

# Regulation Proposal Form

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<b>Proposal Title</b> Removal of Special Regulations on Lake Six Northern Pike	
<b>Author</b> Lawrence Eslinger	<b>Date</b> 06/20/11
<b>Location Information:</b>	
<b>Affected water(s)</b> Lake Six	
<b>County</b> Iron	<b>WBIC(s)</b> 2294500
<b>Upstream/downstream boundaries, if applicable—Law Enforcement should be consulted</b>	
<b>Will this regulation affect Ceded Territory water and are there any anticipated impacts to tribal fisheries?</b> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	

<b>Current Regulation</b> 26" minimum length limit; 2/day for northern pike
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<b>Proposed Regulation</b> No minimum length limit; 5/day for northern pike (statewide rule)
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<b>Management Goal</b> <b>Summary statement that characterizes the desired fishery (e.g. provide a naturally reproducing harvest-oriented walleye fishery; provide a bass fishery dominated by large adults that maximizes predation on smaller fishes)</b> Provide a naturally reproducing, harvest-oriented northern pike fishery within a balanced fish community that includes moderate densities of quality-size panfish.
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<b>Description of the Water(s) and Fishery</b> <b>Provide a brief description of the water(s), past regulations and other management actions. Summarize all applicable fisheries data, particularly from surveys meeting protocols (Table 1).</b> Lake Six is a relatively small, shallow, seepage lake located in central Iron County (approximately 14 miles from Mercer, WI) within the upper Flambeau River watershed. The lake is approximately 148 acres in area and has 1.96 miles of shoreline. Mean and maximum depths are approximately 6 and 15 feet, respectively. Water clarity is relatively low, and color is light brown. Watershed area is approximately 1.3 sq. mi. with roughly 55 acres of wetlands (1970 Surface Water Resources). The lake is noted to be mesotrophic with submersed aquatic vegetation present throughout the littoral zone and bulrushes surrounding the perimeter (Jim Cox, personal observations). Bottom substrate consists of 60% sand, 30% silt/muck, 5% gravel, and 5% rock. Water alkalinity has been measured at 34 ppm, conductance at 79 µmhos/cm, and pH at 7.4 (1970 Surface Water Resources). Lake Six has a shoreline development factor of 1.29, and is therefore nearly perfectly bowl-shaped (1970 Surface Water Resources). The lake has been noted to suffer from periodic winterkill (Roth 2003), and public access to it is by means of a rather limited boat landing.  The first documented fisheries survey on Lake Six occurred in 1983. At that time, it was suspected that a recent winterkill had taken place due to relatively poor survey results (Scholl 1983). During the 1983 survey, forage species (i.e. golden and common shiners) were abundant, yellow perch were present in adequate numbers with good-sized fish (up to 11.2 inches) available, and rock bass, black bullhead, pumpkinseed, white sucker, and creek chubs also found (Scholl 1983). However, brook trout were the only gamefish captured, which had likely migrated from the outlet which is connected to a class 2 trout stream (Roth 2003). Scholl (1983) also noted that northern pike were reported to have been present in Lake Six in years past.
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Northern pike and largemouth bass were stocked periodically between 1983 and 1993. Northern pike broodstock from southern Wisconsin were used to determine if that source was genetically superior to northern stocks suspected of exhibiting higher natural mortality and slower growth rates (Roth 2003). There has been no documented stocking since 1993. Exceptional growth rates of stocked gamefish were noted during surveys conducted between 1983 and 1992 (Roth 2003). Due to fast growth and the presence of large northern pike, the current special regulation (26-inch minimum length limit and two-fish daily bag limit) was implemented in 1995.

#### 2002 Fish Surveys:

A survey of Lake Six was initiated in 2002 to evaluate the impacts of the special regulation on the fishery. Results of that survey (early spring netting) estimated the adult northern pike population at 559 fish (3.8 per acre) with a high capture rate of 15 fish per net-night 12.0 to 38.9 inches long. Of the 417 fish captured over 14 inches, 21% were of legal size. PSD was 78%, RSD-28 was 10%, and RSD-34 was < 1%. Growth rates at that time were noted to be well above Iron County averages, with most fish reaching legal size by age 6. However, it was also noted that few male pike sampled lived beyond 5 years. Therefore, the overwhelming majority of harvestable-size fish were female.

The 2002 survey (April fyke netting and June angling) also documented what appeared to be a relatively low-density population of largemouth bass 12.0 to 19.9 inches long. In addition, the panfish population (summer fyke netting) was comprised of bluegill, yellow perch, rock bass, and pumpkinseed, with bluegill being the most abundant (~15 per net-night). Bluegill size structure was fair (PSD, RSD-7, and RSD-8 at 53%, 20%, and 8%, respectively) with several age-classes present in the population. Management recommendations after the 2002 survey were: 1) maintain the special regulations for northern pike; and 2) monitor the fish community with an emphasis on "the declining forage community" and consider more protective regulations for largemouth bass and panfish populations (Roth 2003).

#### 2010 Fish Surveys:

As recommended in the 2003 survey report (Roth 2003), the status of Lake Six was evaluated in 2010 by SN1, SE2, and SN3 surveys. The SN1 fyke net survey was conducted between March 31st and April 2nd with 10 net-nights of effort. We captured 208 northern pike (169 male, 39 female) at an extremely high rate of ~21 per net-night 10.5 to 33.9 inches long. Only two fish were over the 26-inch minimum length limit. PSD was only 21%, and RSD-28 was < 1%. Growth rates of northern pike had dropped considerably since the 2002 survey; age-6 fish averaged 22.9 inches in length in 2010 compared with 26.7 inches in 2002. Growth rates is now significantly below the Iron County average.

The SE2 electrofishing survey (5/25/10) targeting largemouth bass and panfish captured zero bass but 61 northern pike (31 per mile) 7.5 to 23.9 inches long (most 16 to 20.5 inches). We captured stock-size and larger bluegill and pumpkinseed at rates of only 3 per mile and small yellow perch at a rate of only 16 per mile. The SN3 fyke net survey was conducted on June 15-16. Only 4 bluegills were captured (0.8 per net-night in 5 net-nights), ranging in size between 6.5 and 7.5 inches. No other panfish were captured during the survey, but 15 northern pike (between 10 and 23 inches) were captured.

#### **Management Objective(s)**

**a) Goals are general, objectives are specific. Objectives are used to evaluate the effectiveness of your action and determine if you have achieved your goal. Provide a management objective that is specific, measurable, able to be achieved, related to the goal, and has a temporal component (e.g. increase walleye harvest rate to 0.1 fish/hour while maintaining recruitment at or above 10 YOY/mile within 5 years; increase largemouth bass RSD14 to 35 and bluegill RSD8 to 15 within 5 years**

1. A northern pike population of moderate density with a moderate proportion of quality-sized fish. Of pike sampled during the spawning period in the spring of 2016, fyke net capture rates of stock-size fish ( $\geq 14$  inches) should fall within the range of 5-15 per net-night; and the proportion of those fish  $\geq 21$  inches long (PSD) should be 30-50%.

2. A bluegill population of moderate density with keeper-size fish present. Of bluegill sampled during summer assessments, fyke net capture rates should be 10-20 per net-night; and the proportion of those fish  $\geq 7$  inches (keeper-size) long (RSD-7) should be 15-25%.

**b) Describe how the management objective and associated target levels for metrics were developed (e.g. lake management plan, stakeholder meeting, comparison to other water(s)).**

Management objectives and metrics for northern pike were developed based on catch rate statistics from other waters containing moderate densities, where pike have a reasonable chance of obtaining sizes that most anglers prefer (something larger than "hammer handles"). Objectives and metrics for bluegill were developed based on catch rate statistics collected during the 2002 panfish assessment on Lake Six, and they reflect a general preference of Wisconsin anglers for a fishable population of "keeper-size" panfish in most waters.

### **Current Problem**

**Use survey data or provide context for a similar water or group of waters (e.g. lake type, watershed) to demonstrate how the fishery is not meeting the desired management objective. Identify hypothesized problem(s) you hope to address.**

The abundant northern pike population in Lake Six is hindering itself (as indicated by poor growth and size structure indices) as well as other fish species, probably via high rates of predation. During the 2010 survey, northern pike were captured at a rate of 21/net-night, with PSD and RSD-26 values of 22% and 1%, respectively. Therefore, of the 208 northern pike captured during the survey, only 2 were of harvestable size for anglers under the current regulation. By allowing harvest of any-sized northern pike, catch rates should go down and growth (along with size structure) should increase through reduced intraspecific competition.

Panfish populations are currently severely suppressed by the excessive number of northern pike present. The late spring electrofishing capture rate for bluegill in Lake Six was only 3.0/mile. This relative abundance value falls within the lowest 1% for bluegill populations statewide. With theoretically lower numbers of northern pike present (as a result of angler harvest under a return to statewide regulations), we hypothesize that capture rates of bluegill and other panfish species will eventually increase due to reduced predation.

### **Proposed Regulation Justification**

**How is the regulation change expected to meet your objective(s)? Demonstrate expected results of the regulation using tools such as modeling, comparisons to other waters, peer-reviewed literature, etc...**

Based upon the 2010 survey results, very few northern pike are making it past the current 26-inch minimum length restriction on Lake Six, which is likely due to high intraspecific competition over limited food and space. Therefore, the over-abundant northern pike population (most not even available to angler harvest) is having severe, negative effects on the entire fish community (e.g., no largemouth bass sampled and extremely low panfish abundances) in Lake Six. Angler harvest of northern pike (commonly sought and preferred by anglers) would reduce population densities, decrease intraspecific competition (most likely yielding improved growth rates and population size structure), and likely lead to better survival rates of other fish species in Lake Six. If better survival of panfish would occur, an additional fishery resource (not presently available) would be available for anglers in Lake Six. With optimal spawning habitat present for esocids (e.g. abundant bulrushes and shallow-water macrophytes), the northern pike population will be able to sustain itself through natural reproduction. Also, given the fact that Lake Six is kind of "off the beaten path," it is highly unlikely that angler overharvest will be an issue, further justifying the removal of any special regulations. Despite the proposed liberal regulations, and because of reasons identified above, we expect the northern pike population to achieve management objectives.

### **Evaluation Plan**

**Provide a suggested plan and timeline for evaluating whether the objectives are met in response to the regulation change. Indicate potential courses of action if objectives are not being met. If proposed regulation is not part of the "toolbox" (Table 2) the evaluation plan needs to be additionally detailed with an explanation of how the costs of evaluation will be covered.**

The fishery of Lake Six is scheduled to be surveyed during the spring of 2016. If objectives are not met at that time, fish transfers may be necessary (assuming high densities of northern pike remain and fish transfers are once again allowed).

### **Previous Action**

**Include details on previous regulation proposals that were intended to address the current problem, if applicable.**

N.A.

**Public Participation in Developing Proposed Regulation**

Was input solicited from stakeholders when developing the proposed regulation change? Include documented comments from affected user groups (positive and negative), contacts made with local Conservation Congress Representatives, lake associations, angler groups, etc...

Lake Six does not have a lake association, and there is only one landowner who owns riparian property. Contacts made: Dennis Haanpaa (Iron County Conservation Congress chairman) agreed with the rule change proposal, and said that he believes the lake receives little angling pressure. Dennis also mentioned that no Iron County constituents have contacted him in regards to the Lake Six fishery (phone conversation 4/06/11).

**Small Business and Fiscal Effect**

Explain who is likely to be economically impacted and in what way. If possible, provide estimates.

Small business owners (e.g. local bait stores and/or restaurants) may see some added revenues from anglers heading to fish Lake Six as a result of the liberalized regulations (i.e. the opportunity to harvest northern pike of any size).

**Draft Question: for inclusion in Spring Hearing questionnaire**

**This proposal would (insert proposed regulation):**remove the special regulations restricting northern pike harvest on Lake Six, Iron County, to two fish over 26 inches long, replacing them with statewide regulations for the Northern Zone (i.e., no minimum length limit and a daily bag limit of 5 fish).

**The Management Goal is:**to improve northern pike growth rates and population size structure, decrease predation upon young panfish, and provide fishable populations of "keeper-size" panfish, especially bluegill.

**This regulation proposal is one tool to help meet the management goal because:**increased harvest opportunities will reduce intraspecific competition among northern pike and promote higher survival of young panfish.

**Do you favor :** Yes

## Fish Team Supervisor Regulation Proposal Review Checklist

<b>Proposal Title</b> Removal of Special Regulations on Lake Six Northern Pike		
<b>Author</b> Lawrence Eslinger	<b>Reviewer</b> Dave Neuswanger	<b>Date</b> 7-5-2011
<b>Fish Team Supervisor Reviewer Notes:</b> This is an easy call for me. The current strategy (26-inch length limit for pike) is not working and is causing a major imbalance in the fish community. The proposed strategy (statewide rules for pike) and some informed angler harvest should solve that problem and has a very real chance of achieving the reasonable objectives stated herein. Someday I would like to see a bit more data on the yellow perch population, and its response to past and proposed actions, but I would not delay the proposed action simply because we do not have lots of data on perch. --DJN		

**Recommended Action by Fish Team Supervisor**

Approve  Reject

## Regional Fish Supervisor Regulation Proposal Review Checklist

<b>Proposal Title</b> Removal of special regulation for Northern Pike on Lake Siz, Iron C		
<b>Author</b> Lawrence Eslinger	<b>Reviewer</b> Steve AveLllemant	<b>Date</b> 07/18/11
<b>Regional Fish Supervisor Reviewer Notes:</b> Size structure indices for northern pike all declined over the 15 years the regulation has been in place. There has also been a decline in panfish metrics. There is also likely lower absolute abundance of large northern pike since abundance has increased by about 50% but RSD26 has declined by 10X. This would also simplify regulations by removing a special regulation and reverting to the northern WI base regulation for northern pike. Good case for removal of the current regulation		

**Recommended Action by Regional Fish Supervisor**

Approve  Reject

## Species Team Regulation Proposal Review Checklist

<b>Proposal Title</b> Removal of Special Regulations on Lake Six Northern Pik		
<b>Author</b>	<b>Reviewer</b> Northern Pike Team	<b>Date</b>

**Species Team Reviewer Notes:**

(Cunningham-Team Leader) Recommend approval, team member comments are shown below. The selection of pike special regulation waters was based on fast pike growth, limited recruitment (% littoral), large-sized soft-rayed prey, cool water refugium often present (mean and max depth). Lake Six ranked among the lowest suitability of all the 26"/2 bag lakes in NOR, when nominated in 1994. This was due to several factors; 1) small size 2) shallow mean and maximum depths, 3) high aerial coverage of macrophytes, 4) no cool water refuge habitat, and 5) periodic past and potential future winterkills. The pike demonstrated good growth rates at that time, perhaps because of periodic winter kills. Any evaluation plan should be limited to the normal lakes rotation schedule. No need for additional evaluation monitoring on this population.

(Paoli) I am in favor of getting this lake in line with the statewide reg for northern pike north of Hwy 10 to simplify the regs. I do however feel that the limited 2010 spring fyke netting survey results may be misleading when considering size structure (but realize that it's all that was available to analyze so we work with what we have). It is mentioned that growth rates of northern pike in 2010 had dropped considerably from the 2002 survey and that growth rates are now significantly below the Iron County average. I'm not entirely convinced that this isn't just a feature of the timing of the 2010 spring survey. Nets were fished for only 2 nights, and 81% of the fish were small males. It seems that the females had not moved in to spawn yet, with only 2 fish over 26" caught. If the survey happened to be completed a week later, the size structure likely would have been more favorable. Without seeing the full gamut of age structure data (and questioning the validity of scales on slow-growing NP), I wonder if just one or two really good year classes have contributed to the high population and apparent slow growth of NP. Lastly, it was mentioned that the lake does not receive much fishing pressure. This, coupled with little desire by anglers to keep smaller fish in the first place, may mean that this regulation change will take a while to make a difference in the population of northern pike or panfish. Recommend approve.

(Meronek) I have seen similar results on lakes with the 26 inch limit but have been reluctant to change it yet. It appears to allow an overabundance of young pike and give few fish 26 inches or greater. My results have been somewhat mixed, hence my reluctance to make a change it on multiple lakes. But, I can support this regulation proposal as is.

(Heusner)The 2010 survey indicates an overabundant pike population and a subsequent panfish and forage limiting factor. Allowing harvest of small northern pike may reduce pike abundance and increase size structure, as well as increase panfish recruitment. Simplification of the regulations is good. Angler satisfaction should increase as a result of harvest opportunity. Local business should see an increase in traffic.

Good proposal.

(Kubisiak) Good case that the current regulation failed to maintain a quality fishery over the long term. Minimum length limits perform poorly for pike where natural reproduction is high. However, high angler harvest under the proposed no minimum length limit may result in a pike fishery with few quality fish. This problem may be lessened by poor boating access and low angler effort. Lake Six has shown good pike growth potential in the past. Other options that might reduce over-abundant small pike while promoting more quality-size fish include a maximum length limit or a protected slot limit (not addressed in proposal; these should be added to the regulation options).

Winterkill may be structuring this fish community. Many Oneida County lakes experienced moderate winterkill in 2004 and more severe winterkill in 2008. Bluegill and largemouth bass are less tolerant to winterkill than pumpkinseed, black crappie, yellow perch and northern pike. The poor catch of bass and bluegill in 2010 may be an artifact of recent winterkill, rather than (or in combination with) northern pike predation. However, if winterkill is a major factor, then it argues for the proposed "no minimum" regulation, because a regulation that protects large pike may be periodically negated by winterkill.

**Recommended Action by Species Team**Approve  Reject