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Natural History Notes

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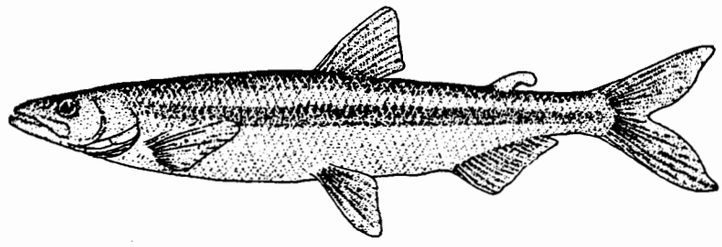
THE RAINBOW SMELT



As this small fish makes its annual spawning migration each spring into tributary streams of the Great Lakes, anglers make their ritualized smelt fishing pilgrimage. The smelt run happily signifies that winter has passed and spring has arrived. Yet few people realize that this fish is not native to the Great Lakes. The first attempts to introduce smelt were in 1906. It is thought that the present strain originated from Green Lake, Maine. They were stocked in Crystal Lake, Michigan, in 1912 and spread into Lake Michigan. Smelt were first taken from eastern Lake Michigan in 1923 and spread to the Green Bay area by 1928. They spread quite rapidly and were taken in western Lake Superior by the late 1930's. It appears that the smelt numbers peaked in the late 1960's and that they are presently declining, likely due to predation by salmon.

The rainbow smelt is one of ten species in the smelt family. Smelts are primarily marine species that migrate into freshwater streams to spawn, similar to salmon. However, some smelt populations live in freshwater lakes and migrate into streams to spawn. When no streams are available, they have been known to spawn on gravel bars in water less than two feet deep. When water temperatures warm to about 40 °F (April, early May) smelt begin their spawning runs into the streams. Most smelt migrate less than one mile up the streams, but in some streams they may swim up to 15 miles to spawn.

A large female (8 inches long) will lay about 30,000 eggs. Spawning takes place at night. When in breeding condition, the male develops nuptial tubercles or small bumps on his body, giving a sandpaper-like feel. During spawning a female is attended by up to four males and usually deposits up to 50 eggs in a single spawning act. Immediately after release the eggs sink to the bottom and become attached by a short stalk which forms from the shell membrane. The eggs hatch in 20-30 days and the fry drift downstream into the lakes. For a short time the newly hatched fry are nourished by the yolk-sac remaining from the egg. After the yolk is used up they feed on very small plants and animals known collectively as plankton. As smelt grow, they feed on larger free-swimming crustaceans and very small fish. Smelt live to be five to seven years old and females may exceed 10 inches in length.

Adult rainbow smelt prefer water temperatures from 40 °-56 °F and depths ranging from 50-200 feet in the Great Lakes. They will take very small bait and are fished through the ice in many areas. But anglers armed with dip nets and seines take smelt by the thousands during the spring spawning run. Smelt fries are popular throughout the midwest. Due to their high oil content, smelt do not retain their flavor for long periods of time when frozen but are very tasty when fresh.

Smelt, as the common name implies, have a rather distinctive odor somewhat like cucumbers. In fact, the scientific name is *Osmerus mordax*. *Osmerus* in Greek means smell. The specific name *mordax* means biting; and if you feel this fish's tongue, you will discover sharp teeth on it. These teeth on the tongue are apparently very useful in capturing prey. This small silvery fish is a fierce predator and competitor. When introduced into lakes, it upsets the ecological balance and competes with native species such as the crappie and cisco. Herein lies an important lesson. The indiscriminate transfer of fish from lake to lake most often does more harm than good. Don't dabble with mother nature without knowing where all the pieces fit!