NOAA FISHERIES

Office of Protected Resources

Only confirmed stranding activities involving species under the jurisdiction of NOAA Fisheries (cetaceans and pinnipeds, except walrus) are included in this report. All data were obtained and analyzed from the NOAA Fisheries' National Marine Mammal Stranding Database, and have been verified. Any duplicate events, and entries of free-swimming entangled large whales, were removed from the following analyses.

Additional Information

This fact sheet provides a national overview. For additional details, please refer to the five supplemental 2019 regional overviews.

All images were taken prior to the COVID-19 pandemic.

Photo (top): **A team of scientists from The Marine Mammal Center and the California Academy of Sciences perform a necropsy on a stranded gray whale at San Francisco's Ocean Beach in May 2019. Photo: Katie D'Innocenzo/The Marine Mammal Center.**

2019 Report of Marine Mammal Strandings in the United States: National Overview

Executive Summary

In 2019, there were 7,719 confirmed marine mammal strandings documented in the United States involving species under NOAA Fisheries' jurisdiction: cetaceans (whales, dolphins, and porpoises) and pinnipeds (seals and sea lions).

Marine mammals strand for a variety of reasons. Results from examinations and necropsies (animal autopsies) show common causes of strandings include: disease; harmful algal blooms and associated biotoxins; injuries due to vessel collisions, entanglements, or other human interactions such as gunshots; malnutrition; marine debris (entanglement or ingestion); pollution exposure; or some combination of these factors. Some strandings may also be related to unusual weather or oceanographic events. Additionally, in many cases the causes of a stranding remain undetermined, especially when carcasses are found in advanced states of decomposition. This report provides an overview of marine mammal stranding response activities in the United States for calendar year 2019.

A "stranding" occurs when a marine mammal is either:

- Dead, whether found on the beach or floating in the water;
- Alive, on a beach, but unable to return to the water;
- Alive, on a beach, and in need of apparent medical attention; or
- Alive, in the water, and unable to return to its natural habitat without assistance.

The U.S. Marine Mammal Stranding Response Network

Photo (above): A fin whale carcass was located during a U.S. Coast Guard supported aerial survey of the Kodiak Archipelago. Photo: Sun'aq Tribe of Kodiak.

The U.S. Marine Mammal Stranding Response Network comprises more than 120 organizations that provide first response capabilities for cetaceans and pinnipeds that are sick, injured, in distress, in peril, or dead. Some organizations also rehabilitate live stranded cetaceans and/or pinnipeds. The overarching goals of the National Stranding Network are to:

- Provide for the welfare of live stranded or otherwise distressed marine mammals.
- Minimize risks to public health and safety from stranded marine mammals.
- Collect data from stranded marine mammals as a resource for scientific information, management decisions, and/or law enforcement investigations.
- Monitor, track, and investigate marine mammal health events (including mortality/morbidity events) and health trends over time, including the impacts of climate change.
- Advance public education and engagement.
- Enhance the conservation and management of wild marine mammal populations and, in turn, marine ecosystems.

The organizations that make up the National Stranding Network are authorized and overseen by the Marine Mammal Health and Stranding Response Program (MMHSRP), which is part of the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) Office of Protected Resources. NOAA Fisheries has jurisdiction over all cetacean and pinniped species, except walrus. The MMHSRP—formalized through an amendment to the Marine Mammal Protection Act (MMPA) in 1992—focuses on four primary areas:

1. Coordinating the stranding and entanglement response networks, including the management of data collected.
2. Leading Unusual Mortality Event (UME) responses and investigations.
3. Conducting and supporting biosurveillance and baseline marine mammal health research.
4. Supporting stranding and entanglement response networks through administration of the John H. Prescott Marine Mammal Rescue Assistance Grant Program.

Every marine mammal stranding event is unique and poses different challenges. Organized stranding response by highly trained and authorized personnel best serves the well-being of the stranded animals, and helps manage risks to public health and safety. The majority of responses to stranding events by the National Stranding Network involve relatively abundant species such as the common bottlenose dolphin (*Tursiops truncatus*), gray whale (*Eschrichtius robustus*), harbor seal (*Phoca vitulina*), and California sea lion (*Zalophus californianus*). Although these species are not listed as threatened or endangered under the Endangered Species Act (ESA), the information and experience gleaned from these cases helps monitor population health trends and keeps the National Stranding Network organizations well trained and prepared for emergency events involving ESA-listed species such as the Cook Inlet beluga whale (*Delphinapterus leucas*), Guadalupe fur seal (*Arctocephalus townsendi*), Hawaiian monk seal (*Neomonachus schauinslandi*), North Atlantic right whale (*Eubalaena glacialis*), and Southern Resident killer whale (*Orcinus orca*).

Live animals that are able to be rescued and rehabilitated provide additional valuable information on the biology, physiology, and health of those and related species. The National Stranding Network's primary goal is always to return live-stranded and rehabilitated animals to the wild when it is safe to do so for that individual animal and the wild populations. In some cases, such as when injuries are severe or the overall prognosis is poor, euthanasia is the most humane course of action for the welfare of the animal. The decision to euthanize an animal is never approached lightly and all other options are considered, in consultation with veterinary professionals, prior to making a decision. The euthanasia procedure is conducted humanely, respectfully, and efficiently by experienced and qualified personnel in consultation with NOAA Fisheries and in accordance with approved veterinary methods.

Necropsies of dead animals provide valuable insight into causes of mortality, life history (age and reproductive status), disease and contaminant exposure, physiology, and the population health of animals that cannot be readily observed in the wild. For some marine mammal species, the only information available about their biology and natural history has been gained from stranded specimens. Data collected from live or dead stranded animals can also provide important information regarding human impacts on marine mammals, such as interactions between marine mammals and fisheries, vessels, or marine debris, or the effects of pollution (oil spills, contaminants, and heavy metals). The National Stranding Network provides data to the MMHSRP using standardized reporting forms, and these data are stored in the National Stranding Database. Data collected from stranding responses help NOAA Fisheries monitor and understand wild marine mammal stocks and populations, as well as make informed decisions for their management and conservation. The information collected by the National Stranding Network on human interaction cases can become important evidence in law enforcement cases, and network members are trained to follow strict "chain of custody" protocols when needed to assist investigations.

Because stranded marine mammals are large, wild, and unpredictable animals that might have been exposed to disease or contaminants, all stranding responses prioritize human safety to ensure National Stranding Network members and the public avoid injuries. Over the past several decades, the MMHSRP has worked with the National Stranding Network to develop and update Best Practices to follow in the field based on lessons learned and advancing husbandry techniques.

Photo (above): Mystic Aquarium's Animal Rescue Program has been rescuing, rehabilitating and releasing sick, stranded or injured marine mammals since 1975. Photo: Mystic Aquarium.

National Overview

Marine Mammal Health Threats

Environmental Degradation and Ecosystem Change

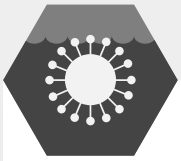
- Climate and ecosystem change
- Habitat degradation, including contaminants (e.g., toxic chemicals, heavy metals, etc.)

Ocean Noise and Disturbance

- Acoustic disturbance
- Energy development
- Ocean and vessel noise

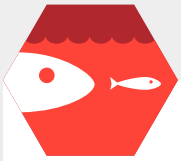
Fisheries Impacts

- Direct interactions/competition with fisheries
- Effects of fisheries on prey
- Entanglement in active or derelict fishing gear (i.e., "bycatch")



Disease

- Biotoxins
- Pathogens (e.g., viruses, bacteria, parasites)



Predator-Prey Dynamics

- Predation
- Prey availability

Pollution

- Chemical contaminants
- Oil spills
- Marine debris

Vessel Interactions

- Vessel harassment
- Vessel strikes

Direct Human Take

- Illegal feeding, harassment, and disturbance
- Illegal human-caused mortality (including illegal shooting)

What Type of Marine Mammals Strand in the United States?

There are 66 species of marine mammals found in the jurisdictional waters of the United States, all of which are protected by the MMPA, and all of which may strand. Marine mammals are classified into four different taxonomic groups: cetaceans (whales, dolphins, and porpoises); pinnipeds (seals, fur seals, sea lions, and walruses); sirenians (manatees); and marine fissipeds (polar bears and sea otters). NOAA Fisheries is responsible for the protection and conservation of all cetaceans and pinnipeds, with the exception of walrus. The U.S. Fish and Wildlife Service (U.S. FWS) oversees the management of manatees, sea otters, walruses, and polar bears. This report only includes data for species under the jurisdiction of NOAA Fisheries (cetaceans and pinnipeds excluding walrus).

Pinnipeds

All pinnipeds come ashore (on land or ice) to rest, breed, nurse and rear pups, molt, or avoid predators. When pinnipeds are observed sick, injured, in distress, or dead, the National Stranding Network responds to provide care, including rehabilitation in some cases, or to examine the carcass. The five most frequently stranded pinniped species nationwide in 2019 (Table 1) were the California sea lion, harbor seal, gray seal (*Halichoerus grypus*), Northern elephant seal (*Mirounga angustirostris*), and harp seal (*Pagophilus groenlandicus*).

Table 1: Most common pinniped species to strand nationally in 2019.

Species	Confirmed Stranding Reports 2019	13-Year Average ± Standard Deviation[1] (2006-2018)
California Sea Lion	2,074	2,308 ± 1,159
Harbor Seal	1,338	1,222 ± 299
Gray Seal	569	211 ± 134
Northern Elephant Seal	457	435 ± 93
Harp Seal	398	117 ± 64

Photo (left): Despite legal protection, marine mammals are still found with injuries consistent with gunshots. On a radiograph of "Glider"—an adult male California sea lion— the bright white dots show evidence of bullets, buckshot, and shot pellets in the head and mouth area. Photo: The Marine Mammal Center.

1 A standard deviation is a measure used to quantify the amount of variation within a set of values.

Main Health Threats for Pinnipeds

Disease

- Biotoxins
- Pathogens (e.g., viruses, bacteria, parasites)

Environmental Degradation and Ecosystem Change

- Climate and ecosystem change (e.g., food web dynamics)
- Habitat degradation, including contaminants (e.g., toxic chemicals, heavy metals, etc.)

Direct Human Take

- Human-caused mortality (including illegal shooting)
- Illegal feeding, harassment, and disturbance

Fisheries Impacts

- Direct interactions/competition with fisheries
- Entanglement in fishing gear or fishery debris

California sea lion[2] (Zalophus californianus):
Weight: Up to 700 pounds
Oceans: Pacific
Status: Not endangered

Harbor Seal (Phoca Vitulina):
Weight: Up to 285 pounds
Oceans: Atlantic and Pacific
Status: Not endangered

Gray seal (Halichoerus grypus):
Weight: Up to 800 pounds
Oceans: Atlantic
Status: Not endangered

Northern elephant seal (Mirounga angustirostris):
Weight: Up to 4,400 pounds
Oceans: Pacific
Status: Not endangered

Harp seal (Pagophilus groenlandicus):
Weight: Up to 300 pounds
Oceans: Atlantic
Status: Not endangered

2 Species illustrations throughout this report are not to scale relative to each other.

Small Cetaceans

Small cetaceans are the dolphins, porpoises, and toothed species of whales (except sperm whales, *Physeter macrocephalus*). The small cetaceans found in U.S. waters have diverse life history patterns—some are solitary, others occur in large groups, some live in bays and estuaries, and some live far offshore. The five most frequently stranded small cetaceans nationally in 2019 (Table 2) were the common bottlenose dolphin, harbor porpoise (*Phocoena phocoena*), short-beaked common dolphin (*Delphinus delphis*), Atlantic white-sided dolphin (*Lagenorhynchus acutus*), and long-beaked common dolphin (*Delphinus capensis*).

Table 2: Most common small cetacean species to strand nationally in 2019.

Species	Confirmed Stranding Reports 2019	13-Year Average ± Standard Deviation[1] (2006-2018)
Common Bottlenose Dolphin	962	803 ± 312
Harbor Porpoise	250	197 ± 39
Short-beaked Common Dolphin	158	136 ± 86
Atlantic White-sided Dolphin	72	30 ± 21
Long-beaked Common Dolphin	55	49 ± 18

Photo (above): Intervention was conducted by capturing and restraining this common bottlenose dolphin long enough to conduct a veterinary assessment, and to document and then remove a life-threatening entanglement consisting of bungee cord with biofouling tightly encircling the animal's head. Photo: Hubbs-SeaWorld Research Institute.

Main Health Threats for Small Cetaceans

Disease

- Biotoxins
- Pathogens (e.g., viruses, bacteria, parasites)

Environmental Degradation and Ecosystem Change

- Climate and ecosystem change
- Habitat degradation, including contaminants (e.g., toxic chemicals, heavy metals, etc.)

Fisheries Impacts

- Direct interactions/competition with fisheries
- Entanglement in active or derelict fishing gear (i.e., "bycatch")

Predator-Prey Dynamics

- Predation
- Prey availability

Common bottlenose dolphin (Tursiops truncatus):
Weight: Up to 1,400 pounds
Oceans: Atlantic, Gulf of Mexico, and Pacific
Status: Not endangered

Harbor porpoise (Phocoena phocoena):
Weight: Up to 170 pounds
Oceans: Atlantic and Pacific
Status: Not endangered

Short-beaked common dolphin (Delphinus delphis):
Weight: Up to 170 pounds
Oceans: Atlantic and Pacific
Status: Not endangered

Atlantic white-sided dolphin (Lagenorhynchus acutus):
Weight: Up to 500 pounds
Oceans: Atlantic
Status: Not endangered

Long-beaked common dolphin (Delphinus capensis):
Weight: Up to 500 pounds
Oceans: Pacific
Status: Not endangered

Large Whales

Large whales are all of the baleen whales and the largest toothed whale, the sperm whale. Nationally, the five most commonly stranded large whales in 2019 (Table 3) were the gray whale, humpback whale (*Megaptera novaeangliae*), minke whale (*Balaenoptera acutorostrata*), bowhead whale (*Balaena mysticetus*), and fin whale (*Balaenoptera physalus*).

Table 3: Most common large whale species to strand nationally in 2019.

Species	Confirmed Stranding Reports 2019	13-Year Average ± Standard Deviation[1] (2006-2018)
Gray Whale	124	32 ± 9
Humpback Whale	60	51 ± 19
Minke Whale	30	16 ± 10
Bowhead Whale	11	4 ± 4
Fin Whale	5	8 ± 3

Photo (above): A stranded minke whale photographed with propeller wounds. On further examination, this individual also had scars consistent with entanglement, as well as plastic in its digestive tract. Photo: Virginia Aquarium.

Main Health Threats for Large Whales

Disease

- Biotoxins
- Pathogens (e.g., viruses, bacteria, parasites)

Environmental Degradation and Ecosystem Change

- Climate and ecosystem change
- Habitat degradation, including contaminants (e.g., toxic chemicals, heavy metals, etc.)

Fisheries Impacts

- Direct interactions/competition with fisheries
- Entanglement in active or derelict fishing gear (i.e., "bycatch")

Vessel Interactions

- Vessel harassment
- Vessel strikes

Gray whale (Eschrichtius robustus):

Weight: Up to 45 tons

Oceans: Pacific

Status: Endangered (Western North Pacific Distinct Population Segment (DPS[3])); not endangered (Eastern North Pacific DPS)

Humpback whale (Megaptera novaeangliae):

Weight: Up to 40 tons

Oceans: Atlantic, Gulf of Mexico, Pacific

Status: Endangered/threatened (some Pacific DPSs); not endangered (East Coast and Gulf of Mexico (West Indies DPS))

Minke whale (Balaenoptera acutorostrata):

Weight: Up to 10 tons

Oceans: Atlantic, Gulf of Mexico, Pacific

Status: Not endangered

Bowhead whale (Balaena mysticetus):

Weight: Up to 100 tons

Oceans: Atlantic

Status: Endangered

Fin whale (Balaenoptera physalus):

Weight: Up to 80 tons

Oceans: Atlantic, Gulf of Mexico, Pacific

Status: Endangered

3 A Distinct Population Segment (DPS) is a group of animals separate from, but related to, other populations of the same species.

A Species in Severe Decline

North Atlantic Right Whale *(Eubalaena glacialis)*

The North Atlantic right whale, a NOAA Fisheries "Species in the Spotlight," is one of the world's most endangered large whale species, with fewer than 350 individuals[4] remaining and fewer than 100 breeding females as of 2019 (for more updated information please see Pace 2021). In the spring and summer, and into the fall, many of these whales can be found in waters off New England and further north into Canadian waters, where they feed and mate. Each fall, some individuals migrate along the East Coast of North America to calving grounds off the southeastern United States. NOAA Fisheries has designated two areas of critical habitat along the U.S. coast, which provide important feeding, nursery, and calving habitat. The population has been in decline since 2010; in 2017, an Unusual Mortality Event (UME) was declared after several deaths were documented in the United States and Canada. **In 2019, 10 North Atlantic right whales were reported dead to the National Stranding Network and one was observed seriously injured.**[5] The loss of any one individual could have negative impacts on an already critically endangered population where deaths are outpacing births. **Since 2017, North Atlantic right whales have experienced an ongoing UME, and as of the end of 2019, 38 individual right whales (30 confirmed dead, 8 seriously injured) were included in the UME for the 3-year period 2017–2019.** Entanglement in fishing gear and vessel strikes are the leading causes of serious injuries and mortalities. NOAA Fisheries and our partners are dedicated to conserving and rebuilding the North Atlantic right whale population. The UME continued past 2019; for more information on the current status of the North Atlantic right whale UME, please visit:

https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2022-north-atlantic-right-whale-unusual-mortality-event

Photo (left): **The carcass of a North Atlantic right whale, later identified as "Snake Eyes," was seen floating off Long Island, New York in September 2019. Prior to his death, he was last seen in early August, 2019, severely entangled in the Gulf of St. Lawrence, Canada. Photo: Atlantic Marine Conservation Society.**

4 For the most recent estimates, please see: https://www.fisheries.noaa.gov/species/north-atlantic-right-whale.

5 The MMPA requires NOAA Fisheries to distinguish between injuries to marine mammals that are serious and those that are non-serious. Serious injury determination is a detailed assessment process that uses data, such as body condition and parameters of the human-caused injury, collected from living whales to determine an individual whale's prognosis for survival. A serious injury designation indicates a whale is likely to die from those injuries (although it was alive at its last sighting).

Comparing Confirmed Stranding Reports in 2019 to Past Years

In most cases, a stranded marine mammal is observed by a member of the public, who reports it to a member of the National Stranding Network via a hotline call (or by notifying local emergency services). A National Stranding Network member then responds to confirm, document, and take the appropriate actions (as resources allow). In 2019, there were 7,719 confirmed marine mammal strandings nationwide. This number is slightly higher than the 13-year (2006–2018) average (n= 6,365 ± 1,210), a time period during which national effort remained relatively consistent (Figure 1). Of the confirmed reports in 2019, 73 percent involved pinnipeds, 23 percent involved small cetaceans, and 4 percent involved large whales. Sometimes carcasses were too decomposed to classify animals to species, or the location of the stranding limited access to, and recovery of, the carcass. In 2019, less than 1 percent of stranded animals were classified as an unknown cetacean (i.e., those cetaceans that could not be categorized as either large whales or small cetaceans).

The high number of strandings reported in Figure 1 for 2009 (pinnipeds), 2013 (small cetaceans), 2015 (pinnipeds), 2018 (pinnipeds), and 2019 (pinnipeds, small cetaceans, and large whales) can generally be attributed to increased strandings of live and dead animals connected with oceanographic changes or UMEs that occurred in these years. In 2019, there were several new and ongoing UMEs (Table 4); confirmed reports of pinniped strandings remained markedly high (Figure 1 and Figure 2), driven mostly by an infectious disease outbreak of Phocine distemper virus (PDV) in the Northeast of the United States; and elevated reports of stranded ice seals in Alaska. Small cetacean and large whale stranding rates were also slightly elevated, which can be attributed in part to a biotoxin bottlenose dolphin UME in the Southeast and several ongoing large whale UMEs across the country.

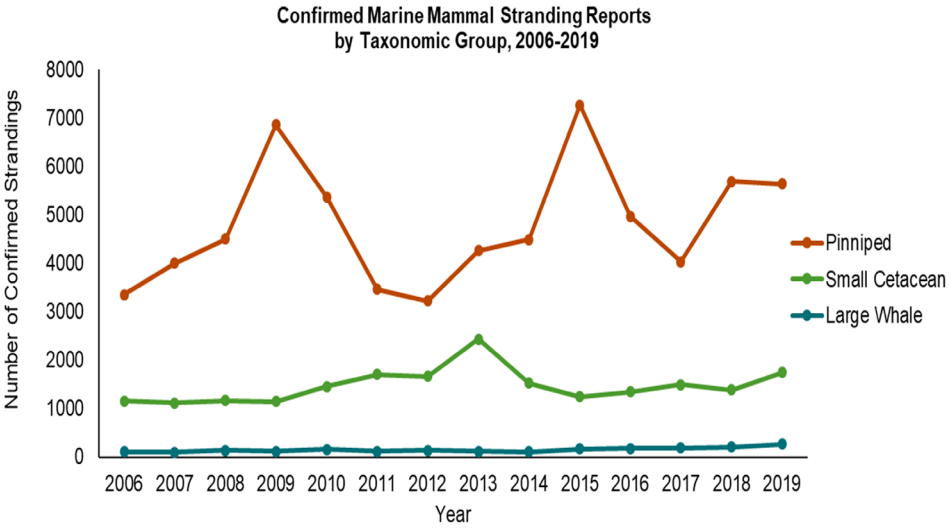


Figure 1: Confirmed marine mammal stranding reports nationwide by taxonomic group, 2006–2019. In 2019, confirmed stranding reports increased for small cetaceans and large whales as compared to recent years, while confirmed reports of pinniped strandings remained elevated.

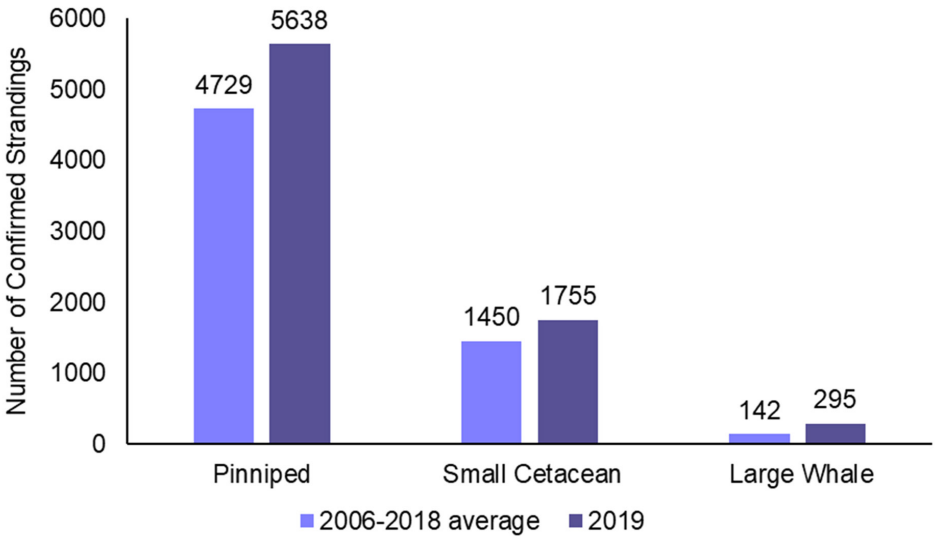


Figure 2: Nationwide stranding summary. In 2019, an additional 57 dead stranded marine mammals, not shown, were classified as an "unknown cetacean," as they were too decomposed to be assigned to the "small cetacean" or "large whale" categories.

A New Species of Baleen Whale in the Gulf of Mexico:

Rice's Whale (Balaenoptera ricei)

In January 2019, a large baleen whale stranded and died in the Everglades on the southwestern coast of Florida in the Gulf of Mexico. Members of the Stranding Network[6] and NOAA Fisheries biologists examined the animal and conducted a necropsy to investigate the cause of death. The whale was underweight and had a sharp, hard piece of plastic (approximately 3" x 2") in its stomach, which may have contributed to the stranding and subsequent death. The entire carcass was collected and cleaned, and the intact skull and skeleton were deposited into the Smithsonian National Museum of Natural History collection. Examination of the morphology of the skull supported previous genetic studies[7] that had identified this type of baleen whale from the Gulf of Mexico as distinct from other closely related baleen whale species in the world. The distinct morphological characteristics combined with the high level of genetic divergence led to the classification of these whales in the Gulf of Mexico as a new species called Rice's whale.[8] The Rice's whale is the only resident baleen whale in the Gulf of Mexico, and has been sighted consistently in the northeastern Gulf of Mexico along the continental shelf. **NOAA Fisheries' most recent abundance estimate from 2017–2018 surveys in the northeastern Gulf of Mexico is approximately 50 individual Rice's whales.** The Rice's whale's very small population size and limited distribution increase its vulnerability to threats. The most significant threats they face are energy exploration and development, oil spills and spill response, vessel strikes, ocean noise, ocean debris, aquaculture, and entanglement in fishing gear. With such a small population size, the death of a single whale due to any of these stressors could have devastating consequences for the population's recovery. The new species retains its protected status under the Endangered Species Act, as it was previously listed as an endangered subspecies (Gulf of Mexico Bryde's whale), and is protected under the Marine Mammal Protection Act.

Photo (above): Members of the Stranding Network perform a necropsy on a large baleen whale, later determined to be an endangered Rice's whale, which stranded in the Florida Everglades National Park in January 2019. Photo: National Park Service.

Photo (right): Rice's whales have been consistently located in the northeastern Gulf of Mexico, along the continental shelf. Photo: NOAA Fisheries/Southeast Fisheries Science Center.

6 With grateful acknowledgement to Clearwater Marine Aquarium; Dolphins Plus; Everglades National Park Service; Florida Fish and Wildlife Conservation Commission; Marine Animal Rescue Society; Mote Marine Laboratory Stranding Investigations Program; Sarasota Dolphin Research Project; and the University of Miami, Rosenstiel School of Marine and Atmospheric Science.

7 Rosel, P.E. and Wilcox, L. A. 2014. Genetic evidence reveals a unique lineage of Bryde's whales in the northern Gulf of Mexico. *Endangered Species Research*, 25(1), 19-34.

8 Rosel, P.E., Wilcox, L.A., Yamada, T.K. and Mullin, K.D., 2021. A new species of baleen whale (*Balaenoptera*) from the Gulf of Mexico, with a review of its geographic distribution. *Marine Mammal Science*, 37(2), pp.577-610.

Unusual Mortality Events

Marine mammal strandings that are "unexpected, involve a significant die-off of any marine mammal population, and demand immediate response" are defined as UMEs under the MMPA. There are seven criteria that define when a mortality event is "unusual," and the Working Group on Marine Mammal Unusual Mortality Events determines if the event meets at least one UME criterion, after which NOAA Fisheries may formally declare the event as an official UME. Understanding and investigating marine mammal UMEs is crucial, as they can serve as indicators of ocean health, giving insight into larger environmental or anthropogenic issues. Since 1991, NOAA Fisheries has documented UMEs along the U.S. coasts of the Atlantic and Pacific oceans, including the Gulf of Mexico, Alaska, and Hawaii. In recent years, increased efforts to examine carcasses and live-stranded animals have improved the knowledge of mortality rates and causes, allowing a better understanding of population threats and stressors, and the ability to determine when a situation is "unusual." In 2019, three new UME investigations were declared and six were ongoing from previous declarations for marine mammal species under the jurisdiction of NOAA Fisheries (Table 4; an additional UME was ongoing for Florida manatees, under U.S. FWS jurisdiction). More information about UMEs is available at: https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-unusual-mortality-events

Table 4: Marine mammal UMEs occurring in the United States during calendar year 2019. UMEs may be declared for part or all of a calendar year; data below represents the time period of the declaration. Some UMEs are declared in the year after elevated strandings began. For more details, see the individual UME webpages.

Year Declared	UME Name	Number of Animals to Strand in 2019	UME Total (from Declaration Through 12/31/2019)	Body of Water/Location	Preliminary Cause
2019	Alaska Ice Seal	165	277	Bering and Chukchi Seas	Undetermined
2019	Northern Gulf of Mexico Bottlenose Dolphin	337	337	Northern Gulf of Mexico	Ecological Factors
2019	West Coast Gray Whale	U.S. = 122 Canada= 11 Mexico = 83	216	Pacific Ocean	Undetermined
2018 (ongoing)	Northeast Pinniped	1,117	2,533	Atlantic Ocean	Infectious Disease
2018 (ongoing)	Southwest Florida Bottlenose Dolphin	49	183	Gulf of Mexico	Biotoxin
2018 (ongoing)	Atlantic Minke Whale	22	79	Atlantic Ocean	Suspect Human Interaction (Entanglement)/ Infectious Disease
2017 (ongoing)	North Atlantic Right Whale	U.S. = 1 dead Canada = 9 dead; 1 seriously injured	U.S. = 9 dead; 4 seriously injured Canada = 21 dead; 4 seriously injured	Atlantic Ocean, Canada and U.S.	Human Interaction (Vessel Strike/Rope Entanglement)
2017 (ongoing)	Atlantic Humpback Whale	27	112	Atlantic Ocean	Suspect Human Interaction (Vessel Strike)
2015 (ongoing)	Guadalupe Fur Seal	207	489	Pacific Ocean, California	Ecological Factors

Featured Unusual Mortality Event:
North Atlantic Right Whale

Photo (above): Responders oversee the initial stages of a mortality investigation for "Snake Eyes," a North Atlantic right whale, in Hempstead, New York. Credit: Atlantic Marine Conservation Society.

NOAA Fisheries declared a UME for the North Atlantic right whale in 2017 throughout their range, following elevated mortalities along the U.S. Atlantic coast and Canada. The investigation is still ongoing; however, preliminary results from necropsied animals indicate "human interactions" as a leading cause, as the majority of cases involved whales that died from either entanglements or vessel strikes. Additionally, several live animals have been documented as seriously injured by either vessel strikes or entanglements, and are therefore included in the UME numbers. Despite mitigation measures to reduce vessel and fisheries interactions in both the U.S. and Canada, 38 individuals (30 confirmed dead, 8 seriously injured) were included in this UME as of the end of 2019.

NOAA Fisheries continues to work closely with National Stranding Network members and other scientific partners who are studying the North Atlantic right whale population, and together we are monitoring changes in whale distribution and habitat use to better understand the spatial and temporal overlap between boaters, fishermen, and whales. We also work with partners in the fishing industry and mariners to identify and implement additional protective measures. Ocean users are reminded to keep an eye out for whales and remember to follow safe viewing guidelines and regulations, which include staying at least 500 yards away from North Atlantic right whales for the safety of both whales and humans.

The UME continued past 2019; for more information on the current status of the North Atlantic right whale UME, please visit:

https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2022-north-atlantic-right-whale-unusual-mortality-event

Evidence of Human Interaction

Although animals may strand due to natural causes, some strandings are caused by human interactions. These interactions can be accidental or deliberate, can inflict severe pain and suffering to individual animals, and can have detrimental impacts on marine mammal populations. In some cases, animals have evidence of past human interactions, which may or may not have played a role in the immediate stranding event. Entanglements in fishing gear or marine debris (including ingestion), interactions with vessels (including vessel strikes), excessive underwater noise, direct harm (e.g., gunshots), general harassment by people (e.g., feeding, touching, interacting with, and moving animals), and close proximity to unleashed pets are common examples of human-caused threats.

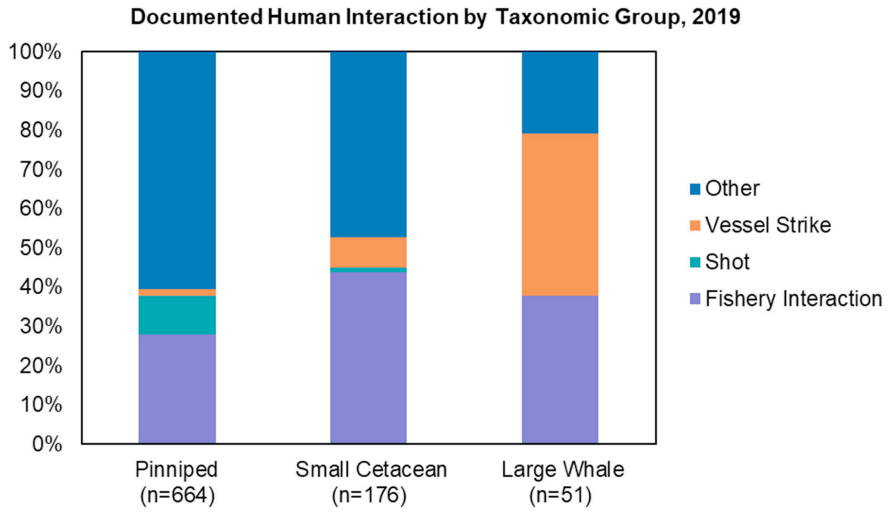
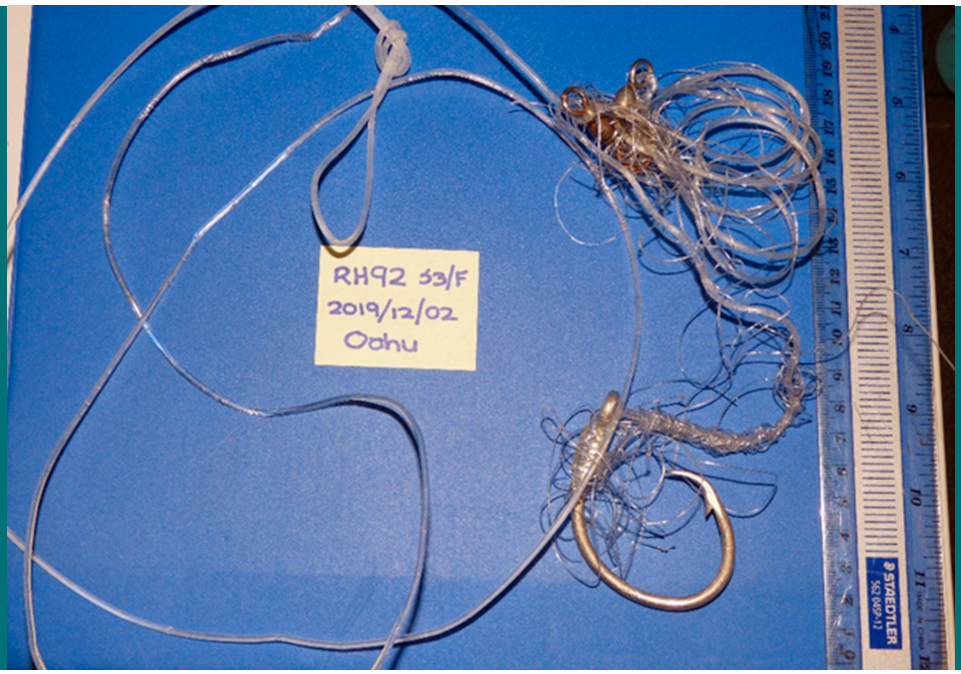


Figure 3: Number of confirmed strandings with at least one human interaction documented in 2019 (n=895). Four dead stranded marine mammals, classified as "unknown cetacean," are not shown above. 31 animals (4 percent) shown exhibited more than one type of human interaction at time of stranding.

In 2019, there were 895 confirmed strandings where at least one type of human interaction was identified,[9] accounting for roughly 12 percent of all reported stranding events. Of the individuals documented with evidence of human interaction (Figure 3), some pinnipeds were affected by fishery interactions (e.g., entanglement in gear or scars, ingested gear), and a number of individuals (n=67) were found with gunshot wounds. Other forms of human interaction, including harassment and disturbance, were documented for several pinnipeds. Similar to pinnipeds, a large proportion of small cetaceans had injuries consistent with fishery interactions, and two presented evidence of gunshot wounds. Large whales had wounds consistent with both fishery interactions and vessel strikes (e.g., propeller scars, bruising, fractures, internal bleeding). Note that for the data in this report, presence of human interaction does not necessarily mean that the interaction was the cause of stranding or death; these interactions could have been incidental to the stranding or from the past (such as healed scars).

Photo (right): Hooks recovered from Hawaiian monk seal "RH92" following a procedure to remove them from her stomach. Photo: Brenda Becker/Pacific Islands Fisheries Science Center.



9 Documented human interaction cases in 2019 (n=926); 31 animals exhibited more than one type of human interaction at time of stranding.

Rehabilitation and Release of Stranded Marine Mammals

Some National Stranding Network organizations are authorized to rehabilitate live-stranded marine mammals with the primary goal of returning the animals to the wild once healthy. Pinnipeds are the most common candidates for rehabilitation because they are relatively small and live partially on land, making them easier to care for than cetaceans, and there are facilities on both the East and West coasts that specialize in pinniped care and treatment. Because cetaceans live entirely in water, fewer facilities nationwide can accommodate them, and none are equipped to provide care for adult large whales. Regulations require that a marine mammal in rehabilitation be released within 6 months unless an attending veterinarian determines the release is unlikely to be successful due to the physical condition and behavior of the animal, more time is needed for assessment and medical treatment, or the release might adversely affect wild populations.

In 2019, 2,061 animals were rehabilitated nationwide (Figure 4). Stranded animals in poor health sometimes die on their own or are euthanized in rehabilitation, depending on the seriousness of their medical condition. Occasionally, a rehabilitated marine mammal might be deemed non-releasable due to behavioral, ecological, and/or medical concerns that make them unlikely to survive in the wild. The MMHSRP and NOAA Fisheries' Permits and Conservation Division work with marine mammal public display or research facilities to place non-releasable animals in permanent managed care for the individual animal's continued welfare. More information on NOAA Fisheries' non-releasable policy can be found at:

https://www.fisheries.noaa.gov/national/marine-mammal-protection/non-releasable-marine-mammals

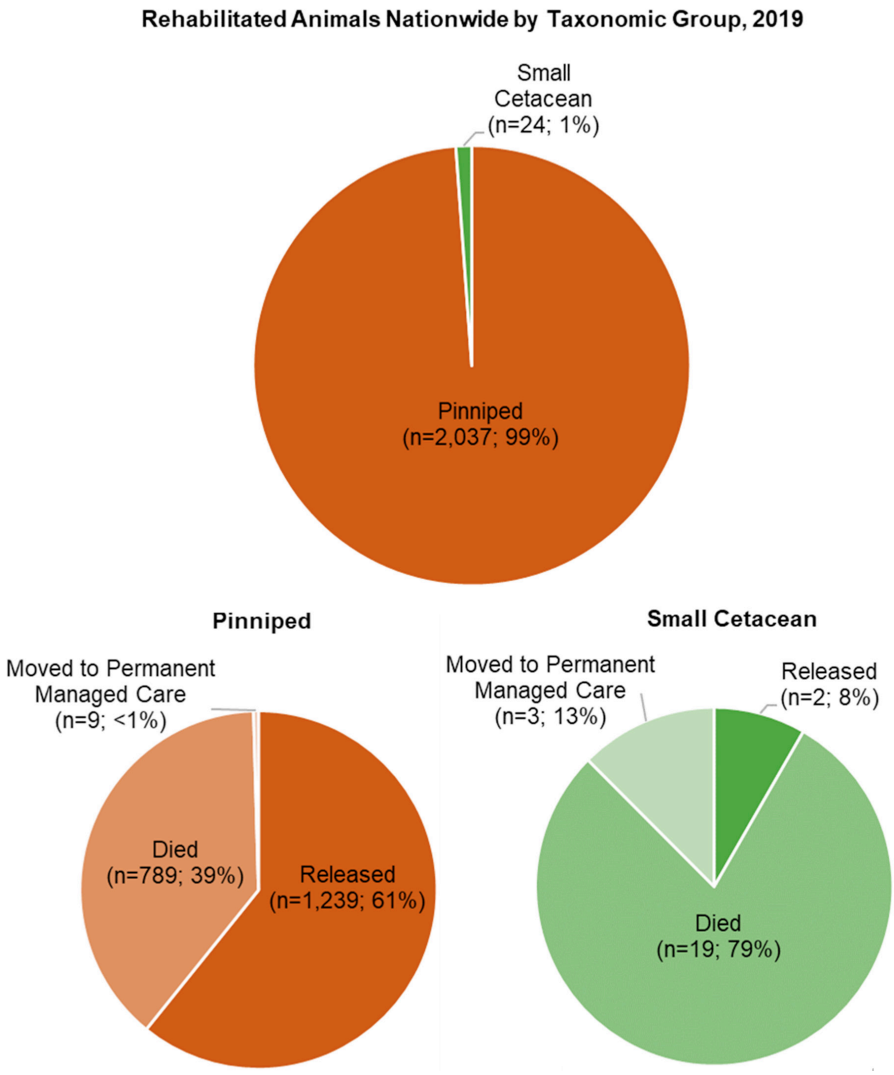


Figure 4: Number of animals rehabilitated nationwide at facilities authorized by NOAA Fisheries, 2019.

Photo (right): "Treatlove," a female harbor seal pup, receives an admission examination by medical experts at The Marine Mammal Center in Sausalito, California. Photo: Adam Ratner/The Marine Mammal Center.

Regional Differences and National Standards

The National Stranding Network is composed of highly skilled and trained individuals from professional organizations, including aquaria, government agencies, higher education institutions, museums, non-profits, and tribes. These organizations are authorized under the MMPA to respond to and rehabilitate stranded marine mammals, either through Stranding Agreements issued by NOAA Fisheries or in their capacity as federal, state, tribal, or local government employees. The MMHSRP has developed a national template for Stranding Agreements that outlines the responsibilities of NOAA Fisheries as well as the Stranding Agreement holder. Depending on available resources, technical expertise, and experience, organizations may be authorized for dead marine mammal response, live animal response and transport, live animal rehabilitation, or a combination of all three roles. Trained National Stranding Network members conduct the on-the-ground activities required to safely respond to marine mammal strandings and they are committed to animal welfare and education. Often faced with challenging circumstances, trained National Stranding Network members are responsible for making decisions that ensure appropriate care is provided to stranded animals.

Each of NOAA Fisheries' five jurisdictional regions (Figure 5) has a Regional Stranding Coordinator and/or Regional Stranding Administrator, who processes and administers Stranding Agreements and coordinates stranding response within their region: Alaska Region (AKR; Alaska), Greater Atlantic Region (GAR; Maine through Virginia), Pacific Islands Region (PIR; Hawaii, Guam, the Commonwealth of the Northern Mariana Islands, and American Samoa), Southeast Region (SER; North Carolina through Texas, Puerto Rico, and U.S. Virgin Islands), and West Coast Region (WCR; California, Oregon, and Washington). Marine mammal stranding rates vary widely across the United States (Table 5), and can fluctuate within the same geographical area between years (Figure 6). There are regional differences in the species, abundance, and distribution of marine mammals most likely to strand, in the frequency and seasonality of stranding events, and in the likelihood of detection and reporting of stranding events. In light of these regional differences, national standards and protocols have built-in flexibility to enable local and nuanced implementation.

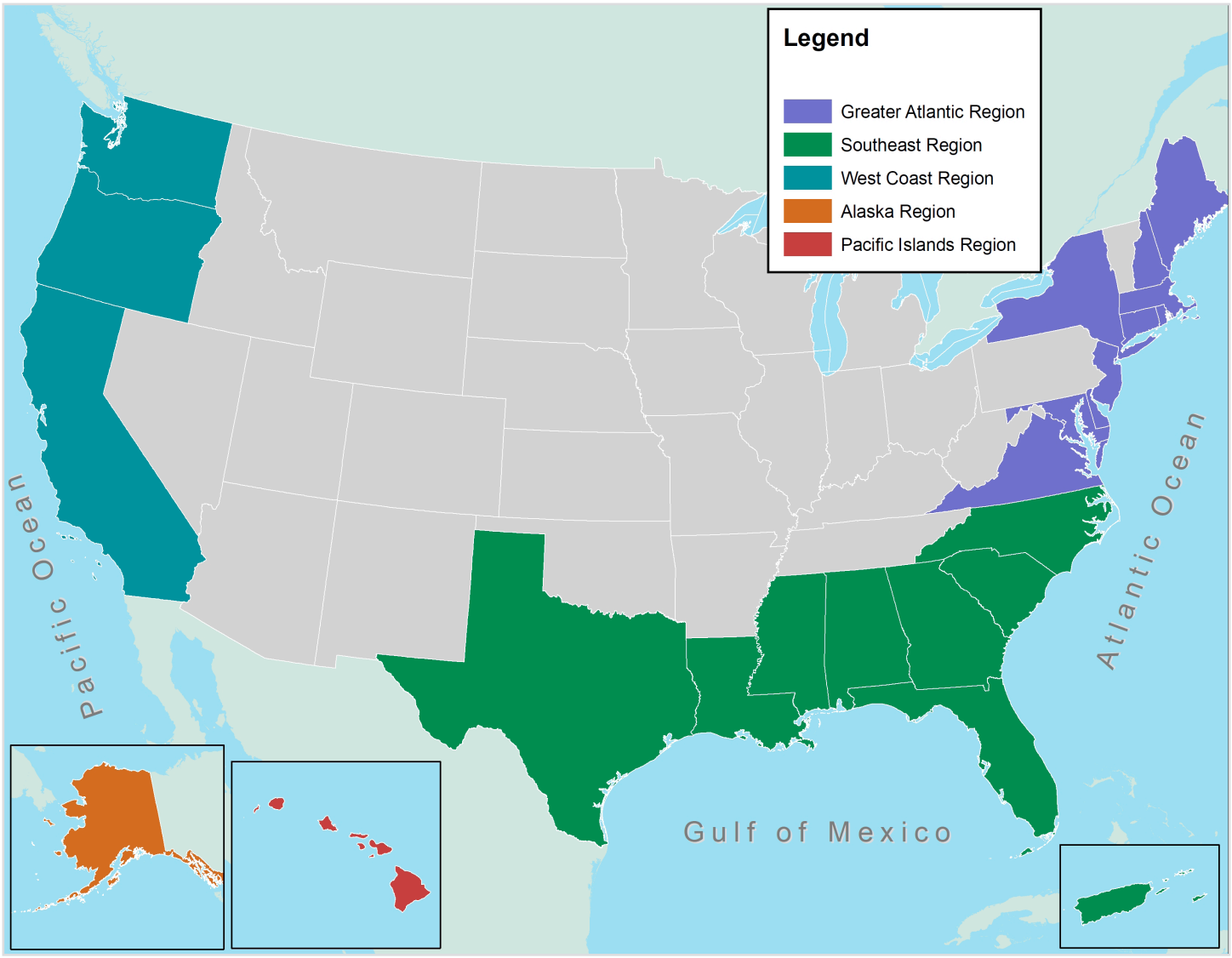


Figure 5: NOAA Fisheries' five jurisdictional regions.

Table 5: Nationwide stranding summary by region for 2019.

2019 Strandings	WCR	GAR	SER	AKR	PIR	Total
Pinnipeds	3,799	1,530	4	275	30	5,638
Small Cetaceans	247	506	926	47	29	1,755
Large Whales	101	62	10	116	6	295
Unknown Cetacean	7	14	8	2	0	31
Total Strandings	4,154	2,112	948	440	65	7,719
(% of National Total)	(54%)	(27%)	(12%)	(6%)	(1%)	-

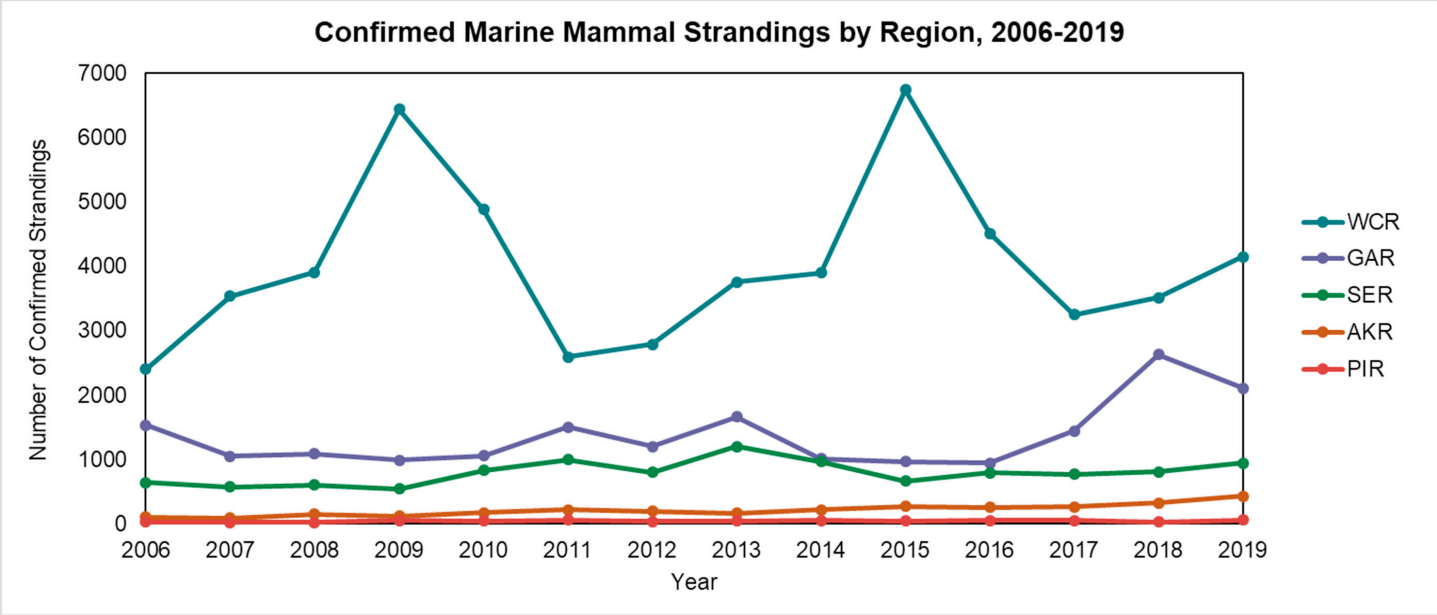


Figure 6: Confirmed marine mammal strandings by region from 2006 to 2019. In 2019, strandings in most regions increased, or remained relatively consistent, as compared to recent years. In 2019, though confirmed stranding reports in the GAR were lower than the numbers reported in 2018, they remained above the region's historical average.

Photo (above): Trained and authorized responders assess and provide fluids to a young harp seal in Rye, New Hampshire. In May 2019, the animal was successfully rehabilitated at the National Marine Life Center in Buzzards Bay, Massachusetts. Photo: Seacoast Science Center.

What Can Members of the Public Do?

Regional 24/7 Hotline

The Marine Mammal Health and Stranding Response Program relies on reports of stranded marine mammals by the public. If you come across a stranded marine mammal please report it to your regional 24/7 hotline.

Alaska:	*(877) 925-7773*
Greater Atlantic:	*(866) 755-6622*
Pacific Islands:	*(888) 256-9840*
Southeast:	*(877) 942-5343*
West Coast:	*(866) 767-6114*

Photo (above): A young male gray seal, "Einstein," was rescued by the International Fund for Animal Welfare in July 2019. Found in Provincetown, Massachusetts, he was admitted to Mystic Aquarium's Animal Rescue Clinic to receive care. Photo: Mystic Aquarium.

Report a Stranding

When reporting a stranded marine mammal, please include the following information:

- Date
- Location of stranding (including latitude and longitude)
- Number of animals
- Condition of the animal (alive or dead)
- Species (if known)

Photos or videos from a safe and legal distance (note that regulations apply to certain species and areas) can also provide valuable information to Stranding Network responders. Only trained and permitted responders should approach or pick up a stranded marine mammal. You can also download the Dolphin & Whale 911 Stranding App in the Apple Store to help report a stranding.

Get Involved

The National Stranding Network relies on government, private, and public support to conduct its vital work to save animals in distress and understand causes of injuries and mortalities. You can make a difference by contacting your local Stranding Network (list available at https://www.fisheries.noaa.gov/report) to see how you can get involved.

Marine Mammal Health and Stranding Response Program Marine Mammal and Sea Turtle Conservation Division Office of Protected Resources

NOAA FISHERIES

Acknowledgements

Grateful acknowledgement to the following people and organizations for their contributions to this report:

The National Marine Mammal Stranding Network members and, particularly for their contribution of photographs, The Marine Mammal Center, California Academy of Sciences, Mystic Aquarium, Hubbs-SeaWorld Research Institute, the Pacific Islands Fisheries Science Center, NOAA Fisheries Regional Marine Mammal Stranding Coordinators, the Marine Mammal Health and Stranding Response Program, NOAA Fisheries' Permits and Conservation Division, NOAA Office of Law Enforcement, and the U.S Coast Guard. All photographs were taken under Stranding Agreement, MMPA Section 109(h) authority, or NOAA Fisheries research permits.

Only trained and permitted responders should approach or pick up a stranded marine mammal.

Only confirmed stranding activities involving species under the jurisdiction of NOAA Fisheries (cetaceans and pinnipeds, except walrus) are included in this report. All data were obtained and analyzed from the NOAA Fisheries' National Marine Mammal Stranding Database, and have been verified. Any duplicate events, and entries of entangled large whales, were removed from the analyses. All data and information described within this report are correct as of May 3, 2021 (when the data query of the National Stranding Database was performed). All photographs were taken under Stranding Agreement, Section 109(h) authority, or NOAA Fisheries research permits.

U.S. Secretary of Commerce
Gina M. Raimondo

Under Secretary of Commerce for Oceans and Atmosphere
Richard W. Spinrad, Ph.D.

Assistant Administrator for Fisheries
Janet L. Coit

January 2023

www.fisheries.noaa.gov

OFFICIAL BUSINESS

Office of Protected Resources
1315 East-West Highway
Silver Spring, MD, 20910