

MINNESOTA VALLEY
NATIONAL WILDLIFE REFUGE
NARRATIVE REPORT - 1980

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MINNESOTA VALLEY NATIONAL WILDLIFE REFUGE

Bloomington, Minnesota

ANNUAL NARRATIVE REPORT

Calendar Year 1980

U.S. Department of the Interior
Fish and Wildlife Service
NATIONAL WILDLIFE REFUGE SYSTEM



#1. Refuge Staff - (Before uniforms arrived) - December 1979.
 Bottom, left to right: Paul Schneider, Marlin Menke, Mark Soller, Joel Felton, Chuck Hibbs, Dave Shaffer, Tex Hawkins, Ed Crozier; Top, left to right: Barb Fischley, Bruce Blair, Bev LaVine.
 79-1202 MVR

Permanent

Edward S. Crozier, Refuge Manager	GS-13	3/11/79	-
Arthur S. Hawkins, Jr., Asst. Refuge Manager, Public Use	GS-11/12*	10/78	-
L. Paul Schneider, Asst. Refuge Manager, Wildlife	GS-9**	8/13/79	-
David M. Shaffer, Landscape Architect/Maintenance	GS-12	9/9/79	-
Beverly A. LaVine, Administrative Technician	GS-5	8/26/79	-
Ann Magney-Kieffaber, Student Trainee	GS-4	8/20/79	9/20/79
Ann Magney-Kieffaber, Outdoor Recreation Planner	GS-5	1/6/80	-
Kenneth A. Deaton, Outdoor Recreation/LE	GS-9**	3/23/80	-
Paul F. Irrthum, Maintenance Worker	WG-8**	3/23/80	-

*Promotion to GS-12 (8/24/80)

**Seasonal, 50 weeks

Temporary

Bruce B. Blair, Engineering Technician	GS-5	6/6/79	-
Joel S. Felton, Laborer	WG-2	7/6/79	7/11/80
Barbara Fischley, Biol. Tech. (Wldfe)	GS-5	9/16/79	6/11/80
Chuck A. Hibbs, Laborer	WG-2	11/18/79	11/14/80
Mitchell House, Laborer	WG-2	10/19/80	1/9/81
Steven Kittelson, Biol. Aid (Wldfe)	GS-4	5/4/80	1/16/81
Marlin J. Menke, Carpenter	WG-10	12/2/79	9/5/80*
Mark D. Nelson, Biol. Aid (Wldfe)	GS-4	5/4/80	8/22/80
Randall E. Pederson, Biol. Aid (Wldfe)	GS-4	4/18/79	8/79
Randall E. Pederson, Laborer	WG-2	10/19/80	-
Frank Picos, Laborer	WG-2	10/19/80	-
Gary Saxton, Park Technician	GS-5	6/3/79	9/28/79
Mark Soller, Carpenter	WG-9	12/2/79	3/14/80
Gary Stelzner, Laborer	WG-2	7/16/79	9/20/79
Mark Van Every, Biol. Aid (Wldfe)	GS-4	5/29/80	8/22/80
Michael Vandelac, Laborer	WG-2	10/19/80	-
Gary Wray, Laborer	WG-2	10/19/80	-

*Last work day was 5/2/80.

Review and Approvals

Edward Crozier 6/30/81
Refuge Manager Date

Gary Wray 6/30/81
Area Manager, TCAO Date

R. Wayne Steier 10/21/81
Regional Office Date

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MINNESOTA VALLEY NATIONAL WILDLIFE REFUGE
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ANNUAL NARRATIVE REPORT
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A. HIGHLIGHTS

1. Refuge Establishment

The Minnesota Valley National Wildlife Refuge will eventually form a wild green belt or corridor meandering between four Twin Cities metropolitan counties and eight suburbs. Today, two-thirds of the floodplain lands and waters that will eventually comprise the refuge are in public ownership and offices and staff are in place.

One unit of the refuge, aside from the headquarters area itself, which is almost entirely in federal ownership and currently sustaining considerable public use is the Louisville Unit, southwest of Shakopee. Other isolated parcels are also functioning as wildlife refuge complete with public use.

A more complete description of the refuge can be found in the general leaflet appended to this report.

This first annual narrative report will begin by tracing the historic events that led to the establishment of the refuge through passage of the Minnesota Valley NWR Act (Public Law 94-466) in 1976. The following material, extracted from a Masters Thesis by Wayne M. Sames, entitled The Minnesota Valley National Wildlife Refuge and Recreation Area: A Case Study, provides a background explanation of refuge establishment.

As the Twin Cities continued to prosper and expand in the early 1900s, the Minnesota River valley became physically less isolated and more familiar to the city dwellers. Some vacationed at country homes along the bluffs, joined one of the gun clubs offering fine waterfowl hunting in the bottomlands, or simply took their automobiles on weekend tours along the valley. Interest in preserving the river valley for recreational purposes began to grow.

In 1934, during the great depression, Governor Floyd B. Olson directed the energetic General Superintendent for Parks in Minneapolis, Theodore Wirth, "...to supervise the preparation of a general plan for the acquisition and utilization of the valley of the Minnesota River from Shakopee to its confluence with the Mississippi River at

Mendota and adjacent lands." Wirth, sometimes referred to as the "father" of the Minneapolis Park System, visualized the valley as "...a recreational area for the Twin Cities and adjacent communities or, in fact, the whole state." He also proposed the establishment of a "forest preserve" along much of the south boundary of the valley. The proposal was apparently conceived, at least in part, as one of the many public works projects undertaken during the depression era.

The ambitious proposal would have involved almost 24 miles of the valley, averaging almost three miles in width and containing over 41,000 acres.

Wirth was also interested in preserving the forest resources of the valley. He proposed that the entire south boundary of the area, in what is now Eagan, Burnsville and Savage, as well as the rugged hills in the northwest corner of the project area near Chaska, be set up as "forest preserves".

Finally, Wirth noted areas of special and historical interest in the valley, including the Sibley House, Fort Snelling, Indian camps, trails, the Battle of Shakopee (between the Dakota and Ojibway in 1858), an old tavern and stone mill, and the "boiling springs". He cited the rapidly growing population of the Twin Cities, recreation and tourism values of the proposal, and the availability of Federal assistance and a large number of "itinerant workers" as justification for the project. In reviewing the existing state and federal parks and forests in Minnesota, he pointed out that "...the forests are all far north of the Twin Cities".

The proposal was outlined by Wirth in a letter to Governor Floyd B. Olson in April 1934. This letter, along with some additional information, was also included in a "Tentative Study Plan of the West Section of a Metropolitan Park System For the Twin Cities Minneapolis and St. Paul" which was part of the 53rd Annual Report of the Minneapolis Park Board of Commissioners in 1935.

But, in the end, the dream was never realized. Governor Olson one of the prime supporters of the idea, died in the summer of 1936. Apparently, the new administration did not have the same degree of interest in the project. A few overlook areas were developed, including one near the Flying Cloud Airport in Eden Prairie and another near Mendota, but the real essentials of the plan never materialized.

During the next three decades commercial, industrial and residential development in the valley was such that the completion of Wirth's plan became impossible. Even so, it did spark an interest in the minds of some people that was not completely extinguished. Whatever the real reasons for the failure of the original Wirth proposal, the idea of preserving at least portions of the lower Minnesota River valley never died completely. In 1963, the Minnesota River was one of four rivers in the state to be designated by the legislature as a state canoe and boating route. This legislation provided for the marking of hazards and points of interest, development of water recreation sites, and acquisition of lands for such purposes. Little was accomplished under this act in the Minnesota River valley until the early 1970's, however.

About the same time that the canoe and boating route act was passed, the legislature created the Minnesota Outdoor Recreation Resources Review Commission (MORRC). This Commission was empowered to study the recreation resources of the state and recommend to the legislature a comprehensive program for further study and development of these recreation resources.

The legislature provided special funds, as a result of the MORRC recommendations, for the study of certain of the areas identified. One of these areas was the Minnesota River valley. The Minnesota Conservation Department, now the Department of Natural Resources, commissioned a study of the river valley to determine its suitability for a state park. In 1966, a study report and plan for a Carver State Park was developed for the department by the consulting firm of Theodore Wirth and Associates of Billings, Montana. This Wirth was the grandson of the Theodore Wirth who had developed the original preservation proposal of 1935.

The proposal for Carver State Park was almost as ambitious as the 1935 plan. One major difference, however, was that the emphasis had shifted further upstream to the area west and south of Chaska. In addition, many new factors had entered into the picture to make the selling of such an idea perhaps more difficult than it may have been in earlier years. For one thing, the U. S. Army Corps of Engineers had begun to discuss the possibility of flood control dams in the river valley. One of these dams would have been built near the site of the proposed state park. Floods were, and will probably always be, a topic of considerable debate and interest to people in the valley. Some people wanted the dams badly, while others did not. Among those opposing the development of the dams was the Conservation Department. Another factor was that this

state park proposal originated essentially from a state agency, though there was some local support for the idea. The original Wirth proposal appears to have been largely the product of two far-sighted and imaginative individuals, Wirth and Olson.

The Division of State Parks of the Conservation Department, which had commissioned the second Wirth study, held a series of meetings and discussions with local officials and citizens throughout much of the period from 1965 to 1969. There was apparently a mixed reaction in the area to the idea of a state park in the valley. In general, those who favored the proposal saw it as a good method to preserve the natural values of the valley, provide needed recreation opportunities, and perhaps bring some tourism dollars into the area. They may also have seen it as a means of preventing the Corps of Engineers proposal for a series of dams and reservoirs in the river valley.

Those who opposed the state park concept most often cited their support of this reservoir system as a major argument against the park. Some felt that the valley was not suitable for a park and that the reservoirs were needed much more for the prevention of flood problems. They also argued that the park would take in several potential gravel extraction sites on private lands and might harm the valley by bringing in too many people.

Though there was some support from local legislators and county officials, there was apparently enough local opposition to bog down the progress. By 1969 the Division of State Parks had all but abandoned the idea of a state park as originally envisioned. Instead, the concept of a linear recreational trail system in the valley had gained support and interest. In 1969, the state legislature passed a bill creating the Minnesota Valley Trail and authorized the Department of Natural Resources to:

" . . . provide a recreational travel route . . . which provides access to or passage through areas which have significant scenic, historic, scientific, or recreational qualities. . . ." When completed, this trail will follow the Minnesota River from Fort Snelling to Le Sueur. A detailed "Plan for Recreational Trails in the Minnesota River Valley" was prepared in late 1969 for the Minnesota Boating and Trails Association by a consulting firm. Information from this report was passed on to the Division of State Parks for some of the initial planning of the trail.

The Department of Natural Resources began acquiring land in the valley soon afterwards and by the mid-1970's had established several trail wayside areas. Some of these waysides were established in the area that was originally proposed for a state park. They include the Rush River Wayside near Henderson, the Lawrence Wayside near Jordan and Chaska, Trail Site Two near Chaska, and the Rice Lake Wayside between Savage and Shakopee.

There was some controversy about the acquisition of large parcels of land for these waysides. Some people felt that the Department was buying more land than was needed for trail purposes. The fact that much of the land acquired was in the vicinity of the proposed state park also upset some people.

While the Department of Natural Resources was attempting to acquire and protect certain portions of the valley, local units of government were also getting into the act. The Hennepin County Park Reserve acquired a large section of the valley adjacent to Blue and Fisher Lakes between Shakopee and Savage. This is now known as the James J. Wilkie Park Reserve. The City of Bloomington was also very active in acquiring lands along the bluffs for park purposes. Some of the other towns in the valley, most notably Shakopee, also had park areas along the river.

Yet, with all of this activity aimed at protecting portions of the valley, by the early 1970's much of the area was being threatened by industrial and commercial development. Burnsville and Savage were particularly active in attracting industrial and commercial uses in the floodplain areas. In 1969, a large flood in the valley did tremendous damage to these developments. The filling in of the floodplain continued, however, and the developments continued also. Communities south of the river had begun to grow rapidly and the need for additional road crossings was becoming a controversial topic. The population growth of the area promised to put ever increasing strain on the natural qualities of the river.

It was in such an atmosphere that the idea of greater and more comprehensive protection of the valley took root. Change in the valley was evident to almost anyone traveling across it, particularly along Interstate 35. The floodplain was being filled in with large sanitary landfills, industrial sites were springing up over a large area, and the inevitable strip development of commercial enterprises was in full swing. This change was even more obvious to the people who lived and worked in or near the valley. It was these people who finally decided to act.



- #2. Development of the floodplain, encouraged by the pressure of the commercial navigation channel stimulated citizen groups into action to preserve the remaining natural areas of the Minnesota valley. 80-532 MVR



- #3. Among other developments in the floodplain, quarries pose threats to water supplies, access and aesthetics--both visual and audio. The landfills in the background are reaching 200' above the floodplain, nearly matching the height of the natural bluffs on the north side of the river. 80-1977B MVR

The sporadic efforts to protect the natural habitat within the lower Minnesota River valley did not seem to some people to be enough to stem the tide of commercial and industrial expansion in the early 1970's. The damaging floods and landfills were enough, however, to convince a small group of citizens in the city of Burnsville that the time had come to take some action to prevent complete development of the valley.

A group of local Burnsville residents formed an organization called the Burnsville Environmental Council in the early 1970's. One of the major projects of this group was to try to prevent the issuance of permits for some landfill operations in the river floodplain in Burnsville. They were unsuccessful in their initial attempts, partially because the city council of Burnsville was apparently pro-development at that time and wanted to see industrial activity in the valley area. All of the 1,400 acres of floodplain land within the city at that time was zoned for industrial use.

In an effort to broaden support for protection of the river valley, the Burnsville Environmental Council developed a brochure entitled "The Lower Minnesota River" and distributed it throughout the area. In this booklet, the group called for the establishment of a "Lower Minnesota River National Wildlife Refuge Area". The primary objective of this action was to "... maintain an urban floodplain in its natural state, to prevent further pollution and degradation of the area and to retain a corridor of wild land in the heart of a metropolitan area."

In order to gain support for their plan, the Council tried to involve interested citizens in the nearby municipalities. Perhaps the most well organized group in the area with similar attitudes toward the preservation of the river valley was the Bloomington Natural Resources Commission. This was an advisory group to the Bloomington City Council and had been very active in a number of environmental issues in that city. They, too, had concerns over the development in the valley. Bloomington has little floodplain that is capable of supporting industry and the bluffs are closer to the river there. Because of this, the city of Bloomington had followed a policy of protecting much of the bluff areas next to the river as city park land.

Bloomington residents could still see the development occurring in the river valley in Burnsville and Savage, however, and they were concerned. When contacted by the Burnsville Environmental Council about their river protection plan, several members of the Bloomington Natural Resources Commission and other local citizens became very interested. By the spring and summer of 1973 the two groups had joined together to form an ad hoc Lower Minnesota River Committee. This group held a series of organizational meetings during the summer of 1973 and elected two co-chairpersons to coordinate their activities.

The citizen group had decided that local efforts were, indeed, inadequate to preserve the valley and they were determined to push for the establishment of a federal management program. This would take a tremendous lobbying and educational effort and they lost little time in getting to work. They began organizing local information meetings in the various towns in the valley and recruiting new members. They launched a major mailing campaign to alert state and federal legislators of their plans and invite their support. They developed and distributed informational brochures and also developed an excellent slide presentation of the lower Minnesota River valley which, incidentally, is still being used by the U. S. Fish and Wildlife Service today. The news media was contacted and several papers ran stories and editorials regarding the proposal.

Finally, they developed draft legislation for the creation of a national wildlife refuge and recreation area and sought authors for the bill. Then, Senator Walter Mondale was the chief Senate author while Congressmen Oberstar, Frenzel and Hagedorn were the prime movers of the bill in the House. Field hearings in Minnesota were held by subcommittee's of both the Senate and House in 1975 and 1976. The testimony was very largely in favor of the proposal at these two hearings. The bill finally passed the U. S. House of Representatives on September 20, 1976 and the U. S. Senate on September 24, 1976. The President signed the bill into law on October 9, 1976. After years of intense effort, the citizen group had succeeded in gaining the type of comprehensive management and protection for the valley that had been envisioned, but never quite realized, since the days of Theodore Wirth.

The signing of the Minnesota Valley Act represented over a decade of tireless public participation and undaunted commitment to a popular goal. Several citizen coalition leaders received awards in recognition of their work.

Perhaps as important as the actual signing of the Act was the establishment of a continuing process for public involvement. Those who care most about the future of Minnesota Valley's wildlife resources remain organized, as close as the telephone, and involved on nearly a day-to-day basis.

The legislation provided for dual-management of the area. The national refuge portion, about one-half of the total acreage, is to be managed by the U. S. Fish and Wildlife Service. The remainder of the area constitutes the national recreation area and is to be managed by the State of Minnesota and its political subdivisions. The law also provided funding for land acquisition and for development of a comprehensive



- #4. This photo of Bloomington Ferry shows the type of environmental restoration, signing, and fencing that is being accomplished on high visibility, newly acquired refuge lands.

80-31 MVR

management plan within three years of adoption of the bill (or by October 1979). The management plan, however, is still in the process of completion and may not be finalized until the fall of 1981. Included in this report is a copy of Public Law 94-466 and the accompanying official maps.

The refuge's first employee was Arthur S. Hawkins, Jr., who served as Acting Refuge Manager from October 1, 1978 through March 2, 1979 and received a Special Achievement Award for his efforts during the start-up period. Refuge Manager Edward S. Crozier began his assignment on March 11, 1979, after previously serving as Region 3 BLHP Coordinator, I&R Program Coordinator, and Chief of the National Planning Team for the National Wildlife Refuge System. He coordinated USFWS feasibility studies for the proposed refuge.

By late summer 1979, temporary refuge headquarters was established in a recently vacated blufftop residence at 3815 East 78th Street in Bloomington and both basic staff and equipment were ready for formally initiating refuge operations. Administrative Technician Beverly LaVine, who began work in August 1979, played a crucial role in this process, facilitating everything from personnel actions and procurement to public relations.

2. Construction and Maintenance

Development of the refuge headquarters area was a major highlight of the first full year of refuge operations. Assistant Manager (Landscape Architect/Construction-Maintenance) David Shaffer and Maintenanceman Paul Irrthum directed the complete remodeling of an historic walkout residence for refuge offices which were occupied in July 1980. Engineering Technician Bruce Blair helped design the headquarters entry, along with numerous other improvements to help create a positive image for refuge visitors. Other newly acquired outbuildings were remodeled for maintenance and storage purposes.

Other major projects included building removal and landscape restoration at the Lyndale Marina, the Bloomington Ferry Crossing and the site of the future refuge wildlife education and interpretation center. Signing, gates and environmental restoration of newly acquired lands were among the other important functions of the maintenance crew.

3. Wildlife Management

Assistant Manager Paul Schneider and Biological Technician Barbara Fischley initiated work in several areas during the first period of refuge establishment. A monitoring system for wildlife and their habitat was initiated. This system measures several different parameters on designated sites. These sites can function as control and experimental plots. Measurement of small mammals, birds, vegetation and habitat using the Habitat Evaluation Procedure (HEP) will allow us to detect the effects of time and our management.

In addition, methods were devised for counting breeding waterfowl. Brood counts are not feasible because of the extensive, heavy growth of water lily, arrowhead, and lotus. Monthly waterfowl counts were also done.

A long range management philosophies document was prepared using the opinions and feelings of a variety of interested people.

A comprehensive management planning process was devised. Although not the traditional approach, it seems most functional for Minnesota Valley because it integrates all refuge activities, gives a ten-year plan, and uses the annual work plans. It helps assure a consistent direction for refuge management.

Several proposals were prepared for additions to the refuge. These areas were either overlooked or deliberately omitted for various reasons when the refuge legislation was passed. Now they appear to be viable, highly desirable additions.

We were active on several fronts attempting to protect refuge resources from development threats. Some proposals were on neighboring lands, but some actually involved lands within our designated boundaries. We were disappointingly ineffective in dealing with these threats.

Draft hunting and trapping plans were formulated with consideration given to the multitudes of interests involved. It was a difficult task to try to devise plans that met fairly general approval. As with most compromises, the plans are acceptable to most, but optimal to none.

Cooperative farming programs were started with several farmers. The organic or biological farming plans were initiated, some successfully, some not so. A gradual phase-out of most ag lands is in progress. Preliminary evidence shows very high values for wildlife in the weedy, old fields.

Some unusual wildlife sightings were reported. These included a monk parakeet near Upgrala, an albino pileated woodpecker near the Bass Ponds, and gray foxes at the refuge headquarters. We also have unconfirmed reports of a pack of five coyotes and a bobcat at Louisville Swamp. In September 1980 we observed a flock of about 60 turkey vultures over Louisville Swamp.

4. Interpretation and Recreation

Outdoor Recreation Planners Ann Magney-Kieffaber and Ken Deaton joined Public Services Supervisor Tex Hawkins early in the year to help develop environmental education and visitor assistance and safety programs, respectively. The most important accomplishment of the I&R team during the first year of refuge operations was the development of an I&R Prospectus to guide future program implementation. Like the Flora and Fauna Management Plan, the I&R Prospectus will also be used in the development of comprehensive unit management plans following Master Plan approval.

Interpretation and recreation highlights for 1980 included completion of a new Systems 70 display and general leaflet to accompany the revised refuge slide-tape synch program; completion of a contracted environmental education assessment of the metro area, with teacher contact identified learning sites and refuge-specific materials or activities; completion of a contract refuge slide collection by Craig Blacklock and organization of a slide library with assistance from a University of Minnesota volunteer media specialist; piloting of teacher environmental education workshops at the Bass Ponds and other outdoor learning sites, as well as school outreach programming highlighted by over 3,000 student activity hours during Wildlife Week; experimental interpretive activities including birding tours, canoe excursions and ski outings; an average of one news release every other week with features in Naturalist and Volunteer magazines; piloting of micro computer applications for pre-field trip orientation at schools or visitor information and for assessing planning data as demonstrated by refuge staff at the Midwest Wildlife Conference; and numerous presentations involving local clubs, government offices and other organizations including Rotary, Chambers of Commerce, Audubon, City Councils, Sportsmen's Clubs, Minnesota Ornithological Union, Minnesota Academy of Sciences, Scientific and Natural Areas Committee of Minnesota Department of Natural Resources, Nature Centers, etc.

5. Other Activities

Several happenings during the past year highlight the national and international prominence of the refuge which is already attracting attention because of its tremendous potential as a model for urban wildlife management. Internally, the refuge hosted a number of meetings and orientation

session/tours to acquaint USFWS personnel and other government representatives with our operation. During 1980, the refuge was visited by the Deputy Director, the Associate Director for Wildlife and the Assistant Director of Operations and Budget, Washington, D. C. Senator David Durenberger visited the refuge in September and was briefed on the proposed Wildlife Interpretive Center. Local TV and newspapers covered the Senator's interaction with a local school group that happened to be involved in an environmental education activity at the site during the visit.

In April 1979 the refuge hosted Costa Rican Biologist Julio Sanchez during a two-week training program that also involved visits to Sherburne NWR and the Northern Prairie Wildlife Research Station in Jamestown. As a result of this introduction to the planning and refuge establishment process at Minnesota Valley, the Costa Rican government requested, through the USFWS International Affairs Office, that Crozier, Shaffer and Hawkins assist with the master planning of that country's first national wildlife refuge. For two weeks during January 1980 the team visited the new refuge and met with planners and administrators in San Jose, Costa Rica. Minnesota Valley Refuge has a video tape of the project, produced for Costa Rican television while the planners conducted their activities.

In September, refuge personnel from Panama, Costa Rica and Nicaragua visited the Minnesota Valley NWR as part of a training program set up by the USFWS International Affairs Office. The refuge can expect to host Latin American trainees for all subsequent programs since it was rated by participants as a valuable part of their nationwide orientation to the refuge system. Also in the fall, three wildlife specialists from Denmark visited the refuge and were guided by Hawkins to Carlos Avery and Crex Meadows Wildlife Management Areas for an introduction to state-run facilities.

B. CLIMATIC CONDITIONS

Above average temperatures and below average precipitation characterized climatic conditions in 1980 at the Minnesota Valley National Wildlife Refuge (Table 1). The valley experienced a mild winter in comparison with the severe winters of 1978 and 1979. Total snowfall was noteworthy; however, accumulations were never in excess of 5" at any one time during the year. Winter temperatures were near normal with a low temperature of only -15°F on January 9th, and only two days failed to record above zero temperatures. The river was free of ice by March 27.

Spring germination and flowering were retarded by below normal precipitation and lack of sufficient snow cover during the winter. Bluff areas along the river appeared most affected where some flowering failed to occur. Characteristic spring flooding of the Minnesota River did not occur in 1980 where the water fluctuation range at the Savage bridge was approximately 6½ feet.

Summer precipitation and temperature were near normal with a maximum temperature of 100°F occurring on July 11. The most significant climatic event of the year occurred on July 15 when a severe windstorm with winds in excess of 95 mph swept the area. Wind damage was most extensive at the Louisville Unit at the western end of the refuge where hundreds of trees were blown over. Numerous snags caused safety hazards over trails and cleanup is still in progress.

Autumn precipitation and temperatures were drought-like with precipitation well below normal. Freeze-up on the Minnesota River occurred on December 4. By the end of the year, no significant amounts of snow had fallen and the ground was snow-free.

Table 1. MONTHLY PRECIPITATION AND TEMPERATURES ¹

1980 Month	Precipitation (Inches)			Temperature (°F)			
	Total	Normal ²	Snowfall	\bar{x}	\bar{x} normal ²	\bar{x} maximum	\bar{x} minimum
January	.94	.73	12.9	15.3	12.2	23.5	7.0
February	.67	.84	8.8	15.3	16.5	23.4	7.1
March	1.12	1.68	13.7	27.3	28.3	36.4	18.1
April	.83	2.04	8.5	49.2	45.1	61.0	37.4
May	2.29	3.37	-	61.5	57.1	73.8	49.2
June	5.52	3.96	-	67.6	66.9	78.7	56.5
July	2.30	3.69	-	75.2	71.9	87.1	63.2
August	3.26	3.05	-	70.7	70.2	80.3	61.0
September	3.68	2.73	-	59.5	60.0	69.2	49.8
October	.66	1.78	Trace	45.1	50.0	54.2	36.0
November	.26	1.20	.9	36.6	32.4	45.5	27.7
December	.24	.89	2.8	19.8	18.6	27.4	12.2
				EXTREMES		100.0	-15.0
Total	21.77	25.96	47.6				

1. This information was collected by the National Weather Service at the Minneapolis-St. Paul International Airport, approximately .5 miles from refuge headquarters.
2. Normal based on a 30-year normal (1940-1970) by the National Weather Service.

C. LAND ACQUISITION

1. Fee Title

In 1976 the U. S. Congress appropriated 8.3 million dollars from Land and Water Conservation Funds for acquisition of lands in the Minnesota Valley National Wildlife Refuge with land acquisition to be completed by 1983. One hundred and thirteen (113) publicly and privately-owned tracts of land ranging from 1842 acres to .1 acres are involved in the acquisition consisting of approximately 6488.4 acres. Public waters and the Black Dog Lake Unit make up the difference for a total of 9310 acres.

At this time, 59 of the 113 parcels of land have been acquired totaling 3,184.9 acres or 53% of total fee title acquisition. Five million, four hundred seventy-three thousand, four hundred dollars (\$5,473,400) or 66% of acquisition funds have been paid out to landowners with approximately 33% of total funds remaining. Table 2 gives the annual breakdown of LWCF appropriations.

Several parcels of the remaining land (totaling 480 acres) are owned by county and municipal governments which prohibit using money from the LWCF for their acquisition since they are already in public ownership. If this acreage can be included in the refuge without fee title acquisition, only 2,822 acres remain to be acquired. Table 3 indicates acreage acquired by refuge unit and Figures 1, 2, 3 and 4 show amount of acreage acquired. Table 4 shows acquisition status.

2. Easements

A management agreement from Northern States Power Company of 1,306 acres for Black Dog Lake is currently being negotiated. Negotiation for the agreement is in its second year between the Field Solicitor and attorneys for NSP with a final agreement expected sometime this year. Under the agreement, the USFWS will post boundaries, patrol, census and carry out limited environmental education and wildlife management activities.

3. Other

Nothing to report.

Table 2. ANNUAL BREAKDOWN OF LWCF APPROPRIATIONS

Fiscal Year	Amount
1977	\$75,000
1978	7,731,000
1979	400,000
Total	8,206,000
1980 (withdrawal)	-1,748,000
Total	6,458,000
1981	1,940,000
Total	\$8,398,000

Table 3. ACREAGE ACQUIRED BY REFUGE UNIT

Unit	Ultimate Acreage	% of Total Area	Acres Acquired	Acres Remaining To Be Acquired	Existing Public Land & Water
Long Meadow	2461.0	26.4	694.0	1246.0	521.0
Bloomington Ferry	384.0	4.2	160.9	221.4	1.8
Upgrala	2442.5	26.2	219.1	1040.7	1182.7
Chaska	590.5	6.3	270.1	197.7	122.6
Louisville Swamp	2125.5	22.9	1840.8	116.3	168.4
Total	8003.5	86.0	3184.9	2822.1	1996.5
Black Dog Lease	1306.0	14.0			
Grand Total	9309.5	100.0	3184.9	2822.1	1996.5

Table 4. ACQUISITION STATUS

Lands	Acres	Percent
Acres Acquired	3184.9	34.2
Existing Public Land & Water	1996.5	21.4
Black Dog Lease	1306.0	14.0
Total	6487.4	69.7
Acres Remaining to be Acquired	2822.1	30.3
Grand Total	9309.5	100.0

MINNESOTA VALLEY NATIONAL WILDLIFE REFUGE

DAKOTA & HENNEPIN COUNTIES, MINNESOTA

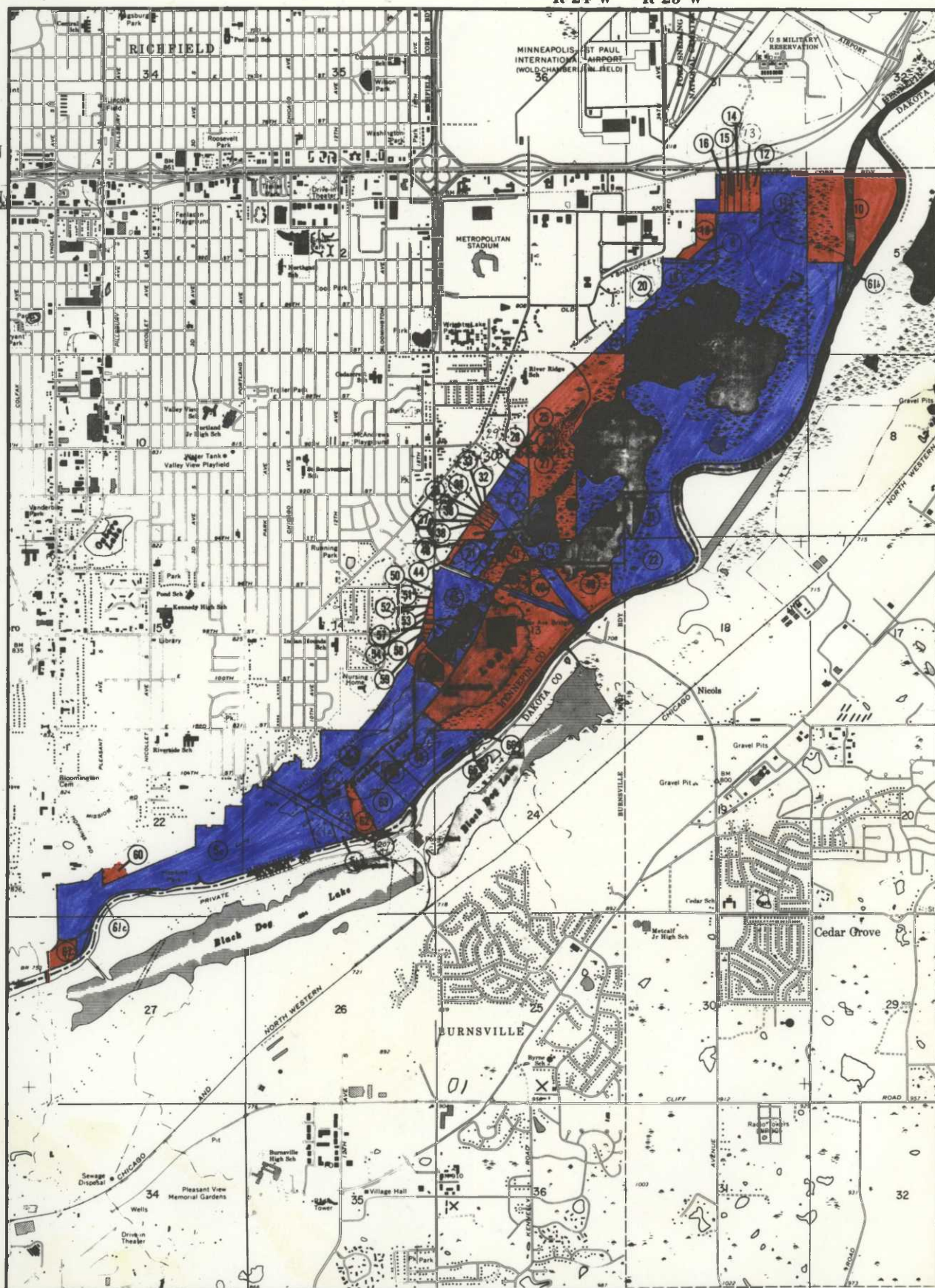
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DEPARTMENT OF THE INTERIOR

UNITED STATES
FISH AND WILDLIFE SERVICE

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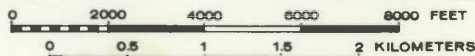
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SUPPLIED BY USGS

R 24 W R 23 W
FOURTH & FIFTH PRINCIPAL MERIDIAN



True North
Mag. N. 51/2°
MEAN
DECLINATION
1965

TWIN CITIES, MINNESOTA APRIL 1977

3R MN. 839 402

MINNESOTA VALLEY NATIONAL WILDLIFE REFUGE HENNEPIN & SCOTT COUNTIES, MINNESOTA

2

UNITED STATES
DEPARTMENT OF THE INTERIOR

UNITED STATES
FISH AND WILDLIFE SERVICE

R 22 W R 21 W

R 21 W R 24 W

T 116 N

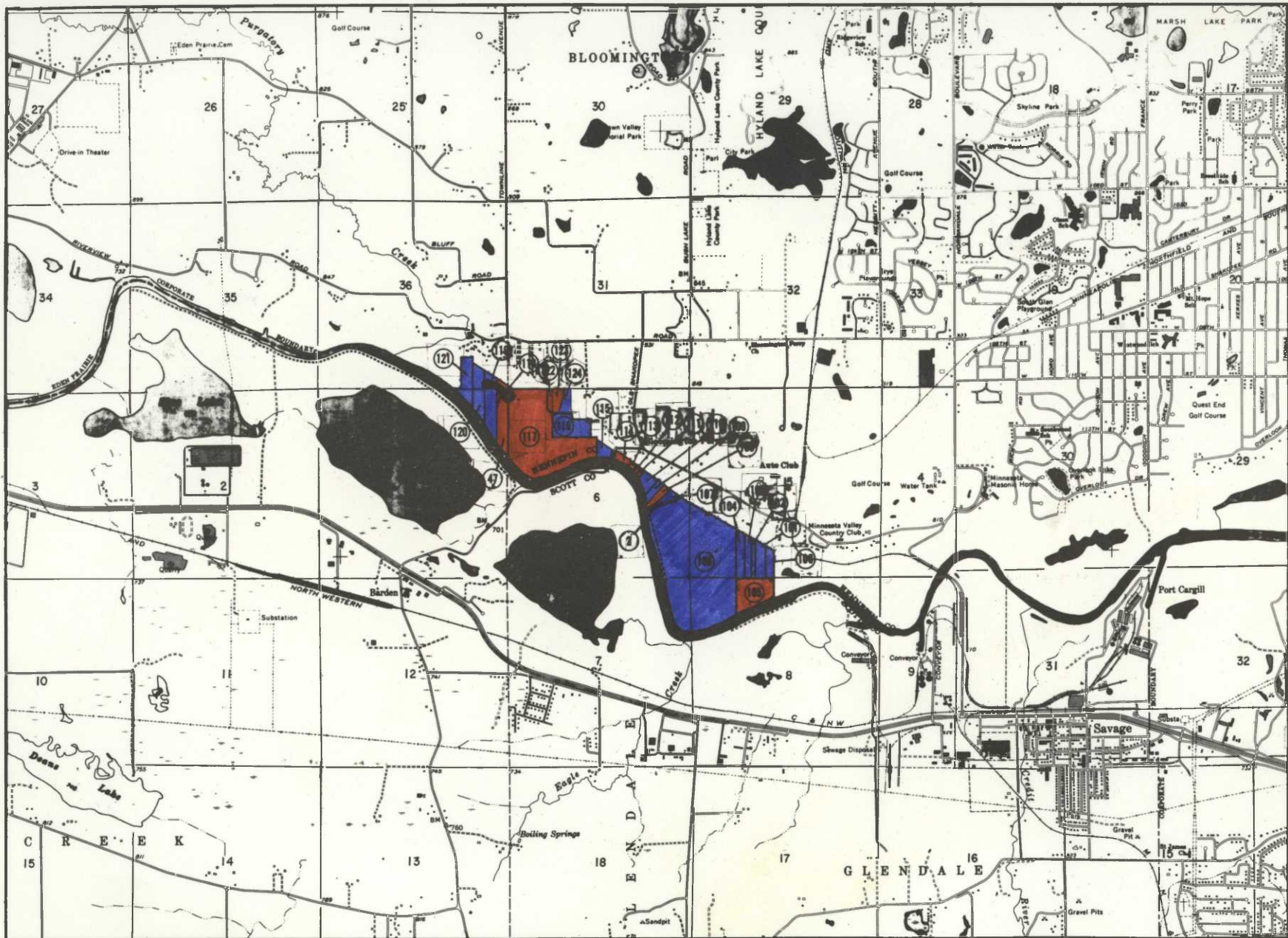
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23

FIGURE C.2

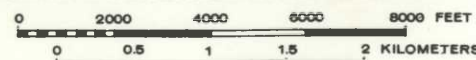


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SUPPLIED BY USGS

R 22 W R 21 W

R 21 W R 24 W

FOURTH & FIFTH PRINCIPAL MERIDIAN



TWIN CITIES, MINNESOTA APRIL 1977

True North
Mag. N. 5/2°
MEAN DECLINATION
1965

MINNETA VALLEY NATIONAL WILDLIFE REFUGE

CARVER, HENNEPIN & SCOTT COUNTIES, MINNESOTA

UNITED STATES
DEPARTMENT OF THE INTERIOR

R 23 W R 22 W

UNITED STATES
FISH AND WILDLIFE SERVICE

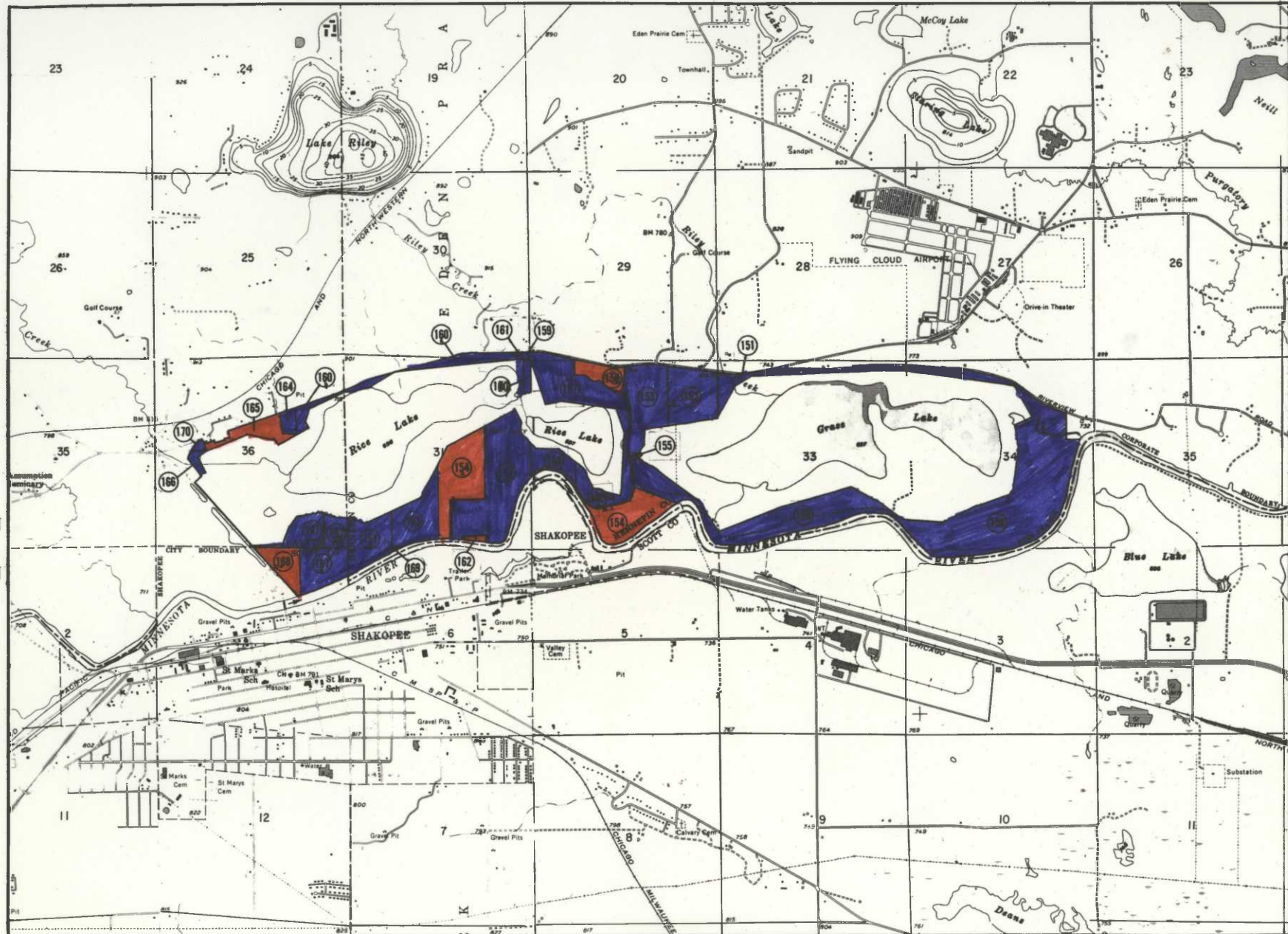
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T 116 N

T 115 N

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SUPPLIED BY USGS

R 23 W R 22 W

FOURTH & FIFTH PRINCIPAL MERIDIAN



True North
Mag. N. 51/2°
MEAN DECLINATION
1965

TWIN CITIES, MINNESOTA

APRIL 1977

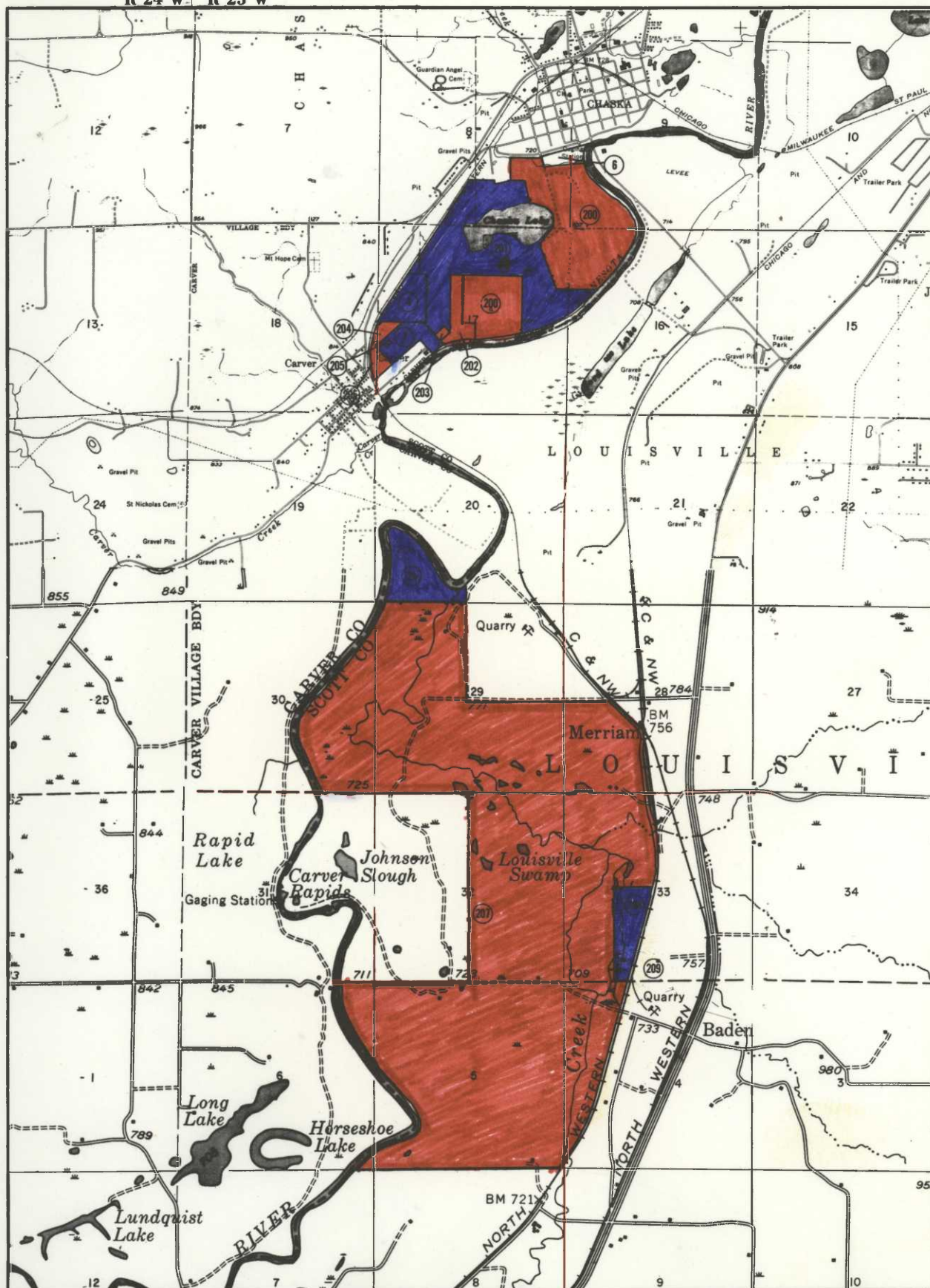
FIGURE C.3

MINNESOTA VALLEY NATIONAL WILDLIFE REFUGE
CARVER & SCOTT COUNTIES, MINNESOTA

UNITED STATES
 DEPARTMENT OF THE INTERIOR

UNITED STATES
 FISH AND WILDLIFE SERVICE

R 24 W R 23 W



T 115 N

T 115 N

COMPILED IN REALITY FROM INFORMATION
 SUPPLIED BY USGS

FOURTH & FIFTH PRINCIPAL MERIDIAN



True North
 1/2°
 Mag. N.

MEAN
 DECLINATION
 1965

TWIN CITIES, MINNESOTA APRIL 1977

3R MN. 839 402

D. PLANNING

1. Master Plan

The master planning process being used for the Minnesota Valley Project is similar to that used by the U. S. Fish and Wildlife Service throughout the National Wildlife Refuge System. The first Interim Report on the Minnesota Valley NWR Master Plan can be referred to for a detailed description of this process; but, briefly, the ten stages involved include the following:

- (1) clarifying project goals
- (2) defining a preliminary list of activities to be included in the plan for the project area
- (3) completing a resource inventory
- (4) establishing location criteria and space requirements for selected activities
- (5) developing suitability maps for selected activities
- (6) setting objective levels for how much of each activity to plan for in the project area
- (7) identifying and resolving any conflicts regarding the resource's capacity to accommodate these various objective levels
- (8) developing alternative plans
- (9) evaluating alternatives and selecting a final land-use plan
- (10) writing the final master plan and EIS

This planning process is designed to ensure that environmental considerations are taken into account from the very beginning so that a plan is developed which will balance the needs of man and wildlife in response to the physical resource.

In FY 1979 a total of \$500,000 was made available to contract with consultants to prepare a refuge-recreation area master plan. Unfortunately during the consultant selection process the 2nd choice consultant submitted a formal protest causing a long delay and eventually forcing the formation of an "in-house" planning team. This and the need to develop baseline information, computerize data processing, public involvement and technical reports, extended the planning process into 1981.

At the time of the first Interim Report in January 1980, the third step of this process--that is, the collection of all pertinent natural and cultural resource data--had been begun but was not yet completed. Since that time, all the raw data pertinent to the project has been inventoried, and some sets of combined data useful for planning purposes have been developed with the aid of the computer.



#5. Minnesota Valley National Wildlife Refuge Planning Team takes a break at the bluff site of the proposed wildlife interpretive center. Long Meadow Lake is in the background. Left to Right - Nancy Balderston, Bruce Blair, Gary Saxton, Ray Norrgard (DNR), Kathleen Wallace (DNR), Jim Dustrude (DNR), Ed Crozier, Mike Timmons, John Tietz and Dave Lindberg.
79-381 MVR

Resource data collected for this project has been digitized for computer use by Environmental Systems Research Institute (ESRI) of Redlands, California and is now stored at the Minnesota Land Management Information System (MLMIS) offices. Natural resource data (soils, vegetation, slope, and wetland type) was manually composited to create an Integrated Terrain Unit Map (ITUM). Each unit of this ITUM map reflects a particular combination of the four data types and is based on the theory that natural systems occur in predictable combinations. ITUM mapping allows for the elimination of "sliver errors", caused by improper alignment of overlays or mapping inaccuracies on a component map. Once entered in point, line, and polygon form, the resource information will be converted to half-acre grid cells useful in the planning process.

The major application of this data will be the measurement of environmental impact by the various alternatives. Model alterations and map revisions will be able to be made quickly and variables weighted differently - options not readily available in a manual process. It is hoped that the data now stored at MLMIS will also be invaluable in the future management of the refuge. By using a remote refuge terminal via telephone hook-up, analysis of the effects of different management strategies could be greatly simplified. These computer capabilities could also add an interesting dimension to environmental education programs at the refuge.

By the end of 1980 three alternative plans had been prepared and presented in a series of meetings to the participating agencies and to the public in two workshops held in December of 1980. The planning team is now preparing the selected alternative which should be near completion in the next few months.

2. Management Plan

A Flora and Fauna Management Plan and I&R Prospectus were drafted in 1980. Also drafted were hunting, trapping, sign and safety plans. All these documents were exposed to public review and were routed through Area and Regional Offices for review and approval. They will be developed in three phases that supplement one another. Briefly:

PHASE I is a broad, conceptual plan based heavily on current policies and philosophies nationally, regionally and locally. The planning team was instrumental in development of this phase, which is currently out for review.

PHASE II is a ten year mid-range plan. It is site and action specific, yet flexible in timetable. It would use acetate overlays on Master Plan base maps to show compatibility with and progress toward Master Plan objectives. Project description

worksheets would be included. PHASE II would also incorporate all refuge functions for a single management unit into one compatible package.

PHASE III is the Annual Work Plan. It is very site and action specific. It would also use acetate overlays on Master Plan base maps. This phase would include all the work items normally covered in the present narrative portion of the AWP.

Phase I is completed because its progress could parallel Master Plan formulation. However, completion of Phases II and III will require a completed Master Plan and will follow it closely.

3. Public Participation

To date, the Minnesota Valley planning process has involved a significant amount of public participation and it will continue to do so throughout the final stages of planning. As shown in the Appendix, over 75 meetings have been held so far: some with special interest groups, some with local or regional government representatives, and some--including a series of small workshops--with the general public.

The first series of public meetings held in January 1980 focused on the second step of the master planning process; that is, the determination of which activities should be managed for in the Minnesota Valley National Wildlife Refuge/Recreation Area/Trail. Over 200 people attended and, after being given an update on the project, they were asked to rate a tentative list of activities as acceptable or unacceptable for the refuge or recreation areas. Small groups of six to ten people met to develop a list of special concerns and to attempt to reach consensus on some of the major issues raised. A group spokesperson then presented a summary of the group's views to the planning team and to the meeting-at-large.

Some of the major issues that surfaced during these public meetings related to trails, hunting, preservation and enforcement. For example, concern was expressed as to how many trails would be acceptable in the valley and what types of users would be allowed on them. There were also questions raised regarding how much hunting should be accommodated and how much protection would be necessary to preserve the valley's unique archaeological, historical, and biological sites. Many citizens also stressed that adequate law enforcement must be available and that opportunities for environmental education, multiple use of the study area, and wildlife management should be balanced. The tremendous spirit of cooperation among the participants at these meetings was obvious and appreciated.



- #6. The small work group sessions gave all participants an opportunity to voice their concern and record them for group discussion purposes. In this photo, Vibrant Films is shooting scenes for use in the refuge film.

80-3284 MVR

The second series of public meetings for review of the master plan were held December 17 and 18. Three alternative concept plans prepared by the planning team from the computerized resource inventory and suitability maps were presented to the public during the two meetings. Review and comments were solicited from the general public at these meetings using the nominal group process and from local government agencies at separate presentations prior to the public meetings.

The first public meeting held in Bloomington was relatively quiet although eighty-five people registered. A number of excellent ideas were generated and feedback was generally positive. The greatest concern was voiced over our hunting and trapping management plans which have been available for review during December and were available through January.

The meeting held in Shakopee was attended by a vocal pro-hunting and trapping constituency and a multitude of other interest groups and representatives (125 in attendance). At one point in the meeting, a member of the audience interrupted the presentation to give a prepared speech in personal opposition to the hunting and trapping management plans. After his opinion was aired, the planned format continued with participants breaking up into work groups. This generated a number of excellent suggestions and observations. As a result of the public meetings, the refuge staff revised the hunting and trapping plan drafts and made them available for review again in January.

In addition to the public workshops, there have been countless meetings held with local, state and federal agency representatives. These meetings have involved contacting people with professional expertise who could help verify the inventory data and otherwise augment the information available to the planning team. Discussions with local officials also focused on finding out what plans their communities had for recreational activities near the project area. This coordination has helped the planning team determine how the national wildlife refuge/recreation area can help meet local communities' needs.

The planning team is continuing to meet with state, federal and local officials. There will be additional public meetings as well as periodic news releases which will provide up-to-date information regarding the planning project. A draft master plan and environmental impact statement will be released for additional review to all interested parties. These review comments will then be analyzed and incorporated into the project's final Master Plan and Environmental Impact Statement in 1981.

4. Compliance with Environmental Mandates

The National Environmental Policy Act of 1969 (NEPA, Section 102(2)(c)) mandates that all federal administrative organizations investigate the environmental impact of their own proposed actions. Accordingly, the Fish and Wildlife Service normally requires the preparation of an Environmental Impact Statement (EIS) whenever a new refuge is established. The obvious goal of NEPA and its implementing document, the EIS, is to foster federal actions that protect, restore, and enhance the environment. To ensure that these federal actions are also consistent with other federal, state and local plans, the environmental review process associated with the development of the EIS also requires a significant amount of public involvement.

To best accomplish these goals, the NEPA process must be integrated with the master planning process, and that is exactly what has been done in the case of the Minnesota Valley Refuge/Recreation Area project. The two planning processes have been coordinated from the outset to ensure that all procedures run concurrently and that sound environmental principles and reasonable alternatives are incorporated in both products--the Master Plan and the EIS.

In fact, sections of the EIS, particularly the analysis of alternatives, will parallel the FWS Master Plan analysis. The EIS alternatives analysis will include a determination of what types of recreation and wildlife activities (e.g., hiking, wildlife observation, shorebird production, etc.) should be considered for the project area and how much of each should actually be included. These determinations are based in large part on the detailed inventories of the valley's natural and cultural resources, on research conducted by individuals, groups and agencies pertaining to recreation and wildlife, and on information gathered at public meetings.

In addition to the Master Plan EIS development, the refuge staff prepared environmental assessments on the major O&M projects including development of the refuge headquarters area, the Bass Ponds rehabilitation project, the Louisville parking area development, the Louisville dike/road rehabilitation project, several floodplain environmental restoration projects and two proposed water development projects. These environmental assessments were submitted to the Area and Regional Offices for their review and approval before the field work could actually begin.

5. Research

There were no full-scale FWS research projects conducted at the refuge in 1980 aside from the management monitoring discussed in the habitat section of this report, but there are numerous amateur studies being

conducted by hobbyist naturalists in the Minnesota valley. Their information and knowledge is frequently useful. As time goes on, we are able to direct these and some university studies more toward refuge management needs.

Although not a part of normal refuge operations, a great deal of data was gathered during preparation of the refuge Master Plan. This data was gathered by private contractors and by FWS and DNR personnel in cooperation with other Federal, State and local agencies. Following are brief descriptions and comments on some of the studies.

Dr. Dwain Warner delivered a biological inventory of the valley. The data was gathered in one year, 1979, which was an unusual flood year. It includes a generalized vegetation map, bird transect data that attempts density estimates, small mammal results, muskrat studies, and some miscellaneous data. There were, however, no marsh interior transects. This is, no doubt, the best data available on valley wildlife, yet it is subject to question because of the unusual and only year in which it was gathered.

Bill Minors performed a detailed vegetation survey of the valley. The detailed maps he developed were later consolidated into only a few habitat types to better facilitate master planning.

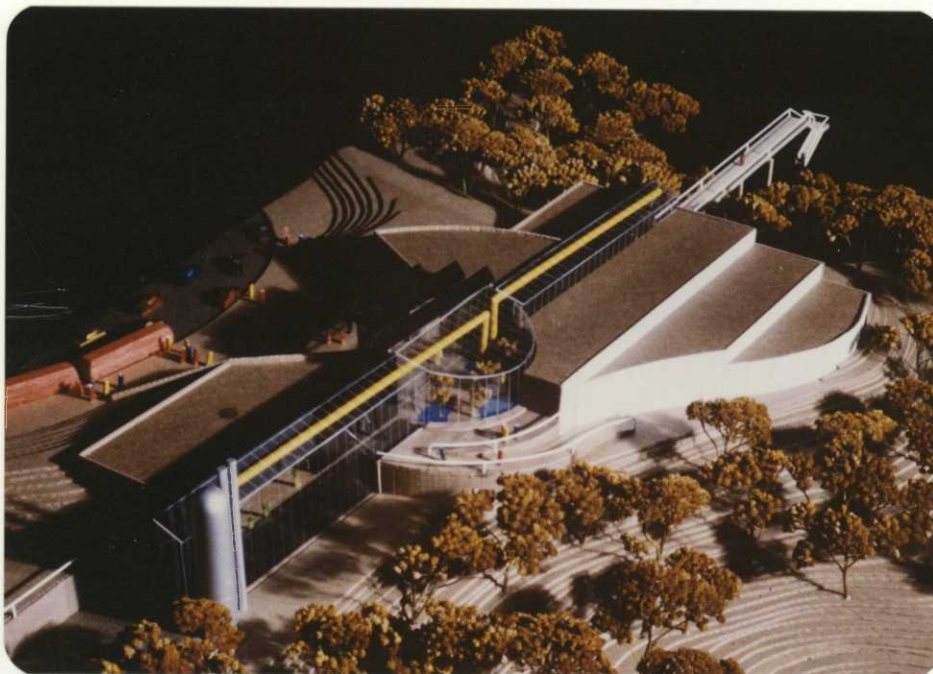
To ensure that archaeological and historical sites were identified and considered in the location and development of recreational trails, waysides, etc., the FWS contracted for a field investigation and literary search by Archaeological Field Services, Inc. A two-volume report, "A Cultural Resources Record Check and Archaeological Investigation of the Minnesota River Valley Refuge Lands" documented known historical and archaeological resources of the study area. Information obtained through this process varied greatly from site to site in the degree of quality and detail. The investigation also included field sampling 10% of refuge lands for potential archaeological sites. This survey, though small, did indicate that potential sites could be found in (a) bluffs, (b) slopes and (c) floodplain forest and rivers edge.

Normal Chemical performed a hydrology study of valley waters. This study was very poorly done and was not accepted as satisfactory. It does contain some information on aquatic plants and invertebrates and other parameters that may have some use.



- #7. Long Meadow Lake is an escape to another world in Bloomington. It lies directly below the blufftop site of the visitor center, but within minutes of downtown Twin Cities, the airport, mass transit and the I-494 strip development of hotels and entertainment facilities.

80-57 MVR



- #8. Architects model of proposed visitor center to be located on the blufftop near current headquarters overlooking Long Meadow Lake. The design has a "high tech" look because of the energy conservation features.

80-3607 MVR

Other data gathered included soils, topography, wetlands, land use utility networks, zoning, land ownership, rights-of-ways, and other information needed to plan a wildlife refuge.

6. Visitor Center Design

In July 1980 an agreement was signed between the U. S. Fish and Wildlife Service and Ellerbe Associates of Minneapolis for the development of schematic design for the future refuge wildlife interpretation and education center.

The project was approached within the architectural firm as a design competition with a cash reward for the winning entry. Selected from ten competing concepts--structures ranging from totally underground to protruding from the bluff--the winner utilized the south facing blufftop to good advantage for possible solar heating and a striking panoramic view of Long Meadow Lake.

Included in the schematic design booklet is a series of exhibit drawings and a narrative that conveys the interpretive essence of what could become the nation's primary facility conveying the importance of urban wildlife management to large numbers of people who don't ordinarily visit wildlife refuges.

The design work on the Minnesota Valley wildlife interpretation and education center, as mandated in the refuge establishing legislation and funded through the Minnesota Valley planning appropriations, was completed in December 1980. The building is now ready for detail design and construction when development finally becomes available.

E. ADMINISTRATION1. Personnel

The refuge's first "official" staff member was Arthur S. Hawkins, Jr. (Tex) who served as Acting Refuge Manager from October 1978 through early March 1979. He conducted refuge business while officing at the Twin Cities Area Office in St. Paul.

Edward S. Crozier became the first refuge manager of Minnesota Valley National Wildlife Refuge on March 11, 1979. After establishing temporary refuge headquarters in Bloomington, the hiring of temporary and permanent staff began. A total of 8 permanent employees are stationed at the refuge. Of this total, three are seasonal appointments (50 weeks) and five are permanent full time. Gary Saxton and Bruce Blair were among the first temporary employees to be hired in early June of 1979. Since that time several laborers and biological aids have come and gone.

Listed below are the employees who are or have been at Minnesota Valley Refuge:

Permanent

Edward S. Crozier, Refuge Manager	GS-13	3/11/79	-
Arthur S. Hawkins, Jr., Asst. Refuge Manager, Public Use	GS-11/12*	10/78	-
L. Paul Schneider, Asst. Refuge Manager, Wildlife	GS-9**	8/13/79	-
David M. Shaffer, Landscape Architect/Maintenance	GS-12	9/9/79	-
Beverly A. LaVine, Administrative Technician	GS-5	8/26/79	-
Ann Magney-Kieffaber, Student Trainee	GS-4	8/20/79	9/20/79
Ann Magney-Kieffaber, Outdoor Recreation Planner	GS-5	1/6/80	-
Kenneth A. Deaton, Outdoor Recreation/LE	GS-9**	3/23/80	-
Paul F. Irrthum, Maintenance Worker	WG-8**	3/23/80	-

*Promotion to GS-12 (8/24/80)

**Seasonal, 50 weeks

Temporary

Bruce B. Blair, Engineering Technician	GS-5	6/6/79	-
Joel S. Felton, Laborer	WG-2	7/6/79	7/11/80
Barbara Fischley, Biol. Tech. (Wldfe)	GS-5	9/16/79	6/11/80
Chuck A. Hibbs, Laborer	WG-2	11/18/79	11/14/80
Mitchell House, Laborer	WG-2	10/19/80	1/9/81
Steven Kittelson, Biol. Aid (Wldfe)	GS-4	5/4/80	1/16/81
Marlin J. Menke, Carpenter	WG-10	12/2/79	9/5/80*
Mark D. Nelson, Biol. Aid (Wldfe)	GS-4	5/4/80	8/22/80
Randall E. Pederson, Biol. Aid (Wldfe)	GS-4	4/18/79	8/79
Randall E. Pederson, Laborer	WG-2	10/19/80	-
Frank Picos, Laborer	WG-2	10/19/80	-
Gary Saxton, Park Technician	GS-5	6/3/79	9/28/79
Mark Soller, Carpenter	WG-9	12/2/79	3/14/80
Gary Stelzner, Laborer	WG-2	7/16/79	9/20/79
Mark Van Every, Biol. Aid (Wldfe)	GS-4	5/29/80	8/22/80
Michael Vandelac, Laborer	WG-2	10/19/80	-
Gary Wray, Laborer	WG-2	10/19/80	-

*Last work day was 5/2/80.

2. Funding

Minnesota Valley NWR was first funded for operation and maintenance in FY 1979. The original concept was to begin the O&M funding at a level adequate to immediately provide the basic start-up services and improvements as expected by the waiting public at this high profile urban area. Since the refuge is new, there are immediate high cost tasks that are not present on long-established refuges such as environmental restoration of newly acquired lands and installation of basic wildlife management and public use support facilities. Costs are further magnified by the urban location which necessitates doing things in a more costly manner to meet the high local standards. Unfortunately, this situation is not well understood or appreciated and there is a constant struggle to maintain the O&M budget at an acceptable level. The following recap of funding events illustrates that difficulty.

Fiscal Year 1979

New O&M funding which came to the region for Minnesota Valley NWR	\$374,000
Amount reprogrammed to the Minnesota Wetlands Complex for one year only	-100,000
Total amount available to the refuge in FY 1979	\$274,000

Fiscal Year 1980

Increase to Minnesota Valley from Minnesota Wetlands Complex	+100,000
Increase from the RO to cover area-type activities performed by Dave Shaffer, Landscape Architect	+ 15,000
Total amount available to Minnesota Valley at the beginning of FY 1980	389,000
Decrease in initial FY 80 allocation as a result of decrease in regional base	-11,000
Addition of Forest Disease Control Funds	+ 9,800
Revised FY 1980 allocation	\$387,800

Fiscal Year 1981

Total amount available to Minnesota Valley at the beginning of FY 1981	\$414,000
(Included increased O&M funding provided in the Migratory Bird Program Advice for new lands)	+(73,000)
(Included decrease from Minnesota Valley to RO Planning per agreement at the time the Ellerbe & Associates contract was awarded). This amount will be restored to Minnesota Valley in FY 1982)	-(22,000)

Fiscal Year 1981 (cont'd)

(Included reprogramming of \$15,000 for one year only to other Region 3 field stations for I&R)	-(15,000)
Reprogramming to fund Area Landscape Architect expenses	- 15,000
Reprogramming to fund new overhead costs in Central Office	- 3,000
Reprogramming to fund pay increases at Regional Office (cancellation of engineering job orders and equipment purchases)	- 37,000
Addition of forest disease control funds	+ 14,000
Total at time of writing this report	\$373,000

3. Safety

Although the station Safety Plan has been prepared, the safety program at Minnesota Valley NWR is still developing. As the refuge staff acquires new machinery and becomes involved in new tasks, supplemental safety training becomes essential. An example of this being the chain saw certification class taught at Minnesota Valley as the need arose to clear some trees from refuge lands.

Safety meetings are held once a month with pertinent topics aimed at the needs of refuge personnel. Some of the topics for the past year included: emergency first aid, boating and canoe safety, and working with machinery. When possible, outside people were brought in to give the presentations.

Minnesota Valley personnel experienced two accidents in 1980, both were minor. One of the maintenance men sprained a thumb and the refuge boat and trailer were bumped by another vehicle while in transit from another refuge.

To help alleviate unexpected accidents at the refuge, safety check sheets are prepared prior to each new project being undertaken. Hopefully, this will let the crews anticipate potential problems that may arise from each project.

Regional safety personnel have been working closely with refuge staff personnel in reviewing hazardous conditions that have been inherited as more refuge land is acquired. This procedure will be perpetuated until the designated lands have all been acquired. Cooperation with the Regional Safety Office has been excellent. The refuge staff appreciates their quick response to the need for field checks of safety problems.

4. Technical Assistance

The major technical assistance effort was the Costa Rican Refuge Master Plan project described in the highlights section (A.5). On other occasions the refuge staff assisted local communities on wildlife matters which were very minor and involved only short field visits and verbal consultations. Some technical assistance requests at the local level must be approached with caution as it is easy to become drawn into local land use controversies. Participation to protect non-refuge wildlife habitat is a worthy objective, but it must be measured against the political gains or losses on bigger issues involving the refuge proper.

David M. Shaffer, the Minnesota Valley Refuge Landscape Architect, also assists other refuges and wetland offices within the Twin Cities Area Office with landscape architectural services. Following is a list of these services:

Agassiz

Sited the proposed housing units and prepared building concept plans.

Provided technical assistance through the design and construction phases of the new maintenance complex.

Horicon

Prepared site plans for upgrading the existing headquarters area.

Assisted contracted landscape architects in doing landscape plans for several sites.

Provided construction details for the new goose-viewing area.

Necedah

Prepared site plans for the new visitor parking lot.

Prepared site plans and construction drawings for the new headquarters layout which included moving in two additional buildings.

Assisted the manager and architect in redesign of the existing office.

Rice Lake

Sited and assisted engineering in design of a new oil house.

Provided technical assistance to the manager and field staked a new road alignment on the west end of the refuge.

Sherburne

Designed and prepared construction drawings for a handicap ramp for the old school house.

Provided gate construction details.

Tamarac

Evaluated and made recommendations for safety problems on the new auto tour route.

Provided technical assistance for the construction of the new office/visitor complex.

Trempealeau

Provided assistance in the evaluation and design of the new auto tour route and assisted Engineering in development of construction documents.

Upper Mississippi

Half Moon Landing - Provided assistance to refuge staff in interpreting design plans, field staked the layout and provided assistance through the construction phase.

Goose Island - Designed and redesigned the proposal which has been delayed because of archaeological findings.

Verchota Landing - Prepared preliminary designs and provided the Regional Office with detail sketches for Corps of Engineer permits.

Savanna District - Prepared site development plans for the maintenance area and assisted Engineering with preparation of construction drawings for gas pumps and delineators.

Spring Lake Fisherman Access - Prepared site designs and assisted Engineering in construction drawings.

Spring Lake Visitor Center - Prepared a development program, preliminary site plan and coordinated with refuge staff, I&R, State and other officials.

Minnesota Wetlands

Fergus Falls - Prepared a site plan for the new maintenance facility area and prepared detailed plans for the service yard and gas pumps.

Litchfield - Analysis of six sites for determining the location of the maintenance complex and prepared site plans and construction drawings for the selected site.

Benson/Morris - Evaluated several sites for locating the new office/maintenance complex. Prepared a development program and site plans for the total complex and developed conceptual plans for the maintenance building. Also assisted engineering in site construction details.

Detroit Lakes - Revised the development plans to reflect remodeling the current office inside of building a new office/visitor complex and prepared a complete set of site construction drawings. Further developed conceptual plans for remodeling the office and assisted the architectural draftsman in preparing plans for Engineering's use.

5. Other Items

Physical Developments of Potential Threat to the Refuge - During the course of developing the refuge, there have been many proposals for various developments on and/or adjacent to refuge lands, either existing or designated. These proposals represent highly sensitive areas of involvement on our part. Many pose direct and indirect threats to the refuge yet they are mostly on private land. We are not in any position, nor do we have the right, to dictate to private landowners how they shall manage their lands. We must be prepared to put our money where our mouth is if we want to limit development of adjacent lands.

The tact we are generally pursuing at this time is one of contributing to knowledgeable decisions on the parts of the local governing bodies. We have done this by defining impacts as we see them, reviewing environmental assessments and comprehensive plans, preparing an assessment, testifying before city councils and commissions, county boards, and the Metropolitan Council. Since we cannot buy development rights to these adjacent lands, we strive instead for informed decisions.

Additionally, we have requested, along with numerous other groups, that the state designate the valley as a Critical Area. This would help achieve a more comprehensive consideration of actions affecting the valley.

Following are descriptions of some of the major actions we have dealt with:

- Astleford Construction Company had proceeded to install sewers in preparation for commercial development in a wetland south of Black Dog Lake, but the Corps permits had not been obtained. The U. S. Army Corps of Engineers then stepped in and through their permit process have stalled Astleford's work for over a year. In addition, we learned that the wetland contained a rare perched bog or fen. We have proposed the site as an addition to the refuge, but that approval will not be obtained until the Master Plan is approved. At such time we could conceivably purchase the site. The extreme lethargy of the permit process has been an embarrassment to us. Also, conflict of interest looks possible when the USFWS opposes the permit, denial of which would lower the land's value considerably.

- The Shiely Company purchased a large tract of land adjacent to Louisville Swamp. They are presently excavating the mining of a silicious sand used to boost production in waning oil wells. Our concerns were with poorer access, visual and audio aesthetic impacts, and the fact that they also purchased a small tract of designated refuge lands (50 acres) so that they could pump water from Louisville Swamp proper. After much interaction by all involved, the DNR is issuing a permit to appropriate water only during flood stage and to pump well water so long as it did not negatively affect other users.
- The City of Bloomington informed us that they were going to build a 60" storm sewer line down the spring-fed creek to the USFWS-owned Bass Ponds and into Long Meadow Lake. We told them they would need to apply to us for a right-of-way which they did in effect. Ms. Barbara Fischley prepared an environmental assessment in which she discussed their proposal and others that we conceived. The city then used the assessment as a basis to hire consulting engineers to examine the feasibility of the alternatives. It now looks as if we will see a greatly modified plan that is much more considerate of refuge impacts. We feel that although the assessment was time consuming, it was also extremely effective.
- For many years it has been planned to replace the County State Aid Highway 18 bridge (Bloomington Ferry). The new crossing is presently limited to several alternatives, each of which would affect our Bloomington Ferry Unit in some way. We are cooperating with Ecological Services on this project. We do not intend to oppose the crossing, but it will behoove us to support the most environmentally acceptable of the feasible alternatives. Adequate mitigation is also an important consideration.
- Control Data Corporation has proposed and received preliminary approval for a six-story, 1/3 mile long condominium-office complex built into the Bloomington bluff overlooking the Bass Ponds and Long Meadow Lake. Our concerns center on soil erosion and aesthetic impacts. Our involvement was active and was aimed at adequate consideration of the impacts before any decisions were made. We were partially successful in that an assessment has been prepared prior to final approval of the site plan. Our biggest disappointments though are that this sets a precedent for bluff development in Bloomington.

- Northwest Airlines proposed a corporate headquarters for land they own next to our proposed interpretive center site and on land inside the designated boundary of the refuge and the only bluff land proposed for refuge acquisition. Their initial plans included a multi-story office built into the bluff, boardwalks on the marsh below, and a parking ramp. There has been much controversy because they are somewhat short of land above the 760 msl elevation--the normal limits to buildings in Bloomington. Hence we have been pressured into considering a land exchange, and the Minnesota Department of Transportation has been pressured into redesigning a complex I-494 interchange. As of this date a land exchange is not possible and Mn/DOT is proceeding with condemnation. An alternate site was available to the west of refuge headquarters but NWA refused to consider it seriously. Bloomington is expected to approve the proposal.

Special Awards

- Arthur S. Hawkins, Jr. (Tex), Assistant Refuge Manager, Public Use, received a SPECIAL ACHIEVEMENT AWARD for outstanding performance during the period October 1978 to March 1979. He was the only employee of the newly established refuge.
- Beverly A. LaVine, Administrative Technician, received a SPECIAL ACHIEVEMENT AWARD for her work in establishment of the administrative program at the refuge.
- Certificates of Appreciation have been produced to honor those individuals involved with refuge activities. Marialice Seal, co-chairperson of the Lower Minnesota Valley Citizens Committee, became the first recipient of a CERTIFICATE for her continued support in establishing the Minnesota Valley NWR. These CERTIFICATES will be used in the future for teachers and volunteers who make noteworthy contributions to the refuge.
- Elaine Mellott, another co-chairperson of the Lower Minnesota Valley Citizens Committee with Mrs. Seal, was presented a CERTIFICATE OF APPRECIATION from the Secretary of the Interior for her community work in natural resource conservation.

F. HABITAT MANAGEMENT

When reading this section, it is important to recognize that this refuge is newly established. Very little actual manipulation has been done yet. The management to be done hinges largely on the findings of the Master Plan. However, in anticipation of future management, we have developed methods of monitoring effects of various alternative schemes. Management plans will be written in 1981 and 1982. Table F. 1 shows habitat types and acreages by unit as calculated through the computerized resource data bank.

Comprehensive management planning for refuge units will be accomplished in several steps. Once determinations are made for the Master Plan, we can proceed with in-depth planning for each unit. A Management Philosophies document has been written based upon input from many of the people who helped establish the refuge. This will serve as a general guideline in keeping management focused on compatible directions. Shortly we will be preparing detailed management plans that will address the first ten-year period. These will be supplemented annually with the Annual Work Plans and the accompanying narrative. They are designed to facilitate rapid and accurate cross-checking between all the plans to assure a guided, consistent effort.

A vegetation monitoring system has been established. This system utilizes 600 feet transects with 20-0.1 meter² sample sites. Plant species were recorded along with their approximate ground coverages. Forest tree species were recorded within a 50 feet circle of the center point of the transect. This series of 15 transects will be run about every three years. The information gathered will indicate trends in actively manipulated versus control areas, and natural succession.

In addition, it is planned to conduct the Habitat Evaluation Procedure (HEP) on these same sites in 1981. We feel there is promise in utilizing HEP on a long-term basis to measure effects on habitat of various types of management. It should also be beneficial to Ecological Services since we will have vegetation, small mammal and bird indices to support our HEP ratings.

1. General

Habitat conditions in general tend to reflect a neglected state of affairs. Woodlands are often decadent. Water control structures are non-functional. Grasslands have been invaded with shrubs. These are all reflections of the valley as a waste area that few people have paid much attention to. There are five major highway crossings in the valley (Cedar Avenue, I-35W, CSAH 18, Hwy 169, and Hwy 41) that are heavily traveled by commuters. Many have mentioned that they were aware that the area was there but had never really considered the values and potentials of the valley.

Some habitat management has been conducted in the past. Most has been passive, some exploitive, and some active. Upgrala Holding Company and Long Meadow Gun Club have managed water levels in Grass Lake and

Table F.1. HABITAT ACREAGES BY REFUGE UNIT

Habitat Description	Acres	%
Long Meadow Lake Unit	2461	15.21
floodplain forest	473	19.20
hillside forest	164	6.64
oak savanna	27	1.10
dry grassland	11	.47
wet meadow	366	14.89
emergents	950	38.58
aquatics	193	7.82
open water	59	2.38
agriculture	170	6.89
right of way grass	1	.04
developed - residential/recreational	14	.55
developed/disturbed - industrial/gravel/pavement	35	1.44
Black Dog Unit	1306	8.07
floodplain forest	56	4.33
dry grassland	8	.65
wet meadow	607	46.44
emergents	100	7.62
aquatics	21	1.57
open water	503	38.48
right of way grass	2	.11
developed/disturbed - industrial/gravel/pavement	10	.80
Bloomington Ferry Unit	384	2.37
floodplain forest	198	51.56
hillside forest	20	5.21
oak savanna	1	.26
dry grassland	7	1.82
wet meadow	71	18.49
emergents	50	13.15
aquatics	3	.65
open water	10	2.47
agriculture	24	6.25
developed/disturbed - industrial/gravel/pavement	0.5	.13

Habitat Description	Acres	%
Upgrala Unit	2443	15.09
floodplain forest	422	17.26
hillside forest	0.5	.02
oak savanna	5	.20
dry grassland	9	.37
wet meadow	408	16.70
emergents	626	25.65
aquatics	282	11.57
open water	33	1.33
agriculture	645	26.43
sand beaches and dunes	3	.10
mud flats	2	.06
developed - residential/recreational	1	.06
developed/disturbed - industrial/gravel/pavement	6	.25
Chaska Lake Unit	590	3.65
floodplain forest	171	28.96
wet meadow	113	19.14
emergents	56	9.57
aquatics	2	.25
open water	62	10.50
agriculture	183	30.99
developed - residential/recreational	3	.51
developed/disturbed - industrial/gravel/pavement	0.5	.08
Louisville Swamp Unit	2126	13.13
floodplain forest	472	22.18
hillside forest	125	5.86
oak savanna	213	10.02
dry grassland	282	13.24
wet meadow	340	15.97
emergents	278	13.06
aquatics	12	.56
open water	48	2.26
agriculture	352	16.54
sand beaches and dunes	1	.05
mud flats	2	.07
orchards and plantations	1	.05
developed - residential/recreational	3	.14



#9. Long Meadow Lake with new Cedar Avenue bridge and Bloomington in the background. The cropland in foreground is still in private ownership.

80-105 MVR



#10. Purple loosestrife infestation on Long Meadow Lake. This doesn't appear to have spread much in the last several years but small populations are found in many locales.

80-2605A MVR

Long Meadow Lake in the past. These structures are now dilapidated. Some farmers leave some of their crop for wildlife. Many of the larger landowners sell hunting and trapping privileges on their lands. Income from these leases is often substantial.

The apathy of the general public for the valley, though, is best symptomized by the destructive practices of developers and the local governments that allow such uses. We are barraged with development proposals including a silica sand quarry, storm sewer outlets, bluff developments, highway crossings, dredge spoiling, sanitary landfills and commercial-industrial development in wetlands. Some of the proposals are for lands designated by Congress for refuge acquisition, others in the designated state-managed recreation area and some on the private lands adjacent to the project which impact the refuge-recreation area. Basic inadequacies and development orientations in state and local laws have seemed ineffective in preserving the existing habitat. The presentation of biological facts and arguments also has been futile. It all boils down to political decisions that are heavily biased in favor of development.

2. Acquisition

The Minnesota Valley National Wildlife Refuge Act required the Fish and Wildlife Service to acquire approximately 9,500 acres of land depicted as refuge by the "official" map. Also, the Act gave authority to acquire additional lands for inclusion as determined desirable by the Secretary of the Interior. With this in mind, additional areas outside the "official" refuge boundaries, which met the objectives of the legislation by preserving unique habitats of the Minnesota Valley, were reviewed for possible addition (See Figure F.1-4)

- Cedar Springs and the Orchid Bog

Two areas directly adjacent to the Black Dog unit of the refuge are in need of protection because of the sensitive and unique vegetative communities they contain. The Cedar Springs site is a 186-acre tract of land bounded on the north by the Black Dog unit, on the east by the new Cedar Avenue river crossing. This tract possesses a unique artesian aquifer which feed several streams along with a disturbed perched orchid bog. The entire tract consists of the numerous spring-fed streams, a system of ponds, a marsh, a wet meadow area and forest. Eventually the entire water system drains to Black Dog Lake. Because this tract is highly diversified, it is used heavily by wildlife. The orchid bog site is a 48-acre parcel of land near Black Dog Lake unit and Interstate Highway 35. This tract contains a very sensitive calcareous fen vegetative community which support plants which are classified as "rare" by the Minnesota Department of Natural Resources.

MINNESOTA VALLEY NATIONAL WILDLIFE REFUGE DAKOTA & HENNEPIN COUNTIES, MINNESOTA

51

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UNITED STATES
DEPARTMENT OF THE INTERIOR

UNITED STATES
FISH AND WILDLIFE SERVICE

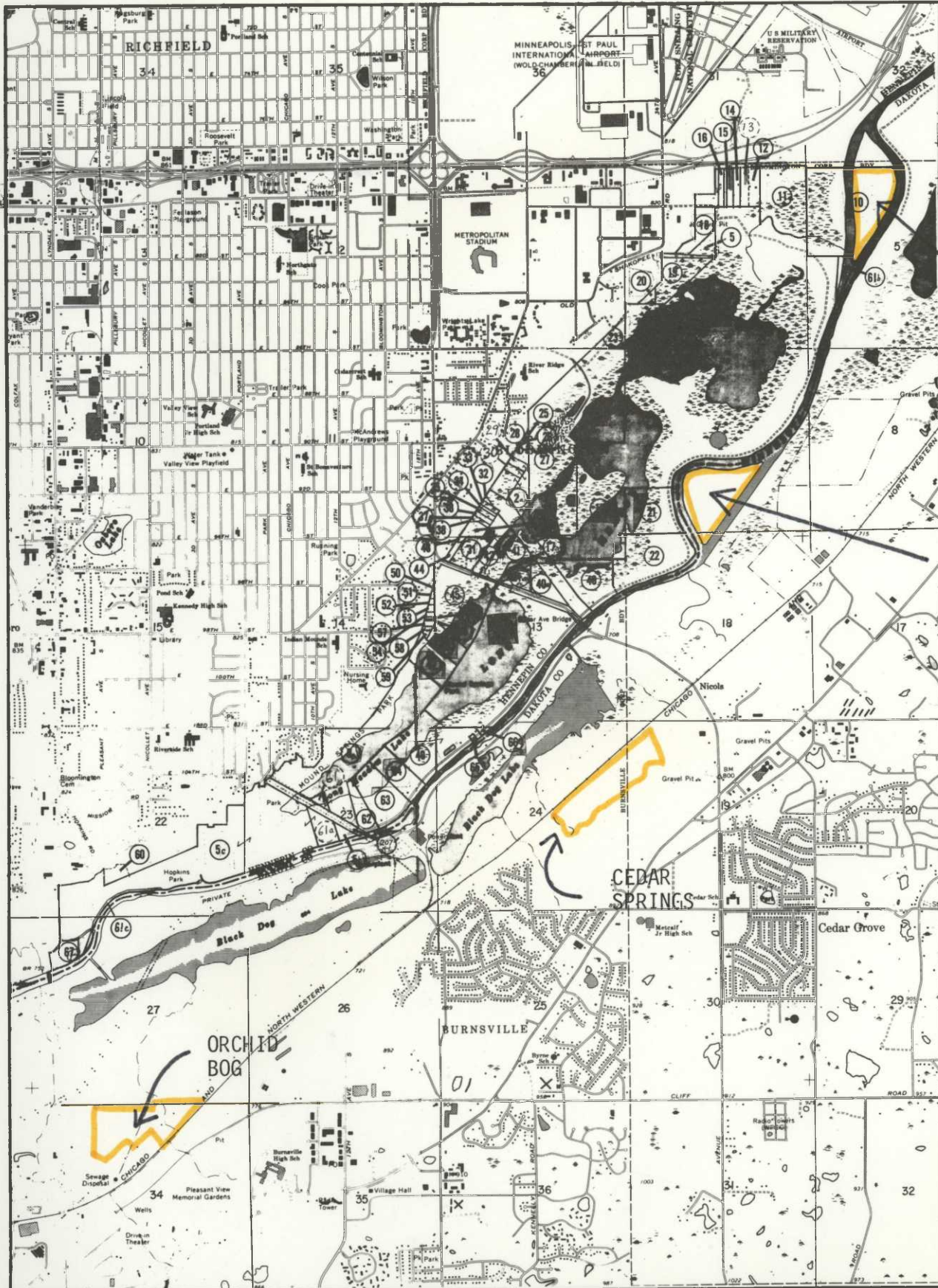
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TWIN CITIES, MINNESOTA APRIL 1977

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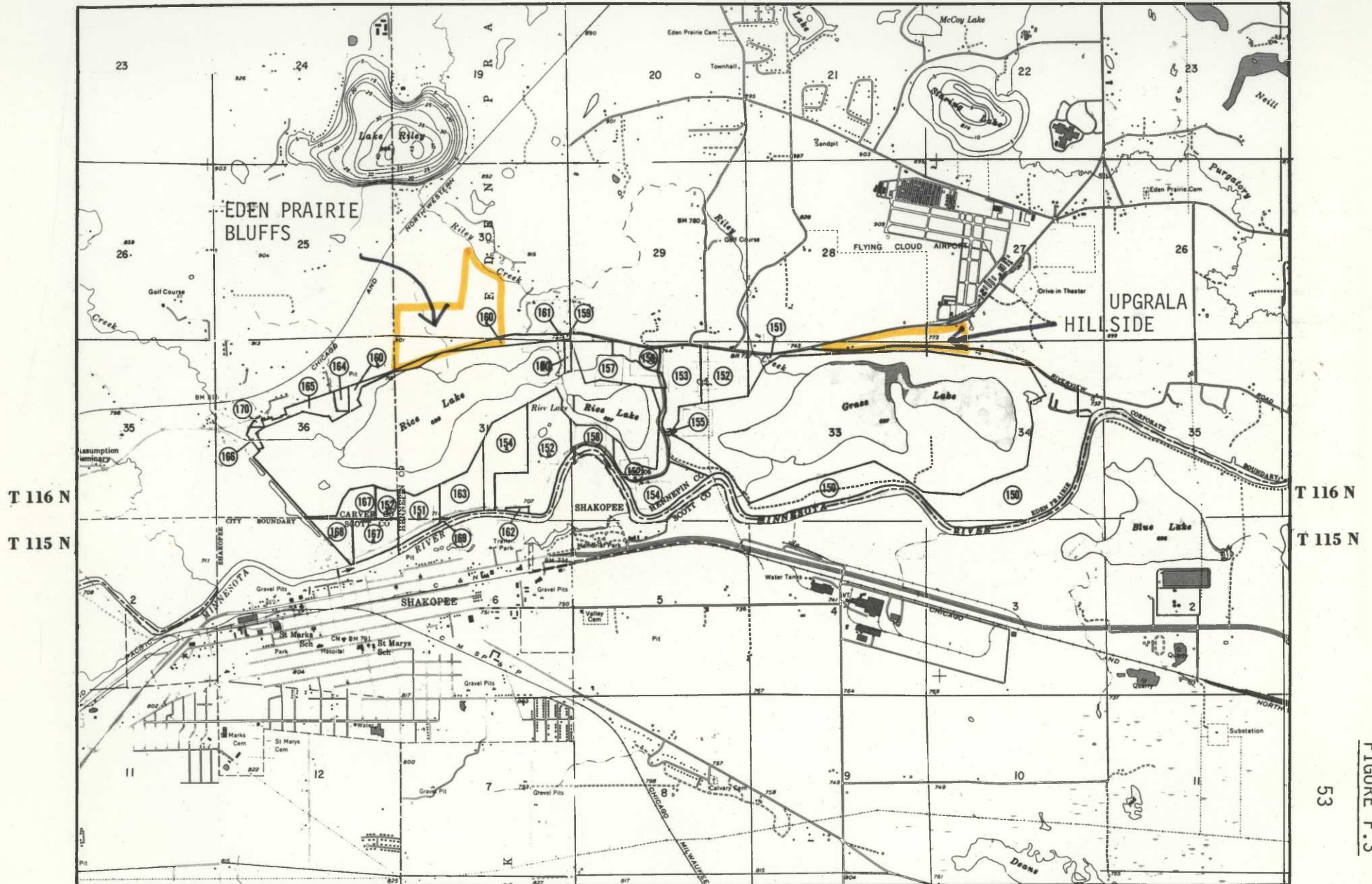
MINNESOTA VALLEY NATIONAL WILDLIFE REFUGE CARVER, HENNEPIN & SCOTT COUNTIES, MINNESOTA

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DEPARTMENT OF THE INTERIOR

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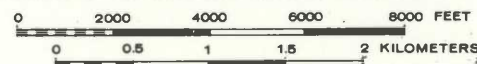
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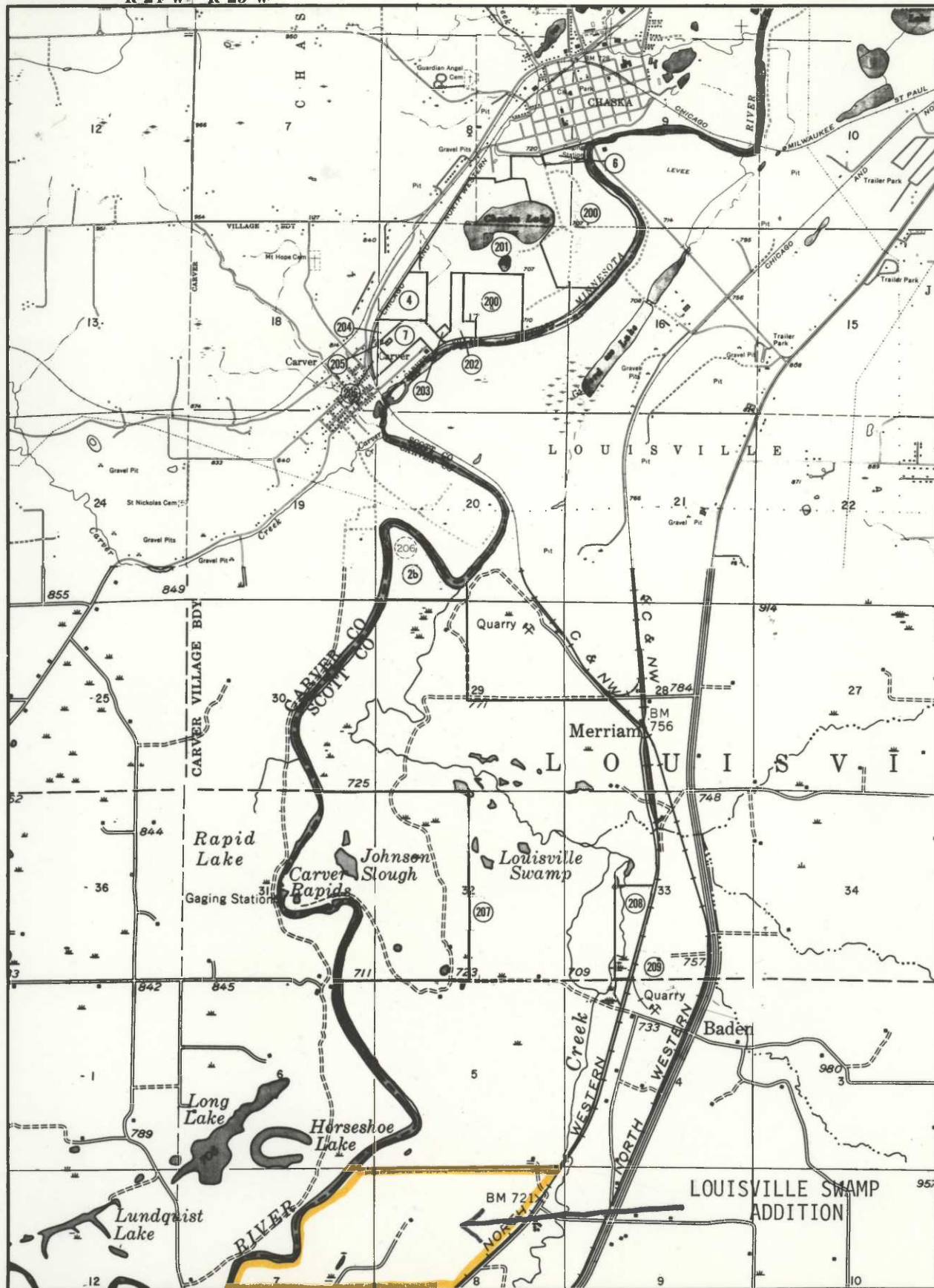
FIGURE F.3

MINNESOTA VALLEY NATIONAL WILDLIFE REFUGE

CARVER & SCOTT COUNTIES, MINNESOTA

 UNITED STATES
DEPARTMENT OF THE INTERIOR

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 UNITED STATES
FISH AND WILDLIFE SERVICE


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FOURTH & FIFTH PRINCIPAL MERIDIAN



TWIN CITIES, MINNESOTA APRIL 1977

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- Island Transfer

The "official" refuge boundaries include a major portion of a 43-acre island in the Minnesota River next to the Long Meadow Lake unit. The other small portion of the island is controlled as part of the right-of-way for U. S. interstate Highway 494. This island was once connected to the Long Meadow Lake Unit but is now separated by a dredged channel. However, the old channel was filled in such a way as to connect the island now to the State of Minnesota lands in Fort Snelling State Park. About 3/4 mile upstream from this island is another dredge-isolated 60-acre island owned by the state. The old channel has filled around this state island so now it is connected to the Long Meadow Lake Unit. This proposal is simply an island transfer to adjust boundaries to facilitate access by respective management entities.

- Wilkie Park

This is the largest proposed boundary adjustment. The Hennepin County Park Reserve District (HCPRD) wants the U. S. Fish and Wildlife Service to assume ownership and management of the 1,200 acre natural area that lies between the Minnesota River and Minnesota Highway 101 primarily in the municipality of Shakopee, Scott County, Minnesota. Wilkie Park is dominated by 330-acre Fisher Lake and 220-acre Blue Lake which are actually extensive spring-fed marshes. The area contains extensive and valuable wildlife habitat and in the opinion of the HCPRD could be more properly and effectively managed as part of the Minnesota Valley National Wildlife Refuge.

- Upgrala Hillside Addition

The area directly adjacent to the eastern end of the Upgrala Unit and south of existing Highway 169/212 is also proposed as a boundary adjustment. This area contains sensitive soil and steep slopes which have been isolated by the proposed refuge. Its addition to the Upgrala refuge unit is only natural and its omission from the authorized refuge was apparently an oversight. The wildlife inventory completed by Dr. Warner (University of Minnesota) had this to say regarding this sensitive area. "Two of the most critical areas in the valley are Rice Lake Wayside and the dry, sandy prairie slopes above Upgrala. These are both being damaged by all-terrain vehicles. The Upgrala site is the habitat of the rare 'Harvest Mouse'."

- Bloomington Ferry

It was proposed to extend the Bloomington Ferry Unit's east boundary to the Savage Bridge. This would enlarge the unit by about 97 acres of marsh, wet meadow, and bluff forest. The boundary would be more practical from



#11. The Upgrala Unit near Shakopee lies just below the Eden Prairie bluffs. Rice Lake and Blue Lake teem with waterfowl during migration. 80-176 MVR



#12. This bluff area overlooking the Upgrala Unit has been recommended for acquisition to protect the bluff from development. It is being currently advertised as prime south-facing slope for solar heated building designs. 80-3113A MVR

a management and administrative perspective. We also requested a 27-acre parcel that would give an access point to the eastern portion of Bloomington Ferry off Auto Club Road. There are presently no good access points to the Unit.

- Louisville Swamp Addition

We would like to acquire management rights to a 500-acre addition just south of Louisville Swamp Unit. This has an extensive spring-fed marsh with an easily controlled outlet, abandoned oxbows of the Minnesota River, floodplain forest, and agriculture lands. This parcel may be subject to other means of control besides acquisition.

- Eden Prairie Bluffs

Beautiful wooded south facing bluffs across Highway 169 from Rice Lake were suggested as an addition. They provide another diversity to the refuge area and could be very valuable in a recreation light.

3. Wetlands

The Minnesota Valley is rich in a diversity of wetlands. Most are spring fed and all have surprisingly good water quality. However, this quality is subject to seasonal and other conditions. (See the wetland acreages in Table F.1.)

In 1979, refuge marshes flooded extensively in August from unusually heavy rains. The Minnesota River flowed in broad sheets in many areas. Much emergent vegetation was inundated and then was discolored as the floodwaters receded.

In 1980, which could probably be called a more normal year, the marshes flooded only slightly in the spring during one rainy spell. At that time the Minnesota River backed up through the marsh outlets. Marsh depths in 1980 averaged 1-3 feet, the emergent-open water ratio was often in the 50:50 vicinity. Little Grass Lake had a good stand of wild rice. Round Lake remained relatively stable even though we removed the stoplogs in August of 1980. The outlet structure was silted in enough that only about 8-inch drawdown could occur. Muskrat numbers in fall 1980 were much higher than any we had previously known of. We don't know whether this related to the minor drawdown or to other factors.

Flooding of the Minnesota River is the major cause of seasonal problems. River flooding frequency and severity has increased in recent years as the river's watershed has been denuded of vegetation and its wetlands drained. The marshes are affected by river water that backs up through the outlet channels and during severe floods, the entire valley floods.



#13. A pond in Louisville that provides habitat for shorebirds and ducks. Shorebird habitat is limited in non-flood years.
80-2875 MVR



#14. A typical wetland in the bottomland hardwood forest. Wood ducks frequent these sites.
80-1915 MVR

Well designed control structures could alleviate some of the water level fluctuations by keeping river water cut of the marshes during minor flooding of the river. Such structures would also be necessary to produce optimum water levels for wildlife management in the marsh.

One area that is particularly disturbed by flood damage is Louisville Swamp. The swampy portion floods via Sand Creek nearly every spring but then the water recedes and it becomes wet meadow. Its value is limited by the constant fluctuations that prevent it from being neither a functional marsh nor a meadow. Two apparent remedies would be to channelize Sand Creek or to create a permanent impoundment by replacing a dilapidated existing bridge with a water control structure. A beaver has coincidentally plugged the bridge and given us a good indication of what to expect. It looks very promising.

Of special note is that we could completely drain the marshes every few years and simulate the wet-dry cycles of very productive prairie potholes. Currently, we do not have that capability and probably will not have it with any of our other marshes for many years. Blue Lake within Wilkie Park was dry this past year due to unusual circumstances. We will be watching it closely to see what effects the drying had on waterfowl, shorebird and wading bird use.

As previously mentioned, water quality in designated refuge waters is good. Levels of PCB's, heavy metals and pesticides were generally non-existent or low. Some were found however, but none at significant, disturbing levels. This is contrary to our expectations. These marshes are subject to Minnesota River flooding, storm sewer effluents, agricultural chemicals, and illegal dumping of various contaminants. Our federal presence and active management and involvement should help mitigate these occurrences in the future.

Flooding has also had unquantified direct effects on wildlife. Those species which nest in emergent vegetation or on marsh fringes are frequently flooded out. Cattail fringes have been killed off by unnatural water fluctuations. Severe river flooding reduced significantly the amount of habitat available for ground-dwelling and nesting animals.

Unfortunately, 1979 was a severe flood year with peaks all through the summer and early fall. This was also the year that we had Dr. Warner's field crews gather baseline data for this project's biological inventory. One year's data, and a freak year at that, give the data an unknown bias. As such, it can be relied on only as the best we have but not scientifically sound.

We have also recommended two other wetland projects. One is a 15-acre moist soil area adjacent to Chaska Lake. The other is rehabilitating the former Izaak Walton League Bass Ponds near Long Meadow Lake. These ponds would be ideal as wetland management demonstration ponds in an environmental education setting.

4. Forests

Forest lands on the refuge consist mostly of floodplain species. Unfortunately bluff forests are under represented on the refuge. The floodplain forest is made up mostly of silver maple, willow, and cottonwood. In drier sites there are significant numbers of American elm, oak, and ash. Many of the elms are dead and dying from Dutch elm disease.

Our forest management has been restricted to diseased tree removal around sensitive areas such as headquarters and near Bloomington Ferry. We have had several requests from refuge neighbors to remove dead trees both because they aesthetically displease some folks and for their firewood values. So far we have declined to bend to the pressure because of the precedent of this type of use if we should start.

Management techniques we are considering include selective cutting to favor mast and cavity trees, mowing and burning meadows to limit woody encroachment, wood sales of designated trees, and allowing some areas to go into forest. One of the apparent needs here is for more expansive tracts to enhance forest interior birds. We have an abundance of edges already.

5. Croplands

In 1980 we initiated our cooperative farming program. We began biological farming techniques in our Louisville Swamp Unit which includes about 400 acres of cropland. Our only other farming was a small portion on the Upgrala Unit. This was conventionally farmed.

Our first year of biological farming should probably be classed as a failure because of weed problems. Spring was quite dry so that seeded crops would not germinate rapidly yet the weeds did. The major weed problems were foxtail and velvet leaf. Yields were down and harvesting was hard on the combine.

Tillage practices included chisel plowing and disking in the spring, seeding, then two cultivations of row crops. All crop residue remained intact on the field. Most of the refuge shares were left in the field. This share included 12 acres of corn, 13 acres of soybeans, and 12.5 acres of food plots. Rotations include sequences of corn, soybeans, oats and alfalfa. We also utilized wildlife plantings for our share in some fields. These plantings included corn, sunflowers, and sorghum. However, the farmer used a forage sorghum rather than grain.

No pesticides nor fertilizers were used except for MCP Amine used in one 18-acre oat field. It was a wasted effort and probably should not have been used. Fertilization probably would have helped the corn very much.



#15. A wildlife food plot planted by the farmer as the refuge share of a soybean field. Refuge agriculture lands are being retired at a regular rate and are being biologically farmed in the interim. Old fields are showing very high wildlife productivity.

80-2951A MVR

Wildlife utilization of the crops has been variable this winter. Little or no snow cover and an abundance of weeds has allowed the wildlife to remain dispersed. A harsh winter will give us a better picture of wildlife food needs. Corn and sunflowers have been heavily utilized. The sunflowers were gone by mid-November, mainly to blackbirds. Corn was used by deer and squirrels. There is some field feeding by waterfowl in the Upgrala Unit where the private landowners have left some crops in the field for wildlife. We expect this use to expand as refuge croplands management increases through land acquisition and then drop again as we slowly convert cropland to other uses. In 1981 we intend to plant more sunflowers and probably cut down on sorghum. It has been interesting to note that weeds were not a problem in the food plots.

In addition, we retired about 70 acres from crop production. Mourning doves and juncos used these fields heavily at times. Some on the south end of the unit abutting private lands was summer fallowed but will need to be fallow again in 1981. It will then be seeded to native grasses.

The ag lands at Louisville were put into bio-farming early because the farmer traditionally farmed them somewhat similarly. Other ag lands will be converted more slowly.

We do have concerns over the extent to which we may be able to utilize bio-farming. The techniques the Service has been studying may not be compatible with the low-lying, wet soils in the Minnesota Valley. It may be mostly academic though as our ag lands will be converted to other habitat types. We do plan on retaining one or three small (60-80 acres) complexes to demonstrate the utility of bio-farming. These will probably be on the Upgrala, Chaska Lake and Louisville Units.

6. Grasslands

Manageable grasslands acquired to date have been limited to the Louisville Swamp Unit. We planned to burn a small portion of Louisville upland in the spring of 1980 but a burn ban precluded it. That burn will hopefully occur in the spring of 1981. That portion of grassland is primarily blue grass, with infestations of sumac and prickly ash. We may need to spot spray these shrubs to control them.

Toward the southern part of Louisville Swamp we have several wet meadow areas of mainly reed canary grass. We mowed half of each meadow in July to set back encroachment by willow and cottonwood. The regrowth was rank enough that it was difficult to distinguish mowed from unmowed in September. We will probably start to burn these areas in the future. A burning plan will be developed in 1981.



#16. An example of the wet meadow habitats common on the refuge.
80-2949 MVR



#17. This is a group of private citizens involved in the prairie management workshop in Louisville savanna. The vegetation information will be used in evaluating effects of burning of the same site. The orange hats were issued as the deer hunting season was open.
80-3348 MVR

7. Other Habitats

Nothing to report.

8. Grazing

Nothing to report.

9. Haying

Haying was done on some grassland and wet meadows in the Louisville Swamp Unit to control tree and shrub encroachment. The farmer sold the hay and stored some for our use in erosion control.

10. Fire Management

No prescribed burning occurred in 1980. A burning plan will be prepared in 1981, and we expect to jointly participate in a burn with the Minnesota Department of Natural Resources (MDNR) on the Louisville Swamp Unit-Carver Rapids Wayside.

Dave Shaffer, Landscape Architect, attended training on fire management.

An agreement was made with the MDNR for wildfire suppression. The MDNR has had agreements with local fire departments to respond to fires on MDNR lands. With our agreement, we simply went through the MDNR and our lands were added to those that the local departments would handle. Expenses are paid on a cost reimbursable basis.

11. Pest Control

Pest control activities consisted of mowing less than one acre of Canada thistle, some pesticide application on newly acquired agricultural lands, and ongoing mosquito control by the Metropolitan Mosquito Control District (MMCD).

Mosquito control has been done in the past by MMCD. They claim to have authority to control on our lands, however, we maintain that their actions on our lands are at our discretion. A cooperative agreement with MMCD was drafted but the Field Solicitor's office rejected it as being not specific enough. We are currently trying to tighten the agreement enough to satisfy the solicitor. We hope to finalize the agreement in 1981 although there is doubt from all parties as to whether it is even necessary.

Agricultural pest control consisted of MCP Amine used on 180 acres of oats with an alfalfa underseeding in Louisville and use of Sutan + (Butylate) and tolban (Profluralin) on 140 acres of sweet corn and beans in the Upgrala Unit. We hope to eliminate all pesticides except for emergency use in the future.

12. Water Rights

No water rights have been applied for or exercised. It may be necessary to do so in the future for pumping from the Minnesota River or other water bodies.

13. Wilderness and Special Areas

The Louisville Unit of Minnesota Valley NWR contains two significant sets of historical stone buildings. The Merriam Station site consists of an old residence and barn dating back to the 1880's. The Jabs farm complex consists of a residence, barn, and grainary from the same time period.

Both of these sites have been rehabilitated to insure adequate public safety and historic stabilization and will become points of interpretive significance along the Mazomani Loop Trail. If funding permits, the residence at the Jabs complex may be used as a shelter for skiers during the winter season.

The Jabs farm complex has been nominated for the National Register of Historical sites. Acceptance to the Register is still pending.

The archaeological study conducted as part of the master planning process identified 110 historic sites in the 18,000 acre study area. Many were on the bluff tops, outside of the floodplain, or the designated refuge. Of those inside the refuge boundary, special care will be taken to avoid any further damage through refuge activities.



#18. Dr. Janet Specter on an archaeological dig in Louisville Swamp with Vibrant Films shooting the scene for the refuge film.

80-244A MVR

G. WILDLIFE

While reading this section, it is important to remember that the refuge is only about one-third acquired, that the Master Plan is not completed, and that no unit management plans have yet been formulated. These documents will describe in more detail the knowledge to date in the following categories.

1. Wildlife Diversity

Diversity on this refuge is high compared to many refuges. About 240 species of birds and 40 species of mammals can be found. This diversity is a reflection of the numerous habitat types in the valley including floodplain forest, bluff hardwoods, prairies, wet meadows, marshes, streams, savannah, willow thickets, agricultural lands and a tremendous amount of edge effect.

A goal during master planning is to encourage the continuation of diversity and edge effect. Under non-management, much of the area would tend to revert to floodplain forest or upland forest. While these are desirable habitats in large blocks, we feel it best to maintain diversity while increasing the size of some forest blocks to favor forest interior species.

Active means of promoting wildlife diversity in 1980 were used in our farming program. Although farming is being phased out, we are doing positive things with it until then. We have created alfalfa borders along the trails, use a four crop rotation, and have used a sunflower-corn-sorghum mixture for food plots in place of some refuge shares. We are maintaining meadows and preventing further shrub encroachment.

The effects of these actions are not readily apparent. Until a few years' wildlife data are gathered and analyzed, we can only make broad observations.

2. Endangered and/or Threatened Species

The only known species in this category on the refuge is the northern bald eagle, a threatened species. Three were sighted several times on Black Dog Lake in the winter of 1979-80. They were observed feeding on dead waterfowl. Black Dog Lake is used to cool thermal discharges from NSP's Black Dog Power Plant and supports wintering mallards, common goldeneyes and common mergansers. No eagles have been seen or reported yet in the 1980-81 winter.

3. Waterfowl

Waterfowl usage on the designated lands and waters of this refuge appears sporadic. Actual counts and estimates are only available for 1980 so trends cannot be accurately predicted yet. Conversations with people, mainly hunters, who have used the valley for many years indicate that 1979 and 1980 were somewhat atypical.



#19. A scene typical of many of our marshes. The dense, non-persistent emergents make it impossible to do waterfowl brood counts.

80-3231 MVR



#20. A local hunter with a giant Canada goose shot near the refuge headquarters. 1980 was the first year these birds were regularly showing up in hunter's bags.

80-3340 MVR

For instance, little Grass Lake, which is not hunted, traditionally holds a few thousand ringnecks in the fall. But in 1979, few ringnecks were present but about 5,000 mallards concentrated there until near freeze-up. In 1980, no real concentrations were noted there at all. About 70 northern shovelers were counted here though on November 10, 1980. These were the only ones noted on the refuge all fall.

Waterfowl usage at Chaska Lake has also been sporadic. In September 1979 we noted more ducks on this small marsh than on all the other marshes combined. They were actively feeding on the abundant submerged aquatics. However, in September 1980, very few birds were on the lake. We speculate that possible harassment by Chaska youth on this small, open lake may be responsible. At any rate, once the duck season opens, the birds are quickly burned off.

Hunting pressure in the valley has a very definite effect on waterfowl distribution. Lakes open to public hunting such as Gifford and Rice (State Wayside) hold very few birds. Completely protected lakes such as Blue, Fisher and little Grass Lake often have good waterfowl concentrations. They function as reservoirs for the more heavily hunted areas. The private areas such as Grass Lake, Rice Lake, and Long Meadow Lake are controlled enough that they hold a few waterfowl, but no concentrations.

Coots are by far the most abundant fall waterfowl. Many are shot for "target practice", and left. When our hunting program starts, it would be worthwhile to address the coots as edible birds since most hunters assume they are not.

We anticipate that as the marshes come under full USFWS control that sanctuary and better conditions through management will increase use considerably.

Canada goose use on the refuge waters seems to be increasing rapidly. Whereas in past years goose kills were extremely rare, fall 1980 yielded at least 20 known. Breeding geese were noted on Grass Lake, Rice Lake and Long Meadow Lake. They could pose a problem in the future as the refuge is part of a much larger metro wetland complex that has a high Canada goose population with little or no harvest opportunity.

Spring waterfowl usage on refuge waters may well be a highlight for waterfowl enthusiasts. The valley's marshes open up before most other waters and attract good numbers of many different species, all in breeding plumage.

In 1980, Barbara Fischley and Paul Schneider organized a waterfowl breeding pair index. It involves counting samples of each marsh and then extrapolating the results to include the entire marsh. It takes about one week's field time for two people and appears to be functional. Estimated breeding pairs in 1980 were 718.

Waterfowl production estimates were made based on a formula that Sherburne NWR uses for their estimates. It is: Breeding pairs x 0.5 broods per pair x 5 ducklings per brood.

This gave us a production estimate of about 1800 fledged birds. Mallards, blue-winged teal, and wood ducks were by far the most common.

A few swans were noted briefly in 1979 and 1980 just before freeze-up on Grass Lake.

4. Marsh and Water Birds

Little can be reported on these birds in our initial years. No formal surveys have been taken. Dr. Warner's work left a void concerning marsh interior species. Some observations are worthwhile, though.

Large numbers of great blue herons use the Grass Lake area. Its proximity to the heronry in Wilkie Park is probably why. Great egrets are commonly seen in late summer.

Green herons are occasionally flushed. American bitterns and black-crowned night herons are conspicuous by their absence. Soras are apparently very common judging by their frequent calling.

5. Shorebirds, Gulls, Terns and Allied Species

Shorebird use on refuge lands appears quite spotty and opportunistic. In 1979 the frequent river flooding attracted them to many areas. Spotted sandpipers, lesser yellowlegs and killdeers were the most common. In 1980 very few shorebirds were noted. Blue Lake was dry though and did attract them.

Some shorebird management is planned for 1981. We may inundate some old river channels to create mudflats. Management on a large scale will have to await rehabilitation of water control structures and outlets on the major marshes.

Gulls on the refuge are heavily oriented to Black Dog Lake and the adjacent sanitary landfill. Other waters support only sporadic and limited use.

Terns appear not too commonly, usually during migration periods. Instances of nesting were not observed.

An upland sandpiper was seen on the headquarters lawn.

6. Raptors

No surveys on raptors have yet been done. Raptor numbers are low during the breeding season and they are only infrequently seen. Kestrels are most common. Red-tailed hawks are occasionally observed, and great-horned owls are not common, although the habitat appears to be good. This is puzzling and we speculate that crow or human disturbance may be the cause. Given our high public use anticipations, breeding raptors will probably remain low.

Raptors were most abundant during winter 1980-81. It has been very mild with little or no snow cover. Red-tails and rough-legged hawks were commonly seen. These birds were not so common in winter 1979-80.

A flock of about 60 turkey vultures was seen at Louisville in September 1980. It appears to be an unusual occurrence.

Three bald eagles spent part of the winter of 1979-80 on Black Dog Lake. They had not been observed during the 1980-81 winter, possibly because it was so mild.

7. Other Migratory Birds

This is one of the Minnesota Valley's most obvious wildlife assets. The baseline study done by Dr. Warner's crews and other work show an excellent species diversity with about 250 species of birds. Interest in bird watching is high. Late in 1980 we began to develop a volunteer bird index effort.

We are faced with several problems in this regard. We do want a handle on migratory birds, yet conventional studies are expensive and time consuming. Continuity of effort as refuge staff changes occur is a real problem that can heavily bias data. And then the data itself is worthless unless it can be used for something meaningful.

Hopefully a volunteer effort will provide better continuity. It certainly allows a much larger sample size. This will allow us to monitor the effects of our management and non-management on one element of the ecosystem. It will work in conjunction with the vegetation transects, the Habitat Evaluation Procedure (HEP), and small mammal transects.

An additional benefit we hope to obtain is that of involving 40 or more environmentally conscious people with the refuge on a personal basis. These type of people have been instrumental in bringing the refuge to this point and their continued interest is desirable in seeking satisfactory completion of refuge development.

8. Game Mammals

These animals so far have received little attention except for white-tailed deer. Deer are common in the valley, especially in winter. Their high visibility assures a high level of interest.

During the winter of 1978-79 deer apparently caused severe shrub damage in neighboring residential areas. The following two winters yielded no known complaints. Many people that live along the bluff set up feeding stations for deer, squirrels, rabbits, pheasants, and song birds. Wildlife observation opportunities are excellent at these sites.

Interest in deer hunting is high, especially amongst bow hunters. The Bambi syndrome is equally strong amongst many anti-hunters. Deer control is frequently discussed and the question frequently arises as to whether or not archers can provide effective population control of deer. Judging from the archery harvest of deer at Louisville (about 30), and the conservation officers' talk about car kills, we are inclined to believe that archery hunting may be sufficient. We also feel that maintaining some food plots away from roads and residential areas will aid in minimizing conflicts.

Aerial surveys of deer have been hampered. In 1979-80, we could not obtain a helicopter for our count. In 1980-81 the snow cover was so sparse or non-existent as to be useless. The deer are not concentrating and would be very difficult to see. The early spring of 1981 may yield sufficient snows for the purpose.

Cottontails and squirrels receive little attention in this area. Cottontails are surprisingly uncommon. Brush piles in conjunction with diseased tree removal may enhance cottontails. The severe flooding in 1979 may have suppressed them, too.

Fox squirrels, gray squirrels, and red squirrels are all common. In some areas they can be found in close proximity to each other. Niche differences readily stand out, with the fox sticking more to the agriculture areas, the gray in the oak and upland woodlands, and the reds seem to prefer old stands of timber.

Muskrats, mink, raccoons and fox are also found on the refuge. Muskrat populations are high. Trappers have been harvesting 50% or more of the muskrats for years and the populations continue to prosper. The severe flooding of 1979 appeared to heavily impact muskrats yet by fall, muskrat houses were common and 1980 produced high populations. We have proposed a trapping season for muskrats, mink and raccoons.

Raccoon sign is frequently observed. Apparently some of the urban neighbors complain about them but the documentation of these complaints is too spotty to be supportable. We intend to handle such complaints on an individual problem animal basis once we are established.

Mink and fox sign and animals are occasionally seen. Both red and gray fox occur. We would like to maintain relatively high populations of these to give our visitors a better opportunity to see them.

9. Marine Mammals

Nothing to report.

10. Other Resident Wildlife

Pheasants are frequently seen on the refuge. They are not abundant by any means, and actually seem rather suppressed. Possible reasons could be the severe 1978-79 winter, heavy flooding in 1979, or poor nesting cover. Their numbers should improve as more suitable cover develops.

Gray partridge were seen in summer 1979 in Louisville. Bob-white quail were also heard there. The source of the quail is unknown but they were probably planted in years past. The Bob-white Quail Society has shown interest in providing better wintering conditions for these birds.

A single ruffed grouse was frequently seen adjacent to the refuge office in May 1980. It seemed to be attracted to the sound of the D-4 caterpillar tractor as it was only seen when the tractor was running. This has been the only observation of a ruffed grouse in the Minnesota Valley for many years and evidently the last of a remnant population.

Preliminary consideration is being given to introducing wild turkeys in Louisville Swamp. The oak savannah, ag fields and woody cover, combined with relative remoteness, make it appear feasible. There is some question as to whether or not they are endemic to the site but there are early historic records of them and presence of bones has been noted in some Indian middens. They would be an exciting addition to the Louisville Swamp Unit. A feasibility study will be done in 1981.

Small mammals are being used as habitat trend indicators. Snap trapping grids were established on nine sample sites. The 50-trap grids are run for four consecutive nights in both April and May. Peromyscus spp. are by far the most common but others such as harvest mice, voles, and arctic shrews do show up also. The small mammal data is to be used in conjunction with the bird data, vegetation data, and the Habitat Evaluation Procedure.

Reptile and amphibian data are non-existent. Bull snakes, hog-nosed snakes and garter snakes have been seen. The garter snakes are common. Leopard frogs seem to be making a comeback from reportedly low levels in the recent past that were caused apparently by red leg, a viral disease.

Turtles are not commonly seen on the refuge. We may perform some pesticide accumulation work with them in 1981.

Mosquitos are abundant on the refuge. We are in the process of negotiating a cooperative agreement with the Metropolitan Mosquito Control District (MMCD). Their major concern is intermittent wetted areas such as temporarily flooded sites and small runoff pools. We do not expect to allow them to use intensive control methods on refuge waters.

11. Fishery Resources

A fishery survey of refuge marshes was conducted in 1979 by Chuck Maas of Fishery Services. Regional Environmental Contaminants Evaluation and our field crews assisted him. The report is due in early 1981.

Some interesting preliminary results are in though. They include large perch at the Hogback Ridge ponds, large and abundant walleyes in Sand Creek at Louisville Swamp, and sunfish in many of the lakes. Contaminant evaluations of fish and sediments show surprisingly low levels in most categories. The Minnesota River was not included in the survey. More information will be available when the fishery and contaminants reports are in.

12. Wildlife Propagation and Stocking

Nothing to report.

13. Surplus Animal Disposal

Nothing to report.

14. Scientific Collections

Nothing to report.

15. Animal Control

Nothing to report.

16. Marking and Banding

Some waterfowl banding was done by Larry Thomforde's Kennedy High School Biology Class. Mallards were captured and banded at Black Dog Lake, Blue Lake, and several small water areas in the city. The former two locations are wintering areas.

Band recoveries have been from as far away as Maine. As might be expected, recoveries decrease with distance from the metropolitan area.

- * This project has provided some interesting information in these past few years but still leaves some interpretation to be done. Where do the 10-20,000 wintering mallards in the metro area breed? Where do metro area breeding birds winter? How much influence do released "Easter ducks" have on the wild birds?

17. Disease Prevention and Control

No evidence of disease mortality was seen. A disease control plan will be prepared in 1981.



#21. Fishery survey on refuge waters. Chuck Maas (yellow cap) from Fishery Assistance and Jerry Brashears (blue cap) from ECE assisted. Asst. Refuge Manager, Paul Schneider, (with camera) assisted. 80-3440 MVR

H. PUBLIC USE

1. General

The emphasis in the 1980 public use program was planning, making initial contacts with local support groups, and information dissemination. Eighteen news releases were issued encompassing a host of refuge topics. Numerous appearances were made in local clubs, government offices and other organizations. These included: Rotary Club, Chamber of Commerce, City Council, Audubon Club, sportsmens clubs, MN Ornithological Union, MN Academy of Sciences, Scientific and National Areas Committee and the Midwest Wildlife Conference.

During the initial years of program planning and development, numerous personal contacts were necessary to coordinate activities and to keep all interested parties informed. The myriad of factions concerned with the establishment of the refuge has kept the I&R staff busy and will continue to do so, even when no tangible benefits are being logged. A preoccupation with outputs at this point could stifle the experimental and creative outreach needed to establish niches for refuge public services.

2. Outdoor Classrooms - Students

Having a national wildlife refuge in close proximity to a large urban area has already proven conducive to outdoor classroom activity. Although a lack of on-site facilities is something of a hinderance, Minnesota Valley NWR has accommodated groups of students and civic organizations on the refuge. One of these activities was conducted by the environmental studies class from Bloomington Kennedy High School. This activity centered around relating site assessment (water quality and vegetation transect studies) to planned city projects (housing developments and storm sewers). Past activities included a letter of recommendation to the City of Bloomington. This activity introduced the students to the complexities involved in establishing a wildlife refuge in an urban setting.

The refuge staff has become involved in the schools also. During Wildlife Week the staff compiled 3,000 classroom activity hours. An environmental education teacher contact directory was developed by contract for the seven-county metropolitan area surrounding the Minnesota Valley NWR. To test refuge outreach demand, a letter was sent to all names in the directory. The response was quite positive. 131 teachers were personally communicated with as a result of the Wildlife Week promotion. 34.4% (49 teachers) of these teachers were not previously members of our contact directory. 74.8% (98 teachers) of the teacher's classrooms were visited by refuge staff. This amounted to 30 schools in 6 out of the 7 metropolitan area counties.



#22. Lakeville teachers instruct students during a refuge-sponsored EE activity. 80-1162 MVR



#23. RO Visual Media Specialist Tom Kelly (right) prepares to photograph gifted student activity of Cedar Crest School at the Bass Ponds. 80-3459 MVR



#24. EE workshop participants preparing to take samples at
NSP Black Dog Power Plant reservoir. 80-1295 MVR



#25. Northern States Power Co. representative and teachers
debate energy issues at an EE Workshop at the Black
Dog Power Plant. A large portion of the NSP land rear
Black Dog is under easement negotiation. 80-1289 MVR

Staff visits to schools were made by Tex Hawkins (Public Service Supervisor), Ann Magney-Kieffaber (EE Coordinator), Paul Schneider (Wildlife Biologist), Barb Fischley (Biological Technician), and Bruce Blair (Engineering Technician). The program centered around the 1980 theme "Save a Place for Wildlife". A set of slides depicting some of the common urban wildlife species, devastated wildlife habitat, and wildlife indicators accompanied a brief story line that discussed wildlife habitat needs. The outline read at the 4-6th grade level, but classes ranging from K-12 were visited, so many of the programs were adapted to upper grade levels by the staff.

3. Outdoor Classrooms - Teachers

The refuge staff has been involved in a number of teacher workshops. Teaching teachers how to take advantage of the outdoors for educational purposes will become a major thrust in the I&R program at Minnesota Valley NWR. Participation was solicited using a teacher contact directory for the entire metro area (over 500 schools) which was developed under contract by EE Consultant Don Wagner. In the spring of 1980 refuge personnel were involved in: the Waconia Teacher-Workshop, Project Learning Tree Teacher Workshop, the Blue Ribbon Teacher Workshop, and the Metropolitan Teachers EE In-service Training Workshop.

In the Blue-Ribbon Teacher Workshop, one of the outcomes of the session was to have each teacher develop an activity that could be used by other teachers visiting the refuge. By doing this, activity packets were developed that were pertinent to the refuge resource base. The activity packets are self-explanatory and guided towards the teacher who had little or no prior knowledge of the refuge or the outdoors.

The State Department of Education promoted the Project Learning Tree (PLT) environmental education materials which are put out by the American Forest Institute. The MEEB (Minnesota Environmental Education Board) sponsored a training seminar in February 1980 during which the concept of multi-agency involvement in regional workshops was promoted. Each REEC (Regional Environmental Education Council) was charged with putting on a teacher workshop in their area. The workshop charged \$17.50 for teachers to attend the day-long session. College credit was available through Arlynn Kline of Mankato State University. Participants were elicited by the committee through personal contacts with school district administrators followed by an information/sign up letter to those administrators identified asking for one elementary and one secondary district representative.

The PLT activities were taught by matching a committee member who had classroom experience with an agency representative from the six state and federal agencies that were involved. This process allowed the teachers to be aware of resource people and materials available to them, the agencies' focus as far as environmental education goes, and some techniques used by experienced EE'ers.

The PLT activities fulfilled the additional hours required for credit and introduced the teachers to another environmental education resource in the Minnesota River Valley. NSP's Black Dog Power Plant was toured in the morning and the surrounding cooling pond was assessed for environmental education potential in the afternoon. The initial site reaction by many of the participants was quite negative, but a number of teachers eventually felt Black Dog was a good experience from the energy and man's influence perspective.

Staff from the Minnesota Valley NWR involved were Tex Hawkins and Ann Magney. Ann was a member of the Workshop Planning Committee and Tex was an agency representative who led a PLT activity. USFWS "We Can Help" materials were displayed and some old incomplete packages were given out. Other information on the refuge was also available.

Activities led by Minnesota Valley staff were #68 Trees as Habitats, #1 Adopt a Tree, and PCB articles.

Mankato State University annually holds a Metropolitan Area Inservice Teacher Workshop for environmental education. The 1980 workshop was held June 26 and was headquartered at Highland Park Reserve's Richardson Nature Center. The class consisted primarily of inexperienced environmental educators. They spent one day on the refuge at the Bass Ponds site, learning and reviewing outdoor education methods and procedures.

Two major activities were tried, one was a water study of the marsh, ponds and streams and the other was a vegetation transect from the upland hardwoods through a meadow and into the marsh. Refuge staff involved in the activities were the Outdoor Recreation Staff--Tex Hawkins, Ken Deaton and Ann Magney. Don Wagner was the Mankato State instructor in charge of the workshop.

Following is a summary of on-site activities:

Wildlife Week, March 17-21 - Refuge outreach demand was tested through a mailing to contact teachers in the seven county metropolitan service area. The demand was never fully realized although 3,000 classroom activity hours with refuge staff were logged. Forms from a "wildlife watch" introduced during the visits are still being received at refuge headquarters.

Waconia Teacher Workshop, April 17 - A joint outreach program with Sherburne NWR to introduce environmental education techniques and materials to an elementary school staff involved 35 activity hours of teacher training.



#26. EE Specialist Ann Magney-Kieffaber working with Bloomington Kennedy High School environmental studies class. Teacher Larry Thomforde ran the student duck banding program last summer. 80-1125 MVR

Bass Ponds - Class Activity, April 23 - The Environmental Studies class from Bloomington Kennedy High School combined biology and social studies to relate site assessment (water quality and vegetation transect studies) and planned city projects (housing developments and storm sewers). Post-activities will include a letter of recommendation to the City of Bloomington. 120 on-site activity hours were logged.

Project Learning Tree Teacher Workshop, May 2-3 - On May 2, refuge staff were involved in a PLT (Project Learning Tree) curriculum workshop. Approximately 100 teacher contact hours are involved where agency and refuge environmental education services will be presented. On May 3, PLT workshop participants moved onto the refuge contrasting energy flow through natural and man-made systems. This contrast will be illustrated through a tour of the Long Meadow Lake marsh and the Black Dog Power Plant (both sites lie within the refuge/recreation area boundaries). This workshop is being offered for graduate credit through Mankato State University (180 activity hours).

Blue-Ribbon Teacher Workshop, May 8 and 9 - EE activists identified through a contract study participated in a second site assessment seminar. Higher education representatives from all the major state universities toured the refuge and made recommendations in February. Educators will help develop ideas for activities relating to sites and concepts outlined in the Public Service Prospectus. Credit was offered through Mankato State University and 100 activity hours involved.

On May 15, Dr. Robert Cook's reconnaissance of refuge and I&R program activities with the Regional Director.

International Affairs Training, June 9 and 10 - Representatives of Guatemalan, Panamanian, and Costa Rican natural resource agencies were briefed on refuge operations and I&R planning procedures. 50 activity hours - technical assistance.

Metropolitan Teachers EE In-Service, June 16-20 - Mankato State University offered a week long course for credit focusing on EE opportunities in the Minnesota Valley. Approximately 50 participants spent two days on the refuge experimenting with environmental education curriculum. 500 on-site activity hours were involved. Refuge staff were involved in the week-long program.

Hunting/Fishing Day - 20 participants discussed waterfowl management, regulation process and importance of steel shot. Resource people included Arthur S. Hawkins, Sr., and Minnesota DNR conservation officers.



#27. Paul Schneider giving a retrieving demonstration to a group of adult hunter education students. Paul's highly trained yellow labrador retriever, COPPER, demonstrated blind manners, marked retrievers and blind retrievers with hand signals.

80-3164 MVR

4. Interpretive Foot Trails

The only established foot trail at this time is the Mazomani Trail in the Louisville Unit of MVNWR. The trail and adjoining Louisville Swamp Unit had about 15,000 visitors during 1980 and is being developed into an interpretive hiking/skiing trail featuring historical and ecological points of interest.

5. Interpretive Tour Routes

N/A

6. Interpretive Exhibits/Demonstrations

The I&R staff of MVNWR manned a booth at the Midwest Wildlife Conference introducing the refuge to visitors through the use of computers. The visitor was shown the potential applications of the computer system in the National Wildlife Refuge System. At the same time, the visitor could draw up information about MVNWR from a micro-computer and take a mini-test to determine their skills as wildlife managers.

The revamped Systems 70 display has seen plenty of action and has been received with enthusiasm. It features portable modular panels with refuge map, profile and description of our responsibilities. It has been set up at planning meetings, open houses, audubon meetings, wildlife conferences, and is currently being rotated to local libraries.

7. Other Interpretive Programs

One-time interpretive events are common at MVNWR. Girl Scouts, Boy Scouts, 4-H Clubs, and local chapters of Audubon have all been provided with interpretive services by refuge staff during 1980.

8. Hunting

The 1980 hunting season was characterized by a lack of information on how and where to hunt in the Minnesota Valley. The conflict between overlapping jurisdictions and shooting/hunting ordinances and laws makes it very difficult for the public to know the legal status of hunting. We attempted to provide clarification but in some cases were dubious ourselves. Eventually full refuge control and managed hunting programs will eliminate that problem. Although the newly acquired refuge lands did not alter the hunting pattern in the valley for 1980, patrolling by refuge personnel was initiated to gain an understanding of hunting in the valley.

For the most part, the valley is hunted by locals, the majority of these being juveniles. The opening weeks of waterfowl and upland game hunting were extremely crowded with good bag success. Marginal hunting and



#28. The Louisville Swamp Unit offers the archery hunter excellent opportunities to skillfully bring down a deer.
80-3015 MVR



#29. Angler on the Minnesota River. Most fish in the river are contaminated and either shouldn't be eaten or else should be eaten in small quantities. 80-1362 MVR

minimal crowding characterized the remainder of the season. In general, there is heavy competition and pressure on the valley's few public areas. Better conditions exist in private clubs. The Long Meadow Lake Club has been in existence since 1884 and the Upgrala Club also has a long tradition. These clubs utilize peninsulas extending into the marsh for pass shooting from blinds. The kill is not great but the clubs' proximity to the city make them very popular and the memberships are composed of well known influential people--several are involved in national league sports or "Fortune 500" corporations. Smaller ownerships or clubs lease land for duck hunting and hunt from blinds.

In the Louisville Unit of the MVNWR approximately 36 deer were taken during the state archery deer season. This archery deer hunt will be perpetuated in the refuge hunting program according to the draft hunting plan established for MVNWR.

Patrolling of refuge and adjacent lands in the valley during the fall produced five citations which have subsequently been paid. Many warnings were issued, especially to juveniles. There seems to be a lack of hunting etiquette in the valley, especially noticeable in public waters, such as Rice Lake Wayside.

Hunting in the refuge will be by permit in the fall of 1981. Currently, the hunting plan for the refuge is being reviewed at the Area and Regional Office level.

9. Fishing

The Minnesota River is excluded from the boundary of the MVNWR. This eliminates most of the fishing activity from the refuge. However, there are areas on the refuge that do have the potential for recreational fishing. As more refuge lands are acquired, a determination will be made pertaining to what areas on the refuge should be opened for bank fishing. Sand Creek in the Louisville Unit is one area with a history of fishing, although none was recorded there during 1980.

10. Trapping

During the fall of 1980 a trapping plan was drafted for public review including presentation at two public meetings in December. We have been very cautious over what restrictions to include because of the urban nature of this refuge. We felt that some continuation of trapping was definitely warranted, but the refuge will not allow indiscriminate trapping. Our initial draft suggested trapping muskrats only, with a youth program oriented toward education and fur sharing.

Subsequent to the public review, we recognized the need to address many concerns that had been expressed. These included the humane aspects,

opening trapping to all ages, beginning the season earlier, and conversion to a trap tag system. This draft is presently out for review and preliminary acceptance appears good except there is still a need to bring it more in line with the state's policies and procedures on fur trapping.

The plan will be completed in 1981 but trapping won't begin until we control a marsh area such as Grass Lake, Rice Lake, or Long Meadow Lake. Long Meadow Lake is questionable because of a "no trapping" ordinance in Bloomington.

11. Wildlife Observation

Although public use information has just started to be documented, many visitors to the refuge do come for wildlife observation. Since this activity does have a higher priority than other purely recreational endeavors, it will be supported and not jeopardized in the continuing refuge planning process.

12. Other Wildlife Oriented Recreation

Hiking, horseback riding and cross-country skiing make up the bulk of this category. The Louisville Unit of the refuge supports a strong horse faction during spring, summer and fall, and a healthy cross-country skiing faction during the winter. These uses are compatible with the refuge resource as long as their activities are restricted to appropriate trails. At least 15,000 of these users enjoyed wildlife-oriented trail experiences at the refuge's only totally acquired management unit in 1980.

13. Camping

14. Picnicking

15. Off-Road Vehicling

16. Other Non-Wildlife Oriented Recreation

All of these activities are somewhat incompatible with a national wildlife refuge. Minnesota Valley NWR will condone these activities only where they must be accommodated through the State Trail System. On refuge lands, these activities will be discouraged. Hopefully, these activities can be accommodated on other lands adjacent to or close to the refuge.

17. Law Enforcement

Law enforcement concerns at Minnesota Valley NWR are many and varied. As posting and signing of new refuge land occurs, the transition is met with animosity from a small segment of the public. It is impossible to please all the different public interest factions that are concerned about the refuge.



#30. Refuge Officer Ken Deaton describing the "pink slip" procedure to a hunter education participant. 80-3180 MVR

Information dissemination is the key to our preventive type enforcement being employed at Minnesota Valley NWR. We are not a typical refuge that is off the beaten path, and somewhat restricted to minimal public use. Our high visibility will hopefully deter, rather than encourage, vandalism.

With ten different cities and four different counties to work with, each law enforcement question becomes highly individualized. Hunting, trespass and vandalism incidences on the refuge are subject to applicable city, county and state ordinances. In 1980, 20 warnings were issued along with five citations which have subsequently been paid. Our transition into refuge status will depend on support of other law enforcement agencies. The refuge staff is currently working up formal cooperative, mutual aid agreements with the counties involved with refuge lands. Things will be simplified when we achieve formal national wildlife refuge status following the completion of the refuge master plan. An unusual provision in the Minnesota Valley NWR Act prevents formal refuge establishment until the Master Plan is completed.

A patrol schedule is currently being finalized that will aid visibility by assuring that a minimum number of man hours are spent on the refuge each week. This will be made more economical by correlating patrol duties with ongoing work assignments.

Currently the refuge manager and Outdoor Recreation Planner/Law Enforcement have law enforcement authority. They will need refresher training to sustain their authority. The ORP/EE will receive law enforcement training in the spring of 1981.

18. Youth Programs

N/A

19. Cooperating Associations

N/A

20. Concessions

N/A

21. Volunteers Program

A refuge volunteer program was initiated late in the year. By the end of December, four volunteers were active in the refuge media center. Over 40 hours of volunteer time was donated during September. Currently we have volunteers help with our library, bird surveys, media center, micro-computer and a potential public use survey system.



- #31. The Regional Safety and Historical Preservation Officers recommended changes in the Louisville Unit historic buildings. Maintenance man Paul Irrthum topples an unstable wall on the barn at the historic Jabs farm. 80-3402 MVR



- #32. Maintenance crew stabilizing the Jabs farm historical stone buildings along the Mazomani Trail. These were constructed in the 1880's. The walls were capped to prevent further deterioration. 80-3403 MVR

I. EQUIPMENT AND FACILITIES

1. New Construction

The renovation of the Swanson house into a permanent office has been our most significant construction project. It was built about 1940 and has been identified as the first architectural designed walk-out rambler built in Minnesota. We were very fortunate to hire a very qualified carpenter and his helper. They undertook the brunt of the project. Their efforts were supplemented initially with part-time laborers and later with our maintenanceman. This project consumed a lot of our efforts but provided us a quality environment to office in. The plans and specifications were prepared by Inter Design, Inc. and the plumbing and electrical was contracted by Wenzel Mechanical Contractors.

A new entrance road, approximately a quarter mile long, and parking lot was constructed by the Airforce National Guard (934th Civil Engineering Squadron). They did all the grading, formed the ditches and trucked in the base material. We contracted for the gravel and they did the spreading and final grading. Their utilization was a little slow because they only train one weekend per month but it was a tremendous savings for the refuge. This work also included closing of three old driveways which consisted of stripping gravel and hauling in top soil. This project really helped tie the headquarters as a total unit and eliminated the residential look of the area.

Tree removal contracts were set up to remove diseased elm trees at both the headquarters area and the Bass Ponds. This work was done in cooperation with the City of Bloomington Elm Tree Disease Program. The total contracted amount was approximately \$10,000.

The Louisville Unit historic buildings required a considerable amount of restoration for both preservation and safety. The initial work consisted of a contract with cement masons from Murphys Landing, a Minnesota Valley Restoration organization. Because of cold weather, their work will not be completed until the spring of 1981. In conjunction with their work, our maintenance crew installed tie rods at the Marion Station residence and weeded and installed security screens for all the windows.

Gates and barricades were constructed and installed by the maintenance crew at the entrances to the service yard, Bass Ponds and Chaska Lake Unit. In conjunction with this project, the gates on the Louisville Unit had the hinges rewelded and put back in working order. The gates were constructed with square tubular steel and attached to routed wood posts.



#33. A big job to tackle was cleaning up the Lyndale Marina on the Minnesota River near Interstate 35W. There was years of junk accumulation and an abandoned marina building plus it being a favorite 4-WD area. 80-125 MVR



#34. After cleanup, the Lyndale Marina site was graded, seeded, fenced and posted - another job well done! 80-3308 MVR

2. Rehabilitation

Rehabilitation at Lyndale Marina consisted of surveying the marina building on site and a contract for renovating the site. The contract consisted of removal of large quantities of debris, grading and leveling the total site, construction of a decorative fence and gate, and seeding.

The Bloomington Ferry renovation consisted of surveying and removal of the old riding stables and tack house and the grading and seeding of the site. The maintenance crew also installed decorative barricade posts and a road-side identification sign.

Four house sites required to be surveyed or demolished and removed and the site renovated. These properties consisted of: Ansel Doll - 66; Roy McCrea - 205; Arthur Hinke - 14; and Ronald Davis - 13. The McCrea structure was burned by the Carver Fire Department leaving only the removal of the foundation and the site to be renovated. In the process, the contractor succeeded in getting a large loader and a dozer stuck and had to bring in a third machine to get them out.

The Bass Ponds renovation of the gravel mining area has been a slow process because the lessee has the right to remove stock-piled gravel until 1982. The gravel has now been removed but the renovation required by a City of Bloomington permit is still in the process. It is hopeful this work will be completed by early summer 1981.

The headquarters area has several small out buildings and debris that must be removed. We are currently in the process of letting a contract for this work. This contract will also include the house at the Jacobson property off old Cedar and River Road.

3. Major Maintenance

In the spring and summer of 1979 the maintenance program was initiated by the hiring of two temporary laborers and the acquisition of a rejected pickup truck from GSA. Some of their initial projects consisted of getting the Kalscheuer house ready for occupancy and posting some of the initial land acquisition.

The staffing for the maintenance and construction program began in August 1979 with the hiring of the refuge Landscape Architect. In December 1979, two temporary carpenters were hired to remodel the Kalscheuer garage into a shop and the Swanson house into a more permanent office. In February, our maintenanceman was hired and our much needed maintenance program was on its way. The actual labor force has consisted of temporary laborers and bio-techs with a maximum of four during the summer of 1980.



#35. The Bloomington Ferry site included an old stable, tack building and considerable junk when the USFWS first acquired the property. The historic Bloomington Ferryman's house is in the background and still in private ownership. 80-1079A MVR



#36. After the old buildings were removed, the site was graded and seeded. This was one of several expensive environmental restoration projects. Unfortunately all building debris must be hauled to a sanitary landfill which costs considerable in transportation and dumping fees. The completed job is pictured earlier in this narrative report.

To supplement the maintenance and construction program several tools and additional pieces of minor equipment were acquired. Additional work was put into the shop. The Davis tract had a building that was moved in from the air base at the airport that was converted into a storage building which included a small outdoor storage area for equipment. Two temporary fuel tanks were also installed adjacent to the shop building. Unfortunately every change or addition required the electrical service to be updated.

4. Equipment Utilization

The first maintenance equipment was ordered in June 1980. This equipment consisted of a CJ-5 Jeep and Jeep J-10 pickup and a small John-Deere tractor. The jeeps arrived in November and the tractor arrived in February 1980.

In February 1980 arrangements were made to acquire a 1970 John Deere Dozer on surplus and in June, through GSA, we acquired 22,000 G.V.W. truck from an Air Force Base in Kansas. Arrival of these few pieces of equipment was enough to make us think that we were really going to be a refuge.

5. Communications Systems

Purchasing of radio equipment still pending.

6. Energy Conservation

7. Other

J. OTHER ITEMS

1. Cooperative Programs

During the first year of refuge management of the Louisville Unit, the Minnesota Department of Natural Resources provided maintenance and surveillance of the area through a cooperative management agreement that expired in 1980. Cooperative farming agreements were developed with local farmers also in the Louisville area during 1980.

2. Items of Interest

3. Credits

The following individuals assisted in the writing of this first narrative report for the Minnesota Valley NWR:

Edward S. Crozier, Refuge Manager

- Highlights
- Planning
- Administration
- Habitat Management
- Wildlife
- Feedback

Arthur S. Hawkins, Jr., Assistant Refuge Manager, Public Use

- Highlights
- Planning
- Public Use
- Administration (Technical Assistance)
- Other Items

L. Paul Schneider, Assistant Refuge Manager, Wildlife

- Land Acquisition
- Habitat Management
- Wildlife
- Administration (Other Items)

David M. Shaffer, Landscape Architect/Maintenance

- Equipment and Facilities
- Administration (Technical Assistance)

John P. Taylor, Jr., Refuge Manager (Trainee)

- Climatic Conditions
- Land Acquisition
- Habitat Management
- Wildlife
- Photographic Section
- Overall Coordination

Kenneth A. Deaton, Outdoor Recreation Planner/Law Enforcement

- Planning
- Administration (Safety)
- Public Use

Beverly A. LaVine, Administrative Technician

- Administration
- Other Items
- Coordinating, typing and assembling report



#37. Long Meadow marsh at daybreak - It leaves a vivid image in one's mind for a long time and makes it all worth it.

80-3077A MVR

K. FEEDBACK

As I understand this section, it is an opportunity for the refuge manager to depart from the usual factual reporting of the narrative report and express more "personal" views or perspectives.

Since I have been involved in the establishment of Minnesota Valley National Wildlife Refuge from the time it was only a casually-discussed idea in the early 1970's to the refuge activities of today, I can appreciate the progress. On the other hand, I, along with others on the staff, are sometimes frustrated with the pace of establishment. As a result, this first reporting year of the Minnesota Valley NWR has been filled with considerable satisfaction as well as disappointment.

I think the entire staff started with very high hopes. The national environment climate was encouraging; there was strong political and citizen support; and ample resources to purchase land and operate the refuge. By the end of the year, some of that seems to be dwindling away despite the good efforts of the refuge staff and local citizens who support the refuge. The state of the national economy is rapidly having its effect at the field level.

Starting a new refuge provides an opportunity to try a few things differently. When a refuge manager has an opportunity to start again on a new refuge after many years of outside exposure as I have, there is an inclination to envision a few idealistic concepts. After awhile, these ideals seem to mire down and it becomes easy to say, "Oh, what the hell!" and go on in the usual fashion without much innovation. As a result, I think it takes a lot of fortitude to stay exuberant and fresh in approaches to refuge management in today's social-political climate.

It would help if refuge managers and staffs would receive more outside stimulation or encouragement to sort of pep us up. Frequently it seems that the only message coming across is negative and I find it extremely difficult, if not impossible, to buffer this "down feeling" from the staff which makes maintenance of high morale most difficult.

All in all, however, I feel good about the past year in terms of what has been accomplished at the station level. A good staff has been put together and while there is less actual refuge management experience among us than on most refuges, I believe we have established an extremely good operations base to keep things going in the future.

In addition to this "refuge base", we have available for use some special tools such as a computerized resource inventory (each $\frac{1}{2}$ acre is described in 15+ resource variables and stored in the Minnesota Land Information System accessible by the refuge staff), a very extensive 35mm slide collection taken by a professional photographer throughout nature's seasons, two excellent audio-

visual programs tailored specifically to this refuge, a strong planning base including master plan, refuge EIS, management plans and I&R Prospectus, a super administrative system (files, reporting procedures, etc.) organized by Bev LaVine, a first class office facility and a basic complement of cameras, binoculars, vehicles, boats, tractors, trucks, etc., all excellent tools to do the work. The only weakness is a small and poor maintenance/shop building but still workable at this stage.

These material "goodies" are further enhanced by some special staff talents that many refuges lack. As an example, having on-site landscape architects on the staff has paid off in these first stages of refuge development. Although our facility needs are very basic in this initial stage, we were able to develop a basic "facility design" for gates, parking areas and sign supports immediately and keep it consistent from the first installation on. Although this may seem minor, it has helped begin an identity or image for the refuge in the Minnesota valley when it normally takes years to establish a presence in an area and in some areas never occurs.

Another element that has helped in creating an identity is the creation of a Minnesota valley logo by the joint state-federal master planning team that hopefully will be used by all the cooperating federal-state-local agencies that will manage lands in the valley. This has taken some agency ego suppression, but helps tie the whole mix together and is good for the multi-agency meshing that will have to occur. Its use and recognition will accelerate over the next year as the Minnesota Department of Transportation will incorporate the logo in all highway directional signing in the valley. The agency designation will appear only on signs on-site. Again, the need to suppress agency egos. Overall, it should be better for public service and valley identity as a whole.

Considering the difficulties, the refuge staff has done an excellent job this past year in getting this raw area to look and operate as a wildlife refuge. There is some frustration by myself and staff with our lack of involvement or activity in some of the good old traditional refuge or wildlife management activities. The lack of "formal refuge establishment" until the master plan has been completed has caused some of this frustration. In addition, our scattered land holdings have contributed to the problem as it is hard to put together wildlife management programs on even a modest scale if there is checkerboard refuge-private ownership. We are also spending a large portion of our time relating to the public and the local governments which takes away from the time typically applied directly to land management in the more rural sections of the nation. The need to do basic cleanup on the newly acquired lands and just provide simple, safe public access has been very expensive and time consuming. This has further separated us from some of the fun wildlife activities.

The most troublesome problem, in addition to being very time consuming, political, and most visible, is our involvement in controversial land development proposals that are either adjacent to the refuge or are within the congressionally designated portion not yet acquired. This has been somewhat surprising as we thought once the land is acquired by USFWS the pressure would let up, but now we can see that in this urban situation the possible encroachments will go on forever. Frequently the county and city governments support such proposals for the tax generation and we feel obligated to oppose them because of the impact on the existing or proposed refuge lands. It seems we spend considerable time in local government hearing chambers speaking in opposition to highly trained corporate attorneys. One staff member commented that we don't need biological training, we need to go to "smart school and wear 3-piece suits".

Incidentally, the Class A uniform does appear somewhat second rate in many of the formal settings of public appearances on this refuge.

It is a fine line how active we should become in opposition. Frequently we have citizen group allies but they can't carry the battle alone. We feel obligated to protect the environment but at what cost if we are losing support of the local governments for the refuge. This would not be a worrisome concern if we owned all the land and didn't need strong local support. However, we do. Looking ahead, this local support will be even more important in the future, so how far do we go? We could win the battle and lose the war! The bio-politics has gotten to the field level and there is no escaping it on this refuge almost on a daily basis.

In summary, I find the job as refuge manager here to be very challenging and exciting with a tremendous variety that may not be found on most refuges. It is an education that would be helpful to any refuge manager provided you keep flexible, have an open mind and don't mind having a lot of other people involved in more or less routine refuge management decisions.

A P P E N D I X

Refuge

The six management units that will eventually comprise the Minnesota Valley National Wildlife Refuge are located along the Minnesota River between Fort Snelling and Jordan, Minnesota. Acquisition of refuge lands is scheduled for completion by 1983. PRESENTLY, MUCH OF THE LAND IS IN PRIVATE OWNERSHIP.

Each refuge unit will have detailed plans for wildlife protection and habitat management, as well as appropriate recreational activities and educational programs. The continuing planning process will guide program and facility development as lands and funds become available.

Louisville Swamp, a 2,000-acre mix of marsh, bottomland hardwoods and bur oak savanna, is the only refuge unit presently open to public visitation.

Chaska Lake nestles in the floodplain between the river towns of Chaska and Carver. The 580-acre unit consists of an open water, marsh-edged lake surrounded by farmland and floodplain forest.

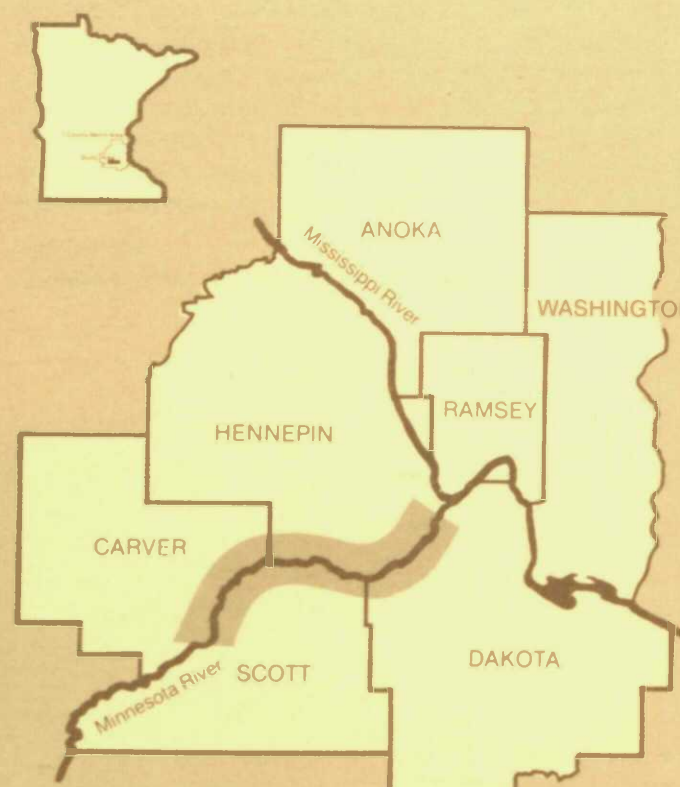
Upgrala derives its name from Upper Grass Lake, the site of an historic hunting club. The area's 2,400 acres of marsh, fields and forested river banks can be observed from Highway 169 along the Eden Prairie bluffs.

Bloomington Ferry was the site of one of the first Minnesota River crossings. The privately-owned historic ferryman's house still stands adjacent to the Highway 18 bridge. These 380 acres encompass lush floodplain forests and wetlands between the river channel and nearby bluffs.

Long Meadow Lake includes 2,200 acres of marshes, fields, hardwood forested bluffs, and bottomlands. The area's proximity to the cities of Minneapolis and St. Paul makes it an ideal location for future recreational and interpretive programs.

Black Dog Lake, owned by Northern States Power Company, is 1500 acres of open water, marshy edges, wet meadows and perched bog, including many unusual plants.

Location



Minnesota Valley



NATIONAL WILDLIFE REFUGE, RECREATION AREA AND STATE TRAIL



Recreation Area

Exciting outdoor experiences are available throughout the Minnesota Valley. Public facilities and programs are provided by the Minnesota Department of Natural Resources, Minnesota Historical Society, county and city parks.

Privately-owned facilities include an historic restoration site, an amusement park, and at least one major annual festival. The river towns of Jordan, Carver, Chaska, Shakopee and Savage, along with the bustling metropolitan suburbs of Bloomington, Burnsville, Eagan and Eden Prairie, all contribute to the complex cultural pattern that has evolved in the Valley.

The Minnesota Valley Trail will eventually provide a connecting corridor between the Valley's major recreation sites from Fort Snelling to Le Sueur. Access points to existing trail segments include Lawrence Wayside, located about five miles southwest of Jordan; Carver Rapids Wayside, adjacent to Louisville Swamp; Trail Site II, opposite Chaska; and Rice Lake Wayside, just south of Bloomington Ferry.

Fort Snelling State Park, located at the confluence of the Minnesota and Mississippi Rivers, provides extensive recreational facilities, as well as environmental education and interpretive programs at the Park's **Pike Island Nature Center**. Detailed maps of trail routes, access points and facilities can be obtained through the DNR.

Historic Fort Snelling recreates 19th Century army life for visitors. The Fort's colorful living history programs provide an interesting perspective on early Minnesota Valley life.

Wilkie Park Reserve is managed by the Hennepin County Park Reserve District primarily as a wildlife sanctuary, encompassing two shallow floodplain lakes that provide ideal habitat for numerous water-loving species.

The Minnesota Valley Restoration Project at Murphy's Landing contains over 40 restored buildings and exhibits that illustrate immigrant life during the 1800s.

The Renaissance Festival recreates a 16th Century marketplace for six weekends in August and September each year, attracting thousands of participants and spectators from all over the country.

Valley Fair is Minnesota's first "theme park", providing turn-of-the-century entertainment for kids of all ages.

Other Refuge Neighbors

A number of the Minnesota Valley's major landmarks are functioning symbols of human interdependence and interaction with the river environment.

Blackdog Power Plant, operated by Northern States Power, is a coal-fired facility adjacent to the Minnesota River in Burnsville. It provides energy for much of the surrounding metropolitan area.

Ports Cargill, Bunge, Continental, Peavey and Richards on the south side of the river, are grain storage and dissemination facilities for barge transport on the Minnesota River.

Blue Lake Treatment Plant, operated by the Metropolitan Waste Control Commission, treats effluent from over 30 surrounding communities.

The combination of open water and spilled grain associated with these facilities represents a major attractant for wintering waterfowl.

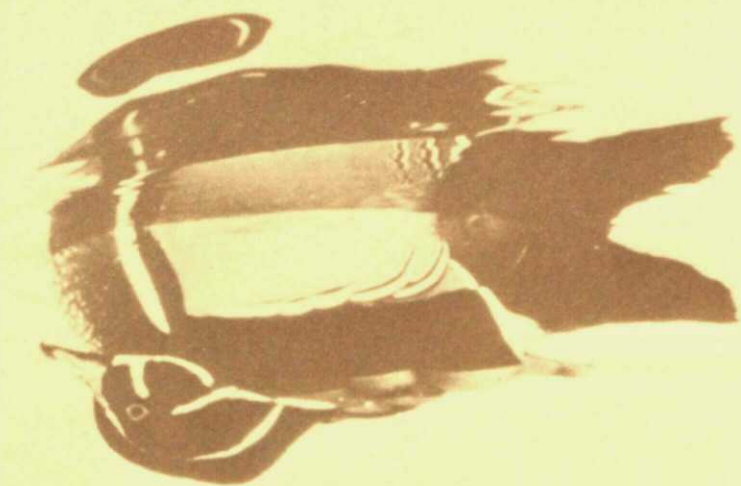
For More Information Contact:



Refuge Manager
Minnesota Valley National Wildlife Refuge
4101 East 78th Street
Bloomington, MN 55420
Phone 612/854-5900



Regional Park Supervisor
DNR Region Headquarters
1200 Warner Road
St. Paul, MN 55155
Phone 612/296-4776

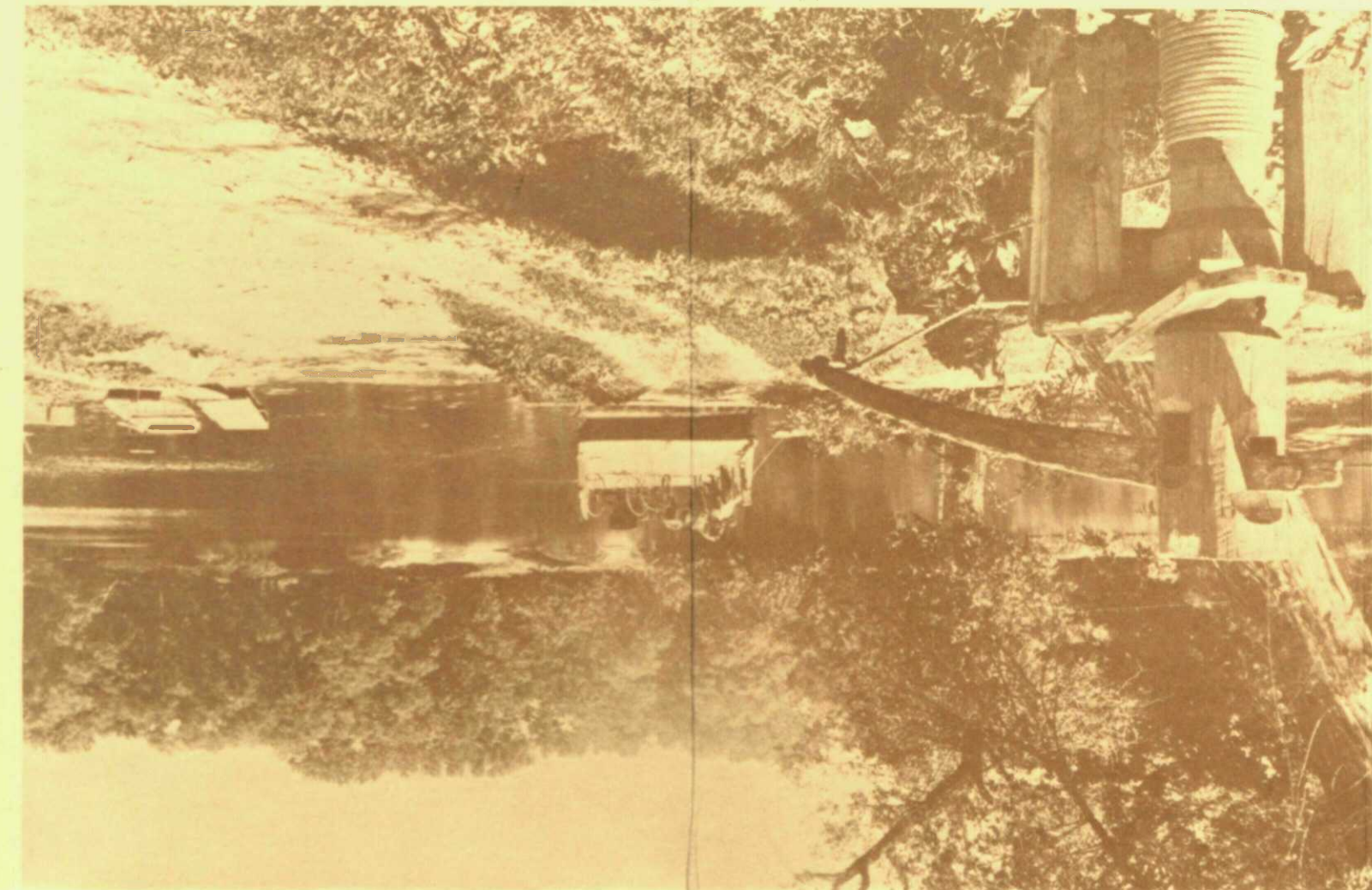


Visitors following the trail west from Fort Snelling as far as Le Sueur will witness a gradual transition from urban to rural landscapes along the river, from a busy present to a simpler past.

Bluffs rising above the Valley floor were once dotted with herds of buffalo and elk, an important food source for the Dakota Indians who also searched the river bottoms for ducks, geese, fish, turtles, wild rice, tubers, fruit, nuts, maple sap and other delicacies. By the 1860s, white settlers who were establishing farms along the Valley had learned the same skills. One local resident whose father homesteaded above Black Dog Lake reports that the family originally dined on buffalo and passenger pigeons, turning to ducks,

Preserving Our Cultural Heritage

Minnesota River Ferry Crossing—Photo courtesy of the Minnesota Historical Society



Vast wetlands extend from the base of the bluffs to natural levees along the river channel. The rich aquatic life of the marsh is constantly changing in response to cycles of growth and decay, flooding and drought. Annual migrations funnel hundreds of thousands of songbirds and waterfowl through this valley flyway. Muskrats cut cattails and other water plants to maintain openings and build houses that provide ducks with loafing sites.

Gigantic cottonwood, silver maple and basswood trees lining the river edge are flood tolerant and historically escaped natural fires. They frame the grain barges and other traditional traffic that hurries through the Minnesota Valley, oblivious to the serene marshes, meadows and forests that lie just beyond the river's banks.

Minnesota Valley

NATIONAL WILDLIFE REFUGE,
RECREATION AREA AND STATE TRAIL

Environmental Ethics in Action

The Minnesota Valley National Wildlife Refuge and Recreation Area is a by-product of the growing environmental awareness that characterized the 1970s. Early in the decade, citizens from the Twin Cities suburbs of Burnsville and Bloomington joined forces to focus national attention on the impending loss of a living resource. The citizens' coalition sought help from their congressional delegation to prevent further loss of wildlife habitat and to preserve their children's natural birthright.

The resulting landmark legislation, passed in 1976, mandated protection of the floodplain along a 36-mile stretch of the Minnesota River. It called for the development of a comprehensive plan to guide all the Valley's land and managing institutions in providing outdoor recreation opportunities. It directed the U.S. Fish and Wildlife Service to establish a major environmental education center and to provide interpretive programs for "hundreds of thousands of urban dwellers".

Eventually, approximately 18,000 acres of the Lower Minnesota River floodplain will be owned and cooperatively managed by federal, state, county and city governments. The six national wildlife refuge units within the recreation area, comprising about 9,500 acres, will be linked with other components of the project by a state corridor trail.

Today, the Lower Minnesota River continues to gently wind through metropolitan Minnesota. The river banks are shaded by great cottonwood, elm, ash and silver maple trees. Beyond these natural silt levees are vast spring-fed marshes interspersed with floodplain forests, brushy thickets, meadows and old farm fields. These fertile habitats support an abundance of wildlife unknown to most other urban areas. Here, unseen and forgotten, animals and plants unite in an incomparable river ecosystem.

During migration, many thousands of waterfowl and other birds funnel through the Minnesota Valley. Of the 250 species that have been recorded here, about 150 nest on the refuge. Notable migrants include white pelicans, whistling swans and bald eagles. Herons, egrets and wood ducks return to the floodplain forests and marshes each year to nest and raise their young. Perhaps the most spectacular year-round resident is the pileated woodpecker, whose huge borings are evident on insect-ridden trees throughout the bottoms. About 50 different kinds of mammals inhabit the refuge, including several hundred white-tailed deer. The marshes are peppered with muskrat houses, and beaver cuttings are common along the river banks. Other species include red and gray foxes, raccoons, mink, weasels, woodchucks, bats, shrews and abundant squirrels, rabbits and mice.

Enhancing Wildlife Values

Spring-fed streams bubbling from the base of the bluffs provide a constant supply of fresh water to the beaver, raccoons and mink that patrol the banks. White-tailed deer stop to drink on their way to browse the shrubs that border the forest edge. Woodpeckers hammer dead trees for insects, creating cavities for future families of songbirds, owls or wood ducks.

Wild animals, like people, respond to different environments according to their particular needs. The dry oak forest and prairie remnants on the bluff edge provide habitat for rodents like mice, squirrels, gophers and chipmunks which in turn feed predators like foxes and hawks.

People are a natural and necessary part of the Minnesota Valley landscape. Wildlife-oriented recreation opportunities will be developed wherever human activities won't conflict significantly with wildlife values. There will be trails connecting the state corridor system to observation blinds and overlooks. Interpretive signs and brochures will help visitors understand what they see. The Minnesota Valley's hunting and fishing traditions will be retained in certain areas under controlled conditions, giving enhancing the natural environment.

Providing Public Services

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.



Department of the Interior

Location

Minnesota



Seven County Twin City Metro Area.
Population 2,000,000 people.



Study Area Description

Geology

Eleven thousand years ago, vast melt waters of the retreating Wisconsin Glacier formed an inland sea called Lake Agassiz. The only outlet at that time, the Glacial River Warren, carved the wide valley that is now known as the Minnesota River Valley. Torrential waters fed the Warren, which varied from one to five miles wide and from 75 to 200 feet deep. When the last ice age came to an end, the River Warren gradually receded. Today, this broad glacial valley is occupied by a much smaller Minnesota River. In the lower stretches of the river valley, there is now an abundance of seeps and springs. These are trapped by a natural levee along the river channel which has created a series of marshes and lakes.

History

The marshes and lakes of the Lower Minnesota River Valley have always been known for their abundance of fish and wildlife. Bluffs rising above the valley floor were once dotted with buffalo and elk, an important source of food for the Dakota or Sioux Indians. These native Americans searched for natural foods along the river bottoms that comprised the bulk of their diet — ducks, geese, fish, turtles, deer, wild rice, plant tubers, fruits, nuts, maple sap and others.

By 1860, white settlers were establishing farms all along the Valley and they, too, learned to depend on the river bottoms for the wild staples of their diet. One local resident reports that his father homesteaded above Black Dog Lake in 1856 and ate buffalo and passenger pigeons as a boy. Later, that individual's own family feasted on ducks, bobwhite quail, prairie chickens and pike.

In recent times, cropland has been increased in the lowlands along the river. Other impacts causing destruction of traditional wildlife habitat include development of landfills, quarries and industries. Conversion of floodplain environments for commercial and industrial production has taken a heavy toll in things natural, wild and free. Yet, amazingly, many of the species which gave sustenance to native Americans and settlers still occur abundantly throughout the Valley.



A Study Report Minnesota Valley National Wildlife Refuge



Department of the Interior U.S. Fish and Wildlife Service.

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

The information herein should not be construed as representing the approval or disapproval of the Secretary of the Interior or the Director of the U.S. Fish and Wildlife Service. The purpose of this report is to summarize a study prepared by the U.S. Fish and Wildlife Service.

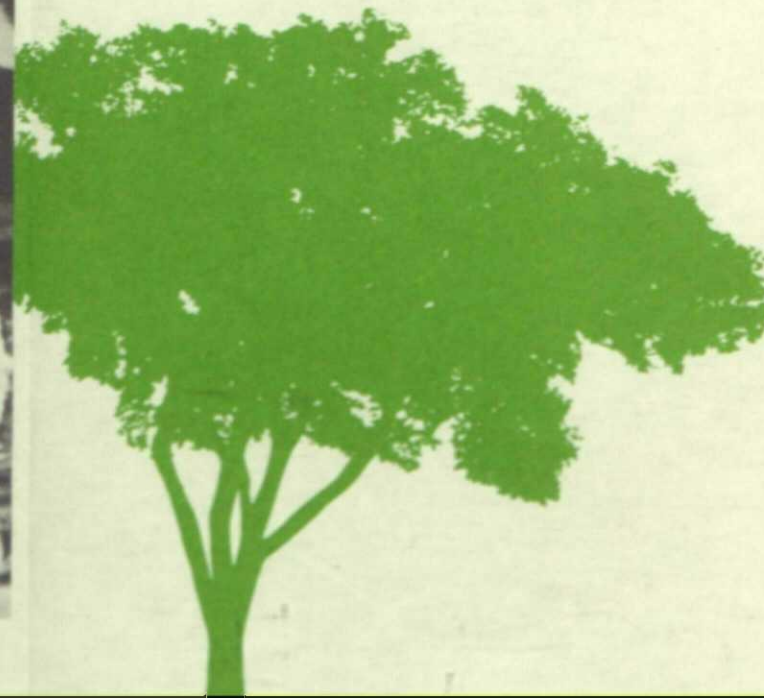


Vegetation

The refuge study area is located in a prairie-forest transition area. A representative cross-section of the river valley shows distinct zones of vegetation. Plant life changes from moist, grassy meadows on the valley floor to maple-basswood forests on the lower slopes and to dry oak savannas with prairie grasses near the bluff tops.

The floodplain forest along the river consists mainly of elm, silver maple, willow, cottonwood, ash, box elder and aspen. While large cottonwoods tend to line the river and silver maples grow in rather homogeneous stands, most forested areas are populated with mixed species.

The valley's large wetlands and shallow lakes are edged with dense willow, aspen, ash and dogwood. Open wet meadows surrounding marshy areas are dominated by reed canary grass, cutgrass, whitetop, swamp milkweed, marsh dock, sedge, smartweed, boneset and cordgrass. Extending far into the water of the area's marshes and lakes are vast stands of phragmites, bulrushes, cattails, sedges, arrowhead, plantain, smartweed and wild rice.



Waterfowl

During spring migration, tens of thousands of waterfowl use this stretch of Minnesota Valley floodplain. Observers report that in the spring of 1959, approximately 5,000 lesser scaup, 1,000 canvasbacks and 1,000 coots rested on Fisher Lake alone. In the fall of 1971, an estimated 10,000 teal, mallards, wood ducks and other species used the Rice Lake/Grass Lake area. By October 1 of each year, between 30 and 40 thousand waterfowl congregate on the refuge study area. These concentrations account for a high level of hunting success throughout the area.

Small numbers of waterfowl have traditionally wintered on the ice-free springs and fast-flowing streams of the Lower Minnesota Valley. Since 1952, 200 to 300 acres of water at Black Dog Lake have been kept open by the action of warm water discharged from the Northern States Power electrical generating plant there, causing numbers of wintering waterfowl to increase considerably. Approximately 4,500 mallards, 850 goldeneyes and 50 black ducks presently winter at Black Dog Lake.

Protected whistling swans and canvasback ducks traditionally use Rice and Grass Lakes during spring migration. In all, 24 waterfowl species have been recorded here.

The Lower Minnesota Valley wood duck nesting habitat is excellent. Other principal species of waterfowl produced here include blue-winged teal, mallards and shovelers. Some of the metropolitan area's estimated 200 pairs of Canada geese could be expected to expand into the refuge study area if suitable sanctuary were provided. The marshes of the refuge study area could be much more productive than other metropolitan wetlands because of their fertility and seclusion.

Other Birds

The Minnesota River Valley Audubon Club and the Minneapolis Bird Club have long kept extensive records on birds seen in this area. They have recorded approximately 275 species during migration. About 100 species nest locally. The Valley's shallow lakes and marshes attract an abundance of water-loving species. Little green herons, black-crowned night herons, bitterns, black terns, yellowlegs, killdeer, spotted sandpipers and rails are also frequently seen and heard calling from the marshes; and good cover adjacent to small grain crops along the river bottoms has maintained excellent pheasant populations.

Mammals

White-tailed deer are common throughout the proposed refuge. Up to 600 have been counted along this 25-mile stretch of river bottoms during the winter when deer move into traditional yarding areas.

Furbearers such as muskrats, mink and beaver have always been abundant in the floodplain marshes. Raccoons, red and gray foxes, woodchucks, weasels, cottontail rabbits, squirrels, bats, shrews and many species of mice are found throughout the uplands.

Fish

Although these shallow floodplain lakes are subject to frequent winter kills, their fertile waters are restocked naturally during periods of high water. Long Meadow Lake, Black Dog Lake, Grass Lake, Upper Rice Lake, Louisville Swamp and part of the Chaska Lake complex are inhabited by carp, buffalo, bullheads, shad, drum, catfish, dogfish, gar, shiners, northern pike, sunfish and other species.



A Wildlife Resource in an Urban Environment

The Lower Minnesota River Valley, gently winding through metropolitan Minnesota, is surrounded but not subdued by urbanization. Its bottomlands are still wild and rich with life. The river banks are covered with great elm, cottonwood and ash trees. Beyond these natural levees are vast spring-fed marshes interspersed with lush brush patches, grassy meadows and small farm fields.

Inhabiting these fertile bottomlands is a variety and abundance of life unknown to most other metropolitan areas. Here, unseen and forgotten, wildlife and plant species have united in harmony with the waters, creating an incomparable river environment.

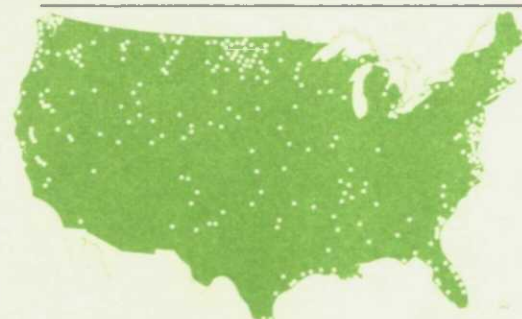
Man, too, has made his contribution to the river floodplain environment. People have polluted its waters, stripped its protective vegetation, filled its marshes with garbage and crisscrossed its shores with utility lines. Despite this urban encroachment, the river floodplain still remains an outstanding wildlife area, a tribute to nature's perseverance.

Citizens' Concern

Some citizens, alarmed with continual destruction of this unique urban resource, have organized to protect the river floodplain. They have distributed informational materials and have held public meetings. Their efforts have led to a congressional request that the U.S. Fish and Wildlife Service investigate the possibility of establishing a national wildlife refuge in the Valley.

In response, the U.S. Fish and Wildlife Service studied the Minnesota Valley area that lies between Jordan and Fort Snelling. It found that this area has significant wildlife values that should be preserved and that these lands could be a valuable addition to the National Wildlife Refuge System. This brochure summarizes the study that was conducted by the Service.

A Refuge



A Minnesota Valley refuge, if established, could become one of 370 other units of the National Wildlife Refuge System. The mission of the System is to provide and safeguard a national network of lands and waters to meet the need for areas where the entire spectrum of human benefits associated with wildlands and wildlife is enhanced. A Minnesota Valley national wildlife refuge could support that broad mission by keeping in public trust, in an urban location, an important natural floodplain which contributes significantly to the wildlife and wildland heritage of this nation.

Refuge Objectives

A Minnesota Valley national wildlife refuge could provide wildlife-oriented activities to broaden man's understanding and appreciation of the environment. It could work in concert with other natural resource units in the River Valley which are or will be managed by the State Department of Natural Resources, County park organizations and local municipal park departments. Together, they could preserve much of the floodplain and ensure that it continues to function as a natural system.

Specifically, the objectives of the refuge could be to:

- Preserve a critical portion of the Minnesota River Valley with its wildlife and natural habitat.
- Provide an urban wildlife area for birdwatching, photography, nature study, hunting, fishing and other wildlife-oriented activities.
- Provide a unique educational resource to all ages by assisting with field studies of environmental

interrelationships, stimulating curiosity and investigation of living things by offering a variety of first-hand outdoor experiences.

Refuge Programs

Wildlife Production & Maintenance

Waterfowl Production: The refuge could be managed to produce three important species of ducks — mallards, wood ducks and blue-winged teal. Management could focus on improvement of nesting habitat and maintenance of brood areas. Special attention could be given to the protection of local broodstock. Waterfowl nesting habitat could be improved by establishing suitable ground cover, installation of nesting structures and a forest management program. Rearing areas for waterfowl broods could be improved by carp control and management of marsh vegetation.

The refuge could help increase the metro area nesting flock of Canada geese by providing nesting habitat. The refuge also could participate in a trumpeter swan restoration project by assisting the Hennepin County Park Reserve District with their on-going program.

Waterfowl Maintenance: The marsh and upland areas could be managed to maintain spring and fall populations of both ducks and geese at levels that could provide ample opportunity to observe waterfowl in their natural habitat. This could be done without causing a significant redistribution of waterfowl or waterfowl harvest from other areas of the flyway. The refuge also might serve to improve the distribution of large Canada geese now moving into the Rochester, Minnesota area where populations are near capacity level.

The refuge could protect and provide for migrating canvasbacks and redheads. It could also be managed to control the increasing wintering mallard flocks to maintain current distribution patterns and control disease. Production and maintenance management could begin immediately without new development by establishing closed areas, controlled hunting, control of carp populations and manipulation of vegetation.

Wildlife Diversity: The area has an abundant variety of birds and mammals due to the various types of habitat. Many people enjoy the diversity of wildlife on-site, but the same wildlife is enjoyed off-site since it often ventures into adjacent residential areas. The refuge could be managed to maintain this diversification so that the great mix of wildlife is perpetually enjoyed by the public.

Wildlife & Wildlands Appreciation

Visitors could observe and enjoy wildlife through programs and facilities specifically designed for that purpose. There could be foot trails, connected to the proposed State Minnesota River Valley Trail System, to lead people to observation blinds and elevated platforms for enhancing their wildlife viewing experience. Signs and brochures could help the visitor interpret and understand what he sees. In addition to the self-guided facilities, there could be guided tours and demonstrations by naturalists who could assist visitors in learning about and enjoying the floodplain environment.

Environmental Education

Suitable outdoor study areas are in short supply in the Twin Cities metro area; existing centers are filled to near capacity. There is a special need for those types of wild areas which can be visited in half a day.

The proposed areas could provide space and limited facilities where outdoor programs in natural science and environmental education for all age groups could be conducted by the existing educational systems, with particular emphasis on serving inner-city schools.

Research & Scientific Studies

Because of its urban location near a multitude of educational institutions, the refuge could provide an excellent opportunity for scientific research studies related to monitoring, preserving or improving the natural environment. Refuge personnel can designate sites and make available facilities for such studies.

Fishing & Hunting

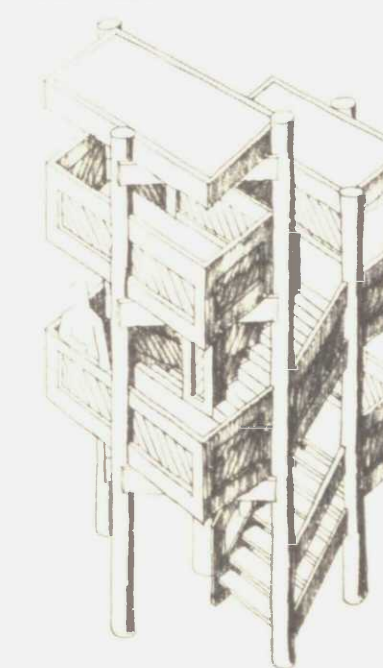
Hunting and sport fishing are still popular activities on the floodplain. Waterfowl and small game hunters pursue ducks, pheasants and rabbits with shotguns while bow-and-arrow hunters seek deer.

These activities could continue to be encouraged on a controlled basis, particularly river fishing. Public access could be improved and fishing sites developed so only a minimum of equipment is needed. This low-cost form of outdoor recreation could then be easily accessible by both public and private transportation and equally available to all citizens. Limited types of hunting could be made available with priority emphasis given to youth programs.

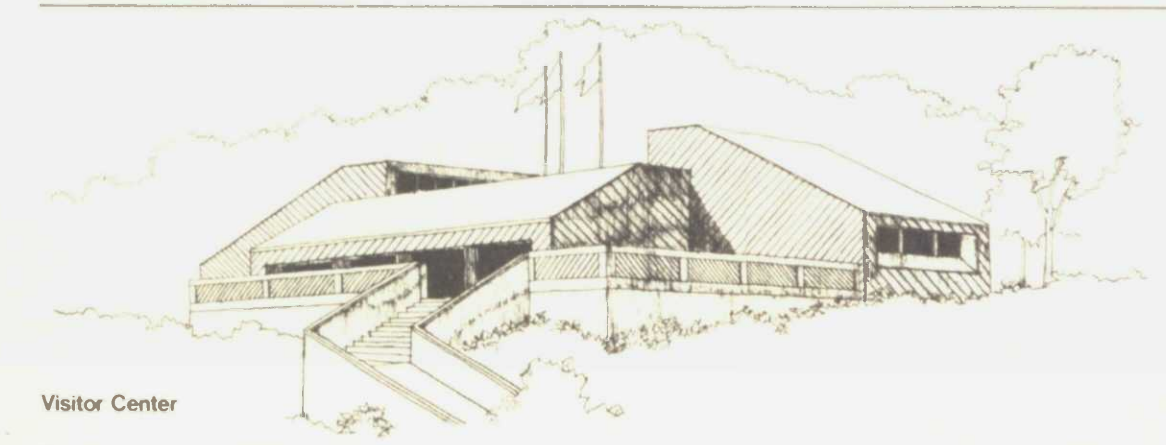
Historic Preservation

There are approximately 40 historic sites within the Minnesota River Valley between the Village of Carver and Fort Snelling. Those which are acquired could become part of the total interpretive program and be used to illustrate the interrelationship of wildlife, Indians and early settlers. In addition, those that qualify could be added to the National Register of Historic Places.

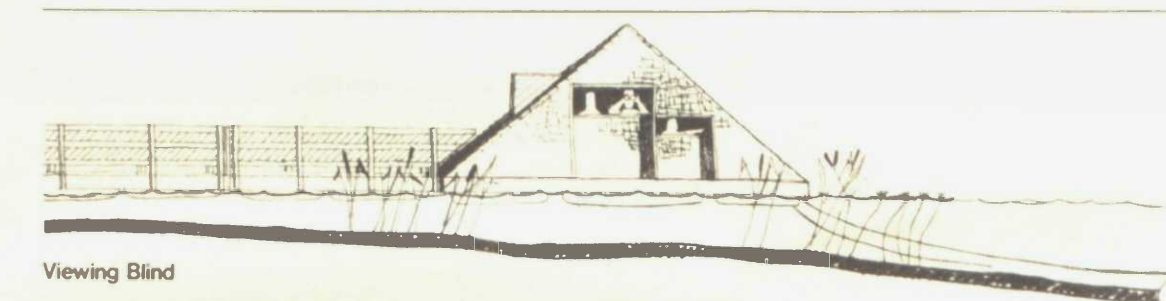
Interpretive Facilities Concepts



Observation Tower



Visitor Center



Viewing Blind

Refuge Facilities

The Minnesota Valley National Wildlife Refuge could consist of approximately 6,600 acres, including 1,450 acres of meandered waters. The refuge could be in four units, beginning with No. 1 near Fort Snelling to Unit IV near Carver, as shown on the attached map.

The Long Meadow Lake Unit, located in Bloomington, could be developed with a combination administration and visitor center building. Providing visitors with an opportunity to learn about the recreational activities and values of the river area, it could be the center of the refuge interpretive and environmental education activities.

Connected to the Minnesota Valley Trail, there could be short hiking paths for wildlife interpretation and observation. An integral part of this trail system could be observation towers and photography blinds. Interpretive media could include signs and brochures.

Also, in the Long Meadow Lake Unit there could be auto access to the wildlife interpretive and observation areas. In the other units auto access could be limited to entrance points and water access points.

Existing roads could suffice for many years without extensive development, but some upgrading would be necessary to make them suitable for refuge operation and maintenance purposes.

The entry points at the other three units could consist of a visitor information shelter, parking area, toilets, control gates and signing. The visitor information shelters could be simple, open-sided structures which could serve the interpretive, educational and wildlife-oriented public use programs.

Water control structures exist on several marsh areas. They are very old and would be either repaired or replaced. The refuge boundary could be posted but not fenced.

For additional information contact the Regional Director, U.S. Fish and Wildlife Service, Federal Building, Fort Snelling,





Department of the Interior U.S. Fish and Wildlife Service.

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

The information herein should not be construed as representing the approval or disapproval of the Secretary of the Interior or the Director of the U.S. Fish and Wildlife Service. The purpose of this report is to summarize a study prepared by the U.S. Fish and Wildlife Service.



Certificate of Appreciation

Minnesota Valley



National Wildlife Refuge

U. S. Fish and Wildlife Service

In Recognition of Contributions to the Betterment of the Minnesota Valley

Date

Refuge Manager

PUBLIC LAW 94-466

94TH CONGRESS

MINNESOTA VALLEY NATIONAL
WILDLIFE REFUGE ACT

Public Law 94-466
94th Congress

An Act

Oct. 8, 1976
[H.R. 13374]

Minnesota
Valley National
Wildlife
Refuge Act.
16 USC 668kk
note.
16 USC 668kk.

To provide for a national wildlife refuge in the Minnesota River Valley, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Minnesota Valley National Wildlife Refuge Act".

DECLARATION OF POLICY

SEC. 2. (a) FINDINGS.—The Congress finds and declares the following:

(1) The Lower Minnesota River Valley, which provides habitat for a large number of migratory waterfowl, fish, and other wildlife species, is a unique environmental resource.

(2) This valley is located close to a large metropolitan area and, accordingly, it is of great value as a source of environmental education, recreational opportunities, and interpretive programs for hundreds of thousands of urban dwellers.

(3) This valley is currently threatened with spoliation, removal from public access, and ecological downgrading, through commercial and industrial development.

(4) Despoilment of this valley and its flood plain will result in the permanent loss of unique social, educational, and environmental assets.

(b) Policy.—It is therefore declared to be the policy of the Congress in this Act to preserve the Minnesota River Valley through the establishment of the Minnesota Valley National Wildlife Refuge.

DEFINITIONS

16 USC 668ll

SEC. 3. As used in this Act:

(1) The terms "conserve" and "conservation" mean to use, and the use of, methods and procedures which are necessary to assure, to the maximum extent practicable, the continued existence of populations of fish and wildlife. Such methods and procedures may include, but are not limited to, all activities associated with scientific resource management, including research, census, law enforcement, habitat acquisition, and public information and education.

(2) The term "interests therein" means any property interest in lands and waters, including, but not limited to, a leasehold, an easement, a future interest, or an equitable use.

(3) The term "refuge" means the Minnesota Valley National Wildlife Refuge, established pursuant to section 4 of this Act.

(4) The term "Secretary" means the Secretary of the Interior, acting through the United States Fish and Wildlife Service.

(5) The term "State" means the State of Minnesota and any political subdivision thereof.

(6) The term "wildlife recreation area" means the wildlife recreation area established adjacent to the refuge, pursuant to section 5 of this Act.

THE REFUGE

SEC. 4. (a) ESTABLISHMENT.—The Secretary shall establish, in accordance with this section, the Minnesota Valley National Wildlife Refuge by publication of a notice to that effect in the Federal Register upon completion of the comprehensive plan pursuant to section 6 of this Act. The refuge shall consist of—

Notice,
publication in
Federal Register.
16 USC 668mm.

(1) approximately 9,500 acres of lands, marshes, submerged lands, and open waters in the lower Minnesota River Valley, which are depicted as a wildlife refuge on a map dated November 1975 and entitled "Official Map—Minnesota Valley National Wildlife Refuge-Recreation Area", which shall be on file and available for public inspection in the offices of the United States Fish and Wildlife Service of the Department of the Interior; and

(2) any additional lands, waters, and interests therein, which the Secretary may acquire and designate for inclusion in the refuge.

(b) ACQUISITION AND ADMINISTRATION.—(1) The Secretary shall, within 6 years after the date of enactment of this Act, acquire lands, waters, and interests therein, within the boundaries of the refuge, by (A) donation; (B) purchase (with donated, transferred, or appropriated funds); or (C) exchange.

(2) With respect to the Black Dog Lake unit, as identified on the map referred to in subsection (a) (1) of this section, the Secretary may not acquire any lands, waters, or interests therein unless such acquisition is compatible with the continued operation of the electric power generation plant presently located within such unit. The Secretary may negotiate and enter into an agreement, with the owner of such powerplant, for the joint or cooperative conservation and management of such unit.

(3) The Secretary shall develop and administer the lands, waters, and interests therein, which are acquired for the refuge, in accordance with the National Wildlife Refuge System Administration Act of 1966, as amended (16 U.S.C. 688dd et seq.). The Secretary may also exercise any other authority available to him for the conservation and management of wildlife and natural resources, the development of wildlife recreational opportunities, wildlife interpretation, and environmental education, to the extent deemed by him to be appropriate to carry out the purposes of this Act.

16 USC 668dd
note.

(c) WILDLIFE INTERPRETATION AND EDUCATION CENTER.—The Secretary shall construct, administer, and maintain, at an appropriate site within the refuge, a wildlife interpretation and education center. Such center shall be designed and operated to promote environmental education and to provide an opportunity for the study and enjoyment of wildlife in its natural habitat.

(d) REVENUE SHARING.—Payments made, in accordance with the Refuge Revenue Sharing Act (16 U.S.C. 715s), to the counties in which units of the refuge are located shall be distributed by such counties to municipalities and townships on the same pro rata basis as is used in the distribution of real estate taxes.

THE WILDLIFE RECREATION AREA

SEC. 5. (a) GENERAL.—The Secretary shall establish, in cooperation with the State and in an area adjacent to the refuge, a wildlife recreation area by publication of a notice to that effect in the Federal Register upon completion of the comprehensive plan pursuant to

Establishment.
Notice.
publication in
Federal Register.
16 USC 668nn.

section 6 of this Act. Such area shall consist of the lands, waters, and interests therein which are depicted as a recreation area on the map referred to in section 4(a)(1) of this Act. The wildlife recreation area shall, in general, consist of—

(1) those portions of the Lower Minnesota River floodplain and which are necessary for one or more of the following: public access to such area; safety; the well-being of the visiting public; and the operation and maintenance of such area; and

(2) any additional areas which are adjacent to such floodplain and which are located between the city of Jordan, Minnesota, and Fort Snelling State Park, excluding the industrialized component thereof located in the municipalities of Savage, Chaska, Shakopee, and Burnsville, Minnesota.

(b) **ACQUISITION AND ADMINISTRATION.**—Lands, waters, and interests therein, which are within the boundaries of the wildlife recreation area, shall, with the agreement of the State, be acquired, developed, and administered by the State (in cooperation with the Secretary) in accordance with the provisions of the comprehensive plan developed under section 6 of this Act.

COMPREHENSIVE PLAN

16 USC 668^{oo}.

SEC. 6. (a) GENERAL.—Within 3 years after the date of enactment of this Act, the Secretary shall, in cooperation with the State and political subdivisions thereof, develop a comprehensive plan for the conservation, protection, preservation, and interpretation of the Minnesota Valley National Wildlife Refuge and the adjacent wildlife recreation area.

Guidelines.

(b) **MANAGEMENT CATEGORIES.**—The plan required by subsection (a) of this section shall delineate and provide appropriate management guidelines for the following two categories of property:

(1) **Category I.**—The Minnesota Valley National Wildlife Refuge, to be acquired and managed by the Secretary pursuant to section 4(b) of this Act.

(2) **Category II.**—Public nature-recreation areas, to be acquired (in fee or by lease, easement, donation, or other agreement) and managed by the State (in cooperation with the Secretary) pursuant to section 5(b) of this Act.

(c) **OTHER REQUIREMENTS.**—The plan required by subsection (a) of this section shall—

(1) provide for the Minnesota Valley Trail Corridor, authorized by Minnesota Statute, 1969, section 85.198, as an integral part of the Minnesota Valley National Wildlife Refuge and the adjacent wildlife recreation area; and

(2) contain such other provisions relating to public use, law enforcement, wildlife conservation, environmental education and interpretation, and other matters as the Secretary and the State deem necessary to preserve, protect, and enhance the refuge-recreation area and to carry out the purposes of this Act.

FINANCIAL ASSISTANCE

16 USC 668^{pp}.

SEC. 7. (a) GRANTS.—The Secretary shall provide sufficient financial assistance to the State to enable it to acquire and develop lands, waters, and interests therein in the wildlife recreation area. A grant made under this section shall only be used with respect to lands, waters, and interests therein which are acquired by the State after the establish-

ment of the wildlife recreation area. The Secretary may reimburse the State for lands, waters, and interests therein which are acquired prior to the establishment of the wildlife recreation area if such lands, waters, and interests therein are contained within the area at the time of its establishment. Such grants shall be subject to such other terms and conditions as may be prescribed by the Secretary. Any grants made from the Land and Water Conservation Fund shall be subject to the provisions of section 6 of the Land and Water Conservation Fund Act, as amended (16 U.S.C. 4601-8).

Reimbursement.

Terms and conditions.

(b) **LIMITATIONS.**—Any payment made by the Secretary under this section shall be subject to the following condition: The conversion, use, or disposal of any lands, waters, and interests therein which are required by the State, directly or indirectly, with Federal financial assistance provided under this section, for purposes contrary to the purposes of this Act (as determined by the Secretary), shall create in the United States a right to compensation from the State in an amount equal to the fair market value of the land at the time of conversion, use or disposal, or an amount equal to the Federal payment for acquisition and development of the land, whichever is greater.

SPOIL SITES

SEC. 8. The Secretary and the United States Corps of Engineers shall assist appropriate local authorities in the disposal of dredge material and in the designation of sites for deposit of dredge material, so as to minimize the disruption of wildlife and the reduction of scenic and recreational values and so as to assure the continuation of navigation on the riverway. The Secretary may acquire such alternative sites, outside the boundary of the refuge-recreation area, as may be necessary, in exchange for sites existing in the area on the date of enactment of this Act. The value of any properties so exchanged shall be approximately equal as determined by the Secretary or, if not, such value shall be equalized by the payment of cash, to the owners of the property within the refuge-recreation area or to the Secretary, as the circumstances require. The Secretary is authorized to expend not more than 20 per centum of the funds appropriated for acquisition of the refuge under section 10(a) of this Act to assist in the disposal of dredge material and to purchase alternative sites for deposit of dredge material as may be necessary outside the boundaries of the refuge and recreation area.

16 USC 668qq.

Alternative sites, acquisition.

CONTINUED PUBLIC SERVICES

SEC. 9. Nothing contained in this Act shall be construed as prohibiting or preventing the provision of vital public services, including—

16 USC 668rr.

(1) the continuation of commercial navigation in the main navigation channel of the Minnesota River which lies within the refuge-recreation area;

(2) the construction, improvement, and replacement of highways and bridges, whether or not the highway is a Federal-aid highway; or

(3) any other activity which the Secretary determines to be necessary;

if the provision of such services is otherwise in accordance with law. Any activity referred to in this section shall be carried out so as to minimize the disruption of the wildlife and the reduction of recreational and scenic values of the area, consistent with economic feasibility.

AUTHORIZATION FOR APPROPRIATIONS

16 USC 668ss.

SEC. 10. (a) ACQUISITION.—There are authorized to be appropriated such amounts as may be necessary for acquisition of lands, waters, and interests therein in the refuge-recreation area, pursuant to sections 4(b) (1) and (7) (a) of this Act, except that such sums shall not exceed a total of \$14,500,000 for the period beginning October 1, 1977, and ending September 30, 1983.

(b) DEVELOPMENT.—There are authorized to be appropriated such amounts as may be necessary for the development of the refuge-recreation area, except that such sums shall not exceed \$6,000,000 for the period beginning October 1, 1977, and ending September 30, 1986. Not more than \$500,000 of such sums shall be used for the development of the comprehensive plan pursuant to section 6 of this Act.

Approved October 8, 1976.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 94-1470 (Comm. on Merchant Marine and Fisheries).
SENATE REPORT No. 94-934 accompanying S. 2097 (Comm. on Commerce).
CONGRESSIONAL RECORD, Vol. 122 (1976):
Sept. 20, considered and passed House.
Sept. 24, considered and passed Senate.

Note.—A change has been made in the slip law format to provide for one-time preparation of copy to be used for publication of both slip laws and the United States Statutes at Large volumes. Comments from users are invited by the Office of the Federal Register, National Archives and Records Service, Washington, D.C. 20408.

MINNESOTA VALLEY NATIONAL WILDLIFE RECREATION AREA

CARVER, DAKOTA, HENNEPIN & SCOTT COUNTIES, MINNESOTA

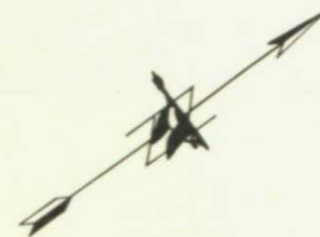


HR. 11323 S. 2097

OFFICIAL MAP

- Boundaries of National Wildlife Recreation Area
- Boundaries of National Wildlife Refuge
- Flood-Plain Limits
- Floodway Limits

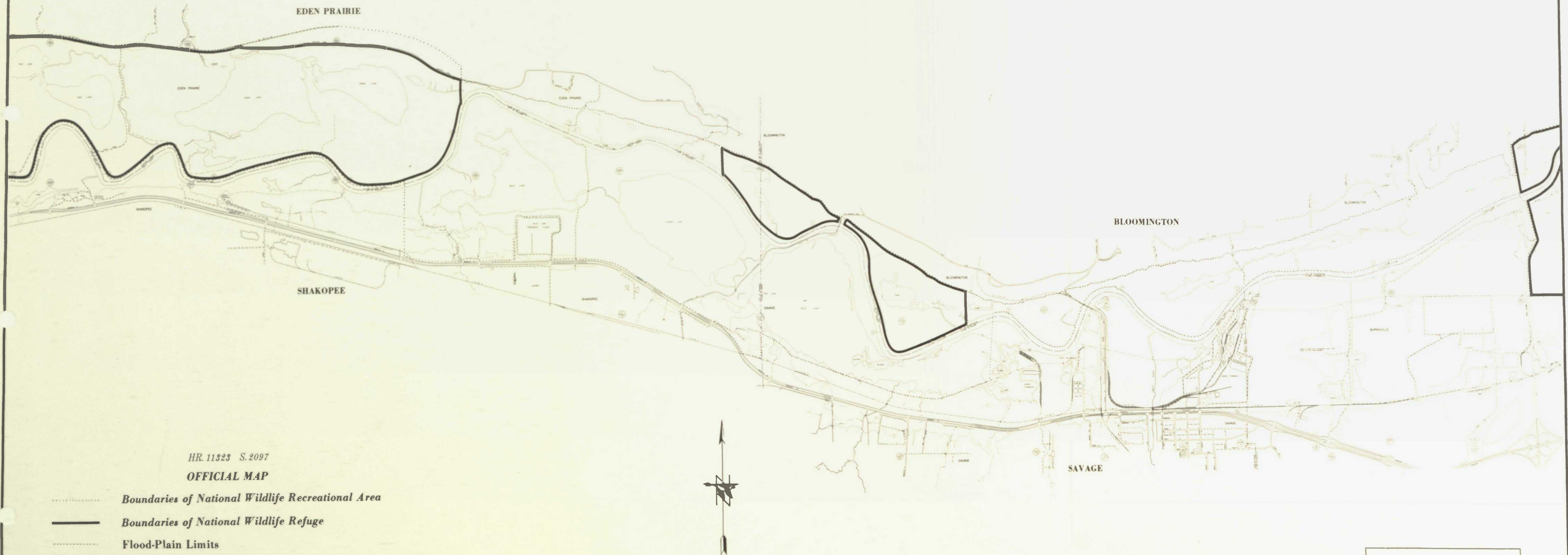
Nov. 1975



U. S. FISH & WILDLIFE SERVICE
Federal Building, Ft. Snelling
Twin Cities, Minnesota

MINNESOTA VALLEY NATIONAL WILDLIFE RECREATION AREA

CARVER, DAKOTA, HENNEPIN & SCOTT COUNTIES, MINNESOTA



HR. 11323 S. 2097

OFFICIAL MAP

Boundaries of National Wildlife Recreational Area

Boundaries of National Wildlife Refuge

Flood-Plain Limits

Floodway Limits

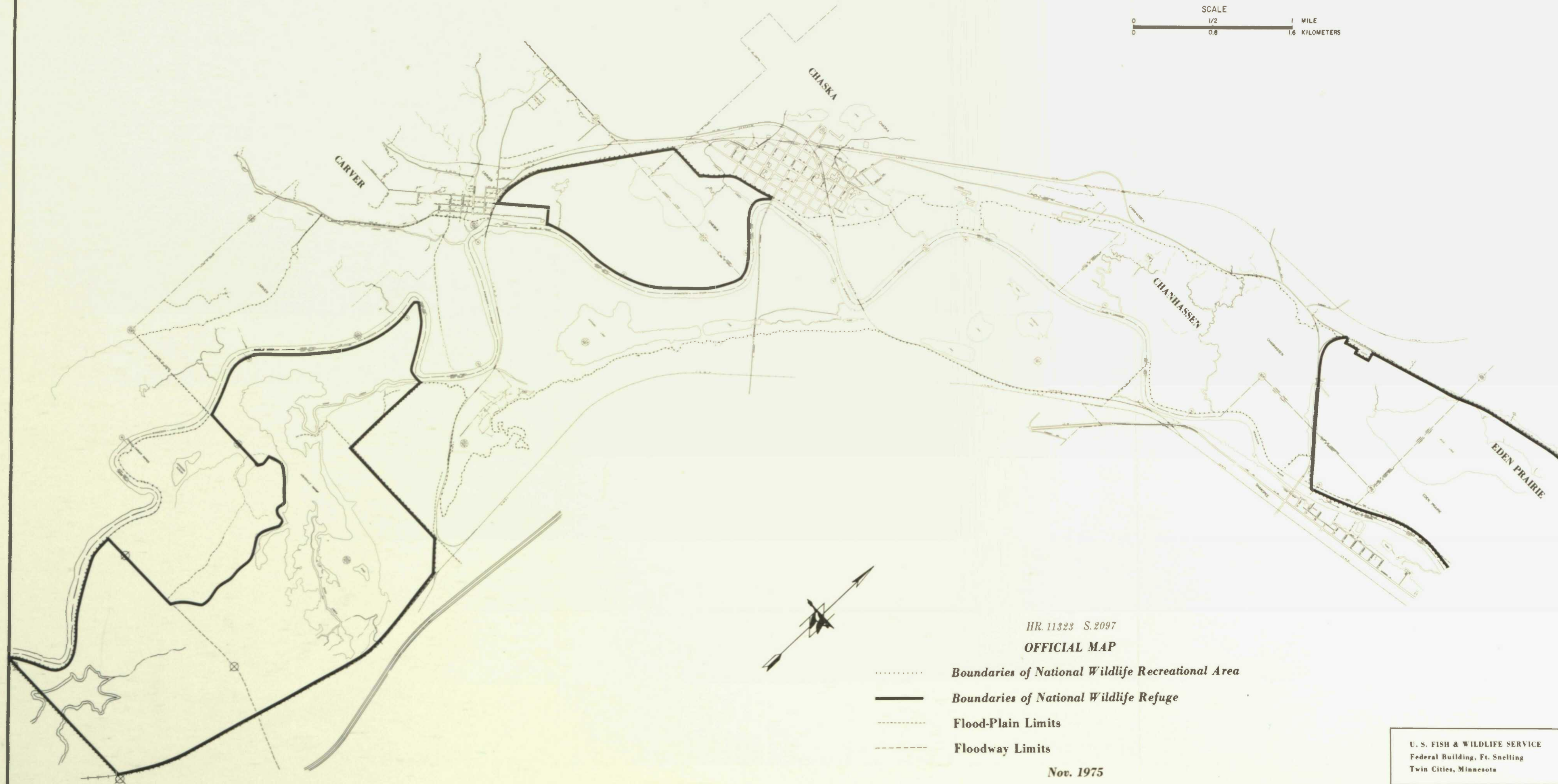
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U. S. FISH & WILDLIFE SERVICE
Federal Building, Ft. Snelling
Twin Cities, Minnesota

MINNESOTA VALLEY NATIONAL WILDLIFE RECREATION AREA

CARVER, DAKOTA, HENNEPIN & SCOTT COUNTIES, MINNESOTA

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HR. 11323 S. 2097

OFFICIAL MAP

- Boundaries of National Wildlife Recreational Area
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- .-.-.- Floodway Limits

Nov. 1975

U. S. FISH & WILDLIFE SERVICE
Federal Building, Ft. Snelling
Twin Cities, Minnesota

APPENDIX

PUBLIC PARTICIPATION MEETINGS

<u>DATE</u>	<u>MEETING LOCATION</u>	<u>PURPOSE</u>
1-9-79	Minnesota Department of Transportation	Minnesota Valley Orientation Meeting
1-10-79	City of Burnsville	"
1-11-79	City of Carver	"
1-15-79	Metropolitan Council	"
1-16-79	Carver County	"
1-20-79	City of Eden Prairie	"
1-24-79	Corps of Engineers	"
1-25-79	Dakota County Parks Department	"
1-30-79	City of Chaska	"
2-1-79	Scott County	"
2-2-79	City of Chanhassen	"
2-2-79	Hennepin County	"
2-6-79	City of Eagan	"
2-6-79	City of Savage	"
2-7-79	Mn/DOT Golden Valley Office	"
2-14-79	Lower Minnesota River Watershed District	"
2-14-79	Louisville Township	"
9-9-79	Bloomington Planning Commission	Review of conditional use permit for refuge headquarters and discussion of Master Plan
9-10-79	Science & Natural Areas Committee - DNR	Presentation & field reconnaissance: Louisville Swamp
9-11-79	Bloomington & Richfield Sports Club	Presentation of Refuge and Planning
9-12-79	Bloomington Park and Recreation Commission	Briefing on refuge status and Master Plan
9-14-79	Bloomington Natural Resources Commission	"
9-18-79	Mpls. Chapter Audubon Annual Conference	Presentation on Refuge & Planning
9-24-79	Bloomington City Council, Staff and 30 citizens	Formal hearing on headquarters conditional use permit and briefing on refuge status and Master Plan

<u>DATE</u>	<u>MEETING LOCATION</u>	<u>PURPOSE</u>
10-23-79	Bloomington Historic Preservation Commission	Briefing on refuge status, Master Plan and treatment of Bloomington Ferry Bridge area historic site
10-24-79	Lower Minnesota River Watershed District Hearing on Permanent Disposal Sites	Brief statement made regarding FWS position on disposal sites, FWS acquisition plans and relationship to Master Plan
11-8-79	MN Valley Audubon Conservation Committee	Briefing on refuge status and Master Plan
11-13-79	Bloomington Chamber of Commerce	Briefing on refuge status and Master Plan
11-20-79	FWS - Regional Office	Review archaeological contract
11-28-79	Carver County Courthouse	Citizens Advisory Committee Meeting on Highway 169 crossing
12-1-79	MN Ornithological Union	Presentation of paper on MVNWR and information on Master Plan
12-1-79	Urban Land Institute	Briefing for Urban Land Institute West Bloomington Study Team on refuge status and master planning
12-5-79	Carver County	Discussion of local needs with Bill Dilks at the refuge
12-5-79	Control Data Corp.	Discuss education programs @ refuge
12-9-79	Registry Hotel	Urban Institute, coordinating planning between stadium land developers and refuge
12-11-79	City of Shakopee	Orientation meeting with city officials
12-11-79	MN Valley Refuge	Briefing by Dr. Warner on final wildlife inventory document
12-12-79	MN Ornithological Union	Presentation of paper on natural character of refuge, history, resource inventory and master planning
12-12-79	MN Valley Refuge	Discuss preliminary hunting ideas
12-19-79	Ad HOC Metro Rivers Commission	Tour of refuge and status report on Master Plan
12-19-79	FWS - Regional Office	SCS personnel to discuss soils mapping
1-8-80	Elaine Mellott, Marialice Seal, RD, DD, ARW, Refuge, PL	Discussion of progress and funding with citizens
1-16-80	Public Agency Meeting	Meeting with representatives of 22 agencies for briefing on status of Master Plan

<u>DATE</u>	<u>MEETING LOCATION</u>	<u>PURPOSE</u>
1-21-80	Metro Council	Discussion of master planning and recreation lands in relation to Metro area open space planning
1-21-80	Public meeting at Chaska High School	Project overview plus workshops dealing with potential activities/ outputs
1-22-80	Public meeting at Southwood Elementary	Project overview plus workshop dealing with potential activities/ outputs
1-22-80	University of Minnesota	Extension lectures - MN Valley presentation
1-23-80	Public meeting at Nicollet Jr. High School	Project overview and workshop dealing with potential activities/ outputs
1-25-80	University of Minnesota	Presentation on MN Valley planning process to a regional planning class
1-31-80	J.F. Kennedy High School	Presentation to Environmental Studies Class
2-5-80	Corps of Engineers	Report on progress of MN Valley Master Plan
2-8-80	University of Minnesota	Minnesota Valley - Case study for a design project
2-14-80	Murphy's Landing	Discussion of project coordination with Margaret McFarlane
2-14-80	Upgrala Hunting Club	Discussion of alternative hunting areas and refuge status
2-19-80	Bloomington Natural Resources Commission	Discussion of Gideon Pond House; cooperative efforts between Bloomington and USFWS
2-20-80	North Suburban Kiwanis Club	Update on MN Valley Trail
2-20-80	Metropolitan Council	Discussion of proposed sanitary landfill and impact on refuge/recreation area
2-25-80	University of Minnesota	Presentation on wildlife refuge planning - MN Valley case study
2-25-80	Bloomington Chamber of Commerce	Review of refuge status and proposed activities in Bloomington
2-26-80	Scott-Hennepin Advisory Board	Master Plan status report

<u>DATE</u>	<u>MEETING LOCATION</u>	<u>PURPOSE</u>
3-3-80	MN Valley Refuge	Alexander Construction - restoration of Bass Ponds
3-4-80	Mn Valley Refuge	Presentation by UofM students of findings related to visual images of the refuge region
3-4-80	Mn/DOT	Review of planning progress, proposed alignments, general information
3-5-80	Bloomington City Office	Planning update and issues of concerns
3-5-80	Metro Council - Open Space/Recreation	Review of planning progress and land acquisition
3-10-80	Bloomington City Council	Planning progress report
3-10-80	Shakopee Chamber of Commerce	Presentation on refuge and plan status
3-11-80	Metro Council	Discussion on "Urban rivers"
3-12-80	Hunter Interest Group Meeting	Discussion of master planning for hunting areas
3-20-80	St. Cloud University	Meeting with MN Association for Environmental and Outdoor Education
3-26-80	Minnesota Valley Audubon Club	Master plan status report: workshop on tentative activities for refuge
3-26-80	Bloomington Parks and Recreation Commission	Master Plan status report: discussion of Bloomington portion of recreation area
3-31-80	Metro Council	Discussion of alternatives to land control along the Minnesota River
4-7-80	Minnesota Field Trial Association	Refuge headquarters briefing
4-8-80	Bloomington Heritage Preservation Commission	Discussion of master plan status and Chambers House
4-10-80	Bloomington Traffic Comm.	80th Street Road
4-12-80	Minnesota Conservation Federation, Rice, Minnesota Annual Board Meeting	Presentation to the Board of Directors (50) on the MVNWR
4-17-80	North Mpls. Izaak Walton League	Presentation to Board Members
4-23-80	City of Bloomington	Storm sewer at Bass Ponds
4-26-80	Mankato State University - Minnesota Academy of Sciences	Presentation on refuge and planning process

<u>DATE</u>	<u>MEETING LOCATION</u>	<u>PURPOSE</u>
5-2-80	Minnesota Valley Citizen Commission	Discussion of refuge and plan status
5-5-80	Control Data Corporation Director of Real Estate	Discussion of CDC project's relationship to refuge protection
5-8-80	Minnesota Valley Audubon	Update on the MN Valley Trail
5-15-80	Deputy Director FWS, Asst. Secretary of Interior Staff Asst., Regional Director	Presentation on refuge and plan status
5-20-80	Mn/DOT	Discussion of coordination for MN Valley State Trail maintenance
5-22-80	Jim Kelley & Kelley O'Neil-Landowners	Discussion of land acquisition and access road
5-29-80	Hastings Govt. Center	Dakota County Recreation w/Planning Director and Asst. Park Director
5-29-80	City of Carver City Manager	Discussion of recreational planning in Carver
6-3-80	Scott County Citizens Group	Discussion of refuge in relation to Jordan Quarry
6-4-80	Dakota County Planning Park Director	Discussion of recreational planning in Dakota County
6-4-80	National Wildlife Refuge Association	Discussion of refuge and plan status with regional representative
6-10-80	Mn/DOT	Discussion of state bikeway program and its relationship to the MN Valley study
6-11-80	City of Shakopee Parks Director	Meeting with George Muenchow re: recreational parks in Chaska and their relationship to the MN Valley study
6-17-80	Horseback Riding Clubs	Discussion of how valley is being used by riders
6-19-80	National Park Service	Meeting with county, state and NPS officials relating to data collection on MN Valley
6-24-80	Burnsville Ice Arena	Meeting with Ralph Clover re: recreation
6-26-80	Mn/DOT	Discussion of new road (80th St.) in relation to refuge

<u>DATE</u>	<u>MEETING LOCATION</u>	<u>PURPOSE</u>
6-26-80	Trail Association	Discussion of snowmobiling and how the MN Valley is being used
7-9-80	Bloomington Citizens Bluff Protection Group	Discussion of bluff protection in relation to refuge
7-10-80	MN Valley Refuge	Meet w/Ellerbe re Visitor Center
7-22-80	Bloomington Natural Resources Commission	Discussion of refuge in relation to bluff development
7-24-80	Minnesota Environmental Quality Board Hearing on Jordan Quarry	Discussion of refuge and plan in relation to Jordan Quarry development
7-30-80	City of Shakopee City Planner	Discussion of public land ownership and private recreational facilities in relation to the MN Valley
8-4-80	River Tour by Asst. Secretary of Interior, Director of NPS, U.S. Congressmen & Aird, Metro Park & Recreational Directors	Discussion of refuge and plan status
8-5-80	Minneapolis	Discussion with Tim Hanson re Northland Bicycle tours re: bicyclists needs
8-5-80	Mn Valley Refuge	Meet w/Seitz & Brust re visitor center to finalize structural and exhibit programs
8-6-80	FWS - Regional Office	Meeting re historic building action plan
8-7-80	Ellerbe Associates	Present visitor center program to architects
8-12-80	Hopkins	Review Hennepin County Road #18
8-13-80	Refuge Headquarters	Meeting with Mn/DOT re: New road
8-27-80	Refuge Headquarters	Meeting with local bikers interested in MVNWR
8-27-80	Bloomington Chamber of Commerce	General briefing re project
9-11-80	Refuge headquarters	Meeting with Frances Berns, Bloomington SUN reporter
9-12-80	Eden Prairie	Meeting with Bob Lambert, Director of Community Services re coordinated planning of recreation area
9-18-80	Environmental Quality Board	Provide testimony at EQB hearing re the Shiely quarry

<u>DATE</u>	<u>MEETING LOCATION</u>	<u>PURPOSE</u>
9-23-80	LeSeuer High School	Public workshops on trail
9-24-80	Belle Plaine City Hall	Public workshops on trail
9-26-80	Eden Prairie	Meeting with Chris Enger, city planner re coordinated planning of recreation area
9-25-80	Carver County	Meet w/Carver County re management agreement on city lands
9-26-80	Eden Prairie	Meet with Chris Enger, City Planner for Eden Prairie re coordinating E.P.'s role in planning of recreation area
9-29-80	MN Valley Refuge	Architectural review meeting to judge 12 proposed designs of visitor center
10-1-80	MN Valley Refuge	Review/selection of alternative visitor center plan with Ellerbe architects, FWS Review Committee
10-7-80	Refuge Area	Julie Hasbargen and Dan Meyer (Senator Boschwitz Staff aids) visit and briefing
10-8-80	Refuge Area	Congressman Frenzel and Senator Durenberger's staff aids (Mary Calhoun and Shirley Hunt - Durenberger's office; Iris Saunderson - Frenzel's office) visit and briefing
10-9-80	Mn Valley Refuge	Shirley Hunt and Senator Durenberger's Aid (Mary Calhoun) visit/briefing.
10-10-80	MN Valley Refuge	Senator Durenberger for News Conference re refuge/visitor center
10-15-80	Shakopee KC Hall	Meeting with Senator Boschwitz and Fred Corrigan of Shakopee Chamber of Commerce re refuge issues
10-18-80	Bass Ponds	Retrieving demo @ Bass Ponds for Randy Olson
10-27-80	MN Valley Refuge	Final decision on design for visitor center (Ellerbe/TCAO/RO/MVNR)
10-27-80	MN Valley Refuge	Washington Staff (Dave Olsen & Sokolowski) re refuge programming and visitor center briefing
10-30-80	Cedar Avenue Bridge	Ribbon cutting ceremony for new Cedar Avenue bridge

NOTE: Throughout the month, many meetings were held with Ellerbe re the proposed visitor center plans.

<u>DATE</u>	<u>MEETING LOCATION</u>	<u>PURPOSE</u>
11-3-80	MN Valley Refuge	Bloomington city staff for general briefing re refuge
11-4-80	Mn/DOT - Golden Valley	Limited use permits
11-5-80	MN Valley Refuge	Discussion of MN Valley plans with NWRA.
11-12-80	MN Valley Refuge	Meet with Bill Seeley, Attorney for NWA to review building plans
11-21-80	MN Valley Refuge	Cliff Aichinger (MSPA) and Marialice Seal of Citizens Committee on "Critical Area" designation
11-21-80	Bloomington City Hall	E. Mellott of Citizens Committee received award from USDI at City Council meeting
11-18-80	Mpls. Athletic Club	Presentation on refuge to Question Club
11-24-80	Metropolitan Council	NPS meeting to coordinate reconnaissance study of Metro Rivers.

NOTE: Throughout the month of November, many meetings were held with Ellerbe and Peter Seitz re visitor center plans and exhibit design.

12/8- 12/12/80	Various city offices	Meeting with local city and county officials
12-11-80	Metro Council	Meet w/Met Council Physical Development Commission
12-15-80	Ellerbe	Final design meeting with Ellerbe/Seitz re exhibits
12-16-80	MN Valley Refuge	Informal open house w/local officials re MN Valley plans;
12-17-80	Riverside Elementary School - Bloomington	Public meeting/planning workshops
12-18-80	Shakopee Jr. High School Shakopee	Public meeting/planning workshops