

Glenwood Area Fisheries Newsletter

Minnesota Department
of Natural Resources

Winter 2011-12

Happy New Year!

Small northern pike, tough problem— regulations to improve Latoka's fishery are dropped

The experimental northern pike regulation on Lake Latoka in Douglas County will be dropped as of November 1, 2011. A new law passed by the Legislature limits the DNR to no more than 100 lakes statewide with special northern pike regulations, 15 less than what it was prior to passage of the new law. Area fisheries managers across the state had to decide which lakes would be dropped. Latoka was chosen because the management goal of the regulation— to increase the average size of northern pike, was not being met.

Length-based regulations designed to increase the average size of fish is a common tool used by fisheries managers. Such regulations however can take a long time to see results, especially with northern pike. Large pike that are lucky enough not to be harvested by fishermen, can reach over 35 inches in about 10-20 years—that's a long time. Adequate sized prey and cool, oxygenated water during the summer are necessary for pike to grow big as well. Latoka, with its deep water and cisco population, was a prime candidate for an experimental regulation. Restricting the angler harvest on large pike seemed to be a logical way to help boost this part of the fishery. Unfortunately, after 9 years, the regulation has not been successful at increasing the abundance of large northern pike.



So, given the habitat and forage attributes in Latoka, why didn't the regulation work? We suspect that a combination of too many 2-4 year old pike and a correspondingly low abundance of yellow perch caused less than favorable conditions for good pike growth. A key to the success of the regulation was that anglers would direct their harvest at smaller pike, those less than 24-inches. We had hoped that this would result in a "thinning out" of those fish, but it didn't happen. Age data from recent netting surveys show a decline in growth rates after age 6, or about 22 inches. An absence of older year classes suggests high natural mortality. Together, these conditions essentially create an environment where pike are "stuck" at highly dense numbers with most dying before they reach 30 inches. Slow growth due to shortages of adequate prey is a well known problem, however,

some research is now suggesting that social interactions (antagonism and interference) among pike can cause poor growth rates despite adequate prey availability. Bottom line is that methods to improve the size structure of pike populations are very difficult and often poorly understood. What is known is that the selective harvest of the largest northern pike in our lakes over the past 80 years may have created a situation that will take even longer to reverse.

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Some good bets for ice fishing this year

Fish population surveys this past summer found excellent populations of walleyes in Barrett and Page Lakes of Grant and Stevens counties, respectively. The average number of walleyes captured on Barrett Lake was 27 per net and on



Page Lake, it was 23 per net. Both of these averages are well above the number we would expect to see in lakes of this type. Most of the walleyes in Page were decent sized—15-16 inches and Barrett was similar including many larger walleyes.

Water quality is fair to poor in both lakes during the summer, with heavy amounts of nutrients creating prolonged algae blooms. Hard to say whether or not the algae imparts a bad flavor to these fish when eaten, but after ice up, this shouldn't be an issue. If a little structure can be found, either of these lakes might be a good choice for this winter season.

Results for fall 2011 electrofishing for young-of-year walleye

Each year, the DNR conducts electrofishing surveys in the fall to estimate the abundance of young-of-year (YOY) walleyes. Several years ago, it was determined that the abundance of young-of-year walleyes (fish that hatched earlier that spring), was a fairly reliable indicator of what the future abundance of walleyes might be 2-3 years later when those fish would be of more interest to anglers. The DNR's Large Lake Program first used fall electrofishing as a future year-class strength predicting tool back in 1986. While the values are more lake-specific than gillnets and trapnets, the thinking was that if it worked on some of Minnesota's largest natural walleye lakes, perhaps it would be useful on the State's many more smaller walleye fisheries. It may come as a surprise to some people, but the vast majority of the State's excel-

lent walleye fishing comes from-natural reproduction, not artificial stocking.

When estimating fish abundance using various gear types such as nets or electrofishing, the DNR uses a measurement called *relative abundance*, that is, number of fish PER hour, or fish PER net. It can be referenced as "catch-per-unit-of-effort" (CPE). For example, if 15 fish were collected in 20 minutes of electrofishing, the CPE or relative abundance would be 45 fish per hour.

Over time, this method enables biologists to detect abundance trends in fish populations. Below is a quick summary of what's been sampled (**YOY walleyes/hour**) on some of the Area's more popular walleye lakes:

	<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>	<u>2007</u>
Andrew	8	17	9	231	12
Big Chippewa	6	34	24	110	68
Big Pelican (Ashby)	59	133	104	17	33
Ida	14	0	11	28	24
Mary	5	68	21	98	44
Miltona	112	12	125	18	44
Minnewaska	71	5	7	4	6
Reno	42	4	53	28	0

Lake Carlos part of statewide study

Over the past few years, folks may have noticed more frequent sightings of state researchers conducting surveys on Lake Carlos. This monitoring is part of a larger, statewide project called SLICE, which stands for Sustaining Lakes in a Changing Environment.

The project is a joint partnership between the Minnesota Pollution Control Agency (MPCA) and the Minnesota Department of Natural Resources (MDNR), and focuses efforts to improve the understanding of how major drivers of change such as development, agriculture, climate change, and invasive species can affect lake habitats and fish populations in Minnesota's lakes. To increase our ability to predict consequences of land cover and climate change on lake habitats, SLICE utilizes intensive lake monitoring strategies on a wide range of representative lakes. As part of the overall strategy, 24 *sentinel* lakes have been selected for long-term intensive monitoring throughout Minnesota. Sentinel lakes can be deep or shallow and may harbor coldwater species such as cisco, lake whitefish or lake trout. Lake Carlos is considered a "super sentinel" lake because it contains a resident cisco population and research is funded by the Minnesota Environmental Trust Fund (ETF).

Historic trophic status data for Lake Carlos indicates the lake is moderately fertile (mesotrophic) and has been since the beginning of data collection in 1948. As part of the Sentinel lakes research project, reconstructions of Lake Carlos's water quality prior to European settlement using sediment cores will be com-



pleted by 2012. Based on data from 1985-2009, water quality in Lake Carlos could be considered exceptional for this part of the state. Because of its great depth and volume the lake is able to efficiently assimilate phosphorus loading from its extensive watershed, which results in relatively low algal concentrations. Even though most water quality parameters meet expectations, some trends may merit attention. Examples of potential problems include:

Chloride

Chloride (Cl) levels have been steadily increasing since 1948. Although there are no biological implications at current Cl concentrations, this measure is a direct reflection of human activities in the watershed, such as road salting and the upstream discharge of wastewater.

Invasive species

Zebra mussels and curly-leaf pondweed are present in Lake Carlos. Given the potential for zebra mussels to alter lake food webs and water quality, it will be important to monitor zebra mussel popu-

lations and their effect on water quality, habitats, and food webs. Curly-leaf pondweed has been present for some time in Lake Carlos; however, growth has remained sparse likely due to the good water quality in Carlos and modestly diverse assemblage of native aquatic plants.

Coldwater "indicator" fish

Tullibee or cisco are an important coldwater fish present in the lake that roam deep offshore waters; however, their status in Carlos and other Minnesota lakes is threatened due to climate change and land use changes that can lead to warmer water and more increased hypolimnetic oxygen depletion from increased primary productivity. New technological tools (hydroacoustics) and netting techniques have been deployed on Carlos during summer 2011 by DNR Fisheries. Hundreds of ciscos were sampled all the way down to over 100 feet deep, however, detecting population trends will take time in order to truly assess this species' status.

Other current and future work by MDNR, MPCA, and the US Geological Survey in Carlos will focus on intensive monitoring and modeling that will lend insight into the potential consequences of climate, watershed, and in-lake stressors on lake habitats and fish populations. It's important to remember that the cumulative effect of conventional development and agricultural practices, invasive non-native species, and warmer more variable climate can result in a slow erosion of a lakes natural resilience. Actions should be taken at multiple levels (global to local to individual) to reduce the human footprint on the climate and landscape. By doing so, we can all hope to promote proactive protection and restoration measures for Lake Carlos and our environment as a whole.

Muskellunge management objectives not being met on Miltona

Avid muskellunge anglers on Lake Miltona have raised concern regarding fewer and fewer encounters with muskies less than the legal size of 48 inches. Our spring netting data in 2008 and 2011 likewise show a decline in the number of medium-sized muskies captured. Fish in the 30 to 42-inch size category, those considered to be



the future of the fishery, are relatively scarce. The reasons for this are likely a combination of increased natural mortality and fewer muskellunge stocked since 1999. You may recall that the original number of fingerlings stocked prior to 1999 was 1,400 on an every-other-year basis. This was reduced to 800 as a compromise to those opposing muskellunge stocking in Miltona altogether. Based on netting data and angler observations since then, it appears that a restoration to the original number of fingerlings stocked will be necessary in order to sustain a quality fishery. Public meetings to discuss the matter will be held in 2012. Please contact Dean Beck, Area Supervisor with any thoughts or comments you may have regarding this important issue.

Muskellunge stocking summary

The following lakes are stocked with muskellunge fingerlings (about 9-12 inches long, yearlings over 12 inches), usually on an every-other-year basis so that natural reproduction can be assessed from aging scales.

Year	Lobster	Miltona	Oscar
2000	672		136
2001	668	804	
2002	685		100
2003		768	
2004	668		
2005		800	100
2006	668		
2007		800	100
2008	668		
2009		800	100
2010	300 (yearling)		
2011	300 (yearling)	800	100

DNR 2011 walleye stocking

Lake	Fry (Number) stocked	Pounds of fgl, yrl or adl stocked	Number of fgl, yrl or adl stocked
Aaron		834	14,595
Ann	366,000		
Barrett	434,000		
Carlos		1,256	20,048
Cottonwood		550	6,170
Darling		596	8,550
Freeborn	244,211		
Geneva		265	4,372
Gilbert	197,695		
Gilchrist		499	7,013
Grove		552	14,216
Hattie	478,410		
Ida	2,430,328	340	3,400
Indian		92	184
Irene		465	7,638
LeHommeDieu		852	14,782
Linka		157	4,835
Lobster		1,458	22,374
Long (Douglas Co)	226,767		
Long (Stevens Co)	593,084		
Louise		190	1,900
Lower Elk	152,000		
Miltona	4,232,035		
Minnewaska	6,496,719		
Moses		399	7,258
Osakis	6,832,000		
Oscar		880	15,238
Pelican (Pope Co)		971	12,816
Pelican (Grant Co)	3,599,001		
Perkins	513,618		
Pomme de Terre	2,350,000		
Rachel		256	3,977
Red Rock	892,500		
Reno	2,000,835		
Scandinavian		501	12,918
Signalness		106	1,073
Smith	41,402*		
Thompson		179	1,513
Turtle		403	6,676
Union (Forada)		21	465
Victoria		135	2,570

Approximate sizes: Fry=mosquito size, Fgl=(4-8" long), Yrl=9-13" long and Adl=fish>13". Fryling are walleyes about 1 to 1.5" long.
*Smith Lake was stocked with frylings.

Crappie hybrids grow fast and can get big, very big



Black and white crappie hybrid (pomoxis nigromaculatus x annularis)

Most people are aware that Minnesota is home to two different species of crappies— white crappies, which live in the southern and central regions of the state, and black crappies which inhabit the state's northern waters.

The Alexandria/Glenwood area, as you might expect, is home to both. We distinguish white crappies from black crappies by counting the spines on the dorsal (top) fin (white crappies possess 6 compared to 7-8 on black crappie) and examining the coloration on sides (white crappie have vertical bars whereas black crappie have blotchy sides). White crappies have short dorsal fins compared to the distance between their eye and the beginning of

their dorsal fin; however, lengths of black crappie dorsal fin are equal to the distance between the eye and the beginning of their dorsal fin.

If you've ever caught a crappie that's difficult to distinguish between white or black, chances are it's a hybrid. In this area, lakes within the Pomme de Terre and Chippewa River drainages contain both white and black crappies, and therefore are likely to contain hybrid crappie as well.

First generation (F_1) hybrids possess features intermediate between the two pure species by having 7 dorsal spines, blotchy vertical bars, and intermediate lengths of their dorsal fin.

These F_1 hybrids always grow faster than the slowest growing pure species, and usually grow faster than either species within a given lake. Hence, if you catch a large crappie (2 pounds or heavier) in a lake where both species exist, odds are high that it's an F_1 hybrid. First generation hybrids are fertile and will spawn with either pure species. Second generation (F_2) offspring look similar to the pure species parent, but unlike F_1 hybrids, they grow similarly as their pure strain parent and may not even survive. Thus, management efforts designed to promote more F_1 hybrids will not improve our crappie fisheries. Next time you catch a crappie, look it over a little closer.

Employee Spotlight— Leslie George



Every year, thousands of property owners statewide submit applications to alter or remove aquatic vegetation from the lake in front of their property. Reviewing so many applications is a daunting task— plenty of work for two fulltime staff. With budgets tight however, Leslie George is the lone Aquatic

Plant Management Specialist for the area. “It can be tough at times”, says Leslie., “but thankfully much of how permits can be written is in MN Rule.” Most applications require on-site inspections to evaluate the quality of fish and wildlife habitat that may be impacted. “The inspection allows us to make the right permitting decisions”, she says. “Trying to balance the aquatic habitat that will be lost with the reasonable lake-use a property owner expects isn’t easy”. Leslie’s job is unique in that her geographical work area extends from southern Pope County all the way north through Becker County and includes well over 100,000 acres of water.

Leslie grew up in the NW suburbs of the Twin Cities, and attended Armstrong High School in Plymouth, graduating in 1996. The following fall she started her undergraduate career at the University of Minnesota-Duluth and later headed to the University of Minnesota-St. Paul campus to complete her Bachelor’s degree in fisheries management. After completion of an internship with DNR Fisheries, she set her sights on a more advanced degree and continued on at the U of M, eventually working with DNR research staff at the St. Paul headquarters. Leslie’s thesis examined how near shore fish catches varied within in-lake habitat and by sampling date. She graduated in 2004 with a Master’s Degree in Fisheries Management and a minor in Statistics.

When asked how she decided to pursue a career in fisheries management, Leslie recalled summers spent at her family’s lake home on Bay Lake near Deerwood Minnesota. “I have so many great memories of fishing, boating, bonfires, swimming and hiking up there that I know were influential when it came time to making decisions about my career. Although I wasn’t sure at first exactly what I wanted to do, I knew I couldn’t imagine myself in a career that would put me behind a desk for the next 40+ years. I simply had too much fun outside growing up— participating in organized sports, life at the cabin, and even leading a local Parks and Recreation Department’s instructional youth baseball league over the summers. The positive experiences I had as a student at the U of M, my internship, and my Master’s project with the DNR solidified my career desires after graduation”.

Leslie started her full-time career with the DNR in April of 2004 when she accepted a position as the Accelerated Walleye Program Specialist at the Windom Area Office. Largely charged with trying to maximize the walleye fingerling production for the southern region of Minnesota, she quickly took on the additional duties of a fisheries specialist– from conducting fish and habitat surveys to harvesting, hauling and stocking fish. In July, 2006, she was promoted to her current position at the Glenwood Office as the Regional Aquatic Plant Management Specialist, a job she thoroughly enjoys due to its many challenges. “The frequent contact I have with the public, and the interpretation of MN Rules and Statutes, as well as coordination with other DNR divisions, invasive species issues, and the occasional court appearance; well, this job definitely keeps things interesting on a daily basis”.

Leslie lives on the south shore of Lake Minnewaska with her 5 -year old yellow lab Tucker. She enjoys backpacking, camping, hiking, boating, fishing, traveling, snowboarding, cooking, reading and the occasional duck hunt.

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