

DEVILS LAKE WETLAND MANAGEMENT DISTRICT

Devils Lake, North Dakota

ANNUAL NARRATIVE REPORT

Calendar Year 1981

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

JUN 18 1982

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



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11 9 10

Personnel

1. David E. Janes, Refuge Manager, GS-13 PFT
EOD 4/19/81
2. Dennis W. Strom, Assistant Refuge Manager, GS-11 PFT
3. Steven P. Brock, Assistant Refuge Manager, GS-9 PFT
4. Irvin A. Nelson, Biological Technician, GS-8 PFT
5. Mary C. Roemmich, Refuge Assistant, GS-5 PFT
6. Eugene C. Williams, Biological Technician, GS-5 CS
7. Sidney J. Konzak, Assistant Refuge Manager, GS-5 CS
Resigned 10/15/81
8. Jay L. Wolsky, Biological Aid, GS-5 CS
9. Larry D. Martin, Biological Aid, GS-4 INT
10. Richard W. Schnaderbeck, Biological Aid, GS-4 INT
11. Michael L. Haupt, Biological Aid, GS-4 INT

Review and Approvals

David E. Janes 3-26-82
Submitted by Date

Lyle J. Schnaderbeck 4/11/82
Area Office Date

David Lake WMD
Refuge

Maurice L. Mund 5/3/82
Regional Office Date

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A. HIGHLIGHTS

Unseasonably mild temperatures in February removed the light snow cover on the Devils Lake Wetland Management District, permitting completion of easement flights which had been shut down last fall (1980) by early snowfall.

Lyle Stemmerman transferred (12/80) and was replaced by David Janes (4/81) as project leader. Denny Strom suffered the agonies of "Acting Manager" for almost five months and appears to have retained his sanity.

Spring waterfowl concentrations were of immense proportions. Migration numbers peaked the week of March 22 with thousands of birds remaining through mid-April. The attraction in this area was unharvested grain that had been flooded the preceding fall.

Arson resulted in an "uncontrolled" spring burn on two WPA's in Cavalier County totaling 750 acres. The fire was responsible for \$5,000 damage to power poles belonging to Otter Tail Power Company.

Refuge staff conducted controlled burns on 1,800 acres of fee title lands.

A waterfowl breeding pair survey was conducted on the Devils Lake WMD - the first time in many years.

A botulism outbreak occurred on the western edge of Devils Lake (locally known as Minnewaukan Flats). Over 5,000 birds, mostly mallards and coots, were lost. Two minor outbreaks were discovered on Lake Alice NWR and Long Lake where a few hundred dead birds were retrieved.

The YACC camp at Nekoma, North Dakota was closed down. All non-capitalized property was transferred to North Dakota field stations.

A pesticide container dump problem was discovered on a Waterfowl Production Area in Pembina County.

Our station received 161 depredation complaints involving blackbirds or ducks (116/45) last fall.

B. CLIMATIC CONDITIONS

The winter of '80-81 was another easy one. Temperatures were mild as a whole and precipitation was light. Minimal spring runoff left many wetlands with lower water levels than normal. Ice left Devils Lake on April 11, and Lake Alice on April 1. High precipitation amounts in June hampered spraying efforts.

Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
High °F	47	50	62	81	82	88	97	91	88	68	63	40
Low °F	-18	-24	1	16	24	41	45	46	34	19	11	-16
Precip.	.61	1.07	.70	1.19	1.35	6.71	2.56	2.96	3.19	1.71	2.57	.45

C. LAND ACQUISITION

1. Fee Title

One 160 acre tract was purchased in 1981. It took 12 years to close the deal due to title difficulties.

Outright purchase of fee title lands by FWS has been at a standstill from 1978 through 1981. State law required that the Board of County Commissioners inspect sites of proposed acquisition and hold a public hearing. An environmental assessment written by the Wetland Acquisition Office and/or the Board (as agreed upon in the county), was to be submitted to the State Planning Commission, Area Office, and county board for review prior to the hearing. The board either approved or disapproved the purchase within 60 days after receipt of the proposal. Approvals were to be sent to the governor who could override the decision.

On April 27, 1978, Governor Link announced that he would not approve further land purchases unless the following conditions were met:

- a) The Secretary of the Interior must give the State full credit for the equivalent acreage of land acquired for "mitigation and enhancement" for the Garrison Diversion Unit.
- b) The selling landowner must insert a provision in the deed that fee title shall automatically pass to the State of North Dakota, free from any encumbrances imposed by the Federal Government if the Garrison Diversion Unit, as authorized in a manner acceptable to the Legislative Assembly and Governor, is not essentially constructed by a certain date.

Easement purchases have also been at a dead halt. A state law, passed July 1, 1977, stated that landowners could negotiate the time length of an easement. In addition, these would terminate upon the death of the landowner or sale of the property. The FWS has refused to take easements under the terms of this law.

A recent U.S. District Court ruling held that these provisions of State Law were in direct conflict with the interests of the United States and these interests were paramount to State Law. The State of North Dakota appealed the ruling to the U.S. Court of Appeals at St. Louis. The State lost. The Supreme Court has now agreed to consider reinstating the North Dakota laws.

These are very hot political issues in North Dakota. Despite the availability of many willing sellers and the apparent availability of funds, no purchases have been made.

D. PLANNING

The Devils Lake WMD has not initiated any long range Master/Management Plans. As our priorities, man power, and budget change constantly, it is difficult to look beyond annual work plans and project what future specific accomplishments should be. The work is always there. We do what we can.

3. Public Participation

A variety of farming techniques are employed in management efforts to improve waterfowl habitat. We solicit advice and suggestions from many local land-owners or cooperators as to what techniques best apply in a given situation.

4. Compliance with Environmental Mandates

Permit applications have been made for water development on four Waterfowl Production Areas: Oscar WPA, Wengeler WPA - Cavalier County; Hofer Marsh WPA - Grand Forks County; Kitsch WPA - Towner County. Work will consist of sill construction which will enhance water-holding capabilities of several wetlands. Projects are scheduled for 1982.

E. ADMINISTRATION

1. Personnel

Many changes in staffing and grade include: filling and upgrading Project Leader position previously occupied by Lyle Stemmerman, GS-12 to David E. Janes, GS-13; resignation of Sidney Konzak, Assistant Refuge Manager, GS-5; and promotion of Jay Wolsky, Biological Aid, GS-4 to GS-5.

Staffing

<u>Report Year</u>	<u>Permanent</u>		<u>Temporary</u>
	<u>Full-Time</u>	<u>Career-Seasonal</u>	
FY 1981	5	3	3
FY 1980	6	4	1
FY 1979	7	2	5
FY 1978	8	3	5
FY 1977	8	0	4

2. Funding

Funding at this station during the last 5 year period is presented below in Table I. This funding includes Sullys Hill National Game Preserve and Lake Alice National Wildlife Refuge.

TABLE I.

<u>FY</u>	<u>1210</u>	<u>1220</u>	<u>1240</u>	<u>Rehab.</u>	<u>BLHP</u>	<u>Total</u>
81	168,000	39,000	23,000		30,000	260,000
80	160,000	32,000	25,000		336,000	553,000
79	183,500	4,000	59,000		232,000	478,500
78	151,000	14,000	54,000	33,000	151,900	403,900
77	110,000	5,000	23,500	124,000	19,600	282,100

3. Safety

One lost-time injury involving the use of the Kirschman grass seeding drill occurred this past fall. Biological Aid, Richard Schnaderbeck, received a blow to the side of the face from the lever used to lower packing wheels from the transport position. He was apparently unconscious for about an hour at the work site before being able to seek assistance. A three day doctor-ordered recuperation period followed. He experienced headaches for some time. Even "farmers" should wear hard-hats!

Other close calls similar to this instance have occurred at this station and others in the past. As the packer wheels are being lowered with a hand-held lever, there is a point where a sudden increase in weight is transferred to the lever and can unexpectedly result in loss of control over the lever. As a result of these instances, this station now has a policy of always having two people work on the lever and caution new employees unfamiliar with this danger.

Four staff safety meetings were conducted which included films and discussions on winter driving, farm tractor safety, office safety, highway driving safety, and the Federal Employees' Compensation Act.

F. HABITAT MANAGEMENT

1. General

The Devils Lake Wetland Management District covers eight counties of north-eastern North Dakota. The District administers 183 scattered Waterfowl Production Areas comprising 39,778.6 acres; 2,514 easements covering 148,897 wetland acres; and ten easement refuges totaling 8,879 acres.

The geology of the District varies from nearly flat prairie to rolling terminal moraine hills, with Wisconsin glacial lake bed, drift prairie, and Coteau. The gently rolling terrain of the drift prairie contains thousands of shallow depressions or "potholes" which normally provide excellent waterfowl production habitat.

The annual habitat inventory (rip card system) update was not completed this year as a result of a lack of man power coupled with the need to complete higher priority tasks.

2. Wetlands

No management techniques were applied to wetlands in our District this past year. The need is there. Plans are currently being made for future work when money is available.

3. Forests

Our District has no significant acreage of woodlands manageable as a wildlife resource.

4. Croplands

Twenty-eight acres of Little Goose WPA in Grand Forks County were seeded to

small grain by permittee. The Government received a 25 percent share. DNC was seeded into the stubble in October by force account at 11 lb./acre.

Digerness WPA in Cavalier County was seeded to small grain in 1981 by permittee. The cooperator received a 100 percent share in exchange for planting DNC on the 120 acres. The small grain acted as a nurse crop.

The permittee on Martinson WPA received a 100 percent share of small grain crop planted on 40 acres. DNC was planted by force account during the fall.

Stinkeoway WPA in Cavalier County was seeded to DNC in the spring of 1979. Drought conditions during the summer of 1979, followed by a wildfire in 1980, resulted in the production of a poor stand. One hundred and two acres of poor DNC were over-seeded by force account at 10-11 lb./acre.

On Fairdale WPA, Walsh County, 145 acres were seeded to a wheatgrass mixture by force account. This area has a chronic thistle problem. It was thought that a solid wheatgrass stand would provide good cover and be tolerant of weed control efforts. Grasses were seeded at 12.5 lb./acre. Abundant rain-fall following the planting produced a good catch.

Eighty acres of Tautges WPA, Walsh County, were seeded to DNC by permittee. Small grain was used as a nurse crop. The cooperator received 100 percent share of the small grain.

DNC was planted with small grain on 93 acres of Waltz WPA, Cavalier County. The cooperator received 100 percent of the grain crop in exchange for the DNC planting.

5. Grasslands

Hofer Marsh WPA, Grand Forks County, was hayed in strips totaling 72 acres. Thirty-two of these acres were lightly chisel-plowed to stimulate sod-bound grasses. Aerial seeding of vernal alfalfa followed, applied at a rate of 4 lb./acre.

Johnson WPA, Towner County, was hayed. A total of 168 acres were then chisel-plowed and over-seeded with vernal alfalfa using a pickup-mounted Cyclone seeder at a rate of 4½ lb./acre. Forty of these acres were harrowed following the seeding.

Ninety acres of Eidsness WPA were hayed, heavily disced, and then over-seeded with alfalfa using the truck-mounted Cyclone seeder.

Three WPA's which were hayed and chisel-plowed during the summer of 1980 were aerially seeded with vernal alfalfa at 4½ lb./acre in March 1981. These were Weed WPA (Benson County) - 118 acres; Schaan WPA (Ramsey County) - 50 acres; Billings Lake WPA (Cavalier County) - 57 acres. Preliminary results look good on a good catch of the alfalfa.

8. Haying

The following Waterfowl Production Areas in Cavalier County were hayed in an effort to control musk thistle.

Weaver	105 acres
Amoth	17 acres
Hiltner	25 acres
Ulliyott	30 acres
Waltz	48 acres
Billings Lake	240 acres
Total	<u>465 acres</u>

Myrvik WPA, Ramsey County, was hayed and lightly disced to stimulate sod-bound grasses. Total acreage involved was 95.

Agnes Marsh WPA, Grand Forks County, was hayed to remove young trees and shrubs which were becoming established on 190 acres.



#1 Tree/shrub encroachment problem on Agnes Marsh WPA, Grand Forks County. SB

9. Fire Management

Over 1,370 acres were prescription-burned by refuge personnel in an attempt to increase vigor of native grasses and reduce competition of invading species. The following list summarizes locations and acreages of burns.

Hofer Marsh WPA, Grand Forks County	180.00 acres
Stewart Lake WPA, Grand Forks County	490.00 acres
Mekinock WPA, Grand Forks County	560.00 acres
Russell WPA, Ramsey County	140.00 acres

A farmstead burn on Digerness WPA, Cavalier County, was done in a cleanup effort last spring.



#2 - Controlled burn on Stewart Lake WPA in Grand Forks County.
DWS



#3 - Cleanup efforts on old farmstead on Digerness WPA, Cavalier County.
ECW

Wildfires accounted for the loss of in excess of 780 acres this past year.

Arson resulted in an "uncontrolled" spring burn on Stinkeoway and Wengeler WPA's in Cavalier County. Total acreage involved was 750. The fire went unreported until late in the evening of April 26, 1981. FWS personnel responded about 9:00 o'clock that evening, but could do no more than assess the extent of the burn. The fire could be seen for 30 miles. Damage to power poles was in excess of \$5,000. Habitat response to the fire was especially good. We couldn't have done better ourselves.

Island Lake WPA, Ramsey County, was the site of a 30 acre fire that back-burned onto FWS property. It was extinguished by a local fire department.

Brudevig WPA, Cavalier County, was the site of a small fire that burned up a ditch onto FWS lands before it extinguished itself. Less than 1.00 acre of cover was lost.

10. Pest Control

The following table summarizes weed control efforts in our District.

County	Acres Sprayed	Chemical	Pest
Benson	220.5	2,4-D amine @ 1 lb.	Leafy Spurge
Cavalier	339	2,4-D amine @ 1-2 lbs.	Leafy Spurge, Musk
Grand Forks	72	2,4-D amine @ 1 lb.	Leafy Spurge
Ramsey	6	2,4-D amine @ 1½ lb.	Leafy Spurge
Nelson	77	2,4-D amine @ 1 lb.	Leafy Spurge
Towner	50	2,4-D amine @ 1½ lb.	Leafy Spurge
Walsh	192	2,4-D amine @ 2 lb.	Musk Thistle

A total of 465 acres were hayed as weed control effort.

Two 1-ton 4-wheel drive trucks with skid-mounted sprayers are used in our weed control efforts. Aerial application is done where special situations warrant its use. Included in the above acreages are 415 acres which were aerielly sprayed.



#4 - Seasonal employee, Larry Martin, decked out in safety equipment used in noxious weed control efforts. MLH

13. WPA Easement Monitoring

The spring of 1981 was a welcome break from normal in that only 39 ground checks had to be made. The wet fall of 1980 which caused many crops to be harvested after freeze-up also prevented much ditch polishing from taking place.

After checking, two violation notices were issued for drainage for \$100 each. Warning letters were sent on plow furrow violations where warranted. One case was brought before the U.S. Magistrate in Devils Lake.

The magistrate hearing was an interesting case where we had contacted a new landowner in 1979 on a new ditch that the owner didn't know how it was put in. After contact, the new owner agreed to voluntarily fill the ditch to make things right.

We checked the restoration effort in 1980 and sent the landowner a nice letter on how good a restoration job he'd done. On second flight in February 1981 it was noted that the wetland didn't have any water, but because of the dry conditions, any ideas of rechecking were dismissed.

In early spring Assistant Manager Brock received a phone call at his house from an irate landowner from the area stating that he had noted a truck load of plastic pipe and a dump truck of crushed rock in the vicinity about the time the 1980 restoration had taken place.

Assistant Manager Brock again rechecked the restoration, and with the aid of a metal probe and a shovel, located a plastic seep tile placed in a crushed rock filter bed perfectly camouflaged in the approximate location

of the dug ditch. The tile would effectively drain the wetland. Restoration activities had included placement of more than dirt fill.

The owner was cited into the U.S. Magistrate Court in Devils Lake. The defendant lost the case but has appealed the case to a higher court. Several matters were brought out that will be of interest in future easement prosecutions.

In the fall of 1981, again acting on a complaint, we caught the operators of two 750 HP Versatile tractors with scrapers working on a Towner County easement.



#5 - Special Agent William Reynolds explaining virtues of easement contracts to local residents.

DWS



#6 - Illegal ditching activity on Towner County Easement 58X.
We caught 'em in the act! DWS

This case was immediately brought before the U.S. Magistrate with the defendants found guilty and paying fines. Immediate restoration was ordered by the U.S. Magistrate. The onset of bad weather prevented the restoration from taking place this fall. The restoration will be accomplished in 1982.

The apparent case load of 1982 is about double the 1981 level, so the battle will again be fought in the spring.

G. WILDLIFE

1. Wildlife Diversity

Most management activities on the Devils Lake Wetland Management District are geared to waterfowl production. Man power and funds limitations prevent any extensive management efforts for wildlife other than waterfowl. Some habitat improvement work is done to enhance a remnant population of pinnate grouse in the eastern portion of our District.

2. Endangered and/or Threatened Species

A remnant population of pinnate grouse occurs in Grand Forks County. There is in excess of 10,000 acres of State/Federal lands which have potential for providing suitable habitat to support a stable population of pinnate grouse. A management plan has been developed which will be utilized in the future. Controlled burns and food plots are recommendations to develop habitat. The FWS is working in cooperation with the North Dakota Game and Fish Department on this project. Two controlled burns of 1,050 acres were accomplished last spring toward this objective.

Bald eagles utilize District lands on their fall and spring migrations each year.

3. Waterfowl

There were massive concentrations of ducks and geese on the District from mid-March to mid-April. White-fronted geese are showing up in greater numbers each spring.

On February 20, 45 Canada geese were seen on Kelly Slough NWR in Grand Forks County; that same day 450 were spotted on Lake Alice NWR in Ramsey County.

March 15 saw the return of the first snow geese. Fifty birds were seen on Lake Alice.

Open water conditions on marshes last spring were less than ideal. A mild winter of '80-81 with little snowfall, coupled with a dry spring until mid-June, left many potholes dry or with below normal water levels.

A breeding pair survey was conducted during the period of May 26, 1981 to June 5, 1981. A random sample of 35 quarter sections were surveyed on our District. The results are as follows:

						<u>Divers</u>	<u>Dabblers</u>
Average number of breeding pairs/QUARTER SECTION						7.97	17.76
"	"	"	"	"	SURFACE ACRE	.1	.2
"	"	"	"	"	WETLAND ACRE	.36	.72

The first returning fall migrants were reported on September 13 when 40 snows and blues were spotted on Lake Alice.

Whistling swans remained on the District from September 20 until mid-December.

No fall aerial waterfowl census work was done this year for lack of funds.

4. Marsh and Water Birds

A common loon was observed on Devils Lake on May 3, 1981.

5. Shorebirds, Gulls, Terns, and Allied Species

Seventy-five golden plovers were seen over Lake Alice on May 4, 1981.

On May 24, 1981, six ruddy turnstones and five black-bellied plovers were spotted on Lake Alice.

One Caspian tern was seen over Devils Lake on May 27, 1981.

A white-faced ibis was noted on Minnewaukan Flats by refuge personnel on July 7, 1981.

6. Raptors

Many of the bald eagles migrated through the Devils Lake area in March and again in October/November.

An osprey was seen over Devils Lake on April 29, 1981.

On May 3, 1981, and again on June 5, 1981, a turkey vulture was reported over the Devils Lake area.

A Swainson's hawk was observed on a nest on Pembina Prairie WPA on June 11, 1981.

A prairie falcon was seen in Benson County on August 13, 1981.

During the last few winters the number of snowy owl sightings has increased. Several birds have been seen from October through December.

One goshawk was spotted in the Lake Alice vicinity on November 16, 1981.

A rare sighting of a hawk owl was made on December 23, 1981. The bird was located just south of the Devils Lake city limits. The bird was in the area for the entire month of January and February 1982. The sighting has been documented only three other times in North Dakota.



#7 - An observation point frequently used by the hawk owl. DWS

7. Other Migratory Birds

Massive populations of red-winged blackbirds descend on the Devils Lake region each fall. The damage done to local crops is steadily increasing.

A red-winged blackbird carrying a red tag was spotted on Juhl WPA, Pembina County on June 10, 1981. The male birds were being tagged on territory by staff of Denver Wildlife Research Center.

Mourning doves were around through December, which is unusual for this species;

they have usually moved south by mid-October. Annual spring call surveys showed large breeding populations, particularly in the eastern counties of the District.

8. Game Mammals

The local deer population is up as a result of two consecutive mild winters. Furbearer populations were also healthy.

10. Other resident Wildlife

Resident game bird populations saw an increase following two mild winters and good carry over.

15. Animal Control

Michael Duncan, District Field Assistant for Animal Damage Control, is kept busy each fall handling depredation complaints from local farmers. Blackbirds in the sunflowers and ducks in the durum are common occurrences in these parts.

The FWS has assisted by handing out devices such as noise bombs, exploders, and flagging which frighten and disperse bird concentrations.

Blackbird complaints totaled 116; waterfowl depredation complaints totaled 45.

17. Disease Prevention and Control

A crew of 4-6 was kept busy from July-September after a botulism outbreak occurred on Minnewaukan Flats. Two airboats were utilized to retrieve sick and dead birds totaling over 5,000. Mallards and coots were the hardest hit, but all waterfowl species were represented in the head count.

The birds were disposed of by pit incineration at Sullys Hill NGP.



#8 - Part of the day's "take" in dead bird retrieval on Minnewaukan Flats.

#9 - Incineration of
diseased waterfowl
at Sullys Hill NGP.
MLH



H. PUBLIC USE

8. Hunting

Our District offers excellent waterfowl hunting. There are many staging areas where ducks and geese amass by the thousands on their southern migration. Hunters do not have to look far to find quality hunting.

There has been a decrease in the number of waterfowl hunters in the last two years. An increase in fuel prices and increased restrictions placed on non-residents are likely causes for the decrease.

Budget cuts prevented our station from conducting weekly aerial census work during the fall. The hunting public found this to be very disconcerting.

Resident white-tail deer hunters utilize Waterfowl Production Areas during a nine and one-half day gun and a fifteen week bow season.

There are huntable populations of small game and predators, but hunting pressure on these species is light.

10. Trapping

Trapping is very popular in this region, especially for fox. Other species include coyote, muskrat, raccoon and mink. Competition to obtain written landowner permission to trap is extremely intense due to good fur prices. Average prices paid this fall were: coyote - \$80; fox - \$55; raccoon - \$35; muskrat - \$3; mink - \$30. Nineteen permits were issued for trapping on our easement refuges. Permittees are still required to obtain landowner permission on the easement refuges.

11. Wildlife Observation

The number of hours spent actively engaged in wildlife observation on FWS lands is minimal. This activity is most actively pursued by people living in metropolitan areas who have an appreciation for wildlife and who like to get out on week ends.

12. Other Wildlife Oriented Recreation

Photography is a hobby that is pursued by some residents. This interest is held by only a few individuals.

13. Camping

Camping on the Devils Lake Wetland Management District is only permitted on a few designated areas. This activity is only evident during the waterfowl hunting season.

15. Off-Road Vehicling

No off-road vehicling is permitted on the Devils Lake WMD. It presents a

law enforcement problem of serious proportions. Off-road vehicles raise havoc with stands of nesting cover.

16. Other Non-wildlife Oriented Recreation

Snowmobiles present another law enforcement problem, though a minor one. They can do considerable damage to residual cover stands. Their use on WPA's is usually associated with harassment of taking of resident game.

17. Law Enforcement

The major portion of law enforcement activities occurs during the fall waterfowl hunting season. A meeting was held prior to the season opener to coordinate with state wardens and other federal personnel. The initial effort is to get all enforcement in the field during opening week end to cover problem areas. Thereafter, station personnel operate on a voluntary basis.

The following is a summary of cases made and the total fines paid:

(4)	Hunting before/after legal shooting time.....	\$200
(1)	Unplugged gun	50
(3)	Vehicle trespass	75
(3)	Over-limit	225
(2)	Taking protected species	115
(2)	Wanton waste	125

I. EQUIPMENT AND FACILITIES

3. Major Maintenance

State law requires that all county and township roadsides involving school or mail routes be mowed by October 15 of each year. During 1981, 51.25 miles of WPA roadside were mowed at a cost of \$1,957.50. Total mileage done by force account is 7.5

4. Equipment Utilization and Replacement

A 1981 Jeep Scrambler 4X4 was purchased. It replaced a 1975 Dodge 4X4.

6. Energy Conservation

Our station has been able to meet the 10 percent fuels use reduction as required.

J. OTHER ITEMS

1. Cooperative Programs

District personnel sit in on meetings held by the Devils Lake Basin Joint Water Management Board. Our presence is requested to answer questions concerning easements, control structure operation on Lake Alice NWR, and other FWS programs.

2. Items of Interest

There aren't any any more!

3. Credits

This narrative was prepared by the joint undertaking of the Devils Lake Wetland Management staff and was typed by Elsie Grant.

LAKE ALICE NATIONAL WILDLIFE REFUGE
Churchs Ferry, North Dakota

ANNUAL NARRATIVE REPORT
Calendar Year 1981

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

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K. FEEDBACK

A. HIGHLIGHTS

An attempt to drain a 200 acre wetland on a private inholding could have drained 500 acres of refuge wetland. A cease and desist order was issued from the Ramsey County Water Board. See Section F.2.

A green manure crop program was initiated on 40 acres of refuge cropland. See Section F.4.

A 5 acre perennial grain field was planted at the old Noltmier farm site. See Section F.4.

A 72 acre pure stand of alfalfa was planted for waterfowl nesting. See Section F.4.

The harvest of 5 acres of North Dakota Variety switchgrass results in 2,200 pounds of seed. See Section F.5.

A total of 110 acres of switchgrass was seeded with a dormant fall seeding method. See Section F.5.

This is the first year prescribed burning was used as a management tool. A total of 455 acres of grasslands were burned. See Section F.9.

Spring arrived one month early with sightings of geese on February 20. Geese remained abnormally long into mid-May. See Section G.3.

B. CLIMATIC CONDITIONS

This is described in the Wetland Management District narrative.

C. LAND ACQUISITION

1. Fee Title

Progress in acquiring the remaining five tracts totaling 1,224 acres within the proposed refuge boundary remains stalemated. Landowners refuse to sell, and the FWS will not pursue condemnation at this time.

Refuge acreage is as follows:

Fee lands	8,398.60
Meandered lands.....	3,415.00
Lands to acquire.....	1,224.48

D. PLANNING

1. Master Plan

Master planning has not been initiated on this refuge yet due to incomplete acquisition of several key parcels of land.

2. Management Plan

Initial planning was started on a refuge trapping plan. This plan is scheduled to be completed in 1982.

E. ADMINISTRATION

1. Personnel

See details in Wetland Management District report.

2. Funding

See details in WMD narrative report. Funding for Lake Alice NWR is included in the WMD budget.

3. Safety

See details in WMD narrative.

4. Technical Assistance

Provided facility support for Animal Damage Control program operations.

F. HABITAT MANAGEMENT

1. General

Lake Alice National Wildlife Refuge lies within 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 with shallow depressions. The depressions contain poorly-drained soils resulting in wetlands and marshes.

Two major drainages enter Lake Alice - the Mauvais Coulee from the northwest with an 855 square mile drainage, and the combined outlet of three watersheds from the east totaling 1,121 square miles.

Lake Alice itself is 3,415 acres of meandered water with Lake Irvine, approximately the same size, bordering the west boundary of the refuge and smaller Chain Lakes bordering the east boundary. The lake has a controlled outlet to Lake Irvine with a maintained level of 1442.5.

The primary objective of the refuge is to provide nesting cover capable of producing 5,000 ducks with emphasis on mallards, canvasbacks, and redheads. Other objectives include: providing spring and fall migrational habitat for waterfowl, other water and shorebirds; establish wise land use practices; provide wildlife-oriented opportunities for the public; and maintain and improve existing wildlife diversity.

2. Wetlands

Mild spring flooding occurred on the north end of the refuge in the vicinity of the Maza-Garske road even though we had very minimal snow pack in the upstream drainage. This can be attributed to a wet fall of 1980 and the continued extensive drainage of wetlands upstream. It appears that flooding to some extent is going to be present every spring regardless of winter snow pack.

Lake Alice historically was a large Type IV wetland with very good dispersal of emergent vegetation. Since the spring floods of 1974, 1975, and 1979, only the shoreline vegetation remains, resulting in a Type V wetland.

Ice came off of Lake Alice on April 1, 1981. The gates on the water control structure were closed on April 20 with water elevation at 1442.2 feet. Water continued to flow in Mauvais Coulee all summer and one gate was slightly opened on July 1 with a level of 1442.7. On October 26 all radial gates were opened just prior to ice-up to allow draw-down to assist in holding excess spring runoff, in accordance with our operating permit.

Water development plans on the refuge remain stagnant. This development hinges on the success or failure of acquisition of private inholdings within the proposed refuge boundary. In this generally flat topography, any of the proposed water developments would flood and adversely affect private interests.

On one of these private inholdings (Tract 22, Traynor Lake), the owner received a state and county water board permit to allow drainage of approximately 200 acres of wetlands within his property. This permit was issued on the condition that the ditch involved would not be over 2 feet deep. Without notifying this office a backhoe ditch was constructed, 8 feet deep in places. This action would have drained his 200 acres as well as 500 acres of adjacent refuge wetland. Project Leader Janes and Assistant Manager Strom met with the Ramsey County Water Board and obtained a cease and desist on the drainage. It was agreed by this office to clean debris from an old existing ditch on refuge property to help relieve his flooding for this year with FWS concurrence. The owner has since been permitted to construct a dike on his property and pump over the dike and allow the water to flow on us. This action will at least preserve the refuge wetland portion. It is interesting to note that this private inholding, "farmland"/wetland, has not had a crop on it since 1977 and yet he refuses to sell to the FWS.

3. Forests

A small one-quarter acre mature box elder tree area was stump cut to allow resprouting from the stump to provide additional deer browse. This project was accomplished by YACC crews in mid-winter and has resulted in very good success in past years.

4. Cropland

The primary purpose of cropland on the refuge is reestablishment of waterfowl nesting cover. This is accomplished through cooperative farming agreements. In 1981 the farming program involved 500 acres of agricultural land. Due to the wet field conditions resulting from the wet fall of 1980, 238 acres were summer fallowed an additional year.

A total of 120 acres were seeded to small grain with shares being harvested, 75 percent cooperator, 25 percent Government.

A green manure crop rotation was initiated on a 40 acre field this year and will be rotated to another 40 acre field in 1982. These fields have been

farmed for several consecutive years in heavy gumbo soil. The cooperator provides 5 lbs./acre sweet clover and plants with a companion crop of small grains. The small grain was harvested (100 percent cooperator) and the sweet clover will be plowed under in mid-July 1982. This practice should provide nitrogen and increase the tilth of the soil. In addition, the sweet clover growth the following spring should provide some additional nesting cover.

Eighty-seven acres were seeded to an experimental blackbird/sunflower lure field. The Government's share was 1,000 pounds of sunflower seeds, plus any damages incurred by blackbirds. This field was to be seeded prior to any neighboring sunflower fields in the hopes the birds would lure to the refuge field first.

A 10 acre food plot was seeded by cooperator on Tract 12. This consisted of a corn border and sorghum interior. Due to lack of cultivation, weeds infested and out-competed the crop resulting in only a marginal crop.

A 5 acre perennial grain field was seeded within the old Noltmier farmstead (Tract 21). Perennial grain is a cross of tall wheatgrass and winter wheat. This was seeded in early August and the fall rains provided a good start. The winter of 1982 seems to be providing adequate snow cover for protection. Hopefully, this crop will produce a food plot for several years without any further work.

Seventy-two acres of the Kenner field (Tract 18) were seeded to a 100 percent alfalfa field. This field was in crop/unsuccessful DNC for several years. A heavy infestation of quackgrass was treated with Roundup in early June and 40 acres drilled to alfalfa. The remaining 32 acres were hand-seeded in late June due to extremely heavy rainfalls. The drilled portion has a beautiful start. Northern Prairie Wildlife Research Center has suggested that pure alfalfa stands, if managed properly, can be very valuable and a preferred late nesting cover for waterfowl. Our management plans for this alfalfa field include annual haying after mid-July. Additional benefits to resident wildlife may include additional "edge" within a large expanse of DNC. Late summer growth should provide additional deer forage.

5. Grasslands

Since the establishment of the refuge, the primary goal has been to provide the highest quality nesting cover possible. All management practices implemented are geared toward providing the healthiest stand of grass cover possible. Prescribed burning, haying, noxious weed control, and invading tree control have all been used during 1981 to manage the grassland nesting cover.

Intensive management for switchgrass is being initiated on this refuge, partially to establish a source of North Dakota variety seed which is virtually unavailable commercially, and it appears to be a preferred waterfowl nesting cover. It provides a tall, dense, early spring cover that will stand up again after being crushed down by heavy winter snows.

Two 5 acre switchgrass fields (5 acres NDG-965-98 variety), (5 acres PM-SD-149 variety) were burned in early May and then fertilized with 50 pounds per acre ammonium nitrate. The North Dakota variety was swathed in the last week of August and combined in early September. The results from this field were 2,200 pounds of seed with germination of 65 percent and purity 99 percent. A total of 1,478 pounds were distributed to four other refuges in North Dakota for their seeding needs.

The South Dakota switchgrass, a later-maturing variety, was swathed in mid-September and harvested in early October. The yield was 200 pounds and may have been due to improper adjustment of air in the combine. We anticipated a higher yield. Some shattering may have occurred from frost.



#1 - Burning 18 inch switchgrass stubble. This dry fuel is extremely volatile, very much like igniting gasoline. DWS



#2 - A strip of North Dakota variety switchgrass left after surrounding grass was harvested. This variety is a shorter, more leafy, earlier maturing variety, and provides a good low ground cover. SPB



#3 - South Dakota variety switchgrass provides a higher, coarser plant but at this latitude does not consistently produce a viable seed. SPB

It is interesting to note that one of the 5 acre fields had over 20 one-year old and active duck nests visible after the prescribed burn. This field is directly adjacent to a refuge residence with a fair amount of disturbance.

In early November, just prior to freeze-up, 110 acres of switchgrass were seeded. This acreage comprised three separate fields which are commonly flooded or extremely wet during seeding time in early summer. Two 5 acre fields were seeded to North Dakota variety switchgrass with the hopes of using these as seed source fields. After seeding, these two fields were sprayed with Atrazine at 1½ pounds active ingredient per acre. Atrazine is used as a pre- and post-emergent control for quackgrass, pigeongrass and smooth brome grass. The 100 acre field (Tract 11b) was seeded to a mixture of North Dakota and Nebraska 28 switchgrass. This field is almost annually flooded by spring runoff which makes seeding impossible until mid to late summer, thus the dormant fall seeding. Atrazine will be sprayed on this field as soon as field conditions permit in 1982.

A YACC crew worked for about two months removing cottonwood sprouts and trees invading grasslands along the moist fringe of wetlands throughout the refuge. The several thousand sprouting trees removed will not eliminate the problem but will set them back several years. The small 1 to 4 inch trees are easier to remove and keep under control than if they were allowed to grow to a larger size.

8. Haying

Approximately 175 acres of decadent DNC were co-op hayed with the cooperators plowing a fire line around each unit. The fire breaks were seeded back to DNC in late fall of 1981. These units (see figure 1) are scheduled for an early spring burn in 1982. The 1981 DNC burns resulted in excellent rejuvenation of old DNC.

9. Fire Management

Prescribed burning on the refuge was initiated for the first time in 1981. A total of 455 acres were burned under controlled situations (see figure 1). Decadent stands of DNC were burned in late March to early April. Switchgrass fields were burned in early May. It should be noted that the spring weather of 1981 was about one month ahead of normal dates.

LAKE ALICE NATIONAL WILDLIFE REFUGE

TOWNER & RAMSEY COUNTIES NORTH DAKOTA

UNITED STATES
DEPARTMENT OF THE INTERIOR

UNITED STATES
FISH AND WILDLIFE SERVICE

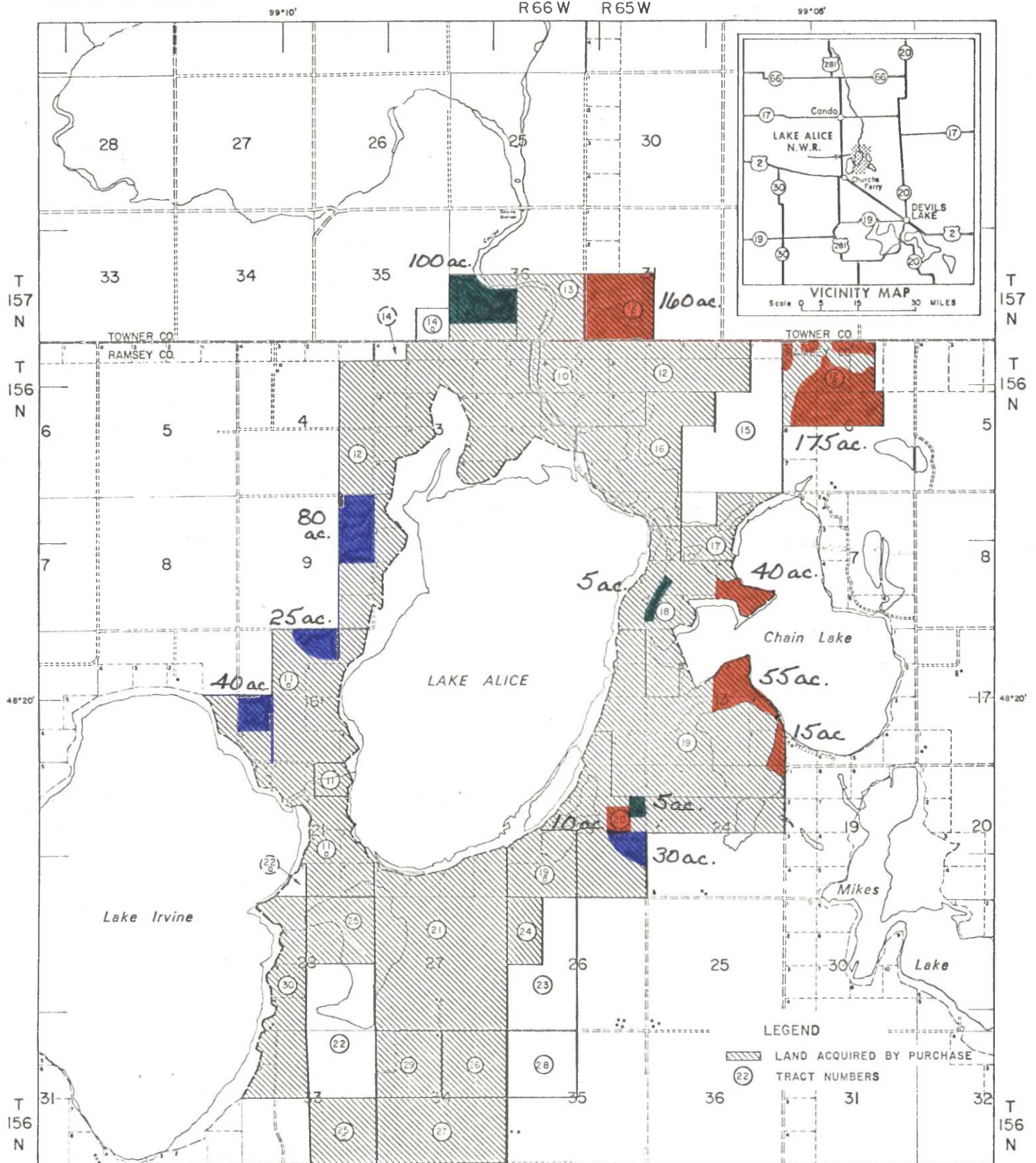


Figure 1

- Prescribed burned 1981
- Hayed DNC 1981 - Scheduled for 1982 burn
- 1981 seeded switchgrass

TABLE I.
1981 Prescribed Burning

Date	Location	Acres	Grass Type	Results/Comments
3/19	Tract 12a	175	DNC	burned while ground frozen, excellent regrowth, especially alfalfa.
3/20	East Potato Lake	15	DNC	excellent rejuvenation of old DNC.
4/2	North Point Chain Lake	40	native/infested with brome	good burn - moderate results in releasing native, further burns needed.
4/8	South Point Chain Lake	55	20 ac. DNC 35 ac. native	very decadent DNC responded excellently; green needlegrass responded excellently.
5/1	Tract 12b	160	130 ac. switchgrass 30 ac. quack/reed canary	not enough grass litter in 1-year old switchgrass seeding to carry a good fire.
5/7	Switchgrass at residence	10	switchgrass	excellent results.

No wildfires occurred during 1981. The refuge did maintain a fire protection agreement with the Churchs Ferry Rural Fire Department at a cost of \$335.00.

10. Pest Control

Noxious weed control is required by law in North Dakota. Leafy spurge has been the major problem on the refuge. One hundred acres of leafy spurge were sprayed using 2,4-D amine at 1 pound active ingredient per acre. This dosage is used to prevent seed spread and does very little to eliminate the stand. No known chemical control program will totally eliminate leafy spurge, thus the most inexpensive control is used to meet the state noxious weed laws.

Roundup was used to control quackgrass prior to seeding alfalfa on the Kenner field (Tract 18). A total of 70 acres was treated with 1 quart active ingredient per acre. Another 5 acres of quackgrass were treated with 2 quarts per acre of Roundup prior to seeding switchgrass.

One cooperator used Treflan at 1 quart per acre on 200 acres for pigeongrass control.

G. WILDLIFE

1. Wildlife Diversity

Although the main priority of this refuge is waterfowl production, many of the management practices for waterfowl do benefit other species. Several practices were initiated this year which may help increase diversity. A 72 acre alfalfa field and a 5 acre perennial grain field were seeded. See Section F.4.

The alfalfa will be hayed each year after the nesting season and should provide an open edge preferred by many species. This fall in the first year seeding as many as 15 deer were observed feeding at night, fox searching for mice were a common sight, and this area had the highest concentration of pheasants on the refuge. The perennial grain field should provide necessary winter food for deer and pheasants. If the perennial grain does not winter kill this year, additional small acreages are planned.

2. Endangered and/or Threatened Species

Bald eagles are commonly sighted during spring and fall migration. On March 18 five bald eagles were observed perching in the trees of the old Magnuson farm site. Fall sightings began on October 26 when two bald eagles were observed. Sightings of single bald eagles occurred on November 23, December 14, and December 18.

3. Waterfowl

Spring arrived very early this year, at least a month ahead of normal. On February 20 a flock of 350 Canada geese were observed on the west side of the refuge. It is generally early April before geese are first sighted. The major migration occurred the week of March 22.

The snow and blue geese remained on or near the refuge quite a bit longer than usual in the spring. The heavy rains of the previous fall resulted in large fields of flooded grain, both unharvested and swathed, which provided excellent spring feeding conditions. The geese, which usually stop only a few days on their journey to the Arctic, remained until mid-May.

A waterfowl breeding pair survey was conducted during the period of May 26, 1981 to June 5, 1981. A random sample of ten quarter sections were surveyed on the refuge. The results are as follows:

	<u>Divers</u>	<u>Dabblers</u>
Average number of breeding pairs/QUARTER SECTION	9.7	33.5
" " " " " SURFACE ACRE	.07	.22
" " " " " WETLAND ACRE	1.7	.53

Using this data and the Hammond Index with assumed nest success of 45 percent, the estimated production of diver ducks on the refuge was 1,860 birds. The estimated dabbler production was 7,017 birds.

As in the past, a flock of non-breeding Canada geese were present most of the summer. No broods or evidence of nesting has been observed. In early September this flock increased to about 200 birds.

Fall migration numbers of ducks and geese were above average. Due to budget restraints, the weekly waterfowl aerial census for 1981 was eliminated so no actual data was collected. The best estimate for peak numbers was approximately 20,000 snow and blue geese in late October.

4. Marsh and Water Birds

Marsh and water birds had a slight decline in 1981 compared to the Lake Alice draw-down year of 1980 which resulted in large numbers of pelicans. This year approximately 200 pelicans were present compared to about 500 in 1980.

5. Shorebirds, Gulls and Terns

A large spring migration of golden plovers occurred over the refuge in 1981. Every field in the area seemed to be teeming with the small birds. Six ruddy turnstones and five blackbellied plovers were observed in front of the Lake Alice residence on May 24.

Shorebirds numbers were greatly reduced compared to the previous year after Lake Alice water levels returned to management levels. The 1980 draw-down had resulted in tremendous numbers of shorebirds using the exposed flats.

6. Raptors

Snowy owls were commonly sighted near the refuge. The earliest sighting was on November 6.

One prairie falcon was sighted just east of Chain Lakes on September 21.

A goshawk was sighted on November 16 on the refuge.

8. Game Mammals

White-tailed deer on the refuge wintered in excellent condition for the second winter in a row due to the very mild winter. An aerial survey conducted on January 28 revealed only 154 deer. The deer seemed to be in fine condition. The deer were not concentrated on the refuge in the winter which is a general indicator of the severity of the weather. This figure of 154 deer compares with 276 in 1979, 320 in 1978, and 200 in 1977. Fawn production seemed to be good with most does observed having twin fawns.

A small population of coyotes remains on the refuge. Several coyotes were trapped on the perimeter of the refuge on private land.

Two active fox dens were located on the refuge this year.

Public trapping on the refuge was closed entirely this year while a refuge trapping plan was being developed.

9. Marine Mammals

One ex-marine was observed splashing about in the Lake Alice control structure. No pairs were seen.

10. Other Resident Wildlife

The ring-necked pheasant population wintered in excellent shape during 1981. The refuge was alive with crowing roosters in the spring. By mid-summer broods were seen in almost every portion of the refuge. This population fluctuates with the severity of winter weather. The pheasant numbers were very high in the fall of 1977 but were virtually eliminated during the bad winters of 1977-78 and 1978-79. Two mild winters, along with an active stocking program by the North Dakota Game and Fish Department, have permitted a rapid buildup in pheasant numbers.

Hungarian partridge are an open country bird dependent on agricultural land. They are rarely seen within the interior of the refuge but are commonly seen near DNC plantings along the edge of the refuge.

11. Fishery Resources

Northern pike make yearly spawning runs up the Mauvais Coulee from Devils Lake to Lake Irvine and Lake Alice and continue up the coulee almost to the town of Cando. After spawning, the northern pikes remain in the area and provide recreational fishing north of the refuge. During low water levels in Lake Alice large numbers of northern pikes concentrate in the deeper water near the water control structure between Lake Alice and Lake Irvine. Since most of this water is very shallow, most of the population winter kills each winter. No recreational fishing is permitted within the closed area of the refuge. Plenty of opportunity exists on surrounding lakes and coulees.

12. Wildlife Propagation and Stocking

The refuge continues to support the North Dakota Game and Fish Department in their pheasant release program. Their hopes are to develop a self-sustaining pheasant population. Pheasant hunting has become a very popular form of recreation for sportsmen on the refuge.

In early May, 50 hens and 10 roosters were released. In late August, 100 ten-week old roosters were released on the refuge.

15. Animal Control

Animal Damage Control personnel removed a pair of beavers from the water control structure area during late summer.

Four neighboring landowners were given a bundle of 25 each of black, plastic flags on lath to be placed in swathed grain fields as a deterrent to waterfowl depredations. No complaints of depredation were received.

17. Disease Prevention and Control

Avian botulism was not a major problem this year. On August 27 during a

botulism patrol with airboat, 39 various species of ducks were picked up. Constant water levels on the main lake seem to prevent major outbreaks. Cool weather and rains after August 27 may have been the major influence preventing a major die-off. Avian botulism has been a historic problem on both Lake Alice and Lake Irvine.

H. PUBLIC USE

1. General

This refuge is located in a rural portion of North Dakota. Most people who come to visit the refuge do so for consumptive purposes such as hunting. Each year there seems to be a very slight increase in non-consumptive uses such as "Sunday drives." During major spring migrations it is not uncommon to see three or four vehicles at a time on the refuge roads on a Sunday afternoon.

In August the refuge hosted a group of approximately 100 Cub Scouts for a week who used the refuge as a center for their field activities. It was structured as a day camp with the kids being transported in each day. Seasonal employee, Mike Haupt, gave a presentation on wildlife management on the refuge. Assistant Manager Strom and Special Agent Bill Reynolds gave a program on waterfowl identification. The Scouts seemed to enjoy the setting of the refuge and have requested a similar program on Sullys Hill National Game Preserve for next year.

8. Hunting

Approximately 3,167 acres are designated as open to public hunting in accordance with all applicable regulations and seasons established by the North Dakota Game and Fish Department. The entire refuge is open for archery deer hunting except for a closure during waterfowl season and general gun deer season.

The majority of the hunting pressure was during the waterfowl season when concentrations of snow and blue geese reached approximately 20,000. On an average week-end day about 100 hunters may line up on the "firing line" and pass shoot geese. Waterfowl hunting pressure on the refuge, primarily non-residents, has declined the last few years. This reduction may be attributed to higher gas prices and increase in nonresident license fees.

1981 was the third year the entire refuge was open to archery deer hunting. Archery hunting pressure seemed to be down again this year. An estimated 20 deer were harvested during this season. No check stations are operated on the refuge.

Regular firearm deer season remains very attractive to hunters on the refuge. No special refuge permit is required, only a valid state license for that state management unit is required. Hunting pressure remained about constant with previous years. Approximately 40 hunters participated on opening day. Total harvest for the entire gun season was about 30 animals.

With the increase in pheasant population, the interest in pheasant hunting was high this year. Though the season is run each year on the refuge

regardless of pheasant population, the limiting factor affecting hunting pressure is the number of birds available to hunt. The pheasant season ran from November 17 through December 31.

10. Trapping

Trapping on the entire refuge was closed this year pending a trapping plan approval in 1982.

11. Wildlife Observation

A few visitors enjoy week-end or evening drives through the refuge roads with the hopes of seeing wildlife. This activity reaches a peak during the spring and fall migration period.

15. Off-Road Vehicling

Off-road vehicling is not presently a major problem on this refuge. In 1980 two of the refuge vehicle trails were improved by using a grader to form a ditch on each side of the road and thus building the elevation of the road up. The resulting ditch on each side of the road has effectively limited vehicle use to designated routes. Each road terminates in a fenced parking area.

17. Law Enforcement

The refuge was patrolled by the Devils Lake Wetland Management staff, U.S. Special Agent, and North Dakota Game and Fish Law Enforcement personnel.

Cases made on the refuge are included in the Wetland Management District enforcement section.

18. Youth Programs

The Young Adult Conservation Corps (YACC) was used for several projects on the refuge. The largest project involved cutting sprouting cottonwood trees up to 10 feet in size along the wetland fringes of the refuge. One crew of about seven people worked for about a month during January removing thousands of small trees. This same crew was involved with stump cutting a one-quarter acre mature box elder stand to provide resprouting for additional deer browse.

Approximately 300 seedling trees were planted by YACC in the 4-year old shelter belt by the refuge residence to replace trees that had died.

I. EQUIPMENT AND FACILITIES

1. New Construction

Three new parking areas were constructed in the refuge open hunting unit. Wooden fence posts were placed 7 feet apart on the perimeter and then trimmed to make a very attractive and effective barrier to vehicle travel. The remaining parking lots are scheduled to be completed in 1982.

2. Rehabilitation

An older grain bin was transferred from a recently acquired WPA of the Arrowwood NWR. This bin was moved using a Donahue trailer to the old Noltimier farmstead. The rehabilitation of this grain bin, including a new floor, will be completed in 1982. This bin will be used by Animal Damage Control for storage of grain for waterfowl depredation work.

An older wooden tool building (10'X12') was moved from Sullys Hill NGP to the Lake Alice residence to be used as storage for lawn equipment, etc. Seasonal employee, Schnaderbeck, constructed a wooden platform and set the building, using YACC help.

Two refuge information signs were taken to Sullys Hill NGP and completely rehabilitated and reinstalled at Lake Alice.

4. Equipment Utilization and Replacement

A small maintenance shop was set up at the quonset at the Noltimier farmstead. This included old tools and benches from Sullys Hill and abandoned YACC facility at Nekoma. Though not a complete and effective shop by any means, it at least is a start. Now farm equipment used on the refuge does not have to be transported to Sullys Hill for all minor repairs and maintenance.

6. Energy Conservation

Two energy conservation projects were completed this year. The two main entry doors on the refuge residence had leaked air badly since its construction in 1978. The door frames were reworked by seasonal employee Schnaderbeck.

Using the Service's tree planter, a small hedge of caragana was moved from the old Anderson farmstead to the northwest side of the residence. Five ash trees were also moved to the same site to provide additional wind protection.

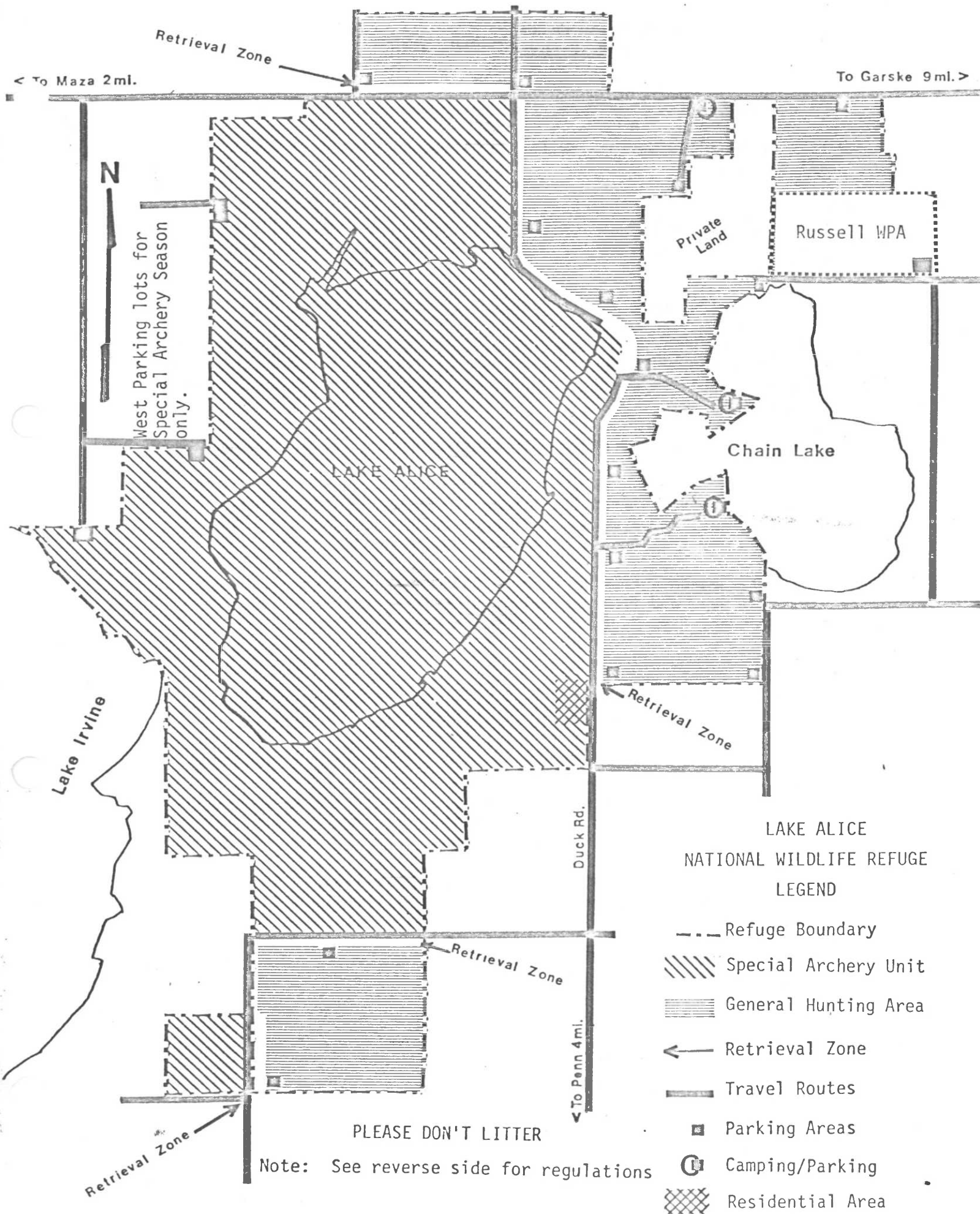
J. OTHER ITEMS

1. Cooperative Programs

The Soil Conservation Service evaluated the switchgrass and big bluegrass seedlings of 1980. In cooperation with the SCS Seed Source Increase Program for North Dakota variety switchgrass, the SCS borrowed the refuge Brillion grass seeder to establish a 10 acre switchgrass field with a local farmer.

3. Credits

This report was written by Steven Brock, edited by Dennis Strom and David Janes, and typed by Elsie Grant.



LAKE ALICE NATIONAL WILDLIFE REFUGE
PUBLIC HUNTING REGULATIONS

Effective Dates: August 28, 1981 to August 30, 1982

NOTICE: Lake Alice National Wildlife Refuge is closed to trapping on all units.

GENERAL HUNTING UNIT - This portion of the Lake Alice National Wildlife Refuge is opened to public hunting in accordance with all applicable regulations and seasons established by the North Dakota Game and Fish Department.

Hunting in this unit is also subject to special refuge regulations.

SPECIAL ARCHERY UNIT - This portion of Lake Alice Refuge is opened to ARCHERY DEER HUNTING ONLY! Archery deer hunting is permitted in accordance with applicable state regulations and subject to special refuge regulations.

The unit is open to archery deer hunting during the following SPECIAL SEASONS ONLY!

Early Season - From 12:00 noon CDT August 28 until sunset that day, and from one-half hour before sunrise until sunset each day from August 29 through September 30, 1981.

Late Season - From 12:00 noon CST November 16 until sunset that day, and from one-half hour before sunrise to sunset each day from November 17 through December 31.

SPECIAL REFUGE REGULATIONS

1. CLOSED AREAS: The special archery unit is closed to all entry except during the hunting seasons established for this unit.

The posted RESIDENCE AREA is closed to all forms of hunting.

2. The construction of blinds, pits and tree stands on refuge lands is prohibited. Hunters may use portable devices or natural materials for temporary blinds and tree stands.
3. RETRIEVAL ZONES: Established for the retrieval of dead or wounded game. These zones are closed to hunting and the field possession of firearms.
4. VEHICLE TRAVEL AND PARKING: Vehicles may be operated only on designated travel routes. Parking is permitted only in designated parking areas.
5. CAMPING: Permitted in designated camping areas only!
6. LITTERING: Littering is prohibited. Users are responsible for removing their trash from the areas. The continuation of camping privileges is dependent upon users keeping the area clean.

SULLYS HILL NATIONAL GAME PRESERVE
Fort Totten, North Dakota

ANNUAL NARRATIVE REPORT
Calendar Year 1981

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

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A. HIGHLIGHTS

We moved into the new office and maintenance building in February. See Section I.1.

Dutch Elm disease was observed on the preserve during the summer. See Section F.3.

One bald eagle was seen on the preserve March 15 and two on March 13. In October five bald eagles were seen. See Section G.6.

B. CLIMATIC CONDITIONS

Refer to Devils Lake Wetland Management District narrative.

D. PLANNING

4. Compliance with Environmental Mandates.

The location for the new office and shop complex at Sullys Hill NGP in the vicinity of the old headquarters had been identified previously as an archaeological site. Compliance with Antiquities Act and National Historic Preservation Act mandates was essential before construction could begin. A mitigation dig was begun in 1979 under contract with North Dakota State University by Dr. Stephen Fox. The contract will be completed in 1982 after field work analysis.

The site is identified as Archaeological site 32BE208 - the Irvin Nelson site. It has been declared eligible for listing in the National Register. It may be the oldest site of human habitation in North Dakota. Indications are that the site is pre-glacial, around 10 - 18,000 years old.

The site yielded evidence of four distinct cultural phases. Two of these are prehistoric units and two are historic. The most recent of the historic phases is represented by an assortment of refuse associated with the early years of the game preserve. From this level numerous discarded medicine vials, tin cans, broken tableware, crockery, pocket watches and nails were recovered. Virtually all of this material dates to the 1920's and 1930's.

The second historic phase is not as well represented as the later one, consisting mainly of clinkers from coal furnaces, nails, some pieces of tableware and various metal fragments. It is possible this period of activity dates to the later part of the 19th century and is associated with the occupation of Fort Totten by the U.S. Army.

The most recent of the prehistoric phases was located in a soil stratum above an ancient beach line of post glacial Devils Lake. The beach is located at 1453 feet above sea level. The second prehistoric cultural phase lies below the beach deposit.

The upper prehistoric culture contained a large assortment of bones from animals consumed by the occupants of the site. The food remains included deer, fish, waterfowl, rabbit and bison. The tools present include arrow and spear points, small cutting and scraping tools, bone awls, pottery and two well preserved bone harpoon points. Preliminary examination indicates that these belong to the woodland cultural phase.

Beneath the beach deposit is a rather different cultural pattern. Artifacts recovered include stone spear points, stone scraping and cutting tools, implements fashioned from bone and one stone knife. The food remains are principally from bison. The cultural pattern represented by these materials is called Archaic.

E. ADMINISTRATION

1. Personnel.

Refer to the Devils Lake Wetland Management District narrative.

2. Funding.

Refer to the Devils Lake Wetland Management District narrative.

3. Safety.

No vehicle accidents, disabling injuries or near-misses occurred at the preserve during the year. Safety meetings are held in conjunction with the Devils Lake Wetland Management District.

F. HABITAT MANAGEMENT

1. General.

Sullys Hill National Game Preserve consists of 1,674 acres of primarily large, wooded hills located on the south shore of Devils Lake in northeast North Dakota. The largest of the hills was named for General Alfred Sully, who in 1865 led a military expedition through this area.

Established as a national park in 1904, the preserve is rich in Indian and military history. Eight Indian burial mounds on the preserve are thought to be over 600 years old. In 1914 Congress established it as a big game preserve.

Since 1970 Sullys Hill National Game Preserve has been operated as a substation of the Devils Lake Wetland Management District.

3. Forests.

Dutch Elm disease was observed on the preserve during the summer. A few trees which had leafed out had lost all of their leaves by the middle of August.

At that time other trees that were effected showed signs of wilting, curling and yellowing of leaves on one or more branches in the upper portion of the tree.

Eight hundred to one thousand elm trees which were infected were marked. Late in December a control measure was started by removing infected trees. There is no way to eliminate Dutch elm disease once it begins. Control programs have as their object, the management of the disease to spread out losses over a long period minimizing the impact of the disease.

5. Grasslands.

No haying or grazing is done on 160 acres of grasslands.

8. Haying.

Hay is put up on the preserve for the buffalo and elk herds. The haying is done by a local rancher who receives two-thirds of the hay crop.

Hay production was good. The one cutting produced 300 ton. All hay was stacked and the refuge share was hauled to the hay pen in the big game enclosure by the permittee.

9. Fire Management.

One wildfire occurred on the preserve in Unit II. The fire started at the Fort Totten dump and strong northwest winds quickly spread it across Bureau of Indian Affairs land and it burned 60 acres on the preserve.

We work together with BIA to control the fires. They have three units for fighting grass fires and we have one unit.

10. Pest Control.

About two gallons of chemical were used during the year for weed control. The most prevalent weed is leafy spurge. Nettles and poison ivy, which are quite common, are controlled only in the recreation area.

G. WILDLIFE

3. Waterfowl.

Waterfowl habitat is limited on the preserve and only one mallard brood was observed. A few mallards, gadwal, teal and wood ducks are present during the summer.

4. Marsh and Water Birds.

American Bittern, Black-crowned Night Heron and Double-crested Cormorants were frequent visitors.

6. Raptors.

Nine bald eagles were seen on the preserve during the year, two in March and seven in October.

The marsh hawk, red-tailed and broad-winged hawk were most commonly seen on the preserve.

7. Other Migratory Birds.

A display flock of giant Canada geese, snow and blue geese and whistling swans are maintained at the preserve for public viewing and environmental education purposes.

A few Canada geese are raised here each year and are free to migrate in the fall. This year four geese returned on March 25 and 18 more returned during the summer.

8. Game Mammals.

Four fox pups were seen on numerous occasions. Gray and fox squirrels are abundant. Muskrats, mink and weasels are seen occasionally. Raccoon population has declined this past year.

10. Other Resident Wildlife.

At the beginning of 1981 the buffalo herd totaled 30 animals, with two mature bulls, both being six years old. The first of the six calves was born on April 30, and the sixth calf was born July 24.

At the beginning of 1981 the elk herd totaled 21 animals, including four mature bulls. Seven calves were born in May and June which increased the herd to 28 animals.

An aerial census in January indicated the deer herd totaled 27 animals.

12. Wildlife Propagation and Stocking.

Five pair of giant Canada geese were received from Northern Prairie Wildlife Research Center. The hand-reared geese were a joint federal and state project which was begun in 1972. Purpose of the program has been to restore giant Canada geese to areas in the state where suitable habitat is found. A total of 270 yearling geese were released this year.

We kept five pair over winter and will release them this spring.

13. Surplus Animal Disposal.

Surplus big game animals are disposed of as carcasses and sold to service clubs and other organizations only. They are field dressed by preserve personnel and delivered to a processor in Devils Lake or picked up at the preserve by the buyer. The ten deer removed were donated to the Devils Lake Sioux Tribe and they distribute the meat among low income families.

The average weight of the seven 2½ year old bull buffalo that were disposed of was 559 pounds and they sold for \$420. each, up \$55 each from 1980. Five caped heads were sold for \$100. each and two hides were sold for \$50. each, which brought the average price of each buffalo to \$505.71.

Five elk cows and two spike bulls were removed during the surplus animal disposal program in November. The carcass price was \$176. on the elk, up \$20. from 1980.

16. Marking and Banding.

The ten giant Canada geese we received from Northern Prairie Wildlife Research Center were banded.

17. Disease Prevention and Control.

Seven raccoon that were found to have distemper were destroyed.

H. PUBLIC USE

1. General.

The total number of visitors to the preserve in 1981 was 90,800, compared to 81,500 in 1980. Visitor figures are based on data provided by an automatic traffic counter.



Figure 1. First tour in 1981, school children from Fort Totten.

4. Interpretive Foot Trails.

Approximately four percent of the visitors used the one-mile self-guided foot trail.

5. Interpretive Tour Routes.

The four mile self-guided auto tour route is used by about 75 percent of the visitors.

6. Interpretive Exhibits/Demonstrations.

Eight tours and slide presentations were given on the preserve to grade school students, bible school students, one garden club and senior citizens group from Devils Lake. A slide presentation about Sullys Hill was given to the Rebecca Lodge in Devils Lake with 80 people in attendance.

11. Wildlife Observation.

The four mile self-guided auto tour route through the big game enclosure provides visitors with an opportunity to view the buffalo, elk, deer, prairie dogs and occasionally fox and raccoon.

14. Picnicking.

The 60 acre Sweetwater Lake recreation area contains picnic grounds with picnic tables, grills, drinking fountains, picnic shelters and rest rooms.

17. Law Enforcement.

No citations were issued, but warnings were given for a wide variety of minor offenses. Evening and weekend patrol, as well as locking the gate every night at sunset, is necessary to control vandalism and numerous other problems associated with public use.

18. Youth Programs.

The preserve continued to participate in the YACC program. The number of enrollees varied from two to 13 during the year.

They helped us move into the new office and shop. They also dismantled the old office and shop, salvaging as much of the lumber as possible.

They were very helpful in keeping picnic grounds clean, the grass mowed, and landscaping around the new shop and office. In December they began cutting down the elm trees that have Dutch elm disease.

I. EQUIPMENT AND FACILITIES

1. New Construction.

The final inspection was made on the new office and maintenance building on January 15, and after a few minor corrections were made, we acquired possession of the building on January 26.

The domestic water supply at headquarters was upgraded by drilling a new well.

Two hundred feet of sidewalk was put in from the visitor's parking area to the office.



Figure 2. The old and the new shop and office.



Figure 3. Constructing 200 feet of sidewalk from visitor's parking area to office building

3. Major Maintenance.

A sealer coat of asphalt surface treatment was put on the six miles of roadway through the preserve at a cost of \$45,019.80.



Figure 4. Applying seal coat to preserve roads.

J. OTHER ITEMS

2. Items of Interest.

The 12 acre lake in the recreation area overflowed in November for the first time since records have been kept. Rainfall was normal.

Irvin Nelson received a Special Achievement Award for coordinating and supervising YACC and YCC crews on clean-up of storm-damaged timber and clean-up of recreation area. He also coordinated YACC crews supporting a professional archaeological staff and served as on-site inspector during the construction of the office and shop complex. This all took place during the summer and fall of 1980.

3. Credits.

This narrative was prepared by Irvin Nelson, edited by the staff, and typed by Mary Roemmich and Elsie Grant.



Figure 5. Twelve acre lake in recreation area overflowed in November, the first time since record keeping began.



Figure 6. Irvin Nelson receiving special achievement award from Project Leader, Dave Janes.