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Resources

Marine Mammal
Health and
Stranding
Response Program

2017 National Report of Marine Mammal Strandings in the United States

March 2021



Only confirmed stranding activities involving species under the jurisdiction of NOAA Fisheries (cetaceans and pinnipeds, except walrus) are used in this report. All data were taken from the National Stranding Database and filtered accordingly. Any duplicate events, and entries of entangled large whales, were removed from the following analyses. All data and information described within this report are correct as of October 25, 2019.

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Front cover: Live-stranded minke whale. Photo: International Fund for Animal Welfare.

Page 3: The Virginia Aquarium Stranding Response Team responds to a report of a live-stranded dolphin on the beach. Photo: Virginia Aquarium.

Executive Summary

In 2017, there were 5,764 confirmed cetacean (whale, dolphin, and porpoise) and pinniped (seal and sea lion) strandings documented in the United States.

One of the following criteria must be met for a marine mammal to be considered “stranded”

- *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.*
- *Alive in the water and unable to return to its natural habitat without assistance.*

A mass stranding describes a simultaneous stranding of two or more cetaceans at the same time and place, other than cetacean cow/calf pairs.

Marine mammals strand for a variety of reasons. Results from examinations and necropsies (animal autopsies) show common causes of strandings include: disease; entanglements; harmful algal blooms and associated biotoxins; injuries due to vessel collisions or human interactions such as gunshots; malnutrition; marine debris; parasite infection; 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 cause of stranding remains undetermined. This report provides an overview of marine mammal stranding activities in the United States for calendar year 2017.

Table 1. Marine Mammal Strandings in the United States for Calendar Year 2017.

2017 Strandings	Total (% of National Total)
Pinnipeds	4,019 (70%)
Small Cetaceans	1,499 (26%)
Large Whales	184 (3%)
Unknown Cetacean¹	62 (1%)
Total	5,764

¹ “Unknown Cetacean” represents stranding reports submitted to the National Stranding Database with insufficient data to classify an animal as either Large Whale or Small Cetacean.

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Release of harbor seals successfully rehabilitated at The Marine Mammal Center. Photo: The Marine Mammal Center/ Bill Hunnewell.

The U.S. Marine Mammal Stranding Response Network

The U.S. Marine Mammal Stranding Response Network (National Stranding Network) is comprised of more than 100 organizations that provide first response capabilities for cetaceans and pinnipeds that are sick, injured, in distress, or dead. The overarching goals of the network are to provide for the welfare of live animals, minimize risks to public health and safety, use strandings as a resource for scientific information, advance public education, and enhance the conservation and management of wild populations and, in turn, our 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, (2) leading Unusual Mortality Event (UME) investigations, (3) conducting and supporting biosurveillance and baseline marine mammal health research, and (4) supporting stranding 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 species whose populations are relatively stable, such as common bottlenose dolphins (hereafter bottlenose dolphin; *Tursiops truncatus*), gray whales (*Eschrichtius robustus*), harbor seals (*Phoca vitulina*), and California sea lions (*Zalophus californianus*). Although these species are not listed as threatened or endangered under the Endangered Species Act (ESA), the information and experience gleaned from those cases helps keep the National Stranding Network organizations well trained and prepared for events involving ESA-listed species such as Cook Inlet beluga whales (*Delphinapterus leucas*), Guadalupe fur seals (*Arctocephalus townsendi*), Hawaiian monk seals (*Neomonachus schauinslandi*), North Atlantic right whales (*Eubalaena glacialis*), and Southern Resident killer whales (*Orcinus orca*).

Live animals that are rescued and rehabilitated provide valuable information on the biology, physiology, and disease risks of those species. The National Stranding Network is committed to returning live-stranded and rehabilitated animals to the wild when it is safe to do so for that individual animal and the wild populations. Human safety is the top consideration in every response. In



Network Goals

1. *Provide for the welfare of live animals.*
2. *Minimize risks to public health and safety.*
3. *Use strandings as a resource for scientific information.*
4. *Advance public education.*
5. *Enhance conservation and management of wild populations and marine ecosystems.*

Health Program Activities

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

some cases, euthanasia is the most humane course of action for the welfare of the animal when injuries are severe or the overall prognosis is poor. The decision to euthanize an animal is never approached lightly, and all other options are considered 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 species, the only information available about its 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, marine debris, or the effects of pollution (oil spills, contaminants, and heavy metals). The National Stranding Network provides data to the MMHSRP using a standardized reporting form, and these data are stored in the [National Stranding Database](#). Data collected from stranding responses helps NOAA Fisheries monitor and understand wild stocks and populations, as well as make informed decisions for their management and conservation. The information the National Stranding Network collects on human interaction cases can become important evidence in law enforcement cases, and Network members are trained to follow strict “chain of custody” protocols to assist investigations.

National Overview

Marine Mammal Health Threats



Environmental Degradation and Ecosystem Change

- Climate and ecosystem change
- Environmental contaminants
- Habitat degradation



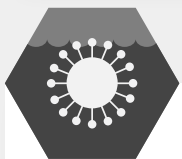
Ocean Noise and Disturbance

- Acoustic disturbance
- Energy exploration
- Ocean noise
- Vessel-based harassment



Fisheries Impacts

- Direct interactions/competition with fisheries
- Effects of fisheries on prey
- Entanglement in fishing gear or marine debris



Disease

- Biotoxins
- Pathogens



Predator-Prey Dynamics

- Predation
- Prey availability



Direct Human Take

- Human-caused mortality (including illegal shooting)
- Illegal feeding and harassment
- Unregulated harvest (outside of the United States)



Pollution

- Chemical contaminants
- Oil spills



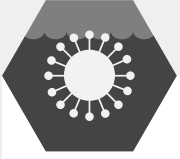
Vessel Interactions

- Vessel harassment
- Vessel strikes

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. Marine mammals are classified into four different taxonomic groups: cetaceans (whales, dolphins, and porpoises); pinnipeds (seals, sea lions, and walruses); sirenians (manatees and dugongs); 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 walruses. The U.S. Fish and Wildlife Service (USFWS) oversees the management of sirenians, sea otters, walruses, and polar bears. This report only includes data for species under the jurisdiction of NOAA Fisheries.

Top Health Threats for Pinnipeds



Disease

- Biotoxins
- Pathogens



Environmental Degradation and Ecosystem Change

- Climate and ecosystem change
- Habitat degradation



Direct Human Take

- Human-caused injuries (including illegal shooting)
- Illegal feeding and harassment



Fisheries Impacts

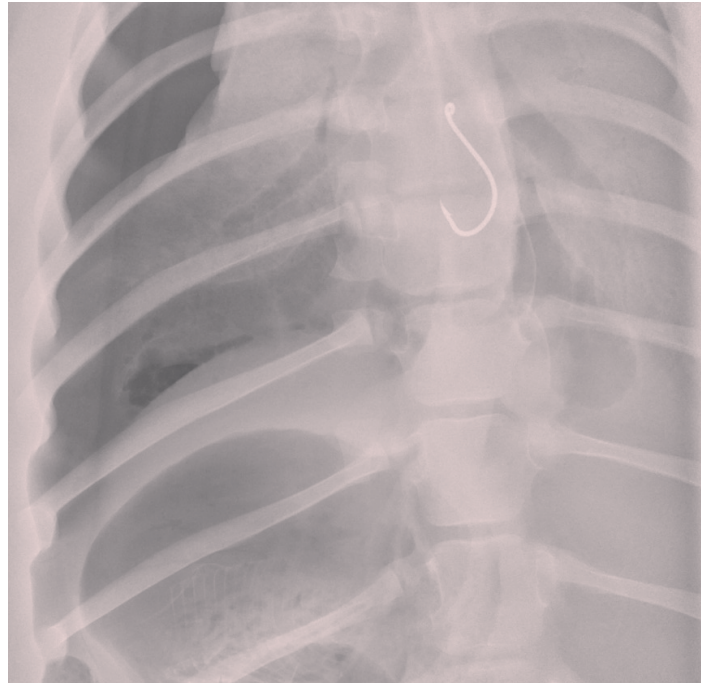
- Direct interactions/competition with fisheries
- Effects of fisheries on prey
- Entanglement in fishing gear or marine debris

Pinnipeds²

Pinnipeds are seals, fur seals, and sea lions. 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 2017 (Table 2) were the California sea lion, harbor seal, Northern elephant seal (*Mirounga angustirostris*), gray seal (*Halichoerus grypus*), and Steller sea lion (*Eumetopias jubatus*).

Table 2. Most common pinniped species to strand nationally in 2017.

Species	Confirmed Stranding Reports 2017	11-Year Average \pm Standard Deviation ³ (2006-2016)
California Sea Lion	1,642	2,415 \pm 1,240
Harbor Seal	1,065	1,153 \pm 123
Northern Elephant Seal	454	436 \pm 101
Gray Seal	297	166 \pm 49
Steller Sea Lion	116	127 \pm 26



An ingested fish hook was the cause of death for Hawaiian monk seal “RN40” (photo taken under NOAA Fisheries Permit No. 18786). Photo: NOAA Fisheries.

² Illustrations depicted are not to scale relative to each other.

³ A standard deviation is a measure used to quantify the amount of variation within a set of values.



California sea lion (*Zalophus californianus*)

- **Weight:** 220 (adult females) to 850 pounds (adult males)
- **Ocean:** Pacific
- **Status:** Not endangered

Harbor seal (*Phoca vitulina*)

- **Weight:** 180 to 285 pounds (average adult size)
- **Oceans:** Atlantic and Pacific
- **Status:** Not endangered



Northern elephant seal (*Mirounga angustirostris*)

- **Weight:** 1,500 (adult females) to 4,500 pounds (adult males)
- **Ocean:** Pacific
- **Status:** Not endangered



Gray seal (*Halichoerus grypus*)

- **Weight:** 550 (adult females) to 880 pounds (adult males)
- **Ocean:** Atlantic
- **Status:** Not endangered



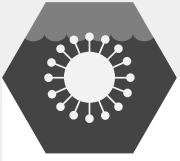
Steller sea lion (*Eumetopias jubatus*)

- **Weight:** 800 (adult females) to 2,500 pounds (adult males)
- **Ocean:** Pacific
- **Status:** Endangered (Western Pacific DPS⁴); not Endangered (Eastern Pacific DPS)



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

Top Health Threats for Small Cetaceans



Disease

- Biotoxins
- Pathogens



Environmental Degradation and Ecosystem Change

- Climate and ecosystem change
- Habitat degradation



Fisheries Impacts

- Direct interactions/competition with fisheries
- Effects of fisheries on prey
- Entanglement in fishing gear or marine debris



Predator-Prey Dynamics

- Predation
- Prey availability

Small Cetaceans⁵

Small cetaceans are the toothed species of whales, dolphins, and porpoises that range in length from 5 to 25 feet. 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 2017 (Table 3) were the bottlenose dolphin, short-beaked common dolphin (*Delphinus delphis*), harbor porpoise (*Phocoena phocoena*), false killer whale (*Pseudorca crassidens*), and long-beaked common dolphin (*Delphinus capensis*).

Table 3. Most common small cetacean species to strand nationally in 2017.

Species	Confirmed Stranding Reports 2017	11-Year Average \pm Standard Deviation ⁶ (2006-2016)
Bottlenose Dolphin	689	809 \pm 340
Short-beaked Common Dolphin	208	133 \pm 91
Harbor Porpoise	192	201 \pm 40
False Killer Whale	99	2 \pm 1
Long-beaked Common Dolphin	54	50 \pm 19



A bottlenose dolphin surfaces in the wake of a passing vessel. Photo: Marine Mammal Stranding Center.

⁵ Illustrations depicted are not to scale relative to each other.

⁶ A standard deviation is a measure used to quantify the amount of variation within a set of values.



Bottlenose dolphin (*Tursiops truncatus*)

- **Weight:** Up to 1,400 pounds
- **Oceans:** Atlantic, Gulf of Mexico, and Pacific
- **Status:** Not endangered

Short-beaked common dolphin (*Delphinus delphis*)

- **Weight:** Up to 170 pounds
- **Oceans:** Atlantic, Gulf of Mexico, Pacific
- **Status:** Not endangered



Harbor porpoise (*Phocoena phocoena*)

- **Weight:** 130 to 200 pounds (average adult size)
- **Ocean:** Atlantic, Gulf of Mexico, Pacific
- **Status:** Not endangered

False killer whale (*Pseudorca crassidens*)

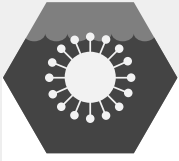
- **Weight:** Up to 3,000 pounds
- **Ocean:** Atlantic, Gulf of Mexico, Pacific
- **Status:** Endangered (Main Hawaiian Islands Insular Distinct Population Segment³); not endangered (Atlantic, Gulf of Mexico)



Long-beaked common dolphin (*Delphinus capensis*)

- **Weight:** 160 to 500 pounds (average adult size)
- **Ocean:** Pacific
- **Status:** Not endangered

Top Health Threats for Large Whales



Disease

- Biotoxins
- Pathogens



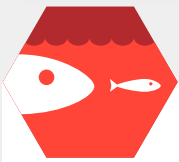
Environmental Degradation and Ecosystem Change

- Climate and ecosystem change
- Habitat degradation



Fisheries Impacts

- Direct interactions/competition with fisheries
- Effects of fisheries on prey
- Entanglement in fishing gear or marine debris



Predator-Prey Dynamics

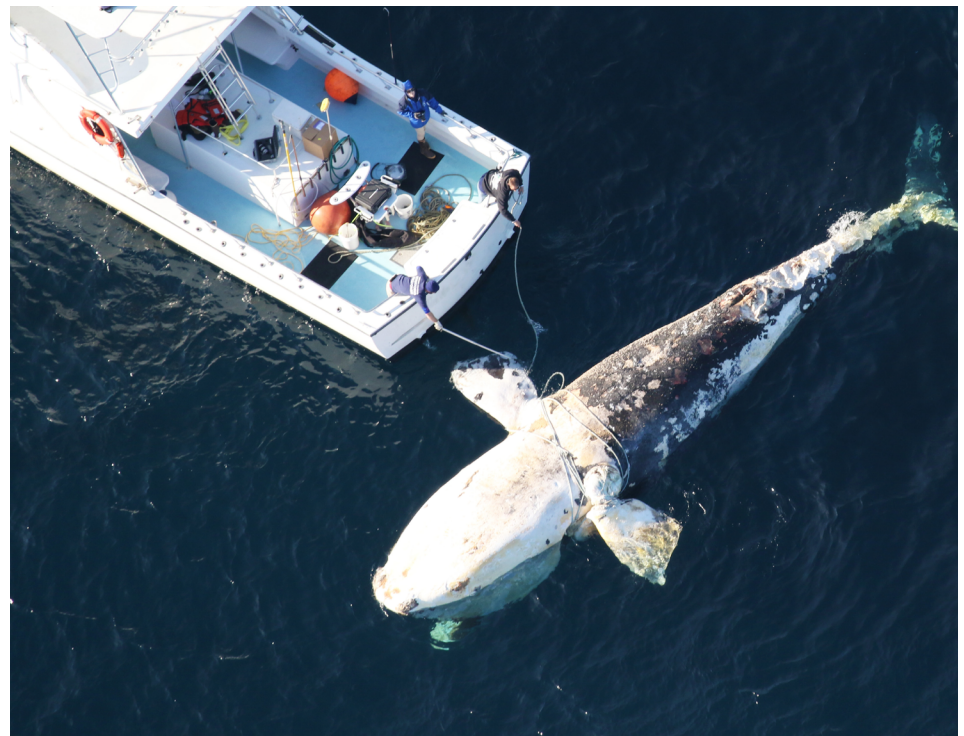
- Predation
- Prey availability

Large Whales⁷

Large whales are all of the baleen whales plus the largest toothed cetacean, the sperm whale (*Physeter macrocephalus*). Nationally, the five most commonly stranded large whales in 2017 (Table 4) were the humpback whale (*Megaptera novaeangliae*), gray whale, minke whale (*Balaenoptera acutorostrata*), fin whale (*Balaenoptera physalus*), and North Atlantic right whale.

Table 4. Most common large whale species to strand nationally in 2017.

Species	Confirmed Stranding Reports 2017	11-Year Average \pm Standard Deviation ⁸ (2006-2016)
Humpback Whale	70	48 \pm 19
Gray Whale	44	29 \pm 8
Minke Whale	31	13 \pm 6
Fin Whale	7	8 \pm 3
North Atlantic Right Whale	5	3 \pm 2



A team from the Virginia Aquarium located and attached a satellite tag to a dead North Atlantic right whale (NOAA Permit No. 20556). Photo: Sea to Shore Alliance.

⁷ Illustrations depicted are not to scale relative to each other.

⁸ A standard deviation is a measure used to quantify the amount of variation within a set of values.



Humpback whale (*Megaptera novaengliae*)

- **Weight:** Up to 40 tons
- **Ocean:** Atlantic, Gulf of Mexico, Pacific
- **Status:** Endangered/threatened (some subpopulations); not endangered (some subpopulations)

Gray whale (*Eschrichtius robustus*)

- **Weight:** Up to 45 tons
- **Ocean:** Pacific
- **Status:** Endangered (Western North Pacific population); not endangered (Eastern North Pacific population)



Minke whale (*Balaenoptera acutorostrata*)

- **Weight:** Up to 10 tons
- **Ocean:** Atlantic, Gulf of Mexico, Pacific
- **Status:** Not endangered



Fin whale (*Balaenoptera physalus*)

- **Weight:** Up to 80 tons
- **Ocean:** Atlantic, Gulf of Mexico, Pacific
- **Status:** Endangered



North Atlantic right whale (*Eubalaena glacialis*)

- **Weight:** Up to 70 tons
- **Ocean:** Atlantic, Gulf of Mexico
- **Status:** Endangered



Comparing Confirmed Stranding Reports in 2017 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). The National Stranding Network then responds to confirm, document, and take the appropriate actions (as resources allow). In 2017, there were 5,764 confirmed marine mammal strandings nationwide. This number is comparable to the 11-year (2006-2016) average ($n=6,318 \pm 1,302$), a time period in which national stranding response effort remained relatively consistent. The high number of strandings reported in the figure below in 2009, 2013, and 2015 can generally be attributed to increased strandings of live and dead animals connected with oceanographic changes or UMEs that occurred in these years.

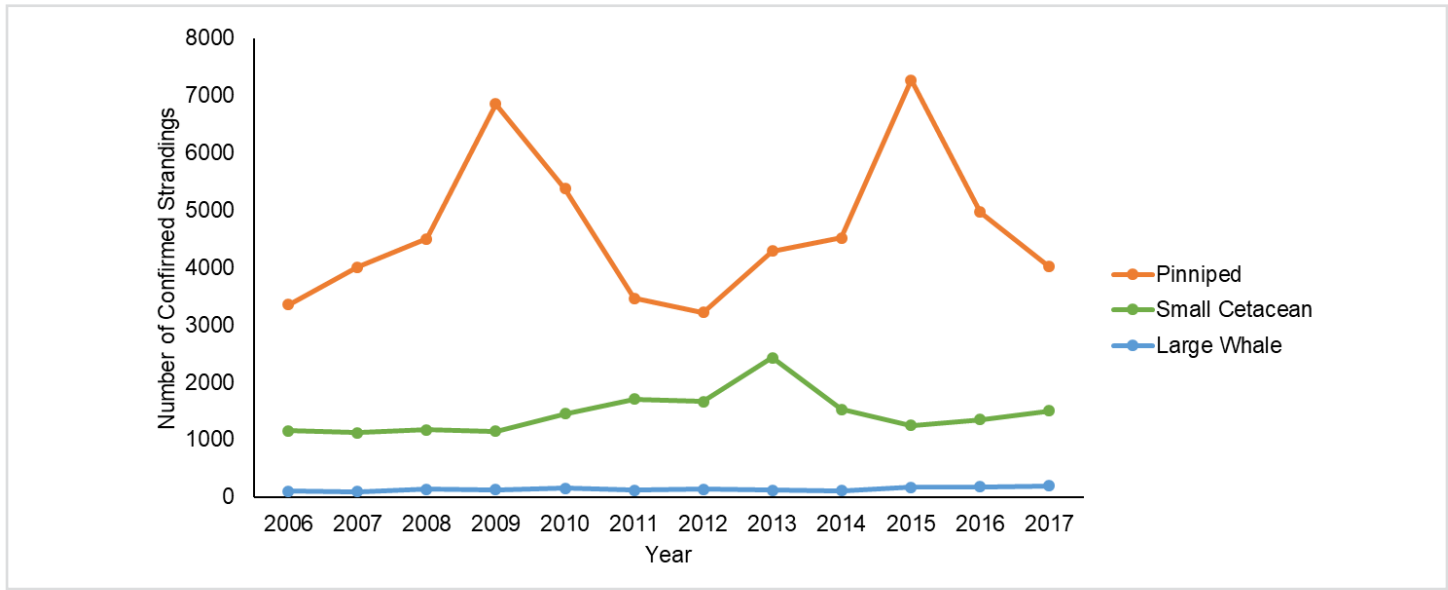


Figure 1. Confirmed marine mammal stranding reports nationwide by taxonomic group, 2006–2017.

Of the confirmed reports in 2017, 70 percent involved pinnipeds, 26 percent involved small cetaceans, and 3 percent involved large whales (Figure 2). Sometimes carcasses were too decomposed to classify animals as small cetaceans or large whales, and the location of the stranding limited access to, and recovery of, the carcass. These animals were categorized as “unknown cetacean.” In 2017, 1 percent of stranded animals were classified as an unknown cetacean.

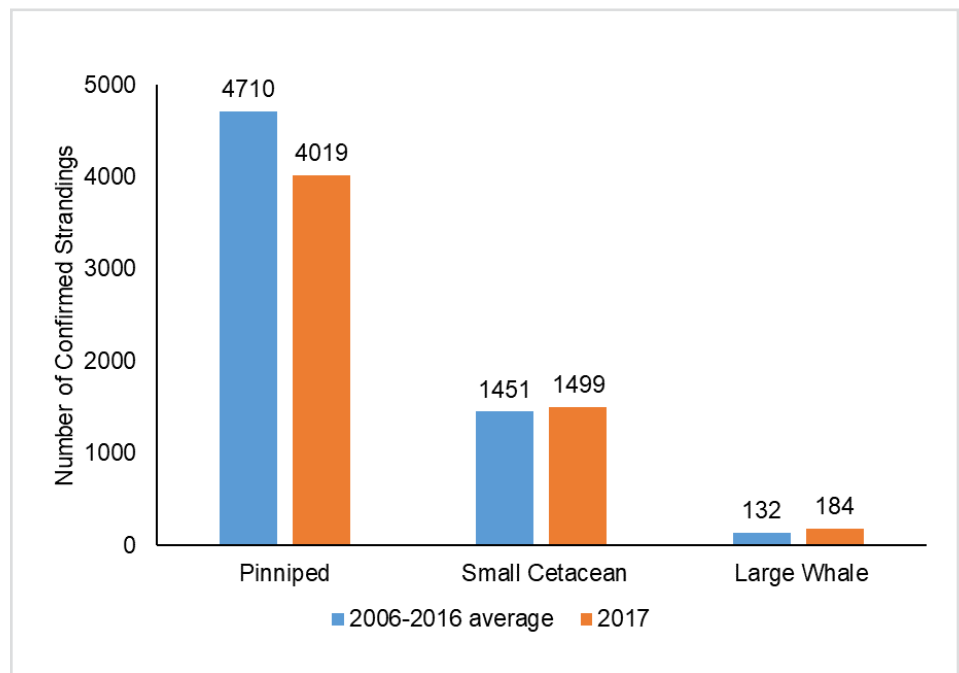


Figure 2. Nationwide stranding summary. In 2017, an additional 58 dead stranded marine mammals were classified as an “unknown cetacean.”

What Age Classes of Marine Mammals Strand?

Pinnipeds

Consistent with the 11-year average, the most commonly stranded age class for pinnipeds nationwide in 2017 was pups (Figure 3). More than 70 percent of harbor seal strandings reported involved pups. Pup mortality in the first year is typically high due to factors including conditions associated with fetal development and/or premature birth, maternal separation, disease, predation by shoreline predators or domestic dogs, dehydration, and starvation.

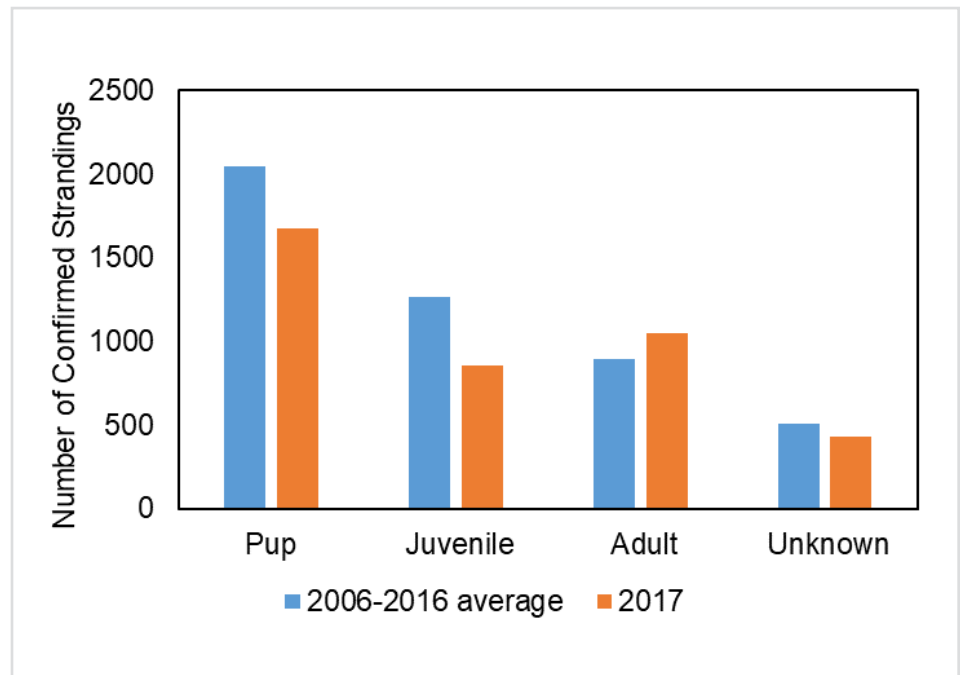


Figure 3. Pinniped strandings by age class, nationwide.

Small Cetaceans

Age class of small cetaceans is determined by the examination of reproductive organs or estimated from length data. Unlike pinnipeds, stranded cetaceans are more likely to represent all age classes—both immature and adult animals (Figure 4).

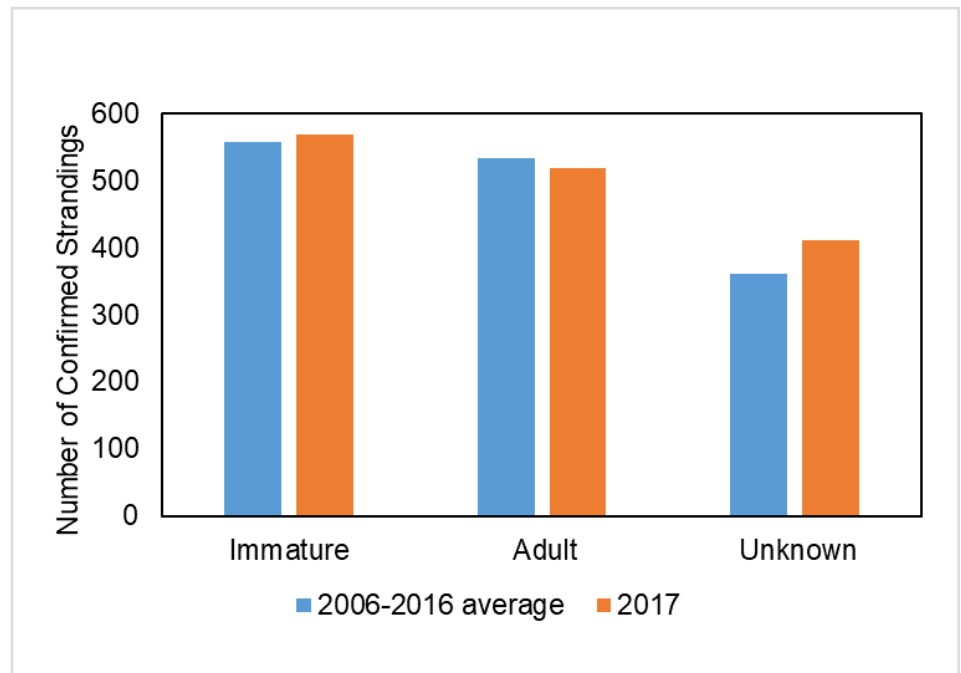


Figure 4. Small cetacean strandings by age class, nationwide.

Large Whales

Similar to small cetaceans, age class of large whales (Figure 5) is determined by the examination of reproductive organs or estimated from length data.

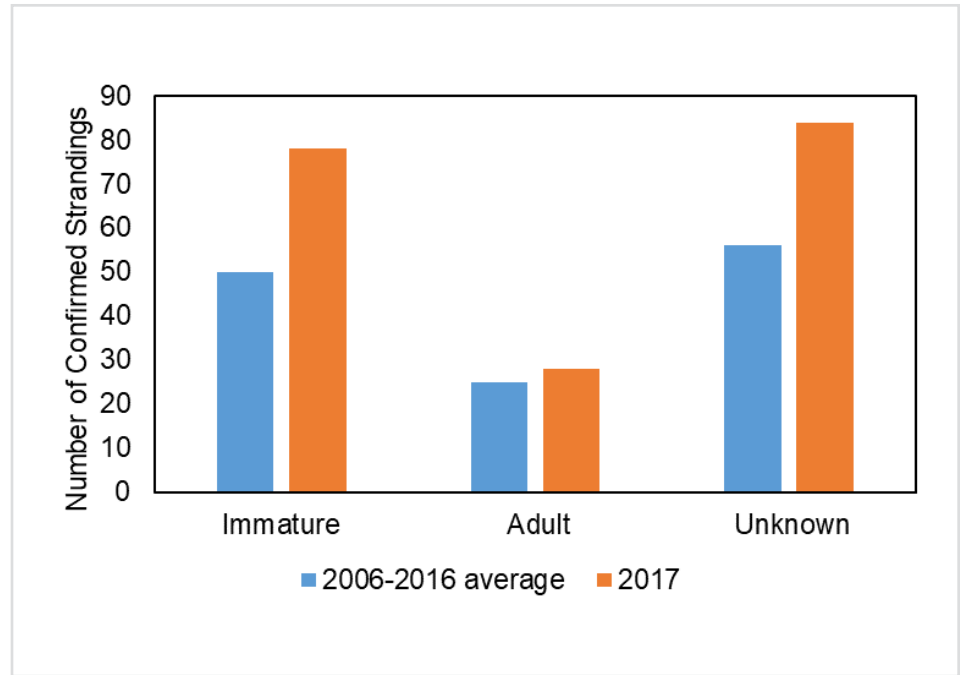


Figure 5. Large whale strandings by age class, nationwide.

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 Unusual Mortality Events (UMEs) under the MMPA. There are seven criteria that identify a mortality event as “unusual,” and a UME must meet at least one. A Working Group of marine mammal health experts determines if the event meets at least one of the UME criterion, after which NOAA Fisheries may declare the event an UME. Understanding and investigating marine mammal UMEs is crucial because these events 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, Gulf of Mexico, and Pacific, including 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 2017, two new UME Investigations were declared and one was ongoing from a previous declaration (Table 5; an additional UME was declared for Florida manatees, under USFWS jurisdiction). More information about UMEs is available at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-unusual-mortality-events>.

Table 5. Marine mammal UMEs occurring in the United States during calendar year 2017.

Year Declared	UME Name	Number of Animals Involved (through 12/31/2017)	Body of Water/Location	Preliminary Cause
2017	Atlantic Humpback Whale	60	Atlantic Ocean	Suspect Human Interaction (Vessel Strike)
2017	North Atlantic Right Whale	United States = 5 Canada = 12	Atlantic Ocean, Canada and United States	Human Interaction (Vessel Strike/Rope Entanglement)
2015 (ongoing)	Guadalupe Fur Seal	236	Pacific Ocean, California	Ecological Factors

Evidence of Human Interaction

Although animals live-strand and/or die of natural causes, some strandings are caused by human interactions. These interactions can be either 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, interactions with vessels, excessive underwater noise, and general harassment by people are common examples of human-caused threats. In 2017, 611 stranded marine mammals were confirmed as showing signs of human interaction, accounting for roughly 11 percent of all reported animals. Of the individuals documented with evidence of human interaction, pinnipeds were affected by fishery interactions (e.g., entanglement in gear or scars, ingested gear), and several individuals (n=48) were found with gunshot wounds (Figure 6). A proportion of small cetaceans (Figure 7) also had injuries consistent with fishery interactions (e.g., entanglement scars, gunshot wounds, ingested gear), whereas large whales (Figure 8) had wounds consistent with fishery and vessel interactions (e.g., propeller scars, bruising, fractures, internal bleeding). One minke whale was also found with gunshot wounds in the state of Washington (Figure 8). 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).



Dead stranded seal with wounds indicative of a vessel strike was reported to the Alaska Region Marine Mammal Network. Photo: provided to the Alaska Marine Mammal Stranding Network.

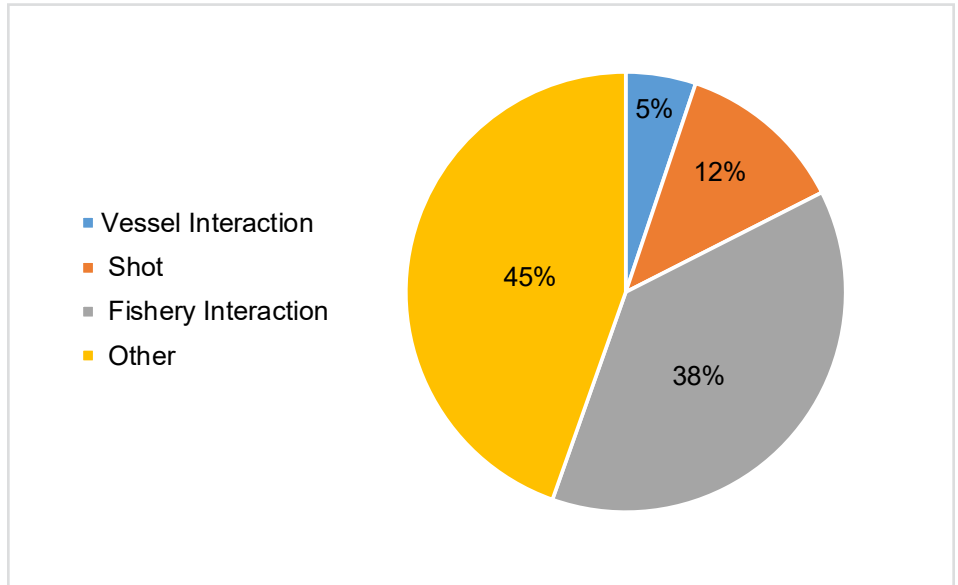


Figure 6. Pinniped human interactions, 2017 (n=385). Some animals had more than one type of human interaction confirmed at stranding.

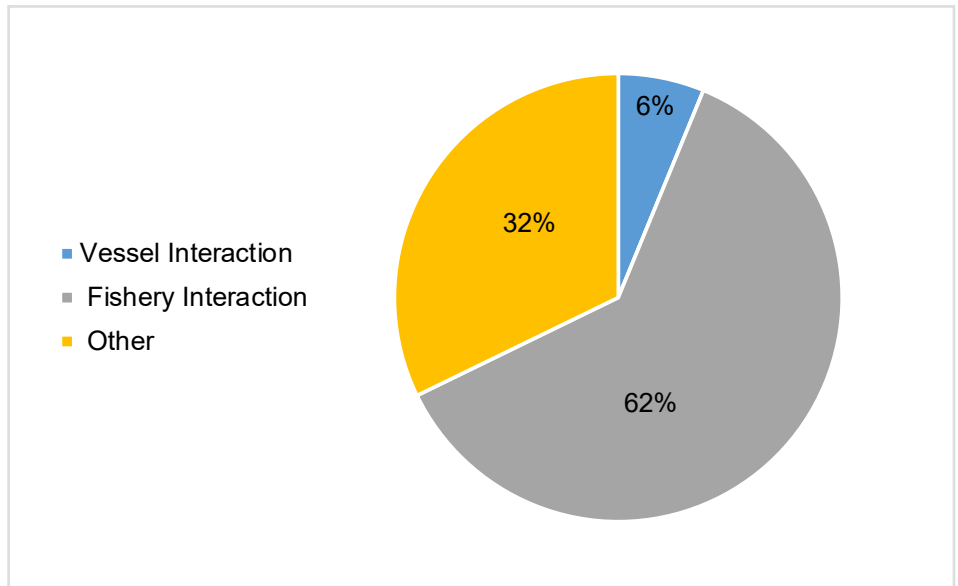


Figure 7. Small cetacean human interactions, 2017 (n=168). Some animals had more than one type of human interaction confirmed at stranding.

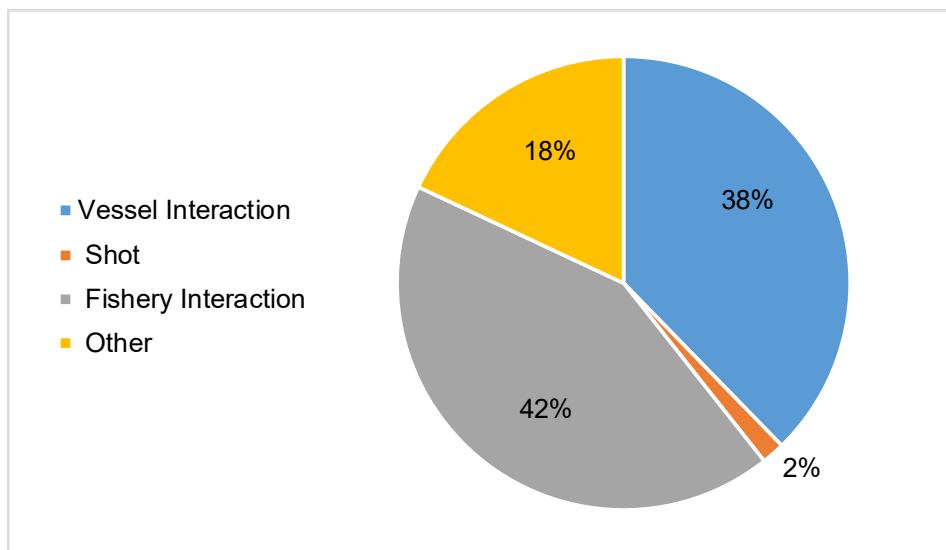


Figure 8. Large whale human interactions, 2017 (n=58). Some animals had more than one type of human interaction confirmed at stranding.

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 healthy animals back to the wild. Pinnipeds are the most common candidates for rehabilitation since they are relatively small and live partially on land, so they are easier to handle than cetaceans, and there are facilities on both the East and West coasts that specialize in pinniped care and treatment. Since cetaceans live entirely in water, fewer facilities nationwide can accommodate them, and none are equipped to provide appropriate care for adult large whales. Regulations require that a marine mammal held for rehabilitation be released within six months, unless an attending veterinarian determines that the animal might adversely affect wild populations, the release is unlikely to be successful due to physical condition and behavior, or more time is needed for assessment and medical treatment. In 2017, 1,724 animals were rehabilitated nationwide (pinniped=1,707; small cetacean=17) and 1,006 (58 percent) were released. Stranded animals sometimes die in rehabilitation due to the poor condition they arrive in or other health complications. In 2017, 706 (41 percent) marine mammals died in rehabilitation. In addition, 12 (1 percent) rehabilitated marine mammals were deemed non-releasable⁹ due to behavioral, ecological, and/or medical concerns that left them unlikely to survive in the wild. The MMHSRP and NOAA Fisheries' Permits and Conservation Division work with marine mammal public display and research facilities to place non-releasable animals into permanent managed care. 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>.



Rescued California sea lions swim in their pool at The Marine Mammal Center. Photo: The Marine Mammal Center/Bill Hunnewell.

⁹ This number includes two cetaceans that stranded and were rehabilitated starting in 2017, and were moved to permanent managed care in 2018.

Balancing a Regional Approach to Marine Mammal Strandings with National Consistency

The National Stranding Network is comprised of highly skilled and trained professional organizations, including aquaria, for-profits, 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 (SA) issued by NOAA Fisheries or in their capacity as federal, state, or local governments. They conduct the on-the-ground activities required to safely respond to marine mammal strandings and are committed to animal welfare and education. Often faced with challenging circumstances, trained network members are responsible for making decisions that ensure appropriate care is provided to stranded animals.

Each of NOAA Fisheries' five jurisdictional regions (Figure 9) has a Regional Stranding Coordinator and/or Regional Stranding Administrator, who processes and administers SAs and coordinates stranding response within their region: Alaska Region (AKR), Greater Atlantic Region (GAR; Maine through Virginia), Pacific Islands Region (PIR; Hawaii, Guam, 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 strandings vary widely across the United States (Table 6 and Figure 10), and can fluctuate within the same geographical area between years (Figure 11). 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 also in the likelihood of detection and reporting of stranding events.

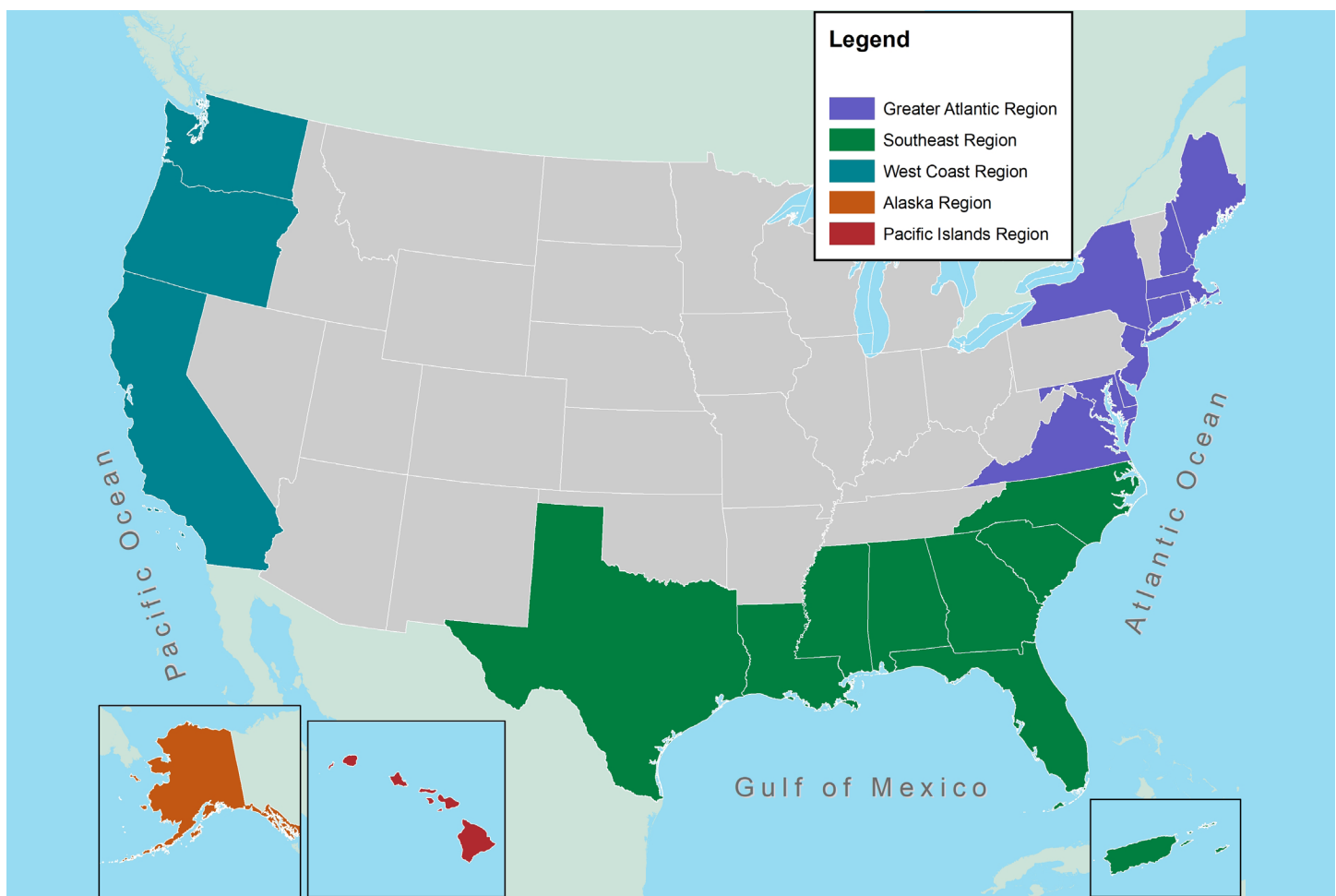


Figure 9. NOAA Fisheries' five jurisdictional regions.

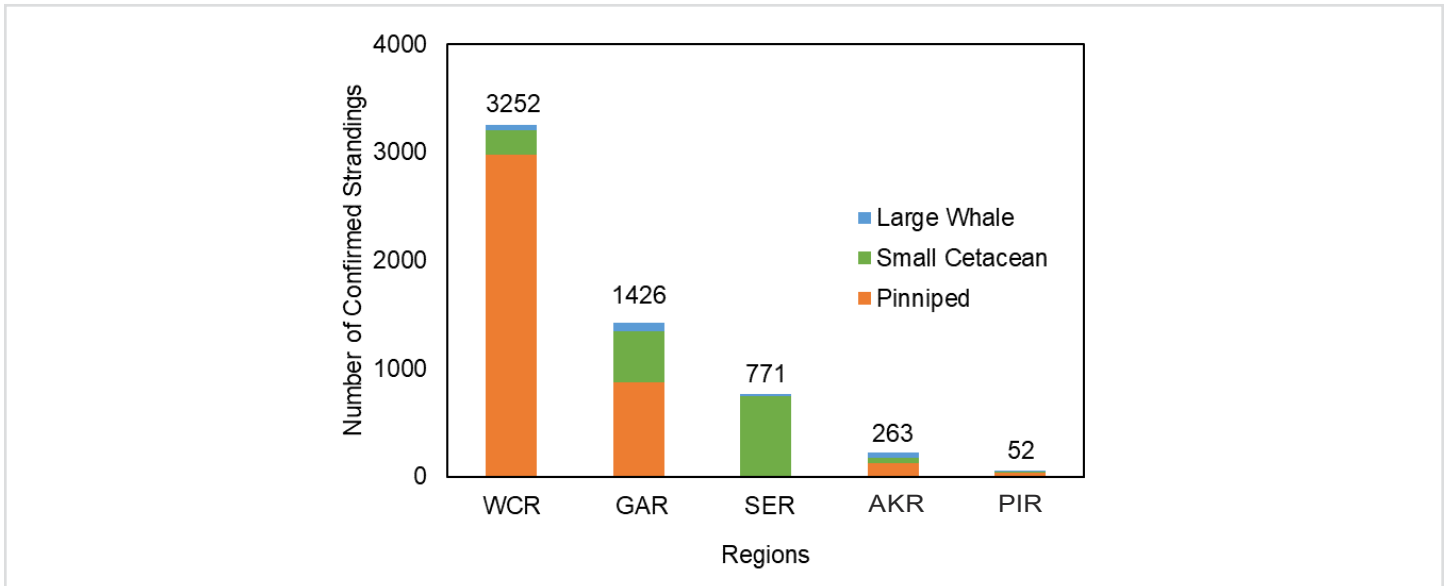


Figure 10: Regional variation in the number of marine mammal strandings by taxonomic group, 2017.

Table 6. Nationwide stranding summary by region, 2017.

2017 Strandings	WCR	GAR	SER	AKR	PIR	Total
Pinnipeds	2,977	874	7	127	34	4,019
Small Cetaceans	226	467	741	51	14	1,499
Large Whales	46	78	13	43	4	184
Unknown Cetacean	3	7	10	42	0	62
Total	3,252	1,426	771	263	52	5,764
(% of National Total)	(56%)	(25%)	(13%)	(5%)	(1%)	

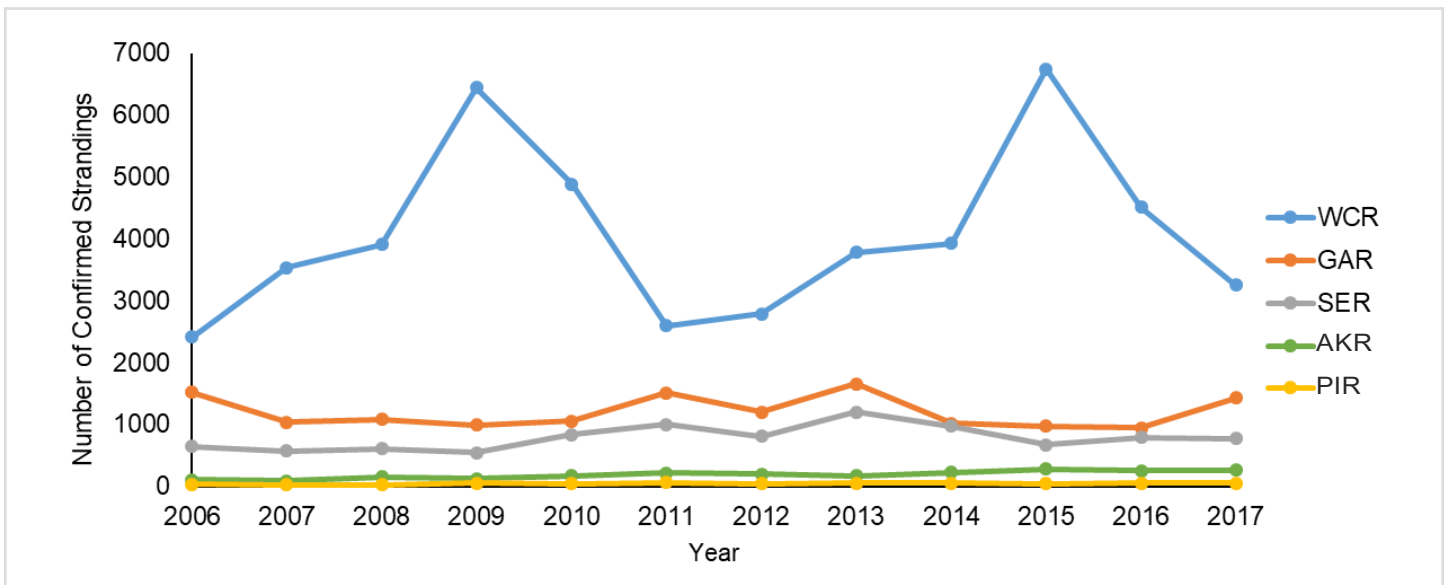


Figure 11. Confirmed marine mammal strandings by region from 2006–2017. In 2017, strandings in most regions remained level as compared to recent years; WCR stranding totals decreased and GAR totals increased slightly.

Alaska Region

The NOAA Fisheries Alaska Region (AKR) (Figure AKR-1) encompasses approximately 33,904 miles of coast-line and includes several large bodies of water (Beaufort Sea, Chukchi Sea, Bering Sea, and Gulf of Alaska). Given the size and remoteness of Alaska, this region contains some of the least visited coastline in the United States. The 263 confirmed marine mammal strandings in the Alaska Region in 2017 is slightly higher than its 11-year (2006-2016) average ($n=165 \pm 77$).



Figure AKR-1. NOAA Fisheries Alaska Region.

What Types of Marine Mammals Strand in the AKR?

More than 25 different species of marine mammals can be found in the waters of Alaska, with the majority of stranding reports involving pinnipeds (Figure AKR-2). Common pinniped species include the harbor seal, Steller sea lion, northern fur seal (*Callorhinus ursinus*), and ringed seal (*Phoca hispida*) (Figure AKR-3). Large whale species such as gray, humpback, and sperm whales are known to strand (Figure AKR-5). The region also has many small cetacean species including the beluga whale, harbor porpoise, and killer whale (Figure AKR-4). Belugas may live-strand when molting or chasing prey in shallow habitats, or if they are suffering from injuries or disease. Belugas may also mass strand during tidal fluctuations, which can be significant at such high latitudes. Unlike other whales and dolphins, healthy belugas that live-strand are usually able to refloat themselves during the next high tide, but some have died after live-stranding on their sides and inhaling mud and/or water.

Table AKR-1. Five most frequently stranded marine mammal species in the Alaska Region.

Species	Confirmed Stranding Reports 2017	11-Year Average \pm Standard Deviation (2006-2016)
Steller Sea Lion	36	36 \pm 11
Harbor Seal	35	28 \pm 12
Beluga Whale	28	15 \pm 6
Humpback Whale	22	15 \pm 9
Gray Whale	16	12 \pm 6

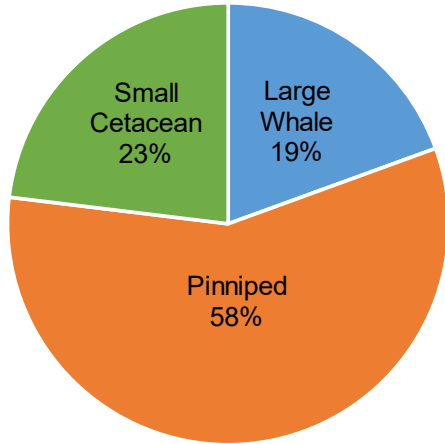


Figure AKR-2. Alaska Region marine mammal strandings, 2017 (n=263). Unknown cetacean (n=42).

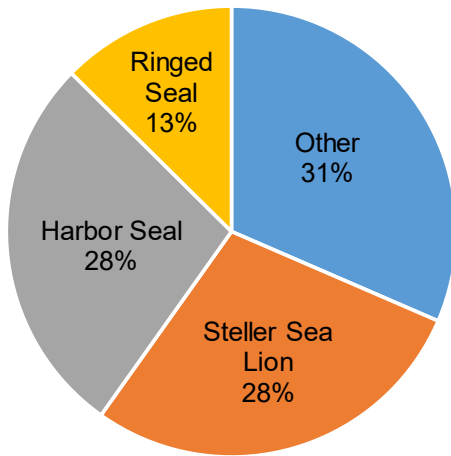


Figure AKR-3. Alaska Region pinniped strandings by species, 2017 (n=127). Other includes northern fur seal (n=10), spotted seal (n=9), bearded seal (n=7), and unidentified (n=14).

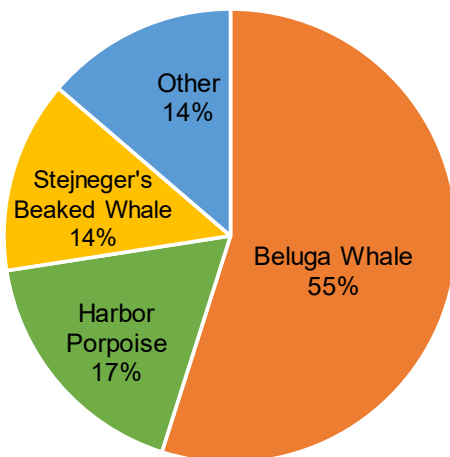


Figure AKR-4. Alaska Region small cetacean strandings by species, 2017 (n=51). Other includes Dall's porpoise (n=3), killer whale (n=3), Cuvier's beaked whale (n=1), and hybrid porpoise (n=1).

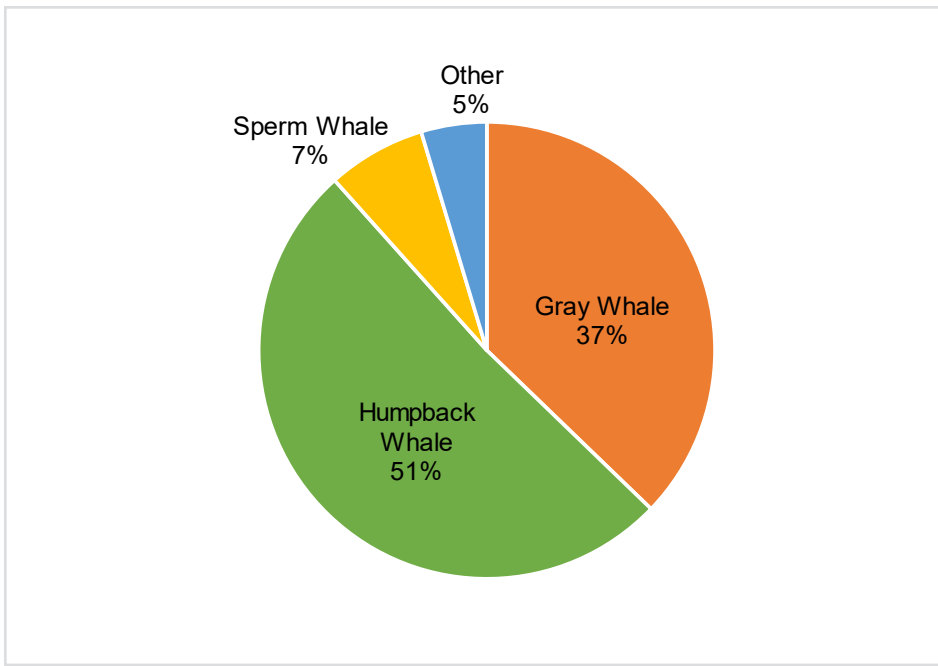


Figure AKR-5. Alaska Region large whale strandings by species, 2017 (n=43). Other includes bowhead whale (n=1), fin whale (n=1), and unidentified (n=5).

When Did AKR Marine Mammals Strand in 2017?

The Alaska Region has many year-round or seasonally resident populations of marine mammals, and the numbers of stranded animals are elevated in the spring and summer months (Figure AKR-6). This is most likely a reflection of the high number of animals that use Alaska waters in the spring and summer as their feeding grounds, such as gray whales, which migrate from their winter grounds in Mexico along the west coasts of the United States and Canada to feed in Alaska waters in late spring/early summer. The number of marine mammal strandings reported to the network may also be higher during the summer, due to increased stranding response capabilities during the spring/summer months since the severe winters limit response efforts, especially in remote areas of Alaska.

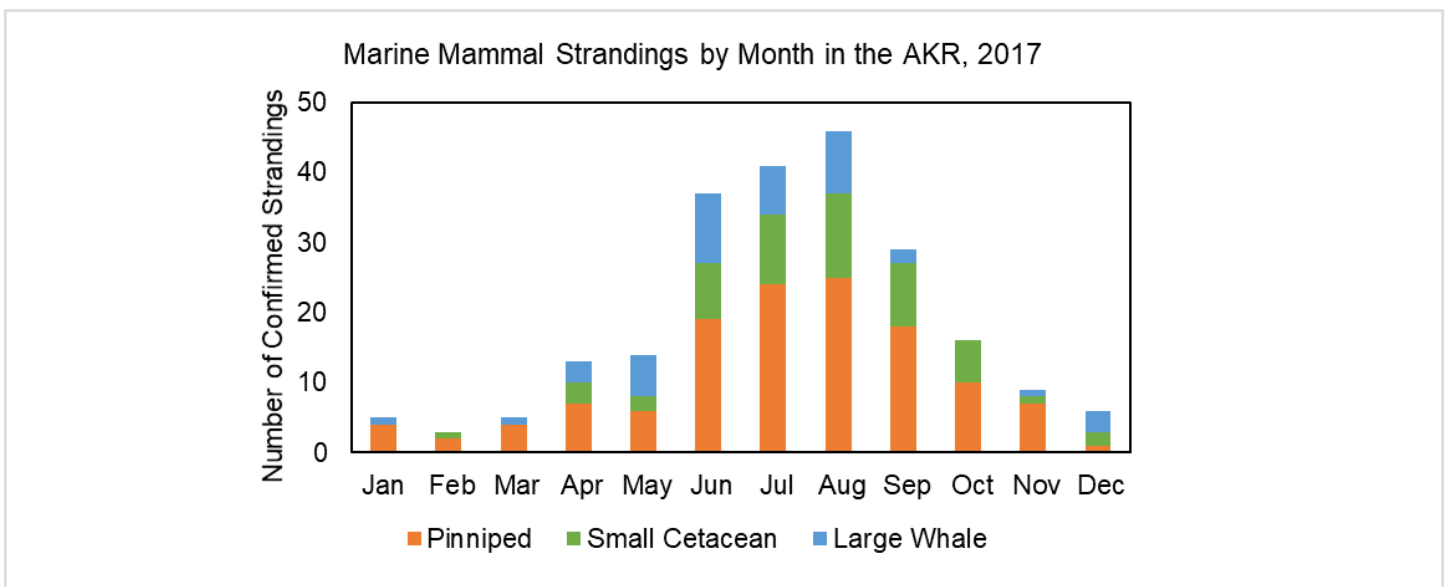


Figure AKR-6. Seasonality of marine mammal strandings in the Alaska Region, 2017.

Are Marine Mammals in the AKR Stranding Alive or Dead?

In 2017, the largest proportion (73 percent) of strandings in Alaska reported to the network involved dead animals. As most areas are remote, and network capabilities are limited due to location, the condition and identification of stranded animals cannot always be confirmed. When marine mammals strand alive, only some can be transported to the region's only marine mammal rehabilitation center, which is the Alaska Sealife Center in Seward. Of the animals admitted to rehabilitation in 2017 (n=6), 50 percent (n=3) were released.

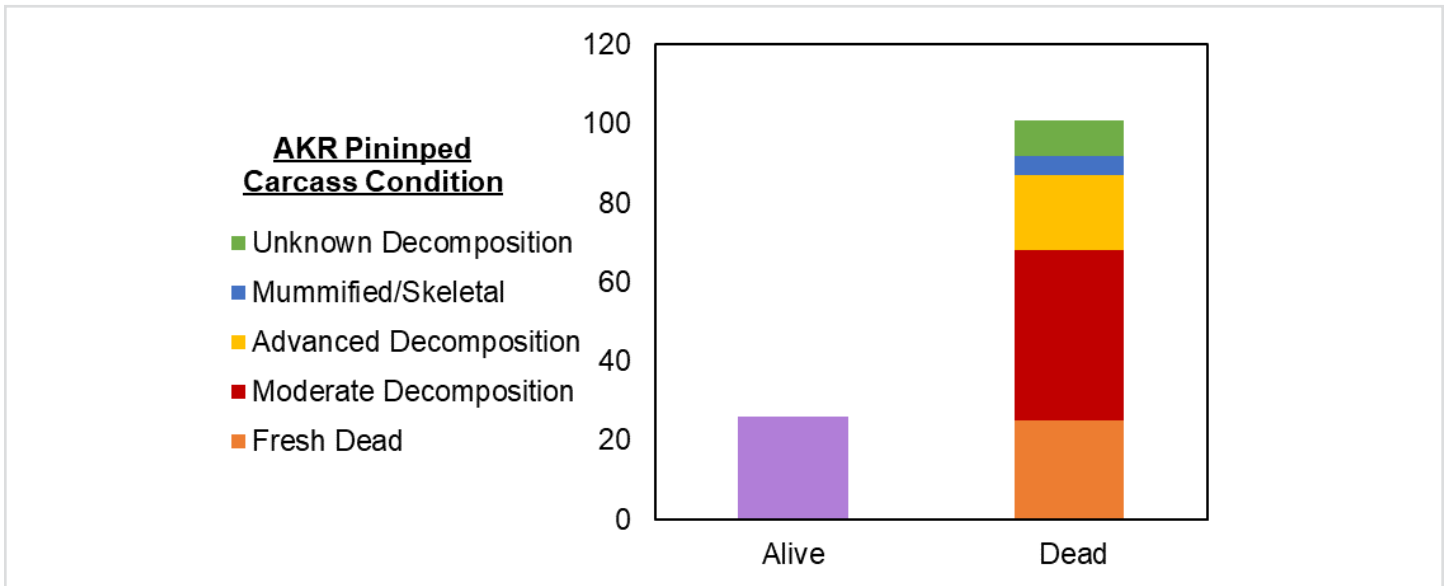


Figure AKR-7. Alaska Region alive and dead pinniped strandings, 2017.

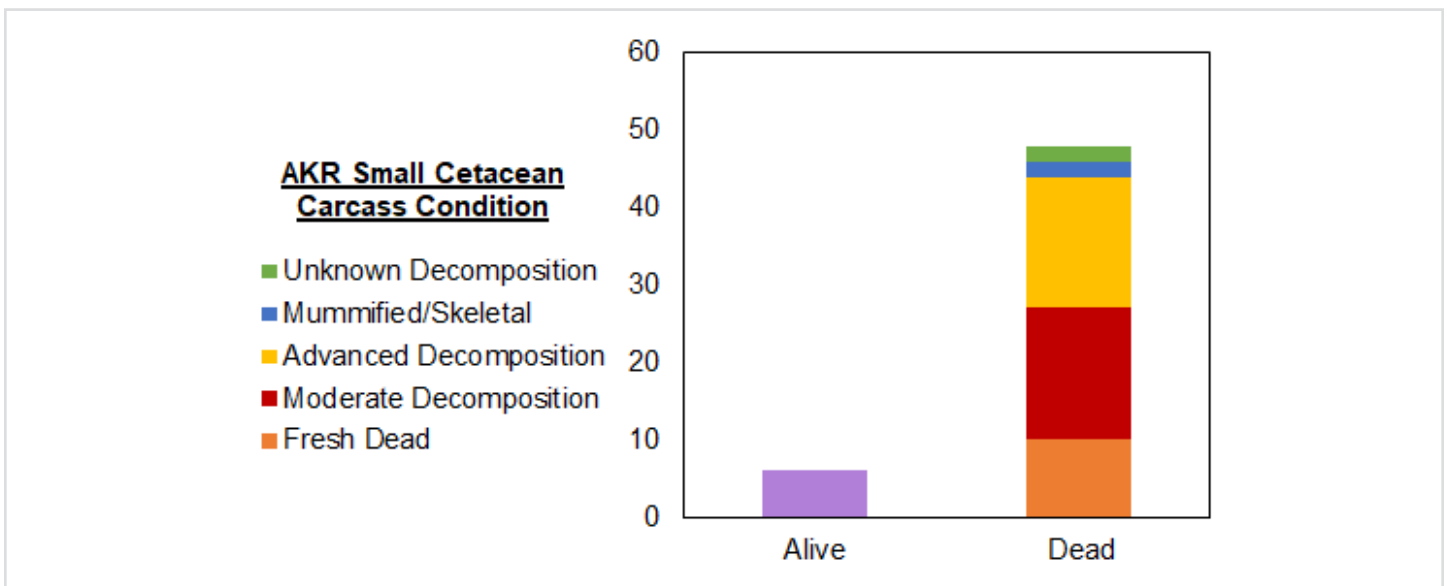


Figure AKR-8. Alaska Region alive and dead small cetacean strandings, 2017.

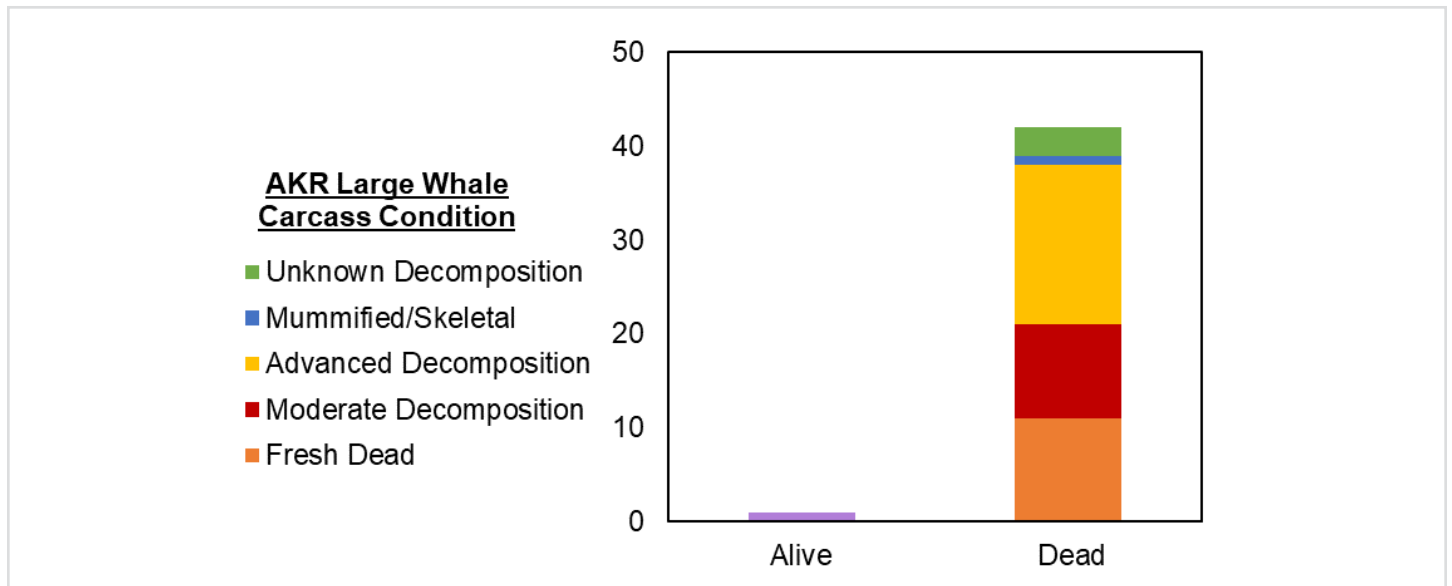


Figure AKR-9. Alaska Region alive and dead large whale strandings, 2017.

What Types of UMEs Were Occurring in the AKR?

While historically there have been some UMEs declared in Alaska, there were no new or open UME investigations underway in 2017. More information about UMEs is available at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-unusual-mortality-events>.

AKR High-Profile Case: Glacier Bay and Icy Strait Humpback Whale Health Concerns

As a member of the Alaska Region Marine Mammal Stranding Network, Glacier Bay National Park and Preserve responds to marine mammal strandings within the park and surrounding areas. Humpback whales in Glacier Bay and Icy Strait have been the focus of more than 30 years of consistent population monitoring by park biologists, and in recent years there have been several indications of population challenges. Beginning in 2014, Glacier Bay National Park documented unusually low calving rates for the species, and unprecedented numbers of calves disappearing from the area in mid-summer. In addition, adult whales with long histories of site fidelity to Glacier Bay and Icy Strait were no longer sighted, and the few individuals that did return to the area appeared abnormally thin, which was cause for more concern.

While Glacier Bay National Park did not respond to any humpback whale strandings in 2017, several free-ranging humpback whales with unusual skin conditions were documented. Photographs of the pectoral flippers of a known individual (SEAK ID #118) in mid-July showed diffuse bleeding and what appeared to be small holes in the skin (Figure AKR-10). Glacier Bay National Park observed this adult male on several occasions and noted that the skin on his head and back appeared to be granular and blotchy, although bleeding was not observed in these areas. While we do not know what caused this condition, consultations with experienced observers suggest that a severe infestation of cyamids (whale lice) may be responsible for this roughened appearance.



Figure AKR-10. The cause of skin abnormalities on the pectoral fins of SEAK ID #118 appear to be related to a cyamid infestation. Photo: Tod Sebens (MV Taz).

Greater Atlantic Region

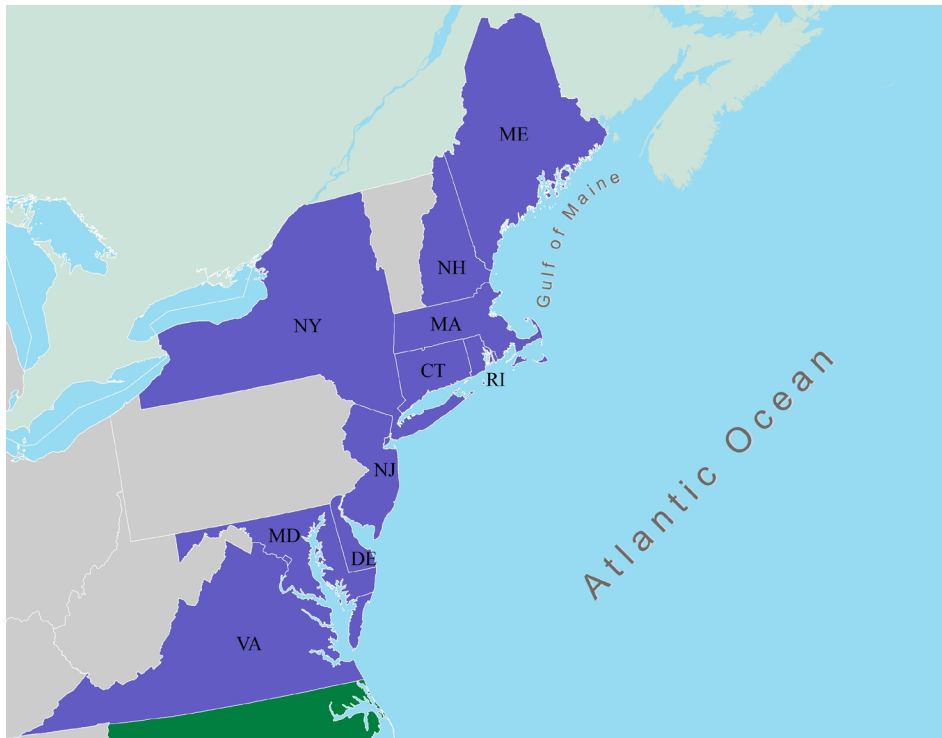


Figure GAR-1. NOAA Fisheries Greater Atlantic Region.

The NOAA Fisheries Greater Atlantic Region (GAR) includes 10 coastal states from Virginia to Maine (Figure GAR-1). This region encompasses approximately 17,433 miles of coastline in the Northwest Atlantic, and includes large bodies of water such as the Gulf of Maine. The region contains several large major cities (New York, and Boston), busy ports and high traffic areas, in addition to a well visited coastline. The 1,426 confirmed marine mammal strandings in the Greater Atlantic Region in 2017 is similar to its 11-year (2006-2016) average ($n=1,182 \pm 257$).

What Types of Marine Mammals Strand in the GAR?

More than 30 different species of marine mammals can be found in the waters of New England and the Mid-Atlantic states, with the majority of stranding reports involving pinnipeds (Figure GAR-2). Common pinniped species include the harbor and gray seal (Figure GAR-3). Arctic species, such as the harp (*Pagophilus groenlandicus*) and hooded (*Cystophora cristata*) seal, strand within the region during certain times of the year. Small cetacean species such as the beaked whales (*Ziphiidae* spp.), pilot whales (*Globicephala melas* spp.), bottlenose dolphin, and harbor porpoise are also known to strand (Figure GAR-4). Toothed whales and small cetaceans are highly social species and are at risk of mass stranding. Mass stranding response is a large component of the regional response efforts conducted by the Stranding Network, particularly on Cape Cod—a hot spot for mass stranding events. The region also has many large whale species (Figure GAR-5) including blue, fin, sei (*Balaenoptera borealis*), right, humpback, minke, and sperm whales.

Table GAR-1. Five most frequently stranded marine mammal species in the Greater Atlantic Region.

Species	Confirmed Stranding Reports 2017	11-Year Average \pm Standard Deviation (2006-2016)
Harbor Seal	395	390 \pm 135
Gray Seal	297	165 \pm 49
Short-beaked Common Dolphin	198	119 \pm 91
Bottlenose Dolphin	125	164 \pm 185
Harbor Porpoise	80	62 \pm 31

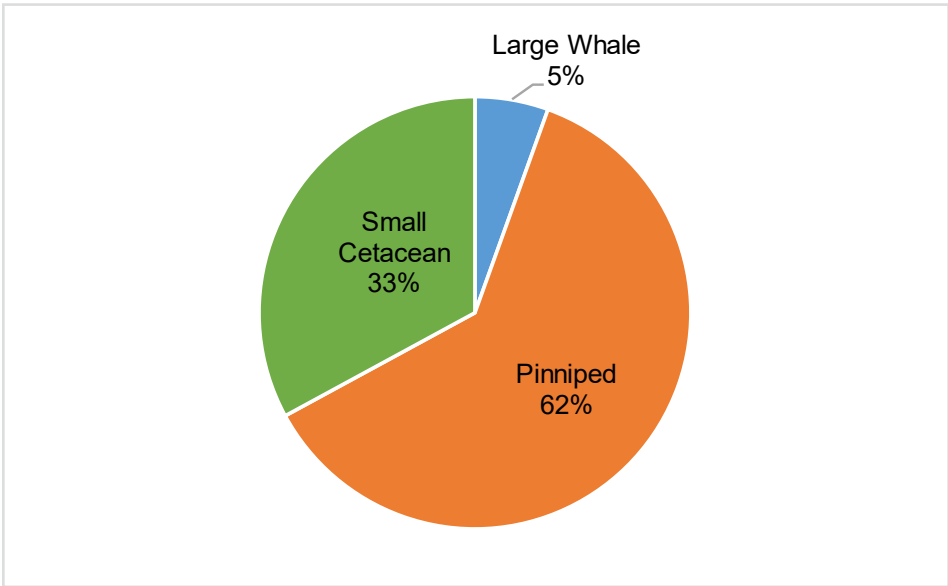


Figure GAR-2. Greater Atlantic Region marine mammal strandings, 2017 (n=1,426). Unknown cetacean (n=7).

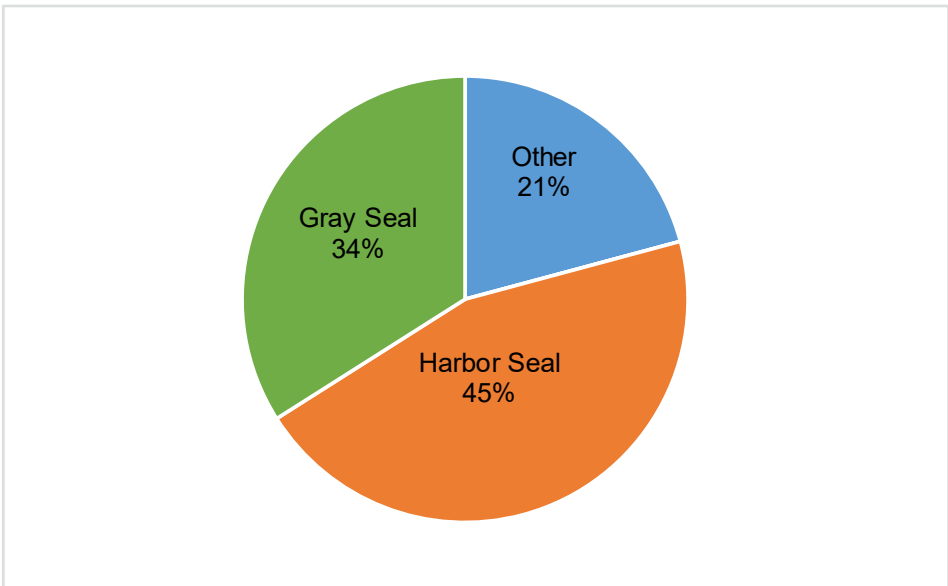


Figure GAR-3. Greater Atlantic Region pinniped strandings by species, 2017 (n=874). Other includes harp seal (n=67), hooded seal (n=1); and unidentified (n=114).

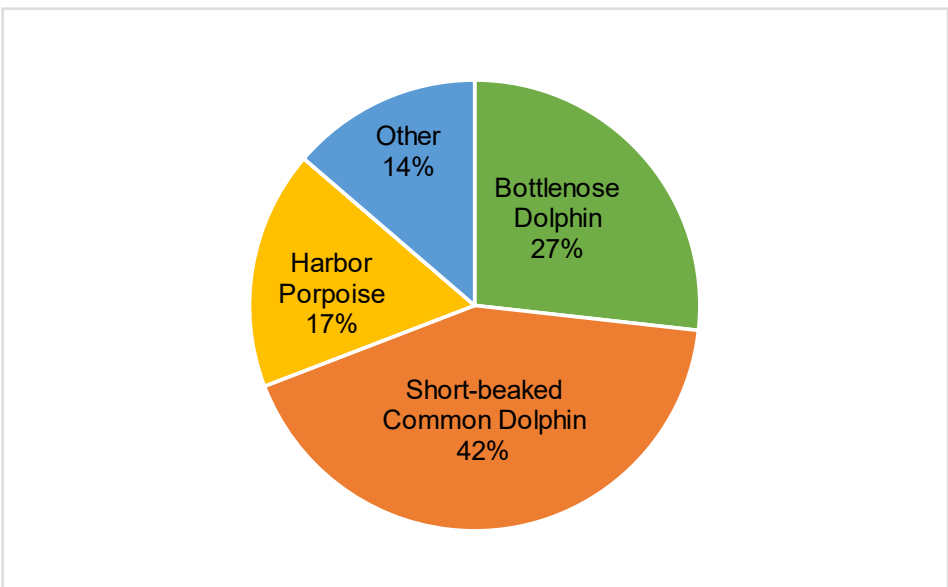


Figure GAR-4. Greater Atlantic Region small cetacean strandings by species, 2017 (n=467). Other includes Risso's dolphin (n=16), Atlantic white-sided dolphin (n=10), pygmy sperm whale (n=6), striped dolphin (n=5), long-finned pilot whale (n=3), dwarf sperm whale (n=2), True's beaked whale (n=1), and unidentified (n=21).

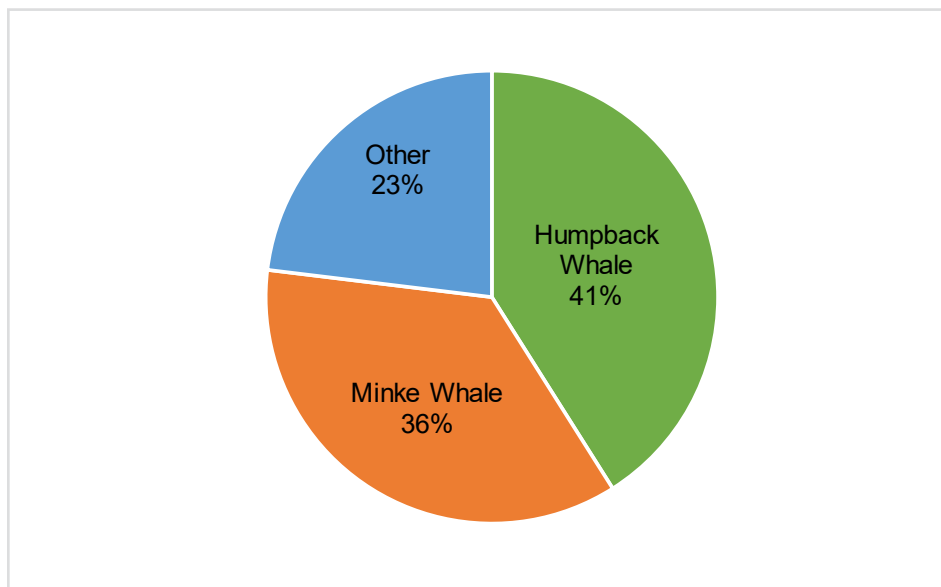


Figure GAR-5. Greater Atlantic Region large whale strandings by species, 2017 (n=78). Other includes North Atlantic right whale (n=5), fin whale (n=3), sei whale (n=1), and unidentified (n=7).

When Did GAR Marine Mammals Strand in 2017?

Although marine mammals stranded year-round in the Greater Atlantic Region, stranding events were more frequent in the spring and summer months (Figure GAR-6). There was a large influx of marine mammals during this period, as the Gulf of Maine and the Bay of Fundy provide spring feeding grounds for many resident and migratory species. Different species and age classes stranded at different times of the year. For example, adult and juvenile gray seals typically stranded in the summer months, while young gray seal pups were more likely to strand in the winter during pupping season. Ice seals such as harp and hooded seals have also become more frequent visitors to the area as their range has expanded south.

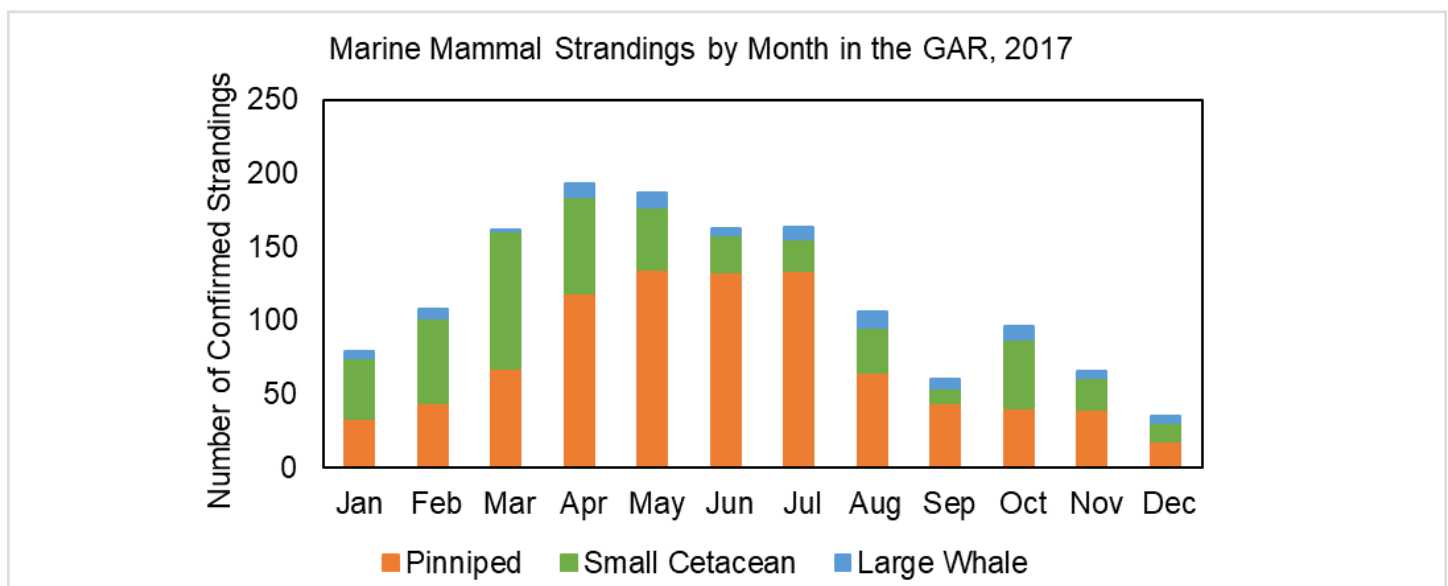


Figure GAR-6. Seasonality of marine mammal strandings in the Greater Atlantic Region, 2017.

Are Marine Mammals in the GAR Stranding Alive or Dead?

In 2017, a large proportion (62 percent) of the strandings reported to the network in the Greater Atlantic Region involved dead animals. The Stranding Network tries to gather as much information as they can from examining carcasses and live-stranded animals to better understand the species involved, as well as any population threats or pressures they may be facing. Necropsies provide tissues to help investigate diseases and parasites and provide critical life history information. Stranding response also allows the network to document any human interaction cases such as vessel collisions, entanglements, and fishery interactions. Based on the recommendations of authorized veterinarians or professionals, some live animals were transported to rehabilitation facilities, moved to permanent managed care, or humanely euthanized. Of the animals transferred to rehabilitation facilities in 2017 (n=130), 65 percent (n=85) were released.

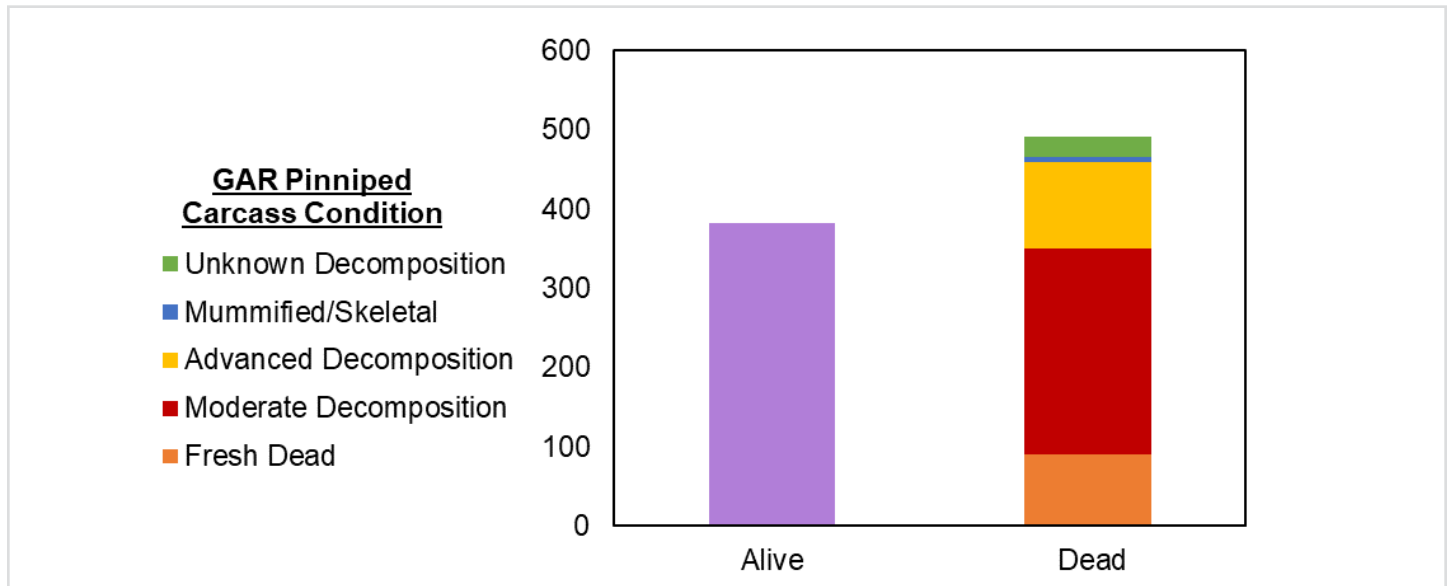


Figure GAR-7. Greater Atlantic Region alive and dead pinniped strandings, 2017.

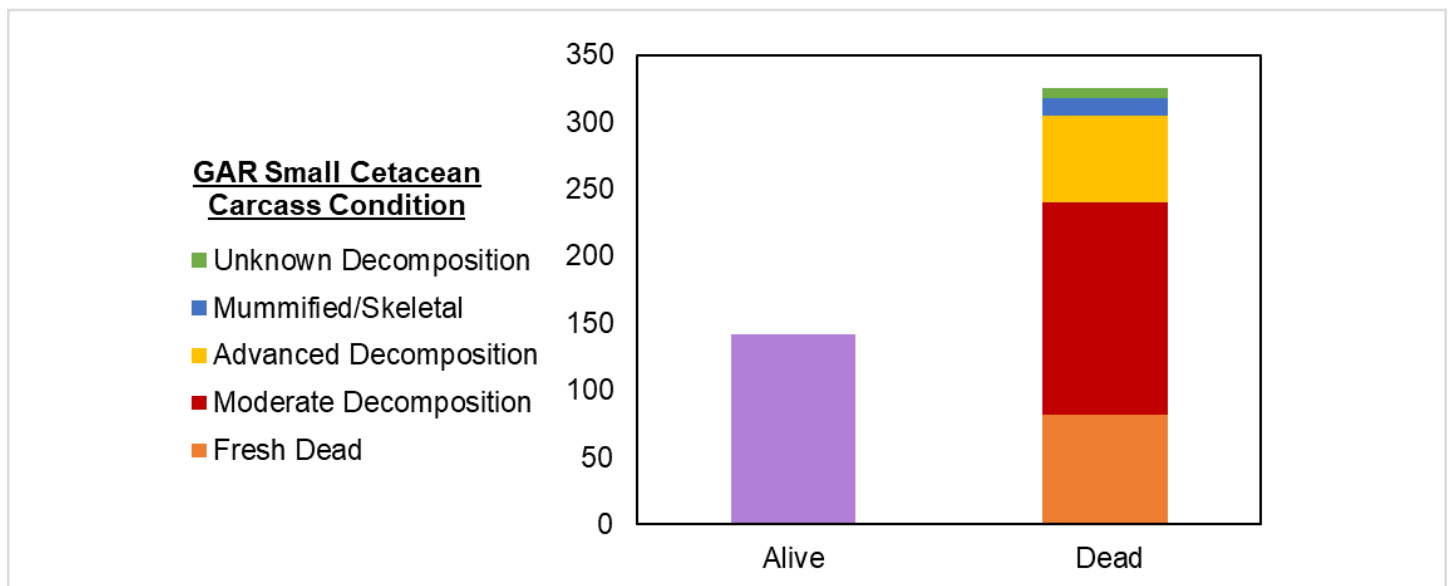


Figure GAR-8. Greater Atlantic Region alive and dead small cetacean strandings, 2017.

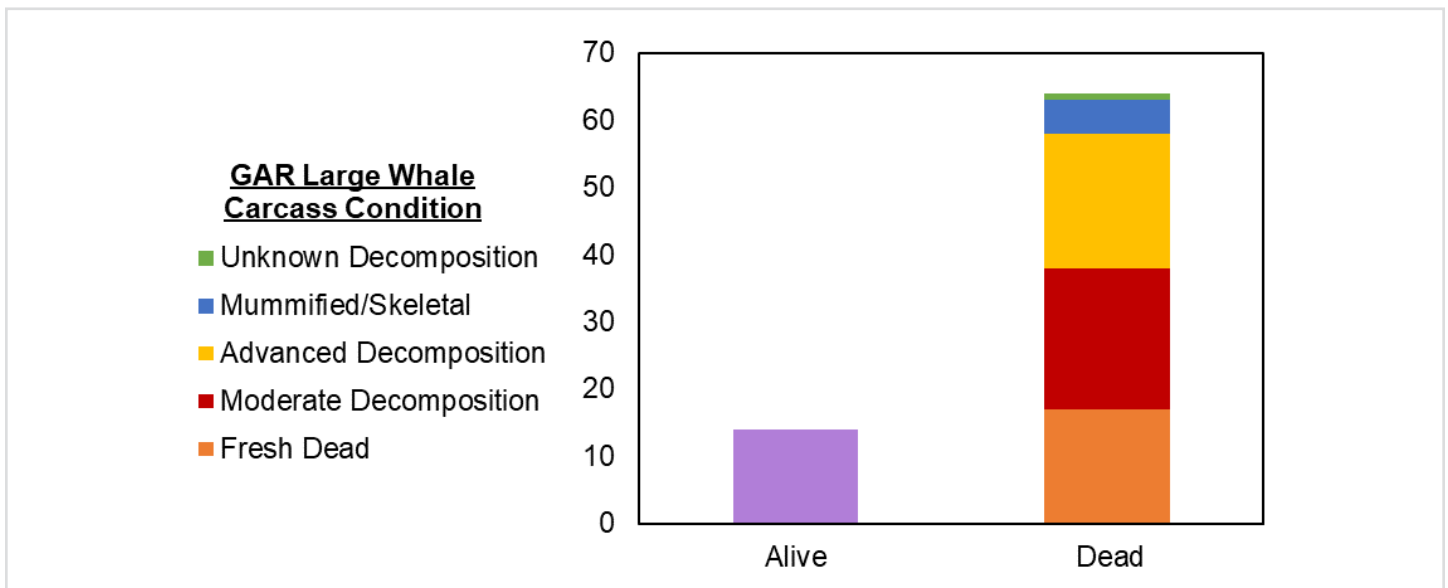


Figure GAR-9. Greater Atlantic Region alive and dead large whale strandings, 2017.

What Types of UMEs Were Occurring in the GAR?

There were two large whale UMEs declared in 2017 involving humpback whales and North Atlantic right whales. Elevated numbers of humpback whale mortalities occurred along the Atlantic coast from Maine through Florida. A portion of the whales showed evidence of pre-mortem vessel strike; however, this finding was not consistent across all humpback whales examined. In 2017, elevated numbers of North Atlantic right whale mortalities were documented, primarily in Canada and some in the United States, which necessitated an UME declaration, especially given the critically endangered status of the population. Preliminary findings indicate human interactions, specifically vessel strikes or entanglements as the cause of death for the majority of the North Atlantic right whales. More information about UMEs is available at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-unusual-mortality-events>.



The Virginia Aquarium responds to a report of a dead stranded humpback whale with deep propeller wounds. Photo: Virginia Aquarium/Alex Costidis.

GAR High-Profile Case: New York Community Responds to Humpback Whale in Reynolds Channel

A humpback whale, estimated to be 24 to 28 feet long, was first sighted in Reynolds Channel, New York, near Long Beach Bridge by The Nature Conservancy in November 2017 (Figure GAR-10). The Atlantic Marine Conservation Society, a NOAA Fisheries authorized local responder, determined the whale was not in distress and was behaving normally, breathing well, and swimming freely. A notice was issued to mariners by the United States Coast Guard, urging the public to keep a distance of at least 100 feet, avoid head-on approaches, and exercise caution when navigating the area. Although it is not uncommon to see whales in Long Island waters at that time of year, high vessel traffic, navigational hazards, and the shallow waters of Reynolds Channel were causes for concern.

The Atlantic Marine Conservation Society, along with network partners, monitored and assessed the whale daily. A plan to herd the whale back towards the ocean was devised but not used. A week after the whale was first reported, having extensively surveyed the area, the team could no longer locate it. Several humpback whales were observed in the surrounding area outside of the channel, and local biologists worked to confirm through photo identification that one of these whales was the Reynolds Channel humpback.

Figure GAR-10. An “out-of-habitat” humpback whale was spotted in Reynolds Channel, Long Island. Photo: Atlantic Marine Conservation Society.



Pacific Islands Region

The NOAA Fisheries Pacific Islands Region (PIR) encompasses approximately 1,494 miles of coastline around Hawaii (HI), Guam (GU), American Samoa (AS), and the Commonwealth of the Northern Mariana Islands (CNMI; Figure PIR-1). The region covers areas frequented by beachgoers (i.e., Main Hawaiian Islands), but also contains some very remote areas. The 52 confirmed marine mammal strandings in the Pacific Islands Region in 2017 is similar to its 11-year (2006-2016) average ($n=44 \pm 12$).

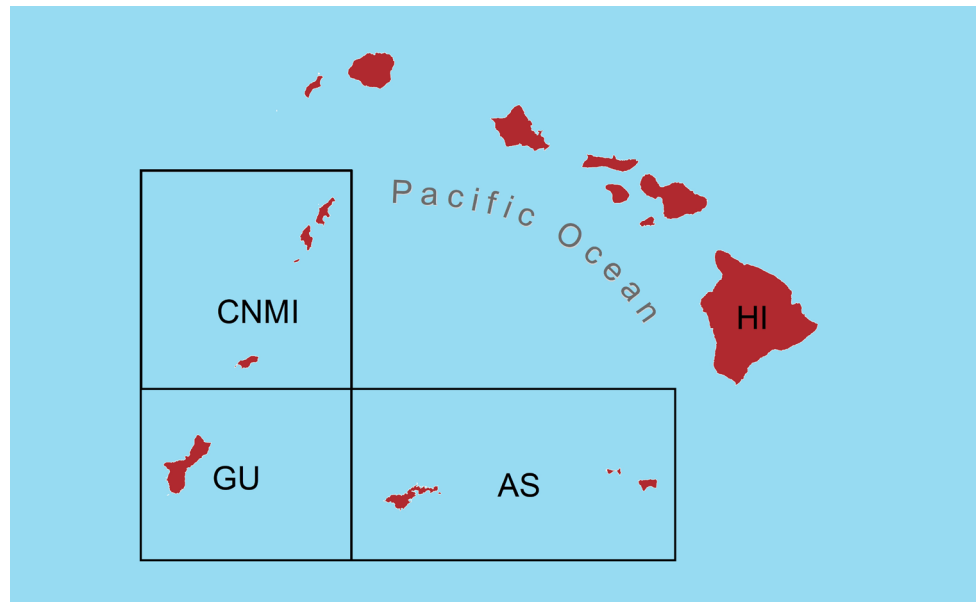


Figure PIR-1. Fisheries Islands Region. Not pictured: the Pacific Remote Island Areas of Kingman Reef; Howland, Baker, Jarvis, and Wake Islands; and Johnston and Palmyra Atolls.

What Types of Marine Mammals Strand in the PIR?

At least 18 different species of marine mammals can be found in the waters of Hawaii, with the majority of stranding reports involving Hawaiian monk seals, which are the only species of pinniped endemic to the Hawaiian archipelago (Figure PIR-2). The Hawaiian monk seal is one of the most endangered species of seal in the world with a population of around 1,400 individuals with about 300 animals in the Main Hawaiian Islands and 1,100 animals in the Northwestern Hawaiian Islands. In 2017, all pinniped strandings reported in the NOAA Fisheries Pacific Islands Region were Hawaiian monk seals (Figure PIR-3; pinnipeds from the mainland United States have been known to strand in Hawaii but such events are rare). Small cetacean species such as the spinner dolphin (*Stenella longirostris*), short-finned pilot whale (*Globicephala macrorhynchus*), and melon-headed whale (*Peponocephala electra*) also stranded in 2017 (Figure PIR-4). Large whale species such as humpback whales, sperm whales, fin whales, and blue whales frequent the jurisdictional waters of PIR, but large whale strandings are relatively rare in the region, with only four occurring in 2017 (Figure PIR-5; humpback whale=3, sperm whale=1).

Table PIR-1. Five most frequently stranded marine mammal species in the Pacific Islands Region.

Species	Confirmed Stranding Reports 2017	11-Year Average \pm Standard Deviation (2006-2016)
Hawaiian Monk Seal	34	19 \pm 9
Short-finned Pilot Whale	9	2 \pm 1
Spinner Dolphin	3	4 \pm 2
Humpback Whale	3	7 \pm 7
Melon-headed Whale	1	3 \pm 2

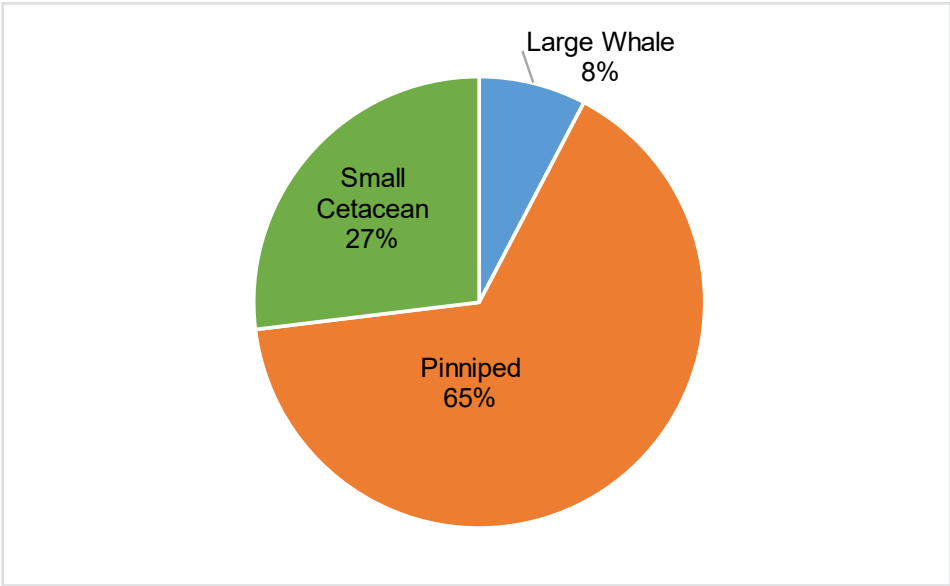


Figure PIR-2. Pacific Islands Region marine mammal strandings, 2017 (n=52).

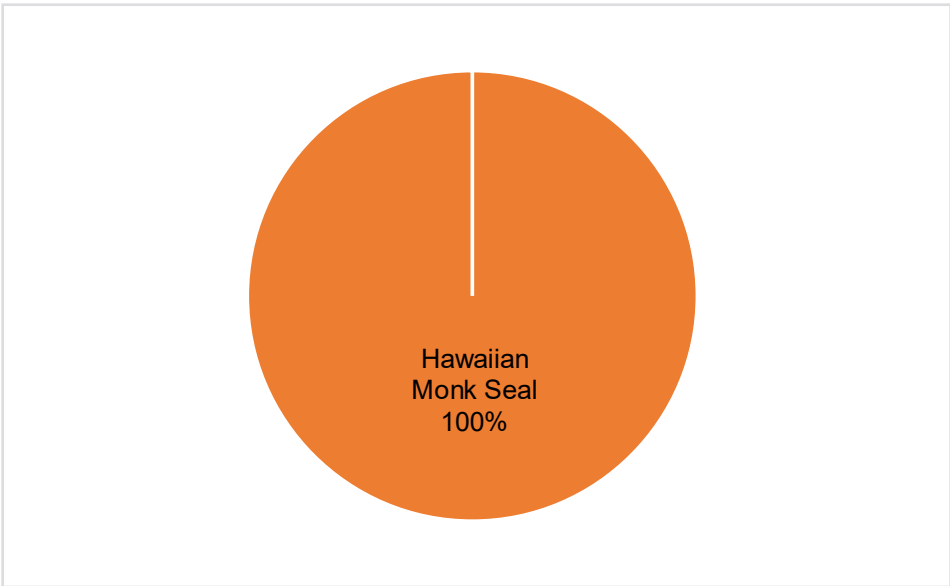


Figure PIR-3. Pacific Islands Region pinniped strandings, 2017 (n=34).

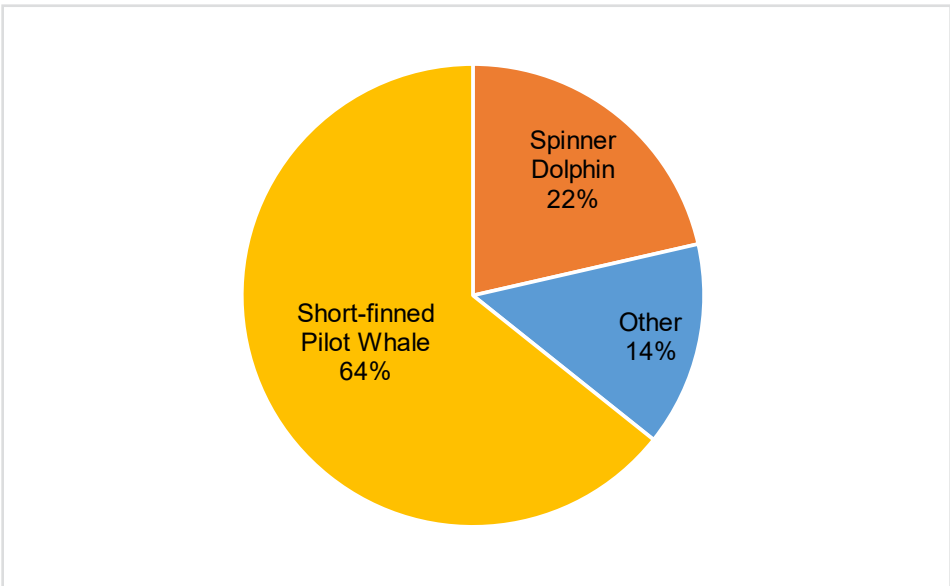


Figure PIR-4. Pacific Islands Region small cetacean strandings by species, 2017 (n=14). Other includes melon-headed whale (n=1) and unidentified beaked whale (n=1).

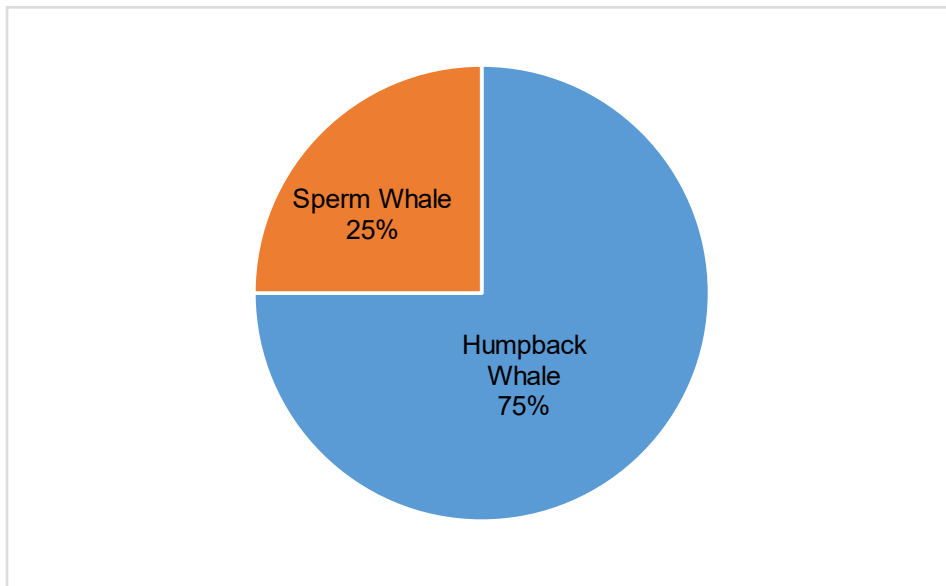


Figure PIR-5. Pacific Islands Region large whale strandings, 2017 (n=4).

When Did PIR Marine Mammals Strand in 2017?

Hawaiian monk seals stranded year-round in the Pacific Islands Region. The small spike in May (Figure PIR-6) is reflective of research cruises conducted around the Northwestern Hawaiian Islands during that period, when seals suffering from malnutrition were rescued and brought into rehabilitation facilities. The Stranding Network also responded to cetacean strandings, although fewer in number. In October 2017, eight short-finned pilot whales mass stranded on Kalapaki Beach, Kauai. Cetaceans were typically spotted more frequently in the winter months, and therefore had a greater tendency to strand during that time. Humpback whales migrate to Hawaiian waters in the winter months to breed and calve, so their strandings occurred between November and May before they returned to their summer feeding grounds in Alaska.

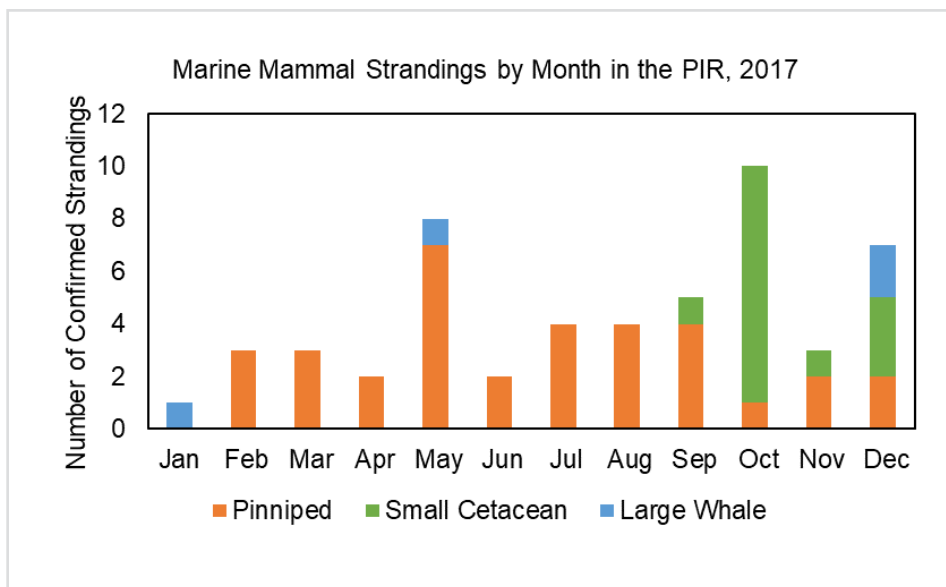


Figure PIR-6. Seasonality of marine mammal strandings in the Pacific Islands Region, 2017.

Are Marine Mammals in the PIR Stranding Alive or Dead?

In 2017, the majority (65 percent) of marine mammal strandings reported in the Pacific Islands involved live animals. Responses to Hawaiian monk seals often included animals accidentally hooked by fishing gear when attempting to consume bait. Interactions with fishing gear pose a serious danger to the seals, especially if the hooks are ingested. A handful of rescued seals were transported to Ke Kai Ola, which is the hospital and rehabilitation facility dedicated to Hawaiian monk seals administered by The Marine Mammal Center. Of the animals transferred to either the facilities at Ke Kai Ola on the Big Island or to the NOAA lab on Oahu in 2017 (n=6), 83 percent (n=5) were released. The network tries to gather as much information as they can from examining carcasses and live-stranded animals to better understand the species, as well as any population threats or pressures they may be facing.

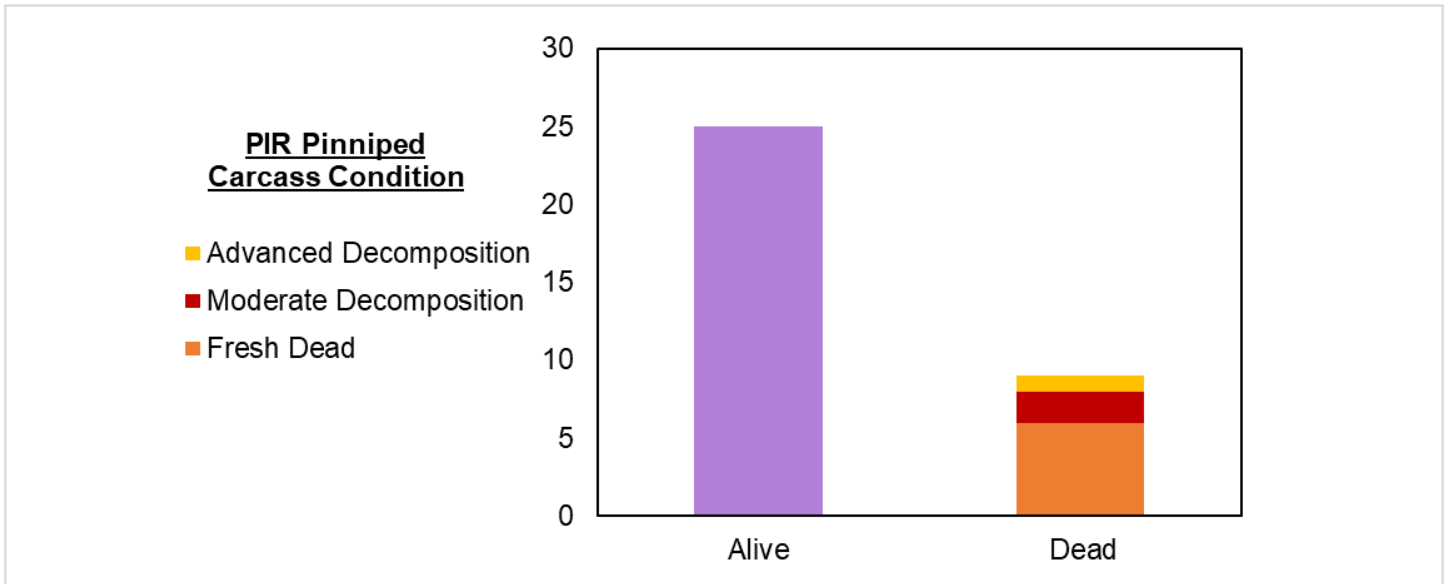


Figure PIR-7. Pacific Islands Region alive and dead pinniped strandings, 2017.

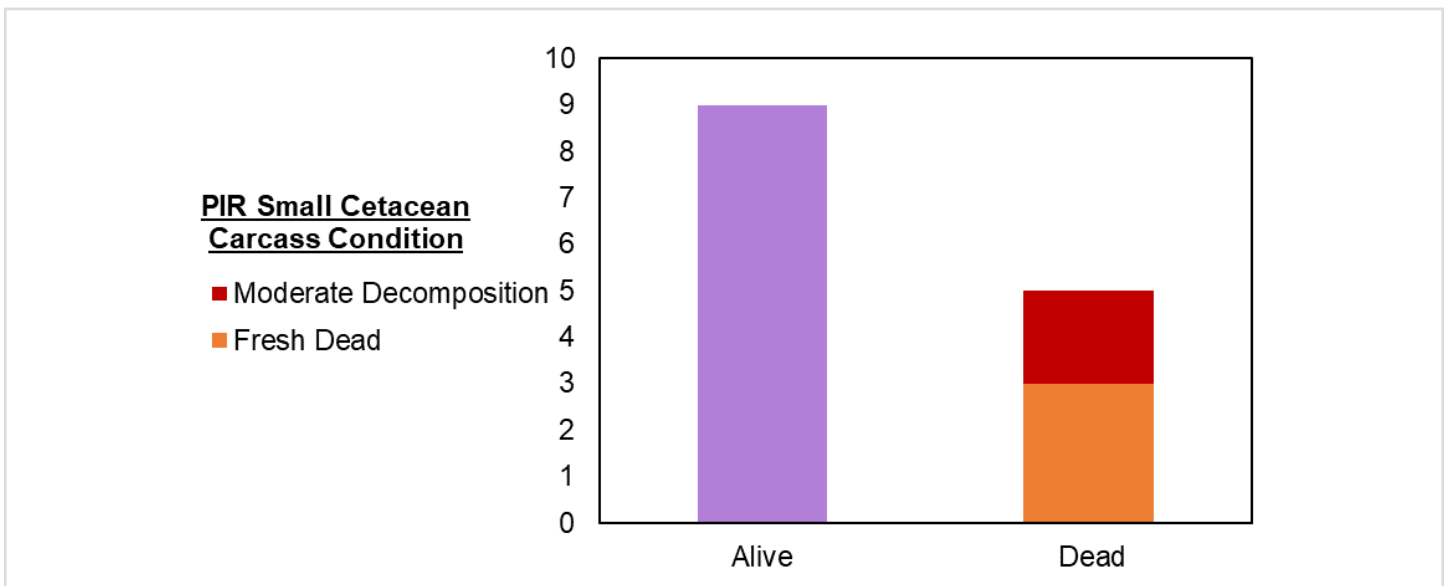


Figure PIR-8. Pacific Islands Region alive and dead small cetacean strandings, 2017.

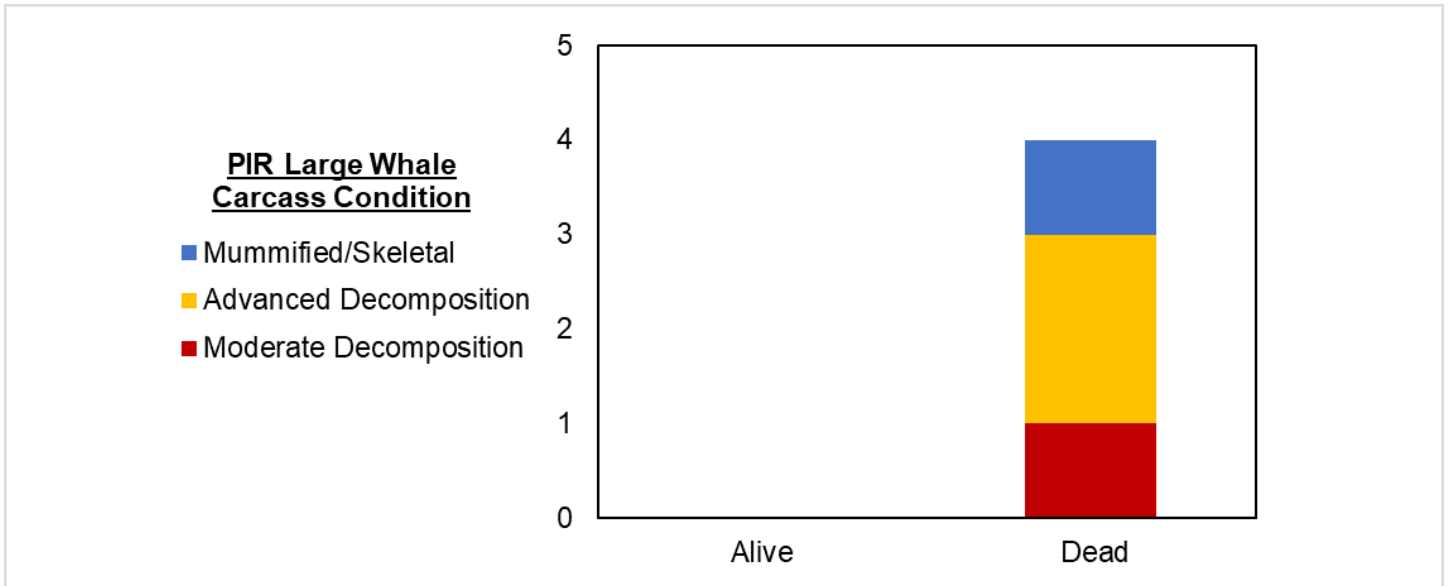


Figure PIR-9. Pacific Islands Region alive and dead large whale strandings, 2017.

What Types of UMEs Were Occurring in the PIR?

UMEs in the PIR are relatively rare, and there were no new or open UME investigations underway in 2017. More information about UMEs is available at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-unusual-mortality-events>.

PIR High-Profile Case: Emaciated Female Hawaiian Monk Seal Successfully Rehabilitated

During the first half of 2017, a yearling female Hawaiian monk seal known as “RH38” to researchers was observed frequently on the north shore of Kaua’i in seemingly healthy body condition. However, in early August, the Pacific Islands Region Marine Mammal Response Network reported RH38 had lost weight and was showing signs of poor health (Figure PIR-10). At under 90 pounds, she was severely underweight (she should have been roughly 150 pounds) and she was transported to Ke Kai Ola on the Big Island for diagnostics and treatment. During her admit examination, veterinarians confirmed RH38 was malnourished and suffering from secondary issues related to her malnutrition. She was treated for parasites and steadily began to eat fish and put on weight. After several months of rehabilitation, RH38 was deemed releasable, weighing approximately 155 pounds. Following her release (Figure PIR-11), RH38 was resighted in 2018 in good body condition. Since Hawaiian monk seals are so endangered, every female is vital to the future success of the species, and the rehabilitation of RH38 is a significant accomplishment to help the species thrive and survive.

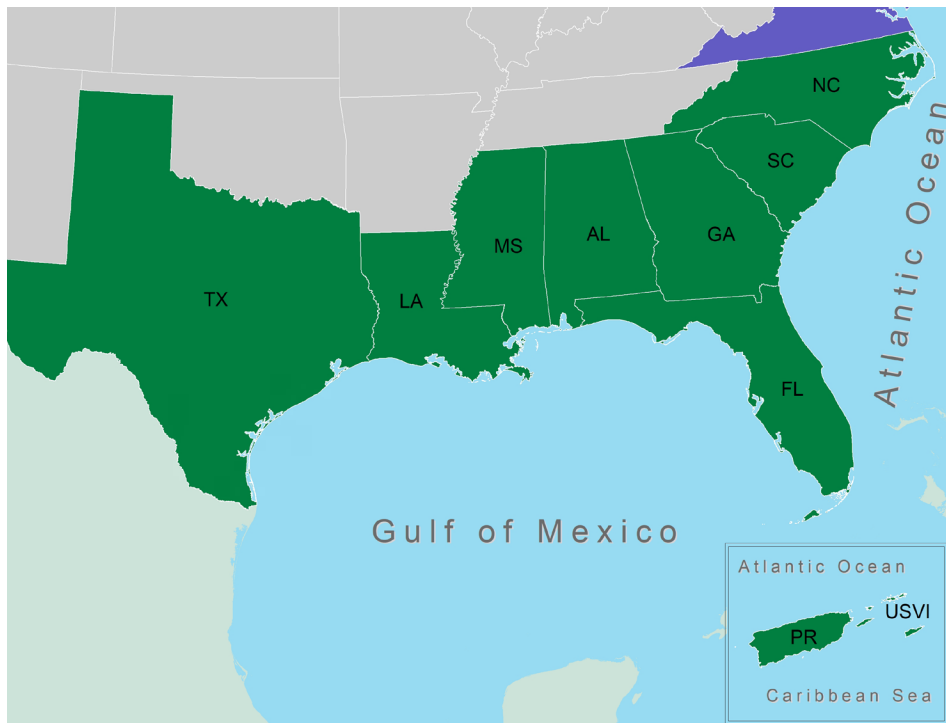


Figure PIR-10. Hawaiian monk seal RH38 was first spotted on Milolii Beach. Before rehabilitation, she weighed only 90 pounds. Photo taken under NOAA Fisheries Permit No. 18786-03. Photo: NOAA Fisheries/Jamie Thomson.



Figure PIR-11. Release of Hawaiian monk seal RH38 after successful rehabilitation at Ke Kai Ola. Photo taken under NOAA Fisheries Permit No. 18786-03. Photo: Kim Rogers.

Southeast Region



The NOAA Fisheries Southeast Region (SER) includes eight coastal states from North Carolina through Texas, as well as the U.S. territories of Puerto Rico and the U.S. Virgin Islands (Figure SER-1). This region encompasses approximately 29,952 miles of coastline and includes several large bodies of water (the south Atlantic Coast, Gulf of Mexico Coast, and Caribbean). The region contains some of the most visited coastline in the United States (i.e., Florida), but also some very remote areas. The 771 confirmed marine mammal strandings in the Southeast Region in 2017 is similar to its 11-year (2006-2016) average ($n=787 \pm 207$).

SER-1. NOAA Fisheries Southeast Region.

What Types of Marine Mammals Strand in the SER?

More than 35 different species of marine mammals can be found in the waters of the southeastern United States and the Gulf of Mexico, with the majority of stranding reports involving cetaceans (Figure SER-2). Common small cetacean species include bottlenose dolphins, Clymene dolphins (*Stenella clymene*), pygmy sperm whales (*Kogia breviceps*), and false killer whales (Table SER-1 and Figure SER-4a). In 2017, a mass stranding of false killer whales ($n=99$) occurred in the region, constituting the largest mass stranding of this species recorded in the United States. Large whale species such as humpback whales, sperm whales, minke whales, and North Atlantic right whales are also known to strand, although rarely and in much lower numbers (Figure SER-5). Seals only occasionally strand in this region, primarily along the mid-Atlantic coast (Figure SER-3), which is the extent of their range in the Southeast.

Table SER-1. Five most frequently stranded marine mammal species in the Southeast Region.

Species	Confirmed Stranding Reports 2017	11-Year Average \pm Standard Deviation (2006-2016)
Bottlenose Dolphin	549	633 \pm 182
False Killer Whale¹⁰	99	3 \pm 1
Pygmy Sperm Whale	17	24 \pm 7
Clymene Dolphin	14	2 \pm 1
Short-finned Pilot Whale	13	19 \pm 17

¹⁰ This species was involved in one mass stranding event along Hog Key in the Florida Everglades.

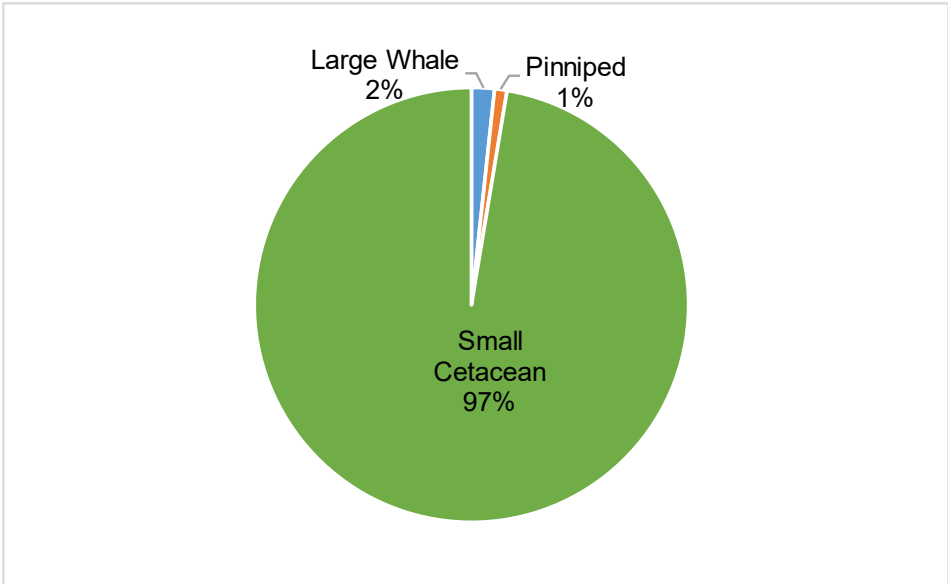


Figure SER-2. Southeast Region marine mammal strandings, 2017 (n=771). Unknown cetacean (n=10).

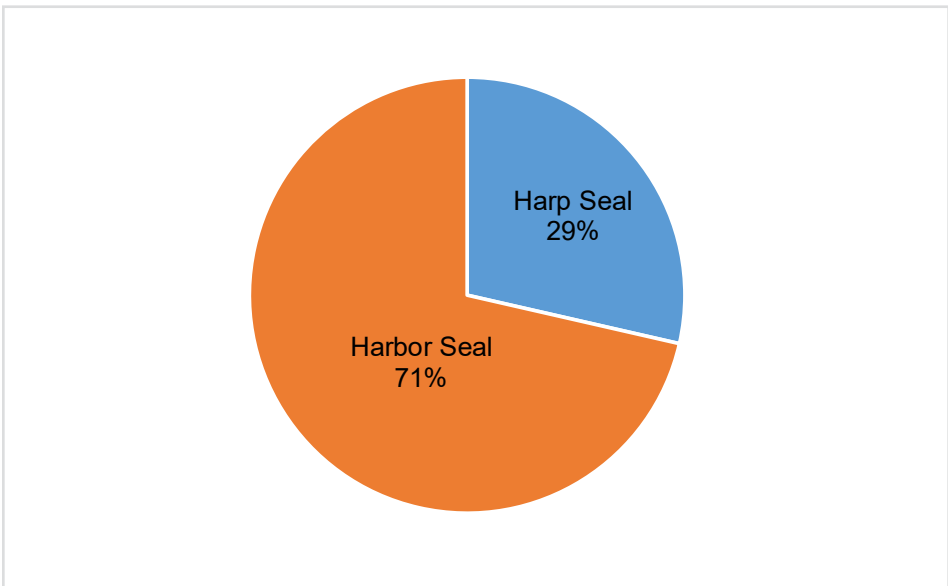


Figure SER-3. Southeast Region pinniped strandings by species, 2017 (n=7).

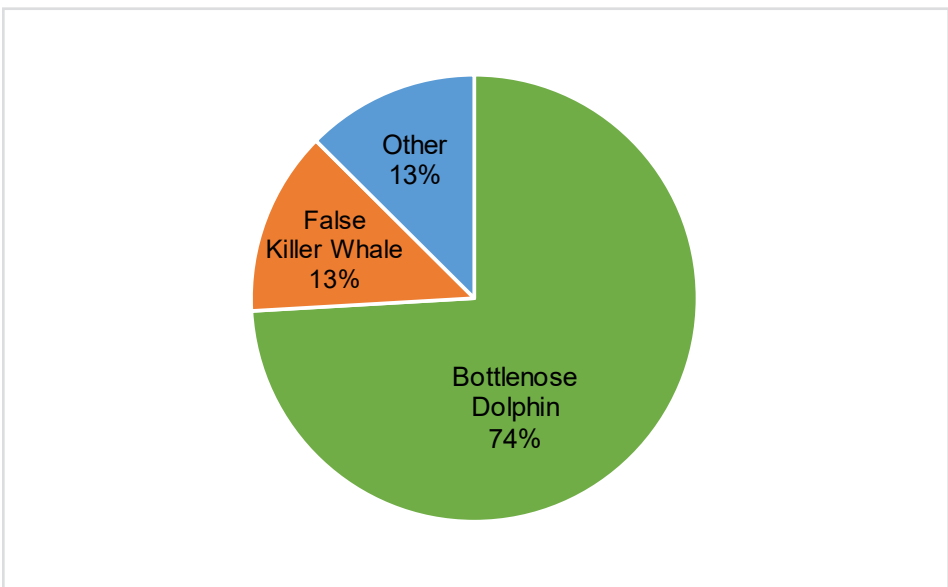


Figure SER-4a. Southeast Region small cetacean strandings by species, 2017 (n=741). Other includes pygmy sperm whale (n=17), Clymene dolphin (n=14), short-finned pilot whale (n=13), dwarf sperm whale (n=7), Fraser’s dolphin (n=5), melon-headed whale (n=4), Risso’s dolphin (n=3), Atlantic spotted dolphin (n=2), striped dolphin (n=2), Cuvier’s beaked whale (n=2), Gervais’ beaked whale (n=2), Blainville’s beaked whale (n=1), harbor porpoise (n=1), rough-toothed dolphin (n=1), spinner dolphin (n=1), and unidentified (n=18).

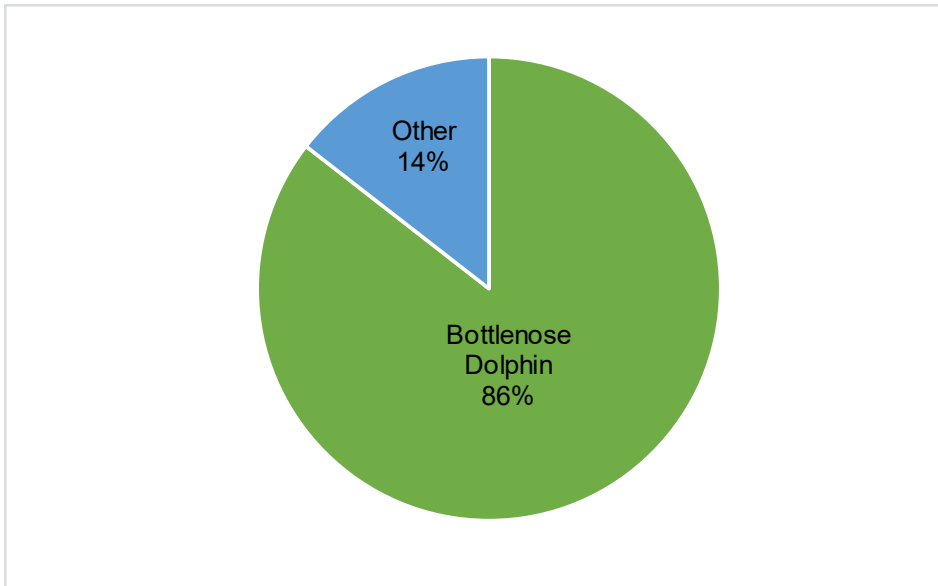


Figure SER-4b. Southeast Region small cetacean strandings by species, 2017 (n=642*).

*The mass stranding of false killer whales was removed from this analysis to represent a more typical species distribution pattern.

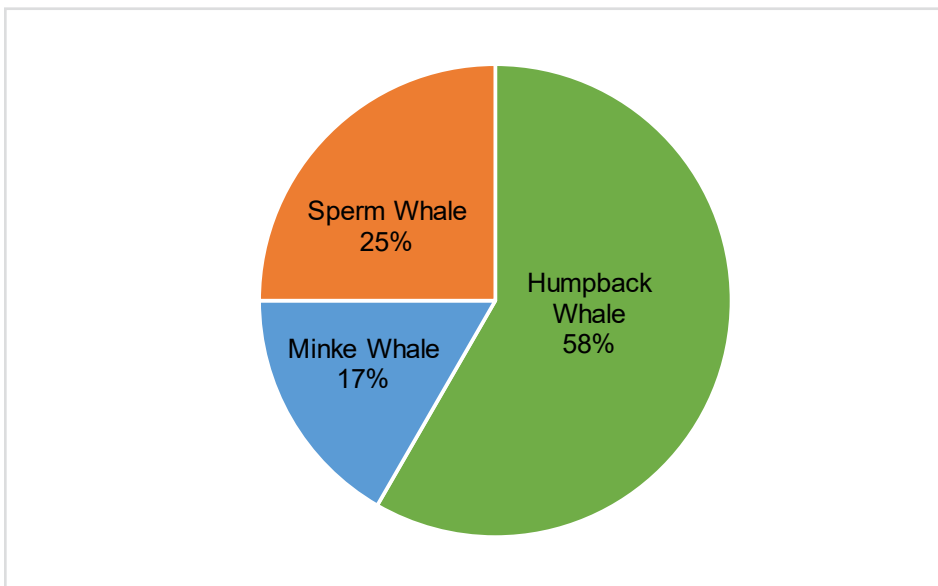


Figure SER-5. Southeast Region large whale strandings by species, 2017 (n=13).

When Did SER Marine Mammals Strand in 2017?

In the Southeast Region a number of year-round resident stocks of bottlenose dolphins live in bays, sounds, and estuaries, as well as seasonally resident and transient stocks. Other cetacean species are also routinely present. In 2017, stranding events occurred throughout the year, but strandings were elevated in January as a result of the mass stranding of false killer whales (n=99) in Hog Key Bay, Florida. Stranding events were also higher in February and March, which coincided with the calving season for some stocks of bottlenose dolphin.

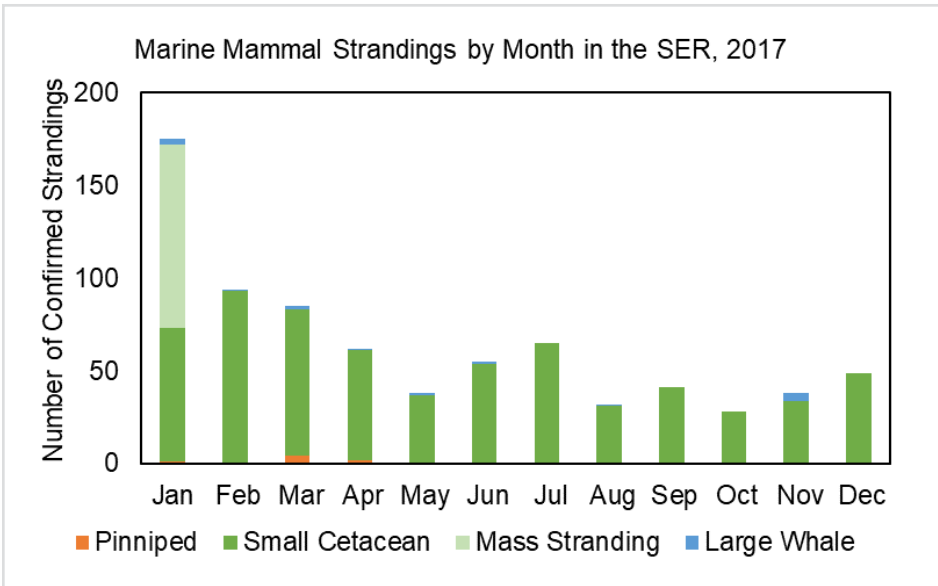


Figure SER-6. Seasonality of marine mammal strandings in the Southeast Region, 2017. The spike in January coincides with the mass stranding of false killer whales (n=99) in Hog Key Bay, Florida.

Are Marine Mammals in the SER Stranding Alive or Dead?

Although the majority of marine mammals that strand in the Southeast are found dead, a small proportion (18 percent) of animals stranded alive in 2017. Based on the recommendations of authorized veterinarians or professionals, a handful of live animals were transported to rehabilitation facilities; others were poor candidates for rehabilitation and needed to be euthanized. In some cases, live animals undergoing rehabilitation were deemed non-releasable, and NOAA Fisheries moved them to permanent managed care facilities. As so few seals strand in this area, there are no rehabilitation centers for pinnipeds in the Southeast Region, so pinniped rehabilitation candidates are transferred to facilities within the Greater Atlantic Region. Of the animals transferred to rehabilitation facilities in 2017 (n=13), 15 percent (n=2) were released.

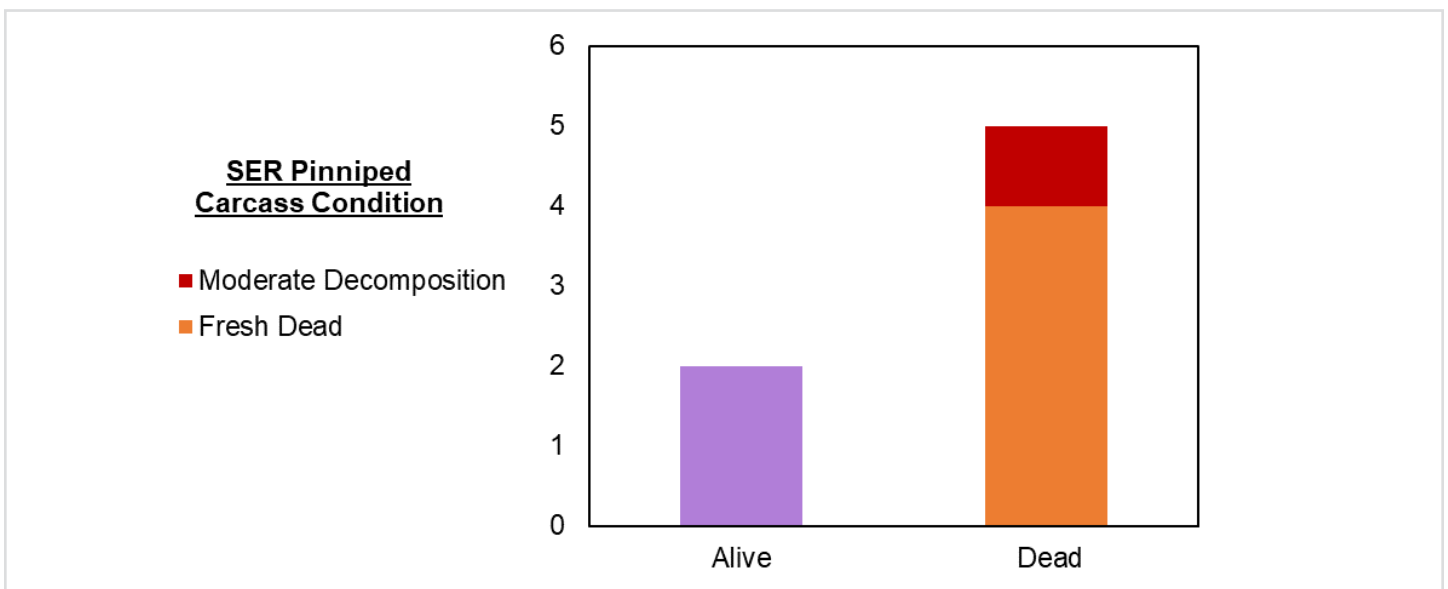


Figure SER-7. Southeast Region alive and dead pinniped strandings, 2017.

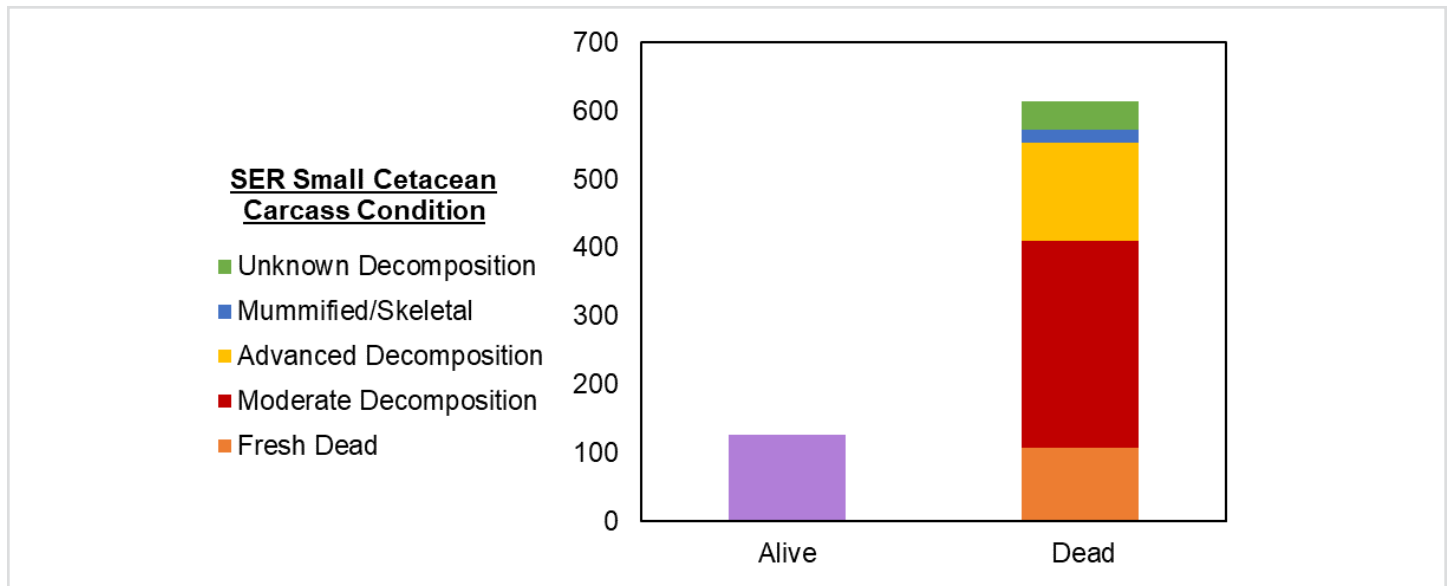


Figure SER-8. Southeast Region alive and dead small cetacean strandings, 2017.

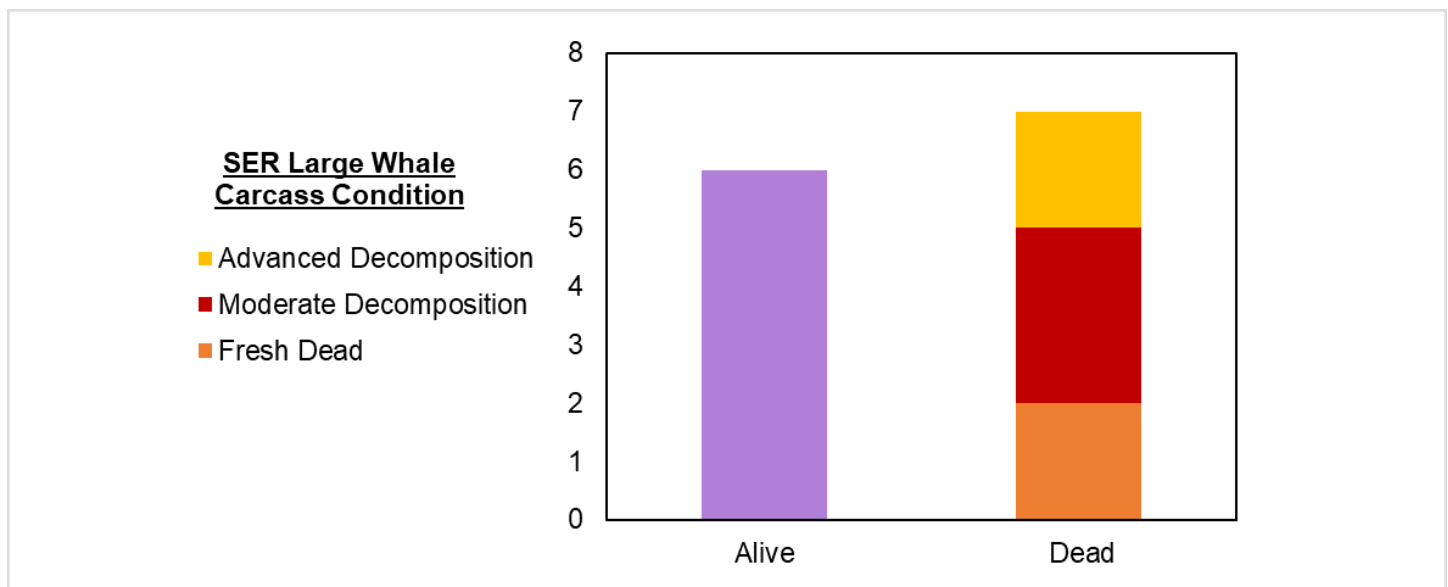


Figure SER-9. Southeast Region alive and dead large whale strandings, 2017.

What Types of UMEs Were Occurring in the SER?

There were two large whale UMEs declared in 2017 involving humpback whales and North Atlantic right whales. Elevated numbers of humpback whale mortalities occurred along the Atlantic coast from Maine through Florida. A portion of the whales showed evidence of pre-mortem vessel strike; however, this finding was not consistent across all humpback whales examined. In 2017, elevated numbers of North Atlantic right whale mortalities were documented, primarily in Canada and some in the United States, which necessitated an UME declaration, especially given the critically endangered status of the population. Preliminary findings indicate human interactions, specifically vessel strikes or entanglements as the cause of death for the majority of the North Atlantic right whales. More information about UMEs is available at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-unusual-mortality-events>.

SER High-Profile Case: Mass Stranding of False Killer Whales in the Florida Everglades

On January 14, 2017, the U.S. Coast Guard reported a mass stranding of false killer whales along Hog Key in the Florida Everglades (Figure SER-10). Given the remote and challenging location, access to the area was limited. On the first day, rescuers attempted to herd the whales into deeper waters using vessels. Unfortunately, the herding attempts were unsuccessful and the majority of the whales re-stranded and died. Of the original 99 whales that initially stranded, 75 died on their own, nine were euthanized, and 15 were refloated and not resighted or recovered.

Due to the overwhelming number of animals that stranded at one time, and the difficult logistics of the stranding area, complete or partial necropsies were performed on a subset of animals. Genetic samples were collected from 84 animals. A mass stranding of this size is a rare occurrence and this event was the largest mass stranding of false killer whales ever recorded in the United States (SER-10; SER-11).



Figure SER-10: The false killer whale stranding along Hog Key in the Florida Everglades. Photo: National Park Service.

Figure SER-11: Ninety-nine animals stranded in this remote area, which was the largest recorded mass stranding of false killer whales in U.S. history. Photo: Chicago Zoological Society.

West Coast Region

The NOAA Fisheries West Coast Region (WCR) stretches from Mexico to Canada and includes three coastal states (California, Oregon, and Washington). This region encompasses approximately 7,863 miles of coastline and covers a range of diverse environments (Figure WCR-1). The region contains several large major cities (Los Angeles, San Francisco, Portland, and Seattle), busy ports and high traffic areas, in addition to a well visited coastline. The 3,252 confirmed marine mammal strandings in the West Coast Region in 2017 is lower than its 11-year (2006-2016) average ($n=4,141 \pm 1,434$).

What Types of Marine Mammals Strand in the WCR?

Forty-three different species of marine mammals can be found in the waters of the U.S. West Coast, and the majority of stranding reports involve pinnipeds (Figure WCR-2). Unlike other parts of the United States, this region has both seal and sea lion species. Common pinniped species include the California sea lion, harbor seal, and northern elephant seal (Figure WCR-3). Small cetacean species such as the harbor porpoise, bottlenose dolphin, long-beaked common dolphin, and striped dolphin (*Stenella coeruleoalba*) also strand (Figure WCR-4), although in much lower numbers. The region also has many large whale species (Figure WCR-5) including the gray whale, humpback whale, fin whale, and blue whale (*Balaenoptera musculus*), as well as the largest toothed whale species, the sperm whale.

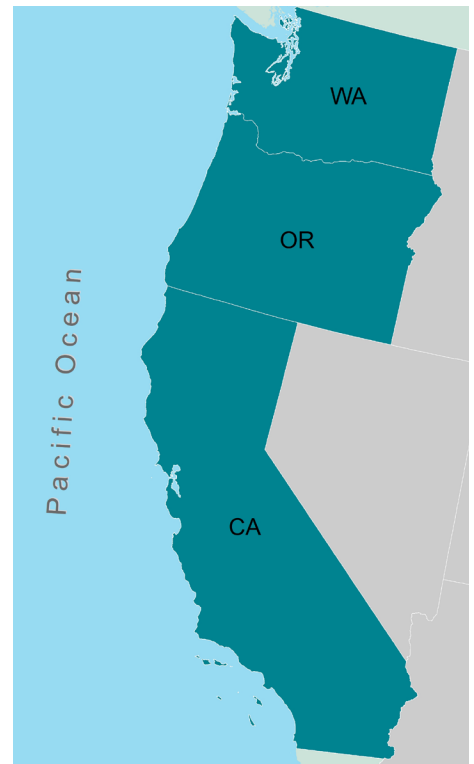


Figure WCR-1. NOAA Fisheries West Coast Region.

Table WCR-1. Five most frequently stranded marine mammal species in the West Coast Region.

Species	Confirmed Stranding Reports 2017	11-Year Average \pm Standard Deviation (2006-2016)
California Sea Lion	1,642	2,414 \pm 1,239
Harbor Seal	629	733 \pm 126
Northern Elephant Seal	452	435 \pm 101
Harbor Porpoise	103	123 \pm 25
Steller Sea Lion	82	94 \pm 19

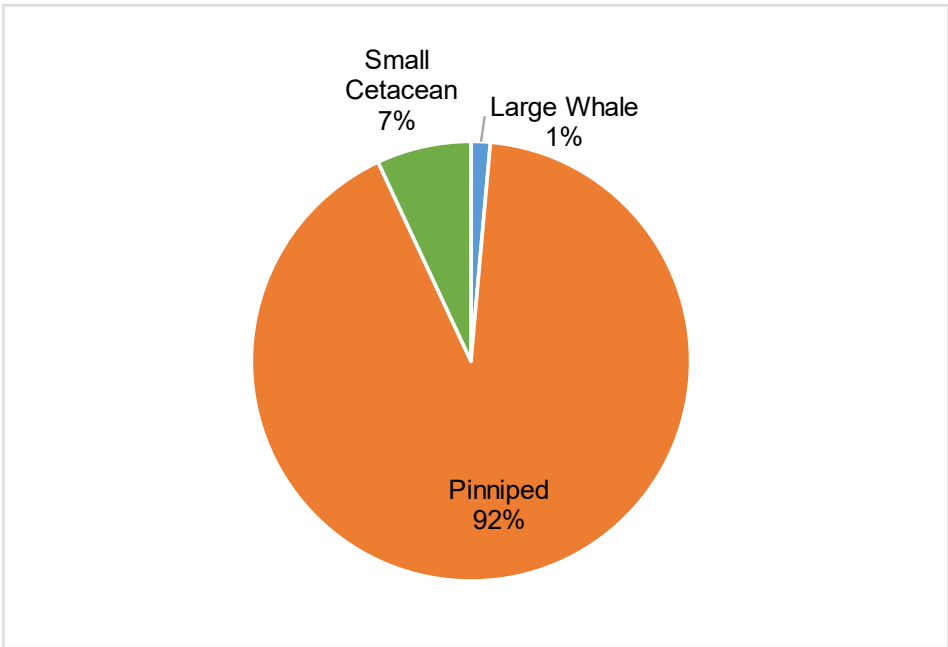


Figure WCR-2. West Coast Region marine mammal strandings, 2017 (n=3,252). Unknown cetacean (n=3).

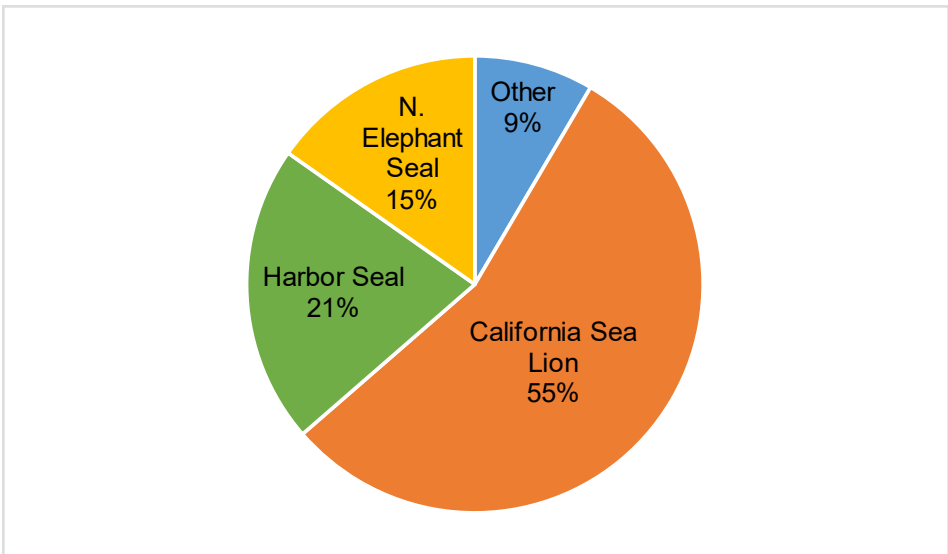


Figure WCR-3. West Coast Region pinniped strandings by species, 2017 (n=2,977). Other includes Steller sea lion (n=82), Guadalupe fur seal (n=76), northern fur seal (n=31), ribbon seal (n=1), ringed seal (n=1), and unidentified (n=61).

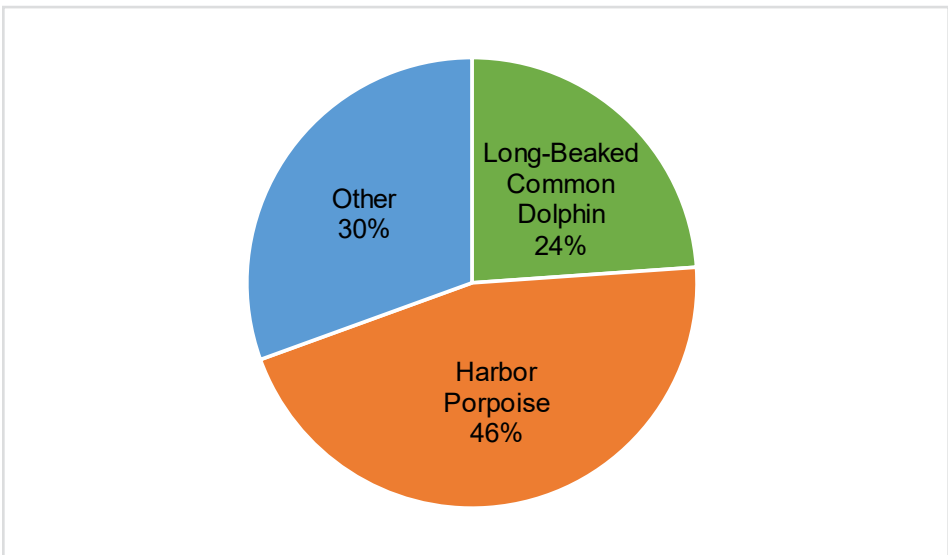


Figure WCR-4. West Coast Region small cetacean strandings by species, 2017 (n=226). Other includes bottlenose dolphin (n=15), Pacific white-sided dolphin (n=11), striped dolphin (n=10), short-beaked common dolphin (n=10), northern right whale dolphin (n=5), Dall's porpoise (n=3), pygmy sperm whale (n=3), Risso's dolphin (n=2), Baird's beaked whale (n=2), Cuvier's beaked whale (n=1), killer whale (n=1), and unidentified (n=6).

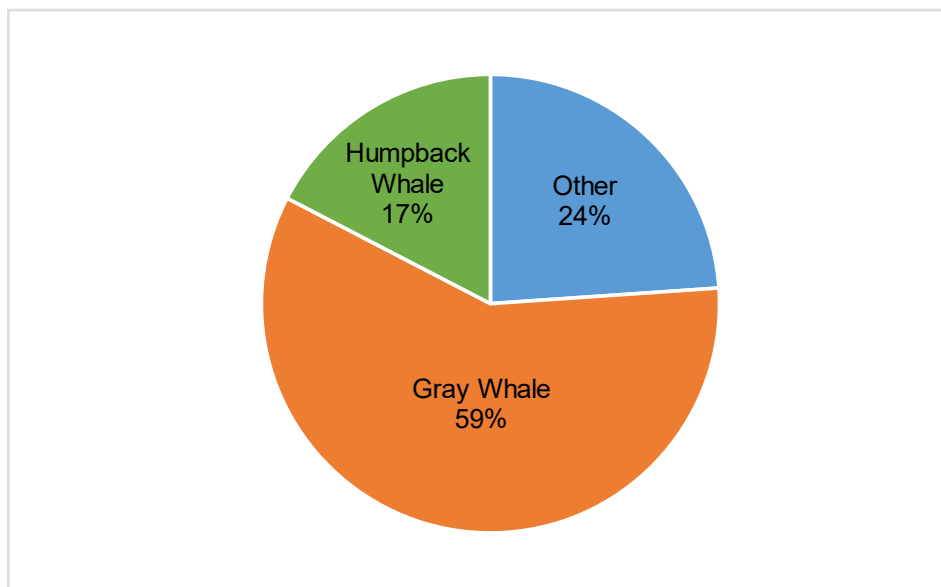


Figure WCR-5. West Coast Region large whale strandings by species, 2017 (n=46). Other includes fin whale (n=3), sperm whale (n=2), blue whale (n=1), Bryde's whale (n=1), minke whale (n=1), and unidentified (n=3).

When Did WCR Marine Mammals Strand in 2017?

In 2017, the majority of pinnipeds to strand along the West Coast stranded during pupping season, or directly after they were weaned (Figure WCR-6). Causes of strandings typically included malnutrition, disease, separation from attending females, and human interaction. Malnutrition may sometimes result if the newly weaned pup is not effectively foraging for food. The Stranding Network also responds to cetacean strandings year-round. The majority of harbor porpoise strandings happened in the summer months of July and August and occurred during, or right after, calving season. Strandings of some large whales, for example the gray whale, coincided with their annual migration along the West Coast.

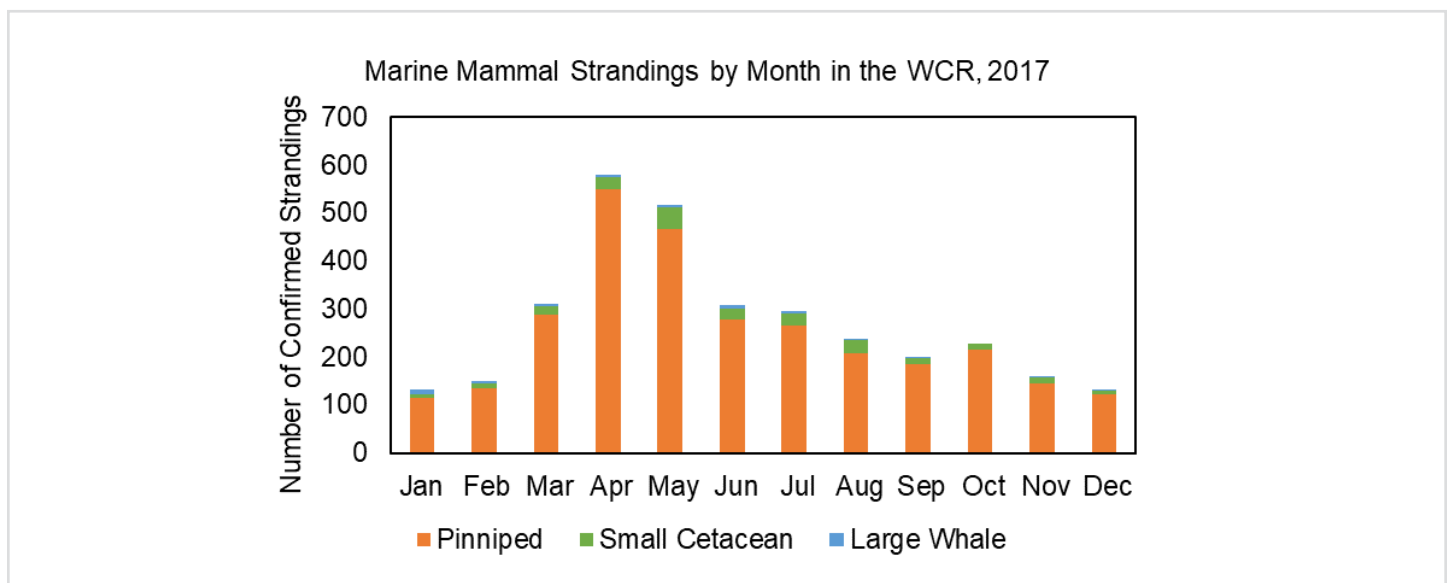


Figure WCR-6. Seasonality of marine mammal strandings in the West Coast Region, 2017.

Are Marine Mammals in the WCR Stranding Alive or Dead?

A large proportion (61 percent) of pinnipeds documented by the West Coast Stranding Network in 2017 involved live animals (Figure WCR-7). Due to the high stranding rates of pups and yearlings, the network has developed differing response and rehabilitation capacities throughout the region. More live-stranded animals are reported in California, and the California network has more rehabilitation capacity compared to Washington and Oregon. Along the West Coast, 12 NOAA Fisheries authorized rehabilitation facilities are available to provide clinical care to a number of sick or injured marine mammals. Of the animals transferred to rehabilitation facilities in 2017 (n=1,569), 58 percent (n=911) were released. Additionally, most cetaceans in the WCR strand dead with only a few stranding alive (Figure WCR-8; WCR-9).

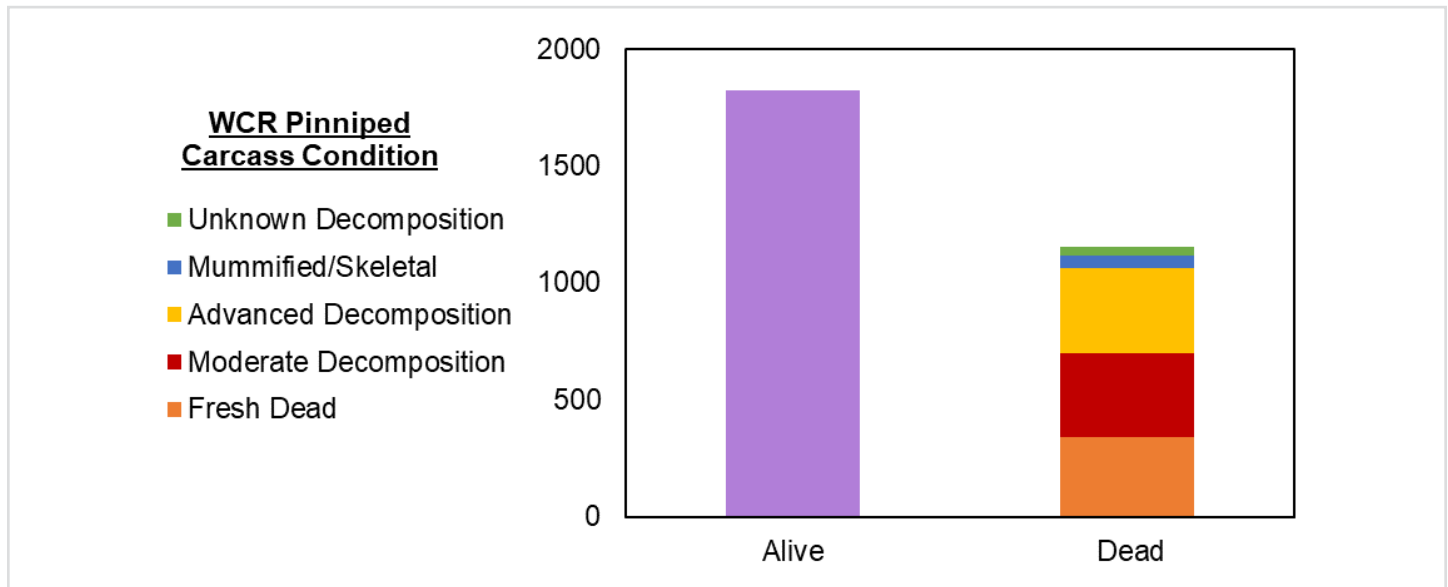


Figure WCR-7. West Coast Region alive and dead pinniped strandings, 2017.

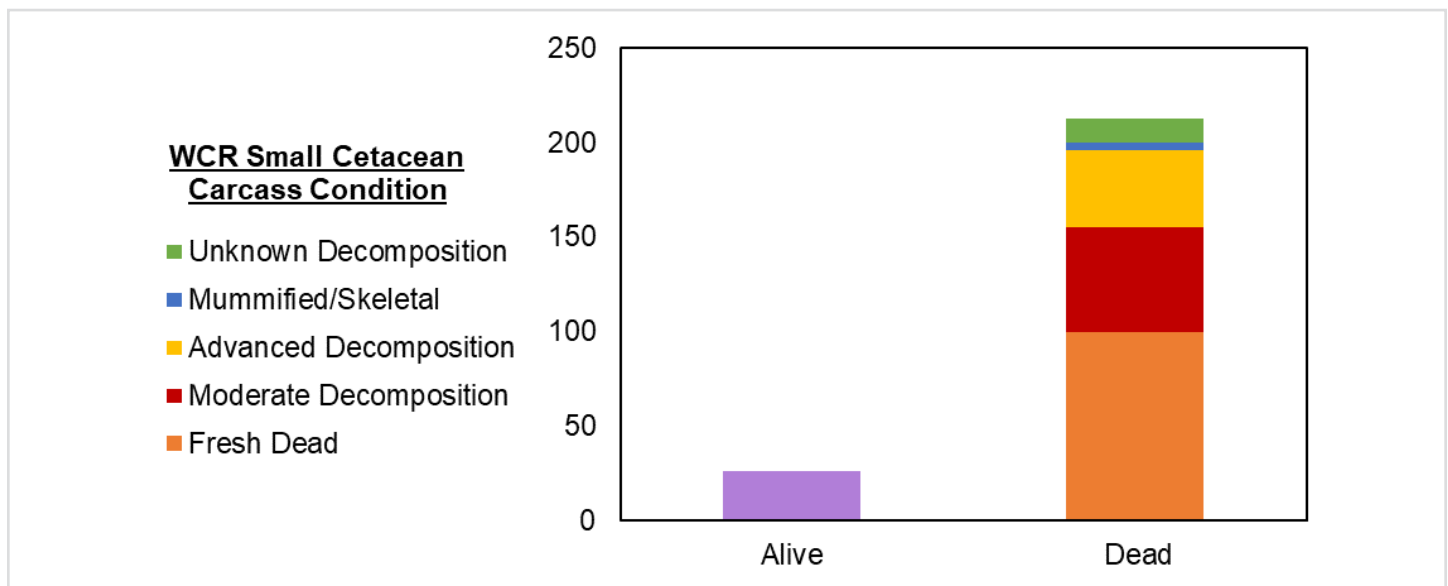


Figure WCR-8. West Coast Region alive and dead small cetacean strandings, 2017.

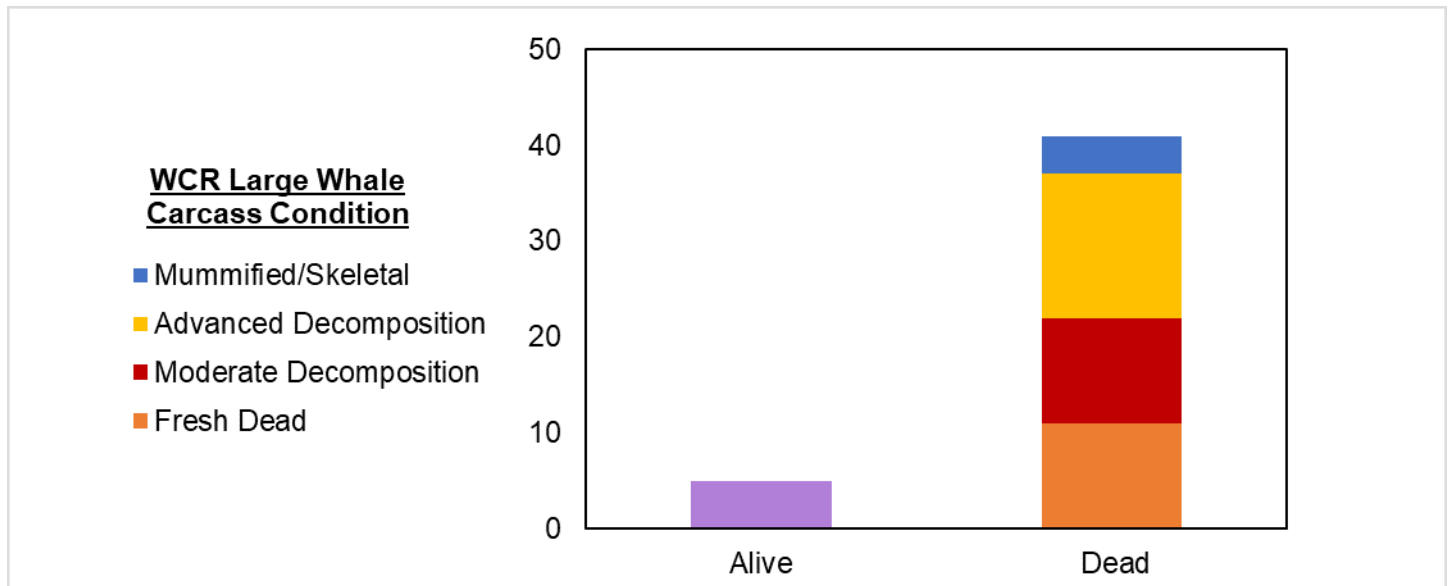


Figure WCR-9. West Coast Region alive and dead large whale strandings, 2017.



Guadalupe fur seal undergoing rehabilitation at The Marine Mammal Center. Photo: The Marine Mammal Center/Cara Field.

What Types of UMEs Were Occurring in the WCR?

There was one ongoing UME investigation in 2017 involving Guadalupe fur seals. Increased strandings of Guadalupe fur seals along the entire coast of California began in January 2015 at eight times higher than the historical average. Guadalupe fur seals were stranding alive and dead, and involved mostly weaned pups and juveniles (1-2 years old). The majority of stranded animals showed signs of malnutrition with secondary bacterial and parasitic infections. More information about UMEs is available at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-unusual-mortality-events>.

WCR High-Profile Case: Blue Whale Stranding in California

In May 2017, a 79-foot adult female blue whale was reported floating off Agate Beach in Marin County, about 10 miles north of San Francisco, CA. After the whale washed ashore, a team from The Marine Mammal Center (TMMC) and California Academy of Sciences conducted a necropsy on May 27, 2017. The carcass was in good-condition and revealed extensive blunt force injuries consistent with vessel strikes (Figure WCR-10). Fluke markings enabled researchers to identify the whale as one from a photograph in 1999. Because the whale stranded on a beach inaccessible to heavy machinery, its carcass could not be removed, buried, or towed out to sea. Marin County Parks and Point Reyes National Seashore, who jointly manage the beach, agreed to leave the carcass in place to naturally decompose. The California Academy of Sciences worked with NOAA Fisheries to distribute skin and blubber samples to permitted and authorized researchers and educators for research and conservation projects.



Figure WCR-10: May 27, 2017. Blue whale necropsy. Agate Beach, Marin County. Extensive bleeding can be seen within the muscle layers. Photo taken under NOAA Fisheries Permit No. 18786-02. Photo: California Academy of Sciences and TMMC.

What Members of the Public Can Do

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.

The most important information to collect includes the:

- **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) can also provide valuable information to 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.

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.



Regional 24/7 Hotlines

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



An endangered Hawaiian monk seal (photo taken under NOAA Fisheries Permit No. 932-1489). Photo: NOAA Fisheries/James Watt.

Acknowledgements

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

The National Marine Mammal Stranding Network members, and particularly the Atlantic Marine Conservation Society, The Nature Conservancy, Glacier Bay National Park and Preserve, California Academy of Science, The Marine Mammal Center and its Ke Kai Ola Hospital, NOAA Fisheries Regional Marine Mammal Stranding Coordinators, the Marine Mammal Health and Stranding Response Program, especially Grace Ferrara and Janelle Layton, and the U.S. Coast Guard.



U.S. Secretary of Commerce
Gina Raimondo

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for Oceans and Atmosphere
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March 2021

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