

Natural Resources - Fisheries

Huon Newburg, Regional Fisheries Supervisor
New Ulm

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Dirk Peterson, Area Fisheries Supervisor
Waterville

(507) 362-4223

Clear Lake, Waseca County

Since I arrived at Waterville in August, 1982, the quality of fishing on Clear Lake has been a major issue of public concern. I would like to review the management of this lake to apprise you of its development and status.

Clear Lake is 652 acres with a maximum depth of 30 feet. It is located within the municipal boundaries of the city of Waseca (pop. 8200). Ecologically it is a roughfish-gamefish lake. The management classification has changed over the years with the Area Managers and the trophic condition of the lake. Primarily managed as a bass/panfish lake during years of high quality in-lake habitat, it has been changed in recent years to include walleye and channel catfish as water quality has deteriorated and carp were introduced.

In 1963, Fisheries determined that the fish populations in Clear Lake were unsatisfactory and dominated by roughfish. The lake was reclaimed in 1963 with toxaphene, a chemical no longer registered for fishery use. The lake was restocked with bluegill, largemouth bass, crappies, and northern pike. Other facets of this lake rehabilitation project included renovation of the outlet structure and development of a controlled northern pike spawning area. Benefits of the project probably lasted ten years before declines in fish populations were noted. Strong year-classes of crappies provided most of the sportfishery through the late 1970's until crappie fishing declined in the early 1980's. Walleye and channel catfish were stocked at various times during the 1970's.

I conducted a population assessment in September, 1982, as assigned by Roland Ruths. At this time, crappie abundance was relatively low and represented by a few large individuals. Bluegill and northern pike abundance were very low. Walleye abundance was high and likely the result of stocking 1.5 lbs./acre/yr. of fingerlings during 1979-1981. Also present was a very large year-class of black bullheads. Results of the survey were presented at a public information meeting in April, 1983. The major concern was improving crappie fishing. I outlined a Fisheries course of action that included annual assessments to monitor crappie and bullhead abundance, reduced stocking of walleye, and discontinued use of the northern pike spawning marsh. The spawning area is entirely cattails and no vegetation was present in the lake. From net catches it appeared pike reproduction and survival were very poor.

A few people, including Jim Zimmerman, columnist for the Waseca paper, were proponents for chemical rehabilitation with rotenone. This was discussed at the 1983 meeting and the overwhelming response to reclamation was "no."

Clear Lake fish populations were assessed in 1983, 1984, and 1985 (Attachment 1). General trends predicted in the April, 1983 meeting were apparent. Crappie abundance increased, walleye abundance was reduced and stabilized, and the bullheads increased to fishable sizes. With increased crappie abundance, however, fish were not landing in the creel.

During the summer of 1985, comment and criticism increased in the Waseca paper (Attachments 2, 3). As a non-voting member of the Clear Lake Restoration Advisory Committee, I outlined trends noted from population assessments of Clear Lake. I explained that reclamation was a possible fish management tool if there was public support for a drastic but effective technique. Segments of the public interpreted this as DNR promoting reclamation. In response, the Waseca Sportsman's Club spearheaded a drive to enlist local service club opposition to a rehabilitation (Attachments 4, 5).

Two meetings were conducted in the fall of 1985 to inform the public of the fishery status of Clear Lake (Attachment 6). One involved the LCMR at Thompson's Boat House in Waseca in September. Information was presented again concerning the status of the lake with the additional thought that, if fishing did not improve in the next year, more serious measures should be considered. This would be a reclamation with rotenone.

A joint public information meeting was conducted on October 16, 1985 by DNR-Fisheries and the city of Waseca. John Barten presented the status of the water quality management program and the upcoming aluminum sulfate treatment scheduled for 1988. I assembled all survey information from 1970 to the present and discussed trends in the relative abundance of fish species (Attachments 7, 8, 9). I explained changes in light of carp introduction and poor water quality. Storm sewers were loading nutrients from the urban watershed to Clear Lake until 1979. Notable declines in gamefish were bluegill and northern pike. Apparent increases were black bullhead, carp, and freshwater drum. Reclamation was again discussed and the response was "no." I suggested, though, if fishing did not improve soon that reclamation should be seriously considered. The group was also informed that a combination rotenone treatment and alum application would yield the highest benefit-cost ratio.

I believe that in light of annual assessments and continued public discontent, a rotenone treatment may be the best way to improve fishing in Clear Lake. Water quality improvements should eventually contribute to good fish habitat. A scenario that would dove-tail both treatments would be as follows:

- A population assessment will be conducted August, 1986. If fish community characteristics are poor and anglers are not catching fish, I would then actively seek public support from the community.
- If support is gathered, then a CORE or D-J project could be written before April, 1, 1987. The rotenone treatment would be accomplished fall, 1987.
- The City could do the alum treatment during 1988 as scheduled.

The cost of a rotenone treatment for Clear Lake would break down as follows:

	<u>Lake full</u>	<u>4' drawdown</u>	
Rotenone (lake, \$11/gal)	\$ 92,510(3ppm) (8245 ac.-ft.)	\$ 83,731(4ppm*) (5597 ac.-ft.)	\$ 62,798(3ppm)
Wetlands (3 - 155 acres**)	1,739(3ppm)	1,739(3ppm)	1,739(3ppm)
Helicopter (807 acres-total, \$10/acre)	8,070	8,070	8,070
Drawdown engineering		5,000 (est.)	5,000 (est.)
Miscellaneous (meetings, bioassay, cleanup, other)	30,000 (est.)	30,000 (est.)	30,000 (est.)
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TOTALS	\$132,319	\$128,540	\$107,607

* EPA allows 4ppm in drawdowns

** Treated as if water were 1 foot deep

These are estimated figures and hidden costs may inflate the final cost. Drawdown of 3 - 4 feet is probably feasible but will require ideal weather conditions for a year and consent of Clear Lake riparian owners. If the public will not support reclamation, I do not recommend forcing the issue. The Loon Lake rehabilitation project has not been discussed in this memo. I've attached various documents that deal with Loon Lake for your perusal. As far as support for the alum treatment in Clear Lake, I've always been a supporter of Waseca's program to improve water quality in Clear and Loon Lakes. In Barten's attempt to secure MPCA funding for the alum treatment, I wrote the 6 DEC 85 memo outlining City - DNR cooperation in lakes management (Attachment 10). If you have any questions, call.