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Federally Recognized Species: Threatened, Endangered, Proposed and Candidate Species Resource Assessment

Tongass National Forest Plan Revision

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Cover Photo: Humpback Whale and calf. Hannes Klostermann, HK-Underwater.com.

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Forest Service, Alaska Region

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Introduction

This assessment report presents the federally listed threatened and endangered species, species proposed for Federal listing, and candidate species, together with the ecological conditions needed to support these species and status of ecological conditions in the plan area. The 2012 Planning Rule states that assessments must "identify and evaluate existing information relevant to the plan area" for threatened, endangered, proposed, and candidate species (36 CFR 219.6(b)(5)). Federally recognized species were included in the assessment if they occur within the action area as defined by the Endangered Species Act (ESA), including all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. We considered other species as well, such as other federally recognized whales and bees but these were determined not to occur within the action area. We also did not include the federally recognized sea turtles based on very low frequency and highly sporadic records of occurrence and on National Marine Fisheries Service (NMFS) recommendation not to add them to the ESA consultation species list at this time (email received 4/15/2025). The ESA consultation species list for the Tongass Forest Plan Revision was approved by the U.S. Fish and Wildlife Service (USFWS) and NMFS and will be revisited for subsequent approvals during the revision process as per ESA requirements.

Species evaluations include information regarding each species' occurrence, habitat status, and population status in the plan area and other appropriate scale(s), to the extent that these are known. Each species evaluation also considers drivers, threats, and stressors for that species or its habitat, and where possible, historic condition along with expected trends for that species or habitat. Not all species have the same kind or amount of information available, so not all species evaluations will appear the same in organization and content.

Resource Importance

The Tongass National Forest features a narrow mainland strip of steep, rugged mountains and icefields dominated by largely intact, pristine temperate rainforest, and over 1,000 offshore islands (USDA 2016). Together, the islands and mainland result in approximately 11,000 miles of meandering shoreline, with numerous bays and coves. A system of seaways separate the many islands and provides a protected waterway called the Inside Passage.

Federally recognized species that occur within the action area for the Tongass National Forest plan revision include the threatened Mexico distinct population segment (DPS) of the humpback whale; the endangered fin and sperm whales; the western DPS of the Steller sea lion and its designated critical habitat; the endangered short-tailed albatross; the candidate Gulf of Alaska Chinook salmon; and the proposed sunflower sea star (Table 1).

Table 1. Federally recognized species relevant to the Tongass. ESU = evolutionary significant unit. DPS = distinct population segment.

Class	Species	Scientific Name	ESU/DPS	ESA Status
Marine Mammal	Humpback Whale	*Megaptera novaeangliae*	Mexico	Threatened
Marine Mammal	Fin Whale	*Balaenoptera physalus*	NA	Endangered

Class	Species	Scientific Name	ESU/DPS	ESA Status
Marine Mammal	Sperm Whale	*Physeter microcephalus*	NA	Endangered
Marine Mammal	Steller Sea Lion	*Eumetopias jubatus*	Western	Endangered + Critical Habitat
Bird	Short-Tailed Albatross	*Phoebastria albatrus*	NA	Endangered
Fish	Chinook Salmon	*Oncorhynchus tshawytscha*	Gulf of Alaska	Candidate
Invertebrate	Sunflower Sea Star	*Pycnopodia helianthoides*	NA	Proposed

Marine waters in Southeast Alaska are characterized geologically by a narrow continental shelf and deep channels (Weingartner et al. 2009). Winds, freshwater runoff, tides, and cross-shelf exchange control the regional oceanography (Weingartner et al. 2009). This complex setting leads to heterogeneous physical processes and numerous and diverse marine biological habitats (Weingartner et al. 2009), generally in highly productive and functional conditions. Nearshore marine waters further benefit from the surrounding relatively pristine and largely undeveloped Tongass temperate rainforest, its freshwater inputs and productive ecosystems.

The Tongass supports important nearshore marine waters utilized by federally recognized species. These waters are important feeding habitat for all relevant federally recognized species, and breeding and resting habitat for the western DPS of the Steller sea lion and the sunflower sea star. There are approximately 1,200 acres of designated critical habitat for the endangered western DPS of the Steller sea lion within Tongass National Forest System lands above mean high water (Table 2, Figure 1), but note that this estimate of overlap is subject to change as our geospatial shoreline mapping improves.

Table 2. Steller Sea Lion designated critical habitat within or near the Tongass. Estimated area of overlap (acres) is approximate and subject to change as shoreline geospatial data improves. LUD = land use designation. NA = not applicable (site does not overlap with the Tongass).

Site	Tongass	LUD Category	Estimated Critical Habitat on the Tongass (acres)
Benjamin Island	No	NA	NA
Biali Rock	Yes	Wilderness	26
Biorka Island	Yes	Natural Setting	2
Cape Addington	Yes	Natural Setting	108
Cape Cross	Yes	Wilderness	303
Cape Fairweather	No	NA	NA
Cape Ommaney	Yes	Natural Setting	116
Coronation Island	Yes	Wilderness	53
Forrester Island	No	NA	NA
Gran Point	Yes	Natural Setting	297
Graves Rock	No	NA	NA
Hazy Islands	No	NA	NA

Site	Tongass	LUD Category	Estimated Critical Habitat on the Tongass (acres)
Lull Point	Yes	Natural Setting	244
Sunset Island	Yes	Natural Setting	44
Timbered Island	Yes	Wilderness	15
White Sisters	Yes	Wilderness	11
TOTAL	11 sites overlapping Tongass	All Tongass sites in Natural Setting or Wilderness	1219

Given the coastal nature of the Tongass, many authorized and permitted activities may indirectly involve marine transport or development and maintenance of shoreline and marine infrastructure and access facilities. There are several existing USFS and non-USFS log transfer facilities, USFS other marine access facilities, and USFS recreation buoys across Tongass shorelines and nearshore waters (Figure 2).

The Tongass also supports freshwater systems used by the Gulf of Alaska Chinook salmon (Figure 3). About 76% of around 890 stream miles known to support Chinook salmon within Southeast Alaska occur within or adjacent to Tongass National Forest System lands. Note that these reflect minimum presence, where Chinook have been observed and reported; other stream reaches that have not been surveyed may also be used by this species. These freshwater systems are generally in highly productive and functional condition, though some are affected by past and ongoing timber harvest, mineral extraction, and recreational uses and development including areas outside of Tongass NFS lands. In addition to the relatively pristine and undeveloped habitat base, factors favoring Alaskan salmon include salmon management policies within the State, the elimination of high-seas driftnet fisheries, enhancement by hatcheries, and generally favorable environmental conditions (Wertheimer 1997). Also see the Salmon assessment for additional details on resource importance and other information relevant to the Gulf of Alaska Chinook salmon.

Resource History and Current Management Direction

Resource History

Federal lands comprise about 95 percent of Southeast Alaska, with about 80 percent in the Tongass National Forest (and most of the rest in Glacier Bay National Park and Preserve). The remaining land is held in state, Native Corporation, and local community private ownerships.

Most of the area of the Tongass is wild and undeveloped. Approximately 74,000 people live in the towns, communities, and villages of Southeast Alaska, most of which are located on islands or along the mainland coasts (USDA 2016). The communities of Southeast Alaska depend on the Tongass National Forest ecosystem services, including employment in wood products, commercial fishing and fish processing, recreation, tourism, and mining and mineral development. Many residents also depend on subsistence hunting and fishing to meet their basic needs that are supported by Tongass NFS lands and interconnected streams and rivers.

Many ecosystem services and work on the Tongass involve marine transport via watercraft and floatplanes to access remote islands and communities. Commercial marine traffic is substantial in Southeast Alaska as well, and includes cruise ships, cargo ships, intra- and inter-state ferries, commercial and sport fishing vessels, tour boats, and tug boats and barges. In 2018, 644 different commercial vessels > 65 feet in length plus tugs with Automatic Identification System stations were recorded in Southeast

Alaska; an additional 473 were excluded that did not enter State waters within 3 miles of shoreline (Miller et al. 2019). Most of these were fishing vessels 65-150 feet in length. Together these 644 vessels travelled nearly 2.3 million miles in Southeast Alaska in 2018, with most miles (29 percent) by cruise ships (Miller et al. 2019). These vessels travelled into nearly every waterway in Southeast Alaska and especially the primary channels. This study did not report the numerous smaller watercraft used for commercial and recreational boating and marine transit needs in Southeast Alaska, especially focused around communities.

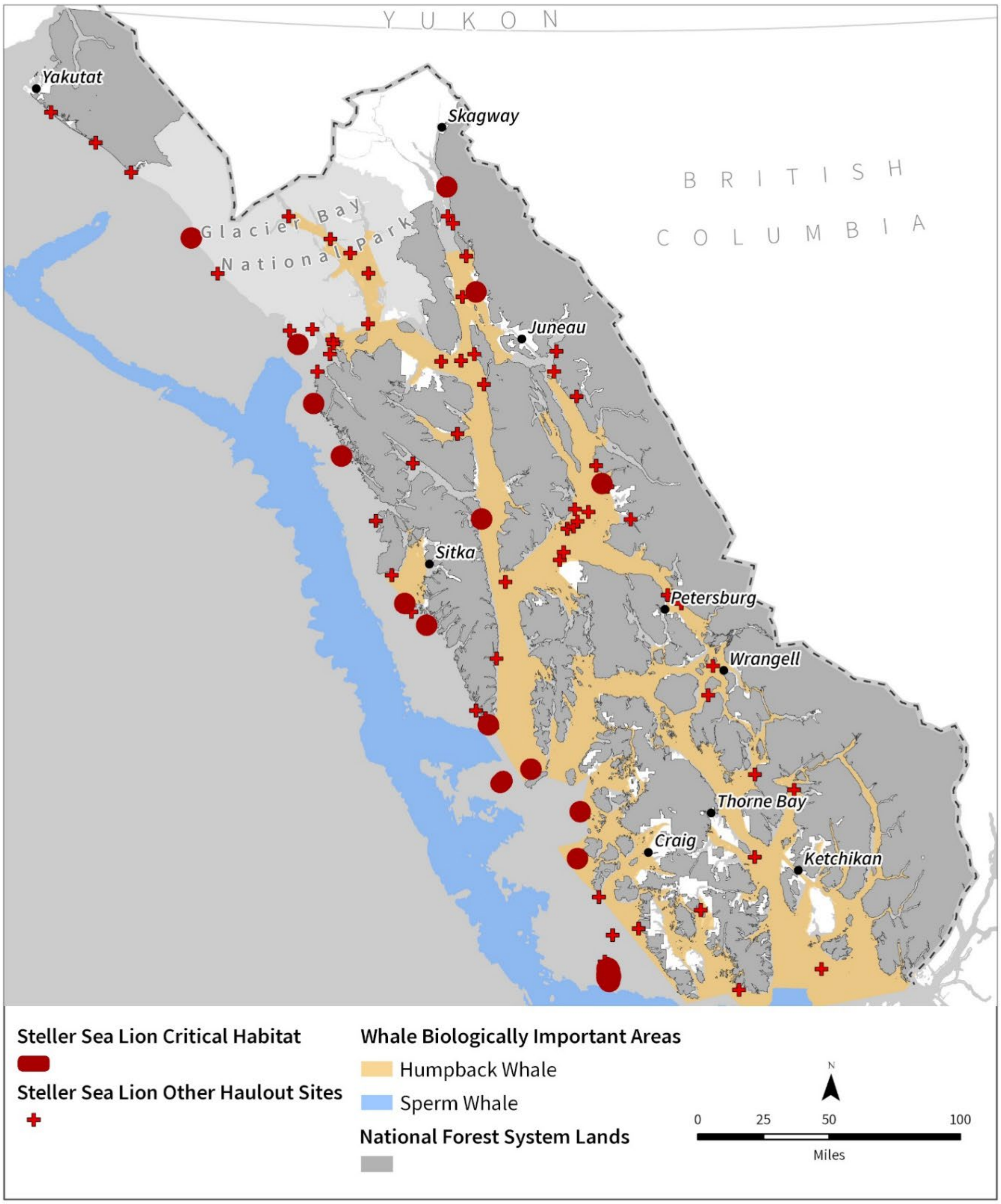

Figure 1. Steller Sea Lion designated critical habitat, other Steller Sea Lion haulout sites, and Humpback and Sperm Whale Biologically Important Areas within and near the Tongass.

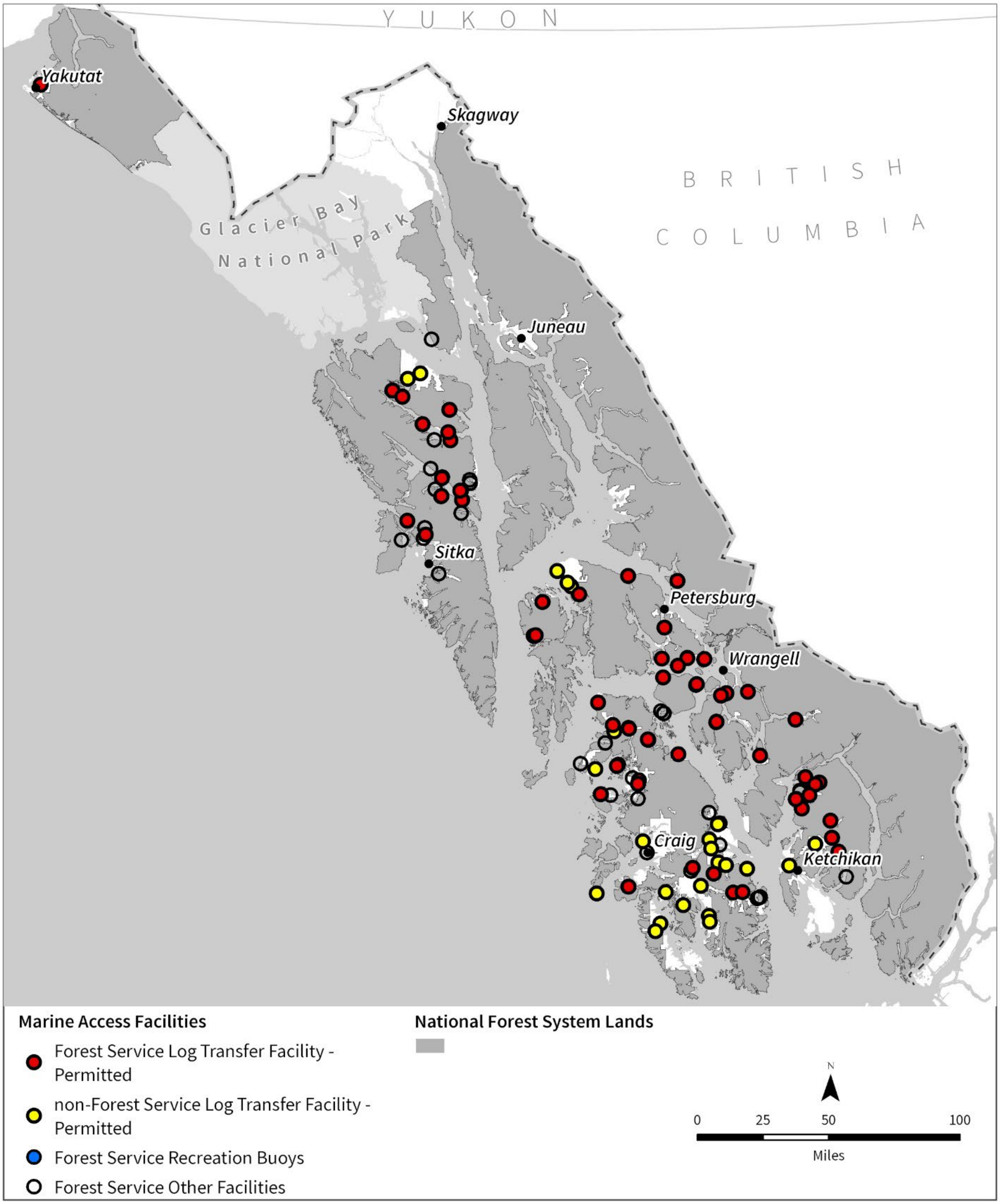

Figure 2. Existing marine access facilities across the Tongass, including USFS and non-USFS permitted log transfer facilities, USFS recreation buoys, and other USFS facilities.

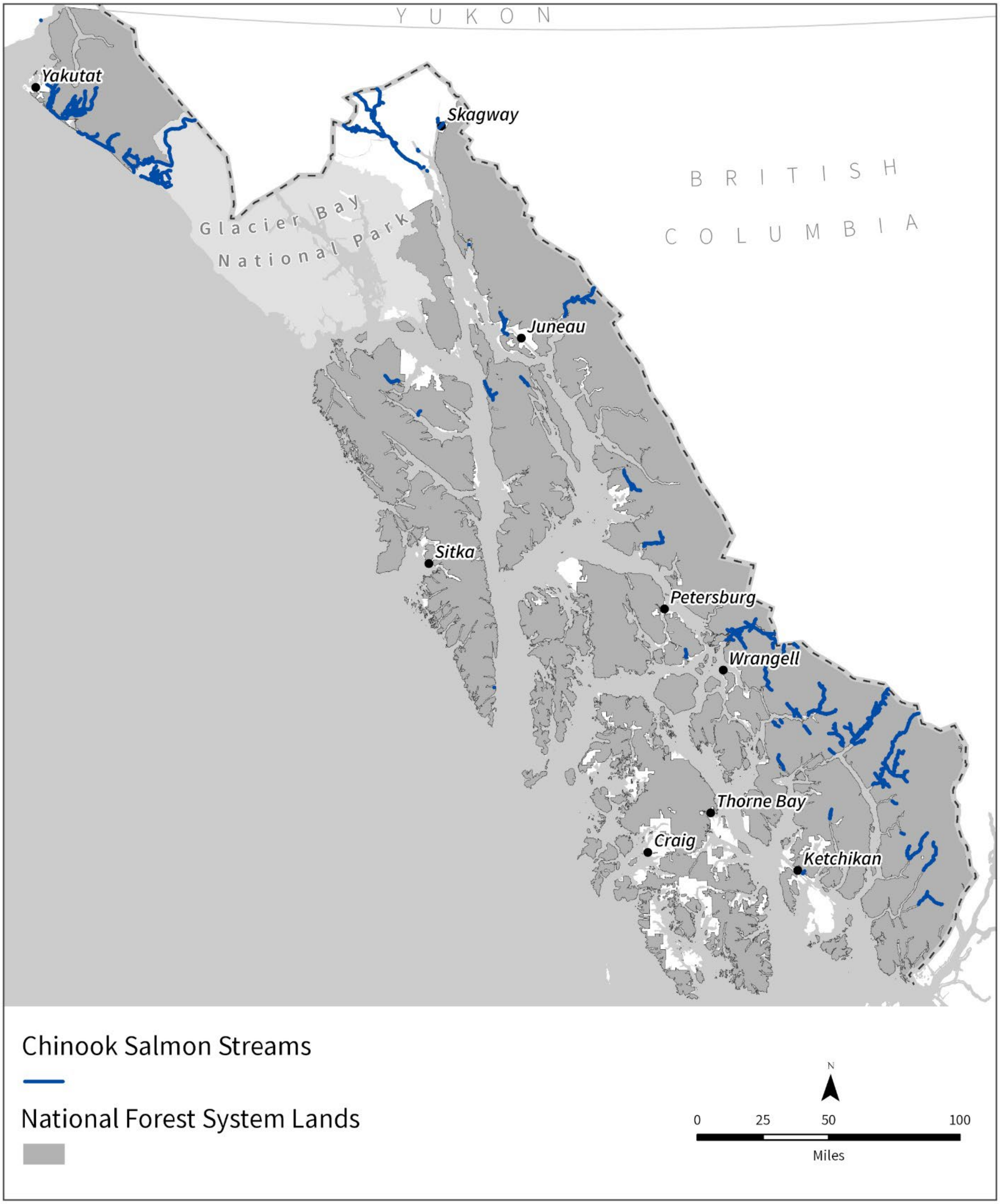

Figure 3. Southeast Alaskan freshwater streams and rivers with chinook salmon records. Data are from the Alaska Department of Fish and Game Anadromous Waters Catalog: https://www.adfg.alaska.gov/sf/SARR/AWC/index.cfm?ADFG=maps.dataFiles

Current Management Direction

Legal and Regulatory Compliance

Current Forest Plan direction includes standards and guidelines to help protect and maintain federally recognized marine mammal habitats consistent with the Marine Mammal Protection Act, Endangered Species Act, and National Marine Fisheries Service guidelines for approaching marine mammals. The level of indirect influence from Tongass authorized and approved activities on marine transit has not been quantified, but likely involves very minor contributions compared to other sources of marine traffic such as from public recreation, non-USFS-permitted cruise industry and other tourism, and commerce.

Freshwater systems within Tongass NFS lands are currently managed according to standards and guidelines and other plan components associated with riparian management areas and other land use designations as well as best management practices that minimize impacts of management activities to aquatic systems (see the Salmon assessment and USDA 2016 for more details). Minimum buffer protections on anadromous streams and tributaries are also mandated by the Tongass Timber Reform Act of 1990. Active aquatic and upland restoration programs on the Tongass supported by management direction additionally help to improve and restore function to freshwater systems that have been impacted by prior management activities, such as from roads and culverts and past timber harvest.

Scope and Scale of Assessment

For this assessment, federally recognized species relevant to the Tongass were evaluated in the context of categories directed and defined by the National Forest System Land Management Planning Final Rule and Record of Decision (hereafter 2012 Planning Rule), detailed in the Code of Federal Regulations (36 CFR 219 2012). The Forest Service Handbook provides specific, detailed direction called directives for implementing planning rules.

Most native species' needs would be covered under broader ecosystem plan components and are not specifically discussed or evaluated in detail. Rather, we focus on the condition, status, and trends for "at-risk species." Under the 2012 Planning Rule, at-risk species are defined as:

- Federally recognized threatened, endangered, proposed, and candidate species; and
- Species of Conservation Concern (SCC).

The 2012 Planning Rule requires the identification of SCC, which are "species, other than federally recognized threatened, endangered, proposed, or candidate species, that are known to occur in the plan area and for which the Regional Forester has determined that the best available scientific information indicates substantial concern about the species' capability to persist over the long- term in the plan area" (36 CFR 219.9 (c)). This topic is discussed in detail in the Species of Conservation Concern assessment. The directives also call for identifying information regarding fish, wildlife, and plant species that may be commonly enjoyed and used by the public for hunting, fishing, trapping, gathering, observing, or sustenance, and assessing the conditions and trends of these species and their habitats. These considerations are discussed in the Subsistence and Other Harvest assessment, focusing on the contributions of those species to social and economic sustainability and subsistence of rural communities in Southeast Alaska.

The 2012 Planning Rule recognizes that it may not be possible to maintain a viable population of some at-risk species within the plan area due to circumstances beyond the authority of the Forest Service or due to limitations in the inherent capability of the land. Examples might be migratory species where viability is primarily affected in other locations, climate-sensitive species affected by warming temperatures, or where the plan area has limited ecological capacity to provide sufficient habitat to sustain the species.

Status and Trends

Current Status of Habitat Conditions and Trends (for all federally recognized species)

The current condition of beach, estuary, and terrestrial marine habitats within and adjacent to the Tongass National Forest has been moderately degraded in localized areas, especially on lands of other ownership in cities and towns. Freshwater systems have also been degraded in some areas by past management. However, Tongass habitats and the vast majority of shoreline, marine, and freshwater habitats within Southeast Alaska remain intact, function properly, and continue to be productive for wildlife and fish. Common vegetation and habitat management activities include timber harvest, young-growth restoration projects, and aquatic organism passage and riparian restoration projects. There are also active, permitted mines in the area. Other actions or authorized activities are related to recreation, public use, maintenance, and monitoring. All of these activities may require marine transport, associated beach landings, and occasionally shoreline or marine infrastructure. As mentioned, impacts associated with FS marine transport as well as on freshwater systems are minimized by laws and current Forest Plan direction.

Humpback Whale

The humpback whale shown in Figure 3 was listed as endangered in 1970, first under the Endangered Species Conservation Act and subsequently under the Endangered Species Act (ESA) when it passed in 1973.

Figure 4. Humpback whale.

From the late 1800s through the early 1900s, humpback whales were extensively commercially hunted. Signs of recovery since the end of commercial whaling led NMFS in 2016 to conduct a global status review and publish a rule to change the status of humpback whales under the ESA. Under the final rule, the Mexico DPS (which includes a small portion of humpback whales found in Southeast Alaska) was delisted to threatened, and the Hawaii DPS (which includes most humpback whales found in Southeast Alaska) was removed from listing (81 FR 62260; September 8, 2016). Updated probability of occurrence data indicates individual humpback whales in Southeast Alaska have a 2% probability of being from the threatened Mexico DPS and a 98% probability of being from the recovered Hawaii DPS (Wade 2021, NMFS 2021). In the Gulf of Alaska, individual humpback whales have an 11% probability of being from the threatened Mexico DPS and an 89% probability of being from the recovered Hawaii DPS (Wade 2021, NMFS 2021). The endangered Western North Pacific DPS also has a chance of occurring off the coast of Yakutat (Wade 2021, NMFS 2021). There is evidence of mixing between the Mexico and Hawaii DPSs on their wintering grounds (Darling et al. 2022), and movement and genetics data suggest further population structure within the Mexico DPS (Martien et al. 2021).

Critical habitat was designated for the Mexico DPS in 2021, but none was identified within waters surrounding the Tongass**.** The humpback whale status review (Bettridge et al. 2015), the final 2016 rule revising the species-wide listing under the ESA (81 FR 62260, September 8, 2016), the recovery outline for the Mexico and other DPSs (NMFS 2022a) along with the original recovery plan (NMFS 1991), and information on the NMFS (2024): online species account, as well as other best available scientific information provide science on this species and a foundation for this species' assessment.

Distribution within the boundaries of the Tongass

The Mexico DPS spends winters along the Pacific coast of mainland Mexico and in the Revillagigedo Archipelago, transits along the coast of Baja California, and spends summers feeding throughout the North Pacific from California to the Kamchatka Peninsula in Russia (NMFS 2022a: Calambokidis et al. 2008, Titova et al. 2018, Wade 2021). Humpback whales, including predominantly Hawaii DPS but also Mexico DPS individuals, are regularly sighted in the inside marine waters of Southeast Alaska, including shallow coastal areas around the Tongass. This species generally migrates long distances from tropical waters where they calve during the winter to cooler, northern coastal waters where they feed during the rest of the year. The highly productive fjords of Southeast Alaska are an important feeding area (Ferguson et al. 2015). Nearly all of the Inside Passage marine water channels surrounding the Tongass have been identified by NMFS as a humpback whale Biologically Important Area that supports concentrated feeding activities (Figure 1; Ferguson et al. 2015). Humpback whales are typically observed in nearshore waters of Southeast Alaska from approximately May through December, with peak numbers during summer and fall (Baker et al. 1986) and substantial numbers remaining through early winter, although individuals can be seen every month of the year (Straley 1990).

The local distribution of humpback whales in Southeast Alaska centers around feeding and prey, particularly herring (*Clupea harengus*) and krill (*euphausiids)*. Important local feeding areas include Glacier Bay and adjacent portions of Icy Strait, Stephens Passage/Frederick Sound, Seymour Canal and Sitka Sound. Glacier Bay and Icy Strait appear to be important in spring (Ferguson et al. 2015), when whales prey heavily on herring and other small, schooling fishes. Frederick Sound and all of the inside waters are important in summer, when whales feed on swarming euphausiids (Ferguson et al. 2015). During autumn and early winter, some humpbacks move out of the Sound to areas where herring are abundant, particularly Seymour Canal (Straley 1990).

Population status and trend

North Pacific humpback whale populations were estimated at approximately 15,000 individuals prior to commercial whaling overexploitation and subsequently declined to an estimated 1,200 by the end of commercial whaling (Teerlink et al. 2015). Populations have bounded back since then, and recent estimates range from 16,293 to 21,808 (CV=0.04; NMFS 2022a: Calambokidis et al. 2008; Barlow et al.

2011; Wade 2021), with annual growth rates estimated at 6.8 percent from 1966 to 2006 (NMFS 2022a: Calambokidis et al. 2008).

There is no current abundance estimate for the Mexico DPS, although an estimated 3,477 (CV=0.101) whales from the Mexico DPS feed off the U.S. West Coast (NMFS 2022a: Calambokidis and Barlow 2020, Curtis et al. 2022). In Southeast Alaska, where Hawaii and Mexico DPSs overlap, past population estimates were 300 in 1979-1983 (Baker et al. 1985), 547 in 1986 (95% CI 504-590; Baker et al. 1992), 404 in 1985-1992 (Straley et al. 1994), and 961 for northern Southeast Alaska in 2000 (95% CI 657-1076; Straley et al 2009). While the current population trend for the Mexico DPS is also unknown, Calambokidis and Barlow (2020) reported an approximate 8.2% annual growth rate from 1989-2018 for humpback whales off California and Oregon waters, where whales from the Mexico and Central America DPSs overlap (NMFS 2022a).

Abundance and calf production rates of humpback whales recently declined in Glacier Bay and Icy Strait in Southeast Alaska, presumably due to disruption of lower trophic level prey after a marine heatwave in the Gulf of Alaska in 2014-2016 (Neilson and Gabriele 2021). The marine heatwave caused dramatic changes in population dynamics and the Glacier Bay National Park and Preserve long-term dataset (1985-2020) indicated sharp declines in humpback whale survival and reproductive success coinciding with the marine heatwave (Neilson and Gabriele 2021, Gabriele et al. 2022). Evidence of a decline in the encounter rate of humpback whales and the number of calves in Prince William Sound (Arimitsu et al. 2021) indicates this decline likely occurred widely throughout the Gulf of Alaska. There is therefore considerable uncertainty about current actual population size and trends and it is unclear if the Mexico DPS is still increasing overall (Young et al. 2023).

Fin Whale

Fin whales, *Balaenoptera physalus*, have been listed as endangered since 1970 under the precursor to the ESA and have retained this status since the ESA was passed in 1973. Though this species was not initially targeted by commercial whalers due to its speed and open ocean habits, as whaling methods advanced, efforts turned to fin whales and decimated their populations. Critical habitat has not been designated for fin whales. The original ESA listing (35 FR 8491; June 2, 1970), the recovery plan (NMFS 2010a), the fin whale Northeast Pacific stock assessment (Muto et al. 2021a), information on the NMFS (2023a): online species account, as well as other best available scientific information provide science on this species and a foundation for this species' assessment.

Distribution within the boundaries of the Tongass

Fin whales are typically found in deep, offshore waters (NMFS 2023a). They occur year-round in a wide range of locations, but the density of individuals in any one area changes seasonally (NMFS 2023a). Most migrate from the Arctic (or Antarctic) feeding areas in the summer to tropical breeding and calving areas in the winter, though the location of winter breeding grounds is not known. Fin whales tend to travel in the open seas, away from the coast (NMFS 2023a). In Alaska, fin whales are typically found in offshore marine waters of the Bering Sea, Chukchi Sea, Cook Inlet, Aleutian Islands, Gulf of Alaska and Southeast Alaska in proximity to the open ocean. There have been two sightings in lower Clarence Strait (Dahlheim et al. 2009) and they only rarely occur in the Inside Passage. They have been sighted off the coast of Prince of Wales Island, Coronation Island, Sitka Sound, Yakutat, and Chatham Strait.

Population status and trend

Fin whales are divided into four stocks for management purposes, the Alaska (Northeast Pacific) being one of these (NMFS 2023a). Reliable, recent population estimates and trends are not available for the Northeast Pacific stock (NMFS 2023a). The best available estimate from 2013 indicates a minimum stock population estimate of 2,554 fin whales, but this is viewed as an underestimate (Muto et al. 2021a). Zerbini et al. (2006) estimated annual increase of a portion of the stock at 4.8 percent between 1987 and 2003, though caution is advised in interpreting this result due to uncertainties related to the initial population and population structure of fin whales in the area (Muto et al. 2021a).

Sperm Whale

Sperm whales were listed as endangered under the Endangered Species Conservation Act in 1970 (35 Federal Register 233: 18319) and have been listed under the ESA since it became law in 1973. Sperm whales were a primary target of the commercial whaling industry from 1800 to 1987, which nearly decimated all sperm whale populations. While whaling is no longer a major threat, sperm whale populations are still recovering. The original ESA listing (35 FR 8491; June 2, 1970), the recovery plan (NMFS 2010b), the fin whale Northeast Pacific stock assessment (Muto et al. 2021b), and information on the NMFS (2023b): online species account, as well as other best available scientific information provide science on this species and a foundation for this species' assessment.

Distribution within the boundaries of the Tongass

In general, sperm whales are considered deep water species (NMFS 2010b), and routinely hunt at depths of 2,000 feet (NMFS 2023b). Acoustic surveys, from fixed autonomous hydrophones, detected the presence of sperm whales year-round in the Gulf of Alaska, though they appear to be approximately two times as common in summer than in winter (Mellinger et al. 2004, Muto et al. 2021b). This seasonality of detections is consistent with the hypothesis that sperm whales generally move to higher latitudes in summer and to lower latitudes in winter (Muto et al. 2021b). NMFS identified a Biologically Important Area for sperm whales in the Gulf of Alaska, off the coast of the Tongass (Figure 1). Sperm whales have also been documented using the inside waters of Southeast Alaska. The Southeast Alaska Sperm Whale Avoidance Project (Straley et al. 2015) tracked the movement of several individuals into inside marine waters surrounding the Tongass. The study showed several tagged whales migrating through Chatham Strait as far north as the Lynn Canal with one individual moving through Icy Strait. In 2019 a dead sperm whale washed up on the east side of Lynn Canal, north of Berners Bay near Juneau showing evidence consistent with a ship strike (NOAA 2019).

Population status and trend

Current and historical abundance estimates and associated population trends of sperm whales in the North Pacific are based on limited data and are considered unreliable (Muto et al. 2021b). Sperm whale numbers were heavily depleted by commercial whaling and populations are still recovering and likely increasing. North Pacific stock abundance for sperm whales prior to exploitation is believed to have been around 1,260,000 and reduced to around 930,000 by the late 1970s (no confidence intervals available; Allen and Angliss 2015, Muto et al. 2021b). Estimates for a large area of the eastern temperate North Pacific were produced from line-transect and acoustic survey data by Barlow and Taylor (2005); the acoustic data produced an estimate of 32,100 sperm whales (coefficient of variation (CV) = 0.36; Muto et al. 2021b). From surveys in the Gulf of Alaska in 2009 and 2015, Rone et al. (2017) estimated 129 (CV = 0.44) and 345 sperm whales (CV = 0.43) in each year, respectively (Muto et al. 2021b). Again, caution in interpreting these data is warranted (Muto et al. 2021b).

Steller Sea Lion

Steller sea lions (Figure 4) were listed as threatened under the ESA in 1990 due to unexplained widespread population declines (55 FR 49204). In 1997 NMFS reclassified the population into two distinct population segments; the threatened eastern DPS which inhabits waters east of 144 °W longitude (a line near Cape Suckling, AK) through Southeast Alaska, British Columbia, down to California and the endangered western DPS, which includes all Steller sea lions originating from rookeries west of this line into the Aleutians, Pacific Rim, and Japan (62 FR 24345; 62 FR 30772). The eastern DPS has recovered and was delisted in 2013 (78 FR 66139), but the western DPS remains listed as endangered.

Figure 5. Stellar Sea Lion.

Distribution within the boundaries of the Tongass

Jemison et al. (2013) found that there is regular movement of western DPS Steller sea lions across the 144° W longitude boundary. Most of the cross-boundary movements are temporary with individuals returning to their natal area for breeding, but some females from the western DPS have likely emigrated permanently and have given birth to pups at White Sisters and Graves Rocks rookeries. Most confirmed sightings of western DPS animals have been in northern areas of Southeast Alaska, especially north of Frederick Sound (Jemison et al. 2013). Several confirmed sightings have been recorded at haulouts in Frederick Sound; and there are a few confirmed observations of western DPS animals south of a line from Hazy Island, through Sumner Strait, to the northern tip of Wrangell Island (NMFS 2013).

Sea lions obtain their diet exclusively from the marine environment but depend on terrestrial environments for rookeries (birthing areas) and haulouts (non-birthing resting and loafing areas). Haulouts and rookeries tend to be preferentially located on exposed rocky shoreline and wave-cut platforms (Ban 2005). Some rookeries and haulouts are also located on gravel beaches. Terrestrial sites tend to be associated with marine waters that are relatively shallow and well-mixed, with average tidal speeds and gradual bottom slopes (Ban 2005). Rookeries are nearly exclusively located on offshore islands and reefs. Sites used as rookeries in the breeding season may also be used as haulouts during other times of year. Some haulouts are used year-round while others only on a seasonal basis (NMFS 2008). When not on land, Steller sea lions are seen near shore and out to the edge of the continental shelf and beyond.

Population status and trend

The western DPS declined by over 70 percent between the mid 1970s and 1990 and another 40 percent between 1990 and 2000 (NMFS 2008). Then, between 2000 and 2004 there was a 12% increase in numbers of non-pups counted in the Alaskan range of the western DPS (NMFS 2008), the first increase observed during more than two decades of systematic surveys. The observed increase, however, was not evenly spread among all regions of Alaska. Increases were noted in the eastern and western Gulf of Alaska and in the eastern and central Aleutian Islands, while the decline persisted through 2004 in the central Gulf of Alaska and the western Aleutian Islands (NMFS 2008). Western DPS Steller sea lions increased in abundance between 2012 and 2015 in Alaska, continuing the trend that began in the early 2000s (Fritz et al. 2016).

Between 2015 and 2017, pup counts declined in the eastern (-33%) and central (-18%) Gulf of Alaska (Sweeney et al. 2017), likely due to changes in availability of prey associated with the marine heat wave from 2014 to 2016 (Bond et al. 2015, Peterson et al. 2016, von Biela et al. 2019, Arimitsu et al. 2021. In 2019, pup counts rebounded to 2015 levels, but non-pup counts in the eastern, central, and western Gulf of Alaska regions declined (Sweeney et al. 2019). The population currently appears to be relatively stable in the Gulf of Alaska (Young et al. 2023), though signs of recovery have slowed or ceased altogether in the western DPS, and in Southeast Alaska (mostly non-listed eastern DPS, but some western DPS in northern portions) appear to be declining in recent years (Sweeney et al. 2023).

Steller sea lion critical habitat

Critical habitat was designated in 1993, based on the location of terrestrial rookery and major haulout sites, spatial extent of foraging trips, and prey availability (58 CFR § 226.202 at 58 FR 45278, 1993; redesignated and amended in 1999 at 64 FR 14067). Steller sea lion critical habitat includes all designated major haulouts and rookeries, as well as terrestrial, aquatic, and air zones that extend 3,000 feet landward, seaward, and skyward, respectively, from each. NMFS has designated three rookeries and 11 major haulouts along Tongass shorelines (Table 2, Figure 1). In total approximately 1,200 acres of Steller sea lion critical habitat occur within the 3,000 feet terrestrial zone on Tongass lands above mean high water. Note that this estimate is approximate and subject to change as our shoreline geospatial mapping improves. In addition, there are two other major haulouts designated in southeast Alaska within the boundaries of Glacier Bay National Park at Graves Rock and Cape Fairweather.

The physical and biological features of Steller sea lion critical habitat support reproduction, foraging, rest, and refuge that are essential to the conservation of the Steller sea lion (64 FR 14067). Factors that influence the suitability of terrestrial sites include substrate, exposure to wind and waves, the extent and type of human activities and disturbance in the region, and proximity to prey resources (Mate 1973). The use of traditional rookery sites and the link of territorial males, postpartum females, and pups here, make them particularly vulnerable to harassment. In some cases, haulout sites can be completely abandoned after repeated disturbances (NMFS 2008).

The remote locations of most rookeries and haulouts help to reduce the frequency of harassment, but disturbance by air and watercraft continues to occur. Steller sea lions are vulnerable to harassment and disruption of essential life functions (e.g., breeding, pup care, and rest) at rookeries and haulouts throughout their range (NMFS 2008). In addition to boat and airplane traffic, other Tongass activities such as timber harvest, mineral extraction, and subsistence harvest in the vicinity of critical habitat may disrupt the essential life functions that occur there.

Short-Tailed Albatross

The short-tailed albatross (*Phoebastria (=Diomedea) albatrus*) was federally listed as endangered throughout its range, including the United States, on July 31, 2000 (65 FR 147:46643-46654). It had previously been listed in accordance with the Endangered Species Conservation Act of 1969 as endangered throughout its range except within the United States and its territorial waters.

Distribution within the boundaries of the Tongass

This species does not breed within or near the Tongass; the species nests on islands in Japan and Taiwan and more recently on Midway Island (USFWS 2014). Outside the breeding season, the species spends much of its time feeding in the Alaskan waters of the Bering Sea, Aleutian Islands, and Gulf of Alaska (USFWS 2008). This species occurs offshore in the Gulf of Alaska at incidental levels, especially during the spring (Heinl 2010). The marine regions preferred by short-tailed albatrosses for feeding are areas of upwelling and high productivity, such as continental shelf breaks (Piatt et al. 2006) where there are high squid concentrations (USFWS 2008). Juveniles are the only age group that forage near the Tongass (USFWS 2008), especially where the shelf break is close to shore. The shelf break comes close to the Alexander Archipelago and the Tongass along Chichagof and Baranof Islands (USFWS 2008).

Population status and trend

The short-tailed albatross was formerly the most abundant albatross in the North Pacific, numbering in the millions. Historical feather overexploitation decimated the species, resulting in near-extinction by the mid-20th century. Fisheries bycatch and threats to nesting islands from volcanic activity and potential development continue. Post-exploitation, this species is now increasing at between 5 and 9% per year from about 1,200 individuals in 2000, to 2,400 with 450-500 breeding pairs in 2008 (USFWS 2008), and to 4,354 in 2014 (USFWS 2014).

Gulf of Alaska Chinook Salmon

NMFS found that the Gulf of Alaska Chinook salmon (*Oncorhynchus tshawytscha*) may be warranted for listing as threatened or endangered on May 24, 2024 (89 FR 45815), after being petitioned. This was their 90-day finding and means that the petition, viewed in context of information readily available in their files, presents substantial scientific or commercial information indicating that the petition action may be warranted. However, conclusive information indicating the species may meet the ESA's requirements for listing is not required to make a positive 90-day finding. This finding initiates an in-depth status review (the 12-month review) to determine whether listing under the ESA is warranted. NMFS treats species with positive 90-day findings as candidate species, and therefore, the Gulf of Alaska Chinook salmon is treated as a candidate in this assessment.

Distribution within the boundaries of the Tongass

The petition encompasses all Chinook salmon populations that enter the marine environment of the Gulf of Alaska (89 FR 45915), which includes all Chinook salmon populations that use freshwater systems within Southeast Alaska and the Tongass (Figure 3). Chinook salmon spawn in a limited number of streams and rivers compared with other salmon species in Southeast Alaska (Armstrong and Hermans 2007). There are more than 85 identified stocks of Chinook in Southeast Alaska (Halupka et al 2000). The largest are the Taku, Stikine, and Alsek rivers that originate in Canada (Armstrong and Hermans 2007). The other mainland coast streams supporting populations are shorter (generally less than 31 miles) and less productive (Armstrong and Hermans 2007).

Population status and trend

Many of these over 85 identified stocks are small, with only the Taku, Stikine, and Alsek rivers receiving runs greater than 10,000 fish, and nine others receiving runs greater than 1,500 fish (Pahlke 2010). In addition to the Taku, Stikine, and Alsek major systems (with greater than 10,000 spawners), there are also medium systems (with between 1,500 and 10,000 spawners) including Andrew Creek and Blossom, Chickamin, Keta, Situk and Unuk rivers as well as minor systems (with fewer than 1,500 spawners) including systems such as the King Salmon River on Admiralty Island (Armstrong and Hermans 2007).

Annual returns of Chinook salmon into all systems in Southeast Alaska averaged 76,271 fish during 1991-1993 (Armstrong and Hermans 2007 citing unpublished data presented by Heard et al. 1995).

Though four small Chinook stocks in Southeast Alaska were thought to be extirpated based on anecdotal reports (Halupka et al. 2000), Chinook salmon spawning in Southeast Alaska in the 1960s through 1990s was largely increasing or stable (Mecum and Kissner 1989, Baker et al. 1996). Of 31 Chinook salmon spawning sites with enough data to be evaluated, 11 were increasing, 19 were stable, and 1 was declining (Baker et al. 1996).

Gulf of Alaska Chinook salmon populations across Alaska have declined over at least the past decade, resulting in fisheries closures and prolonged impacts to local communities (Jones et al. 2020). Starting in 2012, wild Chinook salmon returns began to fall short of Alaska Department of Fish and Game (ADF&G) goal ranges in multiple Southeast Alaska indicator systems, including the Unuk, King Salmon, and Chilkat Rivers (Tydingco et al 2024). This led the ADF&G to enact regionwide sport fishing retention of Chinook salmon in 2017 and the Alaska Board of Fisheries to adopt Stock of Management Concern status for the Chilkat, King Salmon, and Unuk River stocks in 2017, followed by action plans that specified management measures to reduce harvest of these 3 stocks in all fisheries in 2018 (Tydingco et al 2024). The inside waters of Southeast Alaska were subsequently closed to retention of sport-caught Chinook salmon between April 1 and June 14 from 2018 through 2024 (Tydingco et al 2024). Further, decreases in the size and age at maturity over the past few decades have been observed and these widespread phenotypic shifts are postulated to result in decreases in fecundity and population abundance (Lewis et al. 2015, Ohlberger et al. 2018).

Sunflower sea star

On August 18, 2021, the Center for Biological Diversity petitioned NMFS to list the sunflower sea star (*Pycnopodia helianthoides*) under the ESA, shown in Figure 5. NMFS determined that the proposed action may be warranted (86 FR 73230, December 27, 2021) and began a full status review to evaluate overall extinction risk for the species. NMFS determined that the sunflower sea star is likely to become an endangered species within the foreseeable future throughout its range and on March 16, 2023, published a proposed rule to list the sunflower sea star as a threatened species (88 FR 16212). NMFS did not propose at that time to designate critical habitat.

Figure 6. Sunflower sea star.

Distribution within the boundaries of the Tongass

The sunflower sea star is a large (up to 1 m in diameter), fast-moving (up to 160 cm/minute), many-armed (up to 24) echinoderm native to the west coast of North America (NMFS 2022b for paragraph). It occupies waters from the intertidal to at least 435 m deep but is most common at depths less than 25 m and rare in waters deeper than 120 m. Sunflower sea stars occur over a broad array of soft-, mixed-, and hard-bottom habitats from the Aleutian Islands, AK, to Baja California, Mexico, but are most abundant in waters off eastern Alaska and British Columbia. The sunflower sea star hunts a range of bivalves, gastropods, crustaceans, and other invertebrates using chemosensory stimuli and will dig for preferred prey in soft sediment. While generally solitary, they are also known to seasonally aggregate, perhaps for spawning purposes.

Population status and trend

Prior to 2013, the global abundance of sunflower sea star was estimated at several billion animals, but from 2013–2017 sea star wasting syndrome (SSWS) reached pandemic levels, killing an estimated 90 percent or more of the population (NMFS 2022b). Declines in the northern portion of its range were less pronounced than in the southern portion, but estimated mortality still exceeded 60 percent of the population (NMFS 2022b).

Stressors and Drivers

The primary marine stressors in the region include changes in climate trends, coastal development, floating marine debris, marine-based recreation, and recreational and commercial fishing. Effects from warming temperatures, increased carbon dioxide, and changing precipitation on the marine environment include increasing ocean temperatures, acidification, algal blooms and associated toxins, and noise as well as changes in ocean currents, hydrology, tidewater glaciers and sea ice, marine species distributions and food webs, and sea levels countered by isostatic rebound from glacial recession. These changes will be compounded for some species, especially the whales and sea lion, by increasing marine recreation and marine debris in the region. There are also habitat degradation and climatic stressors on freshwater systems.

Sources of habitat degradation occur primarily from marine-based recreation, tourism, and commerce, commercial and recreational fisheries, shoreline and marine infrastructure development, and global marine debris in marine systems and management activities, such as from past timber harvest, roads and culverts, mining, and hydropower projects in freshwater systems. Vessel traffic and associated underwater noise, disturbance at resting sites, potential for ship strikes of marine mammals, and other forms of habitat degradation is thought to have increased 10-fold in Southeast Alaska since the 1980s (Jansen et al. 2015).

Marine debris has also been increasing globally and regionally (National Marine Fisheries Service (NOAA 2016), along with associated entanglement risks (NOAA 2014). There is likely to be additional habitat degradation associated with increased temperatures, changes in precipitation and atmospheric carbon dioxide as detailed in the species' Population-level drivers and stressors sections below.

Humpback Whale

Population-level drivers and stressors

Humpback whales in Southeast Alaska today face threats from entanglement in fishing gear, vessel-based harassment, vessel strikes, underwater noise, competition with commercial fisheries, and impacts from ocean changes due to increasing temperatures, increased atmospheric carbon dioxide, and changing precipitation (NMFS 2024a). Because the humpback whale inhabits shallow coastal areas, it is increasingly exposed to human activity, making it more susceptible to most of these stressors. The ability of humpback whales to recover from threats is limited by a slow growth rate, long gestation periods, high maternal investment in offspring, and low fecundity (NMFS 2022a). Further, despite being a highly mobile species, humpback whales may be constrained by the high level of site fidelity they exhibit to both wintering and feeding areas (NMFS 2022a).

Humpback whales can become entangled by many different gear types, including moorings, traps, pots, or gillnets (NMFS 2024a). Once entangled, if they can move the gear, the whale may drag and swim with attached gear for long distances, ultimately resulting in fatigue, compromised feeding ability, or severe injury, which may lead to reduced reproductive success or even death (NMFS 2024a). There is evidence to suggest that most humpback whales experience entanglement over the course of their lives but are often able to shed the gear on their own (NMFS 2024a). Studies of characteristic wounds and scarring indicate that humpback whales in the region experience a high rate of interaction with fishing gear (20-71%; Neilson et al. 2009). However, the portion of whales that become entangled and do not survive is unknown.

Whale watching vessels, recreational boats, and other vessels may cause stress and behavioral changes in humpback whales, leading to vessel-based harassment, though regulations aimed at preventing and minimizing such impacts exist (50 CFR 224.103). Because humpback whales are often found close to shore and generally surface in an active state, they tend to be popular whale watching attractions. Humpback whales are the central attraction for the whale watching industry in Southeast Alaska.

Inadvertent vessel strikes can injure or kill humpback whales (NMFS 2024a). Humpback whales are vulnerable to vessel strikes throughout their range, but the risk is much higher in coastal areas with heavier ship traffic. Vessel size, speeds, and nighttime travel further influence lethality (Neilson et al. 2012, Webb and Gende 2015). Mean annual mortality due to vessel strikes between 2016 and 2020 was estimated at 1.75 whales in Southeast Alaska and 0.14 in the Gulf of Alaska (Young et al. 2023). Much of the vessel traffic is seasonal during summer months, though some occurs year-round (Neilson et al. 2012). There is also generally more vessel traffic in near shore areas putting near shore species like humpback whales at higher risk for collisions (Neilson et al. 2012). This and other vessel stressors are likely increasing along with increases in vessel traffic and a growing whale watching industry (NUKA 2012, Neilson et al. 2012, Jansen et al. 2015).

This population is likely exposed to moderate levels of underwater noise resulting from human activities, such as commercial and recreational vessel traffic and near-shore blasting or pile driving for shoreline infrastructure (NMFS 2024a). Overall population-level effects of exposure to underwater noise are not well established, but exposure is likely chronic in more heavily trafficked waters of Southeast Alaska. As vessel traffic and other activities are expected to increase, the importance of this stressor is expected to increase. Increasing ocean acidification is likely to further exacerbate underwater noise, as more acidic marine waters decrease sound absorption for frequencies less than or equal to 10 kHz (Hester et al. 2008). Projected acidity of mid-century marine waters are expected to be 40 percent less effective in absorbing sounds in these frequencies (Hester et al. 2008).

Recent work suggests that commercial fisheries of forage fish on the U.S. West Coast may negatively impact baleen whales by affecting a primary prey, though there is high uncertainty and many caveats (NMFS 2022a: Kaplan et al. 2013; Koehn et al. 2017). There is suspected interaction with the regulated herring fishery in Southeast Alaska, but impacts to humpback whales are uncertain (NMFS 2022a).

The impacts of changes to temperature and weather patterns on whales are largely unknown, but it is considered one of the largest threats facing high latitude regions where many humpback whales forage (NMFS 2024a). Changes are occurring from increasing ocean temperatures, acidification, algal blooms and associated toxins, and acidification effects on underwater noise as well as changes in ocean currents, hydrology, tidewater glaciers and sea ice, marine species distributions and food webs, and sea levels countered by isostatic rebound from glacial recession. Notably, a marine heatwave from 2014 to 2016 raised concerns about the indirect impacts of increased global tempeartures and future interactions between multiple threats (NMFS 2022a). The heatwave pushed some prey species, like anchovies, closer to shore (Santora et al. 2020). This subsequently shifted whale distribution and increased whale foraging in nearshore waters where there is more overlap with commercial and recreational fixed-gear fisheries, including that for Dungeness crab. At the same time, there was a change in fishing effort in central California due to a harmful algal bloom at the start of the Dungeness crab fishery season (Santora et al. 2020; Saez et al. 2021). The delay at the start of the Dungeness fishing season in the fall increased fishing effort in the spring, which coincided with the arrival of humpback whales (Saez et al. 2021). These factors resulted in increased exposure of humpback whales to fishing gear and caused significantly more entanglements in the region.

Further, in Southeast Alaska, the marine heatwave caused dramatic changes in population dynamics (Gabriele et al. 2022), including sharp declines in humpback whale survival and reproductive success. The main driver of these declines was thought to be changes to prey availability and quality, and subsequent food limitation. Any resulting changes in prey distribution could lead to changes in foraging behavior, nutritional stress, and diminished reproduction for humpback whales. Additionally, changing water temperature and currents could impact the timing of environmental cues important for navigation and migration.

Fin Whale

Population-level drivers and stressors

Although the main direct threat to fin whales was addressed by the International Whaling Commission moratorium on commercial whaling, several threats remain today. These include collisions with vessels, entanglement in fishing gear, effects of increasing anthropogenic noise in the ocean environment, and reduced prey abundance due to overfishing and/or increasing temperatures and changing precipitation patterns (Allen and Angliss 2015; Muto et al. 2021a, NMFS 2023a). Collisions with vessels is a major threat; fin whales are considered the most vulnerable species to ship strikes after North Atlantic Right Whales (NMFS 2023a). The projected increase in ship traffic in offshore and arctic waters arising from the opening of trans-polar shipping routes (as arctic sea ice continues to decline) will increase the risk of vessel strike and increase ambient noise and pollution (NMFS 2023a). Fin whales can also become entangled in fishing gear, either swimming off with the gear attached or becoming anchored (NMFS 2023a). Once entangled, whales may drag and swim with attached gear for long distances, ultimately resulting in fatigue, compromised feeding ability, or severe injury, which may lead to reduced reproductive success or death (NMFS 2023a). Underwater noise negatively affects whale populations, interrupting their normal behavior and driving them away from areas important to their survival. Increasing evidence suggests that exposure to intense underwater sound in some settings may cause some whales to strand and ultimately die (NMFS 2023a).

The impacts of warming temperatures on baleen whales may result from altered oceanographic conditions, as well as the timing and distribution of sea ice coverage (NMFS 2023a). Changes in prey distribution could lead to changes in foraging behavior, nutritional stress, and diminished reproduction for fin whales (NMFS 2023a). Fin whales experienced deleterious effects of a marine heat wave event along with other large whale species in 2015 and 2016 (Young et al. 2023). Additionally, changing water temperature and currents could impact the timing of environmental cues important for navigation and foraging (NMFS 2023a).

Sperm Whale

Population-level drivers and stressors

The sperm whale recovery plan (NMFS 2010) cites a number of potential threats to Pacific stocks but all of these threats are considered low or expected to have little effect on their recovery. Four of the most common threats cited for Alaska sperm whales are interactions with commercial fishing, whale watching, acoustic disturbance and ship strikes. Very little information is available for understanding the frequency of ship strikes but general consensus is that the threat is low (NMFS 2010). Neilson et al. (2012) found that out of the 89 defined whale strikes documented from 1978-2011 only one of those was a sperm whale and the fate of that whale is unknown. A minimum estimate of the mean annual mortality caused by ship strikes is 0.2 (Young et al. 2023). The level of effects on sperm whales from ship noise is not fully understood either but effects are expected to be like those described for humpback whales (NMFS 2010).

Steller Sea Lion

Population-level drivers and stressors

Threats to Steller sea lions include effects of fisheries on prey; sea level rise, temperature changes, ocean acidification, and harmful algal blooms; disease and parasites, potentially exacerbated by increasing temperatures and ocean acidification; toxic substances such as mercury, organochlorines, and others that bioaccumulate in top predators; human-caused injuries and mortality from active fishing gear, disturbance at terrestrial sites, entanglement in marine debris or fishing gear, illegal feeding, illegal shooting, and vessel strikes; and predation from killer whales, sharks and humans. These threats are further detailed in the NMFS (2023c): online species account and the Steller sea lion recovery plan (NMFS 2008). The recovery plan (NMFS 2008) ranked environmental variability in prey, competition with fisheries, and predation by killer whales as potentially high threats, toxic substances as medium threat, and incidental take due to interactions with active fishing gear, Alaska native subsistence harvest, illegal shooting, entanglement in marine debris, disease and parasites, disturbance from vessel traffic and tourism, and disturbance due to research activities as low threats. Our understanding of the impacts of these threats on Steller sea lion survival and reproduction and which threats are the largest impediments to Steller sea lion recovery is currently limited (NMFS 2008).

Short-Tailed Albatross

Population-level drivers and stressors

The major cause of population declines that led to the species' endangered status, feather exploitation, no longer occurs (USFWS 2008). Further, the swordfish longline fishery that was responsible for the majority of seabird incidental bycatch now has observer coverage and seabird avoidance regulations (USFWS 2008). The most notable existing threat to the species is unstable slopes and the possibility of volcanic eruption at its main breeding site in Japan (USFWS 2008, 2014). Other continued threats include incidental catch in some commercial fisheries, ingestion of plastics, contamination by oil and other pollutants, the potential for depredation or habitat degradation by non-native species, and adverse effects related to changing ocean conditions. These secondary threats are considered discountable to the recovery of the species as long as the population continues growing at a high and steady rate (USFWS 2008).

Gulf of Alaska Chinook Salmon

Population-level drivers and stressors

Gulf of Alaska Chinook salmon face several threats, including overfishing, potential influences of fishing on size and age at maturity, bycatch in other fisheries, impacts from hatchery operations, habitat degradation, and changes in climatic conditions. With 76% of known Chinook streams within or adjacent to Tongass NFS lands, the threat most relevant to Tongass management is habitat degradation, which has occurred in some localized areas with Chinook salmon from past timber harvest, roads and culverts, mining, and hydrological projects. As mentioned, current Tongass Forest Plan direction helps minimize impacts to aquatic systems from active management and promotes aquatic restoration of prior impacts.

Recent population declines are best explained by climate drivers. Current declines in Chinook salmon abundance in Southeast Alaska have been attributed to changes in growth conditions during the first year at sea, which is hypothesized to affect smolt size-selective survival likely due to differential vulnerability to predation or ability to store enough energy to survive the food-limited first marine winter (Graham et al. 2019). Early marine growth and coho salmon smolt survival is strongly correlated with strong ocean upwelling and high biological productivity (Holtby et al. 1990). Therefore, changing ocean conditions and ocean productivity are likely at the root of the recent declines. Other climate variables in freshwater systems have also been shown to be influential. In South-central Alaska, Gulf of Alaska Chinook productivity declined across all populations with increased precipitation during the fall spawning and early incubation period and increased with above-average precipitation during juvenile rearing (Jones et al. 2020). Above-average stream temperatures during spawning and rearing had variable effects, with negative relationships in many warmer streams and positive relationships in some colder streams (Jones et al. 2020). Productivity was also associated with regional indices of streamflow and ocean conditions, with high variability among populations (Jones et al. 2020).

Sunflower sea star

Population-level drivers and stressors

Species-level impacts from sea star wasting syndrome (SSWS), both during the pandemic and on an ongoing basis, have been identified as the major threat affecting the long-term persistence of the sunflower sea star (NMFS 2022b). Although disease, specifically SSWS, is the primary known threat to this species, activities that affect near-shore or deeper benthic communities could also impact this species. These other threats include habitat degradation and destruction, especially in nearshore, urbanized areas, unregulated harvest of the species in some jurisdictions, and both direct and indirect consequences of increasing temperatures and ocean acidification (NMFS 2022b). Elevated ocean temperatures likely contributed to the precipitous declines of this species as warmer temperatures are associated with increased transmission and mortality rates of SSWS (NMFS 2022b). Further, ocean acidification can increase physiological stress and decrease survival in a broad array of marine organisms, especially in shell-forming prey of this species (NMFS 2022b). Tongass permitted or authorized activities most likely to influence this federally recognized species include shoreline infrastructure development and bark accumulation at log transfer facilities, though the mobility of this species and localized nature of these activities decreases risk.

Key Takeaways

There are no federally recognized plants relevant to the Tongass. Threatened, endangered, candidate and proposed wildlife, fish, and invertebrate species relevant to the Tongass include the Gulf of Alaska

Chinook salmon in freshwater systems and three whales, one sea lion, one seabird, and one sea star in marine systems (Table 1).

The Tongass:

- Supports but generally does not encompass nearshore marine waters used as foraging habitat by all federally recognized species relevant to the Tongass, and as breeding and resting habitat by the endangered western distinct population segment (DPS) of the Steller sea lion and proposed sunflower sea star.
- Supports freshwater systems used by the Gulf of Alaska Chinook salmon candidate for spawning and rearing of juveniles.
- Provides approximately 1,200 acres of designated critical habitat for the endangered western DPS of the Steller sea lion within Tongass National Forest Service lands above mean high water. Critical habitat for this species consists of 3,000 feet landward, seaward, and skyward from three major rookeries (breeding sites) and 11 major haul-outs (resting sites) within and near the Tongass (Table 2, Figure 1).
- Indirectly influences marine systems via Forest Service authorized and permitted activities that may involve boat or float plane transit or involve nearshore, shoreline, or marine infrastructure.
- Is subject to stressors caused by increasing ocean temperatures, acidification, algal blooms and associated toxins, and noise as well as changes in ocean currents, hydrology, tidewater glaciers and sea ice, marine species distributions and food webs, and sea levels countered by isostatic rebound from glacial recession. These stressors are being and will continue to be compounded for some species, especially the whales and sea lion, by recent increases in marine recreation in the region. Climate stressors in marine and freshwater systems are also the primary drivers in recent Gulf of Alaska Chinook salmon declines.
- Current Forest Plan direction includes measures to protect federally recognized marine mammal habitats consistent with the Endangered Species Act and Marine Mammal Protection Act as well as to protect freshwater habitats that support the Gulf of Alaska Chinook salmon.

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Glossary

Critical habitat
Specific areas designated and published in the Federal Register as critical by the Secretary of Interior or Commerce for the survival and recovery of species listed as Threatened or Endangered pursuant to the Endangered Species Act.

Endangered species
Any species of animal or plant that is in danger of extinction throughout all or a significant portion of its range. Plant or animal species identified and defined in accordance with the 1973 Endangered Species Act and published in the Federal Register.

Estuary
An ecological system at the mouth of a stream where fresh water and salt water mix, and where salt marshes and intertidal mudflats are present. The landward extent of an estuary is the limit of salt-intolerant vegetation, and the seaward extent is a stream's delta at mean low water.

Habitat
The sum total of environmental conditions of a specific place occupied by a wildlife or plant species or a population of each species.

Marine waters
Waters of, or belonging to, or caused by, the sea.

Threatened species
A plant or animal species likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Threatened species are identified and defined in accordance with the 1973 Endangered Species Act and published in the Federal Register.