



Devils Lake Freshwater Shrimp FISH FOOD SUPR

Story by Randy Hiltner
Photos by Craig Bihrl

No matter the name – freshwater shrimp, gammarus, scuds or sideswimmers – the abundant crustaceans swimming in Devils Lake are an extremely important link in the water’s food chain.

Most species of freshwater shrimp are less than one-inch long, with an average length of about a half-inch. They are semitransparent, but exhibit a wide variety of colors. Devils Lake’s bountiful invertebrates vary from light brown to bright green.

Freshwater shrimp (top) are an important link in the Devils Lake food chain. Biologists (right) sample these small crustaceans in winter to assess abundance.



REME

Freshwater shrimp are ravenous feeders – acting as either scavenger or predator – eating both plants and animals. Most often these tiny animals will browse on a film of microscopic plants, animals, algae and other organic debris found on logs, rocks and elsewhere. But given the opportunity, they'll coat and feast on a minnow hanging for long periods under an angler's bobber.

North Dakota Game and Fish Department fisheries personnel have also observed freshwater shrimp devouring small fish caught in gill nets during netting surveys. Skeleton and some skin is all that remained on some of the netted fish.

Freshwater shrimp mate several times per year. During this time, the male swims with the female on his back for several days. The female carries up to about 50 eggs per brood, which hatch in the egg pouch in one to several weeks. As they grow, freshwater shrimp young shed their exoskeletons numerous times.

Sometimes freshwater shrimp can be abundant. Up to 9,000 per square yard have been reported on the bottom of some lakes. Fisheries personnel, on occasion, have covered the floors of Department boats with these crustaceans hitching a ride in fish-trap nets pulled from Devils Lake.

Typically, more freshwater shrimp are found in shallower waters near aquatic vegetation, although underwater cameras have revealed many in the deeper reaches of Devils Lake.

The freshwater shrimp's standing in the food chain for all of Devil's Lake game fish can't be overstated. Whether it's a 3-inch yellow perch or a 10-pound northern pike doing the eating, freshwater shrimp are a staple for these fish at some point during the year.

Freshwater shrimp are consistently found in the majority of fish stomachs captured during netting surveys on Devils Lake. Anglers have also witnessed the importance

of freshwater shrimp as food as their livewells team with scuds regurgitated from the day's catch. A fish caught from deeper water during the ice-fishing season will often have freshwater shrimp in its mouth, as the pressure change from the ascent pushes out the stomach and its contents.

With an almost unlimited supply of freshwater shrimp, Devils Lake game fish – yellow perch and white bass, in particular – are in better shape compared to other fish in the Midwest. The yellow perch and white bass in other waters can hardly rival the "fat" fish in Devils Lake. The dense population of freshwater shrimp is likely the biggest reason for the heavy-bodied fish, as they can easily fill their stomachs with little effort year-round. Conversely, other smaller lakes that have lots of hungry perch, but not enough food, produce relatively thin fish.

Abundant freshwater shrimp, while an asset for growing large perch quickly, can sometimes make it tough on anglers. Most anglers know of certain lakes where they can catch small, skinny perch one after another. Sometimes a bare hook with just the scent of bait can do the trick. Often, this isn't the case at Devils Lake.

There are times when Devils Lake perch can be caught in numbers, but many times the perch bite can be tough as fish are fat on freshwater shrimp. In December 2003, however, there was a period of relatively "easy" fishing on East Bay, where, interestingly, the highest freshwater shrimp density samples were collected. While high prey densities can make perch fishing tougher, anglers can excite fish into localized feeding frenzies that will provide some quick success.

Realizing the importance of freshwater shrimp to the Devils Lake fishery, and after receiving input from the University of North Dakota, Game and Fish Department biologists began sampling these small crustaceans last winter with specially-designed traps, in an attempt to assess abundance



Freshwater shrimp are a staple for fish in Devils Lake, and important to the health of the fishery.

from year-to-year and site-to-site. Last year, the highest trap densities of freshwater shrimp were observed in East Bay, which corresponds with reports from the area from anglers seeing lots of scuds in ice holes.

In an effort to further protect freshwater shrimp and North Dakota fisheries, the Department has also established stricter regulations regarding out-of-state importation of various invertebrates for bait. In the past, nonresident anglers brought with them various invertebrates – dragonfly nymphs, for example – to entice yellow perch. Today's concerns over introducing aquatic nuisance species, teamed with tighter regulations, may slow the launch of unwanted species into the state.

Sometimes small items comprise important parts of the whole. In the case of Devils Lake, freshwater shrimp are critically important to the health of the fishery.

RANDY HILTNER is a district fisheries biologist for the Game and Fish in Devils Lake.