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# MARINE MAMMAL AND SEA TURTLE STRANDING RESPONSE 2006 GRANT REPORT



VIRGINIA  
**AQUARIUM**  
STRANDING RESPONSE



Virginia Coastal Zone  
MANAGEMENT PROGRAM

*VIRGINIA AQUARIUM FOUNDATION STRANDING  
RESPONSE PROGRAM*

*Marine Mammal and Sea Turtle  
Stranding Response  
2006 Grant Report*

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**A FINAL REPORT TO THE  
VIRGINIA COASTAL ZONE MANAGEMENT PROGRAM  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
COMMONWEALTH OF VIRGINIA**

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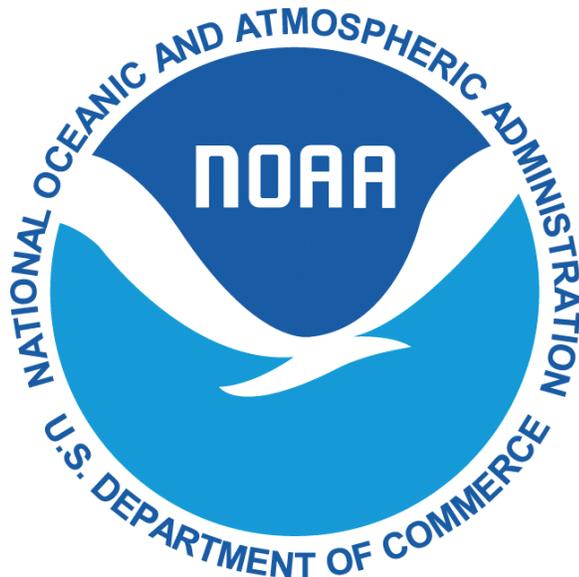
The mission of the Virginia Aquarium & Marine Science Center (formerly Virginia Marine Science Museum) is to increase the public's knowledge and appreciation of Virginia's marine environment and inspire commitment to preserve its existence. The Aquarium is operated by the City of Virginia Beach in cooperation with the Virginia Aquarium Foundation (VAQF) and the Commonwealth of Virginia.

The Virginia Aquarium Research & Conservation Division is responsible for directing the organization's efforts in these areas. With primary support from the VAQF, the division is dedicated to conservation of the marine environment through research, partnerships, marine animal rescue and education.



## Virginia Coastal Zone MANAGEMENT PROGRAM

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## INTRODUCTION

All marine mammals and sea turtles are designated as protected species by the Marine Mammal Protection Act (1972) and/or the Endangered Species Act (1973). The Virginia Aquarium & Marine Science Center (formerly: Virginia Marine Science Museum) Foundation Stranding Response Program (VAQS) holds permits from state and federal authorities for all activities related to marine mammal and sea turtle stranding response and research. VAQS has been responding to marine mammal and sea turtle strandings (more than 3500) in Virginia since 1987. The Aquarium and the VAQS Stranding Center are located in Virginia Beach, VA. VAQS responds to all marine mammal strandings in Virginia and currently maintains the state marine mammal stranding database. In addition, VAQS and their cooperators respond to sea turtle strandings along the lower Chesapeake Bay, eastern shore and ocean coastlines. Sea turtle stranding data are recorded in the VAQS database and reported to the state sea turtle stranding database at the Virginia Institute of Marine Science (VIMS) in Gloucester Point.

VAQS uses staff, volunteers and other organizations (cooperators) to report, record, collect, and examine stranded animals. The organization and training of primary response cooperators is crucial to the stranding network. Rapid response to strandings can result in the rescue of live animals and the collection of valuable data that may otherwise be lost due to decomposition and/or scavenging. Formed in 1991, the VAQS Stranding Response Team (Team) is composed of staff and volunteers trained to respond to stranded animals. VAQS staff provides training programs for more than 75 Team volunteers and personnel from cooperating agencies and organizations. Instruction in biology, ecology and both live and dead stranding response protocols are provided for marine mammal and sea turtle species found in Virginia. These cooperative training efforts have included the U.S. Coast Guard, U.S. Fish and Wildlife Service, NOAA Fisheries Service (NMFS), Nature Conservancy, Virginia Marine Resources Commission, Virginia Department of Game and Inland Fisheries, state parks, national wildlife refuges, and regional law enforcement authorities. As a result of these continuing efforts, the VAQS continues to maintain and improve statewide stranding response.

Marine mammal groups found in Virginia include cetaceans (dolphins, porpoises and whales), pinnipeds (seals) and sirenians (manatees). Marine mammal strandings occur in all months of the year. During the 1990s, Virginia averaged 61 marine mammal strandings per year with a high of 105 in 1994. Since then, strandings have increased dramatically. For the six most recent years 2001-2006, Virginia has averaged 111 marine mammal strandings (Fig. 1). It is important for organizations such as VAQS to examine stranded marine mammals because these species are very difficult to study in the wild. Very little is known about the natural history of many marine mammal species and strandings provide a rare opportunity to thoroughly examine these animals. With the advent of new techniques such as molecular genetic analyses and biotoxin, contaminant and hormone assays stranded animals provide a wealth of information about wild populations that are difficult and expensive to study *in situ*. In some species such as pygmy/dwarf sperm whales and beaked whales, data collected from stranded animals provides the best information available on the animals' natural history. Stranding records can indicate seasonal trends in presence and suggest areas of high concentration of marine mammal species such as bottlenose dolphins and harbor porpoises (Read and Murray, 2000). Spatial and temporal trends in marine mammal mortalities, such as those caused by unusual mortality events and/or fisheries interactions, can also be monitored from stranding records. Each stranded marine mammal is thoroughly examined including body measurements, external appearance, and internal condition (via necropsy). Data and tissues are collected for life history, histological

and toxicological studies. Samples are collected by VAQS and supplied to the Smithsonian Institution, Armed Forces Institute of Pathology, NMFS and numerous other research organizations.

In addition to dead strandings, the VAQS Team responds to several live marine mammals each year. The level of response depends on the type of animal. Sick or injured baleen whales and toothed whales larger than 12 feet in length are virtually impossible to rescue and often must be humanely euthanized. Some smaller cetaceans can be rescued if found quickly and in suitable condition. They must be supported in water as soon as possible and treated for shock. Successful cetacean rehabilitation requires large tanks and access to sophisticated equipment. Currently, VAQS is not equipped to attempt long-term rehabilitation of a cetacean. As soon as possible, animals that are good candidates for rehab are transferred to other facilities. Pinnipeds (seals), on the other hand, are amphibious and can be transported in canine kennels. The VAQS Stranding Center has a seal holding pen adequate for short-term triage and a seal rehabilitation unit capable of holding one seal. Seals in triage can be held in a 4' x 4' dry pen with gated entry into a 4' x 4' pool. Following triage, animals are placed in a seal rehabilitation area (large enough for one animal) or are transferred to other facilities in the stranding network that specialize in long-term rehabilitation and release of pinnipeds. In the past six years, VAQS has responded to an average of 5.0 cetaceans and 5.8 pinniped live strandings in Virginia each year. The VAQS Team also responds to live animal emergencies in northeastern North Carolina. In recent years, the number of responses to live marine mammal strandings in North Carolina has increased (10.0 per year in last six years).

Five species of sea turtles (loggerhead, Kemp's ridley, leatherback, green, and hawksbill) are found in Virginia. Sea turtle strandings recorded by VAQS occur primarily in the late spring, summer and fall. The VAQS Team responded to an average of 83 sea turtle strandings per year during the 1990s. From 2001-2004, strandings increased dramatically (an average of 347 per year). Since 2004, strandings have decreased dramatically to an average of 167 per year (Fig. 6).

Sea turtles are examined in much the same way as marine mammals. Data are recorded for all strandings, and necropsies are performed on most stranded carcasses. Stranding trends, including probable causes of mortalities, are monitored through stranding records. Stranded sea turtles are checked for flipper and pit tags and results are reported to NMFS. A small number of loggerhead sea turtles nest on Virginia beaches each year. The VAQS Team participates in a nesting beach monitoring program with the Back Bay National Wildlife Refuge. Live strandings of sea turtles have also increased and the VAQS Team has successfully rehabilitated and released many of the stranded turtles. In the past six years, VAQS has responded to an average of 10.0 live sea turtle strandings in Virginia each year. The Stranding Team expertise in sea turtle rehabilitation has resulted in many turtles that have stranded outside Virginia being transferred to VAQS for rehabilitation and/or release.

In addition to stranding response, VAQS conducts research on marine mammals and sea turtles. Photo-identification is a non-invasive technique that takes advantage of naturally occurring marks on animals. Photo-ID is used to study both bottlenose dolphins and large whales, primarily humpback whales, in the nearshore waters of Virginia. VAQS has also been conducting research on loggerhead sea turtles since 1990. Early research involved the study of growth potentials of loggerhead hatchlings in controlled environments. Post-release satellite tracking of aquarium-reared loggerheads was conducted with the help of VIMS. Growth and nutritional studies continue with hatchling loggerheads and non-releasable juvenile and adult loggerheads, Kemp's ridleys and greens.

VAQS Team staff and volunteers present the results of their research at national and

regional workshops, at professional meetings and in numerous publications (Appendix I). In addition, VAQS research has been presented to more than eight million people through innovative Aquarium exhibits and public programs. Staff and volunteers present educational programs related to stranding events, on-going stranding response and research throughout the year. Recently, staff have been gaining valuable experience in live animal rehab by visiting and working with staff at other facilities. VAQS staff members also serve on federal management and scientific teams studying the interactions of protected species with commercial fisheries and other potentially threatening human activities. They regularly use their expertise and data to comment on projects that may have an effect on the local marine mammal and sea turtle populations, including a proposed naval undersea training range off Virginia's eastern shore. Finally, public and private organizations conducting natural resource surveys and environmental assessments routinely utilize the VAQS stranding database and the expertise of staff for information regarding protected species in Virginia.

## STRANDING RESPONSE METHODS

When examining dead stranded marine mammals and sea turtles, the VAQS Team follows data collection protocols developed by NMFS (Appendix IV). For marine mammals, Level A data are collected on all strandings and recorded in the marine mammal stranding database. Level A data include:

observer	date
species	location
body length	weight
gender	disposition of carcass
signs of human interaction *	
sample collection and dissemination	

(\* Signs of human interaction consist of clues on a carcass that human activities were responsible for injuries and/or the death of the animal. The two most common types of human interactions are fishery entanglements and vessel strikes.)

Level B and C data are collected from fresh carcasses. Level B and C data are recorded on numerous other data sheets often provided by other research organizations. These more precise data include:

- age
- extensive body measurements
- descriptions and photographs of external & internal appearance
- parasite and pathology occurrence
- stomach contents
- reproductive status
- genetic information
- tissue contaminant levels
- information for specific research

In order to provide timely, accurate and usable data, the VAQS compiles these data in a database. The computer system, database and software allow for analytical study of the data including GIS mapping. When combined with the extensive VAQS photo and video catalogs, the marine mammal stranding database can be an invaluable tool for scientists, natural resource managers and other state and federal agencies.

Sea turtle data are collected in much the same manner as for marine mammals (Appendix

IV). In addition to the Level A data listed above, the VAQS Team also examines sea turtle carcasses for several types of tags. Pit tags and wire tags require specialized equipment in order to be detected. Most turtles are examined for stomach contents, gender and signs of human interaction such as fishing gear and debris ingestion.

Live marine mammals and sea turtles have become an increasing part of stranding response at VAQS. Live stranding response is quite different from responding to dead animals. While time is important when responding to a fresh dead stranding, timely response is crucial to the welfare and potential survival of live stranded animals. Once a live stranding is confirmed, staff and volunteers can be ready to respond in minutes. Cooperating agencies, especially on Virginia's eastern shore, have immensely improved the VAQS Team's ability to rescue animals. Whenever possible, live stranded animals are rushed to the Stranding Center where they are immediately treated for shock and other obvious injuries. The VAQS veterinary staff and the Team veterinary technician have developed protocols and data sheets for live animal response and rehabilitation. VAQS staff has established an excellent working relationship with the local hospital laboratory and with local vet clinics that provide valuable services in the form of blood and sample analyses, radiograph support and doses of less common drugs. In addition, the medical team works with several specialized veterinarians and technicians, including eye specialists and advanced diagnostic technicians, on special cases. The VAQS Team is now experienced at working with live stranded sea turtles and seals and has gained valuable experience with live cetaceans.

## DISCUSSION OF 2006 STRANDING DATA

### MARINE MAMMALS

VAQS stranding data are presented for the calendar year 2006. A total of 92 marine mammals stranded in Virginia during 2006 (Table 1). In the past ten years, the number of marine mammal strandings has varied from a low of 62 in 1998 to a high of 128 in 2001 (Fig. 1). The high numbers of strandings in 1999 and 2001 were accompanied by high numbers of harbor porpoise strandings (Fig. 5B). Marine mammal strandings occur in all months of the year, but some marine mammals (*i.e.* bottlenose dolphins, harbor porpoises and seals) strand seasonally, while others (*i.e.* large whales and other cetaceans) can occur at any time of the year (Fig. 2). In the past ten years, bottlenose dolphins have comprised the majority of the marine mammals that strand each year. 2006 was a typical year with bottlenose dolphins comprising 68% of the strandings (Fig. 3). Marine mammal strandings occurred throughout Virginia's ocean and bay waters. Normally, the strandings are most common along the lower eastern shore and southern shore of the Chesapeake Bay mouth and the southern ocean coast (Fig. 4). Pictures of some of the notable marine mammal strandings in 2006 are included in Appendix II.

Marine mammals are divided into five data groups for analyses. These data groups are: (1) bottlenose dolphin - the most common marine mammal in Virginia, (2) harbor porpoise - a common small cetacean that occurs in late winter and spring, (3) large whales - primarily baleen whales such as humpback, fin, right and minke whales, (4) other cetaceans - primarily oceanic species with low stranding rates such as pilot whales, pygmy and dwarf sperm whales, pelagic dolphins and beaked whales, and (5) pinnipeds - harbor, harp, hooded and gray seals. Live stranded animals are included in these analyses but are also addressed separately below.

### ***Live strandings***

Live marine mammal strandings have increased in recent years. In 2006, VAQS recorded 15 live marine mammal strandings, seven of which stranded in northeastern North Carolina (Table 2). These strandings occurred throughout the year and consisted of 11 seals and four cetaceans. Seals were recovered, provided with emergency medical care and triage, and then provided with long-term rehabilitation, if needed. Because VAQS has only one seal rehabilitation unit, and because the hooded seals were stranding in the heat of the summer, many animals were transferred to long-term rehabilitation facilities along the east coast including the Riverhead Foundation for Marine Research and Preservation (NY), Mystic Aquarium (CT), the Brigantine Marine Mammal Stranding Center (MMSC) (NJ), and the National Aquarium in Baltimore (NAIB) (MD). Five of the seals were successfully rehabilitated and released. One harbor seal was inadvertently recovered by a duck hunter on Virginia's eastern shore and transferred to VAQS. Following a short examination and rehydration, the seal was released with a satellite tag from Virginia Beach. The seal's post-release movements were tracked and ended in North Carolina. After several weeks of apparently no movement, the seal's carcass was discovered in a North Carolina marsh. The four cetaceans included one common dolphin, two pygmy sperm whales, and one humpback whale. The pygmy sperm whales were part of a mass stranding on the North Carolina outer banks. The humpback was a very young and emaciated whale that stranded in Virginia Beach. Pictures of some of the live strandings are included in Appendix II.

### ***Bottlenose dolphins***

Bottlenose dolphins (*Tursiops truncatus*) are the most common marine mammals sighted in Virginia waters. They are also the most commonly stranded marine mammals in the state. Most dolphins strand from April to October, which is concurrent with their seasonal appearance in Virginia coastal waters (Barco *et al.* 1999; Fig. 2). During 2006, 63 bottlenose dolphin strandings were recorded in Virginia (Figure 5A). Strandings occurred primarily along the Atlantic Ocean and lower Chesapeake Bay shorelines, although they were also recovered inside the bay, as well (Fig. 4). In 2006, 62% (39) of the strandings occurred in Virginia Beach and 33% (21) occurred on the eastern shore. Gender was determined for 56 of the 63 stranded dolphins. Females comprised 46% (26) and males comprised 54% (39) of the known gender animals. Twenty two (35%) of the stranded dolphins were less than 160 cm (defined as "young of the year", YOY), the approximate size of a one-year old dolphin (Fig. 5A; Urian *et al.* 1996). Examination of YOY continues to reveal evidence of infanticide in the form of broken bones, hemorrhaging and organ damage (Dunn *et al.* 2002). Of the dolphins that were fresh to moderately decomposed (n = 47), signs of human interaction could not be determined in 27 (58%), were positive in 17 (36%), and were not observed in 3 (6%). Most of the signs of interactions were related to fisheries entanglements.

### ***Harbor porpoises***

Harbor porpoises (*Phocoena phocoena*) were observed only occasionally in Virginia stranding records during the 1980's. Increases in harbor porpoise strandings occurred along the mid-Atlantic coast in 1993-1994 and the increases were most dramatic in Virginia (Cox *et al.* 1998, Swingle *et al.* 1995). In recent years, they have been the second most commonly stranded

marine mammals in Virginia. Harbor porpoises typically strand in late winter and early spring (Fig. 2), and strandings occur along the ocean shorelines (Fig. 4). During 1999, 40 harbor porpoise strandings were recorded in Virginia, but in 2000, that number dropped precipitously to only four. 2001 was another big year (30 strandings), followed by only six harbor porpoise strandings in 2002. There were 19 strandings in 2003, nine in 2004, 28 in 2005, and nine in 2006 (Fig. 5B). Harbor porpoise strandings appear to be cycling such that every other year produces a relatively high number. Whether this relates to fluctuations in abundance of the population or stocks, a threat that is cyclical in nature, or other factors is not yet known.

### ***Large whales***

Large whales do not strand often in Virginia. With the exception of the sperm whale, large whales are typically baleen whales such as humpbacks or fins. All of the large whales normally found in Virginia are endangered species. Because of the logistics involved in examinations of large whales, an extensive large whale response protocol was developed (Blaylock *et al.* 1996). The protocol was developed in response to increased strandings of humpback whales in Virginia and North Carolina in the early 1990's (Swingle *et al.* 1993, Barco *et al.* 2002). The response protocol has since been further developed and is specifically applied to northern right whales (McLellan *et al.* 2004). During 2006, there were two large whale strandings in Virginia, both of which were humpback whales (*Megaptera novaeangliae*). The first humpback whale stranded dead in Virginia Beach with severe propeller strikes to the head and left flipper. This female was identified, through fluke photo-ID, as a known Gulf of Maine whale first sighted in the summer season of 2004, making the minimum age 2-3 years. The necropsy confirmed that the propeller strikes appeared to have caused the animal's death. The second humpback was a very young male that stranded alive in Virginia Beach. The young whale was extremely emaciated and was humanely euthanized on the beach. Histopathology results from samples collected during the necropsy examination indicated that the animal was malnourished and suffered from encephalitis. Overall, there have been 3.2 large whale strandings per year in Virginia during the last six years (Fig. 5C). In addition to strandings, VAQS also responds to large whale entanglements. VAQS staff has been qualified to respond to entangled whales by the Provincetown Center for Coastal Studies in MA. In addition, specialized whale disentanglement gear and supplies are stored at the VAQS Stranding Center for use in the mid-Atlantic region.

### ***Other cetaceans***

“Other cetacean” species generally include pelagic delphinids, *Kogia* species and beaked whales. This group accounted for nine strandings during 2006. These strandings typically occur along the ocean and lower bay shorelines and sometimes involve live animals. In 2006, there were three Atlantic white-sided dolphin (*Lagenorhynchus acutus*), one common dolphin (*Delphinus delphis*), one Risso's dolphin (*Grampus griseus*), two longfinned pilot whale (*Globicephala melas*), one unidentified sperm whale (*Kogia* species), and one unidentified delphinid. The common dolphin was alive when it stranded, though it died on the beach.

### ***Pinnipeds***

Pinniped strandings have generally increased in Virginia since the early 1990s, and nine strandings were recorded from Virginia during 2006 (Fig. 3, 5D). The strandings were identified

as six hooded seals (*Cystophora cristata*) and three harbor seals (*Phoca vitulina*). Regular sightings of seals in Virginia continue to be common occurrences in winter and early spring. During 2006, there were summer strandings of hooded seals all along the Atlantic coast and even into the Caribbean. Hooded seals are known as “ice seals” because their normal range and preferred habitats involve offshore pack ice. This raises the question – what are ice seals doing in Virginia during the heat of the summer? There are no apparent answers to this question as yet, but data collected in 2006 by the VAQS Team and others in the stranding network may help to shed light on this mystery in the future. Improved education and training of stranding network personnel have decreased the unwarranted captures of otherwise healthy seals which have hauled-out to rest on Virginia shorelines, piers, jetties and rock islands. Nevertheless, six of the seals stranded alive and five were successfully rehabilitated and released (Table 2). Seal rescue and rehabilitation efforts continue to represent significant challenges for the VAQS Team and they continue to improve and gain valuable experience and expertise.

## SEA TURTLES

2006 was another unusual year for sea turtle strandings recorded by VAQS (Table 3). It is important to note that the sea turtle stranding data presented in this report do not reflect the entire state. VIMS maintains the state sea turtle stranding database and compiles yearly reports for all Virginia strandings. During the past six years, VAQS has reported both extremely high (460 in 2003) and relatively low (167 in 2005) numbers of sea turtle strandings, with an average of 287 per year. Sea turtle strandings recorded by VAQS during 2006, however, were very similar to 2005 and some of the lowest levels recorded since the 1990s (Fig. 6). The VAQS Team responded to 132 sea turtle strandings during the year and an additional 34 strandings were reported by stranding network cooperators trained by VAQS (Table 3). Cooperators’ reports are given VASC and VDGIF numbers in the database. June was the busiest month with 63 strandings (Fig. 7). Loggerheads (*Caretta caretta*) (n = 124) were the primary species recorded, followed by Kemp’s ridleys (*Lepidochelys kempii*) (n = 27), leatherbacks (*Dermochelys coriacea*) (n = 9) and greens (*Chelonia mydas*) (n = 4) (Fig. 8). Two of the stranded sea turtles were unable to be identified to species. Because these data reflect only those sea turtle strandings recorded by VAQS and cooperators, the distribution of strandings was primarily along the ocean and lower bay shorelines (Fig. 9). The eastern shore of Virginia was the area where 44% (73) of the sea turtle strandings were found. Accomack County accounted for 15% (25) and Northampton County for 29% (48) of the total. Strandings in Virginia Beach contributed to 51% (85) of the total. Improved efforts by VAQS to recruit and train cooperators have greatly enhanced stranding response on the eastern shore. Externally, several dead stranded turtles appeared to have been hit by vessels. In some cases, the carcasses were fresh enough to conduct thorough necropsies. Necropsies on stranded turtles sometimes reveal human interaction in the form of fish lures, hooks and line in the gut of turtles. This fishing equipment could be from recreational or commercial (long-line) gear and may have been actively fishing or “ghost” gear. Further understanding the impacts that recreational and commercial fishing have on turtles is needed. Lastly, the VAQS Team participated in several research projects with NMFS, USFWS and VIMS. Flippers were collected from all sea turtle species for a study on aging and skin and muscle samples were collected for genetic studies on loggerheads and green sea turtles. Live loggerhead sea turtles rehabilitated by VAQS were used in tracking studies by VIMS researchers. Pictures of some of the notable sea turtle strandings in 2006 are included in Appendix III.

### *Live strandings*

2006 was another busy year for the VAQS Team with five live sea turtle strandings from Virginia. Two of these turtles were successfully recovered, rehabilitated and released, and two remained in rehab at the end of the year. In addition, two loggerheads were transferred to the VAQS Stranding Center from other stranding network facilities. They were successfully released along with five Kemp's ridley sea turtles that were transferred from the New England Aquarium for rehabilitation in 2005 (Table 4). During the year, the VAQS Team spent several hours per day medicating and feeding sea turtles. Some of the sea turtles had stranded in the previous year and had been in rehab for many months prior to release. When the year ended, there were two sea turtles in rehab pending release in 2007.

### PROFESSIONAL AND EDUCATION ACTIVITIES

VAQS conducted trainings on biology, ecology and stranding response protocols for sea turtles and marine mammals during the year. Trainings were provided to Virginia Aquarium Outreach Instructors, VAQS Team volunteers and to others including: Back Bay National Wildlife Refuge, Eastern Shore National Wildlife Refuge, Chincoteague National Wildlife Refuge, Virginia Beach police, animal control and beach maintenance personnel, U.S. Coast Guard, and Dam Neck military base natural resources personnel. Cooperator trainings were presented to personnel from VMRC, VDGIF, State parks, national wildlife refuges, regional law enforcement agencies, U.S. Coast Guard, Nature Conservancy and other natural resources groups. In addition, lectures were presented on the topics of marine mammal and sea turtle necropsies, new findings from sea turtle research, and federal efforts to manage and protect marine mammals. VAQS staff attended numerous conferences and workshops including; University of Tennessee Veterinary Exotic Animal Symposium in Knoxville, TN; Kemp's ridley Recovery Plan Stakeholder's Meeting in Houston, TX; 2006 Northeast Region Stranding Network Conference in Ocean City, MD; 2006 International Association of Aquatic Animal Medicine Conference in Nassau, Bahamas; 2006 Sea Turtle Husbandry Symposium in Galveston, TX; Right Whale Consortium Annual Meeting in New Bedford, MA; and the 2006 Sea Turtle Health Conference in Marathon, FL. Staff also traveled to receive specialized training in large whale disentanglement, forensics techniques, disaster response planning, and response to oil spills (see Appendix I for complete listings). Educational programs were presented at many local and regional festivals, to Scouts, to school groups and civic organizations as well as during special VAQ events. A portable exhibit was utilized showing the activities of the VAQS and the Virginia stranding network, and promoting conservation of marine animal species and their habitats.

Grant funds were used in conjunction with funds from the Virginia Aquarium Foundation to staff the Stranding Center with one full-time stranding program coordinator, one veterinary technician, and five part-time stranding technicians. The VAQS Team completed another calendar year using an on-call system developed to ensure that volunteers were available for stranding response, seven days per week, for the entire year. Created and managed by volunteer team response leaders, the on-call system greatly enhances the Team's readiness and rapid response. VAQS Team volunteers logged more than 18,000 hours during 2006.

The VAQS continued several research projects that have been ongoing for many years. The 13th annual Dolphin Count was conducted in August. Bottlenose dolphins were recorded by shore-based observers along Virginia's southern ocean coast. While not a scientific abundance study, the results of the annual dolphin count indicate the importance of Virginia's coastal waters

as habitat for bottlenose dolphins. Photo-identification research on bottlenose dolphins continued for the 18th year. The photo-ID catalog now contains more than 1250 individual dolphins, some of which are regular visitors to Virginia and have been observed in multiple years. VAQS continued to curate the Mid-Atlantic Humpback Whale Photo-Identification Catalog. Results of matching efforts between the mid-Atlantic catalog and others from the western North Atlantic continues to result in new data about the origin of many whales observed in our area (Barco *et al.* 2002). The catalog contains images from stranded and live whales observed in coastal waters from New Jersey through North Carolina. Finally, nutritional and growth studies continued with sea turtles in the Virginia Aquarium's collection.

## SUMMARY

Data collected by the VAQS and Virginia stranding network continue to be critical to the long-term monitoring of sea turtle and marine mammal populations. Fresh-stranded cetaceans continue to be extensively sampled as part of a cooperative research project (involving the University of North Carolina at Wilmington, Duke University and the NC State Vet School) to better assess marine mammal health. These types of studies are crucial to developing a better understanding of the overall health status of marine mammal populations in the wild. Stranding records from Virginia indicate that marine mammal strandings, particularly bottlenose dolphins and harbor porpoise, remain high and that a significant percentage of the mortalities are related to human activities such as commercial fishing. For this reason, VAQS staff serves as expert members on three federal Take Reduction Teams to reduce the incidental mortalities of marine mammals in commercial fishing operations. Sea turtle strandings declined dramatically in 2005 and 2006 and the trend will require further study to determine why. Monitoring stranding activity in 2007 should provide further valuable information to help understand if this decline represents a significant trend, or represents only a temporary change. The VAQS continues to work closely with NMFS to monitor and investigate the high rates of sea turtle strandings on Virginia's eastern shore. In addition, data collected from strandings provides excellent information on life histories of the many species of marine mammals and sea turtles that inhabit Virginia waters. Stranded animals are the only source of this type of scientific information for most species of marine mammals. The sei whale and True's beaked whale strandings in 2003 provide excellent examples of the unique opportunities that strandings provide to study rare and previously unknown species from Virginia.

The VAQS Stranding Center has increased its role in the rescue and rehabilitation of sea turtles, seals and cetaceans. The high level of live stranding responses continued in 2006 and the need for a fully functional rehabilitation facility is clear. The VAQS is planning to continue its efforts on behalf of live stranded sea turtles and marine mammals in Virginia and northeastern North Carolina and plans are being developed for a larger and better-equipped stranding facility.

Marine mammal and sea turtle strandings in Virginia were again at high levels during 2006. Sea turtles continue to strand in high numbers and the number of bottlenose dolphin and harbor porpoise strandings recorded by VAQS remain high. Continued monitoring and reporting of these trends in strandings of protected species will be priorities for the stranding network in 2007.

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Table 1: Marine Mammal strandings in Virginia during 2006, n=92.  
 (Data from the VAQS Marine Mammal Stranding Database)  
 [Length=cm; \* indicates estimated length, ND = no data; U= unknown]

Field Number	Date	Species	City/County	Latitude	Longitude	Cond.	Length	Sex
VAQS20061001	24-Jan-06	harbor seal	Virginia Beach	36.8929	-75.9861	dead	105	M
VAQS20061002	26-Jan-06	harbor seal	Accomack	37.9034	-75.4282	live	98	F
VAQS20061003	14-Feb-06	harbor porpoise	Virginia Beach	36.6880	-75.9205	dead	119	M
VAQS20061004	9-Mar-06	harbor porpoise	Virginia Beach	36.7987	-75.9620	dead	122	M
VAQS20061005	13-Mar-06	harbor porpoise	Accomack	37.9075	-75.3299	dead	122	F
VAQS20061006	16-Mar-06	harbor porpoise	Accomack	37.9340	-75.3782	dead	117	M
VAQS20061007	17-Mar-06	humpback whale	Virginia Beach	36.8375	-76.0030	dead	998	F
VAQS20061008	18-Mar-06	bottlenose dolphin	Virginia Beach	36.7727	-75.9530	dead	175	M
VAQS20061009	20-Mar-06	harbor porpoise	Virginia Beach	36.6938	-75.9233	dead	117	F
VAQS20061010	21-Mar-06	harbor porpoise	Virginia Beach	36.6213	-75.8869	dead	124	F
VAQS20061011	23-Mar-06	harbor seal	Northampton	37.0850	-75.9680	dead	167	M
VAQS20061012	24-Mar-06	bottlenose dolphin	Virginia Beach	36.7045	-75.9275	dead	254	F
VAQS20061013	25-Mar-06	Atlantic white-sided	Virginia Beach	36.9168	-76.0598	dead	147	F
VAQS20061014	26-Mar-06	harbor porpoise	Virginia Beach	36.7887	-75.9587	dead	116	M
VAQS20061015	12-Apr-06	harbor porpoise	Virginia Beach	36.6323	-75.8923	dead	114	M
VAQS20061016	13-Apr-06	sperm whale	Virginia Beach	36.9150	-76.1683	dead	200	U
VAQS20061017	19-Apr-06	bottlenose dolphin	Accomack	37.7088	-75.5751	dead	ND	U
VAQS20061018	26-Apr-06	harbor porpoise	Norfolk	36.9678	-76.2968	dead	137	M
VAQS20061019	1-May-06	longfinned pilot whale	Virginia Beach	36.7090	-75.9296	dead	457*	U
VAQS20061020	2-May-06	Risso's dolphin	Accomack	37.7400	-75.5500	dead	193	F
VAQS20061021	4-May-06	Atlantic white-sided	York	37.1964	-76.3919	dead	164	U
VAQS20061022	4-May-06	Atlantic white-sided	Northampton	37.7734	-75.5357	dead	174	F
VAQS20061023	4-May-06	bottlenose dolphin	Virginia Beach	36.6141	-75.8843	dead	119	F
VAQS20061028	5-May-06	unidentified delphinid	Accomack	37.7794	-75.5303	dead	187	M
VAQS20061024	8-May-06	bottlenose dolphin	Virginia Beach	36.9089	-76.0896	dead	274	M
VAQS20061025	8-May-06	bottlenose dolphin	Virginia Beach	36.9093	-76.0883	dead	202	F
VAQS20061026	8-May-06	bottlenose dolphin	Virginia Beach	36.9139	-76.0719	dead	199	F
VAQS20061027	10-May-06	bottlenose dolphin	Northampton	37.0856	-75.9693	dead	197	M
VAQS20061029	15-May-06	longfinned pilot whale	Accomack	37.8684	-75.3943	dead	451	F
VAQS20061030	15-May-06	bottlenose dolphin	Virginia Beach	36.8374	-76.0030	dead	75	F
VAQS20061031	17-May-06	bottlenose dolphin	Virginia Beach	36.9139	-76.0719	dead	212	F
VAQS20061032	17-May-06	bottlenose dolphin	Northampton	37.1389	-75.9728	dead	233	M
VAQS20061033	18-May-06	bottlenose dolphin	Northampton	37.0866	-75.9728	dead	100	F
VAQS20061034	20-May-06	bottlenose dolphin	Northampton	37.0866	-75.9716	dead	172	M
VAQS20061035	20-May-06	bottlenose dolphin	Northampton	37.1130	-75.9240	dead	83	U
VAQS20061036	22-May-06	bottlenose dolphin	Virginia Beach	36.9128	-76.0727	dead	205	F
VAQS20061037	22-May-06	bottlenose dolphin	Virginia Beach	36.6703	-75.9114	dead	102	M
VAQS20061038	26-May-06	bottlenose dolphin	Virginia Beach	36.9317	-76.0385	dead	205	F
VAQS20061039	28-May-06	bottlenose dolphin	Virginia Beach	36.9204	-76.0846	dead	105	M
VAQS20061040	29-May-06	bottlenose dolphin	Hampton	37.0156	-76.2979	dead	120	F
VAQS20061041	31-May-06	bottlenose dolphin	Northampton	37.0920	-75.9401	dead	118	F
VAQS20061042	2-Jun-06	bottlenose dolphin	Accomack	37.8003	-75.5176	dead	217*	M
VAQS20061043	3-Jun-06	bottlenose dolphin	Northampton	37.3570	-75.9940	dead	105	U
VAQS20061044	7-Jun-06	bottlenose dolphin	Virginia Beach	36.9137	-76.0731	dead	107	U
VAQS20061045	14-Jun-06	bottlenose dolphin	Virginia Beach	36.9166	-76.0603	dead	114	F
VAQS20061047	16-Jun-06	bottlenose dolphin	Accomack	37.7739	-75.5352	dead	186	U
VAQS20061046	18-Jun-06	bottlenose dolphin	Virginia Beach	36.9493	-76.2412	dead	277	M
VAQS20061048	29-Jun-06	bottlenose dolphin	Northampton	37.2291	-76.0122	dead	96	M
VAQS20061049	9-Jul-06	bottlenose dolphin	Virginia Beach	36.9144	-76.0773	dead	198	F
VAQS20061050	13-Jul-06	hooded seal	Northampton	37.0844	-75.9488	live	102	F
VAQS20061051	17-Jul-06	bottlenose dolphin	Accomack	37.8533	-75.3851	dead	244	M
VAQS20061052	19-Jul-06	bottlenose dolphin	Northampton	37.0949	-75.9808	dead	113	M
VAQS20061053	20-Jul-06	bottlenose dolphin	Virginia Beach	36.9168	-76.0598	dead	255	M
VAQS20061054	20-Jul-06	bottlenose dolphin	Virginia Beach	36.9265	-76.0467	dead	196	F
VAQS20061055	20-Jul-06	bottlenose dolphin	Accomack	37.7097	-75.5745	dead	106	U
VAQS20061056	24-Jul-06	bottlenose dolphin	Virginia Beach	36.9986	-75.9833	dead	146	M

Table 1: Marine mammals Strandings *cont.*

Field Number	Date	Species	City/County	Latitude	Longitude	Cond.	Length	Sex
VAQS20061057	26-Jul-06	bottlenose dolphin	Virginia Beach	36.9157	-76.0633	dead	214	M
VAQS20061058	28-Jul-06	hooded seal	Northampton	37.2473	-75.7959	dead	110	M
VAQS20061059	29-Jul-06	bottlenose dolphin	Virginia Beach	36.9241	-76.0487	dead	231	M
VAQS20061060	30-Jul-06	bottlenose dolphin	Virginia Beach	36.9187	-76.0625	dead	181	M
VAQS20061061	1-Aug-06	bottlenose dolphin	Northampton	37.1236	-75.9695	dead	141	F
VAQS20061062	3-Aug-06	bottlenose dolphin	Virginia Beach	36.9172	-76.0591	dead	ND	M
VAQS20061063	3-Aug-06	bottlenose dolphin	Virginia Beach	36.9172	-76.0591	dead	244	F
VAQS20061064	3-Aug-06	bottlenose dolphin	Virginia Beach	36.9666	-76.1041	dead	245	M
VAQS20061065	4-Aug-06	hooded seal	Virginia Beach	36.6222	-75.8917	live	99	M
VAQS20061066	5-Aug-06	humpback whale	Virginia Beach	36.7301	-75.9373	live	642	M
VAQS20061067	6-Aug-06	bottlenose dolphin	Virginia Beach	36.9102	-76.1003	dead	174	M
VAQS20061068	9-Aug-06	bottlenose dolphin	Virginia Beach	36.6906	-75.9216	dead	112	F
VAQS20061069	9-Aug-06	bottlenose dolphin	Northumberland	37.8415	-76.2498	dead	157	M
VAQS20061070	10-Aug-06	hooded seal	Accomack	37.9572	-75.2976	live	115	M
VAQS20061072	12-Aug-06	bottlenose dolphin	Virginia Beach	36.6735	-75.9130	dead	112	F
VAQS20061071	13-Aug-06	bottlenose dolphin	Virginia Beach	36.8376	-76.0026	dead	124	F
VAQS20061073	17-Aug-06	bottlenose dolphin	Virginia Beach	36.8041	-75.9630	dead	164	M
VAQS20061074	20-Aug-06	bottlenose dolphin	Virginia Beach	36.9177	-76.0711	dead	219	F
VAQS20061075	20-Aug-06	hooded seal	Accomack	37.6344	-75.5990	live	120	M
VAQS20061076	23-Aug-06	bottlenose dolphin	Virginia Beach	36.8592	-75.9762	dead	102	M
VAQS20061077	23-Aug-06	bottlenose dolphin	Accomack	37.8902	-75.3406	dead	190*	M
VAQS20061078	27-Aug-06	bottlenose dolphin	Virginia Beach	36.9030	-76.0657	dead	206	F
VAQS20061079	27-Aug-06	bottlenose dolphin	Accomack	37.9762	-75.2823	dead	240	F
VAQS20061080	27-Aug-06	bottlenose dolphin	Accomack	37.9767	-75.2819	dead	125	M
VAQS20061081	28-Aug-06	bottlenose dolphin	Accomack	37.8710	-75.3562	dead	226	F
VAQS20061082	6-Sep-06	bottlenose dolphin	Virginia Beach	36.9140	-76.0705	dead	192	F
VAQS20061083	7-Sep-06	bottlenose dolphin	Virginia Beach	36.9049	-76.0530	dead	207	M
VAQS20061084	15-Sep-06	bottlenose dolphin	Virginia Beach	36.9113	-76.0586	dead	210	M
VAQS20061085	5-Oct-06	bottlenose dolphin	Virginia Beach	36.7444	-75.9431	dead	205	F
VAQS20061086	9-Oct-06	bottlenose dolphin	Virginia Beach	36.8390	-75.9709	dead	120*	U
VAQS20061087	10-Oct-06	bottlenose dolphin	Northampton	37.0834	-75.9550	dead	204	M
VAQS20061088	11-Oct-06	bottlenose dolphin	Northampton	37.4621	-75.6688	dead	238	M
VAQS20061089	26-Oct-06	hooded seal	Virginia Beach	36.9107	-75.9921	live	95	M
VAQS20061090	11-Nov-06	bottlenose dolphin	Hampton	36.9150	-76.0670	dead	243	M
VAQS20061091	7-Dec-06	common dolphin	Accomack	37.9252	-75.3184	live	236	M
VAQS20061092	24-Dec-06	bottlenose dolphin	Virginia Beach	36.5693	-75.8720	dead	260	F

Table 2: Live stranded marine mammals handled by VAQS in 2006.

<u>Month</u>	<u>Species</u>	<u>State</u>	<u>Disposition</u>
January	harbor seal	VA	released 29 Jan, 2006; found dead 5 Apr, 2006
April	harp seal	NC	euthanized 17 Apr, 2006
July	hooded seal (*a)	NC	released 28 Oct, 2006
	hooded seal	VA	died on beach 13 July, 2006
August	hooded seal (*a)	VA	released 28 Oct, 2006
	humpback whale	VA	euthanized on beach 5 Aug, 2006
	hooded seal	NC	euthanized 21 Aug, 2006
	hooded seal (*b)	VA	released 30 Aug, 2006
	hooded seal (*b)	VA	released 30 Aug, 2006
September	pygmy sperm whale	NC	euthanized on beach 1 Sept, 2006
	pygmy sperm whale	NC	euthanized on beach 2 Sept, 2006
	hooded seal (*c)	NC	euthanized 19 Sept, 2006
	harbor seal	NC	died 2 Oct, 2006
October	hooded seal (*d)	VA	released 5 Jan, 2007
December	common dolphin	VA	died on beach 7 Dec, 2006

(\*a) = transferred to Marine Mammal Stranding Center, Brigantine, NJ

(\*b) = transferred to Riverhead Foundation, Riverhead, NY

(\*c) = transferred to National Aquarium in Baltimore, Baltimore, MD

(\*d) = transferred to Mystic Aquarium, Mystic, CT

Table 3: Virginia sea turtle strandings recorded by VAQS and cooperators (VASC, VDGIF) in 2006, n=166. (Data from the VAQS Sea Turtle Stranding Database)

[Length = carapace length notch to tip cm; \* = estimate; ND = no data; U = unknown]

Field Number	Date	Species	City/County	Latitude	Longitude	Cond.	Length	Sex
VASC20062001	14-Jan-06	green	Northampton	37.0931	-75.9801	dead	28	U
VASC20062002	12-May-06	loggerhead	Northampton	37.0978	-75.9404	dead	71	F
VAQS20062001	17-May-06	loggerhead	Northampton	37.1340	-75.9737	alive	65	U
VAQS20062002	21-May-06	loggerhead	Virginia Beach	36.8698	-75.9872	dead	ND	U
VAQS20062003	25-May-06	loggerhead	Virginia Beach	36.9207	-75.9951	dead	69	M
VAQS20062004	28-May-06	Kemp's ridley	Virginia Beach	36.6281	-75.8905	alive	34	U
VAQS20062007	28-May-06	loggerhead	Northampton	37.1586	-75.8547	dead	67	F
VAQS20062008	28-May-06	loggerhead	Northampton	37.1286	-75.8851	dead	71	U
VAQS20062005	29-May-06	leatherback	Virginia Beach	36.9247	-76.0008	dead	ND	M
VAQS20062006	29-May-06	loggerhead	Virginia Beach	36.7495	-75.9450	dead	68	M
VAQS20062009	30-May-06	Kemp's ridley	Northampton	37.2114	-76.0133	dead	38	U
VAQS20062010	30-May-06	loggerhead	Northampton	37.2144	-76.0125	dead	70	U
VAQS20062011	1-Jun-06	Kemp's ridley	Northampton	37.1747	-75.8311	dead	51	U
VAQS20062013	1-Jun-06	loggerhead	Northampton	37.0864	-75.9733	dead	69	F
VAQS20062012	2-Jun-06	loggerhead	Accomack	37.8466	-75.4744	dead	71	F
VAQS20062014	2-Jun-06	Kemp's ridley	Northampton	37.0823	-75.9655	dead	42	M
VAQS20062015	2-Jun-06	Kemp's ridley	Northampton	37.0944	-75.9806	dead	34	F
VAQS20062016	2-Jun-06	loggerhead	Accomack	37.8662	-75.4484	dead	77	F
VAQS20062017	5-Jun-06	loggerhead	Virginia Beach	37.1671	-75.9880	dead	84	F
VAQS20062018	6-Jun-06	loggerhead	Northampton	37.1672	-75.9872	dead	98	M
VAQS20062019	6-Jun-06	Kemp's ridley	Virginia Beach	36.9137	-76.0725	dead	34	M
VAQS20062020	6-Jun-06	Kemp's ridley	Virginia Beach	36.8433	-75.9718	dead	26	F
VAQS20062021	8-Jun-06	loggerhead	Northampton	37.1956	-76.0067	dead	69	F
VAQS20062022	8-Jun-06	loggerhead	Northampton	37.1693	-75.9922	dead	68	F
VAQS20062023	8-Jun-06	loggerhead	Northampton	37.1345	-75.9724	dead	56	M
VDGIF2006001	8-Jun-06	loggerhead	Accomack	37.7230	-75.5689	dead	ND	U
VDGIF2006003	8-Jun-06	loggerhead	Northampton	37.2452	-75.8033	dead	85	U
VAQS20062024	9-Jun-06	loggerhead	Virginia Beach	36.9284	-76.1694	dead	73	F
VAQS20062025	9-Jun-06	loggerhead	Virginia Beach	36.9280	-76.1683	dead	ND	U
VAQS20062026	9-Jun-06	loggerhead	Virginia Beach	36.7429	-75.9424	dead	66	M
VAQS20062027	9-Jun-06	loggerhead	Virginia Beach	36.5608	-75.8699	dead	57	M
VAQS20062028	10-Jun-06	loggerhead	Northampton	36.9508	-76.2443	dead	ND	U
VDGIF2006002	10-Jun-06	loggerhead	Northampton	37.2434	-75.8084	dead	65	M
VAQS20062029	11-Jun-06	loggerhead	Virginia Beach	36.6189	-75.8858	dead	70	U
VAQS20062030	11-Jun-06	loggerhead	Virginia Beach	36.6616	-75.9059	dead	ND	U
VAQS20062031	11-Jun-06	loggerhead	Virginia Beach	36.9151	-76.1178	dead	76	F
VAQS20062032	11-Jun-06	Kemp's ridley	Virginia Beach	36.9145	-76.1164	dead	44	U
VAQS20062033	11-Jun-06	loggerhead	Northampton	37.3829	-75.9862	dead	75	U
VAQS20062034	12-Jun-06	loggerhead	Northampton	37.3151	-76.0188	dead	69	M
VAQS20062035	12-Jun-06	Kemp's ridley	Virginia Beach	36.7548	-75.9471	dead	49	F
VAQS20062036	13-Jun-06	loggerhead	Norfolk	36.8878	-76.3161	dead	ND	U
VAQS20062037	13-Jun-06	loggerhead	Virginia Beach	36.9140	-76.0714	dead	73	U
VDGIF2006004	13-Jun-06	Kemp's ridley	Northampton	37.2134	-75.8158	dead	ND	F
VDGIF2006005	13-Jun-06	loggerhead	Northampton	37.2137	-75.3143	dead	ND	U
VASC20062003	14-Jun-06	Kemp's ridley	Virginia Beach	36.7316	-75.9379	dead	38	U
VAQS20062038	15-Jun-06	loggerhead	Virginia Beach	36.9138	-76.0722	dead	56*	F
VAQS20062039	15-Jun-06	leatherback	Virginia Beach	36.8283	-75.9685	dead	ND	U
VAQS20062040	16-Jun-06	loggerhead	Virginia Beach	36.6943	-75.9234	dead	77	F
VAQS20062041	16-Jun-06	loggerhead	Northampton	37.3564	-75.9940	dead	61	F
VAQS20062042	16-Jun-06	loggerhead	Northampton	37.3450	-76.0020	dead	ND	U
VAQS20062043	16-Jun-06	loggerhead	Norfolk	36.9480	-76.2401	dead	76*	F
VAQS20062045	16-Jun-06	loggerhead	Northampton	37.1070	-75.9548	dead	81	U
VDGIF2006009	16-Jun-06	loggerhead	Northampton	37.1266	-75.8871	dead	78	U
VDGIF2006010	16-Jun-06	loggerhead	Northampton	37.1637	-75.8481	dead	51	U
VAQS20062044	17-Jun-06	leatherback	Virginia Beach	36.8943	-75.9865	dead	ND	U
VAQS20062046	20-Jun-06	loggerhead	Northampton	37.3212	-76.0176	dead	76	F

Table 3: Sea Turtle strandings *cont.*

Field Number	Date	Species	City/County	Latitude	Longitude	Cond.	Length	Sex
VAQS20062047	21-Jun-06	Kemp's ridley	Northampton	37.3014	-75.7982	dead	35	M
VASC20062004	21-Jun-06	Kemp's ridley	Accomack	37.8497	-75.4724	dead	35	F
VDGIF2006006	21-Jun-06	loggerhead	Accomack	37.7422	-75.5561	dead	66	U
VDGIF2006007	21-Jun-06	loggerhead	Accomack	37.7420	-75.5562	dead	64	F
VDGIF2006008	22-Jun-06	loggerhead	Northampton	37.2657	-75.7956	dead	78	F
VAQS20062048	23-Jun-06	loggerhead	Northampton	37.4342	-75.9803	dead	107	M
VASC20062005	23-Jun-06	Kemp's ridley	Accomack	37.8719	-75.3556	dead	58	F
VASC20062006	23-Jun-06	Kemp's ridley	Accomack	37.8719	-75.3556	dead	55	F
VAQS20062049	24-Jun-06	loggerhead	Northampton	37.4341	-76.9803	dead	68	F
VAQS20062050	24-Jun-06	loggerhead	Northampton	37.1364	-75.9723	dead	94	M
VAQS20062051	24-Jun-06	green	Northampton	37.1882	-75.8202	dead	26	U
VASC20062008	24-Jun-06	loggerhead	Accomack	37.8730	-75.3987	dead	68	U
VASC20062009	25-Jun-06	unidentified	Accomack	37.8730	-75.3987	dead	ND	U
VASC20062010	26-Jun-06	loggerhead	Accomack	37.8666	-75.4478	dead	62	U
VAQS20062052	27-Jun-06	loggerhead	Virginia Beach	36.8652	-75.9779	dead	72	F
VASC20062011	29-Jun-06	loggerhead	Accomack	37.8188	-75.5020	dead	93	M
VAQS20062053	30-Jun-06	loggerhead	Virginia Beach	36.9284	-76.0070	dead	76	U
VAQS20062054	30-Jun-06	loggerhead	Norfolk	36.9283	-76.0071	dead	74	U
VAQS20062055	30-Jun-06	leatherback	Virginia Beach	36.5672	-75.6285	dead	ND	U
VAQS20062056	1-Jul-06	loggerhead	Virginia Beach	36.9299	-76.0122	dead	68	F
VAQS20062057	1-Jul-06	loggerhead	Virginia Beach	36.6879	-75.9203	dead	65	U
VAQS20062058	1-Jul-06	loggerhead	Virginia Beach	36.7209	-75.9337	dead	ND	U
VAQS20062059	1-Jul-06	Kemp's ridley	Virginia Beach	36.5926	-75.8768	dead	35	M
VAQS20062060	7-Jul-06	loggerhead	Accomack	37.9120	-75.4032	dead	106	M
VDGIF2006011	12-Jul-06	leatherback	Accomack	37.6148	-75.6136	dead	ND	U
VDGIF2006012	13-Jul-06	loggerhead	Accomack	37.7084	-75.5750	dead	ND	U
VDGIF2006013	13-Jul-06	loggerhead	Northampton	37.2135	-75.8157	dead	ND	M
VAQS20062061	14-Jul-06	loggerhead	Northampton	37.1637	-75.9822	dead	ND	M
VAQS20062062	14-Jul-06	loggerhead	Northampton	37.2048	-76.0120	dead	ND	U
VASC20062012	14-Jul-06	loggerhead	Accomack	37.8522	-75.3813	dead	ND	M
VAQS20062063	20-Jul-06	loggerhead	Northampton	37.2107	-76.0134	dead	90	F
VASC20062013	20-Jul-06	loggerhead	Accomack	37.8085	-75.5112	dead	65	U
VASC20062014	20-Jul-06	loggerhead	Accomack	37.8688	-75.4412	dead	88	U
VAQS20062064	21-Jul-06	loggerhead	Virginia Beach	36.9135	-75.9915	dead	ND	U
VDGIF2006014	24-Jul-06	leatherback	Northampton	37.2137	-75.8145	dead	ND	U
VASC20062007	29-Jul-06	loggerhead	Accomack	37.8680	-75.4439	dead	102	M
VAQS20062065	30-Jul-06	loggerhead	Virginia Beach	36.9012	-75.9849	alive	61	F
VASC20062015	1-Aug-06	loggerhead	Virginia Beach	36.6900	-75.9219	dead	76	U
VAQS20062066	3-Aug-06	loggerhead	Northampton	37.1241	-75.8794	alive	ND	M
VAQS20062067	5-Aug-06	loggerhead	Virginia Beach	36.9151	-76.1178	dead	69	F
VAQS20062068	5-Aug-06	loggerhead	Virginia Beach	36.9195	-76.0548	dead	ND	U
VAQS20062069	5-Aug-06	loggerhead	Virginia Beach	36.9102	-76.1003	dead	ND	M
VAQS20062070	8-Aug-06	loggerhead	Northampton	37.0865	-75.9735	dead	90*	F
VAQS20062071	8-Aug-06	loggerhead	Northampton	37.0858	-75.9694	dead	104	M
VAQS20062072	11-Aug-06	loggerhead	Virginia Beach	36.8432	-75.9719	dead	102	F
VAQS20062073	12-Aug-06	loggerhead	Virginia Beach	36.7270	-75.9363	dead	78	F
VAQS20062074	12-Aug-06	loggerhead	Virginia Beach	36.6558	-75.9031	dead	66	M
VAQS20062075	12-Aug-06	leatherback	Virginia Beach	36.6504	-75.9004	dead	ND	U
VAQS20062076	12-Aug-06	loggerhead	Virginia Beach	36.5705	-75.8726	dead	ND	U
VAQS20062077	12-Aug-06	unidentified	Virginia Beach	36.5707	-75.8721	dead	ND	U
VAQS20062078	13-Aug-06	loggerhead	Virginia Beach	36.7412	-75.9418	dead	99	F
VAQS20062079	17-Aug-06	leatherback	Virginia Beach	36.9271	-76.0459	dead	137	M
VAQS20062080	18-Aug-06	loggerhead	Virginia Beach	36.8794	-75.9822	dead	60	F
VAQS20062081	18-Aug-06	green	Virginia Beach	36.9104	-76.0875	dead	29	U
VAQS20062082	19-Aug-06	loggerhead	Virginia Beach	36.9188	-76.1291	dead	108	M
VAQS20062083	19-Aug-06	loggerhead	Virginia Beach	36.9138	-75.9905	dead	ND	U

Table 3: Sea Turtle strandings *cont.*

Field Number	Date	Species	City/County	Latitude	Longitude	Cond.	Length	Sex
VAQS20062084	22-Aug-06	loggerhead	Virginia Beach	36.7098	-75.9299	dead	57	F
VAQS20062085	22-Aug-06	loggerhead	Virginia Beach	36.9035	-76.0763	dead	73	F
VASC20062016	22-Aug-06	loggerhead	Accomack	37.8590	-75.3897	dead	70	U
VASC20062017	22-Aug-06	loggerhead	Accomack	37.9252	-75.3184	dead	98	U
VAQS20062086	29-Aug-06	loggerhead	Accomack	37.9546	-75.2998	dead	92	M
VAQS20062087	29-Aug-06	loggerhead	Northampton	37.1671	-75.9869	dead	53	F
VAQS20062089	31-Aug-06	loggerhead	Virginia Beach	36.7095	-75.9298	dead	59	U
VAQS20062088	1-Sep-06	loggerhead	Virginia Beach	36.8613	-75.9771	dead	78	U
VAQS20062090	2-Sep-06	loggerhead	Virginia Beach	36.9170	-75.9927	dead	65	F
VAQS20062091	5-Sep-06	loggerhead	Northampton	37.0994	-75.9794	dead	108	M
VAQS20062092	7-Sep-06	loggerhead	Virginia Beach	36.9123	-76.1058	dead	ND	U
VAQS20062093	7-Sep-06	loggerhead	Virginia Beach	36.6593	-75.9047	dead	ND	U
VAQS20062094	7-Sep-06	loggerhead	Virginia Beach	36.6499	-75.9002	dead	ND	U
VAQS20062095	9-Sep-06	Kemp's ridley	Virginia Beach	36.8285	-75.9689	dead	53	F
VAQS20062096	9-Sep-06	loggerhead	Virginia Beach	36.9239	-76.1386	dead	ND	U
VAQS20062097	10-Sep-06	Kemp's ridley	Virginia Beach	36.8744	-75.9810	dead	31	F
VAQS20062098	11-Sep-06	loggerhead	Virginia Beach	36.9312	-76.0373	dead	75	M
VAQS20062099	12-Sep-06	loggerhead	Virginia Beach	36.7183	-75.9330	dead	97	U
VAQS20062100	14-Sep-06	loggerhead	Virginia Beach	36.7919	-75.9595	dead	73	F
VASC20062018	15-Sep-06	loggerhead	Accomack	37.9044	-75.3319	dead	72	U
VAQS20062101	17-Sep-06	loggerhead	Virginia Beach	36.8086	-75.9646	dead	ND	U
VAQS20062111	19-Sep-06	green	Northampton	37.2019	-76.0110	dead	36	U
VAQS20062102	20-Sep-06	Kemp's ridley	Virginia Beach	36.9133	-76.1126	dead	32	U
VASC20062019	20-Sep-06	loggerhead	Accomack	37.9363	-75.3117	dead	74	U
VAQS20062103	26-Sep-06	loggerhead	Virginia Beach	36.8877	-75.9849	dead	ND	M
VAQS20062104	26-Sep-06	loggerhead	Virginia Beach	36.8959	-75.9871	dead	ND	U
VAQS20062105	27-Sep-06	loggerhead	Virginia Beach	36.6602	-75.9052	dead	89	U
VAQS20062106	27-Sep-06	loggerhead	Virginia Beach	36.8591	-75.9761	dead	ND	Y
VAQS20062107	27-Sep-06	loggerhead	Norfolk	36.9321	-76.1951	dead	ND	U
VAQS20062108	29-Sep-06	loggerhead	Norfolk	36.9427	-76.2303	dead	ND	U
VAQS20062109	2-Oct-06	loggerhead	Virginia Beach	36.9191	-76.0553	dead	78	U
VAQS20062110	2-Oct-06	Kemp's ridley	Virginia Beach	36.9091	-76.0962	dead	22	U
VAQS20062112	7-Oct-06	loggerhead	Norfolk	36.9480	-76.2397	dead	106	M
VAQS20062113	8-Oct-06	Kemp's ridley	Norfolk	36.9373	-76.2190	dead	49	F
VAQS20062114	8-Oct-06	Kemp's ridley	Virginia Beach	36.7516	-75.9458	dead	27	U
VAQS20062115	8-Oct-06	loggerhead	Norfolk	36.9438	-76.2328	dead	ND	M
VAQS20062116	10-Oct-06	loggerhead	Virginia Beach	36.6908	-75.9221	dead	67	F
VAQS20062117	10-Oct-06	loggerhead	Virginia Beach	36.6370	-75.8945	dead	69	F
VAQS20062118	11-Oct-06	loggerhead	Virginia Beach	36.7445	-75.9430	dead	58	M
VAQS20062119	17-Oct-06	loggerhead	Virginia Beach	36.8486	-75.9733	dead	63	F
VAQS20062120	21-Oct-06	Kemp's ridley	Virginia Beach	36.7561	-75.9477	dead	ND	U
VAQS20062121	21-Oct-06	loggerhead	Virginia Beach	36.5904	-75.8761	dead	62	F
VAQS20062122	21-Oct-06	loggerhead	Virginia Beach	36.9148	-76.0668	dead	67	M
VAQS20062123	2-Nov-06	loggerhead	Virginia Beach	36.8474	-75.9731	dead	ND	U
VAQS20062124	3-Nov-06	loggerhead	Virginia Beach	36.9121	-76.1741	dead	ND	M
VAQS20062125	5-Nov-06	loggerhead	Virginia Beach	36.7166	-75.9322	dead	71	F
VAQS20062126	6-Nov-06	Kemp's ridley	Virginia Beach	36.9266	-76.0464	dead	25	F
VAQS20062127	7-Nov-06	loggerhead	Northampton	37.1243	-75.9694	dead	57	U
VAQS20062128	7-Nov-06	leatherback	Accomack	37.7882	-75.5256	dead	ND	U
VAQS20062129	8-Nov-06	Kemp's ridley	Virginia Beach	36.9321	-76.1954	dead	ND	U
VAQS20062130	16-Nov-06	Kemp's ridley	Virginia Beach	36.8681	-75.9792	dead	ND	U
VAQS20062131	17-Nov-06	loggerhead	Northampton	37.0832	-75.9642	dead	ND	F
VAQS20062132	24-Nov-06	Kemp's ridley	Virginia Beach	36.7904	-75.9591	alive	23	U
VDFIF2006015	26-Nov-06	loggerhead	Northampton	37.3009	-75.7789	dead	104	M

Table 4: Live stranded sea turtles handled by VAQS in 2006.

<u>Species</u>	<u>Name</u>	<u>Strand Date</u>	<u>Final Disposition</u>
Kemp's ridley <sup>a</sup>	Tiny Tim	10/30/2005	Released 20 June, 2006 from Cape Charles, VA
Kemp's ridley <sup>a</sup>	Mistletoe	10/31/2005	Released 20 June, 2006 from Cape Charles, VA
Kemp's ridley <sup>a</sup>	Grinch	11/11/2005	Released 20 June, 2006 from Cape Charles, VA
Kemp's ridley <sup>a</sup>	Scrooge	11/11/2005	Released 20 June, 2006 from Cape Charles, VA
Kemp's ridley <sup>a</sup>	Fruitcake	11/12/2005	Released 9 July, 2006 from Virginia Beach, VA
Loggerhead <sup>b</sup>	Chomper	12/8/2005	Released 29 June, 2006 from Cape Charles, VA
loggerhead	Top Notch	5/17/2006	Released 20 June, 2006 from Cape Charles, VA
Kemp's ridley	TJ Hooker	5/28/2006	Released 9 July, 2006 from Virginia Beach, VA
Loggerhead <sup>c</sup>	Ed	7/27/2006	Released 13 November, 2006 from Frisco Pier, NC
loggerhead	No name	7/30/2006	Died July 30, 2006
Loggerhead <sup>d</sup>	Fred	10/10/2006	In rehab, pending release
Kemp's ridley	Mighty Luke	11/24/2006	In rehab, pending release

a=transferred from New England Aquarium, Boston, MA

b=transferred from University of New England, Biddeford, ME

c=transferred from National Aquarium in Baltimore, Baltimore, MD

d=transferred from Virginia Institute of Marine Science, Gloucester, MA

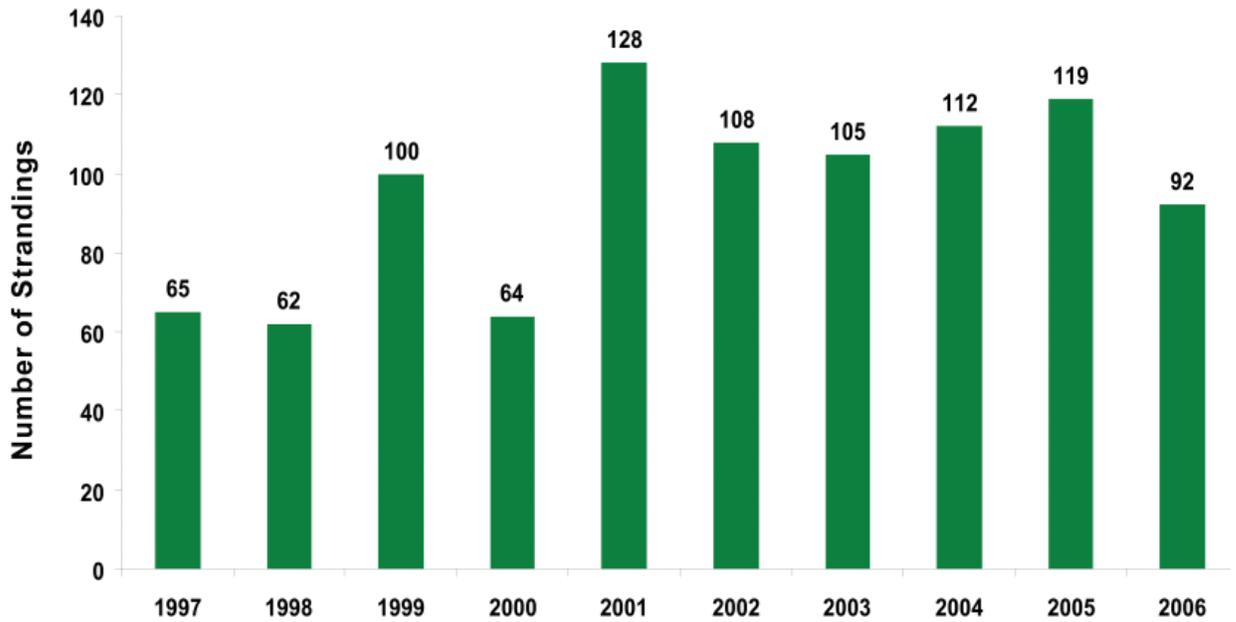


Figure 1: Yearly frequency of marine mammal stranding in Virginia 1997-2006.

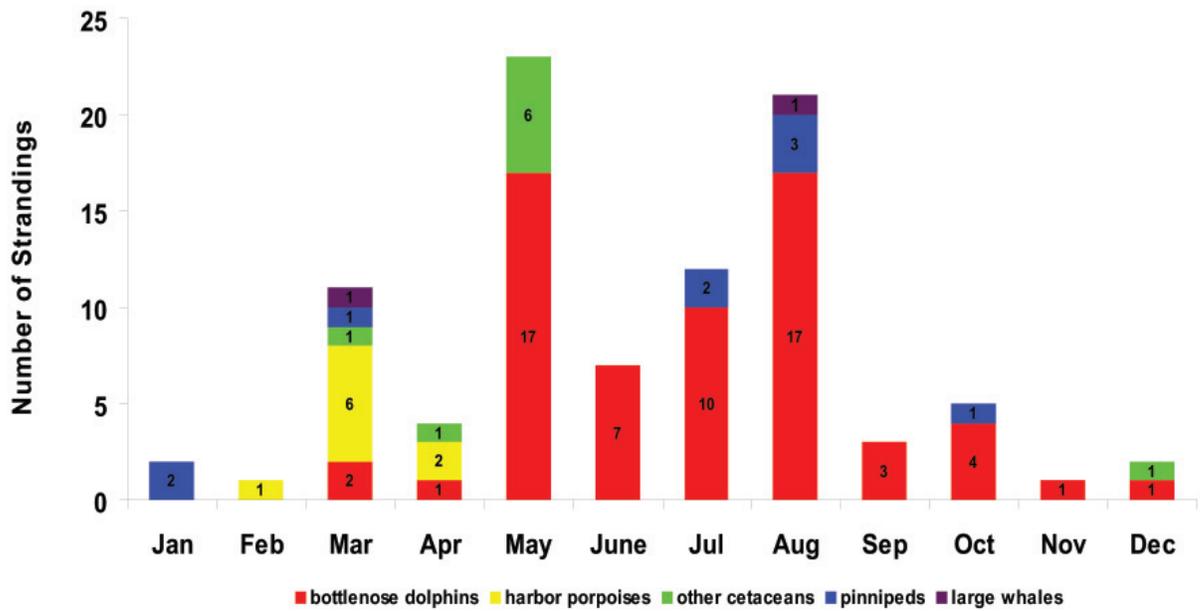


Figure 2: Monthly frequency of marine mammal strandings in Virginia from 2006.

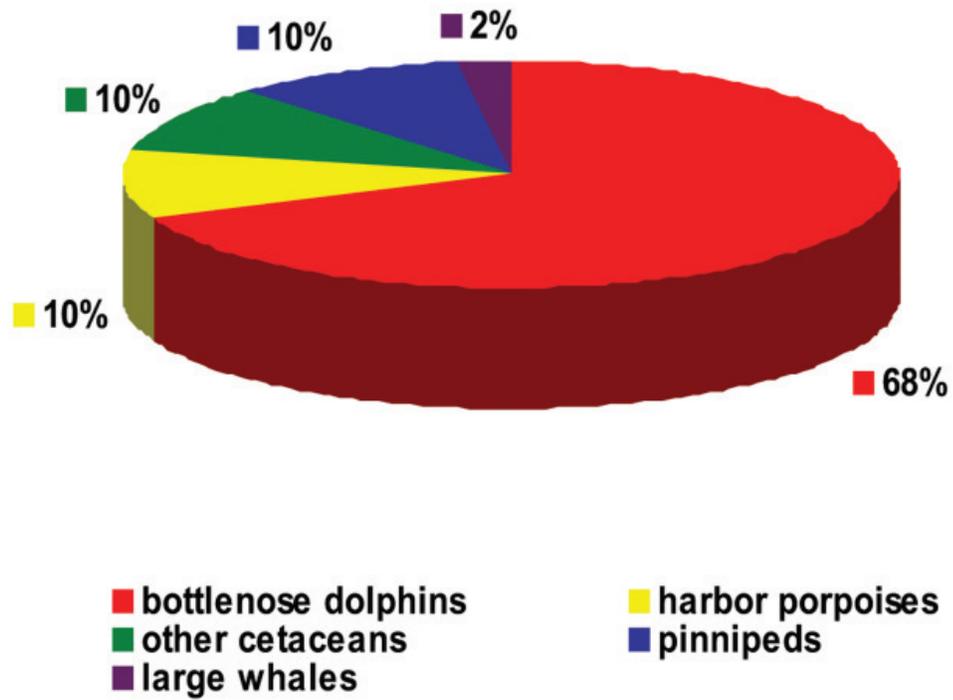


Figure 3: Marine mammal strandings in Virginia from 2006 (bottlenose dolphin n=63, harbor porpoise n=9, other cetaceans n=9, pinnipeds n=9, large whales n=2).

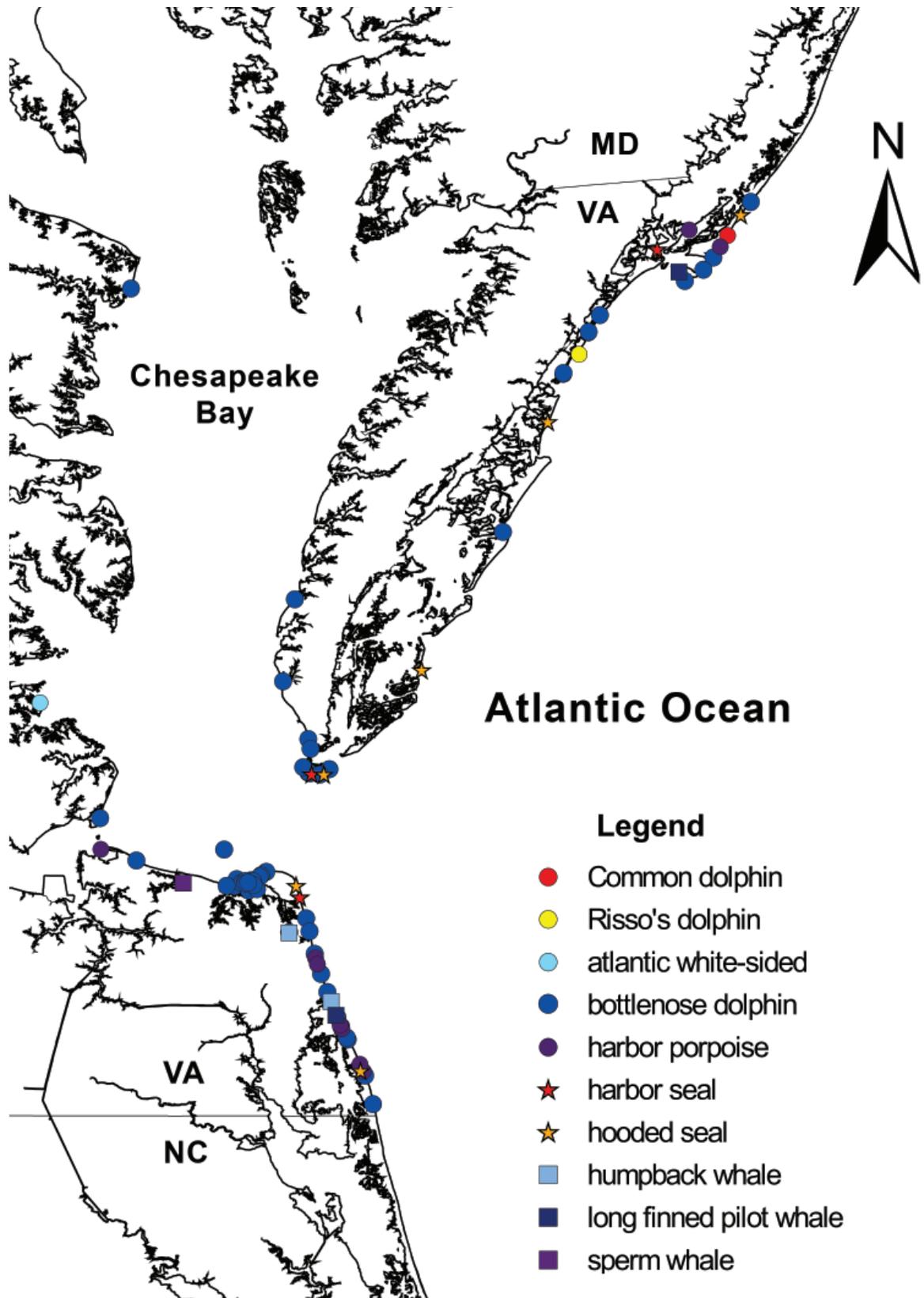
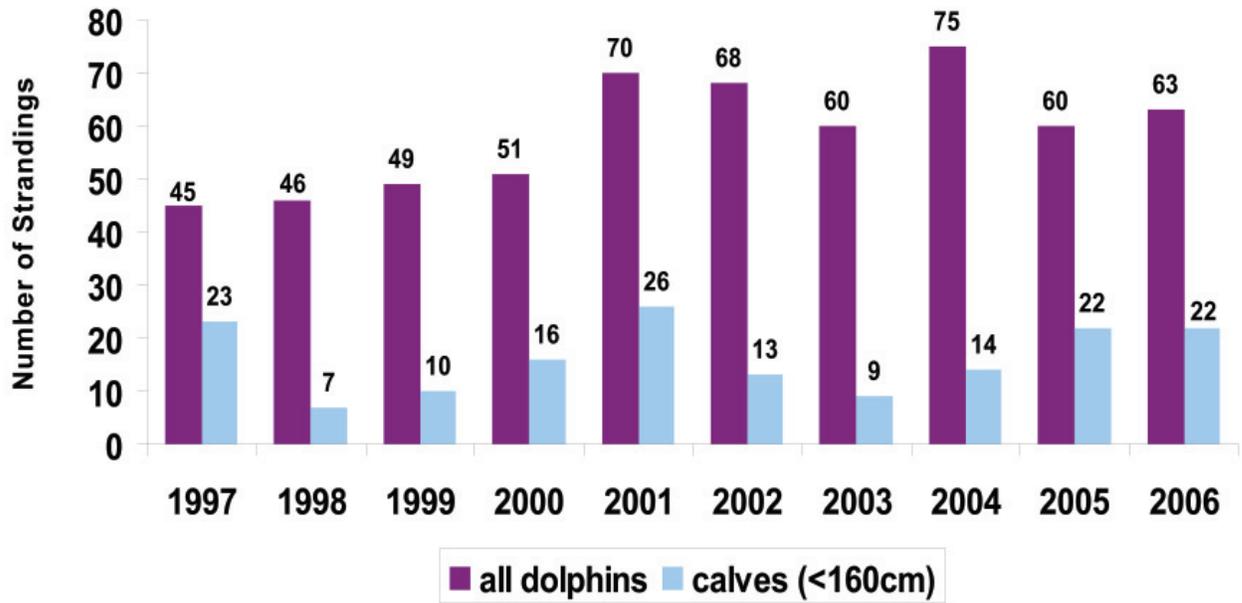


Figure 4: Location of Virginia marine mammal strandings from 2006.

A: Bottlenose dolphins



B: Harbor Porpoises

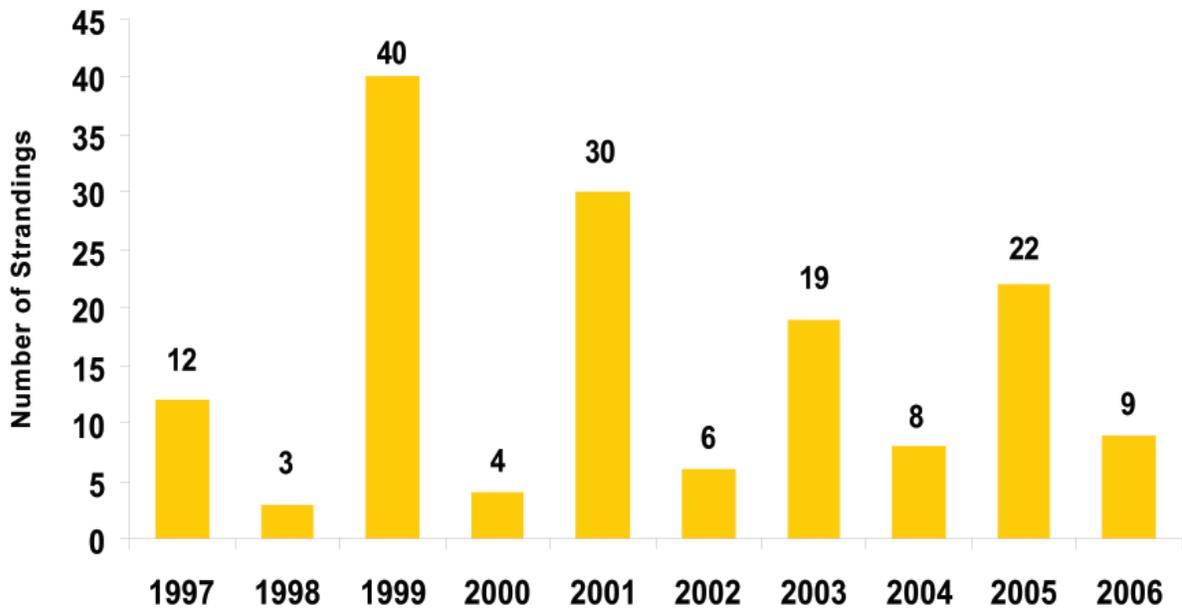
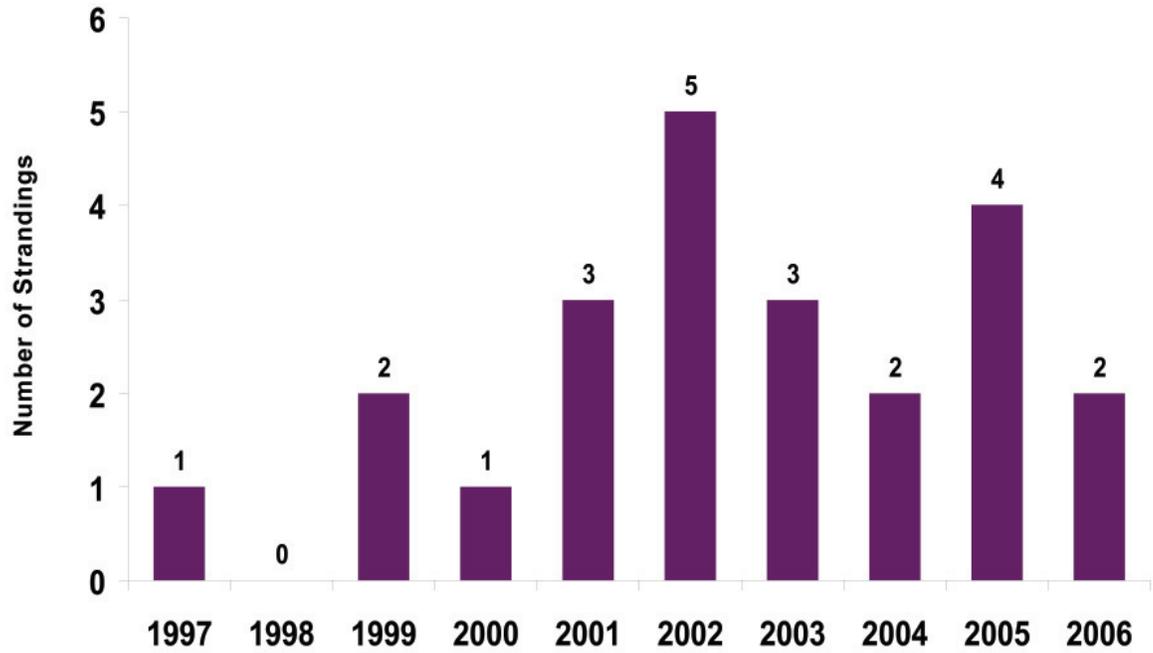


Figure 5A-B: Yearly stranding frequency for bottlenose dolphin and harbor porpoise in Virginia, 1997-2006.

C: Large Whales



D: Pinnipeds

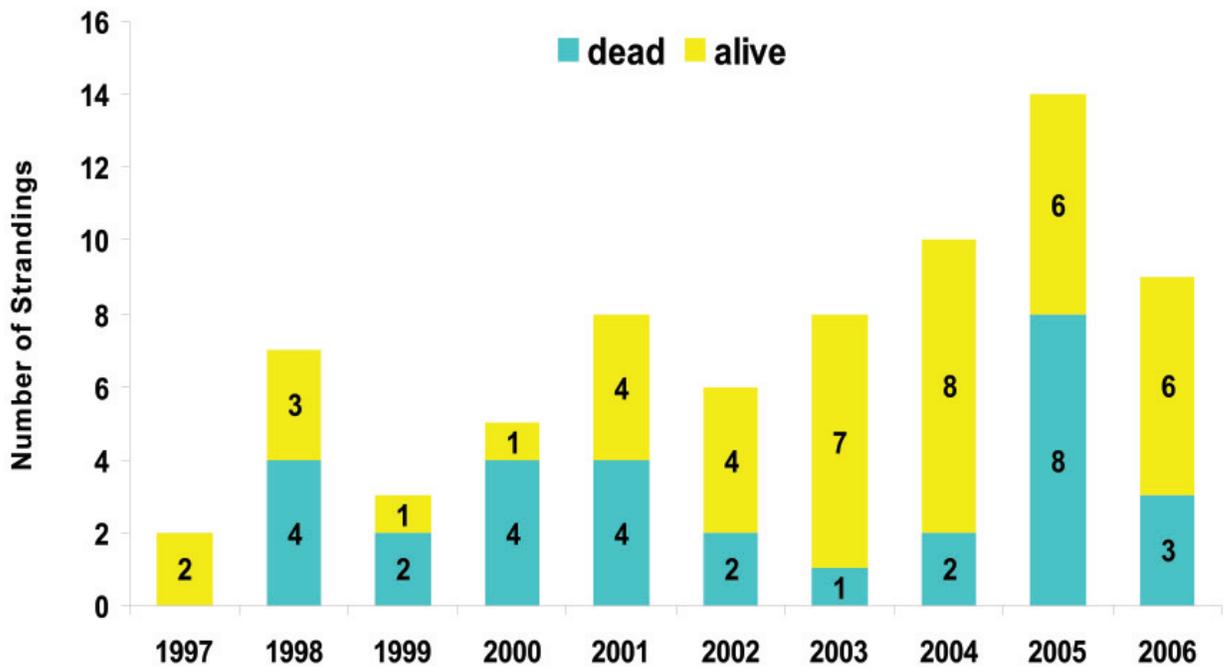


Figure 5 C-D: Yearly stranding frequency for large whales and pinnipeds in Virginia, 1997-2006.

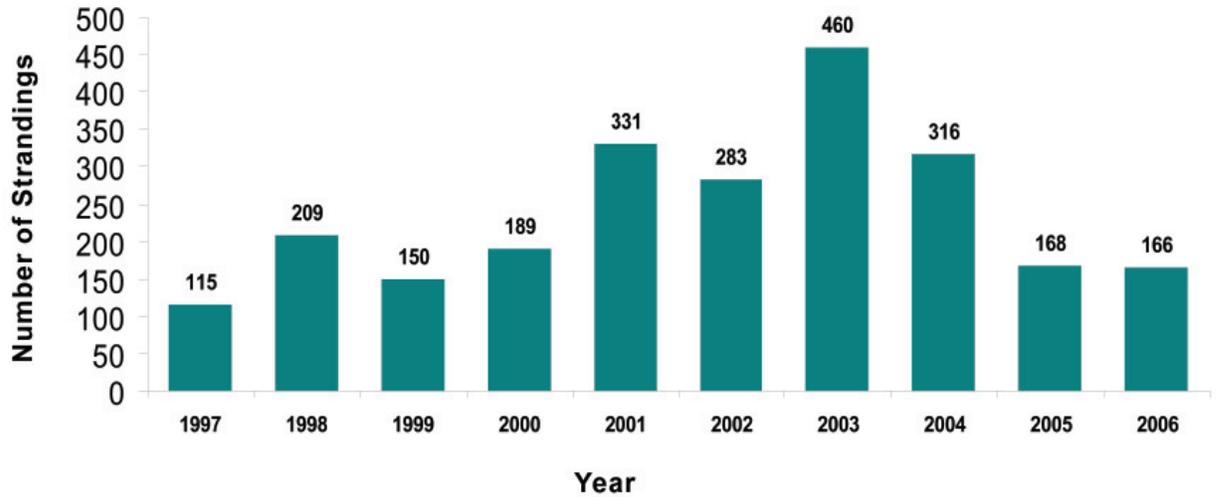


Figure 6: Yearly frequency of sea turtle strandings recorded by VAQS, 1997-2006.

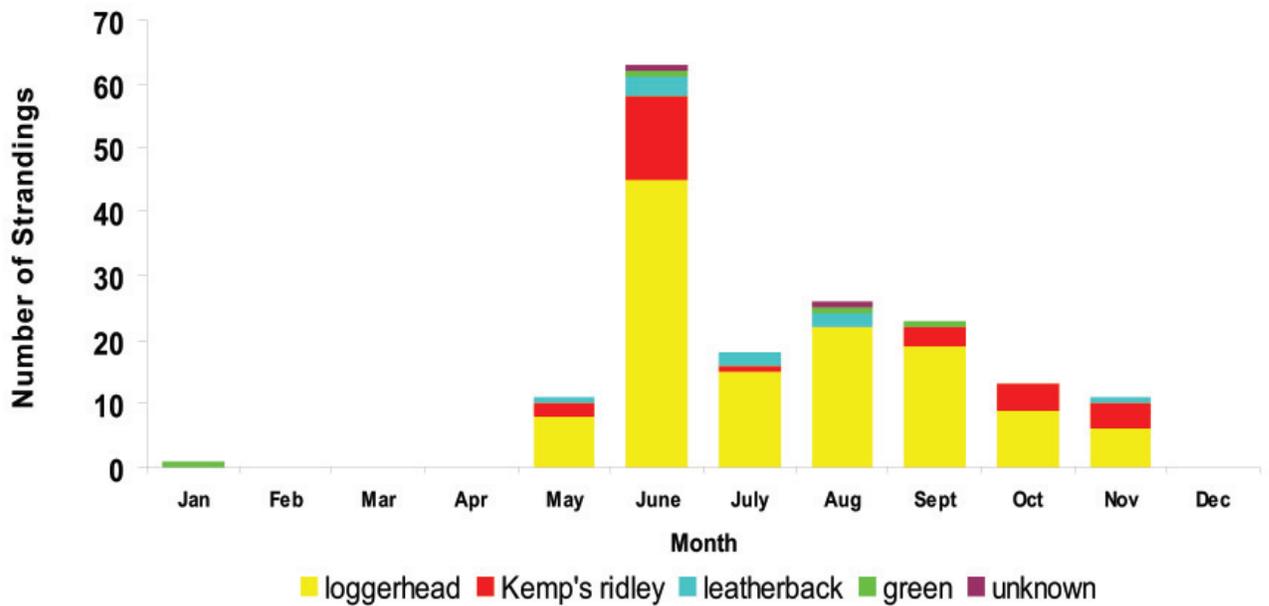


Figure 7: Monthly frequency of sea turtle strandings recorded by VAQS from 2006.

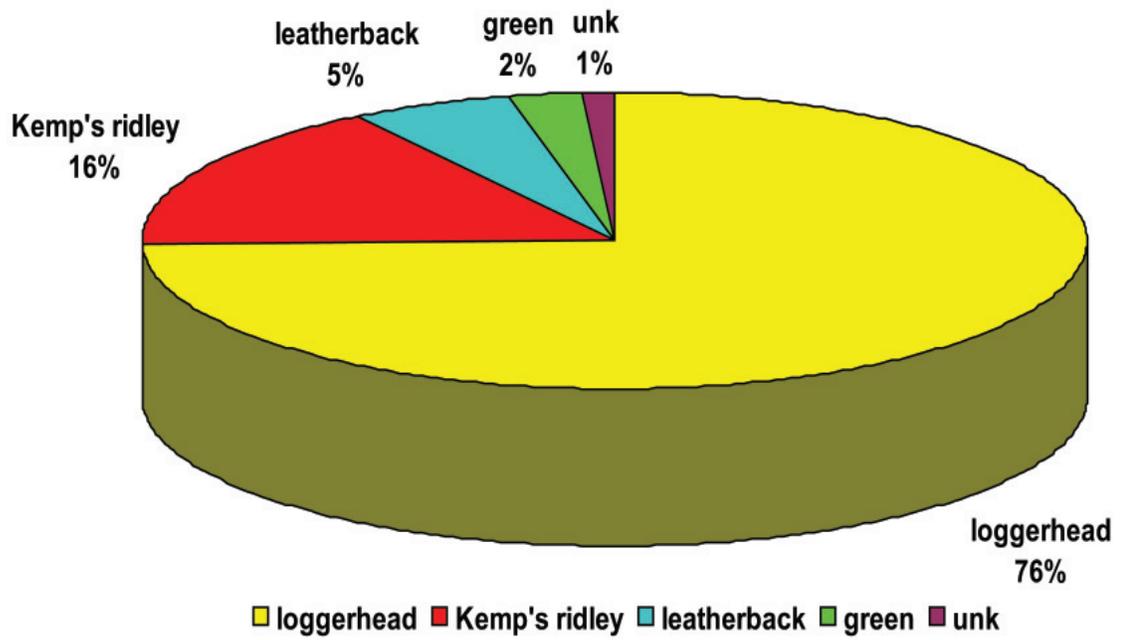


Figure 8: Virginia sea turtle strandings recorded by VAQS from 2006.  
 (loggerhead n=124, Kemp's ridley n=27, leatherback n=9, green n=4, unknown n=2)

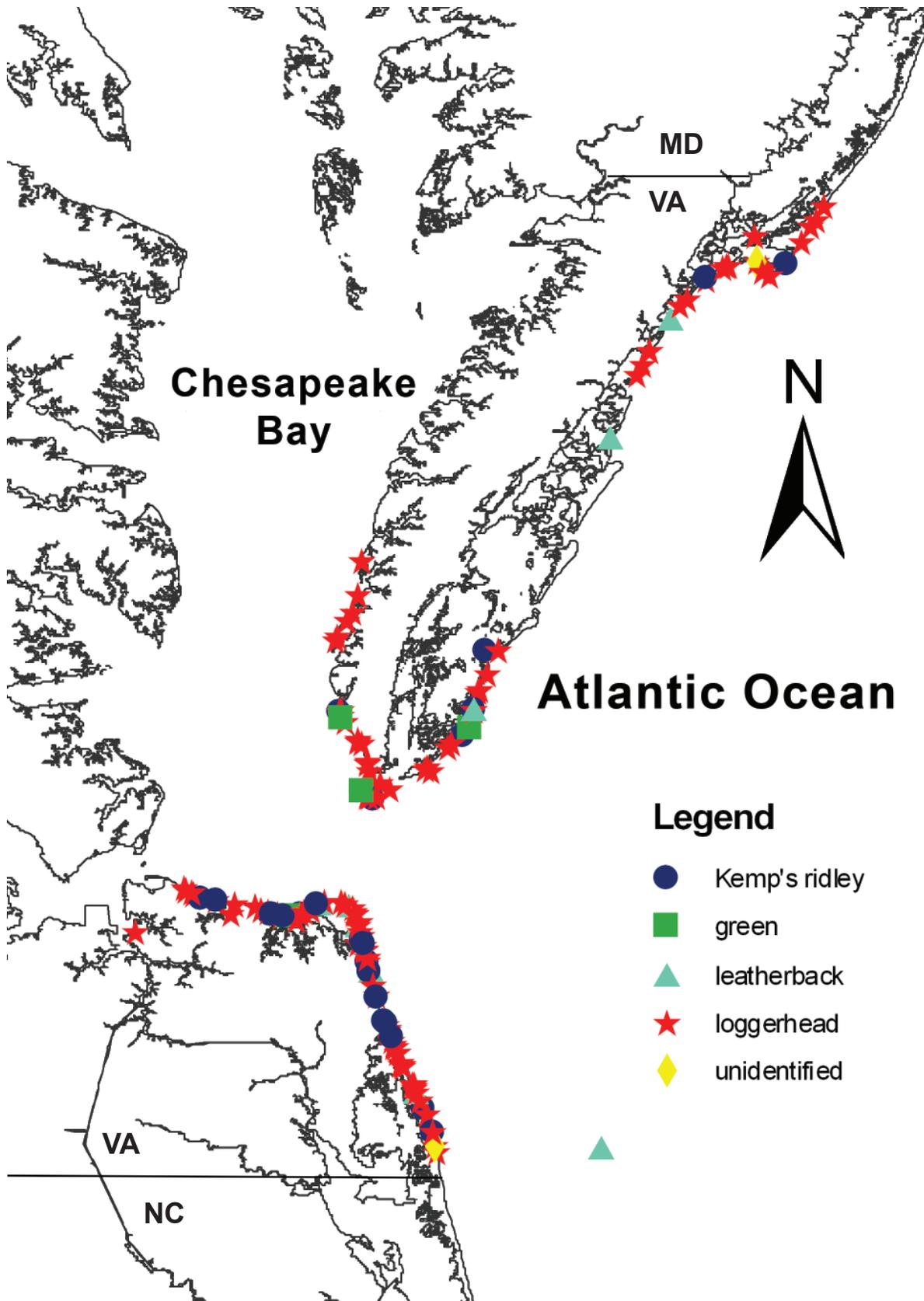


Figure 9: Location of Virginia sea turtle strandings recorded by VAQS from 2006.

## Appendix I: Professional and Education Activities

**Scientific Publications and Presentations**

- Barco, Susan, Touhey, Kathleen. 2006. Developed the Handbook for Recognizing, Evaluating, and Documenting Human Interaction in Stranded Cetaceans and Pinnipeds. Presented trainings to national stranding network personnel under a contract with NOAA Fisheries Service. Trainings were conducted in Hawaii, Alaska, New York, Maryland, Florida and Puerto Rico.
- Barco, Susan, Touhey, Kathleen. 2006. New Protocol for Evaluating Stranded Marine Mammals for Signs of Human Interaction. Oral presentation to the International Association for Aquatic Animal Medicine Annual Conference, May 6-10, Nassau, Bahamas.
- Barco, Susan G. and Swingle, W. Mark. 2006. Supporting Response to Dead Marine Mammal Strandings in Virginia. Final report for the John H. Prescott Marine Mammal Rescue Assistance Grant Program, Award # NA03NMF4390483, VAQF Scientific Report 2006-03, 68 pp.
- Barco, S.G., Beckmann, D.M., Cook, M.L., Harry, C.T., Trapani, C.M., Walton, W.J. and Swingle, W.M. 2006. What Does a Healthy, but Dead, Sea Turtle Look Like? Oral presentation to the Northeast Region Stranding Network Annual Conference, March 23-26, Ocean City, Maryland.
- Cook, M.L., Walton, W.J., George, R., Barco, S.G., Harry, C.T., Swingle, W.M. and Trapani, C.M. 2006. Health Assessment of Four Entangled Sea Turtles. Oral presentation to the Northeast Region Stranding Network Annual Conference, March 23-26, Ocean City, Maryland.
- Cook, M.L., George, R., Walton, W.J. and Barco, S.G. 2006. Preliminary Blood Chemistry Results for Stranded Sea Turtles in Virginia. Poster presentation to the International Association for Aquatic Animal Medicine Annual Conference, May 6-10, Nassau, Bahamas.
- Swingle, W.M. and Barco, S.G. 2006. Preparing for the Big One! Lessons Learned from Right Whale Stranding Response. Poster presentation to the Northeast Region Stranding Network Annual Conference, March 23-26, Ocean City, Maryland.
- Swingle, W.M., Firchau, B. and George, R. 2006. Sea Turtle Husbandry Survey. Oral presentation to the 2006 Sea Turtle Husbandry Symposium, May 20-21, Galveston, Texas.
- Swingle, W.M., Trapani, C.M., Cook, M.L. and Barco, S.G. 2006. Marine Mammal and Sea Turtle Stranding Response 2005 Grant Report. Final report to the Virginia Coastal Resources Management Program, NOAA CZM Grant NA04NOS4190060. VAQF Scientific Report 2006-01, 32pp.
- Trapani, C.M., Barco, S.G., Beckmann, D.M., Walton, W.J., Cook, M.L., Harry, C.T., George, R. and Swingle, W.M. 2006. In-Depth Necropsies of Virginia Sea Turtles: Methods and Findings. Oral presentation to the Northeast Region Stranding Network Annual Conference, March 23-26, Ocean City, Maryland.

- Trapani, C.M., Walton, W.J., Cook, M.L., D'Eri, L., DeRiggi, S., Barco, S.G. and Swingle, W.M. 2006. Rehabilitating Another Head Case of a Loggerhead. Oral presentation to the 2006 Sea Turtle Health Conference, December 1-3, Marathon, Florida.
- Walton, W.J., Trapani, C.M. and Swingle, W.M. 2006. Recovery and Treatment of Live Stranded Marine Mammals in Virginia. Final report for John H. Prescott Marine Mammal Rescue Assistance Grant Program, Award # NA04NMF4390003, VAQF Scientific Report 2006-02, 26 pp.
- Walton, W.J., DiGiovanni, R.A., Jr., Cook, M.L., Trapani, C.M., Schuder, J.P., Harry, C.T. and Barco, S.G. 2006. Case Studies of the First Two Harbor Seals to be Rehabilitated and Released in Virginia. Poster presentation to the Northeast Region Stranding Network Annual Conference, March 23-26, Ocean City, Maryland.
- Walton, W.J., George, R. and Nadelstein, B. 2006. Ophthalmic Abnormalities in Stranded Sea Turtles from the Mid- Atlantic States. Poster presentation to the 2006 Sea Turtle Husbandry Symposium, May 20-21, Galveston, Texas.

#### ***Festivals & Events with VAQS Traveling Exhibit***

- VAQS Team Volunteers at the Aquarium – February 19, 20, 26 and 27
- Virginia Living Museum Reptile Weekend – February 26 -27
- Aquarium Connection Luau – May 21
- Pungo Strawberry Festival Parade – May 27
- Coastal Conservation Association Children's Fishing Clinic in Newport News – July 15
- Dolphin Days at the Aquarium – September 16 - 17

#### ***Public Presentations***

- Cape Henry Rotary Club Public Talk, February 8
- Kiwanis Beach Combers Public Talk, February 22
- Sea Turtle Talk for 5th graders at Linkhorn Park Elementary School, March 24
- Norfolk Academy Alumni Speaker of the Year, April 3
- Westminster Canterbury Public Talk, May 7
- Virginia Aquarium Talk for Teachers, July 12 & 14
- Kiptopeke State Park Public Talk, July 13, Eastern Shore, Virginia
- Virginia Aquarium Sea Turtle Talk for SWAT Camp, July 26 & August 16
- Virginia Aquarium Marine Mammal Talk for SWAT Camp, July 27
- Virginia Aquarium Marine Mammal Teacher Training/Tour, August 15
- Virginia Aquarium Sea Turtle Necropsy for SWAT Camp, August 18

#### ***Stranding Center Tours***

- Michigan State Student Stranding Center Tour – May 17
- Knee Deep in the Chesapeake Stranding Center Tour – May 19
- VAQS Stranding Center Open House – November 14

***Conferences, Workshops and Meetings***

- ASMFC-ACCSP Bycatch Prioritization Committee annual meeting, January 11-12, Charleston, South Carolina
- University of Tennessee Veterinary Exotic Animal Symposium, January 12-13, Knoxville, Tennessee
- Alaska Region Stranding Network meeting, February 1-3, Anchorage, Alaska
- Scoping meeting for NOAA Marine Mammal Health & Stranding Response Program, February 17, Silver Spring, Maryland
- Kemp's ridley Recovery Plan Stakeholder's Meeting, February 23, Houston, Texas
- Virginia Coastal Zone Management Program Grants Workshop, February 28, Richmond, Virginia
- European Association of Aquatic Mammals Annual Conference, March 17-19, Riccione, Italy
- Northeast Region Stranding Network Annual Conference, March 23-26, Ocean City, Maryland
- Alliance of Marine Mammal Parks and Aquariums Annual Meeting, April 1-5, Alexandria, Virginia
- NOAA Fisheries Northeast Region Humpback Whale Research Meeting, April 25-26, Massachusetts
- Southeast Region Stranding Network meeting, May 1-3, Panama City, Florida
- Virginia Master Naturalist Coordinator Training, May 4-5, Douthat State Park, Virginia
- International Association of Aquatic Animal Medicine Annual Conference, May 6-10, Nassau, Bahamas
- 2006 Sea Turtle Husbandry Symposium, May 20-21, Galveston, Texas
- Northeast Region Consortium Executive Committee Meeting, June 15, Gloucester, Massachusetts
- Viewing Guidelines for Marine Mammals in Rehab Workshop, June 19, Boston, Massachusetts
- Pacific Islands Stranding Network Meeting, July 19-21, Honolulu, Hawaii
- Safe Seas NOAA Disaster Training Exercise, August 7-11, California
- Public Hearing on NOAA DEIS for Ship Strike Mitigation, August 10, Baltimore, Maryland
- Forensic Science for Marine Biologists Workshop, Shoals Marine Laboratory, August 14-18, Appledore Island, Maine
- Mid-Atlantic Marine Mammal Research Organizational Retreat, August 25-27, Bald Head Island, North Carolina
- Disaster Animal Response Training, September 14-15, Virginia Beach, Virginia
- Association of Zoos and Aquariums Annual Conference, September 24-30, Tampa, Florida
- Cape Cod Stranding Network Mass Stranding Training, September 30, Cape Cod, Massachusetts

- Puerto Rico Stranding Network meeting, October 4-6, Mayaguez, Puerto Rico
- Right Whale Consortium Annual Meeting, November 7-8, New Bedford, Massachusetts
- Incident Command System Training, November 18, Virginia Beach, Virginia
- 2006 Sea Turtle Health Conference, December 3-5, Marathon, Florida
- Large Whale Disentanglement Training, December 4, Virginia Beach, Virginia
- Prescott Stranding Grant Peer Review Panel, December 4-7, Atlanta, Georgia
- Atlantic Large Whale Take Reduction Team Meeting, December 6-8, Virginia Beach, Virginia

#### ***VAQS Team Events and Trainings***

- Live Seal Rehabilitation Training – January 21-26
- Training for Aquarium Outreach Instructors – March 27
- Beach Driving Training – April 1 & 5
- Sea Turtle Natural History Training – April 13
- Sea Turtle Response Training – April 22-30
- Dolphin Watch training – April 27
- Sea Turtle Necropsy Training – May 6
- VAQS 6th Annual Charity Golf Tournament – May 10
- Live Sea Turtle Training – May 13-21
- Tursiops Neonate Necropsy Workshop – June 14
- Dolphin Count Training – July 20
- Annual Dolphin Count Survey – August 12
- International Coastal Cleanup at Fisherman Island – September 30
- University of British Columbia Leatherback Talk – October 10
- Marine Mammal Natural History Training – October 24 & November 15
- Annual Business Meeting – November 1
- Live Seal Training – November 11-19
- Whale Watch interpreter training – December 11

#### ***Stranding Network Cooperator Trainings***

- NOAA Contractor (DAI) Sea Turtle Observer Training – May 16
- Eastern Shore National Wildlife Refuge Stranding Response Training – May 16
- Virginia Beach Police Stranding Response Training – May 17
- US Coast Guard Stranding Response Training – May 18
- Back Bay National Wildlife Refuge Stranding Response Training – May 23
- Chincoteague National Wildlife Refuge Stranding Response Training – May 30
- Dam Neck Military Base Stranding Response Training – June 9

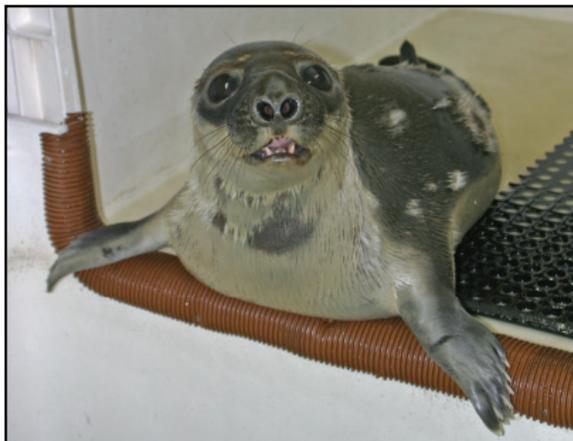
## Appendix II: Highlights of the year - Marine Mammals

Twenty-eight percent of the marine mammals that the VAQS Team responded to in 2006 were determined to have definite signs of human interaction (HI). Bottlenose dolphins comprised 65% of the marine mammal HI cases. Two of these dolphins were found entangled in commercial pound nets, and had to be disentangled by VAQS staff (with assistance from the Marine Police) (see right).



A bottlenose dolphin was found dead at Chincoteague National Wildlife Refuge. During a necropsy, VAQS staff found a fishing hook embedded in the upper right lip, with a wire leader going into the esophagus (see far left). The leader was wrapped around the epiglottis, and appeared to be pulled tight enough to restrict breathing (see near left).

The VAQS Team responded to two humpback whales in Virginia Beach in 2006. The first apparently healthy animal was found dead at the Resort Area, suffering from a severe propeller strike to the head and left flipper. The second whale was found alive on Sandbridge Beach. The juvenile had a poor prognosis and had to be euthanized. A necropsy was performed, and the animal was found to be malnourished and suffering from encephalitis (see right).



In the summer of 2006, VAQS responded to nine live, juvenile seals (eight hooded seals and one harbor seal). Being ice seals, each hooded seal (see left) was suffering from hyperthermia and dehydration. VAQS staff had to euthanize two of the seals and one seal died on the beach. Six seals were transferred to northern rehabilitation facilities. Five of the transferred seals have since been released and one was euthanized.

### Appendix III: Highlights of the year - Sea Turtles



“TJ Hooker,” an endangered Kemp’s ridley (pictured above), stranded with a hook in his/her esophagus. After carefully removing the hook and six weeks of rehabilitation, TJ was released back into the Chesapeake Bay. Many stranded sea turtles, both live and dead, strand as a result of human interactions such as hook ingestion, boat strikes and net entanglements.



The VAQS Team assisted in the rehabilitation and release of seven turtles (see examples above) from three out-of-state facilities including New England Aquarium (five Kemp’s ridleys), University of New England (one loggerhead) and National Aquarium in Baltimore (one loggerhead). All of these facilities have assisted VAQS with seal rehabilitation through cooperative efforts within the northeast region stranding network to rehabilitate and release live stranded marine mammals and sea turtles.

Appendix IV: Stranding Network Datasheets

A: Marine Mammal Level A Datasheet

**MARINE MAMMAL STRANDING REPORT - LEVEL A DATA**

FIELD #: VAQS20061 NMFS REGIONAL #: \_\_\_\_\_ NATIONAL DATABASE#: \_\_\_\_\_  
 COMMON NAME: \_\_\_\_\_ GENUS: \_\_\_\_\_ SPECIES: \_\_\_\_\_  
 EXAMINER Letterholder: Virginia Aquarium Stranding  
 Name: \_\_\_\_\_ Affiliation: Virginia Aquarium Stranding  
 Address: 717 General Booth Blvd. Virginia Beach, VA 23451 Phone: (757) 437-6159

<p><b>LOCATION OF INITIAL OBSERVATION</b></p> <p>State: _____ County: _____                  City: _____                  Body of Water: _____                  Locality Details: _____                  _____                  Latitude: _____ N <input type="checkbox"/> actual                  Longitude: _____ W <input type="checkbox"/> estimated                  How lat/long determined (Check ONE):  <input type="checkbox"/> GPS  <input type="checkbox"/> Map  <input type="checkbox"/> Internet/Software</p>	<p><b>OCCURRENCE DETAILS</b> <input type="checkbox"/> Restrand <span style="float: right;">GE#: _____ (NMFS USE)</span></p> <p><b>Group Event:</b> <input type="checkbox"/> YES <input type="checkbox"/> NO                  If Yes, Type: <input type="checkbox"/> Cow/Calf Pair <input type="checkbox"/> Mass Stranding # Animals: _____ <input type="checkbox"/> actual <input type="checkbox"/> estimated</p> <p><b>Findings of Human Interaction:</b> <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Could not Be Determined (CBD)                  If Yes, Check one or more: <input type="checkbox"/> 1. Boat Collision <input type="checkbox"/> 2. Shot <input type="checkbox"/> 3. Fishery Interaction  <input type="checkbox"/> 4. Other Human Interaction: _____</p> <p>Describe How Determined: _____                  Gear Collected? <input type="checkbox"/> YES <input type="checkbox"/> NO Gear Disposition: _____</p> <p><b>Other Findings upon Level A:</b> <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> CBD                  If Yes, Check one or more: <input type="checkbox"/> 1. Illness <input type="checkbox"/> 2. Injury  <input type="checkbox"/> 3. Other Findings: _____</p> <p>Describe How Determined: _____</p>
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<p><b>INITIAL OBSERVATION</b></p> <p>Date: Year: _____ Month: _____ Day: _____                  First Observed: <input type="checkbox"/> Beach or Land <input type="checkbox"/> Floating <input type="checkbox"/> Swimming</p> <p><b>CONDITION AT INITIAL OBSERVATION</b> (Check ONE)  <input type="checkbox"/> 1. Alive <input type="checkbox"/> 4. Advanced decomposition  <input type="checkbox"/> 2. Fresh dead <input type="checkbox"/> 5. Mummified/Skeletal  <input type="checkbox"/> 3. Moderate decomposition <input type="checkbox"/> 6. Unknown</p>	<p><b>LEVEL A EXAMINATION</b> <input type="checkbox"/> Not Able to Examine</p> <p>Date: Year: _____ Month: _____ Day: _____</p> <p><b>CONDITION AT EXAMINATION</b> (Check ONE)  <input type="checkbox"/> 1. Alive <input type="checkbox"/> 4. Advanced decomposition  <input type="checkbox"/> 2. Fresh dead <input type="checkbox"/> 5. Mummified/Skeletal  <input type="checkbox"/> 3. Moderate decomposition</p>
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<p><b>INITIAL LIVE ANIMAL DISPOSITION</b> (Check one or more)</p> <p><input type="checkbox"/> 1. Left at Site <input type="checkbox"/> 7. Transferred to Rehabilitation: Date: _____ Facility: _____  <input type="checkbox"/> 2. Immediate Release at Site <input type="checkbox"/> 3. Relocated  <input type="checkbox"/> 4. Disentangled <input type="checkbox"/> 8. Died during Transport  <input type="checkbox"/> 5. Died at Site <input type="checkbox"/> 9. Euthanized during Transport  <input type="checkbox"/> 6. Euthanized at Site <input type="checkbox"/> 10. Other: _____</p> <p><b>CONDITION/DETERMINATION</b> (Check one or more)  <input type="checkbox"/> 1. Sick <input type="checkbox"/> 4. Deemed Healthy <input type="checkbox"/> 7. Location Hazardous:  <input type="checkbox"/> 2. Injured <input type="checkbox"/> 5. Abandoned/Orphaned <input type="checkbox"/> a. To animal  <input type="checkbox"/> 3. Out of Habitat <input type="checkbox"/> 6. Inaccessible <input type="checkbox"/> b. To public  <input type="checkbox"/> 8. Unknown/CBD <input type="checkbox"/> 9. Other: _____                  Comments: _____</p>	<p><b>MORPHOLOGICAL DATA</b></p> <p><b>SEX</b> (Check ONE) <b>AGE CLASS</b> (Check ONE)  <input type="checkbox"/> 1. Male <input type="checkbox"/> 1. Adult <input type="checkbox"/> 4. Pup/Calf  <input type="checkbox"/> 2. Female <input type="checkbox"/> 2. Subadult <input type="checkbox"/> 5. Unknown  <input type="checkbox"/> 3. Unknown <input type="checkbox"/> 3. Yearling</p> <p>Straight Length: _____ <input type="checkbox"/> cm <input type="checkbox"/> in <input type="checkbox"/> actual <input type="checkbox"/> estimated                  Weight: _____ <input type="checkbox"/> kg <input type="checkbox"/> lb <input type="checkbox"/> actual <input type="checkbox"/> estimated</p> <p><b>PHOTOS/VIDEOS TAKEN:</b> <input type="checkbox"/> YES <input type="checkbox"/> NO                  Photo/Video Disposition: _____</p>
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<p><b>TAG DATA</b></p> <p>Tags Were:                  Present at Time of Stranding (pre-existing): <input type="checkbox"/> YES <input type="checkbox"/> NO                  Applied during Stranding Response: <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <table border="1"> <thead> <tr> <th>ID #</th> <th>Color</th> <th>Type</th> <th>Placement *</th> <th>Applied</th> <th>Present</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td>(Circle ONE) D DF L LF LR RF RR</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td></td> <td></td> <td></td> <td>D DF L LF LR RF RR</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td></td> <td></td> <td></td> <td>D DF L LF LR RF RR</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table> <p>* D = Dorsal; DF = Dorsal Fin; L = Lateral Body                  LF = Left Front; LR = Left Rear; RF = Right Front; RR = Right Rear</p>	ID #	Color	Type	Placement *	Applied	Present				(Circle ONE) D DF L LF LR RF RR	<input type="checkbox"/>	<input type="checkbox"/>				D DF L LF LR RF RR	<input type="checkbox"/>	<input type="checkbox"/>				D DF L LF LR RF RR	<input type="checkbox"/>	<input type="checkbox"/>	<p><b>WHOLE CARCASS STATUS</b> (Check one or more)</p> <p><input type="checkbox"/> 1. Left at site <input type="checkbox"/> 4. Towed: Lat _____ Long _____ <input type="checkbox"/> 7. Landfill  <input type="checkbox"/> 2. Buried <input type="checkbox"/> 5. Sunk: Lat _____ Long _____ <input type="checkbox"/> 8. Unknown  <input type="checkbox"/> 3. Rendered <input type="checkbox"/> 6. Frozen for Later Examination <input type="checkbox"/> 9. Other: _____</p> <p><b>SPECIMEN DISPOSITION</b> (Check one or more)  <input type="checkbox"/> 1. Scientific collection  <input type="checkbox"/> 2. Educational collection  <input type="checkbox"/> 3. Other: _____                  Comments: _____</p> <p><b>NECROPSIED</b> <input type="checkbox"/> YES <input type="checkbox"/> NO Date: _____  <b>NECROPSIED BY:</b> _____</p>
ID #	Color	Type	Placement *	Applied	Present																				
			(Circle ONE) D DF L LF LR RF RR	<input type="checkbox"/>	<input type="checkbox"/>																				
			D DF L LF LR RF RR	<input type="checkbox"/>	<input type="checkbox"/>																				
			D DF L LF LR RF RR	<input type="checkbox"/>	<input type="checkbox"/>																				

B: Sea Turtle Level A Datasheet

**SEA TURTLE STRANDING AND SALVAGE NETWORK – STRANDING REPORT**

**OBSERVER'S NAME / ADDRESS / PHONE:**  
 First \_\_\_\_\_ M.I. \_\_\_\_\_ Last \_\_\_\_\_  
 Affiliation Virginia Aquarium Stranding Response Program  
 Address 717 General Booth Blvd.  
Virginia Beach, VA 23451  
 Area code/Phone number 757 437-6159

**STRANDING DATE:**  
 Year 2006 Month  Day   
 Turtle number by day   
**VAQS2006**  
 -State coordinator must be notified within 24 hrs;  
 this was done by  phone (757)437-6159  
 email  fax (757)437-4933

**SPECIES: (check one)**  
 CC = Loggerhead  
 CM = Green  
 DC = Leatherback  
 EI = Hawksbill  
 LK = Kemp's Ridley  
 LO = Olive Ridley  
 UN = Unidentified  
**Check Unidentified if not positive. Do Not Guess.**

**STRANDING LOCATION:**  Offshore (Atlantic or Gulf beach)  Inshore (bay, river, sound, inlet, etc)  
 State \_\_\_\_\_ County \_\_\_\_\_  
 Descriptive location (be specific) \_\_\_\_\_  
 \_\_\_\_\_  
 Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

Carcass necropsied?  Yes  No  
 Necropsied by \_\_\_\_\_  
 Photos taken?  Yes  No  
 Species verified by state coordinator?  
 Yes  No

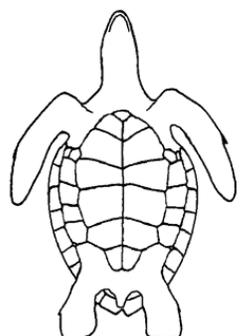
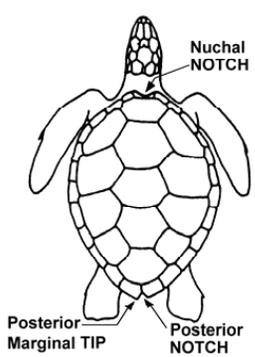
**CONDITION: (check one)**  
 0 = Alive  
 1 = Fresh dead  
 2 = Moderately decomposed  
 3 = Severely decomposed  
 4 = Dried carcass  
 5 = Skeleton, bones only

**FINAL DISPOSITION: (check)**  
 1 = Left on beach where found; painted?  Yes\*  No(5)  
 2 = Buried:  on beach /  off beach;  
 carcass painted before buried?  Yes\*  No  
 3 = Salvaged:  all /  part(s), what/why? \_\_\_\_\_  
 \_\_\_\_\_  
 4 = Pulled up on beach/dune; painted?  Yes\*  No  
 6 = Alive, released  
 7 = Alive, taken to rehab. facility, where? \_\_\_\_\_  
 8 = Left floating, not recovered; painted?  Yes\*  No  
 9 = Disposition unknown, explain \_\_\_\_\_  
 \_\_\_\_\_  
**\*If painted, what color?** \_\_\_\_\_

**SEX:**  
 Undetermined  
 Female  Male  
 Does tail extend beyond carapace?  
 Yes; how far? \_\_\_\_\_ cm / in  
 No  
 How was sex determined?  
 Necropsy  
 Tail length (adult only)

**TAGS: Contact state coordinator before disposing of any tagged animal!!**  
 Checked for flipper tags?  Yes  No  
**Check all 4 flippers.** If found, record tag number(s) / tag location / return address  
 \_\_\_\_\_  
 \_\_\_\_\_  
 PIT tag scan?  Yes  No  
 If found, record number / tag location  
 \_\_\_\_\_  
 Coded wire tag scan?  Yes  No  
 If positive response, record location (flipper)  
 \_\_\_\_\_  
 Checked for living tag?  Yes  No  
 If found, record location (scute number & side)  
 \_\_\_\_\_

**CARAPACE MEASUREMENTS: (see drawing)**  
**Using calipers** Circle unit  
 Straight length (NOTCH-TIP) \_\_\_\_\_ cm / in  
 Minimum length (NOTCH-NOTCH) \_\_\_\_\_ cm / in  
 Straight width (Widest Point) \_\_\_\_\_ cm / in  
**Using non-metal measuring tape** Circle unit  
 Curved length (NOTCH-TIP) \_\_\_\_\_ cm / in  
 Minimum length (NOTCH-NOTCH) \_\_\_\_\_ cm / in  
 Curved width (Widest Point) \_\_\_\_\_ cm / in  
Circle unit  
**Weight**  actual /  est. \_\_\_\_\_ kg / lb



Mark wounds / abnormalities on diagrams at left and describe below (note tar or oil, gear or debris entanglement, propeller damage, epibiota, papillomas, emaciation, etc.). **Please note if no wounds / abnormalities are found.**  
 \_\_\_\_\_  
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 \_\_\_\_\_  
 Genetics sent \_\_\_\_\_ Flipper(s) sent \_\_\_\_\_