



For three weeks in South Africa, eight students and two teachers from South Broward High got a rare up-close view of great white sharks at work.

**SIMON'S TOWN, South Africa** -- It was not a good day to be a Cape fur seal in South Africa's False Bay -- especially if you got separated from your companions. One small seal in particular found itself in mortal peril, grey hounding toward home base, a rocky atoll called Seal Island.

"Go, baby, go!" murmured South Broward High School junior Rachel Hall from the deck of the Ocean Warrior.

Hall had watched anxiously as the seal twice escaped death returning from a fishing trip to the Indian Ocean. But now its luck was about to run out.

About 400 yards off the island, the little animal rocketed into the air, followed by its would-be killer, a 14-foot great white shark that cleared the surface despite its massive girth. The shark caught the hapless seal in mid-air and crashed back down with its prey clamped between its jaws. Then it disappeared.

"We have a kill," shark researcher Neil Hammerschlag dictated into a small tape recorder. "Time: 8:20 a.m., sector four."

The Ocean Warrior's captain, Chris Fallows, shook his head in sympathy for the unlucky seal.

"Poor little guy. He did really well," Fallows said.

That scene, or some version of it, was repeated 20 times that day last month, giving Hammerschlag, eight South Broward marine magnet students and their two teachers a rare glimpse of real-time shark predation in the wild. Great whites are the only sharks that regularly consume marine mammals, and False Bay, near Cape Town, is one of the few places in the world where people can observe these apex predators catching dinner.

"You have seen more than most people see who study great white sharks for a lifetime," Hammerschlag told the teens. "I know in 50 years' time, you're going to be telling people stories they're going to be drooling over."



#### HANDS-ON LEARNING

In addition to accumulating stories and photos, the students were contributing to Hammerschlag's scientific research into white shark predatory success. Hammerschlag, 25, received his master's degree recently from Nova Southeastern University Oceanographic Center. He begins work on his doctoral degree this fall at the University of Miami's Pew Institute for Ocean Science. From May through August, he serves as field coordinator for the ReefQuest Center for Shark Research's expeditions in South Africa.

Hammerschlag trained the students to gather data -- such as time and place of shark predation; weather; size and number of seals; the direction the seals were headed when attacked -- and to sketch identifying characteristics of sharks they observed.

The students -- all top performers in their classes -- had been hand-picked for the assignment by South Broward marine magnet coordinator Ted Davis, assistant coordinator Debbi Hixon and teacher Sharon Thomas. Their expenses for three weeks' work in South Africa were covered by a grant from the nonprofit foundation American Institute of Marine Studies.

They are the first high school students chosen to participate in a ReefQuest expedition. They don't take the opportunity lightly.

"The whole first day, I couldn't believe I was here. It didn't seem real. It was too good to be true," said Cody Ward, 15. Rather than being grossed out by watching seals being devoured by great white sharks, the students took nature's raw display in stride.

"I was like, 'That poor seal,'" said Cassy Meyers, 17. "But it was really neat watching the chase and rooting for the seal. But the sharks have gotta eat, too."

#### GREAT UNKNOWN

Although great white sharks have spawned much myth and lore -- particularly in the 1970s smash hit movie *Jaws* -- Hammerschlag says little is known about them. Ranging worldwide, growing to a length of more than 20 feet and a weight of

more than two tons, they're blamed for killing and injuring more people than any other shark species. But their life history and migration patterns remain a mystery, and no one has witnessed reproduction.

White shark populations are believed to be declining because of poaching by commercial fishing vessels. In 1991, South Africa became the first country to put great whites on its no-take list; the U.S. followed suit in 1997.

False Bay is the ideal living laboratory for studying great white sharks, Hammerschlag says, because the study area is relatively small -- encompassing only a few square nautical miles around Seal Island -- and because the season is short, roughly mid-May through August, which is South Africa's winter.

The False Bay seal buffet was discovered about nine years ago by Fallows and co-captain Rob Lawrence of African Shark Eco-Chararters in Cape Town. They towed a life jacket behind a seven-foot inflatable boat and watched as a huge shark breached and ate it. Numerous television documentaries about the phenomenon followed, including *Air Jaws* on the Discovery Channel.

Between 1997 and 2003, Fallows, Lawrence, Hammerschlag and ReefQuest founder Aidan Martin documented 2,088 great white shark attacks on seals in False Bay.

"Their success rate is 47 percent, which is extremely high if you consider an African lion's is 12 percent," Hammerschlag said. "I wouldn't want to be a seal."

#### CLOSE ENCOUNTERS

Besides recording predation, researchers and high school students identified and studied individual sharks by baiting them close to the boat with yellowfin tuna carcasses. A couple of sharks, nicknamed "Scratchy" and "Wonky," bit the hull and engines of the Ocean Warrior and its sister boat, the Blue Pointer. They soaked the students with their boat side thrashing as they tried to eat the bait, but stuck around long enough to be filmed with underwater cameras.

"Wonky" bit one of the cameras hard enough to lose a tooth, but failed to break the camera. Freeze-framing the video enabled Daniell Washington, an incoming UM freshman, to make detailed drawings of the animal's identifying marks.

Washington, 17, said she felt like she got to know "Wonky" and other sharks in False Bay as individuals. "They're very polite and cordial," she said. "I had the stereotype that they are mindless. But they have personalities, and there's a social order."

Added Ward: "Some, when they come in, they have the same pattern over and over. It's odd that such a big animal gets spooked."

Student Scott Stimpson developed such a sharp eye for shark taxonomy and behavior while in South Africa that he made an impressive discovery one day while beachcombing -- a rare, 11-inch puffadder shyshark floating dead in the surf. Stimpson brought it to Martin for identification.

"Congratulations," Martin told Stimpson. "It's an endangered species found only in South Africa. Its range is supposed to be 150 kilometers west of here." Martin said he planned to produce a scientific paper on the discovery.

#### WEALTH OF DATA

Hammerschlag said he was thrilled with the quality of data collection done by the students. "You guys were amazing," he told them. "You got the data quickly. I don't think it could have gone better. You're not getting basic shark knowledge; you're getting intensive, new information."

Meyers said the South Africa experience completely reversed her perceptions of great white sharks.

"I had an almost-phobia about them," she said. "I didn't know a lot about them. But I'm not afraid of them anymore. If you understand something, it dispels fears you had before. It's hard to fear something when you know more about it. They're not monsters. They're amazing creatures."

Several students said they'd like to take the next step in up-close shark observation: getting into a shark cage underwater. "It probably won't happen because of Mrs. Hixon," said Nicole Compo, 18. "But it would be amazing to see them up close. Even though you can see them better from the boat, I'd do it in a second."



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