

Newsletter



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A Sandtiger Shark ...with Nine Lives?

By Dean Fessler



Shark! People usually swim away as fast as they can whenever they hear that word! However, divers exhibit the exact opposite behavior and usually swim towards sharks in the hopes of an unforgettable encounter or photograph.

During the summer months, certain shipwrecks off North Carolina offer divers a unique opportunity to dive with sharks without baiting or chumming. The wrecks in this area are known for aggregations of sandtiger sharks (*Carcharias taurus*).

The sandtiger, also referred to as the gray nurse, or the raggedtooth shark due to its protruding needle like teeth,

is actually a true marvel of nature! In fact, for this species of shark, surviving until the birth is an example of 'survival of the fittest'. In utero, sandtiger sharks feed upon their smaller siblings and 'milk capsules' (unfertilized eggs). In South African waters and elsewhere, gravid females gather on reefs late in their pregnancy and cease to feed, their teeth often obscured with growth of green algae or seaweed. The mother gives birth to twins – a single pup from each of her two uteri. Therefore, encountering one of the sharks is indeed remarkable given their life history, and diving with a gathering of these sharks is an unforgettable encounter indeed!



Captain Mike Gerken

May 31, 2015: It was the last day of a four-day annual shark shootout organized by Captain Mike Gerken of Evolution Underwater Imaging. The group was diving with Olympus Diving out of Morehead City North Carolina on the wreck of the tanker *Atlas*, torpedoed and sunk by the German submarine U-552 on April 9, 1942. Her remains lie today in ~90 feet of water. The conditions were excellent and the sharks were present in numbers. Many of the divers were already back on the boat, excited about their photos and "talk'n about shark'n".

Mike was still in the water, filming the shipwreck and sharks for his documentary *'Wreck Denizens of North Carolina*. He had noticed that most of the sharks were females bearing fresh mating scars, but one shark appeared to be in distress and was swimming

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unusually close to individual divers rather than swimming away from them. Why?

The reason became painfully clear as Mike approached the shark. "Her swimming movements were labored," Mike said. "She looked weak and thin, like she hadn't eaten for a while." Then Mike saw the 16-ounce fishing jig and hook embedded in the side of her mouth, making feeding difficult if not impossible.

Mike realized the shark's situation was dire and believed he was witnessing a shark approaching the scuba divers for assistance. He decided to accept the shark's plea for help. Mike came close to removing the jig on his first try, but was unable to get a firm grasp on it. On his second attempt, he placed one hand upon the shark's back while placing his other gently underneath the shark. "The shark was not happy at that moment but struggled minimally," Mike reported. With both arms wrapped firmly around her body he was able to finally to reach the lure and remove it from the side of her jaw.

Mike released the shark and watched as she swam away in a less labored, more normal fashion. He knew that he had enabled the shark to survive and hoped that soon she would be enjoying an overdue meal on her way to recovery!

Dolphins, turtles, even whale sharks have been observed seeking assistance from humans, but this may be a first time observation of a sandtiger shark in open ocean conditions seeking out human assistance! It is often said the cats have nine lives. Well, I know of at least one sandtiger that got another chance at life thanks to Captain Mike Gerken and speaking for that sandtiger as well as the Shark Research Institute

THANK YOU Captain Mike!

Mike Gerken is a professional underwater photographer, documentary film maker, fine art print maker, writer, publisher and boat captain. You can learn more about him at www.evolutionunderwater.com

Shark-Spotting Drone

In Australia and South Africa shark spotters are stationed on the tops of cliffs along populated beaches. When a large shark is observed moving close to shore, the spotter radios lifeguards on the beach. Spotter planes that fly above populated beaches searching for sharks close to shore are also used in many locations around the world to alert lifeguards when a shark ventures close to a beach.

In May, a new method of detecting sharks was added to the lifeguards' arsenal when a drone started scanning the waters off some California beaches. The drone, a \$1,400 Phantom 3 model from DJI has a range of about 1.2 miles and can record about 20 minutes of video. Its camera is a lifeguard's eye-in-the sky as it sends back real-time images of sharks near the beaches. "It works great," said Chief Joe Bailey, a lifeguard at Seal Beach in Orange County. "It flies up about 100 feet, looks down a wide area, and when we see the shadows, we'll go down and focus in on them." "It's been a great tool to identify if we have sharks in the water," Bailey said.



At Seal Beach, within 10 minutes of launching the drone, lifeguards spotted 10 juvenile white sharks, each five to six feet in length, just offshore. Although the sharks didn't pose a threat to humans, lifeguards kept an eye on them. If adult white sharks came close to the beach, images from the drone would alert lifeguards to get people out of the water. At Surfside, no swimmers were in the sea when the drone recorded a juvenile white shark in waist-deep water.

Thank You to Our Supporters!

We are very grateful for the continued support of:

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- Joyce Van den berg

And Our Members!

In December 2014, US carrier American Airlines was listed as the carrier for a controversial shipment of shark fins from Costa Rica to Hong Kong. SRI members, along with those from other US and Costa Rican conservation organizations, sent hundreds of letters asking the carrier to join other international airlines and publicly commit to a ban on such shipments. As of March 4, 2015, American Airlines stopped all commercial shipments of shark fins.

Fin-Ished!, created for SRI by **Hillary Palmer**, took second place in the sculpture division of *Art for the Oceans*. The exhibit consisting of 15 ceramic shark fins, each a gravestone for 5 million sharks slaughtered for their fins, was on display from June 5 to 21 at the Honolulu Museum of Art.

Zac Babil's Bar Mitzvah Charity Project: Zac's dad created a website for his son's project and he is collecting donations for SRI's shark conservation efforts. Thank you Zac and Mr. Babil!

Special thanks to Lewis Levine, MD and his son, Chris, for their very generous donations of a MacBook and iPad to our Outreach Program.

Special thanks to Jenkinson's Aquarium, and the more than 1,000 visitors who signed our '*Ban the Shark Fin Trade*' notes. The notes – with visitors' sometimes-feisty but spot-on comments – are given to legislators, putting them on notice that it is time to step up & listen to their constituents.

Calendar of Events

July 5, 2015: *The 7th Annual Shark Celebrity Auction*, an online auction. To enter the auction use the link on www.sharks.org or the link on our Facebook page.

July 8-19, 2015: *JBay Open*, sponsored by the World Surf League. Venue: South Africa. <https://www.facebook.com/WSL>

July 11, 2015: *Fossil Shark Tooth Hunt #1*. Join SRI and the American Littoral Society from 9:30 am to noon on Saturday July 11, 2015. Venue: Middletown, NJ. Wade through Big Brook and sift for ancient shark's teeth, squid pens, and fossilized mollusks. Be prepared to get wet and muddy, but the prizes are well worth it. We'll bring the necessary gear. Great for families! \$5 per person, free for children, SRI members and their families. Contact SRI-Headquarters at **(609) 921-3522** to sign up.

July 11 & 12, 2015: *Shark Con*. Venue: Florida Fair Grounds, Tampa. Like Comic-con, but focuses on sharks instead of comic books. <http://www.shark-con.com>

July 15-19, 2015: *American Elasmobranch Society Meeting*. Venue: Reno, Nevada. <http://elasmobranch.org>

July 30, 2015: *Fossil Shark Tooth Hunt #2*, Venue: Middletown, NJ. Thursday evening 5:30 pm). \$5 per person, free for children, SRI members and their families. Contact SRI-Headquarters at **(609) 921-3522** to sign up.

August 15, 2015: *Fossil Shark Tooth Hunt #3*, Venue: Middletown, NJ. Saturday 9:30 am to noon. \$5 per person, free for children, SRI members and their families. Contact SRI-Headquarters at **(609) 921-3522** to sign up.

September 10–12, 2015: *Surf Expo*. Venue: Orange County Convention Center, South Hall, Orlando, Florida. This show is a lot of fun and a chance to reach out to surfers. 2,500 booths, 7,000 store fronts, and 26,000 attendees. Open only to the trade. www.surfexpo.com

November 4-7, 2015, *DEMA Show* (Dive Equipment Marketing Association). Venue: South Halls, Orange County Convention Center, Orlando, Florida. Open only to the trade but sharks & shark conservation are serious topics here. www.demashow.org

November 8-15, 2015, *SRI Expedition to Cuba*. Led by Dave Grant & Dr. Jennifer Schmidt. Cost: \$3,200 per diver. Limited spaces available. To reserve a space, contact SRI Headquarters at **(609) 921-3522**.



September 24 to October 5, 2016, *The 17th meeting of the Convention on International Trade in Endangered Species*

Venue: Johannesburg, South Africa.

CITES decisions are the only enforceable international regulations providing protection to plants and animals. Our scientists helped win CITES protections for the whale shark and basking shark (2002), white shark (2004), oceanic whitetip shark, scalloped, smooth and great hammerhead shark, porbeagle shark and all species of manta rays (2013). SRI has long been recognized by the United Nations and is one of a handful of organizations allowed to attend CITES CoPs.



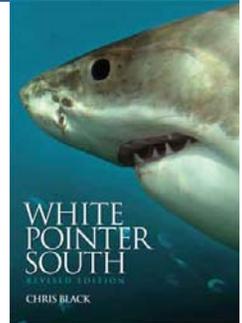
SRI Deputy Director, Dave Grant, with Juan Valdez, National Geographic's chief cartographer with their newest map of Cuba.

Members Bookshelf

White Pointer South by Chris Black.

This is — hands down — the finest book on white sharks published to date! Superbly researched, elegantly written and lavishly illustrated, it traces public attitudes to sharks over the past century including catches of sharks, shark attacks, shark behavior, current research and much more. Expensive (AU\$70 plus shipping from Tasmania). Although the focus is on Tasmania, if there is one book on white sharks that should be in every university library, every school and every SRI members' library, it is this book!

http://whitepointersouth.com/pdf/WhitePointerSouth2010_Ordering.pdf



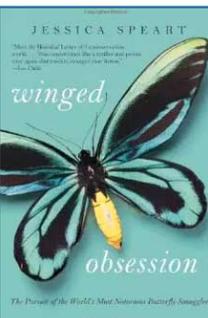
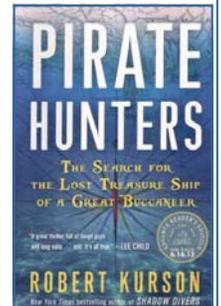
Beyond Words: What Animals Think and Feel by Carl Safina.

Available from Amazon.com on July 14, \$23.03 hardcover, \$16.99 Kindle Edition

Beyond Words brings forth powerful and illuminating insights into the unique personalities of animals through extraordinary stories of animal joy, grief, jealousy, anger, and love. The similarity between human and nonhuman consciousness, self-awareness, and empathy calls us to re-evaluate how we interact with animals. Wise, passionate, and eye-opening at every turn, *Beyond Words* is ultimately a graceful examination of humanity's place in the world.

Pirate Hunters: Treasure, Obsession, and the Search for a Legendary Pirate Ship by Robert Kurson.

Available from Amazon.com \$28 hardcover, \$11.84 Kindle edition. The true story of John Chatterton and John Mattera's quest to find the *Golden Fleece*, captained by Joseph Bannister, one of the most infamous pirates in the history of the Caribbean. "This is a fantastic book, an utterly engrossing and satisfying read. This a real-life *Treasure Island* ... A story for the Ages," *Douglas Preston, NY Times*.



Winged Obsession: Pursuit of the World's Most Notorious Butterfly Smuggler, by Jessica Speart.

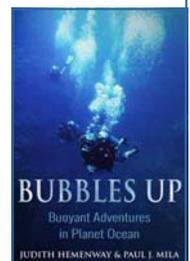
Hardcover \$10.40, paperback \$12.92, Kindle edition \$11.60. Speart's novels center on the illegal wildlife trade and this, her latest, involves one of the world's most beautiful endangered species. Butterflies are as lucrative as gorillas, pandas, and rhinos on the black market. And in this cutthroat \$200 million business, no one made more money than — or posed as great an ecological danger as — Yoshi Kojima, the kingpin of butterfly smugglers. But the story doesn't end there. Working under-cover to research this book, Jessica Speart befriended Kojima as well. What she didn't know was that this cagey smuggler was planning to turn the tables and use her as a patsy for continuing his illegal butterfly trade. *Winged*

Obsession has just been optioned for a movie.

Bubbles Up: Buoyant Adventures in Planet Ocean by Paul Mila & Judith Hemenway.

Print edition \$14.95 from Amazon.com. \$2.99 Kindle or free if you also buy the print edition from Amazon.com.

Join the authors in the South Pacific to meet 30-ton whales and explore a WWII shipwreck, dive with sharks and eagle rays in the Caribbean. Whether you are a diver, snorkeler or simply an ocean lover, you will enjoy these fascinating stories.



Sevengill: The Shark and Me, by Don C. Reed. This isn't a new book, it was published in 1986. It chronicles the author's work at San Francisco's Steinhart Aquarium and contains a lot of wisdom about sharks. Our thanks to Maris Kazmers for introducing this gem to our library. It is readily available on Amazon.

SHARK CELEBRITY AUCTION

You've seen them on Discovery Channel's Shark Week, Animal Planet and the BBC, read their books, and now you can meet them in person for lunch or dinner and get to know them personally!

The 7th Annual Shark Celebrity Auction opens July 5th and will run for 10 days. There will be link on www.sharks.org directly into the auction. This is an opportunity to meet these amazing individuals, and opportunity to meet one-on-one with an authority in the field and "talk shark". And all winning bids are tax-deductible charitable donations from 2015 US federal income taxes.

Celebrities in the auction include Explorers Nancy McGee and Ken Corben, Emmy-Award-winning wildlife cinematographers Marty Snyderman; Andy Brandy Casagrande; Jeff Kurr; and Captain Maureen Langevin. Shark photographers Paul Spielvogel; Lynn Funkhouser; Sandra Critelli; and Amos Nachoum who has twice won the most prestigious prize for any wildlife photographer, the BBC Wildlife Photographer of the Year.

This is an opportunity to meet Michael Aw, underwater photographer, writer, and publisher of *Ocean Geographic*; and Richard Stewart publisher of *Ocean Realm Journal*.

In the auction are Dr. Carl Safina, author of seven books on conservation and host of the PBS television series *Saving the Ocean*; Washington Post journalist and author of *Demon Fish*, Juliet Eilperin; Jupp Kerckerinck, CEO of SRI and author of *Sharks: A Love Story*; Paul Mila author of *Bubbles Up*, and Jessica Speart (her latest book, *Winged Obsession* has just been optioned for a movie); shark sculptor Victor Douieb; Painter of the Blue, Pascal Lecocq; and cartoonist Phil Watson, creator of *Shaaark!* Scientists include Dr. Gordon Hubbell, the world's leading shark paleontologist; molecular biologist Dr. Jennifer V. Schmidt, Ph.D. who has uncovered some of the mysteries of whale sharks; anthropologist Patrick Nason of Columbia University.

Other experts include Richard Fernicola, M.D. author of *Twelve Days of Terror*, the definitive study of the shark attacks of 1916 along the coast of New Jersey that were the inspiration for *Jaws*; Ralph Collier, author of *Shark Attacks of the 20th Century* and director of the Global Shark Accident File; Clay Creswell, case investigator of shark incidents in the Carolinas; marine biologist Scott Curatolo-Wagemann, who was also bitten by a shark; and Al Brenneka founder of Shark Attack Survivors who lost his arm to a shark when he was only 16 and has since become a leading advocate for sharks.

Field researchers are also auctioned, Jeffrey Gallant (Greenland sharks), shark behaviorist Christina Zenato of UNEXSO, South Africa's Debbie Smith and Chris Fallows of *Air Jaws* fame.

Shark conservationists include Rod Roddenberry of the Roddenberry Foundation and the son of legendary science fiction producer Gene Roddenberry, whose Star Trek series changed the face of television; David McGuire of Sea Stewards; Lesley Rochat of AfriOceans; Charlotte Vick of Mission Blue and Google Ocean, Marie Levine and Dean Fessler of SRI; and field researcher John Marion.

Funds raised by the auction benefit shark research, conservation and outreach programs. This one-of-a-kind auction, created and produced by Carolyn Nickels, SRI Membership Director, is one of the most enjoyable events of the year for both celebrities and bidders alike!



The Magic of Whale Sharks

It is said of whale sharks that they are the Ambassadors of the Sea. These ocean giants, often up to 40 feet in length and wearing a pattern of stripes and polka dots, look like they were designed by Disney Studios. Wild animals, bigger than a school bus, they present absolutely no danger to humans. Although whale sharks' mouths are as wide as a double bed, they feed only on plankton and small fishes. But their docile nature makes them especially vulnerable to poachers. In 1993, SRI began tracking whale sharks in order to target conservation efforts in areas where the sharks were at most risk.



Winston Park Shark Club

In 2005, we began putting some of the whale sharks we'd tagged in our tracking studies up for adoption. These adoptions are not 'generic' shark adoptions, each is for one particular shark. Every guardian receives a personalized certificate with their name, their shark's name and when and where he or she was tagged, and a fact sheet about whale sharks. Guardians are notified when and where their shark is resighted. An adoption is a connection between individuals and a specific whale shark.



Sheeren & Amani

Glenn Terry writes. *"The Shark Club, and the other thousand kids in Winston Park Elementary School are thrilled to be the adoptive parents of whale sharks Curly, Johi, and Christopher. Long may they live!"*

Garage Sale: Amani and Sheeren sold some of their books and toys, using the proceeds to adopt two whale sharks!



Darron and his Mom

Diving with one of these gentle giants is always a special experience. Whale sharks touch people's hearts, those who have not yet met one, and even those who may never get to meet one of these very special creatures. When Gail Noren gave a gift of a whale shark adoption to Darron, a friend's son, his response touched her heart and she asked us to share it with you.

"Some people probably wonder why I was born, why I survived, why I've lived for 30 years never seeing, walking or talking. I don't speak as most people can, but I can communicate. For about eleven thousand days and nights, I've experienced the joy of my mother's voice. Like everyone else, I have dreams, memories and I believe there is purpose to my life. Like most people, I love my family; I love animals; I love feeling the sun on my skin; I love the breeze. I love bedtime stories, surprises and mail. And NOW I LOVE A SHARK! His name is Hakim and although I haven't met Hakim I'm bursting with pride to be his adoptive dad. I think about my shark son as any parent does. What is he doing today? Is he happy? Does he have friends, a mate? Will there be grandsharks? I hope Hakim is safe. My parents know I am well-cared-for and safe. I wish I could be sure about Hakim. I cry to think of someone cutting off his fins and letting him sink to the ocean floor to die a slow and agonizing death. If you agree that it takes a village to raise a child, help me protect my shark son by spreading the word about the evils of shark finning."

From Germany : Jupp Kerckerinck

I've have giving presentations in schools throughout Germany during the last several months and have four more scheduled this coming week. It is very rewarding!

Students take our information about the necessity of protecting sharks, and damage and extent of plastic pollution in the ocean very seriously.



Status of U.S. Shark Fin Bills

US states and territories are continuing to enact legislation closing the huge loophole in the Shark Conservation Act, and banning the sale, trade and possession of shark fins. The US Pacific territories of Guam, American Samoa and the Northern Mariana Islands, banned the trade as have the states of Hawaii, Washington, Oregon, California, Illinois, Massachusetts, New York, Delaware, Maryland and Texas.

Texas is the first Gulf state to ban the trade. Since 2010, the state saw a 240% increase in the fin trade. In 2012, a single Texas Parks and Wildlife Department patrol boat recovered nearly 25 miles of longlines and more than 10 miles of gill net with 6,000 sharks illegally caught by Mexican fishermen and bound for the US market. As of July 1, 2016, the sale, trade, purchase *and transport* of shark fins will be prohibited in the state with violations punishable by a maximum \$2,000 fine or 180 days in jail for a first offense. Licensed shark fishermen may still catch sharks and sell the meat but not their fins. The text of the bill can be read at:

<http://www.legis.state.tx.us/tlodocs/84R/billtext/html/HB01579I.htm>

In Vermont, H.B. 122, sponsored by Reps. James McCullough (D), William Frank (D) and George Till (D), was introduced February 5, 2015, and has been referred to Committee on Fish, Wildlife & Water Resources. The text of the bill can be read at:

<http://legislature.vermont.gov/assets/Documents/2016/Docs/BILLS/H-0122/H-0122%20As%20Introduced.pdf>

In Rhode Island, H5477, sponsored by Reps Serpa, Shekarchi, O'Brien, Kazarian, and McKiernan, was introduced February 12, 2015, and referred to the House Environment and Natural Resources. The text of the bill can be read at: <http://webserver.rilin.state.ri.us/BillText15/HouseText15/H5477.htm>

Even though the state of Nebraska is a landlocked state, there has been a push to ban the shark fin trade. L.B. 921, introduced by Senator Jeremy Nordquist.

Shark finning is illegal in U.S. waters, but some states have exemptions for dogfish, and fins harvested from those sharks may still be sold. Because shark fins are unable to be processed in the US, they are shipped to China or Hong Kong for processing. The majority of the global shark fin trade goes through China and Hong Kong, which receive their supply of fins from at least 80 countries, most of which have lax and ineffective shark finning bans. At present, only 15 of the 125 shark-fishing nations ban or regulate finning. This means fins that are imported and sold in the USA can come from sharks harvested in unsustainable foreign fisheries or finned in the open ocean. Some species of sharks are on the brink of extinction due to the exploitative shark fin industry.

From Norway : Dave Grant

Dave Grant, SRI Deputy Director, is on a research cruise to the Arctic, and reports: "Weather is cold, rainy, breezy, warm, sunny, sleety, overcast - just about every hour."

He sent these images at right from Bergen and Flam, Norway.

"The fish mongers here say they never get shark to sell. 'Nobody fishes for it,' says Dave. Unfortunately, the same is not true for whales.



*"No, we never sell shark,
just whale"*



Minke whale steaks

Caribbean Reef Sharks : *Stealth Behavior*

Ritter, Erich and Raid Amin. 2015. *A Study of Shark Stealth Behavior*, Open Journal of Animal Sciences, 2015, 5, 224-228 . <http://www.scirp.org/journal/ojas> <http://dx.doi.org/10.4236/ojas.2015.52025>

Approaching a human is a complex decision-making process for sharks. This study examines the approach patterns of 201 Caribbean reef sharks in the vicinity of divers, focusing on the diver's body orientation and a shark's distance from the seabed when approaching the diver. A standardized video method was used to record the scenario of divers in midwater and kneeling in the sand while being approached by sharks. Aware that meteorological conditions are known to affect the behavior of sharks, the study was conducted at a single location in which sky conditions, underwater visibility, time of day were similar.

A significant number of the sharks showed a preference to move in from outside the diver's field of vision, indicating the sharks able to detect human body orientation. Approaching from the sea floor reduces the diver's visibility of the approaching shark and reflects a typical stealth behavior. While that could imply that the sharks viewed humans as potential prey, it could also suggest that the sharks viewed the divers as possible predators. Further, it is known that sharks learn during encounters with humans, and their assumptions may shift with subsequent encounters.

Slightly more than 41% of the sharks swam more than a metre off the sea floor while approaching the subject. However, larger sharks remained closer to the bottom than did the smaller sharks.

At this stage it is not possible to determine how sharks interpret divers, and may differ among species and individual sharks.

Sandtiger Sharks : *AUV Examines Habitat Selectivity*

Haulsee D. E., Breece M.W, Miller D.C., Wetherbee B.M., Fox D.A and Oliver M.J. (2015) *Habitat selection of a coastal shark species estimated from an autonomous underwater vehicle* Marine Ecology Progress Series, May 28, Vol. 528: 277–288, 2015 [doi: 10.3354/meps11259](https://doi.org/10.3354/meps11259)

Sandtiger sharks, *Carcharias taurus*, migrate along the East Coast of the USA during the fall to overwintering grounds off North Carolina and as far south as Florida. The authors examined habitat selectivity of migrating sandtiger sharks, along the east coast of the USA by pairing acoustic telemetry with environmental habitat parameters as measured by an autonomous underwater vehicle (AUV). The study found evidence that the sharks were selecting their habitat based on distance to shore, salinity, and colored dissolved organic matter (CDOM), but temperature was not predictive of habitat use. The sharks detected by the AUV were close to shore and significantly associated with lower salinity and higher CDOM waters. The results suggest that the sharks respond to prominent dynamic oceanic features.

Globally, the sandtiger population is declining, and information regarding habitat selectivity in this study region may be applicable in other regions around the world. Expanding upon the methods presented, scientists can begin to not only identify essential habitats for vulnerable species such as sandtigers, but also the environmental characteristics of those habitats. The information can be used to foster the conservation and recovery of sandtigers and other marine species.

The study demonstrates the utility of using AUVs equipped with environmental sensors to measure habitat associations of coastal marine species, and will prove useful for future studies combining observations of marine habitats. In general, it would facilitate improved understanding of essential habitats, interactions with fisheries, and ultimately contribute to the conservation of other threatened marine species.