

# Landing the big one requires sound habitat and a good lure

By Michael Duval, DNR Fisheries Habitat Manager

Like all anglers, I have a favorite lure. It glistens, wiggles and darts through the water in a realistic and tantalizing way.

When I catch a fish on it, I'm glad I bought it.

Yet deep down I know catching a fish is as much about the land as the lure. That's because lakes are a reflection of their watershed. They mirror the land practices around them. When soil and nutrients stay on the land, that's good for water quality and fishing. When they don't, the opposite is true. The best lure in the world won't catch fish if fish don't have the habitat they need.

What is habitat and why is it so important to sustainable fish production and growth?

Fish habitat is all of the physical and chemical features of a lake or stream necessary for fish to survive. It has two fundamental components: physical habitat and water-quality habitat.

Physical habitat is the aquatic plants, rocks and other bottom substrates, and woody structure like fallen trees that are important for protective cover, feeding or spawning. Physical habitats affect essential life history requirements of fish in their environment. Over generations, loss of physical habitat reduces fish abundance and the kinds of species that are present.

Water-quality habitat includes the abundance of oxygen, the amount of algae in the water or growing on rocks and wood, and sediment coming from the land into the water. Water-quality habitat tends to have a more immediate effect on the survivability of fish in their environment.

Without oxygen, for example, fish cannot survive.

Maintaining habitat is critical. Contrary to what some people perceive, nearly all fish caught by Minnesota anglers (including 85 percent of walleyes and nearly 100 percent of northern pike) are products of their natural habitat. That means they were spawned naturally in the wild and grew over several years before reaching catchable size.

It also means that prey fish, such as perch, cisco and minnow species, spawned and grew in sufficient abundance to satiate the appetite of predators. Though anglers often focus their attention on game

fish habitat, they rarely think about prey-species habitat. Yet prey-species habitat is essential to the growth and survival of all game-fish species. Yellow perch, for example, are an important prey species for walleye and pike. Perch utilize physical habitat like fallen trees in the water or bulrush remnants from the previous season upon which to drape their egg masses in the early spring. The branches or bulrush stalks keep their eggs from coming in contact with soft bottom sediments that may starve the developing perch embryos of oxygen.

Research studies have shown the importance of woody structure in lakes for maintaining abundant yellow perch. In the absence of wood, perch populations crash and an important food resource for walleye and pike is lost, affecting growth and survival of these popular game species.

Another important prey species is the cisco. Cisco (or tul-

libee) are a prey species of choice for lake trout, pike, muskie and walleye. Most of Minnesota's quality pike, walleye and muskie fisheries have cisco as the primary forage species. A member of the trout family, cisco require cold, oxygenated water to survive. But cold water is most limited during the summer months, which forces cisco to move to deeper water where oxygen is less abundant in late-July and August. Deepwater oxygen is a precious and particularly vulnerable type of habitat.

Nutrients from poor land-use practices can be carried by the various rivers and small streams draining the lake's watershed, depleting deep-water oxygen levels for the long term and resulting in the permanent extirpation of cisco from that system. With the loss of cisco goes the quality of the game fish populations as they have to shift to less suitable prey of lower nutritive value.

As a society, the decisions we make about managing land at the water's edge and within the hearts of our communities have a direct impact on the sustainability and quality of fishing. Think about that the next time you catch a fish. As you do, ask, "Did I catch that fish because I was using my favorite lure?" Or, "Did I catch it because the lake had sufficient physical habitat for fish to spawn, protect their young, and forage for food, and good water quality habitat to ensure their long-term survival?"

I'll keep buying fancy new fishing lures as long as they make them. But I will also do my part to support soil and water conservation. For deep down, I understand that the individual actions each of us takes that impact land and water, as well as the land management decisions of our local, state and federal governments will influence my fishing success more than my latest lure.

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## Removing lake plants could require a permit

Lakeshore property owners are reminded that a permit may be required to remove aquatic plants, according to the Minnesota Department of Natural Resources.

"We need plants to have healthy lakes and strong fish populations, it's as simple as that," said Jon Hansen, DNR aquatic plant management consultant. "So each year we remind folks to let them grow but if they are set on removing plants, please check regulations to see if they need a permit."

Aquatic plants provide food and shelter for fish,



ducks and other wildlife. They stabilize the lake bottom, which helps maintain water clarity. These plants also protect shorelines from erosion by absorbing energy from waves and ice.

Additionally, the DNR is getting questions about devices that generate water

current to blast muck and plants away.

"We refer to these devices as hydraulic jets and even though you can buy one, they cannot be used in any way that disturbs the bottom of the lake or uproots plants," Hansen said.

Specific regulations gov-

ern what situations require permits for aquatic plant removal. Aquatic plant regulations and a guide to aquatic plants can be found at [mndnr.gov/shorelandplants](http://mndnr.gov/shorelandplants). To apply for a permit, visit the DNR's permitting and reporting system at [mndnr.gov/mpars](http://mndnr.gov/mpars).

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