

## **PART I - ADMINISTRATIVE**

### **Section 1. General administrative information**

<b>Title of project</b> Southern Idaho Wildlife Mitigation	
<b>BPA project number</b>	9505700
<b>Contract renewal date (mm/yyyy)</b>	03/1999
<b>Multiple actions? (indicate Yes or No)</b>	Yes
<b>Business name of agency, institution or organization requesting funding</b> Idaho Department of Fish and Game AND Shoshone-Bannock Tribes	
<b>Business acronym (if appropriate)</b>	IDFG and SBT
<b>Proposal contact person or principal investigator:</b>	
<b>Name</b>	Michele Beucler AND Anders Mikkelsen
<b>Mailing address</b>	P.O. Box 25 AND P.O. Box 306
<b>City, ST Zip</b>	Boise, ID 83707 AND Fort Hall, ID 83203
<b>Phone</b>	(208) 334-3180 AND (208) 238-3761
<b>Fax</b>	(208) 334-2114 AND (208) 238-3742
<b>Email address</b>	mbeucler@idfg.state.id.us AND salmon1@cyberhighway.net
<b>NPPC Program Measure Number(s) which this project addresses</b> 11.2D.1, 11.2E.1, 11.3D.4, 11.3D.5, 11.3D.7, 11.3D.8	
<b>FWS/NMFS Biological Opinion Number(s) which this project addresses</b> Not applicable	
<b>Other planning document references</b> The following document refers to the need to mitigate for hydropower impacts: ➤ Bonneville Power Administration Wildlife Mitigation Program Final Environmental Impact Statement (BPA 1997)  The following documents support the need to protect habitat in the South Fork Snake Project Area: ➤ FS/BLM Snake River Activity/Operations Plan (1991) ➤ USFWS Pacific Bald Eagle Recovery Plan (1986) ➤ Idaho Department of Water Resources South Fork Basin Plan (1997) ➤ Idaho Department of Water Resources Henrys Fork Basin Plan (1991) ➤ Targhee National Forest Plan (USFS 1997) ➤ Conservation Strategy for Southeast Idaho Wetlands (Jankovsky-Jones 1997b)  The following documents supports the need to protect wetland habitat in Camas Prairie: ➤ Conservation Strategy for Big Wood River Basin Wetlands (Jankovsky-Jones 1997a) ➤ Rivers of Life: Critical Watersheds for Protecting Freshwater Biodiversity (Master et. al. 1998)	

The following documents support protection of wildlife habitat in the Boise Foothills:

- Ada County Land Use Plan
- 1997 Boise City Comprehensive Plan
- City of Boise Foothills Plan

The following documents support protecting and restoring habitat in southern Idaho:

- Bureau of Land Management Resource Management Plans for
  - Medicine Lodge Resource Area
  - Pocatello Resource Area
  - Shoshone Resource Area
  - Bruneau Resource Area
  - Cascade Resource Area

Each of the following plans recognize that the federal hydropower system has impacted wildlife habitat in Idaho and calls for mitigation of the net losses:

- IDFG 5-Year Mule Deer Plan (Scott et al. 1991)
- IDFG 5-Year Nongame Plan (Groves and Melquist 1991)
- IDFG 5-Year Upland Game Plan (Smith et. al. 1990)
- IDFG 5-Year Waterfowl Plan (Connelly and Wackenhut 1990)
- A Vision for the Future: IDFG Policy Plan 1990-2005 (IDFG 1991)

**Short description**

**Protect, enhance, and maintain wildlife habitats to mitigate construction losses (a total of 54,292 HU) for Palisades, Anderson Ranch, Black Canyon, and Minidoka hydroelectric projects as described in Section 11 of the FWP. This project has been ongoing since 1997 and 15,014 HU have been credited.**

**Target species**

**Mallard, mink, yellow warbler, black-capped chickadee, ruffed grouse, blue grouse, mule deer, Canada goose, ring-necked pheasant, sharp-tailed grouse, bald eagle, elk, peregrine falcon, redhead, western grebe, marsh wren, and river otter.**

**Section 2. Sorting and evaluation**

**Subbasin**

Upper Snake River Basin (above Hells Canyon Dam)

**Evaluation Process Sort**

CBFWA caucus		CBFWA eval. process		ISRP project type
X one or more caucus		If your project fits either of these processes, X one or both		X one or more categories
	Anadromous fish	X	Multi-year (milestone-based evaluation)	Watershed councils/model

			watersheds
	Resident Fish	Watershed project eval.	Information dissemination
X	Wildlife		X Operation & maintenance
			New construction
			Research & monitoring
			X Implementation & mgmt
			X Wildlife habitat acquisitions

### Section 3. Relationships to other Bonneville projects

***Umbrella / sub-proposal relationships.*** List umbrella project first.

Project #	Project title/description
9505700	South Fork Snake/Sand Creek; incorporated into 9505700, Southern Idaho Wildlife Mitigation
5519200	Remaining Palisades; incorporated into 9505700, Southern Idaho Wildlife Mitigation
9206000	Camas Prairie/Anderson Ranch; incorporated into 9505700, Southern Idaho Wildlife Mitigation
5501400	Black Canyon/Bruneau; incorporated into 9505700, Southern Idaho Wildlife Mitigation
5501700	Minidoka; incorporated into 9505700, Southern Idaho Wildlife Mitigation
9206100	Albeni Falls Wildlife Mitigation; coordinates with Southern Idaho Wildlife Mitigation for statewide consistency

#### ***Other dependent or critically-related projects***

Project #	Project title/description	Nature of relationship

### Section 4. Objectives, tasks and schedules

#### ***Past accomplishments***

Year	Accomplishment	Met biological objectives?
FY97	Protected and/or enhanced 2,013 HU (on approx. 11,362 acres)	Not applicable
FY98	Protected and/or enhanced 6,051 HU (on 5,008 acres)	Yes, the overall objective was 4,315 HU
FY98	Maintained above 2,013 HU	Yes, no net loss of HU

FY99	6,920 HU (on 2,600 acres) is to be permanently protected by March 1999	Yes (upon closing of Deer Parks acquisition), the overall objective was 4,146 HU
FY99	Maintained above 8,064 HU	Yes, no net loss of HU

**Objectives and tasks**

<b>Obj 1,2,3</b>	<b>Objective</b>	<b>Task a,b,c</b>	<b>Task</b>
1	Protect 40,719 HU of wildlife habitat by 2010 by acquiring easements or fee-titles. This accounts for 75% of the construction losses for Palisades, Anderson Ranch, Minidoka, and Black Canyon.	a	Negotiate with willing landowners to buy easements and/or fee-titles.
		b	Consult and coordinate throughout process with the NWPPC, BPA, CBFWA, Tribes, local governments, and other affected interests.
		c	Complete due diligence investigations and NEPA compliance (e.g., Level I environmental survey, cultural resources survey).
		d	Seek approval from CBFWA and BPA on HEP report and management plan, and determine protection credit to be given to BPA.
		e	Close real estate transaction.
2	Enhance 13,573 acres of wildlife habitat by 2010. This accounts for 25% of the construction losses for Palisades, Anderson Ranch, Minidoka, and Black Canyon.	a	Negotiate with partners to enhance existing protected areas.
		b	Exclude livestock (or intensively manage when it can benefit wildlife).
		c	Seed and/or transplant native plant species.
		d	Manipulate water and water control structures to mimic natural water regimes.
		e	Remove undesirable and exotic plant species using biological, mechanical, or chemical methods.
		f	Compare baseline with enhanced HU

<b>Obj 1,2,3</b>	<b>Objective</b>	<b>Task a,b,c</b>	<b>Task</b>
			and credit BPA appropriate number.
		g	Manage public access sites to minimize human disturbance.
3	Maintain HU on all protected and enhanced properties in perpetuity. There will be no net loss of HU.	a	Control human access to wildlife habitat areas during critical time periods.
		b	Maintain fencing at all properties to exclude livestock.
		c	Control noxious weeds by biological, mechanical, and chemical means at all properties.
		d	Enforce regulations and restrictions as appropriate.
4	Monitor all properties in perpetuity to maximize benefits to wildlife.	a	Conduct baseline inventories of wildlife species (target species, indicator species, and species of special concern).
		b	Conduct baseline inventories of plants and plant communities.
		c	Conduct HEPs every 5 years to determine increase in HU.
		d	Conduct various animal surveys at regular intervals (interval depends on species and survey method used).
		e	Conduct various vegetation surveys at regular intervals (intervals will vary according to species/community of interest).
		f	Continuously monitor public use.
		g	Amend and update management plans.

**Objective schedules and costs**

<b>Obj #</b>	<b>Start date mm/yyyy</b>	<b>End date mm/yyyy</b>	<b>Measureable biological objective(s)</b>	<b>Milestone</b>	<b>FY2000 Cost %</b>
1	10/1997	09/2010	Protect approximately 40,719 HU (75% of total debt)	Each additional 10,000 HU protected	87.8%
2	04/1998	09/2010	Enhance approximately 13,573 HU (25% of total debt)	Every 5 years after enhancements are initiated	4.8%
3	04/1999	perpetuity	No net loss of protected	On-going	4.7%

Obj #	Start date mm/yyyy	End date mm/yyyy	Measureable biological objective(s)	Milestone	FY2000 Cost %
			and enhanced HU		
4	04/1999	perpetuity	Net gain of target species populations	On-going	2.7%
				<b>Total</b>	100.0%

#### Schedule constraints

Appraisals, Level I environmental surveys, cultural resource surveys, and property boundary surveys cannot be completed when the ground is snow-covered. Most habitat enhancements occur in the spring and summer as well. Closing acquisition deals take time -- it is very difficult to predict how long negotiations will take.

#### Completion date

We intend to achieve full mitigation for *construction* losses (54,292 HU) for Southern Idaho Wildlife Mitigation by 2010. However, O&M and monitoring will continue in perpetuity albeit at a minimal cost.

## Section 5. Budget

<b>FY99 project budget (BPA obligated):</b>	\$3,111,446
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#### *FY2000 budget by line item*

Item	Note	% of total	FY2000 (\$)
Personnel	Includes both IDFG and SBT personnel.	4.5	196,479
Fringe benefits	About 30% of Personnel costs.	1.4	58,944
Supplies, materials, non-expendable property	Maps, film, and film processing photocopies, computer supplies.	<0.1	2,400
Operations & maintenance		2.0	87,647
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	Conservation easement and fee-title acquisitions; 2 vehicles; 2 vehicle radios; 1 computer; 1 office set-up.	78.3	3,393,600
NEPA costs	Cultural resources surveys.	0.6	26,970
Construction-related support			0
PIT tags	# of tags:		0
Travel	Site visits, coordinate with local working groups and governments, coordinate with CBFWA.	0.4	18,788
Indirect costs	Overhead rate 25%	4.4	188,182

Subcontractor	Pre-acquisition services such as appraisals, environmental surveys, property surveys, closing and title searches, and options.	6.2	269,700
Other	Enhancement costs for Minidoka NWR and BCWMA.	2.1	91,800
<b>TOTAL BPA REQUESTED BUDGET</b>			4,334,510

### **Cost sharing**

<b>Organization</b>	<b>Item or service provided</b>	<b>% total project cost (incl. BPA)</b>	<b>Amount (\$)</b>
U.S. Bureau of Land Management	Pre-acquisition costs on some properties; cultural resources and environmental surveys; equipment; weed control, ORV control.	0.05%	2,391+
Idaho Department of Fish and Game	Aerial monitoring; bitterbrush seedlings; ORV patrol; equipment.	0.1%	4,640
U.S. Fish and Wildlife Service	Equipment; pre-project bird monitoring.	0.3%	12,750
<b>Total project cost (including BPA portion)</b>			4,334,510

### **Outyear costs**

	<b>FY2001</b>	<b>FY02</b>	<b>FY03</b>	<b>FY04</b>
<b>Total budget</b>	3,500,000	3,500,000	3,000,000	2,500,000

## **Section 6. References**

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## PART II - NARRATIVE

### Section 7. Abstract

The goal of the Wildlife Section of the NWPPC FWP is to “*achieve and sustain levels of habitat and species productivity as a means of fully mitigating wildlife losses caused by construction and operation of the federal and non-federal hydroelectric system.*” (Sec. 11.1, 1995 Amendments). To achieve that goal, we propose to protect, enhance, and maintain native riparian, wetland, and shrub-steppe habitats in southern Idaho as on-going mitigation for the construction of Palisades, Anderson Ranch, Minidoka, and Black Canyon hydroelectric projects (NWPPC Program Measures 11.2D.1, 11.2E.1, 11.3D.4, 11.3D.5, 11.3D.7, and 11.3D.8). Our overall objective is to fully mitigate for construction losses (54,292 HU) by 2010. The specific FY2000 objective is to provide a minimum of 3,682 HU by protecting and enhancing habitat. To date, we have achieved 27 percent of full mitigation.

Potential mitigation sites in southern Idaho were initially prioritized by interagency teams of biologists in the mid 1980s. The original site-selection process has been supplemented with contemporary conservation site planning in Idaho, including wetland conservation strategies (Jankovsky-Jones, 1997a,b) and using GAP (Scott et al. 1993) cover types as coarse filter targets (Moseley, IDFG, pers. comm.).

We monitor programmatic progress by measuring standardized target species habitat variables from Habitat Evaluation Procedure models (USFWS 1980). To monitor biological progress, the IDFG and SBT monitor wildlife populations on mitigation areas. As our monitoring component increases, we may test hypotheses about the link between habitat features and reproductive success to evaluate what habitat features should be protected (Martin 1989, Kellner et al. 1992).

### Section 8. Project description

**a. Technical and/or scientific background**

The human ecology of the Pacific Northwest has been and continues to rely heavily on the Columbia River system. The development of the Columbia River Basin has provided many modern, social benefits such as hydropower, irrigation, and flood control. These benefits, however, also came with many social and biological costs that were largely ignored for decades. A free-flowing river became a series of reservoirs. The historic salmon and steelhead runs became sparse. The timing and intensity of natural water flows were altered. Riparian corridors and adjacent uplands were inundated. Perhaps most important, yet least understood, were the cumulative impacts on both terrestrial and aquatic systems.

Other land use activities also have impacted native wildlife habitat in the Columbia Basin over the last 100-200 years. Since the 1860s, when mining and farming boomed, wetlands in Idaho have decreased 56 percent, from about 879,000 acres to approximately 386,000 acres (Dahl 1980). The Interior Columbia Basin Ecosystem Management Project basin-wide analysis of riparian vegetation noted widespread declines of shrublands in riparian zones (USFS 1996). Cottonwood, aspen, and willow -- typical riparian-associated species -- significantly decreased in the Snake River Headwaters and the Columbia Plateau.

Substantial declines in native grasslands and shrublands, mostly on non-federal lands, also have been documented (USFS 1996). Within the Columbia Basin, many wildlife species have declined because of the changes and loss of native shrublands and grasslands, including Columbian sharp-tailed grouse, sage grouse, loggerhead shrike, pygmy rabbit, white-tailed antelope squirrel, California bighorn sheep, and Washington and Idaho ground squirrels. **THE CURRENT EXTENT OF SHRUB-STEPPE AND GRASSLAND PROTECTION IN IDAHO IS LOW (CAICCO ET AL. 1995) BUT IS A HIGH PRIORITY** IN the 1996-2000 Idaho Sage Grouse Plan (IDFG 1996). Neotropical migrants, whose populations are declining globally, also would benefit from conserving and restoring riparian, old forest, shrub-steppe, grassland, and juniper habitats (USFS 1996).

Although the obvious cost of the hydropower system was the impact on wild salmon and steelhead runs, the cumulative impacts to wildlife also were recognized. As a result of the Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Public Law 96-501), the Northwest Power Planning Council (NWPPC) passed the Columbia River Basin Fish and Wildlife Program (FWP) to address these impacts and to ensure that wildlife receive equitable treatment in matters concerning the hydropower system. The goal of the FWP wildlife strategy is *“to achieve and sustain levels of habitat and species productivity as a means of fully mitigating wildlife losses caused by construction and operation of the federal and non-federal hydroelectric system”* (Sec. 11.1, 1995 Amendments).

In southern Idaho, four federal projects (Palisades, Anderson Ranch, Black Canyon, and Minidoka) inundated a total of 36,405 acres of wildlife habitat. Using the standardized Habitat Evaluation Procedure (HEP), a measure of both the quality and quantity of wildlife habitat (USFWS 1980), biologists estimated a net loss of 54,292 habitat units (HU) for a variety of target species. The Southern Idaho Wildlife Mitigation Project is designed to mitigate those losses by

protecting and enhancing riparian, wetland, and shrub-steppe habitats on which a wide variety of species depend. As our operating philosophy, we emphasize conservation biology's current ideology: "Protect the best, restore the rest." Although acquisitions require large capital outlay, it is the most effective means of protecting habitat in perpetuity. In conjunction with the NWPPC and CBFWA's Wildlife Caucus criteria for ranking wildlife projects, most projects are in-place, in-kind mitigation and all have addressed HU for target species (see Table 11-4 in NWPPC 1995; USFWS 1980). Each of the four facilities will be addressed separately in this section for clarity.

### **Palisades**

Palisades Dam was completed in 1958, impacting 18,565 acres of wildlife habitat (Chaney and Sather-Blair 1985c) and Sather-Blair and Preston (1985) estimated a net loss of 37,068 HU. The *Wildlife Protection, Mitigation, and Enhancement Plan: Palisades Project* (Martin and Hansen 1986) outlined priorities for mitigation, and the Wildlife Caucus ranked the proposed South Fork Snake River as one of the highest-priority mitigation projects for the Columbia Basin.

The riparian habitats along the South Fork Snake River represent one of the largest remaining cottonwood systems in the western U.S. and provides habitat for many wildlife species and for a native cutthroat trout population. The South Fork and Upper Snake was ranked as the most important fish and wildlife habitat in Idaho (Boccard 1980) and as the highest-priority coarse filter target (seasonally/temporarily flooded cold deciduous forest) for protection within the Columbia Plateau Ecoregion (B. Moseley, IDFG, pers. comm.).

The primary threat to these cottonwood systems is recreational home development spilling over from the Jackson Hole, Wyoming and Yellowstone areas. Wildlife habitat, including the riparian corridor, is being fragmented and increasing human disturbance is reducing the quantity and quality of bald eagle breeding and wintering habitat. Although much of the river corridor is currently managed by the Bureau of Land Management (BLM), several key riparian parcels are scheduled for imminent subdivision if they are not protected through this program (B. Martin, IDFG, pers. comm.). A number of unprotected parcels are likely to become available for acquisition or easement within the next several years (E. Bottum, IDFG, pers. comm.).

Existing shrub-steppe habitat that provides food and cover for big game, sage grouse, and sharp-tailed grouse is steadily declining in both quantity and quality. Wildfires that burn much more intensively with cheatgrass have burned tens of thousands of acres of shrub-steppe in the past few years (J. Hansen, IDFG, pers. comm.). Considering the projected population growth (Idaho Division of Financial Management 1997) and land use trends for Idaho in the next decade, it is critical to protect and enhance the remaining shrub-steppe.

The newly-discovered population of a listed threatened plant, *Spiranthes diluvialis*, may also benefit by protecting habitats in southeastern Idaho.

### **Anderson Ranch**

Anderson Ranch Dam was completed in 1950, inundating 4,740 acres of wildlife habitat along the South Fork Boise River (Chaney and Sather-Blair 1985a). Martin and Ablin-Stone (1986) estimated a net loss of 9,620 HU. The mitigation plan (Meuleman et al. 1987) listed the proposed Hill City Marsh (Camas Prairie) as a high-priority area, and the Wildlife Caucus ranked the Camas

Prairie as a regional, high-priority area in 1993.

The Camas Prairie is a mosaic of high prairie and sagebrush steppe with desert springs and wet meadows along meandering creeks. About 25 species of plants and animals with special status occur in the area (Idaho Conservation Data Center 1994). The marsh is an important stopover for migratory birds and the prairie is a major staging area for over 25 species of raptors (USBLM 1994). Much of the prairie and marsh has been converted to agriculture, the creek's waters rechanneled and diverted for irrigation, and the creek banks damaged by livestock concentration (USBLM 1994). Resident fish have been absent from upper Camas Creek for the last few decades (B. Williams, landowner, pers. comm.). Over 3,000 acres of wetlands, approximately 14 miles downstream from the headwaters, already are protected in the Centennial Marsh WMA.

The mosaic of sagebrush steppe, aspen groves, and chokecherry thickets of upper Camas Creek and the Bennett Hills functions as a high-value birthing and foraging area for big game but has deteriorated from past and current land uses. When protected and enhanced, the area also will provide excellent habitat for sharp-tailed grouse, mountain quail, and neotropical migrants. Upper Camas Creek currently is the highest-priority release site for re-establishing sharp-tailed grouse populations (T. Hemker, IDFG, pers. comm.).

The Camas Prairie and Bennett Hills have been on the verge of tremendous change. Camas County was the 45th fastest growing county in the U.S. in 1994-1995 (U.S. Bureau of the Census 1995). Fairfield and surrounding areas are catching the overflow from the Wood River Valley (Sun Valley) boom and offers a relatively cheaper county/town in which to live in close proximity to Sun Valley (approximately 50 road miles). Two wealthy movie stars own a local ski area which has caused speculation and increased land values.

We have concentrated mitigation efforts on the 14-mile stretch between Centennial Marsh WMA and the headwaters (in-kind, in-place). Mitigation activities upstream would significantly improve water flows through the marsh as well as restore wildlife habitat along the creek corridor. In addition to the target species, mitigation will benefit numerous species of waterfowl, shorebirds, passerines, raptors, gallinaceous birds, herps, and several rare plant species (Jankovsky-Jones 1997a). Another tremendous benefit of this project is the opportunity to restore high-quality, spring-fed, native trout habitat in Camas Creek.

### **Black Canyon**

Black Canyon Dam was completed in 1924, impacting 1,100 acres of wildlife habitat along the Payette River (Chaney and Sather-Blair 1985b). The impact assessment reported an estimated net loss of 2,230 HU (Martin and Ablin-Stone 1986). The mitigation plan was completed in 1987, with the Bruneau River project listed as the highest priority (Meuleman et al. 1987).

Since completion of the mitigation plan, growth of Boise City has generated a great deal of concern in terms of losing open space and wildlife habitat on the Boise Foothills. The Boise Foothills, adjacent to Boise, are home to a great diversity of bird, mammal, and herp species, and provide an ever-shrinking critical winter range (much of which severely burned in 1996) for mule deer and elk. Several species of raptors migrate through the area. Bald eagles winter along the Boise River and feed in the adjacent Foothills (Kaltenecker et al. 1994). There also are several

rare, endemic plants in the Foothills such as Aase's onion (Mancuso 1996). A portion of the Foothills already is protected in the Boise River WMA but the rest is under immediate threat from home development. Ten thousand additional homes are planned in the Foothills, and the Harris Ranch development -- 3,500 homes -- already has proceeded through the first stages of development approval by the City of Boise and Ada County governments.

Because the Boise Foothills are much closer to the Black Canyon site than the Bruneau River (thus allowing for in-place, in-kind mitigation) and because there is immediate threat and high public interest, the Boise Foothills currently are listed as the highest priority for Black Canyon mitigation.

### **Minidoka**

Construction of Minidoka Dam was completed in 1909, impacting over 12,000 acres of wildlife habitat along the Snake River (Martin and Mehrhoff 1985). The impact assessment reported an estimated net loss of 5,374 HU (Martin and Meuleman 1989). The mitigation plan was completed in 1991, with the two preferred projects being riparian/river protection and enhancement and the South Hills shrub-steppe protection and enhancement (Meuleman et al. 1991).

### **b. Rationale and significance to Regional Programs**

The goal of the Wildlife Section of the NWPPC FWP is to “*achieve and sustain levels of habitat and species productivity as a means of fully mitigating wildlife losses caused by construction and operation of the federal and non-federal hydroelectric system.*” (Sec. 11.1, 1995 Amendments). The specific objectives of the Southern Idaho Wildlife Mitigation Project are to 1) protect approximately 40,179 HU high-priority riparian, wetland, and shrub-steppe habitats; 2) enhance approximately 13,573 HU on existing protected lands; 3) maintain all HU through appropriate O&M activities; and 4) monitor for both programmatic (crediting BPA for mitigation) and biological (vegetation and animal responses) progress. All site-specific projects will mitigate in-kind losses and most are in-place as well. We anticipate full mitigation for construction losses by the year 2010.

The NWPPC's FWP functions as a vehicle for implementing broader conservation and biodiversity goals. For example, The Nature Conservancy has been developing eco-regional plans; one plan, that includes shrub-steppe in southern Idaho, is completed and the remaining five eco-regions should have final plans by December 30, 1999 (B. Moseley, IDFG, pers. comm.). Southern Idaho Wildlife Mitigation then provides a mechanism and funding with which to protect areas with high biological significance. Once a site is protected through the FWP, ecologists may collect biological information for expanding databases and fine-tuning the planning processes.

We coordinate closely with the Albeni Falls Wildlife Mitigation working group (Proj. No. 9206100 for statewide consistency. When appropriate, we coordinate with the Snake River Native Salmonid Assessment Project (Proj. No. 9800200), although on-the-ground coordination likely will happen in several years when that project starts to implement fish recovery.

### **c. Relationships to other projects**

This project proposal, Project No. 9505700 (Southern Idaho Wildlife Mitigation), historically was two funded projects, Project No. 9505700 (South Fork/Sand Creek), and Project No. 9206000 (Camas Prairie - Anderson Ranch) and three unfunded projects, Project No. 5519200 (Remaining Palisades), Project No. 5501700 (Minidoka), and Project No. 5501400 (Black Canyon). We combined these four facilities to increase flexibility in implementing the protection, mitigation, and enhancement plans (Meuleman et al. 1991, Meuleman et al. 1987, Martin and Hansen 1986).

Southern Idaho Wildlife Mitigation fits nicely within the context of several, regional fish and wildlife programs:

- The Interior Columbia Basin Ecosystem Management Project (USFS 1996) identified conservation and management needs. We can place site-specific mitigation projects within that broader context.
- The U. S. Bureau of Reclamation's Snake River Resources Review is collecting existing information to develop a decision-support system for running different scenarios of river operations to better balance competing interests in Snake River water. We have shared information gleaned from the FWP with them.
- Mitigation staff use The Nature Conservancy's Eco-regional planning as a site-selection tool. Areas protected through the FWP may provide sites at which biodiversity data is collected for the Idaho Conservation Data Center.
- Mitigation staff compare FWP processes with upcoming FERC relicensing of Idaho Power Company hydroelectric facilities (Hells Canyon Complex, Middle Snake facilities). Although the processes are very different, both directly impact Columbia River Basin fish and wildlife.
- Biological data collected at mitigation sites will be GIS-compatible and may be used in future GAP analyses.

We currently are working in partnership with several other agencies and organizations to implement mitigation projects:

- The SBT and IDFG have signed a cooperative wildlife mitigation agreement to facilitate implementation of the wildlife mitigation program in southern Idaho.
- The BLM has been a particularly important partner. They have provided countless manhours, pre-acquisition costs on four mitigation parcels, and closing costs on two. They have primary O&M responsibilities on four parcels.
- We have implemented a cooperative noxious weed/biological control project with the NRCS and the High Country Resource Conservation and Development Area.
- The Teton Regional Land Trust (TRLT) provided time and expertise in developing an 800-acre conservation easement along the South Fork. TRLT now holds this easement.
- The Conservation Fund and Trust for Public Land have helped negotiate the proposed Deer Parks acquisition.
- We recently completed a three-way purchase of 2,135 acres of important shrub-steppe habitat near the Tex Creek Wildlife Management Area, with one-third of the funding provided by the Rocky Mountain Elk Foundation, one-third by IDFG, and one-third with BPA mitigation funds.
- We have also worked closely with the Treasure Valley Land Trust, Wood River Land Trust, local Soil Conservation Districts, and the City of Boise.
- We are exploring additional partnerships with The Nature Conservancy, Idaho Soil

Conservation Commission, Henrys Fork Foundation, Ducks Unlimited, Pheasants Forever, Idaho Power Company, and local counties.

**d. Project history** (for ongoing projects)

The Southern Idaho Wildlife Mitigation became effective on January 1, 1997. Planning and implementing Southern Idaho Wildlife Mitigation (non-capital outlay costs) has cost approximately \$917,893 (both IDFG and SBT) since October 1996. Capital outlay has totalled \$8,342,350. Each of the four facilities will be addressed separately in this section for clarity.

**Palisades**

Palisades Dam was completed in 1958, impacting 18,565 acres of wildlife habitat (Chaney and Sather-Blair 1985c). The impacts were assessed using HEP (USFWS 1976), and Sather-Blair and Preston (1985) estimated a net loss of 37,068 HU at Palisades. The *Wildlife Protection, Mitigation, and Enhancement Plan: Palisades Project* (Martin and Hansen 1986) outlined priorities for mitigation, and the Wildlife Caucus ranked the proposed South Fork Snake River as one of the highest-priority mitigation projects for the Columbia Basin. The *South Fork Snake River Programmatic Management Plan* (Martin and Hansen 1993) was completed in 1993 and a Final Environmental Assessment for the project was released in October 1995 (Bonneville Power Administration 1995). The proposed Remaining Palisades Mitigation Project was incorporated into the FWP in 1995. The Final EA and FONSI for South Fork Snake River/ Palisades Wildlife Mitigation were released in 1995 (DOE EA #0956). Progress reports have been submitted to BPA since 1995 and now are combined within the Southern Idaho Wildlife Mitigation progress reports.

A total of 8,064 HU have been credited to Palisades wildlife mitigation, and an additional 7,725 HU are anticipated to be credited during FY1999 (a total of 42 percent of the mitigation debt for Palisades).

<b>Action Completed (FY)</b>	<b>Site-specific Project</b>	<b>Habitat Units</b>	<b>Acres</b>	<b>Cost (capital)</b>
FY97	Winterfeld conservation easement	383	422	\$ 225,000
FY97	Kruse conservation easement	814	800	\$ 310,000
FY97	Kinghorn I acquisition (Menan Butte)	317	140	\$ 220,350
FY97	Noxious weed project	499	≈10,000	\$ 80,000
FY98	Kinghorn II acquisition (Beaver Dick)	901	310	\$ 465,000
FY98	Payne acquisition (Quarter Circle O)	1,254	2,135	\$ 260,000
FY98	Soda Springs Hills acquisition	3,896	2,563	\$1,282,000
FY99	Deer Parks acquisition (in progress)	6,918	2,591	\$5,200,000
FY99	Lower Portneuf River easement (in progress)	807	430	\$ 300,000

**Anderson Ranch**

Anderson Ranch Dam was completed in 1950, inundating 4,740 acres of wildlife habitat along the South Fork Boise River (Chaney and Sather-Blair 1985a). Martin and Ablin-Stone (1986) estimated a net loss of 9,620 HU. The mitigation plan (Meuleman et al. 1987) listed the proposed Hill City Marsh (Camas Prairie) as a high-priority area, and the Wildlife Caucus ranked the Camas Prairie as a regional, high-priority area in 1993. Implementation has been on-going since 1993. A draft EA almost was released for public review but was abandoned when the Wildlife Mitigation EIS was released (BPA 1997). Progress reports have been submitted to BPA since 1994 and now are combined within the Southern Idaho Wildlife Mitigation progress reports.

We have focused our efforts on the upper end of Camas Creek (in-kind, in-place), above the existing Centennial Marsh WMA. Two parcels currently are being negotiated that will account for 23 percent of the mitigation debt for Anderson Ranch.

<b>Action Completed (FY)</b>	<b>Site-specific Project</b>	<b>Habitat Units</b>	<b>Acres</b>	<b>Estimated Cost (capital)</b>
FY99	Rice acquisition (negotiating)	2,030	1,789	\$ 715,000
FY99	Williams acquisition (negotiating)	169	640	\$ 315,000

### **Black Canyon**

Black Canyon Dam was completed in 1924, impacting 1,100 acres of wildlife habitat along the Payette River (Chaney and Sather-Blair 1985b). The impact assessment reported an estimated net loss of 2,230 HU (Martin and Ablin-Stone 1986). The mitigation plan was completed in 1987, with the Bruneau River project listed as the highest priority (Meuleman et al. 1987). The Black Canyon/Bruneau project was incorporated into the FWP in 1995. Implementation planning began in 1996, and mitigation actions are covered in the Wildlife Mitigation EIS (BPA 1997). Updates are included in the Southern Idaho Wildlife Mitigation progress reports.

Currently, the top priority for Black Canyon wildlife mitigation is habitat protection in the Boise Foothills (in-kind, in-place), adjacent to the Boise Foothills WMA. Discussions have been on-going about land exchanges and conservation easements since summer 1996, and we currently are negotiating a purchase price with a landowner on a small but critical portion of low-elevation (and thus potentially developable) land. This fee-title acquisition will be paid out of FY1999 funds.

<b>Action Completed (FY)</b>	<b>Site-specific Project</b>	<b>Habitat Units</b>	<b>Acres</b>	<b>Estimated Cost (capital)</b>
FY99	Foothills/river corridor acquisition (negotiating)	114	125	\$ 300,000

### **Minidoka**

Construction of Minidoka Dam was completed in 1909, impacting over 12,000 acres of wildlife habitat along the Snake River (Martin and Mehrhoff 1985). The impact assessment reported an estimated net loss of 5,374 HU (Martin and Meuleman 1989). The mitigation plan was completed in 1991, with the two preferred projects being riparian/river protection and enhancement and the

South Hills shrub-steppe protection and enhancement (Meuleman et al. 1991). Minidoka was incorporated into the FWP in 1996, and actions are covered under the Wildlife Mitigation EIS (BPA 1997). Updates are included in the Southern Idaho Wildlife Mitigation progress reports.

During 1998, we reclaimed shrub-steppe from agriculture at Big Cottonwood WMA (in-kind, off-site).

<b>Action Completed (FY)</b>	<b>Site-specific Project</b>	<b>Habitat Units</b>	<b>Acres</b>	<b>Cost (non-capital)</b>
FY99	Big Cottonwood WMA -- Sagebrush-steppe restoration	est. 112	60	\$18,983

### **Adaptive Management**

The original process for implementing mitigation projects was cumbersome. Potential mitigation sites for Palisades, Anderson Ranch, Black Canyon, and Minidoka were identified many years ago by interagency teams of biologists, and as each project moved along individually, it was difficult to match up the highest-priority habitats, willing sellers, and adequate and timely funds. Out-year funds were unknown, so partnerships also were difficult to establish. In addition, the State of Idaho and the Shoshone-Bannock Tribes were not well coordinated.

Over the past few years, we have succeeded in stream-lining the process for wildlife mitigation in southern Idaho. The State of Idaho and the Shoshone-Bannock Tribes signed a Memorandum of Agreement in 1996 to coordinate mitigation throughout southern Idaho. In the same year, Palisades, Anderson Ranch, Black Canyon, and Minidoka mitigation implementation were combined under one project by the state and the Tribe, the Southern Idaho Wildlife Mitigation Project.

While the original site selections still guide our activities (e.g., Martin and Hansen 1986, Meuleman et al. 1987), we have modified our site-selection process to include more current conservation approaches such as wetland conservation strategies (Jankovsky-Jones 1997*a* and *b*) and eco-regional planning (B. Moseley, IDFG, pers. comm).

As biological monitoring becomes a larger component of Southern Idaho Wildlife Mitigation, we will evaluate animal responses to protecting the habitat composition and structure and to spatial variables. At some point, protecting more acreage may fail to produce the biological results we desire (e.g., increase in waterfowl production, lower winter kills). A number of studies have shown that loss of individual species with decreasing area of habitat fragments is more strongly related to changes in habitat than to reduction in area (Martin 1989). When, and if, the point of diminishing results occurs, we will need to assess the value of purchasing more lands.

### **e. Proposal objectives**

We are submitting this proposal as a multi-year project to be completed by 2010. The overall objective was outlined in Section 4 of this document; however, our specific FY2000 objectives are below.

**Objective 1. Protect a minimum of 3,682 HU by acquiring easements or fee-titles on 5,394 acres during FY2000:** The Camas Creek parcels would protect an additional 1.5 miles of Camas Creek and remove private inholdings within the Centennial Marsh WMA. After acquiring these three parcels, we will have achieved approximately 35 percent of the mitigation debt for Anderson Ranch. The South Hills properties include scrub-shrub and riparian wetlands, wet meadows, and shrub-steppe that would benefit sage grouse, yellow warblers, and mule deer. One parcel is on American Falls Reservoir and along Boone Creek; this parcel is a high-priority for IDFG. The West Fork Bannock Creek is a spring-fed creek with a resident population of native Yellowstone cutthroat trout. This parcel -- which has 300 acres riparian, 300 acres mixed conifer, and 600 acres shrub-steppe -- has been overgrazed for years and is developable. When purchased, it would be incorporated into the Fort Hall Reservation (SBT). The Boise Foothills parcel has 14 acres of spring-fed wetlands surrounded by steep winter range. Three plant species of special concern occur in the area: Mulford's milkvetch, slick-spot peppergrass, and Aase's onion (Conservation Data Center 1994).

<b>FY 2000 Proposed Site-specific Project</b>	<b>Acres</b>	<b>Estimated Cost (capital)</b>
Camas Creek acquisition #1	640	\$ 272,000
Camas Creek acquisition #2	480	\$ 72,000
Camas Creek acquisition #3	240	\$ 102,000
South Hills acquisition #1	2,000	\$1,000,000
South Hills acquisition #2	500	\$ 750,000
South Hills acquisition #3	54	\$ 60,000
West Fork Bannock Creek acquisition	1,200	\$ 837,600
Boise Foothills easement	280	\$ 300,000

**Objective 2. Enhance riparian vegetation at Minidoka NWR and Big Cottonwood WMA in FY2000:** In FY2000, we propose two small enhancements and HU would not be credited to BPA for several years (until enhancements “take hold”). IDFG staff will begin riparian and grassland enhancement in spring 1999 and will benefit Yellowstone cutthroat trout, California bighorn sheep, Rio Grande turkey, sage grouse, and other species of wildlife. We estimate all enhancements at Big Cottonwood WMA eventually will provide 653 HU. At Minidoka NWR, USFWS staff intend to remove invasive trees to allow cottonwoods to regenerate; otherwise, the cottonwoods will senesce causing a nesting colony of great blue herons to be displaced.

<b>FY 2000 Proposed Site-specific Project</b>	<b>Acres</b>	<b>Expected Year of Completion</b>	<b>FY2000 Estimated Cost</b>
Big Cottonwood WMA riparian and grassland enhancements	160	2001	\$ 20,000
Minidoka NWR riparian enhancement	120	2002	\$ 71,800

**Objective 3. Maintain 15,014 HU on 6,316 acres in perpetuity:** In FY2000, we will conduct O&M on the following properties that already have been protected, or will be by the end of FY1999, under this program: Menan Butte, Beaver Dick, Winterfeld easement, Quarter Circle O, Soda Hills, and Deer Parks. Because O&M budgets for all Palisades projects will be administratively handled together, we have lumped the estimated costs.

<b>FY 2000 Proposed Site-specific Project</b>	<b>Acres</b>	<b>Estimated Cost</b>
Palisades projects	8,161	\$87,647

**Objective 4. Establish baseline conditions of wildlife and vegetation at Big Cottonwood WMA, Deer Parks, Soda Hills, Quarter Circle O, Menan Butte, and Beaver Dick during FY2000:** We need baseline conditions for evaluating management effectiveness. Specific surveys will be described in site-specific management plans.

**f. Methods**

**Objective 1. Protect 40,719 HU of wildlife habitat by 2010 by acquiring easements or fee-title:** We have discussed the scientific principles used to select focus areas for mitigation projects in Sections 7 and 8(d). When a site-specific parcel has been identified within a focus area, the respective working group (e.g., Palisades Working Group) ranks the parcel with the CBFWA regional criteria to ensure regional wildlife program standards are met. Upon consensus by the working group and agreement between the state and Tribes, we pursue the acquisition, conservation easement, or enhancement of existing public lands. A baseline HEP is conducted immediately and an appropriate number of “protection” HU are credited. A management plan including a desired future condition is prepared and is reviewed by the CBFWA Wildlife Caucus.

**Objective 2. Enhance 13,573 acres of wildlife habitat by 2010:** At Big Cottonwood WMA, we intend to use our water right to maintain minimum flow in Big Cottonwood Creek, otherwise flows would be diverted for groundwater recharge. We also will exclude livestock to encourage regrowth of woody vegetation (i.e., passive restoration).

Tasks for enhancing riparian vegetation at Minidoka NWR include 1) killing and/or removing Russian olive trees from the riparian zone; 2) collecting and preparing willow and cottonwood cuttings; and 3) planting cuttings, plugs, and bare root stock. Removing Russian olive trees will affect some wildlife species such as magpies. However, magpies are nest-predators on many passerine species.

Although we generally support passive approaches to improving habitat quality, we felt these two projects warranted intensive methods to “jump-start” native vegetation.

**Objective 3. Maintain HU on all protected and enhanced properties in perpetuity:** Specific O&M activities will be outlined in site-specific management plans and will be consistent with CBFWA standards (CBFWA 1998).

**Objective 4. Monitor all properties in perpetuity to maximize benefits to wildlife:** Progress

will be monitored programmatically by measuring standardized target species habitat variables from HEP models (USFWS 1980) and compared to baseline measured at the time of acquisition. Habitat measurements for HEP are consistent with methods outlined in Hays et al. (1981).

As standard business, the IDFG and SBT monitor game populations (*via* aerial and ground surveys, harvest data, etc.). In addition, we will monitor neotropical bird populations at Big Cottonwood WMA, Deer Parks, and Centennial Marsh WMA properties annually. Sharp-tailed grouse will be considered on the Winterfeld easement and Centennial Marsh WMA properties. The USFWS already monitors bird populations at Minidoka NWR (S. Bouffard, USFWS, pers. comm.) However, density often is a poor indicator of habitat quality (Van Horne 1983) and the specific habitat features that have a direct effect on reproduction or survival represent the appropriate and critical features that need to be identified for management (Martin 1989). Data collection could include vegetation structure and composition, landscape features, predation and nest parasitism rates, climatic regime, and demographics.

Various ecological components will be monitored at site-specific projects. Plant and animal species of special concern occur on the Centennial Marsh WMA and will be monitored periodically by Idaho Conservation Data Center staff. The NRCS will be monitoring responses of noxious weeds to insect biocontrol. Mergliano (1996) currently is studying cottonwood regeneration along the South Fork. Managers may initiate groundwater monitoring in project areas to assess response to management.

In addition to monitoring wildlife populations, managers also have opportunities to investigate responses of living things to protecting and enhancing habitat. However, the bottom line on whether research is conducted or not is funding, and funding for research through the CBFWA process has been handled at the Wildlife Caucus level. In this proposal, we are not proposing to fund research.

Public involvement is essential for a successful mitigation program. Although public involvement efforts for Palisades, Anderson Ranch, Black Canyon, and Minidoka each have taken on lives of their own, we generally have followed the principles of Systematic Development of Informed Consent (Bleiker and Bleiker 1997). Interagency teams of biologists work together with local governments, non-governmental organizations, and interested citizens to build and maintain productive relationships.

#### **g. Facilities and equipment**

We have been fortunate to use existing equipment and intend to continue using equipment from the existing inventory of the IDFG, SBT, and the BLM. To date, the only equipment purchased under this project has been a 4-wheeler and spray rig for the Cottonwood WMA enhancement for a total of \$6,100. After the Deer Parks acquisition is finalized, we will need to purchase two pickup trucks and an office set-up. Most of these are one-time capital expenditures.

#### **h. Budget**

**Personnel** costs include two IDFG mitigation specialists, the SBT mitigation biologist, two

wildlife technicians, and part-time assistance from existing IDFG and SBT staff. No FY1999 funds were used towards personnel. Cost-sharing is underestimated considering IDFG, SBT, and BLM biologists at existing protected areas will manage newly-added mitigation properties (with no BPA funding). Wildlife technicians will assist primarily with O&M and monitoring.

**Fringe benefits** include health and retirement benefits for personnel.

**Supplies and Materials** excludes those needed for O&M. Most of these supplies are used in coordinating with CBFWA, regional working groups, SBT Council, IDFG Commission and other affected interests.

**O&M** includes non-capital supplies and materials, equipment rental, water rights fees, training, office maintenance, tools, signs, and utilities.

**Capital acquisitions** are the actual costs of fee-title for the eight properties listed in Section 8e.

**NEPA** includes only the cost of conducting a cultural resources survey. These are subcontracted, with the contract awarded to the lowest bidder. The BLM conducts cultural resources surveys on properties on which they will hold title, so we may have underestimated their cost-sharing contribution.

**Travel** for the key personnel to coordinate with each other, regional working groups, and CBFWA and to visit proposed projects.

**Indirect costs** are overhead of IDFG and SBT. The rate is determined independently of CBFWA, NWPPC, or BPA. It often varies year-to-year.

**Subcontractors** include those needed for appraisals, environmental surveys, property boundary surveys, and title searches. We also included the costs for closing a real estate transaction and any option money that may be needed (IDFG usually avoids paying for options). Contracts are awarded to the lowest bidder. We have underestimated the cost-sharing for pre-acquisition services; the BLM has used existing staff and expertise for several parcels, but we do not know what they will contribute to the proposed South Hills properties.

**Other** includes all enhancement costs associated with the Minidoka NWR and Big Cottonwood WMA enhancement projects as described in Section 8e. Costs include personnel, fuel, herbicides, plant fabric, transportation, and native plant seeds and cuttings.

## **Section 9. Key personnel**

### **Key Personnel in Southern Idaho Wildlife Mitigation Project Implementation**

#### **Shoshone-Bannock Tribes**

Anders Mikkelsen - Wildlife Mitigation Biologist, 1.0 FTE -- Overall project coordination, prepare management plans, develop partnerships, negotiate with landowners, coordinate surveys, coordinate enhancement, O&M, and monitoring and evaluation activities, prepare

progress/scientific reports.

## **Idaho Department of Fish and Game**

Ed Bottum - Wildlife Mitigation Specialist stationed in Upper Snake regional office, 1.0 FTE -- Overall project coordination, including development of partnerships. Also includes review of management plans, preparation of management plans, and survey coordination.

Michele Beucler - Wildlife Mitigation Specialist stationed at Headquarters, 0.5 FTE -- Overall project coordination including internally with state lands manager and FWP-funded staff, prepare management plans, negotiate with landowners, coordinate surveys, and prepare progress reports.

## **Resumes**

### **T. ANDERS MIKKELSEN**

#### **Education:**

Humboldt State University - B.S. Wildlife Management - 1990

Senior Thesis - *Coexistence and vertical stratification of Sciuridae feeding regimes.*

#### **Current Employer and Responsibilities:**

The Shoshone-Bannock Tribes

- Wildlife Mitigation Biologist and Program Manager  
Southeast Idaho Wildlife Mitigation Projects, 5/1998 to Present

#### **Previous Employment:**

- The Shoshone-Bannock Tribes - Fisheries Biologist, Project Leader, 9/1996 to 6/1998
- Washington Dept. of Fish and Wildlife - Fisheries Technician, 4/1992 to 9/1996
- Puyallup Tribe of Indians - Salmon Biologist, 9/1991 to 4/1992
- U.S. Forest Service, Redwood Sciences Laboratory - Biological Technician, 1990
- U.S. Forest Service, Redwood Sciences Laboratory - Biological Technician, 1989

#### **Certification:**

Completed Habitat Evaluation Procedures (HEP) training in 1998.

#### **Expertise:**

Prioritization and implementation of Wildlife Mitigation projects in coordination with interagency work groups. Evaluation of land use activities and impact assessments on fish and wildlife resources. Development of fish and wildlife management plans and habitat acquisitions.

#### **Publications:**

Bugert, R., Eltrich, R., Mikkelsen, T. A. 1993. An analysis of the 1992 chinook salmon smolt releases from the Rock Island Fish Hatchery Complex. Final rept. WDFW. 63p.

Eltrich, R. Mikkelsen, T. A. 1994. Summary report on the 1989 brood sockeye and chinook salmon stocks reared at Rock Island Fish Hatchery Complex Facilities. Final rept. WDFW 47p.

Eltrich, R., Mikkelsen, T. A. 1994. Downstream movement and emigration of chinook salmon from the Chiwawa River in 1992/1993. Final rept. WDFW. 46p.

Eltrich, R., Mikkelsen, T. A. 1994. Summary report on the 1990 brood sockeye and chinook salmon stocks reared at Rock Island Fish Hatchery Complex Facilities. Final rept. WDFW. 53p.

Eltrich, R., Mikkelsen, T. A. 1994. Summary report on the 1991 brood sockeye and chinook salmon stocks reared at Rock Island Fish Hatchery Complex Facilities. Final rept. WDFW. 140p.

Eltrich, R., Mikkelsen, T. A. 1995. Summary report on the 1992 brood sockeye and chinook salmon stocks reared at Rock Island Fish Hatchery Complex Facilities. Final rept. WDFW. 126p.

Eltrich, R., Mikkelsen, T. A. 1995. Downstream movement and emigration of chinook salmon from the Chiwawa River in 1994. Final rept. WDFW. 36p.

Mikkelsen, T. A., Murdoch, A. 1996. Volitional release monitoring of steelhead smolts from Eastbank Fish Hatchery. Final rept. WDFW. 3p.

Mikkelsen, T. A., Murdoch, A. 1996. Summary report on the 1993 brood sockeye and chinook salmon stocks reared at Rock Island Fish Hatchery Complex Facilities. Final rept. WDFW.

Mikkelsen, T. A., Murdoch, A. 1996. Downstream movement and emigration of chinook salmon from the Chiwawa River in 1995. Final rept. WDFW.

Mikkelsen, T. A., Taki, D. 1996. Snake River sockeye salmon habitat and limnological research. Final rept. SBT. BPA Proj. No. 91-71.

Mikkelsen, T. A., Taki, D. 1997. Snake River sockeye salmon habitat and limnological research. Final rept. SBT. BPA Proj. No. 91-71.

## **C. EDWARD BOTTUM**

### **Education:**

Idaho State University - M.S. in Botany - 1976

Thesis - *Pollination ecology in Penstemon procerus, the small-flowered penstemon.*

University of Nebraska - B.A. in Zoology - 1971

### **Current Employer and Responsibilities:**

Idaho Department of Fish and Game

- Wildlife Mitigation Specialist - 1998  
Implement wildlife mitigation in southern Idaho, coordinate with CBFWA.
- Regional Wildlife Biologist - 1987 to 1991

- Manage wildlife populations, review and comment on land use proposals.
- Senior Conservation Officer - 1984 to 1987  
Wildlife law enforcement.
- Bio-aide - 1978  
Canada goose and pronghorn research.

**Previous Employment:**

- The Nature Conservancy of Oregon - Field Steward, managed several preserves - 1996 to 1997
- Self-employed - Consultant, surveyed rare bird, raptor, and herp populations - 1991 to 1995
- Bureau of Land Management - Natural Resource Specialist, rangeland soil and vegetation inventories and rare plant surveys - 1979 to 1980
- National Park Service, Yellowstone National Park - Biological Technician, forest ecology research - 1976 to 1977

**Certification:**

Completed Habitat Evaluation Procedure (HEP) training in 1998.

**Expertise:**

I have experience evaluating wildlife populations and their habitat and predicting the effects of land use proposals on those populations and habitats.

**MICHELE BEUCLER**

**Education:**

Texas A&M University - M.S. in Wildlife and Fisheries Sciences - 1995

Thesis - *The Impacts of Mining on the Habitat Ecology of Raccoons in East-central Texas.*

Unity College - Unity, Maine - B.S. in Environmental Science/Wildlife - 1988

**Current Employer and Responsibilities:**

Idaho Department of Fish and Game

- Wildlife Mitigation Specialist - 8/1993 to Present  
Implement wildlife mitigation in southern Idaho, coordinate with CBFWA and NWPPC.  
Statewide coordination of Responsive Management program.

**Previous Employment:**

- Texas A&M University - Texas Utilities Fellow, Research Assistant 8/1989 to 7/1993
- U.S. Bureau of Land Management - Field Assistant - 5/1989 to 8/1989
- Southside Animal Hospital - Veterinary Assistant - 2/1989 to 5/1989
- Institute of Ecosystem Studies - Research Assistant - 5/1988 to 12/1988
- Bovid Conservation and Ecology Project - Field Assistant - 5/1985 to 8/1985

**Certification:**

Completed Habitat Evaluation Procedure (HEP) training in 1993.

**Expertise:**

I have experience with evaluating impacts of large-scale land uses on vegetation and wildlife and recommending methods to improve reclamation/restoration. In addition to technical skills in ecology, I have received professional training in public involvement, strategic planning, and performance measures.

**Publications:**

Beucler, M., and D. E. Toweill. 1995. What's it worth? The contribution of fish and wildlife to Idaho's economy. Idaho Wildlife. Vol. 15 Issue 4, pp. 11-13.

Beucler, M., D. E. Toweill, T. McArthur, and C. L. Groen. 1994. Newcomers to Idaho: perceptions, reality, and management implications. Proc. Western Assoc. of Fish and Wildlife Agencies.

**Activities:**

I served as program chair for the 1998 Annual National Conference for the Organization of Wildlife Planners. I conducted a needs assessment for The Wildlife Society's Native People's Wildlife Management Working Group and currently am running for secretary in The Wildlife Society's Economics Working Group.

## **Section 10. Information/technology transfer**

Information on long-term species/habitat relationships will be compiled and presented at professional meetings such as The Wildlife Society and to GAP personnel at IDFG to help validate modelled species distributions. Information on habitat response to a variety of management techniques, including biological control of noxious weeds, will be provided to other wildlife and land managers in the region, through publications, presentations, and personal communications. Appropriate standardized project data will also be provided to Idaho StreamNet personnel.

In general, the IDFG has the infrastructure for handling data *via* tabular and spatial databases. The Idaho Conservation Data Center (CDC) inventories and monitors plant and animal occurrences at many Wildlife Management Areas (WMA). In addition, the CDC has prepared Wetland Conservation Strategies for the Big Wood, Henrys Fork, and Coeur d'Alene River drainages. Much of this information is GIS-compatible and already in our system. Data collection for mitigation sites would be most useful if compatible with the CDC and GIS standards.

## **Congratulations!**