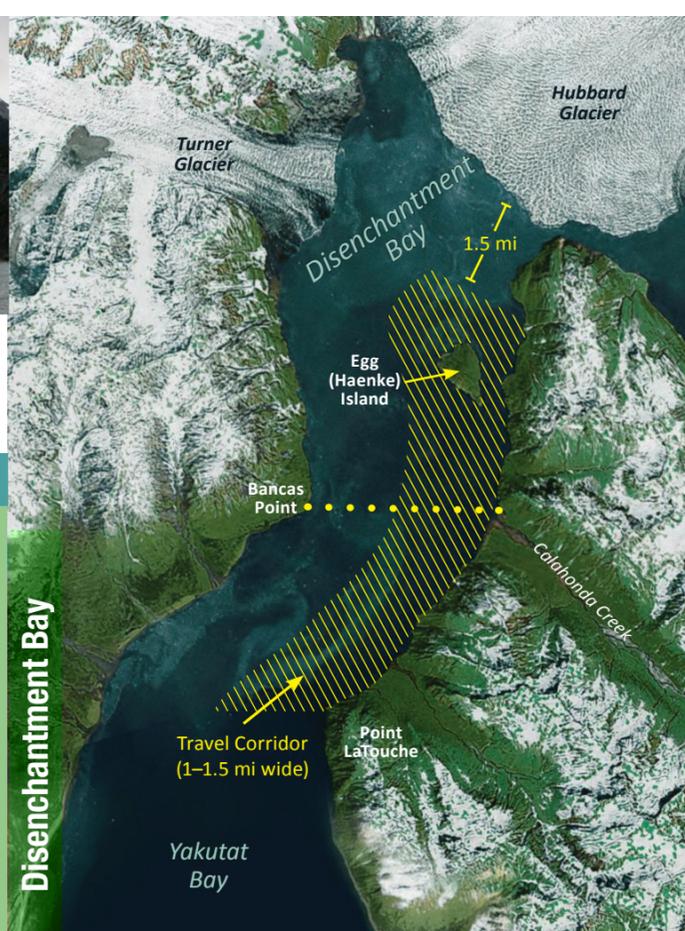
NOAA FISHERIES



At **TWO SPECIFIC SITES**, due to high vessel traffic coinciding with large numbers of pups, **ADDITIONAL SEASONAL AND AREA RESTRICTIONS** are advised to provide further protection while mothers are rearing pups. General guidelines are always in effect at these sites as well.

Guidelines for Specific Areas (May 15 to June 30)

- Tracy Arm Fjord**
 - During seal pupping, vessels should try to restrict travel to the southwestern half of the arm within 580 yds (apx. 0.33 mi) of the shoreline, and greater than 1250 yds (apx. 0.75 mi) from the glacier, to avoid higher seal densities along the eastern side of the arm and closest to the glacier (see map).
 - When ice is thick, vessels should stop north of a line drawn east from Tern Point.
- Disenchantment Bay**
 - During seal pupping, vessels should try to restrict travel to the eastern half of the bay within 1 to 1.5 mi of the shoreline, and greater than 1.5 mi from Hubbard Glacier, to avoid higher seal densities along the western side of the bay and closest to the glacier (see map).
 - When ice is thick, vessels should stop south of a line between Bancas Point and Calahonda Creek.



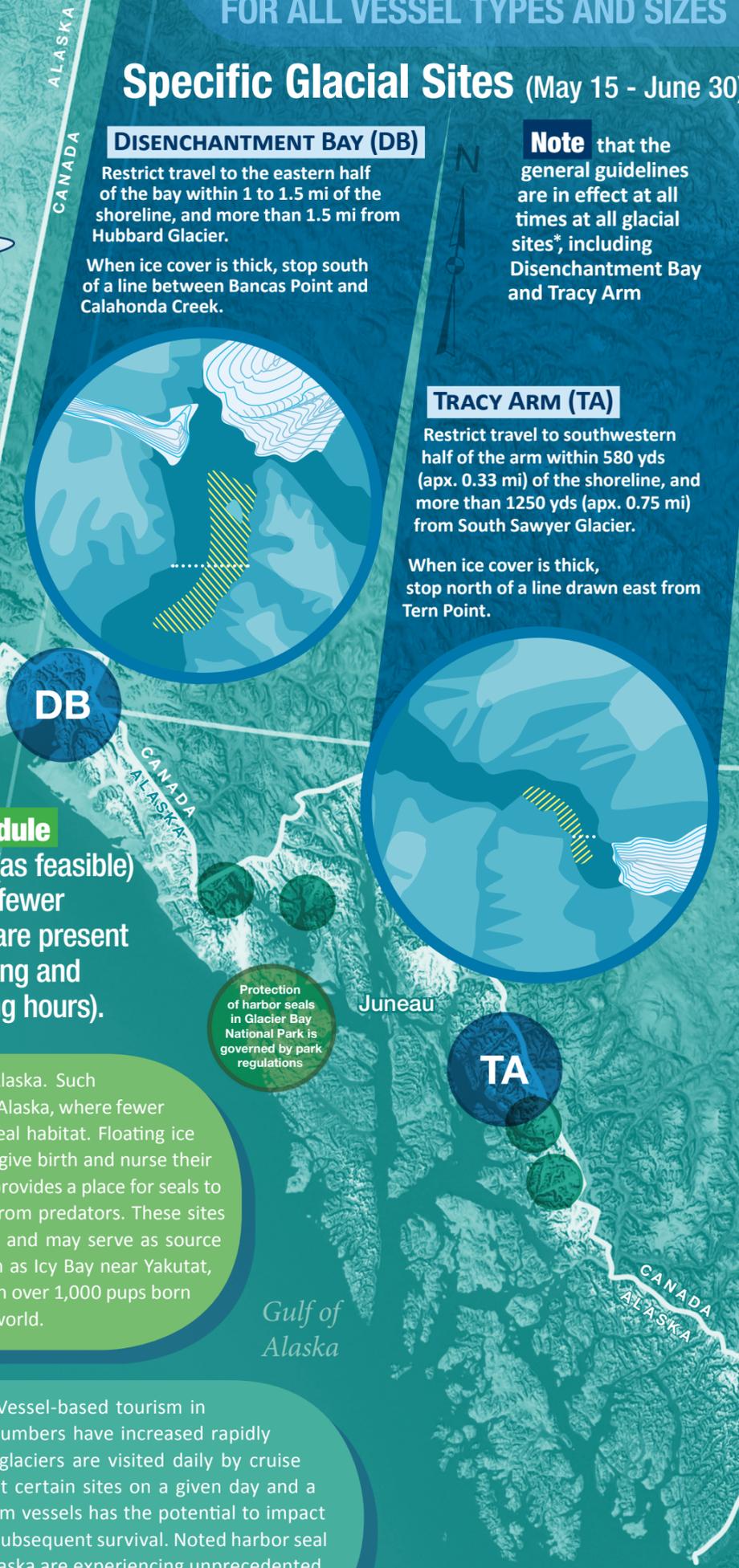
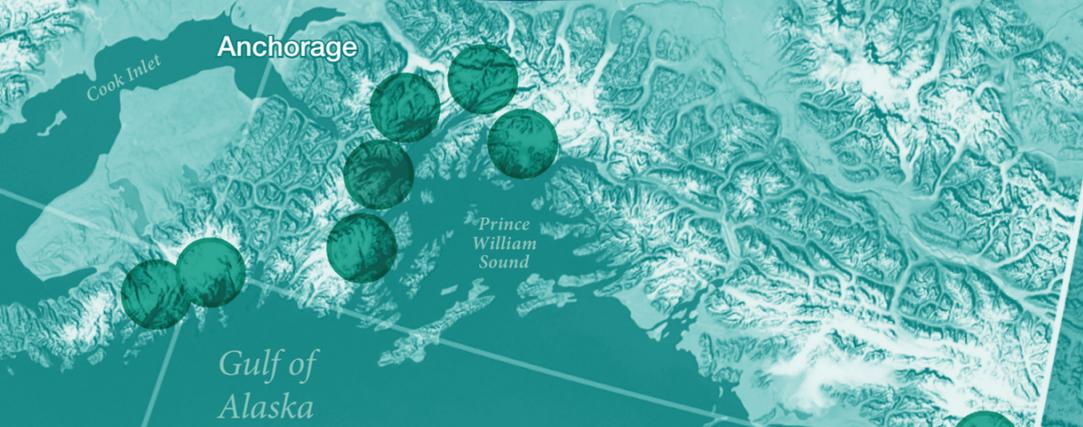
Tracy Arm Fjord



Protecting Alaska's Glacial Harbor Seals

Approach Guidelines For Tidewater Glacial Fjords

FOR ALL VESSEL TYPES AND SIZES



Specific Glacial Sites (May 15 - June 30)

DISENCHANTMENT BAY (DB)

Restrict travel to the eastern half of the bay within 1 to 1.5 mi of the shoreline, and more than 1.5 mi from Hubbard Glacier.

When ice cover is thick, stop south of a line between Bancas Point and Calahonda Creek.

Note that the general guidelines are in effect at all times at all glacial sites*, including Disenchantment Bay and Tracy Arm

TRACY ARM (TA)

Restrict travel to southwestern half of the arm within 580 yds (apx. 0.33 mi) of the shoreline, and more than 1250 yds (apx. 0.75 mi) from South Sawyer Glacier.

When ice cover is thick, stop north of a line drawn east from Tern Point.

All Glacial Areas* (year-round; without compromising safe navigation; strive to follow each recommendation as practicable to reduce chance of disturbance)

Keep 500 yds (~ ¼ mile) from all seals. Be equally cautious departing a fjord as arriving.

Minimize wake, avoid abrupt changes in course or engine pitch, and avoid loud noises and voices.

Avoid thick ice cover where seals congregate. Even if seals are not visible they could still be using area.

Schedule visits (as feasible) when fewer seals are present (morning and evening hours).

Unique and Valuable

Tidewater glacier areas are essential habitats for harbor seals in Alaska. Such habitats are only available to seals in southcentral and southeast Alaska, where fewer than two dozen ice-filled inlets provide this unique form of seal habitat. Floating ice calved from glaciers forms nursery areas where female seals give birth and nurse their young for about three weeks before they wean. The ice also provides a place for seals to rest at all tidal stages year-round while offering protection from predators. These sites host a significant portion of Alaska's harbor seal population and may serve as source populations for surrounding areas. In some glacial areas, such as Icy Bay near Yakutat, counts of seals on the ice have been as high as 5,000 animals with over 1,000 pups born each year. This might be the largest aggregation of harbor seals in the world.

Rising CONCERNS

Human presence can diminish the value of this habitat for harbor seals. Vessel-based tourism in Alaska began in the early 1900's with relatively few passengers but numbers have increased rapidly in recent decades to now over a million annually. Some tidewater glaciers are visited daily by cruise ships and smaller tour boats, which can result in multiple vessels at certain sites on a given day and a significant number of seals being disturbed. Chronic disturbance from vessels has the potential to impact seal populations by influencing successful weaning of pups and their subsequent survival. Noted harbor seal population declines have occurred at some glacial sites. Glaciers in Alaska are experiencing unprecedented rates of ice loss, and at some tidewater glaciers harbor seals are already coping with reduced ice cover which may make them more sensitive to other impacts.

THE SCIENCE TO Understand Disturbance

Studies across a range of habitats show that human disturbance can cause seals to abandon haul-out areas temporarily or permanently, or shift their haul-out timing. Studies in glacial fjords on vessel disturbance of seals have been underway for three decades, revealing consistent impacts. Research questions have focused on 1) seal behavior during close approaches, 2) disruption of mother-pup nursing and bonding, 3) thermal stress, and 4) disruption of haul-out patterns. Findings summarized below show that cumulative vessel disturbance may threaten reproduction and survival of harbor seals.

DISTANCE

- Seals can be disturbed at up to 500-1000 meters (or about 0.25 to 0.66 mi).
- Seals approached by vessels at 100 m (about 100 yds) can be 25 times more likely to flush from the ice than seals at 500 m; seals approached head-on are also more likely to flush from the ice.
- Smaller vessels often cause as much (or more) disturbance than larger vessels.

MOTHER-PUP PAIRS

- Pregnant females and those with pups can be more sensitive to disturbance. Moms nurse for only about 3 weeks before pups become independent.
- Upon disturbance, mothers and newborns are more prone to becoming separated which can be damaging, or lethal, during a life stage when pups are nursing and rely on mom for sustenance and protection.

THERMAL STRESS

- When disturbed, seals often flush into the water. Vessel presence can cause seals to spend more time submerged in ice-chilled water.
- Pups that spend increased time in glacial water may have to trade energy for growth for energy to keep warm. This would likely reduce survival in young seals.

HAUL-OUT TIMING

- Most seals tend to haul out during the middle of the day (about 9am to 4pm; the warmest hours) when most vessels visit glacial fjords.
- A single vessel entering the ice habitat during peak hours can flush more than 10% of the seals (and pups) present; disturbance is magnified when multiple vessels visit on a given day.

* Except Glacier Bay National Park which maintains its own harbor seal protections