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# Shark Research Institute



## *Newsletter*

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### SRI's SATELLITE TAG

We anticipated that there would be considerable difficulty in attaching the satellite tag to a whale shark and so a 'blank' tag was also constructed (same size, weight and buoyancy) with which to experiment before we deployed the live tag. Months were spent designing and running field trials with a number of tag-anchors and tethers of varying lengths. Although the 'blank' tag is highly visible, the live tag is dark blue to reduce its visibility to marine predators.

After considerable experimentation Rob Allen developed a tag-anchor that performed very well in sea trials. Initially, we planned to put the tag-anchor in the

shark's side as Scott Eckert had done, but on practice runs the blank tag kited out to the side. On the coast of East Africa whale sharks often hug the shallows and we feared that the tag would snag on the reef.

On our final sea trial we placed a tag-anchor in a nine-metre shark. The tag-anchor was placed in the shark's first dorsal ridge below its first dorsal fin, and we shortened the tether so that the tag would not be hit by the shark's caudal fin as it was being towed by the shark. Worked like a charm!

From 27 February to 7 March 1998, to assess whale shark availability and water

conditions, Mickey Biermann conducted daily aerial surveys of the area around Cape Vidal, South Africa.

At 15h00 on 6 March 1998 Kim Brown activated the satellite tag in Kloof, a suburb of Durban, South Africa. Next morning, Andrew Gifford drove to Cape Vidal with the satellite tag and joined the tagging team. Unfortunately, the weather was bad: a strong southwesterly was blowing and it was still raining heavily.

At 0h500 on 8 March 1998 the wind was still howling. At 0900 the wind dropped and we launched the boat. Mickey found two whale

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sharks in choppy water and we made a practice run using the blank tag. At 10h45 Mickey located a magnificent seven-metre female whale shark in clean water. Steve Hosack of the Natal Parks Board implanted the hinged-barb tag-anchor just ahead of the shark's first dorsal fin in her first lateral ridge, and I attached the satellite tag. But the tether, designed for a nine-metre shark, was too long.

I removed both the tag and tether, and back on board the boat I shortened the tether so that it would clear the caudal fin when towed directly behind the shark.

Mickey circled overhead, kept the shark in sight, and managed to put us back on the same shark. Then I swam down with the live tag and, using a shackle, attached the end of the tether to the anchor head.

We stayed with the shark for about 20 minutes to make certain that she was comfortable, and that the tag did not interfere with her normal swimming action. This phase of the operation was a total success!

We will keep you informed about the shark's whereabouts in future issues of the newsletter.

*Sue Smith,  
Whale Shark  
Tagging Program Instructor*

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### Satellite and acoustic tracking of whale sharks in Western Australia: trials and tribulations

*Abstract of a paper presented at the 5th Indo-Pacific Fish Conference in Noumea, New Caledonia, 3-8 November, 1997 by J.D. Stevens, J.S. Gunn, T.L.O. Davis, & B. Norman: CSIRO Division of Marine Research, Hobart, Australia*

Aggregations of whale sharks (*Rhincodon typus*) occur each year during March and April off Ningaloo Reef, Western Australia, where they form the basis of an ecotourist industry.

During the 1997 season, we carried out some acoustic telemetry and satellite tracking of whale sharks to provide information on their short and long term movements, and behaviour.

One shark was tracked acoustically on two separate occasions for 25 and 14.5 hours; this followed two previous tracks up to 26 hours in length which were carried out in 1994. The behaviour of the sharks on all tracks were similar showing frequent dives between the surface and the bottom.

A towed satellite tag system was developed which used a hydrodynamically designed float, housing the tag, which generated about 70N of lift

and 'flew' above the shark when the animal was below the surface. The float was attached to the shark by a two to five-metre stainless steel wire tether. Attachment methodology for both types of tags involved a snorkeler firing a stainless steel head into the thick dermal layer of the shark below and alongside the first dorsal fin. Problems were encountered with the attachment method and with the wire satellite tag tether, which were compounded by a lack of sharks during the study period.

We plan to deploy the satellite tags, as well as some archival tags, on whale sharks during the 1998 season.

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### **Indonesian Fishtrap up and running again....**

A new technique of fishing has begun in Indonesia. Using permanent concrete pylons, two high-tech \$100,000 fishing nets stretch across 500 metres of the Lembah Strait, the deep-water channel used as a migratory path by marine mammals such as whales and dolphins. The 2.5-cm mesh nets are set 50 metres off the Tangkoko Batu Angus National Park, and cover 2,000 square metres of the channel.

SRI, a non-profit tax-exempt [501(c)(3)] multi-disciplinary scientific organization, conducts and sponsors shark research throughout the world.

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The nets form a T-shape, blocking the channel and forcing all marine life up to the crossbar of the T and into collection areas. The nets operate round the clock with a three- to eight-hour clean-out cycle by the operator working with boats crewed by 15 to 20 men.

Everything that swims – small migrating Minke whales, turtles, whale sharks, dolphins, fish and manta rays – are captured. Nothing survives.

In two weeks last March (1997), some 1,424 manta rays, 18 whale sharks, 312 sharks, four Minke whales, 326 dolphins, 577 pilot whales, 789 marlin, 84 sea turtles and nine dugong were reported caught and butchered, even though many of these species are protected under international convention.

PT Eka Sapta Usahamina, a Taiwanese-Indonesian joint venture, was awarded a license to run a scientific operation north of the strait in 1996, but has been operating this illegal operation since March 1996.

Sources claim the company is protected because its silent partner is a Jakarta-based retired general. "Anyone who runs an operation like that has to be powerful and well-connected," says Lembah Strait Protection Society chairman, Billy Matindas.

The *South China Morning Post* reports that Eka Sapta Usahamina claims to have netted only 30 tonnes of prime fish in the past six months (worth about HK\$207,000) from the illegal operation. The regional government takes five percent of the cost price of the catch, and the end product is shipped out by Taiwanese boats heading for the huge markets of Korea, Japan and China.

In May 1997 the nets were temporarily removed after sport divers made public a video of the fishing operators butchering a whale shark, but the nets went back in the water in July.

SRI members are urged to register their protests with the Indonesian Government and demand that they put a stop to this slaughter.

Address your letters to: Mr. Ir Sawono Kusumaatmaja, State Minister for the Environment, Jar Medan Merdeka Bart #15, LT 3 Djarkarta Pusat, INDONESIA

## Basking shark gains protection in UK waters

On 9 March 1998 the United Kingdom government announced the protection of basking sharks (*Cetorhinus maximus*) throughout its national waters. This conservation legislation is the



result of many years of collective effort and campaigning by numerous individuals and organizations. The new legislation, enacted under the UK's Wildlife and Countryside Act, complements that already passed by the Isle of Man.

*Ian K. Fergusson,  
Chairman, The Shark Trust*

## **Whale shark visits nuclear power station**

*by Charles Maxwell,  
Underwater Video Services*

There was a message on 4 March 1998 regarding a whale shark trapped in a cooling water intake at the Koeberg Nuclear Power Station, about 40 km north of Cape Town, South Africa.

My diving company has an underwater maintenance contract with this power station and [we] were called to the pump station to recover the animal.

At first I thought that the "whale shark" was incorrectly identified and was in fact a basking shark but the distinctive white spots and wide head that was described to me convinced me otherwise.

The reason for my confusion was that basking sharks are relatively common in the cold Atlantic Ocean waters of

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South Africa during our summer months, whereas whale sharks prefer the warmer water of the Indian Ocean on our east coast. There have, however, been reports of whale sharks off Cape Town. This is possibly due to these animals drifting south with the warm Mozambique / Agulhas currents. In addition, during sustained periods of wind with an onshore component, the typically cold water of the southern Atlantic can warm to 16° or 18°C. The El Nino may also have had some influence on this but then the El Nino seems to be blamed for anything out of the ordinary these days!

Anyway, Mike Woodborne ventured into the pump intake after the pump had been shut down to assess the situation. There he found the shark, nose up against the filter screen, hardly moving. In the time it took to get back to the boat to get a rope, the shark managed to swim out but unfortunately got sucked straight into the adjoining running pump. This pump was then shut down and the shark was towed to the open sea.

According to Mike, at that stage the shark appeared to be dead but, due to the quick thinking of the divers, the shark was towed head first. Within 20 metres the shark recovered so quickly, presumably from the water flow to its gills in the right

direction, that it could be released.

It swam slowly away in the direction of the Cape of Good Hope, hopefully on its way back to the warmer waters of the Indian Ocean.

The interesting thing about this incident is that during its entrapment in the pump intake, with each pump moving 20 cubic metres of water/sec., there was a water flow from tail to head of about 2 metres/sec. (4 knots) and the animal survived.

## **Driftnetter Chased Down near Japan**

A Chinese driftnet vessel was chased down by U.S. Coast Guard ships dispatched from San Pedro, California. The *Cao Yu No.6025* was seen with its nets in the water by a Canadian Air Force surveillance plane 1,200 nautical miles northwest of Midway Island.

The *Cao Yu* fled but was chased down and boarded by the cutter *Chase*. Driftnet, 120 tons of tuna, and hundreds of shark fins were found on board.

Driftnet vessels have also been reported as active north of Darwin, Australia, in the Arafura Sea.

*Sea Shepherd Log,  
Fall/Winter 1997*

## INDIAN OCEAN EXPLORER

The luxurious 98-foot live-aboard dive vessel, *The Indian Ocean Explorer*, is offering trips to the Outer Islands of the Seychelles, the Amirantes, and Aldabra - a World Heritage Site dubbed the "Galapagos of the Indian Ocean." The 10 August, 17 August 17 and 24 August cruises are "Whale Shark Specials". For more information contact Rothschild Dive Safaris (1-800-359-0747) or David Rowat at: [divesey@seychelles.net](mailto:divesey@seychelles.net)

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## GLOBAL SHARK ATTACK FILE

• On 14 January 1998, it was overcast and drizzling and the sea was turbid at Ponta do Ouro, Mozambique. For a week surfers had observed large fish feeding on shoals of baitfish close inshore. At 1:15 p.m. surfer Roberto Zomada (23) was lying prone on his board when a shark bit his leg. Dr. Grant Golombick, who was on the beach at the time of the attack, described the injuries: "The bite on the right leg was about 20 cm in diameter. There were puncture marks and longitudinal lacerations similar to those caused when slipping on

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coral. There was no arterial bleeding and the injury could not be classified as serious or life-threatening." The surfer was treated at the Manguzi Hospital, then airlifted to Richards Bay, South Africa, and transferred to St. Augustine's Hospital in Durban. Witnesses believed that a small dusky shark (*Carcharhinus obscurus*) was involved in the incident.

• On 25 January 1998, the sea was "warm, dirty and choppy" at Igoda, East London, South Africa. Glen Vosloo (21) was surfing 200 metres from shore when a shark bit his left calf and foot. "I turned around and clouted it, and it let go and swam away," said Vosloo. The surfer paddled ashore unaided. The sea conditions led Mr. Willis Maritz, Curator of the East London Aquarium, to hypothesize that the species responsible for the attack was either a Zambezi shark (*Carcharhinus leucas*) or a tiger shark (*Galeocerdo cuvier*).

*Reported by Andrew Gifford*

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## Whale Shark Slaughter continues in the Philippines

Two more whale sharks were caught off Donsol [Philippines] and slaughtered in the neighboring town of Pilar on 23 March 1998, bringing to six the number of

these gentle creatures which commercial fishermen had caught and killed in the coastal Sorsogon town. Whale sharks, known as *butanding* in Sorsogon and *balilan* in Cebu, are the world's largest fish. Feeding on plankton and small fish, they can reach a maximum length of 15 to 18 metres and weigh up to 20 tons. The slaughter of whale sharks caught the attention of serving President Ramos who had pledged to look into the plight of these creatures when he visited Sorsogon.

The World Wildlife Fund, Philippines (WWF), an international environmental organization monitoring the movement of the sea creatures in Sorsogon, reported the whale sharks were captured using a motorized banca bearing the name *Johanna*. The banca was registered in Pasacao, Camarines Sur and owned by Saturino Baluca, the same man involved in the catching of four other whale sharks earlier in March. A report by the Coast Guard Station in Sorsogon dated 13 March 1998 said the whale sharks were brought to Barangay San Antonio Sapa, Pilar, where Barangay Captain Betty Atayza issued a permit authorizing Baluca and several fishermen in his employ to capture, process and transport the whale sharks. Baluca paid the municipality of Pilar P3,240 for the transport of outgoing



cargo, as per municipal ordinance NR001 series of 1997. The amount was received by municipal collector Cesar Veca.

The report further stated that the meat, skin and fins of the animals were immediately transported in trucks to Manila via Legaspi City and addressed to Rick Manalo of Filmosa Trading Corp., a fish trading company based in Manila. Filmosa has its office at 150 Plaza Cervantes, Room 722, BP1 Building, Manila and its telephone numbers are 2420795 and 2421092. The whale shark products are exported to Taiwan where they are sold for up to 28 times their original price. A certificate to export the whale sharks was issued by the Bureau of Fisheries and Aquatic Resources (BFAR) to Filmosa.

Donsol is an important habitat for whale sharks. For several months a team from the WWF Philippines, Silliman University, Hubbs Sea World Research Institute, and NOAA, has been studying the sharks in Donsol.

The Philippines Fisheries Code of 1998 states that only duly registered municipal fisherfolk can legally fish within municipal waters. The code also states that the municipality has jurisdiction over its own waters. A municipal resolution is already in place in

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Donsol protecting whale sharks in their own waters. But in his weekly press conference in Malacadang, President Ramos noted that whale sharks are not a protected species in the Philippines. And BFAR admitted its helplessness in protecting whale sharks, saying it lacks sufficient data to justify the ban on the slaughter of the giant sharks.

The slaughter of whale sharks for Filmosa Corp is also occurring in Bohol and Misamis Oriental provinces according to Marilyn Baldo of the Mindano Marine Wildlife Watch.

Edwards examines the importance of sharks in the marine ecosystem, and the reversal of human attitudes towards sharks over the last 40 years. This book provides solid up-to-date information about sharks.

Look for *Shark Diver*, a new magazine produced by the folks at *Skin Diver* magazine, on the magazine racks at Barnes & Noble or at Borders.

### SIXTH GRADE SHARKS



When students in Carolyn Dice's 6<sup>th</sup> Grade Social Studies Class at North Lawn Elementary School in Neodesha, Kansas, read an article in the "Time for Kids" publication about SRI's Whale Shark Study, they decided to help. The article mentioned that tagged sharks could be "adopted" for \$10 each. The students held a fund-raiser - a submarine sandwich sale - that netted \$90. "The kids worked hard designing and selling tickets and making the sandwiches," Mrs. Dice said, "and they adopted NINE whale sharks!"

### Bulletin

*Dr. Alex Antoniou reports that his team has just tagged two whale sharks off the island of Utila, Honduras in the Caribbean Sea.*

*The Whale Shark Tagging Program in the Caribbean is a joint project between SRI and Rutgers University.*

### Members' bookshelf ..and magazine rack

*Shark, The Shadow Below* by Hugh Edwards. HarperCollins Publishers: New York, 1997. \$19.95, paperback.

The title suggests that this is just another hack book about sharks, but it is definitely not.