

## *Healthy Waters*



### **Healthy Waters #3:**

### **Healthy Waters for Fish, Wildlife, and Plants**

The watersheds of North Central Minnesota provide habitat to a wide variety of fish, wildlife and plant species including some that are very rare. Approximately 42 species of fish, 58 species of mammals, 243 species of birds, 27 species of reptiles and amphibians, 815 species of plants and unknown numbers of invertebrates live in the Leech Lake watershed. This diversity is due to the wide variation of ecosystem types within the landscape of the watershed, but it is also due to a significant proportion of the watershed still being intact habitat and capable of supporting this diversity.

There are approximately 14 types of wetlands, numerous lakes, rivers and streams found within North Central Minnesota watersheds. The uplands and wetlands of these watersheds contain a wide variety of ecosystems from dry pine forests and mixed conifer/hardwoods forests to rich northern hardwood forests and lowland conifer dominated swamps and bogs.

When compared to other parts of Minnesota, many portions of North Central Minnesota watersheds are still relatively healthy, but face continuing threats from forest management practices, invasive species, nutrient and chemical runoff, recreation and development that continue to degrade our diverse wetlands. Only by working to restore and/or preserve our remaining wetlands can we protect the diversity of the watershed's flora and fauna.

The distribution and abundance of flora and fauna can be directly correlated to the abundance and quality of water in the watershed. Many species of flora and fauna are specialists and are adapted to specific ecosystems or habitat types. Wetland diversity supports both habitat and species diversity.

Many rare orchid species are associated with lowland conifer swamps, particularly those which support Northern white cedar. There are 49 known species of orchids found in Minnesota and approximately 75% are associated with wetlands. The watersheds in this part of the state support approximately 25 of these species, especially within the bogs and conifer swamps.

In addition to rare orchid species, there are also a number of very rare forbes, grasses, aquatic plants and lichens that are strictly associated with our watershed's diverse wetlands. Preserving this rich diversity of flora, especially the rare species, will involve protecting and preserving the Leech Lake watershed and surrounding watersheds.

Most fish species require high quality water to persist and thrive. In the North Central Minnesota watersheds, the lake whitefish is probably the poster child for clean water. Whitefish, along with tullibee, are important species in some lakes as they are able to utilize the open water portions of the lake. Most other fish species utilize shallower areas and are more closely associated with the lake bottom. White fish, due to their high oil content, are an important forage species, especially for large northern pike and muskellunge.

Whitefish are near the southern edge of their range in Minnesota and only persist in larger lakes with cool water refuges in the summer as they cannot tolerate the higher water temperatures that occur during the summer in the shallow and upper water levels. Declines in water quality will result in these refuges becoming smaller and smaller.

The beaver is an example of an animal in the watershed that has both positive and negative influences on the plants and animals that live in close proximity to them. Beavers were all but extirpated from Minnesota during the Fur Trade Era, but they have made a remarkable recovery and their populations are currently at or above historic levels in many areas. Beavers are good for a watershed. They build dams that hold back water on the landscape, which promotes surface and groundwater recharge that reduces downstream flooding. Water movement slows and allows for sediment, nutrients and other chemicals to settle out instead of flushing directly into our lakes and streams where it can contribute to degraded water quality. Beaver impoundments also provide habitat to waterfowl, reptiles, amphibians and a variety of songbirds.

On the down side beaver activity can flood out habitat important for other species, such as orchids, block fish spawning runs and allow small minnow species to become established in waters where they compete with other species for invertebrate food items.

The watersheds of North Central Minnesota, and the plants and animals that inhabit them, comprise a diverse, complex, and wondrous place that will only be maintained if we work to protect and maintain the quality of the watershed and its waters into the future.

*This article was written by Steve Mortensen, Fish, Wildlife, and Plant Resources Director, and Bobby Henderson, Invasive Species Projects Manager, Division of Resource Management, Leech Lake Band of Ojibwe on behalf of the Civic Engagement Team of the Leech Lake Watershed Restoration and Protection Project. The next article in in Healthy Waters series: Healthy Connections Between Surface and Groundwater.*