

## Highlights by Decade

### The First: 1966-75

This was an organizational period, marked by enormous outpouring of community support and energy. In addition to the five managers, an advisory committee, comprised of about twenty representatives of city and county government, local business interests, the professions, and lake associations shaped the District's world view. The Advisory Committee figured prominently in the preparation of the District's Overall Plan, which greatly influenced the program and the strategies of the Managers for over twenty years. Weed harvesting was a major focus of nutrient management efforts, but the District got involved in quite a varied list of other activities.

In May, 1968, in its first systematic data collection effort, the Managers entered into a cooperative agreement with the U.S. Geological Survey (USGS) to obtain stream flow and lake levels information. In 1969 the District was the host for a Statewide Conference on lake eutrophication that brought experts from all across the nation; this quickly stimulated a series of research efforts aimed at understanding nutrient budgets and hydrology, the efficacy of weed harvesting, and the impact of septic systems on lakes. These efforts, funded to a large extent by federal grants and led by Dr. Joe Neel of University of North Dakota (UND), also spawned numerous masters and doctoral theses.

Near the end of the first decade the District advocated for the diversion of Detroit Lakes sewage effluent from the Ditch 14 system, plans were laid to upgrade the City of Detroit Lakes sewage treatment plant, and to secure funds to evaluate the impact on downstream lakes.

Throughout this period nearly all of the administrative activities were performed by Managers, though Cal Berman was hired in 1974 to supervise summer weed harvesting operations and to undertake other tasks assigned by the Managers.

### The Second: 1976-85

During this period limnologists rapidly improved their understanding of the nature and extent of lake problems, causes, and solutions. Managers responded by expanding their own data collection efforts (the first comprehensive assessment of all the major District lakes was completed in 1983), but they struggled with consideration of numerous competing and expensive suggestions for addressing lake problems. Among other things dredging of nutrient enriched sediments (on lakes St. Clair, Muskrat and Sallie), and upstream dams (on Rice Lake) were given special attention.

Early in the decade they also negotiated the purchase of Dunton Locks park. The District secured funds from the USGS for a \$30,000 study of the impacts of the new sewage-treatment plan on downstream lakes by Joe Neel. In the 1976-1978 period. Later the managers pressed for the expansion of the Detroit Lakes sewage system to include more lake residents. They also supported and permitted the construction of three ball fields on the Pelican River floodplain in the DL industrial park. The weed harvesting project was re-authorized for \$60,000 in 1977, but the nutrient reduction rationale was abandoned.

Flowering Rush was first identified in the mid-1970's in Deadshot Bay; the plant subsequently spread through Detroit Lakes, and down the Pelican River to Muskrat, Sallie and Melissa. The District efforts to control this exotic plant with various herbicide and mechanical treatments.

The District hired its first employees to undertake harvesting activities in the late 1960's, but it was only in its second decade that it began to utilize staff for administrative activities. Donald Klomstad began service as Executive Secretary in 1979.

Since the District's overall plan had not been given a ten-year update, the Managers received some pressure to revise its overall plan early in 1981, and again in 1982, but took no action. Though the Managers often advocated for the enforcement of other agencies rules, it is interesting that the District had never adopted its own Water Management Rules in accordance with Watershed Law. This deficiency also was brought to the attention of the Managers on several occasions during this decade.

A project to undertake the dredging of the Shoreham channel between Melissa and Sallie, and the sandbar channel between Little and Big Detroit project was established in 1981. The District eventually became embroiled in a legal battle over a contract default; the dispute was eventually resolved in the District's favor, and the dredging completed.

### **The Third Decade: 1986-1995**

In 1988 the District's Board of Managers was expanded from five to seven members in response to a County Board decision to give more representation to agricultural interests.

Don Klomstad left the position of Executive Secretary in 1990. He was replaced by a full-time Executive Secretary in 1991, Peter Waller, who was, in turn, succeeded by Dick Heock who became administrator in 1993.

The harvesting projects, and related aquatic plant management activities, continued to occupy a central place in the District's thinking during this period. The Sallie-Melissa project had been reauthorized in 1985, and the Detroit project began in 1991. For several years harvesting was tried on Deadshot Bay. In the meantime, Flowering Rush (FR) became increasingly problematic. From 1986-1991 various herbicides were tested and handpicking of flowers, and hand-digging was also tried. Eventually the DNR included FR on its Exotic Species List, and promulgated a management plan which featured mechanical harvesting.

During this decade the Managers reviewed quite a broad range of actions or proposals (boat ramps, siltation basins, retaining walls, animals in waterways, and special runoff situations), but it was not until 1991 that it adopted its first Water Management Rules in accordance with the Watershed Law. The Rules were controversial, especially a general permit requirement which elicited opposition, primarily from the City of Detroit Lakes. The new Rules also required a special permit for land application of septage. Towards the end of the period, the permit system was determined to be too broad for consistent enforcement, so the rules were significantly revised, eliminating the permit requirements.

Early in the period nutrient reduction discussions centered on Muskrat, St. Clair and Rice Lake – proposals included aeration, alum treatment, stream and ditch diversion, and wetland enhancements, but no action was taken. In 1987, taking advantage of a federal "Clean Water" funding opportunity, the District began working with the Minnesota Pollution Control Agency. A Clean Lakes Diagnostic Feasibility Study for Detroit and Sallie was funded in 1988. Several years of data collection and analysis led to a 1994 report. Subsequent funding was approved for implementing nutrient-reduction recommendations based upon that report. The District's formal and on-going monitoring and educational programs also grew from these recommendations and the funding.

The District embarked on a program to develop a greenway along the Pelican River. One 14-acre river-facing parcel near highway 34 was obtained, but the Managers failed to take action on an offer from Burlington Northern to sell their abandoned right-of-way along the river south of Highway 10.

Throughout the period Managers had been reminded of the need for revising the District's overall plan in accordance with Watershed Law. A first draft submitted in 1990 was not approved; after several more versions, a Revised Plan incorporating a broad range of initiatives, including education and monitoring as well as nutrient reduction, was prescribed by BWSR in late 1994.

In December, 1995 the District was honored as the Outstanding Watershed District of the Year, by the Minnesota Department of Natural Resources.

### **The Fourth Decade: 1996-2005**

During this period research ascertained strong links between impervious surfaces and lake water quality. At the same time, a greatly expanded set of options for stormwater treatment became available. The District response was to re-double its efforts to obtain the detailed data required to efficiently control upstream nutrient sources.

By 1996 the District had implemented a monitoring program aimed at (1) providing base line water quality data on streams and lakes, and (2) at assisting in the diagnosis of specific water quality problems. Student interns were employed to gather and analyze the data; a cooperative arrangement was established with the City's water quality laboratory.

With technical support from the DNR and PCA, District staff began to compile annual discharge and loading files on nine stream sites as well as some special analyses of storms and other events of hydrologic significance (water levels were unusually high during this period, with the flood of record occurring in the spring of 1997). Among other things, this work led to the suspicion that wetlands generated significant seasonal loadings of bio-available ortho-phosphorus which subsequently moved downstream. This led to intensive studies in wetlands adjacent to Ditch 14 and in the Rice Lake area which confirmed the suspicion. The solution to the problem was more elusive.

District Staff characterized water quality initially on eight lakes, and later on 17. With assistance from private consultants and MPCA experts, detailed assessments were undertaken on lakes Detroit, Muskrat and Sallie. A

special study also was completed on Long Lake to determine the cause of a alarming decrease in transparency on Long Lake (it appears that this it was simply a cyclical episode). An enhanced water quality assessment of Sallie, involving raft-mounted sensors, obtained detailed information of within-lake phosphorus dynamics.

Recognizing the importance of Muskrat Lake as a nutrient source for Lake Sallie, Managers authorized a biomanipulation project to increase Muskrat's uptake of phosphorus. In 1997 the District began to study shoreline modifications on the major lakes.

The Managers continued to place a heavy emphasis on education, through the prize-winning Waterwatch program which had been established in 1993, as well as participation in other school and community initiatives, some of which were on-going throughout most of the period.

The Northeast Detroit Lakes stormwater plan, the result of a multi-jurisdictional task force, resulted in the construction of three large stormwater detention facilities in the late 1990's.

The District also turned its attention to upstream sources of nutrients, particularly the Rice Lake area and Campbell Creek. Both were known to be major sources of nutrients and sediments, to Detroit Lakes, and Floyd Lakes, respectively. A Comprehensive plan for the Campbell Creek subwatershed was prepared and several upstream management practices were undertaken.

A major accomplishment was the use of alum to deactivate phosphorus in St. Clair lake. The 1998 effort accomplished its major purpose of reducing downstream phosphorus loadings to the Pelican River (and eventually Muskrat and Sallie). Several major stormwater detention basins were constructed to intercept stormwater to the Pelican River, Ditch 14 and Long Lake.

Owing to a change in Watershed Statute, a stormwater utility was adopted in 1998. Funds obtained from stormwater fees were used to pay for various stormwater treatment projects; options were greatly expanded to include not only traditional detention and retention systems, but also adoption of non-traditional building techniques and materials, and new runoff-control approaches.

Long threatened and long delayed, the responsibility for public ditches 11,12, 13 and 14 was transferred from County to the District in accordance with provisions of Minnesota Ditch Law.

Harvesting projects continued but generally received lesser attention from the managers. Much of the responsibility of setting priorities and running the projects was given over to harvest subcommittees for each project (Melissa/Sallie and Detroit). Under pressure from DNR, the focus turned from removing "weeds" to providing reasonable navigational and recreational use. And though some record harvest totals were observed during this period, this appeared to linked to infestations of Curly-leafed pondweed, another exotic specie.

Meanwhile, towards the end of the period it became apparent that DNR's Management Plan for Flowering Rush was ineffective in controlling the spread and growing nuisance of flowering rush. The recognition led to a return to experimentation with herbicides.

In 2001, part-time Administrator Hecock was replaced by his full-time assistant, Tera Guetter. Under her leadership the District became affiliated with the U.S. Natural Resources and Conservation Service, and the Agricultural Research Service which provided technical assistance in further assessing the issue of upstream loadings from drained wetlands. This work resulted in plans to undertake modifications of the drainage through the Rice Lake wetland in order to reduce discharges of bio-available phosphorus to Detroit Lakes.

In 1998 the District had tightened its rules with respect to point and non-point nutrient discharges and other problematic water quality practices. In 2002 it again overhauled and further strengthened the rules; a permit system for very limited situations was re-instated. Once again other governmental officials objected to the new procedures, but few problems were encountered in their implementation.