Narrative Preamble:

The Columbia Basin Fish Accords (Accords) are ten-year agreements between the federal action agencies and states and tribes. The Accords supplement the Columbia Basin Fish and Wildlife Program and are intended to assist the action agencies in meeting obligations under the Endangered Species Act by producing substantial biological benefits for Columbia Basin fish. The Accords also acknowledge the tribes' and states' substantive role as fish resource managers, and provide greater long-term certainty for fish restoration funding and biological benefits for fish. Ongoing projects supported and new projects developed under these agreements are designed to contribute to hydro, habitat, hatchery and predation management activities required under the 2008 FCRPS Biological Opinion. In addition, projects within the agreement assist BPA in meeting its mitigation obligations under the Northwest Power Act.

Project Title:

Table 1. Proposal Metadata:

Project Number	2008-601-00
Title	Upper Lemhi River – Acquisition
Proposer	Idaho Office of Species Conservation
Brief Description	Acquisition of interest in land and/or water through fee simple and conservation easements
Province(s)	Mountain Snake
Subbasin(s)	Salmon
Contact Name	Mike Edmondson, Program Manager
Contact email	mike.edmondson@osc.idaho.gov
Projected Start Date	February 1, 2010

A. Abstract

A broad range of partners have worked together to establish conservation objectives that will benefit Endangered Species Act-listed Chinook salmon and steelhead trout as well as resident bull trout found on properties located within the Upper Lemhi watershed. Conservation partners include staff from the Idaho Department of Fish and Game (IDFG), Idaho Department of Water Resources (IDWR), Bureau of Land Management, The Nature Conservancy (TNC), Upper Salmon Basin Watershed Program (USBWP), Idaho Governor's Office of Species Conservation (OSC), and Bonneville Power Administration (BPA). The Upper Lemhi watershed encompasses over 400,000 acres and includes some of the most important spawning and rearing habitat within the Upper Salmon watershed. The Lemhi River is a major tributary of the

Upper Salmon and historically a major spawning and rearing tributary for Snake River spring/summer-run Chinook and Snake River steelhead.

The Upper Lemhi River Acquisition Project seeks to permanently protect in-stream and riparian habitat, improve river flow in the Lemhi River, and assist in reconnecting tributary streams to the Lemhi River to benefit all life stages of Snake River spring/summer-run Chinook and Snake River steelhead. Conservation easement and fee simple acquisitions are being pursued on approximately 9,086 acres of the Tyler Ranch, 1,354 acres of the Cottom Ranch, the 1,000 acre Beyeler Ranch, and the 608 acre Kenney Creek Ranch in the Lemhi River watershed. Acquisitions will ensure that these properties will maintain their current biological integrity while improving the quality of habitat for all salmonid species using several prescribed conservation actions.

Objectives for these projects include a number of water related outcomes as well as habitat improvements in the Lemhi River and its tributaries. Conservation easement and fee simple acquisitions will provide strong legal protection and restoration opportunities, such as grazing restrictions or commitments to restore degraded river habitat and non-functioning tributary habitat. The acquisitions will address the following limiting factors identified in the Federal Columbia River Power System (FCRPS) planning process which include: 1. Stream flow; 2. Migration barriers; 3. Entrainment; 4. Riparian condition, sediment, and temperature.

Conservation strategies will be implemented at a variety of scales ranging from specific reaches of the Lemhi River and its tributaries to addressing threats to Chinook salmon and steelhead habitat across entire watersheds such as the Big Timber Creek watershed. Additional restorative actions will be addressed within project 2008-602-00 (Upper Lemhi River-Restoration).

Idaho and its partners have selected areas in the Upper Lemhi watershed having the highest densities of active Chinook salmon spawning, and have prioritized tributaries having the highest intrinsic potential to support spawning and rearing to maximize the biological benefits for anadromous fish. The acquisitions and subsequent habitat actions that target low stream flows, high stream temperatures, fish passage barriers, degraded riparian reaches, and associated sedimentation are expected to improve the productivity of Lemhi River Chinook salmon and steelhead. Specifically, these actions are projected by NOAA to increase egg to smolt survival by 16% for Chinook and 5% for steelhead (See Appendix B).

B. Problem statement: technical and/or scientific background

The primary limiting factor in the Lemhi watershed is disconnected tributaries, a situation that reduces spawning and rearing habitat quantity for anadromous species and isolates resident fish populations (Northwest Power and Conservation Council (NPCC) 2005). Channel alteration and extensive irrigation diversion impacts the Lemhi drainage. These activities have resulted in steeper gradients, scouring, and redeposition of gravel in the lower river, subsequently raising the riverbed and increasing flood

hazards, as well as destroying fish habitat. Only two of the 30 tributaries to the Lemhi River are regularly connected to the mainstem (Figure 1).

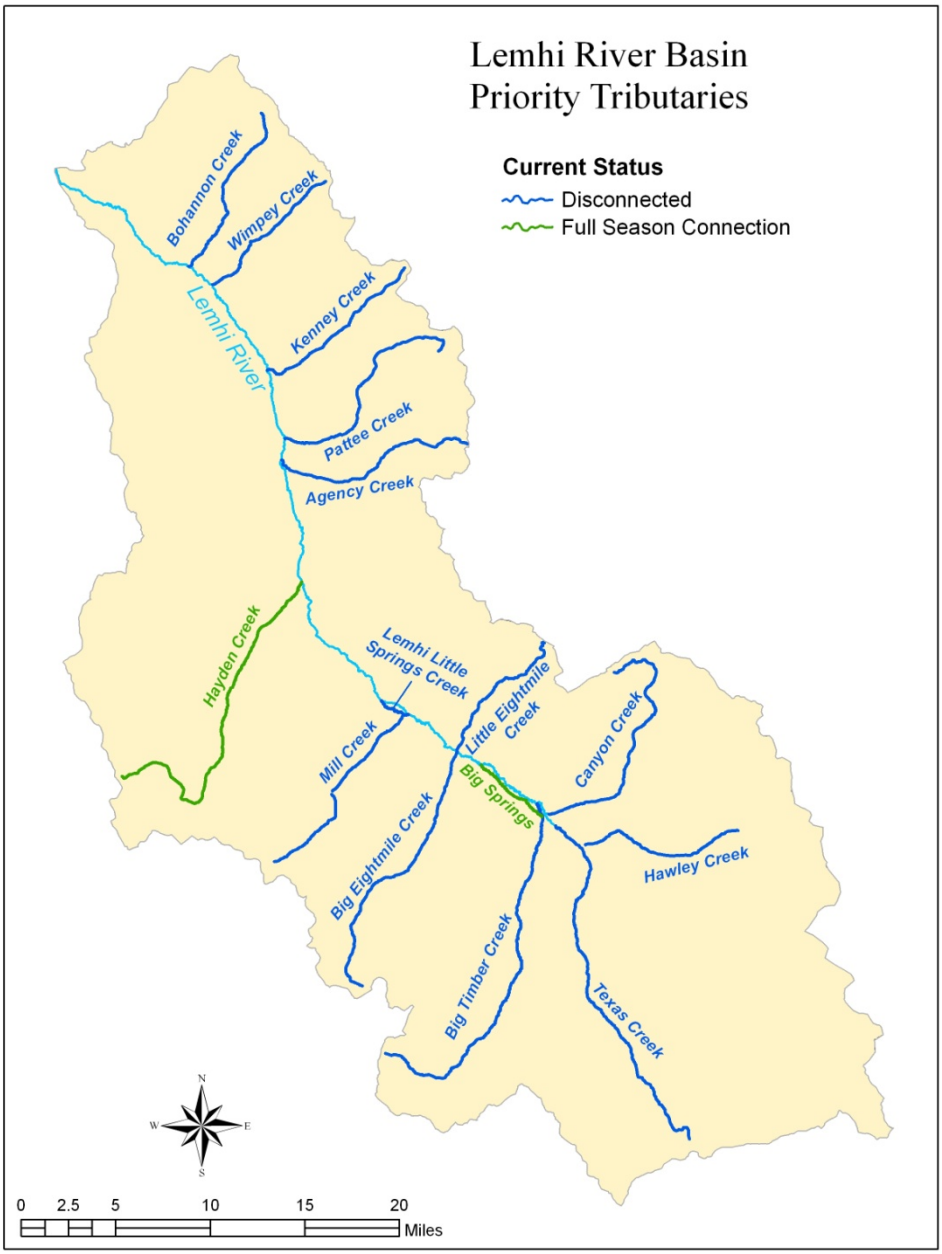


Figure 1 - Lemhi River Basin Priority Tributaries (Idaho Department of Water Resources, 2009)

Floodplain development in the Lemhi River basin is occurring in the 50- and 100-year floodplains, similar to the Upper Salmon River Core Area. The main land uses are agriculture and livestock grazing. A major source of pollution is irrigation water return, which increases sedimentation and water temperatures. Cattle grazing along the mainstem river degrades the riparian vegetation and streambank stability. Depending on the snow pack and early season irrigation practices, dewatering of the lower river can delay anadromous smolt and adult migrations. The large number of irrigation

diversions may also delay smolts on their seaward migration, thus potentially decreasing survival. Except for Big Springs Creek, tributaries of the upper Lemhi River above Hayden Creek are no longer available to anadromous production because of low flows and diversions (Table 1).

Table 1- Ranked impacts of altered ecosystem features impacting habitat quality and quantity for fish species in the Lemhi watershed. Degree of impact on habitat quality or quantity ranked as: P (component is functioning properly, needs protection), 1 (least influence), 2 (moderate influence), 3 (greatest influence-highest priority) (NPCC 2005).

Ecosystem Feature	Altered Component	Lemhi River, Mouth to Agency Creek	Lemhi River, Agency Creek to Hayden Creek	Lemhi River, Hayden Creek to Leadore	Big Springs Creek	Hayden Creek	Other Lemhi Tribs and Lemhi Headwaters
Channel Structure	Floodplain	2	2	P	P	P	P
	Pool/Riffle Ratio	2	2	P	2	P	2
	Large Woody Debris	2	P	P	P	P	P
Hydrology	Discharge	P	P	2	P	2	1
	Low Flow	3	2	P	P	2	3
	Peak	P	P	2	P	2	3
Sediment	Increased Fines	P	P	3	3	2	2
Water Quality	Temperature	2	3	2	3	P	P
Riparian	Shade	2	3	3	3	2	2
	Streambank Stability	2	3	3	3	2	2
Exogenous	Exotics	P	P	P	P	P	P
	Chemicals	P	P	P	P	P	P
	Barriers	3	2	2	P	3	3

Criteria Used In Selection of Properties for Conservation Easement

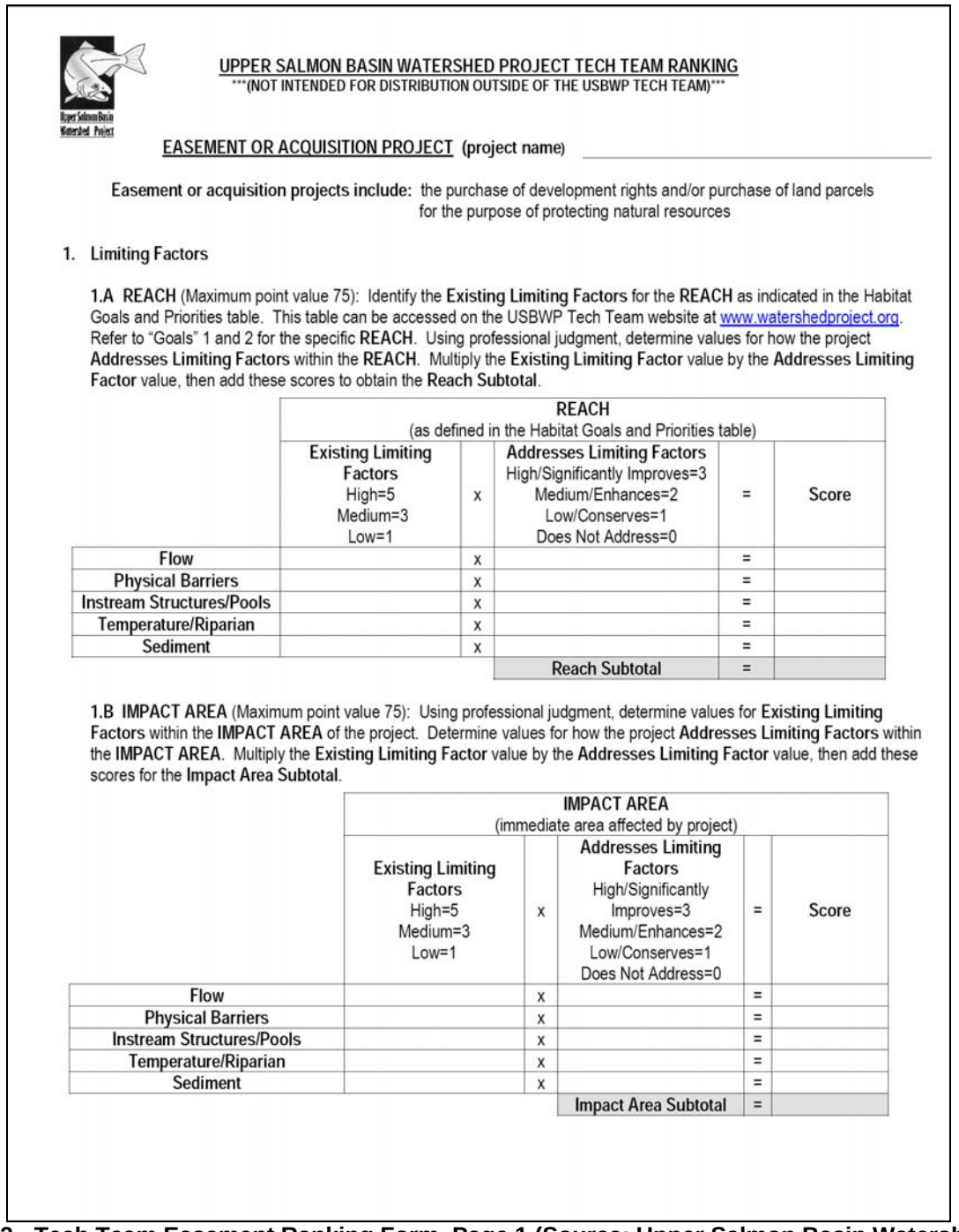
The Upper Lemhi River Acquisition Project (2008-601-00) is designed to acquire key aquatic habitats in the Lemhi Watershed. Properties have been evaluated through the Easements Subcommittee of the Upper Salmon Basin Technical Team. See membership in Appendix A. The ultimate goal is to identify and implement projects that protect and restore in-stream and riparian habitat, improve river flow in the Lemhi River, and reconnect tributary streams to the Lemhi River to benefit all life stages of Chinook salmon and steelhead. Potential acquisitions in interests in land and/or water through fee simple and conservation easement were selected using ranking criteria provided in Figures 2 and 3.

The Tech Team Easement Subcommittee was formed on February 4, 2009. The role of the subcommittee is to try and bridge the gap between easement proposals and on-the-ground conservation actions. Easement negotiations by necessity require a level of

privacy, but the funding justification must be linked to the actual conservation benefits before ranking and funding. Benefits such as riparian enhancement, improved stream flow, barrier removals and other actions that restore, enhance and protect fish habitat are ranked using a standardized form (figures 2 and 3). Figure 4, Habitat Goals and Priorities Table, has been included because it is referenced in the instructions for the ranking form (on Figure 2).

Following acquisition through this project, additional habitat actions will be implemented through project 2008-602-00, Upper Lemhi River Restoration Project, to facilitate tributary reconnects and improve instream habitat in the Lemhi River. Other limiting factors indirectly addressed by this project include altered riparian habitat, and degraded water quality. Please see Section F for specific objectives, methods, work elements, and metrics associated with this project.

We will address limiting factors as listed in the Bi-Op: 1. Stream flow; 2. Migration barriers; 3. Entrainment; 4. Riparian condition, sediment, and temperature. Please see Appendix B for NOAA accreditation of this project's outcomes under the 2008 FCRPS Biological Opinion. Conservation objectives are associated with the acquisitions over approximately 9,086 acres of the Tyler Ranch, 1,354 acres of the Cottom Ranch, the 1,000 acre Beyeler Ranch, and the 608 acre Kenney Creek Ranch in the Lemhi River watershed. Additional restorative actions to be completed through project 2008-602-00 (Upper Lemhi River-Restoration).



UPPER SALMON BASIN WATERSHED PROJECT TECH TEAM RANKING
(NOT INTENDED FOR DISTRIBUTION OUTSIDE OF THE USBWP TECH TEAM)

EASEMENT OR ACQUISITION PROJECT (project name) _____

Easement or acquisition projects include: the purchase of development rights and/or purchase of land parcels for the purpose of protecting natural resources

1. Limiting Factors

1.A REACH (Maximum point value 75): Identify the Existing Limiting Factors for the REACH as indicated in the Habitat Goals and Priorities table. This table can be accessed on the USBWP Tech Team website at www.watershedproject.org. Refer to "Goals" 1 and 2 for the specific REACH. Using professional judgment, determine values for how the project Addresses Limiting Factors within the REACH. Multiply the Existing Limiting Factor value by the Addresses Limiting Factor value, then add these scores to obtain the Reach Subtotal.

	REACH (as defined in the Habitat Goals and Priorities table)				
	Existing Limiting Factors High=5 Medium=3 Low=1	x	Addresses Limiting Factors High/Significantly Improves=3 Medium/Enhances=2 Low/Conserves=1 Does Not Address=0	=	Score
Flow		x		=	
Physical Barriers		x		=	
Instream Structures/Pools		x		=	
Temperature/Riparian		x		=	
Sediment		x		=	
			Reach Subtotal	=	

1.B IMPACT AREA (Maximum point value 75): Using professional judgment, determine values for Existing Limiting Factors within the IMPACT AREA of the project. Determine values for how the project Addresses Limiting Factors within the IMPACT AREA. Multiply the Existing Limiting Factor value by the Addresses Limiting Factor value, then add these scores for the Impact Area Subtotal.

	IMPACT AREA (immediate area affected by project)				
	Existing Limiting Factors High=5 Medium=3 Low=1	x	Addresses Limiting Factors High/Significantly Improves=3 Medium/Enhances=2 Low/Conserves=1 Does Not Address=0	=	Score
Flow		x		=	
Physical Barriers		x		=	
Instream Structures/Pools		x		=	
Temperature/Riparian		x		=	
Sediment		x		=	
			Impact Area Subtotal	=	

Figure 2 - Tech Team Easement Ranking Form, Page 1 (Source: Upper Salmon Basin Watershed Project, 2009)

2. **BENEFITS TO SPECIES AND LIFE STAGES** (Maximum point value 125): Determine values based on professional judgment and/or coordination with regional fisheries biologists. Add all of the values for the subtotal. **(Values: New=5; Significantly Improved=3; Moderately Improved=2; Slightly Improved =1 No change=0)**

Species \ Life Stage	Provides Access to Spawning & Incubation Habitat	Provides Access to Rearing Habitat	Spawning & Incubation	Rearing	Over-wintering
Chinook Salmon					
Steelhead Trout					
Bull Trout					
Westslope Cutthroat Trout					
Red-band Trout					
Species and Life Stages Subtotal =					
		BENEFITS TO LIFESTAGES TOTAL =			

Life Stage	Needs	Potential Projects/Fixes
Spawning/Incubation	Suitable gravel	Riparian, pulse flow, pools, side channel
	Reduced fine sediment	Riparian, pulse flow, bank
	Flow	Quantity
	Temperature	Riparian, pulse flow, pools, quantity
Rearing	Flow	Quantity
	Temperature	Riparian, pulse flow
	Food	Riparian, pulse flow
	Structure/complexity	Riparian, pulse flow, pools, structures
Over-Wintering	Pools/complexity	Pools

3. **SHIPUSS PRIORITY FOR BIOLOGICAL FACTORS:** Refer to Table 2 in the SHIPUSS document and enter the appropriate score based on the *Adjusted Percent Total* (APT) for stream or reach. Priority 1 (APT of 70% or greater) = 20, Priority 2 (APT of 50%-69%) = 10, and Priority 3 (APT of less than 50%) = 0. ☐

4. **TOTAL PROJECT SCORE** (Add the subtotals from 1A, 1B, 2 and 3): ☐

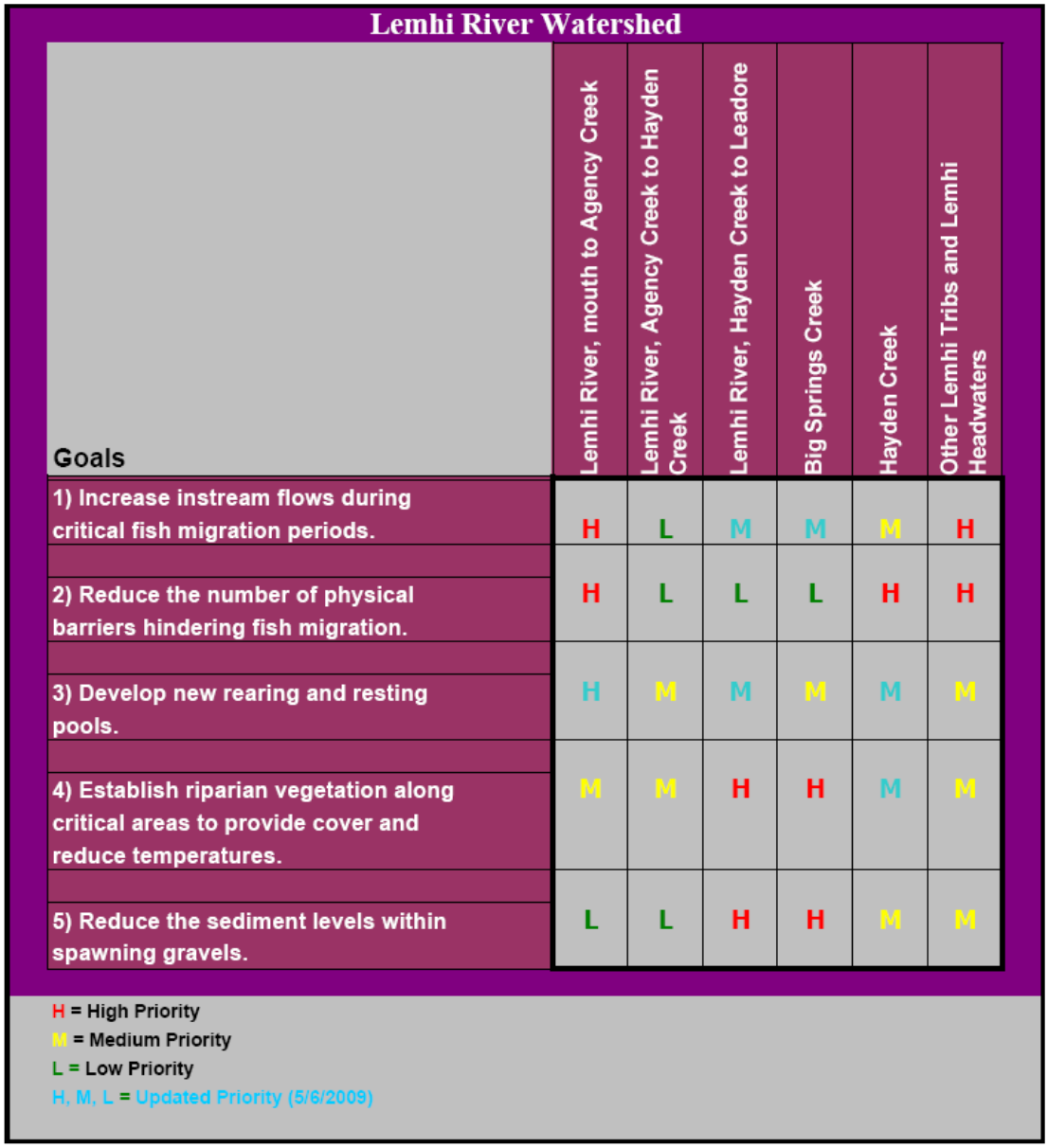
OVERALL PROJECT RANKING: Using this criteria, a score of 0 to 90 is a **low** ranking; 91 to 150 is a **medium** ranking; and 151or greater is a **high** ranking.

The OVERALL PROJECT RANKING for this project is (check one): ☐ **LOW** ☐ **MEDIUM** ☐ **HIGH**

Additional comments relevant to the biological merit of this project should be included on the reverse side of this form.

Comments relevant to the biological merit of this project: _____
____Assumptions:

Figure 3 - Tech Team Easement Ranking Form, Page 2 (Source: Upper Salmon Basin Watershed Project, 2009)



Lemhi River Watershed

Goals	Lemhi River, mouth to Agency Creek	Lemhi River, Agency Creek to Hayden Creek	Lemhi River, Hayden Creek to Leadore	Big Springs Creek	Hayden Creek	Other Lemhi Tribs and Lemhi Headwaters
1) Increase instream flows during critical fish migration periods.	H	L	M	M	M	H
2) Reduce the number of physical barriers hindering fish migration.	H	L	L	L	H	H
3) Develop new rearing and resting pools.	H	M	M	M	M	M
4) Establish riparian vegetation along critical areas to provide cover and reduce temperatures.	M	M	H	H	M	M
5) Reduce the sediment levels within spawning gravels.	L	L	H	H	M	M

H = High Priority
M = Medium Priority
L = Low Priority
H, M, L = Updated Priority (5/6/2009)

Figure 4 - Lemhi River Watershed Habitat Goals and Priorities Table (Source: Upper Salmon Basin Watershed Project, 2009)

Habitat

Riparian and aquatic habitats in the Lemhi watershed provide rich and vital resources to fish and wildlife due to their high productivity, diversity, continuity, and critical contributions to both aquatic and upland ecosystems. Riparian areas function as the transition zone between aquatic and terrestrial ecosystems, and aquatic and riparian habitat mutually influence and benefit each other. The Lemhi watershed supports twenty-two species of fish. More than 75% the Salmon subbasin's terrestrial vertebrate species use riparian habitats for essential life activities. Properly functioning

riparian habitats are critical in creating and maintaining instream conditions necessary for imperiled native fish stocks (NPCC 2005).

One of the primary limiting factors in the Lemhi watershed is adequate fish passage conditions between the Lemhi River and tributary habitats. Irrigation withdrawals that dewater stream segments and fish passage barriers (e.g. diversions and road culverts that block fish migration) effectively disconnect tributaries from the mainstem. These factors prevent access to historically available spawning and rearing habitat for anadromous species while isolating resident fish populations. Big Springs Creek and Hayden Creek are the only tributaries connected to the Lemhi year-round (Idaho Department of Water Resources 2009). Low flows are a primary concern in the Lemhi, but channelization has also caused a loss of floodplain access and lack of habitat diversity in the lower reach. When State Highway 28 was constructed in 1952, approximately 5 miles (8 km) of the Lemhi River channel were altered and/or isolated from the river (Gebhards 1958). An additional 10 miles (16 km) of Lemhi River channel were altered in 1957 in response to significant flooding (Gebhards 1958). Altered riparian habitats are common in the drainage. High water temperatures in the Lemhi River downstream of Agency Creek and in Big Springs Creek impact habitat quality (NPCC 2005).

There are 2,950 points of water diversion in the Lemhi watershed and 191 stream-alteration permits recorded. Twelve creeks are included on the 303(d) list as sediment-impaired streams, representing a 10.7% of the total waterways in the watershed. There are a total of 22 known road culverts on U.S. Forest Service Lands in the Lemhi watershed. Thirteen are known to block adult fish passage, one allows passage, and the fish passage status of the remaining are unknown (NPCC 2005).

Specific habitat issues identified in the Lemhi River Agreement (2002-2003) include maintaining a 35-cubic feet per second (cfs) minimum flow (measured at the L5 gauge), acquiring a minimum 8 cfs of flow in Hayden Creek, and reconnecting priority tributaries. Modification of the L6 diversion to facilitate fish passage and improve resting and rearing habitat is also cited as a specific need (NPCC 2005). Since 2003 the State of Idaho has implemented conservation actions to address these issues, and is currently developing and implementing projects under the Lemhi Conservation Program (LCP) that address other limiting factors throughout the Lemhi sub-basin.

C. Rationale and significance to regional programs

Implementation of the Upper Lemhi River Acquisition Project will address the goals and objectives in the following programs:

1) Biological Opinion
   RPA 35 - Achieving habitat quality and survival improvement targets

The acquisitions will address the following limiting factors identified in the FCRPS planning process: 1. Stream flow; 2. Migration barriers; 3. Entrainment; 4. Riparian condition, sediment, and temperature.

The Reasonable and Prudent Alternative (RPA) outlined in the BiOp proposes an expanded program to protect and improve tributary environments and reduce limiting factors, based on the biological needs of listed fish. These habitat actions are targeted to the populations and limiting factors where there is the greatest need, based on biological analysis. The RPA includes tributary habitat actions to protect and improve Mainstem and side-channel habitat for fish migration, spawning and rearing, and to restore floodplain function.

2) Salmon Subbasin Management Plan (NPCC 2005)

The Salmon Subbasin Plan was developed as part of the Northwest Power and Conservation Council's (NPCC) Columbia River Basin Fish and Wildlife Program to help direct Bonneville Power Administration's (BPA) funding of projects in the Salmon subbasin that mitigate for damage to fish and wildlife caused by the development and operations of the Columbia River's hydropower system.

The Salmon subbasin fisheries technical team was unable to generate a prioritization scheme for specific areas within the subbasin for a variety of reasons. However, the Fisheries Technical Team did make an effort to prioritize the types of habitat actions that are needed to recover listed anadromous species. Based upon those recommendations, the following environmental objectives could be achieved with the implementation of the Upper Lemhi River Acquisition Project:

- Rehabilitation of natural hydrograph
- Reconnection of tributaries throughout the watershed
- Improved irrigation efficiency
- Improved riparian habitat function
- Improved riparian habitat quantity and quality
- Reduction of sedimentation
- Improved resident and anadromous migration at diversions
- Improved irrigation conveyance

3) Columbia River Basin Fish and Wildlife Program

The Columbia River Basin Fish and Wildlife Program is a habitat-based program that aims to rebuild healthy, naturally producing fish and wildlife populations by protecting, mitigating, and restoring habitats and the biological systems within them. In 2007-2008, Bonneville Power Administration and other agencies agreed to an extensive set of actions over the next 10 years to benefit listed and unlisted anadromous fish, resident fish, and wildlife across the Columbia River Basin.

These actions, including this project, were a part of the Columbia Basin Fish Accords and the 2008 Biological Opinion (NPCC 2009).

4) 2003 Mainstem Amendments

The 2003 Mainstem Amendments do not apply directly to Upper Lemhi River Acquisition project. However, migration and passage condition objectives within the Mainstem Plan would provide indirect benefits for salmon and steelhead produced in the Lemhi Watershed.

5) Columbia River Basin Accords

The Columbia River Basin Accord agreements were established with action agencies, four tribes and one state for 10-year commitments to benefit Columbia River Basin salmon and steelhead stocks. Key components of the Accord Agreements which are addressed with this project include:

- Northwest ratepayer's litigation risk will be reduced as fish populations respond to improved habitat quantity and quality in the watershed
- Implementation of NOAA Fisheries BiOp actions will insure that key components of the biological opinions are incorporated into on-the-ground salmon and steelhead recovery efforts
- Partnerships with key landowners and action agencies will promote collaborative approaches towards the conservation of fish and wildlife resources in the watershed
- Establish a mechanism whereby interested parties can work together on species recovery before statutory obligations become contentious issues in the court system

6) Lemhi Habitat Framework for the Snake River Basin Adjudication Comprehensive Water Rights Settlement

The primary goals of the Lemhi Framework are to:

- Implement biologically sound strategies that contribute to the persistence of healthy populations of Chinook salmon, bull trout, steelhead, westslope cutthroat trout, and redband trout in the Lemhi watershed;
- Implement restoration alternatives, such as land acquisitions, that have a high likelihood of success and that provide substantial value for target resources;
- Coordinate with and support other compatible fish protection and restoration activities in the Lemhi basin to maximize total benefits to fisheries resources.

Implementation of the Upper Lemhi River Acquisition Project will facilitate the achievement of Lemhi Framework objectives after key habitats have been acquired. The Lemhi Framework will likely guide the selection of and the decision process for habitat acquisition projects in the Lemhi Watershed.

D. Relationships to other projects

Table 2. Relationship to existing projects

Funding Source	Project #	Project Title	Relationship (brief)
BPA	2008-602-00	Upper Lemhi River-Restoration	Restoration of property interests acquired through this project
BPA	2007-399-00	Upper Salmon Tributary Passage (Idaho Watershed Habitat Restoration)	Consultation on restoration project
BPA	1994-015-00	Screen Shop Program	Complements acquisitions when screens are required for aquatic resources conservation

Currently, the only BPA funded project identified in the BiOp currently implementing on-the-ground habitat projects in the Lemhi is the Fish Screening and Passage Improvements project. Sub-projects funded under the Upper Lemhi River Acquisition project would be linked to the Screen Shop Program if new acquisitions required improvements to water delivery systems to prevent entrainment losses.

E. Project history (for ongoing projects; this includes projects that have been funded with non-BPA funds).

Not applicable

F. Proposal biological/physical objectives, methods, work elements and metrics.

Objectives

Objective: Protect functional habitat from degradation threats and establish opportunity for restoration and enhancement through the purchase of interest in land and/or water through fee simple or conservation easement acquisitions.

Desired outcome: Protection of core anadromous fish habitats and associated riparian and upland habitats. Additional restoration work will be completed through project 2008-602-00, Upper Lemhi River-Restoration.

Snake River Spring/Summer Chinook – Lemhi Population:

Chinook Assessment Unit – Disconnected Lemhi River Tributaries and Carmen Creek

Actions Addressing Limiting Factor – Entrainment

Tyler Ranch:

- Implement irrigation efficiency projects that will improve flow for fish passage, improve stream habitat condition, and eliminate entrainment for ~8 miles of Canyon Creek, 1.3 miles of Hawley Creek and 2 miles of Eighteenmile Creek to the Lemhi River. Install a fish screen in Hawley Creek 1 to eliminate fish entrainment. This action will primarily focus on changing the delivery of water rights from an open ditch to gravity fed systems that will increase flow in these tributaries and eliminate fish entrainment in irrigation ditch systems. Accounts for 4.5% of the total limiting factor for this AU.

Actions Addressing Limiting Factor – Riparian Condition, Sediment, Temperature

Tyler Ranch:

- The conservation easement will maintain and permanently protect riparian zones as they improve over time for ~1.5 miles of Eighteenmile Creek, ~1.5 miles of Texas Creek, and numerous other small springs.

Cottom Ranch:

- Riparian habitat areas have been established in the conservation easement that will permanently protect the river corridor to benefit anadromous fish. The riparian area consists of a total of ~ 59 acres of riparian habitat and ~.5 miles of Lee Creek.

Beyeler Ranch:

- Riparian habitat areas have been established in the conservation easement that will permanently protect the river corridor to benefit anadromous fish. There will be a total of approximately 80 acres of protected riparian habitat which includes ~.75 miles of Big Timber Creek and .5 miles of Canyon Creek.

Kenney Creek Ranch:

- Riparian habitat areas have been established in the acquisition that will permanently protect the river corridor to benefit anadromous fish. Riparian areas to be permanently protected by this acquisition consist of approximately 1.5 miles of the Kenney Creek tributary.

All 4 of these properties account for 3% of 10% of the total limiting factor for the entire assessment unit.

Actions Addressing Limiting Factor – Stream Flow

Tyler Ranch:

- Implement irrigation efficiency projects that will improve flow in Canyon Creek by 2 cfs and Hawley Creek by limiting the irrigation use to 3 cfs. These actions will

improve flow in ~8 miles of Canyon Creek and 1.3 miles of Hawley Creek and 2 miles in Eighteenmile Creek to the Lemhi River. This action will primarily focus on changing the delivery of water rights from an open ditch to gravity fed systems that will increase flow in these tributaries and eliminate fish entrainment in irrigation ditch systems. Accounts for 2% of the total limiting factor for the AU.

- Establish a permanent agreement not to divert for 4.5 cfs of water covering 1 mile and opening up habitat to about 16 miles of Big Timber Creek and secure agreement to divert from Lemhi River and maintain and operate existing infrastructure. Accounts for 1.5% of the total limiting factor for the AU.

Cottom Ranch:

- Work with Idaho Department of Water Resources and the Beyelers to transfer all water rights from the L-58a and Big Springs 5 diversions (which currently capture all of the flow from Lee Creek) to L-58 in order to facilitate the reconnect of approximately 2 miles of the lower Lee Creek tributary. Flow increase in Lee Creek is currently estimated to be ~3 cfs, however, an accurate accounting has yet to be determined due to a lack of data. Accounts for less than 1% of the total limiting factor for the AU.
- Eliminate irrigation use from Walter's Creek and enhance flows by ~1 cfs in the upper reach of Little Springs Creek. Accounts for less than .5% of the total limiting factor for the AU.

Beyeler Ranch:

- A project is currently being implemented that provides more flow in Canyon Creek. The water right that serves acreage on the Beyeler ranch will be spilled to the Lemhi River, captured at a new point of diversion (POD) on the river, and pumped to its place of use. This provides an additional 2 cfs in Canyon Creek that is expected to establish a full reconnection with the Lemhi. The conservation easement will restrict landowner from modifying and/or removing water conservation improvements associated with improved irrigation water delivery. Accounts for 1% of the total limiting factor for the AU.
- Establish a permanent agreement not to divert covering 1 mile and opening up habitat to about 16 miles of Big Timber Creek that will improve flow in a previously dewatered stream segment. The water right will be called for at the Big Timber Creek #2 diversion, spilled to the Lemhi and then pumped from the same POD as the Canyon Creek POD to its place of use. This adds 1.5 cfs of Big Timber Creek water and contributes to reconnecting Big Timber Creek. The conservation easement will restrict landowner from modifying and/or removing water conservation improvements associated with improved irrigation water delivery. Accounts for 1.5% of the total limiting factor for the AU.

Kenney Creek Ranch:

- Restrict irrigation water diversion when flows in Kenney Creek are between 24 and 8 cfs as measured at the IDWR staff gage to no more than 50% of the total flow in Kenney Creek at the Kenney Creek 2 diversion. Maintain minimum flow in Kenney Creek (currently determined to be 4 cfs) below the Kenney Creek 2

diversion, as measured by staff plate readings at the IDWR staff gage, to facilitate migration of Chinook salmon and steelhead from the Lemhi River into Kenney Creek for spawning and rearing. Improves flow and opens up access to about 8 miles of habitat. Accounts for 1% of the total limiting factor for the AU.

Actions Addressing Limiting Factor – Migration barriers

Cottom Ranch:

- Work with Idaho Department of Water Resources and the Beyelers to transfer all water rights from the L-58a and Big Springs 5 diversions (which currently capture all of the flow from Lee Creek) to L-58 in order to facilitate the reconnect of approximately 2 miles of the lower Lee Creek tributary. Flow increase in Lee Creek is currently estimated to be ~3 cfs, however, an accurate accounting has yet to be determined due to a lack of data. Accounts for .5% of the total limiting factor for the AU.

Kenney Creek Ranch:

- Restrict irrigation water diversion when flows in Kenney Creek are between 24 and 8 cfs as measured at the IDWR staff gage to no more than 50% of the total flow in Kenney Creek at the Kenney Creek 2 diversion. Maintain minimum flow in Kenney Creek (currently determined to be 4 cfs) below the Kenney Creek 2 diversion, as measured by staff plate readings at the IDWR staff gage, to facilitate migration of Chinook salmon and steelhead from the Lemhi River into Kenney Creek for spawning and rearing. Improves flow and opens up access to about 8 miles of habitat. Accounts for 5% on the high end and .5% on the low end if you are only counting the affects from the barrier to the mouth, of the total limiting factor for the AU.

Chinook Assessment Unit – Mainstem Lemhi River, Hayden Creek, and Big Springs Creek

Actions Addressing Limiting Factor – Riparian Condition, Sediment, Temperature

Tyler Ranch:

- The conservation easement will maintain and permanently protect riparian zones as they improve over time for ~9 miles of the Lemhi River, ~6 miles of Big Springs Creek (including any unfenced portions). Additionally the easement will establish larger riparian buffers on Big Springs Creek where the existing fence provides a limited riparian buffer, i.e. those areas that are approximately 10 feet or less from Big Springs Creek. Accounts for 15% of the total limiting factor for the AU, this protects a majority of the Chinook salmon production in the Lemhi River.
- To stimulate channel form and function, establish 72 hour flush flow during high water for each tributary that would have previously been diverted by developing an agreement not to divert irrigation water during naturally occurring high water events. This will be coordinated under the Lemhi Conservation Program and will utilize the same strategy on other ranches to maximize benefits to fish habitat. Accounts for 10% of the total limiting factor of sediment for the AU with additional actions necessary for riparian habitat improvement.

Cottom Ranch:

- Riparian habitat areas have been established in the conservation easement that will permanently protect the river corridor to benefit anadromous fish. There will be a total of approximately 391 acres of protected riparian habitat which includes: 214 acres of riparian habitat and ~2.5 miles of the Lemhi River and associated springs, 177 acres of riparian habitat and ~1.5 miles of Little Springs and Walters Creeks. Accounts for 2.5% of the total limiting factor for the AU, this protects a majority of the Chinook salmon production in the Lemhi River.
- Create a 72 hour flush flow during high water in the Lemhi River. This will be coordinated under the Lemhi Conservation Program and will utilize the same strategy on other ranches to maximize benefits to fish habitat. Accounts for 5% of the total limiting factor of sediment for the AU with additional actions necessary for riparian habitat improvement.

Beyeler Ranch:

- Riparian habitat areas have been established in the conservation easement that will permanently protect the river corridor to benefit anadromous fish. There will be a total of approximately 100 acres of protected riparian habitat which includes ~1.5 miles of the Lemhi River. Accounts for 1.5% of the total limiting factor for the AU, this protects a majority of the Chinook salmon production in the Lemhi River.
- Create a 72 hour flush flow during high water in Lee Creek and Little Springs Creek. This will be coordinated under the Lemhi Conservation Program and will utilize the same strategy on other ranches to maximize benefits to fish habitat. Accounts for 1% of the total limiting factor of sediment for the AU with additional actions necessary for riparian habitat improvement.

Kenney Creek Ranch:

- Riparian habitat areas have been established in the acquisition that will permanently protect the river corridor to benefit anadromous fish. There are a total of approximately ~1.25 miles of the Lemhi River protected by this acquisition. Accounts for 1% of the total limiting factor for the AU, this protects a majority of the Chinook salmon production in the Lemhi River.

Actions Addressing Limiting Factor – Stream Flow

Tyler Ranch:

- Eliminate the L-63 ditch. This would contribute as much as 9 cubic feet per second (cfs) of flow to the Lemhi River. Our analysis using the Mike Basin model has shown the impact to the hydrology of the Upper Lemhi River system would be relatively low, i.e. possible flow reduction in Big Springs Creek by approximately 4 cfs. As part of the elimination of the L-63 ditch the conservation easement will include provisions that restrict the diversion of any conserved water resulting from this action, or other water conservation actions taken upstream from the property, from being diverted to fill other water rights associated with this property. Accounts for 10% of the total limiting factor for the

AU, this improves flow over a majority of the Chinook salmon production in the Lemhi River.

- Create a minimum flow target for Big Springs Creek of 15 cfs. Results of hydrologic modeling completed by IDWR have shown that we will need to protect (through agreements not to divert or partial season leases) between 3 and 5 cfs in order to attain the 15 cfs objective. The parties may have to agree to a water management plan for Big Springs Creek water rights in order to specifically identify how we may conserve the 3-5 cfs needed to meet this objective. Accounts for 5% of the total limiting factor for the AU, this improves flow over a majority of the Chinook salmon production in the Lemhi River.

Cottom Ranch:

- Place a permanent lease on 4 water rights and a permanent full season lease on one water right. Reconfigure and shrink the overall irrigated acres on the east side of the Lemhi River and improve the efficiency of irrigation delivery systems which service this portion of the property. In doing this we will also eliminate water withdrawal from the spring area on the southeast portion of the ranch adding approximately .9 cfs to the Lemhi River, thus reconnecting this spring source to the river. Accounts for 4% of the total limiting factor for the AU, this improves flow over a majority of the Chinook salmon production in the Lemhi River.
- Place an agreement not to divert on the water rights on the west side of the Lemhi River. This action will result in approximately 3.1 cfs of additional flow in 2.5 miles of the Lemhi River through the ranch. Additionally we will work with the Idaho Department of Water Resources to consolidate all of the water rights affected by this agreement to one point of diversion, thus eliminating one diversion and ditch system all together. Accounts for 1% of the total limiting factor for the AU, this improves flow over a majority of the Chinook salmon production in the Lemhi River.
- Work with Idaho Department of Water Resources and the Beyelers to transfer all water rights from the L-58a and Big Springs 5 diversions to L-58 (which capture all of the flow from Lee Creek) in order to facilitate the Lee Creek reconnect. Flow increase in Lee Creek currently estimated to be ~3 cfs, however, an accurate accounting has yet to be determined due to a lack of data. Big Springs 5 contributes another 5cfs for approx. 8 miles. This accounts for 4% of the total limiting factor for this AU.

Actions Addressing Limiting Factor – Entrainment in irrigation diversions

Cottom Ranch:

- Work with Idaho Department of Water Resources and the Beyelers to transfer all water rights from the L-58a and Big Springs 5 diversions (which currently capture all of the flow from Lee Creek) to L-58 in order to facilitate the reconnect of approximately 2 miles of the lower Lee Creek tributary. Flow increase in Lee Creek is currently estimated to be ~3 cfs, however, an accurate accounting has yet to be determined due to a lack of data. Accounts for 2% of the total limiting factor for this AU.

Snake River Steelhead – Lemhi Population:

Steelhead Assessment Unit – Carmen, Bohannon, Wimpey, and Kenney Creeks

Actions Addressing Limiting Factor – Migration Barriers

Kenney Creek Ranch:

- Restrict irrigation water diversion when flows in Kenney Creek are between 24 and 8 cfs as measured at the IDWR staff gage to no more than 50% of the total flow in Kenney Creek at the Kenney Creek 2 diversion. Maintain minimum flow in Kenney Creek (currently determined to be 4 cfs) below the Kenney Creek 2 diversion, as measured by staff plate readings at the IDWR staff gage, to facilitate migration of steelhead from the Lemhi River into Kenney Creek for spawning and rearing. Improves flow and opens up access to about 8 miles of habitat. Accounts for 20% of the total limiting factor for the AU.

Actions Addressing Limiting Factor – Riparian Condition, Sediment, and Temperature

Kenney Creek Ranch:

- Riparian habitat areas have been established in the acquisition that will permanently protect the river corridor to benefit anadromous fish. There is a total of ~1.5 miles of the Kenney Creek tributary included in the riparian protected area. Accounts for 3% of the total limiting factor for the AU.

Actions Addressing Limiting Factor – Stream Flow

Kenney Creek Ranch:

- Restrict irrigation water diversion when flows in Kenney Creek are between 24 and 8 cfs as measured at the IDWR staff gage to no more than 50% of the total flow in Kenney Creek at the Kenney Creek 2 diversion. Maintain minimum flow in Kenney Creek (currently determined to be 4 cfs) below the Kenney Creek 2 diversion, as measured by staff plate readings at the IDWR staff gage, to facilitate migration of steelhead from the Lemhi River into Kenney Creek for spawning and rearing. Improves flow and opens up access to about 8 miles of habitat. Accounts for 2% of the total limiting factor for the AU.

Steelhead Assessment Unit – Mainstem Salmon and Lemhi Rivers and Hayden Creek

Actions Addressing Limiting Factor – Riparian Condition, Sediment, and Temperature

Tyler Ranch:

- The conservation easement will maintain and permanently protect riparian zones as they improve over time for ~9 miles of the Lemhi River, ~6 miles of Big Springs Creek (including any unfenced portions). Additionally the easement will establish larger riparian buffers on Big Springs Creek where the existing fence provides a limited riparian buffer, i.e. those areas that are approximately 10 feet

or less from Big Springs Creek. Accounts for 12% of the total limiting factor for the AU.

Cottom Ranch:

- Riparian habitat areas have been established in the conservation easement that will permanently protect the river corridor to benefit anadromous fish. There will be a total of approximately 391 acres of protected riparian habitat which includes: 214 acres of riparian habitat and ~2.5 miles of the Lemhi River and associated springs, 177 acres of riparian habitat and ~1.5 miles of Little Springs and Walters Creeks. Accounts for 1% of the total limiting factor for the AU.

Beyeler Ranch:

- Riparian habitat areas have been established in the conservation easement that will permanently protect the river corridor to benefit anadromous fish. There will be a total of approximately 100 acres of protected riparian habitat which includes ~1.5 miles of the Lemhi River. Accounts for .5% of the total limiting factor for the AU.

Kenney Creek Ranch:

- Riparian habitat areas have been established in the acquisition that will permanently protect the river corridor to benefit anadromous fish. There are a total of approximately ~1.25 miles of the Lemhi River protected by this acquisition. Accounts for 1% of the total limiting factor for the AU.

Actions Addressing Limiting Factor – Stream Flow

Tyler Ranch:

- Eliminate the L-63 ditch. This would contribute as much as 9 cubic feet per second (cfs) of flow to the Lemhi River. Our analysis using the Mike Basin model has shown the impact to the hydrology of the Upper Lemhi River system would be relatively low, i.e. possible flow reduction in Big Springs Creek by approximately 4 cfs. As part of the elimination of the L-63 ditch the conservation easement will include provisions that restrict the diversion of any conserved water resulting from this action, or other water conservation actions taken upstream from the property, from being diverted to fill other water rights associated with this property. Accounts for 5% of the total limiting factor for the AU.
- Create a minimum flow target for Big Springs Creek of 15 cfs. Results of hydrologic modeling completed by IDWR have shown that we will need to protect (through agreements not to divert or partial season leases) between 3 and 5 cfs in order to attain the 15 cfs objective. The parties may have to agree to a water management plan for Big Springs Creek water rights in order to specifically identify how we may conserve the 3-5 cfs needed to meet this objective. Accounts for 1% of the total limiting factor for the AU.

Cottom Ranch:

- Place a permanent lease on 4.5 water rights and a permanent full season lease on one water right. Reconfigure and shrink the overall irrigated acres on the east side of the Lemhi River and improve the efficiency of irrigation delivery systems which service this portion of the property. In doing this we will also eliminate water withdrawal from the spring area on the southeast portion of the ranch adding approximately .9 cfs to the Lemhi River, thus reconnecting this spring source to the river. These water rights equate to approximately 4.16 cfs of water protected as instream flows in the Lemhi River. Accounts for 2% of the total limiting factor for the AU.
- Place an agreement not to divert on the water rights on the west side of the Lemhi River. This action will result in approximately 3.1 cfs of additional flow in the Lemhi River through the ranch. Additionally we will work with the Idaho Department of Water Resources to consolidate all of the water rights affected by this agreement to one point of diversion, thus eliminating one diversion and ditch system all together. Accounts for less than .5% of the total limiting factor for the AU.

Steelhead Assessment Unit – Other Salmon and Lemhi River Seasonally and Disconnected Tributaries

Actions Addressing Limiting Factor – Entrainment and Fish Passage

Tyler Ranch:

- Implement irrigation efficiency projects that will improve flow for fish passage, improve stream habitat condition, and eliminate entrainment for ~8 miles of Canyon Creek, 1.3 miles of Hawley Creek and 2 miles of Eighteenmile Creek to the Lemhi River. Install a fish screen in Hawley Creek 1 to eliminate fish entrainment. This action will primarily focus on changing the delivery of water rights from an open ditch to gravity fed systems that will increase flow in these tributaries and eliminate fish entrainment in irrigation ditch systems. Accounts for .5% of the total limiting factor for this AU.
- Elimination of the L-63 ditch. This would contribute as much as 9 cfs of flow to the Lemhi River. Accounts for .5% of the fish passage limiting factor for this AU.

Cottom Ranch:

- Work with Idaho Department of Water Resources and the Beyelers to transfer all water rights from the L-58a and Big Springs 5 diversions (which currently capture all of the flow from Lee Creek) to L-58 in order to facilitate the reconnect of approximately 2 miles of the lower Lee Creek tributary. Flow increase in Lee Creek is currently estimated to be ~3 cfs, however, an accurate accounting has yet to be determined due to a lack of data. Accounts for .25% of the total limiting factor for the AU.

Actions Addressing Limiting Factor – Riparian Condition, Sediment, and Temperature

Tyler Ranch:

- The conservation easement will maintain and permanently protect riparian zones as they improve over time for ~1.5 miles of Eighteenmile Creek, ~1.5 miles of Texas Creek, and numerous other small springs.

Cottom Ranch:

- Riparian habitat areas have been established in the conservation easement that will permanently protect the river corridor to benefit anadromous fish. The riparian area consists of a total of ~ 59 acres of riparian habitat and ~.5 miles of Lee Creek.

Beyeler Ranch:

- Riparian habitat areas have been established in the conservation easement that will permanently protect the river corridor to benefit anadromous fish. There will be a total of approximately 80 acres of protected riparian habitat which includes ~.75 miles of Big Timber Creek and .75 miles of Canyon Creek.

All properties account for 1% of the total limiting factor for the entire assessment unit.

Actions Addressing Limiting Factor – Stream Flow

Tyler Ranch:

- Implement irrigation efficiency projects that will improve flow for fish passage, improve stream habitat condition, and eliminate entrainment for ~8 miles of Canyon Creek, 1.3 miles of Hawley Creek and 2 miles of Eighteenmile Creek to the Lemhi River. Install a fish screen in Hawley Creek 1 to eliminate fish entrainment. This action will primarily focus on changing the delivery of water rights from an open ditch to gravity fed systems that will increase flow in these tributaries and eliminate fish entrainment in irrigation ditch systems. Accounts for 1% of the total limiting factor for this AU.

Cottom Ranch:

- Work with Idaho Department of Water Resources and the Beyelers to transfer all water rights from the L-58a and Big Springs 5 diversions to L-58 (which capture all of the flow from Lee Creek) in order to facilitate the Lee Creek reconnect. Flow increase in Lee Creek is currently estimated to be ~3 cfs, however, an accurate accounting has yet to be determined due to a lack of data. Eliminate irrigation use from Walter's Creek and reconnect the lower reach of this tributary to Little Springs Creek. Big Springs 5 contributes another 5 cfs for approx. 8 miles. Accounts for .5% of the total limiting factor for this AU.

Beyeler Ranch:

- A project is currently being implemented that provides more flow in Canyon Creek. The water right that serves acreage on the Beyeler ranch will be spilled to the Lemhi River, captured at a new point of diversion (POD) on the river, and

pumped to its place of use. This provides an additional 2 cfs in Canyon Creek that is expected to establish a full reconnection with the Lemhi. The conservation easement will restrict landowner from modifying and/or removing water conservation improvements associated with improved irrigation water delivery. Accounts for .1% of the total limiting factor for this AU.

- A similar project is being implemented on Timber Creek that will improve flow in a previously dewatered stream segment. The water right will be called for at the Big Timber Creek #2 diversion, spilled to the Lemhi and then pumped from the same POD as the Canyon Creek POD to its place of use. This adds 1.5 cfs of Big Timer Creek water and contributes to reconnecting Big Timber Creek. The conservation easement will restrict landowner from modifying and/or removing water conservation improvements associated with improved irrigation water delivery. Accounts for 1% of the total limiting factor for this AU.

Other Conservation Actions:

Restoration Projects

Cottom Ranch:

- In addition to habitat protections, this conservation easement will secure landowner cooperation for the restoration of Lee Creek. This project will move Lee Creek from its current location between Cottom Lane and the existing livestock feeding area to its historic channel in order to improve juvenile fish utilization and reconnect Lee Creek to the Lemhi River.

Beyeler Ranch:

- The Beyelers have committed to work with TNC and its partners to restore the portion of Canyon Creek which flows through the ranch.

Public Access Cottom and Beyeler Ranches:

Public access has been agreed to on some portions of the Lemhi River which flows through both ranches. Access would be limited to foot access only and by isolated parking areas. Public access would include fishing, wildlife viewing, and limited hunting opportunities.

Work Elements, Methods and Metrics

a. Work element # 172 – Conduct Pre-Acquisition Activities

For acquisition projects, OSC Project Managers will work with sub-contractors to complete the procedures and steps required for fee simple acquisitions or easements. Milestones may include: acquire appraisal, acquire BPA review and approval of appraisal, perform and obtain tile searches and reports.

Milestones:

a. Coordinate all pre-acquisition procedures with BPA to assure compliance with Federal laws and guidelines

b. Acquire appraisal
c. Acquire BPA review and approval of appraisal
d. Perform title search
e. Review and clearance of title report encumbrances by BPA
f. Perform land boundary surveys as needed
g. Provide legal descriptions
h. Perform hazardous waste assessment
i. For easement, define easement terms and conditions for BPA review and approval
j. Attach completed water survey form in Pisces
k. Draft legal agreement, grant deed of conservation easement for BPA review and approval
l. Assign or record with deed BPA's third party rights to enforce easement or covenant for acquired properties

Metrics: No metrics needed

Deliverables: Final realty package

Methods: The OSC Program Manager and subcontractors will complete the milestones to produce a final realty package for BPA.

b. Work Element # 115 – Produce Inventory or Assessment

OSC will provide a baseline assessment of conditions, which will be used to support future implementation actions.

Milestones:

a. Produce a baseline assessment of conditions

Metrics: No metrics needed

Deliverables: Document providing a baseline assessment of conditions.

Methods: Create a baseline assessment of conditions at each property selected by the Tech Team Easements Subcommittee.

G. Monitoring and evaluation

The Nature Conservancy's Conservation Easement standard operating procedure contains the Conservancy's procedures intended to ensure that the Conservancy can demonstrate compliance with U.S. Treasury Regulations 1.170A-14 regarding Qualified Conservation Contributions to Qualified Organizations. This procedure reflects and embodies the Conservancy's practices, protocols and lessons learned in over thirty-five years of acquiring, holding, monitoring and enforcing the conservation easements and deed restrictions under Conservancy stewardship. Included are standards for baseline

documentation, compliance monitoring, including monitoring frequency and reporting requirements, and enforcement procedures. The monitoring documents will be part of the final realty package to be produced through the project. A sample easement monitoring form is included in Appendix C.

The conservation actions implemented through acquisition of easements and land purchases described in this document are anticipated to exert a statistically detectable influence on physical habitat in the Lemhi watershed, in turn positively influencing fish performance (e.g., the distribution of anadromous salmonids and juvenile survival and growth). However, existing monitoring and evaluation projects in the Lemhi River sub-basin are likely insufficient to detect these changes, or identify life stage specific limiting factors to support adaptive management strategies. Thus, a rigorous study design was developed under the Integrated Status and Effectiveness Monitoring Project (ISEMP) to guide monitoring efforts. This project was initiated in 2003 (Jordan 2003) with funding through the Bonneville Power Administration in response to the need for status and trend and effectiveness monitoring called for by the 2000 Biological Opinion. Monitoring data generated and evaluated under ISEMP will assess changes to the physical habitat and associated response in fish vital rates. ISEMP will also inform an adaptive management process under the State of Idaho's LCP to guide future management decisions relative to improving anadromous fish habitat in the basin.

The ISEMP design underwent extensive scientific review and was approved by the Independent Scientific Review Panel (ISRP 2006). The ISEMP project provides an opportunity to unify existing Lemhi monitoring efforts under a single design, either by modifying existing efforts or simply utilizing the sampling effort and data from existing projects. In addition to utilizing existing efforts, the ISEMP project will generate more precise estimates of juvenile abundance, growth, survival, and distribution as well as adult escapement and distribution. Additionally, the ISEMP project will generate continuous quantitative data describing habitat quantity and quality through the use of green Light Detection and Ranging (LiDAR) and empirical habitat data collected at the reach scale via on-the-ground habitat surveys. Thus, the expectation is that ISEMP is capable of detecting improvements to habitat quality and fish performance as a result of this project.

H. Facilities and equipment

Not applicable

I. References

Gebhards, S.V. 1958. Fish loss in irrigation canals on the Salmon River drainage as determined by electrical shocker. Special Report. Idaho Department of Fish and Game, Vol. 4, No. 45. Salmon, Idaho.

Idaho Department of Water Resources. 2009. Boise, Idaho.

ISRP. 2006-1. Review of Salmon subbasin pilot projects monitoring and evaluation plan. Northwest Power and Planning Council. 11p. http://www.nwfsc.noaa.gov/research/divisions/cbd/mathbio/isemp/docs/salmon_river_pilot_project_study_design.doc

Jordan, C. 2003. Develop and implement an integrated subbasin-scale status and watershed-scale effectiveness monitoring program for salmonid populations and habitat as called for in the NMFS 2000 FCRPS Biological Opinion. http://www.nwfsc.noaa.gov/research/divisions/cbd/mathbio/isemp/docs/35019_revised_n.pdf

Northwest Power and Conservation Council. 2005. "Salmon Subbasin Management Plan." In *Columbia River Basin Fish and Wildlife Program.* Portland, Oregon.

Northwest Power and Conservation Council. 2009. *Columbia River Basin Fish and Wildlife Program*. Portland, Oregon.

J. Key personnel

Mike Edmondson

For this proposed work, Mike Edmondson's role will be project lead for the state of Idaho. FTE = .15.

Since August 2008, Mike Edmondson has served as the Anadromous Fish Program Manager for the OSC. Mike brings more than a decade of experience administering federal programs. Mike came to OSC with a background of 14 years with the Idaho Department of Environmental Quality working on surface water quality and forestry issues. Mike has co-authored Total Maximum Daily Loads; served on the Idaho Forest Practices Act Advisory committee (the rule making committee for forestry rules); authored the 1998, 2002, and 2008 Clean Water Act §303(d) Impaired Waters Reports and the 2002 and 2008 §305(b) Reports collectively known as the Integrated Reports. Mike lead Idaho's stream monitoring program from 1996 through 1998 overseeing ambient biological data collection on 2,552 stream data collection sites. Mike has held scientific collection permits for electrofishing and collected fish abundance and fish tissue data from streams, lakes, and rivers.

Professional Experience

Anadromous Fish Program Manager, Idaho Office of Species Conservation, 2008-Present
Scientist 3: 303(d)/305(b) Program Manager, Idaho Department of Environmental Quality (DEQ), Boise, Idaho, 2001-2008
Water Quality Science Officer: 303(d)/305(b) Program Manager, Idaho DEQ, Boise, Idaho, 1998-2001

Water Quality Science Officer: Beneficial Use Reconnaissance Program (BURP) Manager, Idaho DEQ, Boise, Idaho, 1996-1998
Environmental Sciences Specialist: Cascade Reservoir Project Idaho DEQ, Boise, Idaho, 1995-1996
Environmental Sciences Specialist: Tri-State Mining Project, Idaho DEQ, Boise, Idaho, 1994-1995

Education

California Polytechnic State University, San Luis Obispo
Degree: Bachelor of Science (Conferred June 1994)
Major: Ecology and Systematic Biology with concentration in Ecology (aquatic)

Publications

- 2008 Integrated Report. DEQ 2009
- Idaho Forest Practices Act Quadrennial Audit Work Plan. DEQ 2008.
- Policies and Procedures Document. DEQ 2008
- 2002 Integrated Report. DEQ 2005
- Policies and Procedures Document. DEQ 2002.
- New Mayfly (Ephemeroptera) Records from Idaho. Lester, G.T., McCafferty, W.P., and Edmondson, M.R., Entomology News 113 (2): 131-136, March & April, 2002.
- Level IV Ecoregions of Idaho. McGrath C.L., Woods A.J., Omernik, J.M., Bryce, S.A., Edmondson, M., Nesser, J.A., Shelden, J., Crawford, R.C., Comstock, J.A., and Plocher, M.D., 2002, Ecoregions of Idaho (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey
- 1998 303(d) List. DEQ 2000
- Tri-State Field Sampling Manual. Edmondson, M.R., DEQ 1995

Amy Hines

For this proposed work, Amy Hines' role will be administrative oversight. FTE = .1.

Since December 2008, Amy Hines has worked as a Project Manager for the Idaho Office of Species Conservation. Amy provides administrative and technical support to federal, state and private partners pertaining to BPA assistance programs. This role requires Amy to provide oversight of BPA-funded contracts and any associated subcontracts. Amy performs duties related to invoicing and payments, reporting, and contracting. Amy also coordinates all narratives and statements of work for OSC's BPA projects.

Professional Experience

Project Manager, Idaho Office of Species Conservation, Boise, Idaho, 2008-present.
Grants/Contracts Program Specialist, Idaho State Department of Agriculture, Boise, Idaho, 2007 – 2008.
Technical Writer, Idaho State Department of Agriculture, Boise, Idaho, 2004-2007.
Grants Coordinator, Idaho State Department of Agriculture, Division of Animal Industries, Boise, Idaho, 2003-2004.
Consultant, Boise, Idaho, 1998-2003.
Research Assistant Internship, Idaho Council on Industry and the Environment, Boise, Idaho, 1998.
Research Assistant, Idaho Geological Survey, Moscow, Idaho, 1996-1997.

Education

University of Idaho
Degree: Bachelor of Science (December 2009)
Major: Environmental Science (Physical Science Option)

Relevant Professional/Technical Courses completed:
Subawarding for Pass-Through Entities, Management Concepts, 2008.
Managing Federal Grants and Cooperative Agreements for Recipients, Management Concepts, 2008.
Project Management I & II, Executrain, 2004.

Mark Davidson

For this proposed work, Mark Davidson's role will be conservation easement coordination and lead negotiator. FTE = .3.

Mark Davidson has been working toward the protection of fish and wildlife habitat across Idaho for more than nine years. His work has entailed oversight and implementation of conservation easements in the Silver Creek, Big Lost River and Upper Salmon River watersheds. While at Silver Creek, Mark managed TNC's conservation easement program, which includes twelve ranches and accounts for over 9,500 acres of land protecting the Silver Creek watershed and its world renowned wild trout fishery. Mark negotiated a 1,122 acre conservation easement in the Big Lost River watershed in order to protect important spring creek habitat and their influence on the Big Lost River. In the Upper Salmon River watershed, Mark has been TNC's leader in creating a conservation vision for land and water conservation projects that protect anadromous fish rearing and spawning habitat, wildlife habitat, and open space. This effort has led to the acquisition of conservation easements and conservation easement opportunities in the Carmen Creek, Pahsimeroi River and Lemhi River watersheds. Since 2004, Mark has successfully worked with three landowners to complete conservation easements protecting 3,340 acres in the Carmen Creek and Pahsimeroi River watersheds. Mark is currently negotiating conservation easement transactions with three landowners who own approximately 12,205 acres in the Upper Lemhi River watershed. Mark has been effective in establishing solid working relationships with landowners and has built up credibility and support from many within the ranching community as well as agency partners.

Professional Experience

Conservation Manager in Central Idaho**,** The Nature Conservancy, Hailey, Idaho, 2003 - Present. Develop and implement the strategic conservation plan for approximately 4 million acres in the Upper Salmon landscape in Central Idaho. Establish support from a broad range of partners, including private landowners, elected officials, government agencies, and other conservation groups to protect sagebrush steppe, riparian, and other habitats with a focus on salmon protection. Employ land acquisition and conservation easement strategies to reach conservation goals. Continue to create new, innovative mechanisms to secure water for conservation purposes by partnering successfully with state water management department. Participate as an advisory board member on local watershed group. To date, have written grants and secured more than $10,000,000 in public funding to implement protection projects. Supervise one full-time staff and formally mentor the executive director of a local land trust.

Silver Creek Preserve Manager**,** Silver Creek Preserve, The Nature Conservancy, Picabo, Idaho, 2001 - 2003. Oversaw all aspects of preserve operations at The Nature Conservancy's flagship Idaho preserve. Established and maintained productive working relationships with landowners, ranging from traditional ranchers to part-time recreational homeowners. Monitored and enforced conservation easements.

Silver Creek Assistant Manager**,** Silver Creek Preserve, The Nature Conservancy, Picabo, Idaho, 2000 - 2001

Wildlife Technician**,** Great Salt Lake Ecosystem Project, Utah Division of Wildlife Resources, Salt Lake City, Utah, 1997 - 2000

Biology Technician**,** West Desert Spotted Frog Project, Utah State University, Logan, Utah, 1997

Biological Aide**,** Aquatics Section, Utah Division of Wildlife Resources, Salt Lake City, Utah, 1997

Education

B.S. in Biology, Idaho State University, August 1999
Related courses include ecology, plant ecology, ichthyology, mammalogy, evolution, plant physiology, and identification of seed plants.

Morgan Case

For this proposed work, Morgan Case's role will be as water rights advisor. She will advise on water rights changes, negotiations, and act as a liaison with the Idaho Department of Water Resources board. FTE = .1.

Since August 2005, Morgan Case has worked as a Staff Biologist for the Idaho Department of Water Resources. Morgan Case is the project manager for the *Idaho Water Transactions Program*. This role requires Morgan to plan, coordinate, and implement water transactions in the Upper Salmon River Basin. This includes analysis of water right information, negotiation with water right owners, and close coordination with partner agencies to determine the biologic merits of transactions. Morgan also provides support for the Idaho Water Resource Board's Minimum Stream Flow Program. Morgan has previous work experience conducting stream habitat assessment, measuring stream flow, and performing GIS analysis. Morgan is currently working towards becoming a Certified Public Manager. In that process she has completed numerous trainings that emphasize communication, writing, negotiation, and problem solving skills.

Professional Experience

Biologist, Idaho Department of Water Resources, Boise, Idaho, 2004 – present.
GIS Specialist, Idaho Department of Water Resources, Boise, Idaho, 2003-2004.
Hydrologic Technician, White River National Forest, USDA Forest Service, 2003.
Research Assistant, Minnesota State University, Mankato, MN, 2002.
Teaching Assistant, Minnesota State University, Mankato, MN, 1999-2001.
Aquaculture Extension Agent, US Peace Corps, Gabon, 1996-1998.

Education

Minnesota State University
Degree: Master of Science (Conferred 2003)
Emphasis: Environmental Science (Emphasis in Aquatic Ecology)

Grand Valley State University
Degree: Bachelor of Science (Conferred 1995)
Emphasis: Biology

Publications and Presentations

- November 2006 Oral presentation "Innovative Methods to Improve Instream Flows in the Upper Salmon Basin" at IWRRI Idaho Water Symposia in Boise, ID

- March 2004 Case, M and J Madsen. "Point Intercept Surveys of Aquatic Macrophytes, Tubers and Sediment in Heron Lake, Minnesota: Identifying Factors Limiting the Growth of Stuckenia pectinata (L.) Börner (Sago Pondweed)", Journal of Freshwater Ecology, Volume 19, Number 1, pp. 17-23.

- July 2002 Oral presentation "Environmental Factor Limiting the Success of Sago Pondweed (Stuckenia Pectinata) in the Heron Lake System, Minnesota" at the Aquatic Plant Management Society Annual Meeting in Keystone, CO

- April 2002 - Poster presentation of thesis research at the Minnesota Waterfowl Association Symposium on Shallow Lake Management

Eric Rothwell

For this proposed work, Eric Rothwell's role will be as hydrology advisor. He will assist with baseline surveys, and any gauging, modeling, and planning for changes in irrigation practices, including irrigation diversion removals and consolidations. FTE = .2.

As a Staff Hydrologist with Idaho Department of Water Resources, Eric Rothwell is the project lead and technical contact for the *Hydrologic Analysis and Flow Assessment in the Upper Salmon River Basin* project. This role requires Eric to plan, coordinate, and perform hydrologic studies including fieldwork and hydrologic modeling. This includes complex studies of river basins and reservoir system operations used for department planning and management activities; performance of water supply evaluations using a variety of hydrologic and analytical techniques including computer programs and statistical methods; and providing hydrologic support for the water transaction program. Fieldwork includes stream gage maintenance, conducting seepage studies to determine irrigation returns and surface water/ground water interactions, and examination of diversion measuring devices. This position also requires active participation and support of the Upper Salmon Basin Watershed Project (USBWP) Technical Team. In this position Eric provides hydrologic analysis to members of the USBWP Technical Team and land owners to assist in negotiations of water transactions, easements, and habitat improvements.

Professional Experience

Hydrologist, Water Planning Bureau, Idaho Department of Water Resources, Boise, Idaho, 2008 - present

Hydrologist, Herrera Environmental Consultants: NMFS, NOAA, 2005 - 2008

Research Assistant, Boise State University, Boise, Idaho, 2002 - 2005

Hydrologic Technician for the University of Idaho, Boise Aquatic Sciences Lab, USDA Forest Service Rocky Mountain, 2004

Hydrologic Technician, GS-1316-5, Sawtooth National Recreation Area, USFS, 2002

Education

MS Geology (Emphasis in Hydrology) Boise State University
BS Geology from Boise State University

Jeffrey J. Lutch

For this proposed work, Jeffrey Lutch's role will be that of fisheries biologist. He will act as a technical advisor to the project in identifying and developing conservation projects to be implemented upon easement acquisition. He will advise on accrediting projects under the Bi-Op, and will recommend and implement monitoring and evaluation strategies to determine the effect of implementing habitat conservation projects. FTE=.1.

Jeffrey Lutch is a fishery staff biologist at the Idaho Department of Fish and Game in Salmon, Idaho. He presently acts as the lead coordinator of the Lemhi Conservation Program, which is designed to conserve and enhance fishery resources for ESA-listed fish in the Upper Salmon River Basin. His responsibilities include developing habitat conservation plans, developing and implementing projects under the Section 6 Agreement and Snake River Basin Adjudication water rights settlement, and coordinating conservation work in the Lemhi basin among the cooperative state, federal, and tribal agencies. He brings over 15 years of experience in fisheries, with an emphasis on evaluating the life history of resident and anadromous salmonids in the intermountain west.

Professional Experience

Fishery Staff Biologist, Idaho Department of Fish and Game (IDFG), Salmon Regional Office, Salmon, Idaho, 2004-Present.

Senior Fishery Research Biologist, IDFG, Fish Research Office, Nampa, Idaho, 2001-2004. Project leader for a statewide cooperative research project distributed among four government and tribal agencies that is evaluating the benefits and risks of using various hatchery supplementation techniques on naturally reproducing chinook salmon.

ishery Biologist, National Park Service, Center for Aquatic Resources, Yellowstone National Park, 1995-2001. Staff biologist responsible for monitoring, evaluating, and managing native westslope cutthroat trout and fluvial Arctic grayling populations, managing long term cutthroat trout monitoring programs, developing a lake trout control program on Yellowstone Lake, and coordinating the annual angler statistics program.

Fishery Biologist, Bureau of Land Management, Kobuk District Office, Fairbanks, AK, 1994. Project biologist responsible for fisheries assessments of fluvial Arctic Grayling populations.

Education

MS, Biology (Concentration in Fisheries Science). Clarion University, 1994.
BS, Biology. University of Pittsburgh. 1990.

Selected Reports/Conservation Documents

The Lemhi Conservation Plan. Supporting document of the Lemhi Section 6 Agreement. *In prep.*

Lemhi Habitat Actions Table; Framework for the implementation of habitat actions in the Lemhi River basin pursuant to Section II.A.8 of the NPT Term Sheet. Snake River Basin Adjudication Court, 2005

Lutch, J., C. Beasley, and K. Steinhorst. 2005. An updated study design and statistical analysis of Idaho Supplementation Studies. Bonneville Power Administration. P.O. Box3621 Portland, OR 97283-3621. 85pp

Lutch, J., and B. Leth. 2003 Idaho supplementation studies, 1997-2001. Idaho Department of Fish and Game annual progress report to the Bonneville Power Administration.

Lutch, J., C. Beasley, and K. Steinhorst. 2003. Evaluation and statistical review of Idaho supplementation studies 1991 – 2001. Bonneville Power Administration. P.O. Box 3621 Portland, OR 97283-3621. 82pp

Lutch, J. 1999. Affected Environment; Impacts to fisheries and aquatic resources. Environmental Assessment Madison/ Norris Junction Road Improvement. Yellowstone National Park, WY.

Ruzycki J., and J. Lutch. 1999. Impacts of two-stroke engines on aquatic resources. Effects of winter recreation on wildlife of the Greater Yellowstone Area: A literature review and assessment.

Lutch, J. 1999. Affected Environment; Impacts to fisheries and aquatic resources. Environmental Assessment Iron Springs Creek and Old Faithful Sewage Treatment Plant Improvement. Yellowstone National Park, WY.

Lutch, J. J. 1994. Assessment of Arctic Grayling populations in the Squirrel River, Alaska. Bureau of Land Management in house report. Fairbanks, Alaska.

Selected Presentations

Reconnecting Anadromous and Resident Fish Habitat in the Upper Salmon Basin. Idaho Chapter American Fisheries Society. Boise, Idaho. 2/27/07.

Idaho Supplementation Studies: A cooperative study for evaluating supplemented populations of Chinook salmon in Idaho. Western Division American Fisheries Society. Salt Lake City, Utah. 3/1/04

Idaho Supplementation Studies: A Review for the Independent Science Advisory Board. National Marine Fishery Service, Northwest Science Center, Seattle Wa. 1/23/02

Native Fishery Management in Yellowstone National Park: Westslope Cutthroat Trout. Western Division of the American Fisheries Society. Moscow, ID. 7/15/99.

Other personnel will be determined, if needed, as the project date nears.

Appendix A
Upper Salmon Basin Technical Team Membership List

Last Name	First Name	Outreach	Eagle Valley/ Bohannon Creek	SHIPPUS & Work Windows	Easements	Water Transactions & Reconnects	Agency Affiliation
Bezold	Justin		X				Idaho Department of Fish and Game
Bradbury	Allen	X					Upper Salmon Basin Watershed Project
Bragg	Karma						Custer Soil and Water Conservation District
Brostrom	Jody		X				U.S. Fish & Wildlife Service
Case	Morgan		X	X	X	X	Idaho Department of Water Resources
Curet	Tom		X		X	X	Idaho Department of Fish and Game
Davidson	Mark			X	X		The Nature Conservancy
Edmondson	Mike		X		X	X	Office of Species Conservation
Fealko	Chad			X		X	National Marine Fisheries Service
Garcia	Daniel						U.S. Forest Service
Gregory	Jim		X				Trout Unlimited
Hamilton	Brian						U.S. Bureau of Reclamation
Koenig	Hans	X			X		
Koons	Wendy	X	X			X	Upper Salmon Basin Watershed Project
Loucks	Bob		X	X			Citizen/Lemhi Irrigation District/WD74
Lutch	Jeff		X		X	X	Idaho Department of Fish and Game
Maser	Jeff						Idaho Soil Conservation Commission
Moulton	Mark				X		Sawtooth National Recreation Area
Murphy	Paddy		X	X	X	X	Idaho Department of Fish and Game
Olson	Mark					X	Natural Resources Conservation Service
Simpson	Al		X			X	U.S. Bureau of Reclamation
Snook	Quinton	X	X		X	X	Upper Salmon Basin Watershed Project
Swift	Aaron						Idaho Department of Environmental Quality
Tipton	Clif						Bureau of Land Management
Trapani	Jude	X	X	X	X	X	Bureau of Land Management
Trotter	Kim						Trout Unlimited
Troy	Kristin		X				Lemhi Land Trust
Troy	Ron		X				The Nature Conservancy
Tsosie	Theresa						Shoshone-Bannock Tribes
Warren	Chuck						Idaho Department of Fish and Game

Appendix B

Steelhead - Lemhi River

Assessment Unit	Limiting Factor	INITIAL 2007-2009 VALUES						Updated 07-09 values		Updated Low Bookend	Tyler	Cottom	Beyeler	Kenny	Total	2010-2012 VALUES				
		Low Bookend	Original 07-09 values		High Bookends		LF Weight									10-12 Estimates		Updated High Bookends		Updated LF Weight
			2018	2033	2018	2033		2018	2033							2018	2033	2018	2033	
Carmen, Bohannon, Wimpey, and Kenney Creeks	Entrainment	5	10	10		50	33.3	7.5	7.5	30	30	30	30	30	30	50	50		90	20.0
Carmen, Bohannon, Wimpey, and Kenney Creeks	Migration Barriers	5	10	10		50	33.3	7.5	7.5	30	30	30	30	34	34	50	50		90	20.0
Carmen, Bohannon, Wimpey, and Kenney Creeks	Riaprian Condition, Sediment and Temperature									50	50	50	50	50.15	50.15	55	60		75	10.0
Carmen, Bohannon, Wimpey, and Kenney Creeks	Stream Flow	5	10	10		31	33.3	7.5	7.5	30	30	30	30	30.1	30.1	35	35		50	50.0
Mainstem Salmon and Lemhi Rivers and Hayden Creek	Entrainment	85	85	85		95	25.0	85	85							85	85		95	5.0
Mainstem Salmon and Lemhi Rivers and Hayden Creek	Migration Barriers	50	50	50		60	25.0	50	50							53	53		60	5.0
Mainstem Salmon and Lemhi Rivers and Hayden Creek	Stream Flow	18	20	20		30	25.0	23.5	23.5	20	20.3	20.125	20	20	20.425	25	25		30	50.0
Mainstem Salmon and Lemhi Rivers and	Riparian Condition & Sediment									20						21	21		40	30.0
Mainstem Salmon and Lemhi Rivers and Hayden Creek	Temperature	25	25	25		45	25.0	28	28							29	29		45	10.0
	Combined Riparian, Sediment and Temperature	25	25	25		45	25.0	28	28	20	22	21.5	21	20.5	25	25	30		45	40.0
Other Salmon and Lemhi River seasonally and disconnected tributaries	Entrainment	5	10	10		50	33.3	5	5	20	20.5	20	20	20	20.5	25	25		50	25.0
Other Salmon and Lemhi River seasonally and disconnected tributaries	Migration Barriers	5	10	10		50	33.3	7	7	20	20.5	20.25	20	20	20.75	25	25		50	25.0
Other Salmon and Lemhi River seasonally and disconnected tributaries	Riparian Condition, Sediment and Temperature									40	42	40.25	40.75	40.5	43.5	45	55		65	10.0
Other Salmon and Lemhi River seasonally and disconnected tributaries	Stream Flow	5	10	10		31	33.3	7.5	7.5	20	21	20.5	21.1	20	22.6	25	25		35	40.0

	6		6							
	6		6.8							
	5		5.015							
100.0	15		15.05							
4.25	32	4.25	32.865							
2.5		2.5								
10		10.23								
8.0		10								
24.75		26.98								
	5		5.125							
	5		5.19							
	4		4.35							
100.0	8		9.04							
	22		23.705							

Tyler et. al

AU	Current					Potential			
	Hab (%)	SI	Weight	Totals		Hab (%)	SI	Weight	Totals
1	32	0.013	0.45	0.006		32.865	0.013	0.45	0.006
2	24.75	0.010	0.08	0.001		26.98	0.011	0.08	0.001
3	22	0.009	0.48	0.004		23.705	0.009	0.48	0.005
Sum:			1.00	0.011				1.00	0.011

Survival Change:	1.05

Chinook - Lemhi River Habitat Function

Assessment Unit	Limiting Factor	INITIAL 2007-2009 VALUES						Updated 07-09 values		Current Low Bookend	Tyler	Cottom	Beyeler	Kenny	Total	2010-2012 VALUES					
		Low Bookend	Original 07-09 values		High Bookends		LF Weight									10-12 Estimates		Updated High Bookends		Updated	
			2018	2033	2018	2033		2018	2033							2018	2033	2018	2033	LF Weight	
Lemhi tributaries and Carmen Creek	Entrainment in irrigation diversions	5	10	10	50		33.3	7.5	7.5	20	21.35	20	20	20	21.35	25	25	50		20	4
Lemhi tributaries and Carmen Creek	Riparian Condition, Sediment, Temp									40	41.25	40.1	40.15	40.19	41.69	45	55	65		10	4
Lemhi tributaries and Carmen Creek	Migration Barriers	5	10	10	50		33.3	7	7	20	20	20.5	20	20.5	21	25	25	50		20	4
Lemhi tributaries and Carmen Creek	Streamflow	5	10	10	30		33.3	7.5	7.5	22.5	22.69	24	25	23.5	27.69	30	20.5	25		50	11.25
																				100	23.25
Lemhi, Hayden Creek, Big Springs Creek	Entrainment in irrigation diversions	85	85	85	95		25	85	85	85	85	85.2	85	85	85.2	85	85	95		5	4.25
Lemhi, Hayden Creek, Big Springs Creek	Riparian Condition and Sediment									20	25	21.5	20.5	20.2	27.2	21	21	40		30	6
Lemhi, Hayden Creek, Big Springs Creek	Migration Barriers	50	50	50	60		25	51	51	50					50	54	54	60		5	2.5
Lemhi, Hayden Creek, Big Springs Creek	Streamflow	11	15	15	35		25	23.5	23.5	20	23.5	20.9	20	20	24.4	25	25	30		50	10
Lemhi, Hayden Creek, Big Springs Creek	Water Temperature	25	25	25	45		25	28	28	25	27	26	26	26	30	29	29	45		10	2.5
																				100	25.25

Juvenile Rearing habitat use only in some tribs; Low book ends (<20%) suggests habitat is not functional

4	4.27
4	4.169
4	4.2
11.25	13.85
100	26.489
4.25	4.26
6	8.16
2.5	2.5
10	12.2
2.5	3
100	30.12

Tyler et al

AU	Current					Potential			
	Hab (%)	Survival	Weight	Totals		Hab (%)	Survival	Weight	Totals
1	23.25	0.042	0.68	0.028		26.5	0.048	0.68	0.032
2	25.25	0.045	0.32	0.015		30.12	0.054	0.32	0.017
Sum:			**1.00**	**0.043**				**1.00**	**0.050**

Survival Change: 1.16

Appendix C
Sample Easement Monitoring Form

INTRODUCTION for the MONITOR

Conservation Interest Compliance Monitoring is linked directly to the terms of a specific conservation easement or deed restriction. Its purpose is to assure The Nature Conservancy, as the holder, that its interests on the property continue to be protected.

The monitor is charged with determining if changes have taken place that are inconsistent with the terms of the easement or deed restriction.

Prior to the visit, the monitor reviews both the actual easement or deed restriction text and related records - the Easement Documentation Report, or other baseline, preceding monitoring reports, etc. Other sources of information may also be used including recent aerial photographs, reports from consultants on technical factors, for example residual dry matter measurements (RDM), on range lands.

On-site the monitor views the features of the property which is subject to the interest's terms, and documents the visit with a written report using this template, photographs, and supporting documents, (such as RDM reports). Any concerns or problems that may be encountered are carefully documented for subsequent resolution by TNC project, and if necessary legal, staff. In addition, for IRS-Reportable conservation easements, the monitor observes and records conditions in three areas required for TNC's tax reporting.

A key function of the site visit is the opportunity it presents to check in with the property owner or site manager. This relationship is a key factor in the long-term success of any conservation interest. Ideally, a monitor will leave the property with an understanding of the landowner's current activities, and the owner or manager will be left with a renewed understanding of not only the terms of the easement or deed restriction, but also of the conservation values which are The Nature Conservancy's reasons for holding it.

A good working relationship with the property owner is an important by-product of compliance monitoring activity.

NOTES on using the Template: While working through this template, you will not have access to spell checking or text-formatting features (bold, italics, etc.). However, when you have completed it, if you wish you may ***carefully*** *access those functions, using the process below, before saving the final version:*

It is easy to accidentally delete content working with the template unlocked – remember to navigate with arrows!

- *Go to the View menu, select Toolbars and check the Forms from the list or icon.*
- *The Forms toolbar will appear. Unprotect the form by clicking on the lock icon.*
- *Leave the last field you worked in, (this causes Word to recognize any errors in that field).*
- *Navigate using arrows ONLY, (NOT the mouse), to move between and within sections of text.*
- *Go to the Tools menu and select "Spelling and Grammar" to identify and accept/correct errors.*
- *To add formatting, holding down the Shift key, use arrows to highlight the desired text: Then add formatting by clicking the italics, or other icon, up on the Word menu bar.*
- *After you have finished go back to the Forms toolbar and click the lock icon again to protect the form. Save the template under a unique name before submitting the report.*

A note on the letterhead page: You will have to unlock the template(described above) to change the office and phone number portions of the TNC letter head. Also note that the report is titled with the local name for the easement. TNC's CLS reference name and date info are included farther down.

The Nature Conservancy
Protecting nature. Preserving life.™

Idaho Field Office
151 N. 1st Ave.
Hailey, ID 83333

Tel (208) 788-8988
Fax (208) 788-9040
nature.org

CONSERVATION INTEREST
COMPLIANCE MONITORING REPORT

Local Name for easement or deed restriction]

PART I

SUMMARY, PROPERTY INFORMATION and CONTACTS

TYPE of Interest Conservation Easement
MANAGED AREA BASIC RECORD **Name** for this interest:
ESTABLISHMENT DATE (Legal Date)
IFMS code
*(The MABR name and Date above, or the IFMS code- from your CLS staffer-is used to record the CLS fields marked with *)*

*MONITORING INTERVAL: every year
(monitoring less frequently than every year requires OU documentation and approval)

*DATE(s) of THIS VISIT:

*STATUS (*from Part IV*): <choose>

* IRS Reportable? YES ☐ NO ☐ (*See Appendix II for details and direction.)*
Complete ***for any easement TNC held for any time period in the past fiscal year.***

*IRS Structures Question *(from Part II)* YES ☐ NO ☐

*IRS-Required Residential Subdivision Question *(from Part II):* YES ☐ NO ☐

*IRS Encumbered Golf Course Question *(from Part II)* YES ☐ NO ☐

BUDGET CENTER(s) You are ***required*** to record your time and any related monitoring or enforcement expenses for IRS-Reportable easements ***directly*** to an easement monitoring and enforcement sub-1 center (-8888) of your budget center. For future reference please note the center(s) used this year below.
-8888 -8888 additional centers:

Are Monitor(s) name and contact info entered where indicated in Part V?
YES ☐ NO ☐ (must be completed and notarized before submission).

List any others present at visit *(for owner or representative see below)*:

Was Owner / representative contacted before visit**?** YES ☐ NO ☐
(Indicate who was contacted)

Did the Owner / representative accompany monitor? YES ☐ NO ☐
(Indicate who accompanied monitor)

Was easement or deed restriction text read and baseline reviewed immediately before site visit? YES ☐ NO ☐

PROPERTY BACKGROUND

County property located in:
Nearest town or city:
TNC interest (easement or deed restriction) Acres:
Topographic map (quad name):

CURRENT OWNER	LESSEE / MANAGER/Occupant: *(if any)*
Name:	Name:
Address:	Address:
Phone:	Phone:
Phone (other):	Phone (other):
Comments:	

Property transferred since last report? YES ☐ NO ☐
If YES:

Deed From:
Deed To:

Conservation restrictions included in deed documentation? YES ☐ NO ☐ NA ☐

EASEMENT or Deed Restriction AREA INSPECTED:
(entire ranch vs. specific areas **describe *and* indicate** on MAP)

Natural Communities observed:

Rare species: *(if present and specifically noted)*:

PART II

INTEREST (Easement or Deed Restriction) SITE INFORMATION:

Land Owner / Representative Report:
(Include any comments or questions regarding his/her activities. Also note wildlife sighting, disease, or other things observed by owner)

Monitor's Observations:

Describe current land use practices on interest lands in detail:

Have there been any changes in these practices from the last monitoring?
YES ☐ NO ☐

If YES, describe:

IRS Structures Question: YES ☐ NO ☐ NA ☐
(Complete if this is an IRS reportable easement. *See Appendix II for details on this question*)

IRS Encumbered Golf Course Question: YES ☐ NO ☐ NA ☐
(Complete if this is an IRS reportable easement. *See Appendix II for details on this question*)

Adjacent Lands:

IRS Adjacent Subdivision/Development Question: YES ☐ NO ☐ NA ☐
(Complete if this is an IRS reportable easement. *See Appendix II for details on this question*)

Note any other activities on adjacent properties, if relevant:

Natural catastrophic events:

Have there been any natural catastrophic events since last inspection (fire, flood, etc)? YES ☐ NO ☐

If YES, describe impact on property:

If YES, are there any activities planned to address the damage and restore the habitat? **YES ☐ NO ☐ NA ☐**

Are they consistent with the interest terms? **YES ☐ NO ☐**

Any *new* or *change to* infrastructure, improvements, water bodies, facilities, etc.?

(Indicate new or changed conditions in the categories below where they apply: From the drop down list, select the type of change, e.g. "Added","Expanded","Removed", etc.. Then describe at right and indicate on a separate map. (Any activities which may be inconsistent with the easement or deed restriction terms are to be documented here.)

does not apply Barns (*describe):*

does not apply Buildings (*describe):*

does not apply Corrals (*describe):*

does not apply Dumps (*describe):*

does not apply Excavation (*describe):*

does not apply Fences (*describe):*

does not apply Hayfields (*describe):*

does not apply Irrigation (*describe):*

does not apply Landfill (*describe):*

does not apply Landing Strip (airplane); (*describe):*

does not apply Mining (*describe):*

does not apply Orchards / tree farms (*describe):*

does not apply Ponds / lakes (*describe:*

does not apply Roads (*describe):*

does not apply Row crops (*describe):*

does not apply Timber harvesting (*describe):*

does not apply Trails (*describe):*

does not apply Utilities (*describe):*

does not apply Vineyards (*describe):*

does not apply Water development /wells/irrigation (*describe):*

does not apply Other (*describe*):

<u>Any Management Problems</u>?
Mark with "☒" and describe. Show location on MAP
(Include any which bear on the easement's or deed restriction's conservation purposes, even if not subject to its terms or under owner's control.)

☐ Erosion (*describe):*

☐ OHVs (*describe):*

☐ Trespassing (*describe):*

☐ Feral animals (*describe):*

☐ Exotic plants (*describe):*

☐ Litter (*describe):*

☐ Vandalism (*describe):*

☐ Overuse (*describe):*

☐ Disease (*describe):*

☐ Pollution (*describe):*

☐ Deferred required maintenance (e.g. fences, etc.) (*describe):*

<u>Management Activities</u>: Have there been any of the following activities since the last monitoring? If YES, put an "X" in the appropriate box *and describe* below:

☐ Ecosystem / species preservation: *(additional acreage, nest site protection, etc.)* (*describe):*

☐ Scientific: *(research, surveys, etc.)* (*describe):*

☐ Educational: *(nature study, tours, etc.)* (*describe):*

☐ Wildlife / Habitat Management / Restoration: *(plantings, reintroductions, etc.)* (*describe):*

☐ Exotics control: *(spraying, pulling, hunting, etc.)* (*describe):*

☐ Other:

PART III

PHOTO DOCUMENTATION & REFERENCES:

PHOTO INFORMATION:

Photography appropriate for the scale of the site and interest terms <u>is required</u>:

- Document any alterations or changes in easement or deed-restricted lands and habitat (human, natural or catastrophic events should be included).

- Include a reference **documenting where each photo was taken**, (by number), either on the map showing areas visited, as GPS coordinates in an attached index or as a second line for each image in the table below: *(If EDR/ baseline photo-points are retaken, also indicate <u>which</u> images were re-taken.)*

- For any images NOT taken by the monitor but acquired commercially or from other sources **include date, source and receipt for and purchased imagery**.

Photographer & image #	Description	Date taken
1.		
2.		
3.		
4.		
5.		
6.		

If more space is needed, provide an index in the format above, list under "Additional Related Documentation & References" below and attach.

ADDITIONAL RELATED DOCUMENTATION & REFERENCES

Attach additional documentation on compliance measures, such as RDM (Residual Dry Matter) reports, surveys, photo index, etc. *Also <u>note</u> here any formal plans being prepared concerning the management of the property and attach a copy if possible.*

File Name:	Title/contents, source & date	Format
1.		
2.		
3.		
4.		

PART IV

NARRATIVE AND STATUS

SUMMARY and RECOMMENDATIONS:

Provide a narrative. It must incorporate information from previous reports. Include impressions of long-term trends and conditions of site.

STATUS:
Based on your observations, in your best judgment ***are the terms of the easement or deed restrictions being met?*** Mark *one* and add comments below.
(Please also enter this status in Part I)

☐ OK, no violation of interest terms observed

☐ PENDING, unsure due to the need for additional information or evaluation

☐ NO, some activities were observed which are believed to be in violation of the easement or deed restrictions

Comments: *(explain in detail "Pending" or "No, some activities believed to be in violation" status)*:

PART V
Monitor Info, Signature and Notarization

MONITOR(s):

1) **Name:**
   Affiliation:
   Address:
   Phone Numbers
      Work:
      Home:
      Other phone *(specify)*:
   Email address:

   Signature : _____
   Date:

[STATE/COMMONWEALTH] OF _____
COUNTY OF _____

On this ____ day of _____, 2005, before me, the undersigned notary public, personally appeared _____, to me personally known or otherwise proved to me through satisfactory evidence of identification to be the person whose name is signed on the preceding document, and acknowledged to me that [s/he] signed such document voluntarily for its stated purpose.

_____
Notary Public
My Commission Expires:

MONITOR(s):

2) **Name:**
Affiliation:
Address:
Phone Numbers
Work:
Home:
Other phone *(specify)*:
Email address:

Signature : _____
Date:

[STATE/COMMONWEALTH] OF _____
COUNTY OF _____

On this ____ day of _____, 2005, before me, the undersigned notary public, personally appeared _____, to me personally known or otherwise proved to me through satisfactory evidence of identification to be the person whose name is signed on the preceding document, and acknowledged to me that [s/he] signed such document voluntarily for its stated purpose.

_____
Notary Public
My Commission Expires:

END

Appendix I (optional)

GENERAL Easement or Deed Restriction INFORMATION

This information is not directly related to our compliance monitoring activity, but is very helpful in tracking the characteristics of our conservation interests and in identifying trends which may inform how easements and deed restrictions are selected, written and followed in the future.

Visitation Status

☐ open to public
☐ access by permission only
☐ private, closed
☐ other (*describe)*

TNC Posting

Is there a plaque or sign acknowledging TNC's involvement?
YES ☐ NO ☐ UNKNOWN ☐

If YES, please include a photograph of sign or plaque.

Visitation Rules (permitted activities, *if applicable*)

☐	dogs	☐	fishing
☐	horses	☐	hang-gliding
☐	OHVs	☐	collecting *(define)*
☐	hunting	☐	hiking
☐	camping	☐	spelunking
☐	climbing	☐	parasailing
☐	plantings	☐	other *(define)*

Current Use(s) of Interest Lands *(Mark all uses with an "X")*

☐ Ecosystem / species preservation
☐ Scientific research
☐ Environmental Education
☐ Recreation
☐ Agriculture
☐ Grazing
☐ Forestry
☐ Residential
☐ Commercial/industrial
☐ Other *(describe)*:

Landowner Type

- ☐ Private Individual/family
- ☐ Private Corporation
- ☐ Federally Recognized Indian Tribe
- ☐ Non-profit organization, (e.g. land trust, foundation, educational group)

Are all of this property owner's lands covered under this interest? YES ☐ NO ☐

If Public Entity indicate type:

- ☐ Local *(specify)*
- ☐ State
- ☐ Federal

Relation to Other Protected Lands

Is this property part of a larger conservation effort? YES ☐ NO ☐

If YES, ***describe the property's conservation context****, (name and approximate size of larger effort, or any other protected lands which are part of it, either fee or other interest):*

Is it physically contiguous with other protected lands? YES ☐ NO ☐

If YES, ***describe:*** *(adjacent lands, approximate acreages if available)*

Natural Processes on the property

Describe your view of the status of natural processes *on the easement or deed-restricted lands*. Put an "X" in the appropriate box, and explain choice in comments if necessary.

Natural Processes & Connectivity	Category			
	Optimal	Suboptimal	Marginal	Poor
Fire	☐	☐	☐	☐
Hydrology	☐	☐	☐	☐
Grazing	☐	☐	☐	☐
Corridors	☐	☐	☐	☐
Other	☐	☐	☐	☐

Comments:

Appendix II
IRS Easement Reporting Requirements - Direction

Background: The IRS now requires that non-profits report annually on a number of characteristics of each of the easements it holds, or did hold at any time during the reporting tax year. Much of this information is one-time data that is recorded in CLS. However, some conditions *can change with time*. To capture this change, new questions have been added to the monitoring template's required fields on pages 1-3.

IRS-Reportable Conservation Easements:
Indicate if the Conservation Easement is IRS Reportable [YES/NO]

DEFINITION
Any conservation easement held by TNC currently, or which TNC did hold during the current tax reporting year is IRS-Reportable.

DIRECTION:
TNC tax reporting is on the fiscal year and easement monitoring is on the calendar year. For this reason, if you are monitoring an easement which TNC transferred to another entity *less than twelve months ago*, check with your CLS staffer to determine how much longer that easement will be IRS-reportable. You will be told when you should stop reporting your time and expenses to the -8888 sub center.

NOTE: Once the answer is "NO" it will not change in subsequent monitoring reports.

IRS Question about Easements on Structures:
Indicate if the conservation easement includes terms that apply specifically to EXISTING building(s) or structure(s) [YES/NO]

DEFINITION (note, this is broad):
A "building" is "an enclosed space with walls and usually a roof that provides shelter or housing or provides working, office, parking, display or sales space. This includes houses, barns, sheds, cabins, garages, etc. "Structures" are practically everything else in the way of man-made improvements and include docks, picnic pavilions, well houses, etc.

EXAMPLES and DIRECTION:
If the easement terms include any restrictions on any ***existing*** buildings or structures: e.g. any limitations or restrictions on their size, modification/replacement, etc. **Indicate YES**.

If the easement includes restrictions on buildings and or structures, *but **none** of those buildings or structures have been constructed yet*, **Indicate "NO"**.

If the easement has no restrictions on structures of any kind, - whether or not there are buildings or structures present on the easement property. **Indicate "NO"**.
(This is the case with some very old easements).

NOTE: Once the answer is "YES" it will not change in subsequent monitoring reports.

IRS Question about
Easements Adjacent to or Within residential developments and housing subdivisions:

Indicate if there is residential development or housing subdivision adjacent to (sharing *or touching* a border of) or surrounding this conservation easement. [YES/NO]

DEFINITION: (generally this is obvious, but see "clarification" below for those ambiguous cases):
A residential development (sometimes simply called a subdivision) is typically a piece of property that is divided into subdivisions with houses constructed on each piece of subdivided land. Typically, this would encompass a residential area of similar dwellings built by property developers and usually under a single management.

EXAMPLES and DIRECTION:
The existence of a new house on an adjacent farm or ranch would not qualify. Neither would the division of an adjacent property into pieces which are marketed to individuals who may build on their own. However, the existence of multiple vacation homes *developed and marketed together* would qualify.

NOTE: Once the answer is "YES" it will not change in subsequent monitoring reports.

IRS Question about
Easements that encumber a golf course or portions of a golf course:
Indicate whether the easement encumbers a golf course or portions of a golf course. [YES/NO]

DEFINITION:
A golf course is defined as an area developed for and used nearly exclusively for the purpose of playing golf. Typically it is composed of amenities such as landscaping, irrigation systems, paths and golf greens and tees, that may be used for golfing or golfing practice by the public, by members and guests of a private club, or by individuals. A small personal putting green would not count.

EXAMPLES and DIRECTION:

If the lands under easement include an ***existing*** golf course, or part of a golf course, **Indicate YES**.

If the easement does not include a golf course, or part of a golf course, **Indicate "NO"**.

If the easement's terms provide for but limit a *future* golf course, *but it has not been constructed yet*, **Indicate "NO"**.

NOTE: Once the answer is "YES" it will not change in subsequent monitoring reports.