

NORTHWEST MONTANA WETLAND
MANAGEMENT DISTRICT

Kalispell & Moiese, Montana

ANNUAL NARRATIVE REPORT
Calendar Year 1988

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and

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U.S. Department of Interior

Fish & Wildlife Service

National Wildlife Refuge System

REVIEW AND APPROVALS

NORTHWEST MONTANA WETLAND MANAGEMENT DISTRICT

Kalispell, Montana

and

Moiese, Montana

ANNUAL NARRATIVE REPORT

Calendar Year 1988

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INTRODUCTION

Waterfowl Production Areas of the Northwest Montana Wetland Management District are located in Lake and Flathead counties in northwestern Montana. The wetland district is a satellite unit of the National Bison Range.

Lake County WPAs are located eight to nine miles northwest of the National Bison Range. The five WPA units; Duckhaven, Herak, Kickinghorse, Montgomery and Sandsmark, total 1,224 acres. They are located in an area of glacial and lake bed soil deposits and are part of an area of dense glacial kettles which were formed during the Wisconsin period of glaciation. Lake County WPAs have been administered from the National Bison Range since the first acquisition in 1974.

Flathead County units total 4,458 acres and include Batavia Flathead, Smith Lake, and Blasdel WPAs.

Flathead WPA (2,370 acres) includes seven miles of shoreline and upland along the north end of Flathead Lake, including remnants of "delta" islands at the mouth of the Flathead River. Primarily floodplain, the north shore is dominated by flat, open topography and is characterized by dense stands of herbaceous vegetation varying from emergent stands of bulrush and cattail to mixed grass/forb cover types. Seasonally open water comprises the remaining 1,700 acres. Flathead Lake water levels are controlled by Kerr Dam, a hydroelectric facility at the lake's outlet. Incoming waters are controlled by Hungry Horse Dam, 36 miles up-river from Flathead Lake. This water management system holds the lake level at full pool from mid-June to October, then slowly drains the lake until March. Prior to the construction of Kerr Dam in 1938, the lake pool peaked and fell during the month of June, allowing the lake shore to support a substantial growth of cottonwoods and associated wetland vegetation. Sustained high water levels have destroyed almost 2,000 acres of riparian habitat. Low water levels, between November and late May, now expose nearly a half-mile of beach the entire seven-mile-length of the WPA.

Batavia and Smith Lake WPAs are located in the Smith Valley four and ten miles, respectively, west-southwest of Kalispell. Batavia consists of 340 acres of upland and 170 acres of reed canary/bulrush marsh which is fed by a diversion from Ashley Creek. Smith Lake contains 500 acres of upland and 540 acres of seasonally flooded marsh which is dominated by reed canary grass, bulrush and cattail. The

1,040 acres of FWS fee lands surround the 1,400 acre meandered Smith Lake.

Blasdel WPA is located approximately 1 1/2 miles north of Flathead Lake. The unit presently consists of 242 acres of DNC, 125 acres of cropland, 40 acres of native prairie, 35 acres of tame grass and 75 acres of wetlands.

Flathead County WPAs are administered by an on-site Refuge Manager, who is headquartered at the Creston Fisheries Center, Creston, Montana (Sec. E.1.).

INTRODUCTION

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A. HIGHLIGHTS

1988 will be remembered as one of the driest and hottest on record. Low snowpack in the mountains, a relatively snow-free valley floor and only two normal or better months of precipitation dried up the Lake County potholes. Precipitation for the year in Flathead County was 14 percent below the 36-year average (Sec. B.).

Duck production for the district decreased 39 percent; Canada goose production increased 35 percent (Sec. C.3.).

The two bald eagle nests on Flathead WPA successfully fledged four eaglets (Sec. G.2.).

A 76-acre-roundout on Blasdel WPA was acquired this year (Sec. C.1.); an additional 104 acres was seeded to DNC (Sec. F.4.).

Acquisition of the 154-acre Kickinghorse WPA and the 470-acre Duckhaven WPA was completed this year. These are excellent tracts within the Ninepipe wetland complex (Sec. C.1.).

A predator control program was initiated on all WPAs, Tribal Game Management Area lands, and private lands surrounding Ninepipe NWR. Even though 209 skunks were captured, duck nesting success was not significantly improved (Sec. G.3. and G.15.).

Purple loosestrife (Lythrum salicaria) increased considerably in stand density and number of wetlands affected in Lake County (Sec. F.2.).

A Purple Loosestrife Management Zone was formed by a committee representing several local groups. The committee produced a five-year control proposal, obtained financial commitments of \$39,000 over five years and applied for matching funds from the Montana Noxious Weed Trust Fund (Sec. F.10.).

B. CLIMATIC CONDITIONS

Drought and warm temperatures continued in 1988. As the 1980's can be described as a mild and dry decade, 1987 and 1988 were by far the driest and mildest.

Very light snowpack in the Mission Mountains, little snow cover on the valley floor and low precipitation caused Lake County potholes to dry out. Above average rainfall in May provided moisture for grasslands and nesting habitat, but pair ponds were dry early and larger wetlands dried toward fall.

Freeze-up on all remaining wetlands occurred by early December, but temperatures were not cold enough to freeze Lake County creeks and rivers.

The following table summarizes the National Bison Range weather conditions. Similar conditions prevailed on Lake County WPAs.

Table I. NBR 1988 weather conditions

MONTH	TEMPERATURE		PRECIPITATION		SNOW
	HIGH	LOW	1988	35-YR AVG	
January	52	- 3	0.44	0.93	6.25
February	65	3	0.03	0.56	2.00
March	71	13	0.46	0.73	2.00
April	82	16	0.45	1.06	
May	89	24	2.85	1.72	
June	97	33	0.79	2.09	
July	98	36	0.73	1.00	
August	97	36	0.27	0.98	
September	95	27	0.76	1.05	
October	82	18	0.38	0.86	
November	63	9	1.04	0.74	6.50
December	55	- 2	0.72	0.84	4.50
Totals			8.92	12.56	21.25

Note: 1.24" of rain fell on 5/31

The drought that began in 1986 also continued in Flathead County. The early winter months were again generally mild with temperatures ranging from a low of -17° in January to a high of 65° recorded on March 20. Precipitation for the first quarter was 22 percent below the 36-year-average.

The first two weeks of April brought cool and wet weather to Flathead County. By mid-month the temperature rose to 78° and spring arrived. Temperatures were near normal for the second quarter except for a low of 18° recorded in early April. May precipitation of 3.6 inches brought the year's total precipitation to within .72 inches of normal.

Warm, dry conditions prevailed throughout July and August. Temperatures rose into the low 90's on several occasions. August was extremely dry with only .13 inches of precipitation recorded. September's 2.3 inches of rain brought some relief to parched soils; however, precipitation remained 1.2 inches below normal for the three-month-period.

Temperatures were near normal throughout most of October with several heavy frosts recorded near month's end. The first snow of the year in Flathead County fell on November 9. Light to moderate snowfall continued throughout the month resulting in a total accumulation of 8.5 inches. All sloughs and potholes were frozen by November 28. Snowfall continued throughout December bringing an additional 15.5 inches to the area. The year-end snows boosted total precipitation to 16.92 inches; however, this was still 2.6 inches below the 36-year-average. Temperatures in December were near normal.

Table II. 1988 Climatic Data, Flathead County WPAs*

MONTH	TEMPERATURE		PRECIP.-INCHES		SNOWFALL-1988
	HIGH	LOW	1988	36-YR AVG.	
January	47	-17	.98	1.56	7.5
February	55	- 8	1.03	1.22	3.5
March	65	18	.77	1.09	
April	78	19	1.36	1.41	1.0
May	84	28	3.60	2.24	
June	89	35	1.98	2.82	
July	92	40	1.07	1.44	
August	92	37	.13	1.61	
September	96	30	2.30	1.68	
October	74	18	.62	1.38	
November	64	16	1.39	1.44	8.5
December	41	- 9	1.69	1.66	15.5
Totals			16.92	19.55	36.0

* Climatic data for Flathead County WPAs is recorded at the Northwest Montana Agricultural Research Center, Creston, Montana.

C. LAND ACQUISITION

1. Fee Title

A 76-acre-round-out on Blasdel WPA was purchased in March of this year (Fig 1.).



Figure 1. The 76-acre-round-out on Blasdel was finalized early this year. The purchase allows for total management of the 20-acre wetland, plus an additional 56 acres of cropland that will be seeded to nesting cover. Prior to the purchase, the FWS owned only the south half of the wetland. The roundout lies in the northeast portion of this photo. RW 6/2/87

Acquisition of two new Lake County WPAs was completed in 1988. The smaller tract (Kickinghorse WPA) is 154 acres and was purchased from Eugene Piedalue. This excellent tract is 23 percent wet and lies between Ninepipe NWR and Kickinghorse Reservoir. The other tract (Duck Haven WPA) is 15 percent wet and was

purchased from Adam Kirsch (230 acres) and Kermit Anderson (240 acres). Purchase agreements on an additional 140 acres have been negotiated with Mr. Anderson through land trades. A timbered tract on Smith Lake WPA and two odd quarter corners on the National Bison Range are designated for divestiture. All environmental assessments, archaeological surveys and associated paper work have been completed. The trades must have Washington approval before proceeding.

When complete, the Duck Haven tract (Fig 2.) will encompass 610 acres. This and the Kickinghorse tract (Fig 3.) were some of the last parcels of land in the Ninepipe wetland complex still in private ownership. Their purchases were extremely important since both tracts had highway frontage on U.S. 93 and were threatened with commercial development and/or subdivision.



Figure 2. The new Duck Haven WPA was purchased from two owners and presently encompasses 470 acres. Purchase agreements on an additional 140 acres have been negotiated through land trades. This area is 15 percent wet. RW 6-11-86



Figure 3. The smaller of two acquisitions in Lake County was the Piedalue tract. This excellent 154-acre-tract is 23 percent wet and was threatened by subdivision or development. It has one-half mile of frontage on Highway 93. It was named Kickinghorse WPA. RW 6-11-86

2. Easements

Currently there are no wetland easements in Lake or Flathead Counties.

In September of this year, on-going negotiations with the landowner of a potential six-acre-easement in Flathead County broke down. The area known as Cooper's easement was under review as a donated easement for mitigation for past wetland filling by six private businesses in Kalispell. Negotiations were terminated because of the landowner's objections to wording within the easement contract.

3. Other

In Flathead and Lake Counties, a total of 6,511 acres has been delineated for potential purchase or development for wildlife mitigation that is required by the 1980 Northwest Power Planning Act. This congressional act required mitigation for wildlife losses due to the construction of hydroelectric projects on the Columbia River system. In northwest Montana, wildlife losses have been attributed to two such projects; Hungry Horse Dam, constructed in 1948 and Libby Dam, constructed in 1968. A total of 4,569 acres has been established by the Montana Department of Fish, Wildlife & Parks and the Bonneville Power Administration (BPA) as a goal for waterfowl restoration. Mitigation implementation for these acres is the responsibility of BPA via ratepayer dollars.

No BPA dollars were allocated this year for purchase of any of the delineated wetland tracts. This year state biologists in Kalispell continued putting together a priority list of waterfowl mitigation/acquisition sites in the north valley. Manager Malcolm and Assistant Managers West and Washtak met with state personnel on several occasions this year to discuss the feasibility of several potential acquisition sites.

In October, it was learned that BPA had \$500,000 in its FY 89 coffers for a waterfowl project. At year's end, the state was preparing two mitigation proposals to be submitted to BPA; one, a 1,481-acre-acquisition in Lake County, near the National Bison Range (to be managed as a WPA) and the other, a 500-acre-roundout and wetland development project on the south end of Smith Lake WPA in Flathead County. It is expected that one of the two proposals will be accepted by BPA in 1990.

D. PLANNING

2. Management Plan

To comply with Washington office direction and to simplify future planning, a Station Plan was prepared. The document is meant to serve as a base for unifying the Wetland Management District and all lands under the direction of the National Bison Range.

The Plan presently contains a Background Statement and an Operating Statement for all lands managed by the Fish and Wildlife Service in Northwest Montana. Individual Management Plans will be prepared on an as needed basis.

These two statements provide general guidance with the refuge manager, staff, and associate manager deciding on the necessary tools to accomplish the Refuge mission in individual management plans.

4. Compliance with Environmental & Cultural Resource Mandates

In 1988, resource inventory forms for the State Historical Preservation Office (SHPO) were completed on the Blasdel barn (Fig 4.). At year's end we were awaiting word on the historical significance of the building.



Figure 4. This barn on Blasdel WPA is the largest of its kind in Flathead County. Because of its unique interior design and construction and the public's awareness and concern over its fate, the State Historical Office was investigating the possibility of listing it in the National Register. At year's end no definitive word had been received from the SHPO. RW 5-10-88

Environmental Assessments were written for two proposed land trades. Both trades would divest the Service of odd tracts in return for excellent wetlands adjacent to Duck Haven WPA in Lake County. Cultural Resource Surveys were completed on both Service-owned tracts and no significant resources were identified. The Service lands scheduled for disposal are discussed under Section C.

An Environmental Assessment was prepared and approved for predator removal on waterfowl nesting areas in the Flathead Valley. There were modifications to the original plan after receiving public comments. Specifically, no traps were set on Ninepipe, Pablo or Swan River National Wildlife Refuges due to concerns of Defenders of Wildlife. They encouraged us to exempt all refuges from the plan except for islands. Trapping will be initiated on refuge uplands only if and when additional monitoring indicates nesting success is below the minimum acceptable level of 25 percent Mayfield.

5. Research and Investigations

NWMWMD NR 88-1 "Sediment Dynamics on the North Shore of Flathead Lake, Montana".

This study was initiated in April and is designed to study the relationship between sediment transport mechanisms and wind generated erosion. Principal researchers are Mark Lorang and Jack Stanford, of the Flathead Lake Biological Station. The study is funded by the Montana Power Company. Objectives of the study are:

1. To quantify the wave energy regime that exists on the north shore of Flathead Lake (Bigfork side) and its relationship to the intensity, direction and duration of wind storms during the full pool period (June - September).
2. To relate water current patterns to the wave energy regime and document the direction and rate of sediment movement near the shoreline.
3. To determine the temporal and spatial dynamics of wave and wave-wash (transport) mechanisms as the lake fills to full pool during the spring and early summer.
4. To explain the morphometric features of the shoreline in terms of wave and wave-wash mechanisms and, if possible, draw inferences on how the shoreline may change under different lake level management and/or erosion control scenarios.

In 1988, Mark resurveyed shoreline profiles adding ten additional short profiles and more erosional headstakes. In addition, direct wave observations were made. The data was then related to wind data recorded during the months of June, July and August. Several turbidity readings were also taken at fixed locations and at specific depth intervals. Mark also measured changes in exposed elevation to determine bedloaded transport of materials. Shoreline retreat relative to bedload transport was also monitored. Full pool sediment samples were taken in an attempt to define the relationship between bed movement and transport of suspended sediments within the various wave and wave-wash regimes.

All field work was completed this year; however, a final report on Mark's findings was not available at reporting time.

Ninepipe NR-87 - Nest Success of Upland Nesting Ducks in Relation to Predator Removal (61540-41) Nathan Hall, University of Montana.

This was the third year of study in the southern end of the Flathead Valley. In two previous years, Mr. Hall found Mayfield nest success of only 15.4 percent (1986) and 20.7 percent (1987). As a result, predator removal was initiated in 1988. There were 109 striped skunks removed from a 17-square-mile study area surrounding the Ninepipe NWR. The objective of this study was to determine if predator (skunk) removal would significantly increase upland duck nesting success.

Results indicated 18.5 percent Mayfield nest success or no significant difference from 1987, when there was no predator removal. There was a similar number of nests found during the two years, 128 in 1987 and 114 in 1988.

The study will continue in 1989 with only slight modifications.

Ninepipe NR-88 - Striped Skunk Predator Removal Program in the Flathead Valley. (61540-42). Denise Pengeroth, University of Montana.

Results indicated 97 adults and 12 juveniles were captured between 7 April and 19 July, 1988. Up to 102 traps were used for a total of 7,002 trap nights. Trapping success for the period was 1.6 skunks/100 trap

nights. Trap success was greatest in habitat classified as dense nesting cover. Seventy-four animals were captured in this habitat type.

The study will continue in 1989 with the following modifications. Sixty-one feral cats and one raccoon were captured in 1988 and released. In 1989 the cats will be sacrificed unless the owner can be located and any raccoons caught will be euthanized. Information on productivity of the female skunks captured in 1988 will be evaluated through placental scars and counted fetuses. Trapping will begin three weeks earlier or about 15 March. This should improve trap success since animals are out by that time and baited traps will be more attractive to animals recently leaving their winter homes.

E. ADMINISTRATION

1. Personnel

With the exception of Assistant Manager Washtak and north valley seasonal employees, all WMD personnel are headquartered at the National Bison Range near Moiese, Montana. For a complete summary of personnel status and staff photo see the NBR narrative.

Administration, operation and maintenance of Lake County WPAs is the responsibility of personnel at the National Bison Range.

On-site management and administration of WPAs in Flathead County is the responsibility of the Assistant Manager (Fig. 5), who is headquartered at the Creston Fisheries Center. The Center is located approximately 15 miles east of Kalispell and 71 miles north of the Bison Range. The Fisheries Center is the only FWS facility in Flathead County. Several other FWS divisions, including Fish and Wildlife Enhancement, Fish and Wildlife Assistance, and Hatcheries are also headquartered at the center.



Figure 5. Ray Washtak, on-site Assistant Manager for Flathead County WPAs. LL 1-11-89

On March 27, Kevin Shelley E.O.D. as a Biological Technician-Wildlife (Temporary), (Fig. 6).



Figure 6. Bio-Tech Kevin Shelley. This was Kevin's third year working for FWS in northwest Montana; his assistance included all phases of field operations and some administrative functions. RW 9-8-87

Daily clerical support for the Flathead County WPAs is provided by the Fisheries Center Administrative Assistant, while the Refuge Assistant at the Bison Range provides administrative support for detailed Refuge administration. Administrative assistance provided by the Fisheries Center clerk and Refuge office space at the Center is provided on a cooperative reimbursable basis.

4. Volunteer Program

Prior to his temporary appointment, Kevin Shelley volunteered two and a half days of assistance with goose structure installation on Blasdel WPA and

rehabilitation of other structures. Renay Washtak also volunteered one day of assistance with the same projects.

In April, Eileen Kirsch, a Ph.D. candidate (MSU-Zoology) volunteered one day in assisting with placement of the predator control traps.

On April 18, Mike Herman EOD as a volunteer for the field season (Fig. 7). Mike volunteered approximately 810 man-hours throughout the summer, assisting with various north valley WMD field operations.



Figure 7. Refuge volunteer Mike Herman. Mike is a 1985 graduate of the University of Nebraska (B.S. Wildlife Management). His assistance this year included pair and brood counts, noxious weed control, signing and posting, WPA cleanup and many hours of predator management. RW 4-26-88

5. Funding

Operational funding for the entire Wetland District is included in the annual appropriation of the National Bison Range (NBR). Exact expenditures for WPAs in Lake County is not known because work programs on those WPAs are integrated with on-going staff and field duties at NBR. Funding for WPAs in Flathead County is broken down separately based on annual work plan items as submitted by the Assistant Manager at Creston. For FY 89, approximately \$68,300 has been tentatively allocated for the north valley wetland district (and Swan River Refuge) operations. Projected north valley funding for FY 89 represents a tentative seven percent increase over FY 88 funding (Table 3). Total appropriations for the Bison Range (Table 4) were reduced by ten percent from FY 88 funding levels, and the effective reduction was closer to 12 percent considering salary increases.

Table III. *Annual Appropriations, Flathead County WPAs and Swan River National Wildlife Refuge.

	FY	O & M	ADDITIONAL FUNDING
*	85	34,000	\$12,000 (Small ARMMS)
	86	50,000	\$10,000 (Small ARMMS)
	87	50,000	
	88	64,000	
**	89	68,300	

* Since 1985, funding has been provided from the overall annual appropriation of NBR. Prior to FY 85 the administration and operation of the north valley Refuge program was the responsibility of the Project Leader at the Fisheries Center. Funding was provided to the Center from the Division of Refuges and Wildlife - Denver.

** Tentative appropriations.

Table IV. A five-year-comparison of funding for the NBR complex.

FY	1261-2	6860	ARMMS	O & M TOTAL	8610	YCC
89	391,000	42,000	-----	433,000	7,900*	
88	457,000	42,000	-----	433,000	9,900	3,000
87	313,000	42,000	110,000	465,000	9,700	3,000
86	300,000	45,000	154,000	499,000	4,700	13,000
85	360,000	45,000	62,000	467,000	7,000	13,000
84	323,000	45,000	75,000	443,000	6,000	13,000

* Projected available

A further discussion of funding matters and needs can be found in the NBR narrative.

6. Safety

In early December, eight working days were lost when Assistant Manager Washtak strained his back while working on the new shop/storage facility. Severe muscle spasms resulted in three days of hospitalization and five days of bed rest.

In April and May wetland personnel received the required three-shot-anti-rabies vaccine series for protection during predator control operations.

7. Technical Assistance

When scheduled Refuge work programs are not interfered with, technical assistance is provided, as requested, to other FWS divisions located at the Fisheries Center and to private landowners.

This year, Manager Washtak spent three days assisting Wildlife Biologist Bill Mytton (T.A. Division-Creston) with banding Canada geese on the Fort Belknap Indian Reservation (Fig. 8).



Figure 8. A total of 107 Canada geese were captured and tagged. Tribal officials requested the banding project. Also assisting was Refuge Manager Gene Sipe (Bowdoin NWR) who is assisting tribal members with sex identification. RW 7-26-88

In June, Manager Washtak spent five days assisting the wetland staff at Benton Lake NWR with farm sign-up in Glacier County in north central Montana.

8. Other

Meetings and/or training attended this year included:

Several coordination and planning meetings with BIA, FWS, MDFWP and Forest Service biologists concerning BPA mitigation.

The annual meeting of the Montana Wildlife Society Chapter and mid-year Project Leaders Meeting in Lewistown.

Flathead Valley Canada Goose Committee Meetings; participants included FWS Managers, State and Tribal Biologists, and University of Montana Wildlife Cooperative Unit personnel.

Annual Work Plan Meeting - West Yellowstone (Red Rock Lakes NWR).

Annual L.E. Re-certification - Marana, Arizona.

Database III and Wordprocessing Computer Courses - Flathead County Extension Office - Kalispell, MT.

Computer training - NBR, presented by Mike Long, Denver.

Farm Bill Coordination Meeting - Malta, MT.

Attended the Waterfowl Nesting "Island Symposium" - Jamestown, N.D.

National Bison Range staff attended three meetings and a field tour related to control of purple loosestrife in Lake County wetlands.

F. HABITAT MANAGEMENT

1. General

Late this year, the district staff learned that two rare wetland plants had been discovered on the Flathead Waterfowl Production Area. According to the Montana Natural Heritage Program and Aquatic Plant Specialist, Peter Lessica (University of Montana, Missoula) one of the plants, Carex comosa is found nowhere else in the State of Montana. The other plant Wolffia columbiana is considered rare, although it can be found elsewhere in the State. The attached WPA sketch indicates the approximate wetland location of the two plants. Currently the wetland is threatened with flooding and drainage by on-going erosion along the north shore of Flathead Lake. This erosion process may affect the

plants in as little as five years.

2. Wetlands

Early spring wetland levels on Flathead County WPAs were below normal due to the continued early spring drought and lack of snowpack and subsequent runoff. Hayed reed canary grass units on Smith Lake remained essentially dry in April and May, resulting in little usable pair habitat. Ice-out in Flathead County occurred on March 19, eleven days earlier than in 1987. Recharge of Batavia pools started on April 8 and ended on April 28 (Fig. 9). Water levels were maintained this year by keeping the stop logs in Ashley Creek through the spring and early summer months, in order to provide adequate pair and brood habitat.



Figure 9. By April 28, all marsh pools on Batavia were full. Marsh pools are recharged by diverting flows from Ashley Creek.
RW 4-28-88

In August of this year, the Montana Department of Fish, Wildlife and Parks (MDFWP), one of the senior water right-holders on Ashley Creek, ordered all water diversion stopped due to on-going drought conditions. As a result, water levels on Batavia dropped in the late summer months. The restriction was lifted in late September and full recharge was completed by October 19. An estimated 592 acre-feet was diverted into the marsh pools this year.

Drought conditions which prevailed throughout 1988 affected all other potholes in the north valley area, including type III wetlands on Blasdel. By summer's end all wetlands were two to three feet below normal or completely dry.

Water levels on Flathead WPA are determined by fluctuations in levels of Flathead Lake, which in turn are dependent on discharge amounts at both Kerr and Hungry Horse Dams. Full pool levels result in a flooding of the WPA cattail shoreline and inner marsh pools. In 1988, the lake reached full pool (2,893') on June 15. Lake drawdown began in mid-October and by year's end a 3/8-mile strip of beach was exposed along the shoreline.

Potholes on Lake County WPAs were low after spring thaw and conditions deteriorated throughout the year. All but the largest wetlands were dry by September, unless they were receiving agriculture irrigation runoff.

Several wetlands on Herak, Montgomery and Sandmark WPAs (Fig. 10) were recharged with water from the Flathead Irrigation Project in late summer. Water diversion from irrigation canals allowed the filling of 13 potholes with approximately 60 acre-feet of water. Fall waterfowl use of these wetlands was good until hunting season.

A serious problem has been developing on wetlands in Lake County, namely the plant purple loosestrife. 1988 was the first year of active control of this wetland weed. An extensive review of the purple loosestrife problem in the southern portion of the Flathead Valley is in Section F.10 (Pest Control).



Figure 10. This July photo of Sandsmark WPA illustrates the poor wetland conditions in Lake County this year. Only those basins that we were able to recharge with irrigation water in the fall of 1987 held water. JM 7-7-88

3. Forests

With the exception of Smith Lake, forested units on Flathead County WPAs are limited to approximately 25 acres of scattered willow, aspen and cottonwood stands. Batavia WPA contains about five acres of willow and aspen in the west marsh pool. There are approximately 175 acres of coniferous forests on Smith Lake WPA. These mountainous/forested units are located on the eastern side of the WPA and contain stands of larch, fir, spruce, cedar and pine. All forested areas are maintained in their natural state.

In April a three-row-shelterbelt was planted along the north side of unit 7 on Flathead WPA (Fig. 11).



Figure 11. Maintenance crews from Eagle Bend Golf Association planted a three-row-shelterbelt on Flathead WPA. The planting was done as partial mitigation for Eagle Bend's involvement in the destruction of 2.2 acres of wetland during construction of the adjacent golf course. All costs, including replacement trees and weed control were provided by the golf course. It is hoped that the shelterbelt will screen out any potential disturbance caused by golfing activity. A portion of the course can be seen beyond the fence line. KS 4-5-88

In April, approximately 550 shrubs were planted on Blasdel WPA. All shrubs were donated by the local Chapter of Pheasants Forever and were planted along or in existing use-lines and hedgerows. Only ten percent of the shrubs survived the summer's drought.

4. Croplands

In 1988, two barley plots totaling 24 acres on Blasdel were seeded back to DNC. The 15-acre barley plot on Smith Lake received little waterfowl use in 1987 and in April of this year, it was also seeded to DNC.

Eighty acres of cropland on Sandsmark and Montgomery WPAs in Lake County were permittee farmed in 1988. The farming agreement intended to establish dense nesting cover on some fields in return for the permittee's use of other fields for crops. There are extreme weed problems on these two units, especially Sandsmark.

The regional pesticide committee did not approve all pesticide proposals on these units and when whitetop (Cardaria spp.) took over the fields, we mowed the 40 acres at Sandsmark and the permittees had to sacrifice the crop. The forty acres will be fallowed in 1989 to control this perennial plant. Alfalfa will be planted in 1990. Periodic cutting of the alfalfa will, hopefully, help control the whitetop. Also pure alfalfa stands have proven very attractive to ducks on the Pablo National Wildlife Refuge ten miles north of these WPAs. Nesting success has also been very high in alfalfa.

5. Grasslands

Grassland units on Flathead County WPAs are dominated by reed canary grass, quackgrass, Kentucky bluegrass, creeping meadow foxtail, bluebunch wheatgrass, basin wild rye, rough fescue, DNC and scattered clumps of snowberry. With the exception of several small burns and limited haying over the past several years, all grassland units have been rested. This was due to overgrazing and annual haying prior to 1985. Since then, vegetative growth and mulch build-up on all upland units have been monitored through photo points and Robel measurements, which are taken each spring and fall. In October of this year, it was noted that several management units, including DNC tracts on Smith Lake and Batavia had lower vegetative densities than in previous years. Land use plans for 1989 include treatment of these areas to restore vegetative vigor. In May of this year, Eagle Bend Golf Association completed seeding and fertilizing all spoil areas (25 acres) from last year's pair pond construction on Blasdel. Approximately 4.5 acres of pair ponds were

developed on Blasdel WPA as partial mitigation for the destruction of two acres of wetlands during the golf course development project. The spoil areas were seeded with five pounds of alfalfa, four pounds each of tall and intermediate wheatgrass and one half pound/acre of sweet clover, followed by a fertilizer blend consisting of 50 pounds N, 60 pounds P205, and 60 pounds K20/acre.

The addition of the 76-acre-roundout on Blasdel added approximately 56 acres of cropland to the unit. The majority of this acreage will be seeded to nesting cover in 1990.

In May, an additional 80 acres on Blasdel were seeded to DNC (Fig. 12).



Figure 12. Units 1 and 6 on Blasdel WPA were air-seeded with a DNC mix in mid-May. Following the seeding the cooperators used this packer to finalize the seeding operation. Initial growth was excellent. RW 5-16-88

As a result of timely rains in May of this year, the 1987 DNC seedings on Blasdel showed remarkable growth (Figs. 13, 14, 15 and 16).



Figure 13. A total of 104 acres of DNC were planted in 1987 on Blasdel. This photo was taken shortly after the planting operation in May. RW 5-21-87



Figure 14. The drought of 1987 greatly affected the first year's growth. Some alfalfa can be seen in this photo, but the majority of the 104 acres were dominated by wild oats and various broadleaf weeds. All seeded units were hayed twice for weed control in 1987.
RW 10-12-88



Figure 15. This photo shows the same field during the early spring months of 1988. Note the wild oat stalks (residual matter) that was evident even after two mowings in 1987.
RW 4-27-88



Figure 16. The 3.6 inches of rain received in May were all the DNC stands needed. By early June, all 104 acres of DNC on Blasdel looked like this. The seeded units also had an excellent understory of alfalfa, and tall and intermediate wheatgrass. Seeding rates were: 2.5 pounds/acre Alkar tall wheatgrass, 2.5 pounds/acre Oahe intermediate wheatgrass, .5 pounds/acre yellow blossom sweet clover and 2.0 pounds/acre Ladak alfalfa. All rates are P.L.S. RW 6-2-88

Other cropland acreage on Flathead County WPAs includes 33 acres of DNC on Flathead WPA, 65 acres on Batavia and 27 acres on Smith Lake.

Lake County WPA grasslands are composed primarily of Kentucky bluegrass, quackgrass, and DNC plantings. Excluding the two new WPAs, 300 acres of the 344 identified in the Habitat Management Plan as necessary for sufficient duck nesting cover have been converted to DNC. Some of the earlier plantings (1982) have severe weed problems. Whitetop invasion into DNC on Sandsmark WPA and coincidental lodging of vegetation has necessitated the clipping and subsequent fertilization of DNC plantings. This weed problem is chronic and solutions will not come quickly. Current plans are to continue mowing, with occasional fertilization. Some areas may have to be broken up and farmed to break the weed's growth cycle. Ninety-five percent of the new Duck Haven WPA is in pasture of blue grass, quack, brome, wheat grasses and alfalfa. This area has some problems with whitetop and spotted knapweed, but we won't know the true condition of the grasslands until 1989, since the former owner retained grazing rights until December 31, 1988 and the area was still slicked-off at the end of the year. The new Kickinghorse WPA will be converted to DNC over the next two years, but was all ag ground in 1988. The former owner also retained ag rights till the end of the year.

7. Grazing

Grazing on Flathead County WPAs is somewhat limited and is usually done only to provide additional goose browse. Most potential grazing cooperators contract with the Forest Service and/or private timber companies, which offer six-month leases on large land tracts at very low A.U.M. rates. As a result there is little interest in short term (i.e. 30 day) grazing on the WPAs. In 1988, four special use permits were issued for grazing, three for the purpose of providing goose browse on Smith Lake, Batavia and Flathead. On November 8, the cooperator at Smith Lake began grazing the marsh in unit 4. The purpose of this treatment was to open up the heavy cattail growth. Most of the treatment was provided by the trampling effects of the cattle. All cattle were removed on January 6, 1989 due to heavy snow cover. Results were fair.

Table V summarizes grazing treatments applied this year on Flathead County WPAs.

Table V. Grazing treatments, Flathead County WPA's -1988*

Cooperator	Unit	Total use	Purpose
Mytton	3-Batavia	3.6 AUMs	Goose browse
	9-Smith Lake	31.6 AUMs	Goose browse
Mahlum	5-Flathead	92 AUMs	Goose browse
Wood	8-Smith Lake	29 AUMs	Goose browse
Kiser	4-Smith Lake(Marsh)	54.5	Open marsh

* All units with the exception of Flathead and Smith Lake (unit 4 only) were grazed with horses.

There was no grazing of any WPA tracts in Lake county this year.

8. Haying

In past years, haying of newly seeded DNC units has proven very beneficial in establishing nesting cover by reducing weed competition. In 1988, all 104 acres which were seeded this year on Blasdel were mowed to control heavy infestations of wild oats and broadleaf weeds. All units were mowed in late July to avoid impacts on nesting.

As in years past, reed canary grass meadows surrounding Smith Lake were hayed to provide improved pair habitat in the spring of 1989. This year, 113 acres were mowed by the two cooperators. Hay tonnage was estimated at 0.9 ton/acre. Due to this year's dry conditions all haying was completed by the end of July.

Approximately 15 acres of the south half of unit 1 on Flathead WPA were hayed this year. This 40-acre DNC unit was planted in 1981. Robel readings taken the last several years have shown a gradual decline in vegetative densities. As a result, half of the unit was hayed with the remainder rested as a control. If conditions warrant, the remainder of the unit will be hayed in 1989. Other upland units hayed this year

include 32 acres in units 6, 9 and 10 on Smith Lake (Fig. 17).



Figure 17. Cooperator Bill Kiser hayed 32 acres in three small units on Smith Lake this year. All units had been scheduled for prescribed burns. Early green-up precluded our burning efforts so the areas were hayed.
RW 6-15-88

Table VI summarizes this year's haying on Flathead County WPAs.

Table VI. Hayed units - Flathead County WPAs - 1988.

Cooperator	Unit	#AL	Cover type	Purpose
Dedman	1 -Flathead	15	DNC	Restore vigor of uplands
Kiser	6,9,10 (N1/2) -Smith Lake	32	Cool season grass	Restore vigor of uplands
Marquardt	1,2,4 -Smith Lake	70	Reed canary grass	Provide pair habitat
Kiser	3,4,10 -Smith Lake	43	Reed canary grass	Provide pair habitat
Ballenger	1,2,3,6 -Blasdel	104	DNC	Control weeds/establish seeding
Marquardt	1 -Batavia	30	DNC	Restore vigor of uplands

10. Pest Control

There was no spraying of any herbicides on Flathead County WPAs this year. Several pesticide use proposals were submitted, but all were denied by the Regional Office Pesticide-Use Committee. As a result, force account noxious weed control efforts were limited to hand chopping or tractor mowing of heavily infested uplands. Canada thistle and spotted knapweed are the two noxious weeds of most concern on the WPAs. Small plots of spotted knapweed in parking lots on Batavia and Flathead were hand pulled. All nesting islands on Batavia were hand chopped to control heavy Canada and musk thistle growth. In addition, those upland units on Smith Lake and Blasdel with large infestations were hand chopped or mowed with gasoline powered weed eaters. Approximately 20 acres of Canada thistle on Blasdel WPA were also mowed with a tractor. It is estimated that approximately 25 man-days were expended this year on force account weed control efforts on north valley WPAs. As in past years, mowing prevented seed production and may reduce stand densities after several years.

In 1988, approximately 630 stem mining weevils (Ceutorhynchus litura) were released on Blasdel and Flathead WPA as a biological control of Canada thistle (Fig. 18).



Figure 18. Release sites for the weevils were selected based on the density of Canada thistles. The weevils eventually bore into the stalk where their larvae feed on the pith of the thistle stem ultimately killing the plant. All release sites will be monitored for success in 1989. KS 5-13-88

Weed problems in Lake County included spotted knapweed, Canada thistle and whitetop on WPA grasslands, whitetop in croplands and purple loosestrife in wetlands. Weed control in croplands was done by the cooperator, Keith Krantz. Weed control on grasslands was contracted to the Lake County Weed Office at approximately \$11.00/acre. Control efforts in wetlands were done by the staff at the National Bison Range, Lake County Weed Office and volunteers from the Flathead Resource Organization, an environmental group concerned about spraying herbicides in wetlands.

Table VII summarizes chemical use on Lake County WPAs:

Table VII. Herbicide use on Lake County WPAs in 1988

Target Species	Herbicide	Rate*	Acres	Application Method
Whitetop Cropland	MCPA	.25lb/acre	42	Ground-boom
Knapweed, whitetop, & thistle Grassland	2,4-D	1.9lb/acre	60	Ground-boom

* Pounds acid equivalent

National Bison Range staff mowed several weed infested acres on the WPAs near parking lots, along roads and trails and in one crop unit. A total of 60 acres was mowed; forty of that was related to mowing a winter wheat field that was badly infested with whitetop. The other acres were related to thistle control in grasslands.

Purple loosestrife control was organized in late July when it became apparent that this weed had expanded dramatically in the past year. Five members of the Bison Range staff spent a full week assisting the Lake County Weed Office with control efforts on non-federal lands. Infestations at twenty different sites were spot sprayed with glyphosate (Rodeo) herbicide in mid-August. A one percent solution was used on the weed and the twenty sites only encompassed about five total acres.

In addition to chemical control, Bison Range Staff and the Flathead Resource Organization dug up loosestrife at four sites totaling about .25 acres. Most of the digging was on the Ninepipe National Wildlife Refuge (Fig. 19).



Figure 19. This Lake County wetland was taken over by purple loosestrife. Because there are only 100 contaminated acres in the entire county there may be hope for control. Several concerned agencies formed the Lake County Loosestrife Control Zone in 1988 and raised nearly \$12,000 for 1989 control efforts.
BW 7-18-88

A loosestrife public meeting and field tour in mid-August attracted over thirty people from various agencies and groups (Fig. 20). The first organized alert to the problem began in the fall of 1987. Montana Department of Agriculture's botanist Barbara Mullin organized a meeting of wetland managers, extension agents and nurserymen.



Figure 20. Over thirty people from various agencies and groups attended a public meeting and field tour of purple loosestrife infested wetlands in Lake County. This site is near Spring Creek in Ronan where the plant escaped cultivation. BW 8-7-88

The concerns that led to the first meeting in August 1987 were heightened when we saw the shocking expansion of the plant in July of this year. History of the plant's expansion in Montana is sketchy, but National Bison Range staff first became concerned in about 1983 when a few collections were made in Lake County, in the city of Ronan. Subsequent discussions with area residents indicated the plant was well established as early as 1979. It appears the plant escaped from cultivation along the banks of Spring Creek and spread by water and wildlife.

Along with the initial control efforts, the Lake County Weed Office and Bison Range staff made a concerted effort to map all infestations in the county. Approximately 50 different sites were located, varying in size from one isolated plant up to 25 acres. Total

contaminated acres in the county are approximately 100. Only one wetland on the Sandmark WPA is currently contaminated, but the potential for habitat degradation is great.

In September, a "Purple Loosestrife Management Zone" was formed by several concerned agencies and citizen groups in Lake County. Assistant Manager Bill West is a member of that committee. The group will take the lead in the following areas:

- 1). Inventory and monitoring of purple loosestrife in Lake County to determine the extent of infestation on an annual basis.
- 2). Increase public awareness of the weed and educate the public in identification and control.
- 3). Develop a five-year plan to eradicate loosestrife from several sites and contain its future spread.
- 4). Coordinate control plans among all interested persons and groups.
- 5). Raise funding for control programs and environmental monitoring.

The committee prepared a control proposal and application for matching funds from the Montana Noxious Weed Trust Fund. Five local groups pledged a total of \$7,800.00 per year for five years to the weed's control. A similar amount was requested from the state.

Control plans for 1989 will follow guidelines developed in Minnesota and Wisconsin, where active control programs are in place. This will include digging the plant on FWS lands, since we now have three organized groups interested in that type of donated help. In addition, small areas will be spot sprayed with Rodeo in August and larger areas will be sprayed with 2,4-D amine in June and a follow-up treatment with Rodeo will follow in August, if needed. Although 2,4-D may cause concerns near wetlands, its selectivity for broadleaf plants will hopefully allow monocot plants such as cattail to establish were the loosestrife has been eradicated.

In Flathead County, purple loosestrife was found in five different locations. The sites included: a commercial greenhouse in Ferndale; the Conrad Mansion and Bibler Gardens in Kalispell where the plant is grown as an ornamental; Gatiss Gardens at Creston (ornamental displays); and along Ashley Creek six miles west of the Smith Lake Bridge. All landowners and/or retailers were contacted concerning the potential effects of the plant on the area's wetlands. With the exception of the landowner along Ashley Creek, no one seemed concerned about the plant and all refused to participate in any control measures or acknowledge the potential dangers. With the assistance of the Flathead County Weed Supervisor, the landowner south of Smith Lake agreed to clip the seed heads off the six plants that were found. One week later, Assistant Manager Washtak dug the remainder of the plants out, then staked the area for further monitoring in 1989. In addition, the six-mile stretch of the creek to the bridge was floated to check for other infestations. None were found. This spot infestation will be closely monitored in 1989 because the creek meanders for over 22 miles before spilling into the Flathead River. With several tributaries and wetlands that lie along its meandered route the potential for spread of purple loosestrife in Flathead County is great.

12. Water Rights

Water rights for Batavia and Smith Lake WPAs were purchased by the FWS from the Ashley Irrigation District in 1981. At that time \$5,000 was paid to acquire 1,445 acre-feet of the waters of Ashley Creek; 745 acre-feet to be diverted for Batavia and 700 acre-feet for Smith Lake WPA. Montana statutes do not recognize a legal right to use water without an artificial diversion from the source; hence, the water right at Smith Lake provides for pumping from Ashley Creek. In 1988, as in past years, we did not exercise our right to pump, because pumping is not needed nor is it economically feasible. In 1988, an estimated 592 acre-feet were diverted from Ashley Creek into the three marsh pools on Batavia WPA.

G. WILDLIFE

2. Endangered and Threatened Species

In 1988, both bald eagle nests on Flathead WPA were occupied. Each of the two adult pairs successfully fledged two eaglets. Use of the WPA by migrating and/or transient bald eagles continued in 1988, with several other adults observed on numerous occasions. In July, eight adults were observed roosting in cottonwood stands along the north shore of the WPA and near the mouth of the Flathead River.

In June, two adult bald eagles were observed on Smith Lake. The eagles remained for a few days, presumably feeding on dead fish, then left the area.

3. Waterfowl

Ten nesting pairs of Canada geese on three Lake County WPAs produced an estimated 40 goslings. All seven artificial nesting structures and a small island in the Type I wetland on Montgomery WPA were used by nesting pairs. Goose production was not calculated for the two new Lake County WPAs. Fall goose use of the WPAs was fair to good due to crop residues left from the cooperative farming on Sandmark and Montgomery and because there was adequate water in the potholes which had been refilled from the Flathead Irrigation project. Since these areas are hunted heavily, the bird use dropped with the waterfowl opener in early October.

In Flathead County, Canada geese began to show signs of territoriality in mid-February and initial nesting began on February 28. On Flathead WPA only five of the old tree stumps on the delta island were used this year compared to 17 nesting attempts in 1987; one ground nest was also found. All five nests were successful. In early May, the nesting islands were searched, but no nests were found presumably due to the extremely dry conditions. In addition, four other structures on the WPA were used successfully this year. Goose brood flights were flown in early June and 101 goslings were observed. As in past years, this figure does not represent total goose production on the WPA alone because many molting adults who nested along the Flathead River have migrated to the WPA to seek cover, food and loafing sites for their broods.

On Smith Lake, six of the 15 wooden goose nesting structures were occupied again this year along with one of the two floating structures that were installed in 1987. In addition, goose nesting was also observed on several muskrat mounds (Fig. 21).



Figure 21. Canada goose nesting on Smith Lake included the use of muskrat mounds. Aerial brood counts flown on June 3 revealed 20 goslings on the WPA. KS 5-3-88

The 26 small nesting islands on Batavia WPA supported only two goose nests this year. Both of them were successful. No broods were observed on the aerial brood count; however, five goslings were observed on July 6.

On Blasdel WPA, three of the six nesting structures were used this year, with 14 goslings hatched. Canada goose nesting for Flathead County WPAs is summarized in Table VIII.

Table VIII. Canada goose production, Flathead County
WPAs, 1988.

Unit	No. Pairs Observed	No. Goslings Observed
Batavia	4	5
Smith Lake	16	20
Flathead	19	101
Blasdel	6	14

Duck breeding pair habitat was only fair on the WPAs in 1988. Continued dry weather and a mild winter with little snow left fewer wetlands for breeding ducks. Production was also poor due to excessive nest predation.

Duck production was estimated on Lake County FWS lands by multiplying the spring nesting pair count numbers by a 35 percent productivity rate derived from nesting studies, then multiplying by the average brood size of 5.2 ducklings and finally multiplying by a 70 percent survival of ducklings from brood count to fledging. Table IX summarizes this year's breeding pair and production numbers in Lake County.

Table IX. 1988 duck breeding pair counts and estimated production for Lake County WPAs.

Species	# Pairs	Production
<u>Montgomery WPA</u>		
Mallard	8	10
Shoveler	1	1
Gadwall	2	3
Cinnamon Teal	5	6
Wigeon	2	3
Redhead	5	6
Subtotal	23	29
<u>Kickinghorse WPA</u>		
Mallard	16	20
Gadwall	6	8
Cinnamon Teal	20	25
Blue-winged Teal	5	6
Redhead	6	8
Shoveler	8	10
Wigeon	3	4
Green-winged Teal	2	3
Lesser Scaup	1	1
Subtotal	67	85
<u>Herak WPA</u>		
Mallard	7	9
Cinnamon Teal	4	5
Redhead	9	11
Shoveler	7	9
Gadwall	3	4
Pintail	1	1
Blue-winged Teal	3	4
Subtotal	34	43

Table IX. Continued

Species	# Pairs	Production
<u>Sandsmark WPA</u>		
Mallard	12	15
Pintail	2	3
Gadwall	2	3
Shoveler	11	14
Blue-winged Teal	2	3
Cinnamon Teal	13	17
Wigeon	2	3
Redhead	12	15
Green-winged Teal	3	4
Ring-necked Duck	2	3
Ruddy Duck	1	1
Subtotal	62	81
<u>Duck Haven WPA</u>		
Mallard	24	31
Redhead	25	32
Shoveler	35	45
Cinnamon Teal	50	64
Blue-winged Teal	19	24
Gadwall	18	23
Wigeon	7	9
Pintail	3	4
Green-winged Teal	4	5
Ruddy Duck	2	3
Lesser Scaup	1	1
Subtotal	188	241
Total	374	479

Duck production on Flathead County WPAs was calculated in the same manner as on Lake County WPAs. However, no data was available this year on specific productivity rates for these units. Therefore, duck production totals for Flathead County are estimated by using a productivity rate (.35) based on data obtained in 1988 from Lake County WPA nest searches. Table X summarizes pair count data and estimated production on north valley units this year.

Table X. Duck breeding pairs and estimated production Flathead County WPAs.

Species	Flathead		Batavia		Smith Lake		Blasdel	
	# Pairs	Production	# Pairs	Production	# Pairs	Production	# Pairs	Production
Mallard	11	9	51	41	25	20	10	8
BW/Cinnamon Teal	0	0	28	22	23	19	10	8
Redhead	0	0	5	4	11	9	13	11
Canvasback	0	0	0	0	3	2	0	0
Gadwall	0	3	0	0	3	2	0	0
Pintail	4	0	0	0	1	1	0	0
GW Teal	0	0	1	1	0	0	1	1
Lesser Scaup	0	0	0	0	0	0	2	1
Wigeon	0	0	1	1	2	2	2	1
Shoveler	0	0	6	5	4	3	1	1
Ringneck	0	0	2	2	2	2	4	3
C. Goldeneye	0	0	0	0	0	0	2	2
Bufflehead	0	0	0	0	0	0	0	0
Ruddy	0	0	0	0	0	0	33	27
Wood Duck	0	0	0	0	0	1	0	0
Common Merganser	0	0	0	0	0	0	0	0
Totals	15	12	94	76	74	61	78	63

Estimated production on Flathead County WPAs was 212 ducks, a 317 percent decrease from 1987 estimates. The reason for this year's decline in production can be attributed to two factors: 1) long term effects of the drought, resulting in reduced pair habitat; 2) the fact that this was the first year we applied a mortality rate to our calculations.

Waterfowl populations on all WPAs are monitored by aerial census flights, and random ground counts done in conjunction with on-going work programs. Spring waterfowl populations peaked in March when an estimated 7,500 birds were observed. Wetland conditions were adequate in most Type III potholes for spring migrants; however, continued warm dry weather in June and July resulted in all Type I wetlands and some Type III's being dry from mid-summer through the fall months.

Fall waterfowl populations peaked in October. An estimated 14,000 ducks and geese were observed; there were also over 8,000 coots seen in large rafts in Flathead Lake adjacent to Flathead WPA. Fall wetland conditions were poor to fair, with the exception of Smith Lake. By late November, all units were frozen and waterfowl use was confined to open areas of the upper and lower Flathead River and Flathead Lake. Total waterfowl-use-days for the district was estimated at 2,071,260. Waterfowl population peaks are summarized in Tables XI and XII.

Table XI. Peak waterfowl populations, spring migrations.

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Swans	960	800	800	3,000	250	1,600	500	150	1,300	650	250
Canada Geese	363	502	700	1,000	340	480	600	600	1,850	500	750
Ducks *	10,530	28,640	19,300	5,750	6,850	4,220	4,070	2,495	2,635	4,935	7,480

Table XII. Peak waterfowl populations, fall migrations.

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Swans	85	62	150	140	80	50	74	15	91	115	140
Canada Geese	710	700	1,800	500	480	1,100	1,000	600	350	700	2,100
Ducks *	40,390	6,258	15,320	10,750	30,780	51,340	36,380	10,491	12,934	24,466	21,900

*Coot numbers are included.

4. Marsh and Water Birds

American bitterns, great blue herons, pied-billed, eared and horned grebes and sora rails continued to utilize all WPAs in Flathead County this year. Two pairs of sandhill cranes took up residence at Batavia in April; by mid-June two sandhill crane "colts" were observed with the adults. This observation was the second year in a row in which successful nesting attempts were made on the WPA.

Nesting by other species in this classification of birds probably occurred but was not documented this year.

Three sandhill cranes were observed on Sandmark WPA in July and August. Other marsh birds such as great blue herons, American coots and pied-billed grebes were also present during the spring but the drought reduced much of the water on the WPAs and bird numbers were down as a result.

Birds in this category counted during the May duck pair counts on Lake County WPAs included: 70 coots, 1 horned grebe and 7 eared grebes.

5. Shorebirds, Gulls, Terns & Allied Species

Bird species in this group that were observed on Flathead County WPAs include: spotted sandpipers, lesser yellowlegs, Wilson's phalaropes, dowitchers, snipe, avocets, ring-billed and California gulls. Both gull species utilize Flathead and Smith Lake WPAs with use being the heaviest in the summer months. An estimated 600 gulls were observed along the shoreline of Flathead in July, while 225 of the birds were utilizing the open water portions of Smith Lake. In August, 120 black terns were also observed on the WPA.

Shorebird numbers were still quite high on Lake County WPAs, probably related to the low water levels and resultant mudflats around wetlands. California and ring-billed gulls were observed near the WPAs on several occasions and reports from a local farmer indicated he had observed large gulls taking young pheasant chicks in an alfalfa field near the WPAs.

During the May duck pair counts, we tallied 32 American avocets and 22 Wilson's phalaropes.

6. Raptors

Commonly observed raptors on both Lake and Flathead County WPAs included northern harriers, red-tailed hawks, American kestrels and rough-legged hawks. Northern harriers were common ground nesters, with nests found on Blasdel and Batavia WPAs, and on Lake County WPAs during duck nesting studies.

In July of this year, 20 ospreys were observed on Flathead WPA. Old cottonwood stands and other decaying tree stumps along the north shore of Flathead Lake and at the river's mouth offered excellent habitat for the birds. In May, five osprey nests were observed on the WPA's delta island. All nests were located in the cottonwood stumps. In addition, six other osprey pairs nested on WPA boundary markers or on other structures on the WPA. The exact extent of young fledged this year is unknown, although all eleven nests were thought to have been successful due to their secure location.

During the 1988 Christmas Bird Count a gyrfalcon was seen on Kickinghorse WPA.

7. Other Migratory Birds

Three mourning dove coo-count surveys were completed again this year. One survey is run in the lower valley area of Flathead County; the other, in Lincoln County ends near the Canadian border north of Eureka, MT. In 1988, only six doves were observed on the Flathead and Lincoln County routes. Use of the WPAs is limited, probably due to generally cool nights that prevail throughout the summer months. Small groups of doves were observed on Blasdel in June of this year.

Marcy Bishop of the National Bison Range staff conducted the coo-count in Sanders County between Plains and Hotsprings. In 1988, there was a dramatic increase in the number of doves observed (31) and calls heard (135). These figures represent a 100 percent increase from 1987 survey results.

8. Game Mammals

Whitetailed deer continued to be the most common big game animal observed on Flathead County WPAs. Aspen,

willow and cottonwood groves, as well as brushy areas on Batavia and Flathead and Blasdel provide excellent year-round habitat. Dense cattail stands along Flathead WPA's shoreline also provided excellent winter habitat. Mountainous, forested units on Smith have been designated by the State as winter range for the whitetail. During the month of June, whitetailed does with very young fawns were observed on Smith Lake, Blasdel and Flathead.

In June of this year, an adjacent landowner at Smith Lake reported seeing a lone cow moose on the WPA. Moose have been observed on the WPA in past years. It is suspected that the WPA lies within an established migration corridor used by a small herd in the Blacktail/Ashley Lake area.

10. Other Resident Wildlife

Populations of ringneck pheasant and gray partridge, continued at high levels on Lake County WPAs. A mild winter and plenty of grasshoppers permitted good production and brood survival. A study on pheasant nesting success in relation to skunk removal showed significant improvement in pheasant production.

Based on the number of random sightings made this year, it appears that the ring-necked pheasant population is increasing in Flathead County. During the spring, summer and early fall months, pheasants were observed on nearly every trip to the WPAs. Sightings were made both on and off the units. Flathead WPA continued to offer good habitat with brushy areas, dense stands of cattails and aspen groves providing both nesting, loafing and winter cover sites. Excellent stands of DNC that developed this year on Blasdel also attracted a good number of pheasants as evidenced by the number of "crow calls" heard in the mornings and by actual sightings. Populations of pheasants on Flathead County WPAs are estimated at 150-200 birds.

As in past years, several random sightings of Merriam turkeys were made on Flathead WPA. In May, six of the birds were observed along the dike in unit 3. Later in the month, four turkeys were observed in the DNC field in the same unit. Nesting may have occurred, but was not documented. Populations on the WPA were estimated at 10-12 birds.

11. Fishery Resources

As in past years, Smith Lake WPA continued to support an excellent population of yellow perch. Since the waters of Smith Lake are owned by the State, management of the fisheries resource is the responsibility of the State of Montana Department of Fish, Wildlife and Parks. Catch rates were somewhat sporadic this year despite continued heavy pressure. No management was applied this year and it is suspected that the perch population is self-sustaining and will need no management in years to come.

15. Animal Control

Several complaints were received this year concerning depredating waterfowl on Flathead County units. Most of the complaints were from landowners adjacent to Flathead WPA and concerned depredations occurring in barley fields. When necessary a .20 gauge gun was supplied to assist the landowners in hazing the birds away. Similar complaints about depredation on winter wheat fields near the National Bison Range (Moiese Valley) were referred to USDA animal damage control personnel.

In June, another complaint was received from a resident along the west side of Flathead Lake in Lake County. Apparently one landowner was concerned about his neighbors use of firecrackers to chase broods of geese out of his yard. This individual was in turn, concerned about goose droppings "piling up" on his lawn. Since the matter involved lands within the Flathead Indian Reservation, the complaint was referred to the local state warden.

Control of duck nest predators on Lake County WPAs and surrounding areas was carried out as part of a research project described in Section D-5. Predator control on Flathead County WPAs was done by force account.

Control efforts on these units were initiated on April 15 and continued until July 6. A total of 31 live traps and 15 conibear "cubby sets" were used. Four WPAs, encompassing a total area of approximately 3.2 square miles, were trapped. All but three traps were on WPAs, because most adjacent landowners expressed a surprising amount of concern for their pets even though live traps were to be used on private lands. A total of 100 skunks were caught (Fig. 22). Overall catch/100

trap nights was 3.05. Trap density was one trap/45 acres. The best catch rates were in cool season grass habitats.



Figure 22. Live traps such as this one caught 2.57 skunks/100 trap nights. Conibear 220 "cubby sets" caught 4.07 skunks/100 trap nights. All figures represent catch rates on Flathead County WPAs. All skunks were disposed of with 3-10 ml of sodium pentobarbital which was injected with a hypodermic needle mounted on a 10' metal rod. RW 4-15-88

H. PUBLIC USE

2. Outdoor Classroom - Students

In June, Assistant Manager Washtak presented two 3-hour Outdoor Workshops on "Mini-Refuges" to 48 enthusiastic 4-H campers at their annual 3-day outing

near Loon Lake. The workshops involved discovering and interpreting relationships of flora and fauna within designated small "refuge" areas.

7. Other Interpretive Programs

In April, bio-tech Kevin Shelley presented a two-hour waterfowl management slide series to members of the Whitefish Chamber of Commerce.

Also in April, Washtak presented a 30-minute tape on the National Wildlife Refuge System to 25 sixth graders at Cayuse Prairie School. The tape was followed by a short question and answer period on waterfowl managers' duties and responsibilities. In June, Washtak also served as a Science Fair judge for elementary science exhibits at the same school.

In June and again in October, Washtak was interviewed by television station KPAX (Missoula) concerning waterfowl populations, potential nesting and fall flight predictions.

8. Hunting

Western Montana's waterfowl season opened on October 1 (for geese) and was followed by the duck opener on October 8. Hunter pressure on Flathead and Lake County WPAs was generally light for both species. The majority of goose hunting took place in stubble fields on state and private land near Lake County WPAs or in pit blinds located in stubble fields in Flathead County. Success was good throughout the first week of the season with many limits of geese taken primarily in the early morning hours.

Duck populations were good for the duck opener despite poor water conditions. Most birds were found on the Flathead River, along the north shore of Flathead Lake or at Pablo and Ninepipe National Wildlife Refuges. Dry conditions left many potholes on private lands without water, resulting in heavy hunting pressure along the Flathead River. Opening day duck hunting pressure on the WPAs was generally light, with Blasdel, Flathead, Sandsmark and Smith Lake receiving the most visits. Success was fair to good with several limits checked. A general decline in opening day hunter visits this year may be attributed to blue-bird weather, generally

dry conditions and the fact that antelope season opened October 9, sending many hunters after pronghorns instead of ducks.

Hunting pressure continued to be light throughout the remainder of the season despite good waterfowl populations that remained in Flathead County. The duck season closed on November 26 and re-opened December 24 through January 1, 1989.

Goose season closed on the 26th on the Flathead Reservation west of Highway 93 and did not re-open in December. This has been a closed area for twenty years to protect concentrations of geese using the lower Flathead River near Moiese and Dixon. Goose season remained open through the first of the year in the remainder of the Flathead Valley. Late season hunting pressure was light due to the initial freeze-up which occurred November 27. Waterfowl hunter visits on the WPAs were estimated at 825, a 41 percent decrease from 1987.

Pheasant hunting success in Flathead County this year was considerably better than in the past four years. Blasdel WPA was the most popular hunting area in Flathead County. Success was fair to good and only those hunters using dogs were able to bag the birds in the thick DNC. Pheasant hunter visits this year were estimated at 720, resulting in an estimated 2,160 activity-hours. These figures represent an increase of 47 percent over 1987 estimates.

Pheasant hunting on Lake County units was excellent through the opening weekend. A wildlife roadcheck conducted by Montana Department of Fish, Wildlife and Parks indicated that hunter success was 1 1/2 birds per day and over 200 vehicles were checked with hunters. There were at least 500 pheasants killed opening day in and around the Ninepipe wetland complex and Lake County WPAs.

All Flathead County WPAs were open to big-game hunting. Batavia, Blasdel and Flathead lie within a state-designated "shotgun/archery only" zone, and those hunters wishing to pursue the whitetail often had good success (Fig. 23).



Figure 23. Larry Lockard, Fish and Wildlife Biologist with Enhancement Division at the Creston Fisheries Center pushed this nice four pointer onto the open beach area of Flathead WPA in mid-November. Cottonwood, aspen and willow stands such as those in the left background provide excellent year-round habitat. RW 11-22-88

9. Fishing

Smith Lake WPA continued to be one of the most popular fishing spots in northwest Montana. On any given day, in the winter or summer, as many as five to thirty fishermen are out trying their luck. The State of Montana estimates fishing visits at 8000/year. In 1988, success varied from day to day with the best catches recorded during the evening hours of July and August.

On January 9, the local Lions Club held their annual winter fishing derby at Smith Lake. Over 250 people participated for a variety of awards. Success was fair with only a few "3/4 pounders" caught.

Bull trout and lake trout fishing at the mouth of Flathead River adjacent to the WPA offered excellent fishing in early May this year. Bull trout migrate up the Flathead River to traditional spawning areas in the North Fork and Middle Fork tributaries 25-35 miles up-river. In 1988, the Montana Department of Fish, Wildlife and Parks enlisted the aid of a volunteer to survey the number of boats and fishermen fishing at the river's mouth; from March 19 to May 27, 192 boats were counted. Success on bull trout was good; in addition, many limits of two to three pound lake trout were taken.

In January, the access gate in unit 4 was opened and a trail was marked to allow ice-fishermen an alternate, shorter route to the north end of Flathead Lake. The trail was posted with signs requesting the fishermen stay on the marked trail with their snowmobiles and ATVs. In February two individuals were warned about getting off the trail; however, later in the month the gate was locked due to continued non-compliance with our request.

10. Trapping

Trapping is permitted on all WPAs in accordance with State regulations. Interest in trapping has grown over the past several years with muskrat the primary target. Smith Lake, Flathead and Batavia account for the majority of trapper visits. All trappers were asked to voluntarily report their success. In 1988, four trappers reported taking 278 rats, 14 mink and three raccoons.

17. Law Enforcement

Law enforcement efforts in Flathead County were concentrated primarily on patrolling the WPAs during the waterfowl and pheasant seasons. Assistant Manager Washtak conducted all patrol work. Two citations were issued during the duck opener; one for early shooting; the other for no State Conservation license. Both individuals forfeited collateral and the cases were closed. This was the third year in which steel shot

was mandatory in both Lake and Flathead Counties. Compliance with this regulation was excellent.

Off-road travel and subsequent vehicle trespass, especially on Flathead County WPAs, presented additional enforcement problems for district personnel. In 1988, twelve separate instances of vehicle trespass were investigated. The majority of trespasses often resulted in destruction of wire gates and/or barb wire fences (Fig. 24).



Figure 24. Fence destruction and resulting vehicle trespass were a problem this year on Flathead County units. All twelve investigations were made "after the fact" which made it difficult in making a case stick. Two citations were issued this year; however, many hours were spent repairing fence lines and gates.
MH 6-14-88

No significant developments occurred this year in resolving the exclusive and sustained use of hunting blinds on Flathead WPA. This long standing problem involves a claimed prescriptive easement or right to hunt a portion of the WPA exclusive of other hunters. In 1987, all six of the permanent blinds were removed from the WPA. However, two of the blinds were rebuilt by hunters during the 1987-1988 waterfowl season. With Regional Office concurrence these blinds were removed in March of this year after the blinds were posted for a two-week period. Prior to this year's waterfowl season, the two blinds were re-constructed using driftwood and other native materials. Our request to the Regional Office to remove the blinds was denied, because the WPAs are open to hunting according to State law and State regulations did not prevent the construction of "temporary" blinds. Our only orders were that if the blinds appeared to be a "substantial structure that has the appearance of being permanent" they should be posted and impounded under the terms of 50 CFR 27.93 (abandoned property). Since the two blinds built this year prior to the hunting season did not appear to be permanent structures, no action was taken and the individuals continued to use the blinds and hunt that particular portion of the WPA exclusive of other hunters.

Law enforcement efforts in Lake County during the waterfowl and pheasant hunting openers are concentrated on the WPAs, Ninepipe NWR and state lands surrounding Ninepipe. Patrols were the responsibility of Refuge Officers, Gensmer, King and West. The large number of hunters in this area resulted in many hunter contacts. Public compliance with a confusing system of state, tribal and federal wildlife laws was not always easy. Some hunters had bought more licenses than they needed. Compliance with the tribal regulations requiring steel shot when hunting game birds was still confusing to pheasant hunters but compliance is improving. Only one violation notice was written for possession of lead shot and that individual was waterfowl hunting.

The following table summarizes violations in Lake County.

Table XIII. Citations issued on Lake County WPAs in 1988.

Violation	Cases	Bond	Disposition
Unplugged shotgun	1	\$100.	Paid
Take Migratory Bird (Cormorant)	1	50.	Paid
Possess Lead Shot	1	100.	Paid
Trespass on National Wildlife Refuge	1	50.	Paid

I. EQUIPMENT AND CONSTRUCTION

1. New Construction

In July, Flathead County wetland district personnel, accompanied by the Bison Range maintenance crew, disassembled three 28' x 28' sheet metal buildings at the BLM project site in Duchesne, Utah. One of the buildings was installed at the Creston Fisheries Center for storage and workspace for Refuge personnel, (Figures 25 and 26).



Figure 25. A site for the "new" shop/storage building was selected behind the administrative office at the Hatchery complex. Several large spruce and larch trees were removed in early August. By mid-month the contractor had completed the concrete pad.
KS 8-16-88



Figure 26. The building was put up by force-account. Work was slowed due to weather delays, other duties and trying to remember how to "put it back together". Most of the insulation, electrical work and wood stove installation was completed by late December. Approximately 80 yards of rock was spread to develop an entrance road and parking area for equipment storage. In addition, an underground water line was installed. RW 12-19-88

Other new construction items this year included: installation of 150 yards of 4-strand barb wire fence to prevent vehicle trespass on Flathead WPA (unit 7); and fence-line walk-throughs for public access on Smith Lake (unit 3) and Blasdel (units 4 and 5).

In February, six new goose structures were installed at Blasdel (Fig. 27).



Figure 27. The new goose structures were built by the Bison Range maintenance staff out of 2' x 10' planks and aluminum grating. Installation was completed in late February. Three of the structures were successfully used this first year.
RW 2-25-88

Two parking lots were constructed on the new Duck Haven WPA in Lake County. Each lot included an area to accommodate four cars, along with metal gates to shut off easy public access during the spring and summer nesting period. New WPA signs were posted on the Duck Haven and Kickinghorse tracts prior to hunting season.

2. Rehabilitation

Approximately 35 man-days were spent this year rehabing fence lines and wire gates on Smith Lake, Batavia, Blasdel and Flathead WPAs. Most of the repairs were

needed due to snow compaction on the fence wires and subsequent damage from vehicle trespass.

An additional 2.5 miles of interior fence was removed on Blasdel. In addition, all debris from the out-buildings and old residence, which were burned by the Somers Volunteer Fire Department (Fig. 28) were buried and/or cleaned up.



Figure 28. The Somers Volunteer Fire Department burned the six out-buildings on Blasdel in January. In April, the old residence was burned. All fires were used as training aids for new members on the fire crew. We spent approximately 10 man-days disposing of the remaining debris. RW 1-30-88

All debris along the shoreline of Smith Lake (units 8 and 9) was cleaned up and piled for burning in 1989.

In June, ten yards of 3/4" crushed rock was spread over low spots on the Batavia access road.

4. Equipment Utilization and Replacement

In May, two Husqvarna hand-held, gas-powered weed eaters were purchased to assist with mechanical weed control efforts.

In December, Refuge Law Enforcement equipment was upgraded with the purchase of two new Remington Model 870 12-gauge shotguns.

In September, NBR maintenance crews wired and installed a heavy-duty hitch on the one-ton crew cab for trailer and equipment transport on Flathead County work projects.

J. OTHER ITEMS

1. Cooperative Programs

Jon Malcolm continued to serve as Chairman of the Flathead Valley Canada Goose Committee. The Committee is an interagency effort to coordinate Canada goose management in the Flathead Valley. Members include representatives from FWS, Montana Department of Fish, Wildlife and Parks, BIA and the Confederated Salish and Kootenai Tribes. The committee has no formal regulatory authority, but it serves to coordinate management efforts by the various agencies, and its recommendations are considered by those who set annual hunting regulations.

4. Credits

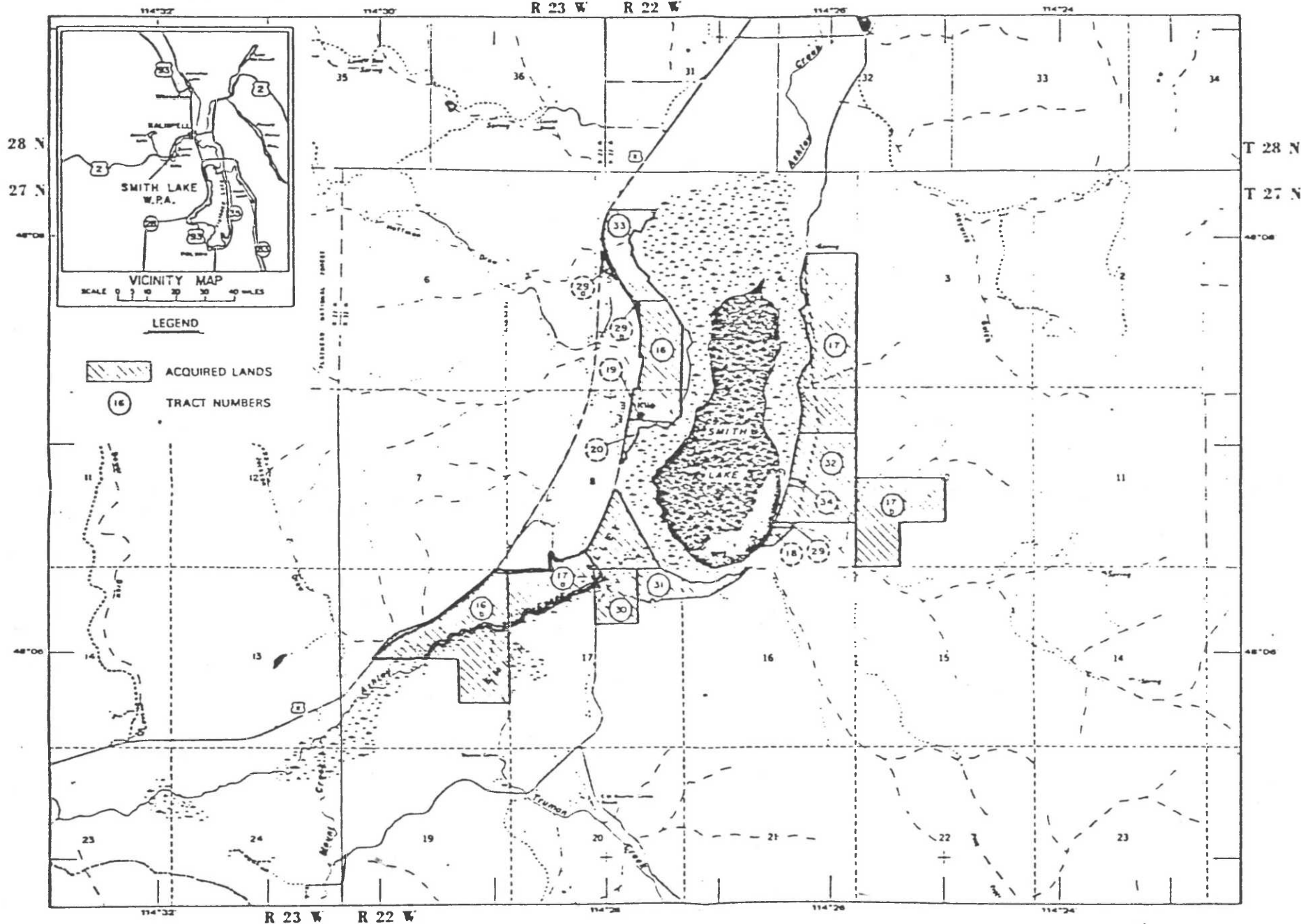
Information and data for Lake County WPAs was provided by Assistant Manager West. Data for Flathead County WPAs was provided by Assistant Manager Washtak, who also assembled the report. Sharol Birks and Sharon Hooley of the Creston Fisheries Center typed it. Jon Malcolm provided editing and final review.

SMITH LAKE WATERFOWL PRODUCTION AREA

UNITED STATES
DEPARTMENT OF THE INTERIOR

FLATHEAD COUNTY, MONTANA

UNITED STATES
FISH AND WILDLIFE SERVICE



COMPILED IN SURVEYS AND MAPS
FROM SURVEYS BY THE BLM AND
GEOLOGICAL SURVEY

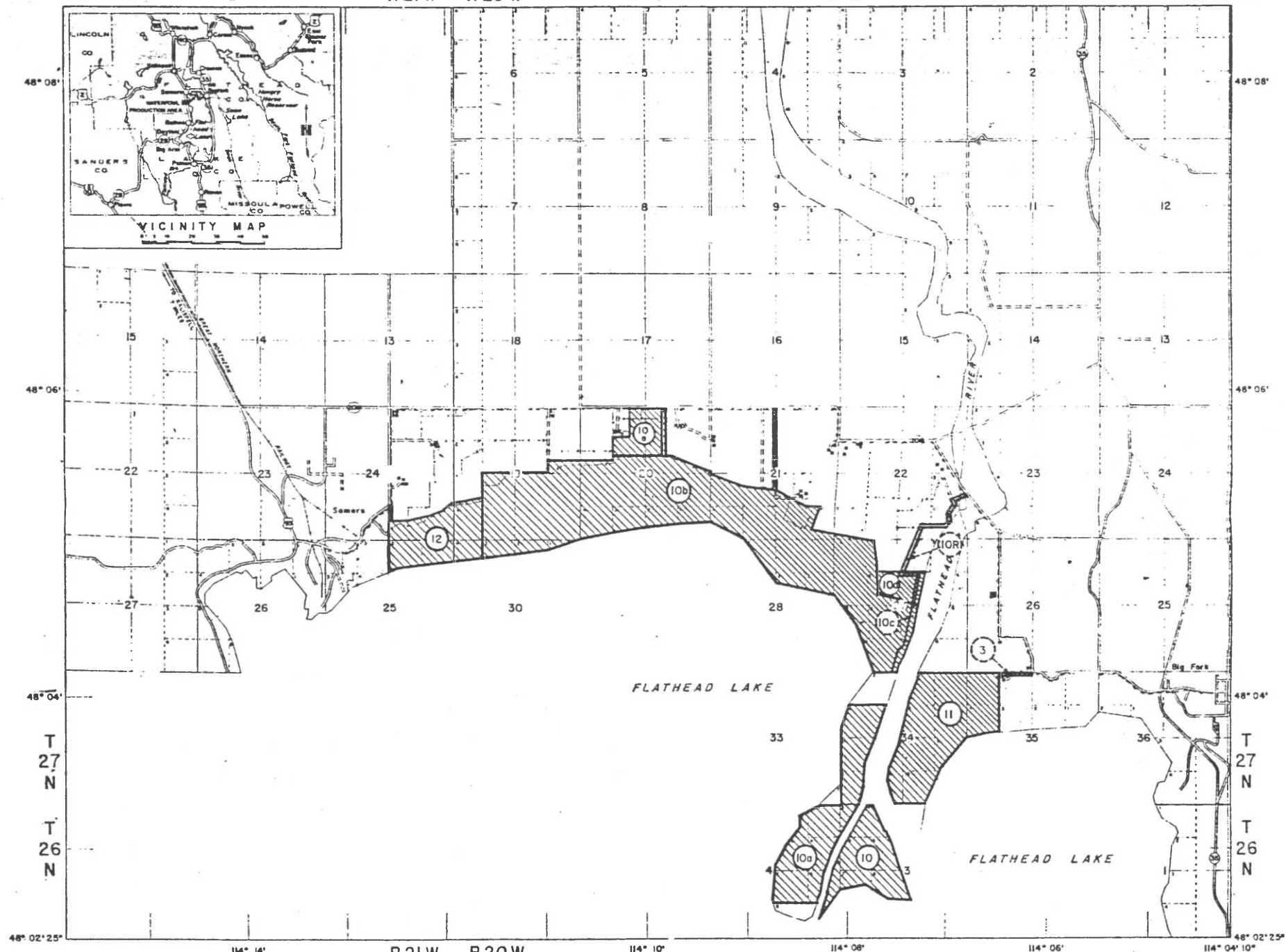
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Revised JULY 1979

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SURVEYS BY BLM, USGS AND FWS

DENVER, COLORADO
Revised: May, 1977

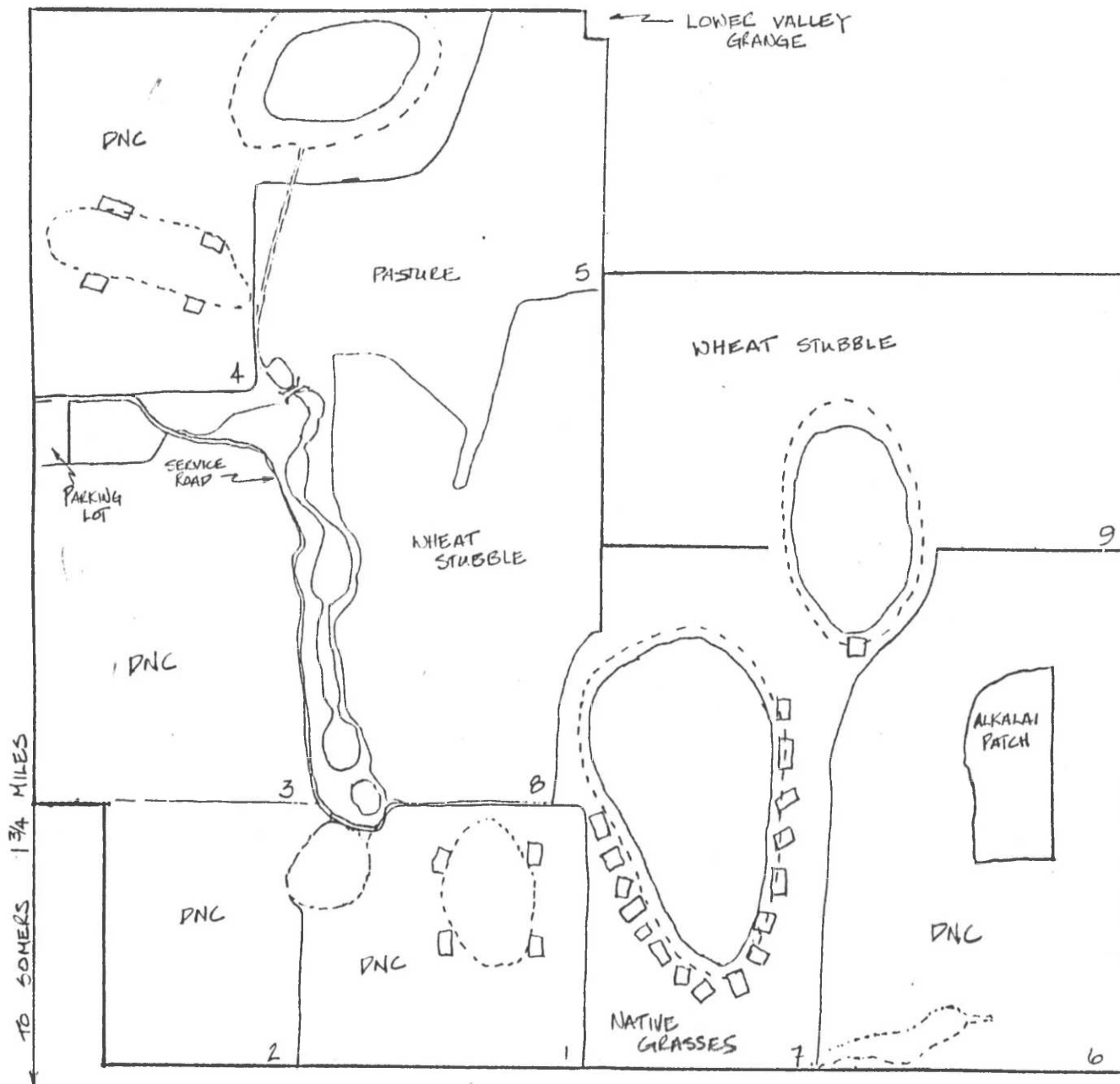
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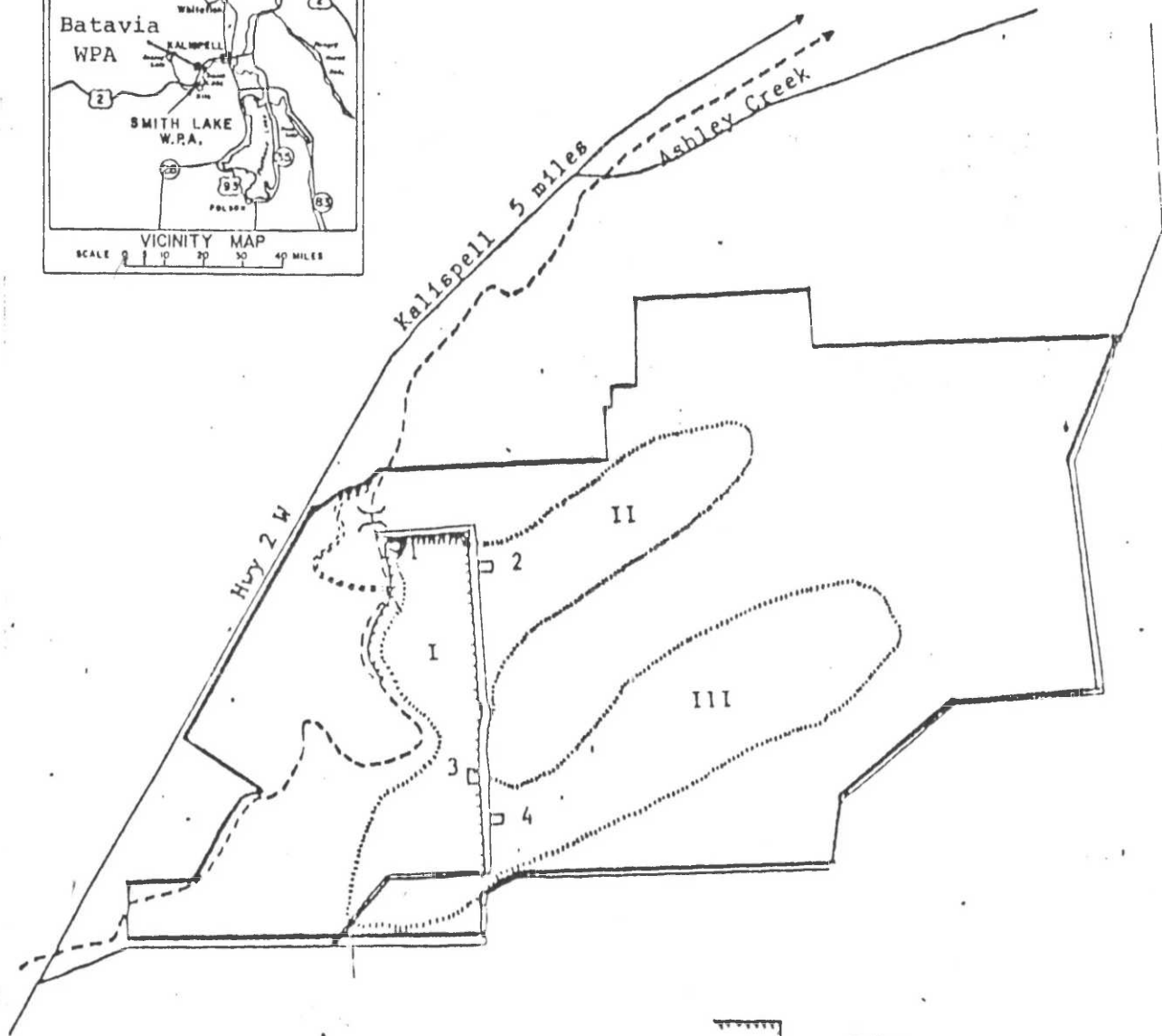
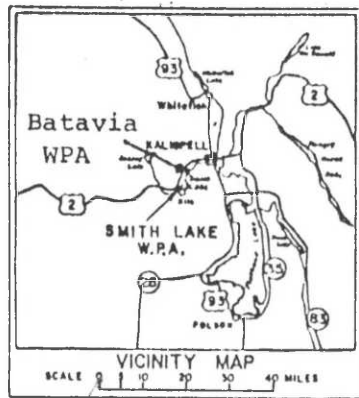
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BLASDEL WATERFOWL PRODUCTION AREA
U.S. FISH AND WILDLIFE SERVICE
DEPT. OF INTERIOR
ACREAGE: 537



BATAVIA WPA



- WPA Boundry
- Roads
- Original Creek Bed
- Ashley Creek
- Marsh
- Feeder Ditch
- Dike
- Old Dam Site
- New Dam Site
- Culvert and Control Structure

