

## Aquatic Plants

Early settlers found an ocean of prairie when they arrived in the Midwest. Looking out over our



Prairie Pothole Region

country today it is difficult to imagine how this landscape once looked. By some accounts, this tall grass wilderness and its unending expanse was so vast it was overwhelming for some. Although the prairie extended through many states in the central US, the *prairie pothole region* was unique within it. The prairie pothole region includes north central and portions of northwest Iowa, extends through western Minnesota, much of the Dakotas and stretches into south central Canada. This region was carved out by massive continental glaciers that left the area only 10,000 to 12,000 years ago making it one of the youngest landforms in North America. From the land's perspective, only a blink of an eye had passed from the time these mountains of ice melted and the earliest settlers arrived. The land was new and

erosion from streams and rivers had yet to leave its mark. Instead, most water was held in the 25 million wetlands and prairie lakes dotting the landscape.

Hundreds of prairie plant species thrived on this new land. That diversity of plant life didn't end at the water's edge. Along the shorelines of the millions of lakes and wetlands a transition of plant life unfolded. The prairie gave way to the wet meadow. Semi-aquatic plants like sedges and more tolerant grasses grew in soils too wet for other plants. As the water depth increased, rushes and floating leaf plants like lilies would take over.

In deeper water, dozens of species of underwater plants would grow from the bottom of the lake or wetland, only breaking the surface in the summer to flower. In the deepest lakes, sunlight could reach down 40 feet allowing these underwater forests to extend well beyond the shoreline.



Pristine northern Minnesota lake

From this diversity of plant life these waters teemed with aquatic life. Thousands of species of animals from the smallest plankton to top predators like northern pike flourished. Hundreds of semi-aquatic and terrestrial animals also relied on these important resources. Early accounts describe the sky turning dark with migrating waterfowl in the fall.

Today, only tiny remnants of this native landscape remain. Millions of wetlands and even some lakes were drained shortly after settlement as the land was made suitable for development and



agriculture. The remaining lakes are no longer buffered by these important wetlands, prairie plants, and porous soils. Many water bodies in the region now contain invasive animals like common carp and zebra mussel or plants like curlyleaf pondweed and Eurasian watermilfoil.

The native shorelines that transitioned from terrestrial to aquatic plants are now lined with rock or concrete and steel retaining walls. The wet meadow has been replaced by turf grass or overgrown with trees that were

historically absent from this area. Soil and nutrients enter our lakes as rains fall across land that lays bare for much of the year. All of it accelerated by artificial drainage tiles, storm sewers, and roof tops.

For many prairie lakes these stresses have been too much. They no longer contain the diversity and habitat once so rich. Their water has turned soupy green with algae as they finally succumb to too many nutrients and massive soil accumulation. Every creature except those tolerant few have dwindled and faded into the murky soup.

Recent efforts to lessen these impacts have been successful. By cutting the inputs from lands draining to the water and altering the troubled fisheries, we can push hard enough in some cases to see these lakes recover slightly and resemble their former days. But, the damage inflicted through decades of abuse have mounted a challenge we can only partially overcome.



Cyanobacteria (blue-green algae)

Because aquatic plants form such a cornerstone of health for our lakes and wetlands, they are a strategic center point of many lake improvement projects. They take up nutrients otherwise used by algae; absorb wind and waves along shorelines creating protected pockets of life and a calm water that doesn't turn to mud with every crashing wave. Most importantly, they provide an underwater jungle that harbors a complex food web critical to the base of life. Without these plants our lake bottoms are barren, a desert with simple lists of plankton, plants, and animals - the only ones hardy enough to survive.

Because so many of our lakes and wetlands were lost or deteriorated so quickly after settlement, entire generations of lowans do not know the sight or meaning of a healthy lake.

We mostly know green waters with fisheries maintained through stocking; a necessary practice when young fish can't survive. When we see something different, we can be shocked by the change. When conditions improve enough for plants to come back, we cringe at their sight and treat them as if they are weeds on an unkempt lawn. They sometimes get in the way of our boat props and docks, creating an inconvenience for our lake use traditions. But most of all, we say it just doesn't look right.

Many are the voices shouting for clean water and healthy lakes and wetlands. These voices are welcome in a land so altered and wounded, but when given the choice between soupy green water and clean water with plants, the voices for our lakes can dwindle and fade as we see the result. Many hope there must be a fix that gives us a lake with no stinky slime, but without all the plants. Our geology and history, however sets our lake's fate. That past provides us with productive soils that are simply reflected in our water. That productivity only comes in two forms, as green toxic algae or clear water with plants.

We must hope that a change from green water to plants is only a temporary shock to lake residents and users, and as our understanding grows so will our tolerance and acceptance of what clean water brings. Maybe someday there will be generations that cringe at the sight of green water and work to bring the plants back to make our lakes look right.



Healthy native aquatic plants

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