



STATE OF  
**MINNESOTA**  
**DEPARTMENT OF NATURAL RESOURCES**  
Metro Region Fisheries, 1200 Warner Road, St. Paul, MN 55106

Reynold Eckstrom  
City Engineer  
4221 Lake Road  
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Dear Rey:

In answer to your questions concerning our recent netting operations on Crystal Lake in Robbinsdale, I wish to pass the following information on. In addition to the netting results, I will also give you information we have on the aeration systems and results of our recreation use study conducted last summer.

First though, I wish to congratulate you and others in the City of Robbinsdale for your efforts to aerate Crystal Lake. There is no doubt that aeration has provided many additional hours of recreation for citizens of your area. Because of our energy problems, this is especially important now since you have made it possible to bring fishing to the people where they live instead of asking them to drive greater distances to find fishing opportunities.

Netting and Electrofishing - The netting and electrofishing operations conducted last week reveal a continued improvement in the fish population. The northern pike in Crystal Lake were found to be more abundant than the statewide or local average. In addition, northern pike were nearly twice as large as the statewide or local average. Twenty-six northern pike sampled weighed a total of 109 pounds and ranged in size from 18-35 inches. The large perch population is still expanding. Perch provide an excellent food source for northern pike. In addition, perch have grown so they now average 1/3 pound each. Perch of that size should now be attractive to anglers. Eight to eleven inch perch when filleted and cooked are equal to any walleye. Perch are now a fish that you should promote locally. If by chance you don't believe me, just keep your eyes open because even if no one else fishes for them this winter, you will definitely see me on Crystal Lake. Crystal has one of the best perch populations we have in the seven county metro region. We stocked largemouth bass in 1977 and 1978 and both age classes were sampled. They are growing nicely and I am hoping their population will expand in the future. In addition to northern pike, perch and bass, we sampled bullheads, suckers and a few pumpkinseed sunfish and goldfish. At one time we considered stocking bluegill sunfish but now in light of the good perch population, we do not want to stock more sunfish.

Sunfish would compete with perch for food which could then result in perch too small to be sought after by anglers. At this time we do not want to take that chance. We definitely will continue stocking northern pike and may add some more bass this fall if we have some available for stocking.

Aeration - Survival of fish we stock is definitely dependent on the effective operation of your aeration system over the winter. I cannot stress enough the importance of keeping the system operational all winter. A shut down of a week or less could be disastrous during severe winters. Our oxygen testing program reveals that during the winter of 1974-75 (when you did not operate aerators) the oxygen level in Crystal Lake dropped to 0.7 parts per million (ppm) resulting in a substantial fish kill. During the winter of 1975-76 you operated one unit and oxygen levels dropped to 1.0 ppm which resulted in a partial fish kill. During the 1976-77 winter you operated two units and oxygen levels dropped to 6.0 ppm which would be considered excellent. During the winter of 1977-78 you again used two units and oxygen levels dropped to 1.3 ppm. The main reason for the low levels was directly related to the down time (approximately two weeks), when either one or both units were not operating. Last winter (1978-79) was one of the most severe winterkill winters we have experienced during the last 20 years. Both units were operational every time we checked oxygen levels but oxygen levels dropped to 2.6 ppm late in the winter. I believe that had the severe winter conditions been coupled with two weeks of down time last winter, Crystal Lake would have winterkilled.

In summary, there has been no winterkill on Crystal Lake following operation of two aerators, although oxygen levels have dropped rapidly during periods of shut down. A third unit may be desirable if it insures that at least two units would be in operation at all times.

Recreation Survey - We have been conducting summer boating and fishing surveys on many of our seven county metro lakes since 1974. Last year we included Crystal Lake in our schedule. The survey period ran from May 12 - September 24, 1978. Crystal Lake provided 124 hours per acre fishing pressure. This compares to other lakes censused last year as follows: Wabasso - 58 hours per acre; Moore Lake (east of 65) - 142 hours/acre; Turtle Lake - 18 hours/acre; Johanna - 37 hours/acre; Silver Lake (south of New Brighton) - 83 hours/acre; and, nearby Twin Lakes - 19 hours/acre. Twin Lake can be divided into Upper, Middle and Lower Twin which provided 10, 35, and 39 hours per acre respectively. Several other lakes censused during other years provided fishing pressure as follows: Calhoun - 46 hours/acre; Harriet - 35 hours/acre; Cedar - 77 hours/acre; Lake of the Isles - 111 hours/acre; Phalen - 49 hours/acre; Minnetonka - 25 hours/acre; White Bear Lake - 30 hours/acre; and, a portion of the Mississippi River - 52 hours/acre. When looking at all lakes censused since 1974, Crystal Lake would be in the top 10% of heaviest fished lakes in the seven county metropolitan region. That is a long way up from what was available in the 1960's. With development of perch fisheries, I would expect fishing use to increase to levels higher than observed in 1978.

Reynold Eckstrom

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Fishing is so popular on Crystal Lake because of aeration, stocking, the fact that carp have not gained access, park land which provides shore fishing, and fertile waters. All are important but winter aeration is the key to success.

  
Duane M. Shodeen  
Regional Fisheries Supervisor

DMS:mv

cc: Robert Wicklund  
Ed Feller