

# Lake Ramsey

## Waterbody and Fisheries Assessment and Recommendations

### 2023

A site visit to Lake Ramsey was conducted on April 4, 2023 to conduct fisheries assessment. Electrofishing was conducted using a 16 ft boat outfitted with Midwest Lake Electrofishing Systems (MLES). All largemouth bass were collected, measured for total length (TL) in millimeters and weighed in grams.

A total of 41 largemouth bass were collected. For the purpose of this report any conclusions regarding forage will be drawn from “on the water” observations, observance of fishermen’s catch during the year and bass relative weights.

Fish managers like to lump groups of fish by length groups and label them to describe or target size groupings for management strategies. Total lengths measured in millimeters (more precise) were converted to inches (less precise) and rounded to the nearest tenth of an inch for ease of understanding and viewing in this report. For largemouth bass these groupings are:

**Stock** is all bass greater than 8 inches

**Quality** is all bass greater than 12 inches

**Preferred** is all bass greater than 15 inches

**Memorable** is all bass greater than 20 inches

**Trophy** is all bass greater than 25 inches

Not included in the category groupings above are those fish less than 8 inches (TL) because anglers rarely target this group. None the less, this is an important group of fish which reveals reproductive success to date and are not considered recruited into the population until they reach 8 inches (TL). By all accounts, most of the bass hatched in the spring of 2022 should appear as fish in the 8 to 12 inch (TL) size classes. We collected five bass that measured less than 8 inches and are therefore not considered recruited. The sample included one fish greater than 19 inches (TL). All bass collected were less than 20 inches and therefore no fish in the sample are considered “Memorable” or “Trophy”. The “Preferred” category represented 44% of all bass collected.

Proportional stock density (PSD) and relative stock density (RSD) are indices used to numerically describe length frequency data. Proportional stock density compares the number of fish of

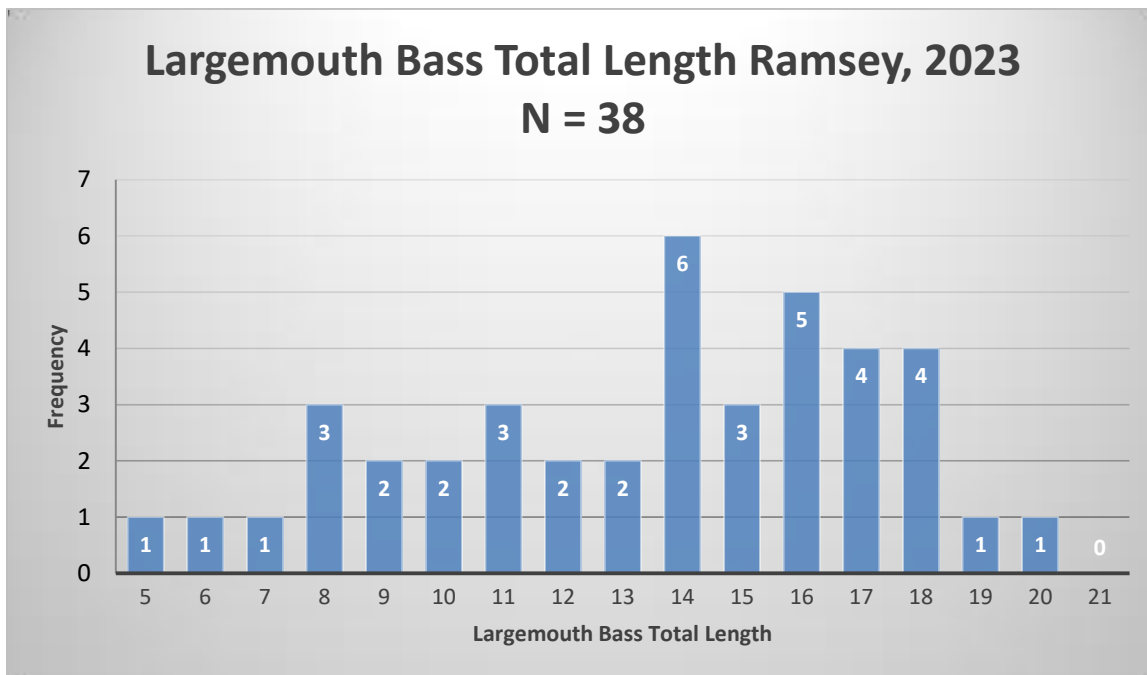
quality size (> 12 inches) to the number of bass of stock size (> 8 inches) and is calculated by the formula:

$$\text{PSD} = \frac{\text{number of bass > 12 inches (27 fish)}}{\text{number of bass > 8 inches (36 fish)}} \times 100$$

The PSD is 75%. A fish population with a high PSD consists mainly of larger individuals whereas a population with a low PSD consists of a population of smaller fish. A value between 40 and 70 generally indicates a balanced population. The relative stock density of preferred is the percentage of bass in a stock (> 8 inches) that are also 15 inches or longer and is calculated by the formula:

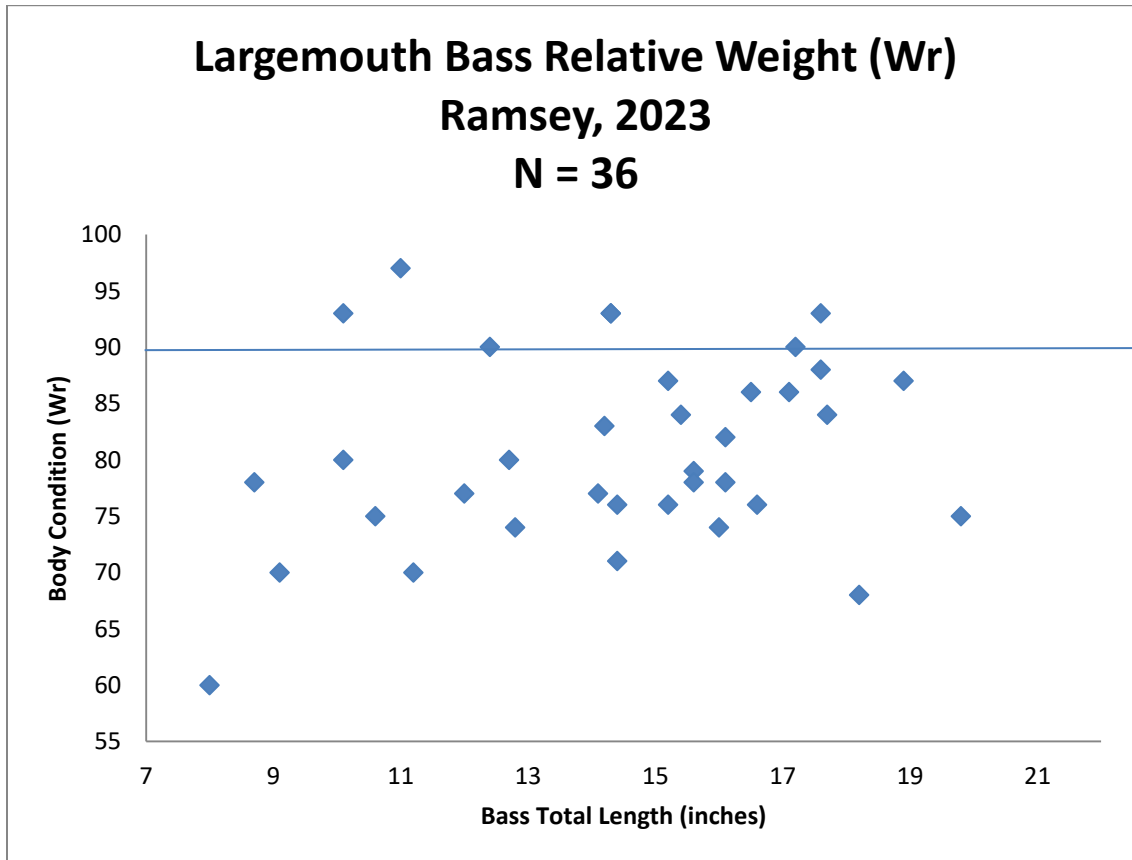
$$\text{RSD (preferred)} = \frac{\text{number of fish > 15 inches (18)}}{\text{number of fish > 8 inches (36)}} \times 100$$

The RSD (preferred) is 50%. An RSD (preferred) value between 10 and 40 indicates a balanced bass population while values between 30 and 60 indicates a higher abundance of larger fish. A RSD value less than 10 indicates a bass population skewed to predominately smaller fish.



Relative weight (Wr) is an index of plumpness and more aptly described as a ratio of the actual weight of one your bass compared to the weight of a healthy, well-fed bass of the same length. Relative weights

near 100% or greater are considered healthy or fat. Most fish populations fall into the 80-99 percentile and are considered average. Fish with relative weights below 80% are considered thin or poor. For Lake Ramsey the average Wr for all bass greater than 8 inches TL is 80.8%.



Bass Wr's and growth rates are dependent on a sufficient forage base in both quantity and quality. The data depicted in the Wr figure above clearly suggest that available forage, both quantity and quality are lacking. The graph also suggests a deficiency of forage exists for all size classes.

#### **Fisheries Conclusions:**

Fisheries samples can be highly variable from year to year. Water temperatures, time of year, weather conditions, etc can affect sampling. Sampling the same locations at the same time of year over a period of years usually provides trends in the populations. Conclusions in this year's report are based on this year's data and comparisons to last year's data.

Reduced relative weights is the most alarming finding in this year's data. There were basically no differences in relative weights across the total length spectrum and were, on average lower than last year's numbers. In the 2022 sample we observed relative weights increasing with increasing total lengths meaning as fish increased in total lengths available forage also increased. Relative weights in the 2022 sample revealed several fish exceeding 100%. No fish in this year's sample reached or exceeded 100%. Water quality, competition, and fish cover can reduce forage availability and/or

predation success. The extensive Southern naiad coverage this past year may have inhibited bass feeding. Catfish and crappie are certainly competing with bass for forage. Water quality issues can inhibit the both primary production (phytoplankton) and therefore the suppress micro and macro invertebrate populations. Regardless of the reason(s), relative weights were low and bordering on poor.

### **Fisheries Management Considerations and Suggestions:**

Comments and recommendations in the 2022 report are still appropriate. Channel catfish and crappie harvest, fish structure, target bass less than 14 inches total length for harvest, encourage residents to install structure and diffused aeration, allow for the take of one “trophy bass” per person per year, and continue electrofishing samples to assess the bass population once a year at the same time of year. A more thorough discussion on these action items can be found in the 2022 report.

Control of Southern naiad coverage is a new item that should be discussed. The initial stocking of triploid grass carp has been completed. The stocking was considered light when one considers the coverage experienced last year and the total acreage of the lake. In my judgment it is always best to under stock for three reasons. First, there are so many variables that come into play when predicting how well, or not carp “do their job”. Second, if additional carp are required, for the long term management of aquatic plants it is always best to have more than one year class. Third, it’s always better to have some aquatic plant coverage to provide surface area and cover for fish if the fishery is a priority.

When using carp to control aquatic plants the message has to be “patience”. The fish are relatively small when stocked and it will take time for their growth and therefore their ability to impact the plant coverage. Expectations have to be realistic. All too often the lack of patience leads to unnecessary subsequent stockings or over stocking. Impacts to the plant coverage by carp cannot be accurately evaluated until at least 1.5 – 2 years after stocking.

Lastly, I would discourage the use of tight funds to rake the broken naiad mats. The mats eventually break up and sink. The message should be to the residents that you are aware of the problem, you are in contact with a professional, you have stocked grass carp and will be ready to stock more carp should it be warranted and this issue will take some time to resolve appropriately. Communication and empathy with the different user groups is important and it’s up to this group of fishermen to make it clear how important the fishery in this lake is to everyone----including non-fishers. Start with home owner value. A strong fisher group that is inclusive, approachable and wants to take care of the lake’s fishery should be recognized by all residents as an attractive additive to the subdivision. Take time to review my “Comment” discussion at the end of last year’s report.

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