INITIAL REVIEW DRAFT

Environmental Assessment/ Regulatory Impact Review/ Initial Regulatory Flexibility Analysis for Proposed Amendment to the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area

Establishing transit areas through Walrus protection areas at Round Island and Cape Peirce, northern Bristol Bay, Alaska

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Abstract: This document evaluates alternatives to allow vessels with Federal Fisheries Permits (FFPs) to transit walrus protection areas at Round Island and Cape Peirce from April 1 – August 15 while tendering herring or salmon or delivering groundfish to trampers or processors. Alternatives include: 1) no action – vessels with FFPs remain excluded from the walrus protection area, 2) open portion of the Round Island walrus protection area to transit, and 3) open portion of the Cape Peirce warus protection area to transit. The purpose of this action is to maintain suitable protection for walruses on Round Island and Cape Pierce, restore access to vessels with FFPs serving as tenders for the northern Bristol Bay herring and salmon fisheries to the routes used by tenders before implementation of GOA FMP Amendment 83, and to allow vessels delivering groundfish access to the route north of Round Island to reduce the likelihood of disturbance to walrus on Hagemeister Island.

List of Acronyms and Abbreviations

‘	feet
ADFG	Alaska Department of Fish and Game
AKFIN	Alaska Fisheries Information Network
BSAI	Bering Sea and Aleutian Islands
CFR	Code of Federal Regulations
Council	North Pacific Fishery Management Council
DPS	distinct population segment
E.O.	Executive Order
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	essential fish habitat
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FMP	fishery management plan
FR	*Federal Register*
ft	foot or feet
GOA	Gulf of Alaska
IRFA	Initial Regulatory Flexibility Analysis
lb(s)	pound(s)
m	meter or meters
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MMPA	Marine Mammal Protection Act

mt	metric ton
NEPA	National Environmental Policy Act
NMFS	National Marine Fishery Service
NOAA	National Oceanographic and Atmospheric Administration
nmi	nautical mile
NPFMC	North Pacific Fishery Management Council
PBR	potential biological removal
PSEIS	Programmatic Supplemental Environmental Impact Statement
RFA	Regulatory Flexibility Act
RFFA	reasonably foreseeable future action
RIR	Regulatory Impact Review
SAFE	Stock Assessment and Fishery Evaluation
SAR	stock assessment report
TAC	total allowable catch
U.S.	United States
TNWR	Togiak National Wildlife Refuge
USCG	United States Coast Guard
FWS	United States Fish and Wildlife Service
VMS	vessel monitoring system

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Executive Summary

This document analyzes the potential environmental and economic effects of a proposal to establish seasonal transit areas through the Round Island and Cape Pierce walrus protection areas in northern Bristol Bay, Alaska. The proposed action would establish one or more transit areas through the walrus protection areas at Round Island and Cape Peirce in order to allow vessels with Federal Fisheries Permits (FFPs) to transit through the areas while tendering for State of Alaska managed herring and salmon fisheries in Togiak Bay, Cape Peirce and Cape Newenham, and Security Cove. Previous Council action (Component 10 to GOA FMP Amendment 83) prevents vessels from surrendering their FFP and reapplying for an FFP within a three year period. As a result, vessels that had previously temporarily surrendered their FFP in order to tender herring or salmon through the walrus protection area were at risk of being out of compliance with federal regulations if they transit the walrus protection area during tendering, or risk losing their FFP if they chose to surrender their permit during tendering.

Purpose and Need

Until implementation of GOA FMP Amendment 83, vessels with FFPs tendering herring or salmon in the Togiak Bay fishery were able to surrender their FFP during the tendering season and transit the walrus protection area around Round Island. Tendering vessels transited north of Round Island as they tendered product from fishing vessels in Togiak Bay, Kulukak Bay, and other bays in northern Bristol Bay to processing plants in Dillingham and other communities. Passage through federal waters north of Round Island is necessary because of shallow waters along the mainland that make it dangerous for vessels to pass through Stat waters north of the walrus protection area. Amendment 83 to the GOA FMP prevents vessels from surrendering their FFP and reactivating it within a three year period. As a result, vessels with FFPs face risk of fine for being out of compliance with existing regulations if they pass through the walrus protection area, or must surrender their FFP in order to tender herring or salmon for the northern Bristol Bay fisheries.

Passage to the south of the Round Island walrus protection area requires vessels to transit through Hagemeister Strait, and around Round Island, adding considerable distance and time to each transit, and potentially exposing vessels to adverse weather conditions. The same is true for vessels wishing to deliver yellowfin sole from the Northern Bristol Bay Trawl Area to floating processors in the Togiak Bay area. Passage through Hagemeister Strait also puts these vessels in close proximity to an emerging walrus haulout on the southern tip of Hagemeister Island where they may have increased likelihood of disturbing those walrus.

The purpose of this action is to maintain suitable protection for walruses on Round Island, to restore access to vessels with FFPs serving as tenders for the northern Bristol Bay herring and salmon fisheries to the routes used by tenders before implementation of GOA FMP Amendment 83, and to allow vessels delivering yellowfin sole access to the route north of Round Island to reduce the likelihood of disturbance to walrus on Hagemeister Island. Any action would only affect vessels with FFPs, vessels without FFPs are not affected by the walrus protection area closures.

The Council adopted the following problem statement to originate this action in April 2013.

> *The purpose of this action is to establish opportunities for federally-permitted vessels to transit the walrus protection area closures at Round Island and Cape Pierce. Currently, federally-permitted vessels that operate as tenders during the Togiak herring and salmon fisheries cannot transit through the Round Island Walrus protection area. This effectively precludes vessels with FFPs tendering the Togiak herring and salmon fisheries.*

Federally-permitted vessels that tender for the herring fishery at Cape Peirce and Security Cove travel through State waters to avoid the Exclusive Economic Zone (EEZ) closures, moving vessels closer to walrus haulouts in these areas. Salmon tender vessels may be similarly affected. Additionally, vessels fishing yellowfin sole in the Northern Bristol Bay Trawl Area, that deliver to processors or trampers in the roadsteads located in Hagemeister Strait or Togiak Bay, must travel south of the Round Island Walrus protection area, which may increase interactions with walrus at Hagemeister Island haulout and walrus moving from Round Island to their feeding grounds in Bristol Bay. Opportunities to transit these areas are necessary to alleviate the unintended consequences of an unrelated Council action and to maintain appropriate protection for walruses.

Alternatives

The Council adopted the following alternatives for analysis in December 2012. Alternatives 2 and 3 are not exclusive

Alternative 1 is the No Action alternative, and would not establish any transit corridors through Walrus protection areas at Round Island or Cape Peirce. Any vessels with a FFP is prohibited from transiting through these areas.

Alternative 2 would establish a transit area in the EEZ north of Round Island, open from April 1 – August 15. There are three options analyzed:

1. Establish a transit area north of a line from 58.80°N, 160.36°W to 58.55°N, 159.59°W, maintaining a minimum of 3 nm from Round Island (Figure 2-1).
2. Establish a transit area north of a line from 58.77°N, 160.18°W to 58.58°N, 159.58°W, maintaining a minimum of 4.5 nm from Round Island (Figure 2-2).
3. Establish a transit area north of a line from 58.28°N, 160.74°W to 58.61°N, 159.58°W, maintaining a minimum of 6 nm from Round Island (Figure 2-3).

Alternative 3 would establish a transit area in the EEZ near Cape Peirce, open from April 1 – August 15. There is one option analyzed: establish a transit area east of a line from 58.50°N, 161.77°W to 58.35°N, 161.77°W (Figure 2-4).

Environmental Assessment

None of the alternatives considered are expected to change the timing, duration, effort, or harvest levels in the herring, salmon, or groundfish fisheries in northern Bristol Bay. Action is limited to transit through walrus protection areas by vessels with FFPs. Therefore, no substantial changes are expected on groundfish or other fish species, habitat, ecosystem components, or seabirds. Potential impacts are limited to direct take (ship strike) or disturbance to marine mammals including Pacific walrus, Steller sea lions, bearded seals, ringed seals, spotted seals, and harbor seals. Levels of direct take via ship strike of marine mammals are very low. Because none of the alternatives would change the level of fishing or other vessel traffic in the area, the effects of the alternatives on direct take (ship strikes) of marine mammals are expected to be insignificant.

Disturbance to Pacific walrus and Steller sea lions hauled out on Round Island and Hagemeister Island is possible for all alternatives. Alternative 1 has incrementally less likelihood for disturbance of marine mammals hauled out on Round Island because vessels with FFPs would not be allowed to transit within 12 nm of the island. However, vessels circumnavigating the walrus protection area would transit close to

an emerging walrus haulout on Hagemeister Island, potentially increasing disturbance to animals hauled out there.

Alternative 2 would allow vessels with FFPs to transit the Round Island walrus protection area from April 1 – August 15, with options to allow the closest point of approach at increasing distances from Round Island. Vessels have been recorded to disturb walrus on haulouts on Round Island, but no disturbance events have been observed for vessels passing more than 3 nm from the island (outside the State of Alaska no transit zone). Because none of the options would allow vessels within 3 nm of Round Island, the likelihood for disturbance to marine mammals hauled out on the island is very low, and any impacts to walrus or other marine mammals are expected to be insignificant.

Alternative 3 would allow vessels with FFPs to transit the Cape Peirce walrus protection area from April 1 – August 15, east of a line from 58.50°N, 161.77°W to 58.35°N, 161.77°W. This alterantive could reduce the potential for disturbance to walrus hauled out at Cape Peirce and nearby haulouts compared to the status quo, as tenders currently transit to the fishing grounds using State waters less than 3 nm from shore. Moving vessels outside of the State waters could reduce the potential for disturbance to marine mammals hauled out on shore.

Management and Enforcement Considerations

Implementation of the any alternative would require NMFS to monitor the activities of federally-permitted vessels to ensure that vessels comply with existing regulations. Existing Vessel Monitoring Systems (VMS) are likely sufficient to monitor the groundfish fisheries. The VMS in Alaska is a relatively simple system that transmits a vessel's identification and location to the NOAA Office of Law Enforcement (OLE) at fixed 30-minute intervals. These data are analyzed daily, to identify anomalies such as vessels failing to send VMS signals, or vessels entering closed waters. Automated data checks identify instances of possible non-compliance and highlight them for manual analysis.

Increasing the VMS polling rate from twice-per-hour may be required to ensure compliance with transit provisions, depending on the size of the transit area through the walrus protection areas.Increasing the polling rate allows for more accurate vessel tracks, but increases the cost to the VMS participant. Those costs are estimated to be approximately $25.88 per month for each additional poll (NPFMC 2012). Increasing to three polls per hour for the five month herring tendering season would add $129.40 to the annual transmission costs resulting in an estimated total cost of $944.40. Increasing to four polls per hour for the same period would add $258.80, resulting in an estimated total cost of $1,073.80.

Vessels without a FFP would not be constrained by the Walrus protection areas around Round Island and Cape Peirce. The lack of VMS on these vessels would, therefore, not have any impact on the enforcement of this action. The NOAA OLE has noted that there is an innate disparity between vessels with a FFP that are prohibited from transiting the walrus protection area, and those without a FFP that are allowed free access through the walrus protection area (B. Pristas, NOAA OLE, Pers. Comm.).

Regulatory Impact Review

Under Alternative 1, the status quo, transit areas would not be established through either the Round Island or Cape Peirce Walrus protection area. Vessels with FFPs would be precluded from tendering for the Togiak herring or salmon fishery unless they could transit through State waters 0-3 nm from shore or through federal waters around the Walrus protection areas. Vessels with FFPs could continue to serve as tender vessels for the Cape Peirce, Cape Newenham, and Security Cove herring fisheries by transiting through State waters 0-3 nm from shore or around the Cape Peirce Walrus protection area. If vessels with FFPs were precluded from tendering, there may be costs for processing companies associated with a reduced pool of available tender vessels. Alternately, vessels with FFPs that served as tenders for either

the herring or salmon fishery would be required to travel outside of the walrus protection areas. Additional costs associated with the longer transit around the protection areas would depend on the fuel consumption rate and additional time required for each vessel.

Amendment 80 vessels delivering yellowfin sole to domestic floating processors or foreign trampers would be prohibited from transiting the Walrus protection areas, and would instead have to circumnavigate the Protection Areas. Vessels transiting from the Norther Bristol Bay Trawl Area would continue to be required to transit south of Round Island and along the west coast of Hagemeister Island, through Hagemeister Strait. This would add 6-8 hours per trip (J. Gauvin, AKSC, Pers. Comm.) compared to transiting through the Walrus protection area. Those larger Amendment 80 vessels typically burn 105 – 145 gallons per hour (J. Anderson, AKSC, Pers. Comm.), and the cost of fuel in Dutch Harbor for the summer of 2013 was $4.04/gallon (Aleutian Fuel Services, Dutch Harbor, 7/26/2013). That results in additional fuel costs of $2,545 to $4,686 per trip compared to transiting north of Round Island.

Under Alternative 2, a transit area would be established through the Round Island Walrus protection area from April 1 – August 15. This would allow vessels with FFPs tendering for the Togiak area herring and salmon fisheries, and Amendment 80 vessels delivering yellowfin sole to processors in Togiak Bay to transit through the Walrus protection area. Transiting through the Walrus protection area would save approximately 6-8 hours per trip compared to transiting south of Round Island and through Hagemeister Strait (J. Gauvin, AKSC, Pers. Comm.). Amendment 80 vessels typically burn 105 – 145 gallons per hour (J. Anderson, AKSC, Pers. Comm.), and the cost of fuel in Dutch Harbor for the summer of 2013 was approximately $4.00/gallon (Aleutian Fuel Services, Dutch Harbor, North Pacific Fuel 7/26/2013). Transiting the Walrus protection area would result in fuel savings of $2,520 to $4,640 per trip compared to transiting south of Round Island and through Hagemeister Strait. Shortening the trip to processors would reduce the delivery time for those fish, and may reduce the likelihood of bruising, which reduces product quality (J. Anderson, AKSC, Pers. Comm.).

Options under Alternative 2 would establish a southern boundary of the transit area, at increasing distances from Round Island: 3 nm, 4.5 nm, and 6 nm. The boundaries farther from Round Island may incrementally reduce the potential for disturbance to walrus on Round Island , but are not likely to significantly affect the distances traveled as vessels with FFPs transit the protected area. Therefore, the differences in transit time or fuel costs are not likely to be significantly different between the options.

Under Alternative 3, a transit area would be established in the eastern portion of the Cape Peirce Walrus protection area from April 1 – August 15. This would allow vessels with FFPs to access the Cape Peirce, Cape Newenham, and Security Cove herring fisheries through federal waters. Currently vessels tendering those fisheries access the grounds through State waters, 0-3 nm from shore. Allowing vessels to access federal waters would move vessels farther from walrus haulouts at Cape Peirce, potentially reducing disturbance to those walrus. Distances traveled and transit times are not likely to be significantly different when traveling through federal vs. State waters.

1 Introduction

This document analyzes the potential environmental and economic effects of a proposal to establish seasonal transit areas through the Round Island and Cape Pierce walrus protection areas in northern Bristol Bay, Alaska. The proposed action would establish one or more transit areas through the walrus protection areas at Round Island and Cape Peirce in order to allow vessels with Federal Fisheries Permits (FFPs) to transit through the areas while tendering for State of Alaska managed herring and salmon fisheries in Togiak Bay, Cape Peirce and Cape Newenham, and Security Cove. Previous Council action (Component 10 to GOA FMP Amendment 83) prevents vessels from surrendering their FMP and reapplying for an FMP within a three year period. As a result, vessels that had previously temporarily surrendered their FMP in order to tender herring or salmon through the Walrus protection area were at risk of being out of compliance with federal regulations if they transit the Walrus protection area during tendering, or risk losing their FMP if they chose to surrender their permit during tendering.

This document is an Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA). An EA/RIR/IRFA provides an assessment of the environmental impacts of an action and reasonable alternatives to the action (the EA), the economic benefits and costs of the alternatives, as well as their distribution (the RIR), and the impacts of the action on directly regulated small entities (the IRFA). This EA/RIR/IRFA addresses the statutory requirements of the MSA, the National Environmental Policy Act (NEPA), Presidential Executive Order 12866, and Regulatory Flexibility Act (RFA). An EA/RIR/IRFA is a standard document produced by the Council and the NMFS Alaska Region to provide the analytical background for decision making.

1.1 Purpose and Need

Until implementation of GOA FMP Amendment 83, vessels with FFPs tendering herring or salmon in the Togiak Bay fishery were able to surrender their FFP during the tendering season and transit the walrus protection area around Round Island. Tendering vessels transited north of Round Island as they tendered product from fishing vessels in Togiak Bay, Kulukak Bay, and other bays in northern Bristol Bay to processing plants in Dillingham and other communities. Passage through federal waters north of Round Island is necessary because of shallow waters along the mainland that make it dangerous for vessels to pass through State waters north of the walrus protection area. Amendment 83 to the GOA FMP prevents vessels from surrendering their FFP and reactivating it within a three year period. As a result, vessels with FFPs face risk of fine for being out of compliance with existing regulations if they pass through the walrus protection area, or must surrender their FFP in order to tender herring or salmon for the northern Bristol Bay fisheries.

Avoiding the walrus protection area by passing to the south of the Round Island requires vessels to transit through Hagemeister Strait, and around Round Island, adding considerable distance and time to each transit, and potentially exposing vessels to adverse weather conditions. The same is true for vessels wishing to deliver groundfish from the Northern Bristol Bay Trawl Area to floating processors in the Togiak Bay area. Passage through Hagemeister Strait also puts these vessels in close proximity to an emerging walrus haulout on the southern tip of Hagemeister Island where they may have increased likelihood of disturbing those walrus.

The purpose of this action is to maintain suitable protection for walruses on Round Island, to restore access to vessels with FFPs serving as tenders for the northern Bristol Bay herring and salmon fisheries to the routes used by tenders before implementation of GOA FMP Amendment 83, and to allow vessels

delivering yellowfin sole access to the route north of Round Island to reduce the likelihood of disturbance to walrus on Hagemeister Island.

The Council adopted the following problem statement to originate this action in April 2013.

> *The purpose of this action is to establish opportunities for federally-permitted vessels to transit the walrus protection area closures at Round Island and Cape Pierce. Currently, federally-permitted vessels that operate as tenders during the Togiak herring and salmon fisheries cannot transit through the Round Island Walrus protection area. This effectively precludes vessels with FFPs tendering the Togiak herring and salmon fisheries. Federally-permitted vessels that tender for the herring fishery at Cape Peirce and Security Cove travel through State waters to avoid the Exclusive Economic Zone (EEZ) closures, moving vessels closer to walrus haulouts in these areas. Salmon tender vessels may be similarly affected. Additionally, vessels fishing yellowfin sole in the Northern Bristol Bay Trawl Area, that deliver to processors or trampers in the roadsteads located in Hagemeister Strait or Togiak Bay, must travel south of the Round Island Walrus protection area, which may increase interactions with walrus at Hagemeister Island haulout and walrus moving from Round Island to their feeding grounds in Bristol Bay. Opportunities to transit these areas are necessary to alleviate the unintended consequences of an unrelated Council action and to maintain appropriate protection for walruses.*

1.2 History of this Action

In 1990, Amendment 13 to the Bering Sea and Aleutian Islands (BSAI) groundfish Fishery Management Plan (FMP) was implemented with measures to prohibit groundfish fishing within 3-12 nm closed areas around the Walrus Island (Round Island, The Twins) and Cape Peirce in northern Bristol Bay from April 1 – September 30. Specific concerns were expressed over noise emitted by fishing activities and its potential to disturb walrus hauled out in those areas. Amendment 17 to the BSAI FMP was adopted in April 1992 to further protect walruses at Round Island by prohibiting transit within 12 nm zones around Round Island, The Twins, and Cape Peirce by federally permitted vessels. This amendment prevents vessels with FFPs from entering or transiting those closed areas during the closure period. Although the State of Alaska Walrus Islands State Game Sanctuary (WISGS) does not impose restrictions in State waters (0-3 nm) around The Twins, Hagemeister Island, Cape Peirce, and Cape Newenham, it does impose a no-transit area around Round Island year-round, except for a travel corridor that allows visitors to access Round Island.

In April 2009, the Council passed a motion based on a request from the U.S. Fish & Wildlife Service (FWS) to gather information and describe procedures for designating a Walrus protection area around a new, emerging walrus haulout on the west side of Hagemeister Island. The FWS expressed concern over potential disturbance to walrus using this haulout from groundfish fishing and other activities. In November 2009, the Council received an updated discussion paper that summarized issues around establishing a protection area around Hagemeister Island, and ultimately elected not to take any action on that issue. Informal discussions with FWS at this time indicated a strong desire by FWS to limit increases in vessel traffic past the walrus haulout on Hagemeister Island.

In June 2012, the Council's Enforcement Committee brought forward an unintended consequence of a recent Council action. As a result of Component 10 to GOA FMP Amendment 83 (implemented on September 23, 2011), federally permitted vessels can only surrender and reactivate an FFP once every

three years. Until recently, vessels with FFPs were permitted to "surrender" their FFP which allowed them to transit the Walrus protection area around Round Island during tendering, with the expectation that they could reapply for their FFP when they completed tendering. Those vessels tendering for the Togiak area herring fishery now risk losing their FFPs if they choose to surrender their permit during tendering and risk being out of compliance with federal regulations if they transit the Walrus protection area during tendering. This also creates a difficult situation for NOAA Enforcement of either not enforcing an existing federal regulation or citing vessels for an unintended consequence of an existing regulation. At that June, 2012 meeting the Council passed a motion articulating the purpose and need and alternatives for an action to allow transit of the Walrus protection area by vessels tendering herring for the Togiak area herring fishery. The Council indicated it was interested in several options including developing a transit corridor with defined time or space restrictions, a check-in/check-out procedure, or other method to address the problem. Informal conversations with FWS biologists again indicated a strong desire to limit vessel traffic past the walrus haulout on Hagemeister Island, and indicated that redirecting traffic north of Round Island to avoid passage through Hagemeister Strait would be preferable to the FWS.

In December 2012, the Council received a brief discussion paper outlining preliminary information for establishing a transit corridor through the Round Island Walrus protection area. This paper summarized information that staff believed could affect the scope of the analysis, and requested input from the Council on whether they wished to expand the initial scope of the analysis to include passage of vessels other than those tendering herring (e.g., Amendment 80 vessels delivering yellowfin sole), or to include a transit corridor through the Walrus protection area around Cape Peirce. After considering the information in the discussion paper and after public comment, the Council passed a motion directing staff to prepare an analysis of alternatives to allow transit of Round Island and Cape Peirce Walrus protection areas by federally permitted vessels, including vessels tendering herring and salmon, and Amendment 80 vessels delivering yellowfin sole to floating processors in Togiak Bay.

In April 2013, the Council, and the Council's Scientific and Statistical Committee and Enforcement Committee reviewed a preliminary draft EA that analyzed the proposed alternatives. The Enforcement Committee noted that defined width transit corridors could raise enforcement concerns, and stated that fixed width corridors were not desirable. After considering the draft EA, SSC and Enforcement Committee minutes, and public testimony the Council passed a motion authorizing staff to develop alternatives for transit areas through Round Island Walrus protection area with input from appropriate agencies and potentially affected stakeholders.

1.3 Description of Action Area

This section provides background information relevant to the analysis of this action. Section 1.3 describes the area affected by the actions proposed under this amendment. Section 1.3.2 describes the fisheries prosecuted in the affected areas. Section **Error! Reference source not found.** provides an overview of alrus and other marine mammal species use of the affected the area. Section **Error! Reference source not found.** provides an overview of seabirds in the affected area.
The action area is the northern part of Brisol Bay, including walrus protection areas around Round Island and Cape Peirce, Togiak Bay, the northern Bristol Bay trawl area, and nearby waters (Figure 1-1)

1.3.1 Existing area closures

1.3.1.1 Amendments 13 and 17 – Walrus protection areas

In January 1990, Amendment 13 to the BSAI Groundfish FMP was implemented with measures to prohibit groundfish fishing activities within 3-12 nm closed areas around the Walrus Islands (Round

Island, High Island, Crooked Island) and Cape Peirce in northern Bristol Bay from April 1 through September 30. Specific concerns were expressed by the public and the FWS over noise emitted by fishing activities of the Joint Venture yellowfin sole fishery, and apparent correlations between increased noise and observed declines in numbers of walrus using these haulouts in northern Bristol Bay. This measure was put into place to reduce disturbance to walrus that use these haulout areas.

In April 1992, Amendment 17 to the BSAI Groundfish FMP was adopted to permanently close the 3-12 nm zones around Round Island, High Island, Crooked Island, and Cape Peirce from April 1 through September 30 to reduce disturbance to walrus. This measure prohibited all federally-permitted fishing vessels from entering or transiting these closed areas during the closure period, including fishing support vessels. The specific regulation at 679.22(a)(4) is:

> (4)Walrus protection areas.
> From April 1 through September 30 of any fishing year, vessels with a Federal fisheries permit under §679.4 are prohibited in that part of the Bering Sea subarea between 3 and 12 nm seaward of the baseline used to measure the territorial sea around islands named Round Island and The Twins, as shown on National Ocean Survey Chart 16315, and around Cape Peirce (58° 33' N. lat., 161° 43' W. long.).

Figure 3-1 shows the existing closure areas in the action area.

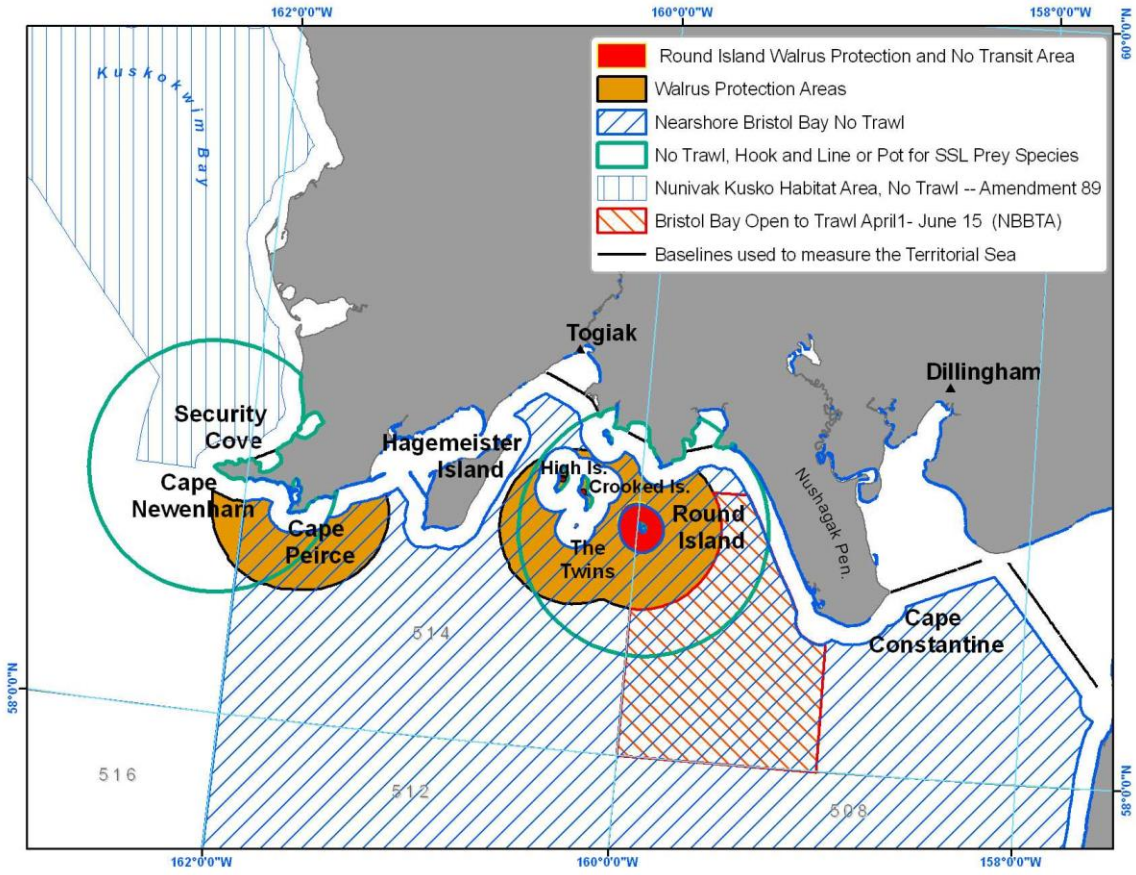
1.3.1.2 Amendment 37 – Nearshore Bristol Bay Trawl Closure Area

In January 1997, Amendment 37 to the BSAI Groundfish FMP was implemented with provisions to prohibit all trawling year-round in the Nearshore Bristol Bay Trawl Closure (NBBTC) area, specifically all waters east of 162° W. long. with the exception of an area known as the Northern Bristol Bay Trawl Area (NBBTA) bounded by 159° to 160° W. long. and 58° to 58° 43' N. lat. that remains open to trawling April 1 to June 15 (Figure 1-1). This closure was enacted to protect juvenile red king crab habitat while at the same time allowing trawling in a portion of the area known to have high catches of flatfish and low bycatch of other species (Ackley and Witherell 1999). The area north of 58° 43' N. lat. was closed to reduce bycatch of herring. The April 1 to June 15 opening period was chosen to minimize bycatch of halibut, which move to nearshore areas in June. Amendment 37 also requires that any catcher vessel or catcher processor used to fish for groundfish in the trawl closure area must carry an observer during 100% of the fishing days in which the vessel uses trawl gear. The specific regulation at 679.22(a)(9) is:

> (9) Nearshore Bristol Bay Trawl Closure.
> Directed fishing for groundfish by vessels using trawl gear in Bristol Bay, as described in the current edition of NOAA chart 16006, is closed at all times in the area east of 162° 00' W. long., except that the Nearshore Bristol Bay Trawl Area defined in figure 12 to this part is open to trawling from 1200 hours A.l.t., April 1 to 1200 hours A.l.t., June 15 of each year.

Under a voluntary agreement between industry and members of the Togiak community, in place since 2009, the trawl fleet has agreed to cease fishing in the NBBTA by June 1st each year.

Figure 1-1 Existing closures and protection measures in northern Bristol Bay.



1.3.1.3 Steller sea lion closures

There are Steller sea lion (SSL) haulouts on Cape Newenham and Round Island, and these areas are designated as SSL critical habitat. Around each of these haulouts directed fishing for pollock and Atka mackerel using trawl gear, and directed fishing for Pacific cod using trawl or fixed gear are prohibited from 3-20 nm. These SSL closures overlap with other fishing closures in northern Bristol Bay (Figure 1-1). The SSL closures are Federal groundfish fishery regulations, and are largely mirrored in adjacent State parallel waters (0-3 nm) through an annual Emergency Order issued by the Alaska Department of Fish and Game (ADFG) with some exceptions[1], neither of them in northern Bristol Bay. As a result, State waters around Round Island and Cape Newenham are closed to directed fishing for SSL prey species during the parallel fishery. In the State-managed groundfish fisheries, a 0-3 nm no transit and no fishing zone around rookeries is recognized, but fishing closures around haulouts are generally not recognized.

1.3.1.4 Amendment 89 Nunivak Island, Etolin Strait, and Kuskokwim Bay closures

In 2008 the Council adopted Amendment 89 to the BSAI Groundfish FMP which established Bering Sea habitat conservation measures. This amendment prohibits nonpelagic trawling in certain waters of the

[1] There are two exceptions, listed under 5 ACC 28.087: (1) in the Kodiak Area, the waters within three nautical miles of the Steller sea lion haulout at Cape Barnabus shall be open to pot and mechanical jigging machine gear: and (2) in the South Alaska Peninsula Area, the waters within three nautical miles of the Steller sea lion haulout at Caton Island shall be open to pot and mechanical jigging machine gear.

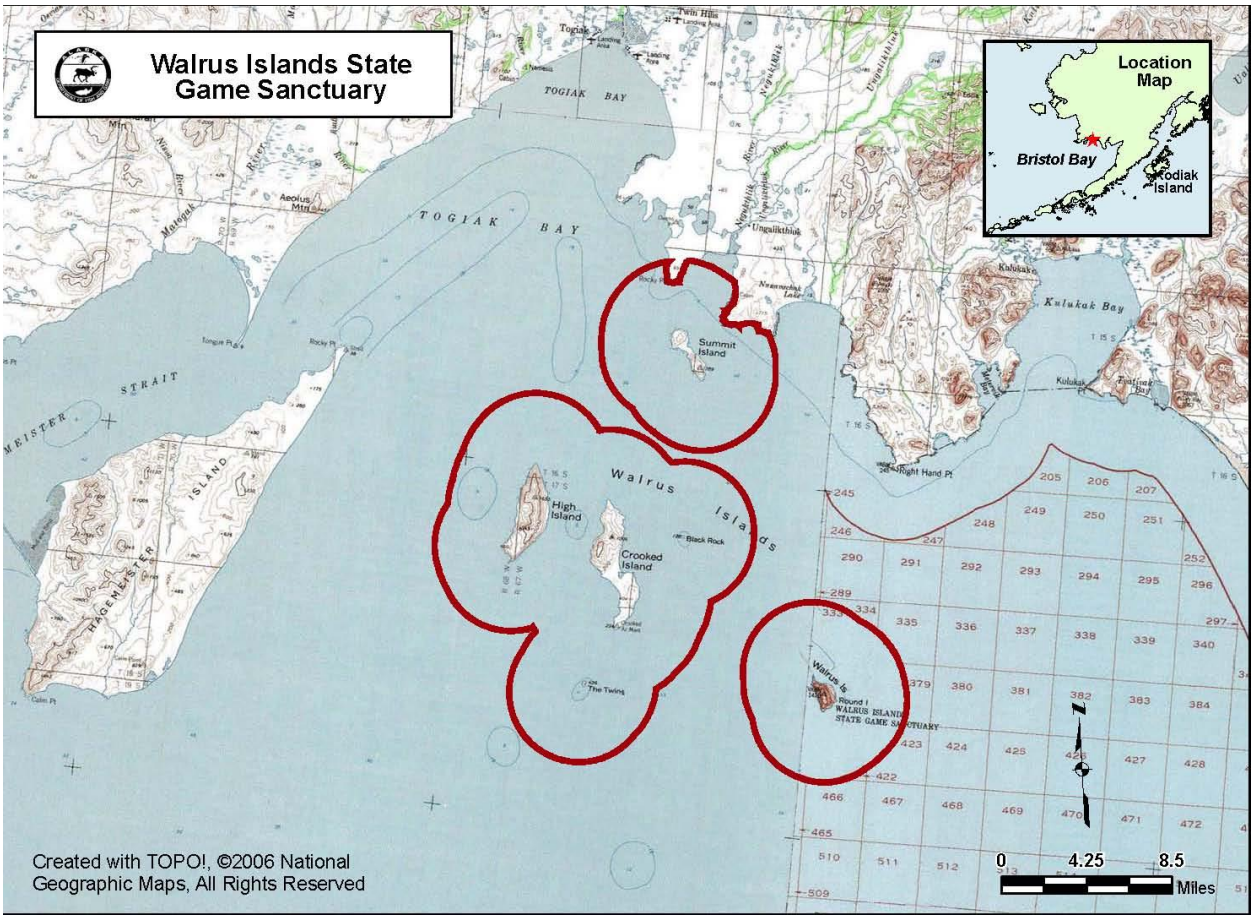
Bering Sea to protect benthic habitat from the potential adverse effects of nonpelagic trawling (Figure 1-1).

1.3.1.5 State of Alaska Closures

In 1960, the State of Alaska established the Walrus Islands State Game Sanctuary (Figure 1-2) to protect a group of seven small, craggy islands and their adjacent waters in northern Bristol Bay. The Walrus Islands State Game Sanctuary (WISGS) includes Round Island, Summit Island, Crooked Island, High Island, Black Rock, and The Twins. The State of Alaska permits visitors to Round Island for wildlife viewing or research, and counts of walrus are completed annually by refuge staff. All other vessel traffic is restricted within 0-3 nm of Round Island, but there are no restrictions on vessel traffic around the other islands in the sanctuary. The State of Alaska does not mirror the Amendment 13 and Amendment 17 Federal walrus protection closures in State waters around The Twins and Cape Peirce. The annual Emergency Order issued by ADFG specifically references the Federal protection measures for Steller sea lions and extends those closures to the State parallel waters fisheries, but does not extend the walrus protection measures to the State parallel fisheries. All State waters in Bristol Bay east of Cape Newenham to Cape Menshikof (located on the north side of the Alaska Peninsula) are closed to trawl fishing year round (5 ACC 39.165), thereby prohibiting groundfish fishing with trawl gear in State waters around The Twins and Cape Peirce. However, groundfish vessels may fish using fixed gear, and may transit State waters around The Twins and Cape Peirce.

Historically, the State of Alaska has mirrored the NBBTA trawl opening in adjacent State waters as defined under Amendment 37, allowing non-pelagic trawling to occur during the April 1 to June 15 open period. A recent Board of Fisheries action closed all State waters in Bristol Bay to all trawling throughout the year – no exemption is allowed in State waters adjacent to the NBBTA.

Figure 1-2 Walrus Islands State Game Sanctuary includes the land area and adjacent State waters of Round, Crooked, High, and Summit Islands and The Twins and Black Rock (AS 16.20.092)



1.3.2 Discription of Fisheries

1.3.2.1 Herring Fishery

Two herring fisheries occur in northern Bristol Bay, a sac roe fishery using gillnets and purse seine nets, and a herring spawn on kelp fishery harvested by hand (Westing et al. 2006, Sands and Jones 2012) in late April through May. Opening and closing dates for the northern Bristol Bay purse seine fishery are shown in Table 1-1 and the opening and closing dates for the gillnet fishery are show in Table 1-2. The herring fishery tends to be prosecuted close to the mainland shore in State waters (T. Sands, ADFG, Pers. Comm.).

The Togiak District herring fisheries are managed in accordance with the Bristol Bay Herring Management Plan (5 ACC 27.865), which was modified by the Alaska Board of Fisheries in December 2006. The plan specifies a maximum allowable exploitation rate of 20% and allocates the harvestable surplus among all the fisheries harvesting the Togiak herring stock. In recent years the seine fleet has been comprised of processor-organized cooperatives. Input from the fleet and industry has indicated that this slows down the "race for fish" and allows improved quality and value.

The herring spawning biomass in the Togiak District (Figure 1-3) was forecast to be 169,094 tons[2] in 2013 (Buck et al. 2012), which resulted in a 20% Total Allowable Harvest of 33,819 tons. The Togiak spawn-on-kelp fishery was allocated 1,500 tons, and the sac roe fishery 30,056 tons, with 21,040 tons allocated to the purse seine fishery and 9,017 tons to the gillnet fishery. In 2012 the Togiak area purse seine fishery was allocated 15,135 tons, the gillnet fishery was allocated 6,437 tons, and the spawn-on-kelp fishery was allocated 1,500 tons.

The 2013 Togiak purse seine fishery occurred from May 11 – May 20, and total harvest was 20,241 tons, 96.3% of the quota (Sands and Jones, 2013). The Togiak gillnet fishery occurred from May 11 – 28, and total harvest was 8,552 tons, 94.8% of the quota (Sands and Jones, 2013). No companies registered to buy herring spawn-on-kelp in 2010 and no fishery occurred. The projected ex-vessel value of the 2013 Togiak herring fishery is approximately $2.88 million, based on a grounds price estimate of $100 per ton for seine and gillnet caught fish, not including any postseason adjustments (Sands and Jones 2013).

A list of tenders for each processing company that plans to process herring is provided to the ADF&G area manager each year. These lists may not be complete, however, as vessels that are listed may cancel their tendering contract for the year, or be replaced by other vessels during the year. For 2013, a total of 64 vessels were listed to tender herring for six processing companies in the Togiak area (T. Sands, ADFG, Pers. Comm.). Of those 64, 30 (47%) also had FFPs.

The Togiak area herring catch for seine and gillnet fisheries from 1996 – 2013 are shown in Table 1-1 and Table 1-2. Seine catch ranged from 11,832 tons (2002) to 20,241 tons (2013), and gillnet catch ranged from 4,011 tons (2007) to 8,552 tons (2013). Price and exvessel value were not reported for all years, but for those years in which price and value were reported, the seine estimated exvessel value ranged from approximately $1.6 million (2012) to $10.4 million (1996), and gillnet estimated exvessel value ranged from approximately $590,000 (2007) to $4 million (1996). Exvessel values do not include postseason adjustments.

[2] The ADFG uses short tons, equal to 2000 pounds or 907.2 kg.

Figure 1-3 Togiak herring fishing districts, Bristol Bay, Alaska.

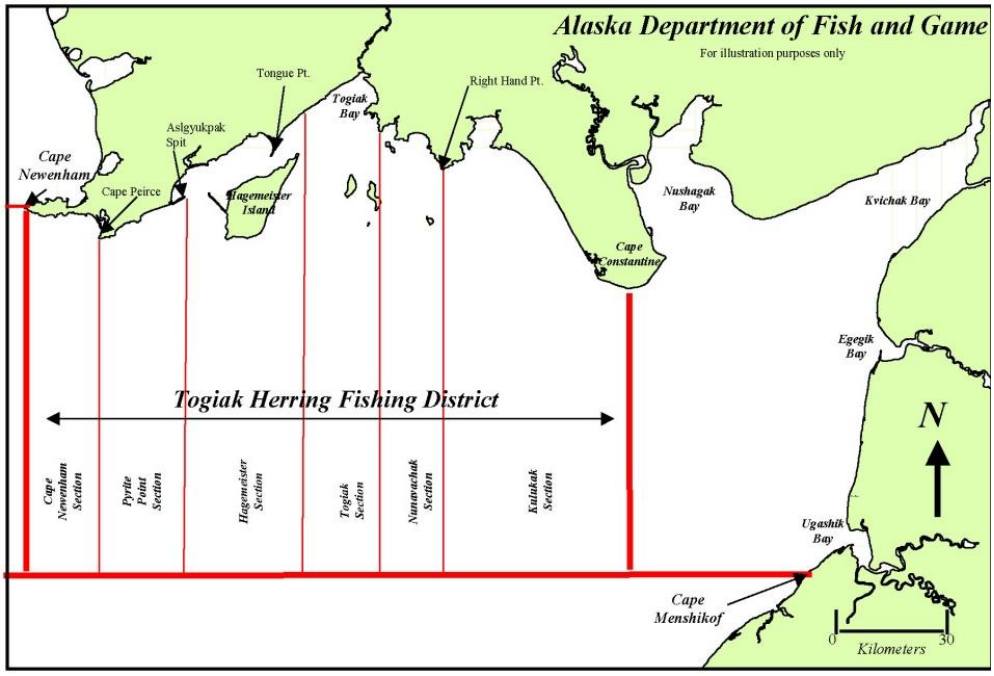


Table 1-1 Historic and current Togiak area herring purse seine catch, quota, and value.

Year	Dates	Catch (t)	Quota (t)	Participation[a]	Price ($/ton)	Value ($)
1996	5/5-5/8	17,386	17,935	268	700	10,400,000
1997	5/2-5/6	18,308	16,391	231		
1998	4/29-5/11	16,135	15,841	123		
1999	5/18-5/25	14,341	20,700	96	400	5,736,400
2000	5/6-5/14	14,630	17,245	90		
2001	5/6-5/12	15,627	14,624	64	126	1,969,000
2002	5/3-5/13	11,832	14,673	37	147	1,739,304
2003	4/26-5/7	14,778	15,457	35	116	1,714,248
2004	4/29-5/9	13,785	17,785	31	140	1,929,900
2005	4/30-5/6	14,381	13,224	33	147	2,114,007
2006	5/12-5/21	16,821	16,471	28	103	1,728,952
2007	5/10-5/20	12,399	16,544	21	135	1,673,865
2008	5/16-5/28	15,691	16,017	28	127	1,992,757
2009	5/16-5/26	12,967	14,882	21	150	1,945,050
2010	511/5/27	18,816	18,134	26	150	2,648,850
2011	5/8-5/19	16,753	17,364	22	100	1,675,300
2012	5/14-5/29	13,084	15,135	16	125	1,635,500
2013	5/11-5/20	20,241	21,040	n/a	100	2,024,100

Sources: ADF&G Bristol Bay Area Annual Management Reports available at
http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.herring#/management
[a] Total number of vessels fishing

Table 1-2 Historic and current Togiak area gillnet catch, quota, and value.

Year	Dates	Catch (t)	Quota (t)	Participation[a]	Price ($/ton)	Value ($)
1996	5/3	6,677	5,956	461	800	4,000,000
1997	5/3-5/6	5,365	5,464	336		
1998	4/29-5/10	5,787	5,280	152		
1999	5/18-5/26	4,608	6,900	171	400	1,846,200
2000	5/7-5/16	5,300	5,738	227		
2001	5/7-5/13	6,508	6,268	96	100	650,000
2002	5/4-5/13	5,263	3,288	82	147	773,661
2003	4/25-5/6	6,505	6,624	75	156	1,014,780
2004	4/30-5/9	4,980	4,980	54	145	722,100
2005	4/30-5/8	5,811	5,667	56	161	935,571
2006	5/13-5/21	7,132	7,059	49	125	889,455
2007	5/10-5/31	4,011	7,090	25	147	589,617
2008	5/16-5/31	4,832	6,864	27	160	773,120
2009	5/16-5/29	4,140	6,378	32	150	620,995
2010	5/11-5/27	7,540	7,772	35	150	1,146,950
2011	5/11-5/28	5,946	7,442	25	100	594,600
2012	5/14-6/3	4,142	6,487	18	125	517,750
2013	5/11-5/28	8,552	9,016	n/a	100	855,200

Sources: ADF&G Bristol Bay Area Annual Management Reports available at http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.herring#/management. Dates shown are those reported.
[a] Total number of vessels fishing

1.3.3 Salmon Fishery

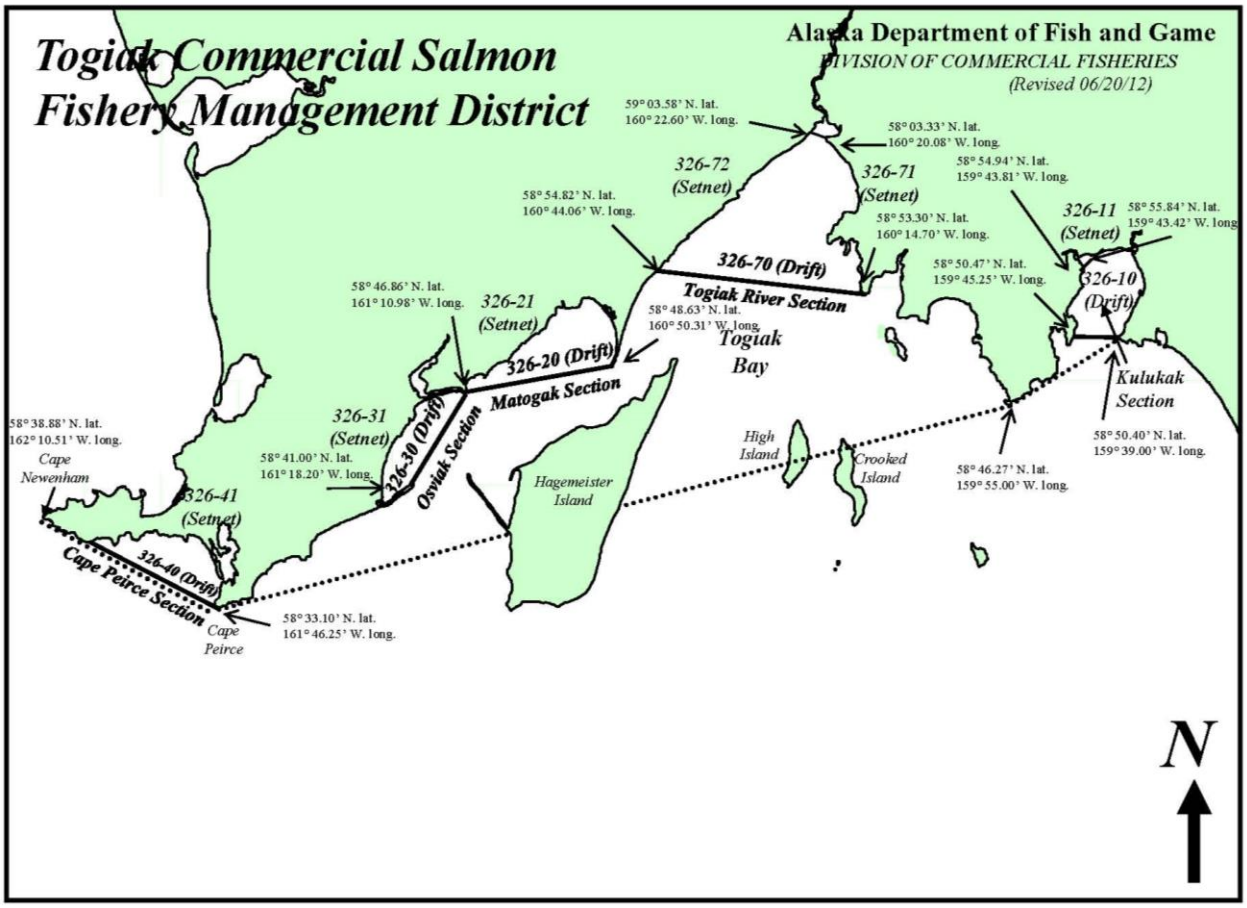
The 5 species of Pacific salmon found in Bristol Bay are the focus of major commercial, subsistence, and sport fisheries. The ADFG publishes annual reports on the Bristol Bay area commercial fisheries (e.g., Jones et al. 2012, 2013); the following description of the salmon fishery comes from the report for 2012 (Jones et al. 2013). Annual commercial catches for the most recent 20-year span (1992 – 2011) average 25.4 million sockeye, 67,188 Chinook, 924,180 chum, 79,131 coho, and 253,473 (even-years only) pink salmon (Appendices A-3 – A-7 in Jones et al. 2013). From 1992 to 2011, the exvessel value of the commercial salmon harvest in Bristol Bay has averaged $116.4 million. In 2012, the exvessel value was approximately $115.4 million. The sockeye salmon fishery is the most valuable, worth an average $114.4 million annually. Management of commercial salmon fisheries in Bristol Bay is directed at maintaining a spawning escapement goal to achieve sustained yield for each stock. Escapement goals are achieved by managing fishery openings specific areas by emergency order and adjusting weekly fishing schedules. The fishery is focused at terminal areas around the mouths of major spawning rivers which allows the fishery to focus on discrete stocks throughout the area.

Fishery managers use run strength indicators to assess and predict run strength and timing for each stock and adjust fishery goals accordingly. Predictions for each age class returning to a river are calculated from models based on the relationship between adult returns and spawners from previous years.

Approximately 45 vessels participate in the driftnet fishery in the Togiak District (Figure 1-4), and 70 set net permit holders participated in 2012 (T. Sands, ADFG , Pers. Comm.) Most of the salmon fishery occurs in Togiak Bay and Kulukak Bay (T. Sands, ADFG, Pers. Comm). The Togiak districts open to commercial salmon fishing on June 1, but typically no fishing occurs until about June 20. The number of

participating vessels and tenders for the 2013 season has been requested from industry, but those numbers have not been provided.

Figure 1-4 Togiak Area salmon district



Subsistence fishing for all five species of salmon occurs in the Togiak area as well. Between 1991 and 2010, an average of 50 permits were issued to subsistence users in the Togiak district (Jones et al. 2012). Total subsistence catch for those same years averaged 4,752 salmon for the Togiak District.

The total salmon catch for each species is shown in Table 1-3. Sockeye is the largest contributor to the Togiak area salmon harvest, followed by chum, pink (in even years), and Chinook or coho (Jones et al. 2013). Total salmon harvest has ranged from approximately 199,000 (1997) to 1.08 million (2008).

Table 1-3 Historic and current Togiak area salmon harvest.

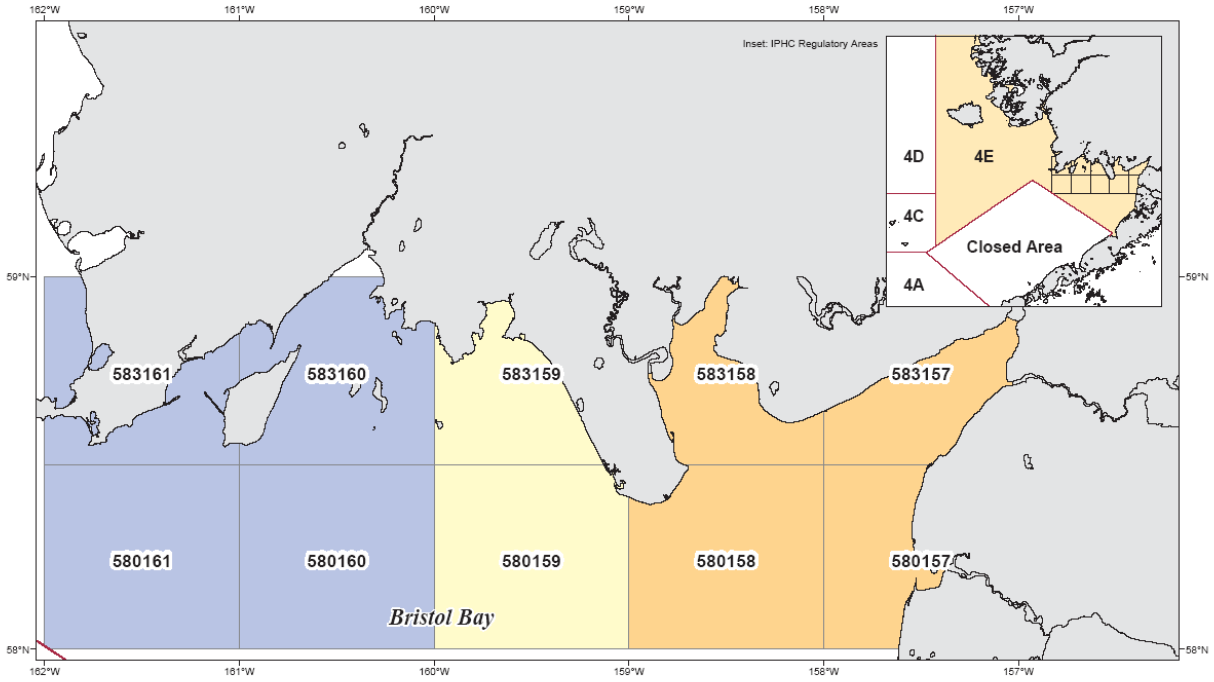
Year	Sockeye	Chinook	Chum	Pink	Coho	Total
1992	726,446	12,640	176,123	93,989	5,328	1,014,526
1993	539,933	10,851	144,869	240	12,615	708,508
1994	400,039	10,484	232,559	69,552	96,062	808,696
1995	605,328	11,981	221,126	294	871	839,600
1996	462,897	8,602	206,226	30,308	58,978	767,011
1997	142,569	6,066	47,285	23	2,970	198,913
1998	190,427	14,131	67,345	6,406	58,688	336,997
1999	385,411	11,919	111,677	2	2,653	511,662
2000	794,996	7,858	140,175	695	2,758	946,482
2001	810,096	9,937	211,701	97	284	1,032,115
2002	233,743	2,801	112,987	311	754	350,596
2003	706,008	3,231	68,154	32	1,047	778,472
2004	437,234	9,310	94,025	18,293	15,463	574,325
2005	465,094	10,605	124,694	2,108	8	602,509
2006	626,442	16,225	223,364	80,748	449	947,228
2007	816,581	7,769	202,486	533	157	1,027,526
2008	651,315	3,087	301,967	125,409	1,159	1,082,937
2009	559,442	1,397	141,371	544	9,209	711,963
2010	667,850	5,082	123,703	39,734	23,730	860,099
2011	744,626	6,837	113,455	352	7,709	872,979
2012	625,919	4,618	206,536	28,055	16,012	881,140
2013[a]	473,960	2,739	7,617	192	*	**

Source: Appendix A3 in Jones et al. 2013.
[a] 2013 preliminary data from ADFG News Release, 9/23/2013
* confidential data
** total unavailable because of confidential Coho data

1.3.4 Halibut Fishery

A small domestic halibut fishery occurs in northern Bristol Bay and Area 4E (Figure 1-5). Fewer than three vessels participate in the halibut fishery in Bristol Bay. Catch is, therefore, confidential. Although more than three vessels harvest halibut from Area 4E, only one processor in Togiak received halibut between 2009 and 2012. Total catch is, therefore, also confidential. Because the vessels fishing halibut in area 4E and delivering to Togiak do not have FFPs, the proposed action will not affect them. However, should those vessels acquire FFPs, they will be subject to the same closures at walrus protection areas as other vessels with FFPs.

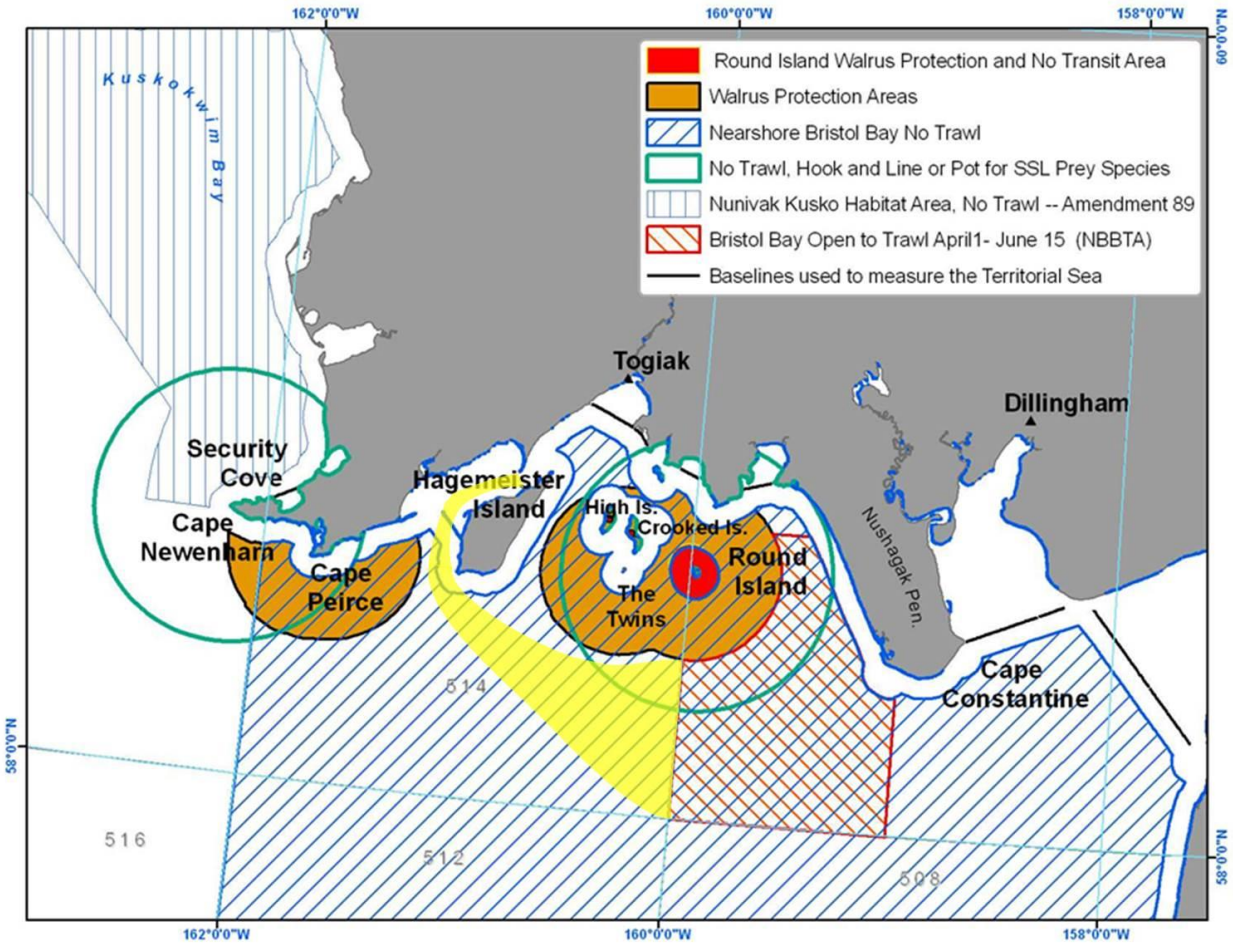
Figure 1-5 International Pacific Halibut Commission statistical areas in northern Bristol Bay.



1.3.5 Yellowfin sole Fishery

Yellowfin sole is the principal groundfish fishery prosecuted in the Northern Bristol Bay Trawl Area. Both catcher vessels and catcher processors participate in the fishery, and a domestic processing vessel may be present in the area to receive catcher vessel catch. The NBBTA is open to trawl fishing from April 1 to June 15, but the yellowfin fishery occurs from generally early May until June 1 when it closes by agreement between industry and members of the Togiak community. During the fishery, vessels harvest groundfish within the Northern Bristol Bay Trawl Area and deliver catches to processor vessels or to refrigerated freighters that anchor in Hagemeister Strait or Togiak Bay by traveling south of Round Island and through Hagemeister Strait (yellow shading in Figure 1-6). Domestic processors can receive product in any location that is not closed to general vessel transit, however foreign flagged vessels must anchor within roadsteads, designated areas where foreign vessels are allowed to receive product. The nearest roadstead to the NBBTA is in Hagemeister Strait (Figure 1-7). Currently few deliveries are made to trampers in the Hagemeister Strait roadstead; most deliveries are now made to a domestic floating processor in Togiak Bay (J. Anderson, Alaska Seafood Cooperative (AKSC), Pers. Comm.). Domestic and foreign vessels may also take product from the yellowfin sole fishery at the Port of Togiak. However, the port of Togiak is shallower than other areas and sometimes less protected from weather.

Figure 1-6 Current generalized travel route (yellow shading) of Amendment 80 vessels from the Northern Bristol Bay Trawl Area to the roadstead in Hagemeister Strait.



Access to offload areas from the NBBTA fishing grounds is limited by the existing walrus protection areas, and vessels with a FFP may not transit the 3-12 nm closed areas during the yellowfin sole fishing season. Vessels currently travel south and west of the closures around Round Island and The Twins and through Hagemeister Strait to make offloads. The east side of Hagemeister Island is too shallow to allow for safe transit by the Amendment 80 vessels and is not used (J. Anderson, AKSC, Pers. Comm.). Industry reports that yellowfin sole is a fish that bruises easily, which reduces its market value. Vessels generally wish to minimize the distances traveled to deliver product, particularly if the weather is rough and buffeting seas are likely to increase damage to the fish.

Figure 1-7 Roadstead in Hagemeister Strait. Foreign vessels may receive product between the red lines shown on the chart.

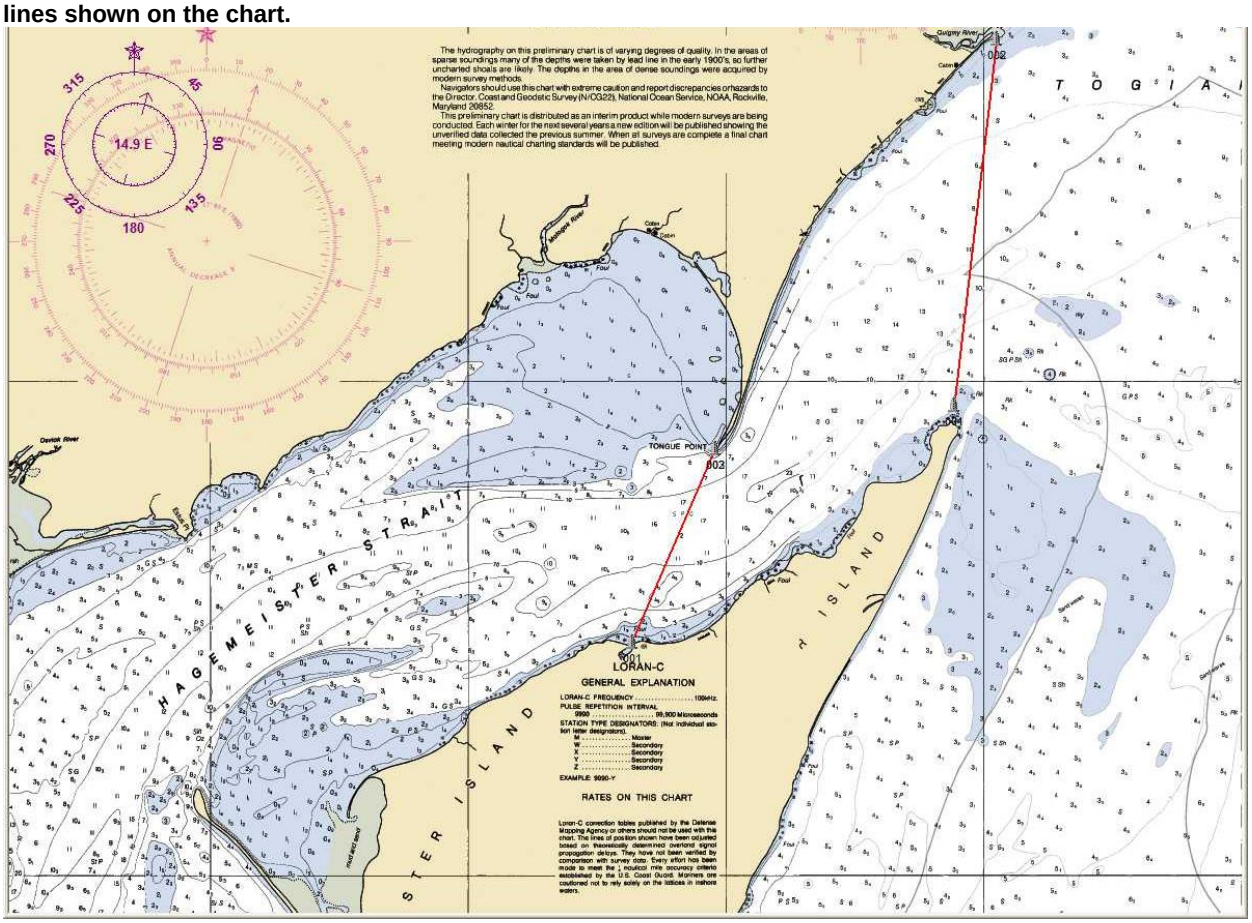


Table 1-4 shows the total amount of yellowfin sole that was harvested in the NBBTA, based on data from observed tows, from 2009 – 2012. Total catch includes catch for both CDQ and non-CDQ operations. In previous years, location data for catch are not as reliable due to lower requirements for observer coverage. The catch within the NBBTA is variable, and effort in the NBBTA varies annually depending on the availability of yellowfin sole and bycatch rate of halibut in other areas. The NBBTA fishery is generally considered by the fleet to be a good area for yellowfin sole with very low halibut bycatch (L. Swanson, Groundfish Forum & J. Gauvin, AKSC, Pers. Comm.).

Table 1-4 Yellowfin sole catch (mt) in the Northern Bristol Bay Trawl Area and total Bering Sea and Aleutian Islands catch, 2009-2012.

	2009	2010	2011	2012
NBBTA catch (mt)	2,264	10,789	7,545	3,405
BSAI catch (mt)	90,096	87,597	12,5947	127,183
% catch in NBBTA	2.5	12.3	6.0	2.7

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Trawling in the NBBTA has been contentious for some time. Alaska Native subsistence users and commercial halibut fishers object to the presence of trawl vessels, and claim that the presence of trawl vessels impacts the distribution and availability of marine mammals and fish for subsistence users. They also are concerned that halibut bycatch in the trawl fisheries affects the abundance of halibut available for their small-scale halibut fisheries. In 2008-2009, the Council evaluated the issues in a series of discussion papers, and in April 2009, the Council was informed of an agreement between the Best Use Cooperative (now Alaska Seafood Cooperative, AKSC) and representatives of the tribes and other native organizations in the area to minimize halibut bycatch and potential impacts to the local halibut fleet. The parties also committed to ongoing communications. In October 2012, the AKSC and Trustees for Alaska, representing the Association of Village Council Presidents, announced a voluntary agreement on an extended southern boundary for the Nunivak Island-Etolin Straits- Kuskokwim Bay Habitat Conservation Area, and the establishment of a working group to share information, review fisheries data and subsistence impacts, and work together to design and fund research that will be useful to all parties.

1.3.6 Other Vessel Activity

Other vessel traffic in northern Bristol Bay includes coastal freighters, local tug and barge traffic, and subsistence and recreational vessel traffic. Navigating the waters of northern Bristol Bay can be difficult, given the shallow depths. Deliveries of freight and fuel and other items to and from Dillingham and Togiak and other western Alaskan coastal and upriver communities are seasonal or sporadic. Local, private vessels may deliver freight and supplies to remote locations. Vessels include tug and barge, lightering barges, and smaller freight carrying vessels. Vessel transit is restricted in State waters around Round Island by WISGS, but not anywhere else in the region. These vessels are not constrained by the Council's Walrus protection areas, and the proposed action will not affect these vessels.

2 Description of Alternatives

The Council adopted the following alternatives for analysis in December 2012.

2.1 Alternative 1

Alternative 1 is the No Action alternative, and would not establish any transit corridors through Walrus protection areas at Round Island or Cape Peirce. Vessels with a FFP are prohibited from transiting through these areas.

2.2 Alternative 2

Alternative 2 would establish a transit area in the EEZ north of Round Island, open from April 1 – August 15. There are three options analyzed:

1. Establish a transit area north of a line from 58.80°N, 160.36°W to 58.55°N, 159.59°W maintaining a minimum of 3 nm from Round Island (Figure 2-1).
2. Establish a transit area north of a line from 58.77°N, 160.18°W to 58.58°N, 159.58°W maintaining a minimum of 4.5 nm from Round Island (Figure 2-2).
3. Establish a transit area north of a line from 58.28°N, 160.74°W to 58.61°N, 159.58°W maintaining a minimum of 6 nm from Round Island (Figure 2-3).

The options considered here allow passage through the walrus protection areas, with the closest allowable point of approach at increasing distances from Round Island. These options are based on the premise that travel farther from Round Island decreases the likelihood of disturbance to walrus hauled out on Round Island. Opening a part of the protection area is preferred over a corridor of defined width for a number of reasons: opening part of the area allows vessels to choose their own safe passage route provided they remain in the open area, vessels are less likely to be constrained when navigating past other vessels or obstacles, and the larger open area with a straight border is easier to monitor and enforce with existing enforcement tools (e.g., Vessel Monitoring Systems).

Figure 2-1 Alternative 2 – Option 1. Transit area north of Round Island with a minimum 3 nm distance to Round Island.

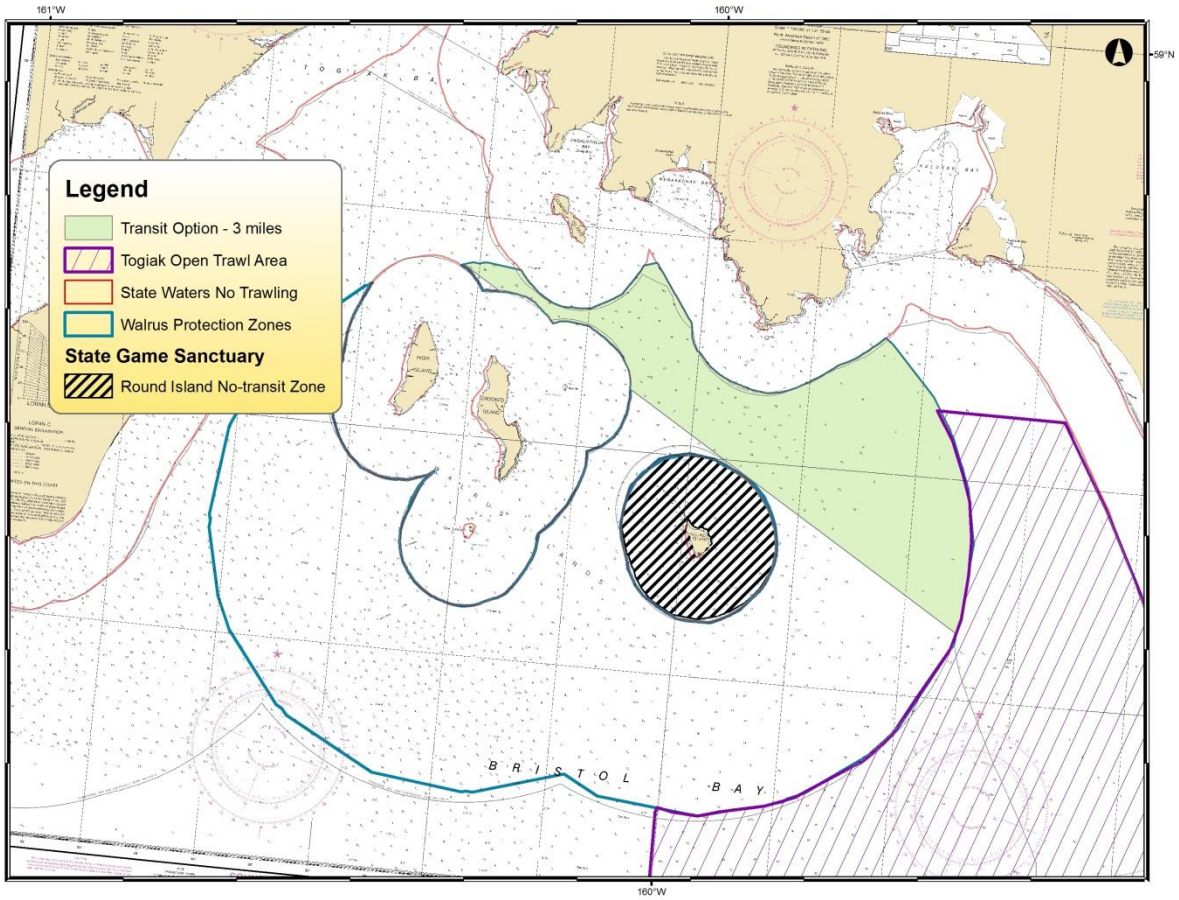


Figure 2-2 Alternative 2 – Option 2. Transit area north of Round Island with a minimum 4.5 nm distance to Round Island.

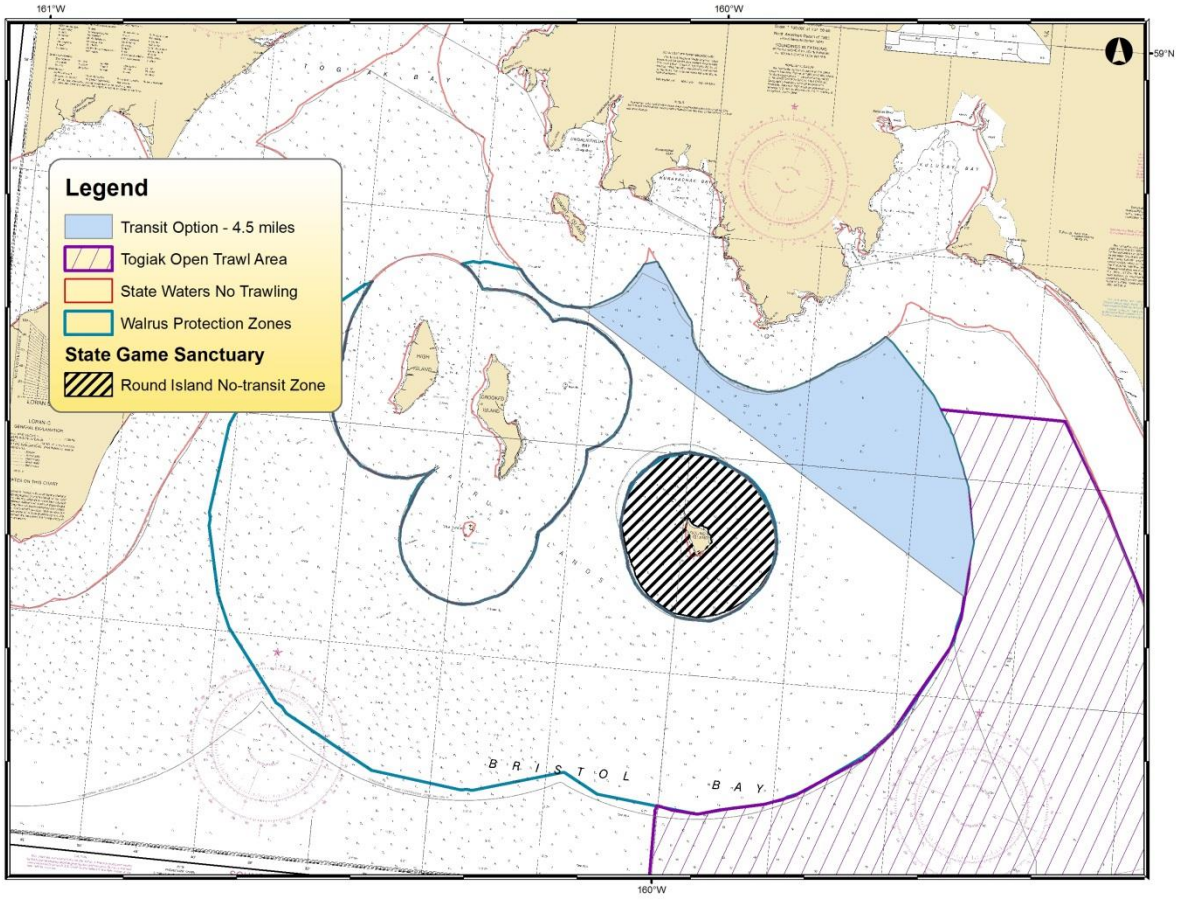
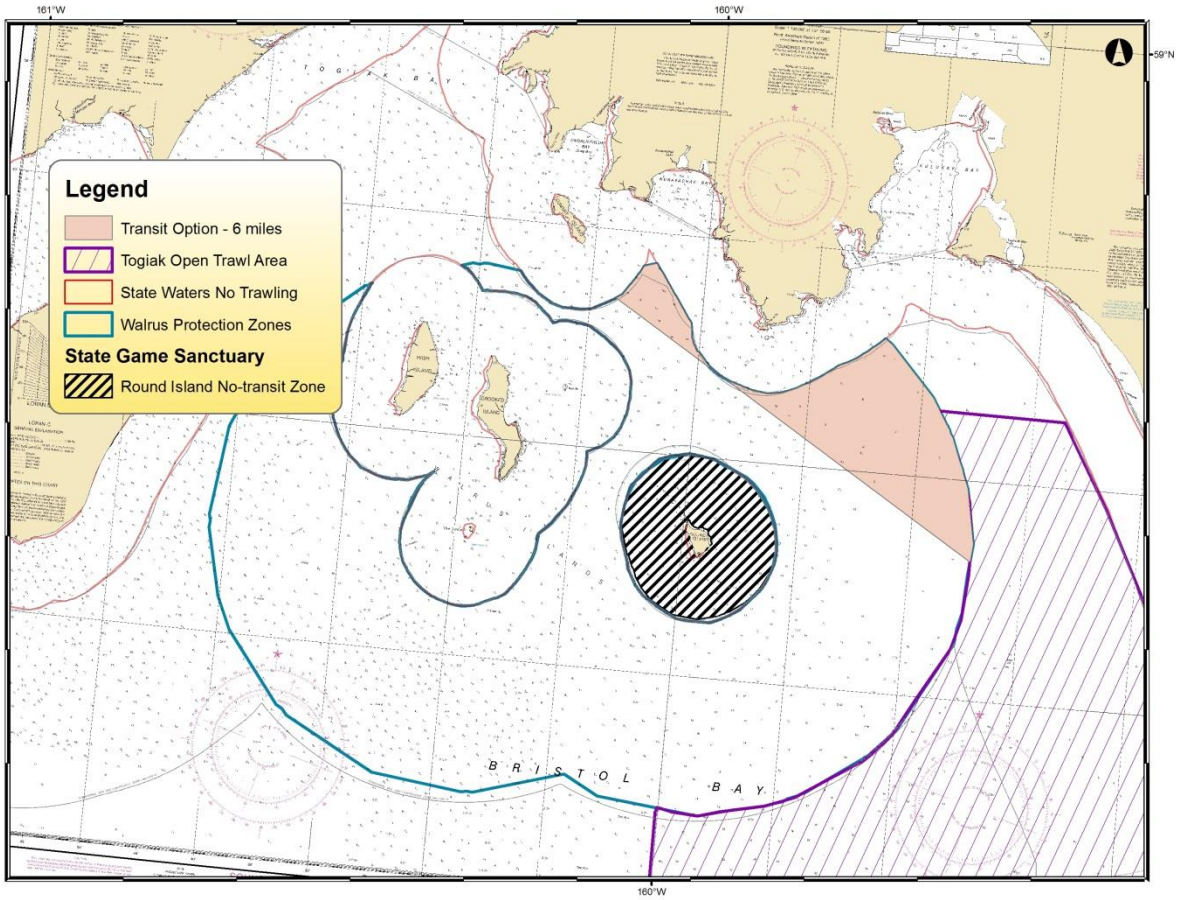


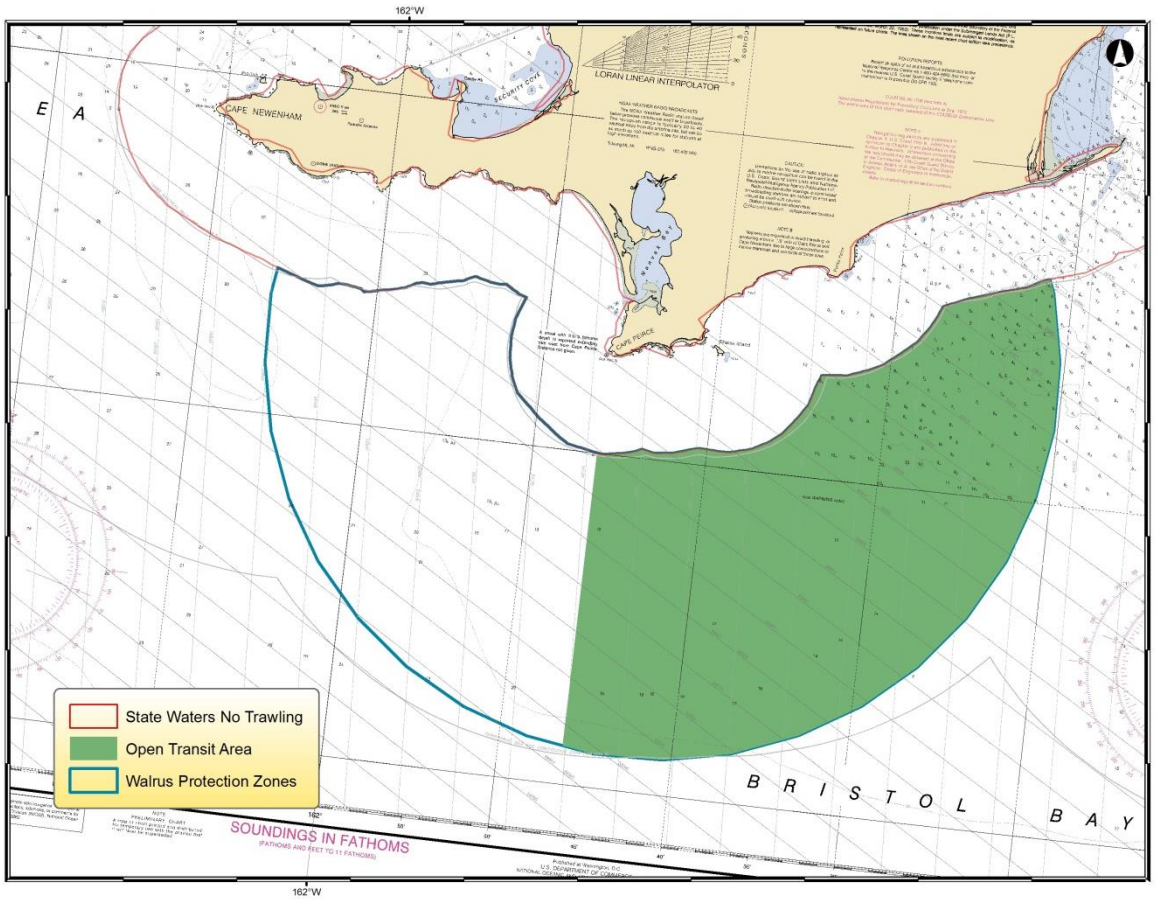
Figure 2-3 Alternative 2 – Option 3. Transit area north of Round Island with a minimum 6 nm distance to Round Island.



2.3 Alternative 3

Alternative 3 would establish a transit area in the EEZ near Cape Peirce, open from April 1 – August 15. There is one option analyzed: establish a transit area east of a line from 58.50°N, 161.77°W to 58.35°N, 161.77°W (Figure 2-4). This option will allow passage through the EEZ to the herring fishing grounds at Cape Peirce, and allow tendering vessels to transit through federal waters rather than State waters, which would bring those vessels closer to the walrus haulouts on Cape Peirce.

Figure 2-4 Alternative 3. Transit area through east side of Cane Peirce walrus protection area.



2.4 Alternatives Considered but not Further Analyzed

An additional alternative was received from the Qayassiq Walrus Commission which advocated for a curved, defined-width corridor that stretched from offshore of Quluqaq (Kulukak) Bay around Nunaaqaq (Right Hand Point) to south of Qilkiq (Summit Island). This alternative was not evaluated because it included a defined-width corridor, and curved boundaries that the Enforcement Committee concluded would create enforcement problems for NOAA Enforcement. Additionally, the alternatives considered for analysis would allow passage through the corridor proposed by the Qayassiq Walrus Commission. Other options suggested but not considered included rescinding the walrus protections around Round Island for part or all of the year.

3 Environmental Assessment

There are four required component for an Environmental Assessment, as described in section 1508.0 of the CEQ NEPA regulations: the purpose and need for the action, the altreantives, the environmental impacts of the proposed action, and the listing of agencies and persons consulted. The purpose and need for the proposal is described in Section 1.1, and the alternatives in Section 2. This section addresses the probable environmental impacts of the proposed action and alternatives. A list of agencies and persons consulted is included in Section 7.

This section evaluates the impacts of the alternatives and options on the various environmental components. Information with which to understand the affected environment for each resource component is summarized in the relevant subsection. For each resource component, criteria are identified to evaluate the significance of impacts. If significant impacts are likely to occur, preparation of an EIS is required.

Analysis of the potential cumulative effects of a proposed action and its alternatives is a requirement of NEPA. An EA or EIS must consider cumulative effects when determining whether an action significantly affects environmental quality. The Council on Environmental Quality (CEQ) regulations for implementing NEPA define cumulative effects as:

> *"the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7*).

The discussion of past and present cumulative effects is addressed with the analysis of direct and indirect impacts for each resource component below. The cumulative impact of reasonably foreseeable future actions is addressed in Section 3.6.

The socio-economic impacts of this action are descirved in detail in the Regulatory Impact Review (RIR) and Initial Regulatory Flexibility Analysis (IRFA) in Sections 4 and 5. Although an EA should evaluate economic and socioeconomic impacts that are relate with natural and physical effects, economic and social impacts, by themselves, are not sufficient to require preparation of an EIS (See 40 CFR 1508.14).

Section 4.10 addresses the management and enforcement considerations of the proposed alternatives and options.

3.1 Groudfish and other fish species

None of the alternatives considered are expected to change the timing, duration, effort, or harvest levels in the herring, salmon, or groundfish fisheries in northern Bristol Bay. Therefore, the alternatives have no potential to affect groundfish or other fish species. Potential impacts to groundfish and other fish species are not considered further.

3.2 Marine Mammals

Alaska supports one of the richest assemblages of marine mammals in the world. Twenty-two species are present from the orders Pinnipedia (seals and sea lions), Carnivora (sea otters), and Cetacea (whales, dolphins, and porpoises). Some marine mammal species are resident throughout the year, while others migrate into or out of Alaska fisheries management areas. Marine mammals occur in diverse habitats, including deep oceanic waters, the continental slope, and the continental shelf (Lowry et al. 1982).

A number of concerns may be related to marine mammals and potential impacts of fishing. For individual species, these concerns include—

- listing as endangered or threatened or considered a candidate species under the Endangered Species Act (ESA);
- protection under the Marine Mammal Protection Act (MMPA);
- declining populations in a manner of concern to state or federal agencies;
- vulnerability to direct or indirect adverse effects from fishing activities.

Marine mammals have been given various levels of protection under the current fishery management plans of the Council, and are the subjects of continuing research and monitoring to further define the nature and extent of fishery impacts on these species. Direct and indirect interatctions between marine mammals and groundfish fishing vessels may occur due to overlap in the size and species of groundfish harvested, and due to temporal and spatial overlap in marine mammal occurrence and fishing activitites.

Marine mammals, including those currently listed as endangered or threatened under the ESA, that may be present in the action area are listed in Table 3-1. All of these species are managed by NMFS, with the exception of Pacific walrus which is managed by FWS. ESA Section 7 consultations with respect to the actions of the federal groundfish fisheries have been completed for all of the ESA-listed species, either individually or in groups. Of the species listed under the ESA and present in the action area, several species may be adversely affected by the proposed action. These include Pacific walrus, Steller sea lion, bearded seal, ringed seal, spotted seal, and harbor seal (NMFS 2006a; NMFS 2010a). No effects are expected to cetacean species, and they are not considered further.

The PSEIS (NMFS 2004) provides descriptions of the range, habitat, diet, abundance, and population status for marine mammals. The most recent marine mammal stock assessments were updated in the 2012 SARs (Allen and Angliss 2013). The Pacific walrus was assessed in 2010. The information from NMFS (2004) and Allen and Angliss (2013) are incorporated by reference. The SARs provide population estimates, population trends, and estimates of the potential biological removal (PBR) levels for each stock.[3] The SARs also identify potential causes of mortality and whether the stock is considered a strategic stock under the MMPA.

Disturbance to marine mammals can occur from the sight, smell, or sound of vessels or aircraft. Many researchers have described the behavioral reactions of marine mammals to vessels or aircraft, but many of these observations are anecdotal. Often, no data on sound levels are associated with these behavioral observations, but some observations include the presence or absence of vessels or the distance to vessels that may be disturbing the animals. Although these are anecdotal observations, they do provide useful information about situations in which some species may react to the presence of vessels. Some studies have been conducted to determine the behavioral response of marine mammals to specific sounds or other human activities (see Richardson et al. 1995). Most of those studies have identified changes in behavior

[3]The SARs are available on the NMFS website at http://www.nmfs.noaa.gov/pr/sars/region.htm

(e.g., cessation of feeding, changes of direction, onset of alertness, etc.), but few have attempted to assess the duration of the altered behavior, or assess the biological consequences of those disturbances.

Table 3-1 Marine mammals that may occur in northern Bristol Bay.

	Species	Stocks
NMFS Managed Species		
Pinnipedia	Steller sea lion*	Western U.S[1]
	Bearded seal*	Beringia
	Ringed seal	Arctic
	Spotted seal	Southern
	Harbor seal	Bristol Bay
Cetacea	Beluga Whale*	Eastern Bering Sea
	Killer whale	Eastern North Pacific Alaska Resident, Aleutian Islands, and Bering Sea transient
	Harbor porpoise	Southeast Alaska, Gulf of Alaska, and Bering Sea
	Dall's porpoise	Alaska
	Gray whale	Eastern North Pacific
	Humpback whale*	Western North Pacific, Central North Pacific
	Minke whale	Alaska
	North Pacific right whale*	North Pacific[2]
FWS Managed Species		
Pinnipedia	Pacific Walrus	Pacific

Source: Allen and Angliss 2013.
*ESA-listed species; **Listed as depleted under the MMPA.
[1] Steller sea lions are listed as endangered west of Cape Suckling and threatened east of Cape Suckling.
[2] NMFS designated critical habitat for the northern right whale on July 6, 2006 (71 FR 38277).

The Alaska Groundfish Harvest Specifications EIS provides information on the effects of the groundfish fisheries on marine mammals (NMFS 2007). Direct and indirect interactions between marine mammals and groundfish fishing vessels may occur due to overlap in the size and species of groundfish harvested in the fisheries that are also important marine mammal prey, and due to temporal and spatial overlap in marine mammal occurrence and commercial fishing activities. This discussion focuses on those marine mammals that may be affected by the proposed action in northern Bristol Bay.

Table 3-2 Status of marine mammal stocks potentially affected by the action.

Species	ESA Status	MMPA Status	Population trends	Distribution in action area
Pacific Walrus	Threatened listing warranted by precluded	Depleted	Uncertain. Estimates are highly variable and not directly comparable	Occur seasonally at several haulouts in northern Bristol Bay.
Steller sea lion – Western Distinct Population Segment (WDPS)	Endangered	Depleted & a strategic stock	For the WDPS, regional increases in counts in trend sites of some areas have been offset by decreased counts in other areas so that the overall population of the WDPS appears to have stabilized (NMFS 2010a)	WDPS inhabits Alaska waters from Prince William Sound westward to the end of the Aleutian Island chain and into Russian waters. Occur throughout AK waters, terrestrial haulouts and rookeries on Pribilof Islands, Aleutian Islands, St. Lawrence Island, and off the mainland. Use marine areas for foraging. Critical habitat designated around major rookeries, haulouts, and foraging areas.
Bearded seal	Threatened	Depleted	Reliable data on trends are unavailable	Occur seasonally in northern Bristol Bay
Ringed seal	Threatened	Depleted	Reliable data on trends are unavailable	Occur seasonally in northern Bristol Bay
Spotted seal	Threatened	Depleted	Reliable data on trends are unavailable	Occur seasonally in northern Bristol Bay
Harbor seal	None	None	Increasing	Occurs throughout Bristol Bay

Source: Allen and Angliss 2013; List of Fisheries for 2011 (75 FR 68468, November 8, 2010), http://www.nmfs.noaa.gov/pr/species/mammals/.

3.2.1 Walrus

The walrus family is represented by a single modern species, *Odobenus rosmarus*. Two subspecies of walrus are recognized; the Atlantic walrus (*O. rosmarus rosmarus*), and the Pacific walrus (*O. rosmarus divergens*). These two subspecies occur in geographically isolated populations and have evolved into slightly different forms. The Pacific walrus is somewhat larger in body size and skull dimensions than the Atlantic walrus, and have proportionally larger tusks.

Walruses have a discontinuous, although nearly circumpolar distribution around the perimeter of the Arctic Ocean and the contiguous sub-arctic seas. Their distribution appears to be constrained by water depth and severe ice conditions. Walruses are usually found in waters ≤ 100 m deep. The Atlantic walrus ranges from the central Canadian Arctic to the Kara Sea. Several more or less discrete stocks of Atlantic walruses are recognized in Canada, Greenland, Norway, and Russia. The Pacific walrus is considered a single stock and inhabits the continental shelf waters of the Bering and Chukchi Seas.

Walruses are managed by the U.S. Fish and Wildlife Service (FWS), with scientific research support from the U.S. Geological Survey (USGS) and the State of Alaska, and management cooperation from the Eskimo Walrus Commission (EWC). In 1960 the State of Alaska designated the cluster of islands outside of Togiak as a state game sanctuary. Included in the Walrus Islands State Game Sanctuary was Round Island, known as Qayassik in Yupik, the Alaskan Native language of the residents of Bristol Bay. Subsistence hunting of walrus was prohibited in the Walrus Islands State Game Sanctuary, until the 1990s

when the residents of Togiak and other Bristol Bay area villages successfully petitioned the State of Alaska Board of Game for a limited subsistence hunt on Round Island. The Qayassik Walrus Commission (QWC) was formed and, with the Round Island Cooperators, set the harvest season and harvest limits for the traditional annual fall walrus hunt on Round Island. The ADFG, FWS, EWC, and QWC completed and signed a cooperative agreement in September 1995. That agreement outlines hunt regulations and designates the management responsibilities of each party. Currently, the QWC consists of representatives of nine villages: Togiak, Twin Hills, Manokotak, Aleknagik, Dillingham, Clarks Point, Ekuk, Ekwok, and New Stuyahok (http://www.bbna.com/website/naturalmarine-belwal.html).

Walrus require ice as a platform for birthing and resting during foraging. Walrus generally reside within areas of moving ice where its constant motion creates an abundance of leads and polynyas (Fay 1982). In recent years the pack ice has receded far to the north, over deep water in which walrus cannot feed. Walrus have been forced to abandon sea ice and use shoreline habitat in northern Alaska and Siberia for hauling out, limiting their foraging areas and making them susceptible to human or other terrestrial disturbance. Stampedes at some of these terrestrial locations have resulted in the deaths of hundreds of walrus calves, which could have population level impacts (Udevitz et al. 2013).

A recent status review of Pacific walrus (Garlich-Miller et al. 2011) was compiled in response to a petition filed by the Center for Biological Diversity to list the Pacific walrus as threatened or endangered under the U.S. ESA (See section 3.2.1.7). Garlich-Miller et al. (2011) reviewed a number of potential threats to walrus and examined their likely impacts over several generations using multiple models. They concluded that the Pacific walrus is experiencing habitat modification due to a warming climate and loss of summer sea-ice to an extent that has not occurred for several thousand years. They further concluded that the intensity of stressors will continue to increase in the future and will likely result in a population decline.

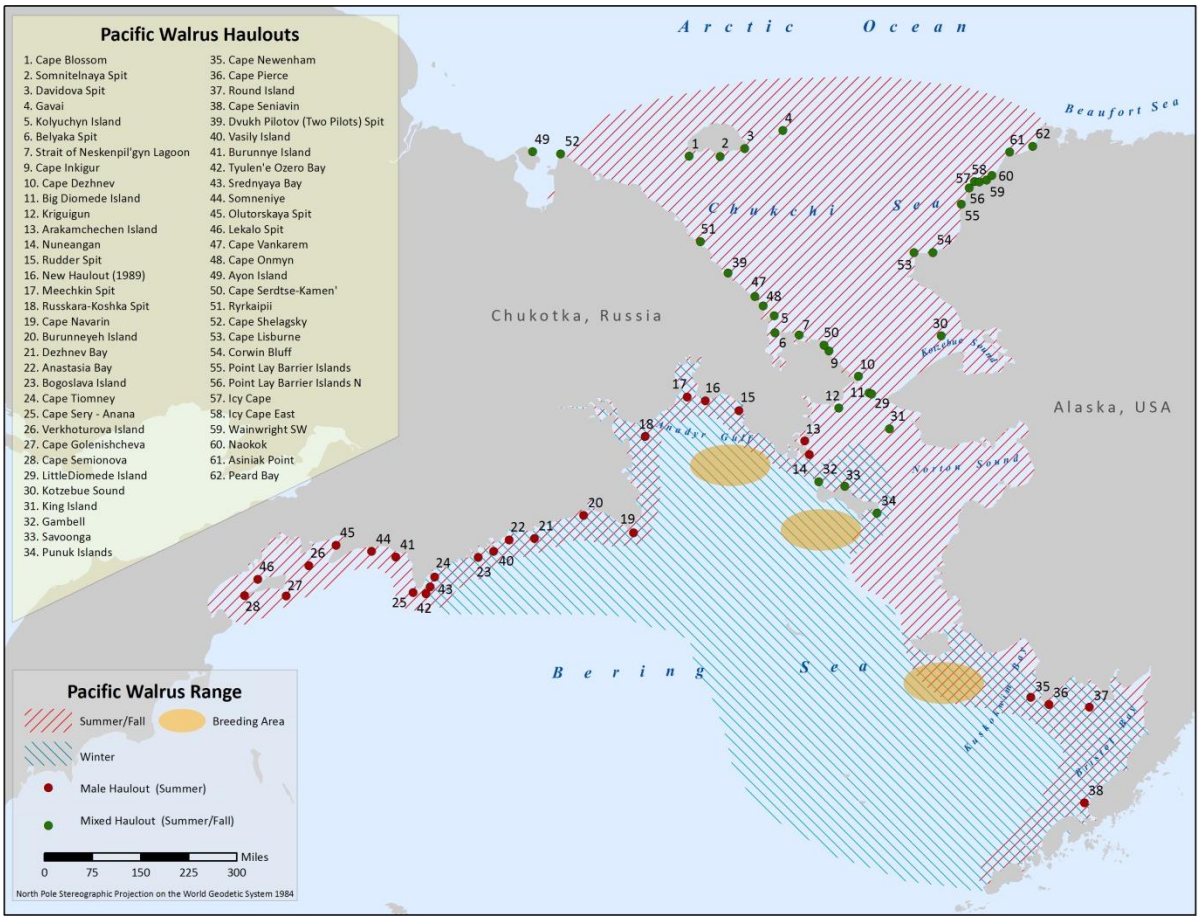
3.2.1.1 Seasonal movements

In winter, virtually the entire population of Pacific walrus inhabits the Bering Sea southwest of St. Lawrence Island and in outer Bristol Bay and Kuskokwim Bay. Walrus use the pack ice for haulout habitat to facilitate foraging on the seafloor. Breeding occurs in January through March, and the fetus develops for about 15 months. Calves are born the following spring as the population moves northward from April through June with the retreating pack ice. As the pack ice recedes, most walrus and nearly all females and young, move northward and enter the Chukchi Sea in May and June. Many walrus also remain in the northern Bering Sea and near Bering Strait (Figure 3-1**)**. Walrus migrate into the Chukchi Sea and follow the ice edge, using the ice as haulout habitat during their summer foraging throughout the Bering Strait area and eastern Siberia, around Wrangell Island, and the western Beaufort Sea near Point Barrow. Several thousand walrus, mostly adult males, remain in Alaskan waters in the Bristol Bay area throughout the summer. As winter approaches, walrus in the Chukchi Sea follow the southward advancing ice edge back through Bering Strait, using haulouts on Big Diomede, St. Lawrence Island, and King Island. They continue to move to the south and by December inhabit their wintering grounds of the northern Bering Sea and outer Bristol Bay and Kuskokwim Bay.

Major terrestrial haulouts in Alaska include Round Island, Cape Peirce, Cape Newenham, Cape Seniavin, and the Punuk Islands. Recently Cape Seniavin and Hagemeister Island have become significant haulout areas (Winfree 2012). Recently walrus have begun using terrestrial haulouts on the Siberian and northern Alaskan coasts as sea ice retreats north over very deep water (Fischbach et al. 2009, Jay et al. 2011). These terrestrial haulouts may become increasingly important if sea ice continues to decline during the summer in the Chukchi and Beaufort Seas.

Jay et al. (2001) studied movements and dive behavior of walruses in Bristol Bay. Using time-depth recorders attached to individual walrus, Jay et al. (2001) noted that walrus dived deep (41 m) and long (7.2 min) about half of the time when swimming offshore. They determined that these dives were likely related to feeding. Other behaviors include shorter duration dives to the seafloor, and short dives while traveling. Jay et al. (2001) observed that when offshore, walrus spent about 60% of that time diving. New satellite linked tags are being developed to record when walrus are feeding during offshore forays to compare energy budgets to walrus using land in ice-free conditions or sea ice as a resting platform (Jay and Fischbach 2008). Recent tagging studies have focused on the northern range of Pacific walrus, concentrating effort in the Chukchi Sea or northern Bering Sea to understand the movements of Pacific walrus relative to retreating sea ice (C. Jay, USGS, Pers. Comm., and see http://alaska.usgs.gov/science/biology/walrus/tracking.html).

Figure 3-1 Distribution and haulout location of Pacific Walrus.From FWS http://alaska.fws.gov/fisheries/mmm/walrus/reports.htm).



3.2.1.2 Population size

The population size of Pacific walrus is not known with any degree of certainty, but the most recent minimum population estimate of Pacific walrus is 129,000 (Speckman et al. 2011). This includes an estimated 22,000 animals that were detected hauled out on sea ice within the survey area, with an expansion factor applied to account for animals not detected because they were in the water. The 95% confidence interval around this estimate is 55,000 to 507,000. A review of 18th and 19th century harvests suggests a pre-exploitation population of several hundred thousand animals (Fay 1982). Large scale

commercial harvests reduced the population to an estimated 50,000 to 100,000 animals in the mid-1950s. In 1972, the population was estimated at 123,640, and by 1980, the estimate was about 250,000 (FWS 1994). A joint U.S./Russian survey in 1985 estimated 230,000 Pacific walrus, and another survey in 1990 resulted in an estimate of 201,039 although unusual ice conditions may have affected those results (FWS 1994). Because of a lack of concurrence on methods, no surveys were conducted from 1990 through the mid-2000s.

3.2.1.3 Use of northern Bristol Bay haulouts

Thousands of walrus, primarily adult males, use haulouts in Bristol Bay during summer months while nearly all females and juvenile walrus migrate northward in spring to feed in the northern Bering Sea, Chukchi Sea, and Beaufort Sea. Use of haulouts in the Bristol Bay regions appears to be shifting; the number of walrus using some haulouts, such as Cape Peirce, appears to be decreasing, while use of other haulouts, such as Cape Seniavin appears to be increasing (J. Garlich-Miller, FWS, Pers. Comm.). However, consistent counts of walrus are only conducted by ADFG at Round Island (Sell and Weiss 2011), and by FWS at haulout sites within the Togiak National Wildlife refuge (e.g., Winfree 2012, Figure 3-2). No attempt has been made to estimate the total number of walrus using northern Bristol Bay haulouts in summer.

Figure 3-2 Togiak National Wildlife Refuge, Alaska.

Although there has been no attempt to count the numbers of walrus using the whole of northern Bristol Bay in summer, it is apparent that the number of walrus using haulouts in Bristol Bay, and the distribution of walrus at haulouts in Bristol Bay has changed in the last several decades. By the early 1950s, most of the haulouts in Bristol Bay had been abandoned, presumably due to hunting pressure. In the 1950s and 1960s, Round Island was the only haulout site that was regularly used, with 1,000-2,000 animals using

the site. Usage increased to more than 10,000 in the early 1980s (Frost et al. 1983). Declining counts at Round Island in the 1980s and 1990s may be a result of redistribution to other traditional coastal haulout sites. Walrus have been seen regularly at Cape Seniavin on the Alaska Peninsula since the 1970s, and at Cape Peirce and Cape Newenham since the early 1980s. Large year to year fluctuations in haulout numbers suggest that animals do not necessarily return to the same haulout each year (Garlich-Miller et al. 2011). In recent years, walrus have begun hauling out on the southwest side of Hagemeister Island. Hagemeister Island is part of the Togiak National Wildlife Refuge (TNWR), and aerial surveys of walrus on Hagemeister Island were conducted from 2005 - 2010 (Winfree 2012).

Round Island

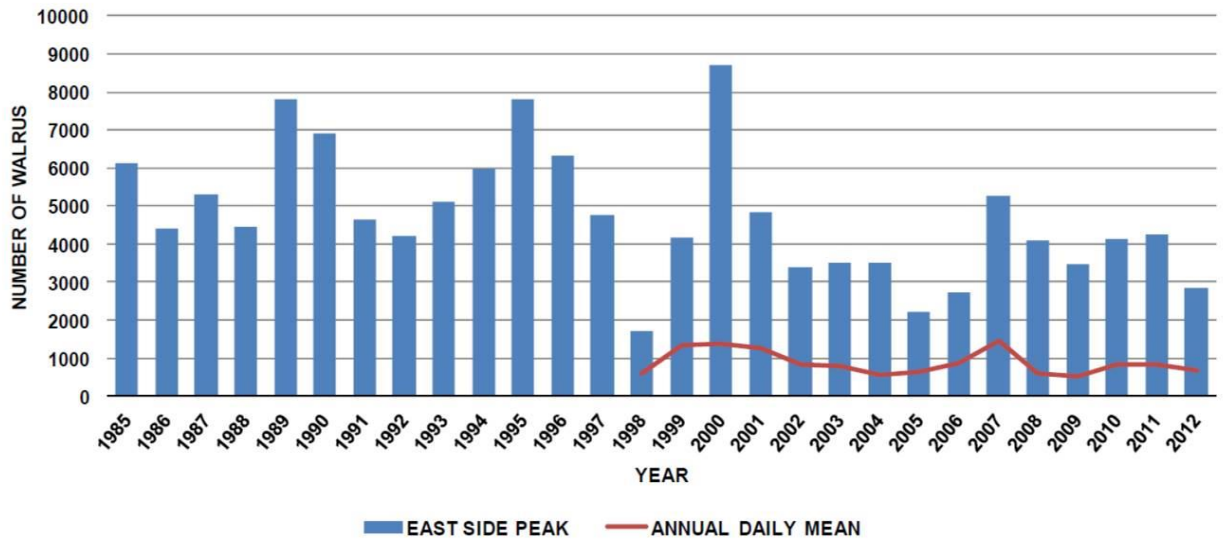
Round Island is one of seven islands that comprise the Walrus Islands State Game Sanctuary (WISGS). The WISGS includes Round Island, Summit Island, Crooked Island, High Island, Black Rock, and The Twins. The WISGS was established in 1960 to protect walrus haulouts and important habitats for several species of seabirds, Steller sea lions, and other marine and terrestrial birds and mammals. The ADFG manages the sanctuary primarily to protect these habitats and to provide for public use and the opportunity for scientific and educational study, viewing, and photography. The ADFG staffs a camp at Round Island through the summer months to protect and monitor walruses and operate a visitor program.

The peak number of walruses counted on Round Island has fluctuated over time (

Figure 3-3). Numbers declined from about 15,000 in 1978 to about 6,000 in 1984. The decline was attributed to disturbance resulting from the developing Togiak herring fishery and from arriving and departing visitors. State regulations were made more restrictive in 1984 by increasing the controlled access area around Round Island from 0.5 nm to 2 nm; the numbers of walrus hauled out subsequently increased to a peak of 12,500 in 1986. The size of the controlled access zone was further increased to 3 nm in 1989. The Federal Aviation Administration, at the request of the State, issued a notice of airspace restriction prohibiting flights less than 2,000 ft. altitude within one half mile of Round Island in order to reduce disturbance associated with the herring fishery.

In the late 1980s daily counts and peak haulout counts on Round Island declined dramatically, coincident with the development of the yellowfin sole fishery in the vicinity of Round Island. In 1989, the yellowfin sole fleet did not fish in the vicinity of Round Island, and the peak count of walrus on Round Island was higher. Since then, the peak counts of walrus on Round Island have varied from 1,700 to more than 8,000. Standardized protocols for walrus monitoring at Round Island were developed jointly by the U.S. Geological Survey Biological Resources Division (USGS BRD), FWS, and ADFG in 1997 and refined in 2002. Walrus are counted daily on nine beaches, as weather allows, on the east side of the island and one site on the west side of the island when conditions allow approach by boat (Weiss and Sell 2012). Walrus were counted manually while hauled out on each beach using binoculars and tally meters (Okonek and Snivelly 2005). The peak count for 2011 was 4,245 (Sell and Weiss 2011), and 3,289 in 2012 (Weiss and Sell 2013).

Figure 3-3 Peak walrus counts on East Side Beaches, Round Island, Alaska 1985–2012.



Source: http://www.adfg.alaska.gov/static/lands/protectedareas/walrusislands/pdfs/historic_count_charts_2012.pdf

Cape Peirce

Cape Peirce is one of the two largest regularly used terrestrial haulouts for Pacific walrus in the United States and is part of TNWR. Cape Peirce was historically used as a haulout, but was abandoned sometime during the first half of the 20th century, presumably due to hunting pressure. Walrus began using Cape Peirce again in 1981, and annual counts have been made from the ground from May to September since 1981. The annual peak number of walrus hauled out during a single day has ranged from 284 to 12,500. Peak numbers generally occur between June 10 and October 6. The timing of peaks may be related to when males migrate north in the fall to join females at the edge of the ice pack.

The number of walrus using the Cape Peirce haulout increased from 1981 to 1985, when the peak count was 12,500. Since then, peak walrus counts have shown a declining trend through 2010 (Winfree 2012).

Cape Newenham

Cape Newenham is also part of TNWR. Walrus have been counted at haulouts from April to December since 1986. The peak counts have ranged from 4 to 5,444. Since 2004, counts have been conducted weekly or biweekly from the air.

Hagemeister Island

In recent years a newly emerging haulout located on the southwest coast of Hagemeister Island has been used consistently by walrus. Hagemeister Island is part of the TNWR, and aerial surveys of walrus on Hagemeister Island were conducted from 2005 to 2010 (Winfree 2012). Peak counts at Hagemeister Island ranged from 803 in 2007 to 2,941 in 2008. In 2010, an estimated 2,500 animals were counted at Hagemeister Island (Winfree 2012). Native hunters from Togiak and other nearby villages have estimated more than 2,000 walrus on Hagemeister at several times during the last few years (H. Aderman. Qayassik Walrus Commission, Pers. Comm.).

3.2.1.4 Feeding habits

Walrus generally feed in waters less than 100 m deep (Fay 1982) in areas of soft sand and mud. Walrus feed on bivalve mollusks, annelids, echiuroids, gastropods, and some crustaceans. Walrus infrequently consume fish, and are occasionally known to prey on phocid seals (Fay 1982). Walrus can consume more than 50 clams in a single dive and consume 35-50 kg of food per day (Jay and Fischbach 2008).

3.2.1.5 Mortality

Anthropogenic disturbance, injury, or mortality to Pacific walrus is prohibited by the MMPA, unless specifically authorized. Alaska Natives are permitted to hunt walrus for traditional subsistence purposes, and some take may be authorized under the MMPA for commercial or scientific research activities.

Information on natural causes of walrus mortality is scant, and generally the only evidence of natural mortality is from carcasses washed ashore. Walrus suffer disease and parasite infections. Garlich-Miller et al. (2011b) reported on a walrus mortality event on a terrestrial haulout near Point Lay, Alaska along the Chukchi Sea coast. At this location, and other coastal haulouts in Alaska and Russia, several walrus carcasses and a few live animals with unusual, multi-focal ulcerated skin lesions of unknown origin were reported. The symptoms observed were similar to those described for a number of morbid ringed seals (*Phoca hispida*) in the same region in July and August, 2011. Garlich-Miller et al. (2011b) reported 28 walrus carcasses, but it is likely that more mortalities occurred at the haulout site. Although clinical and pathological investigation of potential disease agents continues, the cause of these lesions and the associated mortality event is not yet known.

Walrus also may be killed as a result of territorial fighting and occasional predation from killer whales or polar bears. Some pups may be abandoned and pups and juveniles may be trampled by larger individuals. Some walrus have been killed as a result of scientific research activity. Anecdotal reports of frightened groups of walrus fleeing beaches in Russia and northern Alaska included reports of injury and mortality to walrus calves and adults (Jay and Fischbach 2008). Increasing use of terrestrial haulouts in northern Russia and Alaska may exacerbate this source of mortality. Walrus have also been reported entrapped in heavy ice, with possible starvation as a result, but this has not been well documented (FWS 1994).

Walrus are occasionally injured or killed by interactions with trawl and longline fishing gear in the US EEZ, but no data are available from Russian waters. Overall, 13 observed fisheries operate in Alaska within the range of Pacific walrus in the Bering Sea, and could potentially interact with them (Allen and Angliss 2013). Incidental mortality during the 5-year period 2002-2006 was recorded only for one fishery, the Bering Sea/Aleutian Island flatfish trawl fishery, which according to NOAA-Fisheries' List of Fisheries is a Category II Commercial Fishery. The mean annual number of observed mortalities was 1.8, with a range of 0 to 3 (Table 3-3). No incidental injury was recorded during this time period; therefore, annual serious injury is estimated to be zero.

Table 3-3 Summary of incidental mortality of Pacific walrus due to commercial fisheries from 2002-2006 and estimated mean annual mortality. NE = no estimate.

Fishery	Year	Data Type	Observer Coverage (%)	Observed mortality	Estimated mortality	95% CI
BSAI flatfish trawl	2002	Observer	58.4	2	3.3	1.4-7.5
	2003		64.1	0	NE	NE
	2004		64.3	2	3.1	1.4-6.8
	2005		68.3	3	4.1	2.3-7.3
	2006		67.8	2	2.8	1.4-5.9
	2002-2006		64.7	1.8	2.66	1.8-3.9

Commercial harvests of Pacific walrus occurred in the past, but have been prohibited in the U.S. and Russia since 1941 and 1957, respectively. Walrus were hunted throughout their range for tusks, skin, and oil (Fay et al. 1989). Large numbers of walrus were harvested commercially in the 1800s and early 1900s (10,000 – 20,000 annually); this level of harvest was thought to have caused major declines in the population (Fay et al. 1989), and to have contributed to starvation of many Alaska Natives at this time (Bockstoce 1995). Sport harvests of walrus in U.S. waters continued through the 1960s, with an estimated harvest of 5,000 – 6,000 annually (Fay et al. 1989). Sport hunting was prohibited by the MMPA in 1972, but subsistence harvests continue.

In the U.S., only Alaska Natives are permitted to participate in harvests of walrus for subsistence and the creation and sale of authentic Native articles of handicraft and clothing. Similar subsistence harvests of walrus occur in Chukotka, Russia. Before the MMPA prohibition on hunting, subsistence harvest estimates were included in overall harvest information. In the mid-1980s, annual subsistence harvests were estimated to be 10,000 – 15,000 annually, including those animals struck and lost (Fay et al. 1989), but by the late-1980s, harvests were considerably lower (FWS 1994). In 1997 a cooperative agreement was developed between the FWS and the Eskimo Walrus Commission (EWC) to facilitate Native participation in walrus research and management and to develop local subsistence harvest regulations.

Limited hunting under a cooperative agreement between the FWS, ADFG, and the Qayassiq Walrus Commission (QWC) with an established season and harvest quota occurs on Round Island (known as Qayassiq in Yupik). The QWC was established in 1995 to manage a small harvest on Round Island. Subsistence harvest limits have ranged from 10 to 20 animals annually during a fall hunt after the visitor season ends. The quota is often not filled. The only restrictions imposed on harvest outside Round Island are that the harvest not be wasteful, and that it be reported to the FWS through the Marking, Tagging, and Reporting Program within 30 days of harvest. The bulk of the U.S. harvest occurs in the Bering Strait region, but some hunting occurs on Round Island and Hagemeister Island and other locations in Bristol Bay (H. Aderman, QWC, Pers. Comm.).

Historical harvests of walrus are summarized in Allen and Angliss (2013, and references therein). Between 1960 and 2007, the Pacific walrus population sustained an annual estimated harvest between 3,184 and 16,127 (mean: 6,713). Recent harvest levels are lower than the long-term average over this period. It is not known whether recent reductions in harvest levels reflect changes in walrus abundance or hunting effort. The FWS uses the average annual harvest of the past five years as a representative estimate of current harvest levels in the U.S. and Russia. Total U.S. annual harvest is estimated using data collected by direct observation in selected communities and through the statewide regulatory Marking, Tagging, and Reporting Program (MTRP). The two sources of data are combined to calculate annual reporting compliance and to correct for unreported harvest. Total U.S. subsistence harvest is estimated as the sum of reported and estimated unreported harvest. The estimated number harvested is multiplied by

1.72 to adjust for walruses wounded but not retrieved (struck and lost; Fay et al. 1994), yielding the estimated total number taken. Fay et al. (1994) estimated the proportion of targeted walrus that were struck and lost at 42% using data collected between 1952 and 1972. All walruses that have been shot with a firearm are assumed to be mortally wounded. Current accuracy of the struck and lost estimate is not known.

Between 2003 and 2007, the FWS reported an average U.S. subsistence harvest of 1,638 to 1,926 walrus. Residents of villages in the Bristol Bay region account for a small portion of that harvest. In the last decade, annual hunter reported harvest data obtained through the FWS MTRP indicate a harvest of 1 to 5 walrus per year in Dillingham, 1 to 2 walrus per year in Goodnews Bay, 1 to 10 walrus per year in Togiak, and very few animals from other villages (Manokotak, Egegik, Platinum, Twin Hills).

3.2.1.6 Disturbance

As noted above, walrus can be disturbed by the sight, sound, or smell of vessels or aircraft, or other human activity. Some recent incidents of walrus stampeding off of terrestrial haulouts in northern Alaska and Russia have been reported related to human disturbance. Walrus calves and adults can be injured or killed by stampeding adults. Jay and Fischbach (2008) note that as sea ice loss continues more walruses may use terrestrial haulouts, making them susceptible to increased predation and human disturbance.

In the late 1980s, the Council responded to requests from Bristol Bay residents to limit fishing activities near some walrus haulouts. Specific concerns were expressed by the public and the FWS over noise emitted by fishing activities of the joint-venture yellowfin sole fishery in northern Bristol Bay, and apparent correlations between increased noise and observed declines in numbers of walrus using haulouts in the area. The Council was advised that noise from engines or propeller cavitation, net winches, other deck machinery, and other fishing activities disturbed walrus and made it more difficult to successfully hunt walrus for subsistence purposes. Most underwater sounds associated with fishing vessels are generated from propeller cavitation and occur at relative low frequencies (40 Hz – 4 kHz). Measurements of a medium-sized trawler showed sound source levels of 169dB when transiting at 10 knots and 157 dB when trawling at 5 knots (Urick 1983). Underwater sounds may propagate faster and for greater distances than airborne sounds. All reports of walrus disturbance from noise have been reported for walruses hauled out ashore or on ice. Walrus have been shown to respond to airborne sounds at 0.25 to 9kHz, but absolute thresholds for walruses have not been determined (Richardson et al. 1995). Airborne sound levels for trawling vessels have not been reported.

The analysis supporting BSAI Amendments 13 and 17 noted that sounds produced by fishery-related activities may impact walruses in two ways. Airborne sounds may influence the behavior of animals hauled out on beaches. Fewer walruses may choose to haul out, and those that do may remain onshore for shorter periods of time. Walruses may encounter intense underwater sounds produced by fishery-related activity as they approach haulout areas form the sea. They may choose to avoid these areas and swim to haulouts elsewhere or spend long, perhaps energetically expensive periods at sea. Brueggeman et al. (1990) conducted a study to examine the impacts of oil and gas exploratory activities on walruses in the Chukchi Sea pack ice, and noted that during icebreaking activities, animals moved 20-25 km (11-13 nm) from the operations, where underwater noise levels from the ship were 11% to 19% above ambient levels. This movement suggested that the walruses were displaced by icebreaking activity to areas where noise levels approached ambient. After considering the possible impacts on walruses related to noise generated by fishing activities, the Council adopted 12 nm closures around the Walrus Islands and Cape Peirce from April 1 through September 30, when walrus are likely to be present. The State of Alaska established a 3 nm year-round closure around Round Island, within the Walrus Islands State Game Sanctuary (Figure 1-2) in part to protect this haulout from human disturbance.

The extent to which walrus may be disturbed, or subsistence hunting affected, by smaller vessel activities or transit of a larger vessel near a haulout (vs. active fishing activity) is largely unknown. The ADFG reports annually on the number of walrus at the WISGS, and reports on the number of anthropogenic activities that were associated with response from walruses on Round Island (Table 3-4). Before 2010, the reports do not include information about the closest approach of each vessel or aircraft that may be correlated with walrus response, and at no time were received levels of sound measured.

Table 3-4 Number of anthropogenic events at Round Island associated with recorded walrus disturbance, and no disturbance.

Year	Disturbance	No Disturbance
2005	17	19
2006	10	29
2007	17	29
2008	19	29
2009	7	11
2010	6	15
2011	12	73
2012	43	109

Sources: Okonek and Snively (2005, 2006), Okonek et al. (2007,2008), Okonek et al. (2010), Sell and Weiss (2010, 2011), Weiss and Sell (2013)

Sell and Weiss (2011) reported on disturbance of the walrus on Round Island. They monitor and document the response of walruses to anthropogenic activities around the island. When walruses were in sight of observers during an anthropogenic disturbance event, the source of the disturbance and response of walruses were recorded using three distinct behaviors (head raising, reorienting, dispersing) as a measure of level of disturbance (Salter 1979). They report that of 29 anthropogenic events within the 3-nm zone, 8 events resulted in observable disturbance to walrus (head raising, reorienting, dispersing). Sell and Weiss (2011) also report that of 56 anthropogenic events that occurred outside the 3-nm zone, four resulted in observable disturbance to walrus. All disturbance events resulted from aircraft at unknown altitudes. In addition to anthropogenic disturbance, Sell and Weiss (2011) report that a cawing raven fledgling disturbed ~30 animals, and nine other, unexplained disturbance events occurred in 2011.

In 2012, Weiss and Sell (2013) report that approximately 330 anthropogenic events were documented on Round Island, 222 events inside the 3 nm restricted area, and 108 events that were clearly heard or seen outside the 3 nm zone. Walrus were only observed on ten of the events that occurred outside the restricted area: no disturbances were observed. Of the 222 events that occurred inside the restricted area, walrus were observed during 142, and 67 involved authorized visitor or staff transfers to the island by boat or helicopter. Walrus were disturbed on 43 events inside the restricted area. Sixteen of those disturbance events occurred from visitor or staff transfers, 22 were from natural (thunderstorms or ravens) or unknown events. Aircraft resulted in two disturbance events.

Other activities in northern Bristol Bay may also disturb walrus. Salmon or herring fishing, overflights for walrus or Steller sea lion surveys, activities of herring spotter planes, tug and barge movements, and subsistence or recreational vessel traffic all have the potential to disturb walrus. Up to 15 aircraft may be involved in the herring fishery each year over approximately 10-14 days. However, herring fishing activities generally occur away from walrus haulouts and do not occur around the Walrus Islands area. Some herring fishing occasionally occurs on the west side of Hagemeister Island near the northwest end (T. Sands, ADFG, Pers. Comm.). The degree to which herring fishing might disturb walruses at the Hagemeister or Walrus Islands haulouts is not known.

Because of the potential for disturbance to walrus, the FWS in September 2012 released guidelines for vessels operating near Pacific walrus haulouts in Bristol Bay. These guidelines include descriptions of disturbance behavior and best-practices for mariners to avoid disturbance to walrus. Best-practices include:

- Marine vessels 50 feet in length or less should remain at least 0.5 nm away from hauled out walrus
- Marine vessels 50-100 feet in length should remain at least 1 nm away from hauled out walrus
- Marine vessels greater than 100 feet in length should remain at least 3 nm away from hauled out walrus
- All vessels should refrain from anchoring, or conducting tendering or fishing operations within 3 miles of hauled out walrus
- All vessels should avoid sudden changes in engine noise, using loud speakers, loud deck equipment or other operations that produce noise when in the vicinity of walrus haulouts
- All vessels should avoid excessive speed or sudden changes in speed or direction when approaching or departing walrus haulout areas
- All vessels should reduce speed and maintain a minimum 0.5 nm exclusion zone around feeding walruses
- All vessels should not operate in such a manner to separate members of a group of walruses from other members of the group
- All vessels should adjust speed according to weather conditions to reduce the likelihood of injury to walruses.

The Pacific Walrus Conservation Plan (FWS 1994) notes that historically some incidental take in fisheries, disturbance, and competition for prey resources were concerns for the Pacific walrus in Alaska. However, the Conservation Plan states that fishery impacts on feeding habitat and prey resources have not been an issue and could only be of concern if a commercial fishery occurs on clams on a large scale. Disturbance issues have been mitigated through several regulatory actions that minimize fishery activities close to walrus haulouts in northern Bristol Bay when walrus are present during spring and summer. Incidental take in fishing gear has largely been of decomposed walrus, indicating that those animals were already dead when captured in nets. Recent data on fisheries-related mortality were summarized above.

3.2.1.7 ESA listing

On February 7 2008, the Center for Biological Diversity (CBD) petitioned the FWS to list Pacific walrus under the ESA because of the impacts of global warming on the sea ice habitat (CBD 2008). On February 10, 2011, the FWS released its 12-month finding and concluded that listing the Pacific walrus as threatened or endangered is warranted but precluded at this time by higher priority actions under the ESA. Therefore, the agency has added Pacific walrus to the candidate species list. As priorities allow, but by 2017 at the latest, the FWS will develop a proposed rule to list the Pacific walrus and define critical habitat for the species. It is likely that critical habitat for walrus will include the areas around Round Island and The Twins, Cape Peirce, and Cape Newenham (J. Garlich-Miller, FWS, Pers. Comm.), and it is possible that transit restrictions will be implemented in those areas as part of the critical habitat designation.

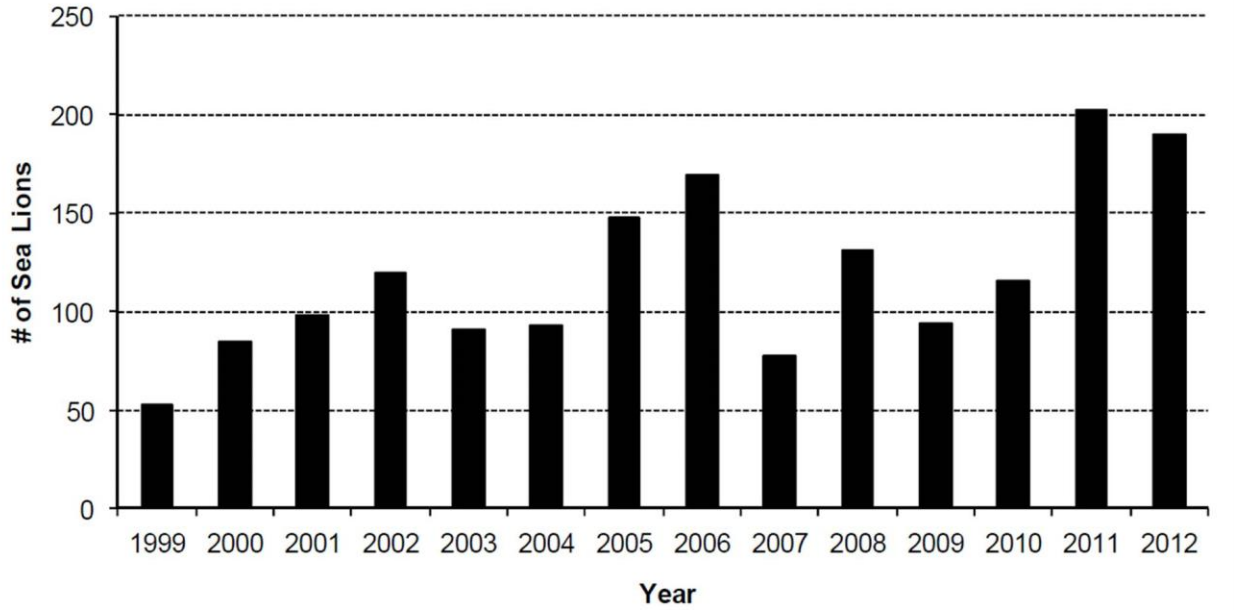
3.2.2 Steller sea lions

The Steller sea lion inhabits many of the shoreline areas of the Bering Sea, using these habitats as seasonal rookeries and year-round haulouts. The Western US population of Steller sea lion is listed as Endangered under the ESA since 1990, and a final rule to delist the Eastern US population was filed on 10/23/13 (http://alaskafisheries.noaa.gov/frules/ssl_asfiled102313.pdf).

Various fishing closures have been enacted around Steller sea lion rookeries and haulouts, particularly after those areas were designated as critical habitat. In northern Bristol Bay, two haulouts are identified as critical habitat on Round Island and Cape Newenham, each haulout is protected by a 20 nmi federal fishery restriction (Figure 1-1).

Steller sea lions typically haul out on the eastern tip of Round Island (Weiss and Sell 2013), where they are surveyed following protocols established by the ADF&G Division of Wildlife Conservation Marine Mammals Program. Steller sea lions are counted, and animals with brands are noted and photographed. Any injured or entangled animals are noted. In 2012, the mean number of Steller sea lions on Round Island was 176 (21-330, Weiss and Sell 2013). The annual mean number of Steller sea lions present on Round Island from 1999 to 2012 is shown in Figure 3-4.

Figure 3-4 Mean number of Steller sea lions on Round Island, 1999 – 2012.



Source: Weiss and Sell (2013)

Thirty two branded animals were observed at Round Island in 2012. These brands originated from three branding locations: Ugamak Island (24), Sugarloaf Island (5), and Medny Island (3). All five of the animals branded at Sugarloaf Island, and two of the three animals branded at Medny Island were males. Although data are not provided, Weiss and Sell (2013) note that in 2012 a notable increase in the number of females with pups were seen in the fall on Round Island.

3.2.3 Bearded Seals

Bearded seals (*Erignathus barbatus*) have a circumpolar distribution and occur from the high Arctic (85° N) to Sakhalin Island (45° N) in the Pacific Ocean, and to Hudson Bay (55° N) in the Atlantic Ocean (Allen and Angliss 2013, and references therein). Bearded seals inhabit the seasonally ice-covered seas of the northern hemisphere where they whelp and rear their pups, and molt their coats on the ice in the spring and early summer. Bearded seals feed primarily on benthic organisms, including epifaunal and infaunal invertebrates, and demersal fishes. Bearded seals generally occur where in waters less than 200 m deep.

A reliable population estimate for the Beringia DPS is currently not available. A few regions have been surveyed by various techniques over the past four decades, although only crude estimates for these areas exist and many assumptions used to derive these estimates are conservative (Allen and Angliss 2013). However, Cameron et al. (2010) estimated about 125,000 bearded seals in the Bering Sea and 27,000 in the Chukchi Sea, based on studies by Ver Hoef et al. (2010), Fedoseev (2000), and Bengtson et al. (2005).

In December, 2012, NMFS issued a final determination to list the Beringia and Okhotsk DPSs as threatened under the ESA (77FR 76740). NMFS determined that the primary threat to these DPSs is habitat alteration stemming from climate change, and that this threat was likely to continue for the foreseeable future.

Bearded seals are occasionally taken in federally managed fisheries in the U.S. EEZ. Between 2007 and 2009, the Bering Sea and Aleutian Islands pollock trawl and Bering Sea and Aleutian Islands flatfish trawl fisheries resulted in estimated mean annual mortality of 2.7 bearded seals.

Bearded seals are an important subsistence species for Alaska Native communities, with estimated annual harvests of 1,789 (SD = 941) from 1966 to 1977 (Burns 1981). The ADFG Division of Subsistence estimated the statewide annual harvest of bearded seals, as of 2000, to be 6,788. There are currently no efforts to quantify the total statewide level of harvest of bearded seals by all Alaska communities, and reports from communities are sporadic. For the Bristol Bay communities of Togiak and Twin Hills, the most recent report is from 1999, in which an estimated 23 bearded seals were harvested in Togiak, none were harvested in Twin Hills (http://www.adfg.alaska.gov/sb/CSIS). However, the number and species of ice seals harvested in a particular village may vary considerably between years (Coffing et al 1999), likely due to differences in ice and wind conditions that change the hunters' access to different ice habitats frequented by different species of seals.

3.2.4 Ringed seals

Ringed seals (*Phoca hispida*) have a circumpolar distribution and are found in all seasonally ice-covered seas of the northern hemisphere as well as certain freshwater lakes. The Arctic DPS occurs in Alaskan waters. Ringed seals occur as far south as Bristol Bay in winters of exceptional ice coverage, but are generally not abundant south of North Sound (Allen and Angliss 2013). Most Alaskan ringed seals winter in the pack ice of the Bering and Chukchi Seas and migrate north in spring as the season ice melts and retreats and spend the summer in the pack ice of the northern Chukchi and Beaufort Seas and coastal ice remnants of the Beaufort Sea (Frost 1985).

The population of ringed seals in Alaska, or globally, is not known. In December, 2012, NMFS issued a final determination to list the Arctic DPS of ringed seals as threatened under the ESA (77FR 76076). NMFS determined that the primary threat to this DPS is habitat alteration stemming from climate change, and that this threat was likely to continue for the foreseeable future.

Ringed seals are occasionally taken in federally managed fisheries in the U.S. EEZ. Between 2007 and 2009, the Bering Sea and Aleutian Islands pollock trawl and Bering Sea and Aleutian Islands flatfish trawl fisheries resulted in estimated mean annual mortality of 1.75 ringed seals.

Ringed seals are an important species for Alaska Native subsistence hunters. The ADFG Division of Subsistence estimated that the annual statewide harvest of ringed seals in Alaska in 2000 was 9,567 (Allen and Angliss 2013). There are currently no efforts to quantify the total statewide level of harvest of ringed seals by all Alaska communities.

3.2.5 Spotted seals

Spotted seals in Alaska are distributed along the continental shelf of the Bering, Chukchi, and Beaufort Seas. The Bering DPS inhabits the waters of the Bering, Chukchi, Beaufort, and East Siberian Seas. Spotted seals overwinter in the Bering Sea along the ice edge. During spring they tend to prefer small ice floes, and inhabit mainly the southern margin of ice in areas where the water depth does not exceed 200 m. Spotted seals move to coastal areas, including Bristol Bay, after the retreat of the sea ice (Allen and Angliss 2013). A reliable estimate of the Alaska stock of spotted seals is not currently available (Boveng et al. 2009).

The annual estimated mortality rate of spotted seals incidental to commercial fisheries is 1.0 animals per year. However, spotted seals are often mistaken for harbor seals, which may confound estimates of mortality for both species (Allen and Angliss 2013).

Spotted seals are an important subsistence species for Alaskan Native hunters, primarily in the Bering Strait and Yukon-Kuskokwim regions. Few studies have been conducted to determine statewide take of spotted seals, and confusion with harbor seals confounds estimates. Wolfe et al. (2005, 2006, 2008, 2009, 2009b) estimated harvest of spotted seals for six villages in northern Bristol Bay from 2002–2007. Harvest ranged from 124 to 213, and total mortality estimates ranged from 153 to 271. The ADFG Division of subsistence estimated the annual statewide harvest of spotted seals, as of 2000, was 5,265. There are currently no efforts to quantify the total statewide harvest levels of spotted seals by all Alaska communities.

3.2.6 Harbor Seal

Harbor seals inhabit nearshore coastal and estuarine waters from Baja California to Cape Newenham and the Pribilof Islands in the Bering Sea. Harbor seals haul out on rocks, reefs, beaches, and in drifting glacial ice, and feed in marine, estuarine, and occasionally fresh waters. Harbor seals are generally non-migratory, with local movements associated with factors such as tides, weather, season, food availability, and reproduction (Allen and Angliss 2013). The NMFS and their co-management partner for harbor seals, the Alaska Native Harbor Seal Commission, decided on 12 separate stocks of harbor seals, based primarily on their genetic structure. The Bristol Bay stock of harbor seals in habits Bristol Bay waters from Unimak Island to Nunivak Island.

The current statewide abundance estimate for Alaskan harbor seals is 152,602 (SE: 7,703; Allen and Angliss 2013). The abundance estimate for the Bristol Bay stock is 18,577 (SE: 1,080; Allen and Angliss 2012). At Nanvak Bay (the largest haulout in northern Bristol Bay), harbor seals declined in abundance between 1975 and 1990, and increased from 1990-2000 (Jemison et al. 2006).

Harbor seals are taken in the Bering Sea and Aleutian Islands pollock trawl fishery. From 2007–2009 the estimated mean annual mortality was 0.40 (Allen and Angliss 2013), although that number may include

some spotted seals (see discussion above). The Potential Biological Removal (PBR) for Bristol Bay harbor seals is 1,061.

Harbor seals are an important subsistence resource for Alaska Native hunters. The Alaska Native subsistence harvest of harbor seals has been estimated by the Alaska Native Harbor Seal Commission and the ADFG. Recent information from the ADFG indicates the average annual harvest level for the Bristol Bay stock from 2002–2008 was 141 (82 – 188). Data on community subsistence harvest of harbor seals are no longer being collected by ADFG.

3.2.7 Effects on Marine Mammals

Criteria to assess the impacts of the action on marine mammals are listed in Table 3-5. These criteria are adopted from the 2006-2007 groundfish harvest specifications environmental assessment/final regulatory flexibility analysis (EA/FRFA). The proposed action would open, from April to September, a portion of the walrus protection areas at Round Island, Cape Peirce, both Round Island and Cape Peirce, or neither area (No Action) to transit by vessels with FFPs. None of the alternatives considered here would change the levels of harvest of any fish species, nor displace fishing from any area. Therefore, the proposed action is not likely to impact any target or nontarget fish species, and has no potential to affect availability of prey for marine mammals. None of the alternatives considered here would have any significant change in the likelihood of incidental take or entanglement of marine mammals because the alternatives would not substantially change fishing patterns in northern Bristol Bay. The following discussion is, therefore, limited to direct impacts (e.g., vessel strikes) and disturbance of marine mammals in Bristol Bay.

Table 3-5 Criteria for determining significance of impacts to marine mammals.

	Direct Impacts	Disturbance
Adverse impact	Mammals are struck by fishing vessels.	Fishing operations disturb marine mammals.
Beneficial impact	There is no beneficial impact.	There is no beneficial impact.
Insignificant impact	No substantial change in vessel strikes by fishing vessels.	No substantial change in disturbance of mammals.
Significantly adverse impact	Mortality from vessel strikes is more than PBR or is considered major in relation to estimated population when PBR is undefined.	Disturbance of mammal is such that population is likely to decrease.
Significantly beneficial impact	Not applicable	Not applicable
Unknown impact	Insufficient information available on take rates.	Insufficient information as to what constitutes disturbance.

3.2.7.1 Alternative 1

Under Alternative 1, no transit provisions would be made through the Round Island or Cape Peirce walrus protection areas. Any vessels with FFPs, whether tendering for the Togiak area herring or salmon fisheries, or transporting yellowfin sole to processors or trampers in Togiak Bay or Hagemeister Strait would be prohibited from transiting the walrus protection areas. Smaller, shallow-draft vessels may be able to transit through State waters 0-3 nm from the mainland shore, but larger, deep-draft vessels would likely continue to transit around the walrus protection areas and along the west side of Hagemeister Island through Hagemeister Strait to the roadstead in Hagemeister Strait or to Togiak Bay. Vessels without FFPs

would continue to be able to transit the walrus protection areas and no change would be expected to their activities.

No changes in direct take are expected under Alternative 1, the level of direct take of marine mammals is very low, and no substantial changes are expected in traffic level. Therefore, the impacts of Alternative 1 on direct take are expected to be insignificant.

Alternative 1 may result in incrementally less potential for disturbance to walrus and other marine mammals near Round Island than the other alternatives if vessels with FFPs are not able to transit the walrus protection area during tendering for the Togiak area herring or salmon fisheries. Alternately, if processing companies hire more vessels without FFPs to tender herring or salmon, the potential for disturbance may increase slightly as fewer tenders would be restricted from the walrus protection areas. Vessels with FFPs may choose to transit through State waters 0-3 nm from the mainland. This would reduce the potential for disturbance to walrus and other marine mammals on Round Island, but may increase the potential for disturbance to walrus and other marine mammals that are hauled out on the mainland coast or near coastal islands.

Vessels with FFPs and other large vessels would likely continue to access Hagemeister Strait and Togiak Bay by transiting along the west side of Hagemeister Island. Walrus at the haulout on the south west side of Hagemeister Island could still be disturbed by those vessels. If the number of walruses hauled out on Hagemeister Island increases in coming years, then the potential to disturb more walrus would increase on pace. Walrus on Hagemeister Island are not monitored for disturbance, so the current level of disturbance is not known. Any change to the potential for disturbance to walrus or other marine mammals on Hagemeister Island would not likely be substantial, and any impacts are expected to be insignificant.

3.2.7.2 Alternative 2

Alternative 2 would open a portion of the walrus protection area around Round Island from April 1 – August 15. The open portion of the walrus protection area would allow vessels with a FFP to transit through the walrus protection area while tendering herring or salmon, or delivering yellowfin sole to floating processors or trampers in Togiak Bay or Hagemeister Strait. Vessels without a FFP would also still be able to transit through the walrus protection area. Alternative 2 would incrementally increase the vessel traffic through the Round Island walrus protection area compared to Alternative 1, and would incrementally increase the potential for vessel strikes in this area. However, Alternative 2 would result in less vessel traffic to the south of Round Island, as Amendment 80 vessels would transit north of the Island. Walrus from Round Island transit south and west from Round Island to feed in Bristol Bay, and Alternative 2 could reduce the likelihood of vessels strikes south of Round Island. Vessel strikes on walrus or other marine mammals are extremely rare and any change under Alternative 2 is not likely to be substantial, and expected impacts of Alternative 2 are likely to be insignificant.

Alternative 2 would also incrementally reduce the likelihood of disturbance to walrus or other marine mammals hauled out on Hagemeister Island. Amendment 80 vessels transporting yellowfin sole to floating processors or trampers in Togiak Bay or Hagemeister Strait would be less likely to travel west of Hagemeister Island. However, no substantial change in the likelihood of disturbance is expected to walrus or other marine mammals hauled out at Hagemeister Island, and any impacts from Alternative 2 on disturbance of walrus or other marine mammals is expected to be insignificant.

3.2.7.2.1 Option 1

Alternative 2 may result in incrementally more potential for disturbance to walrus and other marine mammals at Round Island compared to Alternative 1 if vessels with FFPs transit north of Round Island close enough to cause disturbance. Alternative 1, Option 1 would open an area of the walrus protection area that maintains a minimum distance from Round Island of three nautical miles. Of the three options considered, this would have the highest potential to cause disturbance to walrus and other marine mammals on Walrus Island because of the potential closer approach by vessels with FFPs. However, Sell and Weiss (2011) and Weiss and Sell (2012, 2013) recorded no visible disturbance to walrus from vessels passing outside 3 nm from Round Island. So although the potential for disturbance exists, it is not likely that vessels with FFPs transiting through the walrus protection area tendering herring or salmon or delivering yellowfin sole to processors would cause significant disturbance to walrus or other marine mammals on Round Island.

3.2.7.2.2 Option 2

Alternative 2, Option 2 would open an area of the Walrus protection area at Round Island that maintains a minimum distance from Round Island of 4.5 nautical miles. This option would have slightly less potential for disturbance to walrus or other marine mammals on Round Island than Option 1 because vessels would maintain a greater distance from the island. Again, because no visible disturbance to walrus has been recorded for vessels passing outside of 3 nm from Round Island (Sell and Weiss 2011, Weiss and Sell 2012, 2013), it is not likely that vessels with FFPs tendering herring or salmon, or delivering yellowfin sole to processors would cause significant disturbance to walrus or other marine mammals on Round Island.

3.2.7.2.3 Option 3

Alternative 2, Option 3 would open an area of the Walrus protection area at Round Island that maintains a minimum distance from Round Island of 6 nautical miles. This option would have the least potential for disturbance to walrus or other marine mammals on Round Island because of the greater distance that is maintained from Round Island. Again, because no visible disturbance to walrus has been recorded for vessels passing outside of 3 nm from Round Island (Sell and Weiss 2011, Weiss and Sell 2012, 2013), it is not likely that vessels with FFPs tendering herring of salmon, or delivering yellowfin sole to processors would cause significant disturbance to walrus or other marine mammals on Round Island.

3.2.7.3 Alternative 3

Alternative 3 would establish a transit area through the Cape Peirce Walrus protection area, open from April 1 – August 15. The transit area, east of a line running directly north and south from 58.50°N, 161.77°W to 58.35°N, 161.77°W would be open to vessels with a FFP while tendering herring or salmon from the Cape Peirce or Security Cove area. Vessels without a FFP would also still be able to transit through the Cape Peirce Protection Area. Currently vessels with or without a FFP can travel through State waters 0-3 nm from the mainland coast. Alternative 3 would provide opportunity for vessels with FFPs to travel farther from shore, while tendering herring or salmon.

Alternative 3 may reduce the likelihood of disturbance to walrus at the ape Peirce area, depending on whether vessels with or without FFPs chose to traverse the walrus protection area rather than transit through State waters. Walrus in the Cape Peirce area have not been monitored for disturbance (Winfree 2012) and the incidence of disturbance at Cape Peirce is not known. Amendment 80 vessels transiting from Kuskokwim Bay to Togiak Bay would still circumnavigate the walrus protection area and travel north through Hagemeister Strait so the potential for these vessels to disturb walrus or other marine mammals at Cape Peirce or on Hagemeister Island is unchanged. Overall, no substantial change in the likelihood of disturbance is expected to walrus or other marine mammals hauled out at either Cape Peirce

or Hagemeister Island, and any impacts from Alternative 3 on disturbance of walrus or other marine mammals is expected to be insignificant.

Vessel strikes on walrus or other marine mammals are extremely rare and any change under Alternative 3 is not likely to be substantial, and expected impacts of Alternative 3 are likely to be insignificant.

3.3 Seabirds

Thirty-eight species of seabirds breed in the Bering Sea, and five additional species breed elsewhere and occur in Alaskan waters during the summer months. Seabird species that occur in the Bering Sea are listed in Table 3-6. Three species of seabirds that occur in the Bering Sea are listed under the ESA: the endangered short-tailed albatross, the threated spectacled eider, and the threatened Steller's eider.

The BSAI flatfish fisheries have direct and indirect effects on seabirds. Seabird take is the primary direct effect of fishing operations. The BSAI flatfish fisheries are primarily prosecuted with trawl gear, and seabirds are taken in the trawl fisheries when they are attracted by offal or discards and strike or become entangled in fishing gear. Annual takes of seabirds in the groundfish fisheries are summarized in NMFS (2011). The level of interaction between seabirds and tendering vessels is not known. Indirect effects on seabirds from commercial fisheries include impacts to food sources

More information on seabirds in Alaska's EEZ can be found in the annual Ecosystems Considerations chapter of the SAFE report at http://www.alaskafisheries.noaa.gov/npfmc/resources-publications/safe-reports.html. Information about the NMFS Alaska Region's Seabird Bycatch Reduction Program is available at http://www.alaskafisheries.noaa.gov/protectedresources/seabirds.htm.

Table 3-6 Seabird species in the BSAI.

Type	Common name	Status	Type	Common name	Status
Albatrosses	Black-footed				
	Short-tailed	Endangered	Guillemots	Black	
	Laysan			Pigeon	
Fulmars	Northern fulmar				
Shearwaters	Short-tailed		Eiders	Common	
	Sooty			King	
Storm petrels	Leach's			Spectacled	Threatened
	Fork-tailed			Steller's	Threatened
Cormorants	Pelagic		Murrelets	Marbled	
	Red-faced			Kittlitz's	
	Double-crested			Ancient	
Gulls	Glaucous-winged		Kittiwakes	Black-legged	
	Glaucous			Red-legged	
	Herring		Auklets	Cassin's	
	Mew			Parakeet	
	Bonaparte's			Least	
	Sabine			Whiskered	
	Ivory			Crested	
Murres	Common			Rhinoceros	
	Thick-billed		Terns	Arctic	
Jaegers	Long-tailed			Aleutian	
	Parasitic		Puffins	Horned	
	Pomarine			Tufted	

3.3.1 Effects on Seabirds

None of the alternatives considered are expected to change the timing, duration, effort, or harvest levels in the herring, salmon, or groundfish fisheries in northern Bristol Bay. Therefore, the alternatives have no potential to affect seabirds or their prey. Potential impacts to seabirds are not considered further.

3.4 Habitat

Fishing operations may change the abundance or availability of certain habitat features used by managed fish species to spawn, breed, feed, and grow to maturity. These changes may reduce or alter the abundance, distribution, or productivity of species. The effects of fishing on habitat depend on the intensity of fishing, the distribution of fishing with different gears across habitats, and the sensitivity and recovery rates of specific habitat features. In 2005, NMFS and the Council completed the EIS for EFH Identification and Conservation in Alaska (NMFS 2005b). The EFH EIS evaluates the long term effects of fishing on benthic habitat features, as well as the likely consequences of those habitat changes for each managed stock based on the best available scientific information. Maps and descriptions of EFH for groundfish species are available in the EFH EIS (NMFS 2005b). This document also describes the importance of benthic habitat to different groundfish species and the impacts of different types of fishing gear on benthic habitat.

3.4.1 Effects of the Alternatives on Habitat

None of the alternatives considered are expected to change habitat features used by managed fish species to spawn, breed, feed, or grow. Therefore, the alternatives have no potential to affect habitat. Potential impacts to habitat are not considered further.

3.5 Ecosystem

Ecosystems consist of communities of organisms interacting with their physical environment. Within marine ecosystems, competition, predation, and environmental disturbance cause natural variation in recruitment, survivorship, and growth of fish stocks. Human activities, including commercial fishing, can also influence the structure and function of marine ecosystems. Fishing may change predator-prey relationships and community structure, introduce foreign species, affect trophic diversity, alter genetic diversity, alter habitat, and damage benthic habitats.

Effects of the Alternatives

None of the alternatives considered are expected to change natural variationin recruitment, survivorship, or growth of fish stocks. Therefore, the alternatives have no potential to affect the ecosystem. Potential impacts ot the ecosystem are not considered further.

3.6 Cumulative Effects

This section analyzes the cumulative effects of the actions considered in this environmental assessment. A cumulative effects analysis includes the effects of past, present, and reasonably foreseeable future actions. The past and present actions are described in several documents and are incorporated by reference. These include the PSEIS (NMFS 2004), the EFH EIS (NMFS 2005b), the Harvest Specifications EIS (NMFS 2007a). This analysis provides a brief review of the reasonably foreseeable future actions that may affect walrus and other pinnipeds in northern Bristol Bay.
Because Alternative 2 and Alternative 3 are not exclusive, there is the potential for combined effects from those two alternatives. It appears that walrus move between haulouts in Bristol Bay (see Section 3.2.1.3), and it is possible that walrus moving between Round Island and Cape Peirce could encounter tender vessels or vessels delivering groundfish at both locations. In that event, the walrus or other marine mammal would potentially be disturbed by both vessels. However, it is equally likely that had the walrus or other marine mammal remained at one or the other haulout it would have been exposed to multiple vessels as well. There is also the possibility that if both Alternative 2 and Alternative 3 were selected, a larger number of walrus or other marine mammals would be exposed to sounds from tender vessels or vessels delivering groundfish. Alternately, if either or both Alternatives were rejected, the tendering and groundfish delivery traffic would continue, albeit thorugh a different route and potentially exposing other marine mammals to their sound. Regardless, no option is likely to increase the levels of direct take, and no option is likely to result in significant disturbance to walrus or marine mammals. The cumulative impact of these Alternatives is not likely to be siginificant.

Reasonably foreseeable future actions that may affect walrus and other pinnipeds in northern Bristol Bay include listing of Pacific walrus as threatened or endangered under the ESA, and habitat loss or modification due to the effects of a warming climate.

As noted in Section 3.2.1.7, the Pacific walrus is considered warranted, but precluded for listing under the ESA. When the listing is completed it is likely that the FWS would convene a recovery team and designate critical habitat. Critical habitat is likely to include the waters around Round Island and The Twins, Hagemeister Island, Cape Peirce, and Cape Newenham (J. Garlich-Miller, FWS, Pers. Comm.). A

listing would also likely initiate procedures under the ESA Section 7 requirements that may affect how federal fisheries are prosecuted in the northern Bristol Bay area, and whether vessels are permitted to transit critical habitat. A Section 7 consultation would be conducted to determine whether the groundfish fisheries or other fishing related activities are likely to adversely affect Pacific walrus or its designated critical habitat. Changes to the management of the groundfish fisheries or other fishing related activities may be required if it is determined that the fishery or those activities cause jeopardy or adverse modification of critical habitat. Any change in protection measures for Pacific walrus would ensure that take does not exceed PBR, and that actions would not adversely or modify critical habitat. Additionally, since future TACs will be set with existing or enhanced protection measures, we expect that the effects of the fishery on prey species and disturbance will not increase in future years, and effects are not likely to be significant.

Compelling evidence from studies of changes in Bering Sea and Arctic climate, ocean conditions, sea ice cover, permafrost, and vegetation indicate that the area is experiencing warming trends in ocean temperatures and major declines in seasonal sea ice (IPCC, 2007; ACIA, 2005). Because haulouts in northern Bristol Bay are used primarily in the summer, it is not expected that the effects of this action will compound impacts from a warming climate.

Considering the direct and indirect impacts of the proposed action in the context of impacts of past and present actions and the impacts of the reasonably foreseeable future actions listed, the cumulative impacts of the proposed action are determined to be not significant.

4 Regulatory Impact Review and Probable Economic and Socioeconomic Impacts

This Regulatory Impact Review (RIR) examines the benefits and costs of a proposed regulatory amendment to establish seasonal transit areas through the Round Island and Cape Peirce walrus protection areas in northern Bristol Bay, Alaska. The proposed action would establish one or more transit areas through the walrus protection areas at Round Island and Cape Peirce in order to allow vessels with Federal Fisheries Permits (FFPs) to transit through the areas while tendering for State of Alaska managed herring and salmon fisheries in Togiak Bay, Cape Peirce and Cape Newenham, and Security Cove.

The preparation of an RIR is required under Presidential Executive Order (E.O.) 12866 (58 FR 51735: October 4, 1993). The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following Statement from the E.O.:

> *In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and Benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nonetheless essential to consider. Further, in choosing among alternative regulatory approaches agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.*

E.O. 12866 requires that the Office of Management and Budget review proposed regulatory programs that are considered to be "significant." A "significant regulatory action" is one that is likely to:

- Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, local or tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

4.1 Statutory Authority

Under the Magnuson-Stevens Fishery and Conservation Act (Magnuson-Stevens Act) (16 USC 1801, *et seq*.), the United States has exclusive fishery management authority over all marine fishery resources found within the exclusive economic zone (EEZ). The management of these marine resources is vested in the Secretary of Commerce (Secretary) and in the regional fishery management councils. In the Alaska Region, the Council has the responsibility for preparing fishery management plans (FMPs) and FMP amendments for the marine fisheries that require conservation and management, and for submitting its recommendations to the Secretary. Upon approval by the Secretary, NMFS is charged with carrying out the federal mandates of the Department of Commerce with regard to marine and anadromous fish.

The walrus protection areas in the Round Island area were created by Amendments 13 and 17 to the FMP for Groundfish of the BSAI. The proposed action under consideration would amend this FMP and federal regulations at 50 CFR 679. Actions taken to amend FMPs or implement other regulations governing these fisheries must meet the requirements of federal law and regulations.

4.2 Purpose and Need for Action

Until implementation of GOA FMP Amendment 83, vessels with FFPs tendering herring or salmon in the Togiak Bay fishery were able to surrender their FFP during the tendering season and transit the walrus protection area around Round Island. Tendering vessels transited north of Round Island as they tendered product from fishing vessels in Togiak Bay, Kulukak Bay, and other bays in northern Bristol Bay to processing plants in Dillingham and other communities. Passage through federal waters north of Round Island, or south of Round Island is necessary because of shallow waters along the mainland that make it dangerous for vessels to pass through state waters north of the walrus protection area. Amendment 83 to the GOA FMP prevents vessels from surrendering their FFP and reactivating it within a three year period. As a result, vessels with FFPs face risk of fine for being out of compliance with existing regulations if they pass through the walrus protection area, or must surrender their FFP in order to tender herring or salmon for the northern Bristol Bay fisheries.

Passage to the south of the Round Island walrus protection area requires vessels to transit through Hagemeister Strait, and around Round Island, adding considerable distance and time to each transit, and potentially exposing vessels to adverse weather conditions. The same is true for vessels wishing to deliver yellowfin sole from the NBBTA to floating processors in the Togiak Bay area. Passage through Hagemeister Strait also puts these vessels in close proximity to an emerging walrus haulout on the southern tip of Hagemeister Island where they may have increased likelihood of disturbing those walrus.

The purpose of this action is to maintain suitable protection for walruses on Round Island, to restore access to vessels with FFPs serving as tenders for the northern Bristol Bay herring and salmon fisheries to the routes used by tenders before implementation of GOA FMP Amendment 83, and to allow vessels delivering yellowfin sole access to the route north of Round Island to reduce the likelihood of disturbance to walrus on Hagemeister Island.

The Council adopted the following problem statement to originate this action in April 2013.

> *The purpose of this action is to establish opportunities for federally-permitted vessels to transit the walrus protection area closures at Round Island and Cape Pierce. Currently, federally-permitted vessels that operate as tenders during the Togiak herring and salmon fisheries cannot transit through the Round Island Walrus protection area. This effectively precludes vessels with FFPs tendering the Togiak herring and salmon fisheries. Federally-permitted vessels that tender for the herring fishery at Cape Peirce and Security Cove travel through State waters to avoid the Exclusive Economic Zone (EEZ) closures, moving vessels closer to walrus haulouts in these areas. Salmon tender vessels may be similarly affected. Additionally, vessels fishing yellowfin sole in the Northern Bristol Bay Trawl Area, that deliver to processors or trampers in the roadsteads located in Hagemeister Strait or Togiak Bay, must travel south of the Round Island Walrus protection area, which may increase interactions with walrus at Hagemeister Island haulout and walrus moving from Round Island to their feeding grounds in Bristol Bay. Opportunities to transit these areas are necessary to alleviate the unintended consequences of an unrelated Council action and to maintain appropriate protection for walruses.*

4.3 Alternatives

Alternative 1 is the No Action alternative, and would not establish any transit corridors through Walrus protection areas at Round Island or Cape Peirce. Vessels with a FFP are prohibited from transiting through these areas.

Alternative 2 would establish a transit area in the EEZ north of Round Island, open from April 1 – August 15. There are three options analyzed:

1. Establish a transit area north of a line from 58.80°N, 160.36°W to 58.55°N, 159.59°W maintaining a minimum of 3 nm from Round Island (Figure 2-1).
2. Establish a transit area north of a line from 58.77°N, 160.18°W to 58.58°N, 159.58°W maintaining a minimum of 4.5 nm from Round Island (Figure 2-2).
3. Establish a transit area north of a line from 58.28°N, 160.74°W to 58.61°N, 159.58°W maintaining a minimum of 6 nm from Round Island (Figure 2-3).

Alternative 3 would establish a transit area in the EEZ near Cape Peirce, open from April 1 – August 15. There is one option analyzed: establish a transit area east of a line from 58.50°N, 161.77°W to 58.35°N, 161.77°W (Figure 2-4). This option will allow passage through the EEZ to the herring fishing grounds at Cape Peirce, and allow tendering vessels to transit through federal waters rather than State waters, which would bring those vessels closer to the walrus haulouts on Cape Peirce.

4.4 Methodology for analysis of impacts

This analysis was prepared using data from the NMFS catch accounting system, which is the best available data to estimate total catch in the groundfish fisheries off Alaska. Total catch estimates are generated from information provided through a variety of required industry reports of harvest and at-sea discard, and data collected through an extensive fishery observer program. In 2003, NMFS changed the methodologies used to determine catch estimates from the NMFS blend database (1995 through 2002) to the catch accounting system (2003 through present).

The catch accounting system was implemented to better meet the increasing information needs of fisheries scientists and managers. Currently, the catch accounting system relies on data derived from a mixture of production and observer reports as the basis of the total catch estimates. The 2003 modifications in catch estimation included providing more frequent data summaries at finer spatial and fleet resolution, and the increased use of observer data. Redesigned observer program data collections were implemented in 2008, and include recording sample-specific information in lieu of pooled information, increased use of systematic sampling over simple random and opportunistic sampling, and decreased reliance on observer computations. As a result of these modifications, NMFS is unable to recreate blend database estimates for total catch and retained catch after 2002. Therefore, NMFS is not able to reliably compare historic data from the blend database to the current catch accounting system.

4.5 Description of Fisheries

4.5.1.1 Herring Fishery

Two herring fisheries occur in northern Bristol Bay, a sac roe fishery using gillnets and purse seine nets, and a herring spawn on kelp fishery harvested by hand (Westing et al. 2006, Sands and Jones 2012) in

late April through May. Opening and closing dates for the northern Bristol Bay purse seine fishery are shown in Table 4-1and the opening and closing dates for the gillnet fishery are show in Table 4-2. The herring fishery tends to be prosecuted close to the mainland shore in State waters (T. Sands, ADFG, Pers. Comm.).

The Togiak District herring fisheries are managed in accordance with the Bristol Bay Herring Management Plan (5 ACC 27.865), which was modified by the Alaska Board of Fisheries in December 2006. The plan specifies a maximum allowable exploitation rate of 20% and allocates the harvestable surplus among all the fisheries harvesting the Togiak herring stock. In recent years the seine fleet has been comprised of processor-organized cooperatives. Input from the fleet and industry has indicated that this slows down the "race for fish" and allows improved quality and value.

The herring spawning biomass in the Togiak District (Figure 4-1) was forecast to be 169,094 tons[4] in 2013 (Buck et al. 2012), which resulted in a 20% Total Allowable Harvest of 33,819 tons. The Togiak spawn-on-kelp fishery was allocated 1,500 tons, and the sac roe fishery 30,056 tons, with 21,040 tons allocated to the purse seine fishery and 9,017 tons to the gillnet fishery. In 2012 the Togiak area purse seine fishery was allocated 15,135 tons, the gillnet fishery was allocated 6,437 tons, and the spawn-on-kelp fishery was allocated 1,500 tons.

The 2013 Togiak purse seine fishery occurred from May 11 – May 20, and total harvest was 20,241 tons, 96.3% of the quota (Sands and Jones, 2013). The Togiak gillnet fishery occurred from May 11 – 28, and total harvest was 8,552 tons, 94.8% of the quota (Sands and Jones, 2013). No companies registered to buy herring spawn-on-kelp in 2010 and no fishery occurred. The projected ex-vessel value of the 2013 Togiak herring fishery is approximately $2.88 million, based on a grounds price estimate of $100 per ton for seine and gillnet caught fish, not including any postseason adjustments (Sands and Jones 2013).

A list of tenders for each processing company that plans to process herring is provided to the ADF&G area manager each year. These lists may not be complete, however, as vessels that are listed may cancel their tendering contract for the year, or be replaced by other vessels during the year. For 2013, a total of 64 vessels were listed to tender herring for six processing companies in the Togiak area (T. Sands, ADFG, Pers. Comm.). Of those 64, 30 (47%) also had FFPs.

The Togiak area herring catch for seine and gillnet fisheries from 1996 – 2013 are shown in Table 4-1 and Table 4-2. Seine catch ranged from 11,832 tons (2002) to 20,241 tons (2013), and gillnet catch ranged from 4,011 tons (2007) to 8,552 tons (2013). Price and exvessel value were not reported for all years, but for those years in which price and value were reported, the seine estimated exvessel value ranged from approximately $1.6 million (2012) to $10.4 million (1996), and gillnet estimated exvessel value ranged from approximately $590,000 (2007) to $4 million (1996). Exvessel values do not include postseason adjustments.

[4] The ADFG uses short tons, equal to 2000 pounds or 907.2 kg.

Figure 4-1 Togiak herring fishing districts, Bristol Bay, Alaska.

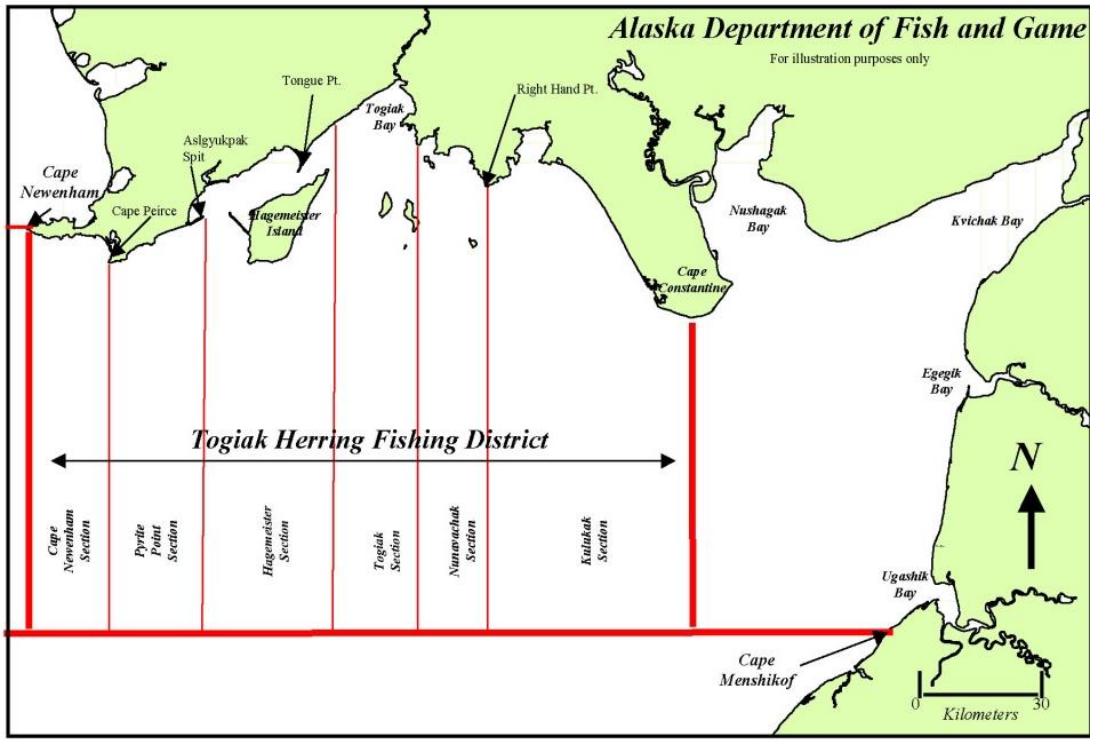


Table 4-1 Historic and current Togiak area herring purse seine catch, quota, and value.

Year	Dates	Catch (t)	Quota (t)	Participation[a]	Price ($/ton)	Value ($)
1996	5/5-5/8	17,386	17,935	268	700	10,400,000
1997	5/2-5/6	18,308	16,391	231		
1998	4/29-5/11	16,135	15,841	123		
1999	5/18-5/25	14,341	20,700	96	400	5,736,400
2000	5/6-5/14	14,630	17,245	90		
2001	5/6-5/12	15,627	14,624	64	126	1,969,000
2002	5/3-5/13	11,832	14,673	37	147	1,739,304
2003	4/26-5/7	14,778	15,457	35	116	1,714,248
2004	4/29-5/9	13,785	17,785	31	140	1,929,900
2005	4/30-5/6	14,381	13,224	33	147	2,114,007
2006	5/12-5/21	16,821	16,471	28	103	1,728,952
2007	5/10-5/20	12,399	16,544	21	135	1,673,865
2008	5/16-5/28	15,691	16,017	28	127	1,992,757
2009	5/16-5/26	12,967	14,882	21	150	1,945,050
2010	511/5/27	18,816	18,134	26	150	2,648,850
2011	5/8-5/19	16,753	17,364	22	100	1,675,300
2012	5/14-5/29	13,084	15,135	16	125	1,635,500
2013	5/11-5/20	20,241	21,040	n/a	100	2,024,100

Sources: ADF&G Bristol Bay Area Annual Management Reports available at http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.herring#/management
[a] Total number of vessels fishing

Table 4-2 Historic and current Togiak area gillnet catch, quota, and value.

Year	Dates	Catch (t)	Quota (t)	Participation[a]	Price ($/ton)	Value ($)
1996	5/3	6,677	5,956	461	800	4,000,000
1997	5/3-5/6	5,365	5,464	336		
1998	4/29-5/10	5,787	5,280	152		
1999	5/18-5/26	4,608	6,900	171	400	1,846,200
2000	5/7-5/16	5,300	5,738	227		
2001	5/7-5/13	6,508	6,268	96	100	650,000
2002	5/4-5/13	5,263	3,288	82	147	773,661
2003	4/25-5/6	6,505	6,624	75	156	1,014,780
2004	4/30-5/9	4,980	4,980	54	145	722,100
2005	4/30-5/8	5,811	5,667	56	161	935,571
2006	5/13-5/21	7,132	7,059	49	125	889,455
2007	5/10-5/31	4,011	7,090	25	147	589,617
2008	5/16-5/31	4,832	6,864	27	160	773,120
2009	5/16-5/29	4,140	6,378	32	150	620,995
2010	5/11-5/27	7,540	7,772	35	150	1,146,950
2011	5/11-5/28	5,946	7,442	25	100	594,600
2012	5/14-6/3	4,142	6,487	18	125	517,750
2013	5/11-5/28	8,552	9,016	n/a	100	855,200

Sources: ADF&G Bristol Bay Area Annual Management Reports available at http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.herring#/management. Dates shown are those reported.
[a] Total number of vessels fishing

4.5.2 Salmon Fishery

The 5 species of Pacific salmon found in Bristol Bay are the focus of major commercial, subsistence, and sport fisheries. The ADFG publishes annual reports on the Bristol Bay area commercial fisheries (e.g., Jones et al. 2012, 2013); the following description of the salmon fishery comes from the report for 2012 (Jones et al. 2013). Annual commercial catches for the most recent 20-year span (1992 – 2011) average 25.4 million sockeye, 67,188 Chinook, 924,180 chum, 79,131 coho, and 253,473 (even-years only) pink salmon (Appendices A-3 – A-7 in Jones et al. 2013). From 1992 to 2011, the exvessel value of the commercial salmon harvest in Bristol Bay has averaged $116.4 million. In 2012, the exvessel value was approximately $115.4 million. The sockeye salmon fishery is the most valuable, worth an average $114.4 million annually. Management of commercial salmon fisheries in Bristol Bay is directed at maintaining a spawning escapement goal to achieve sustained yield for each stock. Escapement goals are achieved by managing fishery openings specific areas by emergency order and adjusting weekly fishing schedules. The fishery is focused at terminal areas around the mouths of major spawning rivers which allows the fishery to focus on discrete stocks throughout the area.

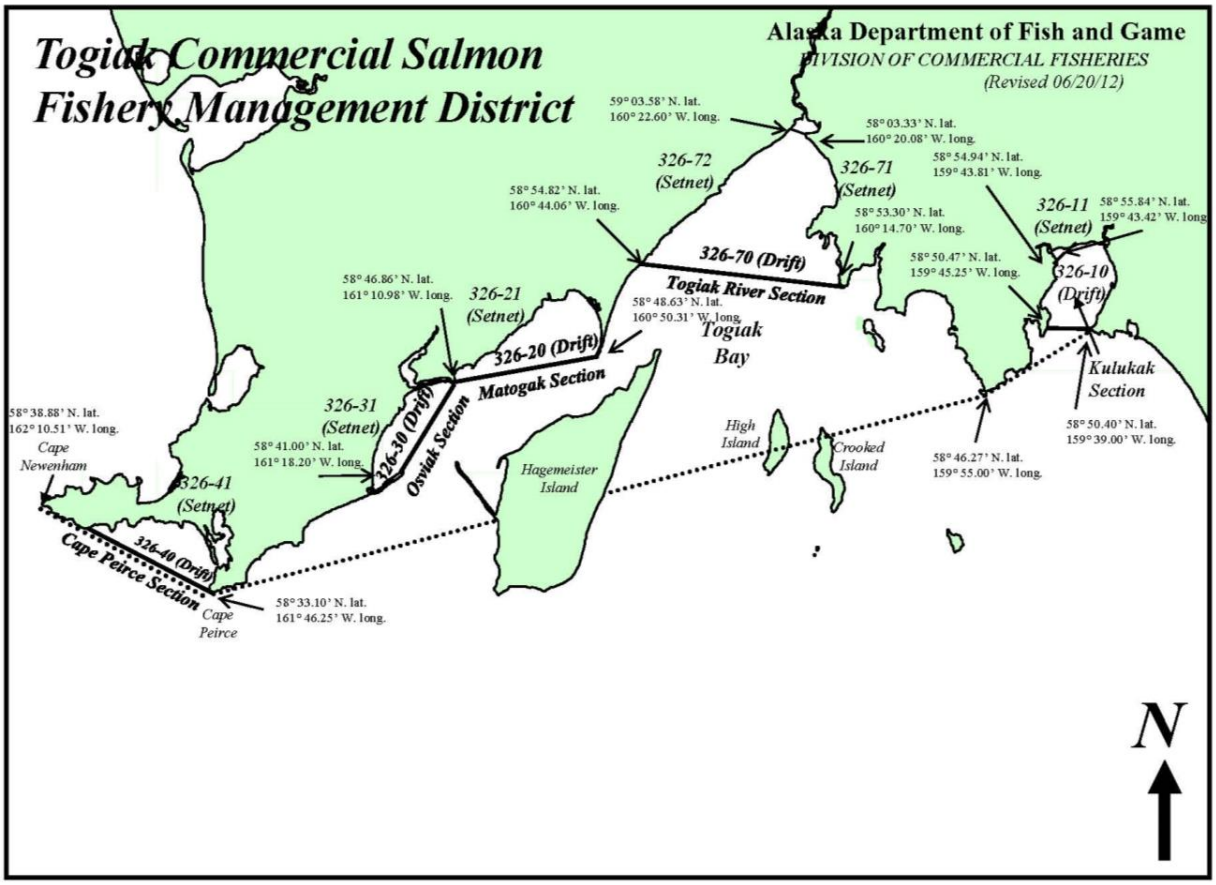
Fishery managers use run strength indicators to assess and predict run strength and timing for each stock and adjust fishery goals accordingly. Predictions for each age class returning to a river are calculated from models based on the relationship between adult returns and spawners from previous years.

Approximately 45 vessels participate in the driftnet fishery in the Togiak District (Figure 4-2), and 70 set net permit holders participated in 2012 (T. Sands, ADFG , Pers. Comm.) Most of the salmon fishery occurs in Togiak Bay and Kulukak Bay (T. Sands, ADFG, Pers. Comm). The Togiak districts open to commercial salmon fishing on June 1, but typically no fishing occurs until about June 20. The number of

participating vessels and tenders for the 2013 season has been requested from industry, but those numbers have not been provided.

Subsistence fishing for all five species of salmon occurs in the Togiak area as well. Between 1991 and 2010, an average of 50 permits were issued to subsistence users in the Togiak district (Jones et al. 2012). Total subsistence catch for those same years averaged 4,752 salmon for the Togiak District.

Figure 4-2 Togiak Area salmon district



The total salmon catch for each species is shown in Table 4-3. Sockeye is the largest contributor to the Togiak area salmon harvest, followed by chum, pink (in even years), and Chinook or coho (Jones et al. 2013). Total salmon harvest has ranged from approximately 199,000 (1997) to 1.08 million (2008).

Table 4-3 Historic and current Togiak area salmon harvest.

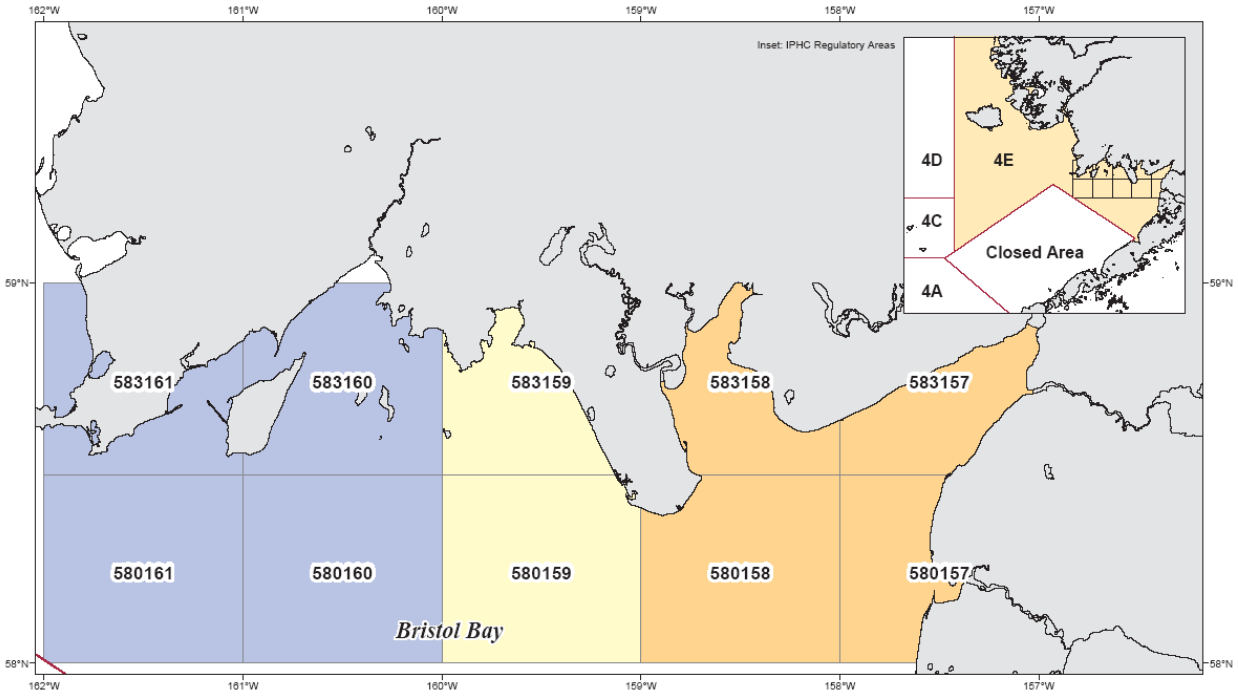
Year	Sockeye	Chinook	Chum	Pink	Coho	Total
1992	726,446	12,640	176,123	93,989	5,328	1,014,526
1993	539,933	10,851	144,869	240	12,615	708,508
1994	400,039	10,484	232,559	69,552	96,062	808,696
1995	605,328	11,981	221,126	294	871	839,600
1996	462,897	8,602	206,226	30,308	58,978	767,011
1997	142,569	6,066	47,285	23	2,970	198,913
1998	190,427	14,131	67,345	6,406	58,688	336,997
1999	385,411	11,919	111,677	2	2,653	511,662
2000	794,996	7,858	140,175	695	2,758	946,482
2001	810,096	9,937	211,701	97	284	1,032,115
2002	233,743	2,801	112,987	311	754	350,596
2003	706,008	3,231	68,154	32	1,047	778,472
2004	437,234	9,310	94,025	18,293	15,463	574,325
2005	465,094	10,605	124,694	2,108	8	602,509
2006	626,442	16,225	223,364	80,748	449	947,228
2007	816,581	7,769	202,486	533	157	1,027,526
2008	651,315	3,087	301,967	125,409	1,159	1,082,937
2009	559,442	1,397	141,371	544	9,209	711,963
2010	667,850	5,082	123,703	39,734	23,730	860,099
2011	744,626	6,837	113,455	352	7,709	872,979
2012	625,919	4,618	206,536	28,055	16,012	881,140
2013[a]	473,960	2,739	7,617	192	*	**

Source: Appendix A3 in Jones et al. 2013.
[a] 2013 preliminary data from ADFG News Release, 9/23/2013
* confidential data
** total unavailable because of confidential Coho data

4.5.3 Halibut Fishery

A small domestic halibut fishery occurs in northern Bristol Bay and Area 4E (Figure 4-3). Fewer than three vessels participate in the halibut fishery in Bristol Bay. Catch is, therefore, confidential. Although more than three vessels harvest halibut from Area 4E, only one processor in Togiak received halibut between 2009 and 2012. Total catch is, therefore, also confidential. Because the vessels fishing halibut in area 4E and delivering to Togiak do not have FFPs, the proposed action will not affect them. However, should those vessels acquire FFPs, they will be subject to the same closures at walrus protection areas as other vessels with FFPs.

Figure 4-3 International Pacific Halibut Commission statistical areas in northern Bristol Bay.



4.5.4 Yellowfin sole Fishery

Yellowfin sole is the principal groundfish fishery prosecuted in the Northern Bristol Bay Trawl Area. Both catcher vessels and catcher processors participate in the fishery, and a domestic processing vessel may be present in the area to receive catcher vessel catch. The NBBTA is open to trawl fishing from April 1 to June 15, but the yellowfin fishery occurs from generally early May until June 1 when it closes by agreement between industry and members of the Togiak community. During the fishery, vessels harvest groundfish within the NBBTA and deliver catches to processor vessels or to refrigerated freighters that anchor in Hagemeister Strait or Togiak Bay by traveling south of Round Island and through Hagemeister Strait (yellow shading in Figure 4-4). Domestic processors can receive product in any location that is not closed to general vessel transit, however foreign flagged vessels must anchor within roadsteads, designated areas where foreign vessels are allowed to receive product. The nearest roadstead to the NBBTA is in Hagemeister Strait (Figure 4-5). Currently few deliveries are made to trampers in the Hagemeister Strait roadstead; most deliveries are now made to a domestic floating processor in Togiak Bay (J. Anderson, Alaska Seafood Cooperative (AKSC), Pers. Comm.). Domestic and foreign vessels may also take product from the yellowfin sole fishery at the Port of Togiak. However, the port of Togiak is shallower than other areas and sometimes less protected from weather.

Figure 4-4 Current generalized travel route (yellow shading) of Amendment 80 vessels from the Northern Bristol Bay Trawl Area to the roadstead in Hagemeister Strait.

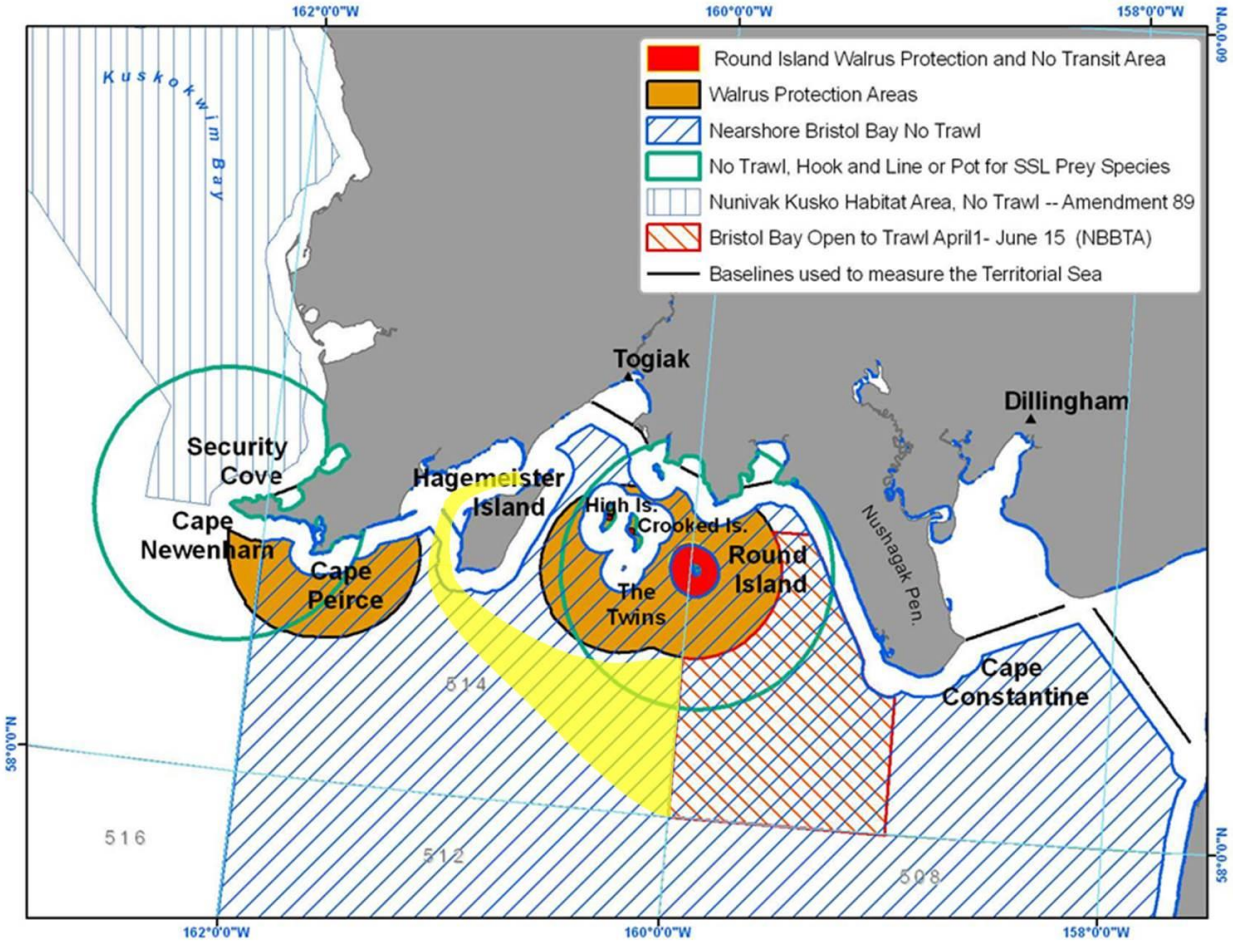
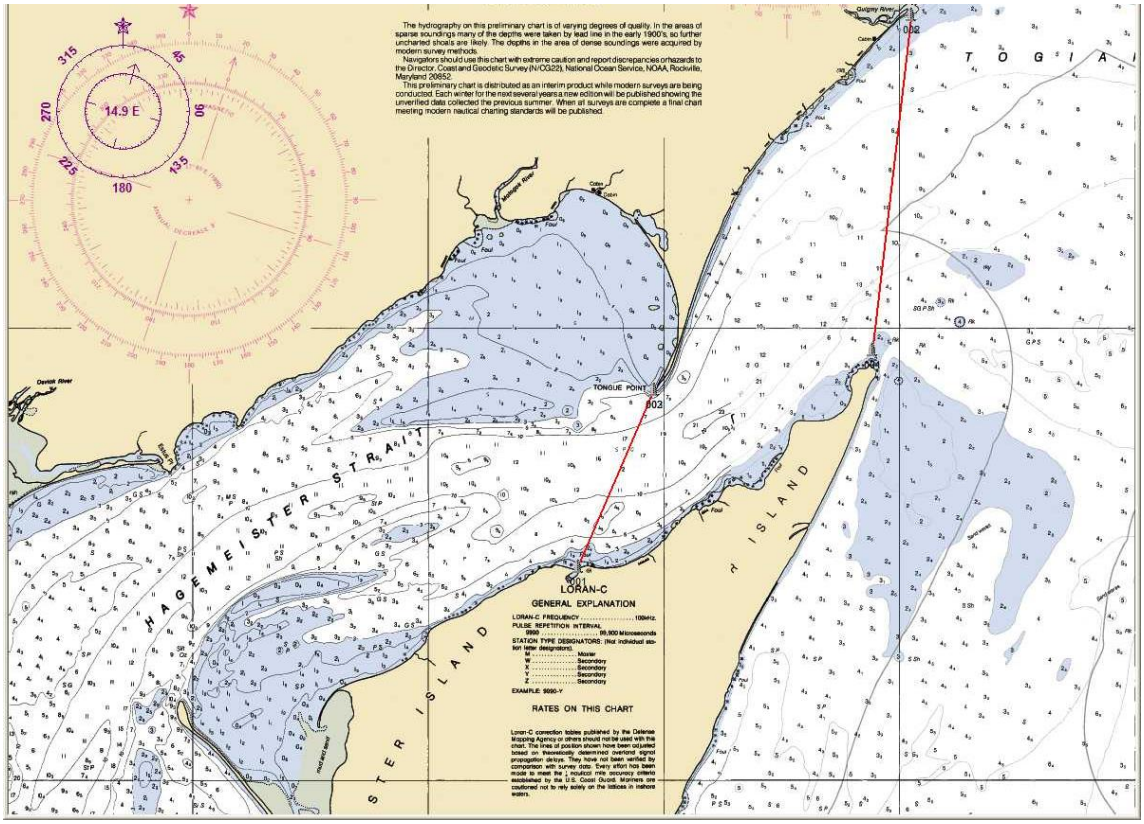


Figure 4-5 Roadstead in Hagemeister Strait. Foreign vessels may receive product between the red lines shown on the chart.



Access to offload areas from the NBBTA fishing grounds is limited by the existing walrus protection areas, and vessels with a FFP may not transit the 3-12 nm closed areas during the yellowfin sole fishing season. Vessels currently travel south and west of the closures around Round Island and The Twins and through Hagemeister Strait to make offloads. The east side of Hagemeister Island is too shallow to allow for safe transit by the Amendment 80 vessels and is not used (J. Anderson, AKSC, Pers. Comm.). Industry reports that yellowfin sole is a fish that bruises easily, which reduces its market value. Vessels generally wish to minimize the distances traveled to deliver product, particularly if the weather is rough and buffeting seas are likely to increase damage to the fish.

Table 4-4 shows the total amount of yellowfin sole that was harvested in the NBBTA, based on data from observed tows, from 2009 – 2012. Total catch includes catch for both CDQ and non-CDQ operations. In previous years, location data for catch are not as reliable due to lower requirements for observer coverage. The catch within the NBBTA is variable, and effort in the NBBTA varies annually depending on the availability of yellowfin sole and bycatch rate of halibut in other areas. The NBBTA fishery is generally considered by the fleet to be a good area for yellowfin sole with very low halibut bycatch (L. Swanson, Groundfish Forum & J. Gauvin, AKSC, Pers. Comm.).

Table 4-4 Yellowfin sole catch (mt) in the Northern Bristol Bay Trawl Area and total Bering Sea and Aleutian Islands catch, 2009-2012.

	2009	2010	2011	2012
NBBTA catch (mt)	2,264	10,789	7,545	3,405
BSAI catch (mt)	90,096	87,597	12,5947	127,183
% catch in NBBTA	2.5	12.3	6.0	2.7

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Trawling in the Northern Bristol Bay area has been contentious for some time. Alaska Native subsistence users and commercial halibut fishers object to the presence of trawl vessels, and claim that the presence of trawl vessels impacts the distribution and availability of marine mammals and fish for subsistence users. They also are concerned that halibut bycatch in the trawl fisheries affects the abundance of halibut available for their small-scale halibut fisheries. The NBBTA, however, is known to the industry as a good area for yellowfin sole, with low halibut bycatch. In 2008-2009, the Council evaluated the issues in a series of discussion papers, and in April 2009, the Council was informed of an agreement between the Best Use Cooperative (now Alaska Seafood Cooperative, AKSC) and representatives of the tribes and other native organizations in the area to minimize halibut bycatch and potential impacts to the local halibut fleet. The parties also committed to ongoing communications. In October 2012, the AKSC and Trustees for Alaska, representing the Association of Village Council Presidents, announced a voluntary agreement on an extended southern boundary for the Nunivak Island-Etolin Straits- Kuskokwim Bay Habitat Conservation Area, and the establishment of a working group to share information, review fisheries data and subsistence impacts, and work together to design and fund research that will be useful to all parties.

4.6 Affected Communities

The communities that could potentially be affected by the proposed action are communities in northern Bristol Bay that process herring or salmon, participate in limited halibut commercial fishing, or participate in the Round Island walrus harvest or other marine mammal hunting. Communities in northern Bristol Bay include Dillingham, Manokotak, Twin Hills, Togiak, Platinum, Goodnews Bay, and Quinhagak.

Dillingham is a fist class city in the Dillingham Census Area with a population of 2,406 in 2012 (Alaska Community Database, http://commerce.alaska.gov/cra/DCRAExternal/). Traditionally a Yup'ik Eskimo area with Russian influences, Dillingham is now a mixed population of non-Natives and Native Alaskans. There are 218 Commercial Fishing Permit Holders holding 257 permits.

Manokotak is a second class city in the Dillingham Census Area with a population of 449 in 2012. Manokotak is one of the newer villages in the Bristol Bay region, becoming a permanent settlement in 1947. Manokotak is a Yup'ik Eskimo village with a fishing, trapping, and subsistence lifestyle.

Twin Hills is an unincorporated community in the Dillingham Census Area with a population of 83 in 2012. Twin Hills was established in 1965 by families who moved from Togiak. Twin Hills is a Yup'ik Eskimo village with a fishing and subsistence lifestyle.

Togiak is a second class city in the Dillingham Census Area with a population of 871 in 2012. The current village site is across the Bay from "Old Togiak", many residents moved to the new site after the 1918-1919 influenza epidemic. Togiak is a traditional Yup'ik Eskimo village with a fishing and subsistence lifestyle.

Platinum is a second class city in the Bethel Census Area with a population of74 in 2012. Platinum is near a traditional village site called Arviq. The community was established shortly after traces of platinum were discovered by Walter Smith in 1926. Platinum was developed as a "company town" for the Goodnews Mining Company which held title to over 150 mine claims in the area. The community was established as a commercial center, and local traditions have not been retained as much as in other villages. The primary economy is cash based.

Goodnews Bay is a second class city in the Bethel Census Area with a population of 258 in 2012. The village was moved to its present site in the 1920s to avoid constant flooding at the old site, known as Mumtraq. The city was incorporated in 1970. Goodnews Bay is a traditional Yup'ik Eskimo village practicing a subsistence, trapping, and fishing lifestyle.

Quinhagak is a second class city in the Bethel Census Area with a population of 689 in 2012. Quinhagak is a long-established village whose origin has been dated to 1,000 AD. Russians noted the existence of the village in 1826, and after the purchase of Alaska in 1867 the Alaska Commercial Company sent annual supplies to Quinhagak. The community is primarily Yup'ik Eskimos who fish commercially and area ctive in subsistence food gathering.

4.7 Analysis of Impacts: Alternative 1, Status Quo

Under Alternative 1, the status quo, transit areas would not be established through either the Round Island or Cape Peirce Walrus protection area. Vessels with FFPs would be precluded from tendering for the Togiak herring or salmon fishery unless they could transit through State waters 0-3 nm from shore or through federal waters around the Walrus protection areas. Vessels with FFPs could continue to serve as tender vessels for the Cape Peirce, Cape Newenham, and Security Cove herring fisheries by transiting through State waters 0-3 nm from shore or around the Cape Peirce Walrus protection area. If vessels with FFPs were precluded from tendering, there may be costs for processing companies associated with a reduced pool of available tender vessels. Alternately, vessels with FFPs that served as tenders for either the herring or salmon fishery would be required to travel outside of the walrus protection areas. Additional costs associated with the longer transit around the protection areas would depend on the fuel consumption rate and additional time required for each vessel.

Amendment 80 vessels delivering yellowfin sole to domestic floating processors or foreign trampers would be prohibited from transiting the Walrus protection areas, and would instead have to circumnavigate the Protection Areas. Vessels transiting from the NBBTA would continue to be required to transit south of Round Island and along the west coast of Hagemeister Island, through Hagemeister Strait. This would add 6-8 hours per trip (J. Gauvin, AKSC, Pers. Comm.) compared to transiting through the Walrus protection area. Those larger Amendment 80 vessels typically burn 105 – 145 gallons per hour (J. Anderson, AKSC, Pers. Comm.), and the cost of fuel in Dutch Harbor for the summer of 2013 was $4.04/gallon (Aleutian Fuel Services, Dutch Harbor, 7/26/2013). That results in additional fuel costs of $2,545 to $4,686 per trip compared to transiting north of Round Island.

4.8 Analysis of Impacts: Alternative 2

Under Alternative 2, a transit area would be established through the Round Island Walrus protection area from April 1 – August 15. This would allow vessels with FFPs tendering for the Togiak area herring and salmon fisheries, and Amendment 80 vessels delivering yellowfin sole to processors in Togiak Bay to transit through the Walrus protection area. Transiting through the Walrus protection area would save

approximately 6-8 hours per trip compared to transiting south of Round Island and through Hagemeister Strait (J. Gauvin, AKSC, Pers. Comm.). Amendment 80 vessels typically burn 105 – 145 gallons per hour (J. Anderson, AKSC, Pers. Comm.), and the cost of fuel in Dutch Harbor for the summer of 2013 was approximately $4.00/gallon (Aleutian Fuel Services, Dutch Harbor, North Pacific Fuel 7/26/2013). Transiting the Walrus protection area would result in fuel savings of $2,520 to $4,640 per trip compared to transiting south of Round Island and through Hagemeister Strait. Shortening the trip to processors would reduce the delivery time for those fish, and may reduce the likelihood of bruising, which reduces product quality (J. Anderson, AKSC, Pers. Comm.).

Options under Alternative 2 would establish a southern boundary of the transit area, at increasing distances from Round Island: 3 nm, 4.5 nm, and 6 nm. The boundaries farther from Round Island may incrementally reduce the potential for disturbance to walrus on Round Island (see section 3.2.7), but are not likely to significantly affect the distances traveled as vessels with FFPs transit the protected area. The differences in transit time or fuel costs are not likely to be significantly different between the options.

4.9 Analysis of Impacts: Alternative 3

Under Alternative 3, a transit area would be established in the eastern portion of the Cape Peirce Walrus protection area from April 1 – August 15. This would allow vessels with FFPs to access the Cape Peirce, Cape Newenham, and Security Cove herring fisheries through federal waters. Currently vessels tendering those fisheries access the grounds through State waters, 0-3 nm from shore. Allowing vessels to access federal waters would move vessels farther from walrus haulouts at Cape Peirce, potentially reducing disturbance to those walrus. Distances traveled and transit times are not likely to be significantly different when traveling through federal vs. State waters.

None of the proposed alternatives would directly impact the distribution of effort, the timing, or duration of the herring, salmon, or yellowfin sole fisheries.

4.10 Management and Enforcement Considerations

Implementation of the any alternative would require NMFS to monitor the activities of federally-permitted vessels to ensure that vessels comply with existing regulations. Existing Vessel Monitoring Systems (VMS) are likely sufficient to monitor the groundfish fisheries. The VMS in Alaska is a relatively simple system that transmits a vessel's identification and location to the NMFS Office of Law Enforcement (OLE) at fixed 30-minute intervals. These data are analyzed daily, to identify anomalies such as vessels failing to send VMS signals, or vessels entering closed waters. Automated data checks identify instances of possible non-compliance and highlight them for manual analysis.

Since 2000, the Secretary of Commerce has introduced VMS requirement or options in connection with several management actions in the BSAI and GOA (Table 4-5). Together, these regulations have created VMS requirements for the BSAI groundfish and crab fleets. Of the 43 vessels identified as tenders for the Togiak herring fleet in 2012, 18 had VMS equipment onboard. Of the 64 vessels identified as tenders for the Togiak herring fleet in 2013 (see § 1.3.2.1), 30 had FFPs. Of those with FFPs, 18 also had FFPs and 12 did not. It is not clear whether any vessels without FFPs had VMS equipment onboard.

Table 4-5 Source of VMS requirements for vessels in BSAI and GOA groundfish and crab fisheries.

Source of VMS requirement	Description of VMS requirement	Regulations
Steller Sea Lion Measures	Vessels in any Federal reporting area that participate in the Atka mackerel, Pacific cod, or pollock directed fisheries.	679.7(a)(18)
EFH/HAPC	All vessels named on an FFP or FCVP when operating in the Aleutian Islands subarea or in adjacent State waters	679.28(f)(6)(ii), 679.7(a)(21)
EFH/HAPC	All vessels named on an FFP or FCVP when operating in the GOA or adjacent State waters with nonpelagic trawl or dredge gear	679.28(f)(6)(iii), 679.7(a)(22)
Rockfish Program	Vessels that are assigned to a rockfish cooperative when operating in a reporting area off Alaska from May 1 until November 15, or until the cooperative has submitted a termination of fishing declaration.	679.28(f)(6)(iv), 679.7(n)(3)(i)
Rockfish Program	Vessels that are subject to a sideboard limit when operating in a reporting area off Alaska from July 1 until July 31.	679.7(n)(3)(ii)
GOA Pacific cod sector splits	A vessel in Federal reporting areas 610, 620, or 630 that receives and processes groundfish from other vessels	679.28(f)(6)(v)
Sablefish vessel clearance requirement	Any vessel who fishes for sablefish in the BSAI	679.42(l)(1)
Crab Rationalization Program	Any vessel harvesting Crab Rationalized crab	680.7(c)(2), 680.23(a)(1), 680.23(b)(1)

Enforcing the no-transit portions of the Round Island and Cape Peirce Walrus protection areas under any alternative would likely require vessels with FFPs to have VMS units installed on their vessels, and require OLE to monitor data received from those units. In October 2012, the Council's Enforcement Committee noted that having VMS data substantially improves efficiency in investigating and litigating enforcement violation cases over traditional enforcement measures such as aerial surveillance. Vessels with FFPs, but without VMS systems on board would likely be required to purchase and install a VMS unit. It is difficult to estimate the average costs of installing and operating VMS because of the diversity of VMS units and packages currently available (NPFMC 2012). There is currently no quantitative information about whether vessel owners are paying list price or a negotiated sales price, costs for installation, which transmission packages are purchased, and the average number of days or months they are transmitting. However, the averages costs were estimated in NPFMC (2012), and are shown in

Table 4-6.

Table 4-6 Estimated average costs of VMS acquisition, installation, and operation

Unit	Estimated Cost ($)
Acquisition and installation	
Base unit with data terminal	2,971
Installation	239
Brackets	60
Initiation fee (with satellite service provider)	150
Notify NOAA OLE	11
Sales taxes	108
Total acquisition and installation	*3,593*
Operation	
Transmission costs two polls per hour (per year)	815
Maintenance and repairs (per year)	77
Total Operation	*892*
Total acquisition, installation, and operation	*4,485*

Increasing the VMS polling rate from twice-per-hour may be required to ensure compliance with transit provisions, depending on the size of the transit area through the walrus protection areas. Small areas and curved borders require greater resolution in tracking than is currently provided with the twice-per-hour polling for VMS in the Bering Sea. Increasing the polling rate allows for more accurate vessel tracks, but increases the cost to the VMS participant. Those costs are estimated to be approximately $25.88 per month for each additional poll (NPFMC 2012). Increasing to three polls per hour for the five month herring tendering season would add $129.40 to the annual transmission costs (

Table 4-6) resulting in an estimated total cost of $944.40. Increasing to four polls per hour for the same period would add $258.80, resulting in an estimated total cost of $1,073.80.

Vessels without a FFP would not be constrained by the Walrus protection areas around Round Island and Cape Peirce. The lack of VMS on these vessels would, therefore, not have any impact on the enforcement of this action. The NOAA OLE has noted that there is an innate disparity between vessels with a FFP that are prohibited from transiting the walrus protection area, and those without a FFP that are allowed free access through the walrus protection area (B. Pristas, NMFS OLE, Pers. Comm.). Although a vessel with a FFP and one without a FFP may be doing the same job, additional regulations are placed on the vessel with the FFP, and additional OLE costs are associated with those regulations.

5 Initial Regulatory Flexibility Analysis

NOTE: The following text is boilerplate that omits details that will only be available when the preferred alternative is selected.The IRFA will be completed for final action.

5.1 Introduction

This Initial Regulatory Flexibility Analysis (IRFA) addresses the statutory requirements of the Regulatory Flexibility Act (RFA) of 1980, as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (5 U.S.C. 601-612). This IRFA evaluates the potential adverse economic impacts on small entities directly regulated by the proposed action.

The RFA, first enacted in 1980, was designed to place the burden on the government to review all regulations to ensure that, while accomplishing their intended purposes, they do not unduly inhibit the ability of small entities to compete. The RFA recognizes that the size of a business, unit of government, or nonprofit organization frequently has a bearing on its ability to comply with a federal regulation. Major goals of the RFA are: (1) to increase agency awareness and understanding of the impact of their regulations on small business, (2) to require that agencies communicate and explain their findings to the public, and (3) to encourage agencies to use flexibility and to provide regulatory relief to small entities.

The RFA emphasizes predicting significant adverse economic impacts on small entities as a group distinct from other entities, and on the consideration of alternatives that may minimize adverse economic impacts, while still achieving the stated objective of the action. When an agency publishes a proposed rule, it must either 'certify' that the action will not have a significant adverse economic impact on a substantial number of small entities, and support that certification with the 'factual basis' upon which the decision is based; or it must prepare and make available for public review an IRFA. When an agency publishes a final rule, it must prepare a Final Regulatory Flexibility Analysis.

In determining the scope, or 'universe', of the entities to be considered in an IRFA, NMFS generally includes only those entities that are directly regulated by the proposed action. If the effects of the rule fall primarily on a distinct segment, or portion thereof, of the industry (e.g., user group, gear type, geographic area), that segment would be considered the universe for the purpose of this analysis.

5.2 IRFA Requirements

Until the North Pacific Fishery Management Council (Council) makes a final decision on a preferred alternative, a definitive assessment of the proposed management alternatives cannot be conducted. In order to allow the agency to make a certification decision, or to satisfy the requirements of an IRFA of the preferred alternative, this section addresses the requirements for an IRFA. Under 5 U.S.C., section 603(b) of the RFA, each IRFA is required to contain:

- A description of the reasons why action by the agency is being considered;
- A succinct statement of the objectives of, and the legal basis for, the proposed rule;
- A description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply (including a profile of the industry divided into industry segments, if appropriate);
- A description of the projected reporting, record keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;

- An identification, to the extent practicable, of all relevant federal rules that may duplicate, overlap, or conflict with the proposed rule;
- A description of any significant alternatives to the proposed rule that accomplish the stated objectives of the proposed action, consistent with applicable statutes, and that would minimize any significant economic impact of the proposed rule on small entities. Consistent with the stated objectives of applicable statutes, the analysis shall discuss significant alternatives, such as:

    1. The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities;
    2. The clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities;
    3. The use of performance rather than design standards;
    4. An exemption from coverage of the rule, or any part thereof, for such small entities.

In preparing an IRFA, an agency may provide either a quantifiable or numerical description of the effects of a proposed action (and alternatives to the proposed action), or more general descriptive statements, if quantification is not practicable or reliable.

5.3 Definition of a Small Entity

The RFA recognizes and defines three kinds of small entities: (1) small businesses, (2) small non-profit organizations, and (3) small government jurisdictions.

Small businesses. Section 601(3) of the RFA defines a 'small business' as having the same meaning as 'small business concern', which is defined under Section 3 of the Small Business Act (SBA). 'Small business' or 'small business concern' includes any firm that is independently owned and operated and not dominant in its field of operation. The SBA has further defined a "small business concern" as one "organized for profit, with a place of business located in the United States, and which operates primarily within the United States or which makes a significant contribution to the U.S. economy through payment of taxes or use of American products, materials or labor…A small business concern may be in the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust or cooperative, except that where the firm is a joint venture there can be no more than 49 percent participation by foreign business entities in the joint venture."

The SBA has established size criteria for all major industry sectors in the United States, including fish harvesting and fish processing businesses. Effective January 5, 2006, a business involved in fish harvesting is a small business if it is independently owned and operated, not dominant in its field of operation (including its affiliates), and if it has combined annual gross receipts not in excess of $4.0 million for all its affiliated operations worldwide. A seafood processor is a small business if it is independently owned and operated, not dominant in its field of operation, and employs 500 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide. A business involved in both the harvesting and processing of seafood products is a small business if it meets the $4.0 million criterion for fish harvesting operations. Finally, a wholesale business servicing the fishing industry is a small business if it employs 100 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide.

The SBA has established "principles of affiliation" to determine whether a business concern is "independently owned and operated." In general, business concerns are affiliates of each other when one concern controls or has the power to control the other, or a third party controls or has the power to control

both. The SBA considers factors such as ownership, management, previous relationships with or ties to another concern, and contractual relationships, in determining whether affiliation exists. Individuals or firms that have identical or substantially identical business or economic interests, such as family members, persons with common investments, or firms that are economically dependent through contractual or other relationships, are treated as one party with such interests aggregated when measuring the size of the concern in question. The SBA counts the receipts or employees of the concern whose size is at issue and those of all its domestic and foreign affiliates, regardless of whether the affiliates are organized for profit, in determining the concern's size. However, business concerns owned and controlled by Indian Tribes, Alaska Regional or Village Corporations organized pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1601), Native Hawaiian Organizations, or Community Development Corporations authorized by 42 U.S.C. 9805 are not considered affiliates of such entities, or with other concerns owned by these entities solely because of their common ownership.

Affiliation may be based on stock ownership when (1) a person is an affiliate of a concern if the person owns or controls, or has the power to control 50 percent or more of its voting stock, or a block of stock which affords control because it is large compared to other outstanding blocks of stock, or (2) if two or more persons each owns, controls or has the power to control less than 50 percent of the voting stock of a concern, with minority holdings that are equal or approximately equal in size, but the aggregate of these minority holdings is large as compared with any other stock holding, each such person is presumed to be an affiliate of the concern.

Affiliation may be based on common management or joint venture arrangements. Affiliation arises where one or more officers, directors, or general partners, controls the board of directors and/or the management of another concern. Parties to a joint venture also may be affiliates. A contractor and subcontractor are treated as joint venturers if the ostensible subcontractor will perform primary and vital requirements of a contract or if the prime contractor is unusually reliant upon the ostensible subcontractor. All requirements of the contract are considered in reviewing such relationship, including contract management, technical responsibilities, and the percentage of subcontracted work.

Small organizations. The RFA defines "small organizations" as any not-for-profit enterprise that is independently owned and operated, and is not dominant in its field.

Small governmental jurisdictions. The RFA defines "small governmental jurisdictions" as governments of cities, counties, towns, townships, villages, school districts, or special districts with populations of fewer than 50,000.

5.4 Reason for Considering the Proposed Action

Until implementation of GOA FMP Amendment 83, vessels with FFPs tendering herring or salmon in the Togiak Bay fishery were able to surrender their FFP during the tendering season and transit the walrus protection area around Round Island. Tendering vessels transited north of Round Island as they tendered product from fishing vessels in Togiak Bay, Kulukak Bay, and other bays in northern Bristol Bay to processing plants in Dillingham and other communities. Passage through federal waters north of Round Island is necessary because of shallow waters along the mainland that make it dangerous for vessels to pass through State waters north of the walrus protection area. Amendment 83 to the GOA FMP prevents vessels from surrendering their FFP and reactivating it within a three year period. As a result, vessels with FFPs face risk of fine for being out of compliance with existing regulations if they pass through the walrus protection area, or must surrender their FFP in order to tender herring or salmon for the northern Bristol Bay fisheries.

Avoiding the walrus protection area by passing to the south of the Round Island requires vessels to transit through Hagemeister Strait, and around Round Island, adding considerable distance and time to each transit, and potentially exposing vessels to adverse weather conditions. The same is true for vessels wishing to deliver groundfish from the Northern Bristol Bay Trawl Area to floating processors in the Togiak Bay area. Passage through Hagemeister Strait also puts these vessels in close proximity to an emerging walrus haulout on the southern tip of Hagemeister Island where they may have increased likelihood of disturbing those walrus.

The purpose of this action is to maintain suitable protection for walruses on Round Island, to restore access to vessels with FFPs serving as tenders for the northern Bristol Bay herring and salmon fisheries to the routes used by tenders before implementation of GOA FMP Amendment 83, and to allow vessels delivering yellowfin sole access to the route north of Round Island to reduce the likelihood of disturbance to walrus on Hagemeister Island.

The Council adopted the following problem statement to originate this action in April 2013.

> *The purpose of this action is to establish opportunities for federally-permitted vessels to transit the walrus protection area closures at Round Island and Cape Pierce. Currently, federally-permitted vessels that operate as tenders during the Togiak herring and salmon fisheries cannot transit through the Round Island Walrus protection area. This effectively precludes vessels with FFPs tendering the Togiak herring and salmon fisheries. Federally-permitted vessels that tender for the herring fishery at Cape Peirce and Security Cove travel through State waters to avoid the Exclusive Economic Zone (EEZ) closures, moving vessels closer to walrus haulouts in these areas. Salmon tender vessels may be similarly affected. Additionally, vessels fishing yellowfin sole in the Northern Bristol Bay Trawl Area, that deliver to processors or trampers in the roadsteads located in Hagemeister Strait or Togiak Bay, must travel south of the Round Island Walrus protection area, which may increase interactions with walrus at Hagemeister Island haulout and walrus moving from Round Island to their feeding grounds in Bristol Bay. Opportunities to transit these areas are necessary to alleviate the unintended consequences of an unrelated Council action and to maintain appropriate protection for walruses.*

5.5 Objectives of Proposed Action and its Legal Basis

Under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), the Secretary of Commerce (NMFS Alaska Regional Office) and the North Pacific Fishery Management Council have the responsibility to prepare fishery management plans and associated regulations for the marine resources found to require conservation and management. NMFS is charged with carrying out the federal mandates of the Department of Commerce with regard to marine fish, including the publication of federal regulations. The Alaska Regional Office of NMFS, and Alaska Fisheries Science Center, research, draft, and support the management actions recommended by the Council. The Bering Sea and Aleutian Islands (BSAI) groundfish fisheries are managed under the Fishery Management Plan for Groundfish of the BSAI Management Area. The proposed action represents amendments to the fishery management plan, as well as amendments to associated federal regulations.

The principal objectives of the FMP amendment and proposed regulations are to restore access to the safe water through the walrus protection area for vessels tendering herring and salmon in northern Bristol Bay and provide access to the safe waters north of Round Island for vessels delivering groundfish to floating

processors or trampers and maintaining appropriate protections for walrus and other marine mammals in the area consistent with the Marine Mammal Protection Act.

5.6 Number and Description of Directly Regulated Small Entities

5.7 Recordkeeping and Reporting Requirements

5.8 Federal Rules that may Duplicate, Overlap, or Conflict with Proposed Action

5.9 Impacts of the Action on Small Entities

5.10 Description of Significant Alternatives to the Proposed Action that Minimize Economic Impacts on Small Entities

6 Magnuson-Stevens Act and FMP Considerations

6.1 Magnuson-Stevens Act National Standards

Below are the 10 National Standards as contained in the Magnuson-Stevens Fishery and Conservation Act (Magnuson-Stevens Act), and a brief discussion of the consistency of the proposed alternatives with those National Standards, where applicable.

National Standard 1 — Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery

National Standard 2 — Conservation and management measures shall be based upon the best scientific information available.

National Standard 3 — To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.

National Standard 4 — Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various U.S. fishermen, such allocation shall be (A) fair and equitable to all such fishermen, (B) reasonably calculated to promote conservation, and (C) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

National Standard 5 — Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources, except that no such measure shall have economic allocation as its sole purpose.

National Standard 6 — Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.

National Standard 7 — Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

National Standard 8 — Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.

National Standard 9 — Conservation and management measures shall, to the extent practicable, (A) minimize bycatch, and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

National Standard 10 — Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

6.2 Section 303(a)(9) Fisheries Impact Statement

Section 303(a)(9) of the Magnuson-Stevens Act requires that a fishery impact statement be prepared for each FMP amendment. A fishery impact statement is required to assess, specify, and analyze the likely effects, if any, including the cumulative conservation, economic, and social impacts, of the conservation and management measures on, and possible mitigation measures for (a) participants in the fisheries and fishing communities affected by the plan amendment; (b) participants in the fisheries conducted in adjacent areas under the authority of another Council; and (c) the safety of human life at sea, including whether and to what extent such measures may affect the safety of participants in the fishery.

The EA/RIR/IRFA prepared for this plan amendment constitutes the fishery impact statement. The likely effects of the proposed action are analyzed and described throughout the EA/RIR/IRFA. The effects on participants in the fisheries and fishing communities are analyzed in the RIR/IRFA sections of the analysis (Sections 0 and 4.10). The effects of the proposed action on safety of human life at sea are evaluated above under National Standard 10, in Section 6.1. Based on the information reported in this section, there is no need to update the Fishery Impact Statement included in the FMP.

The proposed action does not affect the groundfish or halibut fisheries in the EEZ off Alaska, that are under the jurisdiction of the North Pacific Fishery Management Council. Impacts on participants in fisheries conducted in adjacent areas under the jurisdiction of other Councils are not anticipated as a result of this action.

7 Preparers and Persons Consulted

Preparers

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Information included in earlier discussion papers and EA/RIR/IRFA prepared by Jeannie Heltzel, Jonathan Snyder (FWS), and Steve Lewis (NMFS), and by Bill Wilson and Diana Evans (NPFMC) was incorporated into this document.

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