

HISTORY OF THE FISHERY and MANAGEMENT of PELICAN LAKE, ST. LOUIS COUNTY, MN

By Kevin E. Peterson, DNR Area Fisheries Supervisor

- No walleye were found in the initial survey of Pelican Lake in the initial investigation done in 1946
 - Fish community was dominated by northern pike, largemouth bass, black crappie and yellow perch
- Walleye were sampled in the 1959 survey
 - Bluegill and smallmouth bass were also present
- Many changes in the fish community were observed in the next three decades (1960-1990)
 - Muskellunge made a brief appearance
 - Black bullhead arrived on the scene and expanded rapidly
 - Northern pike abundance posted a record high of 17 per net in 1989
 - Yellow perch abundance declined steadily, likely a result of increased pressure from predators
 - Rusty crayfish, a non-native invasive species was reported in 1989
 - Bluegill fishing took off, then contracted as abundance increased and growth slowed
 - Walleye abundance remained low, averaging about 1 per net
- Abundance of northern pike, yellow perch and black crappie returned to historic levels in 1990's and 2000's
 - Northern pike, yellow perch, black crappie and bass dominated the fish community again
- Protected slot limits were implemented for northern pike and bass to maintain and improve size structure in 1998
 - Average size of northern pike in DNR test nets increased from 18.3 inches in 1995 to 21.7 inches in 2007
 - Catch of bass greater than 14 inches long increased in post- regulation sampling
- Walleye fry were stocked in 1991 and 1992 (6 million fry each year)
 - No increase in walleye abundance was measured in subsequent sampling
 - Walleye catch in 1995 assessment netting was 0.6 per net
 - Walleye catch in 1998 assessment was 1.8 per net, though only one fish in the sample was from the 1991 year class-the sample was dominated by the 1994 year-class
 - Walleye made up a very small part of the catch in the 1993 and 1994 creel surveys
- Walleye catch in most recent assessment in 2007 was 2.1 per net, a relatively high catch rate for Pelican Lake
 - Fish in the sample ranged from 12 to 28 inches long, with an average length of 19.8 inches and an average weight of 3 pounds
 - Nine different year-classes were represented in the sample, ranging from 2 to 21 years old, which shows that some natural reproduction of walleye occurred in 9 of the past 21 years
- Yellow perch abundance rebounded to levels not seen since the 1950's

DNR Fisheries Management Direction for Pelican Lake

Continue to focus management efforts on northern pike, bass, black crappie and bluegill to provide a diverse and quality fishing experience for anglers.

- Long Range Goal: A healthy, self-sustaining fish community with northern pike abundance near ten per gill net (historical average) with an average length >21 inches; bass populations with a quality size structure; bluegill and crappie abundance greater than their respective medians for similar lake types (3.2 and 2.6 per trap net)
- Midrange objective: Monitor size structure and condition of northern pike population

Walleye Stocking Information

- Standard walleye fingerling stocking quota for Pelican Lake would be 11,758 pounds (176,370 walleye fingerlings at 15 per pound). This represents approximately 10 percent of DNR's annual production. Production costs are \$18.04 per pound or \$212, 114 for the full quota.
- Walleye stocking is usually not very effective in lakes with high abundance of northern pike, such as Pelican Lake. Northern pike and the other predators would likely feed directly on stocked walleye and compete with them for available food resources.
- The yellow perch forage base has dipped to low levels in the past (see attached graph). Increasing the predator population through walleye stocking could have unintended consequences (e.g. slower growth, increased mortality, less successful reproduction) for the rest of the fish community.
- Walleye fry stocking would be a less expensive stocking alternative, but still uses resources that might be better spent elsewhere. Walleye fry stocking has not been effective on Pelican Lake in the past. The normal stocking rate for Pelican Lake is 6 million walleye fry. DNR production cost to produce 6 million walleye fry is \$11,700. If purchased from the private sector, the cost (at today's rate) would be \$11.36 per 1,000 fry or \$68,160.

Future Management Plans

- Do fish population assessments in 2012 and 2016 using gill nets, trap nets and electrofishing to monitor any changes in the fish community and evaluate the protected slot limits for northern pike and bass.
- Do an angler creel survey in 2016 to obtain estimates of angling pressure, fish harvest and angler demographics.
- Evaluate the experimental regulations for northern pike and bass in 2017.

Note: See the Pelican Lake Management Plan for more information, available upon request from DNR Fisheries in International Falls, MN. Contact Kevin Peterson at 218-286-5220 or Email Kevin.peterson@state.mn.us

