THE MAGAZINE for YOUNG ANG ERS and CONSERVATIONISTS

RISING

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SHARK

MAIS F

Chris Fisc

PLUS COOL STUFF & ACTIVITIES...

What is it?



The largest marine conservation group of its kind, Coastal Conservation Association (CCA) is a non-profit organization made up of 17 coastal state chapters. CCA has been active in almost every national fisheries debate for decades and has been a driving force in state and federal fisheries management issues. With your continued support, CCA will continue to battle for the health and longevity of our coastal fisheries and for recreational anglers' interests in them.

#### Editor and Designer Heather Peterek

Consulting Editors Pat Murray Ted Venker



#### **Chris Fischer**

This guy is on a mission - armed with a great team and all the right tools.

### What Needs to be Done?

Fischer has three key issues that need to be addressed so our world's sharks will live on

> **Shark Quiz** est your shark knowledge skills with a fun guiz.

## Cool Stuff to Try A fun activity to do with friends or family, and a great read.

#### **A Red Menace!**

Learn about red tide, a naturally occuring microscopic organism that is wreaking havoc in certain waters.

# Activity Time Test your skills with these fun challenges.

#### **Kids Fishin'** (ids from all over the US show off their trophies.

ON THE COVER: Expedition Leader and Vessel Owner, Chris Fischer stands aboard the MV Ocean. Preparations for expeditions begin months in advance and the crew work around the clock. Their endurance is tested through early mornings, late night watches and constant problem solving. Their determination and focus helps them to accomplish hands-on unprecedented research

rabbing vessel h Radar, GPS, Tides and Currents ish Finder, Depth Sounde

well-known face in television and fishing conservation groups, Chris Fischer is a lifelong adventurer who has become a respected global research mission leader and ocean supporter. Over the past four years, he has led teams of top scientists and anglers as the host of Shark Men, a National Geographic television series. Shark Men combines science and fishing for a neverbefore-seen way to study great whites. The Shark Men have made their mark with their unique research methods as they catch, tag, and release massive great white sharks in the wild.

Their main goal on these expeditions is to understand the mystery of - where are great whites breeding, where are they feeding and where are they giving birth, because that's when they need to be protected.

Speeding at over 25 miles an hour, weighing nearly 5,000 pounds and armed with over 300 razor-sharp teeth, just how do you capture a great white shark in order to study them? With an elevator, of course. Chris Fischer and his team set out on these missions aboard a 126-foot retired Bering Sea crabbing vessel, named MV Ocean. They transformed its on-board boat lift into the world's first shark elevator. Originally the elevator was used to lift a power yacht on and off the MV Ocean. It is able to lift up to 74,000 pounds and has since been modified with huge railings to haul the enormous great whites from the water for study. This method is a breakthrough in the study of great white sharks.



Once on the lifted platform, the crew immediately puts a hose pumping fresh seawater into the shark's mouth creating a continuous flow over its gills, keeping it safe and comfortable. Then Fischer and crew take blood samples, measure the shark, and attach a tracking antenna to the fish's dorsal fin. These tracking devices give an exact location for the shark each time its dorsal fin is out of the water and a satellite is overhead. And no need to worry about the tracking devices hurting the sharks, as they do not have the same sensitivity to pain as humans. The sharks do not even react when the tags are attached to their fins. The antennas can track a shark for as long as six years and provide very useful information on where the sharks travel to, where they are mating, and where they are giving birth.

With the enormous amount of work put in by Fischer and his team, they are proud to say they have gathered more information about great white sharks than anyone ever before. With every mission, the world's oceans are one step closer to a brighter future.

"I'm not scared dealing with 5,000-pound sharks," says Fischer, "I'm scared of not moving fast enough to protect these apex predators to ensure robust and healthy seas for our children."

# Fischersees three key problems in the way of saving the ocean's largest predator...

Shark fin so seen as a prestigiou meal in some

## the way people think about sharks

needs to change. Sharks should be seen as the fundamental balance keepers of a delicate environment rather than demons.

Movies and television have cast the great white shark as a ferocious predator intent on finding yet another swimmer to feast on. However, this shark has no taste for human flesh whatsoever. If a great white does attack a human, it's confusing it for food.

Many are afraid of sharks because of the "fear of the unknown." As we learn more about where they move and what they are doing in a given area, it allows us to make sense of their behaviors and eliminate fear.

Sharks are absolutely necessary to the balance of the world's oceans. They are found everywhere, they keep many species from becoming over populated by eating them and keeping numbers in check, and they are the cleaners of the ocean. Third,

other cultures need to get on board with shark conservation. In some Asian cultures it is seen as prestigious to eat "shark fin soup." While it is understandable that it is part of their culture, isn't the balance of the world's oceans more important?

Between 40 and 100 million sharks are killed each year by the cruel practice of shark finning. Shark finning is when hooked sharks are hauled onto boats and their fins are sliced off while they are still alive. These helpless animals are often then tossed back into the ocean where they sink towards the bottom and die an agonizing death. The removed fins are used in the creation of some traditional Chinese medicines as well as in recipes such as shark fin soup.

"Imagine if people were cutting the wings off of birds, and then let them go. People would walk through the park and see birds rolling around on the ground in agony. That's exactly what's going on at the bottom of the ocean, but with sharks,' says Fischer.

Sharks differ from other fish in that they do not lay thousands or millions of eggs. Many sharks take up to fifteen years to reach adulthood and then produce only one shark pup per year. Such a slow reproduction rate means that their populations may never recover from the damage already caused.

before. We know very little about the lifecycle of sharks. Scientists and anglers need to work together to push forward in learning more about these fish and they need to do it faster than ever before. The only way to get to the bottom of these scientific mysteries

is through blood and DNA samples. Because of the unique way in which Fischer and his team are able to lift the sharks out of the water, the scientists on board are able to safely gather blood samples every time they catch a shark.

"By giving the science team access to live specimens, scientists are able to answer questions about the sharks that could never be answered before," said Fischer.

The blood and DNA samples are not only used to advance science, but they are used to affect the laws that protect sharks. Fischer and his team work with decision-makers in governments around the world to create a fair, science-based approach to rebuild and keep our marine resources.

Fischer adds, "The ocean as we know it will collapse without sharks, and if we don't do something reasonably soon, the balance of our oceans will be in danger and we don't really understand what that means for its future "

Drawing blood from a huge great white is no easy task! **CCA:** How did you come up with the idea of "Shark Men?"

SHARK MAN

**Fischer:** My team and I were tagging black marlin for a researcher in Panama and he also happened to be a great white shark scientist. He asked us if we thought we could lift up a great white shark with the lift on the side of MV Ocean because he needed to attach a tracking device to it's dorsal fin. I told him that I thought we could and that I would pay for it because I believed in the cause and thought it would be a great contribution to the ocean.

I funded the research for two years. Because I could no longer afford to support it all, we were ready to sell the MV Ocean and everything after our second trip to get out the last tracking devices on sharks. I had the idea to try and make the first episode of ['Shark Men"], and gave myself 90 more days after the trip to get it done or else. Fortunately, National Geographic Channel liked what we were doing and at the very last moment, came in, purchased the show, and that allowed us to continue on supporting more science, using TV to spread global awareness, and leveraging our on camera gigs to affect ocean policy.

**DO YOU HAVE A QUESTION FOR CHRIS FISCHER?** Send in your questions and if chosen, he will answer them in this ongoing Q & A section. PLUS, If your question is selected, you will receive some cool Ocearch gear!

\* Send questions to hpeterek@joincca.org.

# SIER POOR

# **TRUE or FALSE?**

8)



2) Sharks have no bones.

- **3)** Sharks sink when they stop swimming.
- **4)** Sharks skin is soft like human skin.
- 5) Sharks have large litters and give birth many times a year.
- 6) Sharks never lose their teeth.
- 7 Sharks can live in fresh water.

9) No shark is smaller than 1- foot long.

Sharks are cleaners of

the ocean.

- **10)** Sharks don't really serve any purpose in our oceans.
- **11)** More people are killed by bee stings than shark attacks.
- **12)** Sharks are at the top of the food chain.
- **13)** Sharks aren't fish.
- **14)** 100 million sharks are killed each year from shark finning.

nswers on page 1

four steps to get you started!

Here are

Research and find a beach where shark teeth are found and then go to that beach.

> Once you finish searching, lay out all of your findings on a flat surface. Inspect all pieces carefully to see if one may be a shark's tooth or if it's just a piece of a shell.

shark life



this exciting true adventure and informative guide to the sea, master storyteller Peter Benchley takes his experiences from more than 40 years of diving to bring us face to face with the sharks and other marine animals he and his family have encountered, almost always on purpose—but sometimes by accident. Peter sets the record straight about the many types of sharks, the behavior of sharks and other sea creatures we fear, the odds against an attack, and how to improve them even further. He also teaches us how to swim safely in the ocean by reading the tides and currents and respecting all the inhabitants. Here are the lessons Peter has learned, the mistakes he has made, the danger he has faced—and the spectacular sights he has seen in the world's largest environment. The book also includes 16 pages of black-and-white photographs.

find the 10 shark

teeth hidden in

# Try This Activity!

During the lowest part of the tide possible, look for areas where dark sand has been deposited. Also look in areas where teeth may be trapped such as washouts, around rocks or large debris, and other similar places. Scoop sand up from these areas, run it through your hands or sifter and let sand fall through separating larger pieces of material from grains of sand. Keep your eye out for dark triangular shapes.

> Put your teeth in some sort of jar and use an identifier guide to figure out what type of shark it comes from.



**Red Tide!** No, this doesn't refer to something you see after a shark attack, this is a pretty common threat to the health of our marine life...

#### What Harm Does It cause?

When Karenia brevis blooms into red tide, it depletes levels of oxygen in the water and also produces a harmful neurotoxin called brevetoxin. That combination can be deadly for fish and other marine animals, and cause illness in people.

If the outbreak isn't too large, more active species like red drum, seatrout and mackerel can swim out of the affected areas. But bait and smaller fish are often trapped.

The latest Texas red tide killed more than four and half million fish. Striped mullet, Gulf menhaden and scaled sardines were most of the fish that were killed, although there were reports of dead game fish as well.

The tasteless and odorless toxin also concentrates in the flesh of shellfish, such as ovsters and mussels. If eaten, contaminated oysters can cause severe allergic reactions in humans. Eventually, after the red tide has faded and the oysters are allowed enough time to filter clean water, the flesh is cleansed.

Brevetoxin concentrates in the guts of fish, however, so the filets (the part you eat) of those caught in suspected red tide zones are safe to eat.

mussels, or scalle

#### WHERE CAN I FIND IT?



What is red tide?

Red tide is a naturally occurring, higher-than-normal concentration of the microscopic algae Karenia brevis. This organism produces a toxin that affects the central nervous system of fish so that they are paralyzed and cannot breathe. As a result, red tide blooms often result in dead fish washing up on Gulf beaches. When red tide algae reproduce in dense concentrations or "blooms," they are visible as discolored patches of ocean water, often reddish in color

Karenia brevis (A.K.A red.tidir) off the coast of Texas

The blooms mainly come up along Gulf beaches, and less frequently into bays and estuaries.

Yearly blooms occur off Florida's coast. Currents can then push it down to the Keys and into the Atlantic Ocean, where red tide has been recorded as far as North Carolina.

Most recently, a massive bloom began in Texas in September 2011 and stayed until the end of January 2012. It stretched from the lower part of Galveston Bay down into Mexican waters.

CONCEPT OW/



DO NOT EAT clams, oyster



around wind- or ide-protected areas ke these jetties in Port Mansfield.

#### an i Help?

Anglers are very important to getting the word out! f you come across large numbers of dead fish or eveidence of red tide, have an adult call one of these state agencies to file a report. Alabama Emergency Management Agency: 800-843-0699. Florida Wildlife Research Institute: 800-955-8771, Mississippi Dept. of Environmental Qu ality: 888-786-0661 or Texas Parks and Wildlife Dept.: 512-389-4848.

<u>activity men</u>

#### WORD SEARCH

#### Find the words listed below...

ANIMALS	FEAR	LARGE
AQUARIUM	FINS	NURSE
AQUATIC	FISH	OCEANS
ATTACKS	FLORIDA	PLANKTON
BEACH	FOOD	PREDATOR
BITE	FRESHWATER	REEF
BLOOD	GILLS	ROWS OF TEETH
BULL	GREAT WHITE	SALTWATER
CAGE	HABITAT	SEAWATER
CARNIVOROUS	HAMMERHEAD	SHARK ATTACK
CARTILAGE	HUNTER	SNOUT
CHONDRICHTHYES	INTELLIGENT	SPIRACLE
CONSERVATION	JAWS	SWIMMING
DANGEROUS	KILL	TAIL
VERTEBRATE	TOOTH	TIGER SHARK

MAZE

JAWSORRINTELLIGENTIG CLNUDXEEBETARBETREVE TTHOAXXTTCITAUQAGACI CBKREIPZAAHABITATTCK EJOOHNLSPWWPREDATORH IBOVRFANOITAVRESNOCP DJMIEQNOTJALETIBWTGH OUZNMYKUAQEZASOSRHUT OSDRMLTTICROVSOEUNRH FPKAADOOLBGEJFARTYDC AERCHONDRICHTHYESEUZ FRAQUARIUMDEWQRTGQSK LSHRUGDANGEROUSASRXI OGSHARKATTACKPLWSYAL RXREBEACHNVYIIIHBULL IWERTSINUUFRTMUSQXWH DYGILLSUPIARMOCEANSD ANIMALSRNCAIFEERGINP ATTACKSSLCNQSOYFFAIQ JWCBLNKEUGBSLDXJJSCV

#### ANSWERS TO QUIZ ON PAGE 8

- 1. FALSE Sharks do not normally eat people
- TRUE Sharks skeletons are made of cartiage, like the flexible material in our early and noses.
- 3 TRUE Sharks any when they stop swimming because they lack a swim bladder that bony fun have.
- -4 FALSE Shark skin is covered with denticles that give the skin a rough sandpapery texture.
- 5 FAUSE: Many sharks take up to tiffeen years to reach adulthood and then produce only one shark pup per year
- 6. FALSE Every time a shark often some teeth are lost. New ones move forward to replace them
- 7 TRUE Several kinds of snarks, especially bull sharks, spend long periods in fresh water
- 8 TRUE They keep many species from becoming over populated by eating them and keeping numbers in check.
- 9 FALSE The dwarf sham is as small all your hand.
- 10 FALSE Sharks are absolutely necessary to the balance of the world's oceans.
- TRUE + You are about fifty times more likely to be killed by a bee sting than by a shark.
- 12. TRUE Like numans, sharks are at the top of the food chain
- 13 FALSE Sharks are fish, but not bony fishes: Sharks are Earniaginous fish
- 14 TRUE The crue practice of shark timing must be stopped or we may not have sharks in our oceans 30 years from now



Start here.

Whew! You made it!

Bryce Brazzel, 5 caught and released this hammerhead on the Galveston North Jetty, Texas

> Jack Scoggins, 10, caught this 28-inch giant in Bathin Bay, Riviera, Texas

> > Paul Loup, 7, with a redfish caught near Catfish Lake, Golden Meadow, Louisiana

Do you have a great catch that could make our Kids Fishin' Page?

Send us your favorite photo and stories and you could be featured in the next issue of Rising Tide.

Include your mailing address in the email and you will recieve a CCA sticker just for sending it in!

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\* Email photos and info to hpeterek@joincca.org

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We hope that with what you learn, you will grow up just as determined as we are to help protect one of our most valuable natural resources: the Coastal area of our United States.