

Spooked!

Lenny Rudow

Editor's Note: Acoustical Society of America members are unlikely to know the author of the article because he is not an acoustician. The author is, however, not only world-renowned in his profession as a fisherman and boating expert, but he has been a writer and editor in the marine field for over two decades. Lenny has authored seven books on fishing and boating, and he is the angler in chief at Rudow's FishTalk magazine (see fishtalkmag.com). Lenny is also electronics and fishing editor for BoatUS magazine, and is a contributing editor to several other publications. His writing has resulted in multiple Boating Writers International writing contest and Outdoor Writers Association of America "Excellence in Craft" awards.

To an angler, the most important sounds are the ones heard by the fish.

Can they hear me now? That's a question that goes through the mind of every angler worth his or her salt. Because sound can kill, kill the fishing action, that is.

At its core, fishing is an activity that basically boils down to convincing a wild creature to attempt to eat your bait or lure. And to do so, that wild creature has to be comfortable with what's going on around it. A scared fish won't bite, and loud sounds often scare fish. In some settings, this behavior is observable. While poling through the shallow flats of Florida, for example, fly rod in hand, guides are careful to instruct their clients to remain quiet. If they aren't, they'll watch the fish suddenly swim off, startled and spooked.

A slamming hatch. A loud voice. A tacklebox dragged across the deck of a fiberglass boat. All of these sounds are known fish spookers. But there are also a lot of unknowns.

Some anglers believe that boat engines can scare the fish. But is this the result of the engine itself or of the propeller that engine spins? All forms of propeller-driven propulsion



create prop noise under water, which sounds like a whirring or a whine to our human ears. The pitch and volume of the noise a propeller creates is directly related to its speed. Even "silent" electric motors still have to spin a prop. So, could a potent electric trolling motor running at maximum throttle actually be creating as much noise as a gasoline motor run at minimum throttle? But is this a sound fish can hear in the first place?

Some anglers believe that music played at a reasonable volume can help improve the bite. They may postulate that the fish are attracted by the steady beat or that it has nothing to do with fish "liking" the music and everything to do with the mellow, nonthreatening noises masking abrupt sounds, sort of like humming a tune or whistling when walking through bear country to make sure you don't startle a wild beast bigger than you are. Or maybe music merely adds to background noise, the acoustic scene that fish quickly become acclimated to. But is this a sound fish can hear in the first place?

Some anglers believe that sound-making lures with rattles inside or a concave face that gurgles and pops can attract the fish. Some others believe that (particularly in calm conditions) these noisemakers can do more harm than good, scaring the fish with their loud sounds. Or maybe those lure manufacturers (who tell us how amazingly effective these offerings can be) base their marketing more on myth than reality? And of course, once more we have to ask, are these sounds fish can hear in the first place?

SPOOKED!

Truth be told, we anglers simply don't know what fish can and can't hear. We're not acoustic scientists (well, at least not most of us!), and we're certainly not experts on fish beyond knowing how to trick them into biting. We spend untold sums of money on boats, rods and reels, lures, and other gear; we spend day after day at sea; we dedicate countless hours to figuring out how to fool those fish and take home dinner. But aside from a few direct observations, we don't really know — *know* — just exactly which of these sounds that we're making are heard by the fish, much less which are scaring them off. And for that matter, we also don't know what sounds we're making that might actually attract fish.

We don't know if the fish are hearing these sounds at all or if they are (or are not) feeling them via the lateral line. We don't know if the sounds we're making are skipping off the surface of the water or if they're being projected down through the hulls of our boats. We don't know if an open aluminum hull does a great job of projecting sound through the water, whereas a fiberglass hull does not or vice versa. In fact, there's a whole lot about sounds, fish, and what fish hear that we anglers don't know. We may think we know, but...

Many years ago while doing research for an article in *Boating* magazine, my team and I used a hydrophone to record underwater sounds while fishing. We were curious to find out what the fish that we were trying to catch might be hearing so we tried towing the hydrophone just under the surface among the lures in a trolling spread. Then we tried dropping it straight down at various depths under an anchored boat where our baits were being fished. One of the most fascinating discoveries we made was that we didn't hear what we had expected. While trolling, we clearly heard human voices as people talked, but we could barely make out the rumble of the diesel engines, a dominant sound above the waterline. While at anchor, we heard the tell-tail (a stream of cooling water expelled from an outboard motor) splashing on the surface, yet we didn't hear the motor itself. And while trying

to move the boat with as much stealth as possible, the sound of a push pole (usually thought of as the quietest form of propulsion) crunching sand and shells was notably louder than the propeller noise created by an electric motor moving the boat at the same speed.

But you know what we didn't find out? What those fish heard. We discovered what we could hear beneath the surface with our human ears, but as for the fish...well, they weren't telling.

I know darn well that virtually everyone reading this right now knows one heck of a lot more about acoustics than I ever will. And there may even be some anglers among you. But as a 30-year veteran of the fishing field, I'd assert that I probably know the mind of a fisherman as well as anyone on the planet. And one thing I know for sure is that we anglers are quite concerned with catching more and bigger (read older and wiser) fish, which means understanding how to avoid spooking them. That includes how we trigger senses other than hearing, such as sight and even taste. But in this layman's world, I want to know everything I can about how sounds travel into and through the deep blue and just which of them those fish hear. And it's a fair bet that this same curiosity runs through other hobbies and professions. Wouldn't someone training their dog want to know what pitch whistle was best for giving commands from afar? Doesn't a ship's captain want to understand how his or her hearing is affected by fog? Shouldn't a musician know how to best set up in a venue to take advantage of the acoustics they're presented with?

I can't answer any of these questions. But maybe you can.

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