

Beat It, Shark

WE'VE SPENT DECADES BUILDING SHARK POPULATIONS.
NOW IT'S TIME TO BUILD SOME DEFENSES.

BY JEFF WEAKLEY, EDITOR

It's one thing to feel that line suddenly go slack and think, "Shark."

It's quite another to look at a video replay and think, "Sharknado."

Things that happen below the surface boggle your imagination.

Aboard Capt. Scott Fawcett's 31 Contender eight miles off Stuart, Nate Garrison, Tim Nelson and Davis Mersereau stared at their laptop and reviewed the footage. Sharknado indeed.





SHARKNADO!
 Screen grabs from video captured by Sharkbanz crew off Stuart, Florida, in April 2022, as numerous large sharks (probably sandbars) swoop in on a hooked amberjack—and apparently back away from the magnetic accessory integrated into the fishing rig.



Zeppelin deterrent aimed at (passively, harmlessly) overwhelming a shark's electrosenses. At top is underwater video camera used to document interactions. Right: Capt. Scott Fawcett and angler Warren Sapp with AJ from the melee at top of page.

Underwater Photo Pat Ford



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Tim Nelson fights an AJ as Nate Garrison and Capt. Greg Bogdan look on. Davis Mersereau (below right) reviews footage retrieved from the camera, showing a bull shark in the area before the strike. Did the Zeppelin rigged above the weight (below) make the catch possible?



Angler Warren Sapp had dropped a live greenie on a three-way swivel rig over a wreck in 140 feet of water. Above the swivel was rigged a waterproof GoFish camera. Below the swivel, inline with the bank sinker, was one of Garrison's Zeppelin units. It's a 6 1/2-ounce pill-shaped rare earth magnet, super strong and sealed in bioplastic with attachment loops at top and bottom.

The Zeppelin is designed to overstimulate a shark's electrosensory system at close range, with the objective of deterring a strike. It's a fishing accessory based on the

technology in the crew's Sharkbanz wearables for surfers, swimmers and divers.

It's known that sharks can pick up weak electrical signals produced by creatures moving through the water. Ampullae of Lorenzini might sound some like European masterwork you failed to correctly ID on a history exam, but they're actually little gel-filled pores around the shark snout—they're the electrosensors. How this setup interacts with magnetic fields is complex stuff, but it's been documented in labs—and beneath fishing boats.

Sapp hooked up quick, and Fawcett was pretty sure it was an amberjack. He was also reasonably sure there'd be a shark in the area, ampullae all heated up, going after that flailing AJ like a plate of fettucine Lorenzini.

To the cheers of everyone on board, Sapp got his fish to the boat.

The guys pulled the card out of the camera, plugged it into the laptop: Sharknado.

First one, then two, then at one point as many as 12 or more large, brown sharks lined up behind the struggling AJ, swimming around it, toward it, clearly in predatory posture.

Those of us who looked at the footage identified the sharks as sandbars, a species heavily targeted for com-

mercial trade in fins and flesh in the 1970s and '80s. Today sandbars are protected in U.S. waters—and apparently rebuilding.

The Zeppelin had done its job, it seemed.

"I've been around sharks long enough to know, once they start zipping around like we saw on the video, they're gonna eat," commented Fawcett, who's fished out of Stuart since the mid 1980s. "We were witnessing a feeding frenzy, they wanted the fish so bad, but something was deterring or confusing them."

The team behind this device is refreshingly forthright with information. They're continually testing the gear in different scenarios, and willing to admit that it's not a guarantee against strikes. Rather, it may be seen as another

SHARK FILES: SANDBAR SHARKS

While drifting live baits for wahoo and sailfish a few years ago off Stuart, I caught a shark on my boat that was a hard fight on 20-pound sailfish tackle. I had to stare at it for a few minutes, and the subsequent photos, to ID it as a sandbar. It was about a 70- or 80-pound juvenile, and as the literature indicates, likely not yet sexually mature. The species is a slow-grower, becoming mature at around 12 to 13 years and capable of reproducing only once every two years, with a litter of up to seven pups. (Greater amberjack, for comparison, mature in 3 or 4 years and broadcast spawn millions and millions of eggs.)

The sandbar is in the same family (Carcharinus) as the better-known bull shark, but has a more pointed snout. And, the sandbar has a ridge of tissue aft of its dorsal fin. A "ridgeback," is the term scientists and fisheries managers use to help us lay folk differentiate a special category of "brown" sharks from the bulls, black-tips and spinners. The dusky shark is another ridgeback—it's similar

to the sandbar but the dorsal fin starts near the back of the pectoral fin.

Dr. Demian Chapman, at Mote Marine Laboratory in Sarasota, is currently studying sandbar sharks in captivity, documenting their reactions to the magnetic Zeppelin.

"We've seen them come up to the Zeppelin and make a hard turn away, but we'd like to see if they become habituated or not. Some sharks are very resident, living on a certain stretch of reef or rock, while others are migratory. We're trying test that out. It's in the very early stages."

"Science-based regs in the early 2000s paid off as far as sharks go," said Chapman. "Sharks are important for dive tourism, recreational angling, some commercial fishing too, and sharks themselves play important roles in the ecosystem. We need to learn how to coexist, perhaps re-learn some things we've forgotten."

"At the end of the day, it's about having a toolbox of tactics to outsmart the sharks," said Chapman. "Some anglers know you might need to leave a spot alone for a while, or, if you want snapper for the table, and sandbar sharks are around, you might need an electric reel or other gear to crank the fish in super fast."



Sandbar shark with large dorsal fin beginning at midline of pectoral fin, and interdorsal ridge.

Photo Pat Ford

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SHARK FISHING continues to grow and is a highly sought-after sport. While some fish are caught with a hook and line, others are caught with a spear. The 2017 International Convention for the Conservation of Atlantic Tuna (ICCAT) Fisheries Agreement is the first of its kind to include shark fishing.

What will it do?

Under the proposed rule, NOAA Fisheries would establish a Pacific shark fishery that would allow a limited number of commercial and recreational fishery vessels to fish for sharks.

Our sharks at the moment need your help! A study that has been done by the government reports that fishermen around New Zealand's commercial coastline are being attacked by marine or fish-eating sharks that are accidentally caught in their lines, sometimes to the point that they cost as little as \$1.

Please your support to end this brutal practice of over-fishing.

Photo by @sharkbantz

SHARK BYTES

Sportsmen Fighting for Marine Balance Facebook page cultivates images of shark depredation around the coast. How do you feel about the situation? What strategies have you tried, when dealing with “repeat offenders?”

er piece in our evolving toolkit for coexisting with fellow fish-eaters.

“It’s not 100 percent,” said Garrison, “but for fishermen it’s about gains over the long term.”

Garrison cited 2020/21 research by the government in western Australia showing 65 percent reduction in fish lost to sharks, with a prototype. “We believe effectiveness is better with the Zeppelin on the market and the latest rigging methods,” he said. Another report from Hawaii, studying the Zeppelin integrated into basic bottom fishing rigs similar to our common dropper or chicken rig, found similar rates of success—particularly when the Zeppelin was within 6 feet of the bait.

How the rig is put together is important. The disposition of the sharks, as you might guess, also matters.

With the Sharkbantz team, I watched some video footage after Garrison’s colleague and long-time friend Tim Nelson fought—and lost—a suspected cobia we’d hooked on a drift off Palm Beach Inlet. We were fishing with local captain Greg Bogdan. Bogdan had rigged the Zeppelin basically the same way Fawcett would—suspended below a three-way swivel on a 15-foot dropper, with the leader above it 10 feet long.

The objective, said Garrison, is to keep the Zeppelin between the shark and the hooked fish—but close enough (1 to 2 meters) to have the deterrent effect. A magnet simply allowed to bob along below the boat, or hung on an anchor line, won’t help.

The presumption is that the shark is rising up from below a hooked fish, and meets the Zeppelin first. That’s what we observed off Stuart. However in the video on Bogdan’s boat, we saw a bull shark rising from below... and a second bull shark dashing straight down from above. Tim’s cobia—and it was in fact a cobia, a nice one—was caught in a pincher move, disappearing in the maw of the top shark.

So, circumstances and outcomes may differ.

On one of Captain Bogdan’s drifts over a notoriously sharky wreck in 240 feet off Palm Beach, Tim again hooked a solid fish. We assumed—correctly—that it was an amberjack. Tim got it to

the boat, triumphant. A review of the camera footage did not show any sharks following the amberjack—but did show a healthy bull shark, with its tall dorsal fin and blunt head, in the area moments before hookup. Did the shark feel the Zeppelin and depart? Hard to say.

The three-way rig is pretty straightforward—again, you want the device down below the fish you’ve hooked, about three feet from the tail.

For a long-leader application, where you might want the bait 30 feet or more away from sinkers or other unnatural gear, you might get creative. Bogdan suggested a type of sliding break-free rig that took me a few minutes to understand.

Basically, he ties the fishing line to a three-way swivel. One ring of the swivel goes to a standard bank sinker on a

LEVEL UP, OR LIGHTEN UP, IN PREDATOR-RICH AREAS

LEVELING UP YOUR FISHING GEAR, giving you some ability to bring catches to the boat before the predators zoom in, is sometimes a feasible choice. But then again, the opposite approach sometimes wins the game. Two examples:

I enjoy fishing for Spanish mackerel in winter and spring along shallow (15 to 20 foot) reefs off of Hobe Sound in Southeast Florida. My lure of choice is a Gulfstream or Tsunami Glass Minnow jig in ½ ounce. These jigs cast far on the light rods that I've long favored—7 to 7 ½-foot sticks rated for ¼- to ⅝-ounce lures, carrying 2500 or 3000-class reels spooled to the lip with 10-pound braided line.

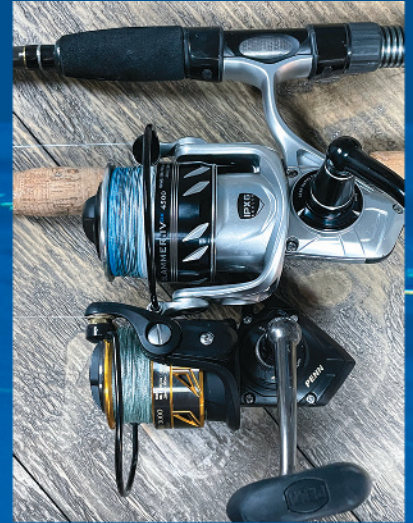
It's fun feeling the pulse of the rod and hearing the whirr as line is pulled off the reel, letting the mackerels show their stuff. Losing an occasional fish to a shark or dolphin might be shrugged off as just part of the day, but in recent years, the interventions have gotten pretty predictable.

Last season, I took a new Penn Slammer DX 4500 [silver reel, above right] on a Carnage III rod rated for 15-40 lb braid and lures of ½ to 1 ½-ounce. I spooled up with 20-pound braided line.

I may have sacrificed a little casting distance, but what I gained was the ability to basically stop a 4-pound mackerel cold in its tracks and speed-winch it, Bassmaster style, right to my boat. The Slammer has a 40 inches per crank pickup and a max drag rating of 30 pounds. No, I'll never need 30 pounds of drag on any spinning outfit. But what I can tell you is the mechanics of that reel, compared to, say a Battle 3000, definitely puts it on another level.

On more than one occasion, I had dolphins chase my hooked mackerel... but I beat them each time. Of course, I also stopped fishing for a few minutes after each incident, and moved my boat down the beach a ways. But if a dolphin tracked me down, I had tackle to get my fish to the boat.

Now for the opposite scenario. Anglers who specialize in fishing for cobia and permit on wrecks are finding that after hooking up, they may back off the drag and allow the fish to swim mostly free—at least evenly enough to avoid stimulating the electrosensory predator reaction in a shark, or swiftly to avoid being eaten. As Capt. Greg Bogdan of Palm Beach describes it, the cobia feel the weight of the fishing rig and naturally swim away from it—which means up. The captain then motors the boat to the fish at the surface, where the gaff is sunk... and the mate either swings straight for the ice box or the crew prepares for a terrible melee in the cockpit!



Easing up on the drag and allowing a cobia to swim away from a wreck and toward the surface is sometimes the key to evading depredation.

Photo Pat Ford



Blackfin tuna trashed by some kind of shark off Key West. Pelagic catches (including billfish) are increasingly being ruined by sharks. We move, yes, but some days they move, too. Below: One rig with Zeppelin, for bottom fishing.

leader (a strong piece). The other end of the Zeppelin is connected to the snap swivel with a rubber band. While fishing, the Zeppelin sits close to the three-way swivel, and the bait is free to swim about. When a fish strikes, the rubber band breaks, and now the Zeppelin slides all the way down to the hook. Or, as close as you might want it: A final swivel before the hook—making the leader essentially three segments—might be installed to ensure the Zeppelin never slides all the way off the rig, in the event of a cutoff.

If it sounds complicated, well it is.

But at \$70 a pop, whatever system you use ought to be configured to prioritize sal-

vaging the Zeppelin.

Later, as we talked at the dock at Sailfish Marina, Bogdan had a pretty good idea for general purpose bottom fishing. He suggested making up a common “dropper” or “chicken” rig with the Zeppelin and weight as needed at the bottom (the 6-ounce Zeppelin is a pretty good weight in and of itself!). But crucially, he envisioned using wire leader for the main stem of the dropper rig, with three-way swivels and mono leaders branching off to the hooks. Below the Zeppelin, bank sinkers could be fastened with sacrificial mono.

That way the Zeppelin is connected to the fishing line entirely by wire; the baits will be stealthy, the sinker poised to break off if snagged.

Bonus points for shark-detering rigs that also minimize gear loss on our reefs.

About sharks in general, Bogdan said, “I’ve found myself in the last couple years, as fish numbers seem to be down, I’m simply not willing go to some spots where anglers won’t have a realistic chance of getting a fish up.”

Bogdan has run charters out of Palm Beach since 1996, putting more than 40,000 hours on his iconic inboard Conch 27.

“For instance, there’s a spot near here right now with 8- to 10- pound muttons, and they’re getting ready to spawn. Do you really want to get six or eight of those eaten by sharks so you can catch one? We’ll do something else.”

Fawcett echoed Bogdan’s sentiments, saying, “In the last seven years or so, it’s definitely gotten out of hand. These sharks are so well-trained, as soon as you pull the boat out of gear on some spots, you’re marking one or two of them within 15 or 20 minutes—and they’ll follow you all day until you move.

“I haven’t bottom fished because of the sharks in almost three years, and same with cobia and permit—you talk to

HOW TO MEASURE LINE FOR YOUR ZEPPELIN:

Length of Bait Leader
+
Estimated Size of Catch
+
3 ft. / 1m / 90 cm

You need your Zeppelin to hang below your catch

METHOD #1: 3-WAY SWIVEL INLINE

Distance from TAIL of your Catch to Device

18-36" in. / 45-90 cm

ZEPPELIN



Sinker (As Needed)

few feet of mono (tip: always a good idea to make the sinker leader lighter than the rest of the rig—if you hang the sinker, you can break off without losing everything else).

The other ring goes to a leader of 10 feet or so. This leader is then is tied to a second swivel, followed by as much leader as conditions or your imagination might dictate. Before adding the hook, though, you slide a standard barrel swivel on the terminal leader.

Also tied to the same three-way swivel ring as the leader is a short piece of line with a snap swivel at the end. That random, free-sliding swivel on the long leader? That’s to be connected to the Zeppelin by another short piece of

people who are just donating fish after fish to catch just one, killing many times their legal limit.”

Fawcett spends his time and energy trolling for sailfish, mahi, and tunas—but even some days, those fish, too, are targeted by sharks.

Fawcett sees the potential for deterrent systems like the Zeppelin, but ultimately feels a rebalancing of the ecosystem is in order—removing sandbar sharks or perhaps others from the protected list, encouraging some form of directed fishery. I’ve heard that from many fishermen up and down both Florida coasts.

Commercial shark fishing has a long but checkered history in Florida. In Stuart, for instance, it dates back at least to the 1940s, when a shark processing plant run by the Borden milk company operated for a few years not far from where Fawcett now docks his boat. Shark liver oil, at the time, was a major source of vitamin A. The international trade in shark fins would bring other bumps in fishing effort—as well as the well-publicized optics of inhumane and wasteful fishing practices. Declines in many shark species through the 1980s and ’90s prompted tighter limits and full protection for many species.

“I’m a conservationist, I’m all for letting fish go,” Fawcett said, “but the experienced captain in me sees what’s happened. Sharks have been protected, and everything else is not.”

Anglers like Fawcett and Bogdan (and quite likely you, reader) have verbalized these kinds of concerns to fisheries agencies in recent years. The Florida Fish and Wildlife Conservation Commission (FWC) is working with researchers at the Florida Atlantic University (FAU) Harbor Branch Oceanographic Institute to evaluate impacts and angler perspectives.

One facet of the study involves a kind of “forensic analysis,” explained Dr. Matt Ajemian, FAU Assistant Research Professor.

“We supply a sampling kit, with a swab kind of like those used in a covid test, and we can collect DNA that a shark left on a fish bite, to determine what species are involved. We’re also analyzing Facebook pages, to see what fish are being reported—the top five we’ve seen are kingfish, amberjack, mutton snapper, red snapper and gag. Right behind them are sailfish, yellowfin tuna, snook, blackfin, wahoo and cobia.”

“We’re in the characterization phases—which fisheries does depredation most effect? Then we’ll get to the mitigation phase; how do we offset this?”

Meantime, Florida anglers are already in mitigation mode, trying various strategies and gear to minimize shark interceptions. As I write this, the wind is 20 knots out of the east and I’m awaiting a calm spell to drop a line offshore and test a little anti-magnetism. [FS](#)



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