



Bodi Lake Spring Walleye and Northern Pike Evaluation 2013

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Introduction: A fisheries survey was conducted on Bodi Lake on May 6, 2013 to evaluate northern pike and walleye population dynamics. The primary purpose of this effort was to collect data on northern pike before the new protected slot limit regulation became effective. The protected slot limit (PSL) regulation for northern pike protects fish between 24 and 34 inches by not allowing harvest of fish in this size range. The possession limit remains at 2 similar to the statewide northern pike regulation. The PSL regulation was placed on Bodi Lake in order to create more quality sized northern pike, while still allowing harvest for fish of smaller sizes to improve the size structure. This regulation will be monitored through the course of the next 5 years to determine whether the size structure has improved, more quality sized fish are produced, and if anglers desire this type of fishery. In addition, collection of walleye during this survey allowed fisheries managers to investigate the survival of the stocked fish from 2012 and age and growth of the adult stock.

- History: See Status of the Fishery Report (2007) for a complete history of Bodi Lake.
- Physical features: See Status of the Fishery Report (2007).
- Biological features: See Status of the Fishery Report (2007).

Methods and Materials: This survey was conducted using a pulse-DC electrofishing boat at nighttime along the littoral zone (shoreline) for 1.2 hours (4,397 seconds). Most of the shoreline was sampled in targeted water depths ranging from 0-4 feet. Total length and gender (if identifiable) were to be recorded for all walleye and northern pike captured. Spine samples were collected from 10 of each species per inch group for age determination. This electrofishing survey targeted only walleye and northern pike.

Results: A total of 21 walleye were collected with 0 northern pike being collected or observed. All walleye collected were of legal size (≥ 15 inches) with a size range of 15-20 inches and an average total length of 18.6 inches. Age and growth analysis from spine samples revealed the presence of 8 year classes (ages 3-10, Figure 1). No fish were captured from the 2012 year class (stocking year). Mean lengths at age were above statewide averages (Figure 2). All captured walleye were identified as male.

Discussion: In order to properly evaluate fish population responses to a regulation change, baseline data should be collected in advance of implementation. Since there were not any northern pike captured in this survey, data from the 2009 netting survey could be used as baseline data for this evaluation.

Alternatively, as a way to collect additional size structure data as well as angler values and opinions, a postcard creel survey was deployed in the spring of 2013. This postcard survey was available at the boating access site and could be obtained by anglers when they made a fishing trip. Information sought on these response cards pertained to such things as effort, target species, days per year fished at Bodi Lake, and catch data (harvested or released). These postcards could be mailed, placed back into the distribution box, or responded to online as a SurveyMonkey[®] questionnaire. Survey responses were analyzed and summarized to investigate the size structure of the northern pike population (Attachment 1). A follow-up postcard survey is scheduled to be conducted in 4-5 years to evaluate any changes in angler attitudes, values, and opinions of the Bodi Lake fishery. The catch data collected on these cards could be used to determine shifts in the northern pike size structure and should be considered when evaluating the effects of the regulation change for northern pike.



The walleye catch from this survey is encouraging for the fishery at Bodi Lake. Because of the lack of stocking between 2007 and 2010 the walleye fishery was previously thought to be poor. However, recent angler reports have been positive with the sizes of walleye being caught aligning with the size structure found in this survey. In addition, the year classes represented from non-stocking years suggest that some natural reproduction is contributing to the fishery (Table 1). The number of adults from non-stocked years is of great importance to fisheries managers when determining stocking rates. Currently, MDNR Fisheries Division is using oxytetracycline (OTC) marking on stocked walleye to evaluate their contribution to the population. Bodi Lake in 2012 and 2013 received OTC marked fish and are evaluated during a fisheries survey conducted in the fall. For additional information on the contribution of stocked and wild fish in Bodi Lake see the 2012 and 2013 Bodi Lake Walleye Evaluation Reports.

Management Recommendations: Management for Bodi Lake has been divided into three primary goals. Goal 1: Continue to monitor the effectiveness of the PSL regulation for northern pike. Goal 2: Improve walleye population to create a desirable fishery. Goal 3: Evaluate angler attitudes, values, and opinions regarding the Bodi Lake fishery.

To accomplish Goal 1, a fisheries survey should be conducted in 4-5 years to sample the northern pike population. This survey should be conducted using common survey methods used by Fisheries Division during the spring time when northern pike are most vulnerable. Size structure and age and growth data should be collected in order to evaluate changes in the population.

Goal 2 should be achieved by continuing the stocking regime as outlined in Fisheries Division's management prescription (2532) until 2017. During this time, monitoring should continue with spring assessments investigating the adult stock and fall index surveys evaluating age-0 walleye. Modifications to the stocking regime will be determined from results found in the surveys.

Angler reports should continue to be documented in the file and gathered when the opportunity is presented. In addition, deploy postcard survey in 4-5 years to gather any changes in angler attitudes, values, and opinions. Using these two methods should help to understand more about the desires of anglers and to accomplish Goal 3.

References:

Waybrant, J. 2007. Status of the Fishery Report: Bodi Lake, Luce County. Michigan Department of Natural Resources, Status of the Fishery Report 2007-28, Lansing.



Table 1.-Walleye stocking starting 2002 and catch data from the spring walleye assessment conducted in May 2013 for Bodi Lake, Luce County.

Year (Class)	Number Stocked	Age	Number of each year class in 2013 spring assessment
2002	8,381	11	0
2003	0	10	3
2004	12,000	9	1
2005	0	8	2
2006	12,177	7	5
2007	0	6	2
2008	0	5	1
2009	0	4	6
2010	0	3	1
2011	0	2	0
2012	177 (FF), 1,100 (SF)	1	0
2013	3,494	0	0

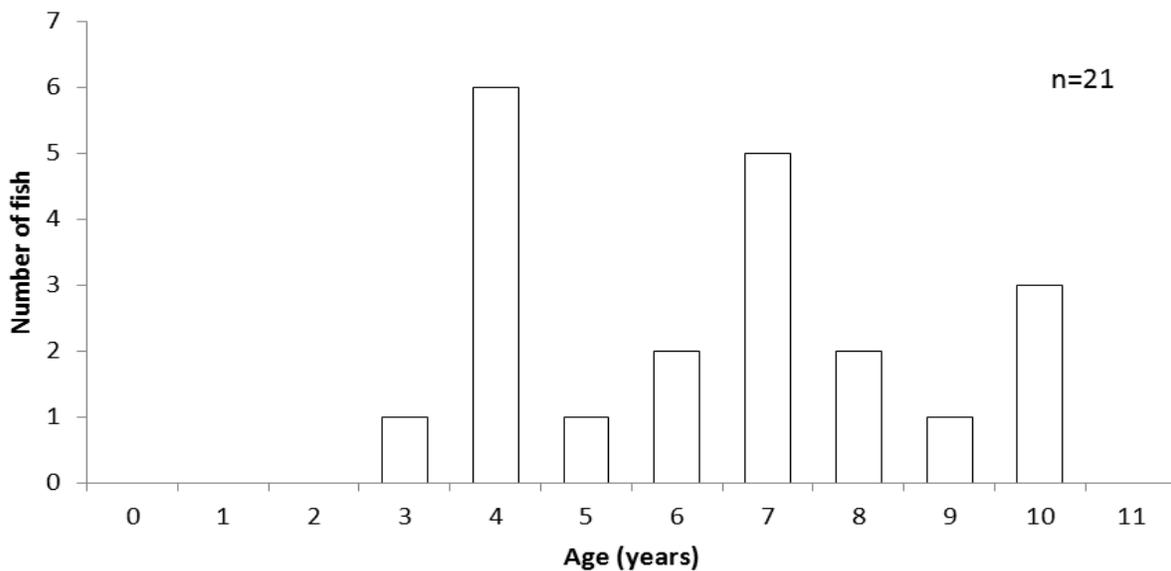


Figure 1.-Age frequency distribution for walleye captured during the fisheries survey conducting on Bodi Lake, Luce County on May 6, 2013.

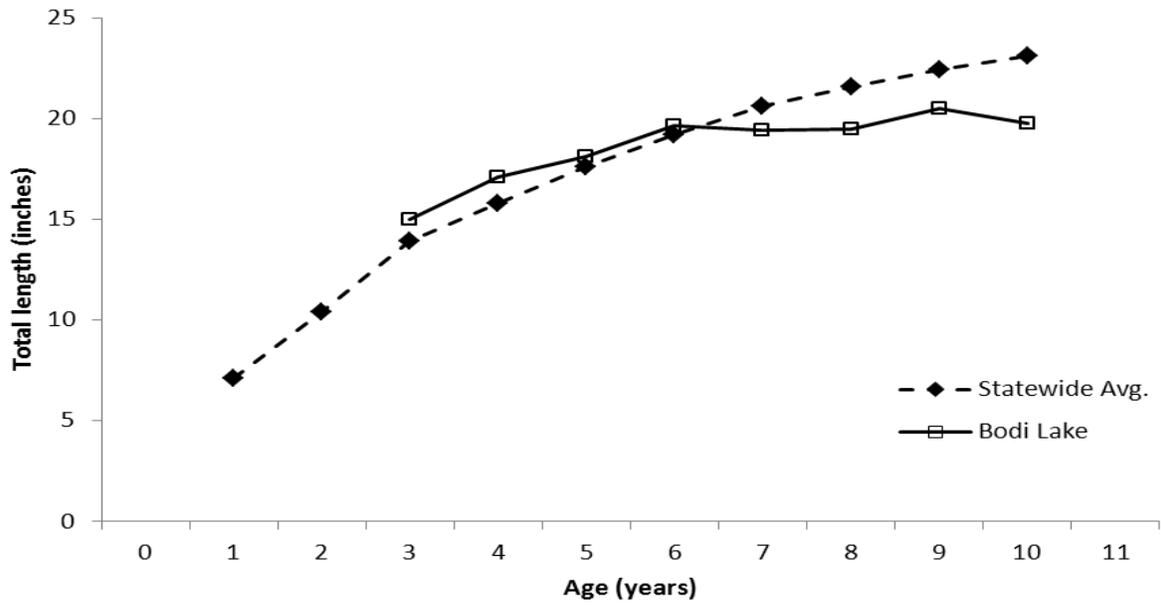


Figure 2.-Growth of walleye in Bodi Lake, Luce County, as determined by spine samples collected during the spring assessment survey conducted on May 6, 2013. Statewide average lengths for January-May are from Schneider et al. (2000).



Attachment 1

Survey Results

Total Surveys	39
Online	3
Postcard	36

Zip Codes

16 unique

Total Time Fished

181.6 hrs

Bait Type

Bait	Total	%
Artificial	6	16.2
Live	25	67.6
Both	6	16.2
<i>responses</i>	37	

Target Species

Species	Total	%
NOP	4	10.8
WAE	15	40.5
Any	18	48.6
<i>responses</i>	37	

Previously Filled Out Card

No	16	(first time)
Yes	21	(repeat angler)
<i>responses</i>	37	

Days Fished Per Year at Bodi Lake

Days	Total
(1-10)	20
(11-20)	2
>20	12*



** 11/12 responses from anglers who previously filled out card*

Prioritize these factors in order of importance to you. (using 1-6, 1= most important factor)

Rank	Size	Number of Fish	Trophy Potential	Consumption	Campground near fishery	Remoteness
1	3	3	1	4	2	3
2	2	5	0	2	3	2
3	4	4	1	3	2	1
4	3	1	2	1	4	1
5	2	0	3	1	0	6
6	0	1	7	3	3	2
gen. importance	11	10	4	12	0	5

Angler Priority when fishing Bodi Lake

- 1** Consumption
- 2** Number of fish
- 3** Size
- 4** Campground near fishery
- 5** Remoteness of fishery
- 6** Trophy Potential

Rate this Fishery (1=highest)

Rating	Total
1	0
2	4
3	14
4	2
5	5

How many Northern pike did you catch/keep during your fishing trip?

Size	Catch	Keep
<24"	180	51
slot 24-34"	10	0
>34"	0	0



Comment Highlights

- No walleyes!
- Need bathrooms (ADA)
- Like slot limit (1)