July 16, 2008

Expedition Shark Has Ended, But Mysteries Remain

Australia's northeastern coast is a hotbed of shark activity, particularly for tiger sharks that come to feed during sea turtle hatching season. But there is trouble Down Under. The sharks are disappearing.

During a recent expedition to Osprey Reef, a group of scientists set out to find out why and we sent a writer, Wendee Holtcamp, and a photographer, Cat Gennaro, along to chronicle their story for this blog. Follow the posts below to read what happened during 10 days of this expedition, from April 5-15, 2008. The rest of the expedition was chronicled during the 2008 Shark Week show, *Mysteries of the Shark Coast*.

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Also, visit a few blog extras from the expedition.

- **Cat's Photo Slide Show**

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Image: Wendee Holtcamp (left) and Cat Gennaro (right).

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Posted at 05:09 PM in Shark Week, Sharks, Television | Permalink | Comments (5) | TrackBack (0)

April 15, 2008

Sunset on Osprey Reef

Nearly the whole crew has descended 45 feet underwater to watch the final crescendo, the last episode of shark rodeo. The cameramen are in place, the rest of us are sitting back on the coral shelf, and Richard and JR come down with the bait—200 of bait. They open the crate, and the cloud of rotting fish guts and flesh make the already murky water like a cloud. I can't see well but I can see sharks. One grey reef shark comes close, swimming right toward me before turning away. Before long they're in the wildest frenzy I've ever seen, tearing madly at the tuna heads and fish, darting around. Because there are so many of us on the coral shelf, we form a wall of air bubbles that tend to keep them away from us.

Richard tries to grab the whitetip but she escapes. Plan A foiled. I see the other shark they're after & a grey reef with a temp logger as well. Because they are bigger than whitetips, he has to catch them with the "claw." He makes a grab but misses. So much for Plan B. On to Plan C—use spearguns to attach pinger tags to silvertips, much the same way they tagged pizza sharks, erm, manta rays, but near the silvertips' dorsal fins. Because of their large size, the only way to catch silvertips would be by hook and line, but that takes time and as we saw earlier in the week, doesn't always work.

Richard and Mike follow the whitetip into a cave, and several grey reefs and silvertips follow them in. They're inside the cave with a bunch of sharks that block the entrance, and Richard has to punch two in the nose to get them to back off. Brendon and JR went to the mouth of the cave to keep more sharks from coming in. When Richard got out of the cave, he saw silvertips circling around. Ping! Richard darts the silvertip in the

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perfect location and gives Mike a high five. Two more follow in quick succession. They come back out of the water elated. Success!

Without a doubt this week's trip, plus a research-only shark tagging trip a couple weeks ago, have been highly successful. "We've gotten more done in the past month than we have in the last 12 years," says Richard. They've now tagged over 60 sharks and rays, placed a grid of receivers all around Osprey Reef and four inside the lagoon at its center. We made a stop in the lagoon center one evening and caught 7 juvenile grey reef sharks, literally just discovering on this trip that it may serve as a shark nursery grounds. And they've collected data from 16 receivers placed a couple months before along Osprey's western wall. A full picture of how the sharks use the reef — and whether they leave seasonally — won't come into view until at least a year's worth of data have been collected.

"We just picked up a manta ray," Richard says. He's back on the boat looking at the data from one of the receivers, and has already picked up signals from the manta tagged a couple days ago. By the next night, they picked up the second manta they tagged as well as chambered nautilus tagged by another researcher. What started as tracking sharks around Osprey Reef has turned into a project tracking sharks, rays, nautilus, and potato cod and that will soon track several other common reef fish. They've created a one-of-a kind grid where they can track movements of all different species in an ecosystem-wide study.

The ultimate goal is to gather enough data and raise awareness of the importance of Osprey Reef to sharks and other marine organisms to preserve it. The isolated coral reef seamount lies outside of the Great Barrier Reef Marine Park, so there's no formal protection here. Scientists know very little about shark natural history, but we do know overfishing and mismanagement threaten nearly all species around the world.

"Sharks are slow growers and take many years to mature. They're more similar to marine mammals than to fish in that way and they're extremely vulnerable to exploitation. It's just that sharks aren't as cute and cuddly as whales," says Richard.

By gathering information about how the sharks use the habitat, he hopes to sway the Australian and Queensland governments to preserve it and all reefs within the Coral Sea permanently.

Some progress has been made. As President of the Cod Hole Ribbon Reef Operators Association, JR had been negotiating an agreement to keep the fisheries away from Osprey reef with the Coral Sea Fisheries Association, but had been unsuccessful. After watching an Australia 60 Minutes show, the fisheries organization created a Memorandum of Understanding agreeing that they would not commercially line fish within a mile of the reef. That the commercial fisheries recognized the value of tourism is commendable, but the reality is that anything can happen without formal protection.

“All shark species in the world are mismanaged, including Australia’s. Once we get all of the info out there, hopefully the government will listen to our recommendations to manage it sustainably,” Richard says.

Expedition Shark is unique because it, along with Richard’s long-term research, partners research with conservation. Not many documentaries involve conducting research as part of the filming, and Celine and Mike say they appreciate that aspect of this film the most.

Celine studied psychology and then inter-cultural relations and it wasn’t until 2003, when she spent time with her father, Jean-Michel Cousteau, while he filmed the grey whale migration to Alaska that she knew for sure she wanted to carry on her grandfather’s legacy in documentary film-making. She’s worked on several documentaries since then, and now sees film making combined with conservation as her future calling. “It’s not enough to protect the shark species. We also need to protect their home,” she says.

The ocean is a foreign world to many people. To all of us really, even those who dive and spend time undersea. But oceans, and especially coral reef ecosystems, have color, beauty, excitement, drama, and, at the same time, a serene peaceful quiet that can not be replicated on land. They also hold incredible biodiversity.

“Some people like going for a walk in the woods but in an hour hike you might see a lizard or a butterfly,” JR says. He introduced Richard to Osprey Reef and to Raine Island, and has been passionate about conserving the region from the start. “But in a dive on the reef you’ll see thousands of animals. You’ll see more different species than you’ll see on land possibly for the rest of your life. Once in a while you’ll get the bonus of seeing these rare creatures, like a tiger shark, but the background hum is incredible— a kaleidoscope of movement and life.”

We've spent the last 20- hours battling 10 to 12 foot swells en route back to Port Douglas. The sun goes down as we approach the Australian mainland, and we've squashed as many people as we can into the tiny wheelhouse room. "What will define you after Expedition Shark?" Celine asks everyone. Richard is in his bed, hiding from the seasickness, but JR, Mike, Dean, Sean, Cat, me, and others are all still hanging out in the dusky light. "The fact that I've had an absolutely fantastic time," says Dean.

One thing I've seen for sure—these guys love their jobs, doing science, making films and working to conserve species that can't speak for themselves. Sharks rule the oceanic world. And it would be a shame if we allowed misplaced fear or ignorance to allow even one of these magnificent oceanic predator species to disappear.

Blog Extras:

- **Peruse parting shots from Osprey Reef in a stunning photo slide show.**
- **Listen to Wendee and Cat's audio dispatches from the Coral Sea, too.**

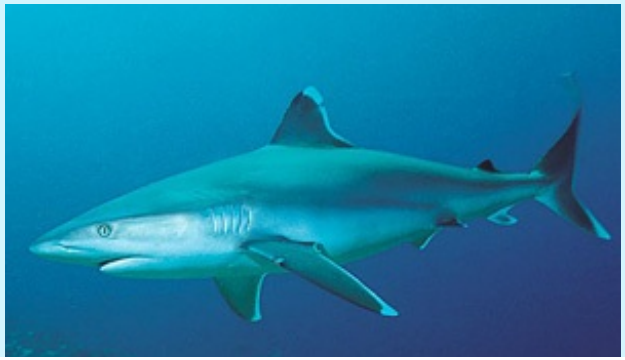
Images: Silvertip with pinger attached; Potato cod; JR and Richard review footage.

Photos: Cat Gennaro/DCL

Posted at 08:09 PM in Reef Sharks, Science, Shark Tagging, Shark Tracking, Shark Week, Sharks, Television, Tiger Sharks | Permalink | Comments (5) | TrackBack (1)

April 14, 2008

Brush with a Silvertip



Richard comes into the wheelhouse, where the skipper drives the boat. "A silvertip just took a swipe at my head!" he says. "JR said that's the most worried he's ever been for my safety." He is worked up a bit. Richard, JR and Mike had gone down on a mission to catch that elusive third whitetip with the temp logger. They joined up with a tourist boat in the area, Mike Ball's Diving Expeditions, and their divers got a rare opportunity to witness the shark rodeo firsthand. What they didn't

expect was to see Richard almost getting bitten on the head by 9-foot silvertip.

Back on board we're watching the video footage to see exactly what happened. Richard had opened up the bait box and the sharks started going mad. When one shark starts gnawing on dead fish flesh, the others quickly join the action and in a minute you have several sharks frantically biting at the bait. When sharks get into a feeding frenzy, they start swimming faster, darting about, and grabbing and jerking their heads back and forth to rip flesh from the fish carcasses. Richard got right in the action and a silvertip came in from behind him. The shark bit the top of his tank instead of his head, swiping over Richard's head with its abdomen. And then the silvertip came in for another bite! Lucky for Richard, he survived with all his limbs intact; he didn't get the shark.

"That's one I can send home to my mum," he says about the video footage. "I never tell her where I'm going or what I'm doing. I just tell her what I've done. She doesn't want to know."

At least one person on this boat has had a full-on shark attack. In 1978, Mike was swimming at the lagoon of Enewetak, an atoll within the Marshall Islands, taking underwater photos of sharks. He saw a grey reef shark coming toward him in an unusual position. "Its back was arched, its nose was raised up, and its pectoral fins were arched way back," he says. "It looked all cramped and convoluted. I was aware it was a threat posture and that I should back away, but I took a photo. That was my fatal mistake." As soon as the camera flashed, the shark took off the top of his arm, then swung back around and took a bite of his fin, and then came back a third time biting his buddy's hand.

He then had to keep his wits about him enough to swim 50 yards to the dive boat. When he got aboard his buddy had already arrived on board, helped him up, and then laid back down. "I realized he'd gone into shock, and I tried to radio for help." It took nearly an hour before some Army medics showed up in a helicopter. In the middle of the North Pacific, they were able to find the boat because of the red color. Mike's blood.

Richard also was bitten — on the rear end as it so happens — by a grey nurse shark he worked with at the Manly aquarium. It was his last day and he was mucking around too much while hand feeding the sharks, and it came up behind and bit him on the butt.

On the first night here, Richard told me to ask JR about the time he got bitten on the head by a tiger shark, followed by everyone's mirthful laughter. So after some coaxing, he told me the story. Turns out JR had a huge tiger shark jaw in his attic, and it fell onto his head. Nine stitches.

Working with sharks can be dangerous business, to be sure. The more you work with them, and the more you're in the action, the greater the chance that they might injure you. To get the photos she does, Cat puts

herself right in the action at times, but as a writer observing the expedition, I sit back and observed from a distance. The tourists that come to dive with the Osprey reef sharks on the Undersea Explorer and other dive boats in the area also watch from a distance. There is danger, but it's not excessive for those who are merely witnesses.

"We're extremely careful with what we do. It may look crazy but we know what we're doing," says Richard. The risks are outweighed by the importance of his work, and the legacy he hopes to leave for marine and elasmobranch conservation. "All shark stocks around the world are in critical condition. We need to get the data to show the politicians and the general public the dire straits sharks are in."

One night of the trip the crew filmed a scene capturing whitetips at night. I never got an opportunity for a night dive because the crew that needed to go with me were often busy with research or filming, but I watched from the boat and could see underwater strobes illuminating the ocean as they lassoed sharks. Whitetips are normally pretty placid creatures, though their super fine razor like teeth can certainly take a chunk out of your flesh. "Their behavior at night is completely different," says Mike. "Even on the duckboard they were jumpy." It was a heart-pumping adrenaline rush, and Mike says since his shark attack at Enewetak , over 30 years ago, he has some fear and anxiety about sharks and the damage they can cause. It doesn't seem to stop him from working with them though.

Our last order of business before heading home is a final attempt to capture the third whitetip with the temp logger. Expedition Shark presenter Celine Cousteau and sea turtle biologist Ian Bell, who worked with the team while filming tiger shark and green sea turtle interactions at Raine Island, were shuttled out to the Undersea Explorer today for some final wrap-up scenes with the whole crew together, so they get front seats at the shark rodeo, too.

We know where the elusive whitetip hangs out —right by the mooring at North Horn. Every time they bring down the bait box, she comes to check it out, but so far, she has eluded capture. Since it's the end of the trip, Richard makes the call to bring down all the remaining bait, including some 200 pounds of tuna. "If anything's going to happen, now is the time." Everyone suits up; the whole crew is going down to watch except for a few remaining on the boat. I walk by the wheelhouse to see the Undersea Explorer staff having an impromptu meeting about the procedure for shark attack. This does not calm my nerves.

I must admit on this dive I am a little nervous. Something about the unknown, the excess bait, everyone else getting amped, and the private meetings about medical evacuation and shark attack procedures just did it for me. My heart's thumping but I jump in and dive down to the coral reef shelf to watch the rodeo for a final time.

Images: Silvertip reef shark; Richard with whitetip

Photos: Getty Images | Cat Gennaro/DCL

Posted at 06:09 PM in Reef Sharks, Science, Shark Tagging, Shark Tracking, Shark Week, Sharks | Permalink | Comments (9) | TrackBack (0)

April 12, 2008

Pizza Sharks

Richard has just arrived on board with a huge grin. "I got him!" he says. It's a much different demeanor than yesterday, when he and Mike were incredibly frustrated at the "one that got away." This time it's not sharks but manta rays, though Richard says, "Rays are just sharks squished out and flattened like a pizza."

One of the cool aspects of the Expedition Shark research is that they grab opportunities that arise to tag new species or ask new questions about the ones that they have been working with for years. When we drift fished to catch silvertips the thought was; why not try to catch them, too? They tried to catch the tiger shark when they spotted it, and they tried to catch grey reef sharks with a "claw." Sometimes it works, and sometimes it doesn't. After some frustration, Richard has now worked out a new technique to tag manta rays, and gather data on them as well as the whitetip and grey reef sharks.

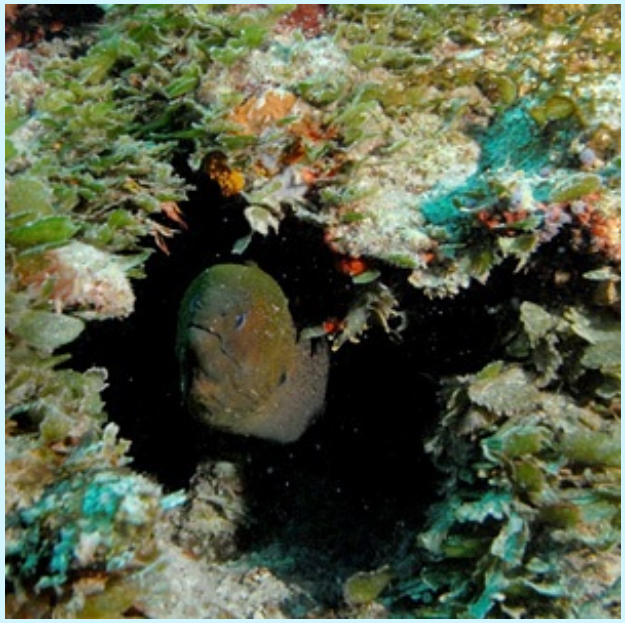
"We are using technology straight out of a spy movie. We're using radio tags and spy cams to look at what these animals are doing in real time," says Richard.

Every morning since we arrived, divers have deployed a reefcam at Raging Horn, and retrieved it in the

afternoon. The reefcam sits inside a watertight cylinder, and gives the scientists eyes into a world undersea. “Most of the shark research investigations put bait into the water. It’s based on observing the sharks after feeding them, which changes their behavior.” Collecting data on their movements and observing their real-time behavior undersea is shedding new insight into the world of these oceanic predators.

“Things we learned decades ago on land, we only have the foggiest idea about for the ocean, and about the largest predators on earth,” says Sanjayan. “It’s just astonishing. I’m a conservation biologist who has worked almost exclusively on land. And being part of this expedition really turned my worldview to understand that all the work that I do is really dwarfed by both the challenges of working in the ocean and the need for conserving the ocean.”

They set the reefcam at a “cleaning station,” where cleaner wrasse fish hang out and wait for marine organisms, including sharks, to show up for a parasite cleaning. “Fish line up like a carwash,” says Dean Miller, who has worked with Richard on and off for the last eight years as Richard’s research assistant and videographer. “You see fish that would otherwise prey on each other, hold off. It’s like a no-go zone.”



Scientists have known that rays and sharks use cleaning stations for some time, but Richard wanted to find out how many different shark species are using them. Using a reefcam, they can find out. Cleaning stations are typically found where currents pass through, because the fish or sharks or rays can hover on the current while being cleaned. Sometimes the cleaning stations are near a geographically distinct feature. This particular cleaning station lies at 100 feet, across a channel where a strong current runs. Sea fans and soft corals abound here.

A spotted moray —much smaller and more colorful than the giant moray from the other day — makes its home in a crevice nearby. Near the cleaning station it looks like a giant graveyard of bones, broken off branches of once living coral, probably victims of a past coral bleaching event or perhaps a cyclone.

Coral bleaching happens when hot ocean temperatures cause algae that live in symbiosis with the corals to abandon ship. The coral polyps have a symbiotic relationship with zooxanthellae algae, and if the algae leave for too long, the corals die. When temperatures cool back down, the algae re-colonize and the reef can recover, but it takes time. Global warming has increased ocean temperatures around the world, and coral bleaching has affected many reefs worldwide, especially ones at shallower depths because shallow water

heats up more quickly.

Dean gets the job of scanning eight or nine hours of reefcam video footage every night looking for interesting footage. “We didn’t know how many different species of sharks use the cleaning station,” he says. “On this trip we’ve seen manta rays, whitetips, silvertips, grey reef sharks, scalloped hammerhead, and a large unidentified species that was over 10 feet long.” He has also seen several interesting behaviors.

“We have seen stalling, which is when the shark uses the current to actually stop in the water to allow the cleaner wrasse to come up and service them. We’ve seen sharks moving out of the way for larger sharks of different and the same species. Yesterday I saw four scalloped hammerheads swimming side by side with the school of chevron barracuda.”

About halfway through our trip, Dean started seeing a lot of manta rays on the footage, and some of the divers spotted them when they’d put down and pick up the reef cam. So Richard thought, why not try to put pinger ID tags on them too? They hatched up a plan to use a speargun to shoot a pinger onto a manta’s wing.

So for the past three days, they have tried to do just that. The first day, Richard thought he had one in the bag. He shot the pinger from the speargun, but it whizzed past. “I’ve never had something where I was so sure I’ve had it, and then it got away.” He came back on board frustrated. Several other diver teams then tried, but didn’t see manta rays when they arrived at the cleaning station. But then, success! Richard, one; Mike, zero.

This morning, the crew tried to tag more mantas in teams of two, leaving every 15 minutes. Mike explains his shift. “We had all this crap with us—the reefcam, the data logger, the spear and cutters and zip strips, and down we go. We had a lot to do. Set the reefcam. Set the data logger. And we had to tag a manta ray in 20 minutes. That’s all the time you’ve got at that depth. So we got down there and I still had this crap in my hand and there was the manta ray,” Mike explains. “It was a beautiful situation where the manta was being cleaned. It was going in circles. He went around once and we couldn’t get him. He went in a second circle and pop, he’s done.”

The researchers have now completed a network of 32 receiving stations around Osprey Reef that detect the pingers. “Now we’ve got two manta rays in the grid,” Mike says, thrilled. Any time these mantas get within 300 feet of any of the receivers, their presence will get recorded. “This was an opportunity to put a really important tag on a very important species in very important experiment.” Richard, one; Mike, one; sharks and mantas,

62 tags.

Images: JR and Richard plan tagging strategy; Moray eel in the coral; Richard with spear gun for attaching pingers to manta rays.

Photos: Cat Gennaro/DCL

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Posted at 01:43 PM in Experiments, Reef Sharks, Science, Shark Tagging, Shark Tracking, Shark Week, Sharks | Permalink | Comments (3) | TrackBack (0)

April 11, 2008

Silvertips, Tigers and Hammerheads, Oh My!

So there is Sanjayan, underwater, holding a whitetip shark on a rope; while JR has taken the other two to the boat. They've just finished the shark rodeo and we're heading to the surface. Sanjayan holds a joint appointment as lead scientist for The Nature Conservancy and a research faculty member at the University of Montana. Coming into the show as a terrestrial ecologist, he presents fresh insight into what it's like to experience some of these things for the first time.

"I've spent a lot of time around carnivores. I've been with polar bears and grizzlies and mountain lions and leopards and lions and wolves. I know how they behave and I know how to put myself in a situation where I'm never taking incompetent risks," says Sanjayan. "But the moment I go in the water, I feel incompetent because I'm surrounded by animals that are more comfortable in their environment than me, and I can't read them. Their body language is new to me."

The sharks must be having a tough time reading us too. Seeing sharks dangling by their tails is a pretty funny sight. But all that lassoing gets the job done.

"When Richard first told me what he wanted to do, that he wanted to catch a shark by its tail, and transfer the lasso from your hand to its tail, I thought it was a crazy idea," Mike said in a video diary he recorded for the

show last night. “But that’s what we’ve been doing. And it works like a charm.”

The shark rodeo takes place at North Horn, at the relatively shallow depth of 55 feet. The plan had been to capture the same three whitetips that they’d placed the temperature loggers on, but catching the third whitetip they placed temp loggers on has proven a bit tricky. The outside capsule fell off her tail fin, so she’s not quite as easy to identify, but Richard can tell her by the fresh sutures on her belly.

After bringing the sharks they captured to the boat, Richard carries them one at a time to the kiddie pool to wait while they work on the third. Richard gives the new whitetip a pinger ID, and removes the temp loggers from the other two.

We watch the shark rodeo again the following day, catching one new whitetip, but the one they really want eludes us yet again. She’s turning out to be a slippery shark. So Richard tries a new capture technique for grey reef sharks. He opens the bait box, which gets them hyped. With fish in the water, the greys started circling and grabbing aggressively at the fish —very different behavior from their regular cruising mode. Once the greys get in a frenzy, Richard tries to hook their tails with a “claw” he invented —a metal hook that works like a handcuff.

We watch for another 20 minutes or so, but it’s not working so Richard makes the call to head up. “The claw just seems to not work around their tail. It just slips out,” Richard says. But the good news: “We’ve now tagged 50 sharks at Osprey Reef.”

Out here on the Undersea Explorer, there are two simultaneous agendas—conduct scientific research and film a documentary. Some days they do both at the same time. Other days, no cameras are around and they just capture sharks. Sometimes they film scenes on board the boat or in the water while no research is happening. Sometimes they just play around, like when Sanjayan, Richard and Mike lay in the kiddie pool with a small whitetip shark.

Sometimes different things are happening at the same time. Various divers are setting and retrieving receivers, fishing for sharks or setting out reef cams. When Undersea Explorer biologist Gabriel Vianna was

retrieving one of the receivers at North Horn, several silvertip reef sharks “buzzed” him. Instead of keeping at a distance, the silvertips were checking him out, just slightly more aggressive than their normal cruising mode.

Since the silvertips were in the area, why not try to catch some? Silvertips forage differently than grey reef sharks, so researchers have to capture them differently too. While you can catch grey reef sharks by fishing off the back of a moored boat, silvertips tend to swim in deeper water and go after moving bait. So with engines idling and winds behind us, the crew cast a 400-pound fishing line with bait, and let the line drift with the boat away from the reef. When the boat gets too far out, skipper Sean would reposition the boat closer to the reef, and then let it drift some more.

I watched the fishing from the back deck and saw several silvertips swimming in the water just off the duckboard. Despite heavy winds during our trip reducing water visibility, the ocean is still incredibly clear blue, and sharks can be seen with clarity under the water’s surface. After an hour and a half, several to try to take the bait, but not aggressively. Once again the sharks just weren’t biting.

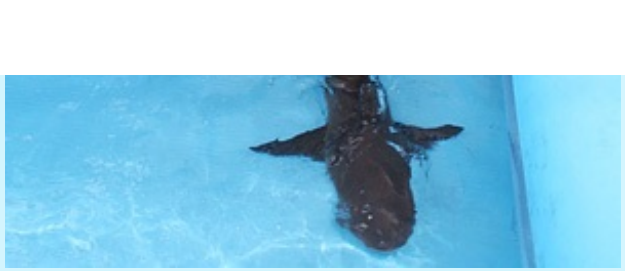
Yesterday morning we were traveling from Admiralty Anchor to North Horn to try our hand at shark rodeo again. I was standing at the duckboard when crew started running past and talking about a tiger shark. Mike spotted something at the front of the boat and so we all went out there to check it out. It comes really close to the surface and Richard makes the call, “definitely a tiger.” I can see the tiger-like marking on its flanks. “It’s a small one.” It is probably about 10 to 12 feet long—larger than any of the other sharks we’ve seen so far, but small for a tiger.

“Ask me how many tigers I’ve seen out here at Osprey, including that one,” Richard says to Sanjayan. “How many have you seen?” Sanjayan asks.

“One,” Richard replies.

JR grabs some fish bait to see if they can hook it, so they can see whether it’s one they tagged at Raine Island earlier in the year, also part of the Expedition Shark film. Tiger sharks lurk in great numbers off of Raine, a green sea turtle nesting beach. The crew got in the water to film, tag and release them. Is it possible that

one of those tiger sharks made its way out here, over 100 miles away? No one knows.



They try to hook the tiger shark for about 20 minutes but unfortunately, it didn't take the bait. She swam close to the surface a few times, dove deep, surfaced again and then swam away— a typical day of shark research.

"First a thresher and now a tiger shark. What's next?" I say. What a rare, privileged sighting! "Maybe a hammerhead? We're going to see a hammerhead!" I say. I'm half joking, because that would be extraordinary and unusual to say the least to see all three of these species here within a few days.

But I'll be darned if we don't see just that — a great hammerhead — the very same afternoon. Topside cameraman Athol Foster was snorkeling off the reef at North Horn when he saw a hammerhead swimming below him. "It came up within couple meters of the surface and it circled around. It showed a lot of interest in me." he says. "Had I been on my own and had no researchers telling me about sharks for the last several days, I probably would have been scared. I was sort of caught between both worlds, where you think, shoot, it could be really scary but I wished it would come closer."

Soundman Cam McGrath was the only one already in Scuba gear, so he jumped in with a underwater camera and got about 20 to 30 seconds of good footage. As more people got in the water, the hammerhead seemed to get a lot more agitated. They kept most people out of the water so they could get some footage and by the time I was able to jump in with my snorkel and mask, it was gone. Athol said it left by heading from the deeper water into the shallower Osprey reef shelf. But what an amazing stroke of luck we've had!

Images: Richard and grey reef; Pinger ID tag; Bait box frenzy; Sanjayan, Richard and Mike in kiddie pool with whitetip shark.

Photos: Cat Gennaro/DCL/Courtesy Wendee Holtcamp

Posted at 05:04 PM in Australia, Experiments, Hammerhead Sharks, Reef Sharks, Science, Shark Tagging, Shark Tracking, Shark Week, Sharks, Tiger Sharks | Permalink | Comments (1) | TrackBack (0)

April 10, 2008

Shark Rodeo

As soon as I hit the water in my Scuba gear, I see a dozen or more remoras, and that means just one thing

—sharks. Remoras are narrow foot-long sucker fishes that live in close symbiosis with many shark species. I haven't seen any remoras on whitetips, but they definitely like grey reef sharks, which are bigger, leaner, and can take a meaner bite out your dangly bits — as Mike can attest. Cat, Sanjayan, JR and I descend straight down onto a coral shelf where we'll sit and observe the action, while Richard and Mike come down with the bait box and lasso ropes, along with George Evatt, the underwater camera guy and his huge 100-pound underwater video cam.

As we swim downward, several sharks circle around, coming within two feet of me. At least two are grey reef sharks. I've never been this close to a shark, nor have I swum near any grey reefs until now. As Mike says, grey reefs are a whole different animal than whitetips. They look more "sharky." I have a few thoughts running through my head about how close these dangerous sharks are to me. Respectful awe.

We drop down to a boulder coral and I follow Sanjayan's lead and lie flat with my fins behind me. A floating cloud of bejeweled coral reef fish swim just above me. The shelf drops off to the "arena" where Richard, Mike and George are about to try to rope themselves some whitetip sharks. Front row seats at the shark rodeo.

As soon as the bait box goes down, more and more sharks start circling. Richard shakes the box which gets fish scent in the water, and Mike and George hang back a bit so the bubbles from their Scuba gear don't scare them off.

When the shark rodeo goes as planned, you grab the shark's tail, slip the rope from your hand over the lower lobe of the tail fin and then cinch it tight around the caudal peduncle, a bump at the base of its tail fin.

Mike and Richard can talk underwater with specialized Scuba masks with built-in walkie talkies. As soon as Mike reaches out for a whitetip, Richard says, "No, no, no!" Or so Mike thinks; turns out Richard actually was saying, "Go, go, go!"—so much for technology.

Richard grabs a whitetip tail and slips the lasso on so quickly it looks like anyone could do this without even trying. Just reach out, grab a shark, slip the rope on, and you've got shark on a rope. When Mike or Richard successfully lasso a shark, they hand it to JR or Sanjayan, who hold the rope so that the shark dangles

downward from its tail. Shark on a rope!

Watching from the coral shelf, even though we're only about 15 feet away, it's difficult to make out everything happening. We wait for what seems like a long time with no action and I'm starting to get cold. After 40 minutes of shaking the bait box and waiting for the right opportunity, they get their sharks— the same three with the white capsule temp recorders that they attached to their tail fins. The whitetips return each night to the same general location, making it possible to recapture the same animals.

Richard catches two sharks relatively easily — he's the shark wrangler after all — and Mike successfully lassoed his first shark, which he aptly named "Finally."

"You think that once you have it by the tail, you've got it," says Mike, but adds. "That's the easy part. The shark isn't happy that you have it, and it will turn around and say hello in a most unfriendly manner," he jokes.

Despite more sharks than I've ever seen in my life swimming around 15 feet from me, the sharks are not out in force. Richard says normally you'll have 30 to 40 sharks coming in close to the box. We may have seen 20, with a dozen closing in on the bait box at any one time. That's still a lot of sharks! A four-foot long potato cod – aka grouper – also muscled its way in amidst the sharks. Some of them grow big enough to eat whitetips.

The researchers have come up with possible reasons why they've experienced such challenges with shark capture this trip. When we first arrived, another tourist boat was out here. The sharks may not be hungry enough. While that may be good for my arms and legs, it's not good for shark research.

If many tourist boats feed sharks it can desensitize them in the same way that grizzlies feeding on garbage can become aggressive because they associate humans with food. Richard and crew use the bait box to lure the sharks, but other than a few wayward scraps that get out, they don't feed them except on rare occasions. During regular trips of the Undersea Explorer, when tourists are on board, they will take a bait box down and let the divers sit back and watch the shark ballet.

Five tourist boats come out to Osprey Reef throughout the year, though only the Undersea Explorer stays for extended week-long trips. Each company varies considerably in their ecological sensitivity, Richard tells me, and the industry is not regulated. Undersea Explorer has received an Australian government eco-certification for their use of sustainable tourism practices.

Before our dive, Richard suggested two other possible reasons we're seeing fewer sharks numbers this trip. Either a fishing vessel came through and killed them, or predators have sent them running—or swimming as the case may be. We tend to think of sharks as top dog of the sea, but many sharks have their own predators in addition to humans. "Last year around this time, a pod of false killer whales were out here and were attacking and eating the grey reef sharks," Richard explains. False killer whales are cetaceans, related to dolphins rather than baleen whales. "And there may also be orcas." He figures it's possible that since it's the same time of year, the false killer whales are around. "So keep a lookout for black dolphins."

When we've got three sharks on a rope, Richard gives us the signal to ascend, slowly. Up we go, three sharks in tow.

Images: Cameramen film the rodeo; Richard expertly lassoes a whitetip; Ascending with shark in tow.

Photos: Cat Gennaro/DCL

Posted at 07:11 PM in Reef Sharks, Science, Shark Tagging, Shark Week, Sharks | Permalink | Comments (6) | TrackBack (0)

April 09, 2008

Shake, Rattle and … Shark?

Mike stands on the duckboard at the back of the Undersea Explorer shaking a coconut rattle — a bamboo stick with a bunch of coconuts on the end that rattle together. "This has been used to attract sharks throughout Polynesia and Micronesia for millennia," he says. "Well, actually I just made this one."

Sanjayan, Richard and JR throw some small dead fish into the water to attract sharks toward the boat, and

once they approach, they shake the rattle at the sea surface to lure them even closer. Scientists once discounted this as folklore, but turns out the age-old practice actually works.

“When we shake the rattle, the sharks tend to swim faster and come to the surface,” explains Mark. “It gets them into a frenzy.” Apparently it’s the vibrations from the rattle that interests the sharks and it’s probably because it mimics the thrashing around of a dying fish. They use the rattle in addition to the fish because they often can’t tell grey reef sharks from similarly sized silvertips unless they come close enough to see the fin markings and body shapes.

Richard sticks his head completely under the water. I’m wondering if he’s out of his fool mind. He’s apparently looking around to see what the sharks are doing underwater, with his Scuba mask on so he can see. “There are three greys out there,” he says to everyone, pointing. During these shark catching experiences, nearly everyone hangs out near the duckboard. There’s several crew filming, soundman Cam McGrath recording sound with his mop-looking microphone, scientists baiting or handling sharks and others just watching.

I look out into the water and can make out three fusiform grey bodies, twice as big as whitetips, swimming gracefully around just off the boat. They have slightly darker markings on their tail fins, and white bellies that become visible as they turn directions underwater. I’m not seeing their infamous dorsal fin sticking out above the water, the classic image that comes to mind of a shark swimming near the surface. Enter JAWS music in my head….dun dun…dun dun...

Richard sticks his head back in the water, looking around, wondering why they’re not coming closer. In an instant he jumps back out of the water and screams. Sanjayan jumps back and shouts in reaction. Richard starts to laugh—just one of the many practical jokes that have been played since we’ve been out at sea.

Several different species may come to the bait, but each day the crew has a plan of action and know which species they need to capture. Today it’s gray reefs. As the sharks draw in closer, Richard and JR take turns throwing out a giant tuna head on a rope, slapping it down hard on the water. He’s hoping one will take a bite so he can pull the shark back on board. But unfortunately they’re just not biting. After an hour or so of trying to attract them, we abort the mission.

We try this method the next day also, and the same thing happens. Sharks come in to check out the scent and sound, but they just aren’t that into the giant tuna head on a rope. We’re at North Horn now, and Richard

makes the call to try this plan at night back at Admiralty Anchor where we moor at night.

In the meantime, Cat and I take a dive in the lagoon with JR to install one of the four additional receivers that they need to get their total number to 32 around Osprey. On this trip, the plan is to install four new receivers inside the giant shallow (80 foot deep) lagoon that makes up the center of the 150-square mile Osprey Reef to complement the receiving stations placed all around the reef exterior.

"The main thing we're trying to figure out is how far they move around the reef," explains Richard. "Another thing we want to figure out is whether the grey reef sharks move in and out between the lagoon and the outside of the reef." These receivers record whenever any shark with a pinger swims by. Not only that, JR later tells me the same receiving stations can record IDs of any individual of any species with a pinger. On Osprey, they've put the pinger ID tags inside of several giant potato cod and chambered nautilus, but eventually plan to also put them on Maori wrasse, coral trout, and Queensland grouper. "This is amazing, honestly," says JR. "Now we can collect data on the biology of all these species that no one knows anything about. And that will help with management." A similar grid system exists within the Great Barrier Reef Marine Park and JR says that they will be able to compare data from here to there to see whether the species behave differently on this seamount reef. (The Osprey reef map shows the location of each of these receivers as red dots).

It only takes about 15 minutes to complete the whole dive. We drop down and JR wraps the rope around a coral island, and the receiver – which looks like a large plastic bottle painted grey – is tethered to buoy which drifts above. While down there, we see a giant moray eel hiding in a coral crevice.

We ascend, take our gear off, and have a shower. We have dinner and after dark, the guys are out on the back deck fishing for grey reef sharks again. Because no filming is going on, fewer people are out there, and I didn't even realize what was going on until they had already caught and tagged two. They catch a third – using the same coconut rattle and tuna head technique as during daytime but it's working like a charm now, probably because they generally feed more at night. I watch as Richard hauls one on the duckboard and lays her upside down. These grey reef sharks' skin looks thicker and quite different from the whitetips, which have flattened bodies from hanging out mostly on the ocean floor. But grey reefs have a rounder, more classic shark

shape and nostrum. They're just beautiful animals. I feel incredibly blessed to be here.

Images: Mike with coconut rattle; Osprey Reef map, featuring pinger stations.

Photos: Cat Gennaro/DCL

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April 08, 2008

Shark Surgery

After hours of waiting, waiting, waiting things can happen fast around here. One minute Sanjayan's playing in the kiddie pool, cracking jokes. Fifteen minutes later, he's got a whitetip reef shark by its pectoral fins, pinned on its back on the duckboard with two whitetips are lounging in the pool. They've never used the kiddie pool as a holding tank for sharks before, but it works brilliantly.

Richard, Mike and Dean dove down below with a box full of fish, which attracts the sharks. Sometimes up to 40 sharks will swim in a flurry around the bait box, and then it's time for shark rodeo! Richard goes in with a rope and lassoes the tail. If I'm lucky, I'll get to go down with the crew while they lasso sharks in the next few days.

Richard is something of a shark superstar around Australia. He's been in four documentaries and worked on 20, and he has a sixth sense about sharks. I've seen him stick his head right in the water with two or three grey reef sharks circling near. I know I wouldn't be that bold.

"I've worked with sharks every day for 6 years at the Manly Aquarium (in Sydney, Australia)," he says. "So, I know when to stop. I know when they're about to get crazy or dangerous."

But today, I'm staying topside, and about to take on my new role as "shark nurse," handing Richard surgical equipment. Richard will be testing a new hypothesis

about whitetip diving behavior and we'll even be able to look at that data before the end of the trip, after they catch these same three sharks again and retrieve the devices.

"We think they're using their diving behavior to thermoregulate," explains Richard. Data they've collected on Osprey Reef whitetips over the past two to three years shows that during the night-time, they spend most of their time at shallower depths, but then do quick swims down deep. On top of that, as the night goes on, the sharks start going deeper and deeper.

Richard's hypothesis is that the body temperatures of these "cold-blooded" animals start to heat up as the night progresses because they're feeding constantly, and then they cool off by diving to the cooler, deeper waters below. "We have to prove that there's a temperature differential between inside the shark and outside." That will suggest that the deep dives can indeed cool them down. They'll do a rough test by comparing internal body temperature to external temperature on these three sharks. We'll find out in a few days.

Three divers arrive back at the boat with three lassoed sharks and hand the ropes to Sanjayan. Scuba gear comes off, then Richard and Mike pull one shark at a time out of the water. Richard grabs the 5-foot-long shark, which wriggles at first, then calms down as he carries it nonchalantly up the stairs into the kiddie pool. They repeat this for the next shark, but the third shark they place upside down onto a mattress – the "surgery table." The mattress has an orange-sized rip in it where another whitetip had taken a bite. "They've got a mouth full of tiny razor blades," says Richard. I ask if he's ever been bitten by a whitetip, and he shows me several tiny bite mark scars on his leg.

I sit near the shark's tail, which Mike holds in place. Sanjayan holds down the shark's pectoral fins which is hard work. JR places a hose so that saltwater runs constantly through the shark's mouth and hence over its gills. Since sharks are fish, they breathe by getting oxygen through water pumping past their gills.

The first order of business is to find out whether the team has captured this shark before. If so, it will already have a PIT —or passive integrated transponder—ID tag inserted by needle beneath the dorsal fin. Before he even swipes the PIT tag reader, Richard says “We’ve caught her before.” He can tell some sharks apart by their spots! Sure enough, after swiping the PIT tag reader, he confirms she’s “Twin Peaks” — so named after two spots on her flank. “Twin Peaks” has probably told us more about whitetips than any other shark. And with this new data, she’ll show us even more.

Richard squirts the shark’s abdomen with antiseptic. I hand him the scalpel and he cuts an inch-long incision through skin and top muscle layer.

“Females have tougher skin than males because it protects them during mating,” Richard explains. “They can get a bit rough.” They can also tell she’s a “girl” because she doesn’t have claspers, two sausage-like projections.

During the incision she flinches a couple of times and Sanjayan yells, “Watch out!” since he can feel her squirm before the rest. They quickly pin her back down, making sure no one has any fingers close by those razor-sharp teeth.

After Richard completes the incision, I hand him a 2 ½ inch long black capsule — a “pinger” which gives the shark a unique ID. Unlike the PIT tag ID, which they can only scan when they capture the shark, the pinger ID gets recorded any time it swims within 900 feet of one of 29 receiving stations (aka data loggers) the researchers have set up around Osprey Reef. They will be installing three more on this trip and I will dive underwater tomorrow to watch one being set up.

Data collected from these pingers will give a great geographical perspective on where the sharks spend their time on the reef. Combined with the time-depth-recorder, which gives a vertical perspective of how deep they dive, they’ll end up with an amazing three-dimensional view of how sharks use their habitat.

I hand Richard the internal temperature recorder, a 1-inch long white capsule. Next, a needle threaded with catgut with which he expertly sews up the incision, twisting it in place with clamps and cutting with scissors.

The next order of business is to attach another temperature capsule to the caudal peduncle — the base of

the tail fin — with a cable tie. Last, he takes measurements of the shark's total body length from head to tail. Then she's ready to go back in the water.

After we finish all three whitetips, they switch to a new project— luring in grey reef sharks by pitching in fish and a tuna head on a rope just off the duckboard. If we can lure them in, we'll also implant pingers and collect data on these guys. Mike shakes a coconut rattle —used for millennia by ancient cultures — to attract them. Within minutes, I see one in the water just off the boat. They're about twice the bulk and size of the whitetips. Magnificent!

Images: Sanjayan holds whitetip for tag retrieval; Richard and Mike with lassoed whitetip; Wendee (bottom right) with team performing "surgery;" Richard sews up incision.

Photos: Cat Gennaro/DCL

Posted at 07:39 PM in Australia, Experiments, Reef Sharks, Science, Shark Tagging, Shark Tracking, Shark Week, Sharks | Permalink | Comments (3) | TrackBack (0)

April 07, 2008

A Rare Find

I'm gazing over the edge of the Undersea Explorer into a mesmerizing azure-colored ocean. We got hit by a rain shower last night along with some raging gusts, and this morning the winds have picked up again. To my eyes, it's a gorgeous day out here in the Coral Sea. It's around 80 degrees both in and out of the water. But mildly choppy seas combined with the strong underwater currents mean both poor shark wrangling and filming conditions.

We've been here just over 18 hours and weather has prevented the crew from doing much. We aborted a night dive, and weren't able to go catch whitetip reef sharks to either implant new tracking devices or retrieve ones already in place. But all's well, because we still have a week ahead of us, and they're using the downtime to film "topside" shots of the crew doing various things, such as lead scientist for the Nature Conservancy and Expedition Shark presenter M.A. Sanjayan in a kiddie pool on the top deck. Funny as it seems, it will be used to hold the sharks they catch underwater before they wrestle them down to the duckboard — a metal

platform off the back of the boat. I won't go into the jokes the crew told about other uses for the kiddie, but suffice it to say that it involved Cat and I, and we're on board with a crew of 16 men.

The Undersea Explorer — the boat we're on and on which Richard Fitzpatrick and crew have conducted their research from for the past 12 years — is owned by a company of the same name. John "JR" Rumney started the innovative business model 14 years ago, partnering scientific research on sharks and other marine creatures with tourism. JR is a "salty dog" who has spent a lot of time at sea, and a lot of time diving with marine organisms. The business model allows snorkelers and Scuba divers a chance to swim with the magnificent creatures, and provides funding to learn about and, ultimately, conserve the reef. "It basically creates a self-funded scientific research program," explains JR, who has since started Eye to Eye Marine Expeditions, applying the same concept with minke whales. He's a fantastic photographer, and joins us on our expedition this week.

We've moved the boat from Admiralty Anchor, a safe harbor where we dock every night, to North Horn — Shark Central, "a very sharky spot," according to dive instructor Chris Witty. During the downtime Cat and I decide to go for a dive to shoot photos of whitetip reef sharks.

Divers typically descend to the deepest part of the dive first, and then come back up gradually, so Cat and I drop straight down along with Undersea Explorer crew member Brendon Robinson. Several whitetips rest right underneath our vessel on the ocean bottom. As Cat shoots the sharks, Brendon points out two foot-long lionfish resting under a precipice, which have long ribbon-like filaments extending over their maroon and white bodies. We glide over and through the reef system, looking at brilliant fish in various color combinations – purple, blue, yellow, black, white and green. A purplish octopus, smaller than a basketball, grabs Brendon's hand as he tries to lure it out from its coral crevice. I let its suckers pull on my hand, and for a second I think I may not get my finger back! It's surprisingly strong for a relatively little guy.

I notice the reef seems more colorful and with far larger variety of fish species present than in the two other spots I've dove and snorkeled on the Great Barrier Reef. Yet Osprey Reef does not lie within the Great Barrier Reef Marine Park, and the lack of formal protection is one reason why Richard and his colleagues are studying

the sharks here.

We swim out into an open channel where tiny bits of sediment whip past, revealing the current speed. All of a sudden, Brendon nearly jumps out of his wetsuit in excitement as he waves us closer and points. I don't know, but I have a good idea it's a shark. Probably a big shark, and I have to admit I got a wee bit nervous, but that didn't stop me from swimming right out towards where Brendon led. I don't see it at first but I keep looking, and there in the murky sea appears a 10-foot long shark, with a tail just half long as its body, trailing like a ribbon off its backside. I ask Brendon in my best sign language 'what is it?' He writes in an underwater notebook "Thresher shark" and makes a "Hang ten" sign which in Australian-underwater-Scuba-sign language, I'm told, means "shocker," Australian for surprising and totally amazingly cool.

Only when I'm back on board do I realize we witnessed an extremely rare sight. "You saw a thresher? No way!" Mike deGruy says when we get back. "Don't put that in the blog. No one will believe you!" he jokes. Mike has done a gazillion dives all over the world and has only ever seen one thresher. Brendon has seen only two before and he has logged something like 5,000 dives, and been coming here for the past 3 years, almost every week out of the year. And the crew hasn't filmed any threshers. "You had a very rare sighting," says JR.

Brendon tells us that we saw a big-eye thresher. Its big eye helps it gather light from its very deep sea environment where it normally is found. Expedition Shark Producer Mark Ferns explains that because Osprey is a seamount, the ocean drops way off to 1,500 meters just beyond it, so there are not only reef sharks but also deep water dwellers — such as the thresher shark — that pass through. Just one more reason why protecting this incredibly diverse reef will help protect sharks of many different species; not to mention the many thousands of other marine species that call this reef home.

The guys say divers with the Undersea Explorer have seen more threshers than usual this year, but no one knows if they're rare or just rarely seen. Despite all of our fascination with sharks — sometimes fear-driven gruesome fascination and sometimes merely awe — scientists still know very little about the majority of the world's shark species, especially in their marine ecosystem habitat. Unfortunately what little information we have about many species comes from shark attacks, which hardly reveals the wide spectrum of their natural history.

"It's 20 minutes until they're going to go catch sharks," Cat says as she comes into our room, where I'm

writing. The plan of the moment — we'll stay topside and record the action when they bring them back on the boat and help with surgically inserting radio tracking devices into their bodies. Up close and personal with live sharks on the boat. Shocker!

Images: Choppy Coral Sea; John "JR" Rumney (left) with crew; whitetip reef shark; thresher shark.

Photos: Cat Gennaro/DCL | Doug Perrin/Seapics.com

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April 06, 2008

Osprey Reef: Sharks in 3-D

One little bit of advice to seafarers: If you say "I never get seasick," you're doomed. I survived 20 hours cruising out to Osprey Reef with my stomach turning, and I'm about to take my first dive. We left Port Douglas around 5 p.m. Saturday, and after 20 hours of steaming through 20-25 knot winds and 6-foot seas, we arrived at Osprey Reef in the Coral Sea. We're so far from land that there's nothing but ocean in every direction — 100 nautical miles from the coast of Australia and nearly halfway between Australia and Papua New Guinea. "Get in the water right away," Cat tells me, "You'll feel so much better."

After sleeping on the deck in the seabreeze overnight, and being one breath away from hurling every time I step below deck, I can hardly focus on the safety briefing let alone wonder how my first dive around sharks will go. I'm trying to listen to dive instructor Chris Witty through my nausea, but my brain wakes up when he says, "You really don't want to go missing out here. You may not last long enough to die from exposure."

He's referring to the sharks…

But sharks aren't the only safety concern here. Because of tomorrow's new moon, we'll see a 9 foot difference between low and high tide over the next few days. This adds oomph to an already swiftly moving current. Chris implores us to follow every safety precaution, "We're too far away for any other boats to aid in a rescue. We're too far for helicopters to reach us. If you get sidetracked by manta rays and swim away from

the reef, basically you're lost. It's nearly impossible to see you in the waves unless you wave your safety sausage." It sounds cute and funny to me in his Australian accent – heck, maybe it sounds funny in any accent - but I sure as heck don't want to be out there having to wave around any safety sausages, hoping the sharks don't nibble the dangly bits below the surface.

Osprey is a reef that formed around a seamount that rises 6,000 feet in the middle of the Coral Sea. And it's a hotspot for whitetip reef sharks, grey reef (whaler) sharks, and silvertip sharks. The occasional tiger shark and hammerhead also pass through. Osprey lies some 80 miles outside the Great Barrier Reef system, which is the largest interconnected living organism in the world. We came here to film the final scenes for Expedition Shark, where shark wrangler — aka biologist and filmmaker — Richard Fitzpatrick and his crew are observing previously undiscovered behaviors for whitetip, grey and silvertip sharks.

Richard grew up in Rockhampton at the southern tip of the Great Barrier Reef. "Me and my best mate used to collect on the reef," he tells me. "I started snorkeling at 6, and diving at 15." He collected all kinds of things, but particularly the dangerous things — stonefish, sea snakes, blue ring octopus, cone shells. And his fascination with sharks started when he collected some epaulette sharks for his marine aquarium. He went on to get a degree from James Cook University and is now working on a Ph.D. there, but has spent the last 20 years working in marine biology, most notably with sharks.

During the past months, Richard and crew placed devices on these sharks that reveal where they travel and how deep they go. Over the next few days they will catch the sharks to retrieve the tags, from which they will be able to see where and when and how the sharks use their reef and offshore habitat. They'll also film other wonders of the Coral Sea, including the chambered nautilus — an ancient relative of squid and octopus — and glowing flashlight fish on a night dive.

Last night during dinner, I sat with Mike deGruy, a veteran filmmaker who both helps catch sharks and shoot video footage for this documentary. I notice the jagged marks on his right forearm and joked that it must have been a shark attack. Turns out, I'm right. I'll save the story for a future blog, but suffice it to say it didn't

calm my nerves when I further asked what species and he laughed and said, “You probably don’t want to hear — it was a grey reef shark.”

As I suit up and get ready to test out my “sea feet” I feel a bit like a seal out of water in my flippers and gear, but all the nausea, the mild anxiety, the talk of shark attacks falls away when I take a “giant stride” entry off the boat into the ocean below. I look around, and see coral reefs on two sides of me, with clown fish, parrotfish, damselfish, and butterfly fish flitting around and two other divers right near me. We sink lower into the ocean and about 50 feet down my dive buddy, boat skipper Sean Ryan, puts his hand on top of his head — the underwater signal for shark — and points to the sandy ocean floor. There before my very eyes is the creature that terrifies so many. Words can’t describe that moment when I see it. I literally feel like I’m swimming through a 3-D IMAX shark film. I am in absolute awe. I wanted to jump up and down, which is kind of difficult to do underwater. I want to say “That is so freaking cool!” but I can’t speak underwater.

We continue our dive through a cave that we’ll return to at night, and back out through a gully where the current is so strong I can barely swim upstream. We arrive in a more open area where it feels like a gigantic swimming pool. I twist around like a dexterous seal. We spot two more whitetip reef sharks on our dive. The last one I swim so close to that I can almost touch it. It’s time to ascend, and I’m waving goodbye to it, watching it become smaller and smaller as I near the boat.

Tomorrow, Richard and crew plan to retrieve the first of the radio tags, and we’ll possibly do a night dive we had to abort tonight because of too-strong currents. One thing is for sure around here – plans change every 15 minutes.

Blog Extra: Listen to Wendee's audio interview with Earth Live.

Images: Wendee and Cat aboard the Undersea Explorer; Richard Fitzpatrick; Fish in the Coral Sea; Whitetip reef shark.

Photos: Cat Gennaro/DCL|Courtesy John Rumney

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