

Pelican River Watershed District's Harvesting Projects: A Change in Direction?

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Weed problems and weed control are not new to District lakes. Concerns about lake weeds were central reasons for the formation of both Lake Detroiters and Melissa-Sallie Improvement Association in the 1940's. The failure of those organizations' many efforts to solve the "weed problem" had a good deal to do with the formation of the Pelican River Watershed District.

Accordingly, cutting and removal ("harvest") of lake vegetation has been a part of the District's activities since its inception. Project #1 was established to remove aquatic plant material from Lakes Melissa and Sallie in 1966, and with the assistance of federal and local funds, as well as grants from the District, equipment was purchased and harvesting began in 1967. The City of Detroit Lakes, Lakeview Township, and lake associations were participants. The Melissa-Sallie harvesting project was re-authorized in 1978 as project 1a, and again later in 1985 as 1b; in 1989 1c was established for Detroit Lake.

The initial project (#1) purposes included nutrient reduction (on the theory that harvesting plant debris containing nutrients would be beneficial), as well as removal of plants considered a recreation nuisance. However, research conducted on Lake Sallie (1970-1972) showed that the nutrient reduction component was relatively small compared to the available in-lake nutrients, so in subsequent projects that purpose was given less attention compared to recreational usage, navigation, water quality, and property value enhancement.

The Minnesota Statute which establishes and controls Watershed Districts anticipates that much of a District's work will be carried under the auspices of one or more "projects". The law outlines projects of different types, methods of origin, and mechanism for funding. The District's harvest projects were initiated as a result of petitions from lakeshore residents. After considering the nature of the problem, the engineering options, feasibilities and costs, the Managers defined, delimited and then established the harvest projects in strict accordance with the statute. Start-up funds were obtained from regular District funds, and from grants and loans. Project start-up and subsequent operational costs were to be paid through assessments on lake-front owners. While not all the initial costs were repaid, small surpluses from the yearly assessments have been accumulated in a fund used to replace and repair equipment.

Major Changes in Harvesting Project Operations

The District's harvesting projects have evolved in many small ways, but recently there have been three major changes:

1. ***The focus of activities has shifted from general harvesting and removal of submerged aquatic plants to harvesting and removal of exotic species.*** Two "nuisance exotic species" as defined by the State of Minnesota, are troublesome in some district lakes. Found in many Minnesota lakes, curly-leafed Pondweed has the unusual (for aquatic plants) habit of maturing then dying in June, accumulating in large and thick mats in the middle of the lake, and blowing to shore in large masses. Found in Detroit Lake since at least 1968, Curly-leafed pondweed continues to be a major nuisance and is found in Big and Little Detroit, the Pelican River, Muskrat, Sallie and Melissa. The District harvests and removes this plant in June and early July in specific areas designated by the DNR.

Flowering Rush is found in only a few Minnesota lakes, including five within the District (plus the Pelican River and possibly Mill Pond too). For about 10 years the DNR's recommended control strategy was repeated cutting and removal of the plants. Harvesting equipment was deployed throughout Detroit, Curfman, Sallie and Melissa and removed as much of the plant that could be found. This effort peaked in 2002 with the removal of over 3000 tons of plant material.

2. **Starting about five years ago as it became increasingly apparent that FR infestations were spreading, the District began looking for herbicide treatments that might help to control the plant.** Many alternative products and application strategies were tested. In 2004 some fairly promising results were obtained by using the product Imazapyr (Habitat). Further tests were conducted in 2005, and since 2006 full-scale application of Habitat has been applied to all known homogeneous Flowering Rush infestations in Muskrat, Sallie, Melissa, Curfman and Big and Little Detroit. The DNR has approved and permitted these herbicide treatments.

Recent research and experimentation has revealed some effective herbicide treatments for Curly-leafed pondweed.

3. **The DNR has gradually curtailed District mechanical harvesting activities.** In 2007 harvesting was limited to proactive removal of curly-leafed pondweed, and a few floating cattail bogs. A request to do some additional removal of plants to improve navigation on some parts of Big and Little Detroit was denied. Concerns about the negative impacts on native species and habitats are central to the DNR's resistance to use of mechanical harvesting equipment. The DNR also has signaled its preference for use of herbicides in some treatments of nuisance aquatic plant situations.

A Crossroads and a Change in Direction

There has always been a certain amount of controversy associated with the harvest programs. Some lakeshore owners have complained that they are being taxed (assessed) without receiving any service (such an argument would be enhanced if DNR were to allow the cutting of navigation lanes which would benefit only a few properties). Some residents have argued (wrongly) that money has been diverted from the harvesting projects to other District activities. Others have complained that the harvesting was not effective, and some believed it to be harmful.

From time to time, Managers and staff have had second thoughts about the projects. Negative habitat impacts, diversion of attention from other more important watershed activities, and the method of assessment were among the Managers' reservations.

In spite of these attitudes and concerns Managers continued to support the projects mainly on the grounds that costs were low and that most residents felt that the mechanical harvesting efforts did some good. (Indeed, more resident complaints about the project had to do with insufficient harvesting, rather than too much.) The roadside pickup feature of the projects has been especially popular, and there has been very strong lakeshore resident support for the recent herbicide treatment of Flowering Rush.

The current twenty year-old projects were established "...to provide recreational benefits, navigational benefits, preservation and improvement of water quality, and the preservation and improvement of property values of riparian properties." DNR policies do not now recognize property-value improvement or water quality improvement as legitimate reasons for permitting mechanical harvesting.

Moreover the District's implicit assumption was that the projects would feature mechanical harvesting of aquatic vegetation; while other means of aquatic plant removal were not excluded in the final orders establishing the projects, the feasibility studies and findings in both projects stressed that mechanical harvesting is the preferred method of treatment. Road-side pickup was not contemplated as part of the projects.

In 2007, the mechanical harvesting equipment cut aquatic plants for only 3 days (21 man-hours) on Melissa/Sallie and 7 days (40 man-hours) on Detroit. Managing curly-leafed pondweed blow-ins accounted for 8 days (56.5 man-hours) on Melissa/Sallie and 8 days (26.5 man-hours) on Detroit. Harvesting project staff activities have been largely confined to roadside pickup. The cost of gearing up for a few days of harvesting may be prohibitive, and it may be difficult to sustain a pool of qualified operators under those circumstances.

In summary, for the following reasons this seems like an appropriate time to consider terminating Projects 1B and 1C:

- DNR reluctance to permit mechanical harvesting activities, (and reliance on navigation improvement as a standard for harvesting activities that are allowed);
- increasing emphasis on herbicides in the treatment of exotic species;
- divergence of project activities from the project intent (e.g. herbicides and road-side pickup);
- growing difficulty of claiming that all assessed properties are benefited (if navigation is the primary criterion for permitting mechanical harvesting);
- difficulty and costs of maintaining current equipment and staff in the present operational mode;

Instead, a new Aquatic Plant/Lake Management Project might be considered as a replacement. Such a project might be district-wide and have a broad range of activities, possibly including...

- Aquatic plant surveying and treatment planning
- Aquatic plant education
- Herbicide treatment
- Mechanical harvesting
- Roadside pickup
- Beach Cleaning
- Plant debris disposal
- Shoreland restoration

Another idea would be to simply abandon harvest aquatic plant control activities altogether. After all they have little to do with water quality. Other governmental units (city, township), and/or private contractors could easily assume the responsibilities.

Harvesting, including costs and assessments data, are summarized in the table.

PELICAN RIVER WATERSHED DISTRICT HARVEST PROJECTS HISTORY

| | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|--|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Harvest (tons) | | | | | | | | | | | | | | |
| Sallie | 123 | 130 | 111 | 92 | 65 | 585 | 307 | 32 | 6 | 5 | 98 | 68 | 20 | 110 |
| Melissa | 143 | 140 | 137 | 113 | 118 | 60 | 105 | 33 | 71 | 39 | 75 | 71 | 53 | 116 |
| Detroit | 186 | 200 | 630 | 660 | 560 | 490 | 520 | 402 | 802 | 900 | 1,040 | 1,458 | 1,348 | 1,878 |
| Muskkrat | | | | | | | | | 185 | 146 | 23 | 171 | 16 | |
| Roadside Pickup | 325 | | 338 | 375 | 403 | 480 | 525 | 550 | 429 | 396 | 602 | 741 | 649 | 892 |
| Shoreline Pickup | 165 | | 300 | 350 | 300 | 280 | 385 | 225 | 55 | 45 | 58 | 16 | 32 | 42 |
| Harvest/Removal Total Tons | 942 | 800 | 1,516 | 1,590 | 1,446 | 1,895 | 1,812 | 1,242 | 1,548 | 1,218 | 1,896 | 2,525 | 2,118 | 3,019 |
| Financial Attributes Total Assessment (in 1000's) | \$25 | \$26 | \$53 | \$81 | \$79 | \$77 | \$55 | \$51 | \$47 | \$44 | \$49 | \$59 | \$88 | \$95 |
| Average Assessment 1/ | \$43 | \$44 | \$67 | \$72 | \$64 | \$61 | \$45 | \$42 | \$40 | \$32 | \$35 | \$47 | \$68 | \$67 |
| Total Expenditures (in 1000's)2/ | \$24 | \$52 | \$70 | \$66 | \$69 | \$88 | \$54 | \$61 | \$53 | \$50 | \$62 | \$80 | \$89 | \$82 |
| Expenditures per ton | \$25 | \$65 | \$46 | \$42 | \$48 | \$46 | \$30 | \$49 | \$34 | \$41 | \$33 | \$32 | \$42 | \$27 |

1/ residence with 75 foot lake frontage (averaged for all lakes)

2/ includes depreciation/administrative, lease, etc.

