

Lake Butte des Morts Commercial Seining Project Report

Adam Nickel, Winnebago Gamefish (excluding sturgeon) Biologist, 22 December 2014

Conducting comprehensive fish surveys on the Upriver Lakes, including Lake Butte des Morts (LBDM), is challenging due to budgetary and logistical issues, most notably the expansive area of the lakes and diversity of habitat. To help mitigate this issue, rough fish commercial seining has been used to sample gamefish species on the Upriver Lakes in years past and was restarted on LBDM in 2013 and renewed in 2014. The seining project consists of working with commercial fishermen who bid on the contract to target and market rough fish such as common carp, buffalo, and freshwater drum. Seining occurs during late fall when water temperatures are cooler because reduced temperatures minimize the amount of stress induced to gamefish and it is easier to target rough fish that are seeking overwintering habitat during late fall. Effort is generally limited to one seine haul per year, but more hauls may be conducted if our DNR fisheries staff desire to collect more biological data from gamefish.

The length of the seine is relatively impressive, spanning 8,700 feet and consists of 5 and 6 inch mesh panels. The commercial fishermen begin by stringing out the seine, starting from Leonard's Point and stretching across LBDM before looping back around to Leonard's Point. The commercial fishermen then begin pulling the seine back into shore at Leonard's Point until the fish are congregated into a holding pen. During this process DNR fisheries staff were on site to collect any gamefish that were captured in the seine. All gamefish including lake sturgeon, walleye, northern pike, flathead catfish, and channel catfish were counted and checked for tags (floy and PIT). Any muskellunge sampled were checked for PIT tags and tagged when needed. Age and growth information was also collected from gamefish on an as needed basis. The contractor is also required to report rough fish and gamefish catch.



Depiction of area covered by seine on LBDM



Seine crew pulling the net back into the boat



Net pen made to hold captured fish



DNR staff processing gamefish from net pen



Seine crew loading rough fish with loader



Seine crews moving rough fish to load truck

In 2013, the seine was set and pulled on November 12th. The rough fish catch reached roughly 750,000 pounds and was mostly comprised of common carp with some buffalo mixed in as well. DNR fisheries crews handled 147 lake sturgeon, 50 northern pike, and 5 muskellunge. Other gamefish captured, such as walleye and channel catfish, were not counted during the 2013 assessment because effort was focused on muskellunge, northern pike, and lake sturgeon. Due to the relatively large mesh size (5 and 6 inch), many of the smaller fish are able to escape the seine; however, northern pike and muskellunge catches indicated that fish larger than approximately 30 inches would be captured. Northern pike captured in 2013 ranged from 28.9-40.3 inches and averaged 34.9 inches, while the muskellunge ranged from 38.9-51.7 inches, averaging 44.7 inches (Figure 1).

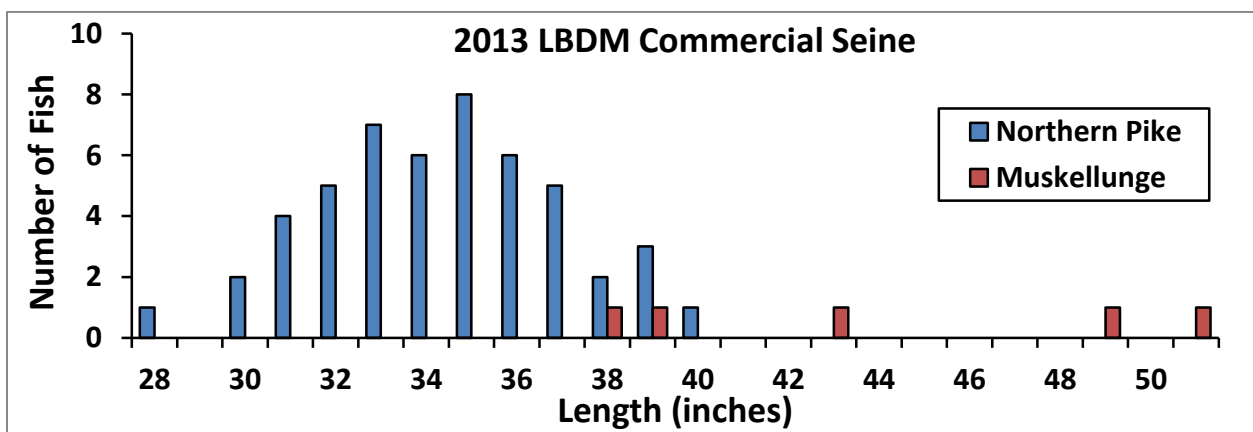


Figure 1. Length frequency histogram for northern pike and muskellunge sampled in the 2013 seine operation conducted on Lake Butte des Morts.

The muskellunge sampled were all Great Lakes spotted strain and are likely present from past stocking events. In fact, 4 of the 5 muskellunge sampled had left ventral fin clips or right maxillary clips indicating that they were hatchery reared fish. Great Lakes spotted strain muskellunge were stocked throughout the Winnebago System during the years 2002-2007. During this time span, 613,248 fish were stocked (589,643 fry; 1,162 small fingerlings; 22,397 large fingerlings; 40 yearlings; and 6 adults). Many of these fish were marked with fin and maxillary clips, but there were also fish stocked without any markings. Angling pressure targeting muskies has increased in recent years and anecdotal reports indicate that some very nice fish (> 45") have been caught. The 2013 commercial seine survey was the first time DNR fisheries staff was able to sample some of these muskellunge since seining efforts in 2009.



A 50.0 inch Great Lakes spotted muskellunge sampled in the seine with a left ventral fin clip

The 2014 rough fish commercial seining operation yielded some very interesting results as well. The commercial seine was set and pulled on November 3rd; however, overall catch was surprising low. Rough fish catch was just over 41,000 pounds and gamefish catch was lower than 2013 numbers for several species including muskellunge, northern pike, and lake sturgeon (Table 1). In 2014, all gamefish and panfish were counted including walleye, channel catfish, flathead catfish, and black crappie. Water temperatures during this first seine pull were higher (44°F) compared to the well below 40°F temperatures in 2013. Due to the lower overall catch and higher water temperatures, DNR fisheries staff allowed for another seine haul when water temperatures decreased.

This second haul occurred on November 12th and water temperatures had decreased to 37°F. Rough fish catch increased significantly during the second seine haul with a catch of just below 350,000 pounds. Gamefish numbers also increased for nearly all species except walleye. The number of muskellunge (22), channel catfish (1,266), and flathead catfish (96) captured during the second haul was impressive. Considering the same methodology was used to sample relatively the same area of the lake during both seine hauls, it was evident that the decreasing water temperatures spurred some sort of fall movement for many species, including muskellunge and common carp.

Table 1. Total number of gamefish captured during the 2013 and 2014 Lake Butte des Morts seining operation.

2013 Lake Butte des Morts Commercial Seine Results							
Date	Muskellunge	Northern Pike	Walleye	Lake Sturgeon	Channel Catfish	Flathead Catfish	Black Crappie
11/12/2013	2	32	NA	5	NA	NA	NA
11/13/2013	3	19	NA	142	NA	NA	NA
Total	5	51	NA	147	NA	NA	NA
2014 Lake Butte des Morts Commercial Seine Results							
Date	Muskellunge	Northern Pike	Walleye	Lake Sturgeon	Channel Catfish	Flathead Catfish	Black Crappie
11/03/2014	0	10	109	2	9	4	0
11/04/2014	2	8	11	43	28	10	1
11/12/2014	2	16	40	4	3	1	0
11/13/2014	20	5	75	167	1,263	95	1
Total	24	39	235	216	1,303	110	2

The 24 muskellunge sampled in 2014 ranged from 40.3-51.2 inches (Figure 2), averaging 45.4 inches, with the 51.2 inch giant weighing 41.5 pounds. As mentioned earlier, it appears that the seine mesh size of 5 and 6 inches is large enough for smaller northern pike and muskellunge to escape; however, fish larger than roughly 30 inches are likely captured. The absence of muskellunge in the 30-40 inch range indicates limited natural reproduction and a

lack of new fish recruiting into the population. As a result, the muskellunge population in the Upriver Lakes appears to be dominated by larger fish from the stocking events from 2002-2007.

Muskellunge stocking in the Winnebago System has been halted since the detection of the Viral Hemorrhagic Septicemia (VHS) fish virus in 2007. Although there is an approved protocol for disinfecting eggs from VHS positive waters for coldwater fish species, no approved protocol currently exists for coolwater species. Therefore, fish eggs from VHS positive cool water systems cannot be reared in state hatcheries. There have been 3 brood lakes established for Great Lakes spotted muskellunge, however, the fish in those lakes still need time to reach sexual maturity and begin spawning. Therefore, obtaining muskellunge for stocking the Winnebago System in the near future will be difficult. However, we are looking into the feasibility of other alternatives for obtaining fish. To start with, we are hoping to conduct a pilot muskellunge spring netting survey on the Upriver Lakes in 2015 to further assess the current status of the muskellunge population.

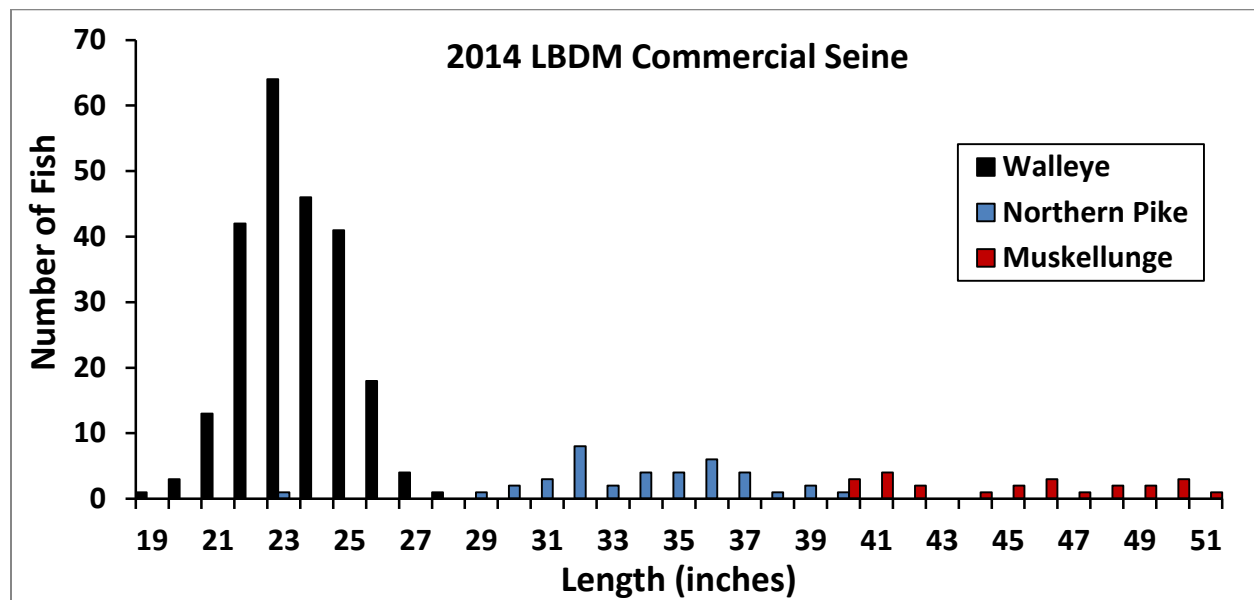


Figure 2. Length frequency histogram for walleye, northern pike, and muskellunge captured seining Lake Butte des Morts in 2014.

Muskellunge were not the only large fish captured during the 2014 seining operation; several nice sized northern pike were also sampled. Northern pike captured ranged from 23.0-40.0 inches, with 18 fish measuring greater than 35.0 inches. The average length of northern pike was 34.3 inches and although none were able to tip the scales at 20 pounds, there were a few fish in the 16-18 pound range. Walleye sampled in the seine ranged from 19.1-28.0 inches and it appeared that walleye greater than 21 inches were recruiting to the mesh size of the seine. Not to be forgotten, several nice sized channel and flathead catfish were also captured. We measured 141 of the 1,303 channel catfish collected, with the average length being 27.1

inches. The largest channel catfish measured was 35.3 inches and 32 fish measured greater than 30 inches. There were also 60 flathead catfish measured ranging from 20.2-41.6 inches, averaging 30.4 inches.

Although mortality was low during the seining operation, there were a few walleye, northern pike, and muskellunge mortalities that were collected for age estimation and diet analysis. Age and growth analysis is still underway; however, walleye and northern pike diet assessment has been completed. A total of 14 walleye stomachs were assessed, of which 3 were empty. Gizzard shad was the dominant identifiable food item in 7 of the 14 stomachs, while freshwater drum was identified in 2 of the diets. The stomachs from the remaining 3 fish contained unidentifiable diet items. Northern pike diets, on the other hand, showed some different trends including 6 of the 9 northern pike stomachs being empty. Of the 3 remaining fish, two stomachs contained relatively large white bass (10-12 inches; 0.66-0.88 pounds) and one stomach contained gizzard shad as the primary diet item. Considering the forage base is currently weaker than normal due to below average year classes of most forage fish species, predatory fish such as northern pike and walleye may be more willing to bite this year. Therefore, 2015 could be a good year to put some extra effort into chasing some gators throughout the system and perhaps even walleyes. **Good luck fishing, be safe on the ice, and remember to take a kid or someone new out fishing in 2015! Feel free to contact me at the number/email address listed below with any questions. Thank You!**



A 51.7 inch muskellunge sampled during seining operations in 2013



A 38.0 inch northern pike sampled during seining operations in 2014

Sincerely, Adam Nickel

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