



LAKE MANAGEMENT PLAN (DIVISION OF FISHERIES)

Region	Area	DOW Number	County	Lake Name	Acres	Littoral Acres	Lake Class
South	Spicer	34-0078	Kandiyohi	Bass	52	31	30

Long Range Goals (note: Size-based goals based on std. survey/ss for Bass Lake which is 2 gillnets and 6 trapnets, percentiles based on Class 30 lakes)

Bluegill (20-40/TN, 15/ss 8"+), Black Crappie (5+/TN or GN with fish 10"+ represented), Largemouth Bass (40-60/hr. with 15+/hr. 15"+), N. Pike (4-6/GN with fish 28"+ represented), Y. Perch (20-40/GN with fish 8"+ represented), Walleye (3.5+/GN). Maintain Black bullhead and Carp less than the 25th percentile for Lake Class 30 (BLB - 5.2/GN, 1.3/TN; CAP - 0.5/GN, 0.3/TN).

Operational Plan

- 1) Full Survey 2007, Population Assessment 2011, Full Survey 2015.
- 2) Conduct spring electrofishing to assess largemouth bass during all survey and assessment years.
- 3) Monitor winter dissolved oxygen levels and set ice-out trapnets if winterkill suspected.
- 4) If extensive winterkill occurs in Bass Lake - re-stock up to 15 pairs of ad. largemouth bass, 62 lbs. each of ad. y. perch and black crappie, up to 310 lbs. of ad. bluegill (predominantly males). Wait 1-year to stock up to 47 lbs. (max. 75 fish) of rescue n.pike.
- 5) If forage adequate, stock up to 62 lbs. of winter rescue northern pike between surveys if gillnet catch is less than 2/GN for consecutive surveys or less than 1/GN for any given survey. Also consider N.Pike stocking if yellow perch survey catches consistently exceed long-range goals.
- 6) Stock up to 155 lbs. of black crappie between surveys if trapnet catches are less than 2.5/GN and TN for consecutive surveys or less than 1/GN and TN for any given survey.
- 7) Protect critical habitat with APM permit process, AMA acquisitions, DOW review process, etc.
- 8) Participate in watershed/water quality/habitat improvement/education initiatives.
- 9) Continually increase angler/citizen awareness and participation in fishery issues utilizing various media.

Mid Range Objective

Monitor fishery with surveys 1 out of every 4 years and winter dissolved oxygen and spring testnet (if winterkill suspected) checks. Use collected information to make management/stocking decisions. Continue meeting/working with interested stakeholders in the development/revision of this LMP and in watershed/water quality/habitat improvement and protection efforts. Seek opportunities to implement potential plan. Participate in the replacement of the previous water control structure with lake representatives, DNR Waters, Kandiyohi Co., etc.

Potential Plan

- Stock walleye fgls. every other year to maintain 3.5/GN (75th percentile for Class 30 lakes) for BLB control. **\$1K**
- Develop a public access that allows reasonable accessibility. **\$135K**
- Consider exp. reg's if long-range goals are not periodically being met (i.e., access improved and pressure increases). **\$5K**
- Consider winter aeration if winterkill frequency increases. **\$7.5K**
- Acquire 'critical' habitat through the AMA acquisition process. **\$10-100K**
- Participate in developing shoreland management demonstration site(s). **\$1-5K**

Primary Species Management Secondary Species Management

LM Bass, Bluegill, B. Crappie N.Pike, Walleye, Y. Perch

Area Supervisor's Signature Date

Bruce Gilchriston (by DAC) 09/16/04
Month Day Year

Regional Supervisor's Signature Date

[Signature] 09/23/04
Month Day Year

Narrative:

(Historical perspectives - various surveys; past management; social considerations; present limiting factors; survey waters; land acquisition; habitat development and protection; commercial fishery; stocking plans; other management tools; and evaluation plans)

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DNR FISHERIES
NEW ULM, MN

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Entry Date	Year Resurvey
____/____/____	____
Stock Species - Size - Number per Acre	
Pr./Sec.	
Schedule	Year Beginning
Population Manipulation ____ YES ____ NO Year ____	
Development ____ YES ____ NO Year ____	
Creel or Use Survey ____ YES ____ NO Year ____	
Other	

Various Surveys

Historical Fish Survey/Assessments – Survey Netting, Spring LMB Electrofishing, Fall YOY Walleye Electrofishing (Summary, Detail)

Fish House Counts

Fish Growth Summary

MN-DNR Website Links – Public Lake Survey Report, Lake Map, Lake Water Levels, Satellite Lake Water Clarity, Lake Location, Area Topo Map.

Water Quality and Oxygen-Temperature Profiles (taken by MDNR-Fisheries)

Past Management

Bass Lake is currently managed as a 'Bass-Panfish' lake and secondarily for Northern Pike. Walleye have not been stocked into Bass Lake; however, they have been sampled in surveys since 1989. The 2003 survey, sampled walleye at well above the 75th percentile for a class 30 lake (6.0/GN in 2003, 75th percentile is 3.5/GN). Walleye immigration into Bass Lake from downstream sources (i.e., Diamond Lake, Tait's Lake which includes northern pike spawning area operations) and/or illegal stocking are the most likely sources. Because of erosion, the crude log/mud outlet structure failed in 2002 making fish movements more feasible and causing a water-level drop of about 2 feet. Currently, options for installing an upgraded water control structure are being considered. Walleye stocking is currently not being proposed; however, future walleye stocking may be warranted for black bullhead control if walleye survey catches drop below 3.5/GN. Carp were sampled in both gillnets and trapnets in 2003 which was the first time carp were sampled since 1979. Carp may have immigrated into Bass Lake after the outlet structure failed.

A severe winterkill occurred on Bass Lake during the winter of 1996-97. Spring trapnets in 1997 (post-winterkill) sampled yellow perch, black bullhead, white sucker and yellow bullhead. Largemouth bass (12M, 10F), bluegill (345 lbs., mostly males), northern pike (48 fish) and black crappie (67 lbs.) adults were stocked in 1997 and 1998 (n. pike). Shoreline seining in August 1997 showed all broodstock species produced young-of-the-year. An additional black crappie adult stocking occurred in 2000 (155 lbs.). Good angling has been reported in recent years for several species.

General Survey Summary

The 2003 survey met or exceeded current goals for largemouth bass (58.2/hr., 19.4/hr. were 15"+), northern pike (14.0/GN, 1 was 28"+) and walleye. Bluegill (19.0/TN, 9 were 8"+), black crappie (2.0/GN, 0/TN, 0 were 10"+) and yellow perch (1/GN, 3 were 8"+) survey catches did not meet long-range goals. The majority of bluegill sampled were between 6-8 inches. During the 2003 spring electrofishing sample for largemouth bass, several yearling walleye were observed in addition to other species. Three year-classes of walleye were found during netting ('99-'01). Black crappie adults and yellow perch were observed in greater abundance during spring electrofishing than was caught during summer netting.

Historically, black bullhead, white sucker, yellow perch and black crappie catches have been quite variable. In addition to the black bullhead gillnet catch in 2003, yellow bullhead and northern pike survey catches were the highest ever sampled on Bass Lake. Yellow bullhead abundance tends to decline with decreasing water quality.

Compared to Spicer area averages, growth rates for largemouth bass are historically above average for Bass Lake; however, growth rates were fast in 2003. Bluegill generally show average growth in Bass Lake; however, growth was above average in '03. Walleye show above average growth, northern pike show average growth and yellow perch exhibit below average growth in Bass Lake.

Social Considerations

- The current access is nearly unusable (very steep, no turnaround room, ruts, etc.) and does not allow reasonable boat access to the general public. Therefore, Bass Lake provides angling primarily for lake residents

and their guests. The lake has a history of excellent fishing at times. Opposition to public access improvements has occurred from some lake residents.

- Reports of illegal walleye stocking occurs periodically. Also, smallmouth bass have been caught/sampled.
- Bass Lake residents may want to consider organizing a Lake Association. In addition, participation in programs such as the Citizen's Lake Monitoring Program is encouraged.

Present Limiting Factors

- Historically, winterkill has been rare in Bass Lake (1996-97 and 1944-45). If winterkill frequency increases, it may be a symptom of eutrophication. Aeration (e.g., 2 Aire-O₂ units) may be called for in the future.
- The small size of Bass Lake makes it vulnerable to overfishing if the public access is improved. Particularly vulnerable may be larger size bluegill and black crappie. Special regulations may be needed to protect the quality of fishery if public access improvements lead to fishing pressure increases.
- Previous bulrush transplantation efforts (i.e., 1994) were moderately successful. This project may be continued in the future given landowner cooperation.
- Fish movements during high water are common between Bass Lake and downstream Tait's (winterkill lake) and Diamond lakes. During low-normal water levels, the Bass Lake outlet structure acted as a barrier to upstream fish movements (approx. 3 foot drop). Additionally, dam boards between the northern pike spawning area and Diamond Lake helped prevent fish movement (particularly carp) upstream into Bass Lake.
- Bass Lake is well-protected from wind action. A stable thermocline typically sets up in early-mid summer. Anoxic conditions quickly occur below the thermocline (max. depth of lake is 31 feet).
- Periodic 'nuisance' level of filamentous algae, submerged vegetation and blue-green algae blooms occur on Bass Lake. Bass Lake drains primarily agricultural land from several inlets/tiles along the west shore.

Survey Needs

- Continual incorporation of GIS technology to enhance habitat sampling, watershed analysis, etc. is needed and forthcoming.

Land Acquisition

- Currently, there are no known opportunities for the acquisition of 'critical' shoreline habitat through the AMA program. Bass Lake is relatively undeveloped on the east and south shorelines.
- Efforts to purchase land for public access development by DNR Trails and Waterways has been unsuccessful.

Habitat Development and Protection

- Ongoing environmental protection efforts include the DOW review process, APM permitting process, various education initiatives, periodic meetings with various stakeholders, cooperation in watershed initiatives, etc. Efforts to find new, more effective ways to monitor and protect habitat should be identified and initiated.
- Efforts to maximize shorefishing opportunities should be a focus for the next decade.
- Landowners willing to participate in shoreline restoration demonstration projects need to be identified. Projects need to be initiated.
- Currently there is some bulrush/waterlily habitat available in Bass Lake. Protection and enhancement of bulrush habitat is desired. There is ample downed woody habitat available to concentrate fish.
- The reduction in sediment/nutrient inputs through 'Best Management Practices' is needed for long-term protection.

Commercial Fishery (Includes Fish Removal Summary)

- Other than some reported commercial bullhead removal in the 1950's (using hoopnets), there has been very little commercial activity/interest on Bass Lake. Commercial removal operations via B-permit will be approved if there is interest and recent fish population information warrants.