NOXIOUS WEED MANAGEMENT

1986 ANNUAL REPORT

MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS

HELENA, MONTANA

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1986 Annual Report

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MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS
Helena, Montana

INTRODUCTION

Noxious weeds have been identified as a serious economic problem in Montana. While 34 species of plants have been designated as noxious weeds, knapweeds (spotted-Centaurea maculosa, diffuse-C. diffusa), Russian-C. repens) and leafy spurge (Euphorbia esula) are considered currently most in need of control. In 1986, spotted knapweed occurred on an estimated 4.7 million acres in Montana, leafy spurge was on 600,000 acres, Russian Knapweed on 47,000 acres, and diffuse knapweed on 16,000 acres (C. Lacey, pers. comm.).

The Montana Department of Fish, Wildlife and Parks (MFWP) manages 470 sites totaling 339,447 acres, less than 0.4% of the state's total land area (Appendix A and B). Most of these lands are managed for Montana recreationists as:

- Fishing Access Sites -- to provide access to desirable fishing across the state
- Parks, Monuments, and Recreation Areas -- to preserve historical and cultural settings
- Wildlife Management Areas -- to maintain wildlife and its habitats and to provide wildlife-oriented recreation.

The MFWP has practiced some form of noxious weed control since its first property acquisition in 1916 (Appendix C). Because of the routine nature of those efforts, noxious weed control activities remained in low profile. The department adopted a formal noxious weed policy in 1983. Department funding was insufficient to achieve the level of plant control desired; the 1985 Legislature authorized expenditures of an additional $20,000 per year during the 1986-1987 biennium for weed control activities by the Wildlife Division.

The purpose of this report is to summarize total MFWP activities and expenditures , including those as part of the additional appropriation. The source of funds for this effort is hunting and license fees, and federal monies; no General Fund appropriations have been authorized.

PROJECT OBJECTIVES AND HISTORIES

This report is intended to present results from 2 related efforts; their objectives, and their histories are as follows:

1. TITLE: Ongoing Department Weed Management

   OBJECTIVE: To disseminate information and track progress towards implementing Montana's new weed laws.

   HISTORY: Changes in Montana weed laws passed by the 1985 Legislature will require an increased effort in department weed management and control activities. This will involve disseminating information on new laws and setting up a standardized questionnaire to retrieve tracking information.

2. TITLE: Coordinated Weed Control

OBJECTIVE: To coordinate with county weed boards on implementation of the new weed laws.

HISTORY: Because of the new weed legislation passed in 1985, there is an increased need to coordinate weed management activities with county weed boards and adjacent landowners. Additional requests will be received to form action committees and initiate cooperative projects. This will entail increased meetings, mapping of weed occurrence and intensified management on our lands by chemical, mechanical and biological control methods.

This project will be administered through the Wildlife Division.

PROCEDURES

Ongoing Department Weed Management

All department noxious weed management plans will be reviewed and modified as necessary. Weed control will be accomplished as specified in the plans and the degree of control evaluated.

Coordinated Weed Control

At least one regular meeting of each county weed board will be attended by a designated department employee during the year. Our representative will provide an explanation of current weed management on our lands in appropriate counties. In all counties, our representative will have to develop county-wide noxious weed management plans that will prevent damage to wildlife and fish habitats. They shall report results and proposed activities of the board to their regional supervisor, who will summarize each report for consideration by the department's weed coordinator. Reports may include recommendations for weed-wildlife/fish evaluations.

SOURCES OF FUNDING

Current lead funds will be utilized for the ongoing Department Weed Management project, with possible redirection by some divisions. This will be integrated with the Executive Planning Process (EPP) Coordinated Weed Control project as appropriate.

Lead funds needed for the first project are estimated at $83,000 annually during the 1986-1987 biennium. Funds required, and approved by the 1985 Legislature for the EPP project were $20,395 for FY1986 and $20,419 for FY1987.

RESULTS

Ongoing Department Weed Management

The MFWP's noxious weed management project involves 3 approaches:

- Control of noxious weeds on department properties
- Education of the public about our program and about the noxious weed issue generally
- Research on wildlife-noxious weed relationships

Control

Field control of noxious weeds has been outlined in management plans for individual sites or groups of sites. Control methods include biological, chemical, and mechanical; incendiary control is practiced only on an experimental basis for general big game winter range improvement. The type of control is prescribed on a site-by-site basis, i.e., integrated pest management. Evaluation of the effectiveness of control procedures has begun on some sites.

Noxious weeds were treated on 142 fishing access sites and state parks, monuments, and recreation areas. A total of about 1,127 acres were treated for a total expenditure of $41,200 (Tables 1 and 2). Costs for weed control on administrative sites are also included, but not listed separately.

Similar treatments were applied to noxious species on 19 wildlife management areas comprising slightly over 1,000 acres; total cost of these efforts was $9,186 (Table 3, Appendix D).

Noxious weed control treatments were applied on about 18 acres at fish hatcheries, at a total cost of $773 (Table 4).

Education

Education of the public about the noxious weed issue is accomplished through demonstration, visual/audio materials, and formal presentations. Demonstration is being implemented via the control procedures by Wildlife and Parks Divisions and staffs on individual sites. Visual/audio materials are the primary products of the Conservation Education Division. Formal presentations, often on technical aspects of this issue, are given by the Wildlife and Conservation Education Divisions. Expenditures for those presentations by Conservation Education personnel totalled $5,107 in FY1986 (Table 5); similar expenditures by wildlife personnel are part of these division's total funding on this issue.

Preventing establishment and expansion is viewed as the most reasonable approach in controlling noxious weeds at the present time. The MFWP is attempting to present this view by participating in as many weed meetings (state, regional, and local levels) as time and funds allow. Informal contacts between local MFWP employees and other individual landowners is encouraged.

Research

Concern has been expressed by some agriculturalists that: 1) wildlife is a major avenue of noxious weed dispersal, 2) that MFWP managed lands are main sources of noxious weed seeds for nearby private lands, and 3) that invasion of native habitats (eg. forests, rangelands) by noxious weeds will eventually dominate those habitats, rendering them useless for wildlife.

Table 1. Summary of Noxious Weed Treatments in the Fisheries (Fishing Access Sites) and Parks Programs (State Parks, Monuments, Recreation Areas) during 1986.

Region	No. Sites	Type of Control	Plant Species	No. Acres
1	25	Chemical & Mechanical	Knapweed	235
		Biological	Knapweed & Leafy Spurge	40
2	36	Mechanical	Knapweed	228
3	0	--	--	--
4	9	Chemical	Spotted & Russian Knapweed	37
	4	Chemical	Leafy Spurge	9
	3	Chemical	Dalmation Toadflax	2
	1	Chemical	Canada Thistle	1
	1	Chemical	Hounds Tongue	1
5	36	Mechanical & Chemical	Thistle	213
			Knapweed	63
			Leafy Spurge	57
			Hemlock	30
			Bindweed	10
6	0	--	--	--
7	4	Mechanical	Canada Thistle	42
	5	Chemical	Leafy Spurge	8
8[1]	18[1]	Chemical	Spotted Knapweed, Dalmation Toadflax, Leafy Spurge, Whitetop & 6 others	151
Totals	142	--	--	1,127

[1]Mostly Lewis & Clark County, including State Capitol grounds and MFWP Warehouse.

Table 2. Summary of Expenditures for Weed Management by the Parks Division, by Region, during FY 1986

Region	Type of Site				Total Expenses
	FAS[1/]	SM	SP	SRA	
1	$ 739	$ 0	$ 240	$ 4,512	$ 5,491
2	5,608	735	616	2,689	9,648
3	3,457	89	1,821	25	5,392
4	1,190	80	433	892	2,595
5	8,671	956	0	3,648	13,275
6	19	0	0	0	19
7	1,337	959	370	1,642	4,308
8	0	0	0	472	472
TOTALS	$21,021	$2,819	$3,480	$13,880	$41,200

[1/] FAS = Fishing Access Sites, SM = State Monuments, State Parks, and SRA = State Recreation Areas.

Table 3. Summary of Noxious Weed Treatments in the Wildlife Program (Wildlife Management Areas) during 1986.

Region	No. Sites	Type of Control	Plant Species	No. Acres	Total Cost
1	4	Chemical & Biological[1]	Spotted knapweed	111	$ 2,901
			Whitetop	80	
			Canada Thistle	30	
			Goatweed	15	
			Dalmation Toadflex	1	
2	--	--	Mostly Knapweeds	--	1,745
3	7	Chemical	Spotted Knapweed & Canada Thistle	96	435
4	4	Chemical & Mechanical	Canada Thistle	275	2,509
			Wild Oats	177	
			Whitetop	58	
			Spotted Knapweed	5	
			Leafy Spurge	3	
			Russian Knapweed	2	
6	1	Chemical	Russian Knapweed	100+	296
	1	Chemical	Bindweed	40	
	1	Chemical	Leafy Spurge	1	
7	1	Chemical	Canada Thistle	10	262
8	--	--	Administration	--	1,038
Totals	19	--	--	1,004	$9,186

[1]Using knapweed gall flies and goatweed beetles

Table 4. Summary of Noxious Weed Treatments at Fish Hatcheries during 1986.

Region	No. Sites	Type of Control	Plant Species	No. Acres	Total Cost
1	1	Mechanical	Russian Knapweed	18	$ 748
2	1	Mechanical	Knapweed	0.13	20
4	1	Chemical	Canada Thistle	0.10	5
5	1	Biological[1]	Leafy Spurge	--	--
Totals	4	--	--	18.26+	$ 773

[1]Using domestic goats

Table 5. Summary of Expenditures by the Conservation Education Division on the Noxious Weed Issue during 1986.

Region	Type of Expense		Total Expenses
	Wages	Operations	
1	$1,419	$ 30	$1,449
2	111	72	183
4	120	0	120
5	610	40	650
7	749	90	839
8	1,788	78	1,866
Total	$4,797	$310	$5,107

The role of natural resource research is to generate ideas, test hypotheses, develop techniques and tools, and to describe relationships among environmental factors, man's activities, and wildlife, fisheries and outdoor recreational activities. It has a responsibility to "crystal-ball" future products and problems, to remain objective in its evaluations, and to recommend solutions to problems.

The MFWP's wildlife research effort has subscribed to these directions and responsibilities since its initiation in the early 1940's. Research efforts in the fisheries program have been similarly concerned since the 1950's.

Through its Wildlife Laboratory, the MFWP began investigating wildlife food habits in the late 1950's. These studies revealed the importance of many grass, forb, shrub, and tree species in seasonal wildlife diets. They documented consumption of a wide variety of both native and exotic plant species. These food habits have been analyzed and reported in numerous department publications and wildlife graduate student theses from Montana State University and the University of Montana.

The potential detriments or benefits of noxious weeds in wildlife diets have not been assessed. Similarly, no direct evaluation has been made of the impacts of noxious weed control procedures on wildlife. The following summarize studies proposed to provide knowledge about both concerns.

Noxious Weed - Big Game Relationships. A study entitled "Evaluate the Affects of Controlling Noxious Weeds on Big Game in Western Montana" was proposed within MFWP as an EPP project in January 1984. It was later expanded as "Noxious Plants and Their control in Relation to Wildlife Using State Wildlife Management Areas," and was proposed in June 1984 for cost-sharing under the Montana Department of Natural Resources and Conservation's (MNRC) Water Development and Renewable Resource Program. The study intended to evaluate comparative effectiveness of short-and long-term biological, chemical, mechanical, and incendiary methods of controlling spotted knapweed on forested rangelands in western Montana, while maintaining or enhancing habitat for wildlife and the public benefits accrued from wildlife-oriented recreation. This study was not selected for funding by the 1985 Legislature.

The proposal was modified (and retitled as "Range Rehabilitations in Relation to Wildlife Using State Wildlife Management Areas") and resubmitted to MNRC for funding under the Water Development and Renewable Resource Program in May 1986.

A second, auxiliary study, "Noxious Weeds in Big Game Diets" was submitted for funding under the Montana Department of Agriculture's Noxious Weed Trust Fund in December 1986. It proposes to document whether elk, mule deer, and white-tailed deer eat knapweed in northwestern Montana, and if they do, the relative occurrence in their seasonal diets. It also intends to document the viability of knapweed seeds that have passed through digestive tracts and deposited on wintering areas of these big game species.

Noxious Weed - Game Bird Relationships. Two studies were proposed, under MFWP's wildlife graduate student stipend program, to document changes in vegetative and insect communities resulting from herbicide applications on range and croplands in Montana. The studies were submitted unsuccessfully for funding within MFWP as 1986-1987 biennium EPP projects in January 1984. These projects were not submitted for similar funding for the 1988-1989 biennium EPP projects.

COORDINATED WEED CONTROL

Control

Each FWP region with significant acreages of Wildlife Management Areas (WMAs) or with noxious weed problems participated in this project. Noxious weed control efforts on WMA's for FY1986 are summarized below. These activities expended $18,315 (90%) of the total allocated in FY1986 (Table 6); however, no budget was designated for expenses for statewide coordination of these activities (see Region 8). A special project budget was developed to accommodate such expenses in FY1987.

Table 6. Summary of Expenditures by the Wildlife Division Under EPP Authorization for the 1986-1987 Biennium.

Region	Project	FY 1986		FY 1987	
		Allocated	Spent	Allocated	Spent
1	5189	$ 1,000	$ 0	$ 1,000	$ 0
2	5289	7,395	7,450	7,395	682
3	5389	2,000	2,215	2,000	0
4	5489	600	1,420	1,600	0
6	5689	3,000	3,082	3,000	0
7	5789	6,400	4,148	2,400	0
8	5889	--	--	3,024	0
TOTALS	--	$20,395	$18,315	$20,419	$682

Region 1

Localized patches of spotted knapweed on the DeRozier Unit of the Kootenai WMA were treated chemically by Lincoln County weed personnel during both 1985 and 1986 growing seasons at no cost to MFWP. Isolated clumps of this plant species were hand pulled by MFWP personnel on the Kootenai Falls Unit.

Region 2

More than $4,000 was spent for a trailer weed sprayer with booms. Remaining funds were spent in purchasing and applying herbicides to knapweeds on the Blackfoot-Clearwater and Warm Springs WMAs.

Region 3

Noxious plants were treated on the Bear Creek (15 acres), Fleecer (45 acres), Mt. Haggin (45 acres), and Wall Creek (25 acres) WMAs. Funds purchased herbicides and safety equipment in FY1986, after a herbicide sprayer was purchased in FY1985.

Region 4

Herbicides were purchased for controlling wild oats in barley fields on the Freezout WMA. Knapweeds, leafy spurge, and whitetop on Blackleaf WMA and knapweeds on the Sun River WMA were also sprayed with herbicides.

Region 6

Most of the funds were used to purchase herbicides that were applied to Russian knapweed on Rookery WMA and other noxious plant species on Fresno, Hinsdale, Area 7, Area 8, and Dodson Dam WMAs. Remaining funds were used for travel for inspecting all WMAs for noxious weed occurrence and treatment.

Region 7

The major expenditure was a Honda 4x4 with spray tanks and folding boom. Twenty-five gallons of herbicide were applied to WMAs in Richland County. A private individual was contracted to treat noxious weeds on one other WMA.

Coordination

Major activities of the weed projects coordinator in 1986 included:

a. attending 3 meetings of the Montana Noxious Weed Advisory Council; this group of scientists and lay people offer recommendations on the noxious weed program of the Montana Department of Agriculture.

b. attending 3 meetings of the Montana Weed Control Association.

c. commenting on Noxious Weed Environmental Impact Statements for 4 national forests (Beaverhead, Custer, Deer Lodge, and Lewis and Clark) in Montana; those comments formed the basis for responding to similar EISs from the Gallatin and Lolo National Forests.

d. developing and implementing standardized reporting forms for all MFWP field and educational efforts on the noxious weed issue, and preparing the Annual Report.

Expenses associated with these coordination activities totaled $3,274 during 1986; a majority ($2,470) of this expense was salary and benefits.

DISCUSSION

Annual noxious weed control activities by MFWP, like other land managers, are influenced by many factors: seed production the previous year, precipitation received the previous and current year, accessibility to noxious weed sites (also influenced by precipitation), etc. Both the success of those activities and the level of related expenses are affected by those variables. Another factor influencing expenditure levels is the method of determining them; expenditures in FY1983 ($38,701) and FY84 ($84,662) were apparently estimated. No expenditures are immediately available for FY1985. MFWP's accounting system was modified to permit coding of specific expenses by the Parks and Wildlife Divisions on noxious weed control during FY1986 and FY1987. This modification will permit more accurate accounting. It appears that MFWP expenses for noxious weed control and education activities will range between $50,000 and $100,000 annually for the foreseeable future. Research expenses would be in addition to those figures.

Analysis of expenditures in noxious weed control activities show wages to be the largest expense category. To minimize these expenses, and to relieve time spent in control on department lands, several regions have contracted this work to county weed crews. Increasing concern for liability responsibilities and potential litigation has generated corresponding reluctance by counties to accept these contracts from MFWP, other agencies, and private landowners. If the department needs to maintain or increase levels of this work, other options for its performance will be required.

Fishing access sites probably attract more public traffic than other recreational sites managed by the department. They account for the largest expenditure of funds available for control efforts. They provide the greatest potential for transporting noxious weed seeds because of the amount of public use and because they are used throughout the seed production season.

Parks, monuments, and recreation areas comprise only 10% all department lands. They also attract large segments of the public seeking a variety of outdoor recreational activities. They are often located for the convenience of the motorized-traveling public, and offer significant potential for transporting noxious weed seeds. However, because they frequently provide facilities for preparing and eating food, as well as prolonged relaxation, the use of herbicides in weed control activities must also consider their consequences to human health.

The Wildlife Program continues to manage its 49 wildlife management areas (WMAs) to maintain and improve wildlife habitat; they include 280,653 acres and represent 83% of all department lands. While some form of public recreation is permitted throughout the year, most occurs in a short period in the fall. Some noxious weed plants may have already shed their seeds. This natural phenomenon and the widely dispersed public traffic reduces opportunities to transport these seeds away from WMAs.

Management practices, on WMAs aimed at increasing soil and vegetation productivity, contribute to reducing environmental conditions that support noxious weeds. Because many of these lands were used intensely prior to their acquisition by the department, vegetational succession was in various stages of disclimax; some stages were sufficiently primitive to contain disturbed soil surfaces and even soil erosion. Therefore, recovery of much of this land, notably the rangelands, will require time and careful vegetation management. Although some soil stabilization and vegetation recovery can be accomplished within a few years, soil rebuilding may require several centuries.

Noxious weeds, that seem to prefer disturbed soil surfaces and immature soils, have invaded and become established on WMAs. Success in controlling them to tolerable levels will also require time. It will also require persistent attention in annual management practices, as well as in long-term management planning.

However, vegetational communities incorporate a variety of grasses, forbs, shrubs and trees naturally; exact community composition is dictated by site, climate and seed stock. The role of each kind of plant, and each species of plant, in wildlife ecology differs. The MFWP is obligated to provide, to the best of its capability, those plants that support primary wildlife species on each area. Noxious weeds may be detrimental or beneficial to wildlife. Habitat management then requires achieving an appropriate balance of vegetation.

The MFWP's commitment to responsible LAND STEWARDSHIP is limited only by understanding of our land management goals and available funding. We have practiced some form of integrated pest management (IPM), and encouraged its consideration/adoption by other land managers since the 1960's. Our management on WMAs epitomizes that commitment, and should provide demonstration areas for those other managers.

RECOMMENDATIONS

Current activity levels for noxious weed control should be continued through the next biennium. This includes continued use of an integrated pest management system where individual biological, chemical, and mechanical procedures are prescribed for individual sites. It is imperative that the effectiveness of each procedure be evaluated for each site.

The level of awareness of noxious weed problems will be increased through widespread viewing of the department's noxious weed videos. A third tape should be developed to compare effectiveness of various control procedures, including the use of rest-rotation grazing by livestock.

Research efforts should be expanded to include evaluating the impacts of noxious weed encroachment into habitats on wildlife management areas. It should also assess the impacts of altering habitats via widescale use of herbicides on changes in vegetation composition and associated invertebrate communities.

The individual proposed research studies should be pursued at every reasonable funding opportunity. In addition, a system for monitoring habitat condition and trend, including the periodic status of noxious plant species, needs to be implemented on each WMA. Whether management goals for WMAs are being achieved is currently determined by measuring products of management, eg. various wildlife surveys, wildlife harvests, and recreational use surveys. Those measurements only partially reflect habitat conditions, and are only gauges of progress toward goal achievement. Habitat capability needs to be identified if goals are to be realistic. Noxious weed control influences habitat capability, and also whether goals can be achieved.

Flooding along the Hi-Line and in parts of eastern Montana during late September 1986 has undoubtedly impacted overall noxious weed ranges in those areas. The noxious weeds of primary concern to agriculturalists in Montana (spotted, diffuse, and Russian knapweeds) continue to invade department lands from other properties. Coordinated efforts to address the noxious weed issue should be continued through the 1988-1989 biennium.

The current overall noxious weed management effort is the most ambitious undertaken by the department. It requires continued refinement to become even more effective in controlling undesirable plant species, and in educating the public about our efforts. Refinements are needed in providing expenditure codes specific to the weed issue, by site, for use by all department personnel; such codes are already available within the Parks and Wildlife Divisions. The Fisheries and Conservation Education Divisions could benefit from similar codes.

SUMMARY

The department has initiated a multi-faceted approach in addressing the issue of noxious weed management. The three main facets are:

- Control of noxious weeds on department lands.

- Education of the public through demonstration and visual/audio materials and program.

- Research into various wildlife-noxious weed relationships

A minimum of $77,854 was spent by the department in these approaches during 1986. This amount includes employee wages, but not all benefits, and does not include time spent by administrators on this issue. The principal source of money for this work continues to be sportsmen licenses and federal cost-sharing funds.

Managing noxious weeds extended throughout the state, and included all 7 administrative regions. The following summarizes field activities by division:

Division	No. Sites	No. Acres	Total Cost
Fisheries	4	18	$ 773
Parks	146	1,145	41,200
Wildlife	19	1,004+	27,501

In addition, the Wildlife Program continues to focus management of 49 wildlife management areas (incorporate 280,653 acres) on habitat maintenance and improvement. Those management practices, aimed at increasing soil and vegetation productivity, contribute to reducing environmental conditions that support noxious weeds.

An additional $5,107 was spent by the Conservation Education Division. Principal activities involved production of 2 VCR tapes, that are now available for public viewing. One is titled "Scourge on Spurge" and features the department's cooperation with county weed programs in the use of domestic goats to control leafy spurge in environmentally sensitive areas, where chemicals should not be used. This effort has been quite successful in southcentral Montana.

The second VCR is titled, "Noxious Weeds: A Growing Concern." It urges recognition by recreationists of the overall noxious weed problem in Montana, and it recommends several steps they can take to prevent further distribution of these species. Other educational activities include attendance at numerous County Weed Board meetings across Montana where information on noxious weed control methods and wildlife needs for a diversity of vegetation is shared.

The research effort has developed 2 proposals for funding during the 1988-1989 biennium:

1. Implementing a large-scale experiment in biological control of knapweeds, that utilizes cattle in a rest-rotation grazing system that should also improve watersheds and wildlife habitats.

2. Documenting the extent to which elk, mule deer and white-tailed deer serve as natural dispersers of knapweed seeds.

The first proposal was submitted for funding to the Department of Natural Resources and Conservation while the second was forwarded to the Department of Agriculture.

Coordinating this department-wide program required a minimum of $3,273; not all time nor operational costs were coded to this activity.

The current overall noxious weed management effort is the most ambitious undertaken by the department. It requires continued refinement to become even more effective in controlling undesirable plant species, and in educating the public about our efforts.

The department should plan to spend up to $100,000 annually for noxious weed management activities. The exact amount will vary with weather and other environmental conditions that produce weed crops, and competition for personnel time by other issues.

809/5

APPENDIX A

Numbers of properties,[1/] by types and regions, administered by the Montana Department of Fish, Wildlife and Parks.

Region:	1	2	3	4	5	6	7	Total
Fish Program								
Fish Hatcheries & Spawn Stations	8	2	1	4	2	1	2	20
Parks Program								
Fishing Access Sites	35	60	58	50	44	11	15	263
Administrative Sites	1	1	4	6	1	1	1	15
State Monuments	0	3	5	4	4	2	2	20
State Parks	3	2	4	1	0	0	2	12
State Recreation Areas	18	6	29	21	5	4	8	91
Wildlife Program								
Wildlife Management Areas	6	5	14	10	6	4	4	49

[1/] As of July 1, 1985.

809/5/15

APPENDIX B

SUMMARY OF DEPARTMENT PROPERTY ACREAGES

BY TYPE AND REGION, AS OF JULY 1, 1985

REGION:	ADM[1/]	FISH PROGRAM		PARKS PROGRAM			WILDLIFE PROGRAM		TOTAL
		FAS	FH&SS	SM	SP	SRA	CON	WMA	
1	3.1	916.3	195.6	0.0	2,497.2	421.6	0.0	7,683.0	11,716.8
2	14.5	3,766.0	21.9	189.5	25.0	472.2	1,305.0	59,580.0	65,374.1
3	26.0	4,504.8	4.1	698.4	3,579.7	2,872.0	230.0	115,288.9	127,204.0
4	109.4	5,748.2	27.8	1,838.1	117.3	818.1	5,500.0	85,068.4	99,227.4
5	3.0	2,208.7	99.5	354.8	0.0	1,836.8	0.0	3,226.8	7,729.7
6	1.7	744.5	12.7	270.1	0.0	2,744.6	0.0	5,638.7	9,412.3
7	2.6	510.4	287.4	3,144.4	9,150.3	1,520.2	0.0	4,167.6	18,782.8
TOTALS	160.3	18,398.9	649.0	6,495.3	15,369.5	10,685.5	7,035.0	280,653.4	339,447.1
	(0%)	(5%)	(1%)	(2%)	(5%)	(3%)	(2%)	(83%)	(100%)

[1/] ADM = Administrative Sites, FAS = Fishing Access Sites, FH&SS = Fish Hatcheries and Spawn Stations, SM = State Monument, SP = State Parks, SRA = State Recreation Areas, CON = Conservation Easements, WMA = Wildlife Management Areas.

809/5/16

APPENDIX C

THE EARLIEST DEPARTMENT LAND ACQUISITIONS

Type of Site Name	Region	No. Acres	Date Acquired
Administration			
Billings Regional Headquarters	5	14.0	August 28, 1936
Willow Creek Patrol Camp	4	245.6	October 19, 1939
Helena Warehouse	4	76.9	August 6, 1951
Fishing Access Site			
Marlowe Springs	1	13.5	January 6, 1933
Ackley Lake	4	160.0[1/]	October 26, 1940
Boot Jack Lake	1	195.7	December 20, 1952
Fish Hatchery			
Washoe Park	2	4.4	November 14, 1908
Yellowstone River	5	0.9	May 20, 1926
Libby Creek	1	69.4	November 12, 1940
Spawning Station			
West Yellowstone	3	15.0	November 7, 1934
Lake Mary Ronan	1	0.3	December 16, 1926
Lauri Lake	1	-	August 12, 1958
State Monument[2/]			
Pictograph Cave	5	121.7	January 11, 1949
Fort Owen	2	1.0	May 26, 1956
Chief Plenty Coups	5	189.8	November 27, 1961
State Park[2/]			
Lewis and Clark Caverns	3	650.0	April 27, 1937
Lone Pine	1	162.0	February 20, 1941
Missouri Headwaters	3	504.7	May 22, 1947
State Recreation Area[2/]			
Ashley Lake	1	144.4	July 4, 1937
Bitterroot Lake	1	30.1	November 30, 1938
Yellow Bay	1	10.0	March 10, 1941
Wildlife Management Area			
Red Rock Lake	3	26.8	October 11, 1916
Judith River	4	1,004.3	January 29, 1940
Gallatin	3	6,188.4	May 17, 1945

[1/] This Ackley Lake property was leased; all other properties in this table were purchased.

[2/] Became FWP properties with the transfer of the Parks Division from the Montana Highway Department in 1965.

APPENDIX D

SUMMARY OF BASE EXPENDITURES FOR WEED MANAGEMENT BY THE WILDLIFE DIVISION, BY REGION, DURING FY1986

Region	Wages & Benefits	Operations	Total Expenses
1	$2,474	$ 427	$2,901
2	844	901	1,745
3	179	256	435
4	1,811	698	2,509
6	0	296	296
7	0	262	262
8	1,038	0	1,038
Totals	$6,346	$2,840	$9,186

809/5/18