SWAN RIVER NATIONAL WILDLIFE REFUGE

. Kalispell, Montana

ANNUAL NARRATIVE REPORT Calendar Year 1986

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# U.S. Department of Interior FISH AND WILDLIFE SERVICE

NATIONAL WILDLIFE REFUGE SYSTEM

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# REVIEW AND APPROVALS

# SWAN RIVER NATIONAL WILDLIFE REFUGE

# Kalispell, Montana

# ANNUAL NARRATIVE REPORT

Calendar Year 1986

Refuge Manager Date Project Leader Date

Supervisor Review Refuge

<u>J</u> Date 27/87

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Regional Office Approval

Date

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# INTRODUCTION

The Swan River National Wildlife Refuge is located in northwest Montana, 38 miles southeast of the town of Kalispell, in the serene and picturesque Swan Valley Mountain Range, (Figure 1).



Figure 1. The Swan Valley offers a tranquil and peaceful setting. Swan River NWR (outlined in red) lies at the south end of Swan Lake. This view looks directly south. The 1,009,356 acre Bob Marshall Wilderness area is located on the left beyond the Swan Mountain Range, which has been designated as habitat "necessary or critical for the recovery" of the grizzly bear. RM 07/02/81

Swan River National Wildlife Refuge was established in 1973 at the request of Montana Senator Lee Metcalf, who desired

to see the area preserved. Today the Refuge consists of 1,568 acres, with an additional 210-acre Forest Service inholding that is managed under a Memorandum of Understanding. The Refuge lies in the floodplain of the Swan River above Swan Lake and between the Swan Mountain Range to the east and the Mission Mountain Range to the west. The valley was formed when glacial water poured down the steep slopes of the Mission Range into Flathead Lake. The valley floor is generally flat, but rises steeply to adjacent forested mountain sides. Approximately 80 percent of the Refuge lies within this valley floodplain, which is composed mainly of reed canary grass. Deciduous and coniferous forests comprise the remaining 20 percent. Swan River, which once meandered through the floodplain, has been forced to the west side of the Refuge by deposits of silt, leaving a series of oxbow sloughs within the Refuge floodplain.

Objectives of the Refuge are to provide for waterfowl habitat and production and to provide for other migratory bird habitat, as well. The Refuge also provides nesting sites for a pair of southern bald eagles and a variety of other avian species. In addition, deer, elk, moose, beaver, bobcat, and black bear are known to inhabit the area. There are no significant developments or facilities on the Refuge and present management is directed at maintaining the area in its natural state. The Refuge is a satellite unit of the National Bison Range. Day to day administration and operations are the responsibility of an "on-site" Refuge Manager located at Creston, Montana, 30 miles northwest of the Refuge.

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# INTRODUCTION

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L. INFORMATION PACKET

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#### A. <u>HIGHLIGHTS</u>

Snowfall for the year totaled 112 inches (Sec. B.).

The Bald Eagle pair successfully hatched and raised two young, (Sec. G.2.).

Estimated waterfowl production declined 30%; Canada goose production also declined 25%, (Sec. G.3.).

Lake County, including the Refuge, was included in a fivecounty steel shot zone for waterfowl hunting (Sec. H.8.).

#### B. CLIMATIC CONDITIONS .

The mild winter weather experienced in late 1985 continued into the early winter months of 1986. Temperatures varied considerably during the first quarter, with daytime temps reaching a balmy  $55^{\circ}$  on the 28th of February and a low of -6° on the 21st. Snowfall was intermittent throughout this period, however, a major storm on February 15th deposited 13 inches. The first quarter of the year was also marked by considerable cloudiness and overcast skies, accompanied by periods of rain and fog. All snow cover had melted by March 15th.

April ushered in an early summer with warm, sunny skies and little precipitation. May and June were unusually hot and dry with many 30-year high temperature records broken. The hot, dry weather continued into early July. However, a cool front moved in on July 4th and unusually cool and wet conditions prevailed for two and one-half weeks. On July 6th, 12-18 inches of snow fell at elevations above 7,000 feet. Late summer brought more normal weather conditions, with temperatures generally in the upper 80's.

Fall weather entered the valley when another cool front swept through the area on September 5th. Cloudy, overcast skies for 24 days in September also brought 3.63 inches of rain. The first frost of the year occurred on September 12th. Clear, sunny days and cool nights were the norm for the first half of October. Heavy fog and drizzle blanketed the area from the 14th through the 26th.

Winter arrived in early November with a sudden onslaught of cold temperatures  $(-5^{\circ} \text{ on the 10th})$ . Freeze-up occurred on November 10th, followed by 13 inches of snow on the 11th.

Periodic heavy snowfall throughout the rest of November resulted in a monthly total of 49 inches, a 56 percent increase from the ten-year average. November temperatures moderated by mid-month, melting a good portion of the snow cover. Only 16.5 inches of snow fell in December compared to the ten-year average of 37.4 inches. Relatively mild temperatures throughout December resulted in some melting. Subsequently, at year's end, only 8 inches of snow was on the ground.

	* 1986			** Ten-Year Averages							
MONTH	MONTHLY HIGH (0°F.)	MONTHLY LOW (0°F.)	TOTAL INCHES PRECIP.	TOTAL INCHES SNOWFALL	HIGH (0°F.)	LOW (0°F.)	TOTAL INCHES PRECIP.	TOTAL INCHES SNOWFALL			
January	47 <sup>0</sup>	5 <sup>0</sup>	3.55"	28.0 "	45 <sup>0</sup>	-18 <sup>0</sup>	3.82"	40.5"			
February	55 <sup>0</sup>	-6 <sup>0</sup>	3.76"	17.5 "	52 <sup>0</sup>	-80	3.07"	24.5"			
March	67 <sup>0</sup>	20 <sup>0</sup>	1.73"	.75"	59 <sup>0</sup>	30	2.21"	15.3"			
April	74 <sup>0</sup>	20 <sup>0</sup>	1.00"	.1"	73 <sup>0</sup>	15 <sup>0</sup>	1.68"	3.8"			
May	92 <sup>0</sup>	29 <sup>0</sup>	2.23"	0.0 "	89 <sup>0</sup>	25 <sup>0</sup>	2.56"	.6"			
June	910	33 <sup>0</sup>	2.32"	0.0 "	87 <sup>0</sup>	300	2.08"	.0"			
July	86 <sup>0</sup>	32 <sup>0</sup>	2.21"	0.0 "	91 <sup>0</sup>	330	1.35"	.0"			
August	890	38 <sup>0</sup>	1.83"	0.0 "	88 <sup>0</sup>	330	1.89"	.0"			
September	79 <sup>0</sup>	28 <sup>0</sup>	4.47"	0:0 "	81 <sup>0</sup>	2.30	1.68"	.3"			
October	70 <sup>0</sup>	2.00	.8 "	0.0 "	73 <sup>0</sup>	15 <sup>0</sup>	2.04"	3.7"			
November	48 <sup>0</sup>	-50	3.08"	49.0 "	56 <sup>0</sup>	20	3.12"	21.6"			
December	40 <sup>°</sup>	80	$\frac{1.22"}{28.2"}$	<u>16.5 "</u> 111.85"	46 <sup>0</sup>	-70	$\frac{3.76"}{29.26"}$	$\frac{37.4"}{147.7"}$			

Table 1. Climatic Data, Swan River National Wildlife Refuge

\* Annual climatic data for the Swan Lake area is voluntarily provided by Adolf Kopp, Jr., a private individual, who lives in Swan Lake, Montana. Adolf is under contract with the National Oceanic and Atmospheric Administration.

\*ATen-year average climatic data provided by the U.S. Weather Service, Great Falls, Montana.

# C. LAND ACQUISITION

#### 1. Fee Title

There was no land acquisition in 1986. Work continued this year on the planning process for potential waterfowl mitigation areas as required by the 1980 Northwest Power Act. This congressional act required mitigation for wildlife losses due to past and future construction of hydro-electric projects on the Columbia River System. In northwest Montana, two such projects (Hungry Horse Dam, 1948 and Libby Dam, 1968) were constructed. Wildlife losses for each of these dams has been documented in mitigation plans prepared by Montana Dept. of Fish, Wildlife and Parks (FWP) personnel. According to these plans 5,834 acres of prime waterfowl habitat were inundated by the two projects. Mitigation implementation for these acres is the responsibility of Bonneville Power Administration (BPA) via ratepayer dollars.

Several significant developments occurred in 1986 relative to these potential mitigation purchases:

- 1) Amendments to the Hungry Horse and Libby Mitigation plans were incorporated into the overall Columbia River Basin Fish and Wildlife Program. This resulted in a preliminary approval of both mitigation plans by the council members and opened the way for some form of mitigation to possibly begin by February 87. However, this action further narrowed wildlife mitigation acres attributed to both dams; waterfowl mitigation acres were reduced to 4,564 acres due to overlapping benefits to species other than waterfowl.
- 2) Public hearings on the amendment process were held in Kalispell and Missoula. This action gave the Power Council members insight into reactions and opinions of: the local public, power utilities, various state and federal agencies and sportsman clubs; to the mitigation plans, process and direction of emphasis. Overall public reaction was favorable. Opposition to the plan was voiced by the local Rural Electric Association because ratepayers will ultimately pay for any mitigation.
- 3) Also in 1986, Manager Washtak assisted Harvey

Wittmier (R.O.-Wetland Acquisition Office) with wetland delineations and subsequent development of an "Acquisition and Development Plan" for both Lake and Flathead Counties. This plan lists 19 specific tracts and/or roundouts as potential purchases by BPA. Any lands purchased may become fee title property of the Service. Future 0 & M funding for any purchases would also be the responsiblity of the Fish and Wildlife Service.

Of specific interest to the Refuge are two possible roundout purchases; a 71 acre wetland tract and a 534 acre forested tract which could be purchased to satisfy habitat losses assessed to grizzly bears.

4) At a December meeting in Helena, R.O. personnel formally proposed a F.W.S. waterfowl mitigation' plan to the state. The F.W.S. also asked for state endorsement of the plan and assurances of coordinated, future, joint mitigation efforts by the two agencies. The major outcome of the meeting was state endorsement of waterfowl mitigation via fee title or easement acquisitions and an agreement to work together towards potential waterfowl mitigation.

To date no acquisition has been made for any of the species (migratory or resident) affected by the two hydro projects. "Mitigation" which has taken place has been in the form of BPA funded studies (Sec. D.5.). The BPA process is a complicated biopolitical venture which involves many federal and state entities, as well as the public ratepayer. Because of this, "on-ground" mitigation for waterfowl losses may be several years down the road.

#### 3. Other

In July of this year, the Nature Conservancy notified the Refuge office of its intent to acquire an option on 397 acres of wetland and forested land adjacent to the south side of the Refuge (Figure 2). The Conservancy pursued this purchase because of the discovery of the rare <u>Howellia aquatilis</u> plant which was discovered in a slough next to the Refuge. There is nationwide concern for this plant, as it has been located in only 4 other places in the world (one other location in the Swan Valley; one each in western Washington, northwestern



Oregon and northern Idaho). The plant has not been found on the Refuge. <u>Howellia aquatilis</u> is currently on the Federal "proposal list" for classification as "rare and endangered".

Since the plant is aquatic dependent there was concern by the Conservancy over future water management plans on the Refuge. The Refuge is currently maintained in its natural state and no water control facilities exist; therefore, present management of the Refuge will not impact this plant.

The possibility also exists that the Conservancy may offer to sell this tract to the F.W.S. at a future date.

In mid-December we received word that the tract had been purchased by the Conservancy. Management of the preserve will be directed at protecting the Howellia colonies. A land steward, to be hired by the Conservancy in 1987, will plan specific management practices.

#### D. PLANNING

# 5. Research & Investigations

There was one research-oriented study on the Refuge this year. Jacoby Carter, a graduate student at Cornell University, working under the direction of Dr. Hall at the Yellow Bay Biological Station (Yellow Bay, Montana) investigated vegetative cover types and vegetative species gradients along the Swan Lake shoreline. The purpose of the study was to correlate and compare vegetation on the non-eroded shoreline at Swan Lake with cover types on an eroded shore at Flathead Lake. Jacoby's research was done in conjunction with on-going erosion studies on Flathead Lake (see Sec. D.5., N.W. MT. W.M.D. Narrative). His data will not be available until early in 1987, therefore, no results of Jacoby's research were available as of this writing.

In 1986 the University of Montana Cooperative Wildlife Research Unit contracted to do a nest drag study of the Wetland District (Lake and Flathead Counties) and Swan River N.W.R. Several attempts were made this year to search grassland units (reed canary grass) on the Refuge. Attempts to locate nests were made in May, June and July. However, wet, boggy conditions precluded any type of an efficient attempt; subsequently, the search was called off and no data is available on nest site selection or habitat preferences.

# E. ADMINISTRATION

# 1. Personnel

The Swan River NWR is a satellite unit of the National Bison Range that is manned by an "on-site" Refuge Manager (Figure 3). The manager is headquartered at the Creston Fisheries Center (Figure 4).



Figure 3. Ray Washtak, Refuge Manager, Swan River National Wildlife Refuge. LL 1/23/87



Figure 4. The Creston Fisheries Center is located near the small town of Creston, 15 miles east of Kalispell and 90 miles north of the National Bison Range. The Fisheries Center is the only F.W.S. facility in the "north valley" area. Several F.W.S. divisions, including Ecological Services, Fishery Assistance, and Hatcheries are headquartered at the center. RW 05/10/85

Supervision of the Refuge Manager, who is a staff member of the Bison Range, is the responsibility of the Project Leader at the Range. The majority of day-today management responsibilities, administration and operations on the Refuge are left up to the discretion of the on-site manager. In late March of this year Kevin Shelley (Figure 5) E.O.D. as a Biological Technician to assist with routine field operations.



Figure 5. Kevin Shelley, Biological Technician, (temporary). Kevin is a wildlife major at the University of Montana (Missoula). His summer experiences, which greatly assisted the Refuge program, included: pair counts, brood counts, fencing, noxious weed control, census, nest dragging, posting, parking lot construction, wildlife surveys (i.e., coo counts), vehicle repair and various maintenance activities. RW 1/18/87 Clerical support for the Refuge program is provided through a combination of Administrative Clerks. The Fisheries Center Administrative Clerk, Sharol Birks, (Figure 6) provides assistance with day-to-day administration (i.e., typing, telphone answering, imprest and other immediate clerical duties), while the Refuge Assistant at the Bison Range provides direction and support for detailed Refuge administration.



Figure 6. Fisheries Assistant, Sharol Birks, a staff member of the Fisheries Center. Sharol also assists in day-to-day administrative matters pertaining to the Refuge program. Sharol's secretarial services, plus Refuge office space at the Center is provided on a cooperative, reimbursable basis. RW 1/5/87 Table II. \* Number of Employees

		Full	Time	Part	: Time	Temporar	y Total	l FTEs
FY	83		l		0	0		1
	84		1		0	0		1
	85		1		0	0		1
	86		1		0	l		1.4
	87		1		0	1	**	1.4

\* Table II lists personnel assigned to Swan River NWR and the North Valley WPAs only; for a complete listing of personnel and employment summary refer to the National Bison Range Annual Narrative.

\*\* Currently planned for FY 87.

#### 3. Other Manpower Programs

Through the course of the year there were many times when personnel of the various divisions at the Fisheries Center assisted each other with on-going work programs. It would be impossible to list each activity separately, however, it was not unusual to see Fisheries Technicians helping out with vehicle repairs, woodworking projects or other shop/field related items involving the Refuge program. This type of assistance is greatly appreciated and provided "unseen" support for the Refuge program.

Robbin Wagner of the Fisheries Assistance office provided 32 hours of direct work-related assistance to the Refuge this year. Robbin assisted with posting of closure signs, boundary posting, seeding of wild rice, and loading used telephone poles that will be used to support Canada goose nesting structures.

# 4. Volunteer Programs

In early March several members of the Flathead Chapter of the Audubon Society spent one evening assisting with the construction of ten wooden goose nesting structures to be used on the Refuge and Wetland District.

#### 5. Funding

Funding for the Swan River National Wildlife Refuge is included in the overall annual appropriation of the National Bison Range (NBR). For FY 87 approximately \$50,000 has been allocated for the north valley refuge and wetland district operations (Table III). Work programs and projects on these units are planned by the on-site manager, coordinated with the Project Leader at the Bison Range for approval, then, if feasible, included in the annual work plans of the NBR. The FY 87 overall target appropriation for the Bison Range was reduced by 14% from FY 86 funding levels; however, no reduction of funding was made this year for north valley operations (Table IV).

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

### Table III. Annual Appropriations

Swan River N.W.R. and Flathead County W.P.A.s

_ <u>H</u>	Υ	0 & M	Additional Funding	
	83	42,000		
	84	42,000	\$26,000 (2800), \$20,000 (ARMMS	)
¥	85	34,000	\$12,000 (small ARMMS)	
¥	86	50,000	\$10,000 (small ARMMS)	
¥	87	50,000		

\* Funding provided from 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. Table IV. NBR Annual Appropriations

		1260	6820	Total 0/M	8610	AARMS	YCC
FΥ	83	339,000	33,000	372,000	6,000		
FΥ	84	323,000	45,000	368,000	6,000	75,000	13,000
FΥ	85	360,000	45,000	405,000	7,000	62,000	13,000
FΥ	86	300,000	45,000	345,000	4,700**	154,000	13,000
F'Y	87	279,000	42,000	321,000	11,700*	110,000	

\* Projected

\*\* Actual Spent

# 6. <u>Safety</u>

There were no work days lost due to accidents in 1986. Safety meetings, when planned by the Fisheries Center staff, were attended by the Refuge Manager. On several occasions NBR safety meetings were also attended when Manager Washtak was at the Range the day of a planned meeting.

#### 7. <u>Technical Assistance</u>

Wildlife Technical Assistance is not a funded responsibility of the north valley Refuge position. However, because of the important and diverse wildlife values in northwestern Montana and the sensitive interaction that these values have on many projects and issues in this area, assistance was provided to other FWS divisions on a number of occasions. This assistance was provided only when time and Refuge work programs permitted.

In 1986, Ecological Services Division at the Fisheries Center was assigned the responsibility of collecting specimens suspected of being contaminated with heavy metals at Milltown Reservoir. This reservoir is located 10 miles east of Missoula at the junction of the Blackfoot and Clark Fork Rivers. The reservoir is known to be contaminated with heavy metals deposited by past copper mining operations in the Clark Fork River drainage near Anaconda and Butte, Montana. Approximately 11 days of assistance was provided by the Refuge Manager in the capture and collection of various species of fish, shorebirds, aquatic insects, crustaceans and waterfowl, (Figure 7). Assistance was also provided with waterfowl pair counts in May, followed by brood counts in July.



Figure 7. Wildlife Biologist Larry Lockard (E.S. Division-Creston) separating invertebrates samples for further analysis of heavy metal concentrations. RW 7/2/86

At the time of this report, species analysis and results had not been completed. Mitigation measures will be the responsibility of Montana Power Company (owner and operator of the dam and reservoir) should excessive heavy metal concentrations be found in the samples collected. Mitigation measures have also not been formulated as of this report date.

# 8. Other

Meetings and/or training attended this year included:

Numerous meetings involving mitigation planning, coordination, implementation and updates involving the State of Montana, FWS, BIA, local Indian Tribes, BOR, related agencies and the Bonneville Power Administration. Also attended were local public hearings concerning BPA mitigation plans.

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

State Pesticide Training - Lewistown, Montana.

Flathead Valley Canada Goose Committee Meetings; participants included FWS, state biologists and managers, BPA funded research personnel, University of Montana Wildlife Cooperative Unit personnel, BIA and Tribal personnel.

Montana Power Company Interagency Consultation and Coordination Meeting concerning the Kerr Dam settlement articles and potential mitigation due to erosion of Flathead WPA. Also attended were several meetings with Montana Power Company biologists concerning on-going erosion and vegetative studies on Flathead WPA.

Various meetings with state and federal agencies concerning the EPA Superfund Site cleanup at the Somers Marsh and subsequent remedial studies of other adjacent contaminated wetlands.

Quarterly CRD (Committee for Rural Development) meetings concerning coordinated, valley-wide noxious weed control efforts by all state and federal agencies (with fee title land holdings) in Flathead County.

Annual Work Plan Meeting - National Bison Range.

Annual L.E. Refresher Course - Denver.

Several meetings with the Flathead Land Trust, Trust for Public Lands (Tacoma, Washington) and local landowners involving acquisition of wetland units in Flathead County. Two meetings with Forest Service and Nature Conservancy (NC) officials concerning refuge management plans and their potential impacts on proposed NC acquisition areas adjacent to the Refuge (Sec. C.3.)

# F. HABITAT MANAGEMENT

### 1. <u>General</u>

The 1,568 acre Swan River NWR (Figure 8) lies at the south end of Swan Lake. The Refuge is composed primarily of an "alluvial floodplain bog" which also contains several old oxbow sloughs. Vegetation within the floodplain is composed mainly of dense stands of reed canary grass. Small growths of willow, alder and birch are also found on higher elevations within the floodplain.



Figure 8. An aerial view of Swan River NWR looking west from 6000 feet. Approximately 80% of the Refuge is composed of an alluvial floodplain. Note the open water "oxbows" which delineate the original course of Swan River. RW 4/3/86 Elevated upland sites, which lie on the west, south and southeast sides of the Refuge are dominated by stands of spruce, riparian cottonwood forests and coniferous forests of cedar, fir and tamarack. Swan River meanders through the western side of the Refuge, finally emptying into the southwest corner of Swan Lake. Spring Creek traverses the reed canary grass meadows on the eastern portion of the Refuge and also empties into Swan Lake.

From late May through July of each year, mountain runoff, coupled with spring rains, forces the Swan River out of its banks. As a result, 80% of the Refuge is flooded annually with one to two feet of water. As river flows subside in late summer, water levels on the Refuge also subside, resulting in heavy growths of reed canary grass.

With the exception of remnants of various channels dug in the 1920's and used as a muskrat farm, two old delapidated log buildings, and twelve nesting islands in the northwestern portion of the marsh, there are no developments on the Refuge. "Bog Road", a county owned road, which traverses the northern half of the Refuge provides the only land access route to the Refuge. Management of the Refuge is currently directed at maintaining the area in its natural state.

# 2. Wetlands

Approximately 1,254 acres of the Refuge can be classified as a wetland/grassland complex (Figure 9). All of this acreage lies within the "alluvial floodplain".



Figure 9. Wetland/grassland vegetation consists of reed canary grass, bulrush and quackgrass ecotypes. This meadow/wetland vegetation is compacted by heavy annual snowfalls. Spring snowmelt creates ponds of open water that provide excellent pair habitat. RW 04/09/86



Figure 10. Swan River meanders lazily through the western side of the Refuge. Other than this riverine system, all other wetlands on the Refuge can be classified within the palustrine or lacustrine systems. RW 4/9/86

With the exception of a culvert through which Spring Creek flows under Bog Road and a site gauge within the creek that is used for recording monthly flows levels, there are no other water control facilities or developments on the Refuge.

Annual flooding of the Refuge precludes effective manipulation of the wetland vegetation. Over the years, subsequent regrowth of the dense stands of reed canary grass has resulted in a heavy litter layer.

In mid-October, 30 pounds of wild rice seed was planted along the lower two-thirds of Spring Creek, Figure 11.



Figure 11. Wild rice seeding on Spring Creek. The seed was obtained from St. Marie's Nursery, St. Maries, Idaho and should be well suited to the northern climates and local growing conditions. Seed costs were shared by the Flathead County Extension Service as an experiment to see if it would grow and what kind of waterfowl use would result. The area will be monitored closely in 1987. Robbin Wagner, 10/22/86

#### 3. Forests

Forested areas (approx. 313 acres) on the Refuge are located on upland sites along the western, southern and southeastern portions of the Refuge. These areas consist of old growth fir, larch, spruce and cedar. All forested units continue to be maintained in their natural state.

# 4. Croplands

There are no croplands on the Refuge.

### 5. Grasslands

There are no seeded or prairie grassland units on the Refuge. Annual flooding prohibits establishment of stands of cool season grasses and/or forb mixtures.

# 7. Grazing

Grazing has been considered as a periodic management treatment to reduce mulch accumulation and "open-up" the marsh in dry years. No grazing cooperators were located in 1986, therefore, no grazing was done. If willing cooperators can be found in 1987, this management tool will be utilized.

#### 8. Haying

Several attempts were made again this year to locate cooperators willing to hay the reed canary grass meadows which had dried out by mid-August. The purpose of the planned haying was to remove accumulated litter and provide larger open pools of water the following spring for pair habitat. However, none of the individuals contacted were interested, as they either had enough hay already or thought that a "late" year haying (August, September) would result in a "reduced protein content" and subsequent low forage quality. As an inducement the hay was offered for only \$5.00/ac, however, there were still no takers.

# 9. Fire Management

Since the Refuge lies adjacent to densely wooded Forest Service land, as well as private land, the use of prescribed burning as a management tool is limited. Control of any fire would be extremely difficult, if not impossible; therefore, no prescribed fires were conducted in 1986. Future burning activities will hinge on adequate control measures.

Even though prescribed burning opportunities on the Refuge are limited, this management tool may be used sometime in the future. With this in mind, and as further protection for the Refuge, a revised Memorandum of Understanding for control of any wildfire on the Refuge was negotiated with, and signed by the U.S. Forest Service, (Bigfork Ranger District).

#### 10. Pest Control

Several elevated upland sites within the Refuge are infested with Canada thistle which is considered a noxious weed in Montana. Most of these sites are within the reed canary grass meadows or along the Swan River banks, thereby making access with spray trucks impossible. The only alternative is to use back pack sprayers, a costly and time consuming control method. No control efforts were made this year due to on-going work duties on the wetland district.

### 11. Water Rights

Water rights and subsequent usage within the "water rights claim area" occupied by the Refuge has been based on a historical irrigation use due to natural flooding. Past water right claims (by private individuals) were not issued on an acre-foot basis because "natural flooding" did not involve a "point of diversion"; hence it was not possible to determine actual acre-footage claimed or used. In 1981 the FWS filed and received a preliminary decree for water rights on a "claimed" 19,117 acre feet. These water rights are based on "FWS use", meaning, for wildlife This type of use is also based on a "point benefits. of diversion" which is in contrast to past historical water rights. When issuing the preliminary decree, state authorities did not award a specific quantity as listed in our request, because no point of diversion Since that time the Service has filed an exists. objection with the Department of Natural Resources Commission on the grounds that the Service wants a specified number of acre-feet as a water right. A prehearing conference was held this year to clarify the matter. At year's end no word had been received as to

the outcome of the hearing. It is suspected that the case will eventually go to court before we can legally claim an actual amount for our use.

# G. WILDLIFE

#### 2. Endangered Species

Southern Bald eagles were the only endangered or threatened species observed on the Refuge this year. Sightings are nearly an everyday occurrence throughout the year. Forested areas along the river and the availability of a constant food source (i.e., rodents and small mammals) create an ideal home for these giant birds.

Eagle populations peaked in April when five adults were observed along the river. Use-days for 1986 were estimated at 1,050, a nine percent increase from CY 85.

In Montana, grizzly bears are listed as a threatened species under the 1972 Endangered Species Act. There were no sightings of grizzlies or grizzly tracks on the Refuge this year. However, they are known to inhabit the Swan Mountain Range and the adjacent Bob Marshall Wilderness Area. If any use of the Refuge does occur, it is considered to be of a random, transient nature.

#### 3. Waterfowl

Waterfowl populations that utilize and/or nest on the Refuge include the majority of common duck species and the Canada goose. Because the majority of the Refuge is flooded each year during June and July, nesting habitat for upland nesters is generally limited to forested areas. For this reason, waterfowl species that nest "over water" or in tree cavities are also common to the Refuge.

Pair counts were completed in May this year, followed by brood counts in July. These counts are done by walking those areas of the Refuge that are accessible and by driving in boats slowly along the lake shoreline and up Swan River. Dense vegetation often makes observations difficult and it is likely that some pairs are missed. This fact makes duck production difficult to estimate. Pair count results for 1986 are summarized in Table V.

Table V. 1985 Pair Counts - Swan River NWR

SPECIES	# PAIRS OBSERVED
SPECIES Mallard Cinnamon teal Common goldeneye Wood duck Common merganser	# PAIRS OBSERVED 35 15 5 1 4
Total	60

Duck production figures are estimated by applying a calculated productivity rate to the number of pairs observed for each species. The rate fluctuates around an assumed average of .45, based on changes in the brood pair index. The calculated rate this year was .482. Production figures for 1986 are summarized in Table VI. This was the second year in a row that duck production declined.

The reason for this year's decline in duck production is not readily apparent. As mentioned earlier, the inherent errors caused by varied physical factors that can be made from year to year in counting pairs is likely to cause the most significant change in estimated production figures. Care is taken to do as accurate a count as possible. In 1986 less pairs and duck broods were observed than in 1985. Habitat conditions were essentially the same this year. Climatic conditions the day of the count were also favorable. Since the Refuge is maintained in its natural state, management activities cannot account for this year's decline in production. Therefore, decreased production this year may be due to: 1) some "quirk" of Mother Nature which apparently resulted in less birds utilizing the Refuge (peak spring populations [Table VII] were down 61 percent when compared to 1985 figures; 2) poor survey techniques, although this was not apparent in the field; and 3) we just don't know. This situation will be monitored closely in 1987 and evaluated to try to determine if there is some specific factor(s) affecting duck production.

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
ann ann anns anns an an anns anns anns								n en manten fertinenige bisarden er					
Canada geese	75	44	74	80	85	10	39	25	56	34	36	94	67
Ducks	335	475	355	350	262	4.2	42	683	1152	1005	$\star$	244	150
<ul> <li>Duck produ</li> </ul>	iction u	nknown,	no surve	ys made.									

# Table VI. Estimated Waterfowl Production, 1974-1986 Swan River National Wildlife Refuge

Table VII. Peak Waterfowl Populations, Spring Migrations Swan River National Wildlife Refuge

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
	1071	1070	1070	2011	1070		2000	2001	1002	1000		1000	1500
Swans	71	50	55	30	10	30	100	80	8	20	40	0	16
Canada geese	60	37	65	30	120	5	120	35	280	380	350	300	223
Ducks	2600	500	410	780	410	1900	2390	530	1770	1270	136	920	367
								4					-

33 -

Waterfowl population estimates on the Refuge are based on random ground counts made in conjunction with ongoing work activities and scheduled aerial census flights. In 1986, waterfowl populations peaked in April (spring migrations) and in November (fall migrations). Total waterfowl use-days this year were estimated at 1,345,150 days.

Canada geese are also common to the Refuge and nesting probably occurs on elevated areas or on remnants of borrow dikes. Breeding pair population objectives have been set at 30 pairs for the "Swan River System". This area includes adjacent off-Refuge lands (i.e., Swan Lake and Swan River).

Goose populations are monitored by random ground counts and scheduled aerial census. Aerial pair counts are made in April, followed by another aerial census of broods in early June. In 1986, sixteen pairs and sixty-seven goslings were observed on the Refuge (Table VIII).

It should be noted that broods counted on the Refuge may or may not be a result of actual production on the Refuge. At times, broods which are hatched on Swan River or elsewhere along Swan Lake migrate to the Refuge in search of food, loafing sites or for safety reasons. Therefore, the figures listed in Table VIII represent those broods observed on the Refuge the day of the count. However, these figures are our most reliable, accurate and consistent determination of goose production.

Because of accessibility problems to most of the Refuge, it is not possible to thoroughly determine actual nesting or nesting success on the Refuge. However, in 1986 the thirteen nesting islands in the northwest corner of the Refuge were searched, as were all borrow dikes. No nests were found on these areas. The decline in goose production may be attributed, in part, to an increase in non-breeders using the Refuge this year.

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
									×.				
Swans	70	27	4	35	18	1	30	28	52	20	37	10	10
Canada geese	300	300	300	930	280	370	180	330	260	200	165	40	175
Ducks	1180	5400	1600	1200	2450	170	2640	720	1050	1160	780	440	847
1. 2 - 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.				*									

Table VIII. Peak Waterfowl Populations, Fall Migrations. Swan River National Wildlife Refuge

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#### 4. Marsh and Water Birds

The wetlands on the Refuge offers a diversity of habitat for many species within this group. Soras, pied-billed grebes, red-neck and horned grebes, American bitterns, and great blue herons are common species that can be observed throughout the spring, summer and fall months. Populations are monitored through random observations done in conjunction with on-going Refuge work activities. Nesting probably occurs, but was not documented this year by actual observation or nest searches.

Several years ago, great blue herons established a rookery along the northeast boundary of the Refuge adjacent to Swan Lake. Active nests have varied between twelve and eighteen. In 1986 approximately thirteen nests were occupied (based on the number of herons seen consistently near or in the nests). Production is unknown.

Populations of marsh and water birds peaked in August. Use-days in 1986 were estimated to be 27,825.

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

In the early spring and summer months lake levels are at their lowest, resulting in mudflats along the lake shoreline and at the mouth of Swan River and Spring Creek. Common snipe, black terns, Wilson's phalarope, least sandpipers, ring-billed and California gulls are some of the species which utilize this habitat. No nesting was observed this year. Populations are also monitored on an "incidental basis" with other work programs. Populations of this group of birds peaked in July and August when 750 birds were observed. Total use-days this year were estimated at 61,880.

#### 6. Raptors

Coniferous and deciduous forest areas on the Refuge offer excellent resting and loafing sites for many raptor species. Various food sources are readily available within the open area of the floodplain, making the Refuge ideal habitat for hawks, owls and

#### eagles (Sec. G.2.).

Use of the Refuge this year by the more common raptor species was documented on almost every trip to the Refuge. In August, two ospreys were observed along the Swan Lake shoreline on the Refuge. This is generally considered an unusual sighting, as ospreys are more common in the Lower Valley areas near Flathead River.

Peak populations of this group of birds are estimated, based on random sightings. Nesting was not documented, but may occur. Use-days for 1986 were estimated at 8,270.

# 7. Other Migratory Birds

Mourning dove "coo count" surveys were completed in Lake and Flathead Counties. Northwest Montana has never held significant numbers of mourning doves, as is reflected by the results of the yearly survey. On this year's two survey routes only five doves and three "calls" were recorded.

Use of the Refuge by the mourning dove is of a random and incidental basis and populations cannot be specifically monitored.

# 8. Game Mammals

The protection, food, and cover of the Refuge and adjacent wooded Forest Service lands provide quality habitat for a variety of game mammals. White-tailed deer are common residents throughout the year, while mule deer and elk are considered "part-time" winter residents, coming down from higher elevations and deep snows. On February 9th, several elk tracks were observed in the forested portions on the west side of the Refuge; and on March 10th eight elk were observed on the Refuge one-quarter mile south of Bog Road. No formal surveys are conducted to determine the population trends of these species and all observations were made on a routine work-related basis. Production of any of these species may occur on the Refuge, but was not documented this year.

Other game mammals which may utilize the Refuge include

black bear and moose. No sightings were recorded this year. If any use of Refuge lands by these two species does occur it is considered to be of a random, transient nature.

#### 10. Other Resident Wildlife

The Refuge mammal list includes: coyote, gray wolf, lynx, bobcat, mountain lion, mink, river otter, beaver, raccoon and skunk. In 1986 river otter and beaver were observed along the banks of Swan River. In addition, raccoon and skunk tracks were also observed on sand bars in the river during May. Several coyotes were also observed during aerial counts made in the fall and winter months. Exact populations of any of these species is unknown.

In October several ruffed grouse were flushed from the wooded area west of Swan River. It is suspected that the secluded, forested portions of the Refuge and a variety of berry producing shrubs creates ideal habitat for this popular game bird. Total population utilizing Refuge land is also unknown.

# 11. Fishery Resource

Water level fluctuations which occur annually will limit a sustained fishery resource on most of the Refuge. With the exception of Swan Lake, only Spring Creek and Swan River offer suitable year round fishery habitat. The most common species found in the two areas are yellow perch, bull trout, northern pike, kokanee salmon, largemouth bass and suckers.

Waterfowl pair counts done in May this year along Spring Creek showed once again that the densely vegetated areas of the creek support a sustained population of spawning northern pike, as many spawning "lunkers" were observed. Montana Department of Fish, Wildlife and Parks (MDFWP) has prepared a warm-water fisheries plan that includes Swan Lake as a potential location for developing a "sporting" population of northern pike. Since Spring Creek appears to be a "prime" northern pike spawning area, the exact status of the pike population on the Refuge may be examined by MDFWP Fisheries personnel sometime in the near future if the warmwater fisheries plan is approved.

#### H. PUBLIC USE

## 1. <u>General</u>

Public use of the Refuge is limited due to its somewhat secluded, out-of-the-way location and annual flooding. The most common consumptive and non-consumptive uses of the Refuge are made by bird-watchers, waterfowl hunters, hikers, "nature lovers" and fishermen. At the present time there are no interpretive routes, foot trails or camping facilities on the Refuge; nor are any of these developments planned in the future.

Because the Refuge is located 30 miles from the manager's headquarters, the exact extent of public use activity is not known. The number of visits and activity hours are based on random observations and contacts made with the public through on-going work projects and routine law enforcement patrols.

To avoid disturbance to any nesting waterfowl the Refuge is posted every year as closed to all public access from March 1 - July 1.

#### 7. Other Interpretive Programs

Interpretive type programs and/or functions this year which involved the North Valley Refuge staff included:

- 1. A combination bird watching and interpretive talk given on-site at the Refuge to 20 members of the Flathead Chapter of the Audubon Society.
- A discussion of waterfowl management and presentation of a film entitled "Wetlands" to 26 members of the Kalispell Green-Wing Chapter - Ducks Unlimited.
- 3. Participation in the first Annual Montana Outdoorsman Spectacular at the Outlaw Inn, Kalispell. The show was a gathering of land management agencies, sporting goods retailers, sportsmen, artists, outdoor craftsmen, and

taxidermists. The Fisheries Center staff, as well as the Refuge staff, developed a booth in which all divisions were represented. During the two and one-half day event Refuge information, brochures and leaflets were passed out to the inquiring public.

 A Slide program on waterfowl management activities in the North Valley was given to 30 members of Flathead Wildlife, Inc. (a local sportsmens group).

#### 8. Hunting

In 1986, a non-toxic shot zone was proposed for five counties in Montana. Lake County was one of the selected counties. The zoning requirement was based on two criteria: 1) those counties having a population of at least twenty-five Bald eagles in one or more winters between 1978 and 1984; and 2) counties which have had an average annual waterfowl harvest of at least 5,000 birds during the 1970's. The proposal was initiated by the FWS in response to an earlier lawsuit brought against the Service by the National Wildlife Federation. The Federation contended that the Service was violating the Endangered Species Act by not banning lead shot in areas of high eagle mortality. Initial reaction to the steel shot proposal was generally negative, both by the State and individual hunters. This resulted in a threat by the State not to go along with the proposal and a subsequent counter threat by FWS to close the season. Several public hearings were held, as well as State/Federal bartering. The end result was State concurrence and further agreement to go with a total state-wide lead shot ban by 1991.

The steel shot requirement did not significantly affect this year's waterfowl hunting activity and only two complaints were received. Both complaints dealt with the effectiveness of the steel shot beyond 40 yards. As in the past, waterfowl hunting was allowed on the northern and western 40 percent (627 ac) of the Refuge, and was done in accordance with applicable state and federal regulations.

This year the goose and duck season opened on October 4. Hunting pressure on the Refuge was light, with only three groups of hunters (7 total) observed on interior hunt units; however, other hunt parties were known to be using Swan River, as evidenced from the sound of shooting in that vicinity. Success on opening day was also light, with only nine total birds checked in by the three parties. Moderating weather conditions and temperatures in mid-November and early December provided continued hunting opportunities. Pressure was generally light, but success for some hunters was good (Figure 12).



Figure 12. Late season waterfowl hunting opportunities on the Refuge were best along the ice-fee shorelines of the lake and Swan River. LL 12/2/86

Hunt activity subsided in mid-December when the edges of Swan Lake froze, making it difficult or impossible for hunters to launch their boats.

Total waterfowl hunting activity-hours for the year were estimated at 750, a 49 percent increase from CY 85 estimates.

Hunting of big game animals and resident upland game birds has never been allowed on the Refuge. It is

doubtful, based on random observations of big game numbers, that a huntable surplus exists on the Refuge. The exception to this may be the ruffed grouse population.

# 9. Fishing

Because Spring Creek offers ideal pike spawning habitat, both the creek itself and the area at the mouth of the creek, where it empties into Swan Lake, attract many fishermen during the May spawning run. This year was no exception to this and at times up to twelve boats were observed just outside the Refuge boundary. Since the Refuge is closed from March 1 -July 1, many fishermen like to test their luck and see how close to the Refuge boundary they can get. No trespasses occurred this year (Sec. H.17.) However, several boats were marginally "borderline" and were subsequently warned. Success was good this year with several limits of pike taken. Once the Refuge is open (July 1) most pike have spawned; however, it was not unusual to see more than one boatload of fishermen going up the creek to try their luck.

Those portions of Swan River which lie within the Refuge boundary are accessible by boat and attract a few fishermen each year. However, the exact number of fishermen and their success is not known.

Use-hours in this category are estimated based on observed fishing activity in Spring Creek and the river only, and not on fishing activity near the mouth of Spring Creek or anywhere else along the Refuge lake shoreline. In 1986 there were an estimated 100 visits to the Refuge resulting in 400 fishing activity-hours (estimated).

### 10. Trapping

Prior to 1985, trapping was permitted, by special-use permit only, in an effort to reduce muskrat populations; thereby, preventing possible Tularemia outbreaks from "overcrowding". Random observations of "rat" populations made this year did not reveal a surplus; hence, no trapping of muskrats or any other furbearing species occurred this year.

#### 12. Other Wildlife Oriented Recreation

Cross-country skiing is always a popular winter sport in northwest Montana. The Refuge is open to this type of recreational activity except during the closure period. The Refuge's forested areas and open floodplain offer excellent diversity of terrain for cross-country skiers. The most popular area on the Refuge continues to be that area adjacent to Bog Road and Spring Creek. No survey is conducted to determine the exact extent of this activity on the Refuge.

Other non-consumptive uses of the Refuge include bird watching and hiking. An estimated 80 visits occurred in this category this year, resulting in an estimated 200 activity-hours.

#### 17. Law Enforcement

Law enforcement efforts on the Refuge were again concentrated on three areas of concern: 1) waterfowl season, 2) the closure season (March 1 - July 1), and 3) during the winter months when snowmobilers take to the trails and forests.

The Refuge hunt area (Figure 13), was patrolled on opening weekend of waterfowl season and then on a routine basis thereafter. No citations were issued, although several hunters were cautioned about "pushing" the legal shooting hours. Compliance with the steel shot requirement was excellent with only two complaints heard (Section H.8.).



Figure 13. The 627 acre waterfowl hunt area is posted along the shorelines of Swan River and Swan Lake, as well as the area immediately adjacent to the north side of Bog Road. RW 8/14/86

Law enforcement efforts during the closure season and winter months concentrated again on snowmobile and cross-country skiing use in March and early April and on fishermen in May and June. No violations were observed; however, "snowcat" tracks were seen both on and off of Bog Road. Catching the "snowcatters" is difficult since it appears their activity is of a random nature and would require daily patrol which is not feasible.

### I. EQUIPMENT' AND CONSTRUCTION

# 1. New Construction

There were two minor projects on the Refuge this year involving new construction.

In August the new Refuge sign was installed, (Figure 14).



Figure 14. The Refuge sign was finally installed this year. Donated by the Flathead Chapter of the Audubon Society, the sign took three years to complete. Design details were initiated and reviewed in 1983 and 1984. It took a year for a local artist to finish it and it was finally ready in late 1985. The sign was installed adjacent to Highway 83 and adds much needed recognition for the Refuge. RW 8/29/86 In mid-October maintenance men from the Bison Range hauled in approximately 300 yards of pit run gravel for a parking lot adjacent to Bog Road, Figures 15 and 16.



Figure 15. Proposed site of Swan Refuge parking lot before development. Note the heavy stands of reed canary grass and the elevated borrow dike in the right hand side of the photo. RW 10/20/86



Figure 16. Pit run gravel and rock was obtained free of charge from a nearby Forest Service gravel pit and used to build up the area. The 65' x 65' lot was "tied into" the existing borrow dike as this area is relatively unaffected by mid-summer flood waters. Fencing around the parking lot may be done in 1987. Should vegetation begin to grow within the new lot, it will be sprayed. RW 7/18/86

# 2. Rehabilitation

In mid-August, seventy yards of pit run gravel were spread on Bog Road to fill several deep holes and ruts in the road (Figure 17).



Figure 17. Bison Range personnel spreading pit run gravel on Bog Road. The road, which crosses the northern portion of the Refuge and dead ends at Swan River, is not owned by the FWS. County plat books list this road as being "public domain" - a road that is owned by the county, but not maintained. The fill material was spread as well as possible by the NBR dump trucks. The State Roads Department, which maintains an equipment shed near the Refuge, completed smoothing off the fill at no charge to the FWS. The road is used by waterfowl hunters during the hunt season. RW 8/29/86

#### 4. Equipment Utilization and Replacement

In early May, Manager Washtak picked up two surplus 6wheel all-terrain vehicles, a surplus 10' airboat and a 4-place snowmobile trailer. All items had been temporarily stored at Long Lake Refuge in North Dakota and came from various stations in Region 6. After minor maintenance both ATVs are in good running shape. One can be used for parts, if necessary, however, both units will presently aid in marsh-related work projects (i.e., providing easier access to nesting islands for noxious weed control and possibly for pair and brood counts).

A local ATV, Marine and Snowmobile dealer overhauled the airboat. It will also be used (primarily in the wetland district) for wetland-related projects.

The snowmobile trailer will be traded for a new, smaller trailer in which the Refuge snowmobile, Honda ATV and 6-wheel ATVs can be hauled.

We are still waiting for the arrival of a new pickup for use on north valley areas. The present 1978, 4 x 4 Dodge, borrowed from the University of Missoula Cooperative Wildlife Research Unit, has been a welcomed and needed piece of equipment. In March of this year, we learned that the GSA contract for the two new 4 x 4s (one is for the Bison Range) ordered in November '85 was finally "let". Hopefully, the new rigs will show up sometime in 1987.

#### J. OTHER ITEMS

#### 1. Cooperative Programs

The local Flathead Chapter of the Audubon Society continued its interest and support of the Refuge this year. This group officially "adopted" the Refuge in 1981. Materials and labor for the Refuge sign, (\$400.00) were donated by the Chapter in 1983.

This year the Chapter donated \$100.00 for materials for goose nesting structures (Sec. E.4.) and also agreed to donate up to \$225.00 for materials for construction of an "information-type" stand or plaque that will be installed at or near the new parking lot. Design details will be developed in 1987.

# 4. Credits

Ray Washtak wrote this report. Jon Malcolm provided editing services and Sharol Birks typed it.

#### K. FEEDBACK

Not much to say this year. Swan River Refuge continues to be an unusual, yet interesting, Refuge. Little management for the waterfowl resource can be done because of the varied physical factors which affect the area. 'This may not be all that bad, as sometimes there is a feeling that "if we aren't doing something, we're not doing our job". Maybe in this case the best management is to let the area remain as natural as possible. Time will tell, I suppose.

I would like to take this opportunity to thank, once again, the various divisional personnel at the Fisheries Center for their assistance throughout the year. When it came time to load heavy items or needing someone to hold the other end of a bolt, someone was always ready to help.

I'd also like to thank Dr. Joe Ball (Montana Cooperative Wildlife Research Unit) for the use of his 4 x 4 pickup, while we await a new rig from GSA. It has gotten me off of more than one muddy road this year.

Ray Washtak



Birds of the

NATIONAL WILDLIFE REFUGE

Montana

# SSFW

	110.1	1000	100	-
DOVES			57	
Mourning dove	0	0	0	
	1	23.	1	2
OWLS	220	15		
Screech Owl	r	0	The second	
• Great Horned Owl	U	0	U	2
Pygmy Owl	0	0	0	•
Barred Owl	0	0	U	2
GOATSUCKERS, SWIFTS, HUMMINGBIRDS	all a			3
Common Nighthawk	U	C	27	į,
Vaux's Swift	0	U	0	
White-throated Swift	0	r	100	
• Rufous Hummingbird	U	U	Re	
• Calliope Hummingbird	U	U	U	2
• Black-chinned Hummingbird	r	U	U	
KINGFISHERS WOODPECKERS	12	52	12E	8
Belted Kingfisher	0	0	0	
Common Flicker	u	c	c	
Pileated Woodpecker	U	U	0	
Lewis's Woodpecker	0	0	Real	E.
Yellow-bellied Sapsucker	U	U	U	3
Hairy Woodpecker	U	u	U	
Downy Woodpecker	U	U	U	
	23	100	1	24
FLYCATCHERS	-	S.F.	25	1
• Eastern Kingbird	0	U	0	
• Western Kingbird	0	C	U	24
• Willow Flycatcher	c	C	The state	14
Hammond's Flycatcher	U	U	8.0	
Dusky Flycatcher	0	U	10	
Western Flycatcher	0	U		
Western Wood Pewee	U	U		
LADKE SWALLOWS	20	25		
Homed Lark	1		102	
Vielet groop Swallow	0	0	-	2
Tree Swallow	-		10	1
Pouch winged Swallow	-		14	1
Been Swallow		1		
• Cliff Swallow		1	3	
	0	0	2.14	
JAYS, MAGPIES, CROWS	12	20	13	
Gray Jay	0	0	r	P
Steller's Jay	r	r	0	1
Black-billed Magpie	c	U	U	1
• Common Raven	c	c	c	
• Common Crow	c	U	U	
Clark's Nutcracker	r	35	0	
CHICKADEES NUTHATCHES CREEDERS	15	1	3.4	
Plack cannod Chidurdos	3	No.	1	
Black-capped Chickadee	C	-		
Chestruit keyled Chickedes	0	0		
• White broasted Nutbatch				
Ped breasted Nutbetch			11	
Brown Creener		U	0	
• brown creeper		Yest		

SSEW

# Welcome to

# SWAN RIVER NATIONAL WILDLIFE REFUGE

The 1,568-acre Swan River National Wildlife Refuge is located 38 miles southeast of Kalispell, Montana. The variety of habitats including grassland, marsh, and wooded river bottom support elk, deer, moose, grizzly and black bear, beaver, river otter, muskrat, and at least 171 species of birds.

The Refuge provides nesting habitat for the endangered bald eagle, great blue herons, black terns, 23 species of waterfowl, and a variety of raptors and songbirds. A canoe trip through the Refuge on the Swan River provides excellent birding throughout the spring, summer, and fall. Canada geese, whistling swan, mallard and goldeneye winter in the open waters of the Swan River and the canals and creeks which cross the Refuge.

The following birds have been observed on the Refuge since its establishment in 1974. Very special thanks must go to Ellie Jones and other Audubon Society members who have contributed much time to the completion of this pamphlet. The Swan River NWR was adopted by the Flathead Chapter of the National Audubon Society in 1981 under the Society's Adopt-A-Refuge Program.

# EXPLANATION OF SYMBOLS:

Seasons:

- S- March-May
- S— June-August
- F- September-November
- W-December-February

#### Birds nesting on the Refuge are preceded by a •.

Symbols indicating seasonal abundance of each species are as follows:

-common	should see in suitable habitat
uncommon	might see in suitable habitat
-occasional	seen only a few times during a season
rare	seen at intervals of 2 to 5 years

The following bird list is in accordance with the 5th A.O.U. Check-List as amended. New names are used in all cases.

	S	S	F	W	
LOONS	1	100		1	
• Common Loon	c	c	U	22	
GREBES	5	E.	23		1
• Red-necked Grebe	c	c	c	2	
• Horned Grebe	c	c	c	23	
• Eared Grebe	c	c	c	0	10.00
Western Grebe	U	c	1		l
• Pied-billed Grebe	c	c	10		
CORMORANTS	13	124		1	
Double-crested Cormorant	0	The second	221	100	ALC: NO
HERONS AND BITTERNS	03	1.7		4	
• Great Blue Heron	c	c	c	c	
• American Bittern	U	U	0	Re C	
SWANS GEESE DUCKS	2.2	14		199	
Whistling Swan	u	r	c	u	
• Canada Goose	c	c	c	c	
Snow Goose	0	21	0	r	
Ross' Goose	r	S.	r	222	
• Mallard	c	c	c	c	
• Gadwall	c	c	U	2	
• Pintail	c	U	c	0	
• Green-winged Teal	U	U	U	r	
Blue-winged Teal	C	c	c	200	
• Cinnamon Teal	c	c	U	-75	
American Wigeon	C	C	C		

	-			
Northern Shoveler	24			100
• Wood Duck	0	0		
• Redhead	u	U	U	0
• Ring-necked Duck	U	U	u	0
_ Canvasback	U	0	U	0
Lesser Scaup	0	0	0	IT S
_• Common Goldeneye	c	c	c	c
_• Barrow's Goldeneye	c	U	U	0
_ Bufflehead	c	U	U	0
White-winged Scoter	r	1	the start	
Harlequin Duck	r		No.	25
-• Ruddy Duck	U	0	22	
Gommon Marganser	U	U	1.54	1
Red breasted Merganser	c	c	c	U
	1		25	20
IGLES, HAWKS, AND FALCONS	de la		2.15	24
Goshawk	U		U	U
Snarp-sninned nawk     Ped toiled Howk	U	U	U	U
Swainson's Hawk	U	U	U	7.5
Rough-leaged Hawk		Re	30	
_ Golden Eggle		1	and and	
• Bald Eagle.	c	c	c	c
_• Marsh Hawk	U	c	in the	A
Osprey	1 41	c	08	1.2
_ Prairie Falcon	0	0	0	12
_ Merlin	0	r	0	
• American Kestrel	0	c	0	
ROUSE, PHEASANTS	30		25h	2.3
_ Blue Grouse	0	0	0	0
_• Ruffed Grouse	c	c	c	c
_ Ring-necked Pheasant	0	0	0	0
AILS	3			34
• Sora	U	c	45	1-12
• American Coot	c	c	c	1
OVERS	20		25	1
• Killdeer	c	c	c	33
OPERIPOS GUILS TERNS	2	1	S.	100
• Common Spine	c	c	0	u
Spotted Sandpiper	c	c	U	
_ Solitary Sandpiper	0	r		2
_ Greater Yellowlegs	0	0	The second	1
_ Lesser Yellowlegs	0	U	The second	
_ Least Sandpiper	0	U	320	30
_ Long-billed Dowitcher	U	U	24	XX
_ Marbled Godwit	0		100	1
_ American Avocet	0	N.	23.3	0.0
Black-necked Stilt	0	1	105	100
_ Wilson's Phalarope	U	U	-	14
Cumornia Guil	0	0	0	1.10

 \_\_\_\_\_ Ring-billed Gull
 0
 c
 u

 \_\_\_\_\_ Forster's Tern
 0
 0
 0
 0

 \_\_\_\_\_ • Black Tern
 c
 c
 u

	S	S	F	w
DIPPERS	225	24	2	10
Dipper	0	0	U	U
WRENS	100	1	202	1
Winter Wren	0	0	0	0
Long-billed Marsh Wren	U	c	c	0
MOCKINGBIRDS	1	alle a	1.10	
• Gray Catbird	U	U	c	12
	THE	30	1	Nes
American Pohin		1		1
• Varied Thrush	c	c	u	ř
• Swainson's Thrush	U	U	U	-
Veerv	0	U	0	
Mountain Bluebird	c	U	0	12.00
Townsend's Solitaire	0	1	0	23
KINGLETS, PIPITS	18	YE	1	
Golden-crowned Kinglet	U	U	U	U
Ruby-crowned Kinglet	U	U	U	U
Water Pipit	U		0	0
WAXWINGS, SHRIKES, STARLINGS	1			22
Bohemian Waxwing	U		No.	c
Cedar Waxwing	U	U	U	15
Northern Shrike	U	12	U	U
• Starling	C	c	U	74
VIREOS, WOOD WARBLERS, WEAVER FINCHES	N.	1	12.62	- Car
• Red-eyed Vireo	U	U		32
• Warbling Vireo	0	U	de la	12
Orange-crowned Warbler	U	U	U	28
Nashville Warbler	U	U	U	201
• Yellow Warbler	C	C	U	Sec.
• Yellow-rumped Warbler	C	c	U	12
Northorn Waterthruch	0	c		10
MacGillivray's Warbler	0			3
Common Yellowthroat	u	u	u	1
Wilson's Warbler	0	U	0	No.
American Redstart	0	U	U	10-1
House Sparrow	0	0	a de	1
PLACKRIPDS AND OPIOLES		33	24	
Babalink				7257
Western Meadowlark	U	U	U	3
• Yellow-headed Blackbird	c	c	U	1
• Red-winged Blackbird	c	c	U	
Brewer's Blackbird	U	c	37	2
• Brown-headed Cowbird	U	c	The	E
TANAGERS	3	38	1	The second
Western Tanager	0	0		1.5
	36	and l	1	Sec.
GROSBEAKS, SPARROWS, AND FINCHES	30	1	1	1
Diack-neaded Grosbeak	0	0	100	1
Evening Grosbeck			-	
Cassin's Finch	0	U	0	0

and the second	S	s	F	W
House Finch	0	Part I	Sec.	1950
Gray-crowned Rosy Finch	0		and a	20
Common Redpoll	12	and a	20	U
• Pine Siskin	c	c	c	U
American Goldfinch	0	0	U	0
• Red Crossbill	U	U	U	U
White-winged Crossbill		· All	-	0
Rufous-sided Towhee	U	0	0	
• Savannah Sparrow	U	U	U	2
Grasshopper Sparrow	U	0	U	22
Vesper Sparrow	U	•	U	25
Lark Sparrow	0	2		28
Dark-eved Junco	c	c	c	c
Tree Sparrow		1	2	0
Chipping Sparrow	0	U	U	in the
Harris'Sparrow	100	TAR		U
White-crowned Sparrow	ú	U	0	0
Fox Sparrow	0	0	0	
• Song Sparrow	c	c	U	U
Snow Bunting	2	1	1	U
	31	27107	500	Sec. 1

#### PLEASE NOTE:

We would appreciate your help if you observe birds that are listed as rare to the Swan River National Wildlife Refuge or if you notice unusual concentrations or activities of birds on the Refuge. Please report the following information by letter or telephone to the Refuge Manager:

Your name, address \_\_\_\_\_

date, weather, exact location \_\_\_\_\_

species, number of birds \_\_\_\_\_

distinguishing features and/or\_\_\_\_\_

activities\_\_\_\_

Where to write for current regulations and information:

Refuge Manager

Northwest Montana Fish and Wildlife Center 780 Creston Hatchery Road Kalispell, Montana 59901 406/755-4375

As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities for water, fish, wildlife, mineral, land, park, and recreational resources. Indian and territorial affairs are other major concerns of America's "Department of Natural Resources."

The Department works to assure the wisest choice in managing all our resources so each will make its full contribution to a better United States—now and in the future.







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