

Any River Will Do for One Spawning Fish

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Jose Manuel Ribeiro/Reuters

A close-up of the sucker mouth and sharp teeth of a sea lamprey.

The sea lamprey can't go home again, and researchers think they know why.

Sea lampreys are anadromous, meaning they live in the open ocean for years and then migrate up a river to reproduce. Other anadromous fish, including many salmon species, return to their birth river for spawning. But a growing body of work suggests that sea lampreys don't have this homing ability.

The latest evidence comes from John Waldman, a biologist at [Queens College](#), and colleagues and is published in *Biology Letters*. They performed genetic analysis of sea lamprey samples from rivers up and down the East Coast.

If the lampreys were returning to their birth rivers, then over time the various populations would develop slight genetic differences because they would never mix. Such is the case with Atlantic salmon and other anadromous species. "But what we see with sea lamprey over and over again is that these things have no genetic differences," Dr. Waldman said. "So we infer that there is no homing going on."

The fish are parasitic — they latch on to other fish and feed off their blood for a week or two at a time. "Over time the population from one river will be dragged all over the ocean," Dr. Waldman said. So perhaps it's not surprising that they can't make it back to their birth river.

Dr. Waldman theorizes that rather than homing, the fish rely on chemical cues. Other research has shown that lamprey larvae release pheromones into the river water, so adult lampreys may detect these chemicals as a sign that the river is suitable for spawning.