

Final Marine Mammal Protection Act
Section 101(a)(5)(E) – Negligible Impact Determination

Humpback Whale, Western North Pacific stock

Humpback Whale, Central North Pacific stock

Steller Sea Lion, Western U.S. stock

Bearded Seal, Alaska stock

Ringed Seal, Alaska stock

National Marine Fisheries Service
Protected Resources Division
Alaska Regional Office
June 9, 2016

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List of Abbreviations

AI	Aleutian Islands
AK	Alaska
AMMOP	Alaska Marine Mammal Observer Program
BOEM	Bureau of Ocean Energy Management
BS	Bering Sea
BSAI	Bering Sea and Aleutian Islands
CFR	Code of Federal Regulations
CNP	Central North Pacific
DPS	Distinct Population Segment
EFP	Exempted Fishing Permit
ESA	Endangered Species Act
EEZ	Exclusive Economic Zone
Fm	Fathom
FMP	Fishery Management Plan
F_r	Recovery Factor
FR	<i>Federal Register</i>
GAMMS	Guidelines for Assessing Marine Mammal Stocks
GOA	Gulf of Alaska
ITS	Incidental Take Statement
LOF	List of Fisheries
MMPA	Marine Mammal Protection Act
MNPL	Maximum Net Productivity Level
M/SI	Mortality and serious injury
NID	Negligible Impact Determination
N_{MIN}	Minimum population estimate
NMFS	National Marine Fisheries Service
Nm	Nautical mile
PBR	Potential Biological Removal
PWS	Prince William Sound
R_{MAX}	Maximum theoretical net productivity rate
SAR	Stock Assessment Report
U.S.C.	United States Code
WNP	Western North Pacific
wDPS	Western distinct population segment

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Executive Summary

Section 101(a)(5)(E) of the Marine Mammal Protection Act (MMPA) (16 U.S.C. 1371(a)(5)(E)) requires the National Marine Fisheries Service (NMFS) to authorize the incidental taking of individuals from marine mammal species or stocks listed as threatened or endangered under the Endangered Species Act (ESA), as amended (16 U.S.C. 1531 *et seq.*) in the course of commercial fishing operations only after NMFS determines, among other things, that mortality and serious injury (M/SI) incidental to commercial fishing will have a negligible impact on the affected species or stock.

The purpose of this document is to conduct the analysis necessary to determine whether the M/SI incidental to U.S. commercial fisheries will have a negligible impact on ESA-listed marine mammals taken in commercial fisheries in the U.S. Exclusive Economic Zone (EEZ) offshore of Alaska. The determination follows a process previously described and implemented by NMFS when issuing incidental take permits under MMPA section 101(a)(5)(E) (e.g., 75 FR 29984, May 28, 2010).

The time frame for the data used in this analysis includes the 5-year period (2008-2012) for which data are available and have been analyzed in the Alaska marine mammal stock assessment reports (SAR) (Allen and Angliss 2015). The NMFS Guidelines for Assessing Marine Mammal Stocks (GAMMS) and the subsequent GAMMS II provide guidance that, when available, the most recent five-year time frame of commercial fishery incidental M/SI data is an appropriate measure of effects of fishing operations on marine mammals (Wade and Angliss 1997). A five-year time frame provides enough data to adequately capture year-to-year variations in take levels, while reflecting current environmental and fishing conditions as they may change over time. In cases where available observer data are only available outside that time frame, as in the case for state-managed fisheries, the most recent observer data is used. Where entanglement data from the NMFS Marine Mammal Health and Stranding Network are considered, the five-year time frame from 2008-2012 is used.

Marine Mammals Included in this Analysis

The ESA-listed marine mammals determined to interact with commercial fisheries in Alaska include: the Central and Western North Pacific stocks of humpback whales (*Megaptera novaeangliae*), North Pacific stock of sperm whale (*Physeter macrocephalus*), western U.S. stock of Steller sea lions (*Eumetopias jubatas*), Alaska stock of bearded seals (*Erignathus barbatus nauticus*), and Alaska stock of ringed seals (*Phoca hispida hispida*). The western distinct population segment (DPS) of Steller sea lions is listed as endangered under the ESA. In this analysis, similar to the SAR (Allen and Angliss 2015), this stock will be referred to as the Western U.S. stock of Steller sea lions. For the purposes of this negligible impact determination (NID), similar to the SAR (Allen and Angliss 2015), the Alaska stock of bearded seals is the Beringia DPS and the Alaska stock of ringed seals is the portion of *Phoca hispida hispida* that occurs within the U.S. EEZ of the Beaufort, Chukchi, and Bering Seas (referred to as the Arctic

subspecies); the Arctic subspecies is listed as threatened under the ESA. This analysis will refer to the “Alaska stock” of both of these species.

On July 25, 2014, the U.S. District Court for the District of Alaska issued a memorandum decision vacating the listing of bearded seals under the ESA (Alaska Oil and Gas Association v. Pritzker, Case No.4:13-cv-00018-RPB). Similarly, on March 11, 2016, the U.S. District Court for the District of Alaska issued a memorandum decision vacating the ESA listing of Arctic subspecies of ringed seals (Alaska Oil and Gas Association v. NMFS, Case No. 4:14-cv-00029-RRB). NMFS is currently appealing both decisions. In the interim, NMFS will continue to consider the effects of fisheries on bearded and ringed seals under MMPA section 101(a)(5)(E), even though the listing of the species is not in effect.

NMFS recently conducted a global status review of humpback whales and proposed changes to the humpback whale ESA listing (80 FR 22304; April 21, 2015). These proposed changes could affect the ESA listing status of humpback whales that are currently identified under the MMPA as the CNP stock. Final action on the proposed rule is not expected until after this analysis is finalized, therefore we are conducting the analysis of the listing as endangered.

A NID was prepared for the humpback whale, Central North Pacific stock in Hawaiian and Alaskan waters (79 FR 62105, October 16, 2014) with regard to fisheries in Hawaii; this analysis will consider effects to this stock from fisheries in Alaska, specifically the Bering Sea and Aleutian Islands (BSAI) flatfish trawl and BSAI pollock trawl fisheries.

Effects of groundfish fisheries in Alaska on the North Pacific stock of sperm whales were analyzed in NMFS 2010a. The only fishery with documented M/SI to this stock in Alaska is the AK Gulf of Alaska sablefish longline fishery, a Category III fishery, which is not subject to permitting requirements under MMPA Section 101(a)(5)(E) and is not considered further in this analysis. Effects to the Northeast Pacific stock of fin whales (*Balaenoptera physalus*) were also analyzed in NMFS 2010a. The only fishery with documented M/SI to this stock in Alaska is the AK miscellaneous finfish handline/hand troll and mechanical jig fishery, a Category III fishery, which is not subject to permitting requirements under MMPA Section 101(a)(5)(E) and is not considered further in this analysis (Allen and Angliss 2015).

Fisheries Considered for Authorization

The MMPA mandates that each commercial fishery be classified by the level of M/SI of marine mammals that occurs incidental to each fishery. The MMPA List of Fisheries (LOF) (79 FR 77919, December 29, 2014) classifies U.S. commercial fisheries into one of three categories according to the level of incidental M/SI to marine mammals. This classification is based on the rate, in numbers of animals per year, of incidental M/SI of marine mammals due to commercial fishing operations relative to a stock's Potential Biological Removal (PBR) level. The MMPA and implementing regulations define PBR as the maximum number of animals, not including natural mortality, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (16 U.S.C. 1362(20); 50 CFR 229.2). The

MMPA further defines PBR as the product of the minimum population estimate (N_{MIN}), one-half the maximum theoretical net productivity rate (R_{MAX}), and a recover factor (Fr) (16 U.S.C. 1362(20)(A)-(C)). Thus, $PBR = N_{\text{MIN}} \times 0.5R_{\text{MAX}} \times Fr$.

A fishery may qualify as one category for one marine mammal stock and another for a different marine mammal stock. A fishery is categorized on the LOF at its highest classification (*e.g.*, a fishery qualifying for Category III for one marine mammal stock and for Category II for another marine mammal stock will be listed under Category II). Category I fisheries have frequent incidental M/SI of marine mammals and Category II fisheries have occasional incidental M/SI of marine mammals (16 U.S.C. 1387(c)(1); 50 CFR 229.2). Category III fisheries have a remote likelihood of, or no known incidental mortality and serious injury of marine mammals.

There are no Category I fisheries in the action area. Three Category II fisheries, the BSAI flatfish trawl, the BSAI pollock trawl, and the BSAI Pacific cod longline have documented M/SI of western U.S. Steller sea lions, western and central North Pacific humpbacks, and the Alaska stocks of ringed and bearded seals; therefore only these three fisheries are analyzed in this document. These federally-managed fisheries take place in federal waters (three nautical miles from shore out to 200) as well as inside state waters (from the coastline out to three nautical miles). The federally-managed fisheries inside state waters are often referred to as state “parallel” fisheries and are included in this analysis. All other Category II and III fisheries that interact with the marine mammal stocks observed off the coasts of Alaska are state-managed fisheries (as opposed to state parallel fisheries) and are not considered for authorization under this permit. The total human-caused M/SI calculated to make a NID for this authorization included all human sources, such as state-managed commercial fisheries and ship strikes.

Criteria for Determining Negligible Impact

In 1999 NMFS adopted criteria for making NIDs for MMPA 101(a)(5)(E) permits (64 FR 28800; May 27, 1999). In applying the 1999 criteria to determine whether mortality and serious injury incidental to commercial fisheries will have a negligible impact on a listed marine mammal stock, Criterion 1 (total human-caused serious injury and mortality are less than 10% of PBR) is the starting point for analysis. If this criterion is satisfied (*i.e.*, total human-caused serious injuries and mortality are less than 10% of PBR), the analysis would be concluded as a negligible impact. The remaining criteria describe alternatives under certain conditions, such as fishery mortality below the negligible threshold but other human-caused mortality above the threshold or fishery and other human-caused mortality between the negligible threshold and PBR for a stock that is increasing or stable. If Criterion 1 is not satisfied, NMFS may use one of the other criteria as appropriate.

Criterion 2: If total human-caused serious injuries and mortalities are greater than PBR, and fisheries-related mortality is less than 10% of PBR, individual fisheries may be permitted if management measures are being taken to address non-fisheries-related serious injuries and mortalities. When fisheries-related M/SI is less than 10 percent, the appropriate management action is to address components that account for the major portion of the total.

Criterion 3: If total fisheries-related serious injuries and mortalities are greater than 10% of PBR and less than PBR and the population is stable or increasing, fisheries may be permitted subject to individual review and certainty of data. Although the PBR level has been set up as a conservative standard that will allow recovery of a stock, there are reasons for individually reviewing fisheries if serious injuries and mortalities are above the threshold level. First, increases in permitted serious injuries and mortalities should be carefully considered. Second, as serious injuries and mortalities approach the PBR level, uncertainties in elements such as population size, reproductive rates, and fisheries-related mortalities become more important.

Criterion 4: If the population abundance of a stock is declining, the threshold level of 10% of PBR will continue to be used. If a population is declining despite limitations on human-caused serious injuries and mortalities below the PBR level, a more conservative criterion is warranted.

Criterion 5: If total fisheries-related serious injuries and mortalities are greater than PBR, permits may not be issued.

Negligible Impact Determinations

Humpback Whales, Western North Pacific stock

PBR for the WNP stock of humpback whales is 3.0 (Allen and Angliss 2015). The average annual M/SI calculated for the WNP stock of humpback whales from fishery-related M/SI is 0.9 or 30% of PBR. The average annual M/SI from all human-caused sources is 2.156 animals, which is 71.87% of the PBR. Criterion 1 was not satisfied because the total human-caused M/SI was greater than 10% of PBR. NID Criterion 2 was not satisfied because total human-caused for the WNP stock of humpback whales is 71.87% of PBR and fisheries-related M/SI is not less than 10% of PBR. NID Criterion 3 was satisfied for the WNP stock of humpback whales. The total fishery-related M/SI of 0.9 per year is above 10% of PBR (0.3), and it is below the stock's PBR of 3.0 whales. The 2014 SAR reports a 6.7% annual rate of increase over the 1991-1993 estimate (Calambokidis et al. 2008), but acknowledges that number is biased high to an unknown degree with no confidence limits.

Humpback Whales, Central North Pacific stock

PBR for the CNP stock of humpback whales is 82.8 (Allen and Angliss 2015). The 5 year (2008-2012) average annual M/SI from all human-caused sources is 15.89 or 19.19% of the PBR (82.8). Criterion 1 was not satisfied for this stock because the total human-caused M/SI is not less than 10% of PBR. NID Criterion 2 was partially satisfied because the total fisheries-related mortality is less than 10% of PBR (3.95 animals or 4.7% of PBR), but the human-related serious injury and mortality is not greater than PBR. CNP humpback whales do not precisely fit the criteria as written for Criterion 3, either. Criterion 3 is satisfied if total fishery-related M/SI is greater than 10% PBR and less than PBR and the population is stable or increasing. NID criterion 3 is partially satisfied because fisheries-related M/SI is less than 10% of PBR and therefore less than PBR and the population is increasing. The 2014 SAR reports a range of annual rates of increase from 4.9-10% depending on the study and specific area.

While CNP humpback whales do not precisely meet the Criteria 2 or 3 as written, a NID can still be made for the stock. Individual review of data regarding the stock indicates an increasing population and human-caused M/SI levels below PBR thereby falling between Criteria 2 and 3.

Steller Sea Lions, Western U.S. stock

The overall PBR calculated for the western U.S. stock of Steller sea lions is 292 animals (Allen and Angliss 2015). The annual average M/SI from all human-caused sources is 244.9 animals, which is 83.78% of this stock's PBR. NID Criterion 1 was not satisfied because the total human-caused M/SI are greater than 10% of PBR. NID Criterion 2 was not satisfied because total human-caused M/SI are not greater than PBR (83.78%) and fisheries-related mortality is not less than 10% of PBR (11.13%). NID Criterion 3 was satisfied for Steller sea lions, Western U.S. because the total M/SI from commercial fisheries of 32.7 animals per year is 10.79% of the PBR (above 10% of PBR), and is well below the stock's PBR of 292. Even with the current levels of human-caused M/SI, NMFS estimates the population of Steller sea lion, Western U.S. stock, overall is increasing. However, there are localized declines in the central and western Aleutian Islands and particular attention should be paid to future instances of incidental take of Western U.S. stock of Steller sea lions in those sub-regions to ensure the level of take remains negligible on a local scale. Criterion 3 is satisfied because current levels of M/SI of western U.S. stock Steller sea lions incidental to commercial fishing are estimated to have a negligible impact on the stocks, because population growth is stable or increasing slightly, and because there are only minor fluctuations in expected M/SI due to the analyzed fisheries.

Ringed Seals, Alaska stock

Total human-caused M/SI of ringed seals is estimated as 9,571.32 (Table 7, Allen and Angliss 2015). PBR is not available for bearded or ringed seals, but for purposes of this analysis, the estimated annual average M/SI from commercial fisheries can be used to consider what level of M/SI would meet NID criteria requirements. Starting with Criterion 1, NMFS estimated the number of ringed seals that would be required for 9,571.32 total human-caused M/SI to be 10% of the stock's proxy PBR. N_{MIN} for this population would need to be 3,190,440 ringed seals (given a F_R of 0.5 and a recommended pinniped R_{MAX} of 12%) with a total human-caused M/SI of 9,571.32 as 10% of a proxy PBR. Given a necessary N_{MIN} 3,190,440 is far greater than the estimate of 170,000 ringed seals in the U.S. EEZ of the Bering Sea in late April (Conn et al. 2014), NMFS estimates that the annual average M/SI for the Alaska stock of ringed seals from all human-caused sources of mortality (9,571.32) is greater than 10% of a proxy PBR for this stock. Therefore, NID Criterion 1 was not satisfied because the total human-caused M/SI is greater than 10% of a proxy PBR, and other criteria were examined.

NMFS then examined ringed seals relative to Criterion 2. NMFS first evaluated whether the total human-caused mortality estimate of animals is likely greater than the stock's proxy PBR. Based on a re-arrangement of the PBR equation, if the total human-caused M/SI of 9,571.32 were equal to a proxy PBR, the N_{MIN} for this stock would need to be 319,044. However, the best available population estimate of 170,000 ringed seals is considerably less than 319,044 animals. If N_{MIN} is less than 319,044, solving for a proxy PBR based on the PBR equation would

result in a proxy PBR smaller than 9,571.32 animals. Therefore, NMFS estimates that total human-caused M/SI is greater than PBR.

NMFS then rearranged the PBR equation to examine whether fisheries-related M/SI for this stock is likely equal to 10% of the stock's PBR. If the estimated annual average of M/SI from commercial fisheries of 4.12 were equal to 10% of a proxy PBR, that proxy PBR would be 41.2 and an N_{MIN} that satisfies that proxy PBR would have to be at least 1,173 ringed seals. Preliminary analysis of the U.S. surveys, which included only a small subset of the 2012 data, produced an estimate of about 170,000 ringed seals in the U.S. EEZ of the Bering Sea in late April. The 170,000 estimate from Conn et al. (2013) is several orders of magnitude greater than an N_{MIN} of 1,173 seals needed to support a proxy PBR of 41.2 seals and average annual M/SI level from commercial fisheries of 10% of a proxy PBR (4.12 seals). Because this very low population level is highly unlikely, NMFS determined that fisheries-related M/SI is less than 10% of a proxy PBR.

NID Criterion 2 is satisfied for ringed seals by determining that total human-caused M/SI of the ringed seal, Alaska stock is greater than a proxy PBR, and fisheries-related M/SI is less than 10% of a proxy PBR.

This determination is supported by review of M/SI incidental to U.S. commercial fishing, revealing total commercial fishery M/SI is low with a high percentage of the fishery observed. Also, the non-fishery M/SI due to subsistence hunting is monitored and even though the current subsistence harvest is substantial in some areas, NMFS estimates this level of harvest will not pose a threat to the Alaska stock of ringed seals and appears to be sustainable (Kelly et al. 2010).

Bearded Seals, Alaska stock

Total human-caused M/SI of bearded seals may be estimated as 6,790.22 according to Allen and Angliss (2015). PBR is not available for bearded or ringed seals, but for purposes of this analysis, the estimated annual average M/SI from commercial fisheries can be used to consider what level of M/SI would meet NID criteria requirements. Starting with Criterion 1, NMFS estimated the number of bearded seals that would be required for 6,790.22 seals to be 10% of a proxy for the stock's PBR. N_{MIN} for this population would need to be at least 2,263,333 bearded seals (given a F_R of 0.5 and an R_{MAX} of 12%) with a total human-caused M/SI of 6,790.22 seals as 10% of a proxy PBR. Because an N_{MIN} of 2,263,333 bearded seals is far greater than the crude estimate from regional surveys throughout the seal's Alaska range provided in the 2010 Status Review (Cameron et al. 2010) of 155,000, NMFS estimates that the annual average M/SI of the Alaska stock of bearded seal from all human-caused sources of 6,790.22 animals is greater than 10% of a proxy PBR for this stock. NID Criterion 1 was not satisfied because the total human-caused M/SI is greater than 10% of a proxy PBR, and therefore other criteria were examined.

NMFS then examined bearded seals relative to Criterion 2. NMFS first evaluated whether the total human-caused mortality estimate of animals is likely greater than the stock's proxy PBR. Based on the PBR equation, if the total human-caused M/SI of 6,790.22 were equal to PBR, the N_{MIN} for this stock would need to be 226,340.7. However, core area estimate for the central and

eastern Bering Sea of 61,800 bearded seals and the 2010 Status Review estimate of 155,000 are both considerably less than 226,340.7. If N_{MIN} is less than 226,340.7 animals, solving for the proxy PBR level based on the PBR equation would result in a proxy PBR level smaller than 6,790.22 animals. Therefore, NMFS estimates that total human-caused mortality is greater than a proxy PBR.

NMFS then rearranged the PBR equation to estimate whether fisheries-related M/SI for this stock is likely equal to 10% of the stock's PBR, $N_{MIN} = PBR / (0.5R_{MAX} \times FR)$. For bearded seals, Alaska stock, if the estimated annual average of M/SI from commercial fisheries of 2.22 were equal to 10% of a proxy PBR, that proxy PBR would be 22.2 seals and an N_{MIN} that satisfies that proxy PBR would have to be at least 740 seals. The VerHoef et al. (2013) core area estimate for the central and eastern Bering Sea of approximately 61,800 bearded seals is several orders of magnitude greater than an N_{MIN} of 740 seals needed to support a proxy PBR of 22.2 seals and average annual M/SI level from commercial fisheries of 10% of that proxy PBR (2.22 seals). Because this very low population level is highly unlikely, NMFS determined that fisheries-related M/SI is less than 10% of a proxy PBR.

NID Criterion 2 is satisfied for bearded seals by determining that total human-caused M/SI of the ringed seal, Alaska stock is greater than a proxy PBR, and fisheries-related M/SI is less than 10% of a proxy PBR.

This determination is supported by review of M/SI incidental to U.S. commercial fishing, revealing total commercial fishery M/SI is low with a high percentage of the fishery observed. Also, the non-fishery M/SI due to subsistence hunting is monitored and even though the current subsistence harvest is substantial in some areas, there is little to no evidence that subsistence harvests have or are likely to pose serious risks to the Alaska stock of bearded seals (Kelly et al. 2010 and Cameron et al. 2010).

1.0 Introduction

Section 101(a)(5)(E) of the MMPA provides for NMFS, as delegated by the Secretary of Commerce, to issue permits for a period of up to three years for the taking of marine mammals designated as depleted because of their listing under the ESA by U.S. vessels and those vessels that have valid fishing permits issued by the Secretary in accordance with section 204(b) of the Magnuson-Stevens Fishery Conservation and Management Act. NMFS may issue the authorization to take ESA-listed marine mammals incidental to these commercial fisheries only after the agency has determined, after notice and opportunity for public comment, that:

- (1) the incidental M/SI from commercial fisheries will have a negligible impact on the affected species or stock;
- (2) a recovery plan has been developed or is being developed for such species or stock under the ESA; and
- (3) where required under section 118 of the MMPA, a monitoring program has been established, vessels engaged in such fisheries are registered in accordance with section 118 of the MMPA, and a take reduction plan has been developed or is being developed for such species or stock.

The purpose of this document is to explain the analysis and rationale for determining whether the M/SI incidental to Category I and II U. S. commercial fisheries off Alaska will have a negligible impact (*i.e.*, determination (1), above) on the following stocks listed under the ESA: the Central North Pacific stock of humpback whales, Western North Pacific stock of humpback whales, the Western U.S. stock of Steller sea lions, and the Alaska stock of ringed seals; as well as the Alaska stock of bearded seals. Commercial fisheries in Alaska within the range of these populations have been observed to interact with and, in some cases, cause M/SI to these species. Determinations regarding (2) recovery plans, and (3) the requirements of MMPA section 118, will be made in the *Federal Register* notice to issue the necessary permits under MMPA section 101(a)(5)(E).

1.1 Process and Criteria for Issuing a 101(a)(5)(E) Permit

Among the requirements of MMPA section 101(a)(5)(E) to issue a permit to take ESA-listed marine mammals incidental to commercial fishing, NMFS must determine whether the taking of marine mammals would have a negligible impact on the affected stock or stocks of marine mammals. Such determinations are required only in authorizing the take of small numbers of any stock of marine mammals incidental to activities other than commercial fishing (Sections 101(a)(5)(A) and (D)) or in permitting the take of threatened or endangered marine mammals incidental to commercial fishing operations (Section 101(a)(5)(E)).

NMFS must determine if the taking (by harassment, injury, or mortality – or a combination of these) incidental to specified activities will have a negligible impact on the affected stocks of marine mammals. For permitting the take of threatened or endangered marine mammals incidental to fishing operations, NMFS must determine if M/SI incidental to commercial fisheries will have a negligible impact on the affected species or stock(s) of marine mammals.

NMFS has implemented these programs, including a qualitative definition of negligible impact at 50 CFR 216.103, and has relied upon qualitative and quantitative approaches to determine the levels of taking that would result in a negligible impact to affected stocks of marine mammals. The quantitative approach is easier for M/SI than for non-lethal takes because mortality and serious injury are considered removals from the population and can be evaluated by well-documented models of population dynamics.

NMFS's regulations implementing the MMPA amendments of 1981 included a regulatory definition for "negligible impact":

Negligible impact is an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival. (50 CFR 216.103¹)

This qualitative definition of negligible impact was the standard NMFS used to implement the Small Take Program from its beginning in 1981 through 1994, when additional amendments to the MMPA were enacted and a more quantitative approach was developed for assessing what level of removals from a population stock of marine mammals could be considered a negligible impact. The qualitative definition remains the only regulatory definition of negligible impact for implementing the MMPA.

In 1998, NMFS published a notice (63 FR 71894; December 30, 1998) advising the public that the agency was extending for a 6-month period the 3-year permit issued nationwide to fisheries in 1995 to authorize the taking of threatened or endangered marine mammals. This notice also informed the public that NMFS considered the 6-month extension of the permit as an opportunity to review existing criteria for the issuance of permits and to address issues that have arisen since the permits were first issued. NMFS solicited public comments to develop alternatives to 10% of PBR as a criterion for determining negligible impact; however, none were received.

Having received no comments upon which to develop alternatives for determining negligible impact, NMFS published a notice proposing to issue permits under MMPA section 101(a)(5)(E) in 1999 (64 FR 28800; May 27, 1999). The notice contained a statement that NMFS, through internal deliberation, had adopted the following criteria for making NIDs for such permits:

¹ 50 CFR 216.103 specifically applies to the Small Take Program. However, the definition of "negligible impact" in 50 CFR 229.2, which implements MMPA sections 101(a)(5)(E) and 118, provides, "*Negligible impact* has the same meaning as in §216.103 of this chapter."

1. The threshold for initial determination will remain at 10% of PBR. If total human-caused serious injuries and mortalities are less than 10% of PBR, all fisheries may be permitted.
2. If total human-caused serious injuries and mortalities are greater than PBR, and fisheries-related mortality is less than 10% of PBR, individual fisheries may be permitted if management measures are being taken to address non-fisheries-related serious injuries and mortalities. When fisheries-related M/SI is less than 10 percent of the total, the appropriate management action is to address components that account for the major portion of the total.
3. If total fisheries-related serious injuries and mortalities are greater than 10% of PBR and less than PBR and the population is stable or increasing, fisheries may be permitted subject to individual review and certainty of data. Although the PBR level has been set up as a conservative standard that will allow recovery of a stock, there are reasons for individually reviewing fisheries if serious injuries and mortalities are above the threshold level. First, increases in permitted serious injuries and mortalities should be carefully considered. Second, as serious injuries and mortalities approach the PBR level, uncertainties in elements such as population size, reproductive rates, and fisheries-related mortalities become more important.
4. If the population abundance of a stock is declining, the threshold level of 10% of PBR will continue to be used. If a population is declining despite limitations on human-caused serious injuries and mortalities below the PBR level, a more conservative criterion is warranted.
5. If total fisheries-related serious injuries and mortalities are greater than PBR, permits may not be issued.

This set of criteria maintained 10% of PBR (from 1995) as the starting point in NIDs and explicitly noted ways in which determinations could deviate from the default. Criterion 3 notes that NMFS may give special consideration if the affected stock of marine mammals is stable or increasing and may permit take incidental to fishing even if incidental removals exceed 10% of PBR but are below PBR.

1.2 Previous Negligible Impact Analyses and Permit Issuances

On August 31, 1995, NMFS issued a three-year permit for BSAI flatfish trawl, BSAI pollock trawl, BSAI Pacific cod longline, and BSAI sablefish pot Category II fisheries, which were determined to have negligible impacts on ESA-listed marine mammal stocks, including humpback whale (central North Pacific stock) and Steller sea lion (western and eastern U.S. stocks) (60 FR 45399); Western North Pacific humpback whales were excluded on the basis of no reported or observed fisheries related mortalities. This permit was extended through June 30,

1999 (63 FR 71894, Dec. 30, 1998). On May 27, 1999, NMFS proposed issuing additional three-year permits for the incidental takes of the same three stocks in BSAI flatfish trawl, BSAI pollock trawl, BSAI Pacific cod longline, and BSAI sablefish pot Category II fisheries (64 FR 28800).

On December 13, 2010, NMFS issued a new three-year permit for BSAI flatfish trawl, BSAI pollock trawl, BSAI Pacific cod longline, and BSAI sablefish pot Category II fisheries that were determined to have negligible impacts on ESA-listed marine mammal stocks, including: humpback whale (central North Pacific and western North Pacific stocks), Steller sea lion (western and eastern U.S. stocks), fin whale (northeastern Pacific stock), and sperm whale (North Pacific stock) (75 FR 32689, Dec 29, 2010).

In 2014, NMFS completed a negligible impact analysis for the humpback whale (Central North Pacific stock) considering human-caused mortality by Hawaiian fisheries; both Alaskan and Hawaiian waters were included in the analysis because that stock is found in both areas at different times of year (NOAA 2014a).

2.0 Action Area - Alaska

The action area includes the Alaska EEZ and state waters (Figure 1). An interactive map representing the general distribution of marine mammals under NMFS jurisdiction in Alaska, including ESA-listed species can be found at: <http://mapping.alaskafisheries.noaa.gov/esa/>.

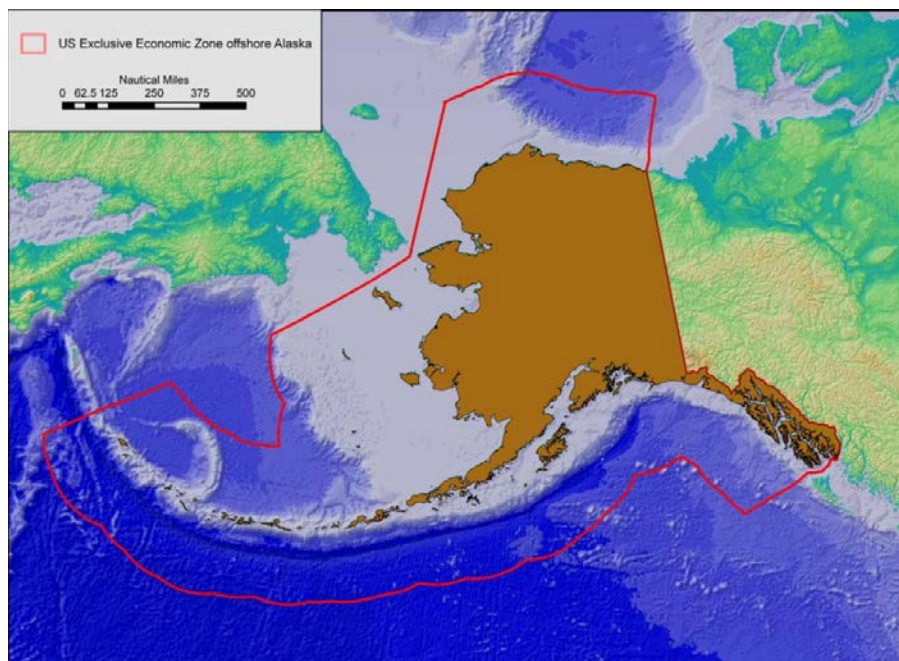


Figure 1. The action area addressed by this NID analysis includes all State of Alaska and Federally-managed fisheries operating within the Alaskan Exclusive Economic Zone and waters of the State of Alaska.

3.0 Category I, II, and III Fisheries in the Action Area

3.1 Fishery Categorization

Under the MMPA, fisheries are classified according to their incidental M/SI of marine mammals. Each fishery is evaluated on a per-stock basis, thus a fishery may qualify as one category for one marine mammal stock and another for a different marine mammal stock. A fishery is categorized on the MMPA LOF at its highest classification (*e.g.*, a fishery qualifying for Category III for one marine mammal stock and for Category II for another marine mammal stock will be listed under Category II). Category I fisheries have frequent incidental mortality and serious injury of marine mammals and Category II fisheries have occasional incidental mortality and serious injury of marine mammals. Category III fisheries have a remote likelihood of, or no known incidental mortality and serious injury, of marine mammals. Additional details are provided in the preamble to the proposed rule implementing section 118 of the MMPA (60 FR 45086; August 30, 1995).

Based on the 2016 List of Fisheries (80 FR 20550, April 8, 2016), there are no Category I fisheries in the action area. The fisheries included in Table 1 have been classified as either a Category II or III fishery in the MMPA List of Fisheries, based on the level of mortality and/or serious injury of marine mammals that occurs incidental to each fishery. However, only the Alaska BSAI flatfish trawl, pollock trawl, and Pacific cod longline fisheries are considered in this NID analysis because they are the only three federally-managed Category II fisheries that have been documented in the 2016 List of Fisheries as incidentally killing or seriously injuring ESA-listed marine mammal stocks in the action area.

These federally-managed fisheries occur inside state waters (from the coastline out to three nautical miles) as well as in federal waters (three nautical miles from shore out to two hundred nautical miles). The federally-managed fisheries inside state waters are often referred to as state “parallel” fisheries and are included in this authorization. All other Category II fisheries that interact with the marine mammal stocks observed off the coasts of Alaska are state-managed fisheries (as opposed to state parallel fisheries). Category III fisheries do not require MMPA 101(a)(5)(E) permits; however, M/SI incidental to all fisheries, regardless of category, are included in the total human-caused M/SI analysis, so those fisheries are listed for reference in Table 1.

Table 1. Category II and III Fisheries off Alaska with M/SI to ESA-listed marine mammals that occur in the action area based on the 2016 List of Fisheries.

<u>Fishery</u>	<u>M/SI of ESA-Listed Marine Mammal Stocks</u>
Category II	
AK Bristol Bay salmon drift gillnet	Steller sea lion, Western U.S.
AK BSAI flatfish trawl	Humpback whale, CNP ¹ Humpback whale, WNP ¹ Bearded Seal, Alaska ² Ringed Seal, Alaska ³ Steller sea lion, Western U.S.
AK BSAI Pollock trawl	Humpback whale, CNP ¹ Humpback whale, WNP ¹ Bearded Seal, Alaska ² Ringed Seal, Alaska ³ Steller sea lion, Western U.S.
AK Cook Inlet salmon set gillnet	Beluga whale, Cook Inlet Humpback whale, CNP ¹ Steller sea lion, Western U.S.
AK Cook Inlet salmon drift gillnet	Beluga whale, Cook Inlet Steller sea lion, Western U.S.
AK Kodiak salmon set gillnet	Steller sea lion, Western U.S.
AK Peninsula/AI salmon set gillnet	Steller sea lion, Western U.S.
AK Prince William Sound salmon drift gillnet	Steller sea lion, Western U.S.
AK southeast salmon drift gillnet	Humpback whale, CNP ¹
AK Yakutat salmon set gillnet	Humpback whale, CNP ¹
AK BSAI Pacific cod longline	Ringed Seal, Alaska ³
Hawaii shallow-set (swordfish target) longline/set line ⁴	Humpback whale, CNP ¹
Category III	
AK BSAI Atka mackerel trawl	Steller sea lion, Western U.S.
AK BSAI Pacific cod trawl	Ringed Seal, Alaska Steller sea lion, Western U.S.
AK GOA Pacific cod longline	Steller sea lion, Western U.S.
AK GOA Pacific cod trawl	Steller sea lion, Western U.S.
AK GOA Pollock trawl	Fin whale, Northeast Pacific Steller sea lion, Western U.S.
AK GOA Sablefish longline	Sperm whale, North Pacific
AK Miscellaneous Finfish set gillnet	Steller sea lion, Western U.S.
AK PWS salmon set gillnet	Steller sea lion, Western U.S.
AK Cook Inlet salmon purse seine ⁴	Humpback whale, CNP ¹
AK Kodiak salmon purse seine	Humpback whale, CNP ¹
AK Salmon troll	Steller sea lion, Western U.S.
AK Southeast Alaska crab pot	Humpback whale, CNP ¹
AK Southeast Alaska shrimp pot	Humpback whale, CNP ¹

¹ NMFS recently conducted a global status review and proposed changes to the ESA listing of humpback whales (80 FR 22304; April 21, 2015). Final action on that proposed rule is not expected until after this analysis is finalized; therefore, we are conducting the analysis of the listing as endangered.

² On July 25, 2014, the US District Court for the District of Alaska issued a memorandum decision in a lawsuit challenging the listing of bearded seals under the ESA (*Alaska Oil and Gas Association v. Pritzker*, Case No. 4:13-cv-00018-RPB). The decision vacated NMFS's listing of the Beringia DPS of bearded seals as a threatened species. NMFS is appealing that decision. In the interim, NMFS will continue to consider the effects of fisheries on bearded seals under MMPA section 101(a)(5)(E), even though the listing of the species is not in effect.

³ On March 11, 2016, the U.S. District Court for the District of Alaska issued a memorandum decision vacating the ESA listing of Arctic subspecies of ringed seals (*Alaska Oil and Gas Association v. NMFS*, Case No. 4:14-cv-00029-RRB). NMFS is appealing this decision. In the interim, NMFS will continue to consider the effects of fisheries on ringed seals under MMPA section 101(a)(5)(E), even though the listing of the species is not in effect.

⁴ M/SI from this fishery were addressed in NMFS' Pacific Islands Region NID analysis (NMFS 2014c).

3.2 Federally-Managed Groundfish Fisheries and State of Alaska-managed Fisheries

A full description of these and all the Category II fisheries listed in the LOF may be found online at <http://www.nmfs.noaa.gov/pr/interactions/lof/>.

3.2.1 Category II fisheries

Detailed fishery descriptions for all federally-managed fisheries classified as Category II in the 2016 List of Fisheries in the action areas can be found in the June 2004 Alaska Groundfish Fisheries Final Supplemental Programmatic Environmental Impact Statement (<http://alaskafisheries.noaa.gov/sustainablefisheries/seis/>) and in the November 2010 Biological Opinion for *Authorization of Groundfish Fisheries under the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Island Management Area, Authorization of Groundfish Fisheries under the Fishery Management Plan for Groundfish of the Gulf of Alaska, and the State of Alaska Parallel Groundfish Fisheries* (NMFS 2010a) available at: <http://www.alaskafisheries.noaa.gov/protectedresources/stellers/esa/biop/final/1210.htm>).

A brief description follows of Category II federally-managed fisheries in the 2016 List of Fisheries (80 FR 20550, April 8, 2016) with documented M/SI of ESA-listed species during the time frame considered for this NID analysis.

BSAI Flatfish Trawl Fishery

In 2008, Amendment 80 to the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands allocated most of the BSAI flathead sole, rock sole, and yellowfin sole to the trawl catcher processor sectors using bottom trawl gear. American Fisheries Act catcher processors and trawl catcher vessels target yellowfin sole allocated to the BSAI trawl limited access sector. Other vessel categories and gear types catch some flatfish incidentally in other

directed fisheries. In 2013, 32 vessels targeted flatfish in the BSAI. Rock sole is generally targeted during the roe season, January to March. After the rock sole fishery, these vessels shift to several different targets; notably Atka mackerel, arrowtooth flounder, flathead sole, yellowfin sole, Pacific cod, and Pacific ocean perch. Vessels also can fish in the Gulf of Alaska for arrowtooth flounder, Pacific cod, flathead sole, rex sole, and rockfish. In the BSAI, most of the flathead sole, rock sole, and yellowfin sole fisheries occur on the continental shelf in the eastern Bering Sea in water shallower than 200 m. Some effort follows the contour of the shelf to the northwest and extends as far north as Zhemchug Canyon. Very few flathead sole, rock sole, and yellowfin sole are taken in the Aleutian Islands due to the limited shallow water areas.

The 2014 SARs (Allen and Angliss 2015) record incidental takes of marine mammals in this fishery since 1988, based on observer coverage through 2012. Observer coverage was 100% during 2008-2012. Species taken include bearded seal (AK stock), harbor porpoise and harbor seal (Bering Sea), killer whale (Alaska resident), killer whale (GOA, AI, and BS transient), northern fur seal (Eastern Pacific stock), spotted seal (Alaska stock), ringed seal (Alaska stock), ribbon seal (Alaska stock), Steller sea lion (Western U.S. stock), and Pacific walrus (Alaska stock). For the species in this analysis, Tables 3-7 report the observed and mean annual mortality.

BSAI Pollock Trawl Fishery

In 2013, 102 vessels targeted pollock in the Bering Sea and Aleutian Islands management area. The pattern of the recent pollock fishery in the BSAI is to focus on a winter, spawning-aggregation fishery. The A season fishery is January 20 through June 10. Fishing in this season lasts about 8-10 weeks depending on the catch rates. The B season is June 10 through November 1. Fishing in the B season is typically July through October and has been conducted to a greater extent west of 170°W longitude compared to the A season fishing location in the southern Bering Sea. Directed fishing is closed for pollock in all areas from November 1 to January 20. Fishing is also closed around designated rookeries and haulouts out to 20 nm and closed within Steller sea lion foraging areas in the Bering Sea and Aleutian Islands. The BSAI pollock total allowable catch (TAC) is allocated 40 percent to the A season and 60 percent to the B season. No more than 28 percent of the annual directed fishing allowance for pollock can be taken inside the Sea Lion Conservation Area in the southern Bering Sea before April 1.

The 2014 SARs (Allen and Angliss 2015) record incidental takes of marine mammals in this fishery since 1988, based on observer coverage through 2012. Observer coverage ranged 85-98% from 2008-2012. Species taken include Dall's porpoise (Alaska stock), harbor seal, humpback whale (Central North Pacific stock), humpback whale (Western North Pacific stock), fin whale (Northeast Pacific stock), killer whale (GOA, AI, and BS Transient stocks), minke whale (Alaska stock), ribbon seal (Alaska stock), spotted seal (Alaska stock), ringed seal (Alaska stock), bearded seal (Alaska stock), northern fur seal (Eastern Pacific stock), Steller sea lion (Western U.S. stock). For the species in this analysis, Tables 3-6 report the observed and mean annual mortality.

BSAI Pacific Cod Longline Fishery

This fishery targets Pacific cod with hook and line gear in the Bering Sea with 45 permits issued or fished. Fishing effort in this fishery occurs within the U.S. Exclusive Economic Zone of the Eastern Bering Sea and the portion of the North Pacific Ocean adjacent to the Aleutian Islands, which is west of 170°W. long. up to the U.S.-Russian Convention Line of 1867.

Management measures for the BSAI groundfish fisheries constrain fishing both temporally and spatially. The authorized gear, fishing season, criteria for determining fishing seasons, and area restrictions by gear type are defined in the regulations implementing the BSAI FMP (50 CFR part 679).

The 2014 SARs (Allen and Angliss 2015) record incidental takes of marine mammals in this fishery since 1988, based on observer coverage through 2012. Observer coverage ranged 51-64% from 2008-2012 (Allen and Angliss 2015). Species taken include Dall's porpoise (Alaska stock), killer whale (GOA, AI, and BS Transient stocks), northern fur seal (Eastern Pacific stock), and ringed seal (Alaska stock). For the species in this analysis, Tables 3-6 report the observed and mean annual mortality.

3.2.2 Category III fisheries

Under MMPA 101(a)(5)(E) permits are not required for Category III fisheries; however, M/SI incidental to all fisheries, regardless of category, are included in this analysis. There are 57 commercial fisheries listed as Category III in Alaska waters (including waters within the EEZ off Alaska) within the range of the ESA-listed marine mammals considered by this analysis; M/SI to these listed species has been reported within the time frame of this analysis in eleven of these fisheries, see Table 1. A brief description of the federal Category III fisheries follows.

AK GOA Pacific cod longline

This fishery targets Pacific cod with hook and line gear in the Gulf of Alaska. There are an estimated 92 participants that have been observed between 13-30% from 2008-2012 (Allen and Angliss 2015).

AK GOA Sablefish longline

This fishery targets sablefish with hook and line gear in the Gulf of Alaska. There are an estimated 295 participants that have been observed between 14-16% from 2008-2012 (Allen and Angliss 2015).

AK BSAI Atka mackerel trawl

This fishery targets Atka mackerel with trawl gear in the Bering Sea. There are an estimated 13 participants that have been observed between 56-100% from 2008-2012 (Allen and Angliss 2015).

AK BSAI Pacific cod trawl

This fishery targets Pacific cod with trawl gear in the Bering Sea. There are an estimated 72 participants that have been observed between 32-100% from 2008-2012 (Allen and Angliss 2015).

AK GOA Pacific cod trawl

This fishery targets Pacific cod with trawl gear in the Gulf of Alaska. There are an estimated 55 participants that have been observed between 23-100% from 2008-2012 (Allen and Angliss 2015).

AK GOA Pollock trawl

This fishery targets pollock with trawl gear in the Gulf of Alaska. There are an estimated 67 participants that have been observed between 27-43% from 2008-2012 (Allen and Angliss 2015).

3.3 State of Alaska Fisheries

This NID analysis authorizes federal fisheries to incidentally take marine mammals, however the analysis must include all fishery and non-fishery human-caused M/SI, which also includes M/SI from State of Alaska Category II and III fisheries. Information about Category II fisheries managed by the State of Alaska can be found

at: http://www.adfg.alaska.gov/index.cfm?adfg=CommercialByFisherySalmon.salmonmaps_districts.

NMFS' Alaska Regional Office operates a marine mammal observer program for Category II state-managed commercial fisheries targeting salmon. Due to the high cost of observing these fisheries, only one or two fisheries have been observed at a time for one to two years each. To date, 7 of 10 state fisheries have been observed in this way. While these observations date back, in some instances, to 1990, they are considered the best available data for these fisheries. Of those 7, the Prince William Sound set gillnet salmon fishery has been reclassified to Category III due to minimal interactions with marine mammals. Table 5 includes the 1990-1991 M/SI to Steller sea lions from the Prince William Sound drift gillnet fishery, as recorded by observers and as considered in this analysis. Additionally, in the 2016 LOF, NMFS has reclassified the AK Cook Inlet salmon purse seine and the AK Kodiak salmon purse seine fisheries from Category II to Category III due to a remote likelihood of interactions with marine mammals (80 FR 20550, April 8, 2016).

4.0 ESA-Listed Marine Mammal Species Occurring in the Action Area

According to the *Alaska Marine Mammal Stock Assessments, 2014* (Allen and Angliss 2015), the following ten ESA-listed species of marine mammals occur within the area of operation of Category II and III fisheries off Alaska.

Table 2. ESA-listed species occurring in the action area.

Species	Stock	Status
Bearded seal	Alaska/Beringia DPS	Threatened ¹
Ringed seal	Alaska/Arctic subspecies	Threatened ²
Humpback whale	Central North Pacific	Endangered ³
Humpback whale	Western North Pacific	Endangered ³
Steller sea lion	Western U.S	Endangered
Beluga whale	Cook Inlet	Endangered
Bowhead whale	Western Arctic stock	Endangered
Fin whale ⁴	Northeast Pacific	Endangered
Sperm whale	North Pacific	Endangered
North Pacific Right Whale ⁵	North Pacific	Endangered

¹ On July 25, 2014, the US District Court for the District of Alaska issued a memorandum decision in a lawsuit challenging the listing of bearded seals under the ESA (Alaska Oil and Gas Association v. Pritzker, Case No. 4:13-cv-00018-RPB). The decision vacated NMFS's listing of the Beringia DPS of bearded seals as a threatened species. NMFS is appealing that decision. In the interim, NMFS will continue to consider the effects of fisheries on bearded seals under MMPA section 101(a)(5)(E), even though the listing of the species is not in effect.

² On March 11, 2016, the U.S. District Court for the District of Alaska issued a memorandum decision vacating the ESA listing of Arctic subspecies of ringed seals (Alaska Oil and Gas Association v. NMFS, Case No. 4:14-cv-00029-RRB). NMFS is appealing this decision. In the interim, NMFS will continue to consider the effects of fisheries on ringed seals under MMPA section 101(a)(5)(E), even though the listing of the species is not in effect.

³ NMFS recently conducted a global status review of humpback whales and proposed changes to the humpback whale ESA listing (80 FR 22304; April 21, 2015). These proposed changes could affect the ESA listing status of humpback whales that are currently identified under the MMPA as the CNP stock. Final action on the proposed rule is not expected until after this analysis is finalized, therefore we are conducting the analysis as if the listing remains endangered.

⁴ NMFS notes that a fin whale suffered M/SI from a Category III fishery in 2012, but M/SI has not been reported in any category II fisheries during the 2008-2012 time frame used for this analysis.

⁵ NMFS notes that the historical range of the North Pacific right whale overlaps with the area of operation of Category II and III fisheries off Alaska as well. However, at a current population estimate of 25.7 in the eastern North Pacific (Allen and Angliss 2015), interactions are very rare. There are no records of fishery-related mortality, and thus effects to this stock are not analyzed in this NID.

5.0 Marine Mammals Considered in this Analysis

M/SI to the following ESA-listed species from Category II U.S. commercial fisheries in the action area has been documented within the time frame considered for this analysis:

Humpback whale, Western North Pacific stock

Humpback whale, Central North Pacific stock
Steller sea lion, Western U.S. stock
Bearded seal, Alaska stock
Ringed seal, Alaska stock

Detailed information on these species can be found in the recovery plans for humpback whales and Steller sea lions as well as SARs (Allen and Angliss 2015) for all five stocks. Information from these sources that is relevant to this analysis and the best available science is summarized below.

Effects from groundfish fisheries on the other marine mammal species listed in Table 2 are not analyzed further in this NID because none of them suffered M/SI from Category II fisheries between 2008 and 2012. The estimated minimum mortality rate incidental to commercial fisheries is unknown for Cook Inlet Beluga whales, but only one mortality has been reported during 2008-2012 (Allen and Angliss 2015). The only fishery with documented M/SI to Northeast Pacific stock of fin whales in Alaska is the AK miscellaneous finfish handline/hand troll and mechanical jig fishery, a Category III fishery (Allen and Angliss 2015). There have been no observed M/SI of bowhead whales incidental to commercial fisheries in Alaska (Allen and Angliss 2015). M/SI of sperm whales occurred in the GOA sablefish longline fishery (a Category III fishery) in 2007, which precedes the time frame used in this analysis. Additionally, there were two serious injuries of sperm whales in 2012 in the fishery. The 2014 SAR mistakenly omitted these two serious injuries incidental to the GOA sablefish longline fishery in the 2014 SAR, which includes 2008-2012 data. The 2015 draft SAR includes the 2012 observed serious injuries and notes that the extrapolated estimate is not available. NMFS is currently analyzing these data and intends to include the resulting bycatch estimates in the 2016 draft SAR, at which time the average annual M/SI in this fishery will be considered for the LOF. If the GOA sablefish longline fishery is elevated to Category I or II in a future LOF, NMFS will evaluate the need for incidental take permit under MMPA section 101(a)(5)(E). A negligible impact analysis on the effects of Hawaiian fisheries on the central North Pacific stock of humpback whales is contained in NMFS 2014c. More information about those fisheries and their impacts on the central North Pacific stock of humpback whales can be found in that document.

5.1 Humpback Whale

Status of the Species

Detailed information for the Central North Pacific and Western North Pacific stocks may be found in the 2014 SAR (Allen and Angliss 2015), including general species information and the current status of the stock (population size, trend, and net productivity rate). Information relevant to this analysis includes the PBR, population trend, and human-caused mortality, further detailed below.

Humpback whales were listed as endangered under the ESA in 1973. Critical habitat has not been designated for this species. The International Whaling Commission (IWC) first protected humpback whales in the North Pacific in 1965. As a consequence of being listed as endangered under the ESA, the CNP stock is considered both “depleted” and “strategic” under the MMPA. See 16 USC § 1362(1) and (19). Humpback whales are also protected by the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES). The humpback whale is distributed worldwide in all ocean basins. Figure 2 shows the approximate distribution of humpback whales in the North Pacific. A large-scale study of humpback whales throughout the North Pacific was conducted in 2004-06 (the Structure of Populations, Levels of Abundance, and Status of Humpbacks (SPLASH) project). SPLASH abundance estimates ranged from 9,000 to 19,000 combined for the Aleutian Islands, Bering Sea, and Gulf of Alaska.

Information from a variety of sources indicates that humpback whales from the Western and Central North Pacific stocks mix to a limited extent on summer feeding grounds ranging from British Columbia through the central Gulf of Alaska and up to the Bering Sea. NMFS recently conducted a global status review of humpback whales and proposed changes to the humpback whale ESA listing (80 FR 22304; April 21, 2015). These proposed changes could affect the ESA listing status of humpback whales that are currently identified under the MMPA as the CNP stock. Final action on the proposed rule is not expected until after this analysis is finalized, therefore we are conducting the analysis of the CNP stock of humpback whales as endangered.

The current population trend for humpback whales in the North Pacific has been estimated in several studies. Mobley et al. (2001) estimated a trend of 7% per year for 1993-2000 for the central North Pacific stock. Mizroch et al. (2004) using data from Hawaii for 1980-1996 estimated a rate of increase of 10% per year. In the northern Gulf of Alaska, Zerbini et al. (2008) estimated 6.6% per year from 1987-2003, and the SPLASH estimate for the total North Pacific shows an annual increase of 4.9% over a similar period from 1991-1993. A similar comparison of SPLASH estimates for Hawaii (only) showed an increase of 5.5 to 6.0% since 1991-1993. The SPLASH estimate for Asia represents a 6.7% annual rate of increase since 1991-1993 (Calambokidis et al. 2008).

Under the MMPA (16 U.S.C. 1362(20)(A)-(C)), PBR is defined as the product of the minimum population estimate (N_{MIN}), one-half the maximum theoretical net productivity rate (R_{MAX}), and a recover factor (F_R).

$$\text{PBR} = N_{\text{MIN}} \times 0.5R_{\text{MAX}} \times F_R.$$

The recovery factor (FR) for the Western North Pacific stock is 0.1, the value for cetacean stocks listed as endangered under the Endangered Species Act (Wade and Angliss 1997). Using the lowest SPLASH abundance estimate calculated for 2004 - 2006 of 938 with an assumed CV of 0.300 for the Western North Pacific stock of humpback whale, PBR is calculated to be 3.0 animals ($865 \times 0.035 \times 0.1$).

For the Central North Pacific stock, a recovery factor of 0.3 is used in calculating the PBR based on the suggested guidelines of Taylor et al. (2003). The default value of 0.04 for the maximum

net productivity rate is replaced by 0.07, which is the best estimate of the current rate of increase and is considered a conservative estimate of the maximum net productivity rate. For the Central North Pacific stock of humpback whale, using the smallest SPLASH study abundance estimate from the best fit model for 2004-06 for Hawaii of 10,103 with an assumed CV of 0.300 and its associated N_{MIN} of 7,890, PBR is calculated to be 82.8 animals ($7,890 \times 0.035 \times 0.3$).

Threats to Humpback Whales

Threats to humpback whales include entanglement in fishing gear, ship strikes, vessel disturbance, climate change, illegal whaling or resumed legal whaling, reduced prey abundance due to fishing or other factors (including climate change), habitat degradation, disturbance from low-frequency noise, disease, impacts related to research, and natural causes. This analysis will focus on M/SI from threats applicable to the NID; however, more detailed information can be found in the Humpback Whale Recovery Plan (available at: http://www.nmfs.noaa.gov/pr/pdfs/recovery/whale_humpback.pdf) the SARs (available at: <http://www.nmfs.noaa.gov/pr/sars/species.htm>), and the global status review (available at: http://www.fisheries.noaa.gov/pr/species/Status%20Reviews/humpback_whale_sr_2015.pdf).

Observed Fisheries

Estimates of marine mammal M/SI in each of these observed fisheries are provided in Allen and Angliss (2015).

Between 2008 and 2012, there was one M/SI of a WNP humpback whale in the BSAI flatfish trawl and one in the BSAI pollock trawl fisheries in 2010, as well as one in the BSAI pollock trawl fishery in 2012. Average annual mortality from observed fisheries was 0.60 whales from the WNP stock (Table 3).

Between 2008 and 2012, M/SI to one CNP humpback whale was documented in the HI shallow set longline fishery, resulting in a mean annual mortality from observed fisheries of 0.15 whales (Table 4). In addition, two M/SI were documented in 2010, one each in the BSAI flatfish trawl and BSAI Pollock trawl fisheries, and one M/SI was reported in the 2012 BSAI pollock trawl fishery, for a total fisheries-related average annual M/SI of 0.75 whales. Mortality was assigned to both the WNP and CNP stocks because stock identification is unknown and both stocks overlap within the area of operation of these fisheries.

However, these estimates are considered a minimum for all commercial fisheries because there are no data concerning fishery-related mortalities in Japanese, Russian, or international waters. This analysis only considers M/SI incidental to U.S. commercial fisheries. In addition, there is a small probability that fishery interactions discussed in the SAR for the CNP stock may have involved animals from the WNP stock because of the overlap in distribution between the two.

Fishery Entanglements and Ship Strikes

Currently, M/SI from fishery entanglements and ship strikes threaten individuals in both stocks.

Reports of WNP humpback whale M/SI caused by entanglement from gillnet gear, pot gear, and set net gear occurred in 2009, 2011, and 2012. In addition, reports of M/SI due to charter and recreational and unknown ships and gear were reported. Minimum total annual mortality from these sources is 1.25 (Allen and Angliss 2015) (Table 3).

Reports of CNP humpback whale M/SI caused by entanglement from gillnet gear, shrimp pot gear, crab gear, longline gear, pot gear, and set net gear occurred from 2008-2012. In addition, reports of M/SI due to charter, recreational, research, and unknown ships and gear were reported. Minimum total annual mortality from these sources is 5.46 (Allen and Angliss 2015) (Table 4).

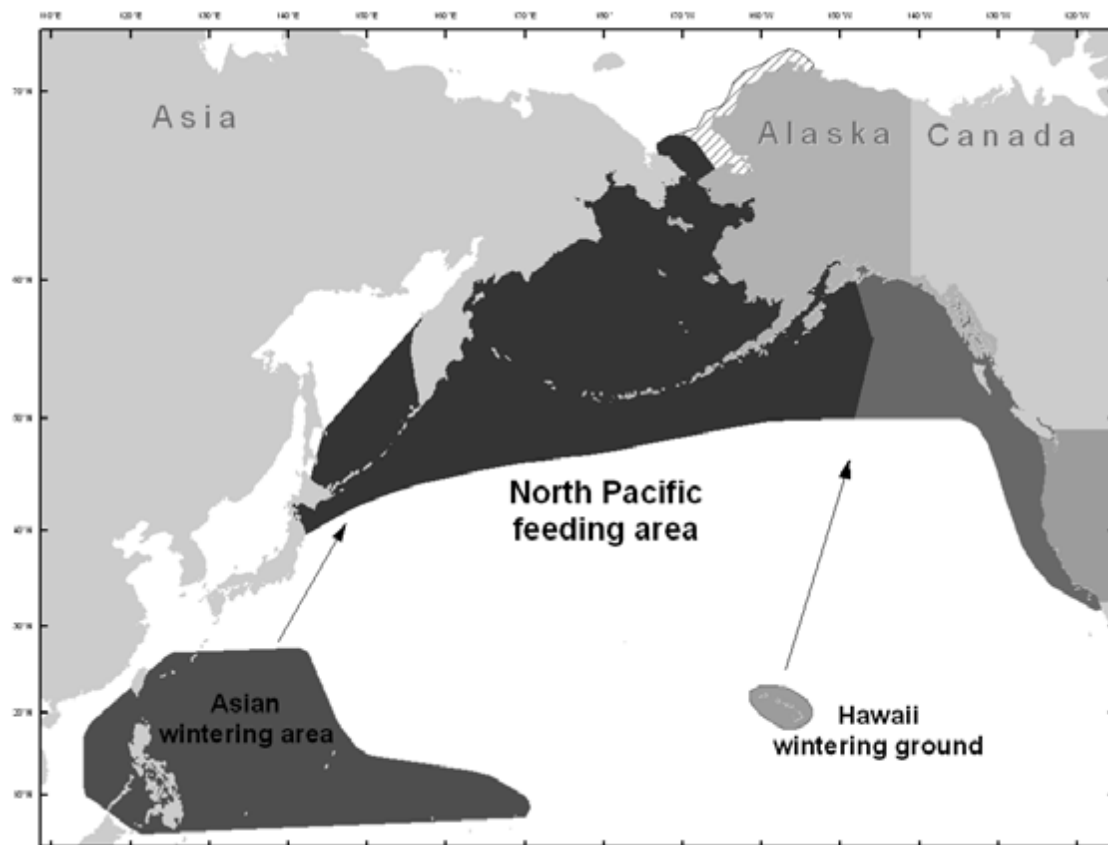


Figure 2. Approximate distribution of humpback whales in the western North Pacific (shaded area).

Other Human-Caused Mortality

There were two reported ship strikes of humpback whales within the geographic area inhabited by WNP humpback whales in Alaska waters: both involved recreational vessels in the Kodiak

area in 2008. In each case the presumably struck whale was subsequently observed exhibiting what appeared to be normal behavior without signs of visible injury. Accordingly, these two events were not considered M/SI.

There are no reported takes of humpback whales from the WNP stock by subsistence hunters in Alaska or Russia for 2008-2012. According to the NMFS Alaska Regional Office's marine mammal stranding database, an additional annual M/SI rate of 0.45 is attributed to vessel collisions in charter and recreational fisheries, and 0.8 to unknown marine debris/gear entanglement (Allen and Angliss 2015).

Vessel collisions with humpback whales from the CNP stock have been reported both in Alaska and Hawaii. Most collisions are reported in Southeast Alaska, but some also occur near Kodiak (Allen et al. 2014). In Hawaii, most reported collisions are near Maui (Bradford and Lyman 2013). According to the NMFS Alaska Regional Office's marine mammal stranding database, an additional annual M/SI rate of 5.46 is attributed to vessel collisions in charter and recreational fisheries, research, and unknown vessels, and to unknown marine debris/gear entanglement in Alaska waters, plus an additional 6.48 in Hawai'i waters (Allen and Angliss 2015).

Oil and Gas

NMFS (2013) conducted an ESA section 7 consultation to consider the effects of the authorization of oil and gas leasing and exploration activities by the U.S. Department of the Interior, Bureau of Ocean Energy Management (BOEM), within the U.S. Beaufort and Chukchi Seas over a 14-year period beginning March 2013 and ending in March 2027 on the endangered bowhead whale (*Balaena mysticetus*), endangered fin whale, endangered humpback whale, endangered right whale (*Eubalaena japonica*), endangered western Steller sea lion (*Eumatopias jubatus*) distinct population segment (DPS), threatened Arctic subspecies of ringed seal, and threatened Beringia DPS of bearded seal (*Erignathus barbatus barbatus*) (NMFS 2013). The biological opinion concluded that these activities were likely to adversely affect but not jeopardize humpback whales, ringed seals, and bearded seals, and that they are not likely to adversely affect nor jeopardize Steller sea lions.

5.2 Steller sea lion, Western U.S. stock

Status of the Stock

Detailed information for the Steller sea lion, Western U.S. stock may be found in the 2014 SAR (Allen and Angliss 2015), the April 2014 ESA section 7 Biological Opinion on the authorization of the Alaska groundfish fisheries under the proposed revised Steller sea lion protection measures (NMFS 2014e), and in the associated NEPA analysis (NMFS 2014d). General species information and the current status of the stock (population size, trend, and net productivity rate) are all discussed at length in those documents. Information relevant to this analysis is further

detailed below including the PBR, population trend, and fishery and total human-caused mortality.

The western U.S. stock of Steller sea lion (also known as the western DPS) is listed as endangered under the ESA, and therefore designated as depleted under the MMPA. As a result, the stock is classified as a strategic stock. Population estimates declined by almost 90% throughout its range, reaching its smallest size in 2000. Prior to the 1990s, the primary causes of the decline may have been entanglement of juvenile Steller sea lions in commercial fishing gear and intentional shooting by fishermen. Improvements in juvenile survival rates may be attributed to management actions taken in the 1990s to reduce direct mortality factors (e.g., shooting and incidental mortality in fisheries) and improvements in prey access resulting from fishery management measures implemented in the early 2000s. Indirect effects of commercial fishing, nutritional stress, predation, and natural environmental changes are all considered to be factors in the decline and lack of recovery (NMFS 2008).

Even with the current levels of human-caused M/SI, NMFS estimates the population of Steller sea lion, Western stock is increasing. The total population of Western U.S. stock of Steller sea lions in Alaska is approximately 55,422 (Allen and Angliss 2015). There is strong evidence that non-pup counts in the Western U.S. stock in Alaska increased at an average rate of 1.67 percent per year between 2000 and 2012 (Fritz et al. 2013, Johnson and Fritz 2014). However, there are differences in trend across the range in Alaska, with strong evidence of a positive trend east of Samalga Pass and strong evidence of a decreasing trend to the west (Fritz et al. 2013, Johnson and Fritz 2014). Because this stock is continuing to decline in the central and western Aleutian Islands, particular attention should be paid to future instances of incidental take of Western stock of Steller sea lions in those sub-regions to ensure the level of take remains negligible on a local scale.

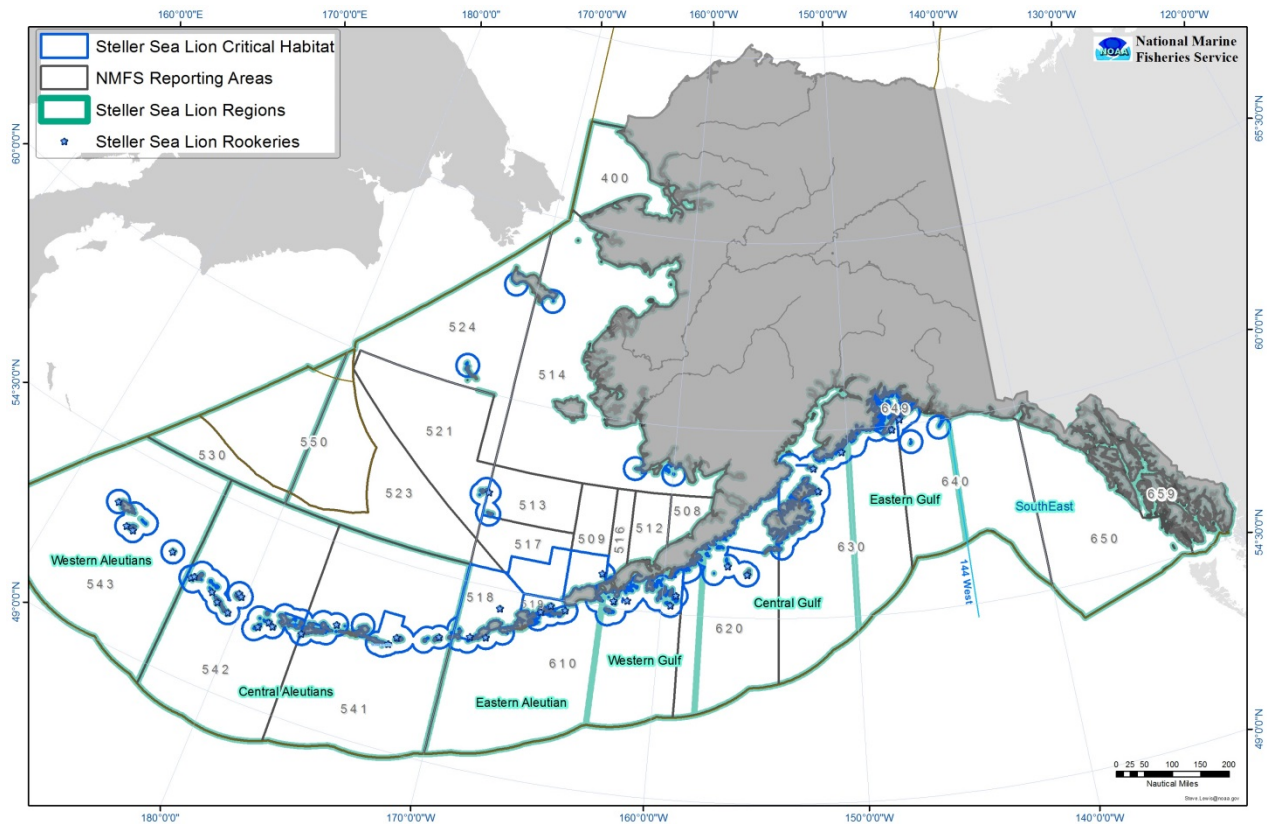


Figure 3. Steller sea lion 1993 critical habitat designation and regions.

Survey data collected since 2000 indicate that Steller sea lion decline continues in the central and western Aleutian Islands but that regional populations east of Samalga Pass have increased or are stable. Many factors have been suggested as causes of the steep decline observed in the 1980s, (e.g., competition with fishing for prey, environmental change, disease, killer whale predation, incidental take, illegal and legal shooting). Decreases in rates of survival, particularly for juveniles, were associated with the steep 1980s declines (Holmes et al. 2007). Factors causing direct mortality were likely the most important. The slowing of the decline in the 1990s, and the periods of increase and stability observed between 2000 and 2008 were associated with increases in survival of both adults and juveniles, but also with continuation of a chronic decline in reproductive rate that may have been initiated in the early 1980s (Pitcher et al. 1998, Holmes et al. 2007). Nutritional stress related to competition with commercial fisheries or environmental change, along with predation by killer whales, has been identified as potentially important threats to recovery (NMFS 2008).

The PBR recovery factor for this stock is 0.1, the value for pinniped stocks listed as endangered under the ESA (Wade and Angliss 1997). The 2013 estimates of non-pups (36,360) plus the number of pups (12,316) is 48,676, which will be used as the minimum population estimate for the U.S. portion of the Western U.S. stock of Steller sea lion (Johnson and Fritz 2014). This is

considered a minimum estimate because it has not been corrected to account for animals that were at sea during the surveys. Thus, for the U.S. portion of the Western U.S. stock of Steller sea lions, $PBR = 292$ animals ($48,676 \times 0.06 \times 0.1$).

Threats to the Western U.S. Stock of Steller Sea Lions

The following is a brief summary of the threats to Steller sea lions as they are applicable to the NID, but more detailed information can be found in the Steller sea lion Recovery Plan (available at: <http://alaskafisheries.noaa.gov/protectedresources/stellers/recovery/sslrpfinalrev030408.pdf>) and the SARs (available at: <http://www.nmfs.noaa.gov/pr/sars/species.htm>). Threats to Steller sea lions include entanglement in fishing gear, illegal shooting, reduced prey abundance due to fishing or other factors (including climate change), habitat degradation, disease, and impacts from research activities. This analysis will focus on M/SI from threats applicable to the NID.

Observed Fisheries

Between 2008 and 2012, M/SI of Steller sea lions, Western U.S. stock, were observed in 6 commercial fisheries: BSAI pollock trawl, BSAI flatfish trawl, GOA Pacific cod longline, BSAI Atka mackerel trawl, BSAI Pacific cod trawl, and GOA sablefish longline (Table 5). Average annual mortality from observed fisheries was 17 Steller sea lions, Western U.S. stock (Table 5) (Allen and Angliss 2015). In addition, the Prince William Sound salmon drift gillnet fishery was observed in 1990 and 1991 and documented 2 M/SI; the average annual mortality from this fishery is 14.5 animals. Therefore, total annual average M/SI from observed fisheries is 31.5 (17 + 14.5) (Allen and Angliss 2015).

Fishery Entanglements

Fishery-related strandings during 2008-2012 resulted in an estimated annual mortality of 1.2 animals from this stock, at a minimum (Allen and Angliss 2015).

In the Steller sea lion recovery plan (NMFS 2008), NMFS concluded that the threat to Steller sea lions from entanglement was low. Levels of entanglement captured in the stranding database are low. However, there may be strong spatial and/or temporal differences in the frequency of entanglement. Raum-Suryan et al. (2009) indicate that only a small percentage of entanglements, at least in Southeast Alaska, are reflected in the currently available entanglement estimates. These entanglements, especially the neck entanglements, pose a lethal threat to affected animals (Raum-Suryan et al. 2009). Results from Raum-Suryan differ greatly from those of a study of the frequency of Steller sea lion entanglements in the Aleutian Islands in 1985 in which only 0.07 percent of the counted adult population (11 Steller sea lions) had evidence of entanglement with debris (Loughlin et al. 1986). In a recent study in the Pribilof Islands, Zavadil et al. (2007) reported a high incidence of plastic packing bands in the debris observed on and removed from Northern fur seals. NMFS acknowledges increased uncertainty about the future threat posed by entanglements. At present, information to adequately document recent and current entanglement frequency in most parts of the range or to indicate whether current rates of

Steller sea lion or other marine mammal entanglements are likely to increase or decrease in the foreseeable future is unavailable (NMFS 2013).

Subsistence Harvest

Data on community subsistence harvests have not been collected since 2009. Therefore, the most recent 5-years of data (2004-2008) are retained in the 2014 SAR and used for estimating an annual mortality estimate for all areas except St. Paul, Alaska. Data from St. Paul are still being collected and are updated with the most recent 5-year period available. The mean annual subsistence take from this stock over the 5-year period from 2004 - 2008, combined with the mean take over the 2008-2012 period from St. Paul, was 199 Steller sea lions/year.

Marine Debris

Reports from the NMFS stranding database of Steller sea lions entangled in marine debris or with injuries caused by other types of human interaction are another source of mortality data. During the 5-year period from 2008 to 2012, 16 animals suffered M/SI due to entanglement with marine debris. The mean annual M/SI from other human-caused sources for 2008-2012 is 3.2 animals.

Habitat Concerns

The persistent decline in the Western U.S. stock of Steller sea lions resulted in a change in the listing status of the stock in 1997 from “threatened” to “endangered” under the ESA. Survey data collected since 2000 suggest that the decline has slowed or stopped in some portions of the range of the western U. S. stock, but continues in others. Many factors have been suggested as causes of the steep decline observed in the 1980s (e.g., competitive effects of fishing, environmental change, disease, killer whale predation, incidental take, illegal and legal shooting). The effects of groundfish fisheries on the prey field of Steller sea lions have been analyzed in NMFS 2014a.

Oil and Gas

NMFS (2013) conducted an ESA section 7 consultation to consider the effects of the authorization of oil and gas leasing and exploration activities by BOEM, within the U.S. Beaufort and Chukchi Seas over a 14-year period beginning March 2013 and ending in March 2027 on the endangered bowhead whale, endangered fin whale, endangered humpback whale, endangered right whale, endangered western Steller sea lion distinct population segment (DPS), threatened Arctic subspecies of ringed seal, and threatened Beringia DPS of bearded seal (NMFS 2013). The biological opinion concluded that these activities were likely to adversely affect but not jeopardize humpback whales, ringed seals, and bearded seals, and that they are not likely to adversely affect nor jeopardize Steller sea lions.

5.3 Bearded Seals, Alaska stock

Status of the Stock

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.

Detailed information for this stock may be found in Allen and Angliss (2014) and the 2010 Status Review (Cameron et al. 2010), including general species information and the current status of the stock (population size, trend, and net productivity rate). The best available information on a population estimate for this stock comes from a few regions that have been surveyed by various techniques over the past four decades. Only crude estimates for these areas exist and many assumptions used to derive these estimates are conservative (e.g., seals in the water were often not included, some areas were not surveyed or were omitted from the analysis). However, based on studies by Ver Hoef et al. (2010), Fedoseev (2000) and Bengtson et al. (2005), for purposes of the ESA status review of the species, Cameron et al. (2010) estimated about 125,000 bearded seals in the Bering Sea and 27,000 bearded seals in the Chukchi Sea. Cameron et al. (2010) did not present population estimates for the East Siberian and Beaufort Seas, but did estimate that the Beringia DPS contained approximately 155,000 bearded seals. However, given that these numbers are outdated, this estimate cannot necessarily be considered strictly minimum or conservative overall (Cameron et al. 2010). Since the status review, Ver Hoef et al. (2013) calculated an abundance of 61,800 (95% CI 34,900-171,600) bearded seals in a core area (297,880 km²) of the central and eastern Bering Sea using survey data collected from helicopters operating off of an ice breaker in 2007. U.S. and Russian researchers conducted comprehensive and synoptic aerial abundance and distribution surveys of ice-associated seals in the Bering and Okhotsk Seas in 2012 and 2013. These data are currently being analyzed to provide abundance estimates for bearded seals (Moreland et al. 2013).



Figure 4. Approximate distribution of bearded seals (shaded area) in Alaska. The combined summer and winter distribution are depicted.

Because it was listed as threatened under the ESA (77 FR 76740; December 28, 2012), this stock is designated as depleted under the MMPA. As a result, the stock is classified as a strategic stock. On July 25, 2014, the U.S. District Court for the District of Alaska issued a memorandum decision in a lawsuit challenging the listing of bearded seals under the ESA (*Alaska Oil and Gas Association v. Pritzker*, Case No.4:13-cv-00018-RPB). The decision vacated NMFS's listing of the Beringia DPS of bearded seals as a threatened species. NMFS is currently appealing that decision. In the interim, NMFS will continue to consider the effects of fisheries on bearded seals under MMPA section 101(a)(5)(E), even though the listing of the species is not in effect. NMFS is developing a recovery plan for this stock.

Threats to the Alaska Stock of Bearded Seals

Threats to the Alaska stock of bearded seals include climate change, habitat degradation, subsistence harvest, disturbance from oil and gas activities, and impacts from research activities. This analysis will focus on M/SI from commercial fisheries applicable to a NID of effects of on bearded seals; however, more detailed information can be found in the SARs (available

at: <http://www.nmfs.noaa.gov/pr/sars/species.htm>). These threats are also described in detail in the species' Status Review (Cameron et al. 2010) and the proposed listing rule (75 FR 77496, December 10, 2010). Effects to bearded seals from these threats have been analyzed in the NEPA review of the groundfish harvest specifications process (NMFS 2015), in NMFS 2014a, the ESA section 7 consultation that considered effects from the groundfish fisheries on bearded seals, and in the ESA Section 7(a)(2) Biological Opinion on Oil and Gas Leasing and Exploration Activities in the U.S. Beaufort and Chukchi Seas (NMFS 2013).

Observed Fisheries

Between 2008 and 2012, M/SI incidental to commercial fishing was observed in the BSAI pollock trawl and BSAI flatfish trawl fisheries. Average annual M/SI from these fisheries was estimated as 2.22 animals (Table 6) (Allen and Angliss 2015).

Subsistence Harvest

At this time, there are no efforts to quantify the total statewide level of subsistence harvest of bearded seals by all Alaska communities. A report on ice seal harvest in three Alaskan communities indicated that the number and species of ice seals harvested in a particular village may vary considerably between years (Coffing et al. 1999). These inter-annual differences are likely due to differences in ice and wind conditions that change the hunters' access to different ice habitats frequented by different types of seals. Although some of the more recent entries in the ADFG database have associated measures of uncertainty (Coffing et al. 1999, Georgette et al. 1998), the overall total does not. The estimate of 6,788 bearded seals from 2000 is the best estimate of harvest level currently available (Allen and Angliss 2015).

M/SI may occasionally occur incidental to marine mammal research activities authorized under MMPA permits issued to a variety of government, academic, and other research organizations.

Oil and Gas

NMFS (2013) conducted an ESA section 7 consultation to consider the effects of the authorization of oil and gas leasing and exploration activities by BOEM, within the U.S. Beaufort and Chukchi Seas over a 14-year period beginning March 2013 and ending in March 2027 on the endangered bowhead whale, endangered fin whale, endangered humpback whale, endangered right whale, endangered western Steller sea lion distinct population segment (DPS), threatened Arctic subspecies of ringed seal, and threatened Beringia DPS of bearded seal (NMFS 2013). The biological opinion concluded that these activities were likely to adversely affect but not jeopardize humpback whales, ringed seals, and bearded seals, and that they are not likely to adversely affect nor jeopardize Steller sea lions.

5.4 Ringed Seals, Alaska stock

Status of the stock

Five subspecies of ringed seals inhabit the Arctic Ocean, Sea of Okhotsk, Baltic Sea, Lake Ladoga, and Lake Saimaa and are discrete breeding populations. For the purposes of this analysis, the Alaska stock of ringed seals is considered to be the portion of *Phoca hispida hispida* that occurs within the U.S. EEZ of the Beaufort, Chukchi, and Bering Seas, also referred to as the Arctic subspecies. This subspecies was listed as threatened under the ESA (77 FR 76740; December 28, 2012), and therefore designated as depleted under the MMPA. On March 11, 2016, the U.S. District Court for the District of Alaska issued a memorandum decision vacating the ESA listing of Arctic subspecies of ringed seals (*Alaska Oil and Gas Association v. NMFS*, Case No. 4:14-cv-00029-RRB). NMFS is appealing this decision. In the interim, NMFS will continue to consider the effects of fisheries on ringed seals under MMPA section 101(a)(5)(E), even though the listing of the species is not in effect. NMFS is developing a recovery plan for this stock.

Detailed information for this stock may be found in the 2014 SAR (Allen and Angliss 2015) and the 2010 Status Review (Kelly et al. 2010), including general species information and the current assessed status of the stock (population size, trend, and net productivity rate). Relevant information to this NID includes the PBR, population trend, and human-caused mortality, further detailed below.

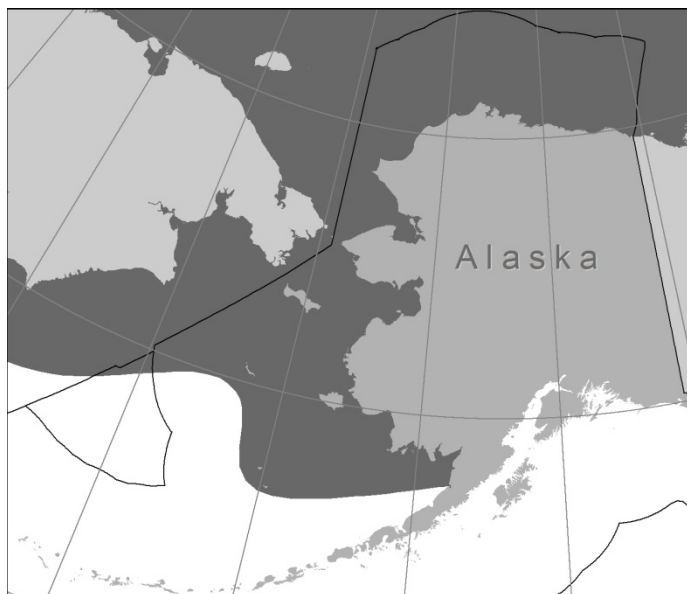


Figure 5. Approximate distribution of ringed seals (shaded area) in Alaska.

Ringed seal population surveys in Alaska have used various methods and assumptions, had incomplete coverage of their habitats and range, and were conducted more than a decade ago; therefore, current and comprehensive abundance estimates or trends for the Alaska stock are not available. Based on the best available estimates from surveys by Bengtson et al. (2005) and Frost et al. (2004) in the late 1990s, N_{MIN} for this stock based on data from the 1990s was

estimated at 300,000 seals (Kelly et al. 2010). This estimate is too dated to use as N_{MIN} for the purpose of calculating PBR.

Preliminary analysis of the U.S. surveys, which included only a small subset of the 2012 data, produced an estimate of about 170,000 ringed seals in the U.S. EEZ of the Bering Sea in late April (Conn et al. 2013). This estimate does not account for availability bias, thus the actual number of ringed seals is likely much higher, perhaps by a factor of two or more. The full data sets are currently being processed and analyzed to provide abundance estimates for bearded, spotted, ribbon, and ringed seals in the Bering and Okhotsk Seas. Similar surveys in the Chukchi and Beaufort Seas are planned for the near future, pending funding. Data on trends in population abundance are not available.

Threats to the Alaska stock of ringed seals

Threats to the Alaska stock of ringed seals include climate change, habitat degradation, subsistence harvest, disturbance from oil and gas activities, marine debris and fishing gear entanglement, and impacts from research activities. This analysis will focus on M/SI from commercial fisheries applicable to a NID of effects on ringed seals; however, more detailed information on these threats can be found in the SARs (available at: <http://www.nmfs.noaa.gov/pr/sars/species.htm>), the species' Status Review (Kelly et al. 2010), and the proposed listing rule (75 FR 77476, December 10, 2010). Competition for prey species between ringed seals and commercial fisheries also exists. Kelly et al. (2010) noted that commercial fisheries target a number of known ringed seal prey species, such as walleye pollock, Pacific cod, herring, and capelin. Effects to ringed seals from these threats have been analyzed in the NEPA review of the groundfish harvest specifications process (NMFS 2015), and in NMFS 2014a, the ESA section 7 consultation that considered effects from the groundfish fisheries on ringed seals, and in the ESA Section 7(a)(2) Biological Opinion on Oil and Gas Leasing and Exploration Activities in the U.S. Beaufort and Chukchi Seas (NMFS 2013).

Observed Fisheries

Between 2008 and 2012, M/SI incidental to commercial fishing was observed in four fisheries: BSAI pollock trawl, BSAI flatfish trawl, BSAI Pacific cod trawl, and BSAI Pacific cod longline. Average annual M/SI from these fisheries was estimated as 4.12 animals (Table 7) (Allen and Angliss 2015).

Subsistence Harvest

At this time, there are no efforts to quantify the total statewide level of harvest of ringed seals by all Alaska communities. A report on ice seal subsistence harvest in three Alaskan communities indicated that the number and species of ice seals harvested in a particular village may vary considerably between years (Coffing et al. 1999). These inter-annual differences are likely due to differences in ice and wind conditions that change the hunters' access to different ice habitats frequented by different types of seals. Regardless of the extent to which the harvest may vary inter-annually, it is clear that the harvest level of 9,567 ringed seals estimated by the Alaska Department of Fish and Game, Division of Subsistence is considerably higher than the previous minimum estimate. Although some of the more recent entries in the ADFG database have associated measures of uncertainty (Coffing et al. 1999, Georgette et al. 1998), the overall total does not. The estimate of 9,567 ringed seals is the best estimate currently available (Allen and Angliss 2015).

In 2011, one animal was reported dead from a gunshot wound to the head presumably struck and lost from the subsistence hunt.

Oil and Gas

NMFS (2013) conducted an ESA section 7 consultation to consider the effects of the authorization of oil and gas leasing and exploration activities by BOEM, within the U.S. Beaufort and Chukchi Seas over a 14-year period beginning March 2013 and ending in March 2027 on the endangered bowhead whale, endangered fin whale, endangered humpback whale, endangered right whale, endangered western Steller sea lion distinct population segment (DPS), threatened Arctic subspecies of ringed seal, and threatened Beringia DPS of bearded seal (NMFS 2013). The biological opinion concluded that these activities were likely to adversely affect but not jeopardize humpback whales, ringed seals, and bearded seals, and that they are not likely to adversely affect nor jeopardize Steller sea lions.

6.0 Interactions with Category II Alaska Fisheries

The MMPA requires NMFS to estimate annual levels of human-caused M/SI to marine mammal stocks (section 117) and to categorize commercial fisheries based on their level of incidental M/SI of marine mammals (section 118). This section evaluates the available information to determine impacts to the western North Pacific stock of humpback whales, central North Pacific stock of humpback whales, western U.S. Steller sea lions, Alaska stock of bearded seals, and Alaska stock of ringed seals from commercial fisheries off Alaska. Of all the Category I and II fisheries included in the 2016 LOF (80 FR 20550, April 8, 2016), threatened and endangered marine mammal species under NMFS's jurisdiction have been observed taken in three federally-managed fisheries: BSAI flatfish trawl, BSAI pollock trawl, and BSAI Pacific cod longline. Information available for this analysis includes reports of interactions between these fisheries and the analyzed species derived from observer programs, logbooks, and reports (e.g., reported entanglements, fisher self-reports, etc.). Additional M/SI has been documented through stranding reports. In cases where the specific fishery that caused the M/SI cannot be definitively identified, the M/SI has been attributed to "unknown fishery." M/SI is not used to categorize unknown fisheries under the annual LOF but is included in this analysis to determine whether fishery-related M/SI collectively has a negligible impact on the stocks.

Marine mammals can be taken in groundfish trawl fisheries by entanglement in gear, being hauled in the net, and by vessel strikes (primarily for cetaceans). Allen et al. (2014) report that most documented records of M/SI of Western U.S. stock of Steller sea lions were due to interactions with trawl and some longline fisheries. According to observer data, Steller sea lions are caught in the hauls of both the BSAI pollock trawl and BSAI flatfish trawl fisheries and usually drown. These interactions typically result in death, not injury. Similarly, ringed and bearded seals were observed killed or seriously injured in the BSAI pollock trawl, BSAI flatfish trawl, and BSAI Pacific cod longline fisheries. Please refer to Tables 3-7 for fishery specific data on M/SI to marine mammals included in this analysis.

Allen et al. (2014) reported that entanglements and vessel collisions of humpback whales comprised the majority of large whale injuries and deaths reported between 2008 and 2012.

Humpbacks tend to occur in nearshore waters, where there is a higher occurrence of human activities (e.g., vessel traffic, deployed fishing gear), and the whales' feeding behaviors, as well as their anatomy (e.g., long flippers), may make them more susceptible to interactions with these activities. Most vessel collisions with humpbacks off Alaska involve small recreational and tourism vessels.

7.0 Negligible Impact Analysis

The negligible impact analyses conducted below for each of the five marine mammal stocks considered includes relevant information for that stock, including the stock's PBR if available, fishery-related M/SI, other human-caused mortality, as well as an application of the negligible impact criteria described in Section 1.

7.1 Commercial Fisheries – Mortality and Serious Injury

7.1.1 Humpback whales, Western North Pacific stock

M/SI to the WNP stock of humpback whales caused by commercial fisheries in Alaska is summarized in Allen et al. (2014). Only M/SI data were used in making the NID. Data considered for this analysis includes M/SI incidental to commercial fishing operations collected through the North Pacific Groundfish Observer Program and M/SI reported to the NMFS Alaska Regional Office, marine mammal stranding database (Allen et al. 2014). The time frame for the data used in this analysis is the five-year period from 2008 through 2012, which is consistent with the 2014 SAR (Allen and Angliss 2015).

The available information on observed WNP humpback whale interactions with the U.S. commercial fisheries in Alaska include three known instances of M/SI within the time frame used in this analysis: one in the BSAI pollock trawl fishery in 2010, one in the BSAI flatfish trawl fishery, also in 2010, and one in the BSAI pollock trawl fishery in 2012. The estimated total annual M/SI is 0.60/year for these fisheries (Table 3). Mortality was assigned to both the WNP and CNP stocks because stock identification is unknown and both stocks overlap within the area of operation of these fisheries.

Allen and Angliss (2014) report the mean annual human-caused M/SI rate for 2008-2012 based on strandings data as 0.45 (NMFS Alaska marine mammal strandings database). An annual mortality rate of 0.3 is attributed to the following: entanglement in unknown gillnet gear, unspecified pot gear, and unspecified set net gear. These events occurred within the area of known overlap with WNP and CNP humpback whale stocks. This M/SI is reflected in both stock assessments (Allen and Angliss 2015). Therefore, the total annual average fisheries-related M/SI for this timeframe, 0.9 (0.6 +0.3), is equal to 30% of the 3.0 PBR level (Table 3). NMFS (2010) notes that it is unclear to what extent entanglements reported to the stranding network in Alaska involve groundfish fishing gear. Overall, the number of entanglements that might result from interactions with groundfish fisheries appears to be low in contrast to other

fisheries (primarily salmon, shrimp, and crab fisheries). The extent of entanglement from groundfish fisheries is not expected to have negative consequences for humpback whales (WNP or CNP) in the North Pacific.

7.1.2 Humpback whales, Central North Pacific stock

Individual incidental M/SI to the CNP stock of humpback whales caused by commercial fisheries in Alaska is summarized in Allen et al. (2014). Only M/SI data were used in making the NID. Data considered for this analysis include M/SI incidental to commercial fishing operations collected through the North Pacific Groundfish Observer Program and M/SI reported to the NMFS Alaska Regional Office, marine mammal stranding database (Allen et al. 2014). The time frame for the data used in this analysis is the five-year period from 2008 through 2012, which is consistent with the 2014 SARs (Allen and Angliss 2015).

The available information on observed CNP humpback whale interaction with the U.S. commercial fisheries in Alaska has been limited to three known instances of M/SI within the time frame used in this analysis: one in the BSAI pollock trawl fishery in 2010, one in the BSAI flatfish trawl fishery, also in 2010, and one in the BSAI pollock trawl fishery in 2012. The estimated total annual M/SI is 0.60/year for these fisheries (Table 4). An additional 0.15 annual average M/SI is attributed to the Hawaii shallow set longline fishery. Mortality was assigned to both the WNP and CNP stocks because stock identification is unknown and both stocks overlap within the area of operation of these fisheries. An additional 2.5 M/SI are reported as the mean annual rate for entanglement in fishing gear in Alaska waters and 0.7 in Hawaii waters. Therefore, the total annual average fisheries-related M/SI for this timeframe is 3.95 ($0.6+0.15+2.5+0.7$), which equals 4.77% of the 82.8 PBR level (Table 4).

Table 3. Summary of Documented M/SI of Humpback Whale, Western North Pacific Stock.

Year	Source	Observed Fishery M/SI (observer coverage rate)	Extrapolated Takes from Observed M/SI	Other Reported Fishery M/SI	Minimum Total Fishery M/SI	Other Human-Caused M/SI (source)	Minimum Total M/SI (includes extrapolated values)
2008	Stranding data					0.52 (ship strike – charter)	1.08
	Stranding data					0.56 (ship strike – recreational)	
2009	Stranding data					0.75 (unknown debris/gear entanglement)	0.75
2010	BSAI Pollock trawl	1 (86)	1.0				2
	BSAI flatfish trawl	1 (100)	0(+1)*				
2011	Stranding data			0.75 (entanglement - unspecified pot gear)			4.0
	Stranding data			0.75 (entanglement - unspecified set net gear)			
	Stranding data					2.5 (unknown debris/gear entanglement)	
2012	BSAI Pollock trawl	1 (98)	n/a				2.95
	Stranding data					0.2 (ship strike – charter)	
	Stranding data					0.75 (unknown debris/gear entanglement)	
	Stranding data					1.0 (ship strike – whale watch)	
Total M/SI 2008-2012		3.0	n/a	1.5		6.28	10.78
Total Annual Average M/SI		0.6	0.6	0.3	0.9	1.25	2.156
Ratio of annual average to PBR (3.0)				10%	30%	42%	71.87%

*Total mortalities observed in unsampled hauls.

**Total mortalities observed in sampled and unsampled hauls. Because the total known mortality (1) exceeds the estimated mortality (0) for 2010, the sum of actual mortalities observed (1) will be used as a minimum estimate for 2010.

Table 4. Summary of Documented M/SI of Humpback Whale, Central North Pacific Stock.

Year	Source	Observed Fishery M/SI (observer coverage rate)	Extrapolated Takes from Observed M/SI	Other Reported Fishery M/SI	Minimum Total Fishery M/SI	Other Human-Caused M/SI (source)	Minimum Total M/SI (includes extrapolated values)
2008	Stranding data					0.72 (ship strike – charter)	5.08
	Stranding data					0.76 (ship strike – recreational)	
	Stranding data					0.2 (ship strike – research)	
	Stranding data					0.4 (ship strike – unknown)	
	Stranding data					3 (unknown gear entanglement)	
2009	Stranding data					2.25 (unknown gear entanglement)	5.87
	Stranding data					0.36 (ship strike – unknown)	
	Stranding data					0.76 (ship strike – charter)	
	Stranding data					1.75 (entanglement in recreational shrimp pot gear)	
	Stranding data			0.75 (entanglement in unknown gillnet gear)	0.75		
2010	Stranding data			3 (entanglement in unknown gillnet gear)	3		12.75
	Stranding data					4 (ship strike – unknown)	
	Stranding data					2.25 (unknown gear entanglement)	
	Stranding data			1.5 (entanglement in unspecified pot gear)	1.5		
	BSAI pollock trawl	1 (86)	1		1		
	BSAI flatfish trawl	1 (100)	0(+1)*		1		
2011	Stranding data			0.75 (entanglement in unspecified crab gear)	0.75		11.25
	Stranding data			0.75 (entanglement in unspecified longline gear)	0.75		
	Stranding data					2 (ship strike – unknown)	
	Stranding data					5.5 (unknown gear entanglement)	
	Stranding data			0.75 (entanglement in unknown gillnet gear)	0.75		
	Stranding data			0.75 (entanglement in unspecified pot gear)	0.75		
	Stranding data			0.75 (entanglement in unspecified set net gear)	0.75		

Year	Source	Observed Fishery M/SI (observer coverage rate)	Extrapolated Takes from Observed M/SI	Other Reported Fishery M/SI	Minimum Total Fishery M/SI	Other Human-Caused M/SI (source)	Minimum Total M/SI (includes extrapolated values)
2012	BSAI pollock trawl	1 (98)	1		1		7.85
	Stranding data			1 (entanglement in SEAK drift gillnet gear)	1		
	Stranding data			1.75 (entanglement in unknown gillnet gear)	1.75		
	Stranding data			0.75 (entanglement in unspecified longline gear)	0.75		
	Stranding data					0.2 (ship strike – charter)	
	Stranding data					0.2 (ship strike – pilot vessel)	
	Stranding data					1.2 (ship strike – unknown)	
	Stranding data					1.0 (ship strike – whale watch)	
	Stranding data					0.75 (unknown gear entanglement)	
Total M/SI 2008-2012		3	3	12.5	15.5	27.3	42.8
Annual Average - AK		0.6	0.6	2.5	3.1	5.46	8.56
Annual Average - HI		0.15	0.15	0.7	0.85	6.48 (2.38 ship strikes, 4.1 stranding records)	7.33
Total Annual Average M/SI		0.75	0.75	3.2 (AK – 2.5, HI – 0.7)	3.95 (AK – 3.1, HI – 0.85)	11.94 (AK – 5.46, HI – 6.48)	15.89
Ratio of annual average to PBR (82.8)					4.77%	14.42%	19.19%

*Total mortalities observed in unsampled hauls.

**Total mortalities observed in sampled and unsampled hauls. Since the total known mortality (1) exceeds the estimated mortality (0) for 2010, the sum of actual mortalities observed (1) will be used as a minimum estimate for 2010.

7.1.3 Steller sea lion, Western U.S. Stock

Between 2008 and 2012, NMFS observed incidental M/SI of western Steller sea lions in the following fisheries: BSAI Atka mackerel trawl, BSAI flatfish trawl, BSAI Pacific cod trawl, BSAI pollock trawl, and Gulf of Alaska Pacific cod longline. M/SI was also observed in the Prince William Sound salmon drift gillnet fishery in 1991. No M/SI was observed in the Cook Inlet salmon set and drift gillnet fisheries (observed in 1999 and 2000), or the Kodiak drift gillnet fishery (observed in 2002), although Steller sea lions were frequently observed in the vicinity of the gear (Manly et al. 2003). Though dated, these data are reported in the 2014 SAR as the best available information for those fisheries (Allen and Angliss 2015). The estimated total average annual M/SI from the federal fisheries is 17 sea lions per year. An additional 14.5/year is estimated to occur from the State of Alaska Prince William Sound salmon drift gillnet fishery. This results in a minimum annual average fisheries-related M/SI of 31.5 animals (Table 5).

Based on average observer (31.5 animals) and an annual average other fisheries-related M/SI of 0.2), NMFS estimates total average annual fisheries-related M/SI at 31.7 animals, or 10.86% of the stock's PBR of 292 animals. Five of the six commercial fisheries that contribute to the average annual M/SI of Steller sea lions are observed by the NMFS groundfish fisheries observer program: BSAI Atka mackerel trawl, BSAI flatfish trawl, BSAI Pacific cod trawl, BSAI pollock trawl, and GOA Pacific cod longline. The observer program is expected to continue into the foreseeable future, so it is reasonable to expect that any significant increase in M/SI of Steller sea lions in these fisheries would result in additional agency NEPA and ESA analyses resulting in the development of management measures to reduce M/SI. The Prince William Sound salmon drift gillnet fishery contributes almost as much mean annual M/SI of Steller sea lions as the combination of the other fisheries, and was last observed in the Alaska Marine Mammal Observer Program (AMMOP) in 1990-1991. These data are included in the calculation of total M/SI as it represents the best available information on the risk this fishery poses to this stock.

Reports from the NMFS stranding database of Steller sea lions entangled in fishing gear or with injuries caused by interactions with gear are another source of mortality data. During the 5-year period from 2008 to 2012, there were confirmed Steller sea lion strandings and entanglements in the range of the Western U.S. stock, resulting in an estimated annual mortality of 3.2 animals from this stock. NMFS (2010) notes that it is unclear to what extent entanglements reported to the stranding network in Alaska involve groundfish fishing gear. Overall, the number of entanglements that might result from interactions with groundfish fisheries appears to be low in contrast to other fisheries (primarily salmon fisheries). The M/SI from these fisheries is detailed in Table 5.

Table 5. Summary of Documented M/SI of Steller Sea Lion, Western U.S. Stock

Year	Source	Observed Fishery M/SI (observer coverage %)	Extrapolated Takes from Observed M/SI	Other Fishery M/SI	Minimum Total Fishery M/SI	Other Human-Caused M/SI (source)	Minimum Total M/SI (includes extrapolated values)
2008	BSAI pollock trawl	8 (85)	10.1		10.1		28.7
	BSAI flatfish trawl	11 (100)	11		11		
	GOA Pacific cod longline	1 (15)	1.6		1.6		
	Stranding data					1 (ring neck entanglement unknown)	
	Stranding data					5 (ring neck entanglement packing band)	
2009	BSAI pollock trawl	6 (86)	6.2		6.2		11.2
	BSAI flatfish trawl	3 (100)	3		3		
	Stranding data			1 (troll gear)	1		
	Stranding data					1 (ring neck entanglement packing band)	
2010	BSAI pollock trawl	5 (86)	8.2		8.2		22.3
	BSAI flatfish trawl	4 (+1)* (100)	4 (5)**		4 (5)**		
	BSAI Atka mackerel trawl	1 (100)	1		1		
	BSAI Pacific cod trawl	1 (66)	1		1		
	GOA Pacific cod longline	1 (28)	1.1		1.1		
	Stranding data					3 (ring neck entanglement unknown)	
	Stranding data			1 (unknown fishing gear)	1		
2011	BSAI pollock trawl	9 (98)	9.3		9.3		19.3
	BSAI flatfish trawl	7 (100)	7		7		
	BSAI Pacific cod trawl	1 (60)	1		1		
	Stranding data			1 (troll gear)	1		
	Stranding data					1 (ring neck entanglement unknown)	
2012	BSAI flatfish trawl	6 (100)	6		6		24.5
	BSAI pollock trawl	7 (98)	7		7		
	GOA Pacific cod trawl	1 (25)	1		1		
	GOA sablefish longline	1 (14)	5.5		5.5		
	Stranding data			3 (troll gear)	3		
	Stranding data					1 (ring neck entanglement packing band)	
1990-1991	Prince William Sound salmon drift gillnet	2 (4-5)	29				29

Year	Source	Observed Fishery M/SI (observer coverage %)	Extrapolated Takes from Observed M/SI	Other Fishery M/SI	Minimum Total Fishery M/SI	Other Human-Caused M/SI (source)	Minimum Total M/SI (includes extrapolated values)
Total M/SI 2008-2012		74	85	6	91	16 (marine debris)	107
2004-2008 annual average		n/a	n/a	n/a	n/a	199 ² (subsistence)	199
Total Annual Average M/SI			31.5 (17+14.5 PWS salmon drift gillnet)	1.2	32.7	212.2 (199 subsistence + 3.2 marine debris)	244.9
Ratio of annual average to PBR (292)			10.79 %	0.41 %	11.2 %	72.67 %	83.87 %

*Total mortalities observed in unsampled hauls.

**Total mortalities observed in sampled and unsampled hauls. In cases where the total known mortality exceeds the estimated mortality for a fishery in a given year, the sum of observed mortalities (both in sampled and unsampled hauls) will be used as a minimum estimate for that year.

¹ Animal reported to Alaska Regional Office stranding program; however, it was not documented in observer data. This observation is being added to the estimated mortality since it is not accounted for in the extrapolated value.

² The mean annual subsistence take from this stock over the 5-year period from 2004-2008, combined with the mean take 2005-2009 from St. Paul, was 199 Steller sea lions/year (Allen and Angliss 2015).

7.1.4 Bearded Seal, Alaska Stock

Individual incidental M/SI to the Alaska stock of bearded seals caused by commercial fisheries in Alaska is summarized in Table 6. Data considered for this analysis include M/SI incidental to commercial fishing operations collected through the NMFS North Pacific Groundfish Observer Program. No other data available to NMFS indicated M/SI for this stock.

Observed M/SI to the Alaska stock of bearded seal from the U.S. commercial fisheries between 2008 and 2012 in Alaska has been documented in the BSAI pollock trawl fishery and in the BSAI flatfish trawl fishery. Additionally, under the previous Exempted Fishing Permit 11-01, a bearded seal mortality occurred on September 26, 2011 (John Gauvin, Gauvin and Associates, LLC, personal communication, September 27, 2011). The estimated total average annual M/SI is 2.2 animals/year.

Although NMFS cannot calculate PBR for this stock with the available information, for the NID analysis NMFS estimated whether total human-caused M/SI for this stock is less than a proxy PBR based on the formula established in the MMPA for calculating PBR.

Table 6. Summary of Documented M/SI of Bearded Seal, Alaska Stock.

Year	Source	Observed Fishery M/SI (observer coverage %)	Extrapolated Takes from Observed M/SI	Minimum Fishery M/SI (includes extrapolated values)	Other Human-Caused M/SI (source)	Minimum Total M/SI (includes extrapolated values)
2008	BSAI pollock trawl	4 (85)	4.1	4.1		5.1
	BSAI flatfish trawl	1 (100)	1	1		
2009	BSAI pollock trawl	1 (86)	1	1		1
2010	BSAI pollock trawl	0 (+1)*	0 (1)**	1		1
2011	BSAI flatfish trawl	1 (100)	1	1		2
	EFP	1***	1	1		
2012	BSAI pollock trawl	1 (98)	1	1		2
	BSAI flatfish trawl	1 (100)	1	1		
Total M/SI 2008-2012		10	11.1	11.1	0	11.1
1990-1998 Annual average					6,788 (subsistence)	6,788
Total Annual Average M/SI				2.22	6,788 (subsistence)	6,790.22

*Total mortalities observed in unsampled hauls.

**Total mortalities observed in sampled and unsampled hauls. Since the total known mortality (1) exceeds the estimated mortality (0) for 2010, the sum of actual mortalities observed (1) will be used as a minimum estimate for that year.

*** Under the previous EFP (EFP 11-01), a bearded seal mortality occurred on September 26, 2011 (John Gauvin, Gauvin and Associates, LLC, personal communication, September 27, 2011) as reported in NMFS 2014b.

7.1.5 Ringed Seal, Alaska Stock

Individual incidental mortalities and serious injuries to the ringed seal, Alaska stock, caused by all commercial fisheries in Alaska are summarized in Table 7. Data considered for this analysis include M/SI incidental to commercial fishing operations collected through the NMFS North Pacific Groundfish Observer Program and the NMFS Alaska Regional Office Marine Mammal Health and Stranding Network. No other data available to NMFS indicated M/SI for this stock.

Observed M/SI of the Alaska stock of ringed seals from the U.S. commercial fisheries in Alaska has been documented in the BSAI pollock trawl, BSAI flatfish trawl, BSAI Pacific cod trawl, and BSAI Pacific cod longline fisheries from 2008-2012 for an average annual fisheries-related M/SI of 4.12 animals/year.

Although NMFS cannot calculate PBR for this stock with the available information, for the NID analysis NMFS estimated whether total human-caused M/SI for this stock is less than a proxy PBR based on the formula established in the MMPA for calculating PBR.

Table 7. Summary of Documented M/SI of Ringed Seal, Alaska Stock.

Year	Source	Observed Fishery M/SI (observer coverage %)	Extrapolated Takes from Observed M/SI	Minimum Fishery M/SI (includes extrapolated values)	Other Human-Caused M/SI (source)	Minimum Total M/SI (includes extrapolated values)
2008	BSAI pollock trawl	1 (85)	1	1		3
	BSAI flatfish trawl	2 (100)	2	2		
2009	BSAI pollock trawl	1 (86)	1	1		2
	BSAI flatfish trawl	1 (100)	1	1		
2011	BSAI flatfish trawl	6 (+1)*	6.0 (7)**	7		13.6
	BSAI pollock trawl	3 (98)	3	3		
	BSAI Pacific cod trawl	1 (60)	1	1		
	BSAI Pacific cod longline	1 (57)	1.6	1.6		
	Stranding data				1 (gunshot)	
2012	BSAI flatfish trawl	3 (100)	3	3		3
Total M/SI 2008-2012		20.6	20.6	20.6	1	21.6
1990-1998 Annual average					9,567 (subsistence)	9,567
Total Annual Average		4.12	4.12	4.12	9567.2	9,571.32

*Total mortalities observed in unsampled hauls.

**Total mortalities observed in sampled and unsampled hauls. Since the total known mortality (7) exceeds the estimated mortality (6.0) for 2011, the sum of actual mortalities observed (7) will be used as a minimum estimate for that year.

7.2 Total Human-Caused Mortality and Serious Injury

The estimated average annual total human-caused M/SI rate for the WNP stock of humpback whales in the action area for 2008-2012 including mortality due to fishing, vessel collisions, and unknown marine debris/gear entanglement is 2.156, which is 71.87% of the 3.0 PBR (Allen and Angliss 2015).

The estimated average annual total human-caused M/SI rate for the CNP stock of humpback whales in the action area for 2008-2012 including mortality due to fishing, vessel collisions, and unknown marine debris/gear entanglement is 15.89, which is 19.19% of the 82.8 PBR (Allen and Angliss 2015).

The estimated average annual total human-caused M/SI rate for the Western U.S. stock of Steller sea lions in the action area for 2008-2012 including mortality due to fishing, vessel collisions, and unknown marine debris/gear entanglement is 244.9, or 83.87% of the 292 PBR.

The estimated average annual total human-caused M/SI rate for the Alaska stock of bearded seals in the action area for the 2008-2012 time period including mortality due to fishing, vessel collisions, and unknown marine debris/gear entanglement is 6,790.22. See section 8.4 for a comparison of M/SI to a proxy PBR for this stock.

The estimated average annual total human-caused M/SI rate for the Alaska stock of ringed seals in the action area for 2008-2012 including mortality due to fishing, vessel collisions, and unknown marine debris/gear entanglement is 9,571.32. See section 8.5 for a comparison of M/SI to a proxy PBR for this stock.

8.0 Application of Negligible Impact Determination Criteria

In applying the 1999 NID criteria (64 FR 28800, May 27, 1999) to determine whether M/SI incidental to commercial fisheries will have a negligible impact on a stock, Criterion 1 (total human-caused M/SI less than 10% PBR) is the starting point for analysis. If this criterion is satisfied, the analysis is concluded. If Criterion 1 is not satisfied, NMFS uses one of the other criteria as appropriate.

NMFS used both the SARs (Allen and Angliss 2015) and previous incidental take statements from ESA section 7 consultations (NMFS 2010a, 2014b, 2014e) as indicators of the levels of M/SI to these species from groundfish fisheries. The SARs estimate mean or minimum annual mortality from observed commercial fisheries. Incidental take statements included in biological opinions on federal fisheries actions estimate anticipated future take over a three year period. In the case of ringed and bearded seals (NMFS 2014b), NMFS used the maximum observed mortality in a given year as the starting point in generating the three-year average, as opposed to the annual average mortality. Since PBRs for the two ice seals are not currently available,

NMFS used both sources of data in the NID analysis towards making a NID of the effects M/SI from groundfish fisheries on those stocks.

8.1 Humpback Whale, Western North Pacific Stock

In the case of the WNP stock of humpback whales, Criterion 1 was not satisfied because the total human-related mortalities and serious injuries are not less than 10% PBR. The PBR calculated for this stock is 3.0 animals (Allen and Angliss 2015). The annual average M&SI to the WNP stock of humpback whales from all human-caused sources is 2.16 animals, which is 71.87% of this stock's PBR [above the 10% PBR (0.3 animals) threshold]. As a result, the other criteria must be examined. Criterion 2 was also not satisfied, because fisheries-related mortality alone exceeds 10% of PBR. The estimate of fisheries-related mortality is 0.9, which is 30% of the PBR.

NMFS used NID Criterion 3 to evaluate impacts of commercial fisheries on the WNP stock of humpback whales because the total fisheries related M/SI is greater than 10% of the stock's PBR but less than PBR, and the stock is stable or increasing. The total of 0.9 fisheries-related M/SI per year (Section 12.1.1) is above 10% of PBR (0.3), and it is below the stock's PBR of 3.0 animals. The 2014 SAR reports a 6.7% annual rate of increase over the 1991-1993 estimate using the best available information (Calambokidis et al. 2008), but acknowledges that number is biased high to an unknown degree with no confidence limits. These data suggest that the stock is increasing. Further, there are only minor fluctuations in expected fisheries-related M/SI. Using Criterion 3 and the best available information on the population growth of the WNP stock of humpback whales and on fisheries-related M/SI as reported in the 2014 SAR (Allen and Angliss 2015), NMFS determines that M/SI incidental to commercial fishing will have a negligible impact on the stock.

8.2 Humpback Whale, Central North Pacific Stock

For CNP stock of humpback whales, Criterion 1 was not satisfied because the total human-related mortalities and serious injuries are not less than 10% PBR. The PBR calculated for this stock is 82.8 animals (Allen and Angliss 2015). The annual average M/SI to the CNP stock of humpback whales from all human-caused sources is 15.89 animals, which is 19.19% of this stock's PBR [above the 10% PBR (8.28 animals) threshold]. As a result, the other criteria must be examined.

Criterion 2 was also not satisfied because total human-caused mortality (15.89) does not exceed PBR (82.8) and the other criteria must be examined.

CNP humpback whales do not precisely fit the criteria as written for Criterion 3. Criterion 3 is satisfied if total fishery-related M/SI is greater than 10% PBR, less than PBR, and the population is stable or increasing. The fisheries-related M/SI (3.95) for this stock is 4.77% of PBR. The fisheries-related M/SI is less than 10% of PBR and therefore less than PBR.

Although CNP humpback whales do not precisely meet the criteria for Criterion 1, 2, or 3, data support a NID for this stock. The stock's population growth rate is increasing, increases in fisheries-related M/SI are limited, and human-caused M/SI is below PBR. The 2014 SAR (Allen and Angliss 2015) reports a range of annual rates of population increase from 4.9-10% depending on the study and specific area. The level of total human-caused M/SI (15.89 animals) is 19.19% of the PBR and is expected to remain below PBR for the foreseeable future. Thus, the expected total human-caused M/SI is well below the Criterion 2 M/SI threshold supporting a NID. Further, there are only minor fluctuations in fisheries-related M/SI. The expected total fisheries-related M/SI is well below the Criterion 3 M/SI threshold supporting a NID. NMFS determines that, based on the best available information, M/SI incidental to commercial fishing will have a negligible impact on the stock.

8.3 Steller Sea Lion, Western U.S. stock

For the Western U.S. stock of Steller sea lion, Criterion 1 was not satisfied because the total human-related mortalities and serious injuries are not less than 10% PBR. The PBR calculated for this stock is 292 animals (Allen and Angliss 2015). The annual average M/SI to the Western U.S. stock of Steller sea lion from all human-caused sources is 244.9 animals, which is 83.87% of this stock's PBR [above the 10% PBR (29.2 animals) threshold]. As a result, the other criteria must be examined.

Criterion 2 was also not satisfied. The total fishery-related M/SI per year is 32.7 animals per year and is 11.2% of the stock's PBR of 292 animals. Total human-caused M/SI is 83.87% of the stock's PBR of 292 animals. (Section 12.1.3) Because total human-caused M/SI are not greater than PBR, and fisheries-related mortality is not less than 10% PBR, NMFS cannot make a NID based on Criterion 2, and the other criteria must be examined.

NMFS used NID Criterion 3 to evaluate impacts of commercial fisheries on the Western U.S. stock of Steller sea lions because the total fisheries related M/SI is greater than 10% of the stock's PBR but less than PBR and the stock is stable or increasing. The total M/SI from commercial fisheries of 32.7 animals per year (Section 12.1.3) is 11.2% of PBR (above 10% PBR), and is below the stock's PBR of 292. Further, there are only minor fluctuations in expected fisheries-related M/SI. The level of total human-caused M/SI is estimated to be below PBR and is expected to remain below PBR for the foreseeable future. Survey data collected since 2000 indicate that Steller sea lion decline continues in the central and western Aleutian Islands but that regional populations east of Samalga Pass have increased or are stable. Overall, the stock is increasing at an annual rate of 1.67 (non-pups) and 1.45 (pups) (Allen and Angliss 2015). Using the best available information on this stock of Steller sea lions and on the fisheries-related M/SI, NMFS determines that M/SI incidental to commercial fishing will have a negligible impact on this stock based on Criterion 3.

NMFS reviewed other analyses in which M/SI to Steller sea lion, Western U.S. stock, from groundfish fisheries has been evaluated. NMFS issued an incidental take statement authorizing take of Steller sea lions in the 2010 ESA section 7 consultation on the North Pacific Groundfish Fishery Management Plan (NMFS 2010a). NMFS estimated that 78.0 sea lions would be taken in a three-year period. Using an annual average of 26.0 sea lions (1/3 of 3 year average of 78 sea lions) as a second estimate for annual fisheries-related M/SI in the same analysis as above, 26.0 sea lions is less than 10% of the PBR (29.2) but still less than PBR (292). NMFS again determines that M/SI incidental to commercial fishing will have a negligible impact on the stock using this additional information.

Criterion 3 is satisfied because current levels of M/SI of Western U.S. stock Steller sea lions incidental to commercial fishing are estimated to have a negligible impact on the stock, because population growth is stable or increasing slightly, and because there are only minor fluctuations in expected fishery M/SI. The level of human-caused M/SI is estimated to be below PBR, and to remain below PBR for the foreseeable future.

8.4 Bearded Seal, Alaska stock

For the Alaska stock of bearded seal, the best available information on total fisheries-related M/SI for the bearded seal stock is not consistent with thresholds required for NMFS to make a NID for this stock based on Criterion 1. NMFS estimates that total human-caused M/SI is likely greater than PBR based on the best available information on minimum stock abundance and total human-caused M/SI. Although NMFS cannot calculate PBR for this stock with the available information, NMFS estimated whether total human-caused M/SI for this stock is less than a proxy PBR based on the formula established in the MMPA for calculating PBR (PBR Formula).

$$PBR = N_{MIN} \times 0.5R_{MAX} \times F_R$$

NMFS rearranged this equation to estimate whether total human-caused M/SI for this stock is likely less than 10% of the stock's PBR.

$$N_{MIN} = PBR / (0.5R_{MAX} \times F_R)$$

The total human-caused M/SI is 6,790.22 animals. If this total human related M/SI of 6,790.22 animals were equal to 10% of a proxy for the stock's PBR, N_{MIN} would need to be 2,263,406 bearded seals (given a recovery factor (F_R) of 0.5 and a recommended pinniped maximum theoretical net productivity rate (R_{max}) of 12%). An N_{MIN} of 2,263,406 is far greater than the crude estimate of 155,000 animals based on regional surveys throughout the seal's Alaska range provided in the 2010 Status Review (Cameron et al. 2010) and even greater than the more recent core area estimate of 61,800 (Ver Hoef et al. 2013). Because this population level is highly unlikely, NMFS estimates that the annual average total human-caused M/SI of 6,790.22 animals is likely greater than 10% of a proxy PBR for this stock. Therefore, NMFS cannot make a NID for this stock based on Criterion 1, and the other criteria must be examined.

NMFS used the equation in a similar manner to the process above in Criterion 1 to evaluate whether Criterion 2 was satisfied (i.e., if total human-caused M/SI is greater than PBR, but fisheries-related M/SI is less than 10% of PBR). NMFS first evaluated whether the total human-caused mortality estimate of 6,790.22 animals is likely greater than the stock's PBR. Based on the PBR equation, if the total human-caused M/SI of 6,790.22 were equal to PBR, the N_{MIN} for this stock would need to be 226,340.7. However, core area estimate for the central and eastern Bering Sea of 61,800 bearded seals (VerHoef et al. 2013) and the Cameron (2010) estimate of 155,000 are both considerably less than 226,340.7. If N_{MIN} is less than 226,340.7 animals, solving for the PBR level based on the PBR equation would result in a PBR level smaller than 6,790.22 animals. Therefore, NMFS estimates that total human-caused mortality is greater than PBR.

NMFS then rearranged the PBR equation to estimate whether fisheries-related M/SI for this stock is likely equal to 10% of the stock's PBR, $N_{\text{MIN}} = \text{PBR} / (0.5R_{\text{MAX}} \times F_R)$. The annual average fisheries-related M/SI is 2.22 animals. If the annual average fisheries-related M/SI of 2.22 were equal to 10% of the stock's proxy PBR, the proxy PBR level would be 22.2 animals. Based on the PBR equation, an N_{MIN} of 740 animals would be required to calculate the proxy PBR level of 22.2 animals.

Given that NMFS cannot calculate PBR for this stock with the available information, NMFS reviewed other analyses in which M/SI to bearded seals from groundfish fisheries has been evaluated. NMFS issued an incidental take statement authorizing take of bearded seals in the 2014 ESA section 7 consultation on the North Pacific groundfish fisheries (NMFS 2014e). NMFS estimated that 18.0 seals would be taken in a three-year period. Using an annual average of 6.0 seals (1/3 of 3 year average of 18 seals) as a second estimate for annual fisheries-related M/SI, if 6.0 bearded seals were equal to 10% of the stock's proxy PBR, the proxy PBR level would be 60 animals. Based on the PBR equation above, an N_{MIN} of 2,000 animals would be required to calculate the proxy PBR level of 60 animals.

Using the best information currently available, the VerHoef et al. (2013) core area population estimate for the central and eastern Bering Sea of approximately 61,800 bearded seals and the Cameron (2010) estimate of 155,000 are both orders of magnitude greater than an N_{MIN} of 740 (SAR reports) or 2,000 animals (calculated using M/SI from NMFS 2014a). Because these very low population levels are highly unlikely, NMFS estimates that fisheries-related M/SI is less than 10% of PBR.

Criterion 2 states that if total human-caused M/SI is greater than PBR, and fisheries related mortality is less than 10% of PBR, "individual fisheries may be permitted if management measures are being taken to address non-fisheries-related M/SI." Non-fisheries-related M/SI as reported in Allen and Angliss (2014) include subsistence and research. The ESA provides take exemption for subsistence harvest of listed species by Alaska Natives. 16 U.S.C. 1539(e). Likewise, the MMPA provides take exemption for subsistence harvest of marine mammals by Alaska Natives. 16 U.S.C. 1371(b). Bearded seals, ringed seals, and other ice seal species are co-managed by the Ice Seal Committee and NMFS by monitoring subsistence harvest and

cooperating on needed research and education programs pertaining to ice seals. Currently, the subsistence harvest of ice seals by Alaska Natives appears to be sustainable and does not pose a threat to the populations (Cameron et al. 2010, Kelly et al. 2010).

NMFS is developing a recovery plan for this stock that will identify and analyze threats and sources of M/SI. Threats to the Alaska stock of bearded seals include climate change, habitat degradation, subsistence harvest, disturbance from oil and gas activities, and impacts from research activities, and have been review in the SARs (available at: <http://www.nmfs.noaa.gov/pr/sars/species.htm>, the species' Status Review (Cameron et al. 2010) and the proposed listing rule (75 FR 77496, December 10, 2010). Effects to bearded seals from these threats have been analyzed in the Alaska Groundfish Harvest Specifications Supplemental Information Report (NMFS 2015), the ESA section 7 Biological Opinion that considered effects from the groundfish fisheries on bearded seals (NMFS 2014e), and in the ESA Section 7 Biological Opinion on Oil and Gas Leasing and Exploration Activities in the U.S. Beaufort and Chukchi Seas (NMFS 2013). The amount or extent of bearded seal take in the groundfish fisheries and the oil and gas leasing and exploration activities are minimized through implementation of reasonable and prudent measures specified in the incidental take statements accompanying the biological opinions.

Based on NID Criterion 2 and the best available information on bearded seal population, fisheries-related M/SI, and total human-caused M/SI, NMFS determines that M/SI incidental to commercial fishing will have a negligible impact on the stock. This determination is supported by review of M/SI incidental to U.S. commercial fishing, revealing total commercial fishery M/SI is low, and the fisheries where bycatch does occur are monitored extensively (as shown in Table 6). If bycatch rates change, NMFS would have that information relatively quickly and could reevaluate the NID as necessary. Also, the non-fishery M/SI due to subsistence hunting is monitored and even though the current subsistence harvest is substantial in some areas, there is little to no evidence that subsistence harvests have or are likely to pose serious risks to the Alaska stock of bearded seals (Cameron et al. 2010).

8.5 Ringed Seal, Alaska stock

For the Alaska stock of ringed seal, the best available information on total fisheries-related M/SI for the bearded seal stock is not consistent with thresholds required for NMFS to make a NID for this stock based on Criterion 1. NMFS estimates that total human-caused M/SI is likely greater than PBR based on the best available information on minimum stock abundance and total human-caused M/SI. Although NMFS cannot calculate PBR for this stock with the available information, NMFS estimated whether total human-caused M/SI for this stock is less than a proxy PBR based on PBR Formula. As described in the Criterion 1 analysis for the bearded seal, NMFS rearranged the PBR equation to estimate whether total human-caused M/SI for this stock is likely less than 10% of a proxy for the stock's PBR.

NMFS estimates that total human-caused M/SI for ringed seals is 9,571.32 animals. If the total human related M/SI of 9,571.32 animals were equal to 10 % of the stock's PBR, the PBR would have to be 95,713.2 and N_{MIN} for this population would need to be 3,190,440 ringed seals (given a F_R of 0.5 and a recommended pinniped maximum theoretical net productivity rate of 12% - R_{MAX}). Because an N_{MIN} of 3,190,440 ringed seals is far greater than the best available estimate of 170,000 ringed seals in the U.S. EEZ of the Bering Sea in late April (Conn et al. 2013), NMFS estimates that the annual average M/SI to the Alaska stock of ringed seal from all human-caused sources of mortality (9,571.32) is likely greater than 10% of a proxy PBR for this stock. Therefore, NMFS cannot make a NID for this stock based on Criterion 1, and the other criteria must be examined.

NMFS used the equation in a similar manner to the process above in Criterion 1 to evaluate whether Criterion 2 was satisfied (i.e., if total human-caused M/SI is greater than PBR, but fisheries-related M/SI is less than 10% of PBR). NMFS first evaluated whether the total human-caused mortality estimate of animals is likely greater than the stock's proxy PBR. Based on the PBR equation, if the total human-caused M/SI of 9,571.32 were equal to PBR, the N_{MIN} for this stock would need to be 319,044. However, the best available population estimate of 170,000 ringed seals is considerably less than 319,044 animals. If N_{MIN} is less than 319,044, solving for PBR based on the PBR equation would result in a PBR smaller than 9,571.32 animals. Therefore, NMFS estimates that total human-caused M/SI is greater than PBR.

NMFS then rearranged the PBR equation to examine whether fisheries-related M/SI for this stock is likely equal to 10% of the stock's PBR, $N_{MIN} = PBR / (0.5R_{MAX} \times F_R)$. The annual average fisheries-related M/SI is 4.12 animals. If the annual average fisheries-related M/SI of 4.12 animals were equal to 10% of the stock's proxy PBR, the proxy PBR level would be 41.2 animals. Based on the PBR equation, an N_{MIN} of 1,373 animals would be required to calculate a proxy PBR level of 41.2 animals.

Given that NMFS cannot calculate PBR for this stock with the available information, NMFS also reviewed other analyses in which M/SI to ringed seals from groundfish fisheries has been evaluated. NMFS issued an incidental take statement authorizing take of ringed seals in the 2014 ESA section 7 consultation on the North Pacific groundfish fisheries (NMFS 2014e). NMFS estimated that 36.0 seals would be taken in a three-year period. Using an annual average of 12.0 seals (1/3 of 3 year average of 36 ringed seals) as a second estimate for annual fisheries-related M/SI, if 12.0 whales were equal to 10% of the stock's proxy PBR, the proxy PBR level would be 120 animals. Based on the PBR equation above, an N_{MIN} of 4,000 animals would be required to calculate the proxy PBR level of 120 animals.

Preliminary analysis of the U.S. surveys, which included only a small subset of the 2012 data, produced an estimate of 170,000 ringed seals in the U.S. EEZ of the Bering Sea in late April (Conn et al. 2013). This estimate is orders of magnitude greater than an N_{MIN} of 1,373 animals (SAR reports) or 4,000 animals (calculated using M/SI from NMFS 2014a). Because these very low population levels are highly unlikely, NMFS estimates that fisheries-related M/SI is less than 10% of PBR.

Criterion 2 states that if the total human-caused M/SI are greater than PBR and fisheries related mortality is less than 10% of PBR, “individual fisheries may be permitted if management measures are being taken to address non-fisheries-related M/SI.” Non-fisheries-related M/SI as reported in Allen and Angliss (2014) include subsistence and gunshot. The ESA provides take exemption for subsistence harvest of listed species by Alaska Natives. 16 U.S.C. 1539(e). Likewise, the MMPA provides take exemption for subsistence harvest of marine mammals by Alaska Natives. 16 U.S.C. 1371(b). Bearded seals, ringed seals, and other ice seal species are co-managed by the Ice Seal Committee and NMFS by monitoring subsistence harvest and cooperating on needed research and education programs pertaining to ice seals. Currently, the subsistence harvest of ice seals by Alaska Natives appears to be sustainable and does not pose a threat to the populations (Kelly et al. 2010).

NMFS is developing a recovery plan for this stock that will identify and analyze threats and sources of M/SI. Threats to the Alaska stock of bearded seals include climate change, habitat degradation, subsistence harvest, disturbance from oil and gas activities, and impacts from research activities, and have been review in the SARs (available at: <http://www.nmfs.noaa.gov/pr/sars/species.htm>, the species’ Status Review (Cameron et al. 2010) and the proposed listing rule (75 FR 77496, December 10, 2010). Effects to the ringed seals from these threats have been analyzed in the Alaska Groundfish Harvest Specifications Supplemental Information Report (NMFS 2015), the ESA section 7 Biological Opinion that considered effects from the groundfish fisheries on bearded seals (NMFS 2014e), and in the ESA Section 7 Biological Opinion on Oil and Gas Leasing and Exploration Activities in the U.S. Beaufort and Chukchi Seas (NMFS 2013). The amount or extent of ringed seal take in the groundfish fisheries and the oil and gas leasing and exploration activities are minimized through implementation of reasonable and prudent measures specified in the incidental take statements accompanying the biological opinions.

Based on NID Criterion 2 and the best available information on ringed seal population, fisheries-related M/SI, and total human-caused M/SI, NMFS determines that M/SI incidental to commercial fishing will have a negligible impact on the stock. This determination is supported by review of M/SI incidental to U.S. commercial fishing, revealing total commercial fishery M/SI is low, and the fisheries where bycatch does occur are monitored extensively (as shown in Table 7). If bycatch rates change, NMFS would have that information relatively quickly and could reevaluate the NID as necessary. Also, the non-fishery M/SI due to subsistence hunting is monitored and even though the current subsistence harvest is substantial in some areas, NMFS estimates this level of harvest will not pose a threat to the Alaska stock of ringed seals and appears to be sustainable (Kelly et al. 2010).

9.0 Negligible Impact Determinations

Relying upon the criteria outlined in 1999 (64 FR 28800), the 2014 Alaska SARs (Allen and Angliss 2015) and the best scientific information and data available, NMFS has determined that for a period of up to three years, M/SI incidental to the BSAI flatfish trawl, pollock trawl, and Pacific cod longline fisheries will have a negligible impact on the WNP stock of humpback

whales, the CNP stock of humpback whales, the Western U.S. stock of Steller sea lions, and the Alaska stocks of bearded and ringed seals. Further, NMFS has determined that for a period of up to three years, M/SI incidental to the BSAI Pacific cod longline fishery will have a negligible impact on the Alaska stock of ringed seals.

The conditions of Criterion 3 are met by the available data for WNP stock of humpback whales and the Western U.S. stock of Steller sea lion, and partially for CNP humpback whales. All conditions of Criterion 2 are met by the available M/SI data for Alaska stocks of bearded and ringed seals.

For the following stocks, NMFS has determined that the M/SI incidental to the BSAI flatfish and pollock trawl fisheries will have a negligible impact for purposes of issuing a permit under MMPA section 101(a)(5)(E):

- Humpback whale, Western North Pacific stock
- Humpback whale, Central North Pacific stock
- Steller sea lion, Western U.S. stock
- Bearded seal, Alaska stock
- Ringed seal, Alaska stock

Additionally, NMFS has determined that the M/SI of the Alaska stock of ringed seals incidental to the BSAI Pacific cod longline fishery will have a negligible impact for the purposes of issuing a permit under MMPA section 101(a)(5)(E).

NMFS will re-evaluate this determination as new information becomes available. Tables 8 and 9 review the results of this NID. Table 8 reports values from Allen and Angliss (2015). Table 9 shows which criteria were satisfied after using both sources of information.

Table 8. Summary of Annual Average M/SI for each marine mammal stock as % of PBR.

Stock	PBR	Annual Average Fishery M/SI	Fishery M/SI as % of PBR	Annual Average Human-Caused M/SI	Human-Caused M/SI as % of PBR
Humpback Whale, Western North Pacific	3.0	0.9	30%	2.16	71.87%
Humpback Whale, Central North Pacific	82.8	3.95	4.77%	15.89	19.19%
Steller Sea Lion, Western U.S.	292	31.5	10.79%	244.9	83.87%
Bearded Seal, Alaska	undet	2.22	N/A	6790.22	N/A
Ringed Seal, Alaska	undet	4.12	N/A	9,571.32	N/A

Table 9. Results of the Application of the NID Criteria by Stock

Marine Mammal Stock	Criterion 1 Satisfied? (Total human-caused M/SI <10% of PBR)	Criterion 2 Satisfied? (Total human-caused M/SI > PBR AND fisheries-related M/SI <10% of PBR)	Criterion 3 Satisfied? (Total fisheries-related M/SI >10% of PBR and < PBR AND population is stable or increasing)	Criterion 4 Satisfied? (If abundance is declining, the threshold level of 10% of PBR will continue to be used and a more conservative criterion is warranted)	Criterion 5 Satisfied? (If total fisheries-related M/SI > PBR, permits may not be issued)
Humpback Whale, Western North Pacific	NO Go to Criterion 2	NO Go to Criterion 3	YES The 5-year fishery-related M/SI is >0.1PBR and <PBR AND the population is increasing	Previous Criterion Already Satisfied	Previous Criterion Already Satisfied
Humpback Whale, Central North Pacific	NO Go to Criterion 2	Partially satisfied. Fisheries-related M/SI <10% of PBR	Partially satisfied. Fisheries-related M/SI < PBR AND the population is increasing	Previous Criterion Already Satisfied	Previous Criterion Already Satisfied
Steller Sea Lion, Western U.S.	NO Go to Criterion 2	NO Not satisfied, go to Criterion 3	YES The total 5-year fishery-related M/SI is >0.1 PBR and <PBR AND the population is increasing	Previous Criterion Already Satisfied	Previous Criterion Already Satisfied
Bearded Seal, Alaska	NO Go to Criterion 2	YES The Total human-caused M/SI is > PBR and <PBR AND fisheries-related M/SI <0.1 PBR	Previous Criterion Already Satisfied	Previous Criterion Already Satisfied	Previous Criterion Already Satisfied
Ringed Seal, Alaska	NO Go to Criterion 2	YES The Total human-caused M/SI is > PBR and <PBR AND fisheries-related M/SI <0.1 PBR	Previous Criterion Already Satisfied	Previous Criterion Already Satisfied	Previous Criterion Already Satisfied

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