

DATE: August 1, 2012

TO: DNR Fisheries Management Board

FROM: Max Wolter - Hayward

SUBJECT: Rule Change Proposal –Black bass length limit removal on Lake Chetac, Sawyer County.

- 1. Rule Author:** Max Wolter, Fisheries Biologist, Hayward Field Unit
- 2. Affected Waterbodies:** The regulation change would occur on Lake Chetac in Sawyer County. Birch Lake is connected to Lake Chetac by a large channel but is managed separately. There may be some exchange of fish between these systems.
- 3. Statement of Regulation Proposal:** Eliminate the statewide 14-inch black bass (smallmouth bass and largemouth bass) minimum length limit currently in place for Lake Chetac in Sawyer County and replace it with a no-minimum length limit while maintaining a 5-daily bag limit.
- 4. Statement of Management Objectives:** A decline in walleye recruitment has occurred recently in Lake Chetac which coincided with the increase in largemouth bass relative abundance suggesting a strong inter-specific interaction. The management goal for Lake Chetac is to maintain a walleye-dominated fish community capable of providing a self-sustaining walleye fishery and predation on panfish sufficient to control recruitment and allow panfish to attain preferred size. Management objectives for Lake Chetac are to restore walleye recruitment to acceptable levels (≥ 15 per mile of fall electrofishing) and improve largemouth bass size structure (from current RSD-15 of 13% to 25-50% in the future) through reductions in bass abundance (from current CPE $\geq 8''$ of 39/mile to 5-15 per mile of spring electrofishing in the future).
- 5. Description of Fishery Status:** Lake Chetac is a 1,920 acre drainage lake with a maximum depth of 28 feet and predominant gravel and sand substrate. Lake Chetac is fed by Benson Creek from the North and Knuteson Creek from the East. This lake is productive with turbid greenish water in comparison to other lakes in the area and an alkalinity level of 66 ppm. Lake Chetac has 15.5 miles of shoreline that is predominantly developed. The fish community is comprised of walleye, largemouth bass, smallmouth bass, northern pike, and panfish. Chetac is a popular bass fishing lake and is located in the Southern Bass Management Zone. This lake hosts many bass tournaments each summer. Lake Chetac has been stocked with small walleye fingerlings or fry periodically since 1972 (Table 1). In 2002 and 2011 large (extended growth) fingerlings were stocked by the DNR and the Lac Courte Oreilles Conservation Department. The Chetac Lake Association has also contributed fry stocking in the last decade but these events have not been well documented. Based on fall survey data these stockings do not appear to be successful, particularly in recent years (Figure 1).

Lake Chetac has previously been known as both a quality walleye fishery and a location to catch large bass. Recent changes in the abundance of these species suggest that this balance no longer exists. Natural walleye recruitment has occurred historically with existing survey data showing detectable numbers of age-0 walleye in fall surveys from 1997 through the early to mid-2000's with strong year classes occurring in the late-90's/early 2000's (Figure 1). The two strongest year classes in recent history were produced in years that the lake was not stocked (Table 1, Figure 1). However, there has been a decreasing trend in the number of recruits observed over time and no YOY fish were sampled in the 2007, 2008, 2009, and 2010 surveys and only 4.6 per mile were observed in the most recent (2011) survey. Examination of the length histogram from spring fyke netting in 2009

showed some fish representing young year classes to be present in the population (Figure 2). However, given the lack of successful year class production between 2007-2011 we expect that most juvenile fish currently in Lake Chetac are the result of stocking. A drastic increase in CPE of largemouth bass $\geq 8''$ to 39/mile in 2009 has been concurrent with the decrease in walleye recruitment over the last decade (Figure 3). Largemouth bass in Lake Chetac are now more abundant than ever before and it appears that growth rates have slowed, resulting in a population of mostly sub-legal fish (RSD-14 = 26%, Figure 4).

Very few young largemouth bass were observed in the 2009 survey (Figure 4), suggesting that at this density bass recruitment may be limited by cannibalism or intra-specific competition. It seems likely that high adult survival, rather than excessive recruitment, has led to undesirably high largemouth bass density. Smallmouth bass are rare in Lake Chetac (0.6 per mile of electrofishing in 2009).

Table 1. Summary of stocking history for Lake Chetac between 1972 and present.

Year	Age Class	Number Fish		Average Fish	Source Type
		Stocked		Length (inches)	
1972	Fingerling	12,300		3.0	DNR Coop Ponds
1973	Fingerling	95,006		3.4	DNR Coop Ponds
1975	Fingerling	95,030		3.9	DNR Coop Ponds
1976	Fingerling	95,000		3.7	DNR Coop Ponds
1978	Small Fingerling	25,000		2.5	
1980	Fry	256,000			DNR Hatchery
1982	Fingerling	25,000		3.0	DNR Coop Ponds
1983	Fry	128,000		1.0	DNR Hatchery
1984	Fingerling	25,375		3.0	DNR Coop Ponds
1986	Fingerling	27,720		3.0	DNR Coop Ponds
1988	Fingerling	36,742		3.0	DNR Coop Ponds
1990	Fingerling	24,766		3.0	DNR Coop Ponds
1992	Fingerling	25,000		2.0	DNR Coop Ponds
1994	Fingerling	1,108		2.9	DNR Coop Ponds
1994	Fingerling	23,814		2.9	DNR Coop Ponds
1996	Fingerling	25,000		1.6	DNR Hatchery
1998	Small Fingerling	48,000		1.5	DNR Hatchery
2000	Small Fingerling	25,000		1.5	DNR Hatchery
2002	Large Fingerling	1,528		8.0	DNR Hatchery
2002	Large Fingerling	1,499		6.6	DNR Hatchery
2002	Large Fingerling	4,995		6.5	DNR Hatchery
2002	Large Fingerling	1,863		6.4	DNR Hatchery
2002	Large Fingerling	1,252		6.3	DNR Hatchery
2004	Small Fingerling	19,199		1.1	DNR Hatchery
2011	Large Fingerling	1,500		7.8	Tribal Hatchery

Figure 1. Fall electrofishing CPE of age-0 walleye in Lake Chetac between 1997 and 2011.

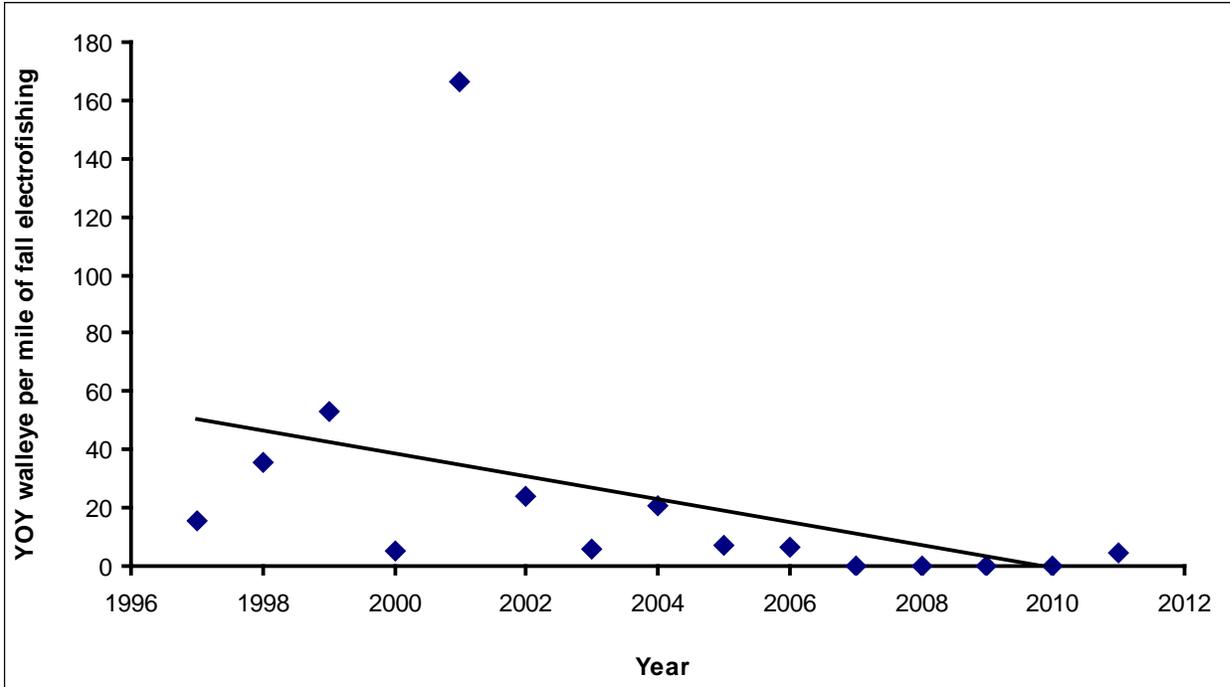


Figure 2. Lengths of walleye captured during an April, 2009 fyke netting survey of Lake Chetac.

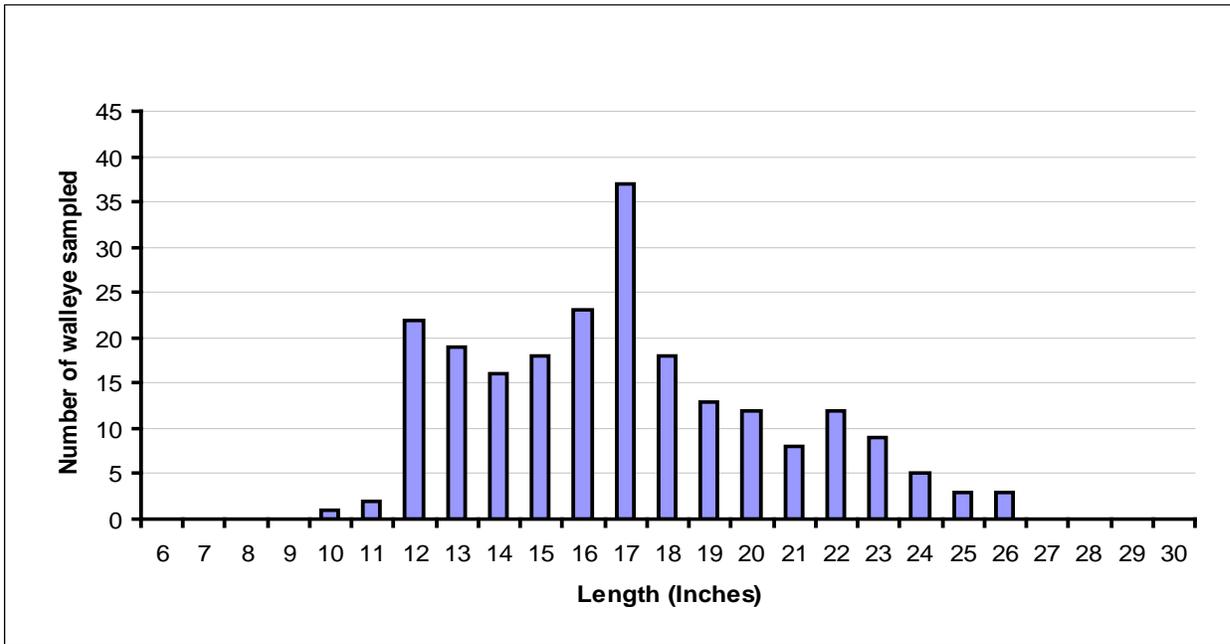


Figure 3. Spring electrofishing CPE of largemouth bass in Lake Chetac between 1997 and 2009.

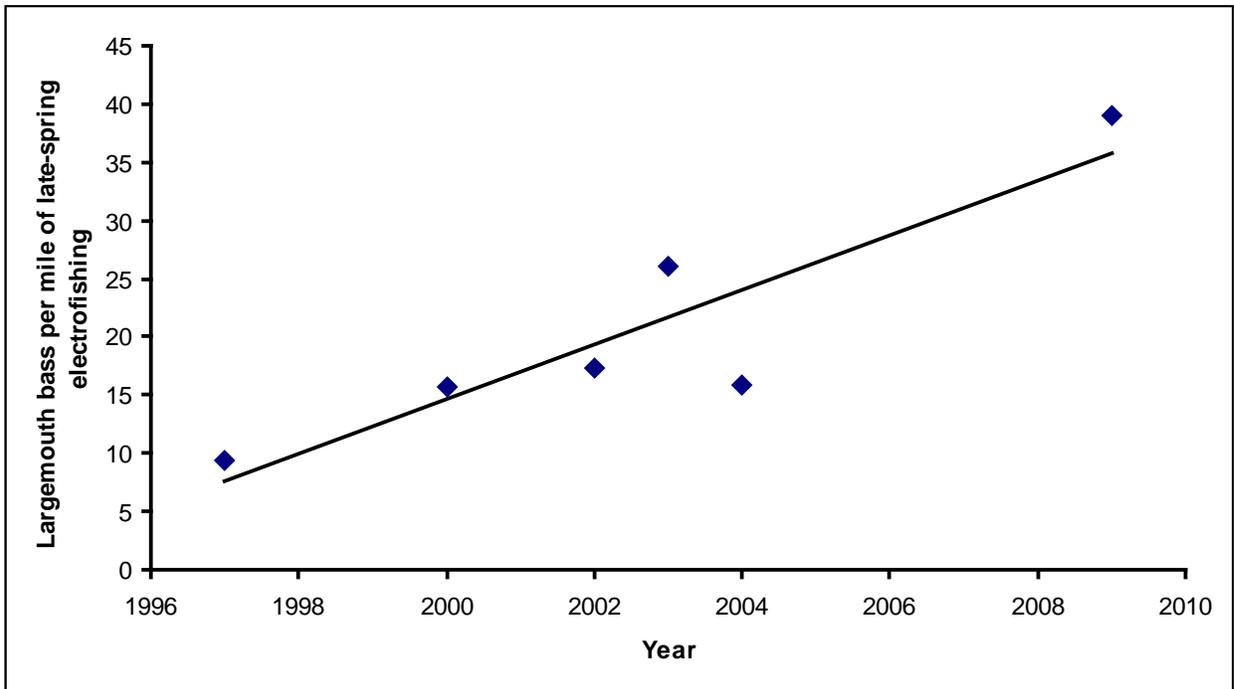
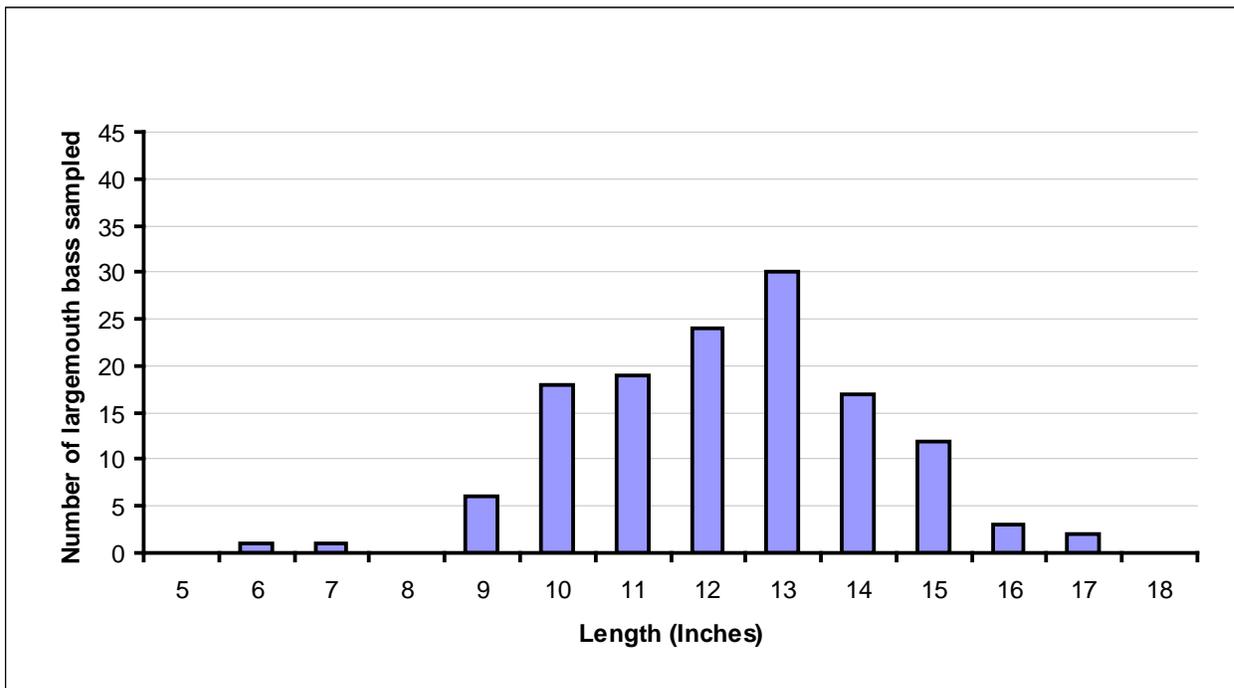


Figure 4. Lengths of largemouth bass captured during a May, 2009 electrofishing survey of Lake Chetac.



6. **Justification of Selected Regulation:** Natural recruitment of walleye in Lake Chetac does not appear to be possible when largemouth bass occur in high abundance as in recent years. Largemouth bass have been shown to be effective predators on juvenile walleye, suggesting that increases in bass abundance and major decreases in walleye recruitment is not a spurious correlation. Removing the length limit on bass will allow for harvest of a much larger proportion of the largemouth bass population which in turn will reduce abundance. We believe this regulation change will have increased effectiveness because Lake Chetac is located in the Southern Bass Management Zone, which will allow harvest for a larger portion of the year at a time of year when anglers are more likely to keep the bass they catch. Smallmouth bass are not perceived to be detrimental to walleye recruitment but will be less impacted by this regulation change because of the low abundance of this species in Lake Chetac. Walleye recruitment in Lake Chetac was strongest when the population of largemouth bass $\geq 8''$ was well below a CPE of 20 fish per mile of electrofishing, making 5-15/mile an appropriate management objective. The success of this regulation will be evaluated by its ability to reduce bass density through angler harvest, improve bass population size structure, and increase walleye recruitment to desired levels in subsequent years. Panfish are arguably more important in the Lake Chetac fishery than either walleye or bass. Therefore, we must re-establish walleye as the dominant predator, because walleyes are more likely than largemouth bass to control recruitment of bluegill and black crappie (preventing over-population and stunting) in a lake this large and turbid.

7. **Public Comment:** The Lake Chetac Association has been very active in the development of this regulation and is in full support. While the majority favors this change we anticipate the local and statewide bass fishing community will likely view it as negative. It is our hope that this regulation will in fact improve bass fishing by allowing for faster growth that can only be achieved in a moderate to low density population. Efforts have been made to communicate this point to the bass fishing community. This regulation change will not negatively affect tribal fisheries; and the LCO Conservation Department's fishery biologist hopes this change will make it unnecessary for them to add Lake Chetac to the list of waters into which they must contribute stockings of extended-growth walleye fingerlings.

At the 2012 spring hearings of the Wisconsin Conservation Congress, Sawyer County attendees voted 61-7 in favor of the Warmwater Study Committee's Advisory Question 79 (#580211) to remove the length limit from largemouth bass at Lake Chetac. Statewide, hearing attendees voted 1,745-704 in favor of the advisory question, which was approved in 65 counties, rejected in 5, and tied in 2.

8. **Previous Action:** Lake Chetac has previously been managed under the statewide 14-inch minimum length limit for bass in the Southern Bass Management Zone. Similar no-minimum length limit regulations have been established recently in four other Sawyer County lakes (Chippewa Flowage and Lakes Nelson, Whitefish, and Big Sissabagama). The FM Board has not previously reviewed this rule change for Lake Chetac.

9. **Draft Question:** The largemouth bass population in Lake Chetac, Sawyer County has increased in recent years beyond levels previously seen. Simultaneously, recruitment of young walleye has become essentially non-existent. Biologists are concerned that high numbers of largemouth bass in this lake will both limit growth of largemouth bass and prevent recruitment of walleye thereby degrading the quality of both populations. Eliminating the statewide 14'' minimum length limit will allow anglers to harvest more small bass that are becoming dominant in this lake.

Do you favor eliminating the 14'' size limit for bass on Lake Chetac, Sawyer County?

10. Fishing Regulation Change Approval Form

Proposal Name: **Eliminate the 14” minimum length limit for bass in Lake Chetac, Sawyer County.**

The need for a rule, statute or pamphlet change is recognized and a proposal is developed and submitted in the form of this **BACKGROUND MEMO** with input from local Law Enforcement staff (i.e. local warden) with particular focus on enforceability and enforcement concerns.

Rule Initiator, signature

Local Conservation Wardens

The proposal was reviewed for need, adequacy and completeness. It has been deemed necessary. The proposal is complete and adequately addresses the rule development guidance.

Fish Team Supervisor, signature

Warden Team Supervisor, signature

The proposal was forwarded by the fish team supervisor and reviewed for need and adequacy, consistency, enforceability and completeness. The regulation is biologically necessary or has the biological potential to be successful, demonstrates necessary consistency and is enforceable. The proposal is complete and adequately addresses the rule development guidance.

Regional Fish Supervisor, signature

Regional Director, signature

Regional Warden, signature