
Shark Research Institute



Newsletter

Volume 7, Number 4

© SRI 1998

SRI GLOBAL HEADQUARTERS: PO BOX 40 PRINCETON, NEW JERSEY 08540, USA.

FAX: +++(609) 921-1505

Bait Ball

by Stan Waterman

The term "feeding frenzy" is a much used and much abused. Feeding frenzies do occur. Very few divers are privileged to actually witness one. We had the real McCoy off Cocos Island in September '98. I had been waiting for just such a phenomenon to unfold before my video lens for many years; and most especially since I saw a remarkable documentary by Avi Klapfer of a true feeding frenzy. Avi owns the *Undersea Hunter* and the *Sea Hunter*, two fine live-aboard dive boats that operate at Cocos Island off the Pacific coast of Costa Rica. I happened to be on the *Okeanos Aggressor*, also at Cocos Island, when the long-hoped-for experience happened.

At Cocos Island one looks for the birds. At sea, perhaps a quarter mile out, you may -- not infrequently -- see the air above the water broken by distant black specks. These will be boobies feeding on some species of bait fish. At the same time the frigate birds will hover over the melee, ready to snatch any catch away from the boobies. The frigates, unable to land on the water, are pirates, living off the boobies. The birds may be hitting on a moving school of small fish. They may also be moving with a bait ball, in which case the schooling fish are moving in a tight ball or vortex surrounded by pelagic predators. The schooling

victims are impelled by survival and mutual protection to crowd in upon one another. An analogy might be the instinct of horses to run back into a burning barn, seeking the protection of the stable and safe home ground.

At a distance one may see dolphins on the surface. For the chance of snorkeling with dolphins, the *Okeanos Aggressor* will take interested guests into one of the fast skiffs to drop off the side at the action place. Usually the bait fish school has moved on, being dispersed and highly mobile. With luck, the dolphins may stick around, make a few

Inside This Issue

-
- 3 Another Whale Shark wears an SRI Satellite Tag

 - 4 Whale Sharks Slaughtered in India

 - 5 Hawaiian Shark Finning

 - 6 White Sharks proposed for CITES

passes within video or still range and then move on. A bait ball holds its position, drifting with the current. The attack on that mass by the circling "Indians" may continue throughout the day if the bait mass is dense enough. The one we lucked out on did just that.

Two divers were already down when I dropped over with the birds dive bombing all around. Jay Ireland and Georgienne Bradley, on-contract for *The Discovery Channel*, were documenting the action with both stills and digital video. For them, the wild occasion was a rare and wonderful windfall. While hammerhead sharks are the big focus at Cocos Island, this scene could well make the whole week for all of us.

Sharks galore! Sharks in every sector. Sharks nearly colliding with us; sharks - as if by some predatory signal - suddenly driving into the bait ball and through it in all directions. The bait ball, densely packed under a floating mess of ship's cordage, expanded into a swirling mass under the top layer. On contact by the sharks' assault the mass convulsed, sagged, briefly lost its tight formation, like a battled line wavering under attack, then reformed, ever whirling, a powerful, cyclonic force, powerless to fight back, blindly maddened to stave off annihilation as long as possible.

Shark Research Institute Newsletter

95% of the sharks appeared to be silkies, few under six feet or over seven. The small number of Galapagos sharks shared the feast along with rainbow runners, big black jacks and an occasional hefty yellowfin tuna. On the perimeter of the bait ball cruised a small pod of four bottlenose dolphins. Jay and Georgienne saw them occasionally pick up a single baitfish that wandered into the open. They appeared uninterested in charging the bait ball, instead they leisurely circled the action. It is possible that they had already eaten to surfeit before we arrived on the scene.

With almost 60 minutes of digital tape in my Sony DCR-SC100, a fresh battery and a spanking-new Light & Motion housing that performed like a champ, I let the tape run. In such a possible once-in-a-lifetime of diving experience you don't conserve your ammunition. So I worked as close as I could with a wide-angle port to contain in the frame the whole matrix of action central, from time-to-time swinging around to record the scores - literally scores - of sharks in the open water around the ball. Jay and Georgienne, concentrating on their work, hardly noticed the cruising sharks that repeatedly approached them and then swung away, inches from

their bodies. It was, of course, happening to me too; but the imperative of camera people is *to get the shot*. To hell with the torpedoes! Full speed ahead!

In this euphoria of false security, I failed to notice that I had maneuvered down-current of the bait ball. Quite suddenly the current carried it on top of me. With a sense of genuine alarm, I realized I was in the middle of the mass, visibility fish only. I backpedaled furiously but made no backway. Then, adding to the excitement, the sharks launched one of the gourmand forays. Their solid bodies rocketed past me, flashes of brown in the all-embracing silver cloud, coming from all directions. I thought, "they can't all miss me in their blind charges"; and then, one didn't. It was a sledge-hammer blow, knocking me aside like a Mack truck might side swipe a bicycle. I wondered if I had sustained a bite and half expected to see blood billowing out from my wet suit. No blood. No bite. No credit to my level of caution. The collision did knock the left handle off my new housing. Later I considered the possibility of it having been the right handle...the one I was holding. And then, I was out of it. In the clear. Too busy to think about what happened; that would come

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

SRI Board of Trustees:

Robert Ferrara, *Chairman*

William L. Bunting, Jr., Esq.

D.W. Bennett

Raymond Ferrara

Leonard J.V. Compagno, Ph.D.

SRI Executive Council:

Stan Waterman, *President*

Leonard J.V. Compagno, Ph.D.

Director, Science & Research

Andrew Gifford,

Director, African Operations

Donald Warren, Esq.

Keith Markey, PhD, *C.F.O.*

Teresa Markey, *Secretary*

Marcia McMahan, *Education*

Mary Regan, *Development*

Kathy Rothschild, *Publicity*

Paula Kovach, *Newsletter*

SRI Project Directors

Lewis Levine, M.D.

Global Shark Attack File

Robin Ernst & Robert Phillips,

Ph.D., *DNA Study*

Andrew Gifford

Whale Shark Study

- Rob Allen *SRI Chief Pilot and Microlight Instructor*

- Sue Smith: *Whale Shark Tagging Program Instructor*

- Dan Heil: *Satellite Tagging Unit*

Field Directors:

- David Rowat - *Seychelles*

- Alex Antoniou, Ph.D. - *Utula*

Advisory Board

Richard Ellis

Affiliates:

- American Littoral Society

- Hubbs Sea World Research Institute

- Shark Research Center

later. Jay, also, found himself in the middle of the action core and sustained three hits by the brown torpedoes powering through the mass. He also described the blows like being hit by a sledge hammer and thought they were all received in his tank. The air tanks were yellow. It's possible that flash of yellow in the chaos of the melee was responsible for the hits.

I shot the wild spectacle inside, outside, around and up and down, grateful for the long 60-minute load of tape and the 1.5-hr battery in my digital camcorder. For more than 30 years I shot 16mm film. A magazine film load lasted 12 minutes. Frustration was epidemic.

Some while after I wrapped my coverage, Jay and Georgienne went out again, accompanied by Michael Topolovac, the President of Light & Motion Industries. The rope mass had sunk far to the bottom out of sight. The bait school was drawn to the Zodiac. The action seethed around the inflatable skill, right at the surface, creating a maelstrom of lashing sharks' tails, criss-crossing fins and water boiling with the convulsions of the bait school. Into this cauldron the divers, without getting wet and committing suicide, lowered their cameras with remote control extensions. The housings finally retired

from the fray, honorably scarred with bite marks that were plainly visible on the tough aluminum housings.

In hindsight I am reminded of Conrad's words (in "Lord Jim"): "To the destructive element submit yourself, and by the exertion of your hands and your feet in the water make the deep deep sea hold you up." Whatever sustained me during the submersion into that real feeding frenzy, it was certainly not prudence. For all of us who think we are safe behind our cameras, there must be a certain kind of madness, a tunnel vision an "out to get the shot" irrational that you are safe from bullets whizzing around you. Then again, it was Zorba who said "A man needs a little madness, or he never breaks the chain and goes free"...or gets eaten.

SRI's Satellite Tagging Program: *an update*

On October 29, 1998 SRI's Tagging Team deployed a satellite tag in second whale shark. The shark, a 7-metre male, was tagged off the coast of Cape Vidal, KwaZulu-Natal, South Africa.

Severe thunderstorms grounded the team for days, but just after dawn there was a break in the weather. "We

watched Rob Allen take off in the microlight and get tossed around by turbulence – and the relief was palpable as we were given the go-ahead,” reported Joanna Walus. “Our two boats launched, following Allen and his airsick co-spotter, Jason Gifford, to the nearest whale shark. It took Steve Hoseck four attempts before the tag-anchor penetrated the shark’s 10cm-thick epidermis below the dorsal fin. Then Detective Sergeant Stephen Sander of the Endangered Species Protection Unit attached the 50cm cylindrical satellite tag to the tag anchor.”

Sander’s team recovered SRI’s satellite tag that the Tagging Team deployed in March 1998 on a 7-metre female whale shark. She was tracked from Cape Vidal, up the Mozambique coast to Xai-Xai and then headed back towards South Africa again, making forays into the Agulhas current. Less than month later, signals from the tag became erratic, then indicated the tag was moving inland to the town of Witbank. After an intensive search, Sander and his team located the tag in the home of two fishermen and returned it to SRI.

The tag was repaired and extensive alterations were made to the housing before re-deployment.

The tag uploads recorded data gathered about depth, position and water temperature to orbiting satellites every time it breaks the surface. It provides essential information about the migratory patterns of this species. This is the fourth whale shark to be tagged with a satellite tag (two others have been tagged in the Sea of Cortez); it is truly “cutting edge technology” and SRI’s Tagging Team are to be congratulated!

SRI, in a joint effort with Rutgers University, plans to deploy two more satellite tags on whale sharks in 1999. The tags will be deployed on whale sharks in the Caribbean in January and February.

WHALE SHARK SLAUGHTER IN INDIA

In a single week in September 1998 fishermen of Zaleshwar village near the Veraval Port in Gujarat, India, slaughtered 20 whale sharks. Called “barel” in the local language, the largest one whale shark killed was claimed to be 54 feet in length with a mass of 12 tonnes.

According to Moosa Hasam Machhiyara, one of the local

fishermen, whale sharks are hunted using sharp-edged steel hooks fitted on each end of a bamboo stick to which barrels are attached. After the shark is dead, two speed boats pull each its body to shore where it is butchered.

“The market value of a whale shark is around Rs. 40,000 to 50,000 (\$1,000 to \$1,250) but fishermen hardly get Rs. 15,000 to 20,000, (\$375 to \$500)” according to Moosa Hasan. “Oil from the shark’s liver is a valuable product; its rate is Rs. 700 (\$17.50) per tin.”

Mohammed Allana, an exporter of marine products, said that the shark’s meat is not eaten “because when it is boiled the meat turns to oil, but its wings (fins) are exported to Singapore.”

GLOBAL SHARK ATTACK FILE

- On November 2, 1998, Tadashi Koda (52) was bitten on the knee by a six-foot shark which became trapped in his tuna net. The incident took place in the Pacific Ocean, 460 miles off the coast of Iwakuni, in southern Japan, when the shark was accidentally pulled aboard the fishing boat. The fisherman was taken to a hospital in Iwakuni. This incident is classed a

provoked attack because it involved a captive shark.

• November 21, 1998, James Tellasmon, 9, was killed by a shark at Jaycee Park, Vero Beach, Florida, on the Atlantic coast about 70 miles north of West Palm Beach. The third-grader was in shallow water 40 to 100 yards from the beach when he was grabbed by the shark. "Witnesses said the boy started to flail, and then he was gone," reported police chief Jim Gabbard. A family friend, Sonny Wilson, attempted to pull the boy from the shark's grasp, but the shark submerged with the child.

Next day, the lower half of the boy's body was recovered. According to regional medical examiner, Dr. Fred Hobin, autopsy confirmed that cause of death was due to traumatic hemorrhage from wounds inflicted by a shark.

"This is the time of year when the water temperature starts changing and migratory fish begin to move through the area. There's lots of bait fish and they're close to shore," Gabbard. Police patrols joined lifeguards in watching for sharks or other predators, but none were seen.

*Dr. Erich Ritter,
Case Investigator*

Hawaiian Shark Finning

HONOLULU -- The boats arrive at the local dock with shark fins hanging from the rigging like laundry on a clothesline. Before the boat is even tied up, crewmen are selling the fins to men clutching six-packs of beer and handfuls of cash. Lately, they've been getting up to \$32 a pound. Some fins wind up in local markets in a refrigerated case, sold to make soup -- a thousand-year-old Asian delicacy. Others are shipped straight to Asia, where prices have hit \$256 for a pound of dried and processed fin.

In Hawaii, where the economy lags behind much of the nation, \$30 million worth of shark fins changes hands annually at the docks, usually in cash-only transactions. Traditionally, the money goes to the crew, not the boat owner. "Hawaii seems to be 'Fin Central,'" said Howard Deese, a marine programs specialist with the state Department of Business, Economic Development and Tourism. "In this economy, everything helps."

The leftovers from this industry are heating up federal discussions over finning. What the arriving boats leave behind in the waters off Hawaii, Guam, American Samoa and the Northern Mariana Islands are the carcasses of hundreds of thousands of finned sharks, mostly blues that are incidentally caught by fishermen chasing swordfish and tuna. Because the markets for shark meat, skin and cartilage are small, fishermen simply throw the body overboard -- sometimes still alive -- after they cut off its fins. That finless shark is eaten by another, bleeds to death or drowns.

Many conservation groups consider that cruel, wasteful and contradictory to American fisheries policy in most other oceans of the world. Shark finning is banned in federal waters of the Atlantic Ocean -- where sharks have been overfished -- and is opposed by U.S. representatives to international fisheries organizations. Yet it's still allowed in the Pacific. "This is a glaring problem that's inconsistent with U.S. policy everywhere on sharks," said Sonja Fordham, a shark specialist with the Center for Marine Conservation in Washington. "There are a million environmental groups ready to pounce on this." That has the attention of federal fisheries managers in

the Western Pacific. Even though some believe finning isn't an issue, they recognize that the practice looks bad.

"It's a perception issue," said Michael Laurs, director of the National Marine Fisheries Service laboratory. "It's premature to say there's a conservation problem. "Even if we demonstrate that there's no conservation problem, there's going to be a large voice coming from a number of groups saying there shouldn't be a shark fishery."

The fisheries service and the Western Pacific Regional Fishery Management Council, responsible for fisheries in federal waters here, have launched efforts to quantify the industry, assess shark populations and seek alternative markets for shark products. What they start with are federal statistics showing that the Asian hankering for shark fins has caused the regional catch to skyrocket.

From 1991 to 1996, as the price of fins doubled, the shark catch reported at Hawaii's docks jumped 22-fold: from an estimated 200,000 pounds to 4.5 million pounds, according to the council. About 99-percent of those sharks were used just for their fins, so the catch weights are estimated based on the size of the fins. And about 95-percent of those finned sharks were

blue sharks, a species of up to 13 feet and 400 pounds that's considered harmless to humans. Blues wind up on fishing vessels because they live in the same neighborhoods as swordfish and tuna, two prime targets of the Pacific commercial fishing industry. The fish typically are caught on lines stretching across 80 miles of sea and dangling thousands of hooks.

The council last year commissioned an overview of world agencies collecting data on Pacific sharks. But that study said "reliable fisheries statistics on a species-specific level for sharks is a rare commodity throughout the Pacific Rim." "Unfortunately, we know very little about the populations of blue sharks," said Charles Kamella, administrator of the fisheries service Pacific Islands Area Office in Honolulu. "All the information we have is fishery dependent data and what we'd like to do is have fishery independent data on the size of the population."

The council also will study whether alternative markets can be developed for shark products, such as using the skin for leather goods and promoting the use of cartilage and the liver for medicinal purposes. A state official said local interests want to process shark carcasses for medicinal purposes, but are hindered

by the fact that carcasses spoil quickly when stored on saltwater ice. The state is working with long-liners on other storage methods. For now, federal officials are not planning to curb the catch of sharks or their finning. Council chairman James Cook, who also owns several fishing vessels, believes finning should be stopped because it's wasteful and dangerous to fishermen, but said the council has to focus on science. "The council looks at this the same way they look at a tuna," he said. "It is a fishery and the shark is a fish."

*San Diego Union Tribune
September, 1998*

CITES protection Proposed for White Sharks

White Sharks may soon receive protection under international law. The Australian government plans to put forward a nomination for the great white shark to CITES (Convention on International Trade in Endangered Species) at the next conference of the parties in 2000.

*Nicola Beynon,
Australian Humane Society.*