

NINEPIPE NATIONAL WILDLIFE REFUGE

Charlo, Montana

ANNUAL NARRATIVE REPORT

Calendar Year 1993

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

F. HABITAT MANAGEMENT

1. General

Management at Ninepipe requires close coordination with the Confederated Salish and Kootenai Tribes (CS&KT), who own the land, and the BIA Flathead Irrigation Project (FIP), who control water levels in the reservoir.

2. Wetlands

Warm weather and below average precipitation in the last half of 1992 resulted in low water levels in the reservoir as the year began. It was 9-10 feet below full pool until the end of April. Snowpack was below average and spring runoff was not enough to recharge the reservoir, and the level was still over 4 feet below full pool at the end of May. Spring water levels were too low to protect nesting islands, and the majority of islands could be accessed by foot.

Cool wet weather in the summer reduced irrigation water demand and allowed filling of the reservoir by the end of June, a time when it is normally on the way down due to irrigation use. Level going into winter, at only 3 feet below full pool, was the best seen in years.

The 4-acre wetland restored on the north 80 in 1992 was filled this spring and provided excellent duck habitat.

5. Grasslands

The refuge supports 390 acres of uplands in a narrow band around the reservoir. This area is dominated by introduced cool-season grasses, but there are some areas where native grasses are recovering. Grass growth was excellent this year due to above average summer rainfall and residual cover should be in good shape for 1994.

6. Other Habitats

The DNC on two islands constructed by Duck's Unlimited in 1987 continued to show improvement this year. The wild rose and snowberry plots planted in 1988 were well established and no cultivation has been required on them since 1990.



Refuge volunteer Lucy O'Brian assisted in searching for duck nests in the DNC cover on the Ducks Unlimited Islands at Ninepipe. LC-7/93.

7. Grazing

Upland Unit 1 was grazed from May 15 to June 15 under the deferred rotational system worked out with CS&KT and covered by MOA. The Tribal permittee used the authorized 100 AUM's, and the Unit will be rested the next 3 years.

10. Pest Control

Whitetop continued as the main problem weed at Ninepipe. There were 19 acres of whitetop, inaccessible to the mower, sprayed with 2,4 D and 20 acres were mowed to prevent seed set.

There was no mowing of Canada thistle this year, as thistle plants were weakened by damage from activity of the stem mining weevil introduced in 1988. This weevil has spread to nearly all thistle stands in the Pablo/Ninepipe/Bison Range area.



Leafy spurge is one of the few noxious weeds not found on Service lands in the Complex. However, it is getting close, as shown by this small patch found along the County Road adjacent to the refuge. This patch was eliminated and hopefully won't survive. Courtesy of John Grant, MT FWP.

In other biological control efforts, we released 100 flower head weevils (Larinus planus) to aid further in control of Canada thistle.

The highlight in pest control was establishment of a nursery in a wetland at the north end of the refuge where Rachael Sykes, a former Bison Range YCC enrollee, was hired through the Lake County Purple Loosestrife Committee to care for loosestrife leaf eating beetles (Galerucella sp.). We believe this is the first refuge in the nation to employ a technician specifically to foster biological weed controls. The insects did well and are expected to overwinter, and hopefully increase for spread to loosestrife infestations throughout the County. Rachael returned to college in the fall at MSU and was working part-time at the USDA-ARS insect lab there.



Rachael Sykes, an employee of the Lake County Weed Board working out of the National Bison Range office is shown at the Ninepipe nursery set up to care for and monitor the purple loosestrife leaf eating beetles. BW-7/93



A Galerucella beetle for control of purple loosestrife. BW-5/93.

G. Wildlife

1. Wildlife Diversity

The excellent bird diversity at Ninepipe has increased with white pelicans showing up during summer for the past few years. In further efforts to increase diversity, a nesting platform was erected for ospreys at the south end of the refuge. A pair of ospreys visited the platform during the summer, and it is hoped they will nest in 1994.

2. Endangered and Threatened Species

Bald eagles and peregrine falcons were seen occasionally on Ninepipe Reservoir. Bald eagles were more common in the winter with 21 counted on the Christmas Bird Count of the Ninepipe area. A few eagles were observed during other times of the year but there has been no attempt to nest on the refuge since 1988.

3. Waterfowl

Ducks

The pair count was conducted on May 25, with 539 pairs counted on the main reservoir and another 27 pairs on the Scoonover DU impoundment for a total of 566 pairs. The count was down 14% from 1992.

Duck production estimates were based on three calculations: 1.) a 56% hen success derived from ongoing nesting studies on State land adjacent to the refuge. This was down from the 65% found last year. 2.) an average brood size of 4.0 from the 67 broods tallied in the July brood sample at Ninepipe and nearby WPA's, down from the 5.0 used last year. 3.) an estimated 70% survival of young from the sample count to flight stage. Due to the decrease in the breeding population and productivity, calculated production was down 40% from 1992.

Duck nesting on the DU islands was up somewhat from 1992, but still disappointing due to the low reservoir levels during the nesting season. There were 17 nests found on the west island and 7 nests found on the east island this year. Apparent nest success was 50%. Two of the nests were flooded when the reservoir rose late in the nesting season.

Table 2. 1993 Duck breeding pair counts and production estimates for Ninepipe NWR.

Species	Number of Breeding Pairs	Estimated Production
Main Reservoir		
Mallard	202	317
Gadwall	90	141
Redhead	51	80
Shoveler	31	49
Cinnamon Teal	88	138
Blue-winged Teal	15	24
Green-winged Teal	10	16
Lesser Scaup	10	16
Wigeon	16	25
Ring-necked Duck	1	2
Ruddy Duck	2	3
Pintail	12	19
Wood Duck	1	2
Sub-total	539	845
Scoonover Unit		
Mallard	6	9
Cinnamon Teal	1	2
Redhead	8	13
Ruddy Duck	3	5
Gadwall	4	6
Wigeon	1	2
Lesser Scaup	1	2
Hooded Merganser	1	2
Ring-neck Duck	1	2
Shoveler	1	2
Sub-total	27	42
Total	566	887

Duck banding in cooperation with MTCWRU, MTFWP and CSKT included an attempt at catching ducks by nightlighting at Ninepipe. Less than 50 ducks were banded in 2 nights of work. A complete report on cooperative banding in the area is found in the Wetland District Narrative Report.

The refuge was used heavily by migrating waterfowl until it froze over in late November. Approximately 15,130 ducks were counted on the pre-season waterfowl count on September 29.

Table 3. Comparison of pre-hunting season waterfowl numbers in 1989-93 aerial census at Ninepipe NWR.

Species	Number Observed				
	1989	1990	1991	1992	1993
Canada Goose	952	1,560	1,868	1,225	840
Mallard	80	3,500	1,525	1,730	2,300
Gadwall	905	2,000	1,220	2,125	300
Pintail	105	1,500	70	250	---
BW/Cinn. teal	50	500	---	---	---
Green-winged teal	1,030	4,000	2,990	300	410
Wigeon	3,450	13,500	14,250	6,500	1,600
Shoveler	---	3,000	200	130	---
Ring-necked duck	---	---	---	500	300
Lesser Scaup	50	---	---	---	---
Redhead	8,200	1,500	200	1,525	10,100
Canvasback	550	50	---	15	110
Ruddy duck	400	100	---	25	---
Wood duck	---	20	---	---	10
Total Ducks	14,820	29,670	20,455	13,075	15,130
American Coot	7,550	11,000	9,500	9,300	5,000

Geese

A total of 75 pairs of Canada geese were counted on Ninepipe during the valley-wide breeding pair census in April. This number was down from 81 pairs in 1992. The decrease in pairs at Ninepipe was likely due to low spring water levels in the reservoir. The aerial goose brood count conducted in June tallied 117 goslings on Ninepipe, a decrease from the 177 counted in 1992. Although goose production was down at Ninepipe, the valley-wide brood count was the highest ever, with 1,863 young recorded.

A fall population of 840 Canada geese was recorded during the pre-hunting season aerial survey on September 29th for a decrease of 31% from the 1992 count.

4. Marsh and Water Birds

Ninepipe NWR supports the largest double-crested cormorant colony west of the continental divide in Montana. Outdoor Recreation Planner Bishop has studied the Ninepipe cormorant colony since its inception in 1974, and again counted cormorant and great blue heron nests and young.

Cormorant production nearly identical to 1992, with 109 nests active and 239 young recorded for 2.17 young per nest. The number of nests and the total number of young produced were both above the ten-year average of 97 and 221 respectively, however, the number of young per nest was below the 10-year average of 2.28.

The number of great blue herons nesting on Ninepipe increased this year after a few years of decline. There were 52 nests producing 109 young compared to 33 nests and 67 young in 1992.

American coots are usually common, but none were counted on the main reservoir in the spring due to low water. There were 5,000 tallied on the aerial waterfowl survey on September 29th.

White pelicans continued their summer visits. There were 8 pelicans recorded during the duck pair count in late May and 18 seen during the brood count in late July.



White pelicans again made their summer visit to Ninepipe NWR. LC-7/93

Western grebes decreased this year due to low water, with 80 recorded in late May compared to 191 in 1992. Although nesting was late, some production of young was evidenced by young seen in late July. Other grebe sightings included 2 red-necked grebes counted on the duck pair count and 1 seen carrying a chick during the brood count.

A single sandhill crane was seen flying over the south end of the refuge on July 1. American bitterns were heard calling at 2 locations on the refuge the same day.

5. Shorebirds, Gulls, Terns and Allied Species

Shorebird use was practically non-existent this year due to high water levels late in the summer when the mudflats that normally attract large numbers were lacking.

There were no counts made of nesting gulls made this year. However, general observations indicated spring nesting populations were about the same as 1992 when 2,566 ring-billed gull nests and 547 California gull nests were documented on islands in the west end of the reservoir. Many of this year's nests were established below the high water mark in the spring and were subsequently flooded when the reservoir filled in July. Consequently, production of young was estimated down at least 50% from 1992. The total number of gull nests has decreased since 1989, and a further decrease is expected in 1994.

Terns were absent from Ninepipe for a number of years, but have recently returned and some nesting has occurred. This year, 2 adult and 2 young Caspian terns were observed on one of the islands in late July. There were also 14 black terns counted at that time.

6. Raptors

American kestrels, northern harriers, red-tailed hawks and great horned owls were the most commonly observed raptors on the refuge during spring, summer and early fall. Rough-legged hawks were most commonly observed during late fall, winter and early spring migration.

In March, 2 immature golden eagles were seen feeding on pheasants.

Raptors encountered on the Christmas Bird Count in and around Ninepipe included 21 bald eagles, 226 rough-legged hawks and 1 gyrfalcon.

10. Other Resident Wildlife

Ring-necked pheasant populations were down in and around Ninepipe this year, but pheasants were still abundant.

11. Fisheries

The Ninepipe fishery is managed by the Confederated Salish and Kootenai Tribes. The primary fishery is largemouth bass which were introduced in 1932. Pumpkinseed sunfish were introduced in 1926 and yellow perch were introduced in 1931.

Studies completed by the Tribes indicate that bass numbers are related to water levels and stability during spawning. The water level this year likely came up too late for a good spawning year.

H. PUBLIC USE

1. General

Visitation for Ninepipe was estimated at about 8,300. Fishing has historically comprised most public use at Ninepipe but wildlife viewing has been increasing steadily in western Montana and for the last several years birders have outnumbered fishermen.

Table 3. Public use showing estimated visitors/hours at Ninepipe NWR for 1985 through 1993.

Year	Fishing	Wildlife Observation	Education	Totals
1985	3,600/10,200	4,700/6,000	450/1,900	8,750/18,100
1986	2,600/ 8,000	2,500/4,000	400/1,500	5,500/13,500
1987	3,500/13,000	2,900/4,700	200/ 750	6,600/18,450
1988	2,000/ 6,000	1,400/2,000	500/ 900	3,900/ 8,900
1989	2,600/ 7,800	2,300/3,000	250/ 550	5,050/11,400
1990	2,200/ 6,800	3,000/4,000	200/ 500	5,400/11,300
1991	3,100/ 9,300	3,500/7,000	300/ 900	6,900/16,200
1992	3,000/ 7,500	4,200/7,500	350/1,000	7,500/16,000
1993	3,500/ 8,800	4,500/8,100	300/ 800	8,300/17,700

Visitors viewing wildlife from U.S. Highway 93 and paved County Highway 212 have not been incorporated in the above visitation estimates even though both these highways actually pass through the refuge. Only those visitors traveling out into the refuge to fish or birdwatch at parking sites along these highways have been

included. Montana Highway Department traffic counters determined that approximately 2,226,500 cars traveled these two roads in 1993. The average daily travel during the summer season was 9,600 vehicles and the year-long average was 6,100 vehicles a day.

To better serve this transient public a cooperative viewing area was completed, except for interpretive displays, this year on State, Federal and Tribal lands near Highway 93. This fully accessible site with interpretive displays, parking, a nature trail and restrooms, has been planned as a cooperative project by the Service, CS&KT and Montana Department of Fish, Wildlife & Parks. Montana FWP funded most of the project and issued a \$50,000 contract for the work. The Service previously put in a paved wildlife viewing trail to a prime viewing site on the Refuge using Challenge Grant funding. Malcolm, Bishop and West have met with State and Tribal personnel on several occasions to discuss layout and interpretive plans. The Tribal Council agreed to waive the requirement for a Tribal Recreation Permit for non-consumptive use at this specific site. A significant increase in visitor use is expected once the project is fully operational.

2. Outdoor Classrooms - Students

Registered school groups that engaged in educational activities at Ninepipe totalled 300 students and teachers. They spent approximately 800 hours observing bird life or doing other wetland learning projects. Two University groups and two high school honors ornithology classes did extended observations on the refuge and additional unscheduled schools and University classes also used Ninepipe for field trips. Wetland and bird folders from our Education Resource Library continued as popular loan items for spring and fall field trip preparations.

3. Outdoor Classrooms - Teachers

Teacher use is included in the summary above.

6. Interpretive Exhibits\Demonstrations

A kiosk, with changeable panels, located at a good viewing area just off Highway 93, presented a seasonal interpretive message to visitors who pulled off the highway there. Fishing regulations, maps and bird lists were stocked at entrance points in season.

Wildlife Viewing Area signs, with the nationally recognized binocular logo associated with the new Wildlife Viewing Guides, were placed at all entrance points to the refuge.

8. Hunting

Ninepipe was closed to all hunting. The refuge and its waterfowl production contributed to the quality of hunting on surrounding State, Tribal and private lands and provided a much needed sanctuary for feeding and resting waterfowl during hunting season and for the balance of the year.

The refuge also provided an important core of winter cover and sanctuary for ring-necked pheasants. Good pheasant and gray partridge populations occurred on and near the refuge. Pheasant hunting was the most popular hunting pursuit on surrounding lands, with over 200 vehicles counted in the area around Ninepipe on opening day.

9. Fishing

Fishing has been one of the major visitor attractions at Ninepipe for a number of years. The entire refuge was open to ice fishing early in the year. On March 1, most of the shoreline was closed to fishing for the waterfowl nesting season. The reservoir had nearly filled by the time the entire refuge reopened on July 15, and fishing was good from then until the refuge was closed for waterfowl hunting season. Bass were the primary species taken.

11. Wildlife Observation

Bird watching has become even more popular at Ninepipe and birders topped fishermen in numbers again this year. The active tourist promotion in western Montana plus a general upward trend in eco-tourism has had a corresponding increase in visitors to our refuges. Audubon Clubs as well as individual birders and university groups used the area regularly.

The Flathead Audubon Chapter conducted the annual Christmas Count which centers on Ninepipe. Dan Casey of MDFWP was the leader with Jim Rogers continuing as compiler. There were 14 participants and they recorded 54 species of birds in the 15 mile count circle, even though the reservoir was completely frozen over.

12. Other Wildlife Oriented Recreation

The refuge was a popular spot for photographers, both amateur and professional, because of its easy accessibility from two highways. Pull-outs along Highway 93 were also favorite spots for sunset photos across the refuge.

14. Picnicking

Due to continued problems with vandalism, the covered shelter and fireplace on the west side of the refuge was removed.

17. Law Enforcement

Refuge Officers from the National Bison Range and Tribal wardens from the Salish and Kootenai Tribes patrolled Ninepipe throughout the year as time permitted. Tribal Wardens were active during the fishing season with Bison Range staff patrolling during waterfowl and pheasant season.

No violation notices were issued by refuge personnel this year, but 3 citations were turned over to the State Warden for violations occurring on surrounding lands. For more information on law enforcement see the narrative reports for the National Bison Range and Northwest Montana Wetland Management District.

18. Cooperating Associations

A number of wetland and waterfowl-oriented publications which are applicable to this area, including the Montana Watchable Wildlife Viewing Guide are sold through the Glacier Natural History Association book outlet in the Visitor Center at the National Bison Range.

I. EQUIPMENT AND FACILITIES

1. New Construction

Materials were purchased for a wood rail fence to be installed on a portion of the refuge boundary at the new Cooperative Wildlife Viewing Site on the east edge of the refuge. The fence will be installed in 1994 as part of the Service share in cost of the project.

3. Maintenance

Maintenance this year was limited to repainting a few recognition signs, periodic clean-up of litter at access points and seasonal changing of interpretive panels at the Highway 93 kiosk.

J. OTHER ITEMS

1. Cooperative Programs

We cooperated with CS&KT in management of Ninepipe by discussing and coordinating their fisheries survey and management activities with wildlife refuge purposes, and also in the management of grazing. Another program was planning for the Cooperative Wildlife Viewing site with the Tribes and Montana FWP.

4. Credits

Lynn Clark - Did most of the biological work and provided information.

Marcy Bishop - Provided some of the public use information.
Jon Malcolm - Wrote the report.
Joan Krantz - Final word processing and assembly.

K. FEEDBACK

See Narrative Report for the National Bison Range.

A. HIGHLIGHTS

A 4-acre wetland restored by refuge personnel in 1992 was filled in the spring (Section F-2).

Reservoir water levels for the spring nesting season were the poorest in over a decade, but the reservoir filled in summer and levels at year's end were as good as ever seen (Section F-2).

Canada thistle plants were stressed by continued stem damage from larvae of a stem mining weevil introduced in 1988 and another new insect species was introduced to help in thistle control. A nursery for introduction of a purple loosestrife leaf eating beetles was established on the refuge (Section F-10).

The unusual summer rise in water levels flooded many gull nests around islands in the reservoir, reducing gull production by at least 50% (Section G-5).

Construction of a Cooperative Wildlife Viewing Site at Ninepipe was completed except for interpretive displays (Section H-1).

B. CLIMATIC CONDITIONS

Ninepipe is only 6 air miles from headquarters of the National Bison Range. Details on this year's weather conditions are in the Bison Range Narrative.

E. ADMINISTRATION

1. Personnel

Ninepipe NWR is administered from the National Bison Range. Administrative information appears in the Bison Range Narrative.

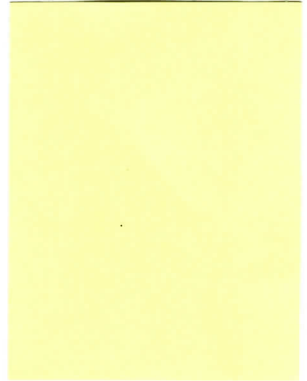
4. Volunteer Program

A major project in the valley has been control of the purple loosestrife (Lythrum salicaria). The Flathead Audubon Chapter did a volunteer hand digging control project on adjacent State lands that helped protect the refuge from loosestrife invasion. The 20 Audubon members put in 89 volunteer hours on the project.

Fourteen members of the Flathead Audubon Chapter also completed the annual Christmas Bird Count for the 15-mile count circle centered on Ninepipe, putting in 42 volunteer hours and driving 296 miles.

PABLO NATIONAL WILDLIFE REFUGE

PABLO, Montana



ANNUAL NARRATIVE REPORT

Calendar Year 1993

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

REVIEWS AND APPROVALS

PABLO NATIONAL WILDLIFE REFUGE

PABLO, Montana

ANNUAL NARRATIVE REPORT

Calendar Year 1993

Jon Malcolm 2/4/94
Refuge Manager Date Refuge Supervisor Review Date

Regional Office Approval	Date
--------------------------	------

INTRODUCTION

Pablo National Wildlife Refuge is located on the Flathead Indian Reservation two miles northwest of Pablo, Montana, and approximately 18 miles north of the National Bison Range. It is a 2,542 acre "easement" waterfowl refuge administered by National Bison Range personnel.

The refuge is located on lands of the Confederated Salish and Kootenai Tribes. Lands within the refuge boundary were first withdrawn for an irrigation reservoir as part of the Flathead Project in 1910. The wildlife refuge was established by Executive Order on the same withdrawal in 1921, subject to reservoir uses. A 1948 Act of Congress reimbursed the Tribes \$400,000 for all past and future uses of certain reservation lands for physical works and facilities of the Flathead Project irrigation and power systems, and for wildlife refuges (Ninepipe and Pablo NWR's). The payment included \$68,712 for the easement at Pablo Refuge.

The 1948 Act also stated that the Tribes "shall have the right to use such Tribal lands, and to grant leases or concessions thereon, for any and all purposes not inconsistent with such permanent easement." The phrase "not inconsistent with such permanent easement" has been the subject of considerable controversy, correspondence and negotiation over the years, but FWS has been able to exert some influence on management of the refuge for waterfowl purposes.

The reservoir contains 1,850 acres at full pool. The only FWS control of water levels comes through cooperation with the BIA Flathead Irrigation Project. In the case of conflicts, wildlife is a secondary use to irrigation because of wording in the 1921 Executive Order.

The 692 acres of upland surrounding the reservoir within the refuge is used by Tribal members for farming and grazing under permits issued by the BIA. FWS attempts to provide for wildlife habitat on these areas through Memorandums of Understanding with the BIA and Tribes.

Approximately 600 acres of adjoining State Game Management Area lands add to the overall wildlife values of the Pablo complex.

TABLE OF CONTENTS

	<u>Page</u>
A. <u>HIGHLIGHTS</u>	1
B. <u>CLIMATIC CONDITIONS</u>	1
C. <u>LAND ACQUISITION</u>	
1. Fee Title..Nothing to report.....	
2. Easements..Nothing to report.....	
3. Other..Nothing to report.....	
D. <u>PLANNING</u>	
1. Master Plan..Nothing to report.....	
2. Management Plan.....	2
3. Public Participation..Nothing to report.....	
4. Compliance With Environmental and Cultural Resource Mandates...Nothing to report.....	
5. Research and Investigations.....	2
6. Other..Nothing to report.....	
E. <u>ADMINISTRATION</u>	
1. Personnel.....	2
2. Youth Programs..Nothing to report.....	
3. Manpower Programs..Nothing to report.....	
4. Volunteer Program.....	2
5. Funding..Nothing to report.....	
6. Safety..Nothing to report.....	
7. Technical Assistance..Nothing to report.....	
8. Other..Nothing to report.....	
F. <u>HABITAT MANAGEMENT</u>	
1. General..Nothing to report.....	
2. Wetlands.....	2
3. Forests..Nothing to report.....	
4. Croplands.....	3
5. Grasslands.....	4
6. Other Habitats..Nothing to report.....	
7. Grazing.....	4
8. Haying.....	4
9. Fire Management..Nothing to report.....	
10. Pest Control.....	4
11. Water Rights..Nothing to report.....	

INDEX (cont.)

Page

- 12. Wilderness and Special Areas..Nothing to report..
- 13. WPA Easement Monitoring..Nothing to report.....

G. WILDLIFE

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

H. PUBLIC USE

1. General.....	9
2. Outdoor Classrooms - Student..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..Ntr.....	
7. Other Interpretive Programs..Nothing to report...	
8. Hunting.....	9
9. Fishing.....	9
10. Trapping..Nothing to report.....	
11. Wildlife Observation.....	9
12. Other Wildlife Oriented Recreation..Ntr.....	
13. Camping..Nothing to report.....	
14. Picnicking..Nothing to report.....	
15. Off-Road Vehicling..Nothing to report.....	
16. Other Non-Wildlife Oriented Recreation..Ntr.....	
17. Law Enforcement.....	9
18. Cooperating Associations..Nothing to report.....	
19. Concessions..Nothing to report.....	

INDEX (cont.)

Page

I. EQUIPMENT AND FACILITIES

1. New Construction..Nothing to report.....	
2. Rehabilitation.....	9
3. Major Maintenance..Nothing to report.....	
4. Equipment Utilization and Replacement..NTR.....	
5. Communications Systems..Nothing to report.....	
6. Computer Systems..Nothing to report.....	
7. Energy Conservation..Nothing to report.....	
8. Other..Nothing to report.....	

J. OTHER ITEMS

1. Cooperative Programs..Nothing to report.....	
2. Other Economic Uses..Nothing to report.....	
3. Items of Interest..Nothing to report.....	
4. Credits.....	10

K. FEEDBACK 10

Information Packet.....(Inside back cover)

A. HIGHLIGHTS

The Memorandum of Understanding negotiated in 1992 with the Confederated Salish and Kootenai Tribes Lands Division and Tribal permittee covering farming on the refuge remained unsigned (Section D-2).

Tribal Safety of Dams personnel issued a contract for repairs to Pablo Dam, and repair work began in August (Section I-2).

Research continued to demonstrate that predation is a major limiting factor for ducks and other ground nesting birds at Pablo (Section D-5).

Ducks Unlimited subimpoundments on the west side of the reservoir were again filled early in the spring, providing 225 acres of excellent habitat for waterfowl and other marsh and water birds (Section F-2).

The second cutting of alfalfa hay was left standing in 1992 on 114 acres adjacent to the DU Units, providing residual cover for ground nesting birds in the spring of 1993. The second cutting of hay was left on 121 acres in the fall (Section F-4).

The bald eagle nest in the southwestern part of the refuge was active and successful again this year (Section G-2).

The breeding population of ducks was down 34% from 1992 and estimated duck production was down 41%. Production of Canada geese was up 31% from last year (Section G-3).

Pablo continued as one of 3 key migration use areas for common loons in Montana (Section G-4).

B. CLIMATIC CONDITIONS

Weather conditions at Pablo were similar to those for the National Bison Range which are covered in the NBR Narrative Report. Information from the Polson Kerr Dam weather station about 3 miles from Pablo usually shows that precipitation at Pablo averages about 20% higher than at NBR.

D. PLANNING

2. Management Plan

The Memorandum of Understanding with the Tribes for farming activities on the refuge ended at the close of 1991, and a new 5-year MOU was negotiated and drafted in 1992. However, it was not signed by the Tribes and talks will continue in 1994.

5. Research and Investigations

Nest Success of Upland Nesting Ducks in Relation to Predator Removal - Kurt Foreman, Montana Cooperative Wildlife Research Unit.

Duck nesting at Pablo was again monitored as a non-removal area in this study. Nest searches were made 3 times on 246 acres of nesting habitat at Pablo using a cable-chain drag. Mayfield nest success this year was 23%, again significantly lower than the 47% found in skunk removal area in the Ninepipe vicinity.

E. ADMINISTRATION

Pablo NWR is administered from the National Bison Range, and most administrative information is covered in the Bison Range Narrative Report.

4. Volunteer Program

Lynn Kelly of the North American Loon Fund provided loon information as a result of approximately 18 hours monitoring loons on the refuge during the fall months (See Section G-4).

F. HABITAT MANAGEMENT

2. Wetlands

DU Units again entered the year at near FSL. They were topped off in April when runoff and pumping by FIP brought the level up to 3210, and excess was passed through to the main reservoir. Thus, the DU projects again provided about 225 acres of excellent habitat for breeding birds. The units also provided excellent brood habitat throughout the summer and were maintained at full pool until late fall.

As usual, DU Unit 1 was drained late in the fall by FIP. The structure between Units 1 and 2 was closed prior to that so that Units 2-4 could be held at FSL going into winter.

Water levels in the main Pablo Reservoir were dependent on runoff, pumping operations by FIP and irrigation use throughout the summer. Main reservoir levels for the year are listed in Table 1.

Table 1. Month-end water levels of the main reservoir at Pablo NWR in 1993.

Month	Water Level (MSL)
January	3200.5
February	3200.5
March	3200.5
April	3200.6
May	3202.9
June	3209.5
July	3209.3
August	3196.8
September	3192.1
October	3192.9
November	3193.0
December	3193.0

Note that the reservoir level was 8-10 ft. below full pool of 3210 during the spring, never reached full pool and was 12 ft. below full pool at year's end. The draw down of over 13 feet during August was not necessarily due to irrigation demand, but to accommodate dam repairs under the Safety of Dams program.

4. Croplands

There were 114 acres of residual alfalfa nesting cover available adjacent to DU marsh habitat units this year under terms of the Memorandum of Understanding between the Service, BIA and Confederated Salish and Kootenai Tribes (CS&KT). The agreement calls for the Tribal permittee to leave food or cover on approximately 30% of the refuge croplands.

The remaining 283 acres of refuge cropland were used by Tribal farming lessees for production of wheat and alfalfa hay. The MOU on refuge farming terminated at the end of the 1991, was renegotiated with the permittee and Tribal Lands Division in 1992, but has not been signed by the Tribes to date.

5. Grasslands

There are approximately 185 acres of grasslands within the fenced boundary of the refuge. This area is dominated by the cool-season species Kentucky bluegrass and quackgrass, interspersed with brushy patches of rosebush and snowberry, along with stands of planted caragana and Russian olive. Moisture this year was adequate for good grass growth.

7. Grazing

One Tribal grazing permittee, under a permit issued through CS&K Tribes, used the refuge grasslands for cattle grazing from May 15 through September 16, using 400 AUM's. At our request, the cattle were turned into the northeastern part of the refuge early in the season. Grazing on the western part of the area, adjacent to the DU marsh units, was deferred until after the duck nesting season. Cattle also grazed the receding reservoir mudflats as fresh new growth became available.

Despite removal of over 100 acres of grazing area for the establishment of alfalfa nesting cover mentioned above, there was still plenty of grass to accommodate the grazing permit. There were still some areas where grass utilization was light, and it continues to appear the grassland will not suffer from our previous commitment to maintain the grazing permit at 400 AUM's in return for removal of the cover areas from grazing.

However, the annual, season-long grazing situation needs to be changed so that there is more undisturbed residual cover for nesting birds. There may be possibilities for some deferment in the future, but this idea is still in the talking stage.

8. Haying

The Tribal farming permittee took one cutting of alfalfa from 6 cover blocks totalling 121 acres. The second cutting on these tracts and was left standing to provide residual nesting cover next spring.

10. Pest Control

Refuge personnel ground sprayed approximately 10 acres on the main dike slopes and in patches below the dike with 2,4-D for control of whitetop, knapweed and goatweed. Biological control efforts included release of 150 stem and root mining moths (Agapeta zoegana) and 55 root boring weevils (Cyphocleonus achates) to help in control of spotted knapweed.

G. WILDLIFE

1. Wildlife Diversity

The new DU impoundments at Pablo, along with the nesting cover blocks, have helped to increase wildlife diversity. The impoundments have helped to increase the food base for bald eagles, great blue herons and double-crested cormorants. A number of other species of marsh and water birds have also benefitted. The upland cover patches developed under the farming MOU also provided additional habitat for such birds as short-eared owls, northern harriers, ring-necked pheasants and a number of other ground nesting species. However, predator control, which is being considered for 1994, is needed to attain a higher level of biodiversity.

Low water levels on the main reservoir created excellent shorebird habitat during the spring. Several shelterbelts and small tree/brush thickets provided habitat for a variety of songbirds.

2. Endangered and/or Threatened Species

Bald eagles were observed occasionally during the winter and early spring. The bald eagle nest in a cottonwood tree on the west side of the main reservoir was occupied for the fourth year in a row after being vacant for 2 years. The nest was successful, with 2 young eagles fledged. Bald eagles continued to use the refuge into the fall and early winter.

3. Waterfowl

Ducks

The breeding population of ducks decreased this year. The number of breeding pairs, shown in Table 2, was down 34% from 1992. Low water in the main reservoir was likely the reason for part of the decrease. In addition, the count may have been somewhat late and pairs may have been more scattered due to improved wetland conditions in the surrounding area.

As reported in Section D-5, nesting success remained low at 23% Mayfield. This translated to a 40% hen success, which was used in the calculation of production estimates. The calculations included an average brood size of 4.5 in 25 broods seen in the July brood index count. A brood survival rate of 70% from hatching to flight stage was also assumed. The calculated production estimate was down 41% from 1992.

Table 2. 1993 duck breeding pair counts and production estimates for Pablo NWR.

Species	Number of Breeding Pairs	Estimated Production
Main Reservoir		
Mallard	116	146
Pintail	10	13
Blue-winged Teal	8	10
Cinnamon Teal	21	26
Green-winged Teal	1	1
Shoveler	7	9
Gadwall	28	35
Redhead	7	9
Common Merganser	4	5
Wood Duck	1	1
Ruddy Duck	1	1
Subtotal	204	257
Ducks Unlimited Units		
Mallard	77	97
Pintail	7	9
Blue-winged Teal	8	10
Cinnamon Teal	33	42
Shoveler	16	20
Gadwall	10	13
Wigeon	1	1
Redhead	12	15
Canvasback	6	8
Ring-necked Duck	11	14
Wood Duck	6	8
Bufflehead	2	3
Green-winged Teal	1	1
Subtotal	190	239
Total	394	496

There were 10,895 ducks tallied on this year's late September aerial waterfowl census, down from the 25,000 recorded at the same time last year. This decrease on one of the area's major staging sites was attributed to decreased production in the general area. This year's September count included 2,960 redheads and 3,710 mallards.

Geese

An aerial goose breeding pair census on April 15 revealed 57 indicated breeding pairs of Canada geese, along with 43 non-breeding birds. The pair count was up from 45 recorded last year. The 26 elevated nesting structures available were not checked this year, but general observations indicated that nearly all of them were used.

There were 187 young geese counted in the June aerial brood census, up some from the 139 counted last year, and the highest count made in the past 16 years.

There were 1,760 Canada geese recorded on the September 29 aerial census, compared to 1,210 the previous September.

There were 2 Ross' geese seen on the main reservoir in May.

4. Marsh and Water Birds

Pablo, along with Canyon Ferry Reservoir and Ennis Lake, continued as one of the key migration areas for common loons in Montana. There were 7 adult loons recorded during the late July duck brood index count.

American coots are usually common throughout the ice-free period, but only 13 were counted during the duck pair count in May. There were 2,750 counted during the staging period on 9/30.

Great blue herons nested in cottonwood trees on the west side of the main reservoir, and also in a tree on the lone island in the main reservoir. Marcy Bishop again documented nest numbers and success at the rookeries. There were 15 nests producing 34 young this year, down 31% from the 22 nests and 49 young tallied last year. Double-crested cormorants nested in a tree on the lone island in the reservoir, and also in 3 trees on the west side. A total of 22 nests producing 47 young were documented. This was also down, by about 60%, from 1992.

Other birds of this group recorded on the duck pair count included 11 red-necked grebes, 38 western grebes, 26 great blue herons, 83 double-crested cormorants, 2 common snipes and 1 sora.

5. Shorebirds, Gulls, Terns and Allied Species

Birds of this category recorded during the year were killdeer, Wilson's phalaropes, ring-billed gulls, long-billed dowitchers, spotted sandpipers, solitary sandpipers, lesser yellowlegs and American avocets.

6. Raptors

One red-tailed hawk and 1 northern harrier were tallied during the duck pair count. A pair of red-tailed hawks again nested in a cottonwood tree on the west edge of the reservoir. A great horned owl nest was also noted on the west side. A snowy owl was sighted in January and 2 ospreys were seen over the DU Units in September.

7. Other Migratory Birds

An intensive neotropical migrant bird survey of 14 plots was initiated at Pablo this year. The survey route was established in the north and east parts of the refuge. It was run 3 times, and 770 observations were made of 65 different species of birds. The 10 most common species encountered and number of observations for each were:

European Starling - 133	Cliff Swallow - 38
Red-winged Blackbird - 76	Willow Flycatcher - 30
Yellow-headed Blackbird - 54	Yellow Warbler - 27
American Robin - 52	Barn Swallow - 26
Eastern Kingbird - 44	Brown-headed Cowbird - 25

8. Game Mammals

White-tailed deer were again seen several times this year, with 4 the most seen at one time.

10. Other Resident Wildlife

Ring-necked pheasants were seen on nearly every visit, with 5 counted on the duck pair count. Gray partridge were also seen regularly. Coyotes were seen occasionally and a den on the west side remained active.

11. Fisheries Resources

Surveys by Tribal Fisheries Biologists have identified populations of yellow perch, pumpkinseeds, black bullheads, longnose and largescale suckers, peamouth, lake whitefish and largemouth bass in Pablo Reservoir. Survey work this year confirmed reproduction by adult largemouth bass planted in 1991, resulting in a strong 1992 year class. The results also indicated excellent growth rates of largemouth bass compared to Statewide averages. It appears that efforts to create a bass fishery in Pablo are beginning to show signs of success.

H. PUBLIC USE

1. General

Visitor use at Pablo continued at a low level. A few bird watchers visited the refuge, but it is not well known outside the immediate area and is somewhat out of the way for tourists. Pablo continued to be overshadowed by similar and handier opportunities at Ninepipe NWR.

8. Hunting

There was no hunting allowed within the refuge boundary. Some waterfowl hunting occurred along the boundary, but pressure and success were generally low.

9. Fishing

Fishing activity at Pablo was primarily by a small group of local ice fisherman, with yellow perch the predominant species taken. Although planting of largemouth bass by the Tribes in recent years appeared successful, bass will not show up in the fish harvest for another year or two.

11. Wildlife Observation

Birding has been a dominant wildlife-oriented public use at Pablo and a core group of local regulars visited the refuge throughout the year except during waterfowl hunting season closures. Raptors, nesting cormorants and the spring and fall shorebird and loon migrations were the major attractions.

17. Law Enforcement

Refuge boundaries were patrolled by Refuge Officers on opening weekends of hunting seasons and occasionally thereafter, with no violations noted.

I. EQUIPMENT AND FACILITIES

2. Rehabilitation

Major repairs to the Pablo Dam under the Tribal Safety of Dams program began in August and were 90% complete at year's end. Work under the 2.8 million dollar contract included removal of rip-rap from the dam face, placement of a fabric liner to prevent seepage and replacement of rip-rap over the liner. A toe drain was also installed on the back side of the dam to intercept any remaining seepage and direct it to small wetlands below the dam. The work also included repairs to the outlet control structure operated by the Flathead Irrigation Project.

J. OTHER ITEMS4. Credits

This report was written by Jon Malcolm. Joan Krantz took care of printing and assembly.

K. FEEDBACK

See National Bison Range report.