Atikokan Bass Classic Data Summary

2008 – 2017

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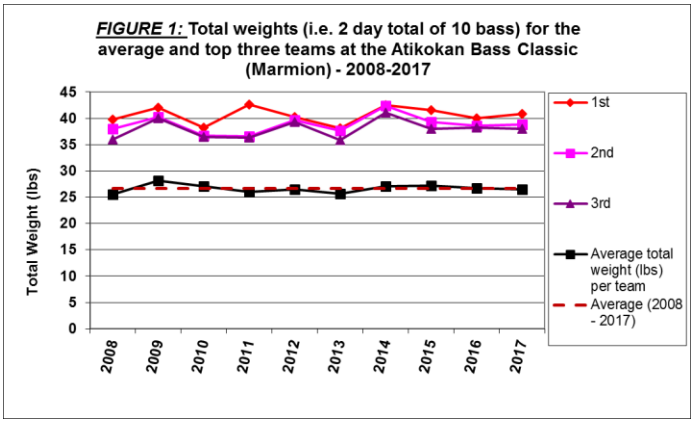
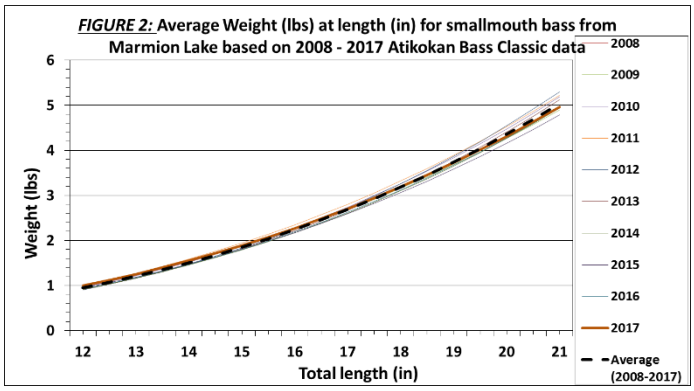
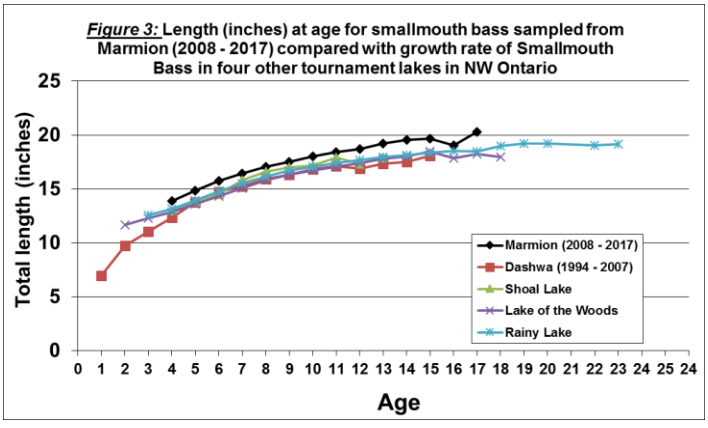
2018 will mark the eleventh year that the Atikokan Bass Classic tournament is held on Marmion Lake, after being held on the Dashwa/Crowrock/Turtle system from 1994 - 2007. Each year, the Ministry of Natural Resource and Forestry has taken measurements and conducted monitoring efforts, in conjunction with the tournament organizers and volunteers. These data have provided valuable information about the biological characteristics of smallmouth bass in Marmion Lake.



The total 2-day weight of fish for the average team in 2017 was 26.44 lbs, which was on par with the 2008 – 2017 average of 26.63 lbs per team. For the winning team, the total weight of fish was 40.79, while the total weight for the second and third place teams was 38.82 and 37.95 respectively, which was also comparable to the average from previous years (**figure 1**).



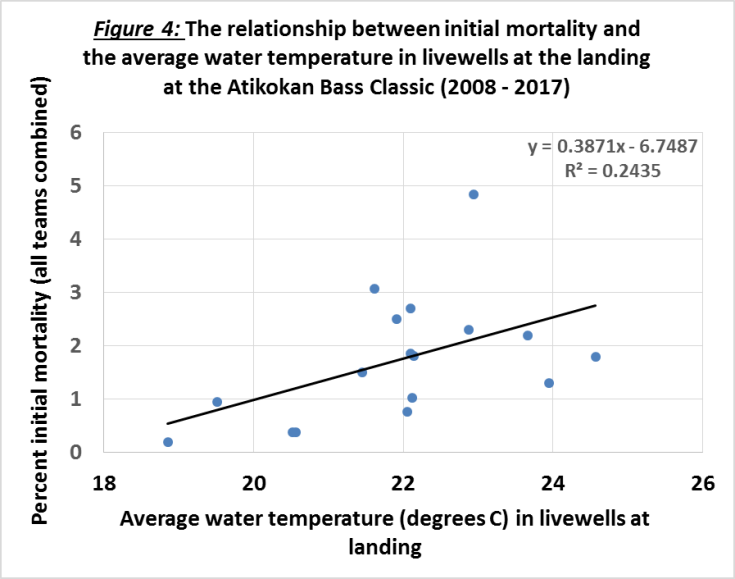
Smallmouth bass condition (i.e. weight at a given length, or how fat fish are) for Marmion based on 2008 – 2017 data is provided in **figure 2**. On average, a 16.5" fish is approximately 2.5 lbs, while a 19.5" fish is approximately 4 lbs in Marmion Lake.

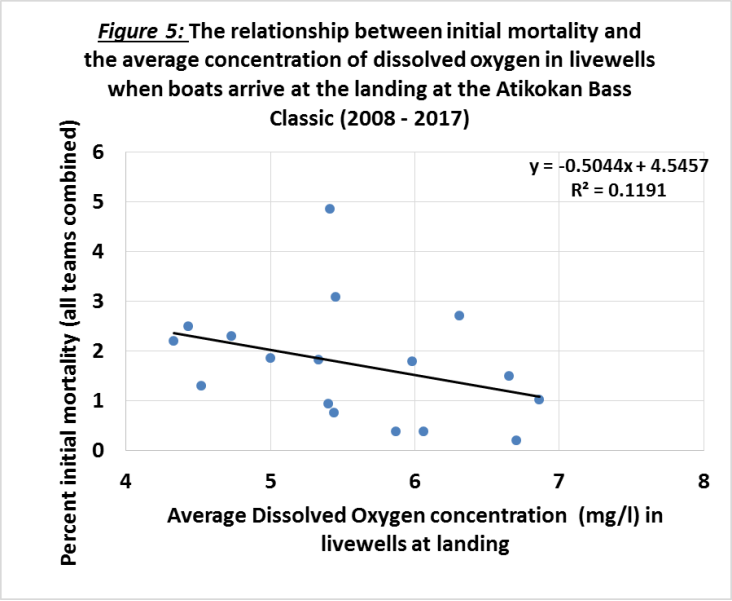


Smallmouth bass sampled from the Atikokan Bass Classic on Marmion Lake between 2008 and 2017 were dominated by eight to ten year old fish, with nine year old fish being the most frequent age group on average.

Compared with several other lakes in Northwestern Ontario that host bass tournaments, smallmouth bass in Marmion Lake grow at a faster rate, reaching a greater total length at a younger age than on other lakes (**figure 3**). The faster growth rate of smallmouth bass on Marmion is may be explained by a number of factors including an abundance of foraging habitat and food availability for smallmouth bass in Marmion, and the relatively recent nature of the introduction of smallmouth bass to Marmion Lake.

As a large scale catch and release bass tournament, minimizing mortality has remained an important priority for tournament organizers and for the MNRF. Three key factors that influence smallmouth bass mortality are the temperature of water in livewells, dissolved oxygen concentration in livewells, and time spent sitting in livewells on dry land.





Each year, volunteers stationed at the Marmion landing and in the town of Atikokan monitor initial mortality, and measure the temperature and dissolved oxygen concentration in livewells. Data from the Atikokan Bass Classic on Marmion Lake demonstrates that initial mortality increases at higher temperatures (**figure 4**) and lower dissolved oxygen concentrations (**figure 5**).

At dissolved oxygen levels less than 5.0 mg/l, smallmouth bass have been found to experience increased stress, and oxygen concentrations below 4.0mg/l begin to result in increased mortality, while at dissolved oxygen concentrations less than 2 mg/l mortality increases significantly. For this reason, volunteers add ice and oxygen to livewells at the Marmion landing, to ensure livewell conditions are suitable for the journey into town.

In 2017, the average travel time between the oxygen station at the landing and the station in town was 23 minutes, which was less than the 2008 – 2017 average of 36 minutes. Minimizing travel time reduces stress and mortality to bass, in part because this reduces consumption of dissolved oxygen in livewells.

If you would like to learn more about monitoring efforts conducted by MNRF during the Atikokan Bass Classic, or biological characteristics of smallmouth bass in Marmion lake, please contact Bridget Antze, Management Biologist with the Ministry of Natural Resources and Forestry (bridget.antze@ontario.ca).

Good luck and tight lines!