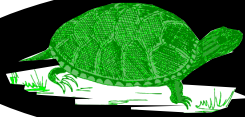


Turtle Creek Watershed District



Geneva Lake News

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'State of the Lake' Address

Spring of 2008 marked the conclusion of a multi-year effort to improve habitat and water quality in Geneva Lake. Water levels returned to normal, and aquatic habitat conditions are the best they have been since the drought of the mid-1970s. A fringe of new rushes, cattails, and arrowhead grows along the shoreline and in shallow bays, and valuable submersed aquatic plants like sago pondweed are found throughout open-water areas. Given the water clarity and good habitat conditions, no additional water level manipulations are proposed for this winter or next spring.

The Minnesota Department of Natural Resources (DNR) intentionally lowered water levels in 2007 to mimic conditions that would occur during an extensive natural drought. Drought is nature's reset mechanism to return aquatic plants to shallow areas in lakes and to control abundance of rough fish. Aquatic plants are critical to wildlife and fish and provide other functions that help maintain clear water. Prolonged high water combined with abundant rough fish and poor water quality cause rooted aquatic plants to die. Once rooted aquatic plants die, algae and a few species of rough fish dominate the lake's ecosystem, causing turbid water in spring and summer—the condition of Geneva Lake for about a decade

prior to reclamation efforts.

Lower water levels in 2007 facilitated using rotenone, a fish poison, to more thoroughly remove rough fish as mild winter conditions had frustrated attempts to winter-kill rough fish in previous years. The lake was treated with rotenone in January 2008 and adjacent wetlands were treated in February. Water samples remained toxic to minnows for several weeks after treatment. In addition, large areas were frozen to the bottom, and dissolved oxygen readings in late winter were very low.

In early winter, the DNR installed a second fish barrier below the dam as a joint project with Ducks Unlimited, with the cooperation of Freeborn County and the Turtle Creek Watershed District and with monetary contributions from Pheasants Forever and the Austin and Owatonna Chapters of the Izaak Walton League. The new barrier functioned well, preventing carp and black bullheads from accessing the lake even during June floods.

The lake has experienced an excellent wildlife response with extensive use by water birds. Waterfowl, coots, grebes, bitterns, herons, and other birds have been much more common than recent years, and leopard frogs were notably abundant in and near

the lake this summer. The DNR conducted a lake-wide survey for wildlife habitat in summer for post-reclamation assessment. The final report of this survey will be available later this year, but notably, rooted aquatic plants were recorded at over 90% of sampling stations and a secchi disk, used to measure water clarity, was also visible to the bottom (3+ ft) at nearly all stations. Prior to 2007, summer secchi readings averaged between 6 inches and a foot for several years. Additionally, phosphorus—a nutrient that causes algal blooms and poor water quality—plummeted to low levels in the lake.


Following the winter rotenone treatment, the DNR stocked the lake with northern pike and yellow perch at 225,720 fry and 2,075 adults, respectively. The stocking occurred shortly after ice-out. Observations and test netting in spring confirmed the rotenone treatment did not entirely eradicate rough fish from the lake. Although this result was disappointing, it was not unexpected.

Department of Natural Resources Fisheries staff conducted additional fisheries assessments in August. Trap nets were lifted on Geneva Lake during the weeks of August 11 and August 25, 2008. Staff sampled yellow perch at approximately 150/trap net. Most of the sample consisted of young of the year (YOY) fish



Water smartweed. Photo: MN DNR

Geneva Lake Reclamation Facts

	2002 Before restoration	2008 After restoration
Secchi ¹	0.4 ft ave. (0.2-0.8 ft)	To the bottom (1.5-5.0 ft)
Total Phosphorus ²	251 ppb	45 ppb
Emergent Vegetation ³	7% surf. area 40% perimeter	30% surf. area 100% perimeter
Submergent Vegetation ⁴	<1% surf. area	84% surf. area

¹ Secchi disk readings depict water clarity in feet

² 90 ppb (parts per billion) is considered 'impaired'

³ ie. bulrush, pond lilies, cattails, arrowhead. Functions include: Filter pollutants and sediment, tie up nutrients, shelter for fish, food and cover for wildlife, shoreline protection

⁴ ie. sago pondweed, wild celery, *Elodea*, coontail. Functions include: Filter pollutants and sediment, oxygenate water, provide food and cover that forms the basis of a complex food-web, supporting everything from microscopic animals to pike to bald eagles

caught in smaller mesh traps. Staff collected 25 pike in total during both weeks of sampling. Average length of these YOY pike was approximately 12 inches, indicating abundant forage. These fish are ambush predators; if food is abundant, they will not swim into passive trap nets like those used in this assessment. Northern pike are expected to be more abundant than the sample size suggests.

Green sunfish, a common species tolerant of low dissolved oxygen conditions in winter, were caught at approximately 250/trap net in the smaller mesh nets. Surviving rough fish had tremendous reproduction. Carp were very abundant at approximately 2,100/trap net in the nets lifted the first week. Most of these appeared to be YOY. The number of carp sampled did decline considerably by the second week, with a 10-degree drop in water temperature. Therefore, the final

indicator of abundance will be growth through the 2009 growing season. If carp are as abundant as the sample suggests, growth will slow in the absence of a mortality or emigration event. Small black bullheads also were abundant at approximately 500/trap net in smaller mesh nets. Most of these fish also appeared to be of 2008 origin. Other fish species observed included bigmouth buffalo, creek chubs, fathead minnows, and white suckers.

For additional fisheries information, contact Hugh Valiant, DNR Area Fisheries Supervisor, at (507) 362-4223 or hugh.valiant@dnr.state.mn.us. For additional wildlife information and habitat survey results, contact Jeanine Vorland, DNR Area Wildlife Manager, at (507) 455-5841 or jeanine.vorland@dnr.state.mn.us.

Ducks Unlimited: Preserving a heritage on Geneva Lake

Ducks Unlimited has preserved approximately 200 acres of land adjacent to Geneva Lake since 2005 through conservation easements.

With 2,000 acres of shallow water and miles of undeveloped shoreline, Geneva Lake provides ideal habitat for migrating waterfowl, thanks to recent reclamation efforts. However, as development pressures grow everyday in the state, the waterfowl and other wildlife benefits Geneva Lake provides could be lost if the shoreline becomes highly developed. Too much development around a shallow lake can make things difficult for waterfowl and managers alike, so Ducks Unlimited (DU) is asking landowners around Geneva Lake to consider protecting their shoreline properties with a conservation easement. Conservation easements give shoreline owners the means to help protect the lake while maintaining their current property uses.

Ducks Unlimited has preserved approximately 200 acres of land adjacent to Geneva Lake since 2005 through conservation easements. A conservation easement is a legal agreement that a landowner makes to restrict the type and amount of development that may take place on his or her property. The easement is tailored to meet the needs and interests of the landowner, and allows for agriculture, recreation, and other compatible uses. Ducks Unlimited believes most lands can benefit wildlife and still produce an economic return to its owner. Furthermore, participating landowners retain ownership and maintain the right to control public access.

These land conservation efforts will be continued with the help

of Lee Markell, Land Specialist, who was hired by DU in April of 2008. Lee worked as a landscape architect and land protection specialist for the Minnesota Department of Natural Resources since 1980.

Lee would be happy to arrange a meeting with landowners interested in helping to protect critical shoreline habitat around Geneva Lake. Bakery goods (sometimes homemade) are often provided at these gatherings.

For more information about the DU conservation easement program, please contact Lee at (651) 788-7464 or lmarkell@ducks.org or go to www.ducks.org.



Re-invest in Minnesota with Wetland Restorations

The Re-Invest in Minnesota-Wetlands Reserve Program Partnership (RIM/WRP) is currently accepting applications for permanent easements on lands with restorable wetlands. Restorable wetlands include areas where the hydrology has been altered by tiling, ditching, or filling. Currently, the RIM/WRP partnership is able to pay 140% of the Estimated Market Value for cropped acres and 93% of the Estimated Market Value for non-cropped areas.

The WRP eligibility has recently changed and requires 7 years of ownership prior to enrolling in the program.

Under the easement, wetlands will be restored to the extent possible and native grasses and forbs will be planted on the uplands. In many cases, 100% cost share is available. The landowner retains ownership of the property as well as the responsibility to maintain the property and pay taxes.

The Turtle Creek and Cedar River Watersheds have been targeted as a RIM Reserve Priority Area with \$2 million available. So far, 10 easements have been secured in Freeborn County, one of which is adjacent to Geneva Lake.

For more information, please contact Tony Reali at the Freeborn County NRCS office at (507) 373-5607 ext. 3.



New Opportunities for Private Land

SAFE Program

The Conservation Reserve Program (CRP) is currently offering a new practice in Minnesota. Earlier this year, the United States Department of Agriculture initiated the new practice under CRP called State Acres For Wildlife Enhancement (SAFE). SAFE serves to establish small blocks (10-40 acres) of grassland and restore habitat for pheasants and other grassland-dependent birds. SAFE provides incentive payments to landowners including annual soil rental rates, approximately 50% cost-share for the cost of establishment (including seed, site preparation, and seeding costs), signing incentive payments, and practice incentive payments may also be eligible.

SAFE requires that a diverse mix of native grasses and forbs be planted to at least 75% of the acreage and up to 25% can be planted into approved introduced grasses. Some sites may be eligible for tree plantings or food plots. The practice allows a landowner to enroll up to 40 acres per tract for contract lengths varying from 10-15

years. Small fields less than 10 acres must be adjacent to existing habitats that collectively form a 10-acre block of habitat. The landowner must also meet the Farm Service Agency (FSA) cropping and ownership requirements.

The state of Minnesota was allocated 23,100 acres when the practice was initiated and many acres are still available. The sign-up is ongoing. Interested landowners may contact the FSA, NRCS, or SWCD office in Freeborn County at (507) 373-5607.

Native Buffer Cost-share Program

This new program, funded by the state Board of Water and Soil Resources (BWSR), provides limited opportunity to receive up to 75% cost share to plant native grasses and forbs. Project sites can be used for seed production, hay, or energy production (outside of nesting season). Management of native prairie remnants may be eligible. Landowners may be eligible for rental payments if the project takes place on agricultural land.

Potential projects include:

- Lakeshore or stream banks with erosion problems or unsightly riprap.
- Perennial gardens and lawn borders.
- Native seed production areas.
- Native prairie remnants.
- Places you would like to see more native plant diversity.
- RIM lands with introduced or marginal plant cover.
- Private, city, or county owned land, rural or urban

Projects must have the potential to decrease soil erosion or increase water quality, a minimum project life of 15 years, 25 native species within the project site, and seed that originates from the same county or ecotype region as the project site.

Items eligible for cost share include site preparation, seed, seeding, prescribed burning, interseeding, weed control, and mulch. Size and cost limits will be determined by the local SWCD Board. Call the Freeborn Co. SWCD for more information at (507) 373-5607.



Local ecotype Canada wildrye, a native prairie grass, that was seeded on the dam at Geneva Lake in 2007. Photo: MN DNR