



The Hidden Lives of Fish

Dr. Sylvia Earle, one of the world's leading marine biologists, said, "I wouldn't deliberately eat a grouper any more than I'd eat a cocker spaniel. They're so good-natured, so curious. You know, fish are sensitive, they have personalities, they hurt when they're wounded."

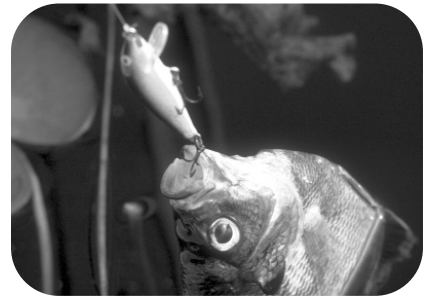
Many people have never stopped to think about it before, but fish are smart, interesting animals, and they have their own unique personalities—just like the dogs and cats we share our homes with. Did you know that fish can learn to avoid nets by watching what other fish in their group do and that they can recognize individual "shoal mates"? Some fish gather information by eavesdropping on others, and some use tools.

Scientists are learning more and more about our finned friends, and here is what a few of them have discovered:

- A recent issue of *Fish and Fisheries* devoted to fish learning cited more than 500 research papers proving that fish are smart, have impressive long-term memories and sophisticated social structures, and can use tools. The introductory chapter said that fish are "steeped in social intelligence, pursuing Machiavellian strategies of manipulation, punishment and reconciliation ... exhibiting stable cultural traditions and cooperating to inspect predators and catch food."
- Dr. Culum Brown, a University of Edinburgh biologist who studies the evolution of cognition in fish, says, "Fish are more intelligent than they appear. In many areas, such as memory, their cognitive powers match or exceed those of 'higher' vertebrates, including non-human primates." Their long-term memories help fish keep track of often complex social relationships. Their spatial memory—"equal in all respects to any other vertebrate"—allows them to create cognitive maps that guide them through their watery homes, using cues such as polarized light, sounds, smells, and visual landmarks.
- Dr. Phil Gee, a psychologist from the University of Plymouth, says that fish can tell what time of day it is, and he trained fish to collect food by pressing a lever at specific times. He says that "fish have a memory span of at least three months," and they can "adapt to changes in their circumstances, like any other small animals and birds."
- "We're now finding that [fish] are very capable of learning and remembering, and possess a range of cognitive skills that would surprise many people."
—Dr. Theresa Burt de Perera, Oxford University
- "Australian crimson spotted rainbowfish, which learnt to escape from a net in their tank, remembered how they did it 11 months later. This is equivalent to a human recalling a lesson learnt 40 years ago."
—*Sunday Telegraph*, October 3, 2004

Did You Know?

- Some fish are too clever to catch! “According to the researchers, close encounters with nets in early life can educate the fish to swim away from an approaching trawler ... Emma Jones, a fish behaviorist at the Marine Laboratory, said: ‘And if you have one fish that is a particularly fast learner, the others will follow.’”
—*The Times* (London), October 28, 2004
- Fish talk to each other through squeaks, squeals, and other low-frequency sounds that humans can hear only with special instruments.
- Fish like to be touched and often gently rub against one another—like a cat weaving in and out of your legs.
- Some fish tend well-kept gardens, encouraging the growth of tasty algae and weeding out the types that they don’t like.
- Like birds, many fish build nests where they can raise their babies; others collect little rocks off the sea floor to make hiding places where they can rest.
- Some fish woo potential partners by singing to them, and male sand gobies, tiny fish who live along the European coastline, even play “Mr. Mom,” building and guarding nests and fanning the eggs with their fins to create a current of fresh, oxygenated water.



Being Hooked Hurts!

A two-year study conducted by scientists at Edinburgh University and the Roslin Institute in the United Kingdom proved what many marine biologists have been saying for years: Fish feel pain, just as all animals do. Anglers may not like to think about it, but fish suffer when they are impaled in the mouth and pulled into an environment in which they cannot breathe. Said Dr. Lynne Sneddon, who headed the recent study, “Really, it’s kind of a moral question. Is your angling more important than the pain to the fish?” If you fish or know someone who does, visit FishingHurts.com to learn more.

Faux Fish—or No Fish

Fish suffer horribly on the journey from sea to supermarket. Commercial fishing boats use huge nets that stretch for miles, swallowing up everything—and everyone—in their path. Fish come out of the nets with their skin scraped completely raw, from being pushed up against rocks, debris, and other fish trapped with them. Fish who survive have their gills slit and are disemboweled alive or are thrown on chopped ice to freeze to death or be crushed by thousands of other fish being piled on top of them.

Fish flesh is frequently contaminated with mercury (which can cause brain damage) and toxic chemicals like DDT, PCBs, and dioxin (which have been linked to cancer, nervous system disorders, and fetal damage), as well as disease-causing bacteria. Why not try faux fish instead? Vegetarian products like mock lobster, shrimp, and crab, (which are available at www.vegieworld.com) have all the taste of the “real thing” but none of the cruelty or contaminants.

To learn more about fish and how you can get involved, visit FishingHurts.com.