

ASSATEAGUE ISLAND NATIONAL SEASHORE

MARINE ANIMAL STRANDINGS

1991-2023



Photo: Short-finned pilot whale stranding in 2019, NPS photo

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Abstract

A total of 197 marine animals stranded dead on Assateague Island National Seashore (ASIS) between the Ocean City inlet and the Maryland/Virginia state line from 2010 through 2023. Sixty-nine were sea turtles and 128 were marine mammals. Of the turtles that stranded, most were loggerheads (*Caretta caretta*) with 9 being the highest recorded in 2018. Of the marine mammal strandings, bottlenose dolphin (*Tursiops truncatus*) was the most common with 71 total from 2010-2023. Unidentified strandings included two chelonids - one in 2013 and one in 2023 - and two pinnipeds in 2014 and 2020. From 1991 through 2023, the average number of animals stranding per year was approximately 17 and the range was 6 to 47 animals. Two Unusual Mortality Events were declared by the National Oceanic and Atmospheric Administration (NOAA) between 2010-2023, one for bottlenose dolphins and another for humpback whales, which are both still active. ASIS staff observed increases in marine strandings of those specific species during the UMEs. Staff at ASIS continue to work with our stranding network partners in MD: The Marine Mammal and Sea Turtle Stranding Program (run by the Maryland Department of Natural Resources, through the Cooperative Oxford Laboratory in Maryland) and the National Aquarium. ASIS staff is currently working together with our MD stranding network partners on long-term NPS Research Permits, to better document roles and responsibilities with collection, reporting and disposal of marine animal carcasses. This system plus the extensive reporting the stranding network partners provides USFWS and NOAA will also replace the need to draft ASIS specific reports, unless a new research project or situation warrants it.

Introduction

The Maryland portion of Assateague Island is approximately 35 kilometers (km) in length and is bordered by the Atlantic Ocean and Sinepuxent and Chincoteague Bays. This portion of the island is managed by either the National Park Service (NPS) as Assateague Island National Seashore (ASIS) or the Maryland Department of Natural Resources (DNR) as Assateague State Park (ASP). Assateague Island National Seashore is open year-round and the combined beach use by park staff and visitors usually results in fairly quick reports of stranded marine animals. This report details sea turtle and marine mammal strandings that occurred within ASIS between 2010 and 2023, with a table documenting all strandings that have been recorded historically.

NPS Management Policies recognizes that naturally occurring wildlife injuries, disease, and death are important factors driving the process of natural selection and ultimately contribute to the overall health and vigor of native wildlife populations. In recognition of the scientific information opportunities any live or dead marine animal offers, ASIS allows stranded animals to be examined and sampled by experienced cooperators and occasionally removed from the park for further study or rehabilitative efforts. Ideally, any live animals removed or rescued from ASIS should be released from the island when possible. Similarly, only animals rescued from ASIS should be released from the island, unless extenuating circumstances warrant the release of animals taken from locations other than ASIS. Requests to release any animal from ASIS are reviewed by the Chief of Resources Management and approved on a case-by-case basis. All live and dead strandings are documented, regardless of condition or recovery efforts. Refer to the most recent park-specific Job Hazard Analysis (approved in December 2024) for more detailed information about handling procedures and management guidelines of marine strandings.

The Cooperative Oxford Laboratory (COL) is operated under a partnership between DNR and the National Oceanic and Atmospheric Administration (NOAA). Through COL, the Marine Mammal and Sea Turtle Stranding Program (MMSTSP), established in 1990, coordinates responses and collects data on all dead strandings on the Delmarva Peninsula. Facilities at COL include a laboratory equipped to necropsy marine animals. Their efforts help develop information on stranding patterns, human interactions and the population health of marine animals. Dead or alive, stranded marine animals provide researchers, resource managers, and others with an invaluable source of information from species that may not otherwise be available for study. The staff at ASIS has worked cooperatively with MMSTSP since 1991 and will continue this team effort so data collection is consistent and readily available.

In addition to COL staff, other members of MMSTSP include the National Aquarium which directs the Marine Animal Rescue Program (MARF). The National Aquarium's MARF focuses its efforts on rescue and rehabilitation efforts. As of 2023, the National Aquarium has a stranding response center locally in Ocean City, MD for live stranded animals; animals rescued for rehabilitation can first be transported to this triage and treatment space before the longer drive to the Marine Animal Rescue Center in Baltimore, MD.

Methods

After a dead animal was observed by or reported to ASIS staff, a simple assessment of its overall condition, estimated size, tentative species identification, and the stranding location was made. This information was generally recorded by ASIS staff and reported directly to MMSTSP by calling their stranding phone. If it was in danger of washing back out, efforts were made to tow larger carcasses out of the tidal zone, ideally to west of the OSV boundary line. Smaller carcasses could be removed from the beach to a more accessible area such as Shell Road or Seashore Headquarters for MMSTSP staff to retrieve, if suitable for necropsy.

Since 2010, response of MMSTSP staff to conduct on site examinations and/or necropsies depends on the species, decomposition status of the carcass, and if the strandings appear to have human related contact/disturbances such as fishing gear. Certain species are priorities for response, such as one's involved in UMEs, all large whales, and highly endangered or rare species to the mid-Atlantic such as the Kemp's Ridley. For common strandings (such as sea turtles or dolphins, especially those that are highly decomposed), ASIS trained wildlife staff collect Level A data and report it directly to the stranding network.

Level A data collection and examination reports from stranding staff documents evidence of human-induced or other interactions, internal and external condition of animal, abnormalities, and evidence of disease or parasites. Measurements are taken from both whole and partial specimens, and when needed, samples are taken for genetics, histology and toxicology. Where species and condition of the carcass warranted, some whole organs are preserved for study by MD-DNR. All reports include the location, species, sex, condition of the animal and general observations.

Complete necropsies and histology can only be performed on freshly dead specimens by stranding network employees. Following examination, the possible cause of death and final disposition of the animal is noted. Occasionally strandings are located near a sensitive piping

plover (federally threatened species) nesting site or are carried back out by the tide before the team can arrive. In those cases, photos and measurements are taken by ASIS staff when possible, to document the stranding.

ASIS staff is then responsible for disposal of the carcass, whether MMSTSP decides to necropsy the stranding or not. From 2010-2021, carcasses were either left to naturally decompose at the original stranding location or placed on the upper beach/dunes away from public areas. Beginning in 2022, after the collection of Level A data all carcasses with no MMSTSP response were towed to the upper beach and buried. This is the preferred method of disposal for NOAA when possible, to prevent additional reports of the same individuals, prevent visitors from driving or taking parts of marine animals (particularly in the developed area and Over Sand Vehicle (OSV) zone of ASIS), and to ultimately aid in the protection of the remains of listed species under being taken from ASIS beaches.

Permitting

MMSTSP maintains current collection permits required by the National Marine Fisheries Service (NMFS) through NOAA, as well as a list of approved research requests for specific species or tissue. Authorization letters are specific to the individual response person and affiliation and include justification for possession of the requested samples. Carcass condition of the stranded animals is a critical factor determining the types of samples harvested.

Reports were catalogued by MMSTSP including reports of special findings and photographs when applicable. A copy of the final stranding report for each animal was historically sent to ASIS for reference but was discontinued in 2010.

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Data Storage

All marine animal strandings that occurred at ASIS through YEAR are documented in NPS files. The ASIS database for Stranded Marine Animals is stored in the RM Electronic Library under "*G:\Electronic Library\03 T&E Animals\08 Marine Animal Strandings\Stranded Database\Strandings*" and was updated through 2009.

This report contains additional data sent by MMSTSP staff for 2010 through 2023, to complete the last report in this format. A Project was created in the NPS IRMA portal within the DataStore titled "*Marine Animal Stranding Reports at Assateague Island National Seashore*". This Project and all related marine stranding reports for ASIS were added to IRMA, connected to the Project and are publicly available. The Reference Code is 2307037 and can be accessed at: <https://irma.nps.gov/DataStore/Reference/Profile/2307037>.

The MMSTSP maintains records for dead strandings in Maryland and has access to data from other states. Records for live, rescued animals are maintained by the National Aquarium (MARP), although formal documents are usually not prepared for external use and are not included in this report.

Results/Discussion

A total of 197 marine animals stranded dead on Assateague Island National Seashore (ASIS) between the Ocean City inlet and the Maryland/Virginia state line from 2010 through 2023. Sixty-nine were sea turtles and 128 were marine mammals. Of the turtles that stranded, most were loggerheads (*Caretta caretta*) with 9 being the highest recorded in 2018. Of the marine mammal strandings, bottlenose dolphin (*Tursiops truncatus*) was the most common with 71 total from 2010-2023. Unidentified strandings included two chelonids - one in 2013 and one in 2023 - and two pinnipeds in 2014 and 2020. Species breakdown for each year from 2010 through 2023 is shown in Table 2, along with a historic breakdown of marine animal strandings from 1991-2009 in Table 1 for comparison.

UME: Bottlenose Dolphins (closed)

A higher number of bottlenose dolphin strandings between 2013-2015 at ASIS can be attributed to the Bottlenose Dolphin Unusual Mortality Event in the Mid-Atlantic Coast. It was discovered that 92% (about 275 of 299) of bottlenose dolphins tested positive for cetacean morbillivirus, a disease within the same family as measles. Additionally, 25% (39 of 153) of the animals also tested positive for the bacterial infection known as brucellosis. Of the 41 marine mammals that stranded on ASIS beaches during 2013, 33 of them were bottlenose dolphins. The highest number of strandings recorded on a single day during this event on ASIS beaches was on October 10, 2013, with a total of 6 bottlenose dolphins. ASIS saw fewer numbers of bottlenose dolphin strandings later during the UME with a total of only two in 2014. The UME was considered closed by NOAA on March 1, 2015. In 2015, four bottlenose dolphin strandings were recorded on ASIS after the conclusion of the event. Additional information regarding this UME can be found at: [2013–2015 Bottlenose Dolphin Unusual Mortality Event in the Mid-Atlantic \(Closed\) | NOAA Fisheries](#)

UME: Humpback Whales (open)

NOAA declared a UME for the humpback whale along the Atlantic coast starting in January of 2016. This UME remains active into 2024. Beginning in 2016, increasing numbers of humpback whale mortalities were reported from Maine to Florida. NOAA has reported that of the humpbacks necropsied (around 90 individuals), 40% have showed evidence from human interaction including either ship strikes or entanglement. Even though some strandings have been attributed to human interaction during this active UME, not all have been related, and more research is needed as part of this on-going UME. At ASIS, 4 of the 5 humpback strandings from 2010-2023 have occurred during the time frame of this UME including one in 2016, 2017, 2021, and 2023 respectively. MD-DNR hold final reports on these animals including necropsy results and suspected cause of death. Additional information regarding this active UME can be found at: [2016–2024 Humpback Whale Unusual Mortality Event Along the Atlantic Coast | NOAA Fisheries](#)

Other Notable Strandings

Other notable marine mammal strandings that occurred between 2010-2023 were of three new species to ASIS including two Clymene dolphins in 2011, one spotted dolphin in 2012, and a west Indian manatee in 2015. Although these species can range along the Atlantic coast it was the first time they had been recorded as stranded animals at ASIS.

In particular, the west Indian manatee was of interest as this species typically remains in warmer water/tropical climates, although they can be a common visitor to the Chesapeake Bay during the summer months. The manatee was discovered on the beach at ASIS on October 27, 2015, an abnormal time of year for this animal to be in the area. It was reported by MD-DNR that tissue samples and swabs of this animal were collected and interest in possible cold-stress related injuries were considered as the water temperature ranged from 61-63 degrees Fahrenheit due to a Nor'easter on the day of stranding. Skeletal remains of this animal were accessioned into the Smithsonian Institution Collection post necropsy. MD-DNR holds the final report on this animal.

Lastly, 55 harbor porpoises stranded on ASIS from 1991-2009, which is relatively high compared with numbers for other strandings (Table 2). Their population numbers have been declining globally, and we may be observing local declines in the Gulf of Maine; researchers suggest that local declines may be due to prey abundance, bycatch, and noise disturbance (Frankish et al 2023). From 2010-2023 only 11 strandings were observed at ASIS (Table 1).

References

Frankish, C., von Benda-Beckmann, A., Teilmann, J., Tougaard, J., Dietz, R., Sveegaard, S., Binnerts, B., de Jong, C. & J. Nieb-Neilson. 2023. Ship noise causes tagged harbour porpoises to change direction or dive deeper. *Marine Pollution Bulletin* Vol. 197 (115755): 1-10.

NOAA. Active and Closed Unusual Mortality Events. Available 12/17/24 at: [Active and Closed Unusual Mortality Events | NOAA Fisheries](#)

Common Name	Pre-1991	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Fin Whale	*																				
Humpback Whale	*		2								1							1	1	1	6
Northern Right Whale													1								1
Pygmy Sperm Whale	*													1							1
Dwarf Sperm Whale	*																				
Sperm Whale						1					1										2
Gervais' Beaked Whale																				1	1
True's Beaked Whale	*																				
Atlantic White-sided Dolphin	*			1				1								1	1		1		5
Bottlenose Dolphin	*	1	4	5	2	1	3	1		1	1	3	4	7	6	1	6	4	3		53
Common Dolphin	*						1				1	1			3				1	2	9
Harbor Porpoise	*	2		3	10	1	3	9	1	15	1	3		1	1	2			2	1	55
Long-finned Pilot Whale			2	1						1						3					7
Short-finned Pilot Whale			3																		3
Risso's Dolphin	*				1							1		2	1	1					6
Striped Dolphin	*	1	1			1						1		2							6
Gray Seal	*																	1	1		2
Harbor Seal			2	1		1	1		1	1						1					8
Harp Seal							1		1			2				1		2		2	9
Hooded Seal								1				1						1			3
Green Turtle											1	1									2
Kemp's Ridley Turtle													1								1
Leatherback Turtle						2					2	2	2	2	9		3			1	23
Loggerhead Turtle	*	8	7	9	7	6	9	5	3	4	6	15	23	3	12	1	6	6	4	11	145
Unidentified	*		2						2						2	1			1		8
Total		12	23	20	20	13	18	17	8	22	14	30	31	18	34	12	16	15	14	19	356

Table 1. Historic Marine Animal Strandings at Assateague Island National Seashore, MD 1991-2009

Common Name	Pre-1991	1991-2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Fin Whale	*	0															
Humpback Whale	*	6	1						1	1				1		1	5
Northern Right Whale		1															
Pygmy Sperm Whale	*	1					2	2									4
Dwarf Sperm Whale	*	0															
Sperm Whale		2															
Gervais' Beaked Whale		1															
True's Beaked Whale	*	0		1													1
Atlantic White-sided Dolphin	*	5		1													1
Bottlenose Dolphin	*	53	5	4	2	33	2	4	4	1	2	3	1	3	5	2	71
<i>Clymene Dolphin</i>		0		2													2
Common Dolphin	*	9		1	1	2		1				1		2	1		9
Harbor Porpoise	*	55	3		1	3				3		1					11
Long-finned Pilot Whale		7															
Short-finned Pilot Whale		3										1					1
Risso's Dolphin	*	6				1											1
<i>Spotted Dolphin</i>		0			1												1
Striped Dolphin	*	6		1	1	1									1		4
<i>West Indian Manatee</i>		0						1									1
Gray Seal	*	2		3											1		4
Harbor Seal		8		1		1						1					3
Harp Seal		9	2	2						1			2				7
Hooded Seal		3															
Green Turtle		2															
Kemp's Ridley Turtle		1					1	1		1							3
Leatherback Turtle		23		1				1	1								3
Loggerhead Turtle	*	145	5	2	4	5	5	5	4	7	9	4	5	3	1	2	61
Unidentified	*	8				1	1						1			1	4
Total		356	16	19	10	47	11	15	10	14	11	11	9	9	9	6	197

Table 2. Historic Marine Animal Strandings at Assateague Island National Seashore, MD 2010-2023. (Species in italics were newly stranded species for ASIS).