

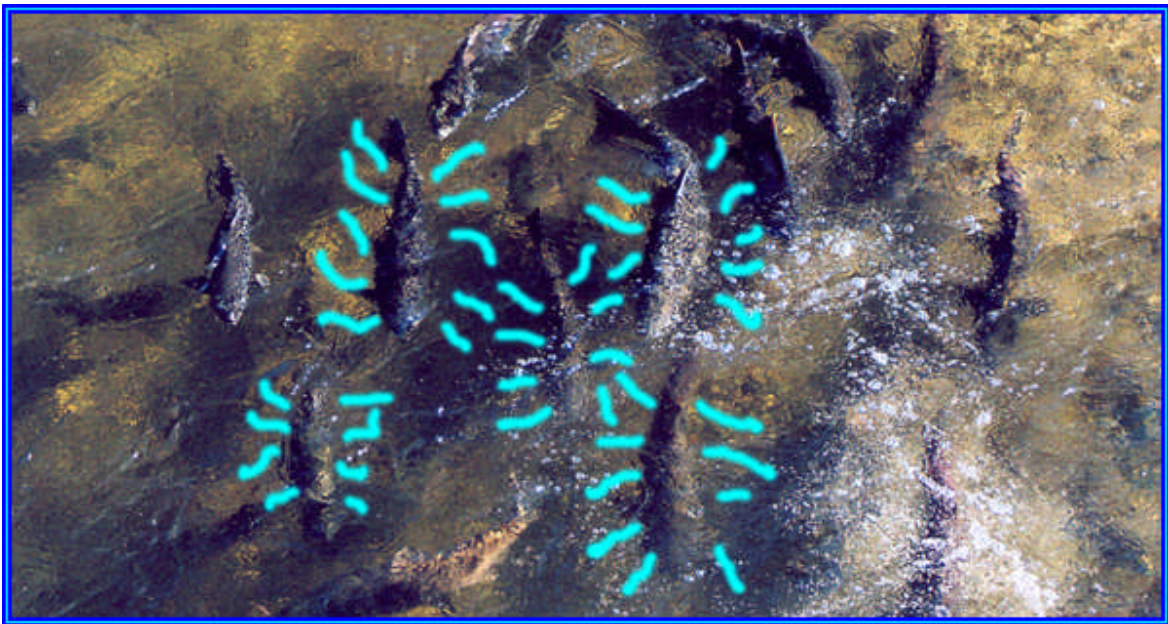
## TOP FISHING SECRETS

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### The Language of Fish

*Fish communicate with each other and knowing how they do translates into more fish on the hook.*

**Timothy Kuserets**



*The blue squiggle lines in the photo represent slime that is secreted when “club cells” are ruptured from virtually any portion of the body of these salmon. The broadcast of the scent created by the slime (via club cells) alerts all other fish in the area causing them to bolt enmasse. Hooking a fish in the mouth or anywhere on the body will cause slime to form. Bites from bears, seals, and otters will also rupture club cells. Anglers who practice catch and release inherently burst these cells while handling fish subsequently putting any holding fish on alert once the catch has been returned to the water. The ability of fish to generate this olfactory defense is a brilliant evolution that allows them to communicate with each other using only their sense of smell. If the water were murky with zero visibility they would still be able to understand that a predator, or threat, was in the area, locate its general vicinity, and react instinctively within fractions of a second.*

*Though clustered, fish are referred to as “Schools” they swim together cohesively the same way birds do without colliding into one another. Purely on the basis of close proximity schools of fish can almost instantly react to one another. A single startled fish will alarm the entire shoal stimulating them to flee as one. The lateral lines of almost all fish allow them to perceive sounds making them extremely sensitive to low frequency sound modulations. Based on acoustics in any given area most fish can determine if there is a threat from a predator or even detect sounds of immobile objects such as the hull of a boat, floating dock, or buoy.*

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*Solely on the basis of sound fish literally would not “need” to see, which is incumbent during times of zero visibility. So, even if you cannot see the bottom of the river, lake, or estuary the second you wade or start the motor of a boat fish are able to accurately access the threat, identify the location of it, leave the area, or simply go off the bite and you’d never even know fish were there from the start.*

*Every one of these incredible fish senses and instincts can be countered putting even pressured fish on the hook when you know the language of fish.*

**Author’s Note:** This article discusses how fish communicate with each other. It gets a little complicated sometimes, but will answer every possible question when it comes to figuring out how, why, when, and where fish communicate to each other using their unique languages both internally and externally. This article does not predispose that fish are intelligent, rather, that they communicate with instinctive behavior and not cognitive decision making abilities. Fish are food, fun to catch, and inherently stupid when compared to human beings. The quest to fish is a very spiritual and fulfilling experience that only outdoorsmen can experience; this article is solely meant to enhance that experience.

Fish are not people and people are not fish. It seems like an easy thing to comprehend but sometimes fishermen take for granted the physiology of fish and treat the idea of hunting for them as nothing more than experiences based on luck, not science. Finding, Hooking, and Landing fish can be complicated and frustrating if you really don’t know how fish function in their aquatic environments. If you fish without that understanding then it really does boil down to luck and that can equate to some rough times. It is possible however to reason out why fish behave the way they do by first understanding what scientist have fundamentally learned.

Scientists have been on the forefront of understanding the physiology of fish for decades, especially when it comes to Salmonids, but only in the last twenty-five years have they fully understood that fish can actually talk to each other.

The language of fish is sort of complicated, but what language isn’t? Fishermen the world over have seen it in action even if they didn’t know about it. When fish go off the bite, almost always there is a fundamental reason that takes place prior to the lack of hookups. Most of the time fish go off the bite is because of the pressure of predation. Did you ever see fish go on the bite for a short period of time and then go off only to see the bite go back on upstream? Did you ever wonder about it or did you do like many other anglers and race over to the feeding fish to make it in time to get one or two of them? Any fisherman who has spent a significant amount of time on the water knows exactly what I’m talking about. Well, each time the bite goes off is due to fish literally talking to each other through Chemicals, Subsonic Vibrations, and Bodily Posturing and Visual Communications. Predation and Feeding are the key motivators to fish communicating to each other, but there are other times too, for instance, inland migration, spawning, barometric fluctuations, temperature, and rapid changes in water current. This is just a sampling of the reasons that give reason for fish to talk to each other, but understanding why they do, and when, is relative to getting more fish on the hook than you ever thought possible. Whether anglers know about it or not, we’ve been communicating the wrong messages to fish for thousands of years. We’ve missed out on golden opportunities to catch fish that should have been easily taken under just about any circumstance. Native Americans have known the spiritual quest of language that takes place between all living things, even if they didn’t understand the scientific nuances we know of today. They were able to catch fish with spears, traps made out of wood, and in some cases able to catch fish with their bare hands. This article explores the elements of science which will allow all anglers to catch more fish than ever before by understanding how to use the language of fish. The first step to catching more fish is to first understand the nature of chemical communication between fish.

One of the fascinating, and a little complicated, ways fish talk to each other is through chemical dispersion. Anglers the world over have felt some of this in the form of slime. The slime we find on tails and bodies of fish

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don't actually exist until we touch them. Beneath the scales and just beneath the skin are cells commonly known by scientists as club-cells. When ruptured, these cells broadcast an odor that alerts other nearby fish and they bolt. The odor, along with the slime is secreted the instant a fish is touched. Depending on the severity of the threat dictates the amount of slime. Fish that feel in mortal threat generate an immense amount of the slime, which is broadcast the moment a seal or bear sinks its teeth into the bodies of them. It is the exact same way it is for fishermen landing a fish. In some species, including Salmonids, the scent can transmit to a variety of other species; this is known as Heterospecific Prey communication, which then warns all fish in the area. This kind of pressure puts fish off the bite faster than anything I know. In the marine environment, contrary to fishing lore, seals are not a good sign that fishing will be good; it is the exact opposite. When threatened, fish will do one of two things. They will bolt from the area, or they will dive to lowest recesses of the area and hold perfectly still in the hopes of blending in with the environment. In many cases this tactic of evasion works, but it also keeps fish from biting the hooks of fishermen. So long as fish feel this kind of pressure the fishing can be astronomically bad. When predators are around, there isn't much fishermen can do about that, but there are fishing techniques they can use to keep fish on the bite just about any other time.

I've always endorsed the idea of catch and release. Anglers who employ my fishing techniques almost always improve their catches by the hundreds annually. With that in mind, keeping all the fish would be a crime against ecology yet the paradox of putting fish back in the water can also keep fish off the bite; so, what do you do? When fish are brought to the boat or to the hand, they almost always find themselves down current making release optimal since chemical broadcasts don't travel upstream, whether in fresh or marine waterways. Anytime catches are landed where the fishing is good, anglers need to be transport the fish down current quickly before any part of the fish touches the water. Remember, fish don't generate the slime until the club cells are ruptured, and you have to come within contact of the fish to make it happen. Fish that are placed back in the same area communicate the stresses they have been exposed to and soon all fish go off the bite; sometimes that means within a couple of minutes to about fifteen, but it does happen and this is the reason why. Hands down, putting fish in the water downstream is the single best way to keep fish on the bite, even if it sounds a little paranoid and goofy. If that sounds slightly off then wait until we explore the way fish can hear; think you know? You might not.

Upcoming Part 2: discusses how fish hear and differentiating sounds in the water from predator, prey, stationary objects, and fishermen. Combine their abilities to broadcast scents and how they hear means more fish on the hook with practical fishing applications.

Scientists admit that they are still at the forefront of completely understanding how fish hear, but they fully appreciate that it can be done internally and externally under just about any circumstance. Based on acoustic interpretations of subsonic vibrations, fish can decide to feed or flee and they don't even need to see what's in the water to decide what to do enmasse; it is a preservation tactic that can be almost instantaneously communicated to an entire school of holding fish. It is another form of fish language that many fishermen do not know. When a fishermen understands how fish hear that knowledge allows anglers to counter a fish's ability interpret what's in the water thus keeping fish on the bite.

Being able to identify sounds in the water, fish focus on locations of prey and predators. Their lives depend on being able to respond almost instantaneously. "Listening" streamlines their attention and applies to every species of fish. Fish are able to differentiate sounds via the Lateral Line System (LLS).

The LLS extends along the body from the tail to the head and face where it is then called Facial Pores, which most fishermen are unaware. Pores on the face and along the head further allow fish to discern sounds from just about every object in the water from almost every direction. Sheryl Coombs and Christopher Braun, coauthors of "Information Processing by the Lateral Line System", insert discussion in *Sensory Processing in an Aquatic*

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Environment, discuss at length about Hydrodynamics of a fish's innate ability to distinguish between moving and stationary objects. Both scientists identify the growing research findings of the lateral line systems for fish to avoid stationary objects, locate prey, and evade predators. Scientists assert that currents of water pass over stationary objects, and those that move, which produce subsonic vibrations that alert fish of what to expect via the distinctive sounds each makes. Fish, in turn, then either evade predators or capture prey depending on the situation. How a single fish responds dictates how other fish nearby will respond as well. Fish that see an opportunity to feed will have identifiable physical posturing that other fish can visually and acoustically identify and will converge to the same area at the same time. If a particular fish is threatened or has been physically attacked it too will relate physical posturing that motivate holding fish to respond in like patterns; fish bolting too and fro will alert holding fish to flee; fish pressured into holding still so as not to be seen motivate other fish to instantly become immobile; moreover, if waters run turbid with zero visibility subsonic transmissions from the body of a fish or predator can be interpreted well enough that other fish can take appropriate measures to stay safe or feed. Quite literally a fish can function very well without the use of its eyes if it has too while still communicating to other members of the same species. Remember, all anadromous species (Hetero-specific) of fish can communicate to other species that in turn learn about their mannerisms so they can respond in an appropriate manner of fight or flight. It is yet another way fish can communicate to each other, though this method is internal with external cues visually and internally via the LLS. All of this information means that fishermen can take steps to counter exactly what fish hear and how sounds are interpreted, this means more fish on the hook using practical applications.

Seasoned anglers have long known that fish will gravitate to still boats to get away from the sun or predators. They have also known about the value of silence when fishing still waters. The best way to counter transmitting sounds beneath the hull of any boat with liners on the deck, which can absorb sound. Another step to diminish sound is to rearrange gear prior to pushing off; this minimizes sounds while actually fishing keeping pressured fish on the bite. Taking these two easy steps just about guarantees that fish will look to hold beneath the boat. If fish are beneath the hull there is an essential fishing technique that must be employed or risk missing out on biting fish. An old-timer trick of making a slow figure eight before taking the offering out of the water will entice fish to strike. Another practical way to keep fish on the bite is to properly wade in the water. Done correctly, fish can be fooled into staying within feet of your position without ever knowing you're anywhere near them.

Knowing that fish can detect waders in the water means there's very little that can be done to catch fish downriver due to the facial pores of the LLS. Against popular tenets of fishing, going upstream against the current is the best way to travel when wading because of the lateral line exposure. The Lateral-line area is largely diminished from downstream due to the triangular shape that is exposed when directly behind fish leaving them virtually blind from directly downstream. When wading, take each step with the same intensity of the current. This kind of wading that is rhythmic. Rather than fight the current, use the speed of the water to allow both legs to "swim" forward with each step never taking each foot very far off the bed of the river. Notice with each step that the rooster tails that used to form around the legs almost disappears. Using this wading technique it's possible to grab a fish by the tail, but this is about fishing. Like a fly fishermen, when holding fish are spotted simply cast upriver far above where they're holding and retrieve the line at the same speed of the current. It is the wading form of boon-dogging and is very effective. This method of wading upstream can be equally as effective going downstream with small adjustments to typical wading patterns. Since currents of water tend to "carry" each foot farther the gait does not need to be very wide. Wade in a relatively straight line to diminish any wakes that could form around the thighs and knees. Keep each foot as close to the bed as possible without kicking up any sediment or moving large rocks. Wading with these precautions in mind, it should be noted that fish holding in gin clear water will still know that you're in the water; however, turbid conditions that make visibility even slightly cloudy can dramatically enhance the ability of an angler to sneak up on a hold to make better

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presentations, and that is ultimately what this is all about; getting a better position in the water to fish each reach successfully without putting fish off the bite.

Fish have a truly amazing ability to hear in water and the fact that sound travels many times faster making it one of the most prolific types of pressure there is. The speed of which fish language travels is almost as fast as sound, but more than that, chemical dispersion, and their olfactory capabilities are forces to be reckoned with. Fish slime is secreted instantaneously when they're either attacked by predators or grabbed by fishermen, and the slime alerts all other fish in the area putting them off the bite. Fish further downstream will smell the chemical broadcast going off the bite as well; couple chemical and olfaction language capabilities with sound and a fish's arsenal seems complete. The LLS just about surround the body of most fish and as such make it very difficult to just "walk" right up to them or to drift above a hold. The Lateral Line System is sensitive, but can be countered with a full understanding of boating and wading precautions. Yes, fish really do have a language all their own, but when an angler is armed with that knowledge it means nothing, and that means more fish on the hook.

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