

MN DNR Fisheries Management Actions and Surveys on Leech Lake

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2014 Leech Lake Large Lake Survey Preliminary Data as of 10/27/14:

- Walleye gill net catch rate (8.9 fish/net) was similar to 2013. Walleye catch rate exceeded the management objective (8.5 fish/net) and was the eighth consecutive year catch rates were above the long-term average (7.7 fish/net; Figures 1 and 2).
- Yellow perch gill net catch rate (13.9 fish/net) was slightly higher than 2013. Yellow Perch catch rate was the second lowest observed over the past 32 years, and remained below the management objective (16.2 fish/net), and has had a decreasing trend for the past seven years (Figures 1 and 2).
- Yellow perch size structure objectives were not met for yellow perch, due to relatively few fish 8.0 inches and longer being sampled (Figures 6 and 7).
- Walleye spawner biomass (2.5 lbs/acre) exceeded the management objective range (1.5- 2.0 lbs/acre) for the third consecutive year (Figure 3). Exceedance of the objective range in 2012 and 2013 resulted in relaxing the protected slot limit (PSL) from 18-26" to 20-26" PSL beginning in 2014. The 4 fish bag limit and one fish over 26.0" allowed in possession remained unchanged.
- Walleye Condition (Relative weight, W_r) improved slightly but remained below average for eight consecutive years (Figure 4).
- Percentage of walleye sampled less than 15 inches (42%) was slightly below the management objective range of 45-65%, indicating a higher percentage of larger walleye were sampled (Figure 5).
- Walleye Year Class Strength Index (a.k.a. the recruitment objective) continues to be met, with 9 of the previous 10 year classes having a measured strength of the long-term average (50th percentile) or higher. The 2014 year class is predicted to be near the long term average (Figure 9).
- Good numbers of walleye are present from the 2012 and 2013 year classes. These are currently 9 to 13 inches (Figure 6).
- Age-0 walleye growth was initially below average in 2014, but has returned to average as of mid-September (Figure 8).
- The fourth programmed fry stocking (7.5 million, OTC-marked) was completed in 2014. The 2014 OTC marking frequency has yet to be determined. No decision has been made on fry stocking in 2015.
- Management objectives were met for northern pike catch rates and size structure (Figures 2 and 7).

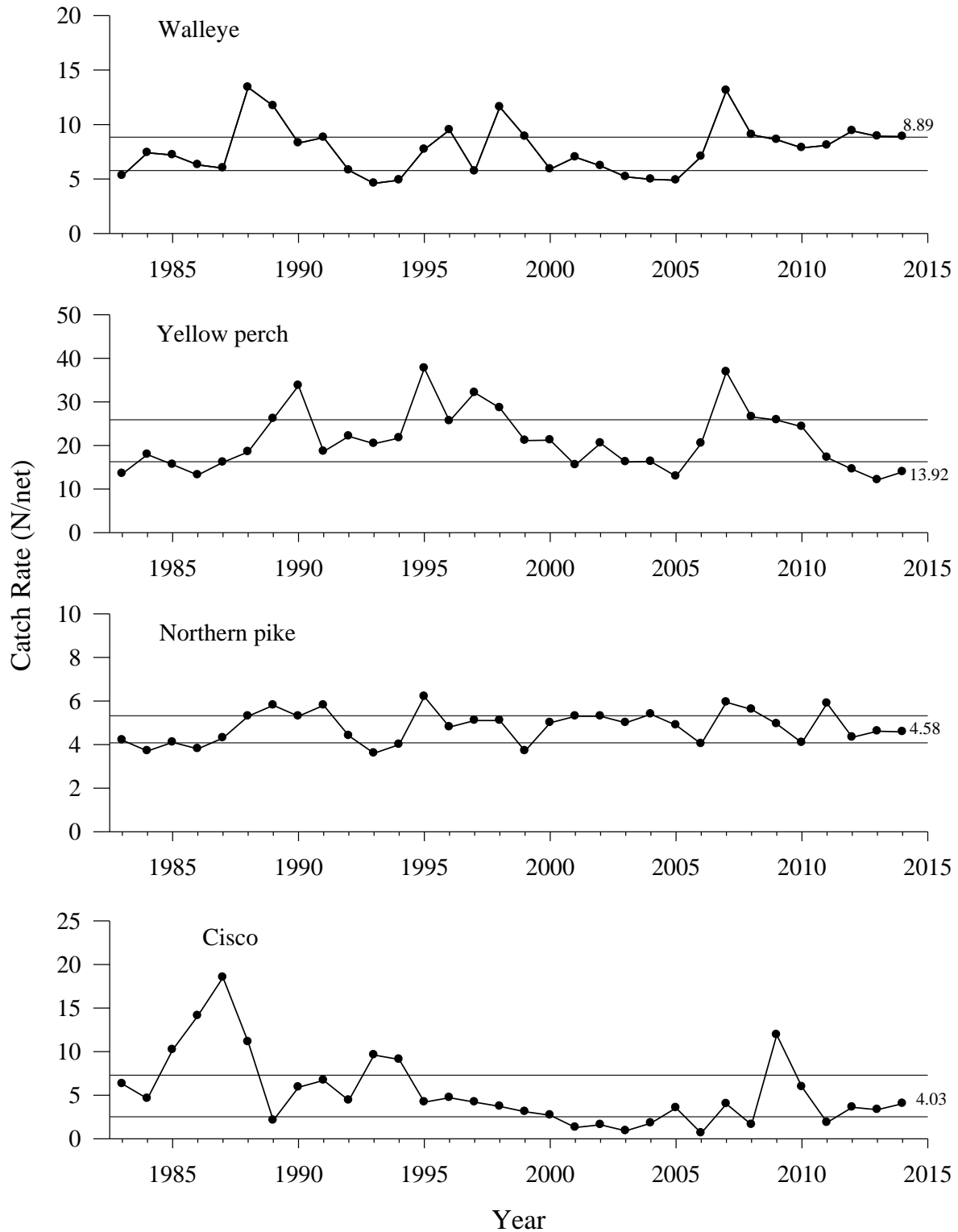


Figure 1. Gillnet catch rates (number/net) of selected species in Leech Lake, 1983-2014. Horizontal lines represent respective upper (3rd) and lower (1st) quartiles.

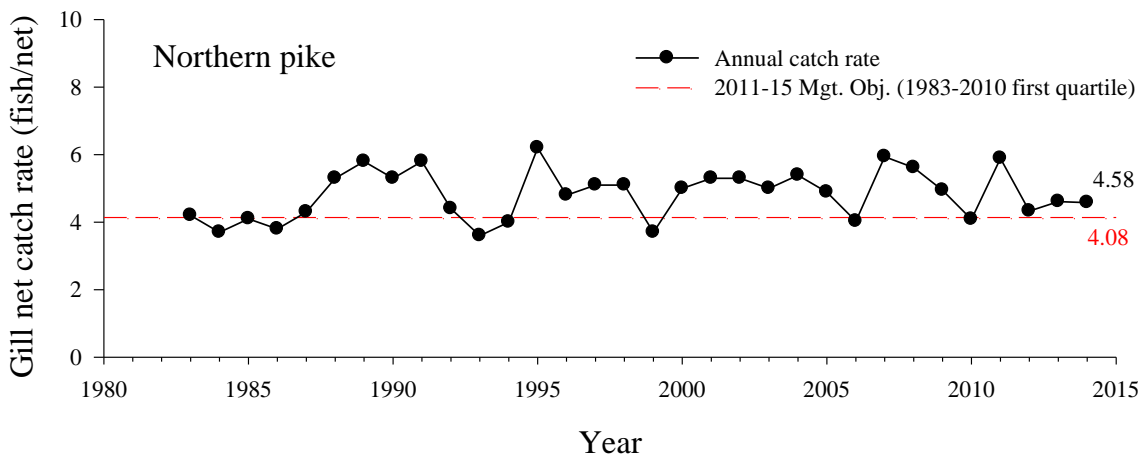
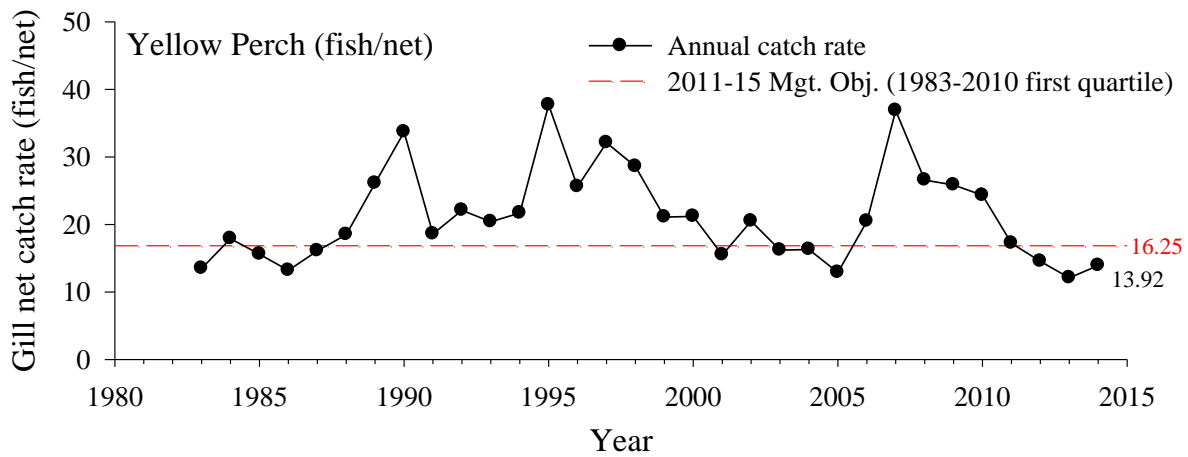
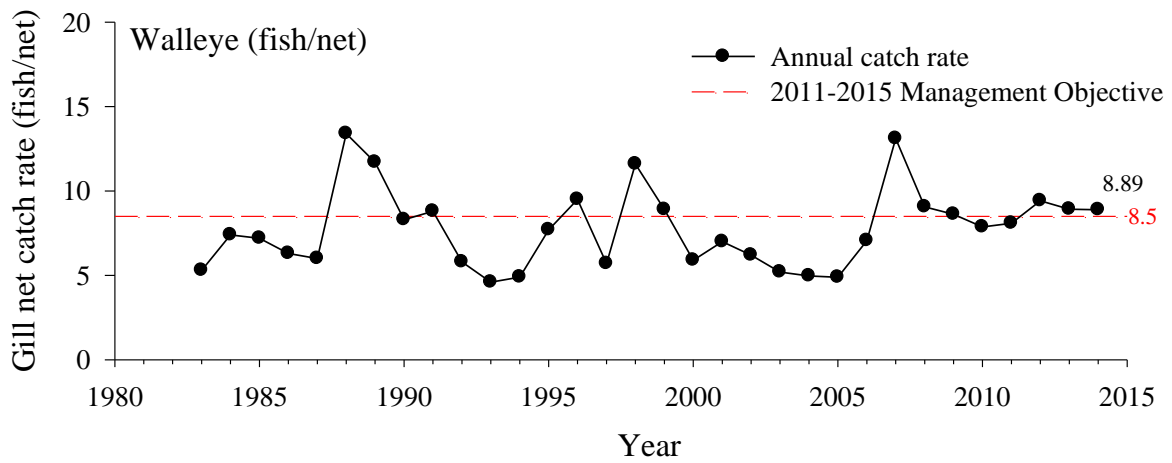


Figure 2. Gill net catch rates of walleye, yellow perch, and northern pike compared to 2011-2015 Leech Lake Management Plan objectives.

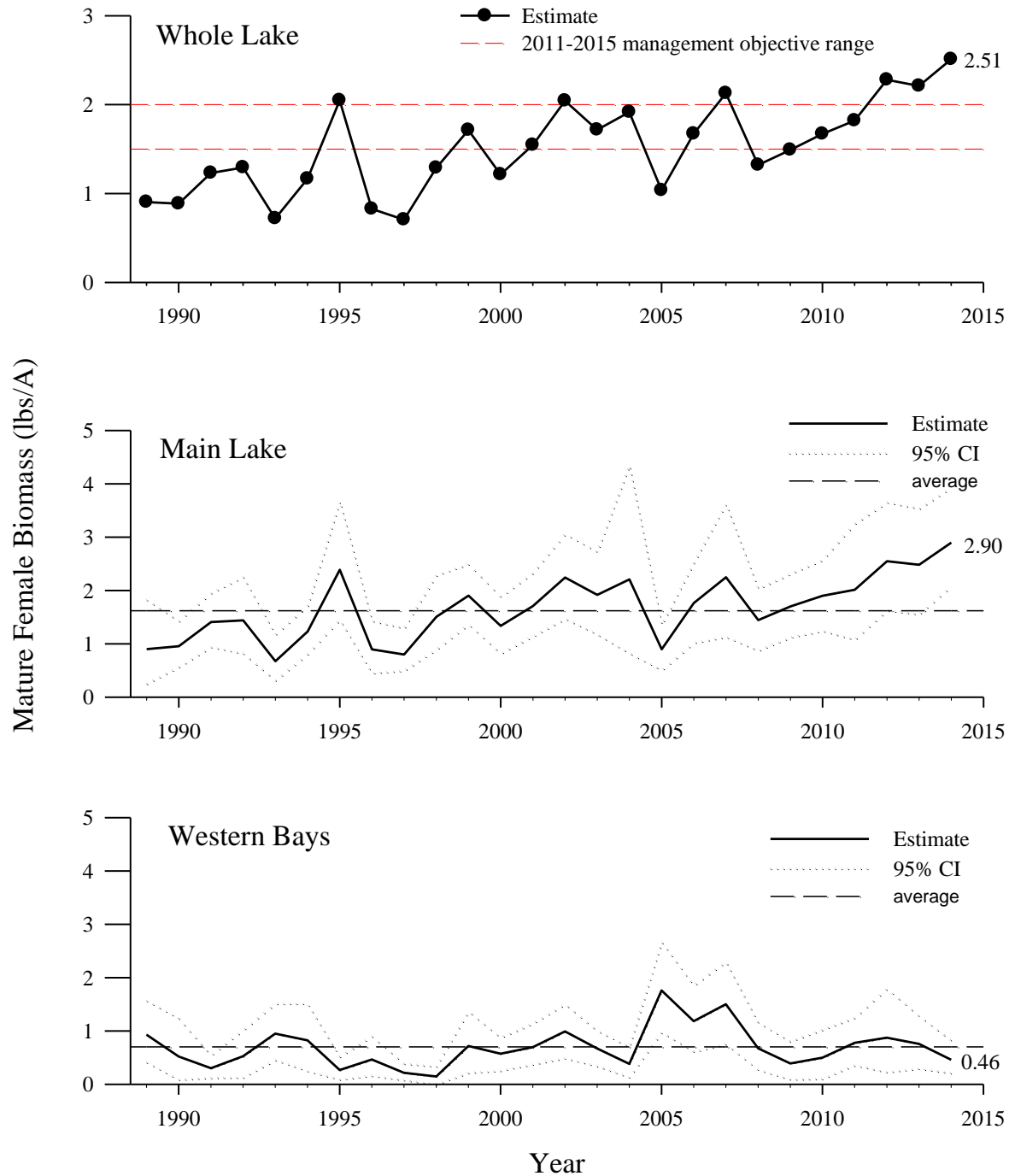


Figure 3. Estimated biomass (lbs/acre) of mature female walleye in Leech Lake, 1989-2014. Horizontal lines on the whole lake estimate (top) depict the current management objective range of 1.5-2.0 lbs/acre. Basin-specific estimates are presented on the bottom two panels with 95% confidence intervals.

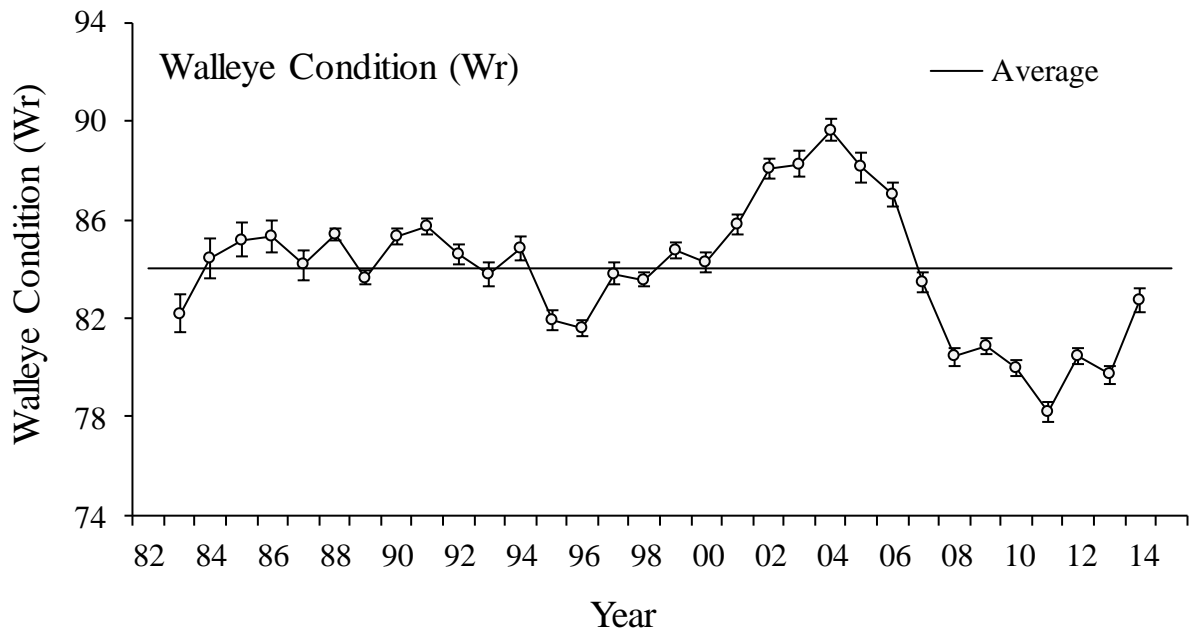


Figure 4. Condition (Wr) of walleye sampled in experimental gillnets in Leech Lake, 1983-2014.

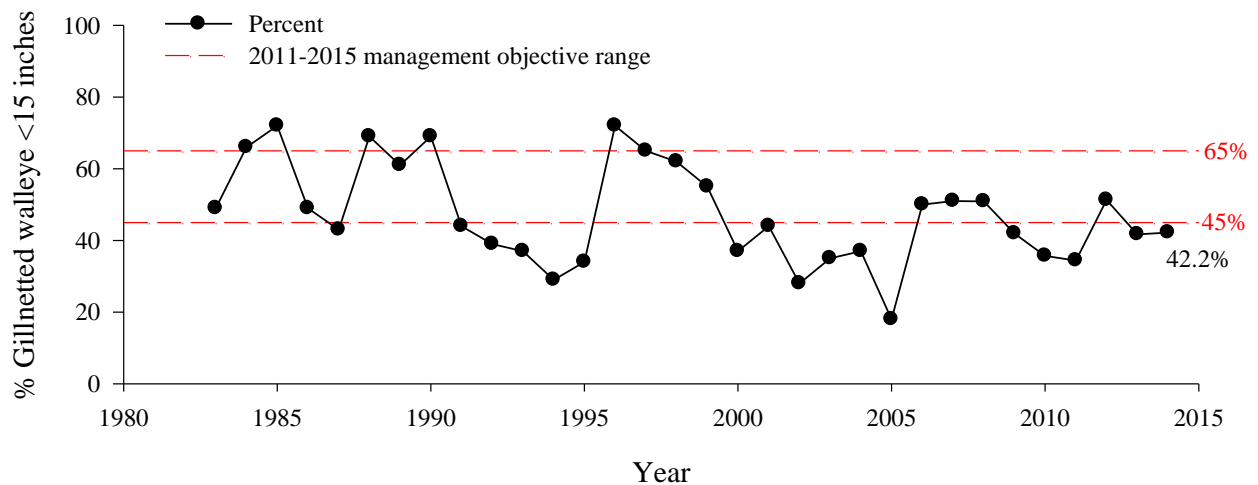


Figure 5. Proportion of gill net sampled walleye shorter than 15 inches relative to 2011-2015 Leech Lake Management Plan objectives.

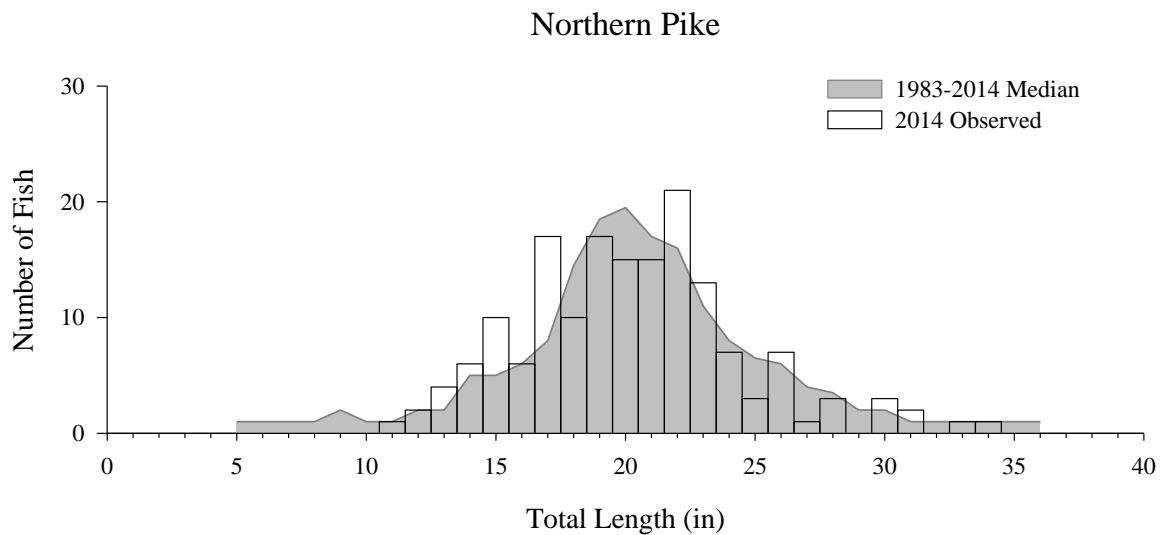
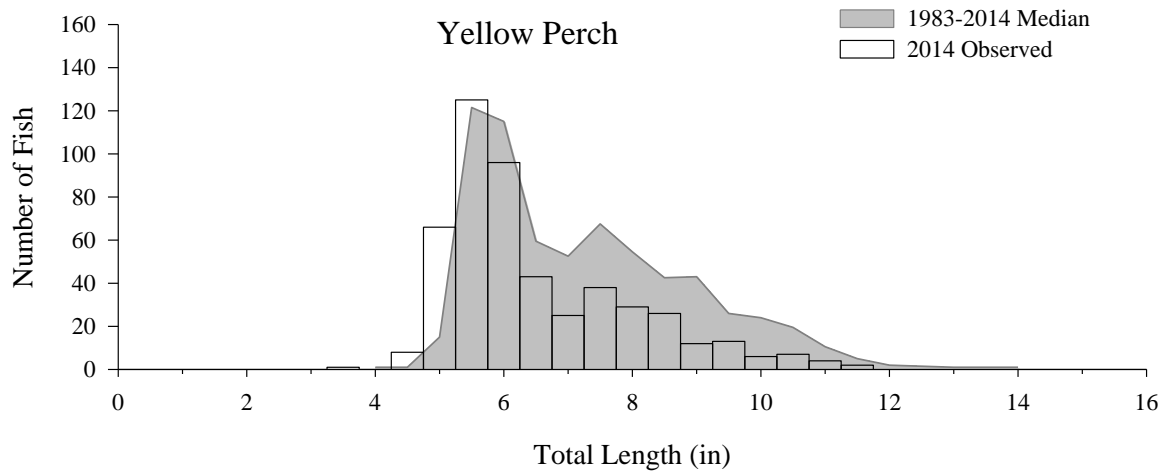
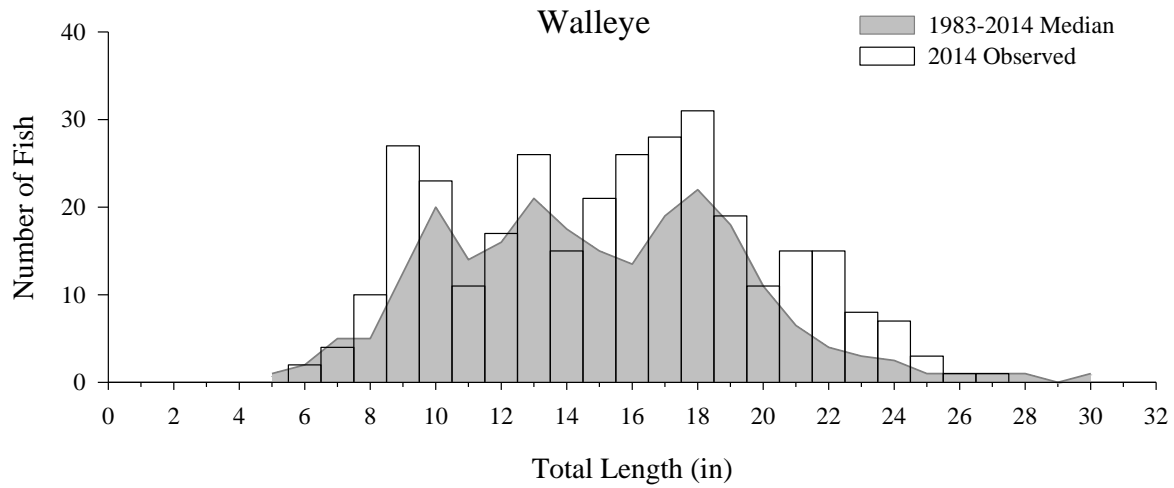


Figure 6. Length-frequency distribution of Leech Lake walleye, yellow perch, and northern pike sampled with experimental gillnets, 2014.

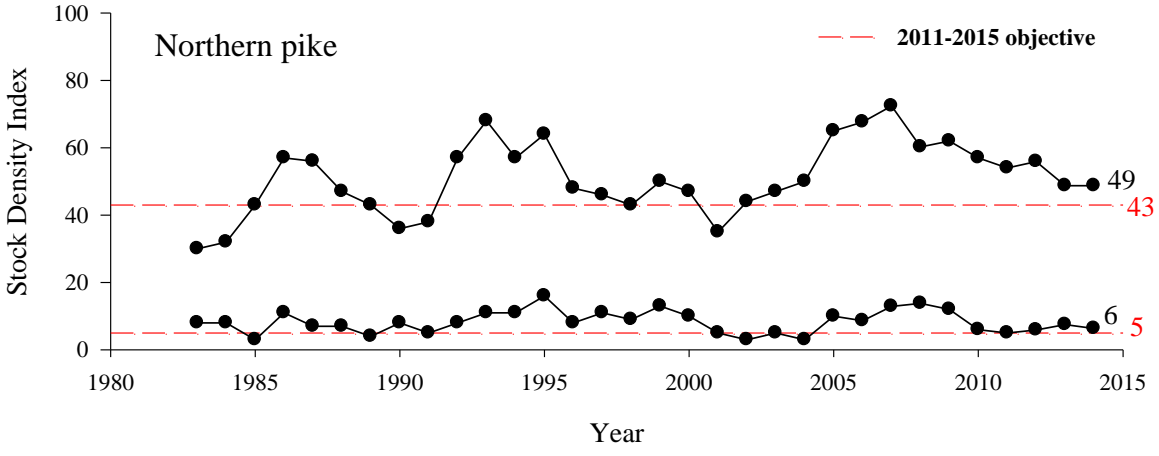
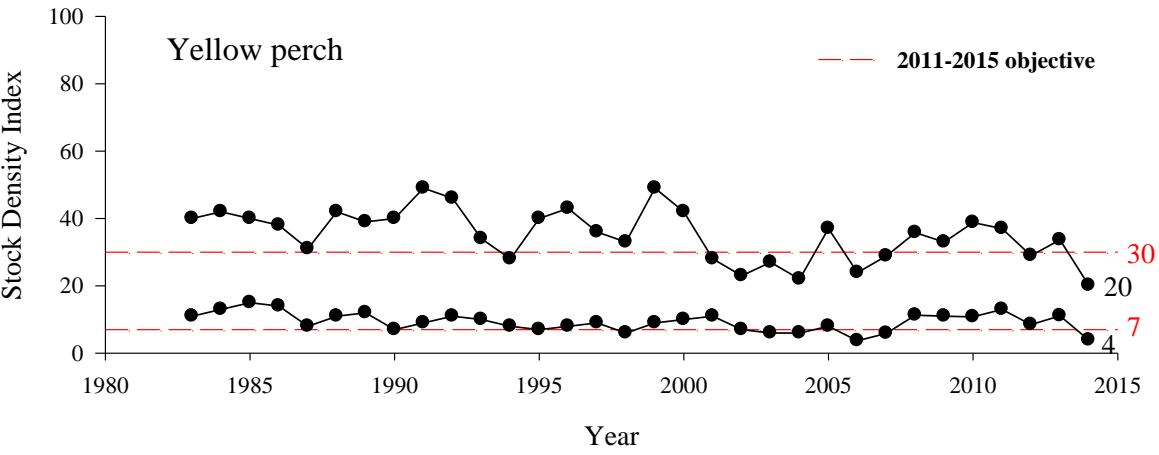
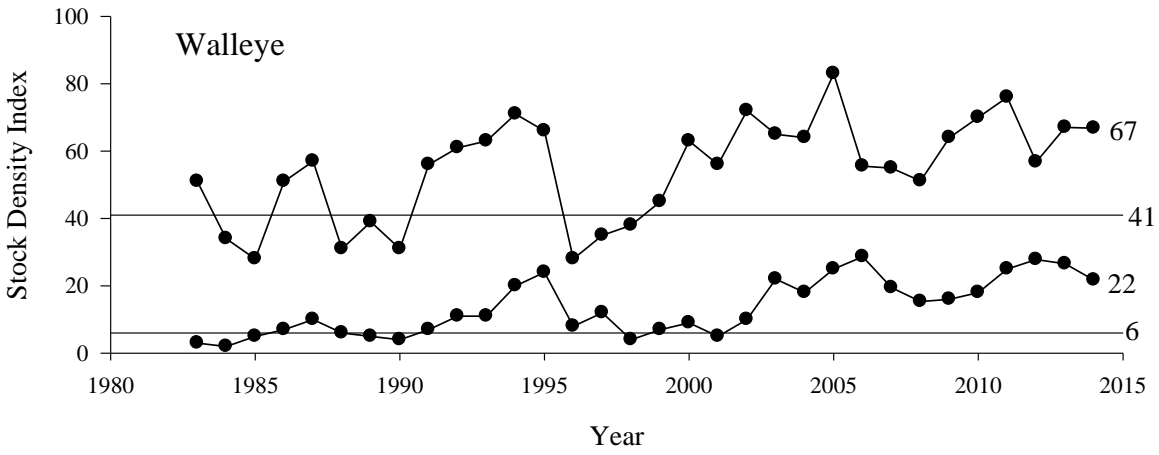


Figure 7. Size structure indices for yellow perch and northern pike relative to the 2011-2015 Leech Lake Management Plan.

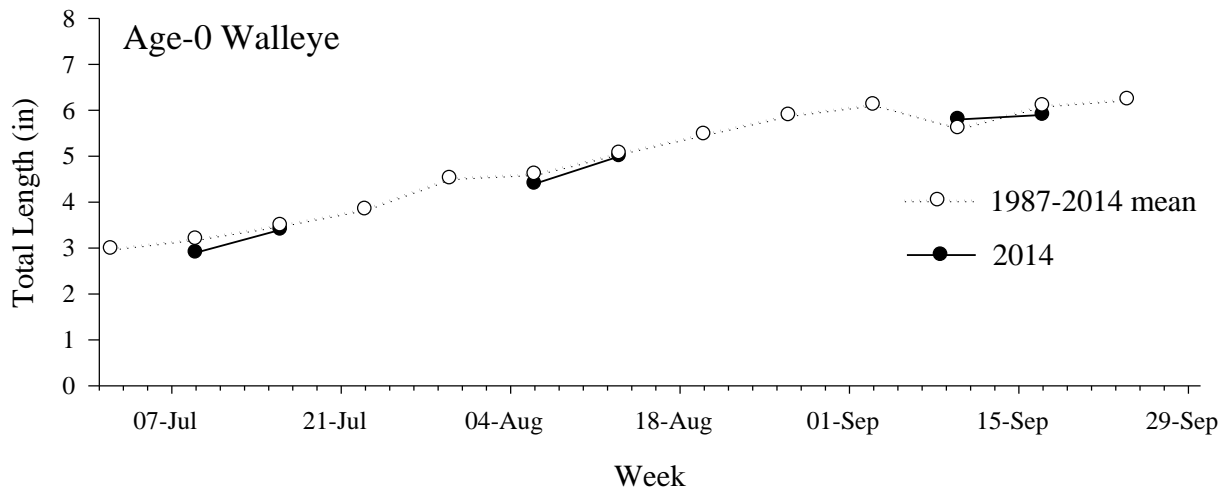


Figure 8. Mean weekly growth of age-0 walleye sampled in Leech Lake during the annual young-of-year assessment, 2014.

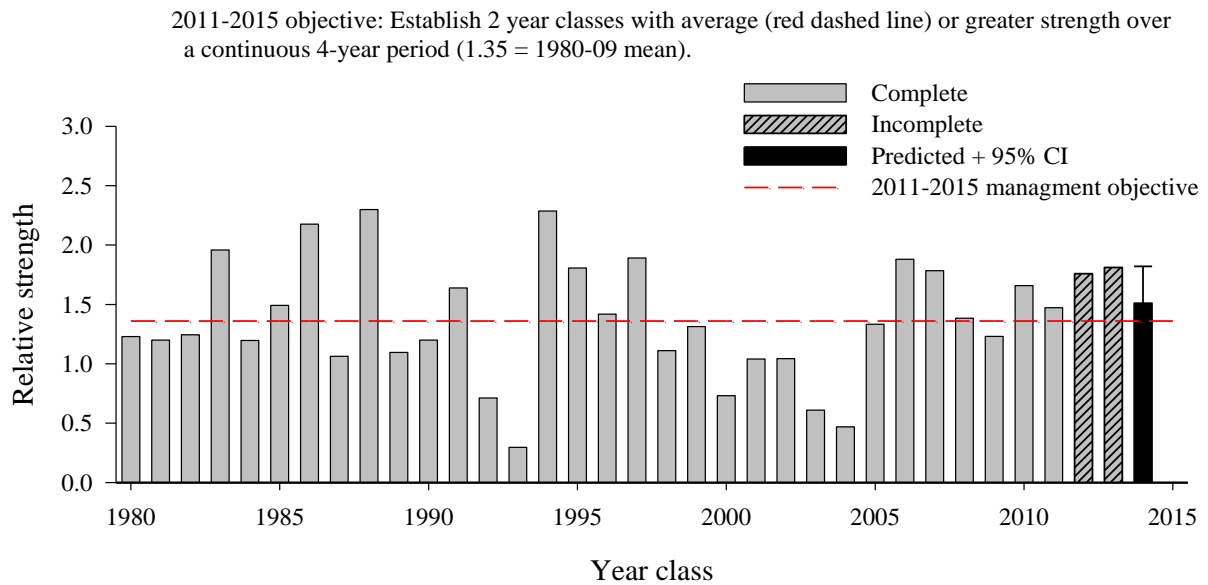


Figure 9. Walleye year class strength index relative to the 2011-2015 Leech Lake Management Plan objective for walleye recruitment.