

WALK ON THE WILDSIDE

The Minnesota Conservation Federation

February 2015

Aerators keep fish alive during the winter

Imagine if winter's arrival caused a severe drop in the oxygen levels in your home. Some years the amount of oxygen would drop slowly toward life-threatening levels, and in other years the levels would drop quickly toward a fatal crash.

For humans, the solution would be to step outside and get fresh air or to open a door or window to let fresh air in, but for fish, the solution is not that simple.

Fish populations in many Minnesota lakes face the threat of low oxygen levels each winter, but the largemouth bass, walleyes, and other species that live in these lakes cannot step outside their habitat when oxygen levels drop. The result is suffocation or winterkill: a mass die-off of fish caused by a lack of oxygen.

Typically, small or shallow lakes are most susceptible to winterkill, especially during long, cold winters with extended periods of ice cover.

Winterkill occurs because there is no photosynthesis and no air/water interaction to put oxygen back in the water.

Fortunately for fish, and the anglers that pursue them, there is a



remedy. The state Department of Natural Resources works with cities, counties, and lake shore owners to install and operate aeration systems that replenish a lake's oxygen supply during the winter months to prevent winterkill. Currently there are more than 80 lakes in the seven-county Twin Cities area that have such systems.

If the aerators are run and operated correctly, they create open water and allow the survival of fish susceptible to winterkill."

The DNR uses two types of aeration systems. The first is a pump and baffle system typically installed on lakes 100 acres or smaller. A pump pushes low-oxygen water over the baffles to oxygenate it. The system usually creates a small area of open water, but leaves the remainder of the lake ice covered.

The second type of aerator is the open ice system, which is used

mainly on large, shallow lakes. The system is placed on the bottom of the lake and uses a pump to keep most of the lake ice-free, which allows air/water interaction.

Not all aeration systems are used every winter, but they usually operate for at least a short time most years. The severity of the winter dictates their use.

Largemouth bass, trout, walleyes, bluegills, and catfish are the first species to die when oxygen levels begin dropping into the red zone. The least susceptible species are bullheads, followed by northern pike and crappies.

A lake would have to freeze almost all the way to the bottom for bullheads to die.

Although most anglers see winterkill as a problem, it does have its positives. Winterkill reduces the numbers of undesirable species like carp and can help clean up smaller bodies of water. However, the gains associated with winterkill are far outweighed by the benefits of operating aeration systems..

The use of aerators, which stretches back about 50 years, has created increasing numbers of viable fishing lakes.

Ice anglers and snowmobilers should be aware of lakes that

Loss of brushlands affects wildlife species

Most Minnesotans have no idea the number of brushlands in the state is declining dramatically, but those interested in wildlife will notice species of birds and mammals dependent on those areas disappearing.

The state Department of Natural Resources has been working for years to save and maintain these ecologically important areas. The result has been an increase in awareness to the problem and a noticeable turn-around in the public's respect for brushlands.

Most people associate the term brushlands with treeless wastelands or tangled alder swamps, but the term actually defines a more diverse area. But a brushland can be anything from an old farm field to a black spruce swamp, to a pine barren.

All of the zones in Minnesota, from the forests of the north, to the oak savanna of the central part of the state, to the prairies of the south have brushlands and are dependent upon them. Wildlife like deer, beaver, muskrats, mice, sharp-tailed grouse, short-eared owls, blue birds, yellow rails, and woodcocks need brushlands to survive. At one time, 8 percent of Minnesota was comprised of brushlands, but today that number is less than 1 percent. The decline in the number of brushlands has meant a drop in the populations of many species.



The sharp tailed grouse has been affected by the loss of brushlands.

Sharp-tailed grouse populations dropped 70 percent and they used to be the main grouse species in Minnesota. Woodcocks are decreasing at a constant rate,

One step being taken by the DNR to combat the loss of brushlands has been to increase its prescribed burning program.

There has been a lot of interest in the state parks system about prescribed burning, which help increase public education about brushlands. The public wants to go to a state park to see trees, but they need to learn to understand the value of fire and brushlands.”

Some state parks like Savanna Portage, Lake Bronson, and St. Croix have made prescribed burning an important part of their management program.

St. Croix State Park uses it for their population of jack pines, which need high heat to release their seeds. There are other plants that also need fire to survive. The burr oak for example, is a real fire species. Aspen trees are also fire

dependent.

Some Minnesotans, like deer hunters, sharp-tailed grouse hunters, and blue berry pickers already know the importance fire and brushlands, but more Minnesotans need to become aware.

As people see species disappearing, like blue birds, they want to have more open land to keep those species around. So far the state has had an incredible response to its brushlands education program. The DNR is making some ground, but it's not certain

if it will win the long-term battle to save the brushlands and the species that depend on them for survival.

Where public and private steps have been taken to preserve brushlands, the DNR has observed improvements in species populations.

Organizations like the Minnesota Sharp-tailed Grouse organization and the Minnesota Prairie Chicken Society are among the groups that have done a great deal of work to protect and restore the state's brushlands.

While the work of such organizations is making a dent in the problem, more people need to become involved and work toward solving the problem, including private landowners. Since most of Minnesota's rural areas are privately owned and not public land, individuals could make a big difference. If more landowners took steps to protect or restore the brushlands on their property, it would go a long way to solving

Rotten trees are actually beneficial to wildlife

Many people think dead trees are ugly and that they should be chopped down, but really, there is a lot of life in a dead tree.

Dead trees are as important to wildlife as living trees, and in some cases, more important. Birds, mammals, reptiles and amphibians all benefit from dead trees.

► **Birds**

Numerous species of birds rely on dead trees for food, shelter and perching.

Birds such as bluebirds, American kestrels, woodpeckers, wood ducks, mergansers, and owls seek out cavities in trees for nesting. Woodpeckers, nuthatches and numerous songbirds depend on dead trees for the insect meals they provide.

Many species of raptors prefer perching on dead trees rather than live trees, because they get a better view of their prey. They also like to clean and eat their meals on dead trees.

► **Mammals**

From squirrels to raccoons,



many small mammals depend on dead trees for shelter. Other mammals that use dead trees include opossums, bats, chipmunks and mice.

Especially during the winter and summer, cavities in dead trees provide essential refuge, for a variety of small mammals, from the extremes of hot and cold. They also provide nesting areas for mammals to rear their young.

Black bears hibernate in the cavities of large trees.

► **Reptiles/amphibians**

Reptiles and amphibians are also drawn to dead wood. Salamanders, for instance, retreat to the moist soil beneath rotting logs to keep cool in the summer.

Tree frogs find plenty of insects to eat on dead trees. Snakes use hollow logs or cavities in dead trees as shelter and as places to winter. Turtles use fallen dead trees in the water to sun themselves.

► **Insects**

Countless numbers of insects depend on dead trees for food and shelter. Attracting insects may not seem

appealing, but all those insects

crawling on a dead tree provides food for large numbers of creatures.

► **Plants**

Dead wood also benefits plants by providing habitat for growth. Moss, lichen and fungi play important roles in the ecosystem and they thrive on dead wood. Young trees and plants also depend on the nutrients provided by decaying wood.

► **Nature value**

Studies show that cutting down a dead tree in your backyard can reduce a yard's habitat by as much as 20 percent. At each stage of decomposition, a dead tree offers new opportunities for wildlife.

Many wildlife experts suggest

Minnesota's voles stay active all winter, beneath the snow

Melting snow cover in late February and March can offer a great opportunity to look for signs of vole activity.

Minnesota is home to about a half-dozen species of voles, with the most common being the meadow vole (pictured here). Voles are closely related to mice, but have

shorter ears and shorter tails.

Many animals and birds prey on voles, including the red fox, owls and hawks. In order to elude its predators during the winter, the vole spends much of its time beneath the snow.

Voles get from one place to the next by tunneling beneath the

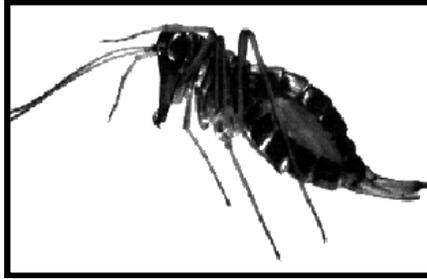
snow. When the snow begins to melt in late winter, these tunnels become visible.

You can look for vole tunnels in your backyard or in wooded or open spaces. Follow the tunnels to see where the voles have spent their winter.

Believe it or not: Finding insects in the snow

The last creatures most people think about in the dead of winter are insects. When it's cold and snowy, it seems like all the insects have vanished, not to be seen again until the spring. However, there are insects around during the winter, if you know where to look.

One such insect is the snow flea. On warm winter days, they



can be seen around the bottoms of trees, hopping around. These small insects eat decaying material and the sap from trees.

Although they are called fleas, they are not. They are really arthropods. They are also called springtails, because they hop using their two spring-loaded tails.

If you are looking for them, you can actually spot snow fleas anytime during the year, but they tend to be easier to see during the winter, against the white of snow.

Boxelder trees provide a winter supply of food

Many of Minnesota's trees offer food to birds and mammals at different times throughout the year. However, those trees that provide a food source during the winter are often the most important to wildlife.

The box elder is among the trees that offers a consistent supply of food for wildlife during the winter. Box elders are very common along the river bottoms of the Mississippi River in southern Minnesota.

Trees can be difficult to identi-



fy during the winter, but it is fairly easy to spot a box elder. From fall through much of the winter, the tree is covered with seeds that resemble propellers. The seeds ripen in the late summer or early fall,

but provide wildlife with food all winter.

If you locate a box elder, which is a member of the maple family, sit down and watch the tree for a while. Chances are you will see squirrels or birds such as cardinals or evening grosbeaks visiting the tree to pluck a few seeds for a snack.

Each day during the winter, birds and animals return to the box elder to feed. As the weeks go by you will notice the supply of seeds gradually disappearing. By spring

Learn more about the Minnesota Conservation Federation...

Dedicated to hunters, anglers and others who value our natural resources!

Visit our website at www.mncf.org

...or contact our office at 651-690-3077

542 Snelling Ave. #104, St. Paul, MN 55116

An affiliate of the National Wildlife Federation since 1936