

2011 Project White Shark Press Kit Index



1. [White Shark Arrives at Monterey Bay Aquarium – News Release](#)
2. [Project White Shark FAQ](#)
3. [Project White Shark Fact Sheet](#)
4. [White Shark Species Info](#)
5. [White Shark Protection History](#)
6. [Open Sea Species List](#)

NEWS RELEASE

FOR IMMEDIATE RELEASE

September 1, 2011

For information contact:

Ken Peterson (831) 648-4922; kpeterson@mbayaq.org

Karen Jeffries (831) 644-7548; kjeffries@mbayaq.org

Angela Hains (831) 647-6804; ahains@mbayaq.org

Alison Barratt (831) 647-6856; abarratt@mbayaq.org

MONTEREY BAY AQUARIUM PUTS ITS 6TH YOUNG GREAT WHITE SHARK ON EXHIBIT

*The only institution to exhibit the ocean's top predator
has successfully returned five others to the wild*

For the sixth time, the Monterey Bay Aquarium (www.montereybayaquarium.org) has a young great white shark on exhibit. He was brought to Monterey from Malibu last night (Wednesday, August 31), just 13 days after he was collected by aquarium staff in waters off southern California near Marina del Rey.

The young shark, a four-foot, seven-inch male weighing 43.2 pounds, was brought north in a 3,200-gallon mobile life support transport vehicle. He was collected August 18 by aquarium staff with the help of a commercial fishing crew using a purse seine net. He was quickly transferred to a more than 4-million-gallon ocean holding pen off Malibu, where he remained for almost two weeks. Aquarium staff observed him swimming comfortably and documented him feeding in the pen before he was brought to Monterey and placed in the million-gallon Open Sea exhibit at 7:01 p.m.

The public can watch the young great white shark on the aquarium's live HD Open Sea cam (www.montereybayaquarium.org/efc/efc_opensea/open_sea_cam.aspx), and receive the latest news about this shark on Facebook (www.facebook.com/montereybayaquarium) and Twitter (<http://twitter.com/#!/MontereyAq>).

The Monterey Bay Aquarium remains the only institution in the world to exhibit a great white shark for more than 16 days, and has successfully returned to the wild each animal kept on exhibit.

As with the five other young great white sharks brought to the aquarium since 2004, the aquarium hopes this one will remain on exhibit for several months, as a way to change public attitudes and promote stronger protection for this magnificent and much-maligned ocean predator.

In 2004, the first female white shark exhibited in Monterey became "the most powerful emissary for ocean conservation in our history," according to aquarium Executive Director Julie Packard. The shark was part of the aquarium's Open Sea exhibit for 6 ½ months and was seen by more than a million people between September 15, 2004 and March 30, 2005. In follow-up surveys, visitors reported coming away with a deeper understanding of the need to protect white sharks and their ocean homes as a result of seeing the shark on exhibit. Collectively, the five sharks exhibited at the aquarium have been seen by more than two million people.

Since 2002, the aquarium has allocated more than \$1 million toward its studies of adult and juvenile great white sharks – research unrelated to the effort to put a white shark on exhibit. Visit www.montereybayaquarium.org/cr/whiteshark.aspx for detailed information about the aquarium’s Project White Shark program.

Exhibiting this species has been the subject of a focused multi-year effort by the aquarium. This approach, developed in consultation with a panel of independent shark experts, is designed to minimize the stresses of collection, holding and transport.

Before bringing a white shark to Monterey, members of the aquarium’s field team monitor its behavior to see if it has adjusted to swimming in an enclosed space. The team offers salmon, mackerel and other fish, and confirms that the shark is feeding consistently before bringing it to Monterey.

In the wild, great white sharks are in decline worldwide, in part because they’re slow to reproduce and because of growing fishing pressure that is decimating all shark species. White sharks are protected in California and other U.S. coastal waters, as well as in South Africa, Australia, Mexico and other nations. Their fearsome reputation has made them a target of trophy hunters and the curio trade.

The aquarium encourages the public to get involved in shark conservation by using its “Seafood Watch” consumer pocket guide to selecting ocean-friendly seafood. The guide highlights “Best Choice” fisheries, including those that harm fewer animals – including sharks. Details are online at www.seafoodwatch.org.

Through its Center for the Future of the Oceans, the aquarium works with other institutions and public agencies to develop best strategies for shark conservation policy in California waters. It also supports creation of a network of Marine Protected Areas (MPAs), including some fully protected marine reserves where fishing is prohibited, along the entire California coast.

The aquarium is open daily through Labor Day from 9:30 a.m. to 6 p.m.; and on Saturdays and Sundays until 8 p.m. (through September 4). Starting September 6, regular aquarium hours are from 10 a.m. to 6 p.m. daily. For more information and tickets, visit www.montereybayaquarium.org.

The mission of the Monterey Bay Aquarium is to inspire ocean conservation.

– 30 –

EDITORS: Contact Public Relations for digital images, HD footage or to arrange interviews. A Project White Shark press kit is available on www.montereybayaquarium.org/aa/pressroom/.

[Back to Index](#)

Project White Shark: Frequently Asked Questions

Q: What is the aquarium's Project White Shark?

A: It's a multi-year study of young white sharks off southern California that we began in 2002. The project had two original goals, and we've had success with both: First, to better understand the biology of these threatened ocean predators through electronic tagging; and second, to determine systematically whether it was possible for us to keep and exhibit a young great white shark. We have succeeded in exhibiting five white sharks since 2004: one white shark for six months in 2004-05, a second animal for four-and-a-half months in 2006-07, a third animal for five-and-a-half months in 2007-08, a fourth shark for 11 days in 2008, and a fifth shark for three months in 2009. We're also working with research colleagues to tag and track young-of-the-year white sharks (white sharks less than one year old) in the wild. In addition, we're collaborating with research partners to tag adult white sharks off California's Central Coast. We believe that tagging and exhibiting white sharks contribute significantly to public understanding and protection of these magnificent and much-maligned animals—an ecologically important and increasingly threatened species.

Q: What's different from past attempts to put white sharks on exhibit?

A: We believe we have succeeded where others had not because most past attempts involved capturing a white shark and putting it directly on exhibit. We took a more cautious and methodical approach, developed in collaboration with shark experts and aquarium colleagues from around the world, and informed by our own experience during the ten years of our Project White Shark. Our demonstrated successes involve keeping a white shark in an ocean pen before proceeding, step-by-step, toward putting it on exhibit. If at any point in the process it appears that a shark isn't doing well, we are ready to release it back to the wild.

Q: Why put a white shark in an ocean pen first?

A: Using a four-million-gallon ocean pen gives the shark a chance to recover from the stress of being caught in fishing gear, and give aquarium husbandry staff a secure place to assess the animal's health and behavior. By working with juvenile white sharks in the ocean pen, we can also learn how they navigate in an enclosed space—an important step in evaluating whether one would likely do well on exhibit at the aquarium.

Q: Why put a white shark on exhibit at all?

A: Our mission is to inspire conservation of the oceans. We know that bringing people face-to-face with living marine animals is a powerful way to move people to care about the oceans and ocean life. White sharks are among the most maligned animals on Earth, and one of many shark species worldwide threatened by human activities. In fact, they're protected under the Convention on International Trade in Endangered Species (CITES). We believe there's no better way for us to raise awareness about the threats white sharks face than to let people see for themselves what magnificent and fascinating animals they are, tell the story of the threats they face in the wild, and offer ways to take action that will protect white sharks. Aquarium Executive Director Julie Packard said that the first white shark we exhibited in 2004-05 was “the most powerful emissary for ocean conservation in our history.”

Q: Where do you keep the shark at the aquarium?

A: We house white sharks in our million-gallon Open Sea exhibit, which was designed for pelagic (open-ocean) animals and engineered with sharks in mind. (For example, we dampened as much electrical field interference, created in the exhibit by the life-support equipment, as possible.) The Open Sea is home to other open ocean species, including bluefin and yellowfin tunas, bonito, barracuda, sea turtles, mahi mahi, and other species of sharks.

Q: How do you collect great white sharks?

A: Two methods. Primarily, our husbandry staff collects young white sharks directly, by purse seine net or hook and line. We also work with commercial fishing crews in southern California, who occasionally catch juvenile white sharks accidentally while fishing for halibut and sea bass. We've asked crews to contact us if they capture a young white shark that's alive and healthy. We have a rapid response team standing by to work with any sharks that are caught by commercial fishermen. Team members assess the sharks' health before tagging them and returning them to the wild. There are many unknowns with sharks obtained as bycatch from a commercial fishery. We don't know long they've been in the net, and to what degree their health might have been compromised as a result. For that reason, we have much more confidence that we're starting with a healthy animal when our own team does the collecting.

Q: How do you know if a shark on exhibit is healthy?

A: One of the best indicators of how an animal is feeling is its feeding behavior. If an animal is ill or stressed, it will typically stop eating. With each animal we bring to Monterey, we watch carefully to see how often and how much the white shark eats, and we can respond immediately if there are any signs of problems. We also look at relaxed swimming patterns, with calm tail-beats, and monitor the shark's overall physical appearance.

Q: What do you feed it on exhibit?

A: We feed our young white sharks wild-caught salmon, mackerel and sardines, supplemented with specially formulated vitamins. We've also added albacore tuna to the menu. In the wild, juvenile white sharks eat fishes, rays and other sharks, only switching to marine mammals when they grow larger, spend more time in colder water, and need an energy-rich diet from the mammals' blubber.

Q: Will a great white shark eat other animals on exhibit?

A: Incidents like this are rare, and we try to keep them to a minimum—primarily by ensuring that all the animals in our care are well fed. The first white shark we kept on exhibit bit two other sharks, though it wasn't clear that she was hunting them. When her behavior changed and it was apparent that she was actively hunting other sharks in the exhibit, we returned her to the wild within four days.

Q: What do you do if a shark gets too big for an exhibit?

A: We've successfully released white sharks and other animals when they outgrew our exhibits. When we've been able to tag and track these animals, we've found that they continue to thrive in the wild. Data from electronic tags on all the white sharks we've released show that they survive and thrive during the months after release – with the exception of one shark that was doing well until it was caught in a commercial gillnet in Baja California several months after release.

Q: What do you do if a shark doesn't eat?

A: In the one case where the white shark wasn't eating, but was otherwise in good health, we returned it to the wild. Our fourth white shark ate only once while at the aquarium. Since she did not eat again for a week, we released her after just 11 days on exhibit to ensure that she was healthy when she went back to the ocean. If a shark appears to be sick or injured, and is unlikely to survive after release, it would be humanely euthanized and a necropsy performed so we could learn as much as possible.

Q: What do you hope to learn from tagging sharks?

A: Working with Stanford University scientists and other research partners, including the Shark Lab at California State University-Long Beach, we are learning about the lives of juvenile white sharks in the wild: where they go, what they do and what contaminants they accumulate in their bodies, either from their mothers or in the food they eat. We want to gain insights into how they fit into the ocean ecosystem in the first year or so of their lives, and to identify the waters where they are most vulnerable during this critical state of their lives. Prior to the start of Project White Shark, little was known about the lives and migrations of juvenile or adult white sharks.

Q: What have you learned so far?

A: We've found that the 43 juvenile white sharks we've tagged (through July 2011) tend to remain in coastal waters, although some traveled more extensively than others during the months they were tracked. Juvenile white sharks traveled back and forth from southern California to the Baja Peninsula, and sometimes up into the Sea of Cortez. They spent most of their time in shallow waters but also were tracked making 1,000-foot dives.

In data from more than 240 tracking tags placed on 100 adult great white sharks off the coast of Central California, we've learned that they make long journeys into the central Pacific, ranging as far west as Hawaii. Papers detailing the findings about juvenile and adult white sharks have been published in the scientific press, and can be found online at www.topp.org.

In addition to our tagging work, we're collecting tissue samples from young sharks killed in Baja California fisheries. By working with researchers in the U.S. and Mexico, we hope to use DNA to document genetic diversity within the Mexican shark population—perhaps throwing light on how many female sharks are birthing pups in the region. Our colleagues at CSU-Long Beach are analyzing contaminants in the tissue of living and dead white shark we receive, and are documenting unprecedented levels of toxic materials in their bodies.

Q: How does this help white sharks?

A: Juvenile sharks are caught accidentally in commercial and sport fishing gear. Whatever we learn about their movement patterns can play a role in developing management strategies to further protect them. By learning what habitats juvenile white sharks use, and how much they travel, resource managers will better understand the risks white sharks face and be able to conserve these rare animals more effectively.

Q: How are the white sharks tagged?

A: We use both a "pop-up archival tag" (PAT tag) and an acoustic tag. The pop-up tags are attached externally to a shark, where they collect data on water temperature, depth and light (used to estimate position). They store the data in a tiny computer and on a pre-programmed

date, the tag releases from the shark and floats to the surface. The data are then sent via satellite back to the laboratory, where they can be analyzed. If our staff is able to collect the tag floating in the water, they can obtain even more information. The acoustic tags broadcast a unique signal that can be picked up by instruments on coastal monitoring buoys if the shark swims nearby. Once there's a network of monitoring stations in southern California and Baja, we'll learn more about the precise location of individual tagged sharks along the coast.

Q: Are white sharks threatened?

A: Yes, they're considered a threatened species, and their numbers have declined greatly in recent decades – though they may be rebounding as a result of protection afforded both to them and the marine mammals on which adult great white sharks feed. They're protected in many parts of the world, including the United States, Mexico, Australia and South Africa. They're slow-growing, late to reach sexual maturity, and they produce relatively few offspring. This makes them highly vulnerable to exploitation. They're killed accidentally in fishing gear and are targeted by trophy hunters. As a result of this trophy hunting, they're now protected under the Convention on International Trade in Endangered Species (CITES).

Updated: August 17, 2011

[Back to Index](#)

Project White Shark Fact Sheet

The mission of the Monterey Bay Aquarium is to inspire conservation of the oceans. In May 2002 the aquarium launched a multi-year study of young great white sharks off southern California with two goals: to better understand the biology of these threatened ocean predators; and to determine, systematically, if it would be possible to keep a young white shark on exhibit. In 2005 the program was expanded to include study of adult white sharks along the entire California coast. This research is ongoing, and will contribute to the understanding and protection of this important marine predator.

Shark Conservation

Shark populations around the world are in decline from overfishing, habitat destruction and other human activities. Of the 350-plus species of sharks worldwide, the International Union for the Conservation of Nature lists 79 as imperiled, ranging from “critically endangered” to “near threatened.” It considers white sharks “vulnerable.” White sharks are top predators that play a vital role in the ocean’s food web—and they’re already seriously depleted. While over 100 nations fish for sharks, only a handful have adopted regulations to protect them. In October 2004, white sharks were listed as protected under Appendix II by the Convention on International Trade in Endangered Species (CITES).

Field Research

Each summer since 2002, aquarium staff and their research partners work in southern California, attempting to capture and hold “young-of-the-year” white sharks, and to electronically tag and release young sharks for scientific study. (“Young-of-the-year” sharks are animals up to 12 months of age.) Aquarium staff obtain young sharks caught accidentally in commercial fishing gear, or catch sharks themselves. On average, about six young white sharks a year have been reported caught in sport and commercial gear in the region.

In the first nine years, the Project White Shark team has successfully tagged and released 43 juvenile white sharks, in addition to five that were brought to Monterey Bay Aquarium, kept on exhibit for up to six months, and ultimately returned to the wild. Published data from the tagging project documented a great white shark nursery area that extends from the warm waters off southern California through Baja California, and that young sharks move back and forth between U.S. and Mexican waters.

In 2005, with support from the aquarium, the Project White Shark was expanded to include adult white sharks along the Central California coast. Dr. Barbara Block of Stanford University leads a consortium of white shark researchers from the Monterey Bay Aquarium, PRBO Conservation Science, the Pelagic Shark Research Foundation and the University of California, Davis as part of the Tagging of Pacific Predators (www.topp.org). Since then, the TOPP team has placed 240 electronic tags on 100 sharks (some have been tagged multiple times) to document their migrations. Published studies demonstrate that these animals undertake long migrations, traveling as far west as Hawaii, and show fidelity for waters off California’s Central Coast.

The research team has also confirmed that California's great white sharks comprise a genetically distinct population, long isolated from other great white sharks around the world. Because the population is distinct, scientists were able to census the population, a first step in monitoring over time whether their numbers are increasing or decreasing. In their first-ever estimate, scientists concluded that the minimum population in the central California region is around 220 adult and adolescent great white sharks.

Future Plans

The Monterey Bay Aquarium continues to work with research partners in the tagging of juvenile white sharks off of Southern California and of adults off the Central California coast. It has expanded its commitment by adding to its staff a research scientist with considerable expertise in great white shark research. The aquarium will also continue its attempts to place a juvenile white shark on exhibit again. Past successes demonstrate that it is possible to exhibit a great white shark in Monterey for a number of months, and to return it successfully to the wild. They also demonstrate that bringing visitors face-to-face with white sharks can raise awareness about shark conservation issues, which supports the aquarium's mission to inspire conservation of the oceans.

Updated August 17, 2011

[**Back to Index**](#)

White Shark Species Information

At the Monterey Bay Aquarium: Since 2004, the Monterey Bay Aquarium has exhibited five juvenile great white sharks, for periods ranging from 11 days to more than six months. All five were successfully returned to the wild.

What's unusual: There are no other great white sharks on exhibit at any aquarium in the world. Only the Monterey Bay Aquarium has succeeded in keeping a white shark longer than 16 days, and had done so four times since its white shark program began in 2002. Outside of these five sharks, there is only one other record of a white shark feeding while kept at an aquarium. By taking a cautious and methodical approach, developed in collaboration with shark experts and aquarium colleagues from around the world, the aquarium has introduced five white sharks to the Open Sea exhibit and successfully returned all five to the wild.

In the wild: The great white shark (*Carcharodon carcharias*) is a legendary hunter, immortalized in the book and motion picture *Jaws*. Dating back 50 million years or more, it is the world's largest predatory fish, averaging 15 feet (4.7 meters) in length at maturity and weighing more than two tons (1,800 kilograms). Pups average around 3.6 feet (1.1 m) in length, and adults can grow up to 21.5 feet (6.5 m) long, with females generally larger than males.

It is an apex predator—the animal at the top of the food web, with few natural predators. Young white sharks eat fishes, rays and other sharks. Adults eat larger prey, including marine mammals and sea turtles. They also eat carrion (dead animals that they find floating in the water). They tear their prey, using triangular, serrated, razor-sharp teeth, each up to three inches long.

White sharks are highly migratory animals, difficult to study or observe. They are found worldwide in the continental shelf waters of temperate seas and oceans. They sometimes venture into tropical zones, and can be found anywhere from the surface to depths of up to 4,200 feet (1,280 m). Little is known about their life history. They may live 20 years or more. They can sense minute amounts of blood in the water and faint electrical fields given off by the bodies of prey animals. They can swim at speeds up to 25 miles per hour in short bursts, and have been observed leaping out of the water in pursuit of prey. Females give birth to between two and 14 live pups. The pups swim away from the mother immediately after birth; there is no maternal care.

Hazards to humans: Of the 360-plus species of sharks on Earth, only a handful are considered dangerous to humans. White sharks are among that number because they are large animals that are capable of inflicting serious injuries to a victim, are commonly found in areas where humans enter the water, and have teeth designed to shear rather than hold. They have been implicated in more attacks on humans—and more fatal attacks—than any other shark species.

Threats from humans: Small in numbers, slow to reproduce and widely distributed around the world, white shark populations are vulnerable to exploitation. Their numbers have been reduced by fishing that feeds the trophy trade, and by inadvertent catch in commercial fishing gear that targets other species. They're protected in California, other U.S. waters, South Africa, Australia, Mexico and some other nations. In 2004 the 166 member-states of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) added white sharks to a list of protected species.

Updated August 17, 2011

[Back to Index](#)

History of White Shark Protection Worldwide

- 1991: **South Africa** announces protection of white sharks within its exclusive economic zone (EEZ). The legislation makes it illegal to catch or kill any white shark, or to sell or offer for sale any white shark, body part or product from white sharks.
- 1993: **Namibia** announces protection for white sharks, by banning fisheries that specifically target white sharks.
- 1994: **California** introduces a temporary law that prohibits the catch of white sharks in state waters, and landing white sharks caught outside state waters in California ports.
- 1997: **California** adopts permanent legislation to fully protect white sharks in state waters, and outlaws all directed efforts to attract white sharks. White sharks may be collected under a permit issued for educational and scientific purposes. Accidental catch in gill net fisheries is also allowed, as its impact is deemed minimal.
- 1997: The U.S. National Marine Fisheries Service (NMFS) outlaws all directed fisheries for white sharks in East Coast waters, including **Florida** and the **Gulf of Mexico**. White sharks caught accidentally must be released with minimum injury and without taking the animal out of the water. Possession of white sharks is prohibited, due to being identified as highly susceptible to overexploitation.
- 1997: **Australia**'s government protects white sharks throughout its waters.
- 1998: **Brazil** gives white sharks the status of endangered species
- 1999: **Malta** declares the white shark a protected species in its territorial waters.
- 2000: The World Conservation Union (IUCN) adds white sharks to the Red List of Threatened Species as "vulnerable to extinction" but notes that "a global status of 'Endangered' may be proven accurate for this shark as further data is collated."
- 2000: The **U.S.** enacts a Shark Finning Prohibition to ban any person under U.S. jurisdiction from: engaging in shark finning; possessing shark fins aboard a fishing vessel without the shark carcass; and landing shark fins without the shark carcass. The Shark Finning Prohibition Act defines finning as the practice of taking a shark, removing the fin or fins from a shark, and returning the remainder of the shark to the sea.
- 2002: During the Convention on Migratory Species, participants demand better international protection for the white shark. Close to 70 nations agree that the white shark should be listed on CITES Appendix I and II to control trade in white shark parts, and that all countries with white shark populations should take legal measures to prevent poaching and directed and accidental catch in fisheries.
- 2004: White sharks are listed on Appendix II of CITES.
- 2007: **Mexico** introduces new regulations and protections for sharks, including a shark finning ban, an extension of the moratorium on new commercial shark fishing permits, and extensive protections for several shark species, including white sharks.

- 2007: **New Zealand** announces that white sharks (known as white pointer sharks) will be fully protected within its exclusive economic zone (EEZ), and that fishing by New Zealand-flagged boats will be prohibited outside its EEZ. The regulations make it illegal to hunt, kill or harm a white shark, or to possess or trade in any part of a white shark. Accidental catch must be returned to the water intact and alive, if possible. It's still legal to use shark nets to protect swimmers around beaches however; and fishermen who accidentally catch and kill white sharks will not be prosecuted, provided they register the death with authorities.
- 2010: **Hawaii** outlaws the shark fin trade, targeting the market that provides an economic incentive to catch and kill sharks – including great white sharks – for their fins.
- 2011: The **United States** enacts the Shark Conservation Act of 2010, which closes loopholes in the Shark Finning Prohibition Act of 2000. **Washington state** and **Oregon** enact bans on the shark fin trade; similar legislation moves forward in **California** – the largest market for shark fins outside Asia. The Monterey Bay Aquarium is a lead sponsor of the legislation.

Updated August 17, 2011

[**Back to Index**](#)

Monterey Bay Aquarium Open Sea Exhibit Species List & Comparative Sizes

Pacific bluefin tuna: Range from 2 feet to 3 ½ feet, and 40 to 110 pounds.

Yellowfin tuna: Range from 1 foot to 3 feet, and 10 to 30 pounds.

Pacific barracuda: 3 feet; range from 8 to 12 pounds.

Pacific bonito: Range from 18 to 24 inches, and 8 to 12 pounds.

Pelagic stingrays: Range from 2 to 3 feet (disk width) and 60 to 80 pounds.

Scalloped hammerhead sharks: Range from 5 feet 1 inches to 6 feet 9 inches, up to 120 pounds.

Pacific sardines: 6 inches; 17,000 sardines on exhibit

Ocean sunfish: 6 feet; 350 pounds

Green sea turtles: 5 feet; 300 pounds

Mahi mahi (dolphinfish): Range from 4 to 5 feet, and 25 to 40 pounds.

Pilotfish: 8 inches to 12 inches; 1 pound.

Updated August 24, 2011

[Back to Index](#)