

DATE: June 18, 2009

FILE REF: 3600

TO: Mike Vogelsang, Area Fisheries Supervisor, Woodruff

FROM: Steve Gilbert, Fisheries Biologist, Woodruff

SUBJECT: 2010 WDNR Fisheries Rule Development Proposal**Title:** Muskellunge Regulation Retention - 45 inch minimum size limit

1. **Author:** Steve Gilbert, Fisheries Biologist – Vilas County
2. **Waterbody:** Little Saint Germain Lake, Vilas County (T40N R08E Sec 35)
3. **Proposal:** Muskellunge Regulation Retention - 45 inch minimum size limit

4. Statement of management objectives:

There is a lack of trophy fishing regulations for muskellunge in the Northern Region. Vilas County has over 200 lakes that contain muskellunge (WDNR 1995), more than any other county in Wisconsin. Only 12 (10 at 40 inch and 2 at 45 inch minimum) of these have special regulations for muskellunge. Preliminary evaluations of our 40-inch minimum waters indicate this regulation has not significantly increased the numbers of fish greater than 40 inches in length when compared to a 34 inch minimum size limit (Margeneau 2000). Little Saint Germain Lake has the potential to produce true trophy muskellunge if afforded more conservative protection than a 40 inch minimum size limit.

The Goal of this regulation is to increase the RSD40 to 25, RSD45 to 10 and the RSD50 to 1 by 2018. Since this regulation went into effect in 2002 the RSD 40 goal has been reached and we are approaching the RSD45 goal.

5. Description of Fishery Status:

Little Saint Germain Lake is 957 acres, eutrophic, and has a maximum depth of 53 feet. It is a drainage lake and the outlet stream flows into the Rainbow Flowage (Upper Wisconsin River drainage). The outlet has a small dam on it that is operated by the Wisconsin Valley Improvement Company. The lake is located near the town of Saint Germain and 93.5% of its 14.5 miles of shoreline are privately owned (Black et al. 1963). There is a WDNR landing located on the northwest shore that provides the only public access to the lake.

The lake has a history as a moderate density muskellunge fishery with trophy potential. Smallmouth bass, largemouth bass, walleye, and northern pike are the other gamefish species present. The panfish fishery currently consists of abundant numbers of yellow perch, bluegill, and black crappie. West Bay, the only deep bay of the lake, has historically supported a cisco fishery.

Muskellunge Fishery

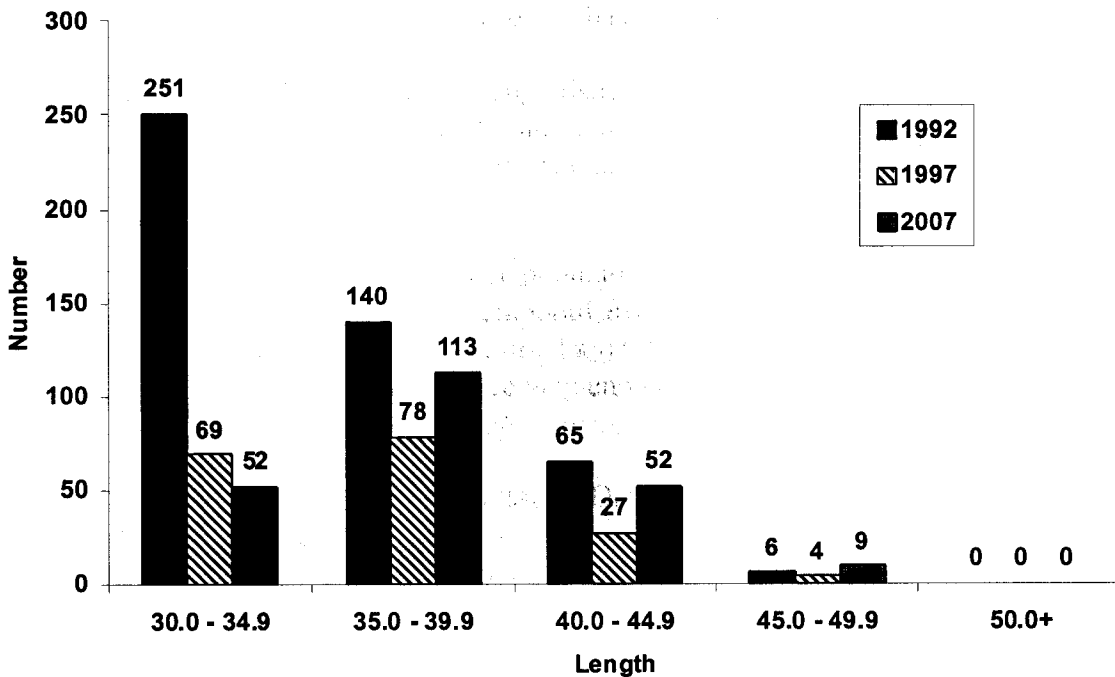
Little Saint Germain has a long history as a popular muskellunge fishery. Regular stocking since the 1930's has maintained the fishery. During the 1980's the lake was stocked almost every year with fall fingerlings at a rate of two to three per acre. This high level of stocking resulted in the high muskellunge population density of the early 90's dominated by fish less than 35 inches in length.

Since 2000, fingerling has been reduced to 0.5 fish per acre every other year. This reduction in stocking is part of our goal to maintain the number of muskellunge present at a level that can support a trophy fishery given the current forage base, harvest, and natural mortality.

In 2007 and 2008 a survey of the muskellunge fishery was conducted on Little Saint Germain Lake to evaluate the results of the 45 inch minimum length limit. Over the two years 145 muskellunge were captured using fyke nets. The largest fish captured was a 48.9 inch long female.

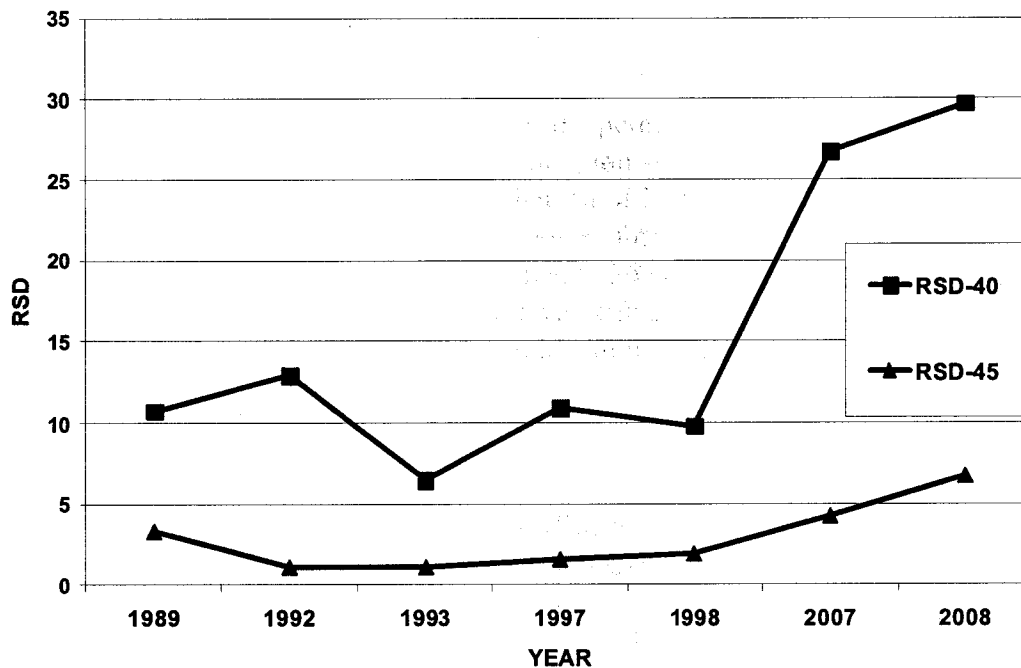
Based on this survey the adult muskellunge population (fish ≥ 30) has increased since the 1997 estimate from .18 to .23 fish/acre. The number of fish over 40 and 45 inches has increased significantly (Figure 1.). We have not captured a fish over 50 inches in length yet but the 45 minimum length limit has not been in place long enough to grow significant numbers of fish of this size.

Figure 1. Historical Muskellunge Population Distribution by Length Group for Little Saint Germain Lake, Vilas County.



Relative stock density (RSD), a measure of the percentage of fish over a set length in a fishery, is a good indicator of actual muskellunge population size structure (Hanson 1986). RSD 34 and 40 values calculated for 2008 using a **stock length of 20 inches**, were 92 and 30 respectively (figure 2.). These RSD values are above those reported for other northern Wisconsin muskellunge waters (Margenau 2000, Hanson 1986). RSD 45 values were not calculated for these other lakes, but Little Saint Germain Lake had a value in 2008 of 7. RSD 50 was 0 but this is expected given the limited protection of the 45 inch length limit and the fact that it has only been in place since 2002.

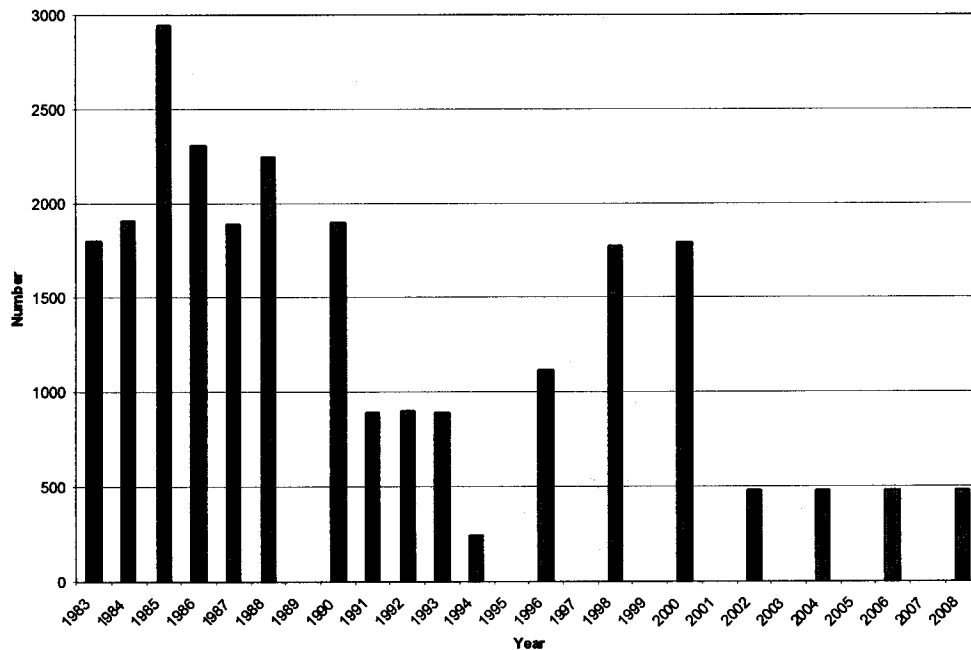
Figure 2. RSD History of Muskellunge (Stock Length > 20.0 inches) from Spring Netting Surveys of Little Saint Germain Lake, Vilas County.



Muskellunge Recruitment

Currently the muskellunge population of Little Saint Germain Lake is maintained through stocking (figure 3). The lake is currently stocked in even numbered years with large fingerling muskellunge at a rate of 0.5 fish per acre. Spring netting and fall electrofishing surveys indicate that there is limited natural recruitment occurring in some years.

Figure 3. Muskellunge Large Fingerling Stocking History for Little Saint Germain Lake, Vilas County (1983 to 2008).



Muskellunge Harvest

The last creel survey of Little Saint Germain Lake was conducted in 1997. At this time the muskellunge regulation on the lake was a 34 inch minimum length and 1 fish bag limit. Based on the results of the survey, anglers caught an estimated 658 and harvested 39 muskellunge for the entire season. This harvest is based on 3 fish reported to the creel clerk as harvested. Only two of these fish were measured and they were 36.0 and 38.3 inches in length. Catch and harvest rates of anglers specifically seeking muskellunge were 70.0 and 588.2 hours per fish respectively. Anglers spent 23,405 hours (23.9 hrs/acre) specifically fishing for muskellunge in 1997 on Little Saint Germain Lake.

Little Saint Germain Lake is in the ceded territory and significant tribal harvest of muskellunge does occur. Since 2001, tribal members have speared an average of 3.5 muskellunge a year (range 0 to 8) during the spring spearing season. There is also a fair amount of tribal winter ice spearing for muskellunge on this lake in some years.

6. Justification of Selected Regulation:

The current 45 inch minimum size limit has increased the numbers of muskellunge 40 inches or greater in length present in Little Saint Germain Lake. This lake has the size, growth rate, and forage base to produce significant numbers of trophy muskellunge. There is also a significant segment of the angling public that would like to see greater opportunities to catch larger muskellunge. In 1999 a survey was conducted by the Wisconsin department of natural resources of 1,400 anglers who fish muskellunge in Wisconsin (Margenau 2004). The survey found that 62% of anglers felt that a trophy muskellunge was a fish 50 inches or longer in length.

Maintaining the muskellunge regulation at the 45 inch minimum will continue to provide an additional quality angling opportunity in Vilas County.

Future plans call for monitoring muskellunge recruitment each fall. A Muskellunge population estimate and creel survey should be conducted on Little Saint Germain Lake every 10 to 15 years to evaluate any changes.

References

Black, John J., Andrews, L. M. and C. W. Threinen. 1963. Surface water resources of Vilas County. Wisconsin Conservation Department, Madison, Wisconsin. 316 pages.

Hanson, David A. 1986. Population characteristics and angler use of muskellunge in eight northern Wisconsin lakes. Am. Fish. Soc. Spec. Publ. 15:238-248.

Margenau, Terry L. and Steven P. AveLallemant. 2000. Effects of a 40-inch minimum length limit on muskellunge in Wisconsin. N. Amer. J. Fish Mgt. 20:986-993.

Margenau, Terry L. and Jordan B. Petchenik. 2004. Social aspects of muskellunge management in Wisconsin. N. Amer. J. Fish Mgt. 24:82-93.

Wisconsin Muskellunge Waters. 1995. Wisconsin department of natural resources. Publication RS-919-96.

7. Public Comment:

At the 2001 spring Vilas County conservation congress hearing the 45 inch minimum (with a 10 year sunset clause) was submitted to be voted on. It passed locally by a 60 to 0 vote and statewide 2,176 to 924. The Little Saint Germain Lake District has reviewed this proposal in the past and approves of retaining this regulation.

This regulation change should cause no conflicts with tribal harvest. Tribal members have speared the lake in the past on a regular basis. Increasing the muskellunge population of Little Saint Germain Lake will have no negative impacts on annual tribal muskellunge or walleye harvest.

8. Previous Action:

Prior to 2002 the muskellunge fishing regulations on Little Saint Germain Lake followed the general inland rules for the state. In 2002, the current 45 inch minimum size limit was placed on the lake. Currently only one other lake in Vilas County has a 45 inch minimum length regulation and none have a 50 inch minimum.

If no action is taken the length limit will revert back to the standard statewide regulation of a 34 inch minimum and one fish bag limit. The Little Saint Germain Lake muskellunge fishery would revert back to a moderate density fishery and few musky greater than 40 inches in length will be caught.

9. Draft Question:

Little Saint Germain Lake Muskellunge Regulation – Retain and make permanent the minimum length limit of 45 inches.

The current 45 inch minimum size limit has been in effect on this lake for 8 years and has significantly increased the number of fish longer than 40 and 45 inches in length. This lake has the potential to grow trophy muskellunge if given additional protection from harvest. It is recommended that the muskellunge regulation on this lake be retained at a 45 inch minimum length limit. This regulation should improve muskellunge catch rates, increase numbers of adults, and provide an opportunity to catch larger fish. The Little Saint Germain Lake District has reviewed this proposal in the past and approves of retaining this regulation.

Do you favor retaining and making permanent the minimum length limit of 45 inches for muskellunge on Little Saint Germain Lake in Vilas County?

Revised: SJG 7/28/09