The whale shark research community has convened every few years, since 2005, in an international forum to communicate new research data, establish and maintain collaborations, and catch up with old friends. The first International Whale Shark Conference (IWSC) was held in Perth, Australia in 2005, where scientists, conservation officers and ecotourism operators met to learn about what was then the very young field of whale shark research. At that conference, it was agreed that each future meeting would occur in another country that hosts whale sharks on their shores. A slightly larger group met again in 2008, on the tiny barrier island of Holbox, Mexico, and in 2012 the 3rd International Whale Shark Conference was held at the Georgia Aquarium in Atlanta, Georgia.

During the summer of 2015, I was contacted by Steffen Bach of Maersk Oil Qatar and the Qatar Whale Shark Research Project. Qatar had been chosen to host the 4th International Whale Shark Conference (IWSC4), and Steffen was the main organizer of that conference. He asked if I would serve as chair of the Scientific Program Committee, to formulate guidelines for research presentations, solicit and review abstracts, and direct the conference presentations. While I knew this task would mean a year of work, I was excited about the opportunity to shape the next phase of whale shark research.

Preparation for a large international conference begins far in advance, and by the fall of 2015 the IWSC4 Scientific Program Committee had been assembled, composed of eminent whale shark researchers from six different countries. The committee issued a call for applications that was sent to shark researchers, conservation scientists and ecotourism representatives worldwide. A fantastic response to that call allowed us to organize a three-day program featuring more than 60 oral presentations and posters. Attendees at IWSC4 represented 20 different countries and/or study sites, and included scientists from several countries that had never before participated in an International Whale Shark Conference. The logistics required to bring so many people to Qatar from so many different countries took months of effort, but with only one or two complications everyone made it safely to Qatar.

The conference kicked off May 16th at the Grand Hyatt Hotel in Doha, Qatar, with recognition paid to the sponsors of the meeting - the Qatar Ministry of the Environment, Maersk Oil Qatar, and the Qatar Whale Shark Research Project (QWSRP). The first two conference speakers, Steffen Bach and David Robinson, represented QWSRP, and they discussed their studies of the large whale shark aggregation that forms in the Arabian Gulf each summer. Remarkably, these sharks are actually attracted by the oil platforms present in the Gulf, which serve to aggregate spawning tuna and allow the whale sharks to feast on the tuna eggs.

Subsequent presentations were divided into

Continued on page 4
Flags have long been used to warn boaters of hazardous sea and weather conditions in the USA. Both South Africa and Australia use flags to warn swimmers and surfers when large sharks are swimming close to beaches.

Gerald Taggert originally designed the yellow and blue Chumming Flag for shark and/or tuna tournament fishermen to prevent competitors unknowingly taking advantage of another boat’s chum slick by trolling through it.

The flags are also used by fishermen who are chumming/baiting the water with either live bait, cut bait or ground bait to attract/lure and hold fish near the fishing boat.

Surfers and swimmers are at risk of an unanticipated negative encounter with a shark whenever shark fishing or surf angling is allowed on the beach — both are shore-based chumming. SRI strongly advocates use of the Taggert Flags, with their unmistakable icons, used singly or in combination, be adopted to alert beachgoers to an increased risk of accidents.

Flags may be purchased at: [http://www.chummingflag.com](http://www.chummingflag.com)
SRI’s Board of Trustees

SRI’s Board of Trustees is seeking additional members. The primary function of a Trustee is to ensure the organization has sufficient funds to achieve its mission. Criteria for Trustees includes:

- Actively support and promote the mission of SRI;
- Make an annual personal donation of at least $5,000 each year, and secure annual grants, corporate donations or conduct fundraisers generating similar amounts;
- Be available to attend (either in-person or by conference call) at least one Board of Trustees meeting each year.

SRI members, sponsors or individuals who are interested in applying for a seat on the Board should send an email to marie@sharks.org and Juppca@gmail.com

Federal Shark Fin Trade Ban

Every year millions of sharks are slaughtered for their fins. Finning has led to a dramatic decrease in shark populations worldwide with numbers of some species like the smooth hammerhead dropping a staggering 99% since 1972. Although the Shark Conservation Act of 2010 prohibits finning in US waters, fins continue to be imported – some from countries in which finning is permitted.

On June 27, 2016 the NJ Senate passed S2044 (Lesniak), a bill prohibiting the sale, trade, distribution and possession of shark fins by a vote of 32-6. Violations will result in fines from $5,000 for first offense and for three or more offenses $50,000 or more. Eleven other states, and three US territories have already enacted shark fin trade bans to close the loophole in the federal Shark Conservation Act.

Four days earlier, the bi-partisan Shark Fin Elimination Act was introduced in the US Congress by Senators Corey Booker (D-NJ),) Shelley Moore Capito (R-WV), Reps. Gregorio Kilili Camacho Sablan (I-MP) and Ed Royce (R-CA). Although shark finning is illegal in U.S. waters, shark fins continue to be bought and sold throughout the United States. The objective of the Act is to close the US as a market for shark fins, and send a message to other countries that the US regards shark finning as a cruel practice that must be eliminated.

Your Help is Needed!


More importantly, CITES is the only international instrument dealing with endangered species whose decisions are enforceable.

SRI has attended every CoP since 2002 and works behind the scenes on the proposals to list additional species of sharks. We also work to maintain protections for sharks, dolphins and other endangered species such as elephants, rhinos and tigers that are already in place. At CITES we are directly clashing with the illegal wildlife trade, the sharkfin industry, the ivory trade, but 80% of the time we prevail by providing peer-reviewed science to the delegates.

The cost to send just one of our scientists to the 12-day meeting (and they must be there the entire 12 days) is about $5,000, including UN fees, supporting documents for each of the 182 delegates, transportation and hotel. Any financial assistance that you can provide will ensure that our scientists will be able to attend CoP17 to fight for sharks and other endangered species. Please give whatever you can afford so that we may continue to fight the good fight. Your donation is 100% deductible from USA federal income taxes.
I can highlight here only a few of the varied research projects that were described at the conference, but all presentations served to advance our understanding of these magnificent animals. The Physiology and Reproduction session kicked off with David Acuna-Marrero, from the Charles Darwin Research Station in the Galapagos, giving an overview of the Galapagos Whale Shark Project, which studies the startlingly different population of whale sharks found at these islands. Unlike most whale shark aggregations, which are dominated by juvenile male animals, the Galapagos hosts a population nearly entirely (more than 90%) comprised of very large female sharks - and many of these sharks appear to be pregnant! Interestingly, the Galapagos female sharks seem to be a highly transient population. Despite the high rate of pregnancy, they do not pup in the area, and do exhibit feeding behavior. Rather, tracking studies showed that they stay only a few days before moving west into the Pacific.

Chi-Ju Yu from the National Taiwan Ocean University, and Lara Zamora from the University of Tasmania in Australia, both used the technique of stable isotope analysis to explore whale shark movements and feeding habits. With this technique, levels of certain isotopes of carbon and nitrogen are measured in whale shark tissue, and can provide information about the diet of individual animals. Yu found indications that whale shark food sources change as animals grow, as smaller whale sharks had different isotope profiles than larger animals. Zamora showed that there is a range of variation in the isotope values between individual animals of the same age, suggesting that whale sharks are eating more varied prey than the zooplankton that we currently believe constitutes the bulk of their diet.

During the Behavior session, Mahardika Himawan from Bogor Agricultural University in Indonesia presented his study of the whale sharks found in Cenderawasih Bay, Indonesia, who have developed a unique feeding interaction with local fishermen. Indonesian fishermen catch small baitfish in large nets hung from over-water platforms called bagans. The whale sharks in this area have developed a feeding strategy in which they swim right up to the bagans, and hanging vertically in the water use their huge mouths to suck the trapped baitfish out of the fishing nets.

Francesco Comezzi, a marine biologist working in the Maldives, also reported on whale shark feeding
behaviors that take advantage of local fishermen. Similar to the practice in Cenderawasih, Maldivian tuna fishermen use lights to attract baitfish at night. Plankton is also attracted to these lights, and Comezzi showed that the whale sharks come to the lights to feed on the aggregated plankton. I’ve seen similar behavior myself in the Djibouti whale shark aggregation, where an underwater light hung off the back of our research boat brought night-feeding whale sharks - pale and ghostly-looking in the small pool of light.

In the Ecology session, two talks highlighted recently discovered whale shark aggregations in the Mid-Atlantic Ocean. Jorge Fontes from the University of the Azores, reported that since 2008 there has been a dramatic increase in the number of whale sharks seen at this island group. Fontes found that the increase in whale sharks correlates with increased numbers of several tuna species, which may draw whale sharks to feed on tuna spawn. Whale sharks are known to travel to feast on tuna eggs at aggregation sites in Mexico and in the Arabian Gulf.

The presence of both whale sharks and tuna in the Azores correlates with an increase in sea surface temperatures in recent years, suggesting that climate change may be affecting the distribution of tuna, and therefore the whale sharks that feed on their eggs. Al Dove, from the Georgia Aquarium in the USA, described their recent study of a population of large adult whale sharks living off St. Helena Island, a speck of rock in the middle of the Atlantic Ocean 2500 miles from South America and 1200 miles from Africa. Researchers have long speculated that whale sharks cross the Atlantic Ocean, and our own genetic work supports this, but there were previously only scattered accounts of whale sharks in the Mid-Atlantic or off the West African coast. These new reports provide additional support for transatlantic whale shark journeys.

During the Population Structure conference session, Casandra Tania from the World Wildlife Fund Indonesia, described the makeup of the Cenderawasih whale shark aggregation. She showed that, like many aggregations, this group is composed primarily of juvenile male animals. Uniquely, however, these sharks seem to be transient, different from most aggregations where the same sharks recur over multiple years. The presence of an individual whale shark in Cenderawasih Bay is typically limited to a single season, with only a small percentage of animals returning in subsequent years.

The session covering Tourism Threats and Management aimed to highlight the dangers whale sharks face worldwide, and to identify positive and negative aspects of the growing whale shark tourism industry. Several speakers reported the rates of scarring found on sharks at their study sites. Whale sharks often suffer wounds to the back or fins from boat propellers, including those of commercial shipping and fishing boats, and of recreational tourist boats. In places such as the Philippines and Indonesia, where whale sharks feed from boats or platforms, they may suffer injuries to their mouths and faces. Rafael de la Parra-Venegas, from the Mexican group Ch’ooj Ajauil, reported that at the whale shark aggregation off Cancun, Mexico, 30% of sharks bear scars, primarily from boat propellers. Freya Womersley, from the Marine Conservation Society Seychelles, presented data on the Djibouti whale shark aggregation, an area where whale shark tourism has grown significantly over the past several years. She showed that in 2011, only 16% of whale sharks showed scars, but by 2001 this number had risen to 40% of animals. The lack of other significant boat traffic in the area suggests tourist boats play a role in these injuries.

On the final afternoon of the conference, an informal workshop was held to review what had been learned during the previous days, to identify key unanswered questions, and to formulate plans for future research. Participants separated into groups representing specific geographical areas (I participated in the Western Atlantic group), with each group answering a series of questions that were later presented to the whole assemblage. These ideas are being compiled and discussed at this time, and will form the basis of a conference report to be published later this year.
You’ve seen them on Discovery Channel’s Shark Week, Animal Planet and the BBC, and read their books. Being auctioned is lunch or dinner with a shark celebrity or expert. It is a chance to meet one of these amazing individuals one-on-one for lunch or dinner and get to know them personally! (Winning bidders may bring guests to the lunch or dinner.)

The 8th Annual Shark Celebrity Auction opens August 10th and will run for 10 days. There is a link directly into the auction on our website’s home page: www.sharks.org

Celebrities in the auction include Explorers Nancy McGee and Emmy-Award-winning wildlife cinematographers Jeff Kurr, Andy Brandy Casagrande, Marty Snyderman and Captain Maureen Langevin. Shark photographers Paul Spielvogel; Lynn Funkhouser; and Sandra Critelli.

In the auction are Jupp Kerckerinck, CEO of SRI and author of *Sharks: A Love Story*; Painter of the Blue, Pascal Lecocq; and cartoonists Jim Toomey, creator of Sherman’s Lagoon and Phil Watson, creator of *Shaaark!* Scientists include Dr. Gordon Hubbell, the world’s leading shark paleontologist and molecular biologist Dr. Jennifer V. Schmidt, Ph.D. who continues to uncover the mysteries of whale sharks.

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 all shark incidents in the Carolinas; marine biologist Scott Curatolo-Wagemann, who was also bitten by a shark.

Shark behaviorists and conservationists Dr. Debra Canabal of Epic Diving and Christina Zenato of UNEXSO, Shark conservationists McGuire of Sea Stewards; Charlotte Vick of Mission Blue and Google Ocean, Marie Levine and Dean Fessler of SRI.

An added bonus, although not available for lunch or dinner, are Lifetime Adoptions of six whale sharks tagged by SRI researchers.

All winning bids are 100% tax-deductible as charitable donations on 2016 US federal income taxes.

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!
Beach Haven was the site of the first of the series of the 1916 shark attacks in New Jersey. On July 6th, the NJ Maritime Museum and the Shark Research Institute presented a Shark Awareness Dinner at Buckalew’s in Beach Haven. The four-course dinner included wine tastings from Gregg Norman wine. But it was the speakers that brought so many people to the event.

Dean Fessler spoke first, and after asking for a moment of silence in honor of the 1916 victims, he went on to explain how the movie “Jaws” caused as much unnecessary fear of sharks as the 1916 events, and pointed out that for the past century, nothing like the events of 1916 have occurred again. He teared up as he told how after a presentation for a 5th grade class a young girl raised her hand and said, “I used to be afraid of sharks, but now I want to study them and help people like you save them.” He later learned from the girl’s teacher that she managed to get a course on shark biology and preservation included in the future curricula of New Jersey elementary schools.

Richard G. Fernicola, M.D. author of "12 Days of Terror" was the keynote speaker. His thoroughly researched book on the 1916 NJ shark attacks, was recently re-printed. He presented a highly detailed account of life in Beach Haven, Spring Lake and Matawan in 1916. He told of the heat wave that summer, the polio epidemic in New York, the war raging in Europe, and the lives and families of the victims. Fernicola brought the people and events of that time to life.

Also present at the dinner was Marie Levine, Executive Director of SRI, and Captain Steve Nagiewicz, Chairman of SRI’s Board of Trustees whose book on NJ Maritime history was recently published. Steve noted that he is working to secure funds for SRI’s study of a nearby white shark nursery and send SRI scientists to advocate for sharks at the upcoming CITES meeting in Johannesburg, South Africa.

More than a thousand people attended a nine-day (July 9-17) centennial held in Matawan, NJ, to commemorate the three shark attacks that took place there on July 12, 1916.

The centennial featured two solemn events: a memorial service and wreath laying at the graves of Stanley Fisher and Lester Stillwell, the two people killed by the shark in the shallow creek 100 years ago, and the dedication of a monument to the two victims.

Other events included lectures by Al Savolaine and signing of his newly released book, Stanley Fisher: Shark Attack Hero of a Bygone Age; a 21-stop trolley tour of sites related to the attacks; a Hero walk, retracing Stanley Fisher’s route to Matawan Creek, movie screenings of Twelve Days of Terror and Blood in the Water, kayak tours of Matawan Creek, an art exhibit including postcards of old Matawan and presentations by Jenkinson’s Aquarium and the Shark Research Institute.
Is there anyone who doesn’t enjoy finding treasure? Especially when it involves getting wet and muddy on a sweltering mid-summer day!

During the Cretaceous Period, ~67-74 million years ago, the Earth was warmer and the sea covered much of present-day New Jersey. Today, marine fossils are easily found by screening gravel bars and creek beds, and fossils of land animals washed out to sea are occasionally found as well.

Here are some photos of our July 30th hunt for fossil shark teeth in Big Brook. In addition to fossil shark teeth, participants found fossil belemnites (squid pens) and bivalves. The next fossil shark tooth hunt is scheduled for Saturday August 20th from 11 to 1. Cost is $5 per person, free for children and SRI members. Registration is required (We will bring all the necessary gear for everybody attending) Call (609) 921-3522 to reserve your space.

Belemnites are an extinct order of cephalopods. They resembled squid but had hard internal skeletons. A fossil belemite is usually the back part of the shell, and looks like a dart or bullet.

Congratulations to Jason McBride, winners of the Carrie Bow Cay Contest! Jason’s drawing of the Great Sea Turtle Rescue took First Prize. Maddy Corcoran’s Martha the Cook and Kaitlin Abercrombie’s Hermit Crabs on the Prowl took Second and Third place in the contest. Jason won marine biologist Hunter Noren’s very cool t-shirt, while Maddy and Kaitlin each received a packet of fossil shark teeth.
As a group of tourists from Sweden were returning from a dive on the reef at Ribbon Valley they photographed evidence of shark hunting in Sabah. Just days earlier images of shark finning in Palu Mabul were circulated on the net. “We had followed the online updates about the finning on Mabul – but to see it (dead sharks) with our own eyes was so disappointing, especially given the spectacular biodiversity of these waters which brings us back year after year,” said Jonas Neander. His group of nine divers shared their photos, including the one above, with the Sabah Shark Protection Association (SSPA).

“We have an obligation to ensure that sharks remain in our waters, not just for the economic spin-off but also to ensure the health of the marine ecosystem in which sharks play a vital role as apex predators,” SSPA said. “Protecting sharks benefits fishermen and the economy while also ensuring the future of Sabah’s diverse marine life.”

The Sabah government is moving to create shark sanctuaries at all its six marine parks, including Semporna’s Tun Sakaran Marine Park, as conservationists press for Federal laws to be enacted to ban shark hunting and finning.

Shark Fins Seized in Hong Kong

On July 4, Hong Kong’s Agriculture, Fisheries and Conservation Department (AFCD) and the Customs and Excise Department discovered an illegal import shark fins at the Cargo Examination Compound in Kwai Chung Customhouse.

Some 880 kilograms of dried shark fins, believed to have come from endangered hammerhead sharks were found in a shipment from Panama. The shipment lacked CITES permits.

There are currently eight shark species, including three hammerheads on CITES Appendix II, and trade in Hong Kong is regulated by the Protection of Endangered Species of Animals and Plants Ordinance (Cap 586). The import, export and re-export of endangered species is an offence, punishable by a maximum fine of $5 million and imprisonment for two years.
**Surfing: An Olympic Sport!**

**It is official:** Surfing will be included in the 2020 Olympic Games in Tokyo, along with baseball, skateboarding, karate, and “sports climbing”. All were unanimously accepted by the IOC’s executive board to be added to the Olympic Games.

Tokyo’s Olympic board said it hopes that more contemporary sports will encourage youths to watch the Games. Yoshiro Mori, chief of the 2020 Tokyo Olympic Games, said: “We have successfully passed the first gate. I am very happy with this result.” Mori went on to express his desire that the decision would help Japan “catch up with the trends of the time.”

On the surfing side of things, there is further development on format and structure of the event. First of all, the competition will include 20 men and 20 women from around the world. How the people will be chosen, the number of competitors from each country, etc., is still unknown.

What’s even more interesting though, is that they will hold the competition in the ocean — not a wavepool. After the debut of Kelly Slater’s wave pool, many believed that Olympic surfing would be held in an artificial arena providing a uniform unchanging wave over and over again. But officials have decided Olympic surfing will take place in the ocean at Shidashita Beach, located about 40 miles outside of Tokyo in Chiba.

---

**Global FinPrint**

In the largest survey of sharks around the world, scientists have visited 100 reefs and collected more than 5,000 hours of underwater footage, revealing where the most sharks live — and where they don’t.

Preliminary results suggest that some spots have healthy populations of sharks, while other heavily-fished areas of the ocean have few if any sharks. The project known as the Global FinPrint, began last year and is expected to continue for two more years. Nearly 25% of the more than 500 species of sharks are threatened with extinction. It is hoped that data collected by this census may help policy-makers protect at-risk populations of shark.

---

**Members Book Shelt**

**Stanley Fisher, Shark Attack Hero of a Bygone Age** by John Allan Savolaine. The author, a longtime resident of Matawan and the Town Historian researched the 1916 shark attacks at Matawan for decades and has written numerous articles on local history. The book is a tribute to Stanley Fisher. The publication is not available in bookstore, but may be ordered from the Matawan Historical Society, 94 Main St, Matawan, NJ 07747. Cost is $20 plus S&H

**Sharks. A Love Story**, by Jupp Kerckerinck zur Borg, CEO of the Shark Research Institute, is now available in German (The English version is sold out). To order a copy, email: JuppCA@gmail.com.

South Africa has long been considered to have one of the largest concentrations of white sharks in the world. A six-year study — the largest and most in-depth of its kind — conducted by a team from Stellenbosch University indicates the white shark population has not only dropped but may now be below the threshold necessary for breeding and long term survival of the species in the area.

To determine the actual number of sharks in the area, the researchers took almost 5,000 photos of the sharks’ dorsal fins from 2009 to 2011 to identify individual sharks. “Using mark-recapture and genetic techniques, the results from this part of the study indicate with 95% confidence a population estimate of between 353 and 522 individuals,” said Sara Andreotti, lead author of the study. “That’s a staggering 52% lower than previous estimates!”

The study identified 333 South African great whites that are able to contribute offspring to the next generation, but that figure is not high enough. Previous research on other species suggests that a minimum of 500 breeding individuals are required to prevent inbreeding depression. To make matters worse, the sharks have only four maternal genetic lineages in a dwindling population; some 89% of all the South African white sharks share the exact same gene sequence. In short, the genetic diversity of the South African white sharks is the lowest in the world. This may result in breeding problems, increased vulnerability to disease, and suggests these white sharks are hovering close to extinction.

The decline in South Africa’s shark population has been blamed on several factors including trophy hunting and pollution, but the study suggests that human measures such as shark nets resulted in the death of around 1,000 white sharks between 1978 and 2008.

With the sharks crucial for balance in the ecosystem, the study says the “loss of such an apex predator will have a cascade of detrimental effects on the ecological stability of the marine environment”. One predicted outcome is a sharp rise in the population of fish-eating seals, which could in turn impact fish populations and local fisheries.


Data collected the study suggests that white shark juveniles arrive at Guadalupe Island from nursery grounds on the mainland when they reach a length of at least 180cm TL. They remain around the island for several months probably feeding on squid and mackerel and staying close to shore from the surface to a depth of 50 metres by day, possibly to avoid the adults. By contrast the adult white sharks moved offshore into deep waters by day and came close to the island during the night.

The juveniles may also start migrating offshore, coming back to Guadalupe and their nursery grounds before maturity. It is argued that the distribution of large white sharks at Guadalupe is determined by the availability of Northern elephant seas and adults hunt them in deep waters in the vicinity during the day, feeding on them before leaving for their pupping grounds to give birth in California and Baja California or to their offshore migration to the west.