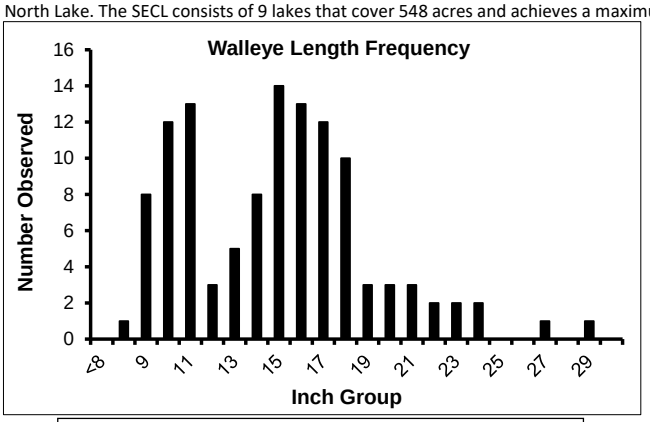
WISCONSIN DNR
FISHERIES INFORMATION SHEET

LAKE: Spread Eagle Chain of Lakes **COUNTY:** Florence **YEAR:** 2018

The Wisconsin Department of Natural Resources conducted a comprehensive survey of the Spread Eagle Chain of Lakes (SECL), Florence County, to analyze the health of its fishery. The SECL is located approximately 6 miles east of Florence (just north of US2), with boat access off of Dunn's Point Road on the west side of North Lake. The SECL consists of 9 lakes that cover 548 acres and achieves a maximum depth of 75 feet.



* Note: Adult walleye are defined as all sexually mature fish and all fish of unknown sex ≥ 15 inches long.

Walleye

A mark-recapture survey was conducted to estimate the abundance of adult walleye in the SECL during 2018. Over a seven day period in May, a total of 116 different walleye (79 considered adults) were captured during fyke net and electrofishing surveys. Based on our survey data we estimate the adult walleye population in the SECL to be approximately 161 fish (0.29/acre). The current population is very similar in size to the adult abundance measured during 2011 (0.36/acre). While the adult population has decreased slightly since 2011, it has actually made significant progress toward becoming a much more sustainable population. The population in 2011 consisted of old/large adults, the majority of those fish have aged out of the population, and the current population consists of younger/smaller fish suggesting that recent changes to the walleye stocking program have been effective. While the adult density is still at a very low level there are many juvenile fish in the population. As those fish mature and future stocking provides more year classes, the population should continue to rise.

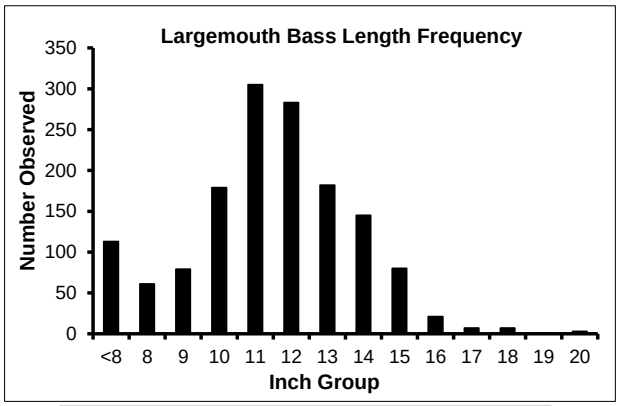
Every walleye captured during our spring survey, 116 fish, was measured to assess size structure. During 2018, approximately 61.7% of the walleye captured were ≥ 15 inches and 13.1% ≥ 20 inches. Since most of the current population are younger/shorter fish it is no surprise that the size structure of the walleye population in the SECL is below the area average of approximately 84.4% ≥ 15 inches and 35.7% ≥ 20 inches. The size structure of walleye in the SECL is expected to continue to rise as the currently young population ages.

Largemouth Bass

Largemouth bass were captured during our spring netting surveys, and 4 spring electrofishing surveys from 5/9 to 5/23/2018. During these surveys a total of 1,013 different adult (≥ 8 inches) largemouth bass were given an identifiable fin clip. These fish were allowed to mix back into the population before we conducted our "recapture" surveys on 5/30 and 5/31/2018. During the recapture survey a total of 476 adult largemouth bass were captured, with 136 fish bearing the fin clip given during the "marking" survey. The data obtained from our survey estimates the largemouth bass population (≥ 8 inches) to be approximately 3,688 fish. At approximately 6.7 adults/acre the SECL population is considered overabundant. However, this population seems to have been slightly reduced since 2011 when the adult largemouth bass density was estimated at 7.4 adults/acre.

A total of 1,466 different Largemouth bass were captured and measured to assess the size structure of the population. This year approximately 19.5% of the largemouth bass captured were ≥ 14 inches and 0.8% ≥ 18 inches. This shows that the size structure of the SECL largemouth population is well below the area average of 44.1% ≥ 14 inches and 6.9% ≥ 18 inches.

Poor size structure in high density populations is common. In an effort to improve largemouth bass size structure and possibly benefit populations of other fish species within the SECL the bass regulation was changed in 2016. Currently, there is no minimum size limit and the daily bag limit is 5 fish/person, however, fish between 14 and 18 inches may not be kept and only 1 fish > 18 inches can be harvested. This liberal regulation should increase harvest on largemouth bass and in time significant changes to largemouth bass size structure are likely.

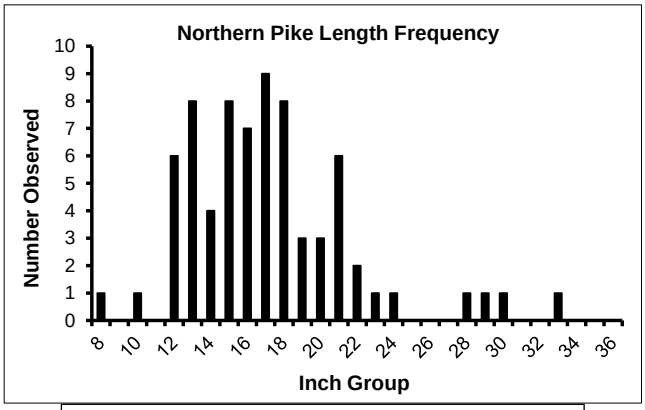


* Note: Adult bass are defined as all bass ≥ 8 inches long.

Northern Pike

Walleye were the focus of our early spring fyke net survey, with net locations designed to maximize walleye catch, because of this too few northern pike were captured to estimate the size of the adult (≥ 12 inches) population in the SECL. As expected with net locations designed to capture spawning walleye, the relative abundance of northern pike (0.6 fish/net-night) was quite low during our early spring survey. The last survey assessing northern pike abundance was during 2011, during this survey net locations were selected for both walleye and northern pike, and relative abundance was measured at 0.8 fish/net-night. The data from these two surveys suggest that abundance of northern pike in the SECL is well below average for this area.

Every Northern Pike captured during the early spring, and muskellunge fyke net surveys was measured to assess size structure, a total of 72 fish. After removing fish < 14 inches, only 25.0% of the fish sampled were ≥ 21 inches, and 7.1% ≥ 28 inches in length. These values are well below the area average of 49.9% ≥ 21 inches and 12.2% ≥ 28 inches, suggesting that the size structure of northern pike in the SECL is poor.

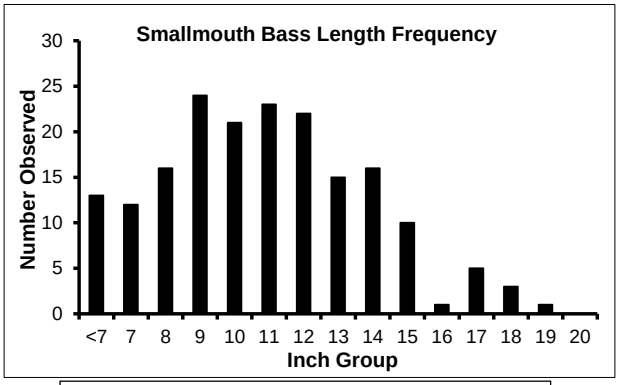


* Note: Adult northern pike are defined as all sexually mature pike and pike of unknown sex ≥ 12 inches long.

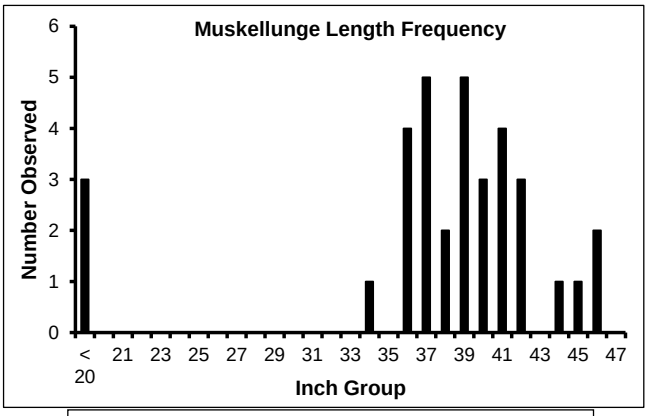
Smallmouth Bass 

During the same surveys conducted for largemouth bass, we also captured smallmouth bass to estimate their abundance in the SECL. A total of 118 different adult (≥ 8 inches) smallmouth bass were captured during the "marking" survey and given an identifiable fin clip. During the "recapture" survey, a total of 64 adult smallmouth bass were captured, with 25 fish bearing the clip from the "marking" survey. Based on these data we estimated the smallmouth bass population (≥ 8 inches) to be approximately 301 fish. At approximately 0.6 adults/acre this is considered a low abundance of smallmouth bass.

A total of 182 different smallmouth bass were captured and measured to assess size structure during our survey. The size structure of the SECL smallmouth bass population is well below average for this area with approximately 21.3% being ≥ 14 inches and 5.3% ≥ 17 inches.



* Note: Adult bass are defined as all bass ≥ 8 inches long.



* Note: Adult muskellunge are defined as all fish ≥ 30 inches long.

Muskellunge 

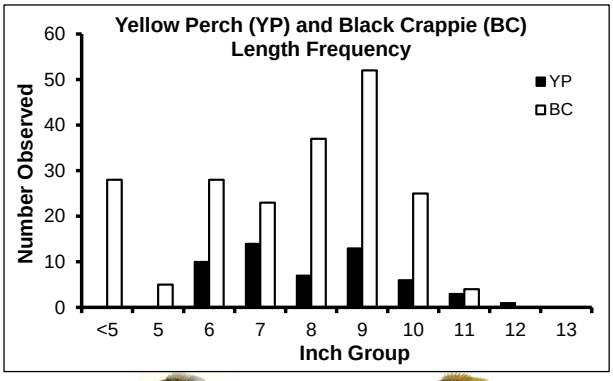
It is a two year process to estimate the abundance of muskellunge in a given waterbody. This year was the first year of the two year process. During 2018, we captured a total of 34 different muskellunge, each fish was marked with an identifiable fin clip and internal tag. Of the 34 fish marked in 2018, 31 fish were ≥ 30 inches, and considered an adult. A second sample of muskellunge will be captured next year (2019), the data from that sample will allow us to estimate the size of the muskellunge population in the SECL.

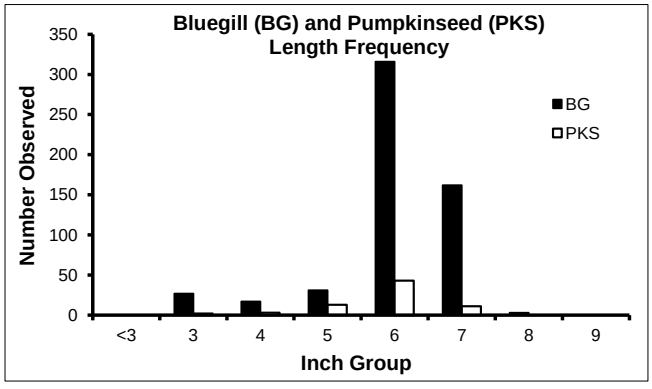
Every muskellunge captured during our 2018 surveys was measured to assess the size structure of the population. After excluding the fish captured < 20 inches, 45.2% of the muskellunge captured were ≥ 40 inches, and 9.7% were ≥ 45 inches, with the largest fish captured being 46.5 inches long. Muskellunge were introduced to the SECL in 2002, so the population has not reached its potential for size structure yet. With that considered the current size structure is pretty good, with a high percentage of fish ≥ 40 inches, but a low percentage of fish ≥ 45 inches. Hopefully size structure will improve as these fish continue to grow.

Yellow Perch  **and Black Crappie** 

The early spring and muskellunge netting surveys were used to assess abundance of yellow perch and black crappie in the SECL. Relative abundance of yellow perch was measured at 2.0 fish per net-night during early spring, and 0.1 fish per net-night during the muskellunge netting survey. Black crappie abundance was 2.5 and 3.8 fish per net-night during the same surveys. Yellow perch abundance in 2018 was very similar to abundance measured in 2011, while black crappie abundance seems to have increased slightly since 2011.

Random samples of 54 yellow perch and 202 black crappie were measured to assess the size structure of their populations. Yellow perch size structure is very good with 55.6% and 18.5% of the fish being ≥ 8 and 10 inches repectively. Black crappie size structure is slightly below the area average with 67.8% and 16.7% of the fish being ≥ 8 and 10 inches respectively.





Bluegill  **and Pumpkinseed** 

Nets were set in early June to assess the summer spawning panfish populations in the SECL. Bluegill are the most abundant summer spawning population with a relative abundance of 46.3 fish per net-lift, while pumpkinseed were the 3rd most abundant species (behind rock bass) at 6.0 fish per net-lift. Bluegill and pumpkinseed abundance is average, when compared to other populations in the area.

All bluegill and pumpkinseed captured during the panfish netting survey were measured to assess the size structure of their populations. Bluegill size structure has improved substantially since 2011, however bluegill size structure is still slightly below the area average with 29.7% and 0.5% of the fish being ≥ 7 and 8 inches respectively. Pumpkinseed size structure is pretty good with 75.0% and 15.3% being ≥ 6 and 7 inches respecitvely.

Other Species

The species listed above were the focus of the 2018 survey, with surveys designed to best sample these individual species. Other species captured during our survey efforts include; rock bass, hybrid bluegill, green sunfish and their hybrids, common shiner, golden shiner, and white sucker. Based on catch rates and observations during this survey, rock bass are of above average abundance; hybrid bluegill, green sunfish, and hybrid green sunfish are of average abundance; golden shiner, and common shiner are present; and white sucker are considered rare.

This report is interim only; data and findings should not be considered final.
For answers to questions about fisheries management activites and plans for the SECL contact:

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