

AnnualNarrative



FWSANV-0097

GRAYS LAKE NATIONAL WILDLIFE REFUGE

Wayan, Idaho

ANNUAL NARRATIVE REPORT

Calendar Year 1988

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

REVIEW AND APPROVALS

GRAYS LAKE NATIONAL WILDLIFE REFUGE

Wayan, Idaho

ANNUAL NARRATIVE REPORT

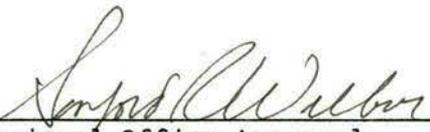
Calendar Year 1988

  
\_\_\_\_\_  
Refuge Manager

3-1-89  
Date

  
\_\_\_\_\_  
Refuge Supervisor

3-1-89  
Date

  
\_\_\_\_\_  
Regional Office Approval

7/3/89  
Date

## INTRODUCTION

Grays Lake National Wildlife Refuge is situated in Caribou and Bonneville Counties, about 30 miles north of Soda Springs. Located near Wayan, in southeastern Idaho, the refuge lies in the remote and sparsely populated Grays Lake Basin. Grays Lake is a high altitude, mountain valley marsh, composed principally of hardstem bulrush and cattail with scattered small shallow ponds. Snowmelt from mountains which ring the valley accounts for the primary source of water for the basin marsh. The elevation of the marsh is about 6385 ft., while the highest surrounding mountain peak is Caribou Mountain at 9803 ft.

The Grays Lake Valley is subject to severe prolonged winters, with unofficial temperatures reaching below the  $-50^{\circ}$  F mark, and 40-50 in. of snow accumulating on the valley floor. The coldest official temperature in the Grays Lake Basin was  $-40^{\circ}$  F in 1922, the warmest reading was  $103^{\circ}$  F in 1919. Summers are characterized by warm days and cool nights, with high temperatures only rarely exceeding  $90^{\circ}$  F. The last killing frost in the spring usually occurs between May 25 and June 5, and the first frost of the fall usually occurs around August 20; however, frost may occur any month of the year. Annual precipitation averages about 17 in. and mean snowfall approximately 115 in.

Initial enabling actions for the establishment of the Refuge, were the October, 1964 Memorandum of Understanding between the FWS and BIA, and the Refuge Use and Cooperative Use Agreement Grays Lake, Idaho of 1965 with 22 private landowners of over 30 tracts surrounding the Grays Lake lakebed. These agreements recognized the long-time dispute of land ownership and land and water use of the Grays Lake area. It was agreed that the FWS would establish a wildlife refuge in the lakebed of approximately 13,000 acres. Additionally, agreements were made as to access, setting of water levels, and continuation of use by landowners of the area between the meander line and the Refuge. The Memorandum of Understanding with the BIA has no time limits, and the Cooperative Use Agreement has a 99-year limit with the option of renewal.

On June 15, 1965, the Migratory Bird Conservation Commission (MBCC) approved the approximate 13,000-acre area with the purchase of access easements, and the construction of dikes for the purpose of restoring the area to its previous waterfowl productivity. It was estimated that 30,000 ducks and geese would be produced annually after rehabilitation. Justification for the refuge also noted that the area has historically provided excellent nesting habitat for Canada geese, redhead, canvasback, mallard, ruddy, lesser scaup, and other duck species, as well as numerous non-game birds such as the greater sandhill crane. Muskrats were also a very important resource and moose frequently utilize the area. On June 17, 1965, the FWS Regional Director signed legislation as a representative of the Secretary of the Interior, and the wildlife refuge that some had sought for 40 years became a reality. On February 7, 1967, the MBCC approved purchase of 2.14 acres in fee for the Refuge Headquarters site, and 27.19 acres of right-of-way for access into the refuge. On April 10, 1969, 42.5 acres were withdrawn for an administrative headquarters site by Executive Order under Public Land Order 4596.

After determination that the Grays Lake Refuge was not manageable as it was with the 13,000-acre lakebed, the FWS Director approved an expanded boundary for the refuge in March 1972. That boundary was approved along with the purchase of 7,630 acres of land within the new boundary by the MBCC on May 9, 1972. Specific purpose of the refuge at that time was listed as waterfowl production, with justification for the expansion centered around protection, control and restoration of habitat for nesting and migratory waterfowl, with concern for the Great Basin Canada goose. Additionally, maintenance of the present greater sandhill crane population and relief from depredation problems caused by waterfowl and cranes were also noted as major objectives.

At the present, one of the primary roles of the refuge is that of providing a nesting ground for the sandhill cranes, some of which are being utilized as foster parents for whooping cranes. It is hoped that through this means a second flock of wild whooping cranes can be established. This experimental program has the potential for far-reaching effects as the endangered whooping cranes migrate southward with the sandhill cranes, stopping over at Monte Vista, Alamosa, and Ouray NWR's in Colorado and Utah, and winter primarily in the Rio Grande Valley of New Mexico, including Bosque del Apache NWR. Grays Lake is considered the nucleus for the Rocky Mountain population of greater sandhill cranes, and has the greatest concentration of crane nests in North America, and possibly the world. This fact in itself has many effects, especially as they relate to crop depredation in surrounding grain fields, and visitors that come to see the cranes. Effective June 14, 1978, the Code of Federal Regulations, Title 50, Chapter 1, was amended to include the entire Grays Lake NWR and all contiguous land and water within 1 mile of the refuge boundaries as Critical Habitat for the endangered whooping crane.

Of the approximate 32,825 acres within the approved refuge boundary, 18,450 acres are controlled by the FWS. Of this acreage, approximately 12,500 acres are controlled by use agreements, 3,230 acres are owned by fee title, 2,650 acres of "No-Man's Land" are claimed by virtue of riparian upland ownership, 27 acres are under easement from private landowners and 43 acres of the headquarters site were acquired by public land withdrawal. Of the remaining 14,375 acres of land within the boundary, 4,489 acres are under private ownership, 3,536 acres are controlled by other public agencies (BIA, BLM, and the State of Idaho), and 6,350 acres lie within the "No-Man's Land", with control rights claimed by riparian upland owners. The Cooperative Use Agreement established the initial refuge boundary as 13,000 acres, as well as use and rights of the disputed "No-Man's Land" between the lakebed meander line and the interior refuge boundary. Within the approximately 32,825-acre refuge boundary, about 60% is shallow watered bulrush marsh, 20% wet and semi-wet meadow, 12% brush and grassland, 5% shallow open water, and 3% aspen forest and willow thicket.

Grays Lake NWR is part of the Southeast Idaho Refuge Complex, headquartered in Pocatello, Idaho.

## TABLE OF CONTENTS

A.	<u>HIGHLIGHTS</u>	1
B.	<u>CLIMATIC CONDITIONS</u>	2
C.	<u>LAND ACQUISITION</u>	
1.	Fee Title . . . . .	4
2.	Easements . . . . .	(Nothing to Report)
3.	Other . . . . .	(Nothing to Report)
D.	<u>PLANNING</u>	
1.	Master Plan . . . . .	(Nothing to Report)
2.	Management Plan . . . . .	(Nothing to Report)
3.	Public Participation . . . . .	(Nothing to Report)
4.	Compliance with Environ. & Cultural Resource Mandates . . . . .	(NTR)
5.	Research and Investigations . . . . .	4
6.	Other . . . . .	(Nothing to Report)
E.	<u>ADMINISTRATION</u>	
1.	Personnel . . . . .	6
2.	Youth Programs . . . . .	(Nothing to Report)
3.	Other Manpower Programs . . . . .	8
4.	Volunteer Programs . . . . .	8
5.	Funding . . . . .	8
6.	Safety . . . . .	9
7.	Technical Assistance . . . . .	(Nothing to Report)
8.	Other . . . . .	(Nothing to Report)
F.	<u>HABITAT MANAGEMENT</u>	
1.	General . . . . .	(Nothing to Report)
2.	Wetlands . . . . .	10
3.	Forests . . . . .	(Nothing to Report)
4.	Croplands . . . . .	10
5.	Grasslands . . . . .	12
6.	Other Habitats . . . . .	(Nothing to Report)
7.	Grazing . . . . .	13
8.	Haying . . . . .	13
9.	Fire Management . . . . .	14

HABITAT MANAGEMENT (cont.)

Page

10. Pest Control . . . . .	14
11. Water Rights . . . . .	14
12. Wilderness and Special Areas . . . . .	(Nothing to Report)
13. WPA Easement Monitoring . . . . .	(Nothing to Report)

G. WILDLIFE

1. Wildlife Diversity . . . . .	(Nothing to Report)
2. Endangered and/or Threatened Species . . . . .	15
3. Waterfowl . . . . .	21
4. Marsh and Waterbirds . . . . .	23
5. Shorebirds, Gulls, Terns and Allied Species . . . . .	24
6. Raptors . . . . .	24
7. Other Migratory Birds . . . . .	25
8. Game Mammals . . . . .	25
9. Marine Mammals . . . . .	(Nothing to Report)
10. Other Resident Wildlife . . . . .	25
11. Fisheries Resources . . . . .	(Nothing to Report)
12. Wildlife Propagation and Stocking . . . . .	(Nothing to Report)
13. Surplus Animal Disposal . . . . .	(Nothing to Report)
14. Scientific Collections . . . . .	25
15. Animal Control . . . . .	25
16. Marking and Banding . . . . .	26
17. Disease Prevention and Control . . . . .	(Nothing to Report)

H. PUBLIC USE

1. General . . . . .	27
2. Outdoor Classrooms - Students . . . . .	(Nothing to Report)
3. Outdoor Classrooms - Teachers . . . . .	(Nothing to Report)
4. Interpretive Foot Trails . . . . .	(Nothing to Report)
5. Interpretive Tour Routes . . . . .	(Nothing to Report)
6. Interpretive Exhibits/Demonstrations . . . . .	27
7. Other Interpretive Programs . . . . .	27
8. Hunting . . . . .	27
9. Fishing . . . . .	(Nothing to Report)
10. Trapping . . . . .	(Nothing to Report)
11. Wildlife Observation . . . . .	(Nothing to Report)
12. Other Wildlife Oriented Recreation . . . . .	(Nothing to Report)
13. Camping . . . . .	(Nothing to Report)
14. Picnicking . . . . .	(Nothing to Report)
15. Off-Road Vehicling . . . . .	(Nothing to Report)
16. Other Non-Wildlife Oriented Recreation . . . . .	(Nothing to Report)
17. Law Enforcement . . . . .	29
18. Cooperating Associations . . . . .	(Nothing to Report)
19. Concessions . . . . .	(Nothing to Report)

I. EQUIPMENT AND FACILITIES

Page

1. New Construction . . . . .	30
2. Rehabilitation . . . . .	(Nothing to Report)
3. Major Maintenance . . . . .	31
4. Equipment Utilization and Replacement . . . . .	33
5. Communication Systems . . . . .	34
6. Computer Systems . . . . .	(Nothing to Report)
7. Energy Conservation . . . . .	34
8. Other . . . . .	(Nothing to Report)

J. OTHER ITEMS

1. Cooperative Programs . . . . .	34
2. Other Economic Uses . . . . .	(Nothing to Report)
3. Items of Interest . . . . .	(Nothing to Report)
4. Credits . . . . .	34

K. FEEDBACK

Nothing to Report.

L. INFORMATION PACKET  
(inside back cover)

A. HIGHLIGHTS

Second consecutive drought year results in driest conditions on record on the Grays Lake Valley (Sections B. and F.2.).

Land acquisition continued with purchase of Tract 40 (Section C.1.).

Refuge Manager Gene Barney retires after 31 years with FWS. Tom Melanson fills vacant refuge manager position (Section E.1.).

Two whooping crane chicks fledged (Section G.2a.).

Adult male whooping crane breaks wing in fence collision (Section G.2a.).

Five peregrine chicks fledged from hacking tower located on refuge (Section G.2c.).

Thirteen trumpeter swans translocated from Red Rock Lakes NWR released at Grays Lake (Section G.3b.).

Refuge visitors hailed from 38 states, Canada, Germany, Austria, Switzerland, England, Japan and New Zealand (Section H.1.).

## B. CLIMATIC CONDITIONS

Weather data reported here was recorded in the Grays Lake Valley. Ralph Stoor keeps weather records at his ranch at the south end of the valley which are comparable to the refuge.

The Soil Conservation Service snow course is approximately five miles south of refuge headquarters and about 400 feet elevation higher. SCS reported a 32 inch snow depth containing 7.6 inches of water in February. This was 76% of the long term average, but above the 5.6 inches of water recorded in 1987.

For the period January-May, 5.43 inches of precipitation were recorded, 68% of the 30-year average. However, the period of June-October saw only 1.72 inches of precipitation, 40% of normal. The drought resulted in a shortage of insect food for young cranes and a lack of stock water prohibited several permittees from receiving fall grazing. Fortunately, things turned around in November with 4.33 inches of precipitation being received for the wettest November on record.

Table 1. Monthly normal and 1988 climate data for Grays Lake.

	mean high Temp(°F) 1931-1960 <sup>a</sup>	mean low Temp(°F) 1931-1956 <sup>a</sup>	mean Precip(in) 1931-1960 <sup>a</sup>	1988 <sup>b</sup>		
				High Temp(°F)	Low Temp(°F)	Precip
Jan	27	-18	1.51	48	-40	1.29
Feb	34	-15	1.66	54	-24	.59
Mar	39	-07	1.60	57	-14	.87
Apr	49	09	1.42	70	4	1.57
May	60	22	1.80	78	10	1.11
June	72	28	2.06	95	24	.82
July	81	34	.79	88	26	.07
Aug	79	31	1.02	89	22	.49
Sept	69	23	1.03	83	14	.34
Oct	58	15	1.38	75	15	0
Nov	40	-04	1.40	59	-18	4.33
Dec	32	-13	1.60	40	-17	.84
Total Precipitation			17.27			12.32

<sup>a</sup>Compiled from official weather station at Gray, Idaho.

<sup>b</sup>From Ralph Stoor Ranch, 5 air miles south of refuge headquarters.

Snow conditions were poor during January and February, making snowmobile use virtually impossible except on packed trails made with the Thiokol. Areas of open water were visible on the marsh by early April, and by April 15 the entire valley was snow free.



GLR 8807, 10/88

GLR-88-NR-1  
TJM

Southend of Grays Lake, looking S.W., with Beavertail Point in foreground. Results of the drought are evident in this photo taken 27 October, 1988.



GLR 8815, 10/76

GLR-88-NR-2  
RH

Same area as above, but during a "normal year", October 1976.

### C. LAND ACQUISITION

#### 1. Fee Title

Land acquisition at Grays Lake is an ongoing program and probably will be well into the next century. Negotiation continued on Tract 65a owned by J.C. Smith. Final title closure and payment for Tract 65a can be delayed no longer than 30 June, 1989 to allow the owners to find replacement land.

On January 28th, Tract 40 was purchased from G. Ewart and Luella R. Muir. This tract involved 44.5 acres of fee title land and control of approximately 140 acres of "No Man's Land". Negotiations are continuing with the same individuals for approximately 90 acres east of Tract 40.

Neighboring land owner Russell Sibbett contacted the refuge on November 7th and proposed the exchange of 40 acres which he owns in Tract 36a for an equal amount in Tract 45 owned by the Service. Formal negotiations are yet to begin.

The refuge was also contacted by Mary Riley of Missoula, Montana who requested the exchange of 29 acres in Tract 25 for 29 acres of Service owned land in Tract 30. Ms. Riley also owns 160 acres in Tract 85 which she will "consider" selling to the Service should the aforementioned land trade be completed.

Land acquisition remains a prerequisite to holding higher marsh water levels and greatly increasing survival of young whooping cranes, sandhill cranes, Canada geese and other waterfowl. Regions 1 and 2 are working cooperatively to correct water problems at Grays Lake. Nine tracts, totalling about 1800 acres, would be affected by holding water levels higher or longer than specified by the present agreement. BIA has indicated a willingness to consider a delayed draw-down schedule if tracts can be purchased or water flowage easements acquired. Service personnel continued to contact landowners to determine if they would be willing sellers. Little other success has been made to date.

### D. PLANNING

#### 5. Research and Investigations

##### Grays Lake NR 88 - Whooping Crane Cross-Fostering Experiment (14612-01)

The principal investigator of this project is Dr. Roderick Drewien of the University of Idaho. See section G.2a for information on this project.

Grays Lake NR 88 - Evaluation of Level Ditching at Grays Lake NWR  
(14612-02)

About 2130 m ( $\approx$  7000 ft.) of level ditching was done in the fall of 1986. Forty-two islands, totalling about 2060 m (6750 ft.), were made during the excavation. The ditching was done in an attempt to increase habitat diversity in a monotypic area of emergent vegetation. It was intended to increase the nest density of diving ducks which prefer to nest near openings. The islands would also benefit geese, dabbling ducks and cranes. Three parallel sinuous ditches were dug and spoil was piled on the insides of the bends. The excavation was done 300 m (nearly 1000 ft. from the nearest land).

The study project was designed to monitor the effects on diving duck density and to estimate the lifetime of the excavation and islands. Two 6.25 ha ( $\approx$  15.5 ac.) nest study plots were established in the ditched area and 2 control plots were set up outside the control areas. Twenty islands were selected randomly for evaluation. Permanent plots were established at a random site on these 20 islands to monitor island erosion and slumping, and filling of the ditches.

In October heights and depths were measured in relation to the marsh bottom. Measurements were made at permanent sites on 20 islands. From May of 1987 to October of 1988 all points on the islands had settled about 20 cm (8 in.) and all points in the ditch had filled about 20 cm. Height at the center of the island was 116 cm (45 in.) and mean depth of the ditches was 128 cm (50 in.). Nest surveys were not done in 1988 because low water prevented access into the marsh. In October several old goose nests were found showing that the islands are beginning to be used eventhough they are nearly devoid of vegetation. Little vegetation from the seeding made in fall of 1986 was evident, but some yellow blossom sweet clover had matured and seeded.

E. ADMINISTRATION1. PersonnelRefuge Personnel

Tom Melanson, Desmond Call, Ralph Stoor, Ewart Muir  
 GLR 8809, 12/88  
 GLR-88-NR-3  
 TJM

- |                     |   |
|---------------------|---|
| 1. Tom Melanson     | Refuge Manager PFT GS-9<br>EOD 9/12/88      |
| 2. Eugene C. Barney | Refuge Manager PFT GS-9<br>Retired 6/3/88   |
| 3. Desmond Call     | Maintenance Mechanic CS WG-9                |
| 4. Ralph E. Stoor   | Engineering Equipment Operator CS WG-8      |
| 5. G. Ewart Muir    | Tractor Operator WG-6<br>5/1 - 9/23/88 Temp |

Refuge Manager Gene Barney retired on 3 June after over 31 years with the Service. Gene served as the manager of Grays Lake since 1982. Gene and his wife are enjoying their retirement near Victor, Montana.

Tom Melanson filled the manager's position on 12 September. Tom transferred in from Modoc Refuge in northeastern California.

Two career-seasonal positions are included each year under the full time category. Each of these employees were furloughed again this year. Des Call was off duty 13 February - 13 March and Ralph Stoor was off duty 4-31 January.

The summer temporary position was filled for the third successive season by G. Ewart Muir, a local rancher. His experience, energy and knowledge of the refuge have resulted in genuine benefits to the maintenance program. His contributions to spring fence maintenance enhanced the security of whooping crane eggs and sandhill crane nests. His removal of obsolete fences and operation of tractors allowed time for co-workers to attend to other critical tasks.

Wildlife Research Biologist, Dr. Rod Drewien, spent the period 23 April to 15 November this year with the cranes on their summering areas before proceeding back to the wintering grounds.



Southeast Idaho Refuge Complex

- |                     |       |                               |           |
|---------------------|-------|-------------------------------|-----------|
| 1. Charles Peck     | 1,2,3 | Project Leader                | PFT GS-12 |
| 2. Terrell Gladwin  | 4,5   | Assistant Refuge Manager      | PFT GS-11 |
| 3. Stephen Bouffard |       | Wildlife Management Biologist | PFT GS-11 |
| 4. Elaine Greer     |       | Program Assistant             | PFT GS- 6 |
| 5. Wendy Hall       |       | Clerk-Typist                  | PFT GS- 4 |

Table 2. Five year comparison of on-board strength.

	<u>Permanent</u>		<u>Temporary</u>	<u>Total FTE</u>
	<u>Full Time</u>	<u>Part Time</u>		
FY 88	3		1	3.27
FY 87	3		1	3.27
FY 86	3		1	3.27
FY 85	3		1	3.27
FY 84	3		2	3.22

Although not an employee of Grays Lake NWR, Biological Technician Kent Luttschwager from Red Rock Lakes NWR worked intermittently from 9 July through 29 September tracking translocated trumpeter swans throughout Grays Lake valley. Kent's work is discussed in detail in Section G.3c.

### 3. Other Manpower Programs

This summer Martha Robbins and Suzanne Tomassi, both from New Jersey, worked from 12 June - 31 July under contract with The Peregrine Fund observing a hacking tower and five fledgling peregrine falcons. Results are discussed in detail in Section G.2b.

### 4. Volunteer Programs

Mrs. Lurae Brinkerhoff, a school music teacher from Green River, Wyoming, returned to Grays Lake again this summer and served as a volunteer for the refuge and Dr. Drewien for approximately 10 weeks. She assembled and typed reports for Dr. Drewien and accompanied most of the refuge visitors to the overlook hill with the refuge spotting scope to be certain each person had the opportunity to see a whooping crane. Her efforts were very much appreciated since the refuge was without a manager during the summer.

### 5. Funding

The four refuges (Bear Lake, Camas, Grays Lake and Minidoka) and the Headquarters of Southeast Idaho Refuge Complex are operated under a single fund target and FTE ceiling. There is flexibility to utilize funds and manpower where needs or benefits are greatest.

Following is a funding summary for FY 88 and a comparison with FY 87.

	<u>FY 87</u>	<u>FY 88</u>
1261 Operations	\$420,000	\$390,700
1262 Maintenance	<u>191,300</u>	<u>257,100</u>
Total 1260 O&M	\$611,300	\$647,800
1113 SE Recovery (Grays Lake Whooping Crane)	\$32,000	\$32,000
1230	\$15,000	0
6860	<u>\$11,000</u>	<u>\$3,000</u>
Total Funds Available	\$669,300	\$682,800
FTE's	15.62	15.0

---

Quarters Receipts

Prior Year Carryover	FY 88 Collections	Withheld for Administration	FY 88 Expenditures	FY 89 Beginning Balance
\$13,408.44	\$4111,52	\$781.19	\$2040.98	\$14,697.79

In addition the following Special Projects were funded in FY 88:

Challenge Grant - Peregrine Hacking at Grays Lake NWR	\$5,000
Challenge Grant - Oxford Slough WPA Habitat Development	\$10,000
Range Survey - Camas NWR	\$9,000
Basement Rehab - Camas NWR	\$1,000
Entrance Road Rehab - Bear Lake NWR	\$34,925
Replacement of Stolen Items - Minidoka	<u>\$3,000</u>
Total	\$62,925

## 6. Safety

Quarterly safety meetings as well as informal discussions were held throughout the year. Minutes of formal safety meetings are kept on file. Videos provided by the Regional Safety Office were incorporated into meetings. All refuge personnel participated in meetings and are generally safety conscious, as a result no lost time or reportable accidents occurred this year.

Quarterly drinking water samples were submitted to the Idaho State laboratory in Pocatello to check for excessive bacteria levels. All tests revealed no bacteria levels above safe drinking standards.

All refuge first aid kits and supplies were replenished. In addition two new kits were purchased for GSA vehicles which were lacking first aid kits.

Fire Safety Service of Pocatello visited the refuge in November to check and upgrade all fire extinguishers. Three 2 1/2 pound extinguishers were purchased for use in GSA vehicles. In addition five 5 pound extinguishers were purchased for use in heavy equipment and the visitors center. Two 20 pound B,C extinguishers used in the shop were replaced with A,B,C extinguishers. Hydro tests were conducted on all existing extinguishers as needed.

## F. HABITAT MANAGEMENT

### 2. Wetlands

Management of wetland habitat in the 22,000 acre marsh is directly related to water management which is controlled by Bureau of Indian Affairs (BIA). A drawdown agreement between BIA, local ranchers and FWS specifies water levels from 6387.4 ft. msl on 10 May to 6386.0 ft. msl by 25 June. Recording stations located at Clark's Cut, Beavertail Point and Grays Lake Outlet indicate approximately 19,000 acre-ft. of water are removed annually from Grays Lake for irrigation on the Fort Hall Project.

Due to below average precipitation this winter, marsh water levels never reached the agreement level of 6387.4. A maximum elevation of 6386.76 was recorded at Beavertail Point on 16 May. Regular releases by the BIA resulted in a continuous drop in water levels until the staff guage at Beavertail Point was dry on 17 August. Clarks Cut outlet showed a marsh elevation of 6383.10 on 17 August. Long time residents of the Grays Lake valley noted that the "lake" was drier in the late summer of 1988 than it had ever been during the dust bowl days of the 1930's.

In 1987, the BIA installed a new water control structure at Clark's Cut. However, shortly after the new structure was put to use it was discovered that excessive welding heat caused warping of the screwgates which resulted in the structure leaking. We were informed by the BIA in 1987 that they would repair the structure this year. BIA has been reminded of the needed repairs, however, the structure continues to leak.

In a year of normal precipitation this leakage is insignificant. However, after two consecutive drought years it is obvious that any leakage is unacceptable.

### 4. Croplands

Objectives of the refuge farming program are to provide supplemental food for whooping cranes and hold them on the refuge where they are more secure. Although GLNWR no longer has a depredation control objective, the farming program helps reduce Canada goose and sandhill crane depredations on nearby private grain fields. All farming was done by

force account and this year about 90 acres were seeded to barley. Birds consume all acreage, usually before grain is mature.

Although the valley was snow free by 15 April, moist soil conditions postponed farming until 5 May. Otis 2-row barley was planted at 100 lbs. per acre, with farming operations being completed on 26 May. Wild oats continue to be an increasing problem in our farm units. We are hesitant to apply herbicides due to extensive barley consumption by whooping cranes. Limited tillable acreage (100 acres) doesn't provide us the luxury of summer fallowing units to control wild oats. Providing a maximum amount of food for cranes, which reduces depredations on adjacent private lands and keeps the whooping cranes on the refuge, dictates that we farm all tillable land each year. Ten additional acres of farm land were broken out this fall which may allow us to fallow the Burton field which has become heavily infested with wild oats.

Mowing strips of standing grain was started in early August to encourage crane use. Most cranes were staging in grain fields by early August.

Refuge grain fields do not produce enough barley to meet all objectives of the farming program. Annually, Grays Lake relies on Umatilla NWR for additional grain. Grain harvested at Umatilla is exchanged for credit at an elevator in Soda Springs, Idaho. This credit is converted to barley, stored in Grays Lake Refuge grain bins and spread for supplemental feed. Considerable transportation cost is saved by this method. This year 2935 bushels were spread between 8 August and 3 October.



Barley used for supplemental feeding of whooping and sandhill cranes, being delivered to the refuge by City Transfer of Soda Springs, ID.  
GLR 8808, 11/88

GLR-89-NR-4  
TJM

Fall discing of food plots is postponed until all cranes have migrated. This year the cranes headed south on the earliest dates on record, with the last whoopers leaving on 29 September and the last sandhills 5 October. Lack of water was undoubtedly the cause of this early migration. Crop residue was incorporated into the soil to facilitate spring farming. Soils warm up quicker in the spring if not covered by residue. With the Grays Lake elevation and short growing season, an early start is essential. Autumn weather was too dry to sprout wild oats so it could be tilled before freeze-up.

##### 5. Grasslands

Management of grasslands consists of protection by fencing out any trespass livestock from whooping crane egg transplant areas, plus controlled grazing and haying other select tracts to create optimum feeding and loafing sites for cranes and geese.

The difficulty in management arises when coordinating vegetative reduction with the methods available to perform that reduction. Haying and grazing are not always compatible with whooping crane chick survival. Intense surveillance and crane herding are used at the onset of mowing in critical areas. Grazing is generally not permitted where whooper chicks are reared, until after they fledge. However, cow/calf grazing is considered safe after 1 September. Yearling cattle are not

compatible in these critical areas, due to their inquisitive and errant behavior. The possibility of trampling a chick is too real.

Haying and grazing provided the only source of funds associated with the Revenue Sharing Act. Checks distributed to counties were from FY 1987 receipts. Bonneville County received \$6049, and Caribou County got \$2,127. These amounts were approximately 59% of the calculated amount. The percentage shortfall continues to increase because Congress has not increased supplemental funding and refuge receipts are not rising as fast as the total market value of refuge lands.

#### 7. Grazing

Special Use Permits were issued to 5 permittees for grazing within fenced refuge lands. One additional permit was issued for on-off grazing of a 17-acre unfenced tract. Another permit continued in effect involving BIA lands in an exchange-of-use to protect whooping crane eggs and young on the north end of the refuge between 1 June and 30 September.

Grazing was allowed after July 1 on pastures without whooping cranes. The north and south lakefront pastures were opened 1 October after all the cranes had migrated. Ray Ostler was able to utilize pasturage in the north lakefront unit by diverting water into this otherwise dry unit from his own land adjacent to the refuge. Three permittees are normally allowed in the south lakefront pasture after all cranes have migrated. This year however the unit had no stockwater in October. Bernard Linstrom was the only permittee able to utilize the south pasture. He did this by opening the fence between private land adjacent to the refuge and pumping well water for his stock.

Fall grazing was used to reduce luxuriant growth to improve whooping crane chick monitoring efforts and rearing activities. All cattle were off the refuge by 22 November.

Grazing use in 1988 totaled 1523 AUMs at \$4.00 each for an income to the government of \$6,092.00. Another 240 AUMs of forage were consumed under an exchange of land use permit. Grazing was again deferred this year on Tract 50 and the BIA lease at the north end of the refuge.

One other Special Use Permit was issued in conjunction with a permittee's use of adjoining unfenced privately owned land. The permit was for haying and grazing approximately 15 acres for a fee of \$50. The landowner's private airstrip is associated with this tract.

#### 8. Haying

Four Special Use Permits were issued for haying. Benefits realized through haying included weed control and short grass areas preferred by cranes and geese for feeding and loafing. Cranes show immediate response to hayed fields, even while still in swaths or bales, as long

as humans are not present. Whooping crane chicks are more easily monitored and predators more easily detected on hayed areas.

The effect of two consecutive years of drought was evident in this years' hay harvest. A mere 162 tons was harvested, which is only 26% of the five year average of 616 tons. The rate remained at \$6.00/ton, for an income to the government of \$972.00.

Like grazing, haying is not permitted prior to 1 July and is controlled by several special conditions. August 15 was specified as the closing date for haying because most fields are near food plots. Haying operations can move cranes onto private grain causing depredations.

#### 9. Fire Management

No prescribed fires were conducted and no wildfires occurred on the refuge. However, on 4 September refuge personnel responded to a wildfire on private land adjacent to the refuge. Apparently a hay meadow owned by Gerald Jensen was ignited by a faulty electric fence. Several neighbors, with the help of the refuge's 200 gallon pumper quickly extinguished the blaze after it burned four acres. Cooperation between the refuge and private landowners is essential due to the lack of any formal fire suppression forces in the Grays Lake Valley.

#### 10. Pest Control

Spraying with 2,4-D amine to keep Canada thistle and other noxious weeds in check is done annually in cooperation with Caribou and Bonneville counties' noxious weed control programs. In 1988, refuge employees sprayed 90 acres of cropland with 0.5 lb. active ingredient (a.i.) 2,4-D per acre. Approximately 40 acres of grassland were spot treated with 1.5 lb. a.i. of 2,4-D combined with 0.25 lb. a.i. of Banvel per acre. Control in barley fields was very good, and spot treatments appeared effective.

Approximately one acre in the Tingey Tract was treated with 2 lbs. active ingredient Tordon 22K for the control of leafy spurge. We seem to be achieving control of leafy spurge in this unit as we treated approximately six acres in 1987.

#### 11. Water Rights

In an attempt to provide water for whooping crane chicks we installed a pump in an existing domestic well which had not been used for ten years. Pumped water was run through approximately one mile of pipe and ditches to a field in which supplemental food was being provided for cranes. Shortly after water reached the field a neighbor complained that we were lowering the water level in his well and he contacted the State water

REFUGE PESTICIDE/HERBICIDE USE REPORT 1988  
STATION Grays Lake N.W.R.

14(a)

Proposal Number	Chemical (Common Name)	Date(s) of Application(s)	Rate of Application (lb/ac)	Method of Application(s)	Site of Application	Name of cert. Applicator	Result (Were objectives achieved, other comment)
1	2-4-D Amine	4-7 12&13 July	.5 lb A.I./ Ac	ground w/boom	all five barley fields	Desmond Call	good control of Canadian thistle, & other various broadleaf species
1	2-4-D Amine & Banvel	13 July	1.5 lb A.I./Ac 2-4-D & .25 lb A.I. Banvel per acre	ground w/boom	Rich hay field	Desmond Call	Good control of Mules ear and Canadian thistle
2	Tordon 22K	4 July	2 lbs A.I. per acre	ground w/boom	Tingey field	Desmond Call	good control of leafy spurge, the size of this infestation has been reduced from five acres in 1986

authorities. An investigation of the situation revealed that our water right on this well was for domestic use only and we were forced to stop pumping. The point became mute anyway as we had just discovered that we were pumping the well dry and would have been forced to quit pumping regardless.

## G. WILDLIFE

### 2. Endangered and/or Threatened Species

#### a. Whooping Crane

Data and observation in this section come largely from communication with the crane research team or excerpted from their bimonthly report and are provided here for the readers' appreciation of progress in the transplant program.

In the early 1960's, Canadian and U.S. Fish and Wildlife Service biologists reviewed production by whooping cranes in Wood Buffalo National Park. They noted pairs normally produced two eggs, but about 90 percent of the pairs arriving with young on the wintering grounds had only a single chick. This data led to the hypothesis that one egg was essentially "surplus", and flock production might be increased by removing one egg from each nest with two eggs. From 1967 through 1974, the eggs were used to start the captive flock at Patuxent Wildlife Research Center. Since 1975, transferred eggs have been used in the cross-fostering project in Idaho, with others continuing to go to Patuxent Wildlife Research Center. From 1967 through 1988, 111 chicks were fledged from the transferred eggs. In theory, only about 18 additional whooping cranes would have fledged in the Wood Buffalo National Park population in the absence of egg pickup. The initial net world population gain due to the egg pickup is 93 fledged whooping cranes. The gain has been further multiplied as some of the fledged birds produced chicks.

#### Spring Migration

Seventeen whoopers spent the winter at or near Bosque del Apache Refuge in New Mexico. Crop shortages at Bosque Refuge and management changes on State areas precipitated an early crane migration, with the first whoopers leaving New Mexico in early February. Conditions awaiting early migrants to the San Luis Valley in Colorado were extremely harsh. The severe conditions precipitated an outbreak of avian cholera in the waterfowl population at Monte Vista NWR. Carcasses of 5,895 ducks and geese and 17 sandhill cranes were recovered during the epizootic.

Concern about the early migration and possible effect of the cholera outbreak at Monte Vista on whooping cranes prompted a

decision to bait fields at Bosque Refuge with stored grain to encourage whoopers to stay. The baiting effort was largely successful and no whoopers were lost to cholera.

Fifteen whooping cranes were positively identified in the San Luis Valley during March and April. Small flocks of sandhill cranes started migrating from the San Luis Valley in mid-March. The first large migration occurred on 21 March and migrants continued leaving through early April. By 10 April few cranes remained in the Valley. Most whoopers migrated during the first week in April. Individual whoopers were observed migrating from the Valley on April 3 (1), 6 (3), 7 (2), and 12 (1).

Sandhill cranes were first observed at Grays Lake on 23 March. Two whoopers together were sighted on 10 April and they may have arrived together. By 17 April, 5 whoopers had arrived at Grays Lake NWR. At the end of June, locations of 16 whoopers were known, including 8 in southeast Idaho (5-Grays Lake, 1-Blackfoot River, 1-Teton River, 1-Island Park), 7 in western Wyoming (2-Yellowstone National Park, 1-Grand Teton National Park, 3-Upper Green River drainage, 1-Hoback Basin), and one was still in the San Luis Valley, Colorado.



Whooping crane in typical wet meadow habitat at Grays Lake.  
GLR 8817

GLR-88-NR-5  
Photographer unknown

Egg Transplant - 1988

Winter snow packs surrounding Grays Lake marsh were below average for the second consecutive year. A maximum winter elevation of 6386.76 was reached on 16 May. The first sandhill crane nest was found on 21 April, with many pairs initiating nesting during the last 10 days of April. Nest initiation was earlier than normal, but similar to the previous two years.

Twelve whooping crane eggs collected from nests in Wood Buffalo National Park, Canada were transported by aircraft to Grays Lake on 28 May and placed in sandhill nests on 29 May. By 14 June 10 eggs hatched, one egg was eaten by an unknown predator and one egg failed to hatch. Ten sandhill eggs picked up during the transplant were shipped to Patuxent Wildlife Research Center for captive rearing.



Whooping crane eggs collected in Wood Buffalo National Park, Canada are transported to Jackson, Wyoming by plane and then delivered to Grays Lake by helicopter.

GLR 8816, 5/20/76

GLR-88-NR-6

EL

Summer 1988

The drought coupled with very limited invertebrate population resulted in a severe lack of food for both young whoopers and sandhills. Only two young whoopers survived beyond 1 August, and both were provided with supplemental food and water until fledged. Both were captured and marked with color-plastic leg bands in August. One young whooper was in a semi-starved condition when captured. Additional supplemental food was placed on its territory to assist it in fledging.



GLR 8801, 8/88

GLR-88-NR-7  
RD

This photo reflects conditions at Grays Lake during 1988. Maintenance Workers Ralph Stoor and Desmond Call provide supplemental food and water for young whooping cranes while the "Jackknife" fire burns out of control on the nearby Caribou National Forest.

Summer distribution of 16 whoopers included 7 in western Wyoming, 8 in eastern Idaho (including 5 at Grays Lake) and 1 remained in the San Luis Valley, Colorado. During the summer four whoopers were captured and translocated to Grays Lake. Three were captured in western Wyoming and one in eastern Idaho.

In September an adult male whooper was observed with an injured wing. Rod Drewien captured the bird and shipped it to Chicago where veterinarian Josh Dien, National Wildlife Health Center, took it by truck to Madison, Wisconsin. The bone was too

severely broken to repair and the outer wing was amputated on 19 September. The bird has since recovered satisfactorily and will be used for captive breeding. This whooper had been under observation all summer and was flying two days before the injury was noted. Dr. Drewien believes the bird hit a fence because it was the only aerial obstruction in his daily area of movement. Removal of 1 1/4 miles of this fence and replacement with a 1/2 mile section at a location more distant from a preferred watering area for whoopers was completed during the fall. Hopefully, these modifications will eliminate future crane/fence collisions. As land acquisition progresses unnecessary fencing will continue to be removed from the interior of the refuge.

#### Fall Migration

Lack of water and food is the probable cause for the fall migration being three weeks earlier than normal. Most cranes had gone south by 20 September, and all the whoopers had departed by 28 September. Neither of the two whoopers fledged in 1988 have been sighted since leaving Grays Lake. We can only hope they will show up next spring.

Table 4. Whooping Crane Transplant Summary, 1975-1988.

Year	<u>Egg Source</u>		<u>Number Hatched</u>		Number fledged	Surviving 1 Oct 1988
	WBNP	PWRC	WBNP	PWRC		
1975	14	0	9	0	5	0
1976	15	2	11	0	4	1
1977	16	14	15	5	4	0
1978	13	15	9	5	3	1
1979	19	5	12	4	8	1
1980	12	2	10	2	5	1
1981	12	0	5	0	0	0
1982	14	13	8	11	7	3
1983	16	12	15	11	19	8
1984	22	10	19	6	13	2
1985	23	0	20	0	11	0
1986	15	0	11	0	2	1
1987	12	0	12	0	2	2
1988	12	0	10	0	2	*2
Total	215	73	166	44	815	20

WBNP = Wood Buffalo National Park

PWRC = Patuxent Wildlife Research Center

\*last observed on 22 and 26 September when they migrated

Sandhill crane production was the lowest recorded since records have been maintained starting in 1969. Only 2.9% young were recorded in the fall population staging at Grays Lake.

Table 5. Whooping cranes known or thought to be alive during fall 1988.

Yr. Class	ID.No.	Probable Sex	Colored Leg Bands		Summer Location
			-Left-	-Right-	
1976	76-7	M	yel(A06)	wh(sm)	western WY
1978	78-10	M		yel(sm)	Grays Lake
1979	79-7	M	bl/wh/bl	yel(A16)	Blackfoot River, ID
1980	Pat#3	F	bl/	red	western WY (1)
1982	Pat#4	M	red/wh/red	bl/wh/bl	Grays Lake (1)
1982	Pat#6	M	unmarked		San Luis Valley, CO
1982	Pat#7	F	gr (radio)	gr(lost)	Yellowstone NP
1983	83-3	M	wh (radio) (lost)	gr	Yellowstone NP
1983	83-8	M	yel(radio)	bl	Island Park, ID (1)
1983	Pat#9	M	wh (radio) (lost)	yel(A32)	Grays Lake
1983	Pat#10	M	yel/red		Grays Lake
1983	Pat#12	M	red(radio)	wh	Grays Lake (trans. across lake)
1983	Pat#14	Unk	wh	red(radio)	Teton Basin, ID (1)
1984	Pat#16	M?	wh(sm)	wh(sm)	Upper Green River, WY
1984	Pat#17	F			Grays Lake (trans. across lake)
1986	86-15	F	red	red	Grays Lake
1987	87-5	?	missing not found		Grays Lake
1987	87-6	F	in 1987 migration		Grays Lake
1988	88-8				Grays Lake
	88-17				Grays Lake

(1) Translocated to Grays Lake.

b. Bald Eagle

Though not abundant bald eagles are seen occasionally in the Grays Lake Valley fall through spring. One adult was observed throughout the spring. The first fall observation was of a lone adult on 8 October. Two adults were observed near Gravel Creek on 18 October and a lone adult was observed on the refuge through the end of the year.

c. Peregrine Falcon

In 1987 the Peregrine Fund and Lower Valley Power & Light Co. constructed a hacking tower on Cinder Knoll on the north end of the refuge. On 12 June 1988 five young falcons were placed in the tower at 34-36 days of age. The birds were provided by the World Center for Birds of Prey in Boise, Idaho.

Martha Robbins and Suzanne Tomassi, both from New Jersey kept a watchful eye on the birds for six weeks. The refuge supplied the girls with a camp trailer.

The hack tower was opened 20 June and all birds fledged the same day. The falcons were observed until 30 July at which time all were still at or near the tower when the operation was shut down. An immature falcon was sighted on 9 October approximately three miles west of the hack tower, however no bands or markers were noted. The Peregrine Fund plans to continue this operation in 1989.

3. a. Waterfowl

Waterfowl production estimates are difficult to obtain at Grays Lake because of the potential disturbance to the whooping crane program. As pairing of whoopers shows more promise, the disturbance factor is even more crucial. Some of the best nesting habitat for geese and ducks is also the same habitat used by sandhill cranes that are selected as foster parents. Any data gathering activities in areas where whoopers or eggs are located is only in support of the whooping crane project. Therefore, only rough estimates of production are available. This year the change in personnel and the lack of documentation of population surveys in the refuge files precluded any estimate of waterfowl production.

By October the normally 22,000 acre marsh had been reduced to 400 acres of open water present in sloughs and canals. Accordingly only about 500 Canada geese and 400 ducks, mainly mallard and gadwall were present at this time. All waterfowl departed the area just before Thanksgiving.

Goose nesting platforms were refurbished with straw prior to the nesting season.

3. b. Trumpeter Swans

The North American Management Plan for Trumpeter Swans identifies expanding the distribution of swans wintering in the Tri-State Region (Montana, Idaho and Wyoming) as a major management objective. One portion of the plan called for the relocation of yearling swans during their first adult molt.

These swans would hopefully winter and expand nesting efforts outside of the Red Rock Lakes area of southwestern Montana.

On 9 July twenty-eight swans were captured at Red Rock Lakes National Wildlife Refuge and tagged with patagial wing markers bearing white letters on yellow and red backgrounds. Thirteen swans (4 males and 9 females) were transported to Grays Lake and released the same day. The remaining 15 swans were released on the Fort Hall Indian Reservation eight miles north of Pocatello, Idaho.

Observations of released swans were coordinated by Kent Luttschwager, a biological technician working out of Red Rock Lakes NWR.

By 13 July all swans had adjusted well to their new habitat, dividing into small groups, pairs and singles. Water conditions in the marsh were extremely poor, forcing the swans to concentrate near Beavertail point and the north outlet. On 26 July all 13 swans were located on the south end of the refuge.

Rapidly deteriorating water conditions in August forced the swans to disperse off the refuge. By 18 August the south end of the refuge was virtually dry and only seven swans could be located. On 25 August an aerial flight of the refuge revealed only five swans. One week later two dead swans were discovered along a canal near Clark's Cut. The causes of death remain unknown since the carcasses were too decomposed to allow necropsies to be performed. On 31 August two swans were reported on Meadow Creek between Blackfoot Reservoir and the refuge. A dead swan was reported on Palisades Reservoir north of the refuge on 31 August. An aerial census of the refuge and surrounding areas on 31 August revealed four swans, two on the refuge and two on Poison Creek, west of the Refuge. Counting the three dead swans, efforts from the ground and aerial observations revealed 11 of the 13 trumpeter swans released on the refuge.



A lone trumpeter swan on the north outlet channel takes advantage of the only water left on the refuge during October.  
GLR 8803, 10/88 GLR-88-NR-8

During early September six swans were using Meadow Creek five miles west of the refuge, and one was using the north outlet of Grays Lake. An aerial flight on 20 September revealed six swans on Meadow Creek and one on Little Valley Reservoir just west of the refuge. On 21 September a dead swan was found near Clark's Cut in the same area as the two dead swans were retrieved in late July. When observations were discontinued on 30 September at Grays Lake, three swans were known dead, and a fourth was reported dead at Palisades Reservoir. Six of the swans were at the north end of the refuge and one was on Little Valley Reservoir accounting for 11 of 13 swans released on the refuge.

It is highly probable that drought conditions at Grays Lake influenced the behavior and survivability of released swans. During a "normal" water year, the refuge has excellent potential for nesting trumpeter swans. The translocation program shows promise, and hopefully will be continued in the future.

#### 4. Marsh and Waterbirds

The greater sandhill crane is the most important of these species because of their role as foster parents for whooping crane eggs and young. The first cranes arrived on 23 March, about a week earlier than

the previous two years. Nesting chronology was fairly well synchronized with hatching dates of whooping crane eggs from Canada. However, some sandhill egg switching had to be done to keep selected foster parents on the nest until whooper eggs arrived. A later-hatching sandhill egg would have to be switched to an early-hatching foster parent nest in these instances.

Sandhill production was again poor this year. Age ratio counts conducted by Dr. Drewien showed a production rate of 2.9% for the Grays Lake area, the lowest in 20 years of records. Drought conditions forced many birds into marginal nesting habitat and insect shortages contributed to the low production.

Sandhills started feeding in refuge fields around late July while barley was still in the dough stage. Fall staging started early again this year and some refuge grain fields hosted concentrations of 300-400 sandhills. A peak number of about 1900 sandhills occurred in mid-September.

Sandhill migrations began around 10 September, earlier than any previous recorded date. All the whoopers and all but a handful of sandhills were gone by 29 September. This is also the earliest date for all the whoopers to have departed.

White-faced ibis numbers were slightly below last year, with a peak population of approximately 130 present in May. Ibis can normally be seen on the refuge mid-April through mid-August.

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

Franklin's gulls are by far the most numerous species in this category found on the refuge. Two nesting colonies totaling approximately 15,000 birds failed to produce any young this year due to severe drought conditions. California and ring-billed gulls are also common on the refuge, arriving in early spring before the snow has left the valley.

#### 6. Raptors

Golden eagles were again sighted on occasion throughout the year. They continue to impact young cranes and geese. Eagles take advantage of concentrated waterfowl and cranes in the fall at refuge grain fields. Sometimes their harassment alters grain feeding and tends to cause crop depredations on private lands.

A mid-winter eagle inventory was conducted on 14 January, with two adult and four unidentified goldens being sighted.

Due to harsh winters very few raptors are present, with rough-legs being the only species normally seen. During spring Swainson's became the predominant species, with redtails, northern harriers and short-eared owls being most numerous during the summer and fall.

#### 7. Other Migratory Birds

No unusual sightings or occurrences to report.

#### 8. Game Mammals

Game mammal activity is centered around Bear Island. This 489 acre island in Grays Lake marsh is controlled by the BIA and used by mule deer and moose, especially for fawning and calving each spring. Most of the refuge use is from moose feeding throughout the marsh during summer and fall months. Deer and elk normally migrate away from Grays Lake area for winter.

#### 10. Other Resident Wildlife

Due to consecutive dry years, the muskrat population has not carried over the winter well and their numbers are down considerably. We would like to see an increase in the muskrat population to help open-up the marsh which is severely choked-out, also as a result of low water levels. No public trapping is allowed on the refuge, however some trapping does occur on BIA and privately owned/controlled portions of the marsh.

#### 14. Scientific Collection

When whooping crane eggs are placed in sandhill crane nests, it is necessary to remove both sandhill eggs. This ensures that all rearing activities by foster parents are directed towards the single whooper chick. This year 10 sandhill eggs were removed by Dr. Drewien and sent to Patuxent for incubation, rearing, nutrition, breeding, disease and contaminant research.

Salvageable red fox pelts were again given to Idaho Department of Fish and Game (IDFG), as specified in our predator control agreement.

#### 15. Animal Control

Steel traps and M-44s (sodium cyanide "coyote getters") were placed adjacent to whooping crane egg transplant areas and later near locations used by summering whoopers. Dead livestock draw stations were used in winter for M-44s, snares, aerial and snowmobile gunning. Aerial hunting is used primarily during winter but also at whooper egg transplants and chick banding periods. The snowmobile gunning period was shorter than normal again this year. Warm weather after mid-March and water on top of the ice made marsh travel too risky. We made 6 helicopter gunning flights in January, February, and March. The majority of coyotes removed was by helicopter (35 coyotes, 8 foxes).

The predator removal area encompasses the refuge and a 3 mile radius outside the boundary. This includes permission on BIA, BLM, USFS and private lands. Most private landowners are cooperative, and benefit from our control program. Besides the usual safety precautions, care is

practiced in timely removal of control devices to protect livestock herd dogs and hunting dogs.

Predator control expertise is contained in the refuge staff. Des Call has many years of personal experience, and has been trained in control techniques and safety. He annually attends the ADC training meeting for procedure updates.

Table 6. Summary of predator control by refuge personnel in 1988.

31.3+-	aerial hunting hours
1090	- trap nights
740	- M-44 nights
45	- coyotes
46	- foxes
17	- badgers
25	- skunks

Accomplishments in the table above required 272 refuge staff hours, traveling 1024 miles by car and 242 miles by ORV (mostly snowmobile). Des Call is assigned predator control responsibility and contributed the bulk of the effort. Staff hours devoted to predator control were down 69% from 878 last year due in part to personnel shortages and poor snow conditions.

#### 16. Marking and Banding

No quotas were assigned to the refuge and no marking and banding activities were performed under refuge permit.

Dr. Rod Drewien banded and color marked 7 young and 14 adult sandhills in Grays Lake Valley as part of his continuing study of the greater sandhill and whooping crane cross-fostering program. Banding of whoopers is discussed in section G.2a.

H. PUBLIC USE1. General

The major attraction for refuge visitors is the whooping crane project. Groups and individuals that signed the visitor register hailed from 38 states and the District of Columbia. Canadian provinces of Manitoba, British Columbia and Quebec were represented, as were the countries of Germany, Austria, Switzerland, England, Japan and New Zealand.

Table 6. Total visits and activity hours at Grays Lake NWR, 1984-1988.

	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
Number of visits	870	880	995	1330	1826

According to our visitor register 1826 individuals visited the refuge this year, which is an increase of 37% over 1987. Word must be spreading about our new visitors center which was developed in 1987. We expect public use to increase as long as the whooping crane cross fostering program is operational.

Once again volunteer Lurae Brinkerhoff did an excellent job of assisting refuge visitors in viewing whooping cranes and explaining the cross fostering program.

6. Interpretive Exhibits/Demonstrations

A visitor center was developed as part of the office in 1987. The exhibit room can be left unlocked without compromising security for the rest of the office. Components of the exhibit contract included office building identification (see staff picture), exterior orientation panel, leaflet dispenser, 8 interior exhibits, hilltop overlook panel and permanently mounted spotting scope. Quality of the exhibits is very satisfactory and the public has been very appreciative and complimentary.

7. Other Interpretive Programs

Talks explaining the whooping crane cross-fostering program as well as viewing the cranes with a spotting scope were provided for local school and scout groups. General talks concerning refuge management and operational objectives were given to visitors.

8. Hunting

Waterfowl hunting is the only hunting permitted on the refuge. Once again the state chose a split season for duck hunting which ran 8 October - 6 November and 10 December - 7 January. The continuing decline on continental waterfowl populations dictated further reductions in bag limits. Hunters were allowed 4 ducks including not more than 3 mallards (only 1 may be a hen), 1 pintail or 2 redheads. The season on

canvasbacks was closed nationwide. Goose hunters in the Grays Lake zone were allowed to pursue the quarry from 8 October - 1 January. Grays Lake is not scheduled to become a steel shot zone until 1991.

Fortunately all the whooping cranes and sandhill cranes had migrated off the refuge prior to the opening of duck season. Low water levels reduced the duck population to less than 500 by opening day, and as a result hunting success was dismal. Freeze-up brought an end to waterfowl hunting by 1 November.

Table 7. Annual waterfowl hunting activity, 1984-1988.

	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
Number of Visits	80	50	90	75	25
Activity Hours	240	200	380	310	148



Hunter access gates were designed and constructed by Desmond Call at the Eagle Creek and Willow Creek access points. They exclude livestock.  
GLR 8812, 12/88

GLR-88-NR-9  
TJM



Hunter access gates are closed after the waterfowl hunting season.  
GLR 8813, 12/88

GLR-88-NR-10

TJM

Normally the patchwork of land ownership on the north end of the marsh makes tallying of on-refuge versus off-refuge hunting difficult. However this years poor marsh conditions forced all hunters onto the refuge. Poor habitat conditions and the resulting low duck numbers is clearly reflected in the fact that only 25 hunters were determined enough to try their luck. Their combined efforts netted 6 Canada geese, 15 mallards, 1 shoveler and 1 pintail. Two hunters traveled from Florida and another from Arizona, needless to say they were very disappointed.

#### 17. Law Enforcement

With all the whooping cranes gone by hunting season, the refuge manager was able to perform all patrol this year. When assistance is needed, an officer from the Pocatello Complex Office is available. No FWS Special Agent or IDF&G officers were seen working the refuge area this hunting season. Virtually every waterfowl hunter was checked by the refuge manager and no violations were detected.

Due to the very limited public use allowed on the refuge, and limited access points to the refuge, law enforcement activities other than during the waterfowl season are limited also. Should a violation be detected a field information report is completed and submitted to the special agent in Idaho Falls. A violation notice is then issued if

appropriate. Refuge officers may begin issuing violation notices next year. No violation notices were issued this year.

On 5 December it was discovered that a young bull moose had been shot on the refuge just a mile north of headquarters and 100 yards off the county road. The culprits left the animal where it was shot without retrieving any of the carcass. No clues or leads were available as to who was involved and the case is now closed.



This moose was illegally shot on the refuge in the Cecil Sibbett field near Grays Lake Road. No clues or leads were developed and the case is now considered closed.

GLR 8810, 12/88

GLR-88-NR-11  
TJM

All officers in the Refuge Complex attended law enforcement refresher training at the California Highway Patrol training facility near Sacramento. The alternate 6-month qualification with Service revolvers was supervised again this year by an officer/instructor from the IDF&G.

## I. EQUIPMENT AND FACILITIES

### 1. New Construction

A 14 ft. x 11 ft. concrete slab was poured to accommodate two 1,000 gallon "ConVault" above ground fuel storage tanks which will be

delivered next spring. Johnson redi-mix of Soda Springs, delivered 4 1/2 cubic yards of concrete for this project. In addition Vaughn Smith Construction of Soda Springs excavated and removed three existing underground fuel tanks (two 500 gallon and one 1,000 gallon) for \$390.00.

Approximately 800 ft. of underground power line was installed, supplying power to the grain storage bins and an old well. Power was needed at the well to supply water for whooping crane chicks. Power at the grain bins will allow us to discontinue use of a portable generator as well as convert one gasoline engine to electric used to power the grain auger. These changes will make grain transfer operations safer and quieter. All ditches were dug by force account, while Echo Electric of Thayne, Wyoming installed the powerlines and receptacles for \$1630.00.

Approximately 1/2 mile of new fence was constructed along Bridge Creek separating the north and south lakefront pastures. This fence replaces 1 1/4 mile of fence which was removed this year. The old fence had been a hazard to whooping cranes for years due to its proximity to a grain field and a small pond. An adult whooping crane collided with the old fence in late summer, resulting in a broken wing which had to be amputated. In addition, another 2 1/2 miles of no longer needed fences were removed from various locations (see attached map). Removal of these fences will reduce the hazards to wildlife as well as airboats and ATV operators.

Hunter access gates designed by Desmond Call to exclude cattle were installed at the Eagle Creek and Willow Creek access points.

### 3. Major Maintenance

Several maintenance projects were completed throughout the year.

Faded and/or shot-up boundary signs were replaced prior to the opening of the waterfowl hunting season in conjunction with posting the waterfowl hunting area.

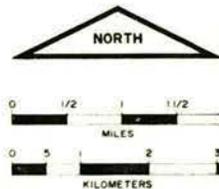
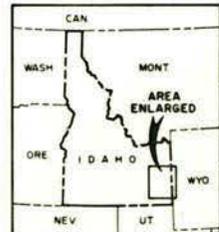
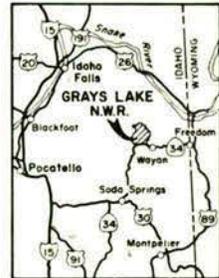
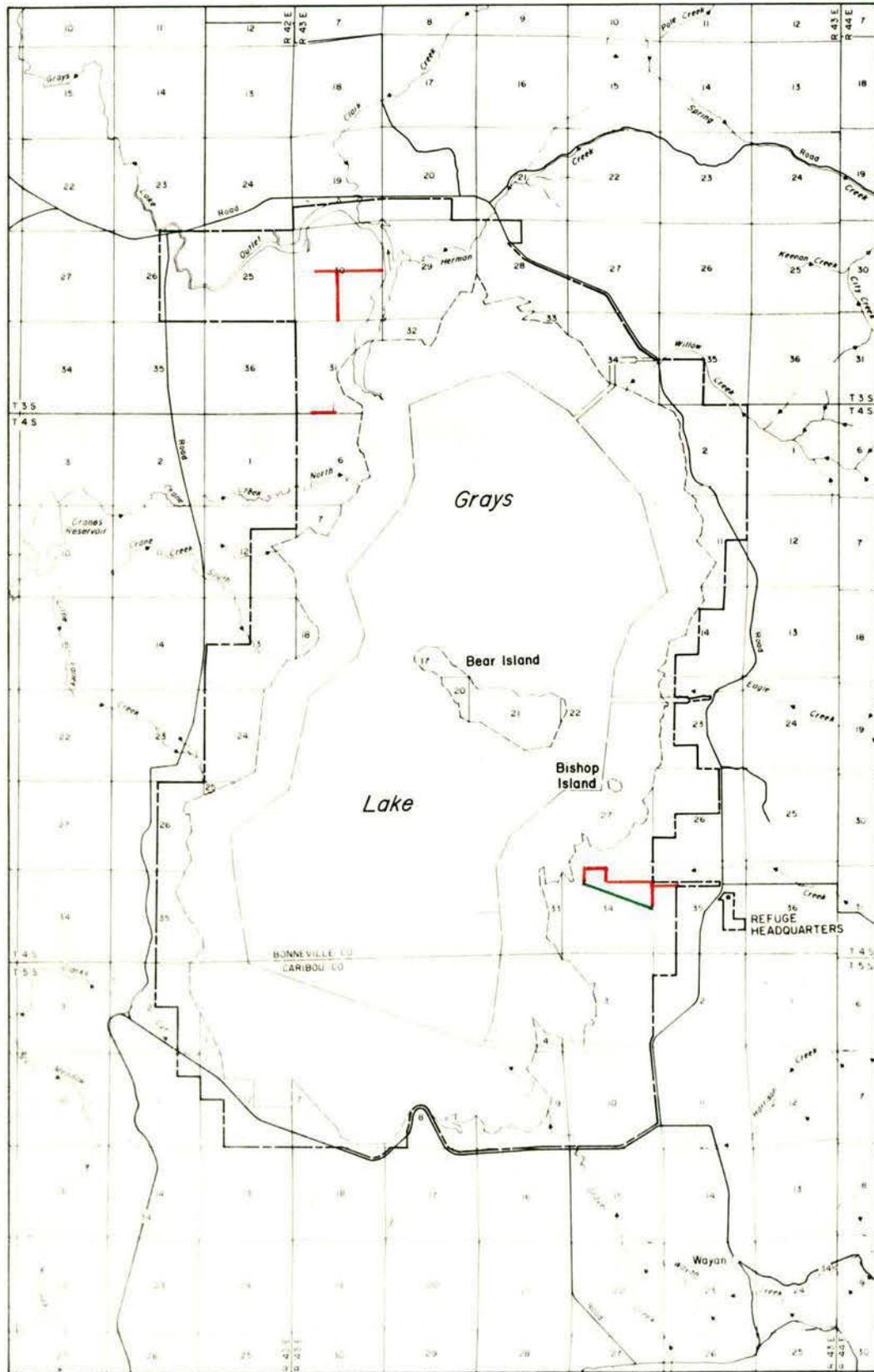
A new level-wind attachment was purchased for the PTO powered fence wire roller.

Carpets in the managers residence and headquarters/visitors center were cleaned by Christiansen Carpet Cleaning of Soda Springs. Cleaning was done during August when the refuge was without a manager.

The Hurricane Aircat airboat received a major overhaul. A new 150 hp lycoming engine was purchased and then installed by the maintenance crew. While the engine was out of the boat the hull was shipped to Bancroft, Idaho where it received a new layer of fiberglass. Later, while the boat was on loan to Camas Refuge for botulism control the prop broke loose and sheered the bolts off from the hub. The boat was delivered to the Idaho State University Vocational Tech School in Pocatello for repairs.

# GRAYS LAKE NATIONAL WILDLIFE REFUGE

BONNEVILLE AND CARIBOU COUNTIES, IDAHO  
U. S. FISH AND WILDLIFE SERVICE



LEGEND  
- - - - - Refuge Boundary  
- - - - - Meander Line  
- - - - - Approximate  
- - - - - 1964 Boundary

1988  
FENCES CONSTRUCTED  
FENCES REMOVED

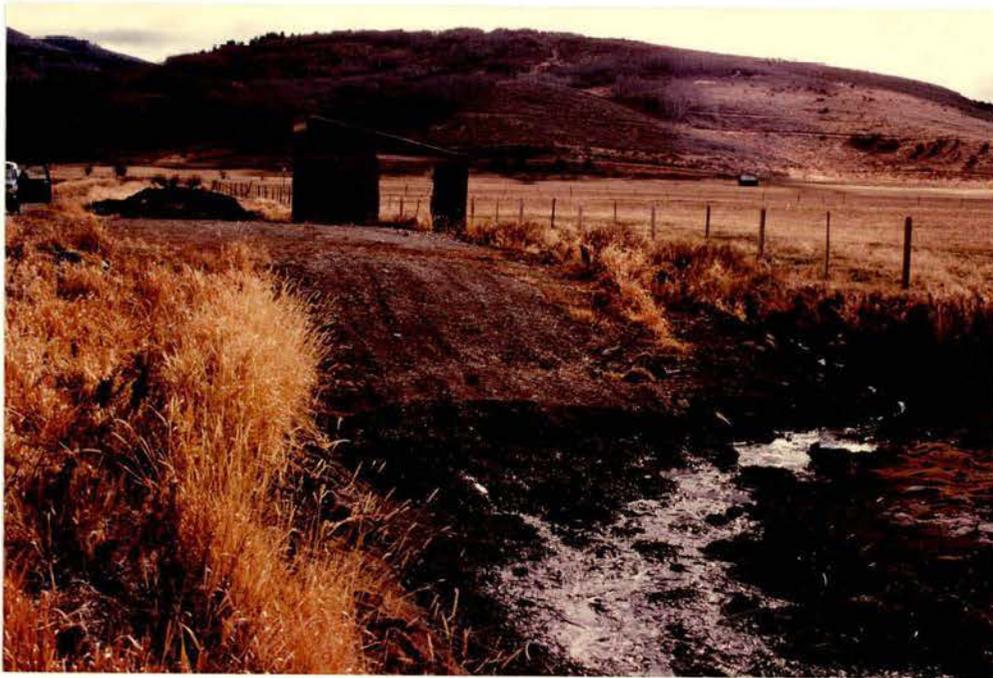
Refuge snowmobiles received general service, tune-up and minor repairs by Pincrest Power Sports in Idaho Falls.

The sewer line from the shop froze again this year, but after two hours of running the steam cleaner in the clean-out access, the problem was solved.

Lack of water in the marsh during late summer allowed us access to clean up several old dump sites which we had been aware of for several years.

Septic tanks for the headquarters/shop complex and the managers residence were pumped out by Dale Hamp of Grace, Idaho.

Approximately 6 yards of crushed pit run gravel was spread at the boat launch on Eagle Creek to improve access during whooping crane egg transplant operations.



Marsh access was improved by upgrading the Eagle Creek boat launch with a layer of crushed gravel. A small channel runs to the boathouse in background.

GLR 8802, 10/88

GLR-88-NR-13

TJM



An erosion problem has developed around support poles for the boathouse constructed in 1987. This problem will be addressed next year.  
GLR 8804, 10/88

GLR-88-NR-14  
TJM

#### 4. Equipment Utilization and Replacement

Grays Lake and Bear Lake Refuges continued to exchange use of several pieces of equipment - grain truck, farm tractor, disk, airboat and Thiokol tracked marsh vehicle. The Camas NWR airboat and IDF&G airboat were placed on standby here for the whooping crane egg transplant and follow-up work. Past experience has proven that breakdowns are inevitable at this critical season.

New equipment acquired this year included: 12 volt fuel dispensing pump for use with the 150 gallon trailer mounted fuel tank used to supply airboat fuel, and a twenty gallon spraymate weed sprayer for use on the Honda four-wheel ATV. This unit will allow us to treat areas on the refuge which are inaccessible with the 500 gallon weed sprayer.

Excess equipment sold to private individuals through the GSA sale process included a gasoline powered portable generator and a McCulloch chain saw.

#### 5. Communication Systems

Radio communications were upgraded with the purchase of two Motorola Syntor XX multi-channel programmable radios. These units allow us communication with other agencies in the area. Two General Electric Master II radios which were replaced by the new Motorolas were installed in the stake bed dump truck and the Thiokol snow machine. Neither of these vehicles previously had radio communication. IC&E of Idahos Falls performed all radio maintenance and installation.

#### 7. Energy Conservation

Two ceiling fans were purchased and installed in the maintenance shop and the managers residence. Echo Electric of Thayne, Wyoming installed both fans. Hopefully, these fans will increase the comfort of these buildings and reduce energy consumption.

### J. OTHER ITEMS

#### 1. Cooperative Programs

The mid-winter eagle inventory was conducted in cooperation with the BLM.

Weekly snow depths were reported to the Boise weather service.

The annual goose breeding pair count was flown in cooperation with IDF&G.

#### 4. Credits

Steve Bouffard wrote Section D.5.

Chuck Peck wrote Section E.5.

Tom Melanson wrote the remainder of the report.

Wendy Hall typed and edited this report. It includes data provided by Ralph Stoor, Desmond Call, Dr. Rod Drewien and the Complex Office Staff.

Photo credits are as follow:

TJM = Tom Melanson, RD = Rod Drewien, EL = Ed Loth, RH = Russ Hoffman

### K. FEEDBACK

Nothing to Report.

### L. INFORMATION PACKET (attached to back cover)

