

Annual Report 2010



ALLIANCE
of Marine Mammal Parks & Aquariums

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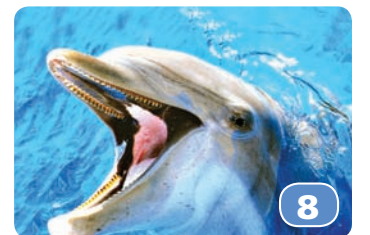
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Introduction

2010 will be remembered for the Deepwater Horizon spill that spewed millions of gallons of oil into the U.S. Gulf of Mexico. Officials report that over two thousand birds, almost 500 sea turtles, and two dolphins were rescued, awash in oil. A similar number were found dead from the effects of the spill. Potential consequences for the Gulf's food chain that supports these species are as yet unknown.

From day one of the oil spill crisis, members of the Alliance of Marine Mammal Parks and Aquariums received calls from U.S. federal and state agencies and volunteered their unique expertise and formidable resources to help mitigate and monitor the effects on marine life as massive gallons of oil gushed into our vulnerable waters and lapped at shoreline environments.

In preparation for emergency animal rescue response calls, members of the Alliance met with these agencies to develop coordinated, comprehensive plans to save dolphins, manatees, and sea turtles. Many Alliance zoological parks and aquariums worldwide are members of government stranding programs and are approved to respond to wild marine mammals, turtles, or seabirds that are sick, injured, or orphaned. In response to the spill, a number obtained the specialized training needed when working with hazardous chemicals. Caregivers at inland member parks and aquariums were poised and ready to travel to the Gulf and volunteer their personal time and expertise. The Alliance and its members also directed the public on how to help in the disaster, providing hotline numbers and guidance to those who discovered an oiled, injured, or dead marine mammal, turtle, or seabird.

The Sarasota Dolphin Research Program, a partnership led by the Chicago Zoological Society, is a pioneer in tagging and tracking dolphins. Because of its expertise, CZS was contracted by the U.S. government and BP to provide tagging and post-release monitoring services for any dolphins that stranded as a result of the oil spill. At the end of November 2010, SDRP was preparing for the possible release of two dolphins undergoing rehabilitation in Louisiana; however, one died and the other was deemed nonreleasable.

Gulf World, in Panama City Beach, rescued more than 140 turtles from the spill; it is the only de-oiling facility in North Florida. This followed the facility's efforts to organize the rescue of more than 1,700 stunned

sea turtles during an extreme cold snap in January. Rescue facilities in the Gulf area transported turtles to SeaWorld Orlando, one of the few organizations with the expertise to tend to the special needs of endangered Kemp's Ridley sea turtles, and Disney's Animal Programs, making room for newly-found turtles needing attention. Both facilities continued treatment of oiled turtles and, when appropriate, released them safely into the ocean. Miami Seaquarium and SeaWorld Orlando were asked by the government to prepare to tend to any manatees affected by the oil spill.



Turtle Rehabilitation at Gulf World

We Need to Know More

The work has not ended with the capping of the well. The Sarasota Dolphin Research Program received several grants and contracts to obtain samples and data from dolphins in and offshore of Florida's Sarasota Bay to be used as controls for comparison with animals directly affected by oil. SDRP is also studying the potential effects of the oil spill and dispersants on dolphins in the Florida Panhandle, in St. Joseph Bay and near Destin, working with the U.S. government and a university partner. SDRP is the world's longest-running study of a wild dolphin population, celebrating its 40th year in 2010. Its unparalleled study of dolphins in Sarasota Bay has drawn scientists and students from at least 23 nations and houses one of the largest scientific databases on a wild dolphin population ever assembled.

The Mirage, located in Las Vegas, Nevada, funded a University of California Davis scientist to work with its Dolphin Habitat

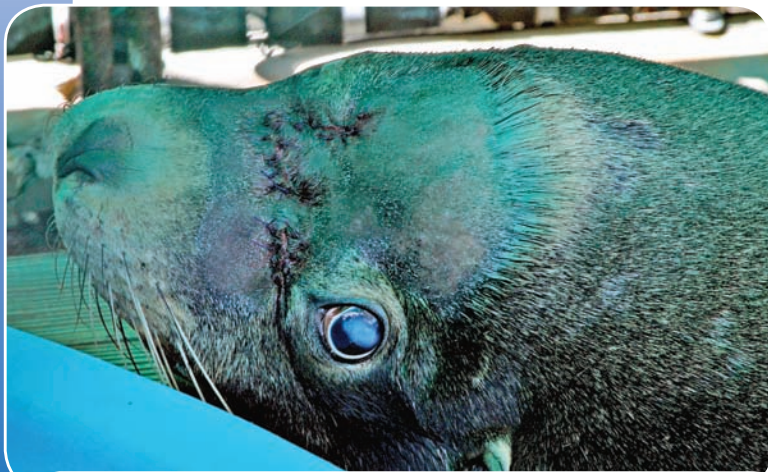
professionals to establish baseline immunologic parameters important to understanding the effects of petroleum contamination on dolphins.

The media coverage of the Deepwater Horizon spill provided scientists the opportunity to remind the public that other, rising threats to our oceans' health and marine life—overfishing, pollution, and climate change—are far more serious.

In the face of the spill, an environmental crisis of unknown and potentially devastating impact, Alliance members' offers of help typifies their daily commitment to missions essential to the survival of marine mammals in the wild and the health of the oceans in which the animals live—education, research, and rescuing injured, orphaned, and sick animals from the wild.

Wearing our Hearts on our Sleeves

The marine mammal community doesn't understand the word "no" when it comes to helping animals. In 2010, California's Six Flags Discovery Kingdom adopted a sea lion that had been rescued after being shot in the face by a fisherman. The park's veterinarian performed extensive reconstructive surgery on the animal—the first of its kind. Sgt. Nevis, named after the sheriff's deputy who helped save him, has integrated well with his new companions in the park's Seal Cove exhibit and has shown great resiliency after his tragic experience.



Sgt. Nevis recovers at Six Flags Discovery Kingdom

Another noteworthy event in 2010 was SeaWorld San Diego's efforts to save Dottie, a dolphin with acute renal failure. When an ultrasound showed a kidney stone blockage, SeaWorld's senior veterinarian sought assistance from the University of California San Diego's Medical Center's chief of nephrology. With guidance, the park's veterinarians did the first successful dialysis on a dolphin. When her health improved, the director of the UCSD Comprehensive Kidney Stone Center performed the first endoscopic laser lithotripsy procedure on a dolphin to break up Dottie's kidney stones. It is not uncommon for Alliance members to adapt human medical technology to help marine mammals, especially reproductive techniques to assure healthy moms produce healthy calves and pups.

Alliance members are very generous in providing care to stranded marine mammals at their own expense, a very time-intensive commitment to sick and injured animals that may need 24-hour-a-day attention. A 2010 survey of Alliance facilities that participate in government stranding networks around the world indicates that they spend, collectively, over \$1.5 million on stranding activities

annually, augmented by 57,000 hours of volunteer time. In one five-year period, members responded to about 2,400 reports of stranded marine mammals. Of these, almost 1,500 animals were treated for injuries and disease at member facilities.

Miami Seaquarium continues to be the Florida manatees' best friend, always welcoming a needy animal. In 2010, the facility rescued and treated over two dozen manatees. Many were stressed by the cold winter months and successfully reintroduced to their home waters. Miami Seaquarium also made sure a manatee, named Ilya, was in tiptop shape before releasing her after she had wandered into the inhospitable cold waters along the northern U.S. coastline.

Biff and Otis made headlines in 2010 after arriving at Chicago's Shedd Aquarium. The sea lions were scheduled to be euthanized as part of a U.S. government program to save endangered salmon being eaten by the animals. As the media explained, a mercy phone call to the aquarium "saved their hides."

In June 2010, the Dutch government oversaw the transport of a young killer whale to Dolfinarium Harderwijk Holland. Morgan, the first killer whale found alive in Dutch coastal waters in more than 60 years, was separated from her pod, very weak, and had not been eating. Animal caretakers at Harderwijk with killer whale experience restored her to excellent health. While the U.S. government understands the risks of returning a young cetacean to the wild and prohibits it, the Dutch government asked the dolfinarium to obtain expert advice to assure a careful and transparent choice on whether a juvenile should be released or remain under human care.

Stranded animals often provide unique research opportunities. A young pilot whale found near death on a Curacao beach was successfully nursed back to health but release attempts in island waters were unsuccessful. SeaWorld San Diego opened its doors to Sully and he happily integrated with their other pilot whales. But SeaWorld trainers and veterinarians soon realized that something was wrong. Early tests indicated that Sully could have a hearing deficit, which may have accounted for his stranding or unwillingness or inability to be returned to the ocean. By studying Sully, SeaWorld is helping him learn to cope with any deficits he may have, while obtaining information that can be used to help other stranded whales and dolphins in the future.



Stranded Manatee (Miami Seaquarium)

And, Speaking of Research

2010 saw the publication of two special issues of the *International Journal of Comparative Psychology*, both highlighting the significance of research with marine mammals in zoological parks and aquariums. Research in aquariums and studies conducted with animals in wild both have understandable benefits and limitations—each setting providing



Dolphin Imitation Research (Dolphin Research Center)

details often unavailable from the other environment. But, much of what scientists know about marine mammals can only be accomplished with animals in public display facilities.

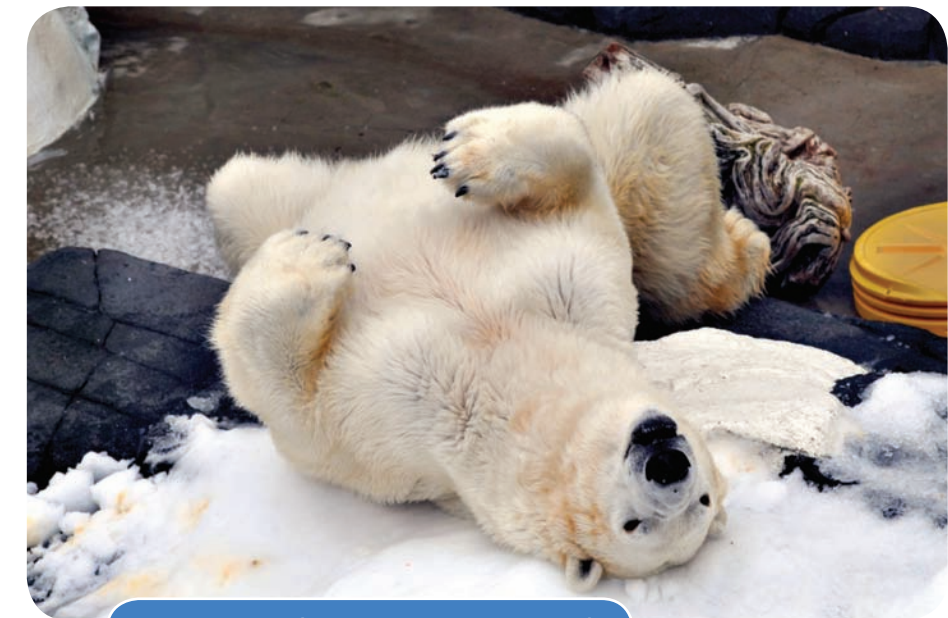
Studies published in the journals demonstrate how this research increases our understanding of cognition, the animals' ability to observe and learn; reproductive physiology, which plays an essential role in conservation efforts; and of individual differences displayed by animals—their personalities, which has ramifications for

welfare and conservation. They demonstrate how parks and aquariums strive to merge discoveries in cross-disciplinary fields such as veterinary science, psychology, physiology, and conservation biology to consistently advance their animal care programs.

One study details how conservation efforts addressing shifting climate conditions and human encroachment on the animals' habitats cannot be fully successful without understanding a species' physiology, information that can be gleaned only through studies with marine mammals in public display facilities. Another confirms that behaviors identified by dolphin trainers are consistent with observations of animal behavior in the wild. A third underscores how ex situ studies provided the earliest data on the animals' hearing, which is essential in crafting appropriate guidelines for mitigating the effects of human-caused sound on marine mammals in the wild.

Alliance members are generous supporters of research. In 2010, the Indianapolis Zoo's \$100,000 Indianapolis Prize was again awarded to a leader in animal conservation. The National Aquarium (Maryland) announced its new conservation center, which will support research and advocate for marine life and the environment. The SeaWorld & Busch Garden Conservation Fund gave \$1 million in grants to 95 wildlife protection projects, including funds for endangered manatee rescue and rehabilitation efforts, protection of critical habitats, and education programs that inspire people to care for at-risk wildlife. As part of its longstanding commitment to the environment, the Disney Worldwide Conservation Fund presented grants of close to \$1.5 million to nonprofit organizations that work to protect plants, wildlife, and ecosystems.

The Alliance elected to post its members' research on the Web site of the newly-founded National Marine Mammal Foundation in 2010. This provides the public with the opportunity to use a searchable database and note the breadth of marine mammal research being conducted by not only zoological parks and aquariums and foundation scientists, but also esteemed university scientists and others making important research contributions to marine mammal conservation and health.



Polar Bear (SeaWorld San Diego)

New Research Confirms that Animals in Parks and Aquariums Live Long, Happy Lives

Past research established that bottlenose dolphins in Alliance member facilities live longer than animals in the wild. In 2010, new scientific research published in *Marine Mammal Science* estimated the age and growth structure of stranded bottlenose dolphins off the coast of Texas. While Alliance data demonstrate that, on average, a one-year-old bottlenose dolphin in member facilities is expected to live for more than 25 years, the new data show that the stranded wild dolphins have a comparable average life expectancy of less than 13 years. This new study confirms that dolphins live almost twice as long in Alliance facilities than in the wild. And, we cannot forget Nellie, the oldest dolphin in a zoo or aquarium, who celebrated her 57th birthday on February 2010 at Georgia Aquarium's Marineland in Florida.

Similarly, a statistical expert at the Minnesota Zoo compiled data comparing life spans of California sea lions in Alliance member facilities to those in the wild. This new study indicates that the median life expectancy of juvenile California sea lions born in North American parks and aquariums is two to three times longer, depending on gender, than the life expectancy of juvenile sea lions in the wild.

Also, Dolphin Quest, SeaWorld, and the Navy Marine Mammal Program presented in 2010 the results of their joint study of bottlenose dolphin neonate survivability, focusing on data between 2000 and 2009. Results from 2009 saw that 13 out of 14 calves born that year were doing well at the time of the report, indicating the success of Alliance members' research and emphasis on neonate health.



Nellie Celebrates Her Birthday (Georgia Aquarium's Marineland)

Inspiring Conservation Through Education

The Alliance was represented in April 2010 before a U.S. House of Representatives Subcommittee on Insular Affairs, Oceans, and Wildlife hearing titled "Marine Mammals in Captivity: What Constitutes Meaningful Public Education?"

In their testimony, representatives of Dolphin Quest and SeaWorld stressed the in-depth and wide-ranging education programs offered by Alliance members and emphasized that, in addition to the over 40 million children and adults who choose to visit member facilities annually, more than two million children participate in specially-designed school programs, summer camps, and other on-site activities at Alliance facilities. Over 800,000 individuals, mostly children, learn about marine mammals from off-site, outreach programs developed for teachers, students, and community groups. Alliance members also reach over 150 million people yearly with educational information through computer learning programs, Web sites, publications, satellite television, and other such vehicles.

Alliance Programs Are Educational and Promote Environmental Stewardship

The hearing provided a forum for experts from member facilities to highlight new, conclusive studies demonstrating the success of Alliance education programs. The first of two recent, independent studies concludes that guests viewing Alliance member dolphin shows demonstrated an increase in conservation-related knowledge, attitudes, and behavioral intentions immediately following their experience and that they retain what they learn. The second study of participants in Alliance member dolphin interactive programs confirmed that not only did guests learn about the animals and conservation, they also shifted their attitudes and acquired a sense of personal responsibility for environmental stewardship.

The value of "informal" education, as distinguished from classrooms, is increasingly being studied and recognized as an essential and effective component of learning. The April 2010 issue of *Nature* included an article saying that researchers who study learning increasingly question the assumption that education only happens in the classroom. It cites evidence suggesting that most of what the general public knows about science is learned from visiting zoos, museums, and Web sites and reading magazine articles. The National Science Foundation's Informal Science Education program invests in projects that develop informal learning experiences to increase interest in and understanding of science, technology, and mathematics.

How Do We Do It?

The Alliance has a vibrant Education Committee whose member educators are dedicated to developing programs that spark interest not only in marine mammals and their environments, but in science. Education information is provided through presentations, interactions with the animals, graphics, and narration. Special education efforts include classroom courses, Web sites, publications, children's camps, internships, and outreach school programs.

Alliance members reach out to the community. In 2010, Georgia Aquarium research was featured on Atlanta's WSBTV. In *Dolphins: Georgia's Breakthrough Discoveries* a renowned scientist at the aquarium talked about the disturbing changes he documented in the health of Indian River dolphins, including

cancer, antibiotic resistance, and other diseases. Alliance members partner with governments. They helped fund and facilitate the U.S. National Marine Fisheries Service's public service announcement with the message—don't feed wild dolphins! The advertising firm, convinced by the Florida Keys' Dolphin Research Center to create the PSA pro bono, won a 2010 Gold Addy Award. Zoomarine Italy and Zoomarine Portugal are two of the five facilities that launched the innovative education program EUZoos-XXI, sponsored by the European Commission. The three-year project held its first workshops in 2010 as it strives to involve the general public in shaping how aquariums and zoos can more effectively communicate messages about endangered and invasive species and ecological connectivity.

Alliance members teach by example, taking a hands-on approach on local environmental issues. In 2010, Dolphin Encounters in the Bahamas created a pilot cardboard recycling program; removed invasive trees from their island, Nassau, replacing them with native species; and, in their role as the National Coordinators for International Coastal Cleanup Day for The Bahamas, organized the largest-ever community event to collect trash from the island's southern coastline.

Alliance members also urge their governments to do the right thing. Moorea Dolphin Center joined local environmental groups in circulating a petition urging the government of French Polynesia to withdraw proposed legislation that would have allowed the hunting of marine turtles, some of which are in danger of extinction. The Alliance recommended that the U.S. government increase penalties for swimming with and feeding wild dolphins, activities that change normal behaviors and can drive animals from important habitats.



Beach Cleanup (Dolphin Encounters)

Making a Dream Come True

Not only do Alliance members care deeply about their animals, they also care about people with special needs. Dolphin Research Center participates in the Wounded Warrior Project, crafting special dolphin interactive programs that can be enjoyed by disabled veterans and others suffering from post-traumatic stress disorder. One of the founders of DRC is a Vietnam veteran and understands how dolphins can provide a life-changing escape from the haunting memories of wartime horrors.

In 2010, Miami's Jackson Memorial Hospital aquatic rehabilitation program ended with a "graduation" trip to Theater of the Sea, in the Florida Keys, where paraplegics and quadriplegics swam with dolphins, building their confidence as they discarded their wheelchairs.

Producers of the television show *Extreme Home Makeover* sought the help of the Bahamas' Dolphin Experience for a young boy with spina bifida, whose longtime dream was to swim like a dolphin. The facility specially trained a dolphin to make this very special child's day. These are the wonderful experiences that make our day.

Parks, aquariums, and zoos are cherished and traditional places for family recreation, centers for discovery, resources for wildlife education, and motivators for environmental stewardship. Thank you for letting us share the special activities of 2010 that brought such joy to the animal care staff, educators, scientists, trainers, and veterinarians who work with their marine mammal families each and every day.



Living The Dream (Dolphin Experience)

Members of the Alliance

- Alaska SeaLife Center
- Atlantis, Paradise Island
- Chicago Zoological Society's Brookfield Zoo
- Discovery Cove
- Disney's Animal Programs at The Seas
- Dolphin Connection
- Dolphin Discovery Cozumel
- Dolphin Discovery Grand Cayman
- Dolphin Discovery Isla Mujeres
- Dolphin Discovery Puerto Aventuras
- Six Flags Mexico Dolphin Discovery
- Dolphin Discovery Vallarta
- Dolphin Encounters
- UNEXSO Dolphin Experience
- Dolphin Quest Bermuda
- Dolphin Quest Hawaii
- Dolphin Quest Oahu
- Dolphin Research Center
- Georgia Aquarium
- Gulf World Marine Park
- Dolfinarium Harderwijk Holland
- Hubbs-SeaWorld Research Institute
- Indianapolis Zoo
- Lisbon Zoo
- Marineland Dolphin Adventure
- Miami Seaquarium
- Minnesota Zoological Gardens
- The Mirage Dolphin Habitat
- Moorea Dolphin Center
- Mystic Aquarium
- National Aquarium
- Navy Marine Mammal Program
- WCS New York Aquarium
- Ocean Park Hong Kong
- Oceans of Fun
- Point Defiance Zoo and Aquarium
- SAIC BioSolutions Division
- Sea Life Park Hawaii
- SeaWorld Orlando
- SeaWorld San Antonio
- SeaWorld San Diego
- John G. Shedd Aquarium
- Six Flags Discovery Kingdom
- Tampereen Sarkanniemi Oy
- Texas State Aquarium
- Theater of the Sea
- Vancouver Aquarium
- Virginia Aquarium & Marine Science Center Foundation
- Zoomarine Italy
- Zoomarine Portugal



Alliance of Marine Mammal Parks and Aquariums

USA Headquarters

Westminster, Colorado

+1.720.887.5921

ammpa@aol.com

Brussels Office

Lasne, Belgium

+32.2.633.1503

ammpa.brussels@gmail.com

www.ammpa.org