

**FY2010 – 2018  
Fish and Wildlife Program Project Solicitation**

**Project ID: 199505701**

**Title: Southern Idaho Wildlife Mitigation-Middle Snake**



## **A. Abstract**

The Southern Idaho Wildlife Mitigation project (SIWM) of the Idaho Department of Fish and Game (IDFG) proposes implementation of wildlife mitigation in the Mid and Upper Snake River Provinces as part of the Northwest Power and Conservation Council's (NPCC) 2010 Fish and Wildlife Program in coordination with the Shoshone Bannock Tribes and the Shoshone Paiute Tribes. The SIWM project is divided between the Mid and Upper Snake Provinces and proposes a two-pronged approach to implementing wildlife mitigation and reducing the wildlife mitigation debt resulting from the development of the Federal Columbia River Power System (FCRPS) and its Black Canyon, Deadwood, Anderson Ranch, Minidoka, and Palisades hydro projects in the Mid and Upper Snake Provinces. The first is perpetual habitat protection through purchase of fee title and conservation easements on lands providing habitats appropriate to replace those identified as lost in the above project loss assessments and the NPCC fish and wildlife program. The second is habitat management of lands protected through acquisition of fee title and conservation easement through activities that protect and enhance those habitat values in perpetuity. Both the protection and habitat management activities are monitored and measured in relation to: 1) habitat units contributed towards deduction of the mitigation debt, 2) habitat responses to management and protection, and 3) wildlife population response related to habitat management and protection.

SIWM – Mid Snake implements mitigation for wildlife habitat impacts attributed to the Black Canyon, Deadwood, and Anderson Ranch projects and is managed and implemented as a single project in conjunction with IDFG's SIWM – Upper Snake. The SIWM – Mid Snake FCRPS incurred a wildlife mitigation debt of 18,083 habitat units for their construction and inundation. Two mitigation projects have been implemented by IDFG in the Mid Snake and 82% of the total mitigation debt is still outstanding in the Mid Snake. The two mitigation projects have been both fee title acquisitions of 166.2 and 62.5 acres in 1998 and 2008, respectively. Both these parcels contribute to and are managed as part of the Department's Boise River Wildlife Management Area; a 35,000 management area of fee title and leased lands managed by IDFG in cooperation with the U.S. Army Corps of Engineers, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, U.S. Forest Service, the Natural Resources Conservation Service and private landowners. The most recent habitat evaluation procedure, performed 7 years subsequent to protection, showed a gain of 9.7% in habitat quality. This was likely the result of a range fire that burned over the mitigation parcel between its acquisition and the HEP.

Priority habitat protection actions focus on enhancing existing IDFG habitat management areas through protection of lands adjacent to these areas and protection of habitats adjacent to public lands or of parcels large enough to provide cost effective mitigation and management of wildlife habitats in perpetuity. The SIWM partners have rectified the HU ledgers, agreed upon an allocation of HUs among themselves, and evaluated the cost of future mitigation. These outcomes will help them negotiate a settlement resolution with BPA for the outstanding mitigation debt in parallel with mitigation implementation.

## **B. Problem Statement: technical and/or scientific background**

In both the Mid and Upper Snake Provinces, human development is increasingly jeopardizing existing wildlife habitat, fragmenting habitats and populations into smaller and smaller islands, and isolating habitat and population connectivity, migration, and seasonal habitat use, and genetic exchange among wildlife populations.

Idaho's reputation is rapidly changing from a "wilderness" state to that of a premier place to live, play, and do business. Idaho currently ranks second nationally behind Oregon as a relocation destination (Idaho Statesman Jan 12, 2006). Between 1982 and 1997 there was a 37% increase in urban areas (<http://www.nrcs.usda.gov/technical/NRI/>), affecting a total of 254,400 acres. In a December 22, 2004 news release, the United States Census Bureau reported Idaho as the third fastest growing state in the Union. Based on United States Census Bureau data, the total population of Idaho increased 2.4 percent between 2004 and 2005. Idaho's rapidly expanding human population and the land base necessary to support this growth is a concern for wildlife conservation, especially along the Snake River of South Idaho, the focus area for Southern Idaho wildlife mitigation.

Although private lands occupy only 36% (16,158,363 acres) of Idaho's 53,467,836 acres, private lands are typically clustered at lower elevations and along river valleys, including the Snake River Plain in southern Idaho and mountain valleys in central and northern Idaho. These private lands are among the most productive and biologically diverse lands in the state and at-risk habitats include wetlands, riparian corridors, and native grasslands and sagebrush steppe; the same habitats as those impacted by the FCRPS and that are a priority for habitat mitigation under the SIWM project.

With the high rate of habitat conversion, loss, and degradation on private lands, the wildlife diversity and urgency for its protection is clear. Because of the configuration and location of Southern Idaho's private lands (mainly clustered around rivers, river canyons and bottomland), the SIWM project in the Mid and Upper Snake Provinces presents a unique opportunity for conservation coincident and in competition with human development.

The SIWM wildlife habitat losses from construction and inundation associated with the Anderson Ranch, Black Canyon and Deadwood projects were quantified (Martin et al.1986) and are listed in Appendix C, Tables 11-1, 11-2 and 11-3 of the Northwest Power and Conservation Councils' fish and wildlife program (<http://www.nwcouncil.org/library/2009/2009-09/Default.asp>). IDFG SIWM has implemented or cooperated in the implementation of more than 15 wildlife habitat mitigation projects across southern Idaho since IDFG-SIWM was initiated in 1997 with two of those mitigation projects occurring in the Mid Snake Province, Boise subbasin (Figure 1). IDFG SIWM in the Mid Snake proposes continuing implementation of mitigation to reduce the more than 82% of the outstanding wildlife habitat mitigation debt that remains (Table 1) and to help address the continuing loss and threat of wildlife habitat occurring in Southern Idaho.

Mitigation implementation began when a process for prioritizing potential protection and enhancement actions at mitigation sites in southern Idaho was established by interagency teams of biologists (Meuleman et al. 1987). In addition to these plans, GAP (Scott et al. 1993; Caicco et al. 1995) cover types are used in a coarse-filter/fine-filter approach to identify areas with potential for mitigation projects. The rationale behind this approach being that conservation of biological diversity can be achieved by protecting areas that contain representative examples of all ecosystems (the coarse filter), thereby protecting viable populations of most species, most biotic interactions, and most ecological processes. Species or communities not protected using the coarse filter are addressed using the fine filter (Huston 1994; Hunter 1991 In: Rust 2000). Current interagency work groups also use ecoregional plans which consider key ecological factors such as size, condition, and landscape context (<http://www.nature.org/aboutus/howwework/cbd/>). However, because SIWM project managers concentrate their efforts in the province on habitats and species specifically identified in the hydropower facility loss assessments, i.e., shrub-steppe, riparian, and wetland habitat types, they are limited in how these prioritization efforts do or don't coincide with mitigation needs. Similarly, the availability of properties for purchase of fee title or easement that have appropriate habitats limits mitigation opportunities. Prioritization of SIWM mitigation gives consideration to coarse and fine filters and existing prioritization plans such as employed by The Nature Conservancy and most recently the focal areas defined by the Idaho Wildlife Conservation Strategy (ICWCS 2006), but mitigation is often more limited by lands/habitat offered for sale, funding and process limits, and a focus on efforts to increase the effectiveness of existing conservation provided by the Department's wildlife management areas.

In addition to mitigation implementation, the Southern Idaho Wildlife Mitigation partners of the Idaho Department of Fish and Game, Shoshone Paiute and Shoshone Bannock tribes commissioned an independent study to review HU's in the Mid and Upper Snake and historic sales of agricultural lands. The report documented land and habitat prices in relation to on-site and in-kind mitigation and off-site out-of-kind mitigation of the SIWM FCRPS projects. The report identifies how increasing land prices are hindering the ability of the SIWM partners to achieve the goal of replacement of unmitigated HU's with the limited amount of acquisition funds available from BPA and as limited by process and contract limitations. The SIWM partners, in an effort to increase the efficacy of their habitat conservation efforts, have proposed a settlement of SIWM FCRPS wildlife habitat debt to BPA. Negotiations by the partners and BPA are continuing as an alternative to implementing mitigation on a project by project basis as increasing land prices, limited acquisitions funds, and bureaucratic processes continue to limit the replacement of critical and sensitive habitat types identified in the FCRPS loss assessments for the Mid and Upper Snake Provinces.



# Southern Idaho Wildlife Mitigation

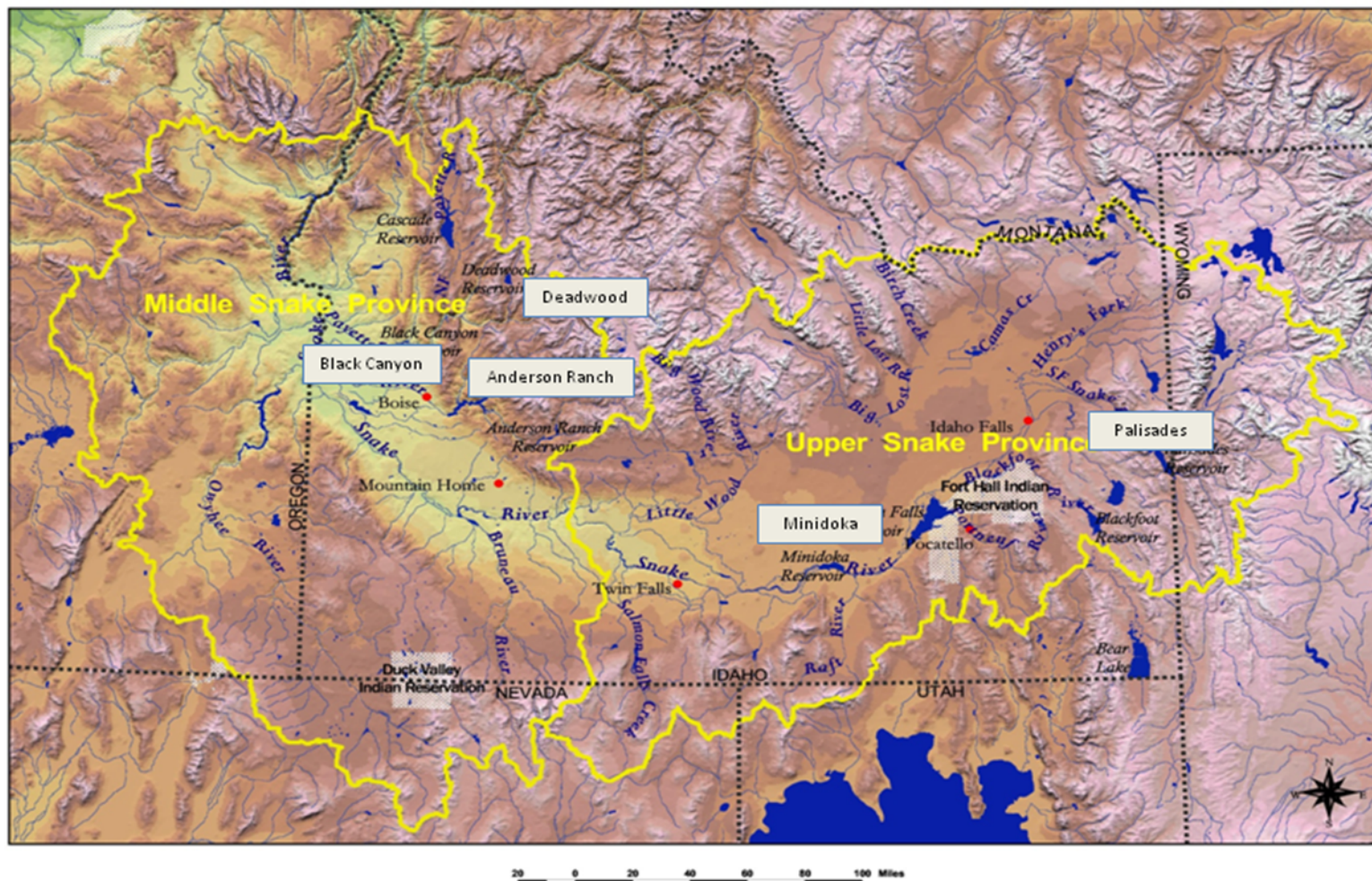


Figure 1. Middle and Upper Snake Provinces of the Columbia River Basin and their associated Federal Columbia River Hydropower projects.

Table 1. Middle Snake province hydropower projects, their focal species, and current mitigation status by habitat units.

Black Canyon, Anderson Ranch, and Deadwood Acres and HEP Species	Black Canyon			Anderson Ranch			Deadwood		
	Black Canyon Losses	Mitigated Acres/HUs	Remaining HUs	Anderson Losses	Mitigated Acres/HUs	Remaining HUs	Deadwood Losses	Mitigated Acres/HUs	Remaining HUs
Acres	1,132	225	-	4,812	3,205	-	3,294	0	-
Mule deer	242	46	196	2,689	437	2,252	2,080	0	2,080
Mink	332	-	332	1,197	398	799	987	0	987
Mallard <sup>1</sup>	270	-	270	1,048	928	120	-	-	-
Canada goose <sup>2</sup>	214	-	214	-	-	-	-	-	-
Ruffed grouse	-	-	-	919	0	919	-	-	-
Bald eagle (breeding)	-	-	-	-	-	-	-	-	-
Bald eagle (wintering)	-	-	-	-	-	-	-	-	-
Black-capped chickadee	68	-	68	890	0	890	-	-	-
Yellow warbler	0	-	0	361	14	347	309	0	309
Pheasant	260	17	243	-	-	-	-	-	-
Redhead	-	-	-	-	-	-	-	-	-
Marsh wren	-	-	-	-	-	-	-	-	-
River otter	-	-	-	-	-	-	-	-	-
Sage grouse	-	-	-	-	-	-	-	-	-
Sharp-tailed grouse <sup>3</sup>	-	-	-	-	-	-	-	-	-
Western grebe	-	-	-	-	-	-	-	-	-
Blue grouse	-	-	-	1,980	330	1,650	-	-	-
Snipe <sup>4</sup>	-	-	-	0	781	-781	-	-	-
Western meadowlark <sup>4</sup>	-	-	-	0	137	-137	-	-	-
Spruce grouse	-	-	-	-	-	-	1,411	0	1,411
Yellow rumped warbler	-	-	-	-	-	-	2,826	0	2,826
<b>Total<sup>5</sup></b>	<b>1,386</b>	<b>63</b>	<b>1,323</b>	<b>9,084</b>	<b>3,025</b>	<b>6,059</b>	<b>7,613</b>	<b>0</b>	<b>7,613</b>

## **C. Rationale and significance to regional programs**

### **Summary**

The IDFG SIWM project encompasses 2 provinces, the Upper and Middle Snake, and their corresponding 11 subbasins; which together total more than 26.7 million acres or approximately 16.2% of the Columbia River basin (Figure 1). The SIWM project objective is to mitigate for a total of 68,515 wildlife habitat units lost as a result of the construction and inundation of Deadwood, Black Canyon, Minidoka, Anderson Ranch, and Palisades FCRPS projects. These habitats include those of 20 identified HEP species used to credit mitigation projects (Table 2). After more than 12 years of implementation, sixty eight percent of the SIWM mitigation debt is outstanding as of early 2009. SIWM is being implemented on contract with BPA by three partners, the Idaho Department of Fish and Game (IDFG), the Shoshone Bannock Tribe (SBT), and the Shoshone Paiute Tribe (SPT). IDFG SIWM has implemented mitigation projects in the Upper and Middle Snake Provinces, crediting Palisades, Minidoka, Black Canyon, and Anderson Ranch for a total of 9480 HUs since 1997. IDFG has credited 1737 HUs in the Mid Snake and 9368 HUs in the Upper Snake. IDG SIWM is searching for properties to replace lost habitat types of Wetland Aquatic, Upland Priority, Forested Wetlands, Shrub-Scrub, Uplands, Forested Riparian, Coniferous Forest habitats.

### **Goals for IDFG SIWM Project**

Evaluate and prioritize habitat mitigation projects within the parameters set by the NWPCC Fish and Wildlife Program, limits and stipulations set by BPA contract and administration, IDFG land acquisition policy, SIWM partnership agreements and coordination, conservation partnerships, and land and real estate sales, prices, and opportunities.

Implement habitat conservation and protection projects through acquisition of fee title or conservation easement on lands providing habitats appropriate for replacement of those identified in the FCRPS projects Black Canyon, Deadwood, Anderson Ranch, Minidoka, and Palisades.

Maintain and enhance habitats protected through fee title and conservation easement to protect existing habitat qualities and restore and improve those habitats for benefit of wildlife species used in HEP assessments.

Administer IDFG SIWM contracts with BPA and quantify and assess habitat unit crediting for all mitigation protection and enhancement projects.

Work in partnership with landowners, conservation partners, agencies, and land development and sales organizations including: realtors, the U.S. Fish and Wildlife Service, the Natural Resources Conservation Service, The Nature Conservancy, Idaho counties, SIWM Tribal partners, and conservation and education groups to increase the efficacy and rate of implementation of the IDFG SIWM project.

## NWPCC Fish and Wildlife Program

### Wildlife Objectives

Ensure that wildlife mitigation projects implemented in fulfillment of this program are consistent with the basinwide implementation priorities described in Appendix C of the Northwest Power and Conservation Council's Fish and Wildlife program (<http://www.nwcouncil.org/library/2009/2009-02.pdf>).

*SIWM mitigation is being implemented for the projects, species and habitats identified in the program. Mitigation is 32% completed. The SIWM project is one of only three wildlife mitigation projects in the Columbia River basin that has not been completely mitigated for.*

Complete mitigation to address the assessed losses caused by construction of the hydro system facilities and the resulting inundation of land.

*Sixty eight percent of the identified SIWM HUs remain to be mitigated in the Mid and Upper Snake provinces. Only 18% of the identified wildlife habitat losses have been mitigated for in the Mid Snake Province by IDFG. Priority is on riparian, wetland, and upland shrub steppe habitats on-site and in-kind.*

Develop and implement habitat acquisition and enhancement projects to fully mitigate for identified losses.

*Projects are implemented based on availability of parcels for sale or purchase of conservation easement that can meet the habitat and species needs identified in the FCRPS loss assessments. Priority is for protection of habitat adjacent to existing IDFG WMAs to increase their protection efficacy or for cooperative habitat protection projects that increase project economy, program effectiveness, and that leverage the efforts of conservation partners.*

Coordinate habitat restoration and acquisition activities throughout the basin with fish mitigation and restoration efforts to promote terrestrial and aquatic area connectivity.

*No resident fish loss assessments have been completed or finalized in either the Mid or Upper Snake Provinces and no resident fish habitat protection projects have been undertaken in the Mid or Upper Snake Provinces. Anadromous fish were extirpated in the mainstem Snake River and its tributaries downstream of Shoshone Falls and upstream of Hells Canyon dam by FCRPS and FERC projects.*

Maintain the values and characteristics of existing, restored and created habitat.

*IDFG has implemented 13 SIWM wildlife mitigation projects totaling 9480 HUs since 1997. Two weed control project was credited for 499 and 112 HUs, two conservation easements totaling 1222 acres were credited for 1196 HUs of protection of existing HUs. Ten fee title acquisition projects totaling 7340 acres were credited for 7785 HUs of protection. Enhancement HUs resulting from habitat improvement*



subsequent to protection have totaled an estimated 1507 HU credits since protection. Mid Snake wildlife mitigation projects have been credited for 106 HU credits while Mid Snake FCRPS projects have been credited for 2520 HU credits for 2 projects in the Mid Snake and 2 in the Upper Snake.

Monitor and evaluate habitat and species responses to mitigation actions.

SIWM monitoring has focused on Tier 1 HEP monitoring to quantify HU crediting and accounting. A Tier 2 monitoring plan has been designed for the Idaho Wildlife mitigation program but it has not been implemented due to BPA contract limits, organizational and logistical limitations, and funding. Efforts during the next cycle will increase habitat and vegetation monitoring on mitigation properties as outlined in Unnasch et al (2003).

Table 2. Total, mitigated, and remaining acres and habitat units by HEP species identified in the loss assessments of FCRPS projects in the Mid and Upper Snake provinces.

Palisades, Black Canyon, Minidoka, Anderson Ranch, and Deadwood Acres and HEP Species	Combined South Idaho Acres/HUs		
	All Losses	Mitigated Acres/HUs	Remaining HUs
Acres	38,409	13,742	-
Mule deer	11,124	4,899	6,225
Mink	4,792	1,089	3,703
Mallard <sup>1</sup>	4,672	1,915	2,757
Canada goose <sup>2</sup>	1,019	554	465
Ruffed grouse	3,250	800	2,450
Bald eagle (breeding)	5,941	3,458	2,483
Bald eagle (wintering)	18,565	7,274	11,291
Black-capped chickadee	2,316	1,167	1,149
Yellow warbler	3,121	325	2,796
Pheasant	260	17	243
Redhead	239	0	239
Marsh wren	56	95	-39
River otter	3,188	0	3,188
Sage grouse	3,755	56	3,699
Sharp-tailed grouse <sup>3</sup>	0	888	-888
Western grebe	0	0	0
Blue grouse	1,980	330	1,650
Snipe <sup>4</sup>	0	781	-781
Western meadowlark <sup>4</sup>	0	137	-137
Spruce grouse	1,411	0	1,411
Yellow rumped warbler	2,826	0	2,826
<b>Total<sup>5</sup></b>	<b>68,515</b>	<b>23,785</b>	<b>44,729</b>

#### **D. Relationships to other projects**

Implementation of the IDFG Southern Idaho Wildlife Mitigation Program (SIWM) is a shared and collaborative effort between the IDFG and the SPT and SBT. Since 1996 IDFG and the SBT have had an agreement for purposes of delineating the areas of responsibility for implementation of the SIWM program. This agreement addresses the southern Idaho FCRPS projects of American Falls, Anderson Ranch, Black Canyon, Boise, Diversion, Cascade, Deadwood, Minidoka, and Palisades. IDFG and SBT agreed to split southern Idaho mitigation as follows: 40% common share, 30% for the state, and 30% for the Tribes. IDFG and SBT will cooperate to manage the common share of wildlife mitigation and interagency work groups will provide management recommendations for common share mitigation lands and the parties shall not oppose the acquisition of land by another party purchased pursuant to the intent of this agreement.

Since the IDFG-SBT agreement, the SPT have requested to participate in the SIWM program. Although they do not yet have a signed agreement with either IDFG, SBT, or BPA; they have received funding for administration and implementation and have cooperated on project selection and prioritization with IDFG and SBT.

Given the lack of implementation, increasing complexity of the process, and low priority of the wildlife program to the NWPCC and BPA ; the SIWM partners are working towards a settlement agreement with BPA in parallel with project implementation. This effort has produced cooperative meetings between SIWM partners and BPA and NWPCC staff, an independent report on estimated cost to mitigation for the remaining wildlife habitat to be mitigated (Chinook Northwest, Inc. 2008), agreement between BPA and the SIWM partners on the outstanding mitigation debt remaining, and agreement among the partners as to the HU allocation for SIWM among themselves. Ongoing negotiations with BPA are expected through the coming year with a request by the partners that they have a settlement agreement with BPA by September 30, 2009.

199505700 – Southern Idaho Wildlife Mitigation, Idaho Dept. of Fish and Game, Upper Snake Province.

*Administered and implemented as single SIWM project in both the Upper and Middle Snake provinces since 1997.*

199505703 – Southern Idaho Wildlife Mitigation, Shoshone Paiute Tribes, Mid Snake Province.

*No formal agreement yet exists between SPT and BPA but SPT contract provides for mitigation and coordination of wildlife mitigation in the Mid Snake.*

199505702 – Southern Idaho Wildlife Mitigation, Shoshone-Bannock Tribes, Upper Snake Province.

*Under 1997 agreement between BPA and IDFG and 1996 agreement between IDFG and SBT. IDFG and IDFG have implemented 6 common share projects since 1997 for a total of 15,552 HUs or 7776 HU/entity. For most common share projects, fee title is held by the Bureau of Land Management to provide for SBT Treaty Rights exercised on those properties as under open and unclaimed lands.*

199206100 and 03 – Albeni Falls Wildlife Mitigation, Idaho Department of Fish and Game, Intermountain Province, Kootenai, Pend Oreille, and Coeur D’Alene subbasins.

*Albeni and SIWM are administered under the same program by IDFG. There is a Tier 2 monitoring plan designed for both the IDFG mitigation program that has not yet been implemented. The IDFG Albeni program has pooled its capital funds via an Albeni Falls Interagency Work Group proposal in the past but this year, has requested separate capital funds, mimicking how SIWM is implemented.*

### **Local Partnerships**

IDFG SWIM implements each acquisition according to IDFG policy. This includes prioritization by the IDFG Lands Committee and approval by the Department’s Commission. The process also requires local acceptance and support for the project and approval of the project by the local county commissioners. Habitat improvement and maintenance on mitigation projects has been implemented through share cropping with local farmers and cooperative grazing management of neighboring landowners or contractors. Two easement mitigation projects were done in cooperation with the Teton Regional Land Trust and they hold and enforce the terms of those mitigation easements. Their efforts along with those of the Nature Conservancy and the City of Boise, Foothills Conservation Committee coincide with and increase the effectiveness of IDFG SIWM mitigation actions in both the Mid and Upper Snake Provinces. The IDFG, including Centennial Marsh WMA, is a member of the Camas Creek Cooperative Weed Management Area steering committee. Once a year we participate in cooperative spray project on a parcel of private land chosen by the committee.

### **Agency Partners**

The Bureau of Land Management is the primary federal partner to IDFG SIWM. They hold fee title to common share projects done in cooperation with SBT SIWM, providing SBT members the ability to exercise their treaty rights on mitigation properties.

The Idaho Department of Lands is a cooperator with IDFG on land leases that coincide with management of its WMA and mitigation parcels. Cooperative grazing leases and miscellaneous leases of IDL lands increase the amount of lands managed for habitat and wildlife and increase the effectiveness that mitigation implementation brings to existing IDFG WMAs.

## **E. Project history (for on-going projects)**

What is commonly known as the Northwest Power Act was signed into law in December 1980. It provided for establishing a regional council with representation from Oregon, Washington, Montana and Idaho. What is now the Northwest Power and Conservation Council was charged with developing a regional energy plan and a compatible regional program to mitigate the loss of fish and wildlife resulting from construction and operation of the FCRPS. Bonneville Power Administration (BPA), which markets the electricity produced by the federal dams, was charged with paying the cost.

The Columbia River Basin Fish and Wildlife Program adopted by the Council established the goal to “Fully mitigate for the wildlife losses from hydropower in the Columbia River Basin.” As a basis for the amount and type of wildlife losses that occurred from FCRPS development, the wildlife loss assessments (Sather-Blair and Preston 1985, Martin et al. 1987, Meulman et al. 1987, Martin and Meulman 1989) quantified the losses of FCRPS in Southern Idaho in the Mid and Upper Snake Provinces and this “habitat units” ledger was adopted into the Council’s Fish and Wildlife program to represent the outstanding wildlife mitigation debt owed by BPA.

To reduce the mitigation debt and achieve the mitigation goal of the Council’s program, the SIWM project was initiated as the result of IDFG and the Palisades Interagency Work Group developing the South Fork Snake/Palisades Wildlife Mitigation project in 1997. This project was originally approved by the Council and BPA in 1995 subsequent to an environmental assessment and finding of no significant impact under the National Environmental Policy Act (NEPA) in 1995. A signed agreement between BPA and the IDFG Commission formalized the project and began implementation of mitigation for the construction and inundation impacts of Palisades dam and reservoir. Later in 1997, a new agreement was signed by BPA and the IDFG Commission establishing the Southern Idaho Agreement for implementing mitigation for Palisades, Anderson Ranch, Black Canyon, Deadwood, and Minidoka projects. Coincident with these agreements between BPA and IDFG, IDFG signed an agreement with the Shoshone Bannock Tribes for Southern Idaho mitigation and which established an allocation of the mitigation debt among the partners and interagency work groups to coordinate mitigation planning, monitoring, and research on common share mitigation projects.

Under these agreements and from 1997 up to present, the IDFG SIWM project has been administered as a single project with responsibility for implementing mitigation for all 4 FCRPS projects across southern Idaho. In terms of geography and administration, all activities and all funding including capital, operations and maintenance and administrative funding for the IDFG SIWM project address all 4 FCRPS projects in both the Upper and Mid Snake provinces and their corresponding subbasins (Boise, Payette, Weiser, Snake Lower Middle, Snake Upper Middle, Snake Upper, Closed, Upper Snake, and Headwaters). IDFG implements and administers the project through a project leader as part of IDFG’s statewide mitigation program. After a project has acquired and protected habitats identified in the loss assessments and credited BPA accordingly, the maintenance and enhancement of those mitigation HU’s is, by separate contract and program, assigned to IDFG’s habitat management staff. Accordingly, emphasis and priority has been on mitigation actions that enhance already existing habitat management efforts. From a biological and management context, mitigation projects have largely focused on adding to existing wildlife management

areas within the areas of FCRPS impacts, unless the project can justify itself in IDFG and NWPCCC forums from a biological and mitigation priority standpoint.

The first SIWM mitigation actions were taken in 1997 with the acquisition of 2 easements totaling 1222 acres and fee title of 860 acres in 2 separate acquisitions; all of which occurred in the Upper Snake Province and all which were credited exclusively towards the Palisades project. Subsequently, IDFG SIWM has implemented a total of 13 mitigation projects in both the Mid and Upper Snake provinces, with the majority of habitat mitigation credits going towards the Palisades project. Three mitigation projects have been credited towards more than one of the 4 FCRPS projects, while no more than 2 FCRPS projects have been credited for a single mitigation project.

The first acquisition for the Centennial Marsh mitigation project was the 1,361-acre Rice property, acquired on March 15, 2002 (Table 3). The second was the Faulkner property of 1,800 acres acquired March 20, 2008. These two acquisitions, as well as ongoing operation and management were funded by Bonneville Power Administration (BPA). This contribution serves to partially mitigate for impacts associated with construction and operation of Anderson Ranch Dam on the South Fork of the Boise River. These properties are managed as part of the Camas Prairie Centennial Marsh Wildlife Management Area (WMA). Currently, the Idaho Department of Fish and Game (IDFG) is contributing cost-share services to manage this project, including personnel and operating expenses.

The Rice and Faulkner properties have both been farmed and ranched for over 60 years. Portions of the uplands and seasonally flooded wetlands have been used for crop production, and the entire properties have been utilized for livestock grazing. Passive restoration techniques are being emphasized on most of the grazed properties, with actions taken only when necessary to maintain existing habitat and protect the property from noxious weed invasions. The previously farmed cropland, contains the majority of the noxious weeds on the property and are a significant management concern as the vegetation type is converted from cropland to wildlife habitat. These areas are being actively restored, through aggressive weed control and reestablishment of permanent native vegetation. Twenty five acres on the Rice property have been successfully converted to permanent native habitat. To address these noxious weed concerns, IDFG is expanding an already extensive weed monitoring and control effort used on the Camas Prairie WMA and implementing it on the Rice and Faulkner properties with O&M funding made possible by BPA.

One segment of the new Faulkner property contains 800 acres and six miles of fence that are in open range (In Idaho Code “Open Range” is defined as open to grazing and private property owners are required to fence out grazing livestock, fencing is not the responsibility of the livestock owner). This mountainous section will require rebuilding and maintaining a fence to keep neighboring livestock off the property. The remaining 2,200 acres, has nine miles of perimeter fence that is partially maintained by adjoining landowners and the balance by IDFG. Maintaining these fences and gates is necessary to protect Camas Creek and the wetlands from trespass livestock.



Table 3. Mid Snake Province IDFG mitigation project history.

<b>Project Name</b>	<b>Hydropower Project</b>	<b>Fed. Fiscal Year</b>	<b>Manager(s)</b>	<b>Acres</b>	<b>HU's</b>
Kruger	Black Canyon	1997	IDFG	166	55
Rice	Anderson Ranch	2002	IDFG	1,344	1,664
Faulkner	Anderson Ranch	2008	IDFG	1,401	1,351*
Bliss Point Cattle	Anderson Ranch	2008	IDFG	400	Included in Faulkner
Smith	Anderson Ranch and Black Canyon	2008	IDFG	59	17*

\*Minimum HU's, HEP analysis scheduled for 2009.

### **Management Actions and Accomplishments**

#### **Rice, Faulkner, and Bliss Point Cattle projects – Centennial Marsh WMA**

##### **Passive Recovery**

Five stock wells are located on the property that were operated to provide livestock water prior to mitigation protection. They now help maintain important wetland habitat as surface water has declined and conditions have improved without livestock use. There are water rights associated with each of these wells.

##### **Operations and Management**

In the fall of 2007, 1/4 mile of interior fence was removed, during May of 2008, three fencing contractors were brought out to the project to obtain bids for the removal of 5.5 miles of interior fencing. This project will be completed later in the summer.

Fifteen miles of fences and nine gates were inspected and maintained to prevent unauthorized vehicle and livestock trespass into the adjacent wetlands and agricultural fields being restored to permanent cover.

There are eight water diversion control structures on the property. These divert the 20 cfs of Camas Creek water rights and distribute it throughout the property. They are constructed of concrete and or rock, and require maintenance after each spring run-off. In early summer, as the water level drops, the rocks that have been displaced are repositioned by hand to maintain their function as water diversions.

Cultural/Historic Resource surveys were completed for the fencing and willow planting projects.

### **Survey and Inventory**

In conjunction with Intermountain west waterbird conservation plan and Idaho Bird Inventory and Survey (IBIS), waterbird and breeding bird surveys were conducted on the Centennial Marsh WMA (see Section G. Monitoring and Evaluation Section).

Incidental calling surveys were conducted for amphibians, primarily western toad, Pacific chorus frog, and spotted frog. These surveys were conducted once in late May and once in mid-June in 2008. Ground searches were conducted for long-toed salamander, short-horned lizard, Western fence lizard, sagebrush lizard, and Western skink.

Fifteen Canada goose nesting platforms were maintained and checked for use. Fourteen were used successfully in 2008.

### **Weed Management**

The entire 3,161 acres of the Centennial Marsh WMA were surveyed and inventoried for noxious weeds in 2008. The primary weeds present are Canada thistle (*Cirsium arvense*), hoary cress (*Cardaria draba*) and field bindweed (*Convolvulus arvensis*). These species are being controlled by chemical as follows: Escort<sup>®</sup> - hoary cress, Curtail<sup>®</sup> - Canada thistle, bull thistle, Rodeo<sup>®</sup> - Common cattail, Roundup<sup>®</sup> - Canada thistle, field bindweed, bulbous bluegrass, Vanquish<sup>®</sup> - field bindweed or by mechanical means. Twenty acres of Canada thistle and five acres of hoary cress were treated in 2008 and similar levels of annual treatment are anticipated. Treated areas were evaluated to determine the effectiveness of the control action. If weeds were still present, later in the growing season, the herbicide application was repeated. The weeds on the new Faulkner property were inventoried and mapped. Diffuse knapweed (*Centaurea diffusa*) found along and around the corrals and along an interior access road were treated.

Rush skeletonweed (*Chondrilla juncea*) is also present on the property. The few plants found were pulled and bagged. Each year we continue to find more scattered rush skeletonweed plants in the area and it is infesting more and more acres up-wind of these properties. Because it disperses by airborne seed, searches and control efforts will be necessary annually. We will continue planting/seeding efforts to manage noxious weed problems that are a result of the property previously being agricultural and to reestablish native vegetation and wildlife cover and forage.

Centennial Marsh WMA entered into the Conservation Reserve Program with Farm Service Agency and enrolled 426 acres in CRP. This was previously either barley or alfalfa ground and was infested with field bindweed and Canada thistle while bulbous bluegrass occurs in the alfalfa ground with a small amount of Canada thistle. All of the CRP acres were summer fallowed for two growing seasons by disking and spraying.

## **Restoration**

Three and one-half miles of stream bank were surveyed and inventoried. During the fall of 2007, 2,000 willows were harvested from IDFG property and planted along these stream channels. Plantings are being monitored by observation for establishment success.

Ditches were installed by previous owners to drain wetlands and efforts to obliterate and rehabilitate these ditches will protect and expand existing wetlands and permit administrative access to parts of the property.

A ditch restoration project was surveyed and planned in the summer of 2006. The amount of material to be replaced to its original location was determined to be approximately 4,400 cu. yards. The larger ditch was a mile long, with two smaller ditches one-quarter mile long each. Contractors were contacted, tours of the site were conducted and bids were submitted. The heavy dirt work was completed in the fall of 2006. Some additional ditch work was performed in the fall of 2007, to enhance drainage on the adjacent neighbors property. The site was prepared and seeded in the fall of 2007. Wetland reestablishment is being monitored by observation.

After the three year grazing agreement and a year of weed control, it was determined that 15 acres in the wetter portion of this field was coming back to desirable vegetation. We will allow it to continue to do so passively. The remaining 25 acres were not planted in 2006 due to a continuing Canada thistle problem. It has now been planted to native vegetation and is being monitored for success.

## **Public Access and Education**

Public access points are managed as necessary to provide recreational access to the properties without compromising restored wetland functions and/or wildlife values. Informational signs are installed and maintained and informational literature is provided as well as public contacts promote public awareness of the BPA wildlife mitigation program. Tours were conducted on the property to birding and school groups. Handicap-accessible restroom facilities are available on nearby Camas Prairie Centennial Marsh. In an attempt to prevent or control wildfires, roadways and parking areas are mowed.. Camping, campfires, and fireworks are prohibited.

## **Krueger, Smith, - Boise River WMA**

The Krueger and Smith mitigation projects, totaling 125 acres (Table 4) are managed in concert with the objectives and strategies of the much larger Boise River, Wildlife Management Area. The goals, objectives, and strategies of the Boise River WMA may be seen in Section F.

## **F. Proposed biological/physical objectives, work elements, methods, and metrics**

The overall goal of the SIWM is to fully mitigate for the wildlife losses from hydropower in Southern Idaho. IDFG prioritizes acquisition/protection projects that replace lost habitat

types in the following cover types: Wetland Aquatic, Upland Priority, Forested Wetlands, Shrub-Scrub, Uplands, Forested Riparian, Coniferous Forest.

## **SIWM Objectives**

Produce Pisces Status Reports for BPA either monthly or quarterly.

Manage and administer the project and tasks in the BPA contract and subcontracts.

### **Identify and Select Projects**

*Evaluate proposed acquisitions submitted by IDFG staff and conservation partners. Rank, recommend, and implement based on IDFG land acquisition policy and IDFG SIWM contract stipulations and limits with BPA.*

Coordinate and contract field activities for operations and maintenance of mitigation habitats

*Coordinate on-going operation and maintenance activities on mitigation project lands. Activities may include noxious weed control, fence maintenance, maintenance of property and habitat improvements, debris removal, maintenance of information and education facilities, and other activities described in the management plans.*

*Coordinate completion of baseline surveys including: distribution and abundance of selected wildlife, and distribution and abundance of plant communities including native species, rare species and noxious weeds. Use components of the Monitoring and Evaluation Plan for Idaho Wildlife Mitigation Projects (Unnasch et al. 2004). Coordinate an inventory of roads, trails, etc. and an assessment of recreational use.*

### **Maintain upland vegetation**

*Maintain upland vegetation through the removal of noxious weeds. BPA-approved herbicide & hand removal will be used on approximately 1391 acres annually.*

### **Implement Information and Education Program**

*Coordinate and implement an I&E program about BPA-funded mitigation. Activities may include development of signs and interpretive sites, production of audio-visual programs and informational brochures, and educational site tours.*

*These activities will occur on an as-needed basis for the 5 segments of the Deer Parks Complex, the Centennial Marsh property, Boise River Properties, and the Quarter Circle O property.*

### **Complete coordination with easement holders**

*Easement holder partners meet at least annually with landowners to discuss management of the land and compliance with the easement. This will be accomplished annually for the Kruse and Winterfeld conservation easements in the Upper Snake Province.*

Coordinate with other entities

*Coordinate with other entities involved with wildlife mitigation in Southern Idaho including tribes, private landowners, non-governmental organizations, and federal, state, and local agencies on an as needed basis.*

Gather necessary information to inform potential settlement discussions

*The Shoshone-Paiute Tribes, Shoshone-Bannock Tribes, and Idaho Department of Fish and Game will work with a BPA on possible settlement options for the remaining wildlife mitigation for the Southern Idaho projects (Anderson Ranch, Black Canyon, Minidoka, and Palisades).*

Conduct the necessary pre-acquisition steps in coordination with BPA

Coordinate pre-acquisition appraisals, site visits, hazardous waste assessments, public notice/involvement processes, environmental compliance requirements, and internal inter-agency discussions.

Submit Progress report for the period of 10-2008 to 9-2009

The progress report summarizes the project goal, objectives, hypotheses, completed and uncompleted deliverables, problems encountered, lessons learned, and long-term planning.

**Centennial Marsh WMA Objectives**

Restore native vegetation to manage noxious weed problems

*Approximately 1000 bare stem willows planted by hand annually. Locations will be determined through field surveys.*

Inspect fences and gates on the property to protect habitat on WMA.

*Inspection and maintenance of approximately 10.5 miles of fence annually and fence removal on 5 miles of internal fence at a rate of 1 mi/yr with the new 1,800 acres acquired in 2008.*

Control weeds on Centennial Marsh to increase success of passive restoration efforts

*Weed control actions on approximately 400 acres annually. Timing of year influences type of removal (water levels and conditions dictate methods).*

Enhance wetland habitat through flooding by removing temporary watering structures

*Utilizing existing wells and water rights after the spring, runoff and flooding to provide water in Camas Creek and enhance riparian and stream habitat and waterfowl brood production.*

Evaluate new office maintenance facility with utilities

*Perform a feasibility study to determine if a new office/maintenance facility (including utilities) should be built and where it might be located.*

Control weeds through on Quarter Circle O property using biological, chemical, and/or mechanical methods

*Survey and control weeds on 2135 acres on Quarter circle O Property. Timing of year influences type of removal (water levels and conditions dictate methods). Typically Herbicide is sprayed off ATV; if certain weeds are mature, then hand removal is required.*



Maintain agricultural plantings to reduce noxious weed issues until native restoration.

*Continue planting efforts to manage noxious weed issues that are a result of the property previously being agricultural.*

Collect monitoring field data on Centennial Marsh

*Conduct a HEP every five years to monitor changes in vegetation and habitat quality, and to provide updated crediting to BPA. Establish a series of permanent photo points to monitor changes in plant communities over time. Use monitoring information to guide annual management priorities and activity planning.*

Submit annual Report

## **Boise River WMA Objectives**

### **Goal: Improve mule deer winter survival**

Objective B: Decrease human disturbance to wintering big game

Strategy 1. Monitor the impacts of recreational use on big game security during winter and restrict access if necessary

Strategy 2. On the Boise Front Segment, require dogs to be leashed at all times (except working hunting and herding dogs)

### **Goal: Increase the size and distribution of upland game populations**

Objective A: Increase canopy cover and frequency of desirable plant species by 10% in 5 years

Strategy 1. Plant desirable native and non-native grass and forb species in degraded sites

Strategy 2. Establish vegetation monitoring plots

Objective B: Increase canopy cover and frequency of desirable vegetation in riparian areas

Strategy 1. Limit livestock grazing in riparian areas

Strategy 2. Survey current livestock water developments for functional status and determine if needed

Objective C: Decrease human disturbance to nesting game birds

Strategy 1. Limit off trail recreational use during nesting season

Strategy 2. On the Boise Front Segment, require dogs to be leashed at all times (except working hunting and herding dogs)

### **Goal: Increase the amount and quality of winter cover and forage to improve mule deer and elk winter survival**

Objective A: Increase canopy cover and frequency of desirable shrubs by 5% in 5 years

Strategy 1. Plant 10,000 to 20,000 shrub seedlings on the BRWMA each year (bitterbrush, big sagebrush and silver sage)

### **Goal: Reduce the spread of noxious weeds**

Objective A: Treat 100% of known infestations of noxious weeds annually

Strategy 1. Maintain a GIS database of noxious weed occurrences on the BRWMA including information about treatments and results of control efforts

Strategy 2. Use integrated weed management (biological, cultural, and chemical methods) to control noxious weeds

Strategy 3. Survey priority areas each year to detect new weed occurrences.

**Goal: Reduce the impact of wildfire on wildlife habitat**

Objective A: Rehabilitate all areas burned by wildfires

Strategy 1. Seed burned areas with desirable grass and forb species to help control post-fire soil erosion and suppress weeds.

Strategy 2. Plant shrub seedlings (bitterbrush, big sagebrush, and silver sage) in burned areas to shorten natural shrub recovery time.

Objective B: Reduce the acreage of the BRWMA that is susceptible to repeated burning

Strategy 1. Design and implement a system of greenstrips to provide defensible areas

Strategy 2. Use desirable fire resistant vegetation to help reduce the possibility of an area burning again.

**Goal: Manage public access to increase or maintain wildlife habitat effectiveness**

Strategy 1. Manage public motorized use of road and trail system to provide larger blocks of secure wildlife habitat

Strategy 2. Monitor the impacts of recreational use on big game security during winter

Strategy 3. Manage public access if necessary by establishing designated endpoints on trails and/or closing areas to public access

Strategy 4. Manage vehicle and foot traffic in critical areas during biologically sensitive time periods

Strategy 5. Require dogs on the Boise Front Segment to be leashed at all times (except working hunting and herding dogs)

Strategy 6. Work with other managers and landowners to coordinate access dates with nearby and adjacent jurisdictions and ownerships

Strategy 7. Prohibit camping and campfires to reduce conflicts and resource damage

Strategy 8. Recruit volunteers to monitor compliance

**G. Monitoring and Evaluation**

Tier I - Monitoring sufficient to answer questions about the trend in population or habitat condition over a broad scale. It has the advantage of being relatively inexpensive to implement. However, its lack of precision makes it relatively insensitive to local conditions or management actions. On a programmatic scale (NWPPC Fish and Wildlife Program), HEP analysis (U.S. Fish and Wildlife Service 1980a) falls into this category and is used to estimate minimum irreducible HU credits for SIWM projects, quantify the total number of HUs credited to habitat protection for mitigation, and to quantify the enhancement HU credits attributed to habitat management and protection subsequent to acquisition. HEP is the protocol for monitoring at the programmatic level to ensure mitigation goals are being achieved and to inform a potential settlement agreement for IDFG SIWM in the Mid and Upper Snake Provinces and so is the foundation of our monitoring strategy.

*Tier II* - Monitoring to answer questions about population trends, community diversity, and species relative abundance in the context of local habitat condition or management action. Although more costly to implement, this level of monitoring has sufficient sensitivity, and defined levels of confidence, to provide feedback on management actions in an adaptive management context. A

Tier 2 monitoring protocol has been designed for the Idaho mitigation program (Unnasch et al. 2003) and scaled accordingly (Figure 4). However, funding and program limitations have limited its deployment since the monitoring report was completed. The logistical and geographical context of the IDFG mitigation program limit its use without a funding commitment beyond individual projects. We have made requests for Tier 2 monitoring at the project level to initiate the protocol in Unnasch et al. (2003) during the next cycle.

Tier III - Research monitoring is the most sensitive level of monitoring. At this level we are able to answer questions about causal relationships between specific habitat attributes and population demographic parameters. This is the most expensive level of monitoring to employ on a per area basis and is beyond the management context of this project.

### Methods

The NWPPC Fish and Wildlife Program requires that a baseline HEP analysis be completed within two years of acquisition of a mitigation property and every five years thereafter. This schedule has been followed as part of the ongoing M&E efforts for SIWM. Some acquisitions are primarily to protect existing high-quality habitats, where management is largely custodial and significant increases in HUs are not anticipated. Other acquisitions require extensive restoration, and substantial gains in HUs are the expected outcome. Results of SIWM HEP analysis following protection and management must be interpreted in this context. IDFG SIWM expects to maintain, within the limits of normal temporal variability, at least the baseline number of HUs on every property. A 20 percent drop in baseline HUs would trigger a management response.

The HEP is based on the assumption that habitat for a selected species can be described by a Habitat Suitability Index (HSI). This value is derived by evaluating the ability of key habitat components (e.g., hiding cover, snag density, forage availability) to supply the life requisites of selected wildlife species. Habitat quality, expressed as the Habitat Suitability Index, measures how suitable the habitat is for a particular species when compared to optimum habitat. The HSI varies from 0.0 to 1.0 (optimal). The value of an area to a given wildlife target species is the product of the size of that area and the quality of the area for the species. This product is comparable to "habitat value" and is expressed as a habitat unit (HU). For a particular target species, one HU is equivalent to one acre of optimal habitat (HSI=1.0). Target species are used in HEP to quantify habitat suitability and determine changes in the number of HUs supported by a particular area. Consequently, a HEP assessment is only directly applicable to the target species selected. The degree to which predicted effects can be extrapolated to a larger segment of the wildlife community depends on careful species selection (USFWS 1980b). Target species and their HSI models selected for HEP analyses in the M&E program would generally be those target species and models used during hydroelectric project wildlife impact assessments. Likewise, field- and remote-sampling methods would generally follow those used during the wildlife impact assessments. During field sampling, transects are lengthened or occasionally shortened to achieve a 90 percent confidence level for our parameter point estimates. Adequacy of habitat sampling is determined using the formula (Zar 1984):

$$\frac{z^2 \times s^2}{e^2}$$

Where:

z= the critical normal value (p=0.1) from any standard statistical reference

s= standard deviation

e= tolerable error level

Habitat cover types are outlined on aerial photographs and a planimeter or dot grid is used to estimate the total acreage of each cover type. Geographical information systems (GIS) will be used to estimate total acreage of each cover type when accurate data layers are available. The habitat units for each target species in each cover type are calculated using the formula:

$$HU = (\text{cover type area}) \times (\text{HSI value}).$$

Published and modified HSI models are used in this analysis. Where published models are modified to better reflect local conditions, modifications must meet U.S. Fish and Wildlife Service standards (USFWS 1981). Habitat units are tabulated across target species and cover types to get total HUs for each species and each cover type for the property.

### Results

Updated HEP assessments were conducted for the Kruger and Rice acquisitions in 2007 ( Table 5) and the outstanding HU ledger for the Mid Snake has been adjusted accordingly (Table 1). The most recent Smith and Faulkner and Bliss Point Cattle habitat protection additions to the Camas Prairie WMA are scheduled for baseline HEPs in 2009.

The most recent HEP information for the Kruger property reflects the affects of a range fire that occurred in 2007 and the inclusion of pheasant as a species. The 2002 baseline Rice HEP was determined to have been improperly conducted due to species stacking issues related to the Anderson Ranch Reservoir loss assessment. The updated 2007 HEP for this property corrected the species stacking omission, made substitutions of species more appropriate for the habitats present and quantified the appropriate enhancement HU's attributed to protection and management between 2002-2007.

The Centennial Marsh WMA and Deer Parks WMA are part of the Idaho Important Bird Area (IBA) Idaho Bird Inventory and Survey (IBIS) statewide programs (Idaho Important Bird Area Annual Report 2008, Idaho Bird Inventory and Survey Annual Report 2008). Both these programs supplement the habitat mitigation efforts through inventory and survey by IDFG Conservation Science program staff and citizen scientists. The Centennial Marsh WMA is one of 64 Important Bird Areas in Idaho and is annually monitored. This site contains 3,000 acres of seasonally wet meadow and shallow impoundments. The marsh's uniformly shallow water attracts thousands of waterfowl and hundreds of shorebirds each spring. Birds commonly see here include blue- and green-winged teal, sandhill cranes, black-necked stilts, Wilson's phalaropes, soras, and long-billed curlews. An estimated 34 waterbirds species are normally surveyed during IBIS surveys in May, June, and July.

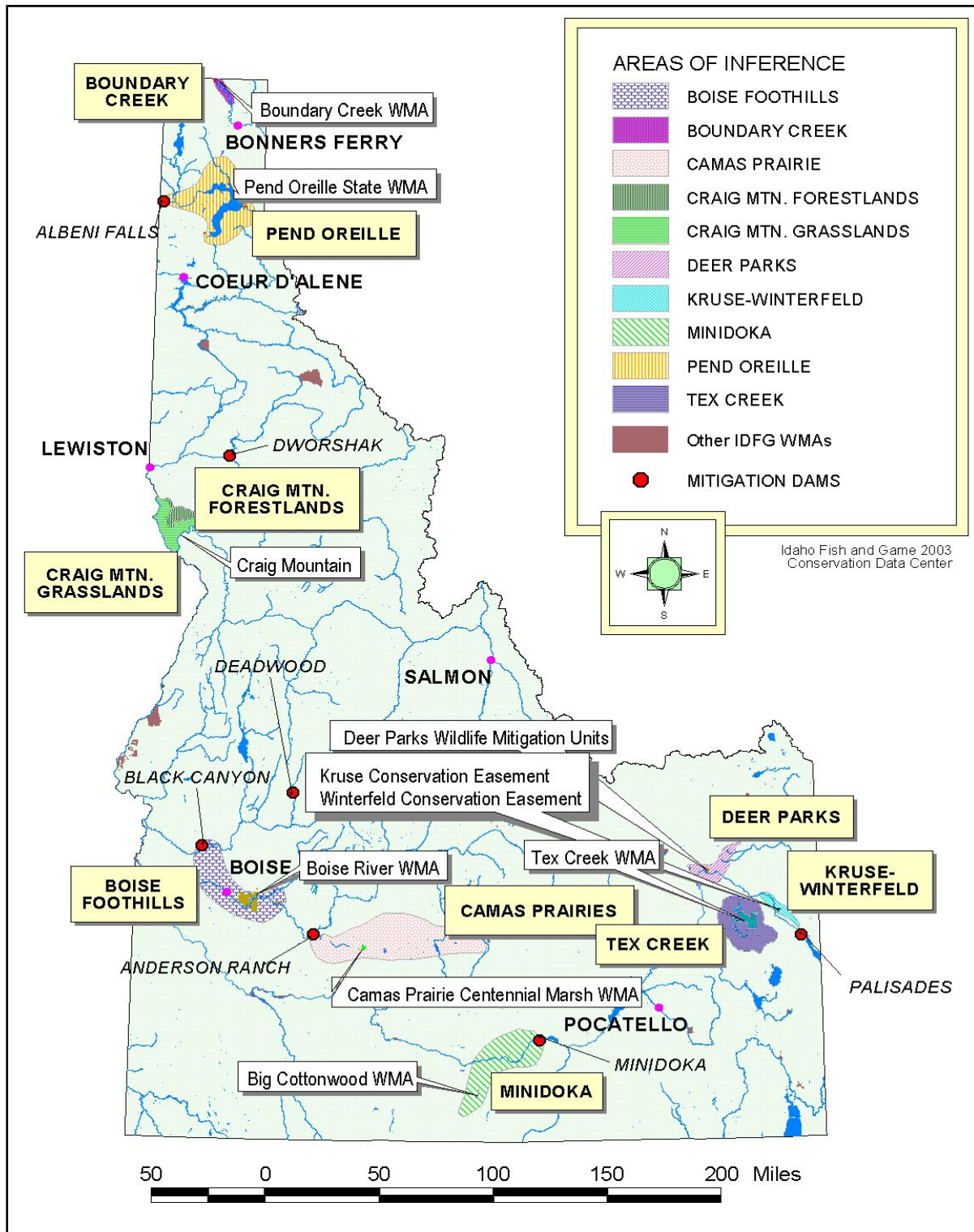


Figure 4. Areas of Inference for monitoring mitigation. White boxes point to existing Wildlife Management Areas. Multiple Wildlife Management Areas combined on the basis of related mitigation efforts and regional proximity are "Areas of Inference", illustrated in light yellow.



Target Species	Krueger		Net Change	Rice (Camas Prairie)		Net Change
	2000	2007	7 years	2002	2007	5 years
<b>Project Acres</b>	<b>166.00</b>	<b>166.00</b>	<b>0.00</b>	<b>1,344.00</b>	<b>1,344.00</b>	<b>0.00</b>
<b>HEP Survey Year</b>	<b>2000</b>	<b>2007</b>	<b>7 years</b>	<b>2002</b>	<b>2007</b>	<b>5 years</b>
<b>Snipe**</b>	-	-	-	885.60	781.00	<b>-104.60</b>
<b>Western Meadowlark**</b>	-	-	-	73.96	136.67	<b>62.71</b>
Mule deer	47.92	38.18	<b>-9.74</b>	-	98.80	98.80
<b>Pheasant**</b>	-	16.60	16.60	-	-	-
Mink	-	-	-	-	1.00	1.00
<b>Mallard **</b>	-	-	-	80.69	642.56	<b>561.87</b>
Canada goose <sup>2</sup>	-	-	-	-	-	-
Ruffed grouse	-	-	-	-	-	-
Bald eagle (breeding)	-	-	-	-	-	-
Bald eagle (wintering)	-	-	-	-	-	-
Black-capped chickadee	-	-	-	-	-	-
Yellow warbler	2.00	0.00	<b>-2.00</b>	3.00	3.52	<b>0.52</b>
<b>Total</b>	<b>49.92</b>	<b>54.78</b>	<b>4.86</b>	<b>1,043.25</b>	<b>1,663.55</b>	<b>620.30</b>

\* The Rice property and other Camas Prairie WMA mitigation projects are credited to the Anderson Ranch project located in the Mid Snake Province. Centennial Marsh is in the Upper Snake subbasin in the Upper Snake Province and so operations and maintenance budgets are submitted under the IDFG SIWM Upper Snake Province budget proposal.

\*\* Species substituted for mink, blue grouse, and mule deer to correct species-habitat associations and HEP analysis resulting from the initial baseline HEP for Rice.

## H. Facilities and equipment

Office space and equipment necessary to support this project are available at Idaho Department of Fish and Game regional and state office facilities and at satellite facilities located on mitigation units. Vehicles, equipment, tools and supplies are purchased, leased or loaned to the project as needed.

A combined maintenance shop and office building has been submitted for the Centennial Marsh properties. The building is needed to ensure safety and efficient operations, secure project equipment, tools, and files,

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## **J. Key personnel**

### **Resume**

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### **Education**

B.Sc. in Fish and Wildlife Sciences - University of Massachusetts

M.S. in Fish and Wildlife Management - Texas A & M University

### **Professional Experience**

Idaho Department of Fish and Game Wildlife Program Coordinator responsible for Department review, analysis, and comment on forest, highway, county, municipal, range land, and waterways development projects impacting fish and wildlife within the state of Idaho. Responsible for coordination with state and federal agencies on fish and wildlife management, mitigation, and regulatory authorities. Develop program direction for Department policy and legislation in statewide issues including outfitter management, forest management, interagency coordination, and watershed protection, strategic planning, and subbasin planning.

### **Writing and Publications**

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## **Resume**

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### **Education**

B.Sc. in Zoology – Idaho State University, 1984

Certified Public Manager – State of Idaho, 2003

### **Professional Experience**

Idaho Department of Fish and Game Wildlife Mitigation Staff Biologist responsible for Southern Idaho Wildlife Mitigation. Responsibilities: Develop and implement acquisition and mitigation programs to help sustain Idaho's fish and wildlife and associated recreation. Purchase land and easements and fulfill acquisition steps and policies expeditiously and with due diligence. Develop project budgets and contracts with Bonneville Power Administration (BPA), Northwest Power and Conservation Council, and regional habitat programs

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