DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Parts 223 and 226

[Docket No. 220318–0072]

RIN 0648–BC56

Endangered and Threatened Species; Designation of Critical Habitat for the Arctic Subspecies of the Ringed Seal

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Final rule.

SUMMARY: We, the National Marine Fisheries Service (NMFS), issue this final rule to designate critical habitat for the Arctic subspecies of the ringed seal (*Pusa hispida hispida*) under the Endangered Species Act (ESA). The critical habitat designation comprises an area of marine habitat in the Bering, Chukchi, and Beaufort seas. Based on consideration of national security impacts, we have excluded an area north of the Beaufort Sea shelf from the designation.

DATES: This rule is effective May 2, 2022.

ADDRESSES: The final rule, critical habitat map, and associated Final Impact Analysis Report (*i.e.,* report titled ''Final RIR/ESA Section 4(b)(2) Preparatory Assessment/FRFA of Critical Habitat Designation for the Arctic Ringed Seal'') can be found on the NMFS website at *www.fisheries.noaa.gov/species/ringed-seal#conservation-management.*

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SUPPLEMENTARY INFORMATION:

Background

On December 28, 2012, we published a final rule to list the Arctic ringed seal as threatened under the ESA (77 FR 76706). Section 4(b)(6)(C) of the ESA requires the Secretary to designate critical habitat concurrently with listing a species as threatened or endangered unless it is not determinable at that time, in which case the Secretary may extend the deadline for this designation by one year. At the time of listing, we announced our intention to designate critical habitat for the Arctic ringed seal in a separate rulemaking, as its critical habitat was not then determinable. Concurrently, we solicited information to assist us in (1) identifying the physical or biological features essential to the conservation of Arctic ringed seals, and (2) assessing the economic impacts of designating critical habitat for this species.

On December 3, 2014, we published a proposed rule to designate critical habitat for the Arctic ringed seal under the ESA (79 FR 71714). Due to a clerical error, that document contained mistakes, and we therefore published a corrected proposed rule on December 9, 2014 (79 FR 73010). We requested public comments on this proposed designation through March 9, 2015. In response to comments, we extended the public comment period through March 31, 2015 (80 FR 5498, February 2, 2015). We held five public hearings in Alaska on the proposed rule (80 FR 1618, January 13, 2015; 80 FR 5498, February 2, 2015).

On March 17, 2016, the listing of Arctic ringed seals as a threatened species was vacated by the U.S. District Court for the District of Alaska (*Alaska Oil & Gas Ass'n* v. *Nat'l Marine Fisheries Serv.,* Case Nos. 4:14–cv–29–RRB, 4:15–cv–2–RRB, 4:15–cv–5–RRB, 2016 WL 1125744 (D. Alaska Mar. 17, 2016)). This decision was reversed by the U.S. Court of Appeals for the Ninth Circuit on February 12, 2018 (*Alaska Oil & Gas Ass'n* v. *Ross,* 722 F. App'x 666 (9th Cir. 2018)), and the listing was reinstated on May 15, 2018.

On June 13, 2019, the Center for Biological Diversity filed a complaint in the U.S. District Court for the District of Alaska alleging that NMFS had failed to timely designate critical habitat for the Arctic ringed seal. Under a court-approved stipulated settlement agreement between the parties, NMFS published a revised proposed rule to designate critical habitat for the Arctic ringed seal on January 8, 2021 (86 FR 1452). Our revised proposed designation incorporated additional relevant information that became available since publication of the 2014 proposed rule, including information received during the comment period on that proposal. In the revised proposed rule, we discussed the differences from the 2014 proposal and described our revised proposed designation of critical habitat for the Arctic ringed seal. Specifically, we proposed to designate as critical habitat for the Arctic ringed seal an area of marine habitat in the northern Bering, Chukchi, and Beaufort seas containing physical and biological features essential to the conservation of the species and that may require special management considerations or protection. Based on consideration of national security impacts under section 4(b)(2) of the ESA, we also proposed to exclude an area north of the Beaufort Sea shelf from the critical habitat designation.

We requested public comments on the revised proposed designation and associated Draft Impact Analysis Report (NMFS 2020) through March 9, 2021, and held three public hearings (86 FR 7686, February 1, 2021). In response to requests, we extended the public comment period through April 8, 2021 (86 FR 13517, March 9, 2021). For a complete description of our proposed action, we refer readers to the revised proposed rule (86 FR 1452, January 8, 2021).

This final rule describes the critical habitat designation for the Arctic ringed seal and the basis for the designation, including a summary of, and responses to, comments received. A detailed discussion and analysis of probable economic impacts associated with this critical habitat designation is provided in the Final Impact Analysis Report (NMFS 2021), which is referenced throughout this final rule. The Arctic ringed seal is listed with the scientific name *Phoca* (=*Pusa*) *hispida hispida.* In this final rule, we continue to use the genus name *Pusa* to reflect currently accepted use (*e.g.,* Committee on Taxonomy (Society for Marine Mammalogy) 2019, Integrated Taxonomic Information System (online database) 2019).

Critical Habitat Definition and Process

Section 3(5)(A) of the ESA defines critical habitat as (1) the specific areas within the geographical area occupied by the species, at the time it is listed, on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination by the Secretary of Commerce (Secretary) that such areas are essential for the conservation of the species (16 U.S.C. 1532(5)(A)). Section 3(5)(C) of the ESA provides that, except in those circumstances determined by the Secretary, critical habitat shall not include the entire geographical area which can be occupied by the threatened or endangered species. Also, by regulation, critical habitat shall not be designated within foreign countries or in other areas outside U.S. jurisdiction (50 CFR 424.12(g)).

Conservation is defined in section 3(3) of the ESA as the use of all methods

and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary (16 U.S.C. 1532(3)). Therefore, a critical habitat designation is not limited to the areas necessary for the survival of the species, but rather includes areas necessary for supporting the species' recovery. (*See Gifford Pinchot Task Force* v. *U.S. Fish and Wildlife Service,* 378 F.3d 1059, 1070 (9th Cir. 2004) (''Clearly, then, the purpose of establishing 'critical habitat' is for the government to carve out territory that is not only necessary for the species' survival but also essential for the species' recovery.''), *amended on other grounds,* 387 F.3d 968 (9th Cir. 2004); *Alaska Oil and Gas Ass'n* v. *Jewell,* 815 F.3d 544, 555–56 (9th Cir. 2016).)

Section 4(b)(2) of the ESA requires the Secretary to designate critical habitat for threatened and endangered species on the basis of the best scientific data available and after taking into consideration the economic impact, the impact on national security, and any other relevant impact of specifying any particular area as critical habitat. This section also grants the Secretary discretion to exclude any area from critical habitat if he or she determines the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat. However, the Secretary may not exclude areas if such exclusion will result in the extinction of the species (16 U.S.C. 1533(b)(2)).

Critical habitat designations must be based on the best scientific data available, rather than the best scientific data *possible. Bldg. Indus. Ass'n. of Superior Cal.* v. *Norton,* 247 F.3d 1241, 1246–47 (D.C. Cir. 2001). *See also Alaska Oil & Gas Ass'n* v. *Jewell,* 815 F.3d 544, 555 (9th Cir. 2016) (The ESA ''requires use of the best available technology, not perfection.''). Provided that the best available information is sufficient to enable us to make a determination as required under the ESA, we must rely on it even though there is some degree of imperfection or uncertainty. *See Alaska* v. *Lubchenco,* 825 F. Supp. 2d 209, 223 (D.D.C. 2011) (''[E]ven if plaintiffs can poke some holes in the agency's models, that does not necessarily preclude a conclusion that these models are the best available science. Some degree of predictive error is inherent in the nature of mathematical modeling.''); *Oceana, Inc.* v. *Ross,* 321 F. Supp. 3d 128, 142 (D.D.C. 2018) (''[E]ven where data may be inconclusive, an agency must rely on the best available scientific information.''). There is no obligation to conduct independent studies and tests to acquire the best possible data. *Ross,* 321 F. Supp. 2d at 142 (citations omitted). *See also San Luis & Delta-Mendota Water Auth.* v. *Locke,* 776 F.3d 971, 995 (9th Cir. 2014) (holding that the best available science standard ''does not require an agency to conduct new tests or make decisions on data that does not yet exist.''); *Am. Wildlands* v. *Kempthorne,* 530 F.3d 991, 999 (D.C. Cir. 2008); *Southwest Ctr. for Biological Diversity* v. *Babbitt,* 215 F.3d 58, 60 (D.C. Cir. 2000) (''The 'best available data' requirement makes it clear that the Secretary has no obligation to conduct independent studies.'')

Once critical habitat is designated, section 7(a)(2) of the ESA requires Federal agencies to ensure that actions they authorize, fund, or carry out are not likely to destroy or adversely modify that habitat (16 U.S.C. 1536(a)(2)). This requirement is additional to the section 7(a)(2) requirement that Federal agencies ensure that their actions are not likely to jeopardize the continued existence of ESA-listed species (sometimes referred to as the ''jeopardy'' standard). Specifying the geographic location of critical habitat also facilitates implementation of section 7(a)(1) of the ESA by identifying areas where Federal agencies can focus their conservation programs and use their authorities to further the purposes of the ESA (16 U.S.C. 1536(a)(1)). Critical habitat requirements do not apply to citizens engaged in actions on private land that do not involve a Federal agency.

Description and Natural History

The Arctic ringed seal is the smallest of the northern seals, with typical adult body size of 1.5 meters (m) in length and 70 kilograms in weight (Kelly *et al.* 2010a). Age of sexual maturity for female Arctic ringed seals generally ranges from 3 to 7 years of age (Smith 1987, Holst *et al.* 1999, Quakenbush *et al.* 2011, Crawford *et al.* 2015), and for males ranges from 5 to 7 years of age (Frost and Lowry 1981), but with geographic and temporal variability depending on animal condition and population structure (Kelly *et al.* 2010a). It is well established that ringed seals can live to more than 40 years of age (Kelly *et al.* 2010a), and that many females surviving into their 30s remain reproductive; the average life span is likely to be much lower, due to high first-year mortality rates (Kelly 1988a).

Distribution and Habitat Use

Arctic ringed seals are circumpolar and are found throughout ice-covered waters of the Arctic Ocean Basin and southward into adjacent seas, including the Bering, Chukchi, and Beaufort seas off Alaska's coast (Frost and Lowry 1981, Frost 1985, Kelly 1988a, Rice 1998). Ringed seals are adapted to remaining in heavily ice-covered areas throughout the fall, winter, and spring by using the stout claws on their foreflippers to maintain breathing holes in the ice. Arctic ringed seals are highly associated with sea ice, and use the ice as a substrate for resting, whelping (birthing), nursing, and molting (shedding and regrowing hair and outer skin layers). The seasonality of ice cover strongly influences Arctic ringed seal movements, foraging, reproductive behavior, and vulnerability to predation. Kelly *et al.* (2010b) referred to three periods important to Arctic ringed seal seasonal movements and habitat use: The winter through early spring ''subnivean period'' when the seals rest primarily in subnivean lairs (snow caves on top of the ice); the late spring to early summer ''basking period'' between abandonment of the lairs and melting of the seasonal sea ice when the seals undergo their annual molt; and the open-water ''foraging period'' from ice breakup to freeze-up in the fall, when feeding occurs most intensively.

Information on movements of individual ringed seals tagged in Alaska indicates that the seals can range extensively across the Bering, Chukchi, and Beaufort seas annually (Crawford *et al.* 2012a, Von Duyke 2018, Crawford *et al.* 2019, Quakenbush *et al.* 2019, Quakenbush 2020, Von Duyke *et al.* 2020). Von Duyke *et al.* (2020) reported that during the August to December period, the median cumulative distance traveled by 17 ringed seals tagged in Alaska was 4,790 kilometers (km) per seal (range 2,719 to 5,988 km).

Subnivean Period: With the onset of freeze-up in the fall, many Arctic ringed seals that summer in the Beaufort and Chukchi seas are thought to move generally southward with the advancing ice, while others remain in these waters over winter (Frost 1985). Adult movements during the subnivean period have been reported as typically limited, especially where ice cover is extensive (Kelly and Quakenbush 1990, Harwood *et al.* 2007, Kelly *et al.* 2010b, Crawford *et al.* 2012b, Luque *et al.* 2014), likely due to maintenance of breathing holes and social behavior during the breeding season (Kelly *et al.* 2010b). For example, Kelly *et al.* (2010b) reported that the home ranges of 55 adult ringed seals inhabiting landfast (shorefast) ice in the Chukchi and Beaufort seas ranged from less than 1 to 27.9 square kilometers in April to June. However, some adult males have been found to make long-distance movements in the Chukchi and

Bering seas during January to March (Quakenbush *et al.* 2019). In contrast, subadult Arctic ringed seals have been observed to travel relatively long distances to remain near the ice edge in the Bering Sea in winter (Crawford *et al.* 2012a, 2019). Crawford *et al.* (2012a) suggested that this habitat may be important for overwintering subadult ringed seals; almost all of the subadults monitored by Crawford *et al.* (2019) showed this winter habitat use pattern along with dive behavior indicative of foraging.

During freeze-up, ringed seals surface to breathe in the remaining open water of cracks and leads, and as these openings in the ice freeze over, the seals open breathing holes that they maintain as the ice thickens by abrading the ice with the claws on their foreflippers (Smith and Stirling 1975). Ringed seals excavate lairs in snowdrifts over their breathing holes where snow depth is sufficient (*e.g.,* McLaren 1958, Smith and Stirling 1975, Smith 1987). These subnivean lairs are occupied for resting, whelping, and nursing pups in areas of annual landfast ice (McLaren 1958, Burns 1970, Kelly *et al.* 1986, Frost and Burns 1989, Smith *et al.* 1991, Oceana and Kawerak 2014) and stable pack ice (Finley *et al.* 1983, Fedoseev *et al.* 1988, Wiig *et al.* 1999, Pilfold *et al.* 2014). Snowdrifts of sufficient depth typically occur only where the ice has undergone a low to moderate amount of deformation (*i.e.,* rafting, ridging, or hummocking due to wind and ocean currents) and where snow on the ice has drifted along pressure ridges or ice hummocks (Smith and Stirling 1975, Lydersen and Gjertz 1986, Furgal *et al.* 1996, Lydersen 1998).

Once mature, females give birth annually to a single pup in their lairs generally from mid-March through April, and the pups are nursed in the lairs for an average of 39 days (Hammill and Smith 1991), with considerable variation (Kelly *et al.* 2010a). Females continue to forage throughout lactation while making frequent visits to birth lairs (Hammill 1987, Kelly and Wartzok 1996, Simpkins *et al.* 2001). The pups develop foraging skills before weaning (Lydersen and Hammill 1993), and are normally weaned before breakup of spring ice (McLaren 1958, Smith 1973, Kelly 1988a, Smith *et al.* 1991).

Subnivean lairs provide protection from cold and predators throughout the winter months, but they are especially important for protecting newborn ringed seals. The lairs conceal ringed seals from predators, an advantage especially important to pups because they start life with minimal tolerance for immersion in cold water (Smith *et al.* 1991). Major predators of ringed seals include polar bears (*Ursus maritimus*) and Arctic foxes (*Alopex lagopus*) (*e.g.,* Smith 1976, Frost and Burns 1989, Derocher *et al.* 2004, Thiemann *et al.* 2008). Pups in lairs with thin snow cover are more vulnerable to polar bear predation than pups in lairs with thick snow cover (Hammill and Smith 1989, Ferguson *et al.* 2005). For example, Hammill and Smith (1991) noted that polar bear predation on ringed seal pups increased four-fold in a year when average snow depths in their study area decreased from 23 to 10 centimeters (cm). Stirling and Smith (2004) surmised that most pups that survived exposure to cold after their subnivean lairs collapsed during unseasonal rains were eventually killed by polar bears, Arctic foxes, or gulls. Similarly, Alaska Native hunters from Kotzebue, Alaska, reported that when the snow melts early, there is no protection for ringed seal pups from predators such as jaegers, ravens, and foxes (Huntington *et al.* 2017a); and hunters in the Bering Strait region suggested that other land predators (grizzly bear (*Ursus arctos*), wolverine (*Gulo gulo*)) may also prey on ringed seal pups not protected in lairs (Gadamus *et al.* 2015).

Subnivean lairs also provide refuge from air temperatures too low for survival of ringed seal pups. When forced to flee into the water to avoid predators, the ringed seal pups that survive depend on the subnivean lairs to subsequently warm themselves (Smith *et al.* 1991). When snow depth is insufficient, pups can freeze in their lairs, as documented when roofs of lairs in the White Sea were only 5 to 10 cm thick (Lukin and Potelov 1978). Stirling and Smith (2004) also documented exposure of ringed seals to hypothermia following the collapse of subnivean lairs during unseasonal rains near southeastern Baffin Island.

During winter and spring, ringed seals are found throughout the Chukchi and Beaufort seas (Frost 1985, Kelly 1988a). In the Bering Sea, surveys indicate that ringed seals use nearly the entire ice field over the Bering Sea shelf. During an exceptionally high ice year (1976), Braham *et al.* (1984) found ringed seals present in the southeastern Bering Sea north of the Pribilof Islands to outer Bristol Bay, primarily north of the ice front. But the authors noted that most of these seals were likely immature or nonbreeding animals. Frost (1985) indicated that ringed seals ''occur as far south as Nunivak Island and Bristol Bay, depending on ice conditions in a particular year, but generally are not abundant south of Norton Sound except in nearshore areas.'' More recently, surveys conducted in the Bering Sea during spring documented numerous ringed seals in both nearshore and offshore habitat, including south of Norton Sound (NMFS Marine Mammal Laboratory, 2012–2013, unpublished data). Relatively few ringed seal pups were documented during these surveys (n=65; Lindsay *et al.* 2021), perhaps reflecting, at least in part, that pups were sheltered in subnivean lairs and thus would not have been detected during the surveys. Although highest pup densities were located in Norton Sound, pups were also documented in offshore habitat farther south (Lindsay *et al.* 2021). Satellite tracking data for ringed seals tagged in Kotzebue Sound, Alaska, showed that adults remained, for the most part, in the Chukchi Sea and Bering Sea north of St. Lawrence Island during winter and spring (Crawford *et al.* 2012a). However, movement data for ringed seals tagged near Utqiaġvik, Alaska, in 2011 indicated that some adults overwintered toward the shelf break in the Bering Sea (North Slope Borough, 2012, unpublished data). Ringed seals tagged more recently in the Chukchi and Beaufort seas (primarily adults) used areas as far south as Nunivak Island during December to May, but the core-use area was located in southern Kotzebue Sound (Quakenbush *et al.* 2019, Quakenbush 2020). Finally, the subsistence harvest of ringed seal pups by hunters in Quinhagak, Alaska (Coffing *et al.* 1998), suggests that some ringed seals may whelp south of Nunivak Island.

Basking Period: Numbers of ringed seals hauled out on the surface of the ice typically begin to increase during spring as the temperatures warm and the snow covering the seals' lairs melts. Although the snow cover can melt rapidly, the ice remains largely intact and serves as a substrate for annual molting, during which time seals spend many hours basking in the sun (Smith 1973, Finley 1979, Smith and Hammill 1981, Kelly and Quakenbush 1990, Kelly *et al.* 2010b). Adults generally molt from mid-May to mid-July (McLaren 1958), although there is regional variation (Ryg and Øritsland 1991), and pups molt at or shortly after weaning (Kelly 1988a, Lydersen and Hammill 1993). Subadult harbor seals *(Phoca vitulina*) and spotted seals (*Phoca largha*) tend to molt earlier than adults (Ashwell-Erickson *et al.* 1986, Burns 2002, Daniel *et al.* 2003), and this may also be the case for subadult ringed seals (Kelly and Quakenbush 1990). Usually, the largest numbers of basking seals are observed in June (Smith 1973, Finley 1979, Smith

et al. 1979, Smith and Hammill 1981, Moulton *et al.* 2002a). Thometz *et al.* (2021) reported that metabolism in ringed seals increased markedly in association with the molt; and discussed that, although a study on the molt in harbor and spotted seals by Ashwell-Erickson *et al.* (1986) has often been cited as evidence of declines in metabolism, that study actually documented increasing metabolic rates during the regenerative phase of molt. Feeding is reduced during the molt, and as seals complete this phase of the annual pelage cycle and the seasonal sea ice melts during the summer, ringed seals spend increasing amounts of time in the water feeding (Kelly *et al.* 2010b).

Existing information on the distribution and abundance of Arctic ringed seals in the U.S. Chukchi and Beaufort seas during the molting period comes largely from aerial surveys conducted for the most part over the continental shelf within about 25 to 40 km of the Alaska coast. However, Bengtson *et al.* (2005) reported results for spring aerial surveys conducted during two successive years in the Chukchi Sea that included a limited number of offshore (beyond 43 km from the coast) transect lines flown perpendicular from the coast up to 185 km. Ringed seals were observed along these offshore transects, albeit at lower densities than transects flown closer to the coast. Aerial surveys conducted in spring to early summer (coincident with the periods of Arctic ringed seal reproduction and molting) in the U.S. Beaufort Sea to investigate bowhead whale density and distribution were concentrated over the continental shelf, but less extensive surveys were also conducted over the adjacent shelf slope and deeper waters up to about 100 km north of the shelf (Ljungblad 1981, Ljungblad *et al.* 1982, Ljungblad *et al.* 1983, 1984, Ljungblad *et al.* 1985, Ljungblad *et al.* 1986, Alaska Fisheries Science Center 2020). Incidental sightings of ringed seals were recorded throughout the survey area, including in the limited areas surveyed north of the shelf.

Open-Water Period: Most Arctic ringed seals that winter in the Bering and southern Chukchi seas are believed to migrate northward in spring as the ice edge recedes and spend the summer open-water period in the pack ice of the northern Chukchi and Beaufort seas (Frost 1985). Arctic ringed seals are also dispersed in ice-free areas of the Bering, Chukchi, and Beaufort seas during this period. Tracking data indicate that tagged ringed seals made extensive use of the continental shelf waters of the U.S. Chukchi and Beaufort seas during the open-water period (Crawford *et al.* 2012a, Quakenbush *et al.* 2019, Quakenbush 2020, Von Duyke *et al.* 2020). Kelly *et al.* (2010b) found that ringed seals tagged during their study ranged during the open-water period up to 1,800 km from their small winter/spring home ranges. In addition, Harwood *et al.* (2012) documented long-distance westward movements of mostly subadult seals tagged in the Canadian Beaufort Sea through the Beaufort Sea offshore of the Alaska North Slope and continuing into the Chukchi Sea (range: 706–6,140 km).

Quakenbush *et al.* (2019) identified a high-use area for tagged ringed seals during the open-water period that included Barrow Canyon and the western Beaufort Sea over the continental shelf similar to where Citta *et al.* (2018) mapped a relatively high density of locations of tagged ringed seals during summer. Although tagged ringed seals tracked in U.S. waters tended to remain over the continental shelf, several individuals also made trips into the deep waters north of the shelf (Crawford *et al.* 2019, Quakenbush *et al.* 2019, Quakenbush 2020, Von Duyke *et al.* 2020; Alaska Department of Fish and Game (ADF&G) and North Slope Borough, 2020, unpublished data). Von Duyke *et al.* (2020) reported that most of the forays by tagged ringed seals north of the shelf involved movements to retreating pack ice and included days when the seals hauled out on the ice. Dive recorders indicated that foraging-type movements occurred over both the continental shelf and north of the shelf, suggesting that both areas may be important during the open-water period. Similarly, during the open-water period, some, primarily subadult, ringed seals satellite-tagged in Svalbard, Norway, made forays into the Arctic Ocean Basin, and that time spent there increased after a major collapse of sea ice in this region, when the seals traveled farther to find sea ice (Hamilton *et al.* 2015, Hamilton *et al.* 2017). Observations of ringed seals near and beyond the outer boundary of the U.S. Exclusive Economic Zone (EEZ) north of the shelf were also documented by marine mammal observers during a research geophysical survey conducted in the summer of 2010 (Beland and Ireland 2010).

Arctic ringed seals typically lose a significant proportion of their blubber mass in late winter to early summer and then replenish their blubber reserves during late summer or fall and into winter (Lowry *et al.* 1980b, Ryg *et al.* 1990, Ryg and Øritsland 1991, Belikov and Boltunov 1998, Goodyear 1999, Quakenbush *et al.* 2011, Young and Ferguson 2013, Quakenbush *et al.* 2020).

Critical Habitat Identification

In the following sections, we describe the relevant definitions and requirements in the ESA and implementing regulations at 50 CFR part 424, and the key information and criteria used to prepare this final critical habitat designation. In accordance with section 4(b)(2) of the ESA, this critical habitat designation is based on the best scientific data available. Our primary sources of information include the status review report for the ringed seal (Kelly *et al.* 2010a), our proposed and final rules to list four subspecies of ringed seals, including the Arctic ringed seal, under the ESA (75 FR 77476, December 10, 2010; 77 FR 76706, December 28, 2012), articles in peer-reviewed journals, other scientific reports, peer reviewer and public comments on the revised proposed rule, and relevant Geographic Information System (GIS) and satellite data (*e.g.,* shoreline data, U.S. maritime limits and boundaries data, sea ice extent) for geographic area calculations and mapping. We also rely upon Indigenous Knowledge (IK) of Alaska Native subsistence users.

To identify specific areas that may qualify as critical habitat for Arctic ringed seals, in accordance with 50 CFR 424.12(b), we followed a five-step process: (1) Identify the geographical area occupied by the species at the time of listing; (2) identify physical or biological habitat features essential to the conservation of the species; (3) determine the specific areas within the geographical area occupied by the species that contain one or more of the physical and biological features essential to the conservation of the species; (4) determine which of these essential features may require special management considerations or protection; and (5) determine whether a critical habitat designation limited to geographical areas occupied by the species at the time of listing would be inadequate to ensure the conservation of the species. Our evaluation and conclusions are described in detail in the following sections, and incorporate changes in response to peer reviewer and public comments (see Summary of Comments and Responses and Summary of Changes From the Revised Proposed Designation sections).

Geographical Area Occupied by the Species

The phrase ''geographical area occupied by the species at the time it is listed,'' which appears in the statutory

definition of critical habitat, is defined by regulation as an area that may generally be delineated around species' occurrences as determined by the Secretary (*i.e.,* range) (50 CFR 424.02). Such areas may include those areas used throughout all or part of the species' life cycle, even if not used on a regular basis, such as migratory corridors, seasonal habitats, and habitats used periodically, but not solely, by vagrant individuals (*Id.*).

Based on existing literature, including available information on Arctic ringed seal sightings and movements, we identified the range of the Arctic ringed seal in the final ESA listing rule (77 FR 76706; December 28, 2012) as the Arctic Ocean and adjacent seas, except west of 157°00′ E longitude (the Kamchatka Peninsula), where the Okhotsk subspecies of the ringed seal occurs, or in the Baltic Sea where the Baltic subspecies of the ringed seal is found. As noted previously, we cannot designate areas outside U.S. jurisdiction as critical habitat. Thus, the geographical area under consideration for this designation is limited to areas under U.S. jurisdiction that Arctic ringed seals occupied at the time of listing. This area extends to the outer boundary of the U.S. EEZ in the Chukchi and Beaufort seas, and as far south as Bristol Bay in the Bering Sea (Kelly *et al.* 2010a).

Physical and Biological Features Essential to the Conservation of the Species

The statutory definition of critical habitat refers to ''physical or biological features essential to the conservation of the species,'' but the ESA does not specifically define or further describe these features. Implementing regulations at 50 CFR 424.02 define such features as those that occur in specific areas and that are essential to support the life-history needs of the species. The regulations provide additional details and examples of such features.

As described below in the section, Summary of Changes From the Revised Proposed Designation, peer reviewer and public comments led us to re-evaluate and revise the descriptions of the essential features identified in the revised proposed rule. Based on the best scientific information available regarding the natural history of the Arctic ringed seal and the habitat features that are essential to support the species' life-history needs, we have identified the following physical and biological features that are essential to the conservation of the Arctic ringed seal within U.S. waters occupied by the species.

(1) *Snow-covered sea ice habitat suitable for the formation and maintenance of subnivean birth lairs used for sheltering pups during whelping and nursing, which is defined as waters 3 m or more in depth (relative to MLLW) containing areas of seasonal landfast (shorefast) ice or dense, stable pack ice, that have undergone deformation and contain snowdrifts of sufficient depth to form and maintain birth lairs (typically at least 54 cm deep).*

Snow-covered sea ice habitat suitable for the formation and maintenance of subnivean birth lairs used for sheltering pups during whelping and nursing is essential to conservation of the Arctic ringed seal because without the protection of lairs, ringed seal pups are more vulnerable to freezing and predation (Lukin and Potelov 1978, Smith 1987, Hammill and Smith 1991, Smith *et al.* 1991, Smith and Lydersen 1991, Stirling and Smith 2004, Ferguson *et al.* 2005).

Snowdrifts of sufficient depth for birth lair formation and maintenance typically occur on deformed ice where drifting has taken place along pressure ridges or ice hummocks (Smith and Stirling 1975, Lydersen and Gjertz 1986, Smith 1987, Kelly 1988a, Furgal *et al.* 1996, Lydersen 1998). For purposes of assessing potential impacts of projected changes in April Northern Hemisphere snow conditions on ringed seals, Kelly *et al.* (2010a) considered 20 cm to be the minimum average snow depth required on areas of flat ice to form drifts of sufficient depth to support birth lair formation. Further, Kelly *et al.* (2010a, p. 109) discussed that ringed seals require snowdrift depths of 50 to 65 cm or more to support birth lair formation. To identify the typical snowdrift depth for snow-covered sea ice habitat that we consider sufficient for Arctic ringed seal birth lair formation and maintenance, we derived a specific depth threshold as follows. At least seven studies have reported minimum snowdrift depth measurements at Arctic ringed seal birth lairs (typically measured near the center of the lairs or over the breathing holes) off the coasts of Alaska (Kelly *et al.* 1986, Frost and Burns 1989), the Canadian Arctic Archipelago (Smith and Stirling 1975, Kelly 1988b, Furgal *et al.* 1996), Svalbard (Lydersen and Gjertz 1986), and in the White Sea (Lukin and Potelov 1978). The average minimum snowdrift depth measured at birth lairs was 54 cm across all of the studies combined, and 64 cm in the Alaska studies only. The average from studies in Alaska is based on data from fewer years over a shorter time span than from all seven studies combined (3 years during 1982–1984 versus 11 years during 1971–1993, respectively); consequently, the Alaska-specific average is more likely to be biased if an anomalous weather pattern occurred during its more limited timeframe. For this reason, we conclude that the average minimum snowdrift depth based on all studies combined (54 cm) provides the best available estimate of the typical minimum snowdrift depth that is sufficient for birth lairs.

Arctic ringed seals have been reported to favor landfast ice as whelping habitat (*e.g.,* Smith and Stirling 1975, 1978, Smith and Hammill 1981, Lydersen and Gjertz 1986, Smith and Lydersen 1991, Pilfold *et al.* 2014). However, landfast ice extending seaward from shore may freeze to the sea bottom in very shallow water (typically less than about 1.5 to 2 m deep), such as in lagoons, near river deltas, and close to shore, during the course of winter (commonly referred to as ''bottom-fast'' ice; Reimnitz *et al.* 1977, Newbury 1983, Hill *et al.* 1991, Dammann *et al.* 2018, Dammann *et al.* 2019). Where sea ice in very shallow waters is bottom-fast, there would presumably be little to no ice-free water present that would allow the seals to swim under and gain access to the ice surface for the construction and maintenance of birth lairs, except perhaps where cracks form in the ice, or where the ice is not uniformly frozen to or resting on the seafloor. Thus, we expect use of bottom-fast ice by Arctic ringed seals to be low relative to use of ice in deeper waters. Although we are aware of few scientific reports or publications that provide specific information on Arctic ringed seal use of sea ice in very shallow areas during the period of whelping and nursing, Lukin *et al.* (2006) reported that in the White Sea, Arctic ringed seal breathing holes and lairs were present in water less than 3 m deep; however, no birth lairs were recorded there. In addition, a study to investigate the effects of offshore oil development on ringed seals (Williams *et al.* 2002, Williams *et al.* 2006) documented several lairs, including two birth lairs, as well as breathing holes, seaward of the barrier islands west of Prudhoe Bay which, based on their locations relative to depths shown on the survey maps and navigation charts, appear to have been located in water that was about 3 m or less in depth, although water depth is approximate and it is possible that sea ice conditions may differ there from those along the mainland coast. There is also some evidence that observed ringed seal densities are lower in very shallow ice-covered waters, at least in the Alaskan

Beaufort Sea during late May to early June (during the molting period) in waters less than 3 m deep (Moulton *et al.* 2001, Moulton *et al.* 2002b, Moulton *et al.* 2002a, Moulton *et al.* 2003), and in waters estimated to be between 3 and 5 m deep (Frost *et al.* 2004).

The extent of landfast ice that becomes bottom-fast over winter varies along the coast (*e.g.,* Dammann *et al.* 2018), and a portion of the landfast ice in very shallow waters becomes bottom-fast over winter. Use of such ice by Arctic ringed seals is expected to be low relative to use of ice in waters greater than 2 to 3 m depth, and there is some evidence that Arctic ringed seal densities are lower in waters less than 3 to 5 m deep, at least in the Beaufort Sea during late May to early June. We therefore concluded that sea ice habitat essential for birth lairs is best described in reference to a minimum water depth, rather than with a specific focus on bottom-fast ice in itself. Specifically, for the purpose of describing sea ice habitat that is essential for the formation and maintenance of birth lairs, we selected 3 m as the minimum water depth for this essential feature.

Arctic ringed seal whelping has also been observed on both nearshore and offshore drifting pack ice. As Reeves (1998) noted, nearly all research on Arctic ringed seal reproduction has been conducted in landfast ice, and the potential importance of stable but drifting pack ice has not been adequately investigated. Studies in the Barents Sea (Wiig *et al.* 1999), Baffin Bay (Finley *et al.* 1983) and the Canadian Beaufort Sea (Pilfold *et al.* 2014) have documented pup production in pack ice, and Smith and Stirling (1975), citing unpublished data from the ''Western Arctic'' (presumably the Canadian Beaufort Sea), also indicated that ''the offshore areas of shifting but relatively stable ice are an important part of the breeding habitat.'' Lentfer (1972) reported ''a significant amount of ringed seal denning and pupping on moving heavy pack ice north of Barrow [*i.e.,* Utqiaġvik].'' Moreover, surveys conducted in the Bering and Chukchi seas during spring have documented ringed seals, including observations of pups, in offshore areas (NMFS Marine Mammal Laboratory, 2012–2013 and 2016, unpublished data). Ringed seal vocalizations detected throughout the winter and spring in multi-year acoustic recordings collected along the shelf break north-northwest of Utqiaġvik, along with a seasonal change in the repertoire during the breeding season, also suggest that some Arctic ringed seals overwinter and breed in offshore pack ice (Jones *et al.* 2014). We therefore conclude that the best scientific information available indicates that snow-covered sea ice habitat essential for the formation and maintenance of birth lairs (in waters 3 m or more in depth relative to MLLW) includes areas of both landfast ice and dense, stable pack ice that have undergone deformation and contain snowdrifts of sufficient depth to form and maintain birth lairs, typically at least 54 cm deep.

(2) *Sea ice habitat suitable as a platform for basking and molting, which is defined as areas containing sea ice of 15 percent or more concentration in waters 3 m or more in depth (relative to MLLW).*

Sea ice habitat suitable as a platform for basking and molting is essential to conservation of the Arctic ringed seal because molting is a biologically-important, energy-intensive process that could incur increased energetic costs if it were to occur in water, or increased risk of predation if it were to occur on land due to the absence of readily accessible escape routes to avoid predators (*i.e.,* breathing holes or natural openings in sea ice). Moreover, we are unaware of any studies establishing whether Arctic ringed seals can molt successfully in water, or reports of healthy Arctic ringed seals hauled out on land during the molt (they are known to come ashore during this period when sick). IK indicates that ringed seals, mostly young individuals, have been occasionally seen hauled out on land in spring near Elim, as well as south of Utqiaġvik, Alaska, although molt status was not addressed (Huntington *et al.* 2015c, 2015d). If Arctic ringed seals' molt becomes more frequently interrupted by being forced to spend inordinate time in water while completing their annual molt, they could incur increased energetic costs and risk microbial infections of the skin (Fay *et al.* 1978).

During their annual molt, Arctic ringed seals transition from lair use to basking on the surface of the ice for long periods of time near breathing holes, lairs, or cracks in the ice (Kelly *et al.* 2010a). The relatively long periods of time that ringed seals spend out of the water during the molt (*e.g.,* Smith 1973, Smith and Hammill 1981, Kelly *et al.* 2010b) have been ascribed to the need to maintain elevated skin temperatures during new hair growth (Feltz and Fay 1966, Kelly and Quakenbush 1990). Higher skin temperatures are facilitated by basking on the ice and this may accelerate shedding and regrowth of hair and skin (Feltz and Fay 1966).

Limited data are available on ice concentrations (percentage of ocean surface covered by sea ice) used by Arctic ringed seals during the basking period, in particular for the period following ice breakup. Although a number of studies have reported an apparent preference for consolidated stable ice (*i.e.,* landfast ice and consolidated pack ice), at least during the initial weeks of the basking period, some of these studies have also reported observations of Arctic ringed seals hauled out at low densities in unconsolidated ice (*e.g.,* Stirling *et al.* 1982, Kingsley *et al.* 1985, Lunn *et al.* 1997, Chambellant *et al.* 2012). Arctic ringed seals in the Chukchi Sea have also been observed basking in high densities on the last remnants of the seasonal sea ice during late June to early July, near the end of the molting period (S. Dahle, NMFS, personal communication, 2013). Crawford *et al.* (2012a) reported that the average ice concentrations (and standard error (SE), a measure of variability in the data) used by several ringed seals in the Chukchi and Bering seas during the basking period in June was 20 percent (SE = 7.8 percent) for subadults and 38 percent (SE = 21.4 percent) for adults. For a normal distribution of ice concentrations used by the seals (*i.e.,* is a bell-shaped curve), selecting the mean value for ice concentration as a lower threshold for the essential feature would exclude about half of the range of ice concentrations used by the seals. Therefore, to select a lower threshold that encompasses a majority of the ice concentrations used by the seals during molting, we subtracted one SE from each mean. The average of these adjusted values for subadults and adults (12.2 percent and 16.6 percent, respectively) is 14.4 percent. This is nearly identical to the value of 15 percent ice concentration that is commonly used to define the ice edge (National Snow and Ice Data Center (NSIDC) 2021) and for which there are spatial data layers readily available. For the purpose of describing the essential feature of sea ice habitat that is suitable as a platform for basking and molting, we selected 15 percent as the minimum ice concentration.

As discussed above, landfast ice extending seaward from shore may freeze to the sea bottom in very shallow water (typically less than about 1.5 to 2 m deep) during the course of winter and remain so into spring, potentially during part of the basking and molting period. Although some Arctic ringed seals may use very shallow ice covered waters, where ice is bottom-fast, there would presumably be little to no ice-free water present that would allow the seals to swim under and gain access to the ice

surface for basking and molting, except perhaps where cracks form in the ice, or where the ice is not uniformly frozen to or resting on the seafloor. Thus, we expect use of bottom-fast ice by Arctic ringed seals to be low relative to use of ice in deeper waters. Also, as indicated above, there is some evidence that observed ringed seal densities are lower in very shallow ice-covered waters, at least in the Alaskan Beaufort Sea during late May to early June in waters less than 3 to 5 m deep. Based on the best scientific information available, we therefore conclude that sea ice habitat essential for basking and molting is of at least 15 percent ice concentration in waters 3 m or more in depth (relative to MLLW).

(3) *Primary prey resources to support Arctic ringed seals, which are defined to be small, often schooling, fishes, in particular Arctic cod, saffron cod, and rainbow smelt; and small crustaceans, in particular, shrimps and amphipods.*

Primary prey resources are essential to conservation of the Arctic ringed seal because the seals likely rely on these prey resources the most to meet their annual energy budgets. Arctic ringed seals rarely prey upon more than 10 to 15 species in any specific geographic location, and typically not more than 2 to 4 species are considered to be key prey (Węsławski *et al.* 1994). Most prey are small, and preferred fishes tend to be schooling species that form dense aggregations (Kovacs 2007). Despite regional and seasonal variations in the diets of Arctic ringed seals, fishes of the cod family tend to dominate their diet in many areas from late autumn through early spring, and invertebrates can also be important in some regions, at least seasonally (as reviewed by Kelly *et al.* 2010a). Although Arctic ringed seals feed on a wide variety of vertebrate and invertebrate prey species, certain prey species appear to occupy a prominent role in their diets in waters along the Alaskan coast.

Quakenbush *et al.* (2011; Tables 4–6) reported that prey items commonly consumed by ringed seals (considered for the studies discussed here to be prey items identified in at least 25 percent of ringed seal stomachs with contents) within the 1961 to 1984 and 1998 to 2009 periods in the Bering and Chukchi seas included Arctic cod, saffron cod (*Eleginus gracilis*), shrimps (from the families Hippolytidae, Pandalidae, and Crangonidae), and amphipods (primarily from the families Gammaridae and Hyperiidae). The authors found that diet composition shifted between the two periods toward an increased proportion and diversity of fish within the recent period, when other commonly consumed prey items included walleye pollock (*Theragra chalcogramma*) in the Bering Sea and rainbow smelt (*Osmerus dentex;* previously called *O. mordax* or *O. mordax dentex,* also Arctic smelt and boreal smelt in some references by authors cited herein) in the Chukchi Sea. An earlier study by Lowry *et al.* (1980b; Table 2) also indicated that ringed seals sampled in the Bering Strait region (at Nome) and in the Chukchi Sea (at Shishmaref) commonly consumed (considered here to be at least 25 percent of the total food volume in ringed seal stomachs with contents in any of the five seasonal samples) Arctic cod, saffron cod, shrimps, and amphipods (Shishmaref, specifically).

Crawford *et al.* (2015; Tables 1 and 2) indicated that prey items commonly consumed by ringed seals during May through July within the 1975 to 1984 and 2003 to 2012 periods in the Bering Strait near Diomede included Arctic cod and shrimps (for non-pup seals [≥1 year of age]); and in the Chukchi Sea near Shishmaref included saffron cod and shrimps (for both pup and non-pup seals). This study similarly found that diet composition shifted between the two periods toward an increased proportion of fish within the recent period for non-pup seals from Diomode and pups from Shishmaref. Other prey items commonly consumed within the recent period near Diomede included walleye pollock and sculpins (family Cottidae) (for non-pup seals); and near Shishmaref included rainbow smelt (for both pup and non-pup seals) and Pacific herring (*Clupea pallasi*) (24.5 percent of non-pup seals).

In addition, Quakenbush *et al.* (2020; Table 1) compared ringed seal diet in the Bering and Chukchi seas (not reported separately for each sea) by season and age class (pup and non-pup, *i.e.,* ≥1 year of age) between the recent 2016 to 2020 and earlier 2000 to 2015 periods. Within both periods, during the ice-covered (November to May) and/or open-water (June to October) season, ringed seals (both pup and non-pup) commonly consumed Arctic cod, saffron cod, shrimps, and amphipods (primarily gammarids); and non-pup seals commonly consumed rainbow smelt. In addition, another prey species—capelin (*Mallotus villosus*)—was commonly consumed within the 2016 to 2020 period by pups during both seasons, and mysids (family Mysidae, *Neomysis* sp.) were commonly consumed by pups within this period during the ice-covered season.

Two studies provide limited information on the diet of ringed seals near Utqiaġvik and in the central Beaufort Sea. Dehn *et al.* (2007; Table 2) indicated that in the Utqiaġvik vicinity, prey items commonly consumed by ringed seals between 1996 and 2001 (primarily during summer) included euphausiids (*Thysanoessa* spp.), cods (primarily Arctic and saffron cod), mysids (*Mysis* and *Neomysis* spp.), amphipods, and pandalid shrimps. In addition, Frost and Lowry (1984; Table III) found that prey items commonly consumed by ringed seals (considered here to be at least 25 percent of the mean total food volume in ringed seal stomachs with contents in any of the three seasonal samples) collected near Utqiaġvik and in the central Beaufort Sea (approximately 80 km northwest of Prudhoe Bay and near Pingok Island and Beaufort Lagoon), primarily between 1977 and 1980, included Arctic cod, as well as gammarid and hyperiid amphipods.

IK about ringed seals documented for coastal communities located in western and northern Alaska aligns in general with the ringed seal diet information from the studies reviewed above. Alaska Native hunters interviewed in several communities in the Bering Strait region, as well as in two communities in the northern Bering Sea region, reported that ringed seals feed on Pacific herring, in particular during spawning (*e.g.,* Oceana and Kawerak 2014, Gadamus *et al.* 2015, Huntington *et al.* 2016, 2017c, 2017b). Other prey species reported for ringed seals in these regions included fishes such as capelin, saffron cod, Arctic cod, sculpins, salmon, and whitefish species, as well as invertebrates such as shrimps and crabs (Nelson 1981, Huntington 2000, Oceana and Kawerak 2014, Gadamus *et al.* 2015, Huntington *et al.* 2015c, 2015a, 2016, 2017b), and near Wainwright in the Chukchi Sea included smelt, saffron cod, and invertebrates such as shrimps (Nelson 1981).

In summary, Arctic cod, saffron cod, shrimps, and amphipods were identified as prominent prey species for the studies conducted in both the Bering Sea and the Chukchi Sea, and Arctic cod and amphipods were also identified as prominent prey species for ringed seals sampled near Utqiaġvik and in the central Beaufort Sea. Rainbow smelt was also a prominent prey species since about 2000 in the Bering and/or Chukchi seas. Several other prey species were reported as commonly consumed by ringed seals, but these reports were more spatially and temporally limited. Still, diet composition and the relative prominence of certain prey species varied both geographically and seasonally, and differences in diet between age classes (pups and non-pup

seals), as well as a temporal shift in diet in the Bering and Chukchi seas, have been reported. In addition, ringed seal diet information for the Beaufort Sea is relatively limited. Therefore, based on the best scientific data available, we conclude that small, often schooling, fishes, in particular, Arctic cod, saffron cod, and rainbow smelt; and small crustaceans, in particular, shrimps and amphipods, are the primary prey resources of Arctic ringed seals in U.S. waters. We find that this level of specificity, naming species known to be prominent in Arctic ringed seals' diet but not limiting the definition to only those species, is most appropriate for defining this essential feature based on the best scientific data available. Because Arctic ringed seals feed on a variety of prey items and regional and temporal differences in diet have been reported, we conclude that areas in which the primary prey essential feature occurs are those that contain one or more of these particular prey resources.

Specific Areas Containing the Essential Features

To determine which areas qualify as critical habitat within the geographical area occupied by the species, we are required to identify ''specific areas'' that contain one or more of the physical or biological features essential to the conservation of the species (and that may require special management considerations or protection, as described below) (50 CFR 424.12(b)(1)(iii)). Delineation of the specific areas is done at a scale determined by the Secretary to be appropriate (50 CFR 424.12(b)(1)). Regulations at 50 CFR 424.12(c) also require that each critical habitat area be shown on a map.

In determining the scale and boundaries for the specific areas, we considered, among other things, the scales at which biological data are available and the availability of standardized geographical data necessary to map boundaries. Because the ESA implementing regulations allow for discretion in determining the appropriate scale at which specific areas are drawn (50 CFR 424.12(b)(1)), we are not required, nor was it possible, to determine whether each square inch, acre, or even square mile independently meets the definition of ''critical habitat.'' A main goal in determining and mapping the boundaries of the specific areas is to provide a clear description and documentation of the areas containing the identified essential features. This is ultimately fundamental to ensuring that Federal action agencies are able to determine whether their particular actions may affect the critical habitat.

As described below in the section Summary of Changes From the Revised Proposed Designation, after revising the proposed definitions of the essential features, and in response to public comments that expressed concerns regarding our proposed delineation of the boundaries of critical habitat with respect to the primary prey resources essential feature, we re-evaluated the best scientific data available to ensure that those boundaries were drawn appropriately. As a result, we now identify one specific area that contains the primary prey resources essential feature in addition to the sea ice essential features as described in this section.

As we explain below, the essential features of Arctic ringed seal critical habitat, in particular the sea ice essential features, are dynamic and variable on both spatial and temporal scales. Arctic ringed seal movements and habitat use are strongly influenced by the seasonality of sea ice, and the seals can range widely in response to the specific locations of the most suitable habitat conditions. Based on the best scientific data available, we have therefore identified one specific area that comprises parts of the Bering, Chukchi, and Beaufort seas, within which all of the identified essential features can be found in any given year.

We first focused on identifying where sea ice essential features occur that support the species' life history functions of whelping and nursing (when birth lairs are constructed and maintained) and molting. As discussed above, Arctic ringed seals are highly associated with sea ice, and the seals tend to migrate seasonally to maintain access to the ice. Arctic ringed seal whelping, nursing, and molting takes place in the Bering, Chukchi, and Beaufort seas. Therefore, we considered where the sea ice essential features occur in all of these waters.

The dynamic nature of sea ice and the spatial and temporal variations in sea ice and on-ice snow cover conditions constrain our ability to map precisely the specific geographic locations where the sea ice essential features occur. Sea ice characteristics such as ice extent, ice concentration, and ice surface topography vary spatiotemporally (*e.g.,* Iacozza 2011). Snowdrift depths on sea ice are also spatiotemporally variable, as drifting of snow is determined by characteristics of the ice, such as surface topography and weather conditions (*e.g.,* wind speed/direction and snowfall amounts), among other factors (Iacozza and Ferguson 2014). The specific geographic locations of essential sea ice habitat used by Arctic ringed seals vary from year to year, or even day to day, depending on many factors, including time of year, local weather, and oceanographic conditions (*e.g.,* Frost *et al.* 1988, Frost *et al.* 2004, Gadamus *et al.* 2015). In addition, the duration that sea ice habitat essential for birth lairs, or for basking and molting, is present in any given location can vary annually depending on the rate of ice melt and other factors. The temporal overlap of Arctic ringed seal molting with whelping and nursing, combined with the dynamic nature of sea ice and on-ice snow depths, also makes it impracticable to separately identify specific areas where each of these essential features occurs. However, it is unnecessary to distinguish between specific areas containing sea ice essential for birth lairs and sea ice essential for basking and molting because the ESA permits the designation of critical habitat where one or more essential features occur.

Arctic ringed seals can range widely, which, combined with the dynamic variations in sea ice and on-ice snow depths, results in individuals distributing broadly and using sea ice habitats within a range of suitable conditions. We integrated these physical and biological factors into our identification of specific areas where one or both sea ice essential features occur by considering the information currently available on the seasonal distribution and movements of Arctic ringed seals during the annual period of reproduction and molting, along with satellite-derived estimates of the position of the sea ice edge over time. Although this approach allowed us to identify specific areas that contain one or both of the sea ice essential features at certain times, the available data supported delineation of specific areas only at a coarse scale. Consequently, we delineated a single specific area that contains the sea ice features essential to the conservation of Arctic ringed seals, as follows.

We first identified the southern boundary of this specific area. We relied on the birth lair essential feature to determine the southern boundary of critical habitat because peak molting (for adults) takes place later in the spring as sea ice retreats northward, and also because the annual extent and timing of sea ice are especially variable in the southern periphery of the Arctic ringed seal's habitat in the Bering Sea (Boveng *et al.* 2009, Stabeno *et al.* 2012, Frey *et al.* 2015). Consequently, we concluded that the southern extent of sea ice suitable for birth lairs also

provides the best estimate of the southern extent of sea ice suitable for basking and molting.

As discussed in detail below, because existing information is limited on whelping locations and the distribution of Arctic ringed seals in the Bering Sea during spring, a precise southern boundary for the critical habitat cannot be determined based on such information. Available estimates of snow-depth on Arctic sea ice derived from satellite remote-sensing data are spatially and temporally limited and are subject to a variety of sources of uncertainty (Spreen and Kern 2017, Sturm and Massom 2017, Webster *et al.* 2018). Further, there is a high degree of variability in snow depths on sea ice and the spatial distribution of those depths within and between years (Sturm and Massom 2017, Webster *et al.* 2018). We therefore turned to Sea Ice Index data maintained by the NSIDC (Fetterer *et al.* 2017, Version 3.0, accessed November 2019) for information on the estimated monthly position of the ice edge in the Bering Sea during spring based on a time series of satellite records. Although April is the peak month for ringed seal whelping, snow-covered sea ice would need to persist for several weeks for pups to be sheltered and nursed in birth lairs. We therefore considered information on the position of the ice edge in the Bering Sea during May to assess whether basing the southern boundary on this ice edge (rather than the April ice edge) would most accurately represent the southern extent of where the birth lair essential feature occurs on a consistent basis. We examined the estimated position of the May median ice edge for both the 30-year 1981 to 2010 reference period currently used by NSIDC for the Sea Ice Index, and for the more recent 30-year period of 1990 to 2019, which was calculated using methods and data types similar to those used for the Sea Ice Index. We note that the two most recent years included in the 1990 to 2019 period had record low ice extent in the Bering Sea (Stabeno and Bell 2019). The May median ice edge from the Sea Ice Index is located about 22 km southwest of St. Matthew Island and about 85 km north of Nunivak Island, and for the more recent 1990 to 2019 period, is generally similar to that of the Sea Ice Index, except that east of St. Matthew Island the ice edge for the more recent period has a more variable shape. As a result, although the median ice edge for both 30-year periods reaches the coast at a similar location south of Hooper Bay, between that location and St. Matthew Island, the median ice edge for the more recent period is primarily located north of Hooper Bay.

To inform our evaluation of the above information relative to determining the southern boundary, we considered data available on the spring distribution of ringed seals in the Bering Sea from aerial surveys conducted in in 2012 and 2013 (NMFS Marine Mammal Laboratory, 2012–2013, unpublished data). Briefly, these surveys collected paired thermal and high-resolution digital imagery. Semi-automated techniques were used to detect seals from the thermal imagery, and expert observers then assigned species and age class to the detections from the associated photographs (Moreland *et al.* 2013). For the revised proposed designation, we considered information on the spatial distribution of ringed seal detections (with species identification confidence classified as ''positive'' or ''likely''). After the revised proposed designation was published, a scientific publication by Lindsay *et al.* (2021) became available that produced maps of ringed seal densities from the aerial survey dataset (based on ringed seal detections for all values of species identification confidence). We therefore considered this information in developing the final designation. Overall, ringed seal densities in the Bering Sea appeared to be higher in areas proximate to and north of St. Matthew and Nunivak Islands (as compared to areas surveyed farther south toward the shelf break), with highest densities in Norton Sound, although ringed seals were documented as far south as Bristol Bay. Relatively few ringed seal pups were documented during these surveys (perhaps reflecting, at least in part, that pups were sheltered in subnivean lairs and thus would not have been detected during the surveys). Although pup densities were highest in Norton Sound, pups were also documented in offshore habitat, primarily proximate to and north of St. Matthew and Nunivak Island, and several pups were detected in offshore areas farther south.

Taken as a whole, we concluded that the best scientific data available on the spring distribution of ringed seals in the Bering Sea suggests that the median position of the ice edge for May provides the best estimate of the southern extent of where the birth lair essential feature occurs on a consistent basis. In drawing this conclusion, we took into consideration that the 2012 and 2013 surveys were conducted in years with above-average ice extent and that our focus in delineating the southern boundary is on identifying the best estimate of the southern extent of where the birth lair essential feature (and potentially sea ice essential for molting) occurs on a consistent basis in more than limited areas. Given the reduction in sea ice east of St. Matthew Island between the reference period used for the Sea Ice Index and the more recent 30-year period described above, we elected to base the southern boundary on the estimated position of the May median ice edge for the more recent 1990 to 2019 period. Because Arctic ringed seals use nearly the entire ice field over the Bering Sea shelf in the spring, depending upon ice conditions in a given year, some ringed seals may use sea ice for whelping south of the southern boundary described above. But we concluded that the variability in the annual extent and timing of sea ice in this southernmost portion of the Arctic ringed seal's range in the Bering Sea (*e.g.,* Boveng *et al.* 2009, Stabeno *et al.* 2012, Frey *et al.* 2015) renders these waters unlikely to contain the sea ice essential features on a consistent basis in more than limited areas.

To simplify the southern boundary for purposes of delineation on maps, we modified the line representing the May median ice edge for the 1990 to 2019 period as follows: (1) Intermediate points along this line between its intersection point with the seaward limit of the U.S. EEZ (61°18′15″ N/177°45′56″ W) and the point southwest of St. Matthew Island where it turns northeastward (60°7′ N/172°1′ W) were removed to form the segment of the southern boundary that extends from the seaward limit of the U.S. EEZ southeastward approximately 340 km; and (2) intermediate points along this line between the point southwest of St. Matthew Island and the point where it reaches the coast near Cape Romanzof were removed and connected to the coast to form the second segment of the southern boundary that extends northeastward approximately 370 km (at 61°48′42″ N/166°6′5″ W). This editing produced a simplified southern boundary that retains the general shape of the original line representing the May median ice edge.

We then identified the northern boundary of the specific area that contains one or both of the sea ice essential features. As discussed above, Arctic ringed seals have a widespread distribution, including in offshore pack ice. The period during which ringed seals bask and molt overlaps with when many ringed seals also migrate north with the receding ice edge. In addition, sea ice and on-ice snow depths are dynamic and variable on both spatial and temporal scales, and sea ice suitable

for basking and molting, and potentially for birth lairs, occurs over waters extending up to and beyond the seaward limit of the U.S. EEZ (see, *e.g.,* Fetterer *et al.* 2017, Sea Ice Index Version 3.0, accessed November 2019, Blanchard-Wrigglesworth *et al.* 2018). We therefore concluded that the outer limit of the U.S. EEZ to the north, west, and east best defines the remaining seaward boundaries of the area containing the sea ice essential features. We note that Canada contests the limits of the U.S. EEZ in the eastern Beaufort Sea, asserting that the line delimiting the two countries' EEZs should follow the 141st meridian out to a distance of 200 nautical miles (nm) as opposed to an equidistant line that extends seaward perpendicular to the coast at the U.S.-Canada land border. Finally, we defined the shoreward boundary of the specific area delineated for the sea ice essential features as the 3-m isobath (relative to MLLW), consistent with the 3-m minimum water depth identified for both features.

The primary prey species essential to support Arctic ringed seals are found in a range of habitats in U.S. waters occupied by these seals. For example, amphipods documented in the diet of Arctic ringed seals in U.S. waters include the pelagic hyperiid amphipod *Parathemisto libellula;* gammarid amphipod species that inhabit the underside of sea ice; and benthic amphipods and shrimps, which were well represented in sampling conducted for benthic assessments in the Beaufort, Chukchi, and northern Bering seas (*e.g.,* Bluhm *et al.* 2009, Goddard *et al.* 2014, Ravelo *et al.* 2014, Grebmeier *et al.* 2015, Ravelo *et al.* 2015, Sigler *et al.* 2017). Notably, Arctic cod and saffron cod make up a substantial portion of the fish biomass in the U.S. Chukchi Sea and Arctic cod dominates the fish biomass in the U.S. Beaufort Sea (North Pacific Fishery Management Council 2009, Logerwell *et al.* 2015). Arctic cod are widely distributed, and are regularly observed in association with sea ice, but they are also found in seasonally ice-free waters (Bluhm and Gradinger 2008, Love *et al.* 2016, Mecklenburg *et al.* 2016). Arctic cod have been documented in surveys of the Beaufort Sea and Chukchi Sea shelf and slope (*e.g.,* Frost and Lowry 1983, Parker-Stetter *et al.* 2011, Crawford *et al.* 2012b, Logerwell *et al.* 2015, Norcross *et al.* 2017a, Norcross *et al.* 2017b, Forster *et al.* 2020), and their general distribution extends northward into deeper waters off the shelf (Cohen *et al.* 1990, Love *et al.* 2016, Mecklenburg *et al.* 2016), where Arctic cod were observed in water wedges along the edges of summer pack ice floes, along with amphipods under the ice, and diving ringed seals were observed at numerous locations (Gradinger and Bluhm 2004). The southern extent of the distribution of Arctic cod and its abundance in the northern and eastern Bering Sea are more limited and linked to the extent of ice cover and associated cold bottom temperatures (Love *et al.* 2016, Mecklenburg *et al.* 2016, Forster 2019, Marsh and Mueter 2019). The distribution of saffron cod overlaps to some extent with that of Arctic cod in the Chukchi and Beaufort seas, but this species is typically found in warmer water and has a more shallow coastal distribution that extends farther south in the Bering Sea (Love *et al.* 2016, Mecklenburg *et al.* 2016). Similarly, rainbow smelt are found primarily in shallow coastal waters of the Bering, Chukchi, and Beaufort seas (Haldorson and Craig 1984, Burns 1990, Logerwell *et al.* 2015, Love *et al.* 2016, Ormseth 2019).

In summary, the available data on the distributions of Arctic ringed seal primary prey species indicate that they occur throughout the geographical area occupied by the species. However, except in limited circumstances that do not apply here, the Secretary cannot designate as critical habitat the entire geographical area occupied by a species. We have no information that suggests any portions of the species' occupied habitat contain prey species that are of greater importance or otherwise differ from those found within the specific area defined by the sea ice essential features. Although ringed seals may forage seasonally in some particular areas, such as Barrow Canyon, the seals also make extensive use of a diversity of habitats for foraging across much broader areas in the Bering, Chukchi, and Beaufort seas. Most importantly, the movements and habitat use of Arctic ringed seals are strongly influenced by the seasonality of sea ice and they forage throughout the year (albeit with reduced feeding during molting). Given this and our consideration of the best scientific data available, we concluded that the best approach to determine the appropriate boundaries for critical habitat is to base the delineation on the boundaries identified above for the sea ice essential features. We conclude this specific area contains sufficient primary prey resources to support the conservation of Arctic ringed seals. Thus, we are designating as critical habitat a single specific area that contains all three of the identified essential features.

Special Management Considerations or Protection

A specific area within the geographic area occupied by a species may only be designated as critical habitat if the area contains one or more essential physical or biological feature that may require special management considerations or protection (16 U.S.C. 1532(5)(A)(i); 50 CFR 424.12(b)(1)(iv)). ''Special management considerations or protection'' is defined as methods or procedures useful in protecting the physical or biological features essential to the conservation of listed species (50 CFR 424.02). In determining whether the essential physical or biological features ''may require'' special management considerations or protection, it is necessary to find only that there is a possibility that the features may require special management considerations or protection in the future; it is not necessary to find that such management is presently or immediately required. *Home Builders Ass'n of N. California* v. *U.S. Fish and Wildlife Serv.,* 268 F. Supp. 2d 1197, 1218 (E.D. Cal. 2003). The relevant management need may be ''in the future based on possibility.'' *Bear Valley Mut. Water Co.* v. *Salazar,* No. SACV 11–01263–JVS, 2012 WL 5353353, at *25 (C.D. Cal. Oct. 17, 2012). *See also Cape Hatteras Access Pres. Alliance* v. *U.S. Dept. of Interior,* 731 F. Supp. 2d 15, 24 (D.D.C. 2010) (''The Court explained in CHAPA I that 'the word ''may'' indicates that the requirement for special considerations or protections need not be immediate' but must require special consideration or protection 'in the future.' '') (citing *Cape Hatteras Access Pres. Alliance* v. *U.S. Dept. of Interior,* 344 F. Supp. 2d 108, 123–24 (D.D.C. 2004)).

We have identified four primary sources of potential threats to one or more of the habitat features identified above as essential to the conservation of Arctic ringed seals: Climate change; oil and gas exploration, development, and production; marine shipping and transportation; and commercial fisheries. As further detailed below, both sea ice essential features and the primary prey essential feature may require special management considerations or protection as a result of impacts (either independently or in combination) from these sources. Our evaluation does not consider an exhaustive list of threats that could have impacts on the essential features, but rather considers the primary potential threats that we are aware of at this time that support our conclusion that special management considerations or

protection of each of the essential features may be required. Further, we highlight particular threats associated with each source of impacts while recognizing that certain threats are associated with more than one source (*e.g.,* marine pollution and noise).

Climate Change

The principal threat to the persistence of the Arctic ringed seal is anticipated loss of sea ice and reduced on-ice snow depths stemming from climate change. Climate-change-related threats to the Arctic ringed seal's habitat are discussed in detail in the ringed seal status review report (Kelly *et al.* 2010a), as well as in our proposed and final rules to list the Arctic ringed seal as threatened. Total Arctic sea ice extent has been showing a decline through all months of the satellite record since 1979 (Meier *et al.* 2014). Although there will continue to be considerable annual variability in the rate and timing of the breakup and retreat of sea ice, trends in climate change are moving toward ice that is more susceptible to melt (Markus *et al.* 2009), and areas of earlier spring ice retreat (Stammerjohn *et al.* 2012, Frey *et al.* 2015). Notably, February and March ice extent in the Bering Sea in 2018 and 2019 were the lowest on record (Stabeno and Bell 2019), and in the spring of 2019, melt onset in the Chukchi Sea occurred 20 to 35 days earlier than the 1981 to 2010 average (Perovich *et al.* 2019). Along with reductions in the extent and timing of sea ice cover, observations indicate a decline in spring snow depth on Arctic ice attributed to later sea ice formation in autumn (Webster *et al.* 2014, Webster *et al.* 2018), and a trend toward earlier spring rain-on-snow events throughout much of the Arctic Ocean in recent decades (Dou *et al.* 2021). Based on climate models, a study by Hezel *et al.* (2012) projected a substantial decline over this century in average snow depth on Arctic sea ice.

Activities that release carbon dioxide and other heat-trapping greenhouse gases (GHGs) into the atmosphere, most notably those that involve fossil fuel combustion, are the major contributing factor to climate change and loss of sea ice (Intergovernmental Panel on Climate Change (IPCC) 2013, U.S Global Climate Change Research Program 2017, Stroeve and Notz 2018, IPCC 2021). Such activities may adversely affect the essential features of Arctic ringed seal habitat by diminishing snow-covered sea ice suitable for birth lairs and sea ice suitable for basking and molting, and by causing changes in the distribution, abundance, and/or species composition of prey resources (including Arctic ringed seal primary prey resources) in association with changes in ocean conditions, such as warming and acidification (caused primarily by uptake of atmospheric CO_2) (as reviewed by Kelly *et al.* 2010a, also, *e.g.,* Kortsch *et al.* 2015, Alabia *et al.* 2018, Arctic Monitoring and Assessment Programme (AMAP) 2018, Holsman *et al.* 2018, Thorson *et al.* 2019, Baker *et al.* 2020, Huntington *et al.* 2020). Declines in the extent and timing of sea ice cover may also lead to increased shipping activity (discussed below) and other changes in anthropogenic activities, with the potential for increased risks to the habitat features essential to Arctic ringed seal conservation (Kelly *et al.* 2010a). Given that the quality and quantity of these essential features, in particular sea ice, may be diminished by the effects of climate change, we conclude that special management considerations or protection may be necessary, either now or in the future.

Oil and Gas Activity

Oil and gas exploration, development, and production activities in the U.S. Arctic may include: Seismic surveys; exploratory, delineation, and production drilling operations; construction of artificial islands, causeways, ice roads, shore-based facilities, and pipelines; and vessel and aircraft operations. These activities have the potential to affect the essential features of Arctic ringed seal critical habitat, primarily through pollution (particularly in the event of a large oil spill), noise, and physical alteration of the species' habitat.

Large oil spills (considered in this section to be spills of relatively great size, consistent with common usage of the term) are generally considered to be the greatest threat associated with oil and gas activities in the Arctic marine environment (AMAP 2007). Experiences with spills in subarctic regions, such as in Prince William Sound, Alaska, have shown that large oil spills can have lasting ecological effects (AMAP 2007, Barron *et al.* 2020). In contrast to spills on land, large spills at sea, especially when ice is present, are difficult to contain or clean up (National Research Council 2014, Wilkinson *et al.* 2017). Responding to a sizeable spill in the Arctic environment would be particularly challenging. Reaching a spill site and responding effectively would be especially difficult, if not impossible, in winter when weather can be severe and daylight extremely limited. Oil spills under ice or in ice-covered waters are the most challenging to deal with due to, among other factors, limitations on the effectiveness of current containment and recovery technologies when sea ice is present (Wilkinson *et al.* 2017). The extreme depth and the pressure that oil was under during the 2010 blowout at the Deepwater Horizon well in the Gulf of Mexico may not exist in the shallow continental shelf waters of the Beaufort and Chukchi seas. Nevertheless, the difficulties experienced in stopping and containing the Deepwater Horizon blowout, where environmental conditions, available infrastructure, and response preparedness were comparatively good, point toward even greater challenges in containing and cleaning a large spill in a much more environmentally severe and geographically remote Arctic location.

Although planning, management, and use of best practices can help reduce risks and impacts, the history of oil and gas activities indicates that accidents cannot be eliminated (AMAP 2007). Data on large spills (*e.g.,* operational discharges, spills from pipelines, blowouts) in Arctic waters are limited because oil exploration and production there has been limited. The Bureau of Ocean Energy Management (BOEM) (2011) estimated the chance of one or more oil spills greater than or equal to 1,000 barrels occurring if development were to take place in the Beaufort Sea or Chukchi Sea Planning Areas as 26 percent for the Beaufort Sea over the estimated 20 years of production and development, and 40 percent for the Chukchi Sea over the estimated 25 years of production and development.

Icebreaking vessels, which may be used for in-ice seismic surveys or to manage ice near exploratory drilling ships, also have the potential to affect the sea ice essential features of Arctic ringed seal critical habitat through physical alteration of the sea ice (see also *Marine Shipping and Transportation* section). Other examples of activities associated with oil and gas exploration and development that may physically alter the essential sea ice features include construction and maintenance of offshore ice roads, ice pads, and camps, as well as other offshore through-ice activities such as trenching and installation of pipelines. In addition, there is evidence that noise associated with activities such as seismic surveys can result in behavioral and other effects on fishes and invertebrate species (Carroll *et al.* 2017, Slabbekoorn *et al.* 2019), although the available data on such effects are currently limited, in particular for invertebrates (Hawkins *et al.* 2015, Hawkins and Popper 2017), and the nature of potential effects specifically

on the primary prey resources of Arctic ringed seals are unclear.

In summary, a large oil spill could render areas containing the identified essential features unsuitable for use by Arctic ringed seals. In such an event, sea ice habitat essential for whelping, nursing, and/or for basking and molting could be oiled. Arctic ringed seal primary prey resources could also become contaminated, experience mortality, or be otherwise adversely affected by spilled oil. In addition, disturbance effects (both physical alteration of habitat and acoustic effects) could alter the quality of the essential features of Arctic ringed seal critical habitat, or render habitat unsuitable. We conclude that the essential features of the habitat of the Arctic ringed seal may require special management considerations or protection in the future to minimize the risks posed to these features by oil and gas exploration, development, and production.

Marine Shipping and Transportation

The reduction in Arctic sea ice that has occurred in recent years has renewed interest in using the Arctic Ocean as a potential waterway for coastal, regional, and trans-Arctic marine operations and in extension of the navigation season in surrounding seas (Brigham and Ellis 2004, Arctic Council 2009). Marine traffic along the western and northern coasts of Alaska includes tug, towing, and cargo vessels, tankers, research and government vessels, vessels associated with oil and gas exploration and development, fishing vessels, and cruise ships (Adams and Silber 2017, U.S. Committee on the Marine Transportation System 2019). Automatic Identification System data indicate that the number of unique vessels operating annually in U.S. waters north of the Bering Sea in 2015 to 2017 increased 128 percent over the number recorded in 2008 (U.S. Committee on the Marine Transportation System 2019). Climate models predict that the warming trend in the Arctic will accelerate, causing the ice to begin melting earlier in the spring and resume freezing later in the fall, resulting in an expansion of potential transit routes and a lengthening of the potential navigation season, and a continuing increase in vessel traffic (Khon *et al.* 2010, Smith and Stephenson 2013, Stephenson *et al.* 2013, Huntington *et al.* 2015b, Melia *et al.* 2016, Aksenov *et al.* 2017, Khon *et al.* 2017). For instance, analysis of four potential growth scenarios (ranging from reduced activity to accelerated growth) suggests from 2008 to 2030, the number of unique vessels operating in U.S. waters north of 60° N (*i.e.,* northern Bering Sea and northward) may increase by 136 to 346 percent (U.S. Committee on the Marine Transportation System 2019).

The fact that nearly all vessel traffic in the Arctic, with the exception of icebreakers, purposefully avoids areas of ice, and primarily occurs during the ice-free or low-ice seasons, helps to mitigate the risks of shipping to the essential habitat features identified for Arctic ringed seals. However, icebreakers pose greater risks to these features since they are capable of operating year-round in all but the heaviest ice conditions and are often used to escort other types of vessels (*e.g.,* tankers and bulk carriers) through ice-covered areas. Furthermore, new classes of ships are being designed that serve the dual roles of both tanker/carrier and icebreaker (Arctic Council 2009). Therefore, if icebreaking activities increase in the Arctic in the future, as expected, the likelihood of negative impacts (*e.g.,* habitat alteration and risk of oil spills) occurring in ice-covered areas where Arctic ringed seals reside will likely also increase. We are not aware of any data currently available on the effects of icebreaking on the habitat of Arctic ringed seals during the reproductive and molting periods. Although impacts of icebreaking are likely to vary between species depending on a variety of factors, Wilson *et al.* (2017) demonstrated the potential for impacts of icebreaking, which for Caspian seal (*Pusa caspica*) mothers and pups and their sea-ice-breeding habitat, included displacement, breakup of whelping and nursing habitat, and vessel collisions with mothers or pups. The authors noted that while pre-existing shipping channels were used by seals as artificial leads, which expanded access to whelping habitat, seals that whelp on the edge of such leads are vulnerable to vessel collision and repeated disturbance.

In addition to the potential effects of icebreaking on the essential features, the maritime shipping industry transports various types of petroleum products, both as fuel and cargo. In particular, if increased shipping involves the tanker transport of crude oil or oil products, there would be an increased risk of spills (Arctic Climate Impact Assessment 2005, U.S. Arctic Research Commission 2012). Similar to oil and gas activities, the most significant threat posed by shipping activities is considered to be the accidental or illegal discharge of oil or other toxic substances carried by ships (Arctic Council 2009).

Vessel discharges associated with normal operations, including sewage, grey water, and oily wastes are expected to increase as a result of increasing marine shipping and transportation in Arctic waters (Arctic Council 2009, Parks *et al.* 2019), which could affect the primary prey of Arctic ringed seals. Increases in marine shipping and transportation and other vessel traffic is also introducing greater levels of underwater noise (Arctic Council 2009, Moore *et al.* 2012), with the potential for behavioral and other effects in fishes and invertebrates (Slabbekoorn *et al.* 2010, Hawkins and Popper 2017, Popper and Hawkins 2019), although there are substantial gaps in the understanding of such effects, in particular for invertebrates (Hawkins *et al.* 2015, Hawkins and Popper 2017), and the nature of potential effects specifically on the primary prey of Arctic ringed seals are unclear.

We conclude that the essential features of the habitat of the Arctic ringed seal may require special management considerations or protection in the future to minimize the risks posed by potential shipping and transportation activities because: (1) Physical alteration of sea ice by icebreaking activities could reduce the quantity and/or quality of the sea ice essential features; (2) in the event of an oil spill, sea ice essential for birth lairs and/or for basking and molting could become oiled; and (3) the quantity and/or quality of the primary prey resources could be diminished as a result of spills, vessel discharges, and noise associated with shipping, transportation, and ice-breaking activities.

Commercial Fisheries

The specific area identified in this final rule as meeting the definition of critical habitat for the Arctic ringed seal overlaps with the Arctic Management Area and the Bering Sea and Aleutian Islands Management Area identified by the North Pacific Fishery Management Council. No commercial fishing is permitted within the Arctic Management Area due to insufficient data to support the sustainable management of a commercial fishery there. However, as additional information becomes available, commercial fishing may be allowed in this management area. Two of the primary Arctic ringed seal prey species identified as essential to the species' conservation—Arctic cod and saffron cod—have been identified as likely initial target species for commercial fishing in the Arctic Management Area in the future (North Pacific Fishery Management Council 2009).

In the northern portion of the Bering Sea and Aleutian Islands Management Area, commercial fisheries overlap with the southernmost portion of the critical habitat. Portions of the critical habitat also overlap with certain state commercial fisheries management areas. Commercial catches from waters in the critical habitat area primarily include: Pacific halibut (*Hippoglossus stenolepis*), several other flatfish species, Pacific cod (*Gadus macrocephalus*), several crab species, walleye pollock, and several salmon species.

Commercial fisheries may affect the primary prey resources identified as essential to the conservation of the Arctic ringed seal, through removal of prey biomass and potentially through modification of benthic habitat by fishing gear that contacts the seafloor. Given the potential changes in commercial fishing that may occur with the expected increasing length of the open-water season and distribution shifts of some economically valuable species responding to climate change (*e.g.,* Stevenson and Lauth 2019, Thorson *et al.* 2019, Spies *et al.* 2020), we conclude that the primary prey resources essential feature may require special management considerations or protection in the future to address potential adverse effects of commercial fishing on this feature.

Unoccupied Areas

Section 3(5)(A)(ii) of the ESA authorizes the designation of specific areas outside the geographical area occupied by the species, if those areas are determined to be essential for the conservation of the species. Our regulations at 50 CFR 424.12(b)(2) require that we first evaluate areas occupied by the species, and only consider unoccupied areas to be essential where a critical habitat designation limited to geographical areas occupied would be inadequate to ensure the conservation of the species. Because Arctic ringed seals are considered to occupy their entire historical range that falls within U.S. jurisdiction, we find that there are no unoccupied areas within U.S. jurisdiction that are essential to their conservation.

Application of ESA Section 4(a)(3)(B)(i)

Section 4(a)(3)(B)(i) of the ESA precludes designating as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense (DOD), or designated for its use, that are subject to an Integrated Natural Resources Management Plan (INRMP) prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation. *See* 16 U.S.C. 1533(a)(3)(B)(i); 50 CFR 424.12(h). Where these standards are met, the relevant area is ineligible for consideration as potential critical habitat. The regulations implementing the ESA set forth a number of factors to guide consideration of whether this standard is met, including the degree to which the plan will protect the habitat of the species (50 CFR 424.12(h)(4)). This process is separate and distinct from the analysis governed by section 4(b)(2) of the ESA, which directs us to consider the economic impact, the impact on national security, and any other relevant impact of designation, and affords the Secretary discretion to exclude particular areas if the benefits of exclusion outweigh the benefits of inclusion of such areas. *See* 16 U.S.C. 1533(b)(2).

Before publication of the revised proposed rule (86 FR 1452, January 9, 2021), we contacted DOD (Air Force and Navy) and requested information on any facilities or managed areas that are subject to an INRMP and are located within areas that could potentially be designated as critical habitat for the Arctic ringed seal. In response to our request, the Air Force provided information regarding an INRMP addressing twelve radar sites, 10 of which (7 active and 3 inactive) are located adjacent to the area that was under consideration for designation as critical habitat: Barter Island Long Range Radar Site (LRRS), Cape Lisburne LRRS, Cape Romanzof LRRS, Kotzebue LRRS, Oliktok LRRS, Point Barrow LRRS, Tin City LRRS, Bullen Point Short Range Radar Site (SRRS), Point Lay LRRS, and Point Lonely SRRS. The Air Force requested exemption of these 10 radar sites pursuant to section 4(a)(3)(B)(i) of the ESA. Based on our review of the INRMP (draft 2020 update), the area we are designating as critical habitat, all of which occurs seaward of the 3-m isobath, does not overlap with DOD lands subject to this INRMP. Therefore, we conclude that there are no properties owned, controlled, or designated for use by DOD that are subject to ESA section 4(a)(3)(B)(i) for this critical habitat designation, and thus the exemptions requested by the Air Force are not necessary because no critical habitat would be designated in those radar sites.

Analysis of Impacts Under Section 4(b)(2) of the ESA

Section 4(b)(2) of the ESA requires the Secretary to designate critical habitat for threatened and endangered species on the basis of the best scientific data available after taking into consideration the economic impact, the impact on national security, and any other relevant impact, of specifying any particular area as critical habitat. Regulations at 50 CFR 424.19(b) also specify that the Secretary will consider the probable impacts of the designation at a scale that the Secretary determines to be appropriate, and that such impacts may be described qualitatively or quantitatively. The Secretary is also required to compare impacts with and without the designation (50 CFR 424.19(b)). In other words, we are required to assess the incremental impacts attributable to the critical habitat designation relative to a baseline that reflects existing regulatory impacts in the absence of the critical habitat.

Section 4(b)(2) also describes an optional process by which the Secretary may go beyond the mandatory consideration of impacts and weigh the benefits of excluding any particular area (that is, avoiding the economic, national security, or other relevant impacts) against the benefits of designating it (primarily, the conservation value of the area). If the Secretary concludes that the benefits of excluding particular areas outweigh the benefits of designation, the Secretary may exclude the particular area(s) so long as the Secretary concludes on the basis of the best scientific and commercial data available that the exclusion will not result in extinction of the species (16 U.S.C. 1533(b)(2)). We have adopted a policy setting out non-binding guidance explaining generally how we exercise our discretion under 4(b)(2). *See* Policy Regarding Implementation of Section 4(b)(2) of the Endangered Species Act (''4(b)(2) policy,'' 81 FR 7226, February 11, 2016).

While section 3(5) of the ESA defines critical habitat as ''specific areas,'' section 4(b)(2) requires the agency to consider the impacts of designating any ''particular area.'' Depending on the biology of the species, the characteristics of its habitat, and the nature of the impacts of designation, ''particular'' areas may be—but need not necessarily be—delineated so that they are the same as the already identified ''specific'' areas of potential critical habitat. For the reasons set forth below, we exercised the discretion delegated to us by the Secretary to conduct an exclusion analysis based on national

security impacts with respect to a particular area north of the Beaufort Sea shelf that meets the definition of critical habitat for the Arctic ringed seal, and we exclude this area from the designation because we concluded that the benefits of exclusion outweigh the benefits of inclusion.

The primary impacts of a critical habitat designation arise from the ESA section 7(a)(2) requirement that Federal agencies ensure that their actions are not likely to result in the destruction or adverse modification of critical habitat (*i.e.,* adverse modification standard). Determining these impacts is complicated by the fact that section 7(a)(2) contains the overlapping requirement that Federal agencies ensure that their actions are not likely to jeopardize the species' continued existence. One incremental impact of critical habitat designation is the extent to which Federal agencies change their proposed actions to ensure they are not likely to adversely modify critical habitat, beyond any changes they would make to ensure actions are not likely to jeopardize the continued existence of the species. Additional impacts of critical habitat designation include any state and/or local protection that may be triggered as a direct result of designation (we did not identify any such impacts for this designation), and other benefits that may arise, such as education of the public regarding the importance of an area for species conservation.

In determining the impacts of designation, we focused on the incremental change in Federal agency actions as a result of critical habitat designation and the adverse modification standard (see *Ariz. Cattle Growers' Ass'n* v. *Salazar,* 606 F.3d 1160, 1172–74 (9th Cir. 2010) (holding that USFWS permissibly attributed the economic impacts of protecting the northern spotted owl as part of the baseline and was not required to factor those impacts into the economic analysis of the effects of the critical habitat designation)). We analyzed the impacts of this designation based on a comparison of conditions with and without the designation of critical habitat for the Arctic ringed seal. The ''without critical habitat'' scenario represents the baseline for the analysis. It includes process requirements and habitat protections already extended to the Arctic ringed seal under its ESA listing and under other Federal, state, and local regulations. The ''with critical habitat'' scenario describes the incremental impacts associated specifically with the designation of critical habitat for the Arctic ringed seal.

Our analysis for this final rule is described in detail in the associated Final Impact Analysis Report. This analysis assesses the incremental costs and benefits that may arise due to the critical habitat designation, with economic costs estimated over the next 10 years. We chose the 10-year timeframe because it is lengthy enough to reflect the planning horizon for reasonably predicting future human activities, yet it is short enough to allow reasonable projections of changes in use patterns in an area, as well as of exogenous factors (*e.g.,* world supply and demand for petroleum, U.S. inflation rate trends) that may be influential. This timeframe is consistent with guidance provided in Office of Management and Budget (OMB) Circular A–4 (OMB 2003, 2011). We recognize that economic costs of the designation are likely to extend beyond the 10-year timeframe of the analysis, though we have no information indicating that such costs in subsequent years would be different from those projected for the first 10-year period. However, we could not monetize or quantify such costs, as forecasting potential future Federal actions that may require section 7 consultation regarding Arctic ringed seal critical habitat becomes increasingly speculative beyond the 10-year time window of the analysis.

Below, we summarize our analysis of the impacts of designating the specific area identified in this final rule as meeting the definition of critical habitat for the Arctic ringed seal. Additional detail is provided in the Final Impact Analysis Report prepared for this final rule.

Benefits of Designation

We expect that Arctic ringed seals will increasingly experience the ongoing loss of sea ice and changes in ocean conditions associated with climate change, and the significance of other habitat threats will likely increase as a result. As noted above, the primary benefit of a critical habitat designation—and the only regulatory consequence—stems from the ESA section 7(a)(2) requirement that all Federal agencies ensure that any actions authorized, funded, or carried out by such agencies are not likely to destroy or adversely modify the designated habitat. This benefit is in addition to the section 7(a)(2) requirement that all Federal agencies ensure that their actions are not likely to jeopardize listed species' continued existence. Another benefit of critical habitat designation is that it provides Federal agencies and the public specific notice of the areas and features essential to the conservation of the Arctic ringed seal, and the types of activities that may reduce the conservation value or otherwise affect the habitat. This information will consistently focus future ESA section 7 consultations on key habitat attributes. The designation of critical habitat can also inform Federal agencies regarding the habitat needs of Arctic ringed seals, which may facilitate using their authorities to support the conservation of this species pursuant to ESA section 7(a)(1), including to design proposed projects in ways that avoid, minimize, and/or mitigate adverse effects to critical habitat from the outset.

In addition, the critical habitat designation may result in indirect benefits, as discussed in detail in the Final Impact Analysis Report, including education and enhanced public awareness, which may help focus and contribute to conservation efforts for the Arctic ringed seal and its habitat. For example, by identifying areas and features essential to the conservation of the Arctic ringed seal, complementary protections may be developed under state or local regulations or voluntary conservation plans. These other forms of benefits may be economic in nature (whether market or non-market, consumptive, non-consumptive, or passive), educational, cultural, or sociological, or they may be expressed through enhanced or sustained ecological functioning of the species' habitat, which itself yields ancillary welfare benefits (*e.g.,* improved quality of life) to the region's human population. For example, because the critical habitat designation is expected to result in enhanced conservation of the Arctic ringed seal over time, residents of the region who value these seals, such as subsistence users, could experience indirect benefits by enjoying subsistence activities associated with this species. As another example, the geographic area identified as meeting the definition of critical habitat for the Arctic ringed seal overlaps substantially with the range of the polar bear in the United States, and the Arctic ringed seal is the primary prey species of the polar bear, so the designation may also enhance conservation of the polar bear, and in turn provide indirect benefits (*e.g.,* existence and option values). Indirect benefits may also be associated with enhanced habitat conditions for other co-occurring species, such as the Pacific walrus (*Odobenus rosmarus divergens*), the Beringia DPS bearded seal, and other seal species.

It is not presently feasible to monetize, or even quantify, each component part of the benefits accruing

from the designation of critical habitat for the Arctic ringed seal. Therefore, we augmented the quantitative measurements that are summarized here and discussed in detail in the Final Impact Analysis Report with qualitative and descriptive assessments, as provided for under 50 CFR 424.19(b) and in guidance set out in OMB Circular A–4. Although the best available information does not provide an estimate to monetize or quantify all of the incremental benefits of the critical habitat designation, we conclude that they are not inconsequential.

Economic Impacts

Direct economic costs of the critical habitat designation accrue primarily through implementation of section 7(a)(2) of the ESA in consultations with Federal agencies (''section 7 consultations'') to ensure that their proposed actions are not likely to destroy or adversely modify critical habitat. Those economic impacts may include both administrative costs and costs associated with project modifications. Based on the best scientific and commercial data available and our assessment of the record of section 7 consultations from 2013 to 2019 on activities that may have affected the essential features (relatively few relevant consultations were identified for the 3 years prior to when the Arctic ringed seal was listed under the ESA), as well as available information on planned activities, we have not identified any likely incremental economic impacts associated with project modifications that would be required solely to avoid impacts to Arctic ringed seal critical habitat. The critical habitat designation is not likely to result in more requested project modifications because our section 7 consultations on potential effects to Arctic ringed seals and our incidental take authorizations for Arctic activities under section 101(a) of the Marine Mammal Protection Act (MMPA) both typically address habitat-associated effects to the seals even in the absence of a critical habitat designation. This is not to say such project modifications could not occur in situations we are unable to predict at this time, but based on the best information available for the 10-year period of the analysis, it is likely that any project modifications necessary to avoid impacts to Arctic ringed seal critical habitat would also be necessary to avoid impacts to the species in section 7 consultations that would occur irrespective of this designation. As a result, the direct incremental costs of this critical habitat designation are expected to be limited to the additional administrative costs of considering Arctic ringed seal critical habitat in future section 7 consultations.

To identify the types of Federal activities that may affect critical habitat for the Arctic ringed seal, and therefore would be subject to the ESA section 7 adverse modification standard, we examined the record of section 7 consultations from 2013 to 2019. These activities include oil and gas related activities, dredge mining, navigation dredging, in-water construction, commercial fishing, oil spill response, and certain military activities. We projected the occurrence of these activities over the timeframe of the analysis (the next 10 years) using the best available information on planned activities and the frequency of recent consultations for particular activity types. Notably, all of the projected future Federal actions that may trigger an ESA section 7 consultation because of their potential to affect one or more of the essential habitat features also have the potential to affect Arctic ringed seals. In other words, none of the activities we identified would trigger a section 7 consultation solely on the basis of the critical habitat designation. We recognize there is inherent uncertainty involved in predicting future Federal actions that may affect the essential features of Arctic ringed seal critical habitat; however, we did not receive any new relevant information in response to our specific request for comments and information regarding the types of activities that are likely to be subject to section 7 consultation as a result of the designation that changed our projection of future Federal actions that may trigger consultation.

We expect that the majority of future ESA section 7 consultations analyzing potential effects on the essential habitat features will involve NMFS and BOEM authorizations and permitting of oil and gas related activities. In assessing costs associated with these consultations, we took a conservative approach by estimating that future section 7 consultations addressing these activities would be more complex than for other activities, and would therefore incur higher third-party (*i.e.,* applicant/permittee) incremental administrative costs per consultation to consider effects to Arctic ringed seal critical habitat (see Final Impact Analysis Report). These higher third-party costs may not be realized in all cases because the administrative effort required for a specific consultation depends on factors such as the location, timing, nature, and scope of the potential effects of the proposed action on the essential features. There is also considerable uncertainty regarding the timing and extent of future oil and gas exploration and development in Alaska's Outer Continental Shelf (OCS) waters, as indicated by Shell's 2015 withdrawal from exploratory drilling in the Chukchi Sea, BOEM's 2017–2022 OCS Oil and Gas Leasing Program, and the reinstatement of the 2016 withdrawal of the Chukchi Sea and most of the Beaufort Sea from consideration for oil and gas leasing in January 2021 (Executive Order (E.O.) 13990). Although NMFS completed formal consultations for oil and gas exploration activities in the Chukchi Sea in all but 2 years between 2006 and 2015, no such activities or related consultations with NMFS have occurred since that time.

As detailed in the Final Impact Analysis Report, the total incremental costs associated with the critical habitat designation over the next 10 years, in discounted present value terms, are estimated to be $714,000 at a 7 percent discount rate and $834,000 at a 3 percent discount rate, for an annualized cost of $95,000 at both a 7 percent and a 3 percent discount rate. About 83 percent of these incremental costs are expected to accrue from ESA section 7 consultations associated with oil and gas activities in the Chukchi and Beaufort seas and adjacent onshore areas.

We have concluded that the potential economic impacts associated with the critical habitat designation are modest both in absolute terms and relative to the level of economic activity expected to occur in the affected area, which is primarily associated with oil and gas activities that may occur in the Beaufort and Chukchi seas. As a result, and in light of the benefits of critical habitat designation discussed above and in the Final Impact Analysis Report, we are not exercising our discretion to further consider and weigh the benefits of excluding any particular area based on economic impacts against the benefits of designation.

National Security Impacts

Section 4(b)(2) of the ESA also requires consideration of national security impacts. As noted in the Application of ESA Section 4(a)(3)(B)(i) section above, before publication of our 2014 proposed rule, we contacted DOD regarding any potential military operations impacts of designating critical habitat for the Arctic ringed seal. In a letter dated June 3, 2013, the DOD Regional Environmental Coordinator indicated that no impacts on national security were foreseen from such a

designation. As a result, in that proposed rule we did not identify any direct impacts from the critical habitat designation on activities associated with national security.

Following publication of our 2014 proposed rule, by a letter dated April 17, 2015, DOD indicated that upon further review, it had identified national security concerns with the designation due to overlap of the proposed critical habitat with an area that is used by the U.S. Navy for training and testing activities. This area was described as waters north of Prudhoe Bay off the Beaufort Sea shelf between approximately 125 and 200 nm from shore, extending east to the Canadian border and seaward to the outer boundary of the U.S. EEZ. DOD requested that NMFS exclude this area from the critical habitat designation due to national security impacts, expressing the view that designation of this area will impact national security if training and testing activities are prohibited or severely degraded, as detailed in a comment letter from the Navy dated March 30, 2015. More recently, by letter dated March 17, 2020, the Navy reiterated its request for this exclusion due to national security impacts, but modified the description of the particular area to include waters off the Beaufort Sea shelf between approximately 100 and 200 nm from shore (noting that ice conditions have required the Navy to conduct some recent activities closer to shore). However, in developing this final rule, we followed up with the Navy regarding the location of this area. The Navy clarified that the description in its 2020 letter was outdated and inconsistent with the map included in the letter. The particular area the Navy intended to request be excluded from designation includes waters off the Beaufort Sea shelf between approximately 50 to 80 and 200 nm from shore.

The Navy indicated in its written communications that it conducts Arctic training and testing exercises, referred to by the Navy as Ice Exercises (ICEXs), on and below the sea ice within the particular area requested for exclusion. ICEXs and the accompanying base camps are established anywhere from 100 to 200 nm north of Prudhoe Bay, Alaska. These exercises are planned to occur every 2 years and typically last 25 to 45 days. ICEX camps include approximately 15 to 20 temporary shelters which support 30 to 65 personnel. Training and testing activities include: Submarine activities; submarine surfacing, in which submarines avoid pressure ridges and conduct surfacings in first year ice or in polynyas; aircraft operations; building of runways; and other on-ice activities. The Navy noted that ICEX activities alter the ice by creating holes to deploy training and testing equipment and surfacing submarines. The Navy explained that due to the need for stable ice, flights are conducted immediately prior to buildup of the ICEX camp to determine the final location.

The Navy also noted that the Office of Naval Research conducts research testing activities in the deep waters of the Beaufort Sea with acoustic sources and the use of icebreaking ships to deploy and retrieve these sources, which it plans to continue in the future, and expressed concern that the designation of critical habitat could impact these activities. The Navy indicated that it also conducts other training and testing activities in the Arctic region in support of gaining and maintaining military readiness in this region, and expects additional training and testing activities to occur in this region. The activities may be similar to those identified for ICEXs, and likely also would include vessel movements, icebreaking, and support transport by air and sea. Testing activities may include air platform/vehicle tests, missile testing, gunnery testing, and anti-submarine warfare tracking testing.

The Navy expressed the concern that the critical habitat may impact national security if training and testing activities are prohibited or are required to be mitigated (for the protection of critical habitat) to the point where training and testing value is severely degraded, or if the Navy is unable to access certain locations within the Arctic region. The Navy indicated that if the critical habitat designation maintains the same boundaries identified in our 2014 proposed designation, it does not foresee a way that its training and testing activities will be able to be conducted without significant impacts on those activities. The Navy indicated that due to the size of the area proposed in 2014 as critical habitat for the Arctic ringed seal and the uniqueness of Arctic conditions, the Navy would not be able to shift its training activities to other areas or to different times of the year.

In addition to the information provided by the Navy, by letter dated April 30, 2020, the Air Force provided information concerning its activities at radar sites located adjacent to the area under consideration for designation as critical habitat (relevant sites identified above in the Application of ESA Section 4(a)(3)(B)(i) section). The Air Force requested that we consider excluding critical habitat near these sites under section 4(b)(2) of the ESA due to impacts on national security. Although we do not exempt the radar sites pursuant to section 4(a)(3)(B)(i) of the ESA, as discussed above, here we consider whether to exclude critical habitat located adjacent to these sites under section 4(b)(2) based on national security impacts.

The Air Force noted that annual fuel and cargo resupply activities occur at these radar sites primarily in the summer and installation beaches are used for offload. The Air Force indicated that coastal operations at these installations are limited, and when barge operations occur, protective measures are implemented per the Polar Bear and Pacific Walrus Avoidance Plan (preliminary final 2020) associated with the INRMP in place for these sites. The Air Force discussed that it also conducts sampling and monitoring at these sites as part of the DOD's Installation Restoration Program, and conducts larger scale contaminant or debris removal in some years that can require active disturbance of the shoreline. Coastal barge operations are a feature of both monitoring and removal actions.

Federal agencies have an existing obligation to consult with NMFS under section 7(a)(2) of the ESA to ensure the activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the Arctic ringed seal, regardless of whether or where critical habitat is designated for the species. The specific area identified as meeting the definition of critical for Arctic ringed seals in this final rule includes marine habitat extending seaward from the 3-m isobath (relative to MLLW), rather than from the line of MLLW as we had proposed. Thus, waters adjacent to the radar sites identified by the Air Force overlap to lesser extent with this specific area. The activities described in the Air Force's exclusion request are localized and small in scale, and it is unlikely that modifications to these activities would be needed to address impacts to critical habitat beyond any modifications that may be necessary to address impacts to Arctic ringed seals. We therefore anticipate that the time and costs associated with consideration of the effects of future Air Force actions on Arctic ringed seal critical habitat under section 7(a)(2) of the ESA would be limited if any, and the consequences for the Air Force's activities, even if we do not exempt or exclude the requested areas from critical habitat designation, would be negligible.

As a result, and in light of the benefits of critical habitat designation discussed above and in the Final Impact Analysis Report, with respect to the Air Force's

request, we have concluded that the benefits of exclusion do not outweigh the benefits of designation and therefore we are not exercising our discretionary authority to exclude these particular areas pursuant to section 4(b)(2) of the ESA based on national security impacts. However, given the specific national security concerns identified by the Navy, below we provide an analysis of our decision to exercise our discretionary authority under section 4(b)(2) of the ESA to exclude the area requested by the Navy based on national security impacts.

Other Relevant Impacts

Finally, under ESA section 4(b)(2) we consider any other relevant impacts of critical habitat designation. For example, we may consider potential adverse effects on existing management or conservation plans that benefit listed species, and we may consider potential adverse effects on tribal lands or trust resources. In preparing this critical habitat designation, we have not identified any such management or conservation plans, tribal lands or resources, or anything else that would be adversely affected by the critical habitat designation. Some Alaska Native organizations and tribes have expressed concern that the critical habitat designation might restrict subsistence hunting of ringed seals or other marine mammals, such that important hunting areas should be considered for exclusion, but no restrictions on subsistence hunting are associated with this designation. Accordingly, we are not exercising our discretion to conduct an exclusion analysis pursuant to section 4(b)(2) of the ESA based on other relevant impacts.

Exclusion Based on National Security Impacts

In the revised proposed rule, we proposed to exclude an area north of the Beaufort Sea shelf that is used by the Navy for training and testing activities based on our finding that the benefits to national security of exclusion outweigh the benefits of designation. In developing this final rule, we followed up with the Navy regarding the location of this area. The Navy clarified that the spatial data it previously provided to NMFS to map the requested exclusion inadvertently contained outdated information that did not reflect the full southern extent of the particular area they intended to request be excluded from the designation, which includes waters about 50 nm south of the southern boundary of the proposed exclusion area east of 150° W longitude. In reference to the southern extent of the requested exclusion, the Navy explained that the camp location for recent ICEXs has been positioned to the south of the area we proposed to exclude from designation in the revised proposed rule. In addition, the Navy requested that the western boundary of the proposed exclusion be extended one degree west to account for research activities being conducted by the Office of Naval Research within this area.

Based on the written information provided by the Navy (summarized in the *National Security Impacts* section above), and clarifications provided through subsequent communications with the Navy regarding the southern and western boundaries of the particular area requested for exclusion, we evaluated whether there was a reasonably specific justification indicating that designating certain areas as critical habitat would have a probable incremental impact on national security. In accordance with our 4(b)(2) policy (81 FR 7226, February 11, 2016), when the Navy provides a reasonably specific justification, we will defer to its expert judgment as to: (1) Whether activities on its lands or waters, or its activities on other lands or waters, have national security or homeland-security implications; (2) the importance of those implications; and (3) the degree to which the cited implications would be adversely affected by the critical habitat designation. In conducting our review of this exclusions request under section 4(b)(2) of the ESA, we gave great weight to the Navy's national security concerns. To weigh the national security impacts against conservation benefits of a potential critical habitat designation, we considered the following: (1) The size of the area requested for exclusion compared with the total size of the specific area that meets the definition of critical habitat for the Arctic ringed seal; (2) the conservation value of the area requested for exclusion; (3) the possibility that the Navy's activities would affect the area requested for exclusions and trigger ESA section 7 consultations, and the likelihood that Navy activities would need to be modified to avoid adverse modification or destruction of critical habitat; and (4) the likelihood that other Federal actions may occur that would no longer be subject to the ESA's critical habitat provisions if the particular area were excluded from the designation.

The area requested for exclusion comprises approximately 18 percent of the marine habitat that meets the definition of critical habitat for the Arctic ringed seal, and approximately 60 percent of the portion of this marine habitat north of the Beaufort Sea shelf (north of the 200-m isobath). As noted by the Navy in its exclusion request, and as discussed above in the *Distribution and Habitat Use* and Specific Areas Containing the Essential Features sections, data currently available on ringed seal use of the requested exclusion area, particularly for the northernmost portion, are limited. As we discussed above (see Specific Areas Containing the Essential Features section), aerial surveys of ringed seals during the periods of reproduction and molting have been conducted for the most part over the continental shelf within about 25 to 40 km of the Alaska coast. However, incidental sightings of ringed seals were documented up to about 100 km north of the Beaufort Sea shelf during bowhead whale aerial surveys conducted during spring and early summer. Although we are not aware of any similar data for U.S. waters farther north, the trend toward areas of earlier spring ice retreat suggests that habitat areas closer to the northern boundary of the U.S. EEZ are likely to retain sea ice suitable for birth lairs and/or basking and molting longer than habitat areas further to the south. In addition, recent satellite telemetry data for ringed seals tagged on the Alaska coast show that during the open-water season, some of these seals made forays north of the Beaufort Sea shelf, including into the westernmost part of the area requested for exclusion (Crawford *et al.* 2019, Quakenbush *et al.* 2019, Quakenbush *et al.* 2020, Von Duyke *et al.* 2020; ADF&G and North Slope Borough, 2020, unpublished data). We note that the telemetry data for these seals are unlikely to fully reflect the distribution of this species in U.S. waters for a number of reasons. For example, as discussed by Citta *et al.* (2018), the distribution of telemetry locations for tagged ringed seals is influenced by the location and season of tagging. Thus, although the area requested for exclusion contains one or more of the essential features of the Arctic ringed seal's critical habitat, data are limited at this time to inform our assessment of the relative value of this area to the conservation of the species. Dive recorders indicated that foraging-type movements of some of these tagged seals occurred over both the continental shelf and north of the shelf, suggesting that both areas may be important to ringed seals during the open-water period. Observations of ringed seals near and beyond the outer boundary of the U.S. EEZ in the Arctic Ocean Basin were also documented by marine mammal observers during a research geophysical

survey conducted in the summer of 2010.

The testing and training activities described in the Navy's exclusion request are temporally limited, localized, and small in scale. Based on our analysis of past Navy activities in the area, we think it is unlikely that modifications to such activities would be required if the particular area is designated as critical habitat (beyond modifications necessary to avoid impacts to ringed seals). However, we defer to the Navy's assessment of the critical importance of these activities to national security and acknowledge that any possibility of modifications could have adverse impacts on activities important to national security. The Navy has an existing obligation to consult with NMFS under section 7(a)(2) of the ESA to ensure the activities it funds or carries out are not likely to jeopardize the continued existence of the Arctic ringed seal, regardless of whether or where critical habitat is designated for the species. Aside from the Navy's training and testing activities, we are aware of few other Federal actions that would be expected to affect the particular area requested for exclusion.

In the revised proposed rule, we found that the benefits of excluding the requested area due to national security impacts outweighed the benefits of designating this area as critical habitat for the Arctic ringed seal, and exclusion of the area is not expected to result in the extinction of the species. As discussed in the Summary of Comments and Responses section of this final rule, we received public comments that expressed opposition to the exclusion and requested that we reduce or better justify it. In response to public comments, we followed up with the Navy and requested any additional information the Navy could provide regarding the size of the area requested for exclusion and how the Navy's activities would be impacted by the critical habitat designation.

In its written response, the Navy explained that to conduct ICEXs, the ice floe must meet strict criteria to support a camp and runway, such as thickness, lack of pressure ridges for the runway portion, and adjacent first-year and second-year ice. The Navy stated that given the variable nature of Arctic sea ice suitable to support the establishment of ice camps, the Navy's ICEX program requires flexibility for the area within which an ice camp may be established, as a location cannot be selected until just before the start of ICEX. The Navy explained that once established ice camps drift long distances (for example, as much as 100 miles) due to ocean currents and that the requested exclusion area ensures that the ice camp always remains within the bounds of that area for the entirety of ICEX.

The Navy qualified that because it has not consulted with NMFS under section 7 on Arctic ringed seal critical habitat, and because Navy tactics, technologies, and training events evolve over time, any descriptions of probable impacts to military readiness of designating the area requested for exclusion are necessarily in part theoretical. The Navy explained that the specific requirements for Navy camps along with the ephemeral nature of ice floes significantly limits the physical space in which Navy activities may occur, even apart from avoiding impacts to critical habitat. The Navy stated that it is not inconceivable that a warming climate would further reduce available space suitable for the Navy's activities, and if site selection of the camp were further constrained—*i.e.,* if Navy had to avoid locations in which its activities could have adverse impacts on the sea ice essential features—a suitable location may not be found, and necessitate cancellation of an exercise, which would result in impacts to Navy readiness. The Navy also stated that if impacts to the critical habitat were determined to be unacceptable in a future section 7 consultation, it would not be possible to shift ICEX to a suitable area not designated as critical habitat given the proposed boundaries of the designation. The Navy emphasized that the area requested for exclusion is uniquely suited for Navy training and testing in direct support of the National Command Authority's National Security Strategy in the Arctic region.

With regard to Office of Naval Research activities for which the Navy requested the western boundary of the proposed exclusion be extended one degree west, the Navy explained that these research activities include the deployment of moored acoustic sources that transmit intermittently year-round for the purpose of developing capabilities of navigating gliders or unmanned vehicles that can observe effects of climate change. The Navy described that the deployment or recovery of equipment may involve the use of an icebreaking vessel, which may remove or break up sea ice suitable for ringed seal basking and molting or birth lairs. The Navy stated that because locations to deploy and recover research equipment are pre-selected and there is little flexibility, there is similarly little to no flexibility in conducting icebreaking activities. The Navy discussed that for this reason, if NMFS required modifications to these research activities in a future section 7 consultation to avoid impacts to the critical habitat—such as seasonal or spatial avoidance areas or not breaking ice which has certain conditions—it would have significant impact on these activities. The Navy stated that understanding changing Arctic conditions is critical for maintaining U.S. naval effectiveness and ensuring national security capabilities.

We recognize that there are limited data currently available to inform our evaluation of the conservation value to the Arctic ringed seal of the particular area requested for exclusion. However, we do not think this portion of ringed seal habitat contains features that are not found throughout the specific area designated as critical habitat, nor that exclusion would inhibit protection of the physical and biological features essential to the conservation of the species. Therefore, given the Navy's specific justification regarding potential impacts of the critical habitat designation on its military readiness activities that occur within the area requested for exclusion, we have concluded that the benefits of excluding this particular area due to national security impacts outweigh the benefits of designating this area as critical habitat for the Arctic ringed seal. Moreover, failure to designate this area as critical habitat is not expected to result in the extinction of the species because the area is small in comparison to the entirety of the area we are designating as critical habitat, we have no reason to believe it is more valuable for Arctic ringed seals than other portions of the critical habitat based on the best information currently available, and threats to Arctic ringed seals in this area (including habitat-related threats) from Federal actions will continue to be subject to section 7 consultations. In addition, few to no other Federal actions are anticipated to occur in this particular area that would no longer be subject to consultation regarding impacts to ringed seal critical habitat if this area is excluded. Consequently, we are excluding this area from the designation of critical habitat for the Arctic ringed seal, and we have adjusted the critical habitat boundaries accordingly. We modified the curvilinear southern boundary of the exclusion area recommended by the Navy to simplify its delineation while still including the full area the Navy recommended, resulting in a slightly larger excluded area (about 0.5 percent more area).

As explained in the Final Impact Analysis Report, the total incremental costs associated with designating the entire area identified as meeting the definition of critical habitat for the Arctic ringed seal over the next 10 years, in discounted present value terms, are estimated to be about $726,000 (discounted at 7 percent). The total incremental costs associated with the particular area excluded, which stem from administrative costs that would have been incurred from adding critical habitat analyses to consultations on the Navy's ICEX activities over the next 10 years, are estimated to be $12,000 (discounted at 7 percent).

Final Critical Habitat Designation

We are designating as critical habitat a specific area of marine habitat in Alaska and offshore Federal waters of the Bering, Chukchi, and Beaufort seas, within the geographical area presently occupied by the Arctic ringed seal. This critical habitat area contains physical or biological features essential to the conservation of Arctic ringed seals that may require special management considerations or protection. We exclude from the designation a particular area of marine habitat north of the Beaufort Sea shelf that is used by the Navy for training and testing activities based on our finding that the benefits to national security of exclusion outweigh the benefits of designation. We have not identified any unoccupied areas that are essential to the conservation of the Arctic ringed seal, and thus we are not designating any such areas as critical habitat. In accordance with our regulations regarding critical habitat designation (50 CFR 424.12(c)), the map we include in the regulation, clarified by the accompanying regulatory text, constitutes the official boundary of the critical habitat designation.

Effects of Critical Habitat Designation

Section 7(a)(2) of the ESA requires Federal agencies to ensure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any threatened or endangered species or destroy or adversely modify designated critical habitat. Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species (50 CFR 402.02). Federal agencies must consult with us on any agency action that may affect listed species or critical habitat. During interagency consultation, we evaluate the agency action to determine whether the action is likely to adversely affect listed species or critical habitat. The potential effects of a proposed action may depend on, among other factors, the specific timing and location of the action relative to the seasonal presence of essential features or seasonal use of critical habitat by listed species for essential life history functions. Although the requirement to consult on an action that may affect critical habitat applies regardless of the season, NMFS addresses spatial-temporal considerations when evaluating the potential impacts of a proposed action during the ESA section 7 consultation process. For example, if an action with short-term effects is proposed during a time of year that sea ice is not present, we may advise that consequences to critical habitat are unlikely. If we conclude in a biological opinion pursuant to section 7(a)(2) of the ESA that the agency action would likely result in the destruction or adverse modification of critical habitat, we would recommend one or more reasonable and prudent alternatives to the action that avoid that result.

Reasonable and prudent alternatives are defined in 50 CFR 402.02 as alternative actions identified during formal consultation that can be implemented in a manner consistent with the intended purpose of the action, that are consistent with the scope of the Federal agency's legal authority and jurisdiction, that are economically and technologically feasible, and that would avoid the destruction or adverse modification of critical habitat. NMFS may also provide with the biological opinion a statement containing discretionary conservation recommendations. Conservation recommendations are advisory and are not intended to carry any binding legal force.

Regulations at 50 CFR 402.16 require Federal agencies that have retained discretionary involvement or control over an action, or where such discretionary involvement or control is authorized by law, to reinitiate consultation on previously reviewed actions in instances where (among other reasons): (1) Critical habitat is subsequently designated; or (2) new information or changes to the action may result in effects to critical habitat not previously considered. Consequently, some Federal agencies may request reinitiation of consultation or conference with us on actions for which consultation has been completed if those actions may affect designated critical habitat for the Arctic ringed seal. Activities subject to the ESA section 7 consultation process include activities on Federal lands as well as activities requiring a permit or other authorization from a Federal agency (*e.g.,* a section 10(a)(1)(B) permit from NMFS), or some other Federal action, including funding (*e.g.,* Federal Highway Administration or Federal Emergency Management Agency funding). Consultation under section 7 of the ESA is not required for Federal actions that do not affect listed species or designated critical habitat, and is not required for actions on non-Federal and private lands that are not carried out, funded, or authorized by a Federal agency.

Activities That May Be Affected by Critical Habitat Designation

Section 4(b)(8) of the ESA requires, to the maximum extent practicable, in any regulation to designate critical habitat, an evaluation and brief description of those activities that may adversely modify such habitat or that may be affected by such designation. A variety of activities may affect Arctic ringed seal critical habitat and, if carried out, funded, or authorized by a Federal agency, may be subject to ESA section 7 consultation. Such activities include: In-water and coastal construction; activities that generate water pollution; dredging; commercial fishing; oil and gas exploration, development, and production; oil spill response; and certain military readiness activities. Section 7 consultations must be based on the best scientific and commercial information available, and outcomes are case-specific. Inclusion (or exclusion) from this list, therefore, does not predetermine the occurrence or outcome of any section 7 consultation. However, as explained above, based on our review of prior consultations in the area, we have not identified a circumstance in which project modifications would be necessary solely to avoid impacts to Arctic ringed seal critical habitat, as it is likely any such modifications would also be necessary to avoid impacts to the species.

Private or non-Federal entities may also be affected by the critical habitat designation if a Federal permit is required, Federal funding is received, or the entity is involved in or receives benefits from a Federal project. These activities would need to be evaluated with respect to their potential to destroy or adversely modify Arctic ringed seal critical habitat. For ongoing activities, this designation of critical habitat may trigger reinitiation of past consultations. Although we cannot predetermine the outcome of section 7 consultations, we do not anticipate at this time that the outcome of reinitiated consultations would likely require project

modifications because habitat-related effects on Arctic ringed seals would likely have been assessed in the original consultation. We are committed to working closely with other Federal agencies to conduct any reinitiated consultations in an efficient and streamlined manner to the maximum extent possible and consistent with our statutory and regulatory requirements.

Summary of Comments and Responses

We solicited comments on the revised proposed rule to designate critical habitat for Arctic ringed seals and the associated Draft Impact Analysis Report during a 90-day comment period and held three public hearings, as described above. We also contacted Federal, State, Tribal, and local agencies, and other interested parties by mail and invited them to comment on the revised proposed rule, and we issued news releases and published notices in local newspapers summarizing the revised proposed rule and inviting public comments. We received fifty unique written comment submissions and testimony from seven people during the public hearings.

In addition, we solicited peer review from three reviewers of our evaluation, interpretation, and use of available data regarding what areas meet the definition of critical habitat in the revised proposed rule. The peer reviewers generally agreed that we relied on the best available data regarding the Arctic ringed seal's habitat requirements and generally concurred with our application of this information in determining specific areas that meet the definition of critical habitat, except for some particular aspects that we address below in our responses to peer reviewer comments. We also solicited peer review from three reviewers of the information we considered in the Draft Impact Analysis Report for the proposed designation. The peer reviewers found the information considered in the Draft Impact Analysis Report to be thorough and analyzed using appropriate methods. Most of the peer reviewers provided additional information, clarifications, and suggestions to further inform and improve the analyses. Some peer reviewers provided comments of an editorial nature that noted minor errors in the revised proposed rule or Draft Impact Analysis Report and offered non-substantive but clarifying changes in wording. We have addressed these editorial comments in the final rule and the Final Impact Analysis Report, as appropriate. Because these editorial comments did not result in substantive changes to the final rule, we have not detailed them here. The peer reviewer comments are available online (see *Information Quality Act and Peer Review* section). A few peer reviewers volunteered comments related to aspects of the proposed designation that were outside the scope of the requested reviews. We address those comments below in our responses to public comments.

We have reviewed and fully considered all comments and significant new information received from peer reviewers and the public. Summaries of the substantive comments received and our responses are provided below. As some peer reviewer and public comments were similar, we have, in certain cases, combined the comments, and respond to both the peer reviewer and public comments in the *Peer Review Comments* section below. General comments that did not provide information pertinent to the revised proposed rule have been noted but are not addressed further here. We have not responded to comments or concerns outside the scope of this rulemaking, such as comments disagreeing with NMFS's prior decision to list the Arctic ringed seal as threatened under the ESA.

Peer Review Comments

Evaluation of Critical Habitat

Comment 1: We received comments from the three peer reviewers and several other commenters related to our proposed delineation of the southern boundary of critical habitat. Two peer reviewers, as well as two other commenters, recommended that we identify winter-spring Bering Sea ice edge foraging habitat of subadults as an additional essential feature of Arctic ringed seal critical habitat and base the southern boundary of critical habitat on the position of the ice edge for March or April rather than May to include areas that contain this feature. These peer reviewers and commenters referred to information on the movement and dive behavior of tagged subadult ringed seals in the vicinity of the Bering Sea ice edge in winter and spring (Crawford *et al.* 2012a, 2019). The peer reviewers further noted that the seasonal pattern of southern ice edge use by subadults is distinct from adults and discussed reasons why it may be important habitat to this age class, including for winter foraging. The third peer reviewer commented that our description of the findings of Crawford *et al.* (2012a) understated data showing that almost all tagged subadults (11 of 12) wintered in Bering Sea ice edge habitat (Crawford *et al.* 2019). The peer reviewers and commenters stated that the first few years of life after seals are weaned are an important life history period for maintaining the population.

Response: We thoroughly considered the information available on winter-spring use of Bering Sea ice edge habitat by subadult Arctic ringed seals. Regarding our description of the findings of Crawford *et al.* (2012a), our intent was not to downplay those data, but rather to explain our consideration of this information relative to our reasoning that the southern boundary of the specific area delineated for the sea ice essential features is also appropriate for defining the southern extent of where the primary prey resources essential feature occurs. We have clarified in the preamble to this final rule that almost all of the tagged subadult ringed seals monitored during the studies cited by the peer reviewer overwintered in Bering Sea ice edge habitat. The study by Crawford et al. (2012) provides information on certain aspects of winter-spring habitat in the Bering Sea used by tagged subadult ringed seals, such as distance to the southern ice edge, sea ice concentration, and water depth. However, there is insufficient information available at this time to identify what particular habitat characteristics are important determinants of subadult ringed seal use of such habitat, and to assess how those habitat characteristics provide for the species' life history requirements such that they are essential to the conservation of the Arctic ringed seal. We recognize that the survival of subadult ringed seals is important to the conservation of Arctic ringed seals and that subadults may select habitat differently than adults. However, the comments did not include any additional data or specific information to describe the physical or biological features that characterize this habitat, or to evaluate its importance to the conservation of the Arctic ringed seal, and we are not aware of any such data or information. Consequently, we have not identified ice edge habitat for overwintering subadults as an essential feature of Arctic ringed seal critical habitat. We note, however, that the ESA allows us to consider revising the critical habitat designation if, in the future, new information becomes available that indicates revision may be warranted. With regard to identification of critical habitat for the primary prey resources essential feature, see our response to Comment 31.

Comment 2: One peer reviewer and several other commenters stated that because Arctic ringed seal whelping occurs from mid-March through April it would be more appropriate to base the southern boundary of critical habitat on

the position of the ice edge for March or April rather than for May. The commenters expressed concern that because ice conditions fluctuate, areas south of the proposed southern boundary may be important for ringed seal whelping in some years, with one commenter suggesting that the timing of life-cycle activities is changing, for example basking is sometimes observed before May, which they believe also supports designating critical habitat further south. Two commenters also noted that because the seals move with the ice as it contracts northward, the May ice edge is largely inhabited by the same seals that previously occupied the ice edge further south. In addition, a commenter stated that we should clarify our statement that the majority of the limited detections of pups during aerial surveys of the Bering Sea (conducted in 2012 and 2013) occurred in Norton Sound. The commenter also suggested that we seek additional records of ringed seals and pups in the Bering Sea from Outer Continental Shelf Assessment Program (OCSEAP) cruises and a bowhead whale survey conducted in 1979, and stated that the historical presence of whelping ringed seals on the Bering Sea ice front in April indicates that it served as suitable habitat; therefore, discounting April ice because of recent deterioration of the ice implies that the critical habitat will shrink continuously as the ice further diminishes. One commenter also stated that because it is important to account for the habitat needs of young Arctic ringed seals that require sea ice for molting beginning in mid-April, the southern boundary should be based on the position of ice edge for March. In contrast, the Marine Mammal Commission concurred with our use of the estimated position of the sea ice edge in May to delineate the southern boundary of critical habitat.

Response: We understand the concern expressed by the peer reviewer and commenters. However, as we explained in the revised proposed rule and the Specific Areas Containing the Essential Features section of this final rule, in determining the southern boundary, we focused on delineating the southern extent of where the sea ice essential feature associated with birth lairs is found on a consistent basis. We relied on this essential feature in determining the southern boundary because peak molting (for adults) takes place later in the spring as sea ice retreats northward, and also because the annual extent and timing of sea ice is especially variable in the southern periphery of the Arctic ringed seal's habitat in the Bering Sea. Although April is the peak month for ringed seal whelping, snow-covered sea ice would need to persist for several weeks for pups to be sheltered and nursed in birth lairs. Taken as a whole, we continue to conclude that information available on the spring distribution of ringed seals in the Bering Sea suggests that the median position of the ice edge for May provides the best estimate of the southern extent of where the birth lair essential feature occurs on a consistent basis. We recognize that some ringed seals may use sea ice to whelp or molt south of the areas we are designating as critical habitat, depending upon ice conditions in a given year. However, as we stated in the revised proposed rule and this final rule, given the variability in the annual extent and timing of sea ice in this southernmost portion of the Arctic ringed seal's range in the Bering Sea, these waters are unlikely to contain the sea ice essential feature on a consistent basis in more than limited areas. This does not imply that habitat in the Bering Sea not included in the designation is unimportant to Arctic ringed seals, or may not support their conservation. Rather, the designation delineates the subset of habitat within the area occupied by the Arctic ringed seal in U.S. waters that meets the definition of critical habitat under the ESA based on the best scientific data currently available, and includes the majority of molting and reproductive habitat in the Bering Sea.

Regarding the comments concerning our statement in the revised proposed rule that the majority of ringed seal pups documented during aerial surveys were located in Norton Sound, as indicated above, this general spatial pattern was similarly reported in terms of pup densities in the recent publication by Lindsay *et al.* (2021), which we reference in this final rule. As for the comment concerning additional records of ringed seals and pups in the Bering Sea, the commenter did not provide any specific reference information, and we thoroughly considered all available evidence on the spring distribution of ringed seals in the Bering Sea and where they may whelp, including information from older OCSEAP and other surveys where references were readily available.

Comment 3: One peer reviewer commented that quality of Arctic ringed seal whelping habitat under climate change could be further considered, in particular regarding what is considered the sufficient depth of snowdrifts for birth lairs. The peer reviewer stated that it could be surmised that pup survival is variably affected by a continuum of snow depths, and argued that there is insufficient information available to establish a specific threshold snowdrift depth for the birth lair essential feature. The peer reviewer pointed out that the few studies that have measured snow depths at birth lairs were completed several decades ago before the modern period of substantial declines in sea ice, and noted that because these studies were not designed to measure snow depth requirements for successful whelping, per se, they are not necessarily the best source for determining a specific threshold snowdrift depth for birth lairs. The peer reviewer also commented that snow accumulation on sea ice is affected by several factors that have dramatically changed in recent years, for example, late formation of sea ice in the fall limits snow accumulation that contributes to lair construction and maintenance; and suggested that in recent years, it is possible that somewhat marginal whelping habitat is already found in the Pacific Arctic region, in the Bering and Chukchi seas in particular. Another commenter stated that because ringed seals will necessarily be faced with decreasing snow for birth lairs, we should base the minimum snowdrift depth for birth lairs on a measurement closer to the minimum depths that support ringed seal survival. In addition, a commenter stated that the snow depth data we relied on were typically from higher latitudes than the Bering Strait region, where habitat conditions are very different, and that it is well known that on-ice whelping occurs in this region.

Response: We based the minimum snowdrift depth for the proposed birth lair essential feature on the best scientific data available from measurements taken at Arctic ringed seal birth lairs during studies conducted in a number of different locations within an 11-year time span to account for variability in environmental conditions. We recognize that the minimum snowdrift depth sufficient for birth lairs is unlikely to be a sharp threshold, so there may be many cases where successful birth lairs are created and maintained by ringed seals in snowdrifts shallower than that minimum depth. We also acknowledge that there may be regional and local variability in the conditions of sea ice habitat used by Arctic ringed seals for birth lairs. However, we are not aware of available data that would allow us to define the birth lair essential feature with more specificity on a regional or local basis. We note that although we considered the average minimum

snowdrift depth measured at birth lair sites in Alaska, the average from these studies is based on data from fewer years over a shorter time span than from all the available studies combined (see Physical and Biological Features Essential to the Conservation of the Species section) and is more likely to be biased if an anomalous weather pattern occurred during a more limited timeframe. As we indicated in the revised proposed rule, given the limitations of the best scientific data available, for the birth lair essential feature, we defined snowdrifts of sufficient depth as ''typically'' at least 54 cm deep. This wording is to inform the reader that the minimum snowdrift depth is provided as guidance regarding where birth lairs may occur, rather than as a specific threshold snowdrift depth. With regard to the comment that the minimum snowdrift depth should be based on the minimum depths that support ringed seal survival, we are not aware of available scientific data that could provide a basis for identifying such depths.

Regarding changes in Arctic ringed seal whelping habitat under climate change, in the rule listing the Arctic ringed seal as threatened under the ESA, we recognized that the depths and duration of on-ice snow cover are projected to decrease substantially throughout the species' range (77 FR 76706; December 28, 2012). Thus, habitat conditions for ringed seal whelping are expected to deteriorate over time, in particular within the southern portion of the species' range. Although we acknowledge that some Arctic ringed seals may whelp and/or nurse their pups without the protection of lairs where snow depths are insufficient or lairs have collapsed, available data indicate that under these circumstances pup mortality is substantially higher as a result of hypothermia and predation. In addition, it is very likely that decreased snow cover over birth lairs would leave Arctic ringed seal pups more accessible to Arctic foxes. Furthermore, both polar bears and Arctic foxes would require less time to detect and attempt to catch Arctic ringed seal mothers and pups that are not concealed in birth lairs. Predation on pups by gulls and ravens is typically prevented by the pups' concealment in subnivean lairs. However, when the pups are prematurely exposed, predation by birds can be substantial (*e.g.,* Lydersen and Smith 1989). Alaska Native hunters from Kotzebue, Alaska, have similarly reported that when snow melts early, there is no protection for ringed seal pups from predators such as jaegers and ravens, as well as foxes (Huntington *et al.* 2017a).

Comment 4: One peer reviewer commented that the average life span of ringed seals that we identified is low relative to sample collections from the subsistence harvest in Alaska between 2000 and 2019, which indicate that life span, as well as reproductively active age, is likely longer than 25 years, and the reviewer summarized other related information (Quakenbush *et al.* 2020; Alaska Depatment of Fish and Game (ADF&G), unpublished data).

Response: We have updated the Description and Natural History section of this final rule to reflect the peer reviewer's comment regarding ringed seal life span and reproductively active age.

Comment 5: One peer reviewer commented that our description of the ''open water foraging period'' as when Arctic ringed seals feed most intensively is misleading without further explanation, as it implies this is the most important period for feeding, which is not correct, and recommended that the name for this period be changed. The peer reviewer stated that seasonal changes in ringed seal weight and/or blubber reserves documented by several studies indicate that ringed seals are thinnest in spring and summer and that they begin to regain fat stores toward the end of the open-water season and continuing into winter. In addition, the peer reviewer provided information on seasonal changes in the dive rate (an index of foraging effort) (Crawford *et al.* 2019; ADF&G, unpublished data), which overall was lower during July–September than October–February. The peer reviewer suggested that the reason why ringed seals are moving more but feeding less, or at least gaining little weight during the open-water period, may be due to what prey are available. The peer review noted that Lowry *et al.* (1980a) reported a seasonal switch from Arctic cod in winter to invertebrates in later summer, and suggested that invertebrate prey that are numerically more available but patchy in their distribution may explain an increase in movement and foraging intensity in summer without a corresponding weight gain.

Response: To address the peer review's comments, we have revised the statement regarding seasonal changes in ringed seal blubber reserves in the *Distribution and Habitat Use* section of this final rule to clarify that the seals lose a significant proportion of their blubber mass in late winter to early summer, and then replenish their blubber reserves during late summer or fall and into winter. In addition, in the preamble to this final rule we refer to the ''open-water period'' instead of the ''open-water foraging period.''

Comment 6: One peer reviewer commented that we should address a new publication by Thometz *et al.* (2021) in our discussion of the ''basking period.'' The peer reviewer noted that this study found that there were significant, but short-term, increases in captive ringed seal resting metabolic rate during molt, which is in contrast to the finding of Ashwell-Erickson et al. (1986) that resting metabolic rate in spotted seals decreased during molt. The peer reviewer also commented that the earlier molt documented for a ringed seal kept at local photoperiod in California, as compared to two ringed seals kept at local photoperiod in Alaska, suggests some flexibility in the timing of molt.

Response: We have updated the discussion of the basking period in the *Distribution and Habitat Use* section of this final rule to incorporate the information on ringed seal metabolic rate during the molt reported by Thometz *et al.* (2021). We disagree that photoperiod-driven molt timing reflects flexibility in the process, especially if the reviewer meant to suggest that this implies ringed seals may be able to shift the timing of critical life history functions as a way of adapting to earlier snow melt and ice breakup. The tight linkage between photoperiod and molt timing actually suggests a fairly rigid, rather than a flexible process, constrained by complex, highly evolved, long chains of dependence in photo-chemical and hormonal signaling pathways (Walker *et al.* 2019). In addition, photoperiod is not something we expect to change with Arctic warming (Walker *et al.* 2019). Therefore, we would not expect that the timing of molt or other critical life history events that are hormonally linked to photoperiod to naturally shift to track the loss of sea ice and snow cover that threaten Arctic ringed seals. Perhaps the reviewer meant that molt timing could be flexible in the sense that ringed seals could move latitudinally to align hormonal timing with local snow/ice conditions. However, the study by Thometz *et al.* (2021), which used ringed seals translocated to captive care facilities, doesn't address the capability or likelihood for wild ringed seal individuals to relocate their breeding and molting areas in response to degrading snow/ice habitat; nor does it address whether, on a population basis, shifts in breeding and molting areas can occur as rapidly as suitable habitat is anticipated to be lost.

Comment 7: One peer reviewer suggested adding rainbow smelt to the proposed definition of the primary prey resources essential feature because available diet information for Arctic ringed seals in Alaska indicates that this fish species has increased in importance in the seals' diets in the 2000s (Quakenbush *et al.* 2011, Crawford *et al.* 2015, Quakenbush *et al.* 2020). In addition, another commenter requested that euphausiids and mysids be identified as primary prey resources because they were reported as frequently consumed by ringed seals near Utqiaġvik. A commenter also expressed concern that herring was not identified as a primary prey species. This commenter reported that as a local subsistence hunter, they have observed ringed seals feeding on herring in bays located south of the proposed critical habitat, and suggested that it is likely this is also the case within the area being proposed for designation. In contrast, two other commenters stated that the best scientific information available demonstrates that Arctic ringed seals eat a variety of prey and, therefore, no particular prey species is essential to their conservation. The commenters referred to the status review of the ringed seal (Kelly *et al.* 2010a), which reported that the seals eat a wide variety of prey resources spanning several trophic levels; and also referred to a study by Quakenbush *et al.* (2011), which documented numerous prey species in the stomach contents of ringed seals, and found that ringed seals are consuming a greater diversity of fish species than they did historically.

Response: While we acknowledge that Arctic ringed seals have a diverse diet, and that Quakenbush *et al.* (2011) reported that the diet of Arctic ringed seals in the Alaskan Bering and Chukchi seas shifted between the historic and recent periods toward a greater proportion and diversity of fish during the recent period, we do not interpret this information as indicating that no particular prey species are essential to the seals' conservation. As we discussed in the revised proposed rule, the available data also indicate that certain prey species occupy a prominent role in the diets of ringed seals in waters along the Alaskan coast. Because the seals likely rely on these prey species the most to meet their annual energy budgets, they are an important habitat characteristic that supports the species' conservation. Accordingly, we continue to find that primary prey resources to support Arctic ringed seals compose an essential feature of Arctic ringed seal critical habitat.

We proposed to define primary prey resources to support Arctic ringed seals as Arctic cod, saffron cod, shrimps, and amphipods, based on our assessment of the diet information available for ringed seals in Alaska from studies that relied on stomach content analysis. Our initial goal was to identify a small number of the most important prey species to ringed seals across their range in Alaskan waters, and not just important in a single region or time period. We considered primary prey resources to be those particular prey species that were commonly consumed by ringed seals in more than one region (*i.e.,* Bering, Chukchi, and/or Beaufort seas), and for studies that reported diet information within both an historical and recent period, those particular prey species that were commonly consumed by ringed seals during both periods. However, in response to comments requesting additional prey species be included in the definition of the primary prey resources essential feature, we re-evaluated the information on ringed seal diets in Alaska used to support the proposed definition of this essential feature, along with new diet information provided in a recent report cited in the peer reviewer's comments (Quakenbush *et al.* 2020), to determine if revising the definition of this essential feature may be appropriate.

As noted by the peer reviewer, evidence from the available diet studies indicates that consumption of rainbow smelt by ringed seals in Alaska has increased since about 2000. The studies reported this species as commonly consumed (considered here to be prey items identified in at least 25 percent of ringed seal stomachs): (1) In the Bering and Chukchi seas (by non-pup seals) during the ice-covered and open-water seasons within both the 2016 to 2020 and 2000 to 2015 periods (Quakenbush *et al.* 2020); (2) in the Chukchi Sea (not reported by age class) during the ice-covered and open-water seasons within the 1998 to 2000 period (Quakenbush *et al.* 2011); and (3) near Shishmaref (pups and non-pup seals) during May through July (study results were limited to these specific months) within the 2003 to 2012 period (Crawford *et al.* 2015). With regard to the comment requesting inclusion of euphausiids and mysids as primary prey species, as indicated in the revised proposed rule, Dehn *et al.* (2007; Table 2) found that in the Utqiaġvik vicinity, euphausiids and mysids were commonly consumed by ringed seals (primarily during summer). However, the other diet studies we reviewed did not indicate that ringed seals commonly consumed euphausiids. Mysids were also commonly consumed by pups in the Bering and Chukchi seas within the 2016 to 2020 period during the ice-covered season specifically (Quakenbush *et al.* 2020), but they were otherwise reported only as prey items commonly consumed by ringed seals in these regions during the historical period evaluated (Quakenbush *et al.* 2011, Crawford *et al.* 2015). Regarding the commenter's concern over Pacific herring (*Clupea pallasi*), this species was commonly consumed by non-pup seals near Shishmaref during May through July within the 2003 to 2012 period specifically (Crawford *et al.* 2015), but for the diet studies we reviewed (Lowry *et al.* 1980b, Frost and Lowry 1984, Dehn *et al.* 2007, Quakenbush *et al.* 2011, Crawford *et al.* 2015, Quakenbush *et al.* 2020), this species was not otherwise identified as a commonly consumed prey species. Still, the commenter is a subsistence hunter with knowledge of ringed seals feeding on herring near Bristol Bay, and we note that IK documented for several communities in the Bering Strait and northern Bering Sea regions also indicates that ringed seals feed on Pacific herring, in particular during spawning (*e.g.,* Oceana and Kawerak 2014, Gadamus *et al.* 2015, Huntington *et al.* 2016, 2017c, 2017b).

As described in more detail in the Physical and Biological Features Essential to the Conservation of the Species section of this final rule, the available information on ringed seal diets in Alaska indicate that diet composition and the relative prominence of certain prey species vary both geographically and seasonally, and differences in diet between age classes (pups and non-pup seals), as well as a temporal shift in diet in the Bering and Chukchi seas, have been reported. In addition, ringed seal diet information for the Beaufort Sea is relatively limited. We have therefore revised the regulatory definition of the primary prey resources essential feature to include a description of the seals' most common types of prey, which are small, often schooling fishes, and small crustaceans, and to identify for those types of prey, the prominent prey species in the seals' diets in Alaska. We find that this level of specificity, naming species known to be prominent in Arctic ringed seals' diet but not limiting the definition to only those species, is most appropriate for defining this essential feature based on the best scientific data available. Although in the revised proposed rule we focused on prey species that were commonly consumed in both historical and more recent periods for studies that

provided this information, given the reported increase in occurrence of rainbow smelt in the diets of ringed seals in the Bering and/or Chukchi seas since about 2000, we concluded that it is appropriate to identify rainbow smelt as a primary prey species, along with those primary prey species identified in the revised proposed rule (*i.e.,* Arctic cod, saffron cod, shrimps, and amphipods). Because these prey species were prominent in the diets of ringed seals in Alaska, we conclude that they are essential to the conservation of the Arctic ringed seal. Although other prey items, such as those that commenters requested be identified as primary prey species (*i.e.,* euphausiids, mysids, and Pacific herring), were reported as commonly consumed by ringed seals (per the same 25 percent of stomachs with contents criterion considered above), these reports were more spatially and temporally limited. We identify the primary prey resources essential feature in this final rule as follows: Primary prey resources to support Arctic ringed seals, which are defined to be small, often schooling, fishes, in particular, Arctic cod, saffron cod, and rainbow smelt; and small crustaceans, in particular, shrimps and amphipods.

Comment 8: One peer reviewer commented that although there are not satellite tracking data available indicating ringed seals haul out on land during the molt, they likely do not need to, because sea ice is available during the molting period. The peer reviewer noted that four tagged ringed seals (three adults and one pup) were documented hauled out on land at other times (Quakenbush *et al.* 2019), which the reviewer suggested indicates that ringed seals could haul out on land to molt if necessary. In addition, with regard to the discussion of sea ice suitable for molting, the peer reviewer requested that we add references to support the following statement: ''If Arctic ringed seals were unable to complete their annual molt successfully, they would be at increased risk from parasites and disease.''

Response: We recognize that Arctic ringed seals have sometimes been observed hauled out on land, typically during the open-water period following their annual molt. However, several studies (Hamilton *et al.* 2015, Lone *et al.* 2019, Von Duyke *et al.* 2020) found that some tagged ringed seals made long excursions offshore to reach sea ice and haul out, even when the ice was in areas that seemed to be suboptimal for foraging or energetically costly to get to. This, and the fact that observations of ringed seals ashore remain rare, are consistent with our conclusion that the best scientific data available indicate a strong preference by Arctic ringed seals to haul out on sea ice during the molt, perhaps reflecting fitness tradeoffs such as predation risk associated with hauling out on shore. With regard to the statement concerning risk from parasites and disease, it is reasonable to infer that if ringed seals' molt becomes more frequently interrupted by being forced to spend inordinate amounts of time in water while completing their annual molt, they could incur increased energetic costs and risk microbial infections of the skin (Fay *et al.* 1978). We have revised the statement in question in the preamble of this final rule to reflect this reasoning.

Comment 9: One peer reviewer felt that referring to the median ice edge as a ''contour line'' is somewhat confusing, as this term is often used in the context of the marine environment to refer to bathymetric contours. The peer reviewer suggested it might be more straightforward to use different terminology, *e.g.,* ''the southern boundary,'' or to equate the median May ice edge with the nearest bathymetric contour to define a more natural boundary.

Response: We have modified the language used in this final rule preamble to instead refer to the ''line representing'' the sea ice edge. We appreciate the suggestion to use the nearest bathymetric contour line to define the southern boundary of critical habitat. However, the depth contours do not align well with the position and shape of the median May ice edge, so we have not based the southern boundary of critical habitat for Arctic ringed seals on a depth contour.

Comment 10: In reference to our discussion of primary sources of potential threats to the essential features that may require special management considerations or protection, one peer reviewer suggested that the analysis by Quakenbush *et al.* (2019) of tagged Arctic ringed seal movements relative to both oil and gas lease areas in the Chukchi and Beaufort seas, and shipping traffic in the northern Bering and Chukchi seas, could be used to describe the temporal overlap of ringed seals and these activities.

Response: We appreciate this suggestion. However, our evaluation of oil and gas activity and marine shipping and transportation as sources of threats that may require special management considerations or protection focuses on potential impacts to each of the essential features of Arctic ringed seal critical habitat. Because the analysis referenced by the peer reviewer does not pertain directly to effects of these activities on the essential features, we have not incorporated the suggested information into that evaluation.

Comment 11: One peer reviewer commented that of the four sources of potential threats for which we concluded the essential features may require special management considerations or protection (climate change, oil and gas activity, marine shipping and transportation, and commercial fisheries), only oil and gas activity and commercial fisheries typically have a Federal nexus requiring ESA section 7 consultation. The peer reviewer stated that although climate change is the source of the most serious habitat threats, it does not appear to lend itself to management that would benefit Arctic ringed seals now or in the future. Similarly, several other commenters asserted that our finding that the essential features may require special management considerations or protection relied on threats that are nonexistent or minor compared to climate change. Commenters further asserted that this finding is not consistent with ESA requirements because we did not identify any specific management considerations or measures that would be useful in protecting the essential features or identify how such measures would be implemented. Commenters also stated that existing regulatory mechanisms such as the MMPA and other Federal, State, and local regulatory mechanisms already sufficiently protect the species from threats and impacts. Two of the commenters further asserted that the identified essential features do not support designation of critical habitat because there are no special management considerations or protections that would be useful in protecting these features.

Response: In accordance with section 3(5)(A)(i) of the ESA and our implementing regulations at 50 CFR 424.12(b)(1)(iv), we evaluated whether each of the essential features ''may require special management considerations or protection.'' An important word in this statutory phrase is ''may.'' We must show that such special management considerations or protection may be needed now or in the future, not that the habitat features definitively will require such considerations or protection. Moreover, 50 CFR 424.02 defines special management considerations or protection to ''mean any methods or procedures useful in protecting the physical and biological features of the environment for the conservation of listed species.'' In other words, any

relevant method or procedure qualifies as special management considerations or protection. Even if specific management measures are presently undeterminable, they may become determinable in the future because of continuing advances in science and technology. (*See Alaska Oil & Gas Ass'n* v. *Salazar,* 916 F. Supp. 2d 974, 990–992 (D. AK 2013) (''The Service has shown that someday, not necessarily at this time, such considerations or protection *may* be required . . . For example, the evidence in the record showing that sea ice is melting and that it will continue to melt in the future, perhaps at an accelerated rate, is more than enough proof that protection *may* be needed at some point''), reversed on other grounds by *Alaska Oil & Gas Ass'n* v. *Jewell,* 815 F.3d 544 (9th Cir. 2016)). Additionally, the question is whether the essential features identified may require special management considerations or protection, not whether all threats to those features, including climate change, could be cured through management. For example, if sea ice with snow depths suitable for construction of subnivean lairs becomes more scarce in the future, special management considerations or protections for remaining ice may become necessary, not to prevent or reverse the effects of climate change, but to further protect use of the remaining essential features. As discussed in detail in the Special Management Considerations or Protection section of this final rule, the ''may require'' standard is met or exceeded with respect to each of the essential features of Arctic ringed seal critical habitat.

Draft Impact Analysis Report

Comment 12: One peer reviewer suggested that the analysis of the impacts of the critical habitat designation could be put into perspective by including a brief reference to the rate of climate change in the Arctic. The peer reviewer commented that oil and gas is the industry most affected by the critical habitat designation, and yet those activities are the ones most likely to negatively impact the seals, as well as other marine resources within the area under consideration for designation. Another peer reviewer questioned the language in the Draft Impact Analysis Report that referred to ''long-term reductions in sea ice and on-ice snow depths expected to occur within the foreseeable future,'' given that rapid sea ice loss is already occurring at unprecedented rates. This peer reviewer advised that the analysis would be strengthened and more grounded in current science by acknowledging that GHG emissions are wholly responsible for Arctic sea ice loss. Further, the peer reviewer stated that activities that release GHGs into the atmosphere are ''the'' major contributing factor to climate change and sea ice loss, rather than ''a'' factor, as stated in the report. The peer reviewer noted that the effectiveness of the designation for the species' conservation is, however, most dependent on the elimination of GHG emissions by mid-century, keeping global temperatures from rising beyond 1.5 °C above pre-industrial levels, and consequently minimizing sea ice loss.

Response: We have incorporated a reference to the rate of climate change in the Arctic into the Final Impact Analysis Report, as suggested by the peer reviewer. Although the report contains a limited discussion of climate change and sea ice loss in the Arctic, we discuss this topic in more detail in the Special Management Considerations or Protection section of this final rule. We agree with the peer reviewer's comment that activities that release GHGs are the major contributing factor to climate change and sea ice loss, and we have modified the preamble of this final rule and the Final Impact Analysis Report accordingly. The critical habitat designation can help address potential threats to the species' habitat and mitigate the effects of climate change. Furthermore, it is possible that actions may be taken that could reduce GHG emissions and slow the changes in sea ice habitat, particularly toward the latter part of this century. Arctic ringed seals will increasingly experience the impacts of habitat alteration stemming from climate change and it is therefore important to identify and provide protection under ESA section 7 for the habitat features and areas essential to the species' conservation.

Comment 13: One peer reviewer suggested that it might be informative to compare the estimated incremental administrative costs of future section 7 consultations attributable to the critical habitat designation with financial data (*e.g.,* overall production costs, as well as profits) from certain industries, in particular the oil and gas industry. The peer reviewer commented that other industry expenditures associated with leasing, exploration, drilling, etc., surely must greatly exceed potential incremental administrative costs of consultations.

Response: Although the information suggested by the peer reviewer could provide additional perspective on the estimated incremental costs of future section 7 consultations for oil and gas related activities, we determined that the information considered in the Final Impact Analysis Report provides sufficient context for the analysis. We also note that this report includes information on average annual receipts for oil and gas operations identified as potentially subject to future section 7 consultations addressing the critical habitat.

Comment 14: One peer reviewer commented that it is important to underscore educational, scientific, and non-consumptive use benefits from increased public awareness generated by the critical habitat designation process itself. Similarly, another commenter stated that the designation process educates managers, state and local governments, and the public regarding the conservation value of critical habitat areas to listed species, which can inform management decisions, conservation programs, and recovery efforts. The peer reviewer also suggested that the potential role of marine mammals in general as the ''canary in the coal mine'' on climate change is something useful for scientists as well as the general public. In addition, the peer reviewer stated that the distributional impacts of the designation are importantly in favor of Alaska Native communities, who depend on marine resources for subsistence, employment, and income. Another peer reviewer commented that the discussion of the positive impacts of the designation to community resilience of underserved Arctic coastal communities could be strengthened.

Response: We agree with the peer reviewers and the other commenter that the critical habitat designation for the Arctic ringed seal can have a number of ancillary and indirect economic, socioeconomic, cultural, and educational benefits, such as those described in these comments. Such benefits are discussed in detail in Section 4 of the Final Impact Analysis Report, and additional information regarding potential benefits has been incorporated into that section of the report as appropriate. As discussed in this report, all of the types of benefits identified are at least partially co-extensive with those afforded through the ESA listing of the species (*i.e.,* they are not attributable solely to critical habitat designation). Data are not available to determine the extent to which such benefits would be attributable specifically to critical habitat designation.

Comment 15: One peer reviewer stated that while they did not disagree with the conclusion in the Draft Impact Analysis Report that there are likely some incremental benefits from

designating critical habitat for the Arctic ringed seal, they found it unclear if the information in the report supports a finding that there is a net benefit (and also questioned whether such a finding is necessary). The peer reviewer suggested that the report clearly set out (qualitatively) how the designation would result in an incremental change in benefits from the baseline (without critical habitat). The peer reviewer also commented that for some of the benefits ascribed to the designation (*e.g.,* support of subsistence activities and commercial fishing), it would seem there needs to be an incremental change in the quality of the habitat from the baseline, which suggests the designation would result in a change to activities that impact the critical habitat, even though section 7 consultations are not expected to result in additional project modification requests attributable to the designation. The peer reviewer suggested that the report further characterize the ability of the designation to influence the design of projects prior to consultation, or include additional information regarding other ways that the designation could result in an incremental change in habitat quality. Alternatively, the peer reviewer suggested focusing on benefits they believe have stronger support (education, scientific knowledge, cultural support, and non-use values associated with habitat protection). In contrast, another peer reviewer stated that the report provided a very thorough summary of the expected costs and benefits and made a well-grounded assessment of the longer-term costs/benefits versus shorter-term costs/benefits.

Response: The ESA requires us to designate critical habitat to the maximum extent prudent and determinable for threatened and endangered species listed under the ESA (16 U.S.C. 1533(a)(3)(A)(i)). Section 4(b)(2) of the ESA requires us to designate critical habitat on the basis of the best scientific data available after taking into consideration the economic impact, the impact on national security, and any other relevant impact of specifying any particular area as critical habitat. In addition, section 4(b)(2) describes an optional process by which we may go beyond the mandatory consideration of impacts and weigh the benefits of excluding any particular area against the benefits of designating it. We did not intend to convey in the Draft Impact Analysis Report that the ESA requires any showing that a designation will result in net benefits. We have revised the Final Impact Analysis Report to better communicate the purpose and need for this analysis. In addition, in response to the peer reviewers' comments and suggestions, we expanded Section 4 of the Final Impact Analysis Report to incorporate additional details presented in the revised proposed rule regarding ways in which critical habitat designation for the Arctic ringed seal can result in incremental benefits. Although we do not anticipate modifications to Federal actions expressly to avoid impacts to the critical habitat as distinct from impacts to ringed seals, we note that this does not mean such modifications could not occur in situations we are unable to predict at this time.

Several non-regulatory benefits are expected to result from the designation. Critical habitat designation provides specific notice to Federal agencies and the public of the geographic areas and physical and biological features essential to the conservation of the species, and information about the types of activities that may reduce the conservation value of the habitat. This information will focus future section 7 consultations on key habitat attributes. Designation of critical habitat can also inform Federal agencies of the habitat needs of the species, which may facilitate using their authorities to support the conservation of the species pursuant to section 7(a)(1) of the ESA, including to design proposed projects in ways that avoid, minimize, and/or mitigate adverse effects to critical habitat from the outset. Public awareness of critical habitat designations may also stimulate voluntary conservation actions by the public, as well as research, education, and outreach activities.

In addition to the benefits of critical habitat to the seals, as detailed in Section 4 of the Final Impact Analysis Report and summarized in the *Benefits of Designation* section of this final rule, other forms of benefits may also accrue. These benefits may be economic in nature (whether market or non-market, consumptive, non-consumptive, or passive), educational, cultural, or sociological, or they may be expressed through beneficial changes in the ecological functioning of the species' habitat, which itself yields ancillary welfare benefits (*e.g.,* improved quality of life) to the region's human population. For example, because the designation is expected to result in enhanced conservation of the Arctic ringed seal over time, residents of the region who value these seals, such as subsistence hunters, may experience indirect benefits. As discussed in Sections 4 and 6 of the Final Impact Analysis report, although available information is insufficient to quantify or monetize the benefits of designation, they are not inconsequential, and the potential incremental economic impacts associated with the designation are modest both in absolute terms and relative to the level of economic activity expected to occur in the affected area (see *Economic Impacts* section).

Public Comments

Essential Features

Comment 16: One commenter recommended that we omit the statement indicating that Arctic ringed seals favor landfast ice as whelping habitat because it is quite likely that the majority of Arctic ringed seals whelp in moving ice, even if highest densities have been reported in shorefast ice.

Response: As we noted in the revised proposed rule, nearly all research on Arctic ringed seal reproduction has been conducted in landfast ice, and although whelping has been observed on both nearshore and offshore drifting pack ice, the potential importance of stable but drifting pack ice to the species' reproduction has not been adequately investigated. In response to this comment, we have modified the related preamble text to clarify that Arctic ringed seals have been ''reported to'' favor landfast ice.

Comment 17: Two commenters suggested that the minimum snowdrift depth proposed for the birth lair essential feature based on research conducted during colder periods may not be applicable if temperatures warm as projected, and they added that some ringed seal populations (*e.g.,* Okhotsk subspecies) do not require subnivean lairs for pup survival. One of the commenters also stated that genetic data indicate that ringed seals have previously survived warmer periods with less snow.

Response: Like most phocid seals, Arctic ringed seals whelp and nurse their pups on sea ice. However, snow-covered lairs are particularly important for Arctic ringed seal pups given that: (1) Arctic ringed seal pups have the longest nursing period of any of the northern phocid species (about 6 weeks); and (2) during the period of whelping and nursing, Arctic ringed seal females and pups are limited in their movements, thus making them even more vulnerable to predation. Further, the Arctic ringed seal is the only ice-associated seal that has evolved to occupy landfast coastal ice, where surface predators are common. When snow depth is insufficient, pups can freeze in their lairs, as documented in

the White Sea by Lukin and Potelov (1978). Further, unseasonal warming and rains will become increasingly common as the climate warms (*e.g.,* Hezel *et al.* 2012), and such events have led to high pup mortality when collapse of lairs was followed by a return to cold temperatures (Lukin and Potelov 1978, Stirling and Smith 2004, Ferguson *et al.* 2005). Moreover, pups not sheltered in lairs would have to expend substantial energy reserves to maintain their core body temperature in such conditions, and would thus be more susceptible to other stressors. Pups in lairs with thin snow cover are also more vulnerable to predation than pups in lairs with thick cover (Hammill and Smith 1989, Ferguson *et al.* 2005), and pups not sheltered in lairs would be particularly vulnerable to predation (see also our response to Comment 3). It has been reported that when lack of snow cover has forced birthing to occur in the open, nearly 100 percent of pups died from predation (Smith *et al.* 1991, Smith and Lydersen 1991).

With regard to Okhotsk ringed seals, Heptner *et al.* (1976) pointed out that lairs ''can be detected only with the help of a dog.'' Kelly *et al.* (2010a) discussed that they were not aware of any attempts to locate subnivean lairs using dogs in the Sea of Okhotsk, and that the extent to which Okhotsk ringed seals rely on lairs is unknown. Further, Kelly *et al.* (2010a) commented that unlike Arctic ringed seals, Okhotsk ringed seal whelping appears largely restricted to areas of drifting pack ice where surface predators are relatively rare (and polar bears are absent from the Sea of Okhotsk), indicating that even if Okhotsk ringed seals have less reliance on lairs than Arctic ringed seals, such differences may be attributable to environmental factors rather than reflecting a universal ability of ringed seals to persist without lairs. The best scientific information available would suggest the Okhotsk population has decreased, but estimates of population size are poor (see Kelly *et al.* 2010a).

As for species persistence during previous warmer periods with less snow, we are uncertain what data from warm periods or years the commenter is suggesting we use instead of the data selected, and we are not aware of any data from previous warm periods that could serve as an appropriate analog for current climatic conditions, nor do we think considering birth lair depth in only the warmest years in the past several decades would provide us with an appropriate data set. We also note regarding warm interglacial periods, that we are not aware of any available information on ringed seal adaptive responses during those periods. A fundamental difficulty in using previous warm periods as analogs for the current climate disruption is that the rate of warming in prehistoric periods is poorly known. The species' resilience to those previous warming events, which may have been slower than the current warming, does not necessarily translate into present-day resilience. Moreover, there may be cumulative effects from climate warming and other anthropogenic impacts that combine to limit the species' resilience to the changes anticipated in the coming decades.

Comment 18: One commenter stated that the birth lair essential feature should be defined to include natural cavities in the sea ice that may also be used for birth lairs. The commenter further stated that we should also expand the definition of the birth lair essential feature to recognize the importance of subnivean haulouts used as resting areas during winter and spring. The commenter stated that to reflect use of these subnivean haulouts as winter resting sites beginning earlier in the season, the southern boundary of critical habitat should be based on the position of the ice edge in March rather than in May.

Response: While we acknowledge that Arctic ringed seal birth lairs may occasionally occur in natural cavities in the sea ice, we do not have data to conclude that this habitat is essential to the species' conservation. It has been suggested that lairs in such ice cavities may provide better protection from predators; however, they also provide less insulation, and the instability of such ice poses the risk of seals being crushed (McLaren 1958). As we discussed in the revised proposed rule, Arctic ringed seals use subnivean lairs for resting, as well as for whelping and nursing pups. Subnivean lairs used for resting have been documented as early as December or January in some areas (Smith *et al.* 1991, Williams *et al.* 2006). However, data on ringed seal use of lairs (and characteristics of those lairs) prior to when seals begin developing and occupying birth lairs are quite limited, and the conservation importance of lairs outside of the whelping and nursing period is less understood. In contrast, there are substantial data indicating the importance of sufficient snow depths for birth lairs. As we discussed in response to Comments 3 and 17 above, high rates of pup mortality due to hypothermia and predation have been reported as a consequence of inadequate snow cover. We therefore focused the subnivean lair essential feature of Arctic ringed seal critical habitat specifically on birth lairs.

Comment 19: Several commenters stated we did not sufficiently justify the exclusion of bottom-fast from the sea ice essential features. Commenters noted that: (1) The bottom-fast ice environment fluctuates throughout the seasons and the under-ice surface is irregular and can facilitate ringed seal access to this ice; (2) ringed seals and lairs have been observed on bottom-fast ice (Martinez-Bakker *et al.* 2013); (3) bottom-fast ice near cracks in the ice could provide escape routes for molting seals; (4) evidence that ringed seal densities are lower in very shallow waters does not equate to finding bottom-fast ice unsuitable; and (5) the exclusion of bottom-fast ice does not account for the uncertainty in predicting habitat use as climate change continues to affect the amount, locations, and dynamics of sea ice. One commenter also pointed out that the aerial surveys conducted by Frost *et al.* (2004), which were referenced in the revised proposed rule, did not include ice shoreward of the 3-m depth contour, which was estimated based on bathymetric charts and not actual depth estimates. In addition, the commenter noted that Moulton *et al.* (2002a) reported inconsistent relationships between seal densities and water depths and that they suggested that depth effects were artifacts of their relationship with ice features that, in fact, were driving observed differences in density. The commenter also described their personal experiences with locating subnivean lairs and breathing holes in shallow water (*e.g.,* lairs formed in snowdrifts formed by ice piled on the shoreline), including in Elson Lagoon and at Point Barrow. Two commenters also noted that ringed seal lairs are found along shorelines in Lake Saimaa (Niemi *et al.* 2019) and Lake Ladoga (Sipilä *et al.* 1996, Kunnasranta 2001) and that the seals access these lairs in very shallow water.

Response: In response to public comments received regarding the sea ice essential features relative to bottom-fast ice and very shallow nearshore waters (see Comment 28), we re-evaluated the proposed exclusion of bottom-fast ice and how the sea ice essential features may be best described relative to very shallow nearshore areas. As we explained in the revised proposed rule, although ringed seals use landfast sea ice as whelping habitat, landfast ice extending seaward from shore may freeze to the sea bottom in very shallow waters (typically 1.5 to 2 m deep). In the preamble to this final rule, we have further explained and clarified that

where sea ice is bottom-fast, there would presumably be little to no ice-free water present that would allow the seals to swim under and gain access to the ice surface for the construction and maintenance of birth lairs, or for basking and molting, except perhaps where cracks form in the ice, or where the ice is not uniformly frozen to or resting on the seafloor. Thus, while we acknowledge that some ringed seal lairs may be found in bottom-fast ice, we expect use of bottom-fast ice by Arctic ringed seals to be low relative to use of ice in deeper waters, and we continue to conclude that bottom-fast ice is not a component of sea ice that is essential for birth lairs or for basking and molting.

Mapping of bottom-fast sea ice extent by Dammann *et al.* (2019) (based on analysis of satellite imagery from spring 2017) indicated that prominent areas of bottom-fast ice in the U.S. Beaufort Sea were situated around certain river outlets, in particular the Colville River Delta, and in a number of lagoons along the coast, while in the Chukchi Sea, bottom-fast ice was predominantly within lagoons. The proposed definitions of the sea ice essential features therefore qualified that bottom-fast ice ''typically'' occurs in waters less than 1.5 to 2 m deep. This wording was to inform the reader that the depth information was provided as guidance regarding where bottom-fast ice *might* be present.

We reviewed the references cited by the commenters and found that they did not provide any new information regarding the issue of bottom-fast ice or very shallow ice-covered waters (*i.e.,* less than 2 to 3 m in depth) relative to Arctic ringed seal birth lair sites. We note that a study of the breeding habitat of ringed seals in Lake Saimaa by Sipilä (1990) reported that the water depth below birth lair breathing holes in the ice at the end of the breeding period (in 2 years when the water depth in the lake was not artificially lowered) during the winter was 0.6 to 1.5 m. The author explained that the steepness of the shore slope was important to allow the seals passage when the water level was low. We interpret this information as indicating that ice was not typically bottom-fast where birth lairs were constructed. Moreover, in contrast to sea ice habitat used by Arctic ringed seals, both Saimaa and Ladoga ringed seals are confined to large freshwater lakes, and as a commenter noted, in Lake Saimaa, the only places where snow forms drifts deep enough for lairs is along the shorelines of islands and islets (Sipilä 1990).

Regarding the comments concerning aerial surveys conducted by Frost *et al.* (2004) and Moulton *et al.* (2002a), we have clarified in the preamble to this final rule that the lower densities in very shallow water reported by Frost *et al.* (2004) were for waters estimated to be between 3 and 5 m deep. However, we maintain that the results reported for both studies provide some evidence that ringed seal densities are lower in very shallow water, at least in the Alaskan Beaufort Sea during late May to early June. In particular, Moulton et al. (2002) reported that the lowest ringed seal densities were observed in waters less than 3 m deep in each of the 3 years that surveys were conducted and this was also reported for similar surveys completed in the subsequent 3 years (Moulton *et al.* 2001, Moulton *et al.* 2002b, Moulton *et al.* 2003). As for the effects of climate change on the sea ice habitat of Arctic ringed seals, we are not aware of any available information that would provide a basis to conclude that bottom-fast ice may in the future become an element of sea ice habitat that is essential for birth lairs or for basking and molting.

We recognize that some Arctic ringed seals may use sea ice in very shallow water during the molting and/or whelping and nursing periods, as may have been the case for some tagged ringed seals based on the maps of tagged ringed seal movements in the publication by Martinez-Bakker *et al.* (2013) (*e.g.,* in Elson Lagoon). However, our focus in defining the sea ice features is on the habitat attributes that are essential to the conservation of Arctic ringed seals. As we discuss in the Specific Areas Containing the Essential Features section of this final rule, although the extent of landfast ice that becomes bottom-fast over winter varies along the coast (*e.g.,* Dammann *et al.* 2018), a portion of the landfast ice in very shallow waters becomes bottom-fast over winter, use of such ice by Arctic ringed seals is expected to be low relative to use of ice in waters greater than 2 to 3 m depth, and there is some evidence that Arctic ringed seal densities are lower in waters less than 3 to 5 m deep, at least in the Beaufort Sea during late May to early June. After considering the available information, we have concluded that the sea ice essential features are best described with respect to very shallow waters in terms of minimum water depth, rather than with a specific focus on bottom-fast ice. Specifically, for the purpose of describing the sea ice essential features in this final rule, we selected 3 m as the minimum water depth for the sea ice essential features.

Comment 20: Two commenters stated that the proposed definition of sea ice essential for basking and molting is overly broad, and does not represent a habitat feature that is truly critical to Arctic ringed seals. The commenters stated that the information cited in the revised proposed rule on average ice concentrations used by ringed seals during the molting period provides insufficient evidence for determining that sea ice of 15 percent or more concentration is essential. One commenter also suggested that the proposed definition for this essential feature is inconsistent with the statement in the revised proposed rule that a number of studies have reported an apparent preference for consolidated stable ice (*i.e.,* landfast ice and consolidated pack ice). In addition, another commenter stated that it is unclear why we limited this proposed essential feature to areas containing sea ice of 15 percent or more concentration, as it appears to have no particular significance to the behavior of ringed seals, and noted that in modeling exercises this is the typical threshold for where sea ice is considered present.

Response: As we discussed the revised propose rule, there are limited data available on sea ice concentrations used by Arctic ringed seals for basking and molting. As noted by a commenter, we stated in the revised proposed rule that a number of studies have reported an apparent preference for consolidated stable ice, at least during the initial weeks of the basking period. We also explained that some of these studies have reported observations of Arctic ringed seals hauled out at low densities in unconsolidated ice. However, in identifying the minimum sea ice concentration that is essential for basking and molting, we also considered information on average ice concentrations used by several tagged ringed seals in the Chukchi and Bering seas during the basking period in June reported by Crawford *et al.* (2012a). This information, although limited, provides some evidence of ice concentrations used by ringed seals as annual sea ice melts and recedes north in this region. Our selection of 15 percent minimum ice concentration for this essential feature is consistent with those average ice concentrations when taking into account the standard errors (SEs) of the averages. We have clarified this reasoning in the preamble to this final rule. As we noted in the revised proposed rule, Arctic ringed seals in the Chukchi Sea have been observed basking in high densities on the last remnants of the seasonal sea ice during late June to early July, near the end of the molting period (S. Dahle, NMFS,

personal communication, 2013), which comports with our selection of this minimum ice concentration. The minimum sea ice concentration specified as essential for basking and molting reflects the habitat requirement that some sea ice is present during basking and molting that can be used as a haulout platform. We acknowledge that the sea ice concentration identified for this essential feature is based upon limited information. However, we are not aware of any additional information that would support refinement of the regulatory definition of this essential feature. Therefore, in this final rule, we continue to define sea ice habitat essential for basking and molting as areas containing ice of at least 15 percent concentration, as this is the level of specificity supported by the best scientific data available at this time.

Comment 21: One commenter stated we should identify acoustic conditions that allow for effective communication for predator avoidance and breeding activities as an additional essential feature, and provided information and references concerning ringed seal vocalizations and the potential impacts of noise on ringed seals. The commenter noted that an essential feature addressing acoustic conditions was included in the proposed critical habitat designation for bearded seals because communication plays an important role in that species' reproduction, and suggested that this is also the case for ringed seals. The commenter argued that inclusion of an acoustic essential feature for ringed seals is justified because available evidence indicates that ringed seals increase their vocalizations during the breeding season, rely on quiet and cryptic calls for communication that could be easily masked by anthropogenic noise, and are known to display avoidance behaviors and abandon breathing holes and lairs in response to noise disturbance. Another commenter more generally questioned why we did not discuss the importance of ringed seal vocalizations in social behavior and of their hearing in navigation with respect to the potential for masking by human activities in our evaluation of whether special management considerations or protection may be required.

Response: Although vocalizations may play a role in the reproductive behavior of Arctic ringed seals, in contrast to bearded seals, little is known about the behavioral and ecological contexts of vocalization or the ranges over which the seals communicate. Given the limited scientific understanding, we find that identification of an essential feature addressing acoustic conditions for effective communication by Arctic ringed seals is not warranted at this time. However, in our evaluation of sources of threats to the essential features of Arctic ringed seal critical habitat that may require special management considerations or protection, we identified acoustic effects among the threats to the quantity and/or quality of the essential features. We agree with the commenters that acoustic conditions that allow for effective communication and other uses of sound by Arctic ringed seals are important for the conservation of the species. We will continue to consider and address the effects of anthropogenic noise on Arctic ringed seals in consultations under section 7 of the ESA. The critical habitat designation will result in the additional requirement that Federal agencies evaluate any relevant impacts of noise on the essential features of Arctic ringed seal critical habitat.

Comment 22: One commenter stated that we should identify habitat for seasonal movements of Arctic ringed seals (*i.e.,* dispersal and migration) as an essential feature, given that tracking studies have confirmed that the seals make large-scale seasonal movements that track sea ice conditions and prey resources. The commenter stated that we should overlay information from ringed seal telemetry studies off Alaska with the critical habitat map to ensure that important migratory and dispersal habitat falls within the critical habitat boundaries, and then include such habitat as a separate essential feature.

Response: We recognize that telemetry data for tagged Arctic ringed seals document seasonal movements that for many individuals appear to generally track changes in sea ice conditions, and as the commenter noted, they can make large-scale seasonal movements. However, as we discussed in the proposed rule, the information available on movements and diving behavior of Arctic ringed seals tagged in Alaska indicates that although the seals may forage seasonally in some particular areas, they also make extensive use of a diversity of habitats for foraging across much broader areas in the Bering, Chukchi, and Beaufort seas. Based on the best scientific data available, we are unable to identify physical or biological features that define habitat used for seasonal movements specifically. Therefore, we did not identify such habitat as an essential feature of the species' critical habitat. We note, however, that the late spring to early summer time period during which Arctic ringed seals use sea ice habitat essential for basking and molting coincides with when the sea ice edge retreats northward. Thus, there is some temporal overlap between when this essential feature is used by Arctic ringed seals and seasonal movements of those seals that follow the receding ice edge northward.

Comment 23: Two commenters stated that the essential features and expansive area proposed for designation do not account for the observed flexibility and resilience of Arctic ringed seals regarding lair-site selection and fidelity, their wide-ranging movements, and their broad dietary preferences and behavior, due to widely variable conditions from year to year regardless of climate change. One commenter further stated that ringed seals are not habitat limited, which along with their demonstrated ability to adapt to a variety of conditions, supports the conclusion that there is no single type of habitat used by ringed seals that is essential to their conservation.

Response: We are not aware of available information documenting observed flexibility in selection of breeding habitat relative to natal site fidelity. However, we acknowledge that Arctic ringed seals can make large-scale movements, have diverse diets, inhabit a range of sea ice conditions, and give birth and nurse pups in both landfast and pack ice. Nevertheless, as discussed elsewhere in this final rule, ringed seals require stable sea ice with snowdrifts of sufficient depths for the formation and maintenance of subnivean birth lairs, sea ice that provides a platform for basking and molting, and primary prey resources to support their energetic requirements. We continue to find, based on the best scientific data available, that these physical or biological features are essential to the conservation of the species (see Physical and Biological Features Essential to the Conservation of the Species section), and that each of these essential features may require special management considerations or protection as a result of impacts from four primary sources of threats (see Special Management Considerations or Protection section). We disagree with the assertion that no specific types of habitat should be considered essential because Arctic ringed seals are not ''habitat limited.'' The ESA defines critical habitat within the geographical area occupied by the species in terms of essential physical and biological features, and the associated regulations require us to focus on those features in the designation process. Those habitat features need not be impaired or limiting to be used to designate critical habitat. The relevant considerations are

whether they provide an essential function to the conservation of the listed species and may require special management considerations or protection.

Specific Areas

Comment 24: We received a number of comments that expressed support for the proposed designation, and several commenters including the Marine Mammal Commission, Kawerak, and Maniilaq Association, indicated that they concurred that the proposed critical habitat contains the physical and biological features essential to the conservation of the Arctic ringed seal.

Response: We acknowledge these comments. We note that we made some changes to the revised proposed designation, which are described in the Summary of Changes From the Revised Proposed Designation section of this final rule.

Comment 25: Several commenters stated that the proposed designation is overbroad because it includes most of the geographical area occupied by Arctic ringed seals within the U.S. EEZ. The commenters asserted that as such, the proposed designation is inconsistent with congressional intent and the ESA requirement that critical habitat not include the entire geographical area occupied by the species. The commenters also referred to the Supreme Court ruling in *Weyerhaeuser Co.* v. *U.S. Fish & Wildlife Serv.,* 139 S. Ct. 361, 368 (2018), in which the court stated that critical habitat is a subset of habitat, and stated that this indicates critical habitat must be designated more narrowly to include only those specific areas where the essential elements presently required for survival of the species are located.

In addition, the commenters stated that the revised proposed rule did not provide scientific data demonstrating with any specificity that the entirety of the area proposed for designation actually contains one or more of the identified essential features. ADF&G suggested that in the revised proposed rule, the description of the essential features as dynamic and variable on both temporal and spatial scales, and related language stating that critical habitat was identified based on the expected occurrence of the essential features, indicates that we identified the specific area proposed for designation without supporting data identifying the location of the essential features. They stated that although the designation is to be done at a scale determined by the Secretary, the proposed designation, at a huge scale, stretches the bounds of what is reasonable. They referred to the revised designation of critical habitat for North Atlantic right whales as an example of a designation that is compact and targeted relative to the species' range, even though it expanded the designated critical habitat. They also pointed to the critical habitat designation for North Pacific right whales as an example of a designation that they described as similarly compact and targeted, despite an acknowledged lack of data. They went on to assert that we did not fully analyze the report they provided on Arctic ringed seal movements (Quakenbush *et al.* 2019) as a primary source of spatial data. They stated that we should make the best use of all the available data to delineate the most essential areas within a species' range, and that we instead overcompensated for lack of data or difficulty in determining where essential feature are located by proposing an overly expansive designation. They also contended that based on statutory language, NMFS's goal must be to identify and designate those specific areas that demonstrably contain the highest value physical and biological features for the species. Related comments stated that establishing priority habitat areas for designation would be more manageable and efficient.

Response: Under the ESA, a specific area qualifies as critical habitat if it was occupied by the species at the time of listing and contains one or more of the physical or biological features essential to the conservation of the species and that may require special management considerations or protection. Specific areas are eligible for designation if they meet these criteria. Our regulations clarify that the geographical area occupied by the species may include those areas used throughout all or part of the species' life cycle, even if not used on a regular basis (*e.g.,* migratory corridors, seasonal habitats, and habitats used periodically, but not solely by vagrant individuals; 50 CFR 424.02). Further, physical or biological features may include habitat characteristics that support ephemeral or dynamic habitat conditions, and thus, they need not be present throughout critical habitat at all times.

We have long interpreted ''geographical area occupied'' in the definition of critical habitat to mean the entire range of the species at the time it was listed, inclusive of all areas the species uses and moves through seasonally (45 FR 13011, February 27, 1980). Further, in *Arizona Cattle Grower's Assoc.* v. *Salazar,* 606 F.3d 1160 (9th Cir. 2010), the Ninth Circuit affirmed the interpretation of USFWS that ''occupied'' areas means areas that the species uses with sufficient regularity such that it is likely to be present during any reasonable span of time. As we discuss in the Geographical Area Occupied by the Species section of this final rule, based on the best scientific data available, the range of the Arctic ringed seal was identified in the final ESA listing rule (77 FR 76706; December 28, 2012) as the Arctic Ocean and adjacent seas, except west of 157° E long. (the Kamchatka Peninsula), where the Okhotsk subspecies of the ringed seal occurs, or in the Baltic Sea where the Baltic subspecies of the ringed seal is found. We cannot designate areas outside U.S. jurisdiction as critical habitat. Thus, the geographical area that was under consideration for this designation was limited to areas under the jurisdiction of the United States that Arctic ringed seals occupied at the time of listing. This occupied area extends to the outer boundary of the U.S. EEZ in the Chukchi and Beaufort seas, and as far south as Bristol Bay in the Bering Sea.

We acknowledge that critical habitat constitutes a subset of what qualifies as ''habitat'' for a particular species. *See Weyerhaeuser* v. *U.S. Fish and Wildlife Serv.,* 139 S. Ct. 361 (2018). Consistent with the definition of critical habitat under the ESA and based on the best scientific data available, the specific area designated as critical habitat for the Arctic ringed seal in this final rule contains the physical and biological features identified as essential to the conservation of the Arctic ringed seal and that may require special management considerations or protection. This critical habitat is a subset of the habitat occupied and used by Arctic ringed seals in U.S. waters, and it is also a subset of the much larger circumpolar habitat occupied and used by this species. Moreover, because all of the Arctic ringed seal's critical habitat is currently occupied by the species, the Supreme Court's decision in *Weyerhaeuser* v. *U.S. Fish and Wildlife Serv.* (139 S. Ct. 361 (2018))—which held in the context of unoccupied habitat that an area must logically be ''habitat'' in order to meet the narrower category of ''critical habitat'' as defined under the ESA—is not directly relevant to the designation of critical habitat for Arctic ringed seals. Specific areas that are occupied by a species are inherently ''habitat.''

Delineation of specific areas that contain essential features is done at a scale determined by the Secretary (of Commerce) to be appropriate (50 CFR 424.12(b)(1)). In making decisions about the appropriate scale and boundaries for

the specific area we are designating as critical habitat, we considered, among other factors, the life history of the species and the scales at which data are available to inform our analysis. The seasonality of sea ice cover strongly influences the movements, foraging, and reproductive behavior of Arctic ringed seals, and the dynamic variations in sea ice and on-ice snow depths result in individuals distributing broadly and using sea ice habitats within a range of suitable conditions. Therefore, our delineation of critical habitat for the Arctic ringed seal reflects the considerations described elsewhere in this final rule regarding the variability in the spatial and temporal distributions of the essential features, in particular of the sea ice essential features, the overlap in timing of whelping and nursing with basking and molting, the widespread distribution of Arctic ringed seals using the essential features, and the spatial scale of the seals' movements in utilizing their habitat.

In that regard, our approach is similar to the USFWS's designation of critical habitat for polar bears. Recognizing that sea ice is dynamic and highly variable on both temporal and spatial scales, and that polar bear use of specific areas of sea ice habitat varies daily and seasonally, the extent of the continental shelf within the area occupied by the polar bear in the United States was identified as the sea ice critical habitat unit containing the essential sea ice feature (75 FR 76086, December 7, 2010) (this designation was challenged and ultimately upheld by the Ninth Circuit, *see Alaska Oil & Gas Ass'n* v. *Jewell,* 815 F. 3d 544, 555–62 (9th Cir. 2016)). For Arctic ringed seal critical habitat, the essential features are dynamic, and we identified where one or more of these essential features occurs at a coarse scale with as much specificity as the best scientific data available allows (see Specific Areas Containing the Essential Features section).

As stated above, under the ESA, an area qualifies as critical habitat if, based on the best scientific data available, it was occupied by the species at the time of listing and contains one or more of the physical or biological features essential to the conservation of the species and that may require special management considerations or protection. Specific areas are eligible for designation if they meet these criteria. Neither the ESA's definition of critical habitat nor our implementing regulations at 50 CFR part 424 restrict critical habitat to only the most important core habitats of the species. Further, where, as here, one or more essential features are not static, and their location changes both seasonally and annually, a critical habitat designation must be large enough to account for such changes in the locations of essential features and the particular species' habitat requirements throughout their life history, as discussed above. Following thorough consideration of the peer reviewer and public comments and information submitted, we conclude, based on the best scientific data available, including the information reported by Quakenbush *et al.* (2019), that the specific area we are designating as critical habitat most accurately identifies where the physical and biological features essential to the conservation of the Arctic ringed seal occur. We acknowledge that this designation is much larger than the designations for the North Atlantic right whale and the North Pacific right whale. Each critical habitat designation reflects consideration of the best scientific data available at the time of designation regarding the particular species and its habitat characteristics and requirements.

Comment 26: One commenter stated that designating critical habitat on a seasonal basis, or on a dynamic basis that reflects changing conditions seems at odds with the structure and mandates of the ESA, which specifies that critical habitat should include all areas that are essential to the conservation of a listed species and that federal agencies are under a continuing obligation to consult with NMFS if any action they authorize, fund, or carry out may affect critical habitat; thus temporal considerations should be considered during section 7 consultations.

Response: We agree with this comment.

Comment 27: Several commenters stated that critical habitat should be designated on a seasonal basis to reflect the specific times and places in which the essential features are used by Arctic ringed seals for critical life functions. Some commenters contended that the revised proposed rule would ''over-designate'' critical habitat and rely on subsequent section 7 consultations as a means to refine what constitutes critical habitat, which they stated would effectively remove the designation from notice and comment rulemaking and shift the burden of designation decisions to the consultation process. BOEM specifically recommended that we identify continental shelf waters deeper than 3 m as critical habitat used in summer and fall, and shorefast ice in waters deeper than 3 m as critical habitat used in winter and spring. In addition, another commenter suggested that the designation incorporate a dynamic spatial-temporal element that would roll back the boundaries northward as sea ice recedes seasonally or over longer periods to respond to changes in habitat conditions due to climate change.

Response: The ESA focuses on the spatial presence of the essential features within occupied areas, but does not mention the temporal presence of those features. Under the ESA's definition of critical habitat, if an area is occupied by a listed species and one or more essential features can be found in that area, even if the features are present only seasonally, then that area qualifies as critical habitat. The statute does not allow critical habitat designations to fluctuate seasonally, nor does it specify that critical habitat must contain any particular essential feature at all times. In addition, our implementing regulations at 50 CFR 424.12(c) specify that ephemeral reference points cannot be used to clarify or refine the boundaries of critical habitat. A dynamic boundary based on seasonal presence of the essential features would be inconsistent with this requirement. Moreover, even if seasonal designations of critical habitat were authorized under the ESA or the implementing regulations, such designations could potentially miss an important aspect of critical habitat: The protection afforded by designation even when the species may not be present, thus ensuring that Federal actions are not likely to adversely modify or destroy critical habitat that is important to support essential life history functions during particular times of the year.

The size of the critical habitat designation is in no way related to shifting any burdens to the section 7 consultation process. Where, as here, one or more essential features are not static, and their location changes both seasonally and annually, a critical habitat designation must be large enough to account for such changes in the locations of essential features and the particular species' habitat requirements throughout their life history. The potential effects of a proposed Federal action depend on, among other factors, the specific timing and location of the action relative to seasonal presence of essential features or seasonal use of critical habitat by listed species for essential life history functions. It is therefore common practice in consultations under section 7 of the ESA to address spatial-temporal considerations as part of the analysis of how a particular Federal action would impact the conservation value of critical habitat, and these considerations can be effectively addressed for such analyses

involving Arctic ringed seal critical habitat. It is likely that most Federal actions that would occur outside the time periods when the sea ice essential features are present would not adversely affect those features. However, some actions that temporally avoid the presence of non-static essential features such as sea ice may still impact the habitat that Arctic ringed seals use or occupy. For example, the construction of an offshore artificial island when sea ice is not present could still render some Arctic ringed seal habitat unusable after the construction of the project. Thus, during consultation, NMFS considers the particular set of facts relevant to that consultation, such as the nature of the activities being conducted, the location of the action, and the spatial and temporal scale, in order to determine the potential effects of the activity on critical habitat and ultimately, whether the activity is likely to destroy or adversely modify critical habitat.

Regarding BOEM's specific comment pertaining to the shoreward and northern boundaries of Arctic ringed seal critical habitat, also see our responses below to Comments 31 and 37 for further information on the shoreward and northern boundaries of critical habitat identified in this final rule.

Comment 28: One commenter stated that because shorefast ice frequently freezes to thicknesses of 2 to 3 m deep and into the seabed, use of the 3-m isobath as the shoreward limit would be a practical depth to demarcate areas that seals do not use in winter and spring. Another commenter similarly stated that ice-covered waters shallower than 3 m should not be included as critical habitat because ringed seals cannot overwinter there due to ice freezing to the seafloor and poor prey availability caused by the limited amount of ice-free water, as indicated in a 2006 notice of an application for an incidental harassment authorization issued by NMFS (71 FR 9782, February 27, 2006). The commenter also noted that NMFS recently stated in issuing incidental take regulations that habitat is not suitable for ringed seal lairs where water depth is less than 3 m (85 FR 83451, December 22, 2020). In addition, one commenter asserted that for the sea ice essential features, we need to explain how nearshore areas are as important as habitats in deeper waters and provide evidence that demonstrates the nearshore area has conservation value as critical habitat, including those shallow water areas where the ice is predominantly grounded in winter, stating that only a small segment of the ringed seal population uses shallow nearshore ice habitat in the Beaufort Sea for birth lairs.

Response: Regarding sea ice in waters less than 3 m deep, as we stated in the revised proposed rule and in our response to Comment 19, the best information currently available indicates that where bottom-fast ice forms, it is predominantly in waters less than 1.5 to 2 m deep, though the extent of bottom-fast ice along the Alaska coast varies (see Dammann *et al.* 2019). Public comments we received regarding sea ice in shallow nearshore areas led us to re-evaluate the proposed descriptions of the sea ice essential features, under which certain waters may or may not have qualified as critical habitat depending on whether bottom-fast ice was present. As a result, we have concluded that these essential features are best described by specifying a minimum water depth of 3 m, which has the effect of excluding waters likely to contain bottom-fast ice (see our response to Comment 19).

In the revised proposed rule, the shoreward boundary of critical habitat was defined as the line of MLLW, principally based on occurrence of the primary prey resources essential feature, rather than on the sea ice essential features. However, as detailed below in the section Summary of Changes From the Revised Proposed Designation, after revising the proposed definitions of the essential features, and in response to public comments such as these that expressed concerns about our proposed delineation of the boundaries of critical habitat with respect to the primary prey resources essential feature, we re-evaluated the best scientific data available and the approach we used to identify the specific area(s) that contain this feature (see also our response to Comment 31). We now identify a single specific area that contains all of the essential features based on our delineation of the boundaries for the sea ice essential features. Because we have revised the definitions of the sea ice essential features to identify the minimum water depth for both features as 3 m (relative to MLLW), we identify the shoreward boundary of Arctic ringed seal critical habitat as the 3-m isobath (relative to MLLW), consistent with this minimum water depth. As for the comment about the relative conservation value of shallow nearshore areas with respect to the sea ice essential features, any area occupied by the species may be designated as critical habitat if it contains one or more of the physical or biological features essential to the conservation of the species and that may require special management considerations or protection. We determined that all of the essential features occur in waters 3 m or more in depth, and therefore nearshore waters seaward of the 3-m isobath are properly designated as critical habitat.

Comment 29: One commenter stated that critical habitat should be delineated as the specific areas of landfast ice extending from the 3-m isobath to the 20-m isobath, which the commenter suggested provides optimal habitat for ringed seal lairs and pupping. The commenter referenced the observed densities of Arctic ringed seals on landfast ice in the Beaufort Sea (Frost *et al.* 2002, Moulton *et al.* 2002b), in conjunction with studies of landfast ice extent in the western Beaufort Sea (Mahoney *et al.* 2005, Mahoney *et al.* 2007). However, the commenter stated that based on a study in the East Siberian Sea by Morris *et al.* (1999, as summarized in Mahoney *et al.* 2007) a transitional ice zone occurs between landfast and pack ice, which is more variable in depth, consistency, and distribution. The commenter stated that areas of transitional ice should be excluded from critical habitat because it is marginally valuable for ringed seal survival and conservation and as such, it is not essential to the conservation of the species nor does it require special management considerations or protection. The commenter also pointed out that although the revised proposed rule acknowledges little research has been conducted on Arctic ringed seals in offshore pack ice, the northern boundary of critical habitat was nonetheless defined as the outer boundary of the U.S. EEZ. The commenter further stated that as indicated in the revised proposed rule, during summer, most ringed seals spend a majority of their time foraging offshore near pack ice (Frost 1985), and Von Duyke *et al.* (2020) also reported that most ringed seals tagged during a recent study were documented north of the shelf with retreating pack ice.

Response: With regard to sea ice for lairs and pupping, as discussed in more detail in the Physical and Biological Features Essential to the Conservation of the Species section of this final rule, pup production has been reported in both landfast ice and pack ice. Moreover, surveys conducted in the Bering and Chukchi seas have documented ringed seals, including observations of pups, in nearshore and offshore areas. We therefore determined that snow-covered sea ice essential for birth lairs consists of both landfast ice and dense, stable pack ice. We defined the seaward boundaries of critical habitat with respect to the sea ice

essential features based on the occurrence of the features themselves. The commenter did not provide, and we are not aware of, information on Arctic ringed habitat use relative specifically to what the commenter referred to as ''transitional ice.'' Also, regarding the commenter's reference to the 20-m isobath relative to landfast ice, we note that although the stable location of the seaward landfast ice edge in the Beaufort Sea has been reported to coincide with near the 20-m isobath, the seaward landfast ice edge in the Chukchi and northern Bering Seas is closer to shore and the water depth is more variable (Mahoney *et al.* 2014, Jensen *et al.* 2020). As for ringed seal habitat use during the open-water period relative to pack ice, while it is thought that most Arctic ringed seals spend the summer in the pack ice of the northern Chukchi and Beaufort seas, the seals are also dispersed in ice-free areas of the Bering, Chukchi, and Beaufort seas. Tracking data indicate that ringed seals tagged in Alaska made extensive use of nearshore and offshore waters over the continental shelf in the U.S. Chukchi and Beaufort seas during the open-water period.

Comment 30: The Bureau of Land Management (BLM) stated that we should develop more detailed critical habitat maps that identify seasonal presence/absence of each essential feature in both nearshore and offshore waters to provide clarity regarding where each essential feature is found, rather than designating critical habitat as a single large unit. They stated that we should otherwise better explain why the boundary for each essential feature is the same, how the boundary for each essential feature overlaps with other essential features, or why they have all been incorporated into a single mapped unit.

Response: On the basis of the best scientific data available, and consistent with the definition of critical habitat under the ESA, we identified one specific area within the northern Bering, Chukchi, and Beaufort seas to designate as critical habitat for the Arctic ringed seal. The best scientific data available indicates that the specific area is occupied by the species and contains one or more of the identified essential features which may require special management considerations or protection. As we explained in the revised proposed rule, the temporal overlap of Arctic ringed seal molting with whelping and nursing, combined with the dynamic nature of sea ice and on-ice-snow depths makes it impracticable to separately identify specific areas where each of the sea ice essential features occurs. Further, ringed seals forage throughout the year (albeit with reduced feeding during molting), and their primary prey species are spatially dynamic due to the influences of various abiotic and biotic factors. Moreover, there is no requirement that we develop detailed maps depicting where each essential feature occurs.

Comment 31: Several commenters, including Kawerak, recommended that Arctic ringed seal critical habitat include nearshore waters, river mouths, and inshore estuaries/lagoon systems found throughout the Seward Peninsula and Norton Sound, as well as Kotzebue Sound. Commenters stated that well-documented IK indicates that ringed seals, in particular juveniles, use these areas during the ice-free period (*e.g.,* Kawerak 2013, Oceana and Kawerak 2014). Kawerak and another commenter stated that young seals use estuaries as sheltered calmer waters during adverse weather conditions, to escape large-bodied predators like killer whales, and to hone their fishing skills in the shallow waters during the ice-free months. Kawerak also noted that these estuaries have aquatic plants that young seals use as cover when stalking the variety of small-bodied fishes and invertebrates that reside or travel through these waters. In addition, the Marine Mammal Commission commented that they concurred with the proposed shoreward boundary of critical habitat, but recommended that further research be conducted in nearshore and inshore habitats to better assess ringed seal use of these areas.

Response: We recognize that Arctic ringed seal use of river mouths and inshore lagoons during the open-water period has been reported and documented, and we reviewed and considered the references that were cited in these comments, along with information presented in other available reports and peer-reviewed publications (*e.g.,* Nelson 1981, Huntington 2000, Oceana and Kawerak 2014, Gadamus *et al.* 2015, Huntington *et al.* 2015c, Northwest Arctic Borough 2016) regarding this aspect of the seals' habitat use. Regarding nearshore waters that were included in the revised proposed designation, in response to other public comments that questioned the identified boundaries of critical habitat with respect to the primary prey resources essential feature, we re-evaluated the best scientific data available and the approach we used to identify these boundaries to determine whether they were drawn appropriately. In the revised proposed rule, we preliminarily concluded that the seaward boundaries delineated for the sea ice essential features were also appropriate for defining the specific area where the primary prey resources essential feature occurs; but we defined the shoreward boundary as the line of MLLW based principally on occurrence of the primary prey essential feature. However, after review of this information, we recognize that the available data on the distributions of Arctic ringed seal primary prey species indicate that these prey resources are widely distributed across the entire geographic area occupied by these seals, and as such, we concluded it was not possible to delineate the boundaries of critical habitat based on the description of this feature alone. We also have no information that suggests any portion of the species' occupied habitat provides primary prey resources that differ from those found within the specific area we are designating as critical habitat. Given that the movements and habitat use of Arctic ringed seals are strongly influenced by the seasonality of sea ice, we determined that the best approach to identify the appropriate boundaries for critical habitat is to base the delineation on the same boundaries identified for the sea ice essential features. In this final rule, we therefore define the shoreward boundary of Arctic ringed seal critical habitat as the 3-m isobath (relative to MLLW), consistent with the 3-m minimum water depth identified for both sea ice essential features (see our response to Comment 19).

In response to the comments suggesting that river mouths and inshore estuaries/lagoon systems be included in the designation, we specifically examined available information on ringed seal use of such areas, including the information sources identified by the commenters. Although ringed seal occurrence in this habitat has been documented, we concluded that at this time, we lack sufficient data to develop a description of the specific physical or biological features of this habitat that support the species' life history needs, and to assess how those features provide for the life history requirements of the species such that they are essential to the conservation of the Arctic ringed seal. We acknowledge that, as noted by the Marine Mammal Commission, additional research on ringed seal use of nearshore and inshore habitats would help to better assess ringed seal use of these areas. Should additional information become available indicating whether and what essential features occur in these habitats, we can consider revising critical habitat accordingly. We also note that ESA section 7 consultation requirements

apply to any action that may affect Arctic ringed seals, including in river mouths or those shallow inshore estuaries/lagoon systems not identified as critical habitat, and these consultations typically analyze habitat-related effects to the seals such as effects to prey, even in the absence of a critical habitat designation.

Comment 32: Two commenters stated that Arctic ringed seals are most commonly found foraging in deeper offshore waters near pack ice and asserted that shallow nearshore waters should be excluded from critical habitat because we have not demonstrated that ringed seals actively or substantially feed in those waters or that such waters are used to any significant degree, and that ringed seals are instead most abundant and commonly found foraging in offshore waters near pack ice. One of the commenters further stated that although there are some data suggesting that juvenile ringed seals use shallow waters to forage late in the summer, this is marginal habitat not essential to conservation of the species. In addition, BOEM recommended that the designation focus on areas of greatest prey abundance and suggested that to address this that we remove areas which do not support adequate prey resources, such as shallow nearshore areas that have bottom-fast ice or are subject to scour, and/or identify thresholds of minimum prey abundance for ringed seals to persist. They went on to state that many shallow nearshore areas (less than 3 m) are lacking in adequate prey resources because the benthic habitats and communities are subject to disturbance from bottom-fast ice, strudel scouring in spring, and frequent ice gouging throughout the year, which destroy benthos and prevent benthic communities from developing. They also noted that influxes of fresh water where rivers and streams empty into the ocean kill or drive off marine benthic organisms. In addition, BLM and another commenter stated that we should present a more comprehensive analysis of Arctic ringed seal prey resources by providing information on the ranges and distributions of their prey species. BLM's comments emphasized the Beaufort Sea, in particular, and added that we should include an analysis of this information relative to where prey species distributions overlap with the seals' habitats, and where there is greatest prey species abundance, including seasonally. They stated that the revised proposed rule gives the impression that prey species are distributed homogenously throughout the seals' range, although this is most likely not the case.

Response: The ESA does not require that before designating an area as critical habitat we demonstrate that Arctic ringed seals actively or substantially use the area, that they use it to a significant degree, or that we focus on areas of greatest prey abundance. *Alaska Oil & Gas Ass'n* v. *Jewell,* 815 F. 3d 544, 555–56 (9th Cir. 2016) (holding the ESA required USFWS to identify where the features essential to the conservation of a species occur, and does not require evidence a species currently uses those features in any particular area). Rather, the ESA states that an area qualifies as critical habitat if, based on the best scientific data available, it was occupied by the species at the time of listing and has one or more of the physical or biological features essential to the conservation of the species and that may require special management considerations or protection. As we explained in the revised proposed rule, our delineation of a specific area that contains one or more of the physical or biological features essential to the conservation of the Arctic ringed seal reflects the dynamic nature of the essential features, in particular of the sea ice essential features, the overlap in timing of whelping and nursing with basking and molting, the widespread distribution of Arctic ringed seals using the essential features, and the spatial scale of the seals' movements in utilizing their habitat. Ringed seals forage throughout the year (albeit with reduced feeding during molting) and their movements are strongly influenced by the seasonality of sea ice. Satellite tracking data for Arctic ringed seals tagged in Alaska indicate that although individual seals may forage seasonally in some particular areas, they also make extensive use of a diversity of habitats for foraging across much broader areas, including in nearshore and offshore areas. The relative distribution and abundance of ringed seal primary prey species are spatially dynamic due to the influences of a combination of various abiotic (*e.g.,* geographic and temporal extent of sea ice, ocean conditions) and biotic (*e.g.,* prey availability, timing of spawning) factors. Our delineation of critical habitat with respect to the primary prey resources essential feature reflects the aforementioned considerations and is based on the best information available regarding the occurrence of Arctic ringed seal primary prey species, including information regarding their distributions and documented occurrence within the geographical area under consideration. The commenters did not provide any relevant literature or data that would support the identification of specific thresholds of minimum abundance for ringed seal primary prey species, nor of specific areas where concentrations of the primary prey species are found on a recurrent basis within the ringed seals' habitats in Alaska. Habitat selection of ringed seals with respect to prey is also not well understood. While we acknowledge that it is likely that ringed seal primary prey species are distributed unevenly, the limits of the available information on the distribution and abundance of these prey species, and more importantly, the considerations discussed above, make it infeasible to delineate critical habitat more finely than we describe in this final rule.

Although very shallow nearshore areas are especially prone to high levels of disturbance to the benthos, primary prey species of Arctic ringed seals, such as Arctic cod, saffron cod, and rainbow smelt, occur in these areas. We acknowledge that existing information on Arctic ringed seal use of nearshore areas is limited; however, there is evidence that ringed seals use both nearshore and offshore habitats, in particular during the open-water period. As we stated previously, we are not required to establish some threshold level of documented use, but only to find that primary prey species essential to the conservation of Arctic ringed seals occur in the specific area we are designating as critical habitat. Section 4(b)(2) of the ESA requires that we designate critical habitat on the basis of the best scientific data available. Accordingly, we relied on the best information available to determine the specific areas that are eligible for designation, as described in the Specific Areas Containing the Essential Features section of this final rule.

Nevertheless, as we explained above (see our response to Comment 31), in response to public comments such as these, we re-evaluated the best scientific data available and the approach we used to identify the specific area(s) that contain the primary prey resources essential feature. As a result, we now identify as critical habitat the specific area that contains the primary prey resources in addition to the sea ice essential features. Because we have revised the definitions for both sea ice essential features to identify the minimum water depth for these features as 3 m (relative to MLLW) (see our response to Comment 19), the shoreward boundary of the designation is now defined as the 3-m isobath (relative to MLLW).

Comment 33: One commenter suggested that we delineate primary prey resource units that identify presence/absence of each primary prey item to the extent possible within subsets of the larger designation. The commenter stated that this would be useful for future section 7 consultations and would serve as a means to identify priority areas and help support the adaptive management practices necessary for Arctic ringed seal conservation as the Arctic continues to experience changes.

Response: As we explained in our response to Comment 32, data limitations and considerations related to the dynamic nature of the primary prey resources essential feature make it infeasible to delineate critical habitat more finely than we describe in this final rule. Regarding the comment concerning adaptive management, while this is a useful strategy for conservation of listed species and their habitats, under the ESA we designate critical habitat through a regulatory process that requires us to make decisions based on the best scientific data available at the time of designation. If new information becomes available concerning the effects of environmental changes on Arctic ringed seal primary prey resources that indicates revision of critical habitat may be appropriate to effectively provide for the conservation of the species, we can consider using the authority provided under section 4(a)(3)(A)(ii) of the ESA to revise the designation.

Comment 34: One commenter stated we must identify the specific prey species and the specific locations (spatially and temporally) where foraging on those prey species is essential to the conservation of the Arctic ringed seal and in need of special management considerations or protection, and that the revised proposed rule did not provide a sufficiently specific delineation of critical habitat with respect to the proposed primary prey resources essential feature. They referred to the preamble to our 2016 final rule that amended the regulations for designating critical habitat, which said the descriptions of the physical and biological features essential to the conservation of the species would maintain the specificity of the primary constituent elements identified in previous designations (81 FR 7414, 7426; February 11, 2016). They stated that under the prior regulations (which used the term ''primary constituent elements''), we were required to identify ''feeding sites'' to support the designation of critical habitat based on prey species.

Response: We disagree. Neither the ESA's definition of critical habitat nor our implementing regulations at 50 CFR part 424 require that we designate critical habitat with the level of specificity asserted by the commenter, and this was also not required under the prior version of our regulations. The prior regulations listed ''feeding sites'' among examples of what may constitute primary constituent elements (referred to in our current regulations as physical or biological features) that may be defined and described as essential to the conservation of the species. Rather than identify where Arctic ringed seals actually feed on their essential prey, under the ESA we identify what prey are essential to the conservation of the Arctic ringed seal and then identify where those prey occur within the geographical area occupied by the species. Based on the best scientific data available, we determined that the primary prey resources essential to the conservation of Arctic ringed seals occur throughout the specific area we are designating as critical habitat.

Comment 35: One commenter asserted that we improperly relied upon the description of essential fish habitat (EFH) for Arctic cod and saffron cod in delineating proposed critical habitat. They stated that while the EFH features may be necessary for those fish species, the features of that habitat do not support the critical habitat designation because they are not essential to the conservation of Arctic ringed seals.

Response: We considered EFH, which NMFS has described and identified under the Magnuson-Stevens Fishery Conservation and Management Act for certain life stages of Arctic cod and saffron cod, as a part of the best information available to inform our determination of where the primary prey species of Arctic ringed seals occur. We also considered other sources of information that support the delineation of specific areas with respect to the primary prey species of Arctic ringed seals, as discussed in the Specific Areas Containing the Essential Features section of this final rule.

Comment 36: BOEM stated that, although it is clear in the preamble to the revised proposed rule that critical habitat for Arctic ringed seals may contain one or more of the essential features, we should clarify that this is the case in the regulatory language for the designation.

Response: We find the regulatory text contained in the revised proposed rule to be sufficiently clear—an area qualifies as critical habitat if it is occupied by the species and contains one or more physical or biological features that are essential to the conservation of the species and that may require special management considerations or protection (16 U.S.C. 1532(5)(A)).

Comment 37: In reference to the statement in the revised proposed rule that several tagged Arctic ringed seals showed foraging-type movements in deep waters north of the Beaufort Sea shelf, one commenter stated that we did not identify any evidence demonstrating what prey species ringed seals consume there. They stated that to conclude that the primary prey essential feature occurs in those waters, documentation would be needed on the stomach contents of ringed seals foraging there.

Response: We disagree that we need to prove that ringed seals are consuming primary prey species in a particular area or that we would need data on stomach contents that do not currently exist to determine that waters north of the Beaufort Sea shelf contain the primary prey resources essential feature. Rather, in designating critical habitat the focus is on where features essential to the conservation of a species occur within the occupied habitat of a species, not where the species uses those features. We acknowledge that there is no information available on the prey species that tagged Arctic ringed seals were targeting north of the shelf break in the Chukchi and Beaufort seas. However, in determining the northern boundary with respect to primary prey resources, we took into consideration not only the information available on the foraging movements of these seals, but also, in particular, information indicating that the general distribution of Arctic cod—a ringed seal primary prey species—extends north of the continental shelf. In the preamble of this final rule, we have incorporated additional information to clarify this aspect of our determination. Based on the best scientific data available, we continue to find that the northern boundary delineated for the sea ice essential features is also appropriate for defining the specific area where the primary prey resources essential feature occurs (see Specific Areas Containing the Essential Features section). However, we have exercised our discretion under section 4(b)(2) of the ESA to exclude a particular area north of the Beaufort Sea shelf based on consideration of national security impacts (see Exclusion Based on National Security Impacts section).

Special Management Considerations or Protection

Comment 38: BOEM stated that because sea ice is projected to continue

to retreat northward, we should provide data and analysis of how the geography of the critical habitat for Arctic ringed seals would change in the future with substantial sea ice loss. They also stated that we should highlight those areas within critical habitat that are expected to retain suitable sea ice conditions for Arctic ringed seals long into the future, as this would help emphasize the need for further development of geographic solutions for habitat conservation. Another commenter suggested that it would be helpful and relevant to include reference to the loss of suitable habitat for whelping projected to occur this century as a result of decreased snow cover (Hezel *et al.* 2012).

Response: In our evaluation of whether the essential features of Arctic ringed seal critical habitat may require special management considerations or protection, we indicated that the quantity and quality of these essential features, in particular sea ice, may be diminished by the effects of climate change. Although there will continue to be considerable annual variability in the rate and timing of the breakup and retreat of sea ice, trends are toward ice that is more susceptible to melt (Markus *et al.* 2009) and areas of earlier spring ice retreat (Stammerjohn *et al.* 2012, Frey *et al.* 2015). Thus, the earlier retreat of sea ice in the spring supports including the northern portion of the critical habitat in particular, as it retains sea ice suitable for birth lairs and/or basking and molting the longest. As suggested by a commenter, in the *Climate Change* section of this final rule, we have added information regarding projected reductions in on-ice snow depths, although it does not alter our previous identification of climate change as a source of threats to the essential features of Arctic ringed seal critical habitat. As for BOEM's comment that we should explain how the geography of critical habitat may change in the future with substantial sea ice loss, the critical habitat boundaries will not automatically change in areal extent as sea ice distribution and extent diminish; they will remain fixed until such time as NMFS revises them based on new information.

Comment 39: One commenter stated that climate change, driven by anthropogenic emissions of GHGs, poses an existential threat to the Arctic ringed seal, and noted that climate change impacts on the seals include changing temperatures, rapid loss of sea ice, altered precipitation regimes, ocean acidification, extreme weather events, and effects on key prey species. The commenter provided information and references regarding trends in GHG emissions, the relationship between GHG emissions and sea ice loss, and the impacts of climate change in the Arctic. In addition, another commenter stated that we should discuss ocean acidification and its effects on ringed seal prey. Several other commenters also expressed concerns over the impacts of climate change on the species, and one commenter, an Alaska Native hunter, reported their personal observations of sea ice loss and declines in the number of marine mammals.

Response: We appreciate the comments and references provided by the commenters, which we reviewed and considered in developing the final critical habitat designation. As discussed in the revised proposed rule, we identified climate change as one of four primary sources of threats to the identified essential features of Arctic ringed seal critical habitat that may require special management considerations or protection. Although our evaluation does not consider an exhaustive list of threats that could impact the essential features, in response to comments, in the preamble to this final rule we have added ocean warming and acidification to our discussion of impacts on the essential features from climate change.

Comment 40: One commenter requested that we remove the following statement in the revised proposed rule because it was unsupported and unnecessary: ''The best scientific data available do not allow us to identify a causal linkage between any particular single source of GHG emissions and identifiable effects on the physical and biological features essential to the conservation of the Arctic ringed seal.'' The commenter stated that scientific studies have documented continuing severe and rapid reductions in sea ice extent and thickness and increases in ocean acidification resulting from GHG emissions. The commenter further stated that GHG emissions from individual projects cumulatively contribute to habitat degradation and loss for the Arctic ringed seal, and appreciable GHG emissions from large-scale projects can make a measurable difference in the amount of sea ice loss.

Response: We acknowledge that particular point sources, such as a single power plant, contribute incrementally to global indicators like atmospheric concentration of GHGs or global average temperature. In response to this comment, we have omitted the statement in question in the preamble of this final rule because it is not needed to support our identification of climate change as a primary source of threats to each of the essential features of Arctic ringed seal critical habitat.

Comment 41: One commenter provided information concerning regulation of commercial crab fisheries in the Bering Sea and Aleutian Islands and measures taken to minimize impacts of the fishery, noting that not all fisheries pose the same impacts and that they believe commercial crab fisheries do not pose a risk to Arctic ringed seals. The commenter stated that with changing environmental conditions, more commercial densities of crabs could move north into designated critical habitat, but if commercial crab fisheries follow this pattern, they do not believe that it would have substantial impacts on ringed seals.

Response: In determining whether the essential features of Arctic ringed seal critical habitat may require special management considerations or protection, we base our determination on whether such management or protection may be required, rather than whether management is currently in place, or whether that management is adequate. As we discussed in the revised proposed rule, given the potential changes in commercial fishing that may occur with the expected increasing length of the open-water season and range expansion of some commercially valuable species responding to climate change, we concluded that the primary prey resources essential feature may require special management considerations or protection in the future to address potential adverse effects of commercial fishing on this feature.

Comment 42: Several commenters expressed concerns over potential impacts of commercial fisheries on ringed seal prey resources through removal of biomass and/or modification of benthic habitat, in particular from bottom trawling activities. One commenter also expressed concern regarding the risk of incidental mortality of ringed seals if bottom trawlers are allowed further north, and they noted the potential for impacts on ringed seals from hook injuries due to the 2019 arrival of a large-scale Pacific cod longline fleet to northern Bering Sea and Bering Strait region. Another commenter, an Alaska Native hunter, reported past observations of ringed seals feeding on herring south of the proposed critical habitat and expressed concern that commercial fishing activities have reduced herring biomass.

Response: We understand the concern expressed by the commenters that commercial fisheries may impact Arctic ringed seal prey resources. Designation

of critical habitat does not, in and of itself, regulate or restrict any activities. Rather, through the section 7 consultation process, Federal agencies must ensure that their actions are not likely to destroy or adversely modify designated critical habitat. Thus, once the Arctic ringed seal critical habitat designation becomes effective, any section 7 consultations on federally managed fisheries will be required to address the additional requirement that Federal agencies ensure that their actions are not likely to adversely modify or destroy designated critical habitat. We note, however, that we consult on Federal actions and thus not every fishery is subject to section 7 consultation, as there are fisheries with no Federal nexus. Although we acknowledge the concerns regarding the risks posed to ringed seals by direct interactions with commercial fishing gear (*e.g.,* hookings or entanglements), such impacts are considered threats to individual ringed seals themselves and not the habitat. To date, section 7 consultations completed on the effects of Federal groundfish fisheries in the Bering Sea and Aleutian Islands Management Area on ringed seals have concluded that the seals are only occasionally taken in those fisheries, and that the fisheries are not likely to jeopardize the continued existence of the Arctic ringed seal.

Comment 43: Several commenters expressed concerns over the potential impacts of vessel traffic, in particular icebreakers, on Arctic ringed seals, *e.g.,* during the whelping period. One commenter requested that we expand the discussion of special management considerations or protection to include Arctic marine tourism, and stated that we should consider and discuss how marine tourism differs from other types of shipping traffic, as ice-reinforced vessels reportedly under construction may facilitate purposefully seeking out icy waters and areas with wildlife. In addition, several commenters specifically noted concerns over potential impacts from vessel discharges, spills of oil or other hazardous materials, and release of marine debris.

Response: We agree that vessel traffic, in particular icebreaking activities, may affect the essential features of Arctic ringed seal critical habitat, and we addressed those potential effects in our evaluation of whether these features may require special management considerations or protection. As we discuss in the Special Management Considerations or Protection section of this final rule, in addition to the potential effects of icebreaking on the essential features, the most significant threat posed by marine shipping and transportation is considered to be the accidental or illegal discharge of oil or other toxic materials. Regarding marine tourism, in this evaluation we identified cruise ships as part of the maritime traffic along the western and northern Alaska coasts, and in the draft and final versions of the impact analysis reports for this designation (NMFS 2020, 2021), we discussed that a limited but increasing number of cruise ships bring tourists to waters within Arctic ringed seal critical habitat. As previously explained, section 7 consultation requirements apply only when a Federal action is involved (*i.e.,* an action authorized, funded, or carried out by a Federal agency). For icebreaking or other vessel-based activities with a Federal nexus, NMFS and the action agency would evaluate potential effects on a case-by-case basis.

Comment 44: BLM recommended that we provide a more thorough oil spill and oil spill response analysis, specifically for the North Slope of Alaska, to frame the possibility of this impact more accurately with current information. They stated that we need to acknowledge the progress that has occurred since AMAP (2007) to prevent and minimize oil spills in the Arctic and current response mechanisms in place. They specifically requested that we review and incorporate appropriate Alaska Clean Seas policies and protocols, including response and training infrastructure. They also stated that we should update the information on the risk of oil spills, and provide additional context by acknowledging that the most common development of oil fields would most likely be near existing nearshore oil and gas infrastructure in the Beaufort Sea, rather than in remote areas, and that there are offshore producing fields there that have been operating for many years with no major oil spills.

Response: We recognize that there are existing oil spill prevention and response mechanisms in place; however, as we explained in the revised proposed rule, in determining whether the essential features may require special management considerations or protection, we do not base our decisions on whether management is currently in place or whether such management is adequate. We are required to make a determination about whether the essential features *may* require special management considerations or protection either now or in the future, and the existence oil spill prevention and response mechanisms is evidence that the essential features do in fact require special management considerations. Our evaluation of oil and gas activities in the Special Management Considerations or Protection section of this final rule is sufficient to establish that the ''may require'' standard is met or exceeded with respect to the risk posed to the essential features of Arctic ringed seal critical habitat by these activities, primarily through pollution (particularly the possibility of large oil spills), noise, and physical alteration of the species' habitat.

Impacts of Critical Habitat Designation

Comment 45: Two commenters stated that the timeframe used in the Draft Impact Analysis Report was arbitrarily truncated at 10 years, and thus failed to account for costs associated with the designation that will undoubtedly accrue beyond this timeframe. One of the commenters noted that USFWS considered economic impacts of designation of critical habitat for the polar bear over a 30-year timeframe. This commenter also contended that the use of a 10-year timeframe is inherently contradictory and arbitrary given that the listing determination for the Arctic ringed seal was based on ''a 100-year foreseeable future.'' The other commenter stated that the analysis of economic impacts should be revised to use a timeframe coextensive with the anticipated duration of the designation, citing in support of this contention a court decision involving the limited timeframe considered in a particular biological opinion (*Wild Fish Conservancy* v. *Salazar,* 628 F.3d. 513(9th Cir. 2010)).

Response: As discussed in Section 2.4 of both the draft and final versions of the impact analysis reports for this designation, guidance from OMB indicates that ''if a regulation has no predetermined sunset provision, the agency will need to choose the endpoint of its analysis on the basis of a judgment about the foreseeable future'' (OMB 2011). Because rules designating critical habitat have no predetermined sunset, we determined the endpoint for our analysis based on a judgment regarding the foreseeable future economic effects, and in particular, the difficulty in making reliable forecasts of Federal activities and costs beyond this timeframe. The information upon which the analysis of impacts of the designation is based includes NMFS's record of section 7 consultations from 2013 to 2019 on activities that may have affected the essential features of Arctic ringed seal critical habitat (relatively few relevant consultations were identified for the 3 years prior to when

the Arctic ringed seal was listed under the ESA), as well as available information on planned activities that may affect these essential features. We acknowledge that the critical habitat designation for Arctic ringed seals is expected to result in costs that will be incurred more than 10 years into the future, and although we do not quantify the probable economic impacts beyond this 10-year time period, we believe that the estimated impacts of the designation over the next 10 years generally reflect the nature and magnitude of costs beyond this timeframe. This timeframe is also consistent with OMB guidance stating that ''[f]or most agencies, a standard time period of analysis is 10 to 20 years, and rarely exceeds 50 years'' (OMB 2011), and longstanding NMFS practice (*e.g.,* economic analyses of critical habitat designations for the Central America, Mexico, and Western North Pacific distinct population segments (DPSs) of humpback whales, Main Hawaiian Islands insular false killer whales, Northwest Atlantic DPS of loggerhead sea turtles, Cook Inlet belugas, and smalltooth sawfish). Although not relevant to the timeframe used in the economic analysis, we note that in the listing analysis for this species, we did not identify a single specific time as the foreseeable future. Rather, we addressed the foreseeable future based on the available data for each respective threat, and we had sufficient information to establish that threats stemming from climate change were foreseeable through approximately the end of the 21st century (77 FR 76706, December 28, 2012).

Comment 46: Several commenters, including the Alaska Department of Natural Resources (ADNR), stated that the Draft Impact Analysis Report substantially underestimated the impacts of the proposed critical habitat designation because it primarily identified the incremental administrative costs associated with conducting section 7 consultations that include the critical habitat. The commenters stated that the analysis did not sufficiently account for the full range of likely consequences of the designation, including costs that could result under other Federal regulatory programs, threatened and actual lawsuits, delay and impediment of activities, and effects related to increased regulatory uncertainty. Commenters asserted that because these additional costs are likely to occur, can be assessed and calculated, and would have significant impacts on activities that occur on and adjacent to the North Slope, the draft report should be revised to include an analysis of these impacts, both quantitative and qualitative.

Commenters also noted that the U.S. Army Corps of Engineers (USACE) can impose significantly higher mitigation costs for Clean Water Act (CWA) section 404 permits on projects located in critical habitat compared to projects located outside of critical habitat. They added that the CWA's National Pollution Discharge Elimination System (NPDES) permit program mandates special considerations and protections for areas designated as critical habitat. ADNR and another commenter stated this was also the case under the Outer Continental Shelf Lands Act. Additionally, a commenter noted that areas designated as critical habitat have informed the imposition of additional mitigation measures and modifications to proposed activities in authorizations issued under the MMPA. ADNR and another commenter described that areas designated as critical habitat have been expressly excluded from coverage in at least two Alaska-related NPDES permits. In addition, regarding section 404 permits, ADNR described as a specific example that compensatory mitigation for the Point Thomson project involved significantly greater total acreage and therefore greater costs solely because affected wetlands were located in polar bear critical habitat.

Regarding the potential for litigation, commenters stated that oil and gas and other activities on the North Slope and in the Chukchi and Beaufort seas are already frequently the subject of lawsuits intended to delay, impede, and prevent projects from proceeding. ADNR cited as examples lawsuits regarding the polar bear critical habitat designation (*Alaska Oil and Gas Ass'n* v. *Jewell,* Case No. 13–35919 (9th Cir. 2016)), and the Cook Inlet beluga whale critical habitat designation. ADNR stated that time delays and uncertainty could add significant costs (perhaps millions of dollars) to projects requiring Federal permits. ADNR added that because of the limited time window available when construction may occur, depending on the project, delays could have cascading effects on the timing of construction, the start of operations, and the ability to produce oil, gas, or other resources. In addition, ADNR stated that the designation will devalue acquired and future oil and gas leases due to increased risks associated with the developing those leases.

Response: As described in Section 3 of the Final Impact Analysis Report, the analysis of economic impacts of the critical habitat designation considers direct, incremental costs associated with section 7 consultations (*i.e.,* administrative costs of consultations and any project modifications requested by NMFS to avoid or minimize potential destruction or adverse modification of critical habitat), as well as the potential for indirect impacts (*i.e.,* not related to section 7 outcomes), such as time delays or regulatory uncertainty. This analysis considered all relevant incremental costs associated with the designation, and these costs were monetized to the fullest extent that reasonable estimates could be made, and were otherwise treated qualitatively when monetization was not possible. Section 6 of the Draft Impact Analysis report recognized that some potential exists for the designation to result in costs associated with indirect impacts. However, the incremental costs associated with such effects were not quantified in the analysis due to significant uncertainty and information limitations. In response to public comments, the Final Impact Analysis Report (see Section 6.10 of the report) provides an expanded discussion of the concerns expressed by the commenters regarding the potential for indirect incremental impacts, such as the potential for future third-party litigation over specific section 7 consultations, time delays, and other sources of regulatory uncertainty, as we describe in more detail below. We considered both the quantitative and qualitative information presented in that report in developing the final critical habitat designation for the Arctic ringed seal.

The Final Impact Analysis Report acknowledges the concern expressed by commenters that, under certain circumstances, Federal agencies such as USACE (as well as local and State agencies) may choose to manage areas differently after critical habitat is designated. However, we are not aware of plans by any agency to institute future restrictions to provide specific protections for Arctic ringed seal critical habitat. We note that in the specific NPDES general permits cited as examples by commenters, the critical habitat excluded from coverage reflected the U.S. Environmental Protection Agency's consideration of potential effects of permitted discharges to one particular listed species and its critical habitat. Not all designated critical habitat was excluded from coverage in these permits, and there is no basis to assume that the Arctic ringed seal critical habitat designated in this rule would be excluded. With regard to the concern related to requirements for authorizations that NMFS may issue under the MMPA, as discussed in Section 6 of this report, our review of

recent actions in the critical habitat area has not identified a circumstance in which a section 7 consultation would likely result in project modifications solely to avoid impacts to Arctic ringed seal critical habitat. Because it is not possible to predict the timing, frequency, or extent to which this critical habitat designation may trigger specific additional requirements under non-ESA regulatory programs, the report concludes that attempting to forecast such hypothetical outcomes would be speculative.

With regard to comments concerning the potential for the critical habitat to be used in litigation, we note that the specific court case cited by ADNR as an example (*Alaska Oil and Gas Ass'n* v. *Jewell,* Case No. 13–35919 (9th Cir. 2016)) challenged the polar bear critical habitat rule itself. However, when considering the economic impacts of the designation, we do not consider costs of litigation associated with challenging the critical habitat rule. Historical precedent does exist for third-party lawsuits to challenge activities occurring in designated critical habitat. However, these lawsuits typically include claims regarding effects to both listed species and critical habitat, and may include claims under other laws, *e.g.,* the MMPA, the National Environmental Policy Act, etc. Moreover, it is not possible to predict the nature, frequency, timing, or outcome of such lawsuits, and as such, attempting to do so would involve significant speculation. The Final Impact Analysis Report describes the concern and the potential for lawsuits but concludes that determining the outcomes of such third-party litigation would be speculative.

Regarding concerns related to time delays specifically associated with the need to address critical habitat in future section 7 consultations, Federal agencies are already required to consult with NMFS under section 7 for actions that may affect Arctic ringed seals. These consultations typically analyze habitat-related effects to the seals such as effects to prey, even in the absence of a critical habitat designation. While Federal actions that may affect the essential features of the critical habitat will require an analysis to ensure that these actions are not likely to result in the destruction or adverse modification of the critical habitat, which will impose some minor incremental costs to consultations, we do not expect that this will require substantial additional time or resources, especially for new consultations (see also our response to Comment 47). Further, timelines for section 7 consultations are specified in statute and our implementing regulations and the number of listed species or critical habitats considered in any given consultation does not affect these timelines.

Although there is potential for regulatory uncertainty, whether and to what extent projects or associated economic behavior may be affected due to regulatory uncertainty stemming from the critical habitat designation is significantly uncertain. The types of data that would be necessary to quantify costs associated with regulatory uncertainty, such as data linking the designation to changes in industry economic behavior, are unavailable. As for ADNR's concern that the designation will devalue oil and gas leases, we are not aware of any empirical evidence or studies of such effects for the areas included in the designation, and none were identified in these comments. Therefore, the Final Impact Analysis Report describes the commenters' concerns about potential indirect effects stemming from regulatory uncertainty, as well as the concern expressed by ADNR over potential devaluation of oil and gas leases. However, due to the significant uncertainty and information limitations, it concludes that attempting to forecast changes in economic behavior resulting from regulatory uncertainty on the part of industry relative to this critical habitat designation would be speculative.

Comment 47: One commenter stated that the impacts associated with a critical habitat designation cannot be simply dismissed as mere additional administrative costs in the section 7 consultation context. They noted that section 7 consultations typically require, for example, the preparation of biological assessments, consultant services to identify potential effects of the proposed action and potential mitigation or conservation measures, robust engagement with the relevant federal agencies, and frequent litigation regarding the outcome. They stated that the addition of critical habitat to the consultation process creates additional analytical components with additional potential modifications to the proposed action to avoid any destruction or adverse modification of critical habitat, and that these factors increase the duration of project reviews, impose additional regulatory burdens, and create additional legal risks.

Response: As we stated in our response to Comment 46, Federal agencies have an existing obligation to consult with NMFS to ensure that any action authorized, funded, or carried out by them (*i.e.,* Federal action) is not likely to jeopardize the continued existence of the Arctic ringed seal. As discussed in Section 6 of the Final Impact Analysis Report, based on the best information available, the Federal actions projected to occur within the timeframe of the analysis that may trigger a section 7 consultation due to the potential to affect one or more of the essential features of the critical habitat also have the potential to affect Arctic ringed seals. Thus, we expect that none of the activities we identified would trigger a consultation solely on the basis of this critical habitat designation. Public comments did not provide any new information that could be used to revise this analysis. In addition, as discussed in Section 6 of the Final Impact Analysis Report and in the *Economic Impacts* section of this final rule, at this time, we do not anticipate that section 7 consultations would result in additional requests for project modifications to avoid or minimize adverse modification of Arctic ringed seal critical habitat beyond any modifications that may be necessary to address impacts to the seals (*i.e.,* under the jeopardy standard). In particular, this is because section 7 analyses of the effects of proposed Federal actions on listed species, which are triggered by the threatened status of the Arctic ringed seal under the ESA, already consider habitat-related impacts to the seals. Although each proposed Federal action must be reviewed at the time of consultation based on the best scientific and commercial data available at that time, it is unlikely that any project modifications are likely to result from such consultations that would be attributable solely to the critical habitat designation, since any modifications required to avoid jeopardy for this species would likely be identical to measures needed to avoid adverse modification of critical habitat. While we recognize that Federal actions that may affect the essential features of Arctic ringed seal critical habitat will require an analysis to ensure that these actions are not likely to result in the destruction or adverse modification of the critical habitat, which will impose some minor additional costs, we do not expect that this will require substantial additional time or resources. Further, timelines for section 7 consultations are specified in statute and our implementing regulations, and the number of listed species or critical habitats considered in any given consultation does not affect these timelines.

As discussed in Section 3.1 of the Final Impact Analysis Report, the estimates of administrative consultation

costs applied in the economic analysis are based on a review of consultation records from several field offices across the country, and modifications to reflect our experience with consultations in Alaska. These cost estimates take into consideration the anticipated level of effort that would be required to address potential effects on critical habitat in consultations, as well as the complexity of the consultations (*e.g.,* formal versus informal).

With regard to the comment on legal risks and other indirect impacts of the designation, see our response to Comment 46.

Comment 48: Several commenters emphasized that oil and gas exploration, development, and production on the North Slope and in adjacent offshore areas provide very substantial economic benefits, and ADNR and another commenter stressed that these activities are of national strategic significance and provide important energy, economic and national security benefits. ADNR and another commenter expressed that Congress established, and courts have affirmed, that leasing, exploration, and development of these resources are a national priority and in the public interest. They added that the present and future contribution of oil and gas from the North Slope of Alaska and from adjacent state and Federal waters meets a substantial portion of our national energy needs. Further, they stated that development of domestic energy resources, including oil and gas located in, and adjacent to, Alaska, is a well-documented matter of national security and is consistent with the well-established mandates of Federal law.

All of these commenters asserted that the proposed critical habitat designation will result in additional section 7 consultations, project modifications, and likely litigation, and that project delays and increased costs may thus result in impediment of oil and gas activities, less exploration, fewer opportunities to discover economic reserves, and therefore, less development and production of domestic oil and gas resources in these areas, to the detriment of local communities, the State of Alaska, and the United States. ADNR expressed similar concerns regarding potential impacts of the designation on development of critical minerals, citing as an example the Graphite One mine project north of Nome. The North Slope Borough commented that the development of natural resources in and adjacent to the North Slope largely supports the regional economy, allows the Borough to provide essential services and other benefits to its residents, and supports the municipal tax base. The Borough expressed concern that because a significant portion of its revenue is derived from taxes on oil and gas infrastructure, additional impacts to these projects as a result of the designation would be felt by the Borough.

Response: As discussed in the *Economic Impacts* section of this final rule and detailed in the Final Impact Analysis Report, the total incremental costs associated with the critical habitat designation for the Arctic ringed seal within the 10-year post-designation timeframe, in discounted present value terms, were estimated at $714,000 (discounted at 7 percent) to $834,000 (discounted at 3 percent). About 83 percent of the incremental costs attributed to the critical habitat designation are expected to accrue from ESA section 7 consultations associated with oil and gas related activities in the Chukchi and Beaufort seas. To avoid understating the cost estimates, we assumed that a high projected level of oil and gas activity will occur annually, although such a high level of activity is unlikely to occur in each and every year. As detailed in the Final Impact Analysis Report, the costs associated with the designation of critical habitat for the Arctic ringed seal are expected to primarily consist of additional administrative costs to consider the critical habitat as part of future section 7 consultations, with third-party costs primarily borne by the oil and gas sector. Costs to the oil and gas industry are expected to be limited to administrative costs of adding Arctic ringed seal critical habitat to section 7 consultations that are already required to address effects to Arctic ringed seals (and potentially other listed species). At this time, we have no information to suggest incremental project modifications requests are likely to result from these consultations above and beyond any modification requests related to addressing impacts to Arctic ringed seals (*i.e.,* under the jeopardy standard). Including a critical habitat analysis in consultations would slightly increase permitting costs for oil and gas sector activities, but such costs attributable to this designation are not anticipated to change the level of oil and gas sector activities within critical habitat. As discussed in Section 9.2 of the Final Impact Analysis Report, ESA section 7 consultations have occurred for numerous oil and gas projects within the area of the designation (*e.g.,* regarding possible effects on endangered bowhead whales) without adversely affecting energy supply, distribution, or use. The same outcome is expected relative to critical habitat for Arctic ringed seals. This designation is not expected to significantly affect oil and gas production decisions, subsequent oil and gas supply, or the cost of energy production. We have therefore determined that the energy effects of this designation of critical habitat are unlikely to exceed the thresholds in E.O. 13211, and that this rulemaking is not a significant energy action (see *Executive Order 13211, Energy Supply, Distribution, and Use* section). Also, see our responses to Comment 46 regarding potential indirect impacts of the designation, and Comment 47, regarding section 7 consultation costs, generally.

Comment 49: The North Slope Borough stated that we failed to consider impacts on municipal and village activities, such as construction of sea walls, repair and maintenance of roads, water treatment activities, and building and other infrastructure construction. The Borough commented that these activities will likely require a Federal permit or involve Federal funding, and thus will likely require section 7 consultation and mitigation and/or modifications to avoid adverse modification or destruction of the critical habitat. The Borough stated that the additional effort for consultations and implementation of mitigation measures will add possible delays and substantial costs to local projects such that many of them will no longer be affordable.

Response: The Draft Impact Analysis Report projected the occurrence of Federal activities by level of consultation (formal or informal) over the timeframe of the analysis, including for coastal construction projects, as well as for activities involving ports and harbors (see Table 5–16 and Section 6 of this report). The commenter did not provide specific relevant information or examples of planned municipal or village activities with a Federal nexus that could be used to revise this analysis. As summarized in Table 5–16 of the draft and final versions of the impact analysis report (NMFS 2020, 2021), most of the forecasted consultations for these types of activities are expected to conclude informally (*i.e.,* conclude with a letter of concurrence that the action is not likely to adversely affect the critical habitat rather than requiring a biological opinion). Further, it is not likely that section 7 consultations involving these types of activities if needed would result in additional requests for project modifications attributable to the critical habitat designation given the nature of these activities, their potential to affect

the essential features, and the existing need to consider effects on the seals due to the threatened status of the species (which typically includes consideration of habitat-associated threats). With respect to incremental costs of consultations, also see our response to Comment 47.

Comment 50: Several commenters asserted that we failed to fully consider or analyze the economic and other impacts of the critical habitat designation on Alaska Natives, the North Slope Borough, coastal communities in western and northern Alaska, and municipal and village activities in these regions. The commenters stated these impacts would be unreasonably and disproportionately imposed upon Alaska Natives, and in particular, upon residents of the North Slope. The North Slope Borough stated that the development of natural resources in and adjacent to the North Slope largely supports the regional economy, allows for the provision of essential services, supports the municipal tax base, and allows the Borough to provide other benefits to its residents. The Borough stressed that any impact on the development of these natural resources will therefore also impact the Borough and its residents. The Borough added that the revised proposed rule did not address any of the requirements of E.O. 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations). The Borough noted that the Draft Impact Analysis Report briefly addressed these requirements, but disagreed with the conclusion in the report that no disproportionate adverse economic impacts are anticipated.

Response: We understand that the potential for impacts of the designation is of significant concern to the commenters. As discussed in the *Economic Analysis* section of this final rule, we have considered and evaluated the potential economic impact of the critical habitat designation under section 4(b)(2) of the ESA, as identified in the Final Impact Analysis Report. Based on this evaluation, we have concluded that the potential economic impacts associated with the critical habitat designation are modest both in absolute terms and relative to the level of economic activity expected to occur in the affected area, which is primarily associated with oil and gas activities that may occur in the Chukchi and Beaufort seas. As indicated in our response to Comment 47, the costs associated with the designation are expected to primarily consist of additional administrative costs to consider the critical habitat as part of future section 7 consultations, with third-party costs primarily borne by the oil and gas sector. The designation is not expected to significantly affect oil and gas production decisions, subsequent oil and gas supply, or the cost of energy production. In addition, as detailed in Section 9.1 of the Final Impact Analysis Report, based on the best information available, the critical habitat designation is expected to result in minimal impacts to small entities. We therefore do not expect the critical habitat designation to have a disproportionately high effect on low income or minority populations and this designation is consistent with the requirements of E.O. 12898. We also underscore here that no restrictions on subsistence hunting by Alaska Natives are associated with the critical habitat designation for the Arctic ringed seal.

Comment 51: ADNR stated that we neglected to identify Alaska as a potentially affected economic sector or group in the Draft Impact Analysis Report. They stressed that there are substantial economic benefits to Alaska and its citizens from mining, oil and gas, and other activities on the North Slope and in the adjacent state and Federal waters of the Chukchi and Beaufort seas, and additionally, that Alaska has interest in access to and transportation in the proposed critical habitat areas. ADNR and ADF&G expressed concerns that the critical habitat designation will place disproportionate regulatory burdens and economic costs on Alaskans and may result in less mining, oil, gas, and other activities, to the detriment of Alaska.

Response: The draft and final versions of the impact analysis report (NMFS 2020, 2021) analyze in detail the incremental and other relevant impacts of the proposed Arctic ringed seal critical habitat designation. Section 5.4 of these reports describes the economic and social activities within, and in the vicinity of, the critical habitat designation, including Arctic North Slope oil and gas exploration, development and production, mining, ports and coastal construction, commercial fisheries, Alaska Native subsistence, recreation and tourism, commercial shipping and transportation, military activities, and education and scientific activities. These reports considered all relevant economic impacts, and developed cost (and benefit) estimates at an appropriate scale based on the best data available. As discussed in the *Economic Impacts* section of the revised proposed rule and this final rule, the direct incremental costs of this critical habitat designation are expected to be limited to the additional administrative costs of considering Arctic ringed seal critical habitat in future section 7 consultations. We conclude in the final rule that the potential economic impacts associated with the designation of critical habitat for the Arctic ringed seal are modest both in absolute terms and relative to the level of economic activity expected to occur in the affected areas. This conclusion has not changed from the revised proposed rule.

Comment 52: Several commenters indicated that they appreciated that we clearly stated in the revised proposed rule that no restrictions on subsistence hunting are associated with the critical habitat designation. Still, the Marine Mammal Commission recommended that we discuss and highlight in the final rule and in other appropriate outreach materials and fora that the critical habitat designation is not expected to have any adverse impact on Alaska Native subsistence activities. The Commission commented that there is a widely held perception that designating critical habitat has adverse consequences for Alaska Natives who hunt marine mammals, but that is not the case.

Response: As indicated by the commenters and stated in this final rule, although this critical habitat designation overlaps with areas used by Alaska Natives for subsistence, cultural, and other purposes, no restrictions are associated with the designation. We have emphasized this point in public venues, such as the public hearings on the proposed designation, and in our communications with the Ice Seal Committee, the Alaska Native organization with which we co-manage the subsistence use of ice-associated seals under section 119 of the MMPA. We have also conveyed this message in letters sent to tribes and Alaska Native corporations concerning the critical habitat designation. We agree with the Marine Mammal Commission that it is important to continue to highlight this information in appropriate outreach materials and fora.

Comment 53: One commenter found it unclear in the discussion of economic aspects of the proposed critical habitat designation who would specifically be responsible for ''third-party'' costs of section 7 consultations and suggested clarifying this. The commenter also noted that the range of estimated annual costs associated with the proposed critical habitat designation is very wide. The commenter stated that although the Draft Impact Analysis Report provided sufficient detail regarding why this is the case, the related text in the revised

proposed rule was confusing and ambiguous.

Response: Parties involved in a section 7 consultation include NMFS, a Federal action agency, and in some cases, a third party participant. A third party having an interest in a consultation may be a private entity (*e.g.,* applicant for a Federal permit), local or state government, or some other entity. We have clarified this in the Final Impact Analysis Report. The results of this analysis indicate that third parties bear an estimated 58 percent of the total costs of the critical habitat designation within the timeframe of the analysis (10 years), the majority of which are associated with oil and gas activities. The cost model used a retrospective assessment of recent section 7 consultations and available information on planned activities to inform the cost estimates, including third-party costs, of future consultations over the next 10 years. The cost estimate values are discounted as required by regulatory guidance (OMB Circular A4).

Benefits of Critical Habitat Designation

Comment 54: Several commenters, including the State of Alaska (ADNR and ADF&G), stated that Arctic ringed seals are already sufficiently protected from adverse impacts by the MMPA, CWA, Clean Air Act, Outer Continental Shelf Lands Act, National Environmental Policy Act, Oil Pollution Act of 1990; and other Federal, state, and local regulations. Commenters emphasized that activities such as oil and gas exploration and development are regulated pursuant to the MMPA to ensure that they have no more than a negligible impact on ringed seals, and referred to the record of incidental take authorizations issued for Arctic oil and gas activities. One commenter stated that USFWS has already determined, and courts have agreed, that the provisions of the MMPA provide a greater level of protection to marine mammals than the ESA. In addition, ADNR stated that the oil and gas industry has coexisted with bowhead whales under MMPA protections for decades, and there has been no attempt to designate critical habitat for this species. ADF&G and another commenter stated that moreover, the proposed designation is redundant with existing habitat protections for polar bears, notwithstanding differences in habitat use between the two species, as there is substantial overlap between the area proposed for designation and the area already designated for polar bears.

Response: We recognize that certain laws and regulatory regimes already protect, to different degrees and for various purposes, U.S. waters occupied by the Arctic ringed seal, and therefore, to a certain extent, the essential features. However, the existing laws and regulations do not ensure that current and proposed Federal actions are not likely to adversely modify or destroy Arctic ringed seal critical habitat. For example, regulations under the MMPA provide specific protections for Arctic ringed seals but they do not specifically protect the essential features and conservation value of Arctic ringed seal critical habitat. Moreover, critical habitat must be designated regardless of whether other laws or measures already provide protection. *See Natural Res. Def. Council* v. *U.S. Dep't of the Interior,* 113 F.3d 1121, 1127 (9th Cir. 1997) (''Neither the Act nor the implementing regulations sanctions [sic] nondesignation of habitat when designation would be merely *less* beneficial to the species than another type of protection.'').

Regarding the comment that the critical habitat designation is redundant with existing habitat protections for polar bears, we disagree. Arctic ringed seals may use some of the same habitat in the northern Bering, Chukchi, and Beaufort seas used by polar bears, but the critical habitat designation and listing protections for polar bears are established to promote the conservation and recovery of that species specifically. Further, polar bear critical habitat does not explicitly protect the physical and biological features essential to the conservation of the Arctic ringed seal. Section 7 consultations involving polar bear critical habitat therefore would not address impacts to Arctic ringed seals' habitat.

Comment 55: ADF&G asserted that designating very large areas as critical habitat dilutes or undermines the conservation benefits it supplies compared with targeting designations toward areas with higher documented conservation value, and results in designations with little or no benefits to listed species. They stated that this is because the evaluation of whether a proposed Federal action is likely to destroy or adversely modify critical habitat under section 7 of the ESA is based on impacts to the whole of the designated critical habitat. They argued that as a result, when evaluating the impacts of a Federal action on a large critical habitat designation in a section 7 consultation, negative impacts to a ''genuinely critical'' area within a species' range are ''swamped'' by the sheer size of the designated critical habitat. They stated that therefore, the proposed designation for Arctic ringed seals would simply add a regulatory layer under section 7 of the ESA, while providing little or no educational or other benefits. They added that their analysis provided to NMFS to inform the designation of critical habitat for listed DPSs of humpback whales demonstrates that designating very large areas will likely provide no conservation benefits to these populations while adding unnecessary regulatory burdens to oil and gas operations, transportation, and other uses. Two commenters also stated that because we do not anticipate that additional requests for project modifications will result specifically from designation of critical habitat for the Arctic ringed seal, the designation would provide little or no conservation benefit to the species beyond what is already afforded by virtue of its listing under the ESA.

Response: The ESA requires us to designate critical habitat to the maximum extent prudent and determinable. Critical habitat within the geographical area occupied by the species as defined in section 3 of the ESA includes areas on which are found those physical or biological features that are essential to the conservation of the listed species and may require special management considerations or protection (16 U.S.C. 1532(5)(A)). The term ''conservation'' is further defined in section 3 of the ESA as the use of all methods and procedures necessary to bring any endangered or threatened species to the point at which their protection under the ESA is no longer necessary (16 U.S.C. 1532(3)). Therefore, a critical habitat designation must be determined based on consideration of the nature of the habitat features that support the life history and conservation needs of the particular listed species. As we discussed in the revised proposed rule and our response to Comment 25, Arctic ringed seals have a widespread distribution, their movements and habitat use are strongly influenced by the seasonality of sea ice cover, and they can range widely. Moreover, the habitat features they rely upon, in particular the sea ice essential features, are dynamic and variable on both spatial and temporal scales. As such, we identified where the essential features occur at a coarse scale, because this is as much specificity as the best scientific data available allow.

Our critical habitat determination for the Arctic ringed seal reflects these factors, and our analysis is appropriate and sufficient to designate critical habitat as defined by the ESA. Although we reviewed the analysis ADF&G provided to NMFS to inform the

designation of critical habitat for listed DPSs of humpback whales, as we discussed in detail in the preamble to the final rule for that designation (75 FR 21082, April 21, 2021), the ESA, implementing regulations at 50 CFR 424.12, and case law guide us in our evaluation of areas that meet the definition of critical habitat, and none of these sources provide support for the analytical approach advocated by the commenter.

We also disagree with the assumption that the conservation benefits of critical habitat are strictly limited to any changes to Federal actions that are made to avoid destruction or adverse modification of critical habitat. Once designated, critical habitat provides specific notice to Federal agencies and the public of the geographic areas and physical and biological features essential to the conservation of the species, as well as information about the types of activities that may reduce the conservation value of that habitat. Thus, designation of critical habitat can inform Federal agencies of the habitat needs of the species, which may facilitate using their authorities to support the conservation of the species pursuant to section 7(a)(1) of the ESA, including to design proposed projects in ways that avoid, minimize, and/or mitigate adverse effects to critical habitat from the outset. As discussed in the *Benefits of Designation* section of this final rule and in more detail in the Final Impact Analysis report, in addition, other benefits are recognized, such as public awareness of the status of the species and its habitat needs, which can stimulate research, as well as outreach and education activities.

Comment 56: One commenter expressed concern that because we indicated that the critical habitat designation is not likely to result in additional requests for project modifications, we have made a preemptive determination that no changes to projects will be necessary in any future section 7 consultation to avoid adverse modification or destruction of the critical habitat. The commenter stated that this also conveys the impression that NMFS will not meaningfully evaluate the effects of proposed Federal action on the critical habitat in future consultations. The commenter added that given the way that NMFS conducts consultations on a case-by-case basis with an extremely restrictive definition of cumulative effects, and that there have been very few consultations in which NMFS has issued an adverse modification finding, it is unlikely that the designation will provide additional protection to the ecosystem upon which Arctic ringed seals depend.

Response: We disagree with these comments. We are making no preemptive determinations about future section 7 consultations in this critical habitat designation. While we cannot predict the outcome of future consultations with certainty, on the basis of the best scientific and commercial data available, we have not identified a circumstance in which this critical habitat designation would be likely to result in additional requests for project modifications in section 7 consultations. This does not mean that Federal actions will not undergo meaningful and rigorous review through the section 7 consultation process or that project modifications specifically designed to avoid impacts to critical habitat could never occur. Rather, it means only that we have no basis to conclude such modifications are likely to occur and that therefore incremental impacts of this critical habitat designation should be forecasted in our impacts analysis. Based on the best information available regarding potential future Federal actions, and given the high level of existing baseline protections for the seals under the MMPA and due to their listing under the ESA, project modifications made to lessen impacts to ringed seals or to avoid jeopardy would likely encompass measures needed to reduce impacts to (and potentially avoid adverse modification of) critical habitat. That is, while section 7 consultations may result in project modifications, such modifications would likely be necessary to protect ringed seals in addition to protecting the essential features on which the species relies.

In addition, as we explained in our response to Comment 55, the benefits of critical habitat designation cannot simply be measured by the outcome of section 7 consultations, as there are other benefits of critical habitat that extend beyond the direct benefits through section 7 consultations. Regarding consideration of cumulative effects, in formulating our biological opinion as to whether or not a particular proposed Federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat, our regulations at 50 CFR 424.14 require that we assess the status of the species and the critical habitat (including threats and trends), the environmental baseline of the action area, and cumulative effects, which in this context are defined to be the effects of any unrelated future non-Federal activities that are reasonably certain to occur within the action area. The summary of the status of the critical habitat considers the historical and past impacts of activities across time and space. The effects of any particular action are thus evaluated in the context of this assessment, which incorporates the effects of all current and previous actions. This avoids situations where each individual action is viewed as causing only relatively minor adverse effects but, over time, the aggregated effects of these actions would erode the conservation value of the critical habitat (81 FR 7214, February 11, 2016; 84 FR 44976, August 27, 2019).

Comment 57: A number of commenters stated that critical habitat is important to supporting the conservation of the Arctic ringed seals. Some commenters noted the greater protective standard afforded to critical habitat under section 7 of the ESA will help address threats associated with activities such as oil and gas development, which can help increase the species' resilience to climate change. Some commenters also stated that critical habitat provides important public outreach and education opportunities that enhance conservation, including furthering awareness of the impacts of climate change, the plight of listed species, and the conservation value of critical habitat areas. In addition, some commenters suggested that benefits resulting from the designation could extend to other species that rely on the habitat, such as polar bears and bearded seals.

Response: We agree with these comments.

Comment 58: One commenter stated that the proposed designation would provide no meaningful public education benefits because Alaska Native communities and regulated industries that undertake activities within the potentially designated areas are already fully familiar with the species and have implemented protective measures pursuant to the MMPA for decades, and these areas are otherwise largely devoid of human activity. Another commenter also questioned how non-regulatory benefits discussed in the revised proposed rule, such as enhanced conservation or indirect benefits to subsistence users, would actually materialize, and stated that the overlap of critical habitat and its protections for Arctic ringed seals, bearded seals, and polar bears seems purely redundant and without the benefit of any additional protection.

Response: As discussed in the *Benefits of Designation* section of this final rule, and in more detail in the Final Impact Analysis Report, we

conclude that designation of critical habitat for Arctic ringed seals can have a number of indirect benefits. We recognize that Alaska Native subsistence hunting communities adjacent to the Beaufort, Chukchi, and northern Bering seas are very familiar with the species and its habitat, as are certain other entities operating within Arctic ringed seal critical habitat. Still, it is our experience that after critical habitat has been designated for listed species, increased awareness of the habitat needs of listed species on the part of the public as well as planners, government entities, and others, has promoted the conservation of the species. For example, the designation provides specific notice of the habitat features essential to the conservation of Arctic ringed seals, which can facilitate the design of proposed projects by Federal agencies in ways that minimize or avoid effects to critical habitat. However, we also note that the ESA requires designation of critical habitat for listed species to the maximum extent prudent and determinable, regardless of protections afforded by other environmental laws or increased public awareness of the habitat needs of listed species associated with critical habitat designations.

Comments Concerning Exclusions

Comment 59: Several commenters expressed opposition to the proposed exclusion of an area north of the Beaufort Sea shelf from critical habitat based on national security impacts and requested that we reduce or better justify this exclusion. The commenters stated that we did not make clear how the Navy's activities would be disrupted by critical habitat in ways that could negatively affect national security. A couple commenters stated that the large size of the exclusion and the limited description of the Navy's activities gives the impression that those activities may not be consistent with our description of them as localized or small in scale. One commenter also stated that in in weighing the national security impacts against conservation benefits of potential designation we relied on the relative lack of data, while downplaying that the excluded area includes about 41 percent of the habitat north of the Beaufort Sea shelf. In addition, a couple commenters stated that we failed to discuss that as sea ice diminishes, the area proposed for exclusion will become an increasingly greater portion of usable habitat for Arctic ringed seals. One commenter also stated that we should address whether and to what extent the Navy's experience with North Atlantic right whale critical habitat is relevant. Additionally, one commenter requested that, at a minimum, NMFS commit to collecting the data needed to fully analyze the impacts the exclusion will have on Arctic ringed seals and revisiting our determination regarding the requested exclusion at a later date.

Response: As we explained in the revised proposed rule, to weigh the national security impacts against conservation benefits of a potential critical habitat designation, we considered the size of the requested exclusion and the amount of overlap with the specific area meeting the definition of critical habitat for the Arctic ringed seal; the relative conservation value for Arctic ringed seals of the area requested for exclusion; the likelihood that the Navy's activities would trigger section 7 consultation; the likelihood that Navy activities would need to be modified to avoid adverse modification or destruction of critical habitat; and the likelihood that other Federal actions may occur that would no longer be subject to section 7 consultation over impacts to critical habitat if the particular area were excluded from the designation.

In developing this final rule, we followed up with the Navy regarding the location of the area it requested be excluded from the critical habitat designation. The Navy clarified that the spatial data it previously provided to NMFS to map the requested exclusion inadvertently contained outdated information that did not reflect the full southern extent of the particular area they intended to request be excluded from the designation, which includes waters about 50 nm south of the southern boundary of the proposed exclusion area east of 150° W longitude. In addition, the Navy requested that the western boundary of the proposed exclusion be extended one degree west to account for Office of Naval Research activities within this area. We therefore evaluated whether there was a reasonably specific justification indicating that designating the area requested for exclusion as critical habitat, with revision of the southern and western boundaries of the proposed exclusion, would have a probable incremental impact on national security.

In the Navy's written communications in support of their request for exclusion of this particular area, they pointed to the national security implications of the trend toward the Arctic Ocean becoming increasingly accessible and navigable, and stated that they are planning to address future Arctic region security concerns through implementation of the Navy's 2019 Strategic Outlook for the Arctic, and as described in its subsequent Strategic Blueprint for the Arctic released in 2021. As we discussed in the revised proposed rule, the Navy indicated that it currently conducts training and testing exercises on and below the sea ice within the area requested for exclusion (which the Navy refers to as Ice Exercises (ICEXs)) that support the Navy's national security mission. The Navy explained that due to the need for stable ice, flights are conducted over the area requested for exclusion to find a prospective location for a given ICEX camp, and then on-ice surveys are performed to determine the final location immediately prior to buildup of the camp (for additional details, see *National Security Impacts* section). The Navy explained that, given the variable nature of sea ice suitable to support the establishment of ice camps, the Navy's ICEX program has routinely required flexibility for location of the area within which an ice camp may be established. The Navy further stated that the Navy Special Warfare Command (NSWC) units conduct training activities in the same geographic region, and although current training is outside of the proposed critical habitat, as NSWC training is expanding, the Navy has concerns that the designation could affect its ability to conduct activities in certain locations. The Navy also noted that the Office of Naval Research conducts research testing activities in the deep waters of the Beaufort Sea with acoustic sources, most of which operate autonomously for periods of days to months under the ice, and the use of icebreaking ships to deploy and retrieve these sources, and expressed concern that the designation could impact the ability to deploy and retrieve equipment, or to utilize acoustic sources in the manner necessary to fulfill research objectives. The Navy indicated that additional training and testing activities are expected in the Arctic region, which may occur during or independent of an ICEX. The Navy stated that such activities can include the surfacing of a submarine through the ice, the set-up of expeditionary tent encampments, creation of holes in the ice to deploy equipment, and the establishment of an expeditionary runway. These activities are also likely to include vessel movements, icebreaking, and transport of logistics by air and sea in support of future military readiness activities. Testing activities may include air platform/vehicle tests, missile testing, gunnery testing, and anti-submarine warfare tracking testing.

In response to the concerns expressed by commenters we followed up with the Navy and requested additional

information regarding the size of the area the Navy requested be excluded and how the Navy's activities would be impacted by the critical habitat designation. As discussed in the *Exclusion Based on National Security Impacts* section of this final rule, the Navy provided further details on the specific criteria it requires to conduct ICEX activities and the ways in which its training activities could affect the sea ice essential features in the future, possibly resulting in requests for project modifications. The Navy also reiterated that if any activities were curtailed or modified to avoid impacts to critical habitat, it could not relocate those activities to another suitable location outside critical habitat. In addition, with regard to Office of Naval Research activities, the Navy explained that these research activities include the deployment of moored acoustic sources, which may involve the use of an icebreaking vessel for the deployment or recovery of equipment. The Navy stated that because locations to deploy and recover equipment are pre-selected and there is little flexibility, there is similarly little to no flexibility in conducting icebreaking. The Navy discussed that for this reason, if NMFS required modifications to these research activities in a future section 7 consultation to avoid impacts to the critical habitat—such as seasonal or spatial avoidance areas or not breaking ice which has certain conditions—it would have significant impact on these activities. The Navy stated that understanding changing Arctic conditions is critical for maintaining U.S. naval effectiveness and ensuring national security capabilities.

We recognize that, as discussed in the revised proposed rule, data currently available on Arctic ringed seal use of the area requested for exclusion (particularly for the northernmost portion) are limited. Thus, although the area requested for exclusion contains one or more of the essential features of the Arctic ringed seal's critical habitat, data are limited to inform our assessment of the relative value of this area to the conservation of the species. Nevertheless, we must make a determination regarding the requested exclusion based on the best scientific data available. We disagree with the comment suggesting that we downplayed the size of the requested exclusion area, as we provided clear information regarding the location and size of this particular area in the revised proposed rule and fully considered this information in weighing conservation benefits of potential designation against national security impacts. In addition, in this final rule, we have updated the information regarding the size of the revised exclusion area (see above), which now includes about 60 percent of the habitat north of the Beaufort Sea shelf. Although we recognize that as sea ice diminishes the excluded area will become an increasingly greater portion of usable habitat for Arctic ringed seals, and we considered this in our assessment of the benefit of designating this area as critical habitat (and have clarified this in the Exclusion Based on National Security Impacts section), commenters did not provide, and we are not aware of, any new information that would further inform our assessment. Because the requested exclusion comprises a deep area of marine habitat north of the continental shelf, few if any other Federal actions are expected to occur there that would no longer be subject to ESA section 7 consultations if the area were excluded from designation. The Navy and all other Federal agencies have an existing obligation to consult with NMFS under section 7 of the ESA to ensure that Federal actions are not likely to jeopardize the continued existing of the Arctic ringed seal.

We continue to find that the Navy has provided a reasonably specific justification to support the requested exclusion (with revision of the southern and western boundaries). Consistent with our Section 4(b)(2) Policy (81 FR 7226, February 11, 2016), we gave great weight to the Navy's concerns in analyzing the benefits of exclusion. Given the Navy's specific concern regarding potential impacts of the critical habitat designation on its military readiness activities that occur within the area requested for exclusion, we continue to find that the benefits of excluding this particular area due to national security impacts outweigh the benefits of designating this area as critical habitat for the Arctic ringed seal. Though we have not identified any specific circumstances in which this critical habitat designation would be likely to result in requests for project modifications, we acknowledge such modification requests could occur in the future and defer to the Navy's assessment that any possibility of modifications to its activities in this particular area could have adverse impacts on activities of great importance to national security. Regarding the comment requesting that we address the extent to which the Navy's experience with North Atlantic right whale critical habitat (which we noted in the revised proposed rule) is relevant in the context of the Arctic ringed seal critical habitat designation, although we considered all of the information provided by the Navy in support of its exclusion request, this was not a significant aspect of our evaluation of the Navy's request. We independently consider all requests for national security exclusions under 4(b)(2) based on the specifics of the particular area being proposed for exclusion and the importance of that area to the conservation of the relevant listed species.

Failure to designate the excluded area as critical habitat is not expected to result in the extinction of the species because the area is small in comparison to the entirety of the critical habitat, and importantly, because Federal actions in this area—which are expected to be few aside from the Navy's—are still be subject to the requirements of section 7(a)(2) of the ESA to assess threats to Arctic ringed seals (including habitat related threats). We will continue to work with the Navy through the section 7 consultation process to minimize the impacts of the Navy's testing and training activities on Arctic ringed seals. Should additional information become available that indicates revision of the designation may be warranted, we may consider revising the designation accordingly. However, we cannot commit to collecting additional data and revisiting our determination regarding the exclusion request at a later date, as we cannot predict when such information may become available. Further, although we agree generally that additional research and monitoring are needed to fill in knowledge gaps, as well as to continue to monitor the status of the species, the ESA requires us to designate critical habitat based on the best data available, and we have done so in this final rule.

Comment 60: The Marine Mammal Commission stated that it was unclear whether we determined that the area under consideration for exclusion is not subject to ESA section 4(a)(3)(B)(i) because it is not owned, controlled, or designated for use by the Navy, or for some other reason. They recommended that we clarify whether an INRMP or similar plan is in place that addresses potential impacts on ringed seals or other ESA-listed species in the area proposed to be excluded.

Response: We proposed to exclude the particular area north of the Beaufort Sea shelf on the basis of national security impacts and did not rely on a determination that the area was ineligible for designation under section 4(a)(3)(B)(i) of the ESA, which provides that certain areas cannot meet the definition of ''critical habitat'' if they are

covered by a relevant INRMP that has been determined in writing to provide a benefit to the species (16 U.S.C. 1533(a)(3)(B)(i)). Thus, the status of an INRMP is not relevant to this exclusion determination.

Comment 61: A group of oil and gas trade associations stated that all critical habitat proposed for designation should be excluded, or alternatively, at least all areas in which human activities occur, or will foreseeably occur, should be excluded from designation because of the importance to the Alaska economy and national energy needs of oil and gas exploration and development, and the strong potential for the designation to impose unnecessary costs and litigation risks on the oil and gas industry, Alaska Native communities, and state and local governments. They asserted that the economic impacts of designation substantially outweigh any very marginal benefits of designation, and stated that: (1) Oil and gas activities, as well as Alaska Native subsistence harvest of ringed seals, are not expected to threaten the species or its habitat in the foreseeable future, as evidenced in the final rule listing the Arctic ringed seal as threatened; (2) oil and gas activities, as well as other activities, are regulated pursuant to the MMPA and other Federal and state laws to ensure that they have no more than a negligible impact on ringed seals; and (3) the designation will result in no benefits to the species under section 7 of the ESA in that there are no measures or protections necessary for conservation of ringed seals that are not already imposed by the MMPA, and NMFS does not anticipate that the designation will result in additional project modifications.

Response: Section 4(b)(2) of the ESA provides that the Secretary shall designate critical habitat on the basis of the best scientific data available after taking into consideration the economic impact, impact on national security, and any other relevant impacts of specifying any particular area as critical habitat. The economic analysis included in the Final Impact Analysis Report was developed to address the potential economic impacts of the critical habitat designation. As discussed in the *Economic Impacts* section of this final rule and detailed in the Final Impact Analysis Report, the total incremental costs associated with the critical habitat designation for the Arctic ringed seal within the 10-year post-designation timeframe, in discounted present value terms, were estimated at $714,000 (discounted at 7 percent) to $834,000 (discounted at 3 percent). About 83 percent of the incremental costs attributed to the critical habitat designation are expected to accrue from ESA section 7 consultations associated with oil and gas related activities in the Chukchi and Beaufort seas. To avoid understating the cost estimates, we assumed that a high projected level of oil and gas activity will occur annually, although such a high level of activity is unlikely to occur in each and every year. After thoroughly considering the available information, we have concluded that the potential economic impacts associated with this designation are modest both in absolute terms and relative to the level of economic activity expected to occur in the affected area. This has not changed from the proposed rule.

We disagree with the characterization of the benefits of the critical habitat designation as ''very marginal.'' The designation of critical habitat and identification of essential features will provide substantive benefits to the conservation of Arctic ringed seals. At a minimum, the designation ensures that Federal agencies, through the consultation process under section 7 of the ESA, consider the impacts of their projects and activities on Arctic ringed seal critical habitat, and will focus such future consultations on the essential features of the critical habitat. Designation of critical habitat thus provides clarity and consistency to Federal action agencies regarding specific areas and habitat features that should be considered and addressed during these consultations. Designation of critical habitat can also inform Federal agencies of the habitat needs of the species, which may facilitate using their authorities to support the conservation of the species pursuant to section 7(a)(1) of the ESA, including to design proposed projects in ways that avoid, minimize, and/or mitigate adverse effects to critical habitat. Other benefits of the designation include enhanced public awareness of the habitat needs of the species, which can help focus conservation efforts (for additional details, see *Benefits of Designation* section, as well as the Final Impact Analysis Report). We have therefore not exercised the discretion delegated to us by the Secretary to conduct an exclusion analysis to further consider and weigh the benefits of designation and exclusion of any particular area based on economic impacts.

Comment 62: A group of oil and gas trade associations stated that we should clarify that the proposed regulatory language indicating that permanent manmade structures such as boat ramps, docks, and pilings that were in existence by the effective date of the rule are not part of critical habitat also applies to existing infrastructure associated with North Slope and adjacent Outer Continental Shelf (OCS) oil and gas activities. In addition, they stated that we should exclude from designation the infrastructure, ice roads, trails, pads, and surrounding waters necessary to maintain safe access to the facilities identified and described in their comments, including Milne Point Unit F-Pad, Oliktok Point and Spy Island Drill Site, Oooguruk Drill Site, and Northstar Unit Seal Island). They stated that the benefits of excluding these areas from designation far outweigh any benefits of designation, and are justified because they are fundamental to continuity and safety of oil and gas operations and: (1) The identified areas are not essential to the conservation of ringed seals, nor do they require special management considerations or protection; (2) the areas are extremely small relative to the amount of habitat available to ringed seals; and (3) these types of facilities have been constructed and maintained for decades without any indication that these exclusions would impede recovery or have any population level impacts on ringed seals.

Response: With regard to the proposed regulatory language indicating that permanent manmade structures in existence are not a part of the designation, we find that this language provides sufficient clarity, as it applies to any such permanent manmade structures, including those in existence that are associated with oil and gas activities, and this final rule includes that same language. While activities such as dredging and screeding occur in association with the areas requested for exclusion, this does not necessarily indicate that there are likely to be significant additional costs or other indirect impacts from including these areas in the designation. Where there is a Federal nexus for an activity occurring in these areas, we expect that there will in most, if not all cases, be an existing need to address the impacts of these activities on Arctic ringed seals themselves. In other words, for activities such as ice road construction and maintenance, the requirement to consult under section 7 of the ESA would be triggered even in the absence of Arctic ringed seal critical habitat. These consultations typically analyze habitat-related effects to the seals, even in the absence of a critical habitat designation. While Federal actions that may affect the essential features of Arctic ringed seal critical habitat will require an

analysis to ensure that these actions are not likely to result in the destruction or adverse modification of the critical habitat, we do not expect that this will require substantial additional time or resources, especially for new consultations. We have therefore not exercised the discretion delegated to us by the Secretary to conduct an exclusion analysis to further consider and weigh the benefits of designation and exclusion of the identified areas based on economic impacts. Further, under the ESA, the relevant question is whether the identified areas contain physical or biological features essential to the conservation of Arctic ringed seals, not whether use of these areas is essential to conservation of ringed seals or whether these areas (as opposed to the features within them) require special protection. Because we find that one or more essential features occur in all parts of the specific area designated as critical habitat, to the extent these comments are suggesting the identified areas do not meet the definition of critical habitat, we disagree. We note that as we explained previously, the shoreward boundary of the critical habitat designation is now identified as the 3-m isobath (relative to MLLW). Thus a portion of the areas the commenter requested be excluded are not included in the final designation.

Comment 63: The North Slope Borough stated that we should exclude from designation 10-mile buffer zones around all North Slope villages and all lands conveyed to the North Slope Borough or Alaska Native corporations in order to prevent detrimental economic impacts and possible delays in municipal-type projects or other developments that require Federal approval or rely on Federal funding. They indicated that such activities include, but are not limited to, erosion protection, road construction, water treatment activities, port infrastructure, and municipal expansion. They stated that although these activities may not rise to the level of adverse modification, Borough communities and residents should not be forced to bear the additional section 7 consultation costs or possible delays in development of projects associated with maintaining basic services. In addition, they stated that we should exclude from designation similar areas around locations that are currently being developed for oil and gas, as a significant portion of the Borough's revenue is derived from taxes on oil and gas infrastructure. They also commented that without the collaboration of seal hunters and Alaska Native communities who live in those areas, NMFS would be unable to adequately monitor Arctic ringed seals. They suggested that designating critical habitat adjacent to coastal villages could alienate residents of subsistence communities, and thus there is a real collaborative benefit to such exclusions. The Ice Seal Committee similarly stated that we must exclude from designation aquatic areas around villages, Alaska Native corporation lands, and other lands where development and infrastructure-related activities are occurring in consideration of the harmful effects of the designation on Alaska Native communities. Additionally, ADF&G requested that a distance of 20 miles around communities and the Beaufort Sea coast be excluded from designation to avoid unnecessary disproportionate regulatory burdens to those areas that are not balanced by the limited conservation benefits provided to Arctic ringed seals.

Response: While we recognize that the proximity of a number of coastal communities and certain other developed sites to Arctic ringed seal critical habitat raises concerns about potential impacts on human activities, our final economic analysis did not indicate any disproportionate or significant economic impacts are likely to result from the designation. The critical habitat designation includes no regulatory restrictions on human activities, and where no Federal authorization, permit, or funding is involved, activities are not subject to section 7 consultation. For the types of actions we expect to occur in coastal villages or on Alaska Native lands that have a Federal nexus, based on our experience consulting on such activities, we do not expect that the additional need to consult on the critical habitat would result in any additional or novel project modifications beyond those that result from consultations that are already required due to the threatened status of the species and the MMPA (see our response to Comment 49). We have therefore not exercised the discretion delegated to us by the Secretary to conduct an exclusion analysis to further consider and weigh the benefits of designation and exclusion of buffers around the requested areas based on economic or any other relevant impacts. In addition, as we explained previously, the shoreward boundary of the critical habitat designation is now identified as the 3-m isobath (relative to MLLW), rather than as the line of MLLW identified in the revised proposed rule. Thus, waters adjacent to coastal villages within the 10-mile and 20-mile distances requested for exclusion by the commenters overlap to lesser extent with the final designation.

With regard to the comment concerning the effect of the critical habitat designation on NMFS's working relationships with seal hunters and Alaska Native communities, we recognize that the Alaska Natives make important contributions to the conservation and management of Arctic ringed seals. NMFS works closely with the North Slope Borough and other partners to implement co-management and conserve marine mammals. We understand that a number of parties have concerns about ESA listings and critical habitat designations, but we are optimistic that such concerns will not impair our working relationships with co-management partners and other stakeholders over the long term, especially given our continued efforts to provide accurate information regarding the effects of this designation.

Regarding exclusions from critical habitat of buffers around locations where oil and gas development is occurring, we do not consider exclusion from critical habitat to be appropriate in this case. The primary industrial activities occurring within Arctic ringed seal critical habitat are associated with the oil and gas industry. Areas of importance to the oil and gas industry within the critical habitat include the physical and biological features essential to the conservation of Arctic ringed seals, and there are conservation benefits to Arctic ringed seals if the areas requested for exclusion remain in the designation. Moreover, the presence of designated critical habitat for other marine mammal species has not resulted in the inability of the oil and gas industry to engage in exploration, development, and production activities. Regarding benefits of the designation, also see our response to Comment 15.

Comment 64: Two commenters stated that we should exclude from designation areas that are ice-free at certain times of the year and that support activities that are vital and necessary for residents in northern coastal communities, such as shipping lanes used by vessels to transport the vast majority of goods and services, to ensure that there are no impacts on such activities. One commenter stated that from approximately mid-June in some regions through September this shipping not only transports goods, but also serves as a cultural link among coastal Alaska Native communities.

Response: The critical habitat designation would not preclude or restrict shipping activities. Section 7

consultation requirements apply only when a Federal action is involved (*i.e.,* an action authorized, funded, or carried out by a Federal agency). We are not aware of a Federal nexus for the vessel traffic referred to by the commenters such that this activity would be subject to section 7 consultation. As summarized in the *Economic Impacts* section of this final rule, and discussed in more detail in the Final Impact Analysis Report, we anticipate that the impacts of the designation will be limited to incremental administrative effort to consider potential adverse modification of Arctic ringed seal critical habitat as part of future section 7 consultations, and that most of these consultations will be associated with oil and gas activities. Therefore, we find that there is not a clear basis to exercise the discretion delegated to us by the Secretary to conduct an exclusion analysis to further consider and weigh the benefits of designation and exclusion of shipping lanes.

Legal and Procedural Comments

Comment 65: Several commenters cited our regulations at 50 CFR 424.12(a)(1)(ii) in stating that we should determine that designation of critical habitat is not prudent for the Arctic ringed seal, in particular, because the primary threats to the species stem solely from climate change, and therefore, they cannot be addressed through management actions resulting from section 7 consultations. Commenters also referred to the preamble to the 2019 final rule that revised portions of the regulations at 50 CFR part 424, which discussed this newly added provision relative to listed species experiencing threats stemming from climate change. Additionally, one commenter pointed to our statement in the revised proposed critical habitat rule regarding our inability to draw a causal linkage between any particular single source of GHG emissions and identifiable effects on the proposed essential features. Commenters added that there is a strong basis for determining that designation would not be prudent because: (1) The Arctic ringed seal is sufficiently protected under existing laws and regulations, including the MMPA; (2) the species is not threatened or otherwise negatively impacted by any of the regulated activities that occur within its range; (3) NMFS anticipates that the designation will not result in additional project modifications through section 7 consultations; and (4) there are insufficient data available to support the identification of critical habitat. ADF&G also contended that critical habitat is not determinable, citing some similar considerations. The Ice Seal Committee likewise indicated that they believe designation of critical habitat for the Arctic ringed seal is not necessary or prudent at this time.

Response: Section 4(a)(3)(A) of the ESA requires that we designate critical habitat to the maximum extent prudent and determinable at the time a species is listed. Finding that critical habitat is not determinable at the time of listing allows NMFS to extend the deadline for finalizing a critical habitat designation by one year under section 4(b)(6)(C)(ii) of the ESA (16 U.S.C. 1533(b)(6)(C)(ii)). At the end of the 1-year extension, NMFS must use the best scientific data available to make the critical habitat determination. When we listed the Arctic ringed seal as threatened in December 2012, critical habitat was not determinable. Subsequently, we researched, reviewed, and compiled the best scientific data available to develop a critical habitat designation for Arctic ringed seals. Critical habitat is now determinable.

With regard to making a ''not prudent'' determination, our regulations at 50 CFR 424.12(a)(1) provide a non-exhaustive list of circumstances in which we may, but are not required to, find that it would not be prudent designate critical habitat. In 2019, several revisions to this regulatory provision were finalized, including the addition of the following circumstance, cited by commenters, in § 424.12(a)(1)(ii): The present or threatened destruction, modification, or curtailment of a species' habitat or range is not a threat to the species, or threats to the species' habitat stem solely from causes that cannot be addressed through management actions resulting from consultations under section 7(a)(2) of the ESA (84 FR 45020, August 27, 2019). Here, the Arctic ringed seal is threatened throughout all of its range by ongoing and projected reductions in sea ice habitat (77 FR 76706, December 28, 2012). Further, the threats to the essential features of Arctic ringed seal critical habitat do not stem solely from causes that cannot be addressed through management actions from consultations under section 7(a)(2) of the ESA. Rather, as we discussed in the revised proposed rule, we identified four primary sources of threats to the essential features of Arctic ringed seal critical habitat—climate change, oil and gas activity, marine shipping and transportation, and commercial fisheries—that may require special management considerations or protection for the essential features. The situation for the Arctic ringed seal thus differs from the scenarios discussed in the preamble to the 2019 revisions to the ESA regulations in which threats to the listed species' habitat stem solely from climate change. Additionally, if a listed species does fall into that category, a not prudent finding is not mandatory, as we may determine that designating critical habitat could still contribute to the conservation of the species. Moreover, the other reasons given by commenters in support of making a ''not prudent'' determination (*e.g.,* whether existing protections are sufficient and whether project modifications in section 7 consultations result from the designation) do not provide any basis for determining that the Arctic ringed seal falls within any of the other circumstances identified in our regulations at 50 CFR 424.12(a)(1) in which we may determine a designation would not be prudent. The identification of critical habitat is not expected to increase the degree of threat to the species, areas within U.S. jurisdiction provide more than negligible conservation value for this circumpolar species, and a specific area meets the definition of critical habitat.

Comment 66: Several commenters stated that critical habitat is unnecessary to conserve Arctic ringed seals because the species is healthy and abundant, widely distributed throughout its historical range, and has not shown any indication of a decline in population. They stated that moreover, the Arctic ringed seal was listed as threatened under the ESA based on impacts to habitat from climate change projected to occur decades into the future. They questioned expending resources on developing a critical habitat designation in this circumstance.

Response: As we indicated in our response to Comment 65, the ESA requires that we designate critical habitat to the maximum extent prudent and determinable at the time a species is listed under the ESA, or within one year of listing if critical habitat is not determinable at that time. The comments regarding abundance, distribution, and population trend are relevant to ESA listing decisions (and were addressed in the final rule listing the Arctic ringed seal as threatened; see 77 FR 76706, December 28, 2012), but they do not have any bearing on whether critical habitat should be designated. Habitat is a fundamental aspect of conserving any species, and as discussed above, we are required to designate critical habitat for listed species except in the very limited circumstances in which it is determined not to be prudent.

Comment 67: One commenter stated that we should delay designation of

critical habitat until after completing the ongoing 5-year review of the species under the ESA. In addition, two commenters expressed concern that the designation is being driven by litigation and suggested that further research be conducted before designating critical habitat.

Response: The ESA requires us to designate critical habitat, to the maximum extent prudent and determinable, at the time species are listed (16 U.S.C. 1533(a)(3)(A)(i)). If designation is not then determinable, we may extend this deadline by not more than one additional year. A lawsuit was filed in Federal court alleging we did not meet the statutory deadline to designate critical habitat, and under a court-approved stipulated settlement agreement, we must complete a final critical habitat determination by March 15, 2022 (see Background section). We cannot further delay the statutory requirement to designate critical habitat in order to complete the 5-year review.

Comment 68: One commenter stated that because the recent amendments to our joint NMFS/USFWS regulations implementing section 4 of the ESA (84 FR 45020, August 27, 2019; 85 FR 81411, December 16, 2020) are currently the subject of several lawsuits and are included in a list of regulatory actions that are being reviewed by the current administration, we should not rely on those regulatory amendments in designating critical habitat for the Arctic ringed seal.

Response: In designating critical habitat, we are required to adhere to the ESA implementing regulations that are currently in effect. The regulatory amendments published on August 27, 2019, became effective and applicable for proposed critical habitat rules published after September 26, 2019. However, those recent revisions did not materially change our determination of critical habitat for Arctic ringed seals because they involve the procedures and criteria used for designating unoccupied areas and making discretionary determinations that designating critical habitat would not be prudent. A regulatory amendment published on December 16, 2020, which added a definition of ''habitat'' to our ESA implementing regulations, became effective on January 15, 2021, and is applicable to critical habitat rulemakings for which a proposed critical habitat rule is published after that date. As a result, that rule does not apply to the critical habitat rulemaking for Arctic ringed seals. We note, however, that the new regulatory definition of ''habitat'' is consistent with our consideration of habitat in designating critical habitat for Arctic ringed seals.

Comment 69: The North Slope Borough and the Ice Seal Committee expressed concern that we did not adequately inform or consult with the Ice Seal Committee during preparation of the revised proposed rule, and stated that the Ice Seal Committee membership has a significant amount of IK and experience that is directly relevant to various elements of the designation. They requested that we consult with the Ice Seal Committee and provide the opportunity to provide recommendations concerning the critical habitat designation prior to proceeding further with the designation. The Ice Seal Committee further commented that given that ringed seals are essential for subsistence and the continuation of traditional ways of life, this consultation and any subsequent regulatory actions must be based on IK of threats to the species and the conservation actions considered necessary. In addition, another commenter urged us to conduct additional meaningful outreach that engages local Alaska Native hunters and other experts and consider their input in developing the critical habitat designation. In addition, one commenter stated that it appeared that no Alaska Native indigenous experts provided review and input on the proposed designation prior to its publication.

Response: We understand the concerns expressed by the Ice Seal Committee about coordination and input on the designation of critical habitat for Arctic ringed seals, and recognize that Alaska Native subsistence hunting communities have unique knowledge of ringed seals, which are an essential traditional subsistence resource. We gave presentations and updates to the Ice Seal Committee on the designation of critical habitat for Arctic ringed seals and sought their input beginning in 2013. Prior to developing a revised proposed critical habitat designation, we discussed the process for developing the proposal during the Ice Seal Committee co-management meeting in January 2020, where we reviewed a list of relevant questions regarding the identification of critical habitat for the Ice Seal Committee's consideration and input. At that meeting, we also distributed an informational flyer that addressed the designation process and related topics. In September 2020, we provided an update to the Ice Seal Committee by email about the schedule for issuing the revised proposed designation and related information. In January 2021, we notified the Ice Seal Committee by email in advance of the scheduled publication of the revised proposed rule, and we subsequently followed up by letter regarding the revised proposed designation and the comment period on the proposal. During the Ice Seal Committee co-management meeting in February 2021, we presented information regarding the revised proposed designation, the comment period, and the schedule for hearings, and we highlighted the types of data and information we were particularly seeking to inform development of the final designation. We also provided information to the Ice Seal Committee regarding the public hearings by email. In response to their requests to do more to publicize the proposed designation and the scheduled hearings, we provided a flyer to the Ice Seal Committee to share and we arranged to run public service announcements on the radio to inform people about the upcoming hearings. During the Ice Seal Committee meeting in September 2021, we provided an update on the status of development of the final critical habitat designation and sought input about our efforts to coordinate with, and gain input from, the Ice Seal Committee regarding the designation. We will continue to make efforts to improve our communications with the Ice Seal Committee on matters pertaining to the conservation and management of ice seals in Alaska. With regard to the comments concerning our consideration of IK, also see our response to Comment 72.

Regarding the comment concerning review of the revised proposed designation by Alaska Native indigenous experts prior to publication, we sought such input from Alaska Native hunters, including some elders with considerable IK, during Ice Seal Committee meetings as discussed in the preceding paragraph. In developing the final critical habitat designation, we fully considered all of the comments received on the revised proposed rule, including from the Ice Seal Committee, some Ice Seal Committee partner organizations, Alaska Native hunters, and residents of western and northern coastal communities.

Comment 70: The Ice Seal Committee expressed concern that NMFS is not sufficiently providing notice of regulatory actions or engaging with Alaska Native ice seal hunters. To promote outreach and engagement with the Alaska Native community, the Ice Seal Committee suggested that we prepare and distribute handouts that summarize proposed and final regulatory measures that clearly identify

implications and requirements for affected Alaska Native hunters. The Ice Seal Committee committed to assisting NMFS in these efforts. Another commenter similarly urged NMFS to work with Alaska Native organizations to develop improved processes to ensure meaningful outreach and consultation. In addition, another commenter urged NMFS to engage in consultation with Tribes and Alaska Native corporations going forward before drafting and publishing proposed rules, so the proposed rules can incorporate and reflect the expertise of indigenous Alaskans from the start.

Response: We understand and welcome the Ice Seal Committee's interest in furthering our communications and engagement with Alaska Native communities and ice seal hunters, and we will continue to work closely with them regarding conservation and management issues related to ice seals. We note that the primary regulatory impact of critical habitat designation is that actions authorized, funded, or carried out by Federal agencies, and that may affect critical habitat, must undergo consultation under section 7 of the ESA to assess the effects of such actions on critical habitat, and must ensure that their actions are not likely to destroy or adversely modify critical habitat. We do not expect this critical habitat designation to have any adverse impact on Alaska Native subsistence activities. We also do not expect the critical habitat designation to result in any new reporting, sampling, or other procedural requirements for Alaska Native subsistence harvests. Regarding the comment about consultations with Tribes and Alaska Native Corporations, we contacted potentially affected tribes and Alaska Native Corporation by mail and offered them the opportunity to consult on the designation of critical habitat for the Arctic ringed seal and discuss any concerns they may have. We received no requests for consultation in response to that mailing.

Comment 71: One commenter stated that navigating the NMFS website was challenging and made it more difficult to review all the relevant information and submit written comments on the revised proposed critical habitat designation.

Response: The commenter may be referring to the eRulemaking Portal where we accepted electronic comments on the revised proposed rule and the documents associated with the proposal could be accessed. This website transitioned to a new interface during the comment period on the revised proposed rule, which may have complicated use by the commenter. Although electronic comments on the revised proposal were accepted during the comment period via the eRulemaking Portal, we also provided links to the documents associated with this rulemaking on our website, and we accepted written comments by mail.

Other Comments

Comment 72: A number of commenters, including the Ice Seal Committee and the North Slope Borough, indicated that we should further utilize IK in our determination of critical habitat for the Arctic ringed seal. The North Slope Borough stated that due to the amount of existing scientific uncertainty concerning ringed seal habitat requirements, IK constitutes the best scientific data available and should be used in developing and designating any critical habitat for the species. They further stated that we should solicit and collect IK about ice conditions used by Arctic ringed seals for basking and molting, and how flexible they are in the types of habitat they use for these activities, and we should use this information to modify the proposed designation.

Response: In developing this final rule, we considered the best scientific data available, including comments submitted from individuals who provided IK about Arctic ringed seal habitat use, and available publications and reports that documented IK for coastal communities located in western and northern Alaska. We also attempted to incorporate additional information from Alaska Native hunters into the determination of critical habitat by soliciting input from the Ice Seal Committee regarding the essential features of Arctic ringed seal critical habitat and specifically offering to consult with Alaska Native tribes and organizations regarding the development of the designation. Although we received some input in response, we recognize that additional IK exists that we have been unable to incorporate. However, the ESA does not allow us to defer the designation of critical habitat in order to collect additional data. Under a court-approved stipulated settlement agreement, we must complete a final critical habitat determination by March 15, 2022 (see Background section).

Comment 73: The Marine Mammal Commission and two others commenters noted that as sea ice extent continues to decline substantially Arctic-wide, and the timing, rate, and extent of seasonal sea ice loss and formation in the Bering and Chukchi seas continue to shift, areas currently considered to be critical habitat may change. They recommended that we therefore review the critical habitat designation for Arctic ringed seals every 5 years, or as substantial new information becomes available, to evaluate whether there is a need to revise the designation.

Response: We anticipate that future research will add to our knowledge of the habitat needs of the Arctic ringed seal and how changing sea ice and ocean conditions are affecting the seals and the habitat features essential to their conservation. If additional data become available that support a revision to this critical habitat designation, we can consider using the authority provided under section 4(a)(3)(A)(ii) of the ESA to revise the designation, as appropriate.

Comment 69: The Marine Mammal Commission stated that finding an effective way of addressing the risks posed by climate change is likely the only way to fulfill the ESA's mandate to conserve Arctic ringed seals and the ecosystem on which they depend. The Commission recommended that we work with key Federal agencies on a coordinated strategy to address the broader underlying problem—the need to reduce GHG emissions, thereby mitigating the negative impacts of climate change on Arctic marine mammals, including ringed seals, and their habitat. They noted that this strategy should be supported by work with Federal and state agencies, co-management partners, and local communities via existing research partnerships to foster routine inclusion of IK along with conventional science in assessing and predicting habitat transformation in the Arctic. In addition, other commenters stated that addressing loss of sea ice habitat would require international collaboration.

Response: We agree that addressing the effects of climate change on Arctic ringed seals and their habitat will require continued monitoring and research, and we look forward to working with our partners and stakeholders in furthering the conservation of this species. In addition to ongoing research on Arctic ringed seals conducted by NOAA's Marine Mammal Laboratory, NOAA provides climate analyses, sea ice forecasts, and other information to help other agencies and the public understand changes in the Earth's atmosphere and climate. These types of information products are used by a variety of state, Federal, and international bodies to inform decisions related to the root causes of climate change. NOAA also provides funding to and works cooperatively with other agencies on these efforts.

Comment 75: ADF&G requested that we review and incorporate into the final rule relevant information and literature cited in their submission of information for the 5-year status review of four subspecies of the ringed seal, including the Arctic ringed seal.

Response: We appreciate the information and references submitted for the 5-year status review of ringed seals. We reviewed and evaluated this information as part of our critical habitat determination, which is incorporated into the preamble to this final rule as appropriate, and is included in the decision record for this designation.

Summary of Changes From the Revised Proposed Designation

Based on our consideration of comments and information received from peer reviewers and the public on our January 9, 2021, revised proposed rule (86 FR 1452), and additional information we reviewed as part of our reconsideration of issues discussed in the revised proposed rule, we made several changes from the proposed critical habitat designation. These changes are briefly summarized below and discussed in further detail in the relevant responses to comments and other sections of the preamble of this final rule.

(1) *Revised primary prey resources essential feature.* In the revised proposed rule, we identified primary prey resources to support Arctic ringed seals as an essential feature, which we defined to be Arctic cod (*Boreogadus saida*), saffron cod (*Eleginus gracilis*), shrimps, and amphipods. In response to peer reviewer and public comments requesting we identify additional prey species in the regulatory definition of this essential feature, we re-evaluated the information used to support the proposed definition of the essential feature, along with new information provided in a recent report cited in a peer reviewer's comments (Quakenbush *et al.* 2020), to determine if revision of the proposed definition of this essential feature may be appropriate.

In the revised proposed rule, we considered information on ringed seal diet in the central Beaufort Sea reported by Lowry *et al.* (1980b). However, we later identified a subsequent publication by Frost and Lowry (1984) that incorporated additional samples from the Beaufort Sea not included in that previous publication. Because the ringed seal diet information reported in the latter publication represents additional locations and greater seasonal sample sizes, we considered this information in place of Lowry *et al.* (1980b) for the Beaufort Sea, although it does not present significant new findings.

After thorough consideration of the best information currently available, we have concluded that it is appropriate to identify rainbow smelt as a primary prey species of Arctic ringed seals. Our review of this information also reconfirmed that Arctic cod, saffron cod, shrimps, and amphipods are prominent prey species for Arctic ringed seals in Alaska and we therefore continue to identify them as primary prey species. However, diet composition and the relative prominence of certain prey species vary both geographically and seasonally, and differences in diet between age classes (pups and non-pup seals), as well as a temporal shift in diet in the Bering and Chukchi seas have been reported. In addition, ringed seal diet information for the Beaufort Sea is relatively limited. We have therefore revised the definition of the primary prey resources essential feature in this final rule to include a description of the seals' most common types of prey, which are small, often schooling fishes, and small crustaceans, and to identify for those types of prey, the predominant prey species in the seals' diets (*i.e.,* Arctic cod, saffron cod, rainbow smelt, shrimps, and amphipods), which we conclude are essential to the conservation of the Arctic ringed seal. The revised primary prey resources essential feature that we identify and adopt in this final rule is as follows: Primary prey resources to support Arctic ringed seals, which are defined to be small, often schooling, fishes, in particular, Arctic cod, saffron cod, and rainbow smelt; and small crustaceans, in particular, shrimps and amphipods. We find that this level of specificity, naming species known to be prominent in Arctic ringed seals' diet but not limiting the definition to only those species, is most appropriate for defining this essential feature based on the best scientific data available.

(2) *Revised sea ice essential features.* In the revised proposed rule, our definitions of the sea ice essential features excluded any bottom-fast ice extending seaward from the coastline (typically in waters less than 2 m deep). Some public comments received objected to the exclusion of bottom-fast ice, while others argued that very shallow ice-covered waters are not essential to Arctic ringed seal conservation, in part because of the occurrence of bottom-fast ice in such areas. These comments led us to re-evaluate how the sea ice essential features may be best described relative to very shallow nearshore areas. After thorough review of the best scientific data available, we have concluded that sea ice habitat essential for birth lairs, as well as for basking and molting, is best described with respect to very shallow waters in terms of minimum water depth. Based on our assessment of available information regarding Arctic ringed seal use of shallow ice-covered areas and the water depths in which sea ice may become bottom-fast, in this final rule we identify 3 m as the minimum water depth for the sea ice essential features. We have therefore omitted the phrase ''excluding any bottom-fast ice extending seaward from the coastline (typically in waters less than 2 m deep)'' from the definitions of these essential features and instead specify that they are found in ''waters 3 m or more in depth (relative to MLLW).'' This delineates a clear shoreward boundary and avoids the implication that some shallow waters may or may not qualify as critical habitat depending on whether bottom-fast ice is present. We have also made minor wording changes in the definition of sea ice essential for the formation and maintenance of birth lairs for clarity. We further explain and clarify our reasoning for this change in the Physical and Biological Features Essential to the Conservation of the Species section of this final rule.

(3) *Revised shoreward boundary of critical habitat.* In the revised proposed rule, we identified one specific area in the Bering, Chukchi and Beaufort seas containing the proposed essential features. Although the same seaward boundaries were identified for this specific area with respect to both the primary prey resources essential feature and the sea ice essential features, the shoreward boundary was identified as the line of MLLW based principally on occurrence of the proposed primary prey resources essential feature. We expressed in the revised proposed rule that data to determine the specific area containing the essential features are limited, and we specifically requested data and comments on our proposed delineation of these boundaries. In response to public comments that raised concerns about our proposed delineation of the boundaries of critical habitat with respect to the primary prey resources essential feature (as well as to peer reviewer and public comments related to ringed seal use of habitat for foraging), and after revising the proposed definitions of the essential features (as described above), we re-evaluated the best scientific data available and the approach we had used to identify the proposed boundaries to

ensure that they were drawn appropriately.

In reviewing these comments and considering the available data, we recognized that the available information on the distributions of Arctic ringed seal primary prey species indicate that these prey resources are widely distributed across the geographic area occupied by these seals. We have no information that suggests any portions of the species' occupied habitat contains prey species that are of greater importance or otherwise differ from those found within the specific area defined by the sea ice essential features. We concluded it was not possible to delineate the boundaries of critical habitat based solely on the description of the primary prey essential feature without implying the species' entire occupied range qualifies as critical habitat. The best information available indicates that although Arctic ringed seals may forage seasonally in some particular areas, such as Barrow Canyon, the seals also make extensive use of a diversity of habitats for foraging across much broader areas in the Bering, Chukchi, and Beaufort seas. Most importantly, the movements and habitat use of Arctic ringed seals are strongly influenced by the seasonality of sea ice and they forage throughout the year (albeit with reduced feeding during molting). Given this and our consideration of the best scientific data available, we concluded that the best approach to determine the appropriate boundaries for critical habitat is to identify the specific area(s) in which both the primary prey essential feature and the sea ice essential features occur, and that this specific area contains sufficient primary prey resources to support the conservation of Arctic ringed seals. As discussed previously, in this final rule we identify 3 m (relative to MLLW) as the minimum water depth for the sea ice essential features, and we therefore define the shoreward boundary of the specific area containing one or more of the essential features as the 3-m isobath (relative to MLLW), rather than the line of MLLW, as identified in the revised proposed rule. The boundaries are otherwise unchanged from the revised proposed rule.

(4) *Revised exclusion based on national security impacts.* As a result of clarifications provided by the Navy regarding the boundaries of the particular area north of the Beaufort Sea shelf that the Navy requests be excluded from the critical habitat designation for national security reasons, we have revised the southern and western boundaries of the area excluded from designation in this final rule.

(5) *Final Impact Analysis Report.* In response to peer reviewer and public comments, we revised and updated the Draft Impact Analysis Report to further explain and clarify our analysis of the economic costs and benefits of the designation, and to correct typographical and other minor errors. The timeframe, wage schedule, and dollar year of the analysis were also updated to reflect the implementation schedule of the final rule. We also revised the analysis of the incremental administrative costs of section 7 consultations associated with the critical habitat designation to reflect the revised delineation of the shoreward boundary of the designation explained above.

(6) *New information.* In this final rule, we have made minor updates and incorporated additional information and references as appropriate, including information from IK documented for coastal communities located in western and northern Alaska, based on peer reviewer and public comments, new information we received or reviewed after publication of the revised proposed rule, and our internal review of the revised proposed rule.

References Cited

A complete list of all references cited in this final rule can be found on the NMFS website at *www.fisheries.noaa.gov/species/ringed-seal#conservation-management,* the Federal eRulemaking Portal at *www.regulations.gov/docket/NOAA-NMFS-2013-0114,* and is available upon request from the NMFS office in Juneau, Alaska (see **FOR FURTHER INFORMATION CONTACT**).

Classifications

National Environmental Policy Act

We have determined that an environmental assessment as provided for under the National Environmental Policy Act is not required for critical habitat designations made pursuant to the ESA. *See Douglas Cnty.* v. *Babbitt,* 48 F.3d 1495, 1502–08 (9th Cir. 1995), *cert. denied,* 116 S. Ct. 698 (1996).

Regulatory Flexibility Act

Under the Regulatory Flexibility Act (RFA) (5 U.S.C. 601 *et seq.*), as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996, whenever an agency publishes a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (*i.e.,* small businesses, small not-for-profit organizations, and small government jurisdictions). We have prepared a final regulatory flexibility act analysis (FRFA), which is included as part of the Final Impact Analysis Report for this final rule. The FRFA estimates the potential number of small businesses that may be directly regulated by this rule, and the impact (incremental costs) per small entity for a given activity type. Specifically, based on an examination of the North American Industry Classification System (NAICS), this analysis classifies the economic activities potentially directly regulated by this action into industry sectors and provides an estimate of their number in each sector, based on the applicable NAICS codes. A summary of the FRFA follows.

A description of the action (*i.e.,* designation of critical habitat), why it is being considered, and its legal basis are included in the preamble of this final rule. This action does not impose new recordkeeping or reporting requirements on small entities. The analysis did not reveal any Federal rules that duplicate, overlap, or conflict with this action. Existing Federal laws and regulations overlap with this rule only to the extent that they provide protection to natural resources within the area designated as critical habitat generally. However, no existing regulations specifically prohibit destruction or adverse modification of critical habitat for the Arctic ringed seal.

This critical habitat designation rule does not directly apply to any particular entity, small or large. The regulatory mechanism through which critical habitat protections are enforced is section 7 of the ESA, which directly regulates only those activities carried out, funded, or permitted by a Federal agency. By definition, Federal agencies are not considered small entities, although the activities they fund or permit may be proposed or carried out by small entities. In some cases, small entities may participate as third parties (*e.g.,* permittees, applicants, grantees) during ESA section 7 consultations (the primary parties being the Federal action agency and NMFS) and thus they may be indirectly affected by the critical habitat designation.

Based on the best information currently available, the Federal actions projected to occur within the timeframe of the analysis (*i.e.,* the next 10 years) that may trigger an ESA section 7 consultation due to the potential to affect one or more of the essential habitat features also have the potential to affect Arctic ringed seals. Thus, as discussed above, we expect that none of

the activities we identified would trigger a consultation solely on the basis of this critical habitat designation; in addition, we have no information to suggest that additional requests for project modifications are likely to result specifically from this designation of critical habitat. Therefore, the direct incremental costs of this critical habitat designation are expected to be limited to the additional administrative costs of considering Arctic ringed seal critical habitat in future section 7 consultations that would occur regardless, based on the listing of Arctic ringed seals.

As detailed in the Final Impact Analysis Report, the oil and gas exploration, development, and production industries participate in activities that are likely to require consideration of critical habitat in ESA section 7 consultations. The Small Business Administration size standards used to define small businesses in these cases are: (1) An average of no more than 1,250 employees (crude petroleum and natural gas extraction industry); or (2) average annual receipts of no more than $41.5 million (support activities for oil and gas operations industry). Only two of the parties identified in the oil and gas category appear to qualify as small businesses based on these criteria. Based on past ESA section 7 consultations, the additional third-party administrative costs in future consultations involving Arctic ringed seal critical habitat over the next 10 years are expected to be borne principally by large oil and gas operations. The estimated range of annual third-party costs over this 10 year period is $29,900 to $54,900 (discounted at 7 percent), virtually all of which is expected to be associated with oil and gas activities. It is possible that a limited portion of these administrative costs may be borne by small entities (based on past consultations, an estimated maximum of two entities). Two government jurisdictions with ports appear to qualify as small government jurisdictions (serving populations of fewer than 50,000). The total third-party costs that may be borne by these small government jurisdictions over 10 years are estimated to be less than $1,000 (discounted at 7 percent) for the additional administrative effort to consider Arctic ringed seal critical habitat as part of a future ESA section 7 consultation involving one port. In addition, the analysis anticipates three section 7 consultations on coastal construction activities over 10 years that may include third parties. It is not known whether the third parties are likely to be large or small entities. The total administrative costs associated with these three consultations that may be borne by third parties over 10 years are estimated to be $2,000 (discounted at 7 percent).

As required by the RFA (as amended by the SBREFA), we considered alternatives to the proposed critical habitat designation for the Arctic ringed seal. We considered and rejected the alternative of designating as critical habitat the entire specific area that contains at least one identified essential feature (*i.e.,* no areas excluded), because the alternative does not allow the agency to take into account circumstances in which the benefits of exclusion for national security impacts outweigh the benefits of critical habitat designation. However, through the ESA 4(b)(2) exclusion analysis process, we identified and selected an alternative under which a particular area is excluded from designation based on national security impacts after determining that the benefits of exclusion outweigh the conservation benefits to the species. We selected this alternative because it results in a critical habitat designation that provides for the conservation of the species and is consistent with the ESA and joint NMFS and USFWS regulations concerning critical habitat at 50 CFR part 424 while potentially reducing national security impacts. Based on the best information currently available, we concluded that this alternative would result in minimal impacts to small entities and the economic impacts associated with the critical habitat designation would be modest.

Paperwork Reduction Act

This final rule does not contain a collection-of-information requirement for the purposes of the Paperwork Reduction Act.

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

This rule will not produce a Federal mandate.

Information Quality Act and Peer Review

The data and analyses supporting this action have undergone a pre-dissemination review and have been determined to be in compliance with applicable information quality guidelines implementing the Information Quality Act (Section 515 of Pub. L. 106–554).

On December 16, 2004, the OMB issued its Final Information Quality Bulletin for Peer Review (Bulletin) establishing minimum peer review standards, a transparent process for public disclosure of peer review planning, and opportunities for public participation. The Bulletin was published in the **Federal Register** on January 14, 2005 (70 FR 2664). The primary purpose of the Bulletin, which was implemented under the Information Quality Act, is to improve the quality and credibility of scientific information disseminated by the Federal government by requiring peer review of ''influential scientific information'' and ''highly influential scientific information'' prior to public dissemination. Influential scientific information is defined as information the agency reasonably can determine will have or does have a clear and substantial impact on important public policies or private sector decisions. The Bulletin provides agencies broad discretion in determining the appropriate process and level of peer review. Stricter standards were established for the peer review of ''highly influential scientific assessments,'' defined as information whose dissemination could have a potential impact of more than $500 million in any one year on either the public or private sector or that the information is novel, controversial, or precedent-setting, or has significant interagency interest.

The evaluation of critical habitat presented in this final rule and the information presented in the supporting Final Impact Analysis Report are considered influential scientific information subject to peer review. To satisfy our requirements under the OMB Bulletin, we obtained independent peer review of the critical habitat analysis contained in our 2014 proposed rule (79 FR 73010, December 9, 2014) from five reviewers, and of the information used to prepare the associated draft impact analysis report from three reviewers. We reviewed the comments received from these reviewers for substantive issues and new information regarding critical habitat for the Arctic ringed seal, and we used this information as applicable in the development of the 2021 revised proposed rule (86 FR 1452, January 8, 2021) and the associated Draft Impact Analysis Report. We obtained three additional independent peer reviews of our evaluation of available data, and our use and interpretation of this information, in making conclusions regarding what areas meet the definition of critical habitat in the revised proposed rule, and three independent peer reviews of the Draft Impact Analysis Report for the revised proposed rule. The peer reviewer comments are addressed in this final rule and in the Final Impact Analysis

Report, and were compiled into two reports that are available at: *www.noaa.gov/organization/information-technology/peer-review-plans.*

Executive Order 13175, Consultation and Coordination With Indian Tribal Governments

The longstanding and distinctive relationship between the Federal and tribal governments is defined by treaties, statutes, E.O.s, judicial decisions, and co-management agreements, which differentiate tribal governments from the other entities that deal with, or are affected by, the Federal Government. This relationship has given rise to a special Federal trust responsibility involving the legal responsibilities and obligations of the United States toward Indian tribes and the application of fiduciary standards of due care with respect to Indian lands, tribal trust resources, and the exercise of tribal rights. E.O. 13175 on Consultation and Coordination with Indian Tribal Governments outlines the responsibilities of the Federal Government in matters affecting tribal interests. Section 161 of Public Law 108–199 (188 Stat. 452), as amended by section 518 of Public Law 108–447 (118 Stat. 3267), directs all Federal agencies to consult with Alaska Native corporations on the same basis as Indian tribes under E.O. 13175.

As the entire critical habitat area is located seaward of the 3-m isobath, no tribal-owned lands overlap with the designation. Although this designation overlaps with areas used by Alaska Natives for subsistence, cultural, and other purposes, no restrictions on subsistence hunting are associated with the critical habitat designation. We coordinate with Alaska Native hunters regarding management issues related to Arctic ringed seals through the Ice Seal Committee, a co-management organization under section 119 of the MMPA. We discussed the designation of critical habitat for Arctic ringed seals with the Ice Seal Committee and provided updates regarding the timeline for publication of this rule. We also contacted potentially affected tribes and Alaska Native corporations by mail and offered them the opportunity to consult on the revised proposed designation of critical habitat for the Arctic ringed seal and discuss any concerns they may have. We did not receive any requests from potentially affected tribes or Alaska Native corporations in response to the revised proposed rule.

Executive Order 12898, Environmental Justice

The designation of critical habitat is not expected to have a disproportionately high effect on minority populations or low-income populations.

Executive Order 12630, Takings

Under E.O. 12630, Federal agencies must consider the effects of their actions on constitutionally protected private property rights and avoid unnecessary takings of property. A taking of property includes actions that result in physical invasion or occupancy of private property, and regulations imposed on private property that substantially affect its value or use. In accordance with E.O. 12630, this rule does not have significant takings implications. The designation of critical habitat directly affects only Federal agency actions (*i.e.,* those actions authorized, funded, or carried out by Federal agencies). Further, no areas of private property exist within the critical habitat and hence none would be affected by this action. Therefore, a takings implication assessment is not required.

Executive Order 12866, Regulatory Planning and Review

OMB has determined that this rule is significant for purposes of E.O. 12866 review. A Final Impact Analysis Report has been prepared that considers the economic costs and benefits of this critical habitat designation and alternatives to this rulemaking as required under E.O. 12866. To review this report, see the **ADDRESSES** section above.

Based on the Final Impact Analysis Report, the total estimated present value of the incremental impacts of the critical habitat designation is approximately $714,000 over the next 10 years (discounted at 7 percent) for an annualized cost of $95,000. Overall, economic impacts are expected to be small and Federal agencies are anticipated to bear at least 42 percent of these costs. While there are expected beneficial economic impacts of designating critical habitat for the Arctic ringed seal, there are insufficient data available to monetize those impacts (see *Benefits of Designation* section).

Executive Order 13132, Federalism

E.O. 13132 requires agencies to take into account any federalism impacts of regulations under development. It includes specific consultation directives for situations in which a regulation may preempt state law or impose substantial direct compliance costs on state and local governments (unless required by statute). Pursuant to E.O. 13132, we determined that this rule does not have significant federalism effects and that a federalism assessment is not required. The designation of critical habitat directly affects only the responsibilities of Federal agencies. As a result, this rule does not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in the Order. State or local governments may be indirectly affected by this critical habitat designation if they require Federal funds or formal approval or authorization from a Federal agency as a prerequisite to conducting an action. In these cases, the State or local government agency may participate in the ESA section 7 consultation as a third party. One of the key conclusions of the economic impact analysis is that the incremental impacts of the critical habitat designation will likely be limited to additional administrative costs to NMFS, Federal agencies, and to third parties stemming from the need to consider impacts to critical habitat as part of the forecasted section 7 consultations. The designation of critical habitat is not expected to have substantial indirect impacts on State or local governments.

Executive Order 13211, Energy Supply, Distribution, and Use

E.O. 13211 requires agencies to prepare Statements of Energy Effects when undertaking a significant energy action. Under E.O. 13211, a significant energy action means any action by an agency that is expected to lead to the promulgation of a final rule or regulation that is a significant regulatory action under E.O. 12866 and is likely to have a significant adverse effect on the supply, distribution, or use of energy. We have considered the potential impacts of this critical habitat designation on the supply, distribution, or use of energy (see Final Impact Analysis Report for this rule). This critical habitat designation overlaps with five BOEM planning areas for Outer Continental Shelf oil and gas leasing; however, the Beaufort and Chukchi Sea planning areas are the only areas with existing or planned leases.

Currently, the majority of oil and gas production occurs on land adjacent to the Beaufort Sea and the critical habitat area. Any proposed offshore oil and gas projects would likely undergo an ESA section 7 consultation to ensure that the project would not likely destroy or adversely modify designated critical habitat. However, as discussed in the

Final Impact Analysis Report for this rule, such consultations will not result in any new and significant effects on energy supply, distribution, or use. ESA section 7 consultations have occurred for numerous oil and gas projects within the area of the critical habitat designation (*e.g.,* regarding possible effects on endangered bowhead whales, a species without designated critical habitat) without adversely affecting energy supply, distribution, or use, and we would expect the same relative to critical habitat for Arctic ringed seals. We have, therefore, determined that the energy effects of this rule are unlikely to exceed the impact thresholds identified in E.O. 13211, and that this rulemaking is not a significant energy action.

List of Subjects

50 CFR Part 223

Endangered and threatened species.

50 CFR Part 226

Endangered and threatened species.

Dated: March 18, 2022.

Samuel D. Rauch III,

Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

For the reasons set out in the preamble, 50 CFR parts 223 and 226 are amended as follows:

PART 223—THREATENED MARINE AND ANADROMOUS SPECIES

■ 1. The authority citation for part 223 continues to read as follows:

Authority: 16 U.S.C. 1531 1543; subpart B, § 223.201–202 also issued under 16 U.S.C. 1361 *et seq.;* 16 U.S.C. 5503(d) for § 223.206(d)(9).

■ 2. In § 223.102, in the table in paragraph (e), under Marine Mammals, revise the entry for ''Seal, ringed (Arctic subspecies)'' to read as follows:

§ 223.102 Enumeration of threatened marine and anadromous species.

* * * * *

(e) * * *

Species [1]			Citation(s) for listing determination(s)	Critical habitat	ESA rules
Common name	Scientific name	Description of listed entity			
MARINE MAMMALS					
*	*	*	*	*	*
Seal, ringed (Arctic subspecies).	*Phoca (=Pusa) hispida hispida.*	Entire subspecies	77 FR 76706, Dec. 28, 2012.	226.228	NA
*	*	*	*	*	*

[1] Species includes taxonomic species, subspecies, distinct population segments (DPSs) (for a policy statement, see 61 FR 4722; February 7, 1996), and evolutionarily significant units (ESUs) (for a policy statement, see 56 FR 58612; November 20, 1991).

* * * * *

PART 226—DESIGNATED CRITICAL HABITAT

■ 3. The authority citation for part 226 continues to read as follows:

Authority: 16 U.S.C. 1533.

■ 4. Add § 226.228 to read as follows:

§ 226.228 Critical Habitat for the Arctic Subspecies (*Pusa hispida hispida*) of the Ringed Seal.

Critical habitat is designated for the Arctic subspecies of the ringed seal as described in this section. The map and textual descriptions in this section are the definitive source for determining the critical habitat boundaries.

(a) *Critical habitat boundaries.* Critical habitat for the Arctic subspecies of the ringed seal includes marine waters within one specific area in the Bering, Chukchi, and Beaufort seas, extending from the nearshore boundary, defined by the 3-m isobath relative to mean lower low water (MLLW), to an offshore limit within the U.S. Exclusive Economic Zone (EEZ). The boundary extends offshore from the northern limit of the United States-Canada border approximately 90 km to 70°26′19″ N/140°11′21″ W, and from this point runs generally westward along the line connecting the following points: 70°55′35″ N/142°33′51″ W, 70°53′25″ N/144°37′19″ W, 71°1′22″ N/146°36′55″ W, 71°17′21″ N/148°34′58″ W, and 71°20′8″ N/150° W. From this point (71°20′8″ N/150° W) the boundary follows longitude 150° W northward to 72°20′4″ N/150° W, then extends westward to 72°20′4″ N/153° W, then follows longitude 153° W northward to the seaward limit of the U.S. EEZ, and then follows the limit of the U.S. EEZ northwestward; then southwestward and south to the intersection of the southern boundary of the critical habitat in the Bering Sea at 61°18′15″ N/177°45′56″ W. The southern boundary extends southeastward from this intersection point to 60°7″ N/172°1″ W, then northeastward along a line extending to near Cape Romanzof at 61°48′42″ N/166°6′5″ W, with the nearshore boundary defined by the 3-m isobath. This includes waters off the coasts of the Kusilvak, and Nome Census Areas, and the Northwest Arctic and North Slope Boroughs, Alaska. Critical habitat does not include permanent manmade structures such as boat ramps, docks, and pilings that were in existence within the legal boundaries as of May 2, 2022.

(b) *Essential features.* The essential features for the conservation of the Arctic subspecies of the ringed seal are:

(1) Snow-covered sea ice habitat suitable for the formation and maintenance of subnivean birth lairs used for sheltering pups during whelping and nursing, which is defined as waters 3 m or more in depth (relative to MLLW) containing areas of seasonal landfast (shorefast) ice or dense, stable pack ice, that have undergone deformation and contain snowdrifts of sufficient depth to form and maintain birth lairs (typically at least 54 cm deep).

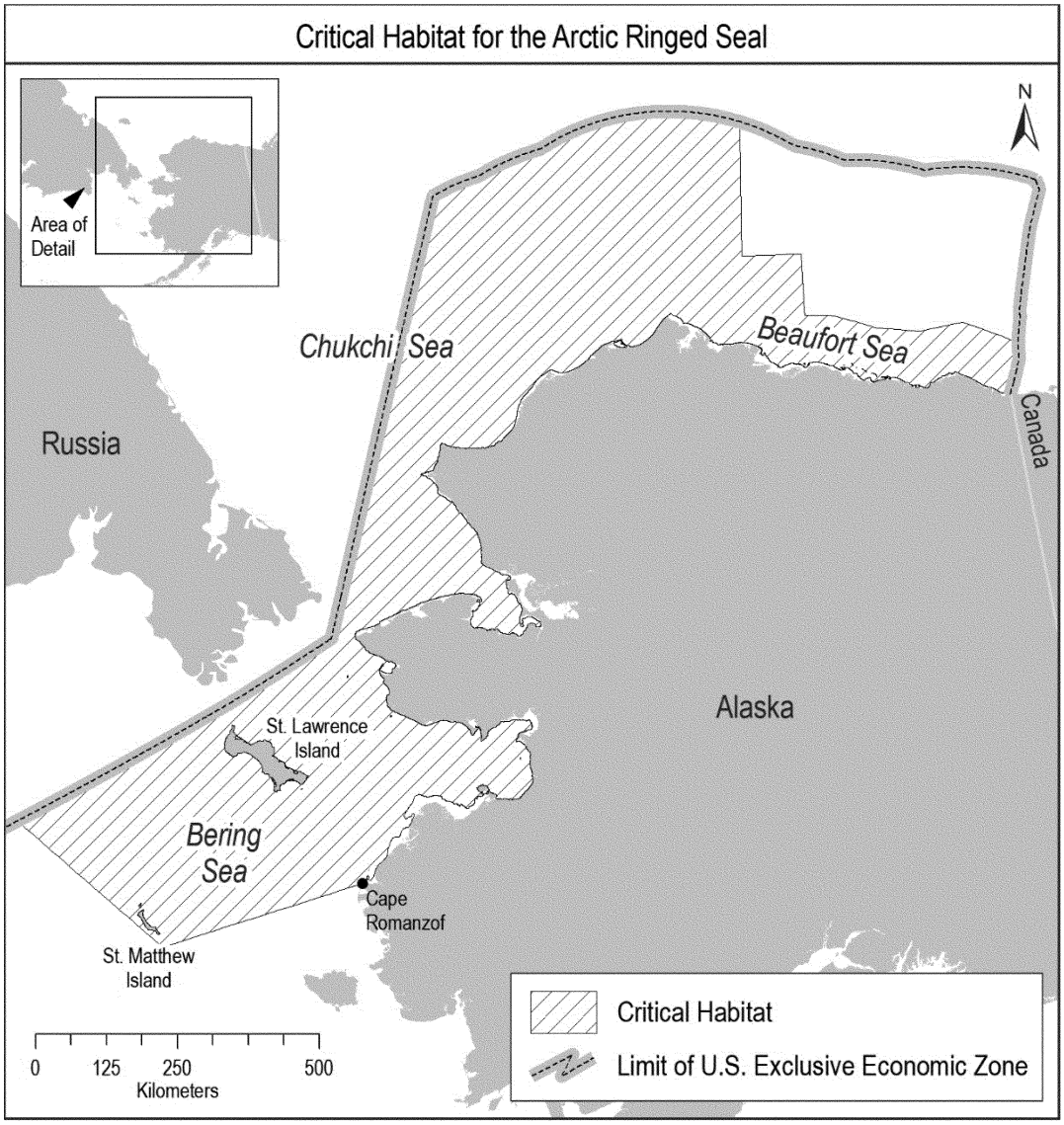
(2) Sea ice habitat suitable as a platform for basking and molting, which is defined as areas containing sea ice of 15 percent or more concentration in waters 3 m or more in depth (relative to MLLW).

(3) Primary prey resources to support Arctic ringed seals, which are defined to be small, often schooling, fishes, in particular, Arctic cod (*Boreogadus saida*), saffron cod (*Eleginus gracilis*), and rainbow smelt (*Osmerus dentex*); and small crustaceans, in particular, shrimps and amphipods.

(c) *Map of Arctic ringed seal critical habitat* follows.

Figure 1 to paragraph (c)

Figure 1 to paragraph (c)



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