DEVILS LAKE WETLAND MANAGEMENT DISTRICT

Devils Lake, North Dakota

ANNUAL NARRATIVE REPORT

Calendar Year 1987

U.S. DEPARTMENT OF THE INTERIOR
Fish & Wildlife Service
NATIONAL WILDLIFE REFUGE SYSTEM

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REVIEW AND APPROVALS

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Michael R. McEwen 9/22/88
Project Leader Date

Refuge Supervisor Review 9.26.88
Refuge Supervisor Review Date

Ralph T. Tice
Regional Office Approval

9/26/88
Date

INTRODUCTION

The Devils Lake Wetland Management District is located in northeastern North Dakota within the famed Prairie Pothole Region. This heavily glaciated zone has a variety of glacial land forms, the most important being the various shallow wetlands and prairie lakes. The Devils Lake District encompasses eight counties; Pembina, Cavalier, Towner, Grand Forks, Walsh, Ramsey, Benson and Nelson and the headquarters is located in the City of Devils Lake, ND. There are two major physiographic regions within the District; the Agassiz Lake Plain covers most of Pembina, Walsh and Grand Forks counties and the northeastern Drift Prairie predominates over the remaining five counties.

The Agassiz Lake Plain, most often called the Red River Valley, is actually old lake plain and typically has low-relief. In Pembina County the Pembina Escarpment marks the boundary between the Lake Agassiz Basin and the Drift Prairie. The boundary is more promounced here but elsewhere the boundary is still distinguishable. The smooth level lake basin contrasts with the low rolling knolls and numerous depressions of the Drift Prairie. The Drift Prairie is characterized by low rounded hills, numerous closed depressions, and scattered waterways. There are some locally developed lake plains within the Drift Prairie, the predominant one in this district is the Devils Lake-Cando Lake Plain in Ramsey and Towner Counties.

The high fertility of soils in the district has encouraged intensive agricultural development and a major altering of the landscape through drainage of lakes and wetlands and leveling of the land. The monotony of these extensive agricultural habitats is relieved by Fish and Wildlife Service easement wetlands, Waterfowl Production Areas and Refuges along with features such as numerous small lakes, native woodlands, alkali flats, isolated native grasslands,(photo # 1) and steep lands with natural drainages.

The Devils Lake WMD was established in the early sixties. The major objectives of the station are wetland preservation, waterfowl/wildlife production and maintenance of breeding grounds and northern staging or migrational habitat. The Devils Lake District presently manages 187 WPAs totalling 40,113 fee acres, 2,525 Waterfowl Production Easements comprising 149,334 wetland acres, Lake Alice NWR totalling 11,194 acres, Sullys Hill National Game Preserve with 1674 acres, and the 27 acre Stump Lake National Wildlife Refuge. District lands also include two combination fee and easement refuges - Kellys Slough NWR and Lake Ardoch NWR, which covers 3966 acres and nine other easement refuges totaling 15,891 acres. This is a total area of responsibility encompassing 221,989 acres throughout eight counties.

Photo # 1. Isolated tract of native prairie in Nelson County. RAH

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A. HIGHLIGHTS

Personnel actions were prominent this year. Mike McEnroe moved from Long Lake NWR to take the Project Leader position; Gary Huschle entered on duty from Charles M.Russell NWR, and Rick Schnaderbeck transferred from a TAPER position to fill the second Assistant Manager position (Section E.1.)

Director Frank Dunkle and Regional Director Galen Buterbaugh and Region 3 Director Harvey Nelson spent two days touring Lake Alice and the Devils Lake WMD looking at wetland and drainage issues (Section J.3).

1987 was the year of the easement blitz! Counting the fall 1986 violations we contacted this spring and the fall 1987 violations, we contacted 139 landowners during the past twelve months. DARD Monty Halcomb, SRA Dave Kraft, and SA's Bill Skar and Garland Swain helped during a 3-week easement operation in the spring (Section F.13.).

Botulism losses on the Minnewaukan Flats were estimated at 20,000 birds (Section G.17.).

The Devils Lake Wetland Management District replaced the water control structure at Billings Lake NWR, (Cavalier County) and Ducks Unlimited constructed a control structure at Hofer Marsh WPA, (Grand Forks County)(Section F.2.).

Station personnel completed seven prescribed burns on 1,225 acres at Lake Alice NWR and in the WMD. Vandals and/or wildfires destroyed 1551 acres of cover on ten WPAs in the fall (Section F.9.).

Devils Lake WMD got excellent television coverage on the Lake Alice islands, botulism outbreak, the Special Olympics at Sullys Hill NGP, fall waterfowl surveys, and the release of new bison at Sullys Hill (Section H.7.).

B. CLIMATE CONDITIONS

The winter of 1986-1987 was one of the warmest ever recorded. Heavy snowfall early in the winter posed a serious threat to resident wildlife but luckily the usual midwinter cold snaps failed to materialize and resident wildlife fared the winter well.

Spring runoff from snow melt was sudden and dramatic. Most of the District's wetlands received adequate recharge and many local coulees exceeded normal spring flows. Unfortunately a drier than normal spring followed and wetland acreage decreased substantially during the breeding season. By fall much of the District was experiencing the driest conditions in recent years with even some Type IV wetlands becoming victim to the drought like conditions. Above average fall temperatures delayed the normal freezeup of District wetlands. Substantial numbers of waterfowl remained in the District as late as November 8th when freeze up finally pushed the birds south.

The coldest recorded temperature at Devils Lake, ND during 1987 occurred January 23 when the thermometer plunged to -20 degrees F. The warmest temperature for the year, 94o F., occurred on June 13. Total precipitation for the area was 18.51 inches which compares to an average of 16.98 inches. Unfortunately this above average precipitation did not occur during times beneficial to breeding waterfowl.

Monthly Climatic Conditions - 1987

Month	High	Low	Precip.	
January	43	-20	0.42	
February	40	0	1.60	
March	50	-11	0.62	
April	88	18	0.21	
May	94	31	3.06	
June	94	43	2.53	
July	89	48	4.77	
August	91	36	3.11	
September	88	37	1.30	
October	78	15	0.24	
November	57	6	0.08	
December	41	-11	0.57	
			18.51	Normal 16.98

C. LAND ACQUISITION

1. Fee Title

Fee acquisition remained at a standstill in the Devils Lake WMD for 1987. However, the political climate has moderated to the point that several options were taken. Three tracts, one in Grand Forks County for 80 acres adjoining Agnes Marsh WPA, and two in Ramsey County for 250 acres and 3.5 acres, respectively, were optioned. Preliminary hearings have been held with the respective county commissioners and the outlook is good for approval to purchase.

2. Easements

There were no wetland easements taken in 1987. Biological reviews were completed on fourteen different tracts proposed for easements and options offered on several of the more promising sites. To date, no options have been exercised.

3. Other

A Memorandum of Agreement was completed between the Service and the Hurricane Lake Joint Water Resource Board that provides for mitigation of 93.4 acres of wetlands that will be lost to the Hurricane Lake Outlet Improvement Project. An option previously taken on a 1,343 acre tract of land in Towner County was exercised in December that mitigates the wetland losses and also provides for a wetlands restoration bank to be drawn on for mitigating wetland losses from future development projects.

An acquisition roundout package was completed for Kellys Slough NWR but is expected to remain a low priority project.

A small (1.77 acre) tract was donated at Kellys Slough NWR that eliminated a former schoolhouse site inholding.

Negotiations between the Service and Carlisle Township, Pembina County resulted in the exchange of a 1.95 acre tract that eliminated a former dump site on Juhl WPA.

A half acre tract was acquired by Otter Tail Power Company and transferred to the Service in Towner County as mitigation for power line right-of-way activity. Minnkota Power Cooperative transferred an 80-acre tract in Pembina County to the Service for mitigation for power line construction.

D. PLANNING

1. Master Plan

No master plan has been developed for the Devils Lake WMD.

2. Management Plan

Management planning matrices for WPAs were revised in 1987. The matrix approach provides a ready reference for development needs, management needs, or resource problems to be plotted against the respective WPAs for each county. As the information for each WPA is compiled, it will be displayed in a Habitat Development/Management Plan for the WPA. The unit managers for the respective counties will prepare approximately 20 percent of their plans each year through 1990. As the staff becomes more proficient on computer systems, the management information will be translated into our computers for ready retrieval.

A variety of management plans were provided with annual updates including water management plans, predator control plans, pesticide use plans and prescribed burning plans.

4. Compliance with Environmental Mandates

Corps of Engineers 404 Permit applications were made and reviewed for Ducks Unlimited projects at Hofer Marsh WPA and Lake Alice NWR. The staff wrote Environmental Assessments for the projects and received necessary clearance from the North Dakota State Health Department and State Historical Preservation Office.

The draft environmental assessment on the Hurricane Lake Outlet Control Project was circulated for public comment and these comments incorporated into the final EA and FONSI. A subsequent appeal of the FONSI by the North Dakota Wildlife Federation resulted in a new round of negotiations that established a water level one foot higher at Hurricane Lake.

Environmental, Social and Economic Analyses were prepared on three tracts proposed for acquisition in Ramsey and Grand Forks Counties. The analyses were submitted to the County Commissioners for their recommendation on purchase of the tracts. This requirement is in compliance with regulations set forth in the North Dakota Century Code.

Environmental reviews were completed on several right-of-way applications from power companies and highway departments.

A county highway bridge replacement on the county road passing through Lake Alice NWR was reviewed for 4F compliance.

Pesticide Use Proposals were submitted to and approved by the Regional Office. A Commercial Applicator license was received by Maintenanceman Wolsky.

A Prescribed Burning Plan was approved by the Regional Office and a Prescribed Burning Permit was obtained from the State Health Department authorizing the burning of 2,110 acres of Service land in the District (including Sullys Hill NGP and Lake Alice NWR).

Seven prescribed burns totalling 1,255 acres were accomplished. Attempts to accomplish the remainder in the fall burn season were thwarted by weather.

E. ADMINISTRATION

1. Personnel

4 3 8 9 2
6 5 1 7

The 1987 permanent staff consisted of:

1. Mike McEnroe, Project Leader, GS-12 PFT
   (EOD on 2/16/87 from Long Lake NWR)
2. Roger Hollevoet, Wetland Manager, GS-11, PFT
3. Dave Janes, Wildlife Biologist, GS-12, PFT
4. Gary Huschle, Assistant Refuge Manager, GS-9, PFT
   (EOD on 5/24/87 from Charles M. Russell NWR)
5. Doug Leschisin, Assistant Refuge Manager, GS-5, PFT
6. Rick Schnaderbeck, Assistant Refuge Manager, GS-5, PFT
   (EOD from TAPER position on 4/12/87)
7. Mary Roemmich, Refuge Assistant, GS-5, PFT
8. Irvin Nelson, Biological Technician, GS-8, PFT
9. Jay Wolsky, Maintenance Worker, WG-8, PFT

Temporary/seasonal personnel consisted of:

4 1 3 2

1. Brad Peterson, Biological Aid, GS-4
2. Bryan Schultz, Biological Aid, GS-4
3. Clark Dirks, SCA Volunteer and Biological Aid, GS-3
4. Darrin Unruh, Volunteer

It finally looked like the personnel situation stabilized this year. Project Leader Mike McEnroe EOD'ed in February. Rick Schnaderbeck, acting as an Assistant Refuge Manager on a TAPER appointment, was selected as Assistant Refuge Manager in April. Gary Huschle, Assistant Manager, lateraled to Devils Lake from CMR in May. We are now at full staff for the first time in two years.

The total staffing pattern for the last five years is shown below:

	Permanent			Total
	Full Time	Part Time	Temporary	FTE's
1987	9.0		1.75	10.75
1986	8.25		2.25	10.50
1985	10.50	1	3.00	13.00
1984	9.5		8.00	13.50
1983	8.5		6.00	13.50

Between easement enforcement, drainage projects, public education/relations and brush fires, the permanent staff is kept more than busy. Unfortunately, we spend little time on WPA or

wildlife management. The list of priority items keeps growing but without the people to do the work. If it wasn't for our summer temporaries, we would not get any biological work done.

2. Youth Programs

The 1987 Youth Conservation camp (YCC) consisted of two enrolles serving 8-week appointments during June and July(photo # 4). Doug Leschisin served as Camp Director. No funds were available for a group leader, so staff members took turns supervising work projects. Several labor-intensive projects were completed this year, however, the limited number of enrollees, compared to past years, and a lack of a group leader limited YCC effectiveness and ate up precious permanent staff time. Benefits to the station were realized from the increased labor force and this year's young people got some valuable experience in the real world.

Three high school age students were made available to the station through a Benson County Youth Work Program and worked along side YCC enrollees. Two of the three students did not complete their terms because of various problems.

A list and brief description of this year's projects are as follows:

- Construction of a 3-strand, barbed wire fence along a 1/2 mile boundary section of Lake Alice NWR.

- Old signs, metal and wood posts, scrap metal, wire and other miscellaneous material was sorted or junked from the Sullys Hill NGP boneyard.

- Litter was picked up and restrooms cleaned at Sullys Hill NGP.

- Picnic tables, signs, bumper posts, and buildings were painted at Sullys Hill NGP.

- Lake Alice NWR storage sheds were cleaned and organized.

- Lake Alice NWR cemetery was mowed, trimmed and generally spruced up.

- Islands and peninsulas were searched for waterfowl nests.

Two accidents occurred this year. One youth punched his foot with a nail and lost one-half day of work. Another enrollee slipped on a shop floor and hit her head, but returned to work the next work day.

Photo # 4. YCC Crew - Steven Torgerson and Tammy Eback. RAH

3. Other Manpower Programs

We hired two biological aids, Brad Peterson and Bryan Schultz, to conduct the seasonal field activities; predator management, nest dragging, pair counts, prescribed burning, WPA mapping, farming, botulism, maintenance and Sullys Hill duties. In late June, we selected Clark Dirks as a biological aid when his 12-week SCA volunteer stint was over. Our summer crew does almost all of our biological work.

4. Volunteer Programs

We had two volunteers during the summer; Clark Dirks from Montana on an SCA appointment, and Darrin Unruh from Oklahoma as a volunteer. The volunteers were provided housing at the old residence at Sullys Hill, weekly per diem and travel expenses to and from the station at the start and end of their appointments.

The volunteers assisted in the biological and maintenance duties at the station; predator management, pair counts, nest dragging, botulism clean-up, and routine maintenance.

5. Funding

Funding for the Devils Lake WMD also includes Lake Alice NWR and Sullys Hill NGP.

As we said last year, funding remains a challenge. Early budgets include almost enough for salaries and fixed costs. Then as the year goes on, there is a series of add-ons and reductions. This year was no exception.

A summary of funding for the Devils Lake WMD for the past five years is as follows:

	1261	ARMM/RP	6860	1520	Extension	Contam.	Total
1987	259.5	149	9.		26.1	1.5	445.5
1986	251.1	118.7	10.	9.0			388.8
1985	254.0	84.0	10.	9.0			357.0
1984	260.0	61.0	10.0	22.0			353.0
1983	253.0		18.0	21.1		32.3 (2800)	324.4

6. Safety

We had one potentially serious accident in 1987. One of the YCC enrollees slipped and fell, hitting her head on the shop floor. She was knocked unconscious for several minutes. Irvin Nelson rushed her to the hospital. She had a slight concussion but returned to work the following Monday. Two of our summer biological aids received poison ivy infections while nest searching islands. The station paid for treatment.

We had monthly safety meetings featuring safety films. We also emphasized the use of seat belts, life jackets, hearing protection and coveralls, rubber gloves and boots while spraying. Irvin Nelson served as Chairman of the station Safety Committee.

Safety purchases during the year included steel-toed boots for YCC enrollees and permanent staff, law enforcement gear, and equipment for pesticide use and prescribed fire management.

7. Technical Assistance

WMD staff provided assistance to the Corps of Engineers and EPA on Section 404 violations at Dry Lake and Sweetwater/Morrison Outlets in Ramsey County, and the Romfo dike and Rush Lake projects in Cavalier County. We also provided information to the Corps and Fish and Wildlife Enhancement, Bismarck on the proposed Devils Lake Outlet project.

District personnel flew winter deer surveys in March and fall goose surveys in October and provided the information to the ND Game and Fish Department and the press.

Assistant Manager Schnaderbeck worked again this year with the Boy Scouts and volunteer groups on building, setting out, and maintaining bluebird houses at Sullys Hill NGP, Lake Alice NWR, and around Devils Lake.

Refuge staff met often with County Water Resource Districts on drainage projects, "coulee cleanout" requests and a variety of wetland/drainage activities. The staff also assisted the Ft. Totten Sioux Tribe on wildlife management planning and the ASCS/SCS on wetland typing. We also provided various assistance to various sportsmen groups.

McEnroe, Hollevoet and Bob Johnson from Arrowwood NWR put on a wetland classification workshop in June. Approximately 160 people attended the workshop to hear wetland experts from a wide array of backgrounds describe wetland soils, types, values, hydrology, and wildlife values. A field trip was also provided (photo # 5).

Photo # 5. Biologists from around the state learning wetland classification at the Jamestown Wetland Classification Workshop. RAH

F. HABITAT MANAGEMENT

1. General

The Devils Lake Wetland Management District is a multi-station complex consisting of a wetland district with 187 WPAs in eight counties, one major refuge and several smaller NWRs, a National Game Preserve and several easement refuges. The complex is divided into sub-units with four areas of responsibility for management. The units are the Northern Unit encompassing Towner, Cavalier and Pembina Counties; the Central Unit of Lake Alice NWR, Ramsey and Walsh Counties; the Southern Unit consisting of Benson,

Nelson, and Grand Forks County; and the Sullys Hill National Game Preserve unit which is handled by a resident Biological Technician. Each unit manager handles the WPAs, easements and refuges within their primary area. Management of the Waterfowl Production Areas will be addressed in this narrative. Management of Lake Alice NWR and Sullys Hill NGP will be addressed separately in narratives attached to this report.

The primary objectives of the Wetland District are wetland preservation and maintenance, waterfowl/wildlife production, maintenance of northern staging grounds and migrational habitat, and providing overwinter cover for resident wildlife.

Waterfowl Production Areas within the district have a diversity of habitat types. The native biotic community consists of some remnant prairie scattered throughout Benson, Nelson or Grand Forks counties. This is mixed grass prairie and consists of big and little bluestem, side oats grama, green needle grass, needle and thread, western wheatgrass and prairie junegrass. The majority of our WPAs are seeded tame grasses or go-back lands. Seeded areas are primarily DNC composed of tall wheatgrass, intermediate wheatgrass, alfalfa and sweetclover. The tame grasslands and go-back areas are composed of smooth brome, quackgrass, Kentucky bluegrass, and alfalfa.

The wetland community consists of a variety of palustrine and lacustrine types with water regimes from temporary and seasonally flooded to permanent. Typical wetland vegetation found throughout the District's wetlands include smartweed, sedges, whitetop, cattail, common reed, bulrush, spikerush, coontail, pondweed and duckweed.

These habitats have potential for excellent waterfowl production along with providing habitat for migrating waterfowl, other migratory nongame species and a wide array of resident wildlife species. Unfortunately the WPAs in the district have not come close to realizing this high production capability for several reasons. The primary reason is that management of habitat has been secondary to protection or preservation of wetland habitats, through easement enforcement and direct involvement in legal drainage projects. We must continue our preservation efforts on privately owned and public wetlands, but we have increased our efforts on management in order to achieve the waterfowl potential that Service lands have in the District. This increased management on WPAs is improving our image, improving public relations, increasing our visibility, assisting in our wetland protection efforts and, of course, improving cover conditions. This effort is creating additional demands on a limited staff as we have begun to inventory our habitats, devise management plans, contact cooperators, assess limiting ffactors, increase surveillance and enforcement and implement proven and new, innovative wildlife/habitat management techniques. We're optimistic, however, and hope we can continue new efforts in 1988-89.

The management techniques we have been using include varied haying techniques, prescribed burning, farming, and alfalfa agreements. These techniques are discussed in following sections.

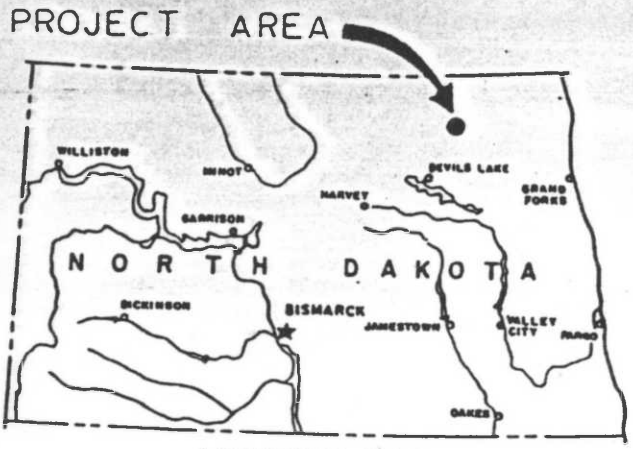
2. Wetlands

Wetlands play an extremely important role in the management, preservation and production of many or most prairie wildlife species, especially waterfowl.

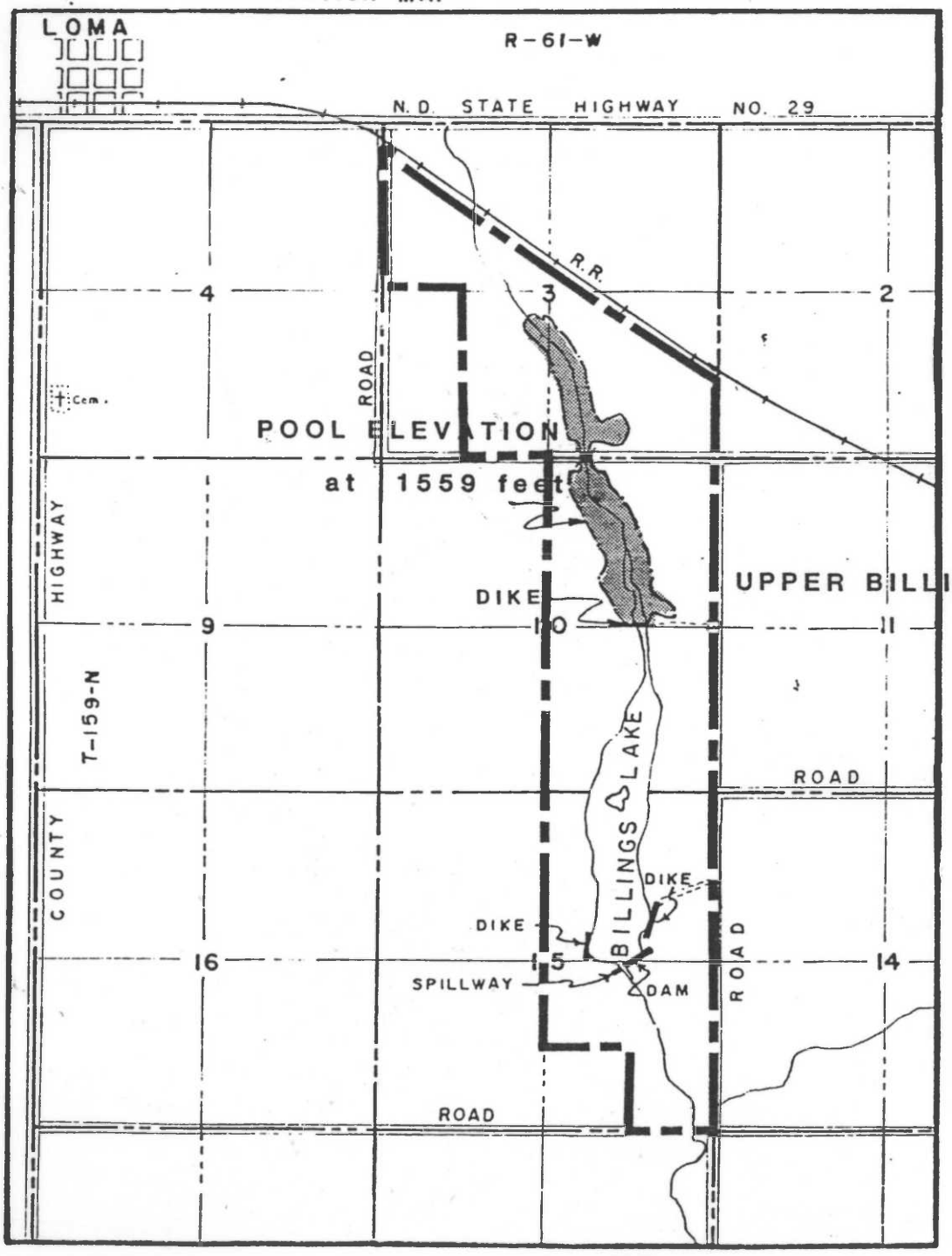
The majority of the wetland types owned by the Service in the Devils Lake District are type IV and type V wetlands which provide excellent brood habitat. Many of the temporary and seasonal wetlands occurring on Service lands are in an advanced successional stage because of runoff from agricultural lands loading nutrients and silt into the basins. Many basins are choked with willows and cattails and are more conducive to moose and whitetail deer, but are of little value to waterfowl. We have started to inventory this problem and plan on developing techniques to restore these basins or create new wetlands to provide for additional waterfowl habitat. Fortunately many of our wetland easements are providing a good source of pair habitat.

In addition to trying to manage some of our natural basins by "reversing succession" we also have water control structures located on a limited number of large wetlands to aid in the drawdown process. On the Hofstrand Lake WPA in Benson County, we pulled the plug in 1985 and created a drawdown to promote moist soil plant management. During drawdown we coordinated an island development proposal with Ducks Unlimited and built two 0.5 acre and ten 0.1 acre islands in 1986. The contractor did an excellent job of construction and we completed seeding the islands in late fall with a DNC mixture. Cattails were transplanted on the edges of the large islands to prevent erosion. In addition, the two-half acre islands were included as part of a Northern Prairie Wildlife Research Center island and point study. Buckbrush and rose will be planted on those islands in the spring. This area was then flooded in the spring of 1987 to provide an excellent new home for waterfowl.

Two other wetlands were created or restored on Service lands. At Billings Lake NWR a water permit was secured to divert 114 acre feet of water into the upper Billings Lake wetland development. The permit was for 60 acre feet of storage and 54 acre feet for evaporation which flooded approximately 56 acres (see figure 1). The wetland was created by restoring an old dike and installing corrigated metal pipes (CMP) with an attached half round CMP standing vertically. Wooden flashboards were installed to the front face of the half round vertically standing CMP. This area will provide an excellent addition to the Billings Lake area for waterfowl production.



LOCATION MAP



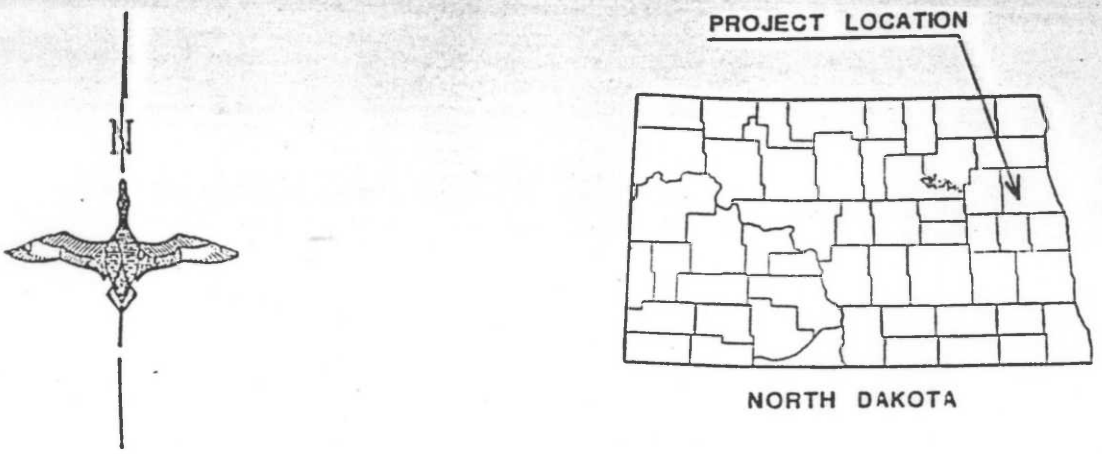
VICINITY MAP

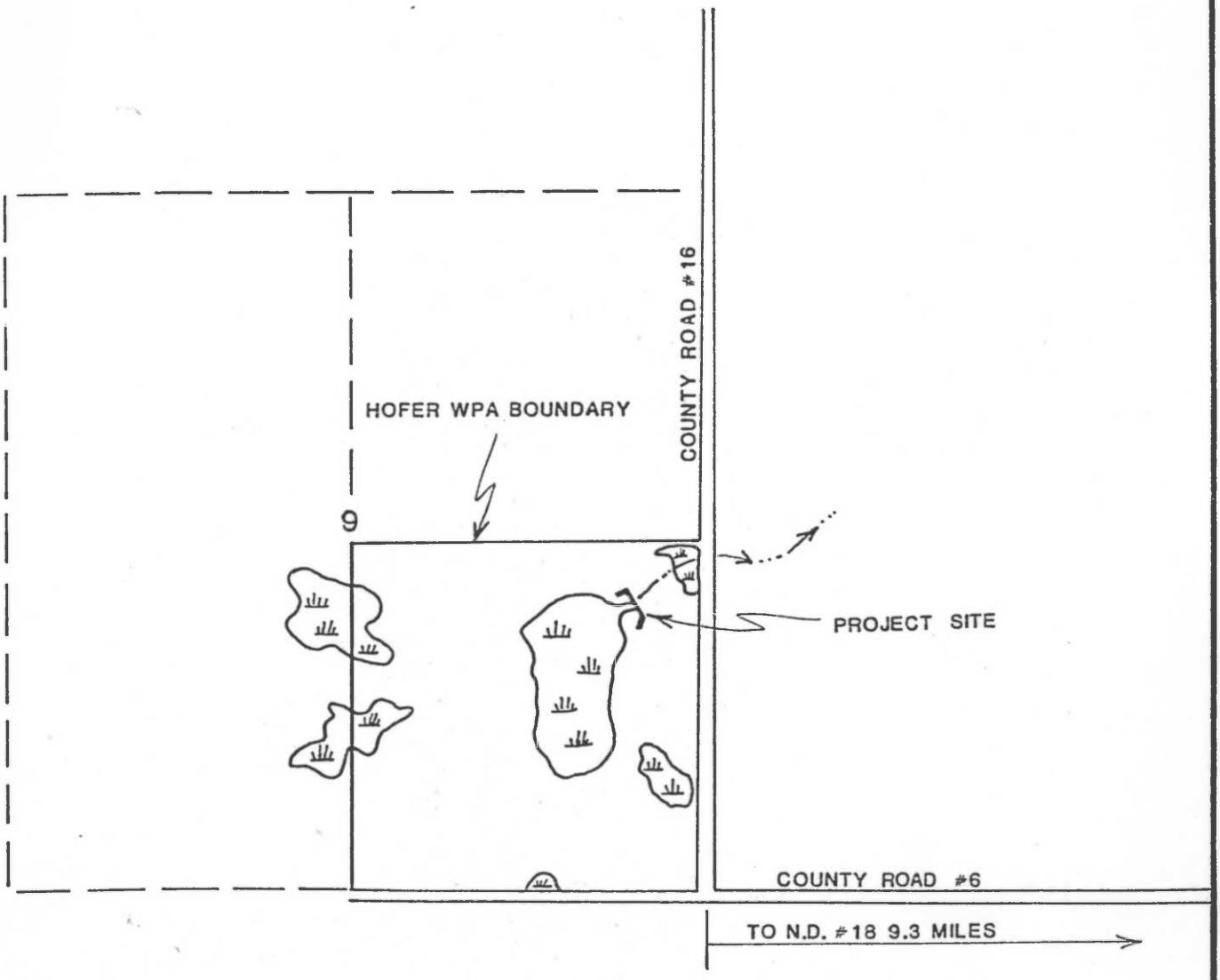
FIGURE

The Hofer Marsh wetland development project was a joint venture between Ducks Unlimited and the Devils Lake Wetland Management Office. The project entailed restoring a partially drained 23 acre semi-permanent wetland (see figure 2).

Ducks Unlimited constructed a 185-foot long earthen dam, effectively plugging the ditch draining the marsh. At the full supply level, the restored 23-acre marsh stores 66 acre-feet of water and provides 0.8 miles of shoreline. A stop-log water control structure, consisting of a 48-inch diameter corrugated metal pipe (CMP) riser with attached 24-inch diameter CMP inlet and outlet pipes, was incorporated into the dam to give us water level mamagement capabilities. Stop-logs housed inside the riser can be added or removed to manipulate the water levels. Approximately 600 feet of inlet channel leading from the deepest part of the marsh to the control structure, and another 500 feet of outlet channel between the outlet pipe and county road #16 were improved to permit total drawdowns of the marsh when required for management purposes (see photo 6). An earthen emergency spillway was excavated to pass excess flows and prevent serious erosion or possible over-topping of the dam following periods of extremely heavy runoff or precipitation.
All disturbed surfaces were spread with topsoil and levelled in preparation for seeding. Construction was completed in September, 1987.

Photo # 6. Restored wetland on Hofer Marsh WPA completed through a cooperative effort with Ducks Unlimited. GLH





SCALE : 1"= 1,320'

FIGURE 2
Hofer Marsh
Grand Forks County

3. Forests

Nominal acreage of woodlands exist in small tracts throughout the District. Most occur as cottonwood, boxelder and green ash shelterbelts and old farmsteads established by previous landowners. No specific management occurs on these areas other than issuing occasional special use permits for firewood.

4. Croplands

Currently 1,733 acres of the District uplands are being managed as croplands. We use cropping rotations to rejuvenate decadent DNC stands and remedy weed infested grasslands. All cropping is done through cooperative farming agreements which are usually issued for 2-4 year periods to ensure a clean and well prepared seedbed for DNC establishment. Cooperators usually plant the area to various small grains and later seed to nesting cover or plant alfalfa as a crop which we later manage as nesting cover.

5. Grasslands

Nearly all uplands on the WPAs are grasslands. These vary from DNC, seeded natives, natives invaded by tame grasses, go-back, or seeded tame grasses. Our grassland management is aimed at periodically rejuvenating these grasses to maintain the best nesting cover they are capable of producing.

Management techniques used this year included haying, haying and spiking, interseeding, prescribed burning and in cases where complete renovation was needed, the area was plowed up, farmed or reseeded. Details of these activities are presented in other sections of this report.

In the spring of 1986 an interseeding trial was conducted on two WPAs. On Pelican Lake WPA 13 acres of brome and bluegrass were sprayed with Roundup herbicide. Big bluestem, switchgrass, sideoats gramma, and birds foot trefoil were no-till seeded into the sod. On Senger WPA 17 acres were burned and then sprayed with Roundup and seeded the same as on Pelican Lake WPA.

Brome and bluegrass has returned to about pretreatment densities on both areas in 1987. On Pelican Lake WPA big bluestem was found scattered throughout the seeded area. Big bluestem and sideoats gramma had a good catch on about half of the area. Switchgrass and birdsfoot trefoil were rare. This area has enough warm season grasses now that some early spring burns are planned to try and enhance them.

The seeded grasses did not catch on Senger WPA. Only a few plants of big bluestem were found in 1987. Birdsfoot trefoil did well however, and was found throughout the seeded area. This area also had a dense stand of sweet clover.

7. Grazing

This management tool has limited use on the Devils Lake WMD, due to the difficulties of finding cattle in this intensified area. The lack of livestock in this area has resulted in very few fences being built around WPAs. In general, livestock operations are secondary to the main grain farming operations and few farmers are interested in livestock management that requires moving stock and putting up temporary fences.

No grazing took place on the WMD in 1987, however, some grazing has been planned for 1988.

8. Haying

Haying can be an effective tool for maintaining DNC, tamegrasses, temporary wetlands and heavy litter native stands. Alfalfa also typically responds well to haying and on many of our newly planted fields we will be planting pure stands of alfalfa. Typically, haying dates are after July 15. Many fields in the district also are hayed to minimize weed complaints with the hope of stimulating the stand and out competing the weedy species. In fields that have heavy litter accumulations it is desirable to find someone with a sickle mower and rake to perform a real clean up of the area. Many temporary wetlands are occasionally hayed to open the wetland and remove heavy litter.

In addition to haying we will spike or disc the field in order to break up choked root systems, aerate the soil, add humus and plant some of the seed produced in the field. This discing or spiking is often followed with a drag or a harrow. This seems to spur new life into decadent DNC fields and tame grasslands.

Eleven WPAs including 251 acres had haying treatments this year. In addition to providing maintenance on grass stands or assisting in weed control, haying is also a good public relations mechanism. WPAs and acres hayed this year are summarized in the following chart:

Area	Acres	Cost	Purpose
Lake Alice	20 acres	140.	Open wetland-slough hay
Amoth WPA	4 acres	20.	Weed control-Musk thistle
Agnes Marsh WPA	44 acres	352.	Cover Maint/weed control in switchgrass.
Mattson WPA	5 acres	00.	Fire break
Wurgler WPA	12 acres	96.	Cover Maint/improve nest.
Lake Legreid	18 acres	00.	Hay/spike for cover mgmt.
Benson WPA	10 acres	80.	Cover mgmt/weed control
Neer WPA	38 acres	304.	Cover Management
Strand WPA	50 acres	00.	Cover Management
Hofstrand WPA	30 acres	00.	Cover Management
Calvin WPA	20 acres	00.	Weed control

9. Fire Management

Fire management is no longer prescribed burning. Fire management includes fire management plans, annual prescribed burning plans, training and testing of fire personnel, physical fitness maintenance, physical fitness testing and equipment inventories. Permits must be obtained from the N.D. State Health Department and coordination developed among local fire departments, Law Enforcement agencies and neighbors. Once all this is completed fire breaks need to be constructed, winds must be managed, the burn completed and a post burn evaluation completed.

This year Hollevoet instructed our four summer biologists in fire behavior, fire fighting and prescribed burning. They were given written exams and physical fitness exams. They passed all written and physical fitness testing and were issued S-130 and S-190 completion certificates. Following training, all necessary plans and approvals were completed or obtained. This brought us to the point of lighting the match.

Prescribed fire is used as a management tool to sustain or improve uplands and wetlands for waterfowl/wildlife production and maintenance. Fire is utilized to reduce litter, improve stand height/density, recycle nutrients, alter plant species composition, create openings in choked wetlands, increase seed production, aid in weed abatement, reduce fuel levels, and reduce competition in new seedings. Plain and simple, prescribed burning is utilized for rejuvenation, improvement, and maintenance of the District's grasslands, and wetlands.

Areas burned consist of both upland and wetland sites. Burning is utilized on native grassland tracts that have become decadent or choked and matted with residual growth, areas invaded by cool season exotics, sites planned for harvesting of seed, and areas that need an overall improvement in height/density ratios and nutrients. Burning in DNC, tame grasses, and recently planted fields is to remove excessive litter, control noxious weeds, enhance stagnant stands, (photo 7) and remove unwanted competition from pioneering annuals.

Wetlands are burned to open the wetland basins and alter species composition; often in combination with another tool such as mowing, grazing, or discing. Wetlands burned are primarily choked basins. The majority of these basins are types III and IV.

This year in the district we completed prescribed fire treatment on 7 areas and burned 1,225 acres. In addition to prescribed fires, arson and wildfires occurred on another 11 areas and burned 1551 acres. These are known wildfires and several others probably went undetected as no one reports the wildfire or arson. Many of these fires started by neighbors burning wetlands and roadsides and

others started because some folks out there just don't like the "wildlife" people (FWS). The end result is a black world of plowed fields, burnt ditches and black wetlands and absolutely NO winter cover for resident wildlife.

Photo # 7. Immediate response of DNC to fire management - Edwards WPA. RWS

A rundown of prescribed burns and wildfires occuring in the District in 1987 can be viewed in the following table.

PRESCRIBED BURNING - 1987

WPA	COUNTY	COVER TYPE	ACRES	DATE BURNED
Thorson	Cavalier	DNC	240	4/21/87
Stinkeoway	Cavalier	DNC/tame grass	160	4/21/87
Solberg	Cavalier	DNC	160	4/22/87
Edwards	Cavalier	DNC/tame grass	465	4/23/87
Lake Alice	Ramsey	seeded switch-grass/big bluestem	35	5/7/87
Lake Alice	Ramsey	Cattail	5	10/28/87
Hofer Marsh	Grand Forks	Cattail/tame grassland	160	11/2/87
Total 7 sites			1225 acres	

WILDFIRES - 1987

WPA	County	Acres
Weaver	Cavalier	10
Ullyot	Cavalier	105
Brudevig	Cavalier	6
Wengeler	Cavalier	320
Phil Aus	Ramsey	35
Phil Aus	Ramsey	245
Miller	Ramsey	260
Hall	Ramsey	45
Hampden	Ramsey	170
Breakey	Ramsey	320
Kellys Slough	Grand Forks	35
TOTAL	11 wildfires	1551 acres

10. Pest Control

With the help of Cooperative Farming Agreements and two contracts for spraying, the leafy spurge spraying was cut in about half.

The contracts consisted of contracting out one 80-acre piece that is covered with leafy spurge and usually took two full days. The other contract was for our WPAs in Grand Forks County which is about 100 miles away. These tracts of land usually take about three days with one truck. So it was a savings of about a weeks cost.

The list below consists of force account county by county pest control:

Ramsey County	66.2 acres
Benson County	79.55 acres
Cavalier County	10.42 acres
Towner County	23.19 acres
TOTAL	179.36 acres

Contracts: 80 acres on Pleasant Lake (Benson County)
45 acres in Grand Forks Co.
125 acres
GRAND TOTAL: 304.36 acres

11. Water Rights

The Devils Lake WMD has 14 units with established water rights. Most of these are easement refuges established during the 1930's drought. Only Lake Alice NWR, Ramsey County; Lake Ardoch, Walsh County; Hofstrand Lake WPA, Benson County, Hofer Marsh,Gr. Forks County and Billings Lake, Cavalier County have water management capability. Annual Water Management Plans were submitted through the Regional Office to the State Water Commission.

In 1987 we also received water permits for structures constructed on the Wengeler WPA and Billings Lake NWR, both in Cavalier County.

13. WPA Easement Monitoring

The Devils Lake Wetland Management District is responsible for annually monitoring and enforcing approximately 2,525 Waterfowl Management Easement contracts covering 149,334 wetland acres scattered through an eight-county area. The easement protects wetland habitats from burning, leveling, filling, or ditching activities. The annual surveillance typically involves flying all the easements over a 10,000 sq. mile area. All potential violations are file checked, documented, flown a second time, photographed, and ground checked (photo # 8). Following ground checking, refuge officers then contact the current landowner and operator to inform them of the violation and their options of restoring the wetland(s) or appearing in court. A compliance date is set and compliance or follow-up checks must be made (photo # 9). In this district this circle of duty is very time consuming.

Our flights are typically completed in the fall in the narrow time frame between the end of the farmer's fall field work and the first snow cover. On occasion spring flights are also scheduled, by the time flights are completed our crews are ready to stay on the ground for awhile. This district typically has half of all the violations occuring in North Dakota!

The 1987 spring and fall easement season was another busy year. We worked on a total of 139 easment cases this year. Our fall 1986 flights came up with 128 cases to be ground checked. The ground checks resulted in 78 cases. We made an easement enforcement blitz this spring. Law Enforcement agents from Denver, Bismarck and Minot were brought in to assist the Devils Lake Refuge Officers in completing all the landowner contacts. We appreciate the help of Monty Halcomb, Dave Kraft and Bill Skar in assisting with the easement enforcement in the district. These agents assisted us in a three week intensive effort to contact the 78 landowners that were required to complete restoration.

In addition to spring work we completed flights in the eight county area in late October - early November. We came up with approximately 90 violations after our first flights. After file checks, second flights, and ground checks this was whittled down to a confirmed 61 cases of unauthorized activity on wetland easements.

A synopsis of our spring and fall easement work is summarized in the following tables.

1986 Fall Flight/Spring 1987 Confirmed Violations

County	Scraper/ Backhoe Ditch	Fill	V Plow/ Furrow Ditch	Total
Pembina	0	0	0	0
Walsh	0	2	1	3
Towner	6	3	5	14
Cavalier	3	5	5	13
Ramsey	23	3	6	32
Benson	2	3	1	6
Nelson	3	3	3	9
Grand Forks	0	0	1	1
TOTALS	37	19	22	78

1987 Fall Flights - Confirmed Violations

Pembina	0	0	0	0
Cavalier	7	1	1	9
Towner	3	2	3	8
Walsh	4	0	2	6
Ramsey	17	2	11	30
Grand Forks	1	0	0	1
Nelson	2	0	1	3
Benson	1	3	3	4
TOTALS	35	8	18	61
1987 Grand TOTAL Easement Violations				139

Each easement case varies and circumstances warrant different actions. Our main goal is restoration of wetland basins but on occasion an additional reprimand is required. This year we issued three citations for $100.00 following restoration of wetlands.

Easement Citations - 1987

Ramsey County 206X -	$100.00
Ramsey County 199X -	100.00
Nelson County 286X -	100.00
TOTAL -	$300.00

Photo # 8. One hundred thirty nine easement cases were opened in 1987, seventy-two consisted of scraper or loader-type ditches. This keeps the enforcement staff busy. RWS

Photo # 9. McEnroe inspecting a ditch a violator said was filled. Upon inspection we found there was no dirt put in ditch, just a bunch of vegetation as a decoy to make us believe compliance was met. We later stood at the scene while violator filled ditch. RAH

G. WILDLIFE

1. Wildlife Diversity

The WMD has a variety of land types that include the flat fertile lands of the Red River Valley AND the undulating Drift Prairie. This variety in the basic land resource gives rise to a complex of vegetation and wildlife.

The majority of the NWRs, easement refuges, WPAs and wetland easements are located in intensively farmed areas and serve as an oasis of habitat for resident and migratory wildlife. This picture is changing as the Conservation Reserve Program is put into practice. Over 193,000 acres have been signed up for CRP in the Devils Lake WMD. This increase in plant cover will be over five times the cover provided by fee owned Service lands.

The WMD staff has taken steps to directly increase wildlife diversity in the area. A bluebird house project was initiated in 1985. This year 100 Canada geese were released at Lake Alice NWR. Plans are being developed for a wood duck house project for 1988. The staff has been cooperating with NPWRC to reintroduce white winged scooters to Stump Lake NWR. Eggs were obtained this year but very poor hatching success resulted in no birds being released.

The Minnewaukan Flats area, at the west end of Devils Lake, has been recently inundated by the rising lake levels. This area now harbors nesting colonies of black-crowned night herons, cattle egrets, snowy egrets, various grebes and gulls and double-crested cormorants. Double-crested cormorants also began nesting on the large island in Stump Lake this year.

2. Endangered and/or Threatened Species

Bald eagles are frequently observed throughout the District during their spring and fall migration. Fall observations appear to be increasing in recent years as more birds are observed scavenging on dead and crippled waterfowl just prior to freeze up.

Personnel from J. Clark Salyer NWR conducted a survey of Piping Plover use which extended into the western portion of the District. The survey found two pair on Cranberry Lake, five pair and 14 juveniles on Pfeifer Lake, five pair and three juveniles on Long Lake WPA, two pair and three juveniles on Simon WPA, and one pair on Volk WPA, all in Benson County.

Sightings of whooping cranes were once again reported to the office during 1987. Although most of these sightings are probably sandhill cranes, efforts are made to confirm most sightings. Whooping cranes probably do wander into the District but we have yet to confirm a sighting.

3. Waterfowl

Waterfowl production is the primary objective of the Devils Lake Wetland Management District. The number of waterfowl produced in the District is typically related to the number of wetland acres available for use by breeding waterfowl. During 1987 breeding waterfowl found good water conditions early in the season but unfortunately precipitation decreased and wetland acreages were reduced substantially later on in the nesting season. The District's wetlands and associated waterfowl populations are in desperate need of a series of wet years to restore wetlands and hopefully reverse recent declines in waterfowl populations.

During 1987 the District initiated and evaluated a wide array of various management techniques to improve and monitor waterfowl production. Following is a brief evaluation of those techniques.

Breeding Pair Count - District personnel assisted Northern Prairie Wildlife Research Center (NPWRC) by collecting data to estimate the breeding pair population of the District and project the total number of waterfowl produced in the District. Breeding pairs and wetland acreages were tabulated for 200 randomly selected sample areas on private land, Service wetland easements, and Service fee title lands. All data was forwarded to NPWRC where waterfowl production for the District was projected using predictive models.

Breeding Population and Production Estimates-1987
Devils Lake WMD

Ownership	Breeding Pairs	Recruits
Easement	41,850	34.096
Federal	2,612	3,203
Private	99,227	83,031
TOTAL Lands	143,689	120,330

We do not believe these figures reflect what is happening in the District, in spite of widespread drainage and high predation rates. The figures do not include any of the public or private islands we worked on which hatched an estimated 9-10,000 ducklings. The sample of two hundred wetlands included only a portion of one Waterfowl Production Area (out of 187), and no samples from Nelson County, our best easement county.

Canvasback Survey

A canvasback habitat use survey was conducted by the field staff this year. This consisted of incidental sightings while going to and from various work projects. There was a total of 118 sightings. The data we gathered from this roadside survey are tabulated below.

SUMMARY - CANVASBACK HABITAT USE

Land Ownership	# of sightings
Private	79
State	1
Federal	25
Easement	13

Wetland Type	# of sightings
3	29
4	51
5	38

Adjacent Land Use Type*	# of sightings
Fallowed or Plowed field	41
Stubble	7
Cropland	34
Grazed grassland	8
Ungrazed grasslands	28

Wetland Size (Acres)	# of sightings
0-3	30
3-6	16
6-12	18
12-30	16
30-60	7
60+	31

Bird Description	# of sightings
Pairs	76
Lone drakes	96
Group of drakes	8
Lone Hens	7
Hen w/brood	11

Dominant Emergent Vegetation	# of Sightings
None	6
Grass	7
Cattail	90
Bulrush	5
Mixed Bulrush	10
Cattail	

Proportion of Water Surface Covered by Emergents (%)	# of Sightings
10	37
25	39
50	25
75	16
85	1
100	

Nesting Bales - During the winter of 1987, 46 flax bales were placed on wetlands on three Cavalier County WPAs. Bales were checked for waterfowl use and nest success after the nesting season. Only six of the 46 bales, or 13%, received use by nesting waterfowl. Of these six nests, five successfully hatched for apparent nest success of 83%. Due to high water conditions early in the spring and bales moved to deeper water by ice action, numerous bales had nesting surfaces which were covered by water or existed just barely out of the water. This could account for the poor use by waterfowl. We will evaluate waterfowl use of the bales in 1988 before placing more bales throughout the District.

Nest Baskets - Fourteen cone shaped, wire nest baskets which were erected in the late 1970's were refurbished and lined with flax straw during the summer of 1986. Baskets were checked for

waterfowl use and nest success after the 1987 nesting season. Three of the 14 baskets or 21%, were used by nesting waterfowl. Two of the nests successfully hatched young for an apparent nest success of 67%. Materials and labor to erect and maintain nest baskets is high and before we erect more baskets, we will need greater use by waterfowl to justify such an investment in dollars and staff time.

Predator Exclosure - A 2,000 foot long electric predator exclosure was erected across a peninsula at Stump Lake NWR. Ducks Unlimited provided the material for station personnel who erected the fence late in the summer of 1985. The fence was electrified in April 1986 after which conibear traps were used to remove eight skunks and two raccoons from the exclosure.

Only 28 nests (0.45 nest/acre) were found on the 62 acre tract. Mayfield nest success for the exclosure was an equally disappointing 5.6%. We are not content with this nest density or success since the Stump Lake islands 200 yards off shore and with similar nesting cover had nest densities of 13.25 nests/acre and Mayfield success of 96%.

Inexperienced trappers using too few traps are believed to be the main reason for the poor results. We have great expectations for this tract and plan on intensifying our predator removal efforts to increase use by nesting waterfowl.

WPA Predator Control - We attempted to reduce predators and improve waterfowl production on three Ramsey County WPAs totalling 2,560 acres. Predator control was attempted with conibear traps and totalled 16 skunks, three raccoon and one fox.

Only ten nests were found on the 101 acres of DNC searched. Mayfield nest success for the search was 25.5%.

We also searched 237 acres of similar WPA nesting cover to establish a data base for comparison with the predator control areas. A total of 25 nests were found (32.5% Mayfield) on these WPAs without predator control.

Based on the above information we are actually better off not controlling predators (32.5% nest success) than controlling predators (25.5% nest success). We attribute the poor results to inexperienced trappers using too few traps on too large of an area. We also made no effort to remove red fox which are a major nest predator.

We do believe predator control on WPAs can have a positive impact on nest success and nest density only if performed effectively on suitable areas.

Extension Projects - Funding was secured from the Wetland Habitat Office for projects improving waterfowl production on private lands. Twenty-five fiberglass goose tubs were purchased with WHO

extension funds and delivered to interested area landowners and sportsman groups. The extension bale banding machine was used by two sportsman groups who banded and placed flax bales in wetlands for use by nesting waterfowl. We also used extension funds to obtain a management agreement which will provide 10 years of access and predator removal rights on a highly productive private island.

Island Predator Control - The District continued with its second year of an island predator control program involving 10 private and Service owned islands. The program has dramatically increased waterfowl nest success and density on these islands.

Predators were controlled with snares, conibears, and shooting. Predator species removed included mink, fox, skunk, and raccoon.

Nest success for those islands which were monitored averaged 83% (See Figure 3). Nest density continued to increase and reached a remarkable 12.3 nests/acre. This phenomenal nest density and nest success on District islands has resulted in a dramatic increase in the number of ducklings produced (See Figure 4). Mallards comprised 47% of total island nests, while gadwall made up 33%, blue-winged teal 10%, scaup, 5%, comprised the remaining 5%.

Nesting waterfowl preferred dense forms of island vegetation. Low growing shrubs such as prairie rose, buck brush, and gooseberry were preferred over grasses and forbs.

The two Stump Lake NWR islands were not monitored for nest success this year. We did occasionally visit the islands to insure their predator free status. No signs of predators or predated nests were found during these visits and we observed an astounding number of birds nesting on the islands. It appeared that nest success and nest density during 1987 would have equaled or surpassed 1986 results when 530 nests were found (13.25 nests/acre) and Mayfield success averaged 96% (Photo 10).

Investment of station funds to control predators on natural islands has proven to be one of the most cost efficient management techniques currently available to managers. Utilizing data from our island program Assistant Manager Schnaderbeck co-authored a paper with John Lokemoen of Northern Prairie Wildlife Research Center concerning the cost effectiveness of predator control on natural islands. The final cost of a duckling hatched on an island included in our predator control program was a mere $0.33. With a cost benefit ratio such as this we simply can not afford not to manage every available island be it owned in fee title or privately. We know of no management technique with a greater return per dollar invested.

Figure 3. Island Nesting Success, 1987

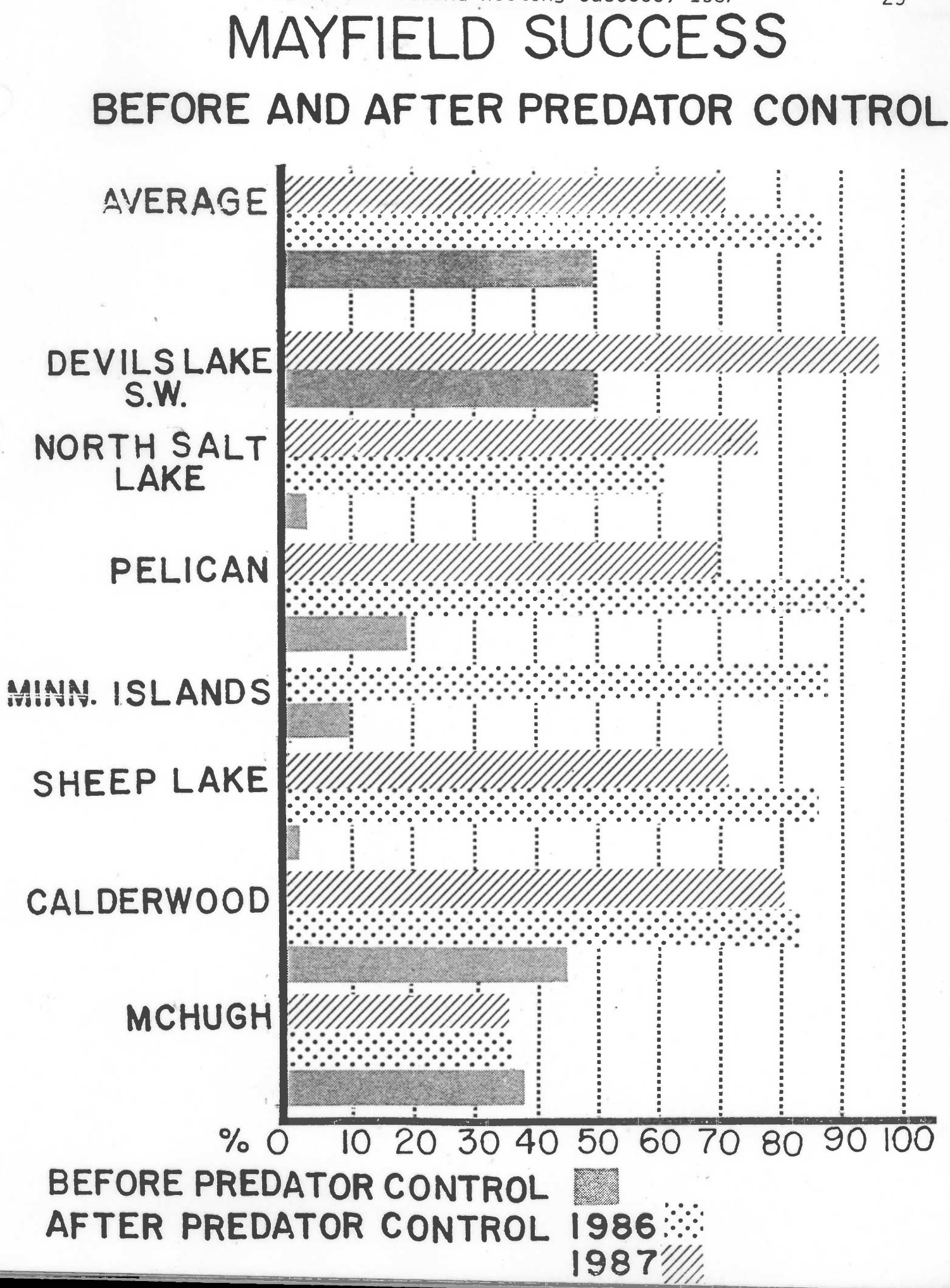


Figure 4. Duckling Production on Islands in 1987

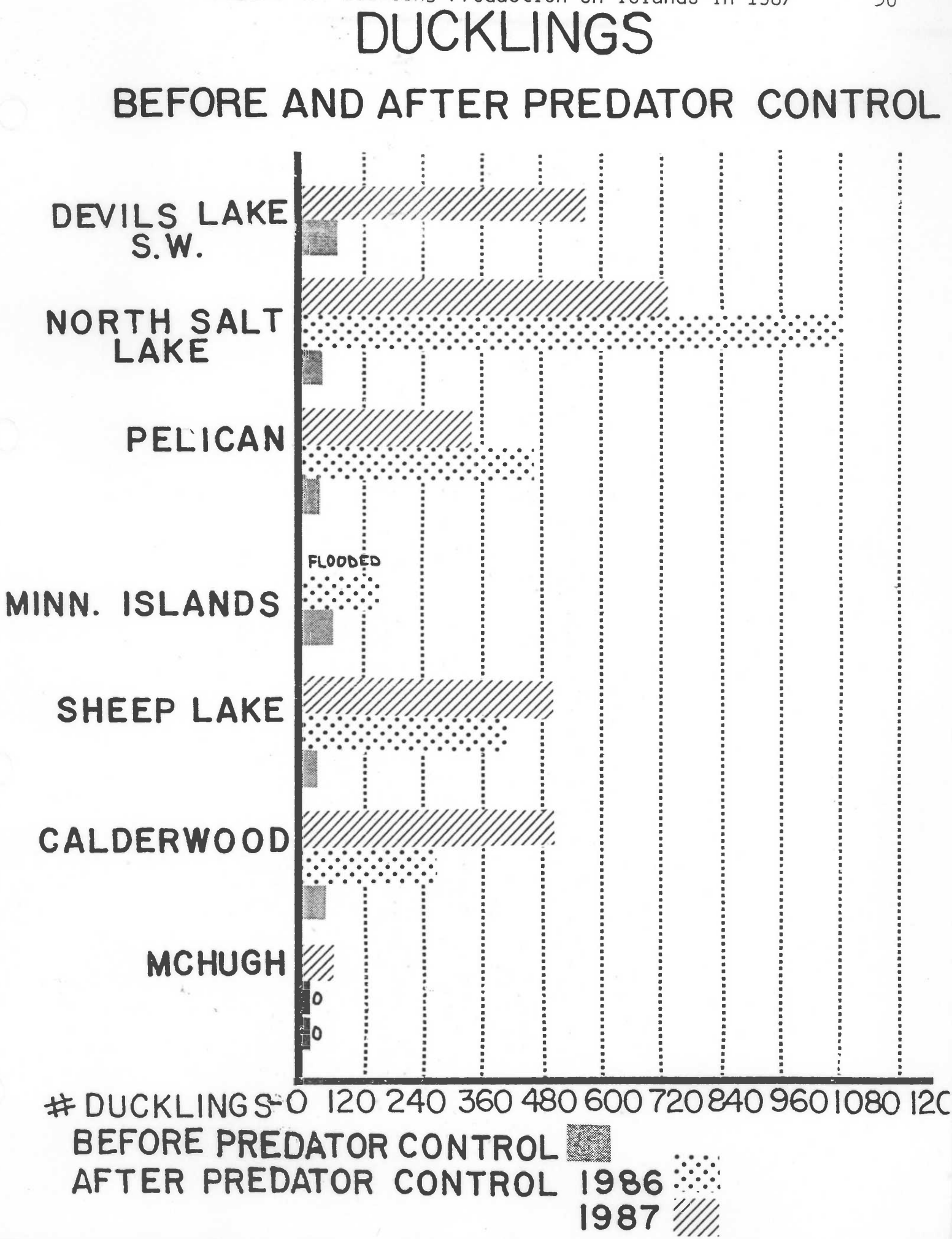


Photo # 10. Aerial view of the highly productive west Stump Lake island. RAH

4. Marsh and Water Birds.

The Minnewaukan Flats of Devils Lake once again proved to be of immense biological value and provided nesting habitat for a large number of marsh and water bird species. Active colonies of double-crested cormorants, eared grebes, American bitterns, black-crowned night herons, cattle egrets and snowy egrets were documented by station personnel. This year we finally did manage to document a successful nesting of snowy egrets on the Minnewaukan Flats. Snowy egrets rarely nest in North Dakota and this find was of great interest to area birders (Photo # 11).

A rare yellow rail nest was discovered by Craig Faanes on the west edge of the Minnewaukan Flats. Luck had it that a photographer from Smithsonian magazine who was having great difficulties locating a yellow rail nest stopped by our office the same day and we managed to direct him to the site.

5. Shorebirds, Gulls, Terns, and Allied Species.

The District is located in premier pothole country and consequently receives extensive use by migrating and breeding shorebirds, gulls and terns. A large colony of Franklin gulls was discovered in the Minnewaukan Flats of Devils Lake. Several colonies of American Avocets and ringbilled gulls were discovered on islands included in the station's island studies.

Photo # 11. Snowy egrets were found nesting in Minnewaukan Flats of Devils Lake.

6. Raptors

Raptor numbers in the District appeared to be average during spring and summer, but station records indicate a general decline of raptor observations during the fall. Snowy owls were frequently observed in December throughout the District.

7. Other Migratory Birds

A crew of volunteers assisted Assistant Manager Schnaderbeck in monitoring eastern bluebird use of the 170 houses available in 1987. Fifty additional houses were added this past year as the bluebird population and volunteer support for the project continues to grow. Bluebird populations at Sullys Hill NGP and along the West Bay of Devils Lake continue to expand. We plan on erecting more houses in these areas and in the Lakewood area of Devils Lake this coming year.

We took steps to acknowledge the most active volunteers in our bluebird program by submitting their names for "Take Pride in America" recognition certificates offered through the NDSU Extension Service and N.D. Parks and Recreation Department. All of our volunteers received the award and the resulting media coverage bolstered support for the program and improved the Service's image within the community (Photo 12).

Photo # 12. McEnroe and Schnaderbeck present "Take Pride in America" awards to area bluebird volunteers. RAH

One of our volunteers, Chris Soper, worked with our bluebird program as his final project for his Eagle Scout Badge. Chris secured funding from local businesses for materials and utilized Cub Scouts to construct and erect over 40 houses. Chris did a fine job and we were happy to assist him in reaching his Eagle Scout status.

8. Game Mammals

The WMD's WPAs and NWRs are very important to the survival of many game mammals in the area. Service lands play a critical role by providing winter food and cover for many resident wildlife species. Primary game mammals produced on Service lands include white-tailed deer, moose, raccoon, red fox, mink, muskrat and coyotes.

The white-tailed deer population is below the five year average. This is primarily due to increased hunting opportunities aimed at curtailing the rapidly increasing population experienced in the years preceding 1987.

Moose populations in the district are considered to be healthy and expanding by North Dakota Game and Fish Department. Some of our WPAs are very important in providing forage and cover for this atypical agricultural moose population. Moose are residents of all counties except Benson. Elk have recently been reported in Cavalier and Pembina Counties.

Fox and coyote populations are considered relatively stable by the local ADC field assistant.

10. Other Resident Wildlife

Mild winters with minimal snow cover and increased cover from the Conservation Reserve Program have painted a much brighter picture for resident wildlife on private lands. But for the past winter, the Districts' WPAs still provided most of the substantial amounts of cover available in the WMD.

Sharptail grouse and Hungarian partridge appear to have maintained their recent increase in numbers. Ring-necked pheasants have shown no change from their very low population level. The above trends area based on casual observations.

12. Wildlife Propagation and Stocking

Giant Canada geese restocking continued in the district by the North Dakota Game and Fish Department. The Service also made a transplant at Lake Alice NWR. See the Lake Alice Narrative for details. A summary of transplants made in the last five years is shown in the following table.

Canada Geese Transplanted in the Devils Lake WMD, 1983 - 1987.

Year	Location	County	Goslings	Adults	Total
1983	Whitman Dam	Nelson	15	6	21
1983	Lake Ardoch NWR	Walsh	20	6	26
1985	Stump Lake	Nelson	25	5	30
1986	Moscow Slough	Cavalier	30	5	35
1986	Devils Lake	Ramsey	32	2	34
1987	Billings Lake NWR	Cavalier	30	4	34
1987	Wiens Slough	Cavalier	30	4	34
1987	Pleasant Lake	Benson	28	4	32
1987	Lake Alice NWR	Ramsey	92	7	99
1987	D. Lk. Airport	Ramsey	13	2	15

15. Animal Control

Breakey, Martinson and Phil Aus WPAs and a portion of Lake Alice NWR were part of a predator management study conducted by the staff. Animals taken are listed in the following table. The "Other" category included Franklin's ground squirrels, badger, woodchuck, and coyote. A discussion of this study is found in Section G. 3 of this report.

Species Composition of Predators Taken From Lake Alice NWR and Breakey, Martinson and Phil Aus WPAs, Ramsey County, North Dakota, 1987.

Area	Skunk	Raccoon	Fox	Other	Total
Lake Alice NWR	18	10	9	9	46
WPAs	16	3	1	1	21
Total	34	13	10	10	67

16. Marking and Banding

The Devils Lake Wetland Management District does not do any scheduled waterfowl banding but we did assist in giant Canada goose aging, sexing, and banding and also found some interesting band returns as a result of collecting banded birds during the botulism clean up activities.

The giant Canada goose banding is done in conjunction with our giant Canada goose restoration project. Young of the year birds captured at J. Clark Salyer NWR were sexed, aged and banded prior to release into new areas.

The Devils Lake District also headed up the botulism clean up activities on the Minnewaukan Flats area of Devils Lake. Approximately 9,600 birds were collected and 41 leg bands were recovered. Eighty eight percent of the banded birds were mallards and 97% of the mallards were males. Other species banded included American Wigeon, pintail, and blue-winged teal; all of these were males. The 41 band recovery reports showed that the Devils Lake area is attracting birds from all around the North American continent. The waterfowl reported were banded at 30 different locations in 13 different states and 6 Canadian Provinces. Forty of the 41 banded waterfowl were males. The oldest bird recorded was a mallard that was nine years old or older and was banded in Saskatchewan. Forty-four percent of the birds collected were three years old or older and 76% were two years old or older.

The Minnewaukan Flats area appears to be a major molt migration area for experienced breeding males and is very important to the areas mallard population. With the wide array of states and provinces represented in the band returns, it shows the importance of this region to the continental population. A summary of states and provinces where birds were banded is listed below:

1987 Band Returns - Minnewaukan Flats, Devils Lake, ND

State	# of bands	Province of Canada	# of bands
Illinois	4	Manitoba	3
Michigan	1	Saskatchewan	8
No. Dakota	5	Ontario	2
Kansas	1	N.W. Territories	1
Minnesota	1	New Brunswick	1
Maryland	1	Alberta	1
Mississippi	3		
Kentucky	1		
Wisconsin	1		
Arkansas	2		
So. Dakota	1		
Tennessee	2		
No. Carolina	2		

TOTAL 41

17. Disease Prevention and Control

Wetland Management District staff checked the Minnewaukan Flats for botulism during June and early July. A botulism outbreak was first detected on July 24. At the peak of the outbreak from July 30 until August 20, two crews were picking up 400-500 birds daily.

The outbreak continued through early September. The WMD staff picked up 9,599 dead and sick birds during the seven-week long outbreak. Total losses were estimated to be 19,000 birds.

Species Composition of Birds Picked up During
1987 Botulism Outbreak on the Minnewaukan Flats

Mallard	3,148	(32.8%)
Coots	1,773	(18.5%)
Gadwall	1,142	(11.9%)
Pintail	818	(8.5%)
Blue-wing Teal	421	(4.4%)
Wigeon	376	(3.9%)
Green-wing Teal	320	(3.3%)
Shoveler	272	(2.8%)
Misc. Divers	154	(1.6%)
Scaup	72	(0.7%)
Black Duck	11	T
Wood Duck	11	T
Unknown	1,081	(11.3%)
	9,599	

Water levels in Devils Lake and the Flats reached 100-year record highs in 1987. Thousands of acres of pasture, hayland and brush were flooded. These newly flooded areas were the botulism hotspots.

During the seven-week outbreak, we spent 82 staff days on clean-up activities. Total costs for salary, airboat fuel and maintenance and miscellaneous supplies was $7450 (Photo 13).

Photo # 13. Crews throwing Botulism claimed waterfowl carcasses into fire pit dug at Sullys Hill NGP. RAH

H. PUBLIC USE

1. General

Public use activities within the District are generally wildlife-consumptive, with hunting being the most prevalent. We have relied heavily upon Sullys Hill NGP to provide an area for environmental interpretation and education. The station has recently placed greater emphasis on public relations and public use programs. Station personnel are working with local wildlife clubs, service clubs, and nonprofit organizations in an effort to improve the local image of the Service and gain support for wildlife programs.

6. Interpretive Exhibits/Demonstrations

Assistant Manager Schnaderbeck prepared an exhibit titled "Woodworking Projects for Wildlife" for an exhibit sponsored by the Devils Lake Chamber of Commerce. The display consisted of a wide array of bird feeders and bird houses built specifically for the display. The event was well received based on the demand for construction plans. We are planning a similar exhibit in the future.

District Biologist, Dave Janes demonstrated the art of furbearer trapping for a local scout group. The scouts were shown examples of various trap sets and how to properly prepare and tan furbearer skins.

7. Other Interpretive Programs

The District is involved in many activities that disseminate information on Service projects and conservation issues. One activity that District personnel have become actively involved in is Project WILD, an interdisciplinary, environmental and conservation education program for teachers. Facilitators instruct teachers on innovative ways to teach students in all subjects while emphasizing wildlife, their habitats and ecological principles.

Wetland manager Hollevoet is a Project WILD facilitator and coordinated a Project WILD workshop for 23 local teachers this past summer along with Project WILD classes in Lakota and Cando. District personnel have assisted in the workshops by giving presentations on a variety of topics of interest to the group.

This past year the District personnel undertook an extensive effort to improve its public relation with the local community. Local newspapers, television and radio station were utilized whenever topics of interest arose. We have a long way to go as the local image of the Service formerly was quite low, but gains have been made and the public is beginning to appreciate some of the positive programs of the Service. Following is a listing of presentations, news releases, media interviews given by District personnel this past year.

Presentations

Hollevoet/McEnroe	Wetland classification workshop - Jamestown
Hollevoet	Hurricane Lake project to Devils Lake Improvement Association.
Hollevoet	Talk on island predator management to Devils Lake Rotary.
Hollevoet	Project WILD workshops in Cando, Devils Lake and Lakota.
Hollevoet	Meet with Pembina County Wildlife Club.
Hollevoet	Presentation to NDCTWS on Wetland Poll- Bismarck.
Hollevoet	Firearms Safety talk to Benson County 4-H, Tokio.

Hollevoet	Ramsey County tour to Louisiana Fish & Game personnel.
Leschisin	Sullys Hill, Girl Scout Tour (25 scouts)
Schnaderbeck	Sullys Hill, Boy Scout Tour (20 scouts)
McEnroe, Hollevoet, Schnaderbeck and Leschisin	attend ND Game & Fish Dept. Advisory Board meetings, Grand Forks, Cando, Park River.
Nelson	Sullys Hill tour for ND School for Deaf (30 students/teachers)
Nelson	Frequent school tours at Sullys Hill.
Nelson	Sullys Hill tour to Benson County 4-H (34 kids)
Schnaderbeck	Talk to Cavalier County Wildlife Club, Langdon.
Schnaderbeck	Bluebird talk to Boy Scouts - Minnewaukan.
Leschisin	Judge at Devils Lake School Science Fair.
Schnaderbeck	FWS activities talk to Sheyenne Wildlife Club.
Schnaderbeck	FWS activities talk to Towner County Wildlife Club, Cando.
Schnaderbeck	FWS programs talk to Devils Lake Women's Club.
Janes	FWS activities in Devils Lake Basin to Devils Lake Improvement Association.
Leschisin	Fourth grade school talk - Devils Lake.
McEnroe	Steel shot talk - Grand Forks Sertoma Club.
McEnroe	Steel shot talk - UND Wildlife Club.
McEnroe	Steel shot talk - Devils Lake DU banquet.
McEnroe	Swampbuster - ND Farmer's Union, Jamestown.
McEnroe	N.D. Wetland Trust - Wetland Conservation Workshop, Bismarck
McEnroe	No-Net loss and Swampbuster, Greater N.D. Association Annual meeting, Jamestown.

News Releases

January, 1987	FWS Offers Piggyback leases
February	FWS/DU Islands at Lake Alice
March	McEnroe and Hollevoet - New Managers.
	Deer Numbers Down at Lake Alice
	Summer Jobs for Youth with Service
April	Sullys Hill open.
May	Project WILD Workshop, Devils Lake and Sullys Hill.
July	New Manager on Board - Huschle.
	Giant Canada Release at Lake Alice.
	Jolliette Township WPA Hay Release - Pembina County.
August	Botulism Outbreak on Minnewaukan Flats.
	Lake Alice Archery Deer Season.
	Sullys Hill Bison/Elk Lottery.
	Botulism Outbreak Slows.
September	Steel Shot Required for Nelson, Ramsey, Towner Counties.
	Botulism Update.
	Fall Waterfowl Survey.
	Lake Alice Waterfowl Season.
	Hofer Marsh DU Project.

	Service Checking on Easement Wetlands.
October	Sullys Hill NGP to Close for Season.
	Lake Alice NWR Open for Deer Gun Season.
	Goose Numbers Show Slight Decline - Hunter Numbers Down.
	Goose Survey Results.
December	Christmas Bird Count to be Held at Sullys Hill
	Time to Help Waterfowl - Nesting Bale Bander Available.
	Results of the Sullys Hill Christmas Bird Count.

Media Interviews

January	WDAZ - Hollevoet, DU nesting islands - Lake Alice.
June	WDAZ - Hollevoet, Lake Alice nest search.
July	WDAZ - Janes, Dutch Elm Disease.
August	WDAZ - Peterson/Dirks, Botulism
	Devils Lake Journal, Hollevoet - Botulism.
	Grand Forks Herald, Hollevoet - Botulism.
	KXJB - McEnroe, Botulism.
	KWAT - McEnroe, Goose Migration Outlook.
October	WDAZ - Hollevoet/Nelson, buffalo release.
	WDAZ - Hollevoet, Goose surveys.

Other interpretive activities included regular meetings with county commissioners, water boards, weed boards, Soil Conservation Districts, sportsmen's groups, wildlife clubs, Rotary Clubs, Lions, and the Devils Lake Improvement Association.

8. Hunting.

The number of waterfowl hunters in the area was felt to be the same or slightly more than the past year or two. Although there was extended mild fall weather, harvest of ducks and geese was average or slightly less.

Canvasbacks were widely scattered in Nelson and eastern Ramsey Counties. The closure on Cans made hunting these areas risky business for the non-discriminating hunter. Several cases were made by area law enforcement officers.

Big game hunting occurs on WPAs throughout the district. Some WPAs are favorite spots for the "big drive" for white-tailed deer. Success is highly variable. Hofstrand WPA only yielded one deer opening day while rumor has it that about 20 deer were taken on Waltz WPA.

Moose hunting also occurs on WPAs and NWRs in the eastern and northern parts of the district.

10. Trapping

Requests for trapping permits on Easement Refuges was up this year as shown in the following table.

Trapping Permits Issued for Easement Refuges.

	1984	1985	1986	1987
No. Permits	16	11	15	18

Trapping on WPAs is allowed consistent with state regulations. Red fox and muskrats are the primary targets.

The bottom fell out of the fur market in late December. Fox, coyote and coon fell to below $10.00. This may have serious repercussions for waterfowl production if it doesn't turn around by next fall.

11. Wildlife Observation.

The level of this activity that is not associated with scouting for the next days hunt is very low.

Excluding Sullys Hill NGP, the staff encountered less than 20 people in the past year just out watching wildlife.

12. Other Wildlife Oriented Recreation.

No established camp grounds are maintained in the WMD. Some camping on WPAs does occur during the hunting season.

15. Off-road Vehicling.

Off-road vehicling is prohibited on Service lands in the district. Some illegal activity of this kind occurs by recreationists and farmers wanting easy access to another piece of land. No violation notices were issued this year for this type of activity.

16. Other Non-Wildlife Oriented Recreation.

The Kellys Slough NWR and WPA is located near Grand Forks and Grand Forks Air Force Base. Evidence, such as empty ammunition cases, targets, broken bottles, and shot-up signs along roads and approaches indicate that target shooting must be a popular activity on these areas.

17. Law Enforcement

Law Enforcement is a time consuming effort in the Devils Lake District office. Our law enforcement efforts include wetland easement enforcement,(Section F.13) refuge lands and WPA enforcement, and game law enforcement. In 1987 we worked on 12

WPA/refuge enforcement cases, and 50 game law cases. A complete summary of our easement enforcement cases and activities is discussed in section F.13.

WPA and refuge enforcement usually involves trespass grazing, trespass farming, burning, motorized vehicle trespass, dumping, encroachment, violation of specific refuge regulations and destruction of government property. These activities are hard to enforce and require a lot of investigation and many times are hard to resolve. A summary of cases we investigated in this category include:

11 - burning of WPA lands
1 - WPA farm trespass

Game law enforcement is primarily done during the waterfowl and deer seasons at Lake Alice NWR and the WPAs. Enforcement staff worked every weekend of waterfowl season and during the deer season at Lake Alice. Numerous contacts were made to let hunters know that we were present. Non-toxic shot regulations were implemented in three counties this year so we participated in a lot of pre-season enforcement by giving presentations on non-toxic shot throughout the District. Hunters did well in following non-toxic shot guidelines this year. We contacted hundreds of hunters and only found nine non-toxic shot violations in 1987. We also participated in a road block in conjunction with the N.D. Game and Fish Department and N. D. Highway Patrol. A total of 34 Violation Notices were issued during the road block. Refuge officers wrote 12 citations and state wardens wrote 22 citations. We let the State wardens issue the citations whenever possible because the fines come back to the county. A summary of all the Federally written game law violations for 1987 is in the following table.

Summary of Federal Game Law Violations in Devils Lake District - 1987

Violations	#/Cases	Fine
Steel Shot Violations	9	$35 (4 juveniles to court)
Possession of Canvasback	4	50 (1 juvenile to court)
Overlimit - waterfowl	3	50
Transportation of waterfowl without ID	9	50
Possession of Canada goose in closed zone	3	50
Possession of firearm in retrieval zone	1	50
Hunting waterfowl in closed zone	1	50
Trespassing	1	35
No license - waterfowl hunting	4	Juveniles to state court
Unplugged gun -waterfowl hunting	2	" "
Driving off established trail	1	Adult, turned in to state court

Hunting deer w/o refuge permit	11	25
Hunting deer w/firearm in archery zone	1	35
TOTAL CASES	50	1,520 and 12 cases filed in state court

I. EQUIPMENT AND FACILITIES

2. Rehabilitation

The WMD purchased a stop log structure and culvert to repair the control structure at Billings Lake NWR in Cavalier County. We hired a contractor to shoot elevations and install the structure at the elevation specified on the State Water Commission permit.

4. Equipment Utilization and Replacement

Maintenance worker Wolsky was kept busy with routine maintenance on our fleet of 22 vehicles. Also a list below consist of major maintenance that took place in our shop.

Water pump in 1972 I.H.C. 5 ton truck
New clutch in spray truck (done at local dealer)
New clutch in 2440 John Deere tractor
Repaired hydraulic control for scraper
Removed scraper bowl from tractor # 2 so tractor could be used as a dozer.

Major equipment replaced and acquisition this year is a follows:

2 new 4-wheel Hondas
1 new Dodge mini van
2 new 3/4 ton Dodge pickups
1 new 140-90 Hesston farm tractor
1 new Gator pump (Photo # 14)

One of this year's major accomplishments is the battle over our new 140-90 Hesston farm tractor. After Maintenance Worker Wolsky found out at the end of July that our new tractor was a Hesston, we notified Contracting about it being a foreign made tractor. Contracting told us that enough of the tractor was made in the United States and it was all right to accept delivery. On August 27, 1987 we received a 140-90 Hesston tractor. The tractor was inspected and it met our specifications, so we accepted the tractor. Two days later Contracting called and told us we could not use the tractor and to lock it up in a storage building. Contracting told us that it was a foreign made tractor (just what we told them earlier). After a four month battle between Hesston Corp. and Contracting and a rebidding process, we still ended up with the same 140-90 Hesston tractor but too late for falls' work.

Maintenance worker Wolsky was also busy throughout the year gathering surplus equipment from the Grand Forks Air Force Base. A total of $142,082.40 worth of heavy equipment was transferred to us from the Air Base. All this equipment was able to be put to good use after a little maintenance. A list below consists of equipment that Wolsky picked up.

January -	1972 Cat. 12E Road Patrol	$12,968.40
May -	1970 Snow Track Vehicle	63,000.00
June -	1972 I.H.C. 5-ton semi truck	7,000.00
November -	1970 I.H.C. tractor, loader, snowblower and 3-pt. rear blade	14,300.00
December -	1972 Hydra Hoc backhoe	33,333.00
December -	1970 Hyster 10,000 lbs. Forklift	11,481.00
	TOTAL	$142,082.40

This equipment was a real saving to this station.

Photo # 14. New Hesston tractor and Gator Pump purchased for wildlife management activities. DAL

5. Communications System

We purchased another state radio bringing the total for the station to five.

7. Energy Conservation

In order to cut down on our electric bill, we installed propane heaters in the chemical room.

J. OTHER ITEMS

This year was also a busy time for giving tours and for getting the word out on wildlife and wetlands. We gave tours to Director Dunkle, Regional Directors Buterbaugh and Nelson, (Photo 15) ARD Kverno, Hydrologist Bellinger, four Louisiana biologists, four Patuxent biologists, two NPWRC biologists, D>U> personnel, various media representativess, support staff Berlinger, and Omaha District Corps of Engineers Personnel.

Our public relations efforts included starting a weekly news release to ten newspapers, various radio and television productions, Project WILD, guest media interviews and Take Pride in America efforts included passing out caps and placemats provided by our N.D. Extension Service. We also noticed a goose decoy trailer decorated with the Take Pride logo that travlelled the District far and wide (Photo 16).

Photo # 15. McEnroe and Hollevoet gave tour of District activities to Director Dunkle and Regional Directors Buterbaugh and Nelson. RAH

K. FEEDBACK

The Devils Lake Wetland Management District - we often hear it's a "hot potato". Everytime we advertise a position, people call and ask, "Is Devils Lake still a hot potato?" You bet it is!; and that's reflected in the number of applicants we get when we have job openings. Normally, if we get any applicants the first time around 2-3 might be qualified. In the higher grade positons we almost have to beg to get people to apply. Why is it, why is

Devils Lake a tough place to work? Easement enforcement, social dislike by the ag community, water boards, wetland drainage, attorneys, public hearings, wetland preservation, coulee cleanouts, ag/wildlife conflicts; we suppose these enter into it. But is it more? Is it North Dakota, Region 6, funding, or what is it? Well one problem we do know, other than all those mentioned previously, is that it seems to come down to the old gripe of manpower and funding. The Devils Lake District does have a tough district, but it definitely could change it we had the people. We have Lake Alice NWR in our District, a 12,000 acre waterfowl refuge in the middle of the famed Prairie Pothole Region. This refuge is unmanned. We have one assistant manager that handles Lake Alice Refuge along with two other counties in the wetland district. Those two counties have 643 easement contracts to inspect/enforce annually and 44 Waterfowl Production Areas to inspect, plan and manage annually. This doesn't even include acquisitions, management planning, NEPA, research needs, technical assistance, disease work, predator management, population surveys, environmental education, public relations, game law enforcement, etc. Our other counties include numerous WPAs, refuges and a National Game Preserve, all are overworked.

This typlifies the workload at Devils Lake and many other stations in the Dakotas. Its time someone accelerates the push to get increased funding so stations like Devils Lake and others in the Dakotas can do a sufficient and improved job.

Photo # 16. Goose decoy trailer spotted in the District on numerous occasions supporting the "Take Pride in America - Protect N.D. Wetlands" logo.

LAKE ALICE NATIONAL WILDLIFE REFUGE
Devils Lake, North Dakota

ANNUAL NARRATIVE REPORT
Calendar Year 1987

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

INTRODUCTION

Lake Alice National Wildlife Refuge is located in Ramsey and Towner Counties of northeastern North Dakota, approximately 18 miles northwest of the city of Devils Lake. It is an area of glacial drift and lacustrine plains formed by continental ice sheets during the latter part of the Wisconsin glaciation. The topography is nearly level to gently undulating with many shallow swales separated by low, irregular-shaped rises. Depressions containing poorly drained soils and marshes occur throughout the landscape.

The Lake Alice area has long been recognized as a major waterfowl concentration point during spring and fall migrations and for supporting significant numbers of nesting waterfowl. Literally tens of thousands of snow geese, Canada geese, mallards and other ducks use the lake and surrounding lands each year.

The refuge was first established in 1935 as a 5,882 acre easement refuge called Lac Aux Mortes (Lake of Death) National Wildlife Refuge. In the late 1930's and 1940's, a series of improvements were completed to enchance the area for waterfowl. Dikes were built, roads improved, an inlet channel constructed, nesting islands pushed up in the lake bed and a rubble spillway placed in the lake outlet. Coincident with these improvements, farmers adjacent to the lake began to construct dikes to prevent flooding as climatic conditions changed from the drought of the dust bowl days. As a result, drainage patterns were considerably altered on lands immediately adjacent to Lake Alice with each landowner attempting to divert and/or pump flood waters away from his property each year. Farmers continued to try to farm lowlands they had used in dry years despite the changing climatic and land use conditions in the watershed.

In 1956, area farmers filed a lawsuit against the Service for flood damages. The claim was denied by the Department of Justice in 1959.

Flooded farm land continued to be a problem leading to the construction of a large, permanent outlet control structure in 1968. Flooding continued, and several farmers pushed for the creation of a larger refuge, and thus purchase of their lands.

In 1972 approval was granted by the Governor and the Migratory Bird Conservation Commission for the outright purchase of 8,595 acres around Lake Alice, and the area became known as Lake Alice National Wildlife Refuge. Total approved area of the refuge is 12,053 acres, including the 3,458 acres of Lake Alice. Acquisition progressed rapidly at first, but bogged down as years went by. Unwilling sellers currently own 824 acres within the approved refuge boundary.

Except for planting cover on former cropland, little refuge development has taken place since 1972. Refuge objectives established during acquisition are as follows:

1. Produce 5,000 ducks annually with emphasis on mallards, canvasbacks and redheads.

2. Provide spring and fall migrational habitat (food, water, and sanctuary) for 120,000 ducks, 50,000 geese, 1,000 swans, and various numbers of other water birds.

3. Establish quality soil cover and land use practices to protect basic resources from wind and water erosion and demonstrate value of these practices to the public.

4. Provide wildlife-oriented opportunities for the visiting public. This includes both consumptive and non consumptive forms, varying from hunting, to bird watching, to nature interpretation.

5. Maintain and improve the existing diversity of wildlife.

INTRODUCTION

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High spring flows inundated portions of refuge (section B)

Ducks Unlimited Inc. constructed two nesting islands in Lake Alice (section F.2)

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Initial attempt to manage predators to increase waterfowl nest success had poor results (section G.15)

Giant Canada geese restored to refuge (section G.12)

Rehabilitation of headquarters accomplished over summer (section I)

New tractor and portable water pump arrive in 1987 (section I.4)

B. CLIMATIC CONDITIONS

A 25" snowstorm in November 1986, provided enough moisture to fill refuge wetlands at or above capacity. Water levels on Lake Alice reached 1445.3 on April 14, nearly three feet above the operating pool level of 1442.5. The Maza-Garske Road was over topped in several spots by water pushing down from the Mauvais Coulee (Photo 1).

See the WMD narrative for additional climatic condition comments.

Photo # 1. Water rushing from the upper watershed overtopped the Maza-Garske road on the north side of the refuge. 4/87 DAL

C. LAND ACQUISITION

1. Fee Title

Landowner contacts continued with inholders at Lake Alice during 1987 but no progress has been made with negotiations. The two principal inholders, Noltimeier (Tract 22) and Hanson (Tract 15) have stated they were not satisfied with the price offered and/or wished to continue farming.

One inholder has sold several parcels to Minneapolis-based hunting clubs which threatens the sanctuary status on the southern edge of Lake Alice. Four violation notices were issued against club members for various infractions this year and their presence within the refuge boundaries likely will continue to cause management and enforcement problems.

The present refuge acreage, including a Bureau of Reclamation mitigation tract is:

Fee Lands	-	7,771.03
Meandered waters	-	3,457.58
To be acquired	-	824.48
TOTAL	-	12,053.09

D. PLANNING

1. Master Plan

No work on a master plan was initiated.

2. Management Plans

The comprehensive Lake Alice Water Management Plan drafted in 1986 remains in limbo. Despite efforts by the District to move along with finalizing it, the local water boards and the State Water Commission have failed to provide the necessary supplemental information needed to complete the plan. The future of the plan also is clouded by attempts of the Corps of Engineers, state and local officials to develop a comprehensive plan for the Devils Lake Outlet proposal. Lake Alice plays an intergal part in the overall water management scheme for the Devils Lake Basin. The other reality is that "locals" don't want to address drainage issues or the possibility of any management that may restrict the free flow of water through Lake Alice NWR.

4. Compliance with Environmental and Cultural Resource Mandates

Annual Water Management Plan updates were provided to the North Dakota State Water Commission in compliance with the state regulations of water rights at Lake Alice.

Permits and an EA were prepared for the construction of two nesting islands in Lake Alice NWR.

E. ADMINISTRATION

See Devils Lake WMD narrative.

F. HABITAT MANAGEMENT

2. Wetlands

Control structure gates were held open at the outlet of Lake Alice throughout the season with the hope of achieving a drawdown. Drawdowns have been attempted every season since 1984, with no successful drying of the lake bed and resultant reestablishment of emergent vegetation. A 1972 account of Lake Alice describes it in these terms: "It is difficult to describe a marsh with over six square miles of tall emergent vegetation interspersed with hundreds of small open water areas where literally hundreds of secretive life forms can live free from man's disturbance. On a cloudy day, a man in a canoe looses all sense of direction two hundred yards from shore. It is an interesting world with its seeming endless variety of plant and animal life. No other marsh in North Dakota is quite like Lake Alice." Today the lake has open water from shoreline to shoreline.

The sterilization of Lake Alice can be blamed on several factors. Above normal snow pack produced runoff that peaked lake levels at 1445.3, with an operating pool level of 1442.5, and drawdown level at 1439.0. Lake levels stayed over 1441.0 until August to prevent any mud flats from appearing soon enough to establish emergent vegetation. Upstream wetland drainage and stream channelization increased and speeded flows to the refuge, but a lack of water control capabilities at downstream Lake Irvine held water in Lake Alice. The large expanse of open water prompted greater wave action and turbidity and further promoted the vicious cycle.

Ducks Unlimited, Inc. constructed two nesting islands in Lake Alice during January. Both islands were constructed on top of old eroded islands constructed in the 1930's. Island # 1 had an hour-glass shape with 1.2 acres of surface area (Photo 2). Island # 2 had a kidney shape with a surface area of 1.1 acre. Construction involved scraping approximately 12 inches of ice away from the island site with a bulldozer, then hauling fill from borrow areas (Photo 3). Over 16,000 cubic yards of fill went into the two islands. Each island had 4:1 side slopes, a 10 foot berm (simulated beach), and a 10:1 slope at or below water level. This design was used to minimize wave erosion on shorelines. Cattails

from existing stands were transplanted on the shoreline berm to further minimize wave erosion. A three-man crew with a bulldozer and two earth movers completed the project in less than one month with good results and a minimum of problems.

Photo # 2. Hour-glass shape of DU island minimizes wave action, adds shoreline, and has a natural appearance. 3/87 DAL

Borrow pits were situated adjacent to Lake Alice, within the normal spring flooded zone. Both pits were dug a maximum of four feet deep with contoured sides and irregular, "natural appearing" shorelines (Photo 4). Shallow channels connected the new wetlands with Lake Alice to insure a reliable water source. The bare shorelines of these ponds proved to be very attractive to spring migrants, pairs, and molting ducks. Hundreds of birds could be found on the ponds at any time.

The contractor planted buckbrush on one island by scraping up stems, roots, and all from shoreline stands and spreading it across the topsoil. New plants rapidly sprouted from the roots to establish the start of a nice brush stand. DNC was hand seeded on both islands; alfalfa seedings looked good by the end of the summer. Volunteer forbs covered the island by June.

One negative development occurred during the high spring runoff when wave action eroded bare island shorelines and carried away the transplanted cattail plants. We replanted the cattails, (photo 5) but this effort also failed since the shoreline had very little organic soil left for plant establishment. We'll have to watch both islands to determine if emergent plant establishment is possible or if other action, such as riprapping, will be necessary.

Photo # 3. Earth mowers hauling fill to DU island. Bulldozer is scraping ice away from the lake bottom. 1/87 DAL

Photo # 4. Borrow pit filled with water and received heavy waterfowl use once spring arrived. Note channel to lake. 3/87 DAL

Photo # 5. Crew transplanting cattails on island shoreline. This second attempt failed to establish an emergent buffer. 7/87 RAH

Forty- five flax bales were positioned on the ice of Lake Alice for breeding waterfowl. However, high spring waters destroyed all but a handful of these bales. Future bales probably are best for peripherial wetlands, not the turbulent waters of Lake Alice.

4. Croplands

Croplands are managed under a multi-year program that is designed to protect the soil from erosion, add nitrogen and organic matter, and reduce the need for fertilizers and pesticides. Each field has a crop rotation consisting of small grains and legumes. Croplands, depending on the stage of rotation, provide food for resident wildlife, supplemental grain for migrating waterfowl and other ground-nesting birds (Table 1). An additional benefit is a source of grain for the Sullys Hill NGP bison, elk and captive giant Canada goose flock.

Farming also is used to prepare fields for seeding of native grass or dense nesting cover. Cropping breaks up old sod, controls weeds, and prepares the seedbed for our grass seeding.

Table 1. Summary of 1987 Cropland Program.

Crop	Acres	Benefit	Comments
Fallow	57	Preparation for DNC	Weed control
Fallow	70	Preparation for DNC	Weed control

Barley	30	Preparation for alfalfa	Weed control
Fallow	40	Preparation for alfalfa	Weed control
Spring wheat	40	Waste grain	Food for staging snow geese
Winter wheat	33	Waste grain	" "
Winter wheat	55	20% share	Grain for Sullys Hill big game
Spring wheat	40	20% share	" " "
Clover/plowdown/ winter wheat	42	Soil nitrogen	Cooperators share
Barley	40	Waste grain	Food for staging snow geese
Sunflowers	10	100% share	Food for resident wildlife
Oats	20	25% share	Grain for Sullys Hill big game

Two food plots, 2-acres each, were planted to corn by force-account. Both fields were failures due to poor seeding techniques resulting from a lack of an adequate corn seeder. A new seeder should rectify this situation in 1988.

5. Grasslands

About 1,000 acres of refuge grasslands are subject to flooding during high runoffs. This spring was one of those years. Management on these areas has stressed conversion to water tolerant grasses such as Garrison creeping foxtail, reed canary grass, and switchgrass. However, some soils are slightly to moderately saline, which is not condusive to creeping foxtail or canary grass. That leaves switchgrass. Some switchgrass stands were flooded up to 6 weeks without killing the plants. Other flood-prone sites are in poor shape with stunted quackgrass and annual forbes being the dominant plants. These areas need to be converted to a water-tolerant grass or have a water management system constructed that will provide a more reliable water regime. We've dubbed these areas "taint" lands because they "taint" wetlands and they "taint" grasslands.

Ron Manson, Valley City WMD, combined the super switchgrass seed field east of the headquarters. About 320 pounds of cleaned seed was the result. We have plans to expand this seed field.

8. Haying

Four permittees hayed 207 acres. Two areas were hayed prior to break-out, with the final goal of DNC reestablishment. A 60-acre alfalfa field was hayed as part of an annual mowing strategy to maintain this vigorous stand. Finally, part of Calio

Coulee was mowed to provide short grass stubble that should be attractive to breeding ducks when flooded next spring. Haying the coulee makes the local residents happy because they have the idea water will flow faster from private land.

9. Fire Management

Several sites proposed for prescribed burns were too wet this spring to carry a fire. However, 20 acres of switchgrass was burned around the residence in June with good response (photo 6). A two-acre marsh was burned on October in the hope that spring water levels will achieve some level of cattail control (figure 1).

Photo # 6. Prescribed fire in switchgrass field around refuge residence. It takes a good crew to have a safe burn around buildings and propane tanks. 5/87 MRM

10. Pest Control

About 50 acres of grasslands or shelterbelts were sprayed with a mixture of Tordon 22K and 2,4-D to control leafy spurge. Spurge is worst in shelterbelts where it's hard to get at with equipment. The only weed complaint received concerned sow thistle. We didn't take any action against this "weed" since its typically found on wetland perimeters or shallow wetlands. Our neighbors were concerned that refuge sow thistle would spread to their drained wetlands (now grain fields).

G. WILDLIFE

2. Endangered and Threatened Species

Five bald eagles were sighted flying over the refuge, four in the fall, one during spring. This number of sightings is about normal compared to past years. Eagles use the refuge only during spring and fall migration periods.

3. Waterfowl

The first spring migrants, Canada geese, were noted on March 21. Mallards and snow geese showed up on March 27 and 31, respectively. Spring snow goose numbers peaked at 45,000 on April 5. No pair survey was conducted but the abundance of water resulted in the refuge being "covered up" with breeding ducks.

Fall snow goose migrants first showed up on September 12, peaked on November 7 with 75,000 birds, and were last seen exiting south on November 16 (photo 7). Duck numbers were low all fall with a maximum of 5,000 birds.

Photo # 7. Spectacular concentrations of snow geese are Lake Alice NWR's major claim to fame
11/87 DAL

Predator control to increase nest success of breeding waterfowl was initiated in 1987 (see G.15). Nest searches of an alfalfa field and three DNC fields generated the following data:

Acres searched:	149
Number of nests:	34
Acres per nest:	4.4
Apparent success:	20.6%
Mayfield index	6.3%

Most nests were blue-winged teal (76%) or gadwall (20%). The previous year's nest searches, without predator control, found apparent nest success and Mayfield index to be 46.6% and 27.5%, respectively. Obviously, our initial attempt at predator control was unsuccessful; an inability to remove numerous red fox from the refuge probably was the major factor.

The initial nesting activity on the two new Lake Alice islands was very encouraging. Cover was sparse, as could be expected, with annual forbs providing the only vegatative cover. The following species nested on the islands:

Species	# Nests
Pintail	12
Mallard	8
Gadwall	2
Blue-winged Teal	2
Shoveler	2
TOTAL	26

Three nests had unknown fates, one nest was abandoned, and 22 nests were successful. No predation was observed on either island. Nest sites were situated in sod clumps, bare soil, sparse forb growth, or shoreline debris. We can't wait for the 1988 season, when these islands will have some vegetative growth to attract additional birds.

4. Marsh and Water Birds

Nesting coots were everywhere on refuge wetlands this year. Why doesn't a nesting coot adjacent to a road covered with raccoon and fox tracks have problems with predation? A flock of 250 sandhill cranes spent several weeks on the refuge this fall. Pelican numbers peaked at 400 birds over the summer. The most unusual sighting included thirty common egrets in Traynor Lake.

5. Shorebirds, Gulls, Terns, and Allied Species.

Shorebirds, including avocets, willets, lesser yellowlegs, and various species of sandpipers seemed to be present in usual numbers. Three avocets nested on the new Lake Alice islands. Over 150 ruddy turnstones were observed on the shorelines of one island.

10. Other Resident Wildlife

Small populations of ring-necked pheasants and gray partridge continue to survive on the refuge. Several partridge broods were seen over the summer. Sightings of a couple sharp-tailed grouse were recorded in spring and winter. Upland game birds have adequate cover on the refuge, but winter food supplies are limited to refuge food plots or feeding stations.

After August the only thing that adjacent private lands provide is sites for dust baths.

Previous records cite good pheasant numbers, but this was in the days prior to the advent of fall tillage. Private land is tilled under by September, so we have to redirect our management toward providing reliable winter food resources to maintain and expand resident wildlife populations.

11. Fishery Resources

Jeff Hendrickson, a student at ND State University, collected fish from the channel between Lake Alice and Irvine with two 3'x6'x1/4" frame nets on July 2 and August 27. Each effort lasted 20 hours. His results are listed below:

Date	Species	No.	Length(mm)	Weight(gr)
7/2	Northern Pike	165	140-230	20-72
	Fathead Minnow	125	-	-
	Stickleback Minnow	15	-	-
8/27	Northern Pike	35	256-368	88-350
	Walleye	2	179-186	46-58
	Yellow Perch	3	92-176	6-69
	Fathead Minnow	7,000	-	-

Apparently these fish swim up the Mauvais Coulee from Devils Lake to spawn and migrate back to Devils Lake prior to winter since Lake Alice and Irvine usually freeze to the bottom. This points out another factor in the importance of the upper watershed lakes to the Devils Lake basin, its fishery and recreation.

12. Wildlife Propagation and Stocking

Restoration of giant Canada goose to the refuge was begun in June (photo 8). We received 99 geese when we assisted the staff of J. Clark Salyer NWR during their annual banding drive of flightless birds. Two nights of spotlighting and transporting birds went very smoothly. The following age/sex categories of geese were released on Lake Alice:

56	HYM
35	HYF
6	AHYF
2	AHYM

The geese seemed to like their new home, as late as August 21 a flock of 65 banded birds were sighted loafing on the refuge.

Future plans call for additional releases and erection of nesting structures to get the flock off to a good start.

Photo # 8. Restoration of Lake Alice NWRs giant Canada goose flock was begun in 1987. 6/87 DAL

15. Animal Control

Predator control was initiated in 1987 over approximately one-half of the refuge. Live traps, conibears, and leg-hold traps were used to capture potential nest predators. A few red fox dens also were dug up. The following predators were removed:

Species	Number
Skunk	18
Raccoon	10
Red fox	9
Other	9

Waterfowl nest success (G.3) did not respond favorably to this effort. Future control efforts will need more pressure on red fox and other predators to be effective. Our level of effort and tactics need a reevaluation prior to next season.

17. Disease Prevention and Control

In a year of catastrophic botulism losses in the district (see G.17 WMD Narrative), it is worth noting that there were no problems at Lake Alice. Lake Alice, or Lac Aux Mortes (Lake of Death) has a long history of botulism problems. Recent high water and the absence of emergent plant communities may be a blessing in disguise when botulism losses are considered in the overall formula. It may be better to keep Lake Alice high, and avoid botulism problems, and manage peripheral marshes to raise ducks.

H. PUBLIC USE

1. General

Public use at Lake Alice centers around hunting and related recreation. The refuge has no facilities such as trails, exhibits, or tour routes. Local residents frequent refuge roads to check out the deer herd or snow goose flocks while out for a drive. No trapping or fishing is allowed on the refuge.

8. Hunting

Lake Alice NWR is divided into three hunting zones: a public hunting unit, archery deer unit, and special deer/pheasant unit. The public hunting unti, 3,309 acres, is open to hunting of all species listed in the North Dakota Game and Fish Department regulations. This zone is the only portion of the refuge open to waterfowl hunting. The archery unit, 1,283 acres, is open only to archery hunting for deer during the State-wide season. The special deer/pheasant unit, 3,055 acres, is open for the archery and firearm deer season and late pheasant hunting during the month of December. The entire refuge, except around the residence, is open to some form of hunting.

A Canada goose closed zone was implemented on the public hunting portion of the refuge to protect the newly reintroduced goose flock. All landowners within the proposed refuge boundary were agreeable to the closure, except for a Minneapolis-based owner who wanted the season closed only on giant Canada geese, but not lesser Canadas. We informed him that the closure would cover all races of Canadas, and he finally agreed. However, three hunters on this in-holding were written violation notices for shooting Canada geese. Compliance elsewhere was good.

Waterfowl hunting is the most prevelant refuge recreation. Pass-shooting for snow geese is popular on the refuge, but hunters with decoy spreads off-refuge did much better. A few hunters tried for ducks with good success.

A few dedicated hunters tried for upland game birds. Calling for red fox and coyotes is popular in the area.

A news release stimulated large numbers of archery hunters to come out to the refuge on opening weekend. The over-crowded conditions seemed to encourage most hunters to try their luck elsewhere for the rest of the season. A few deer were harvested over the course of the season.

One-hundred fifty permits (90 antlerless, 60 antlered) were available for the first day and a half of the firearm deer season. Only 124 permits were requested, some antlerless permits were not issued. Hunting was poor conpared to the two previous hunts. A telephone survey of refuge permittees revealed a success rate of 26.1% for antlerless tags and 20.6% for antlered tags. Some of these hunters filled these tags off-refuge after the first two days of the season. Poor success could be explained by a heavy harvest in 1986, delayed movement of deer onto the refuge because of good weather, or a combination of both.

11. Wildlife Observation

Lake Alice NWR offers good opportunities to view wildlife, especially waterfowl during seasonal migration periods, and deer in the fall and winter. Visitors drive the refuge roads to enjoy the sights of spectacular concentrations of waterfowl or large deer herds. Visitors from outside the local area are uncommon.

13. Camping

Camping is permitted at two areas on the shore of Chain Lake. Most use is during the hunting season.

15. Off-Road Vehicling

No snowmobiles or ATV's are permitted on the refuge. An occasional snowmobile sneaks in the refuge from Lake Irvine or down the Mauvais Coulee. The problem is only a minor headache.

17. Law Enforcement

Law enforcement patrols concentrated on license and bag checks during weekends of waterfowl and deer seasons. The biggest problem was deer hunters hunting on the refuge without the necessary state permit. A group of out-of-state visitors waterfowl hunting on a 21-acre inholding often didn't know or care what or where they could hunt. Five violation notices were issued to this group.

Violation	No. Cases	Fine
Possession of Canada goose in closed zone	3	$50.
Possession of firearm in retrieval zone	1	$50.
Hunting waterfowl in closed zone	1	$50.
Trespassing except as authorized	1	$35.
Hunting deer without a refuge permit	11	$25.
Hunting deer with firearm in archery zone	1	$35.
TOTAL	18	$595.

I. EQUIPMENT AND FACILITIES

1. New Construction

A 40 x 60' security fence was constructed by contract to enhance organization around headquarters. Racks for storage of wood and metal posts were erected inside the security fence to free up space inside an adjacent shed and further facilitate organization (photo 9).

Photo # 9. Security fence and post rack helped organize the headquarters area and free up building space. 7/87 DAL

2. Rehabilitation

The roadbed of the infamous "Hultman's Crossing" north of the headquarters was raised three-feet to allow year round travel through the center of the refuge. Our new heavy-duty Caterpillar scrapers made this job a snap.

An overhead door was installed by contract on a headquarters pole building. This building is now utilized for farm equipment storage without the snow drifts and pigeons of former days. Electric lines also were connected to this building.

The entire headquarters area, consisting of two sheds and grounds, was reorganized and cleaned to the last detail.

Mounds of junk were hauled for scrap or to the dump. The grounds were mowed, the equipment placed inside or lined up, and everything was put in it's place.

3. Major Maintenance

Roads were periodically graded to keep them in shape for refuge and visitor vehicles.

Roadside mowing mostly was accomplished by cooperators in exchange for a bigger share of hay or crop. Some force-account mowing satisfied State laws on the balance.

4. Equipment Utilization and Replacement

A couple long-anticipated equipment acquisitions were realized in 1987. A Hesston diesel four-wheel drive, 120 h.p. tractor and a portable Gator pump will facilitate upland and wetland management capabilities, respectively.

7. Energy Conservation

A 200-gallon diesel and 300-gallon gasoline tank, complete with electric pumps, were erected by maintenance worker Wolsky to further the independence of Lake Alice NWR. No more 40-mile trips to Sullys Hill to get gas.

J. OTHER ITEMS

1. Cooperative Programs

Three proposals were submitted to Ducks Unlimited, Inc. during the past year. The ease of construction and initial nesting success of this years' islands prompted us to submit a proposal to build two more islands on the south end of Lake Alice. Development proposals for Outlet Marsh (54 acres) and Pintail Marsh (27 acres) also were sent to DU. Both projects would use water from Lake Alice and have drawdown capabilities. Water control structures and some dike work would be necessary to bring these projects on line. Both marshes are adjacent to Lake Alice, but have no reliable watershed of their own and no management capability. Pintail Marsh is dry many springs; Outlet Marsh is choked with emergent vegetation. Both areas have potential to be excellent duck marshes.

K. FEEDBACK

Traynor Lake (photo 10), is a 656 acre semi-permanent marsh situated on Lake Alice NWR. The photo depicts Traynor Lake at its best, with lots of acres of shallow water flats. Duck use, as can be expected, is tremendous under these conditions. However, the whole picture is not quite so rosy.

A 320-acre inholding tract still exists at the south end of the marsh. In fact, this marsh is still pumped dry every year over a dike onto the refuge portion of the wetland. In spring the south end supports concentrations of canvasbacks and snow geese; by summer its seeded to grain. The marsh outlet is controlled by an open-end culvert which drains most of the refuge portion of the marsh into Lake Irvine by late spring. The photo illustrates water flows from the marsh. We can't hold water in our share of the wetland without impacting private dikes and crops.

Hindsight is 20-20. In 1980, the Service sent a letter to the landowner informing him that judicial proceedings for condemnation would be initiated within the approved refuge boundary. The Service never had the courage to carry it out. We blew it. In these economic times it can't be profitable for the present operator to maintain dikes and incur pumping costs to grow rock-bottom price wheat. Yet, he's unwilling to sell at today's low land values. In the meantime, refuge management capabilities are crippled on Traynor Lake and its large associated watershed.

In today's political climate there's no real solution except wait for a willing seller. That's frustrating!

Photo # 10. Outlet of Traynor Lake: note flooded shorelines and water rushing from culvert under Service road. 7/87 DAL

SULLYS HILL NATIONAL GAME PRESERVE
Devils Lake, North Dakota

ANNUAL NARRATIVE REPORT
Calendar Year 1987

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

INTRODUCTION

Sullys Hill National Game Preserve (NGP) consists of 1,674 acres of wooded hills and open meadows located on the south shore of Devils Lake in Benson County. On June 2, 1904, President Theodore Roosevelt signed a Presidential Proclamation under a Congressional Act of April 27, 1904, which reserved "a tract embracing Sullys Hill in the northeastern portion of the abandoned military reservation, about nine hundred and sixty acres, as a public park" This proclamation established Sullys Hill as a National Park under the Department of the Interior.

During the second session of the 63rd Congress, an Act of June 30, 1914 provided $5,000 to the Department of Agriculture, Biological Survey, to construct fences, buildings, roads, corrals, etc. This in effect established Sullys Hill National Park as a game preserve and involved the Department of Agriculture in its management.

On March 3, 1931, Congress transferred jurisdiction of Sullys Hill National Park from the Department of Interior to Department of Agriculture, Biological Survey, to be maintained as a "Big game preserve, refuge and breeding grounds for wild animals and birds." It was further stipulated that it was to be made available to the public for recreational purposes consistent with the use of the area as a big game preserve and that hunting would not be permitted on the preserve. The influence of the National Park System is evident in this legislation.

In July 1959, the Bureau of Indian Affairs transferred two tracts of land to the Bureau of Sport Fisheries and Wildlife. One 680 acre tract became the hay field for Sullys Hill NGP and the other, a 317.5 acre parcel became the Lone Tree Waterfowl Production Area.

The largest of the hills in the preserve was named for General Alfred Sully, who in response to settler's fears of Indian uprisings, led an expedition through this area in 1867 from Fort Rice near present day Bismarck, North Dakota. Later in 1867, General Terry came to the area and established Fort Totten Military Post. This action paved the way for whites who then began to settle around Devils Lake.

Sullys Hill NGP also played an important role in Native American history. A little of that history is revealed by eight Indian burial mounds scattered over the preserve which are believed to be over 600 years old. Old reports indicate preserve personnel commonly found artifacts in such places as gardens and other open earth sites. In 1959 three Indian skeletons were disinterred when a water line was installed to one of the headquarter's buildings. An archaeological investigatory dig was conducted in 1979 and 1980 which revealed additional information indicating human habitation of two cultural levels. The earliest, the Middle Woodland culture, apparently occurred as seasonal bison hunting parties; whereas the Lake Woodland culture, though seasonal, exploited a wider variety of game species, bison being less important. A detailed report

entitled, "Excavations at the Irvin Nelson Site, 32BE208" by Dr. Steven Fox, University of North Dakota, is on file at the Devils Lake WMD office. Sullys Hill is currently managed as a National Game Preserve and maintains a buffalo, elk and whitetailed deer herd, a small prairie dog town, turkeys and a waterfowl flock for public viewing. The animals are scattered throughout the 1,674 acre tract in a natural setting. The Preserve has auto tour routes, foot trails, ski trails and picnic areas for the public's enjoyment.

INTRODUCTION

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2.	Other Economic Uses	Nothing to Report
3.	Items of Interest	Nothing to Report
4.	Credits	Nothing to Report

K. FEEDBACK

L. INFORMATION PACKET - - - (inside back cover)

A. HIGHLIGHTS

There were 52,500 visitors to the preserve in 1987. (Section H.1)

Sullys Hill NGP received three buffalo from the National Bison Range in October 1987. (Section G.12)

Sullys Hill NGP hosted the Special Olympics for skiers in February and a walk, run, bike day for 600 people in coordination with the American Diabetes Association (Section H.2).

The road on the auto tour route was repaired in October (Section I.2).

B. CLIMATIC CONDITIONS

The year started out with mild temperatures and above normal precipitation. February was one of the mildest on record. April and May were drier than normal. During the summer months the precipitation was above normal, which kept the lawns green and the big game pasture in excellent conditions throughout the summer. A summary of weather is listed below.

Month	Min.	Avg.	Max.	Avg.	Precip.
January	-38	4	38	19	.37
February	- 6	13	40	24	1.65
March	-18	12	48	25	.81
April	4	28	86	57	.17
May	28	36	88	66	.20
June	34	47	90	75	2.28
July	40	50	86	75	6.70
August	26	46	88	72	2.46
September	30	40	83	68	1.46
October	6	22	68	44	.26
November	2	19	56	37	.06
December	-14	11	34	20	.70

F. HABITAT MANAGEMENT

1. General

Sullys Hill National Game Preserve has a total of 1,674 acres, consisting of 852 acres of wooded hills, 810 acres of grasslands, both native and introduced, a 12 acre lake and several smaller wetlands. The introduced grasses provide hay for winter big game feeding and the native grasses within the big game enclosure are utilized by the buffalo and elk.(photo # 1) One 160 acre tract contains native grass, which is not hayed or grazed.

2. Wetlands

The springs around the area have been running all year. They have kept two small ponds and Sweetwater Lake full. Sweetwater Lake overflowed most of the year. Wood duck nest boxes and nesting structures for geese are maintained on Sweetwater Lake.

3. Forests

The 852 acres of wooded areas on the Preserve are a mixture of American elm, green ash, American basswood, boxelder, cottonwood, quaking aspen and diamond willow.

Dutch elm disease continues to take its toll, but no control work is being done, except in the recreation and headquarters area. These trees are being removed before they become a safety hazard to people using the area.

Photo # 1. Bull elk in big game pasture, Sullys Hill NGP. RAH

5. Grasslands

Due to the low spring precipitation, the grasslands got off to a slow start. But June, July and August provided adequate moisture to keep the grasslands in excellent condition throughout the summer and fall.

8. Haying

One cooperative farming agreement for haying was issued to provide winter feed for the buffalo and elk. Five hundred twenty ton of mixed brome, alfalfa and native grass were harvested from 315 acres. The Preserve's one-third share was delivered to the big game enclosure.

9. Fire Management

Units D and H in big game enclosure were included in the 1987 prescribed burn schedule. However, due to other conflicts we were unable to burn these two units.

10. Pest Control

Four acres of leafy spurge were sprayed with a mixture of Tordon and 2,4-D. They were small areas scattered throughout the Preserve. Nettles and poison ivy, which are quite common, are controlled only in the recreation area, with 2,4-D.

G. WILDLIFE

1. Wildlife Diversity

Sullys Hill is an island of hardwood forest in a sea of prairie. It contains a diverse woodland, various shrubs, open grasslands, beaver ponds, a 12 acre lake and lies adjacent to Devils lake. This diversity of habitats is conducive to a mixture of wildlife species. In addition to the wide array of small birds and mammals that frequent the Preserve, we maintain a herd of 30-35 buffalo, 20-25 elk, white-tailed deer, turkeys, a waterfowl flock, and a prairie dog town.

2. Endangered and/or Threatened Species

Bald eagles frequent the Preserve on their spring and fall migrations. Observations are made throughout the months of March and November. The most birds observed on the same day in March was four. Six eagles is the maximum count this fall. The mild weather allowed the eagles to stay in the area until mid-December.

3. Waterfowl

A display flock of giant Canada geese, snow geese and tundra swans is maintained at the preserve for public viewing and environmental education purposes. Some of the birds in the flock are rehabilitated cripples. This fall the swan that "couldn't fly", a Sullys Hill resident for several years, got airborne and left when we were trying to catch it to take it to winter quarters. The other swan died this summer from unknown causes.

The Canada geese hatched one brood but were not successful in raising the young to fledging. Vandals killed or stole the goslings. A total of 14 giant canada geese were taken to the bird barn this fall. The wintering flock also includes two snow geese.

Four out of the ten wood duck boxes were observed to have been used this past year.

4. Marsh and Water Birds

Black-crowned night herons, double crested cormorants, great blue herons, bitterns, and grebes make frequent use of Sweetwater Lake and add to the visitors experience.

5. Shorebirds, Gulls, Terns and Allied Species.

Black and common terns, and Franklin and ringbill gulls are common visitors.

6. Raptors

Common raptors at Sullys Hill include great-horned owls, broad winged- hawks, red-tailed hawks, marsh hawks and Coopers hawks. Rough-legged hawks and bald eagles are commonly seen during migration.

7. Other Migratory Birds

The Preserve is an excellent place for birders and photographers to find a wide variety of species. Even winter visitors can find the year long residents such as nuthatches, black-capped chickadees, downy and hairy woodpeckers and blue jays to observe. Pileated woodpeckers were observed regularly this past summer.

Woodpeckers became a problem in December when they decided the shop siding was better foraging than dead trees. Red survey flags were effective in stopping their hole drilling activities.

8. Game Mammals

The high beaver population continued to cause trouble with felling trees on the tour route and plugging Sweetwater inlet culvert.

Other common residents are red fox, raccoon, long-tailed weasels, muskrat, beaver, mink, gray and fox squirrels and cottontail rabbits.

10. Other Resident Wildlife

Turkeys are apparently too mobile to become residents of Sullys Hill N.G.P. Four were released in 1985 and 17 in 1986. Only two toms remain in the Preserve at the end of 1987.

12. Wildlife Propagation and Stocking

We were concerned about potential inbreeding in the buffalo, and brought in three buffalo from the National Bison Range.(photo # 2) They were all two-year-olds, one bull and two cows. The bull weighed 980 pounds, one cow weighed 800 pounds and the other weighed 920 pounds.

The only new animals introduced in the herd since 1933 have been nine bulls, one from Wind Cave National Park in 1933, one from the National Bison Range in 1952 and the other seven bulls from Fort Niobrara NWR. The last one was a four year old bull brought to Sullys Hill NGP in 1979.

Photo # 2. One of three Bison Range bison added to Sullys Hill NGP herd in 1987. RAH

13. Surplus Animal Disposal

The lottery system was used again this year for the selection process in the surplus animal disposal program. Twenty-three organizations applied for the six buffalo and three elk to be removed. The drawing was held on September 28.

All surplus animals are disposed of as carcasses and sold to service clubs or organizations only. They are field dressed by Service personnel and delivered to a processor in Devils Lake or picked up at the Preserve by the buyer.

The four 2 1/2 year old buffalo bulls and one mature cow averaged 832 pounds field dressed. The 12 year old buffalo bull field dressed, weighed 1,690 pounds. The average field dressed weight of the three elk was 455 pounds. The buffalo sold for $600 and the elk for $200 which included the hide and head. The removal is done to maintain the habitat and a healthy herd for the touring public.

Thirteen white-tailed deer were removed and donated to the Devils Lake Sioux Tribe and used in the commodities program for aid to low income families.

15. Animal Control

Stray dogs are a continual problem and are frequently observed chasing deer on the Preserve. Eight dogs were removed this past year.

Eight beaver were removed to help alleviate the problems they were creating.

16. Markings and Banding

Additional plain bands were placed on the giant Canada geese this fall. We hope this will make them easier to identify when we pick them up at the Deaf School's bird barn in the spring.

The bison obtained from the National Bison Range are branded on the left hip with the number 5 that corresponds with their year of birth, 1985. These three bison also have brucellosis ear tags.

17. Disease Prevention and Control

Blood samples were taken from all slaughtered bison and elk to test for brucellosis. All samples tested negative.

H. PUBLIC USE

1. General

The total number of visitors to the Preserve in 1987 was estimated at 52,500. The self-guided auto tour route was opened May 1 and remained open until November 1. The recreation area is open to visitors the year around.

2. Outdoor Classrooms - Students

The Preserve hosted the Special Olympics for skiers, which was held in February. Eighteen contestants participated in the Olympics. Another 30 people (parents and supervisors) were also present, photo # 3.

In July the Preserve hosted a week long Cub Scout Day Camp.

Nelson worked with local sponsors of the American Diabetes Association, which had a bike, walk and run for diabetes, photo # 4. About 600 people took part in the day long program in July.

Nelson gave 12 tours and showed films to one 4-H group and two school groups.

Photo # 3. Starting line for cross-country Special Olympics held in February. IAN

Photo # 4. Finish line for the bike/run for diabetes held at Sullys Hill. IAN

4. Interpretive Foot Trails

A one mile self-guided foot trail which has 16 interpretive signs, winds around Sweetwater Lake. Approximately 15 percent of the total visitors use the trail.

5. Interpretive Tour Route

The four mile self-guided tour route is used by approximately 70 percent of the total visitors. The best times for observing wildlife are early spring and in the fall during evening hours.

11. Wildlife Observation

Most people can not help but observe wildlife when they visit Sullys Hill. An estimated 70 percent of total visitations results in wildlife observation activities.

14. Picnicking

The 60 acre Sweetwater Lake recreation area contains picnic grounds with picnic tables, grills, drinking fountains, picnic shelters and rest rooms. Twenty five percent of the total visitors use these facilities.

16. Other Non-Wildlife Oriented Recreation

The cross country ski trail was used by an estimated 500 people during the year.

17. Law Enforcement

The following incidents occurred during the year. Two people were arrested for having stolen property and two cars were impounded by BIA police. Three cars were involved in accidents and had to be removed by a local wrecker. Many cars were stopped for speeding and drivers given warnings.

I. EQUIPMENT AND FACILITIES

2. Rehabilitation

On October 19 the Triton Corporation from Jamestown, North Dakota began to repair the auto tour route road. Seven hundred thirty-three square yards of the bituminous roadway was patched and 451 square yards of two inch overlay was put over excessively cracked areas. The job was completed on October 29. The total cost of the project was $17,506.

3. Major Maintenance

The concrete floor on the cold storage building was polished concrete. We hired a contractor to rout grooves in the floor to

make it safer to walk and work on. Other maintenance included adding a heater to prevent the chemical storage room from freezing, installation of fans in the oil storage room, and an inspection and improving of the wiring at residence # 1.

7. Energy Conservation

In order to cut down on our electric bill, we installed propane heaters in the chemical room.