

Proposed Study Plans
Alternative Study Plans
Studies Not Proposed

Mason Dam Hydroelectric Project
FERC No. 12058-002



In accordance with 18 CFR § 5.11

Prepared by
Baker County

February 2007

INTRODUCTION

Baker County, as applicant for the Mason Dam Hydroelectric Project (Project No. P-12058-002) is pleased to be working with the Federal Energy Regulatory Commission (FERC), other public agencies and interested stakeholders in the Integrated Licensing Process. This project appears to present a win-win scenario to all stakeholders and we believe can be held up as an example of how a collaborative process can bring great projects to fruition.

A thorough understanding of the project is essential to achieving the goals and objectives of each study proposal and ultimately the viability of the project. We will attempt to summarize the salient points in the following bullets.

- a) This project is run of release. This project will not effect water levels in the reservoir or water levels downstream from the dam. When Baker Valley Irrigation District releases water for any purpose, we can use it for generating power. If they do not release water from Mason Dam, we can not request water. We will not be changing water flow or quantity with this project.
- b) Two small turbines will be housed in a powerhouse at the base of Mason Dam. This is a disturbed area with little vegetation and can be blended in with the surrounding area.
- c) The power will be sent to an existing Idaho Power Company transmission line approximately one mile south of the Mason Dam site. The power line from the project to the transmission line will be underground and the proposed route is up the Black Mountain Road right of way. The entire route of the power line will be over ground that has been disturbed and should have limited impact to all resources.
- d) The project will be constructed within a limited time window. Construction will be done in the October to March window when the flows from Mason Dam are at a minimum.
- e) This project is subject to Oregon Division of State Lands in stream work windows and bound by rules and regulations that protect water and other resources.
- f) This is a public project. Baker County currently has Memorandum of Understandings with most public agencies and enjoys good working relationships with all of them. We believe that this framework will allow all stakeholders to come to agreement on the scope of the project and the nexus points that need to be addressed.

BRIEF HISTORY OF THE PROJECT

Baker County began investigating this project over four years ago with the application for a preliminary permit. We have held a number of public meetings and have vetted this proposal in many different ways. The recent energy crisis, which has included severe drought in the West, high oil and natural gas prices and the general awareness of state and national policy for additional renewable energy have heightened the awareness of this project. This has become what is known as a “White Hat Project” because it achieves the goal of supplying renewable energy, helps with local and national energy independence, does not significantly impact the environment and has support from broad based citizen groups.

Initially, this project was put forth by strong advocates of our environmental community. They saw the benefits of an environmentally friendly, renewable energy supply and a way to use less fossil fuels. Our agriculture and resource based folks were slower to come to the table. Their issues revolved around cost of the project, risks to taxpayers and effects of quantity of water if the rules were changed to make electricity generating a priority over irrigation. Through many different forums, most groups are now on board and actively supporting the project. The biggest issue relating to this project in the eyes of Baker County are the costs of environmental and licensing. All other costs can be estimated to relatively hard numbers. We look forward to trying to quantify the costs for studies.

PROJECT BOUNDARIES

Baker County believes that the project boundary is an extremely important element in the licensing process. They are as follows:

- 1) The powerhouse and tailrace facilities.
- 2) The proposed underground power line easement. This would be the actual area that the power line would travel.
- 3) The Substation and hookup to the IPC transmission line.

With the project boundary set with the above criteria, Baker County recognizes that there is a need for potential work with agencies over wildlife issues in the surrounding areas. We believe that as all stakeholders work on these issues we can formulate effective study plans and potential mitigation agreements that enhance these valuable resources.

Additionally, Baker County recognizes the agencies attempt to have baseline data on all resources in the area. All stakeholders agree that at the present time Mason Dam acts as a barrier to fish movement at least moving upriver. With that being said, the major fish issue remaining is the possible mortality of fish passing downstream through the existing

valve waterway versus passing through a turbine. The need for this information appears critical. We welcome a discussion of how this can be accomplished.

PROPOSED STUDY PLANS, ALTERNATIVE PLANS AND JUSTIFICATION TO STAKEHOLDER STUDY REQUESTS.

The Baker County Mason Dam Hydroelectric Project, FERC No. 12058-002, submit their proposed study plans in accordance with the Federal Energy Regulatory Commission (FERC) regulations at 18 CFR. This document includes proposed studies that respond directly to requests submitted by agencies, alternatives to requested studies that speak to the subjects sought to be studied but are adapted in light of controlling factors, including FERC requirements; and explanations of why certain proposed studies are not necessary.

The following is the response of the licensee to each of the requested studies. The document is divided into three sections, with an appendix of the full text of the study requests. Each section is described below.

Section 1: Proposed Study Plans

The studies included in this section respond directly to a study request submitted by a resource agency or FERC. The proposed study plans are generally structured to collect and provide the requested data in the manner reflected in the original study request with certain modifications in some instances. In several cases, studies requested from different entities mirrored each other or differed only with respect to one or more components. In these cases, the licensee combined the study requests to address the objectives of each requesting entity. The studies proposed in this are:

- Dissolved Oxygen and Temperature Assessment
- Vegetation, Rare Plant, and Noxious Weed Assessment
- Threatened, Endangered and Special Status Species Assessment
- Fish Entrainment Study

Section 2: Alternative Study Plans

The studies or actions in this section are crafted to address the objectives identified in the resource agency or FERC study request, but propose that the requested objective or analysis be achieved through evaluating a different set of data or that a methodology other than that included in the study request be employed because it is better suited to meet the requested study objective. These proposed studies or actions are:

- Recreation Visitor Survey and Use Study
- Assess Traditional Cultural Properties
- Assess Archaeological and Historic-era Properties
- Bull Trout and Redband Trout at upper confluence of Phillips Reservoir
- Hydrology and Stream Flow Analysis

Section 3: Studies Not Proposed

- Salmonid Spawning and Juvenile Density Study

Proposed Study Plans

STUDY PLAN 1: DISSOLVED OXYGEN, WATER QUALITY AND TEMPERATURE ASSESSMENT

1.1 Goals and Objectives

These studies were requested by the Oregon Department of Environmental Quality (ODEQ) and FERC. They contain requests for much of the same information and have been combined.

The goal of this study is to evaluate the dissolved oxygen (DO) concentration of water entering the Mason Dam intake within Phillips Reservoir, and then discharged immediately downstream of the Dam into the Powder River, during summer conditions. The objective of this proposed study is to define a baseline condition that will provide for a better understanding of the potential for project-related effects, and possible mitigation strategies. Specifically, the objectives of the study are to:

1. Identify the dissolved oxygen and temperature profile within Phillips Reservoir, in the vicinity of the Mason Dam intake.
2. Identify the DO concentration of water entering the Mason Dam intake at its approximate depth and vicinity.
3. Describe any temporal variations of DO concentration and temperature.
4. Identify and describe reservoir stratification.
5. Describe the DO concentration of water in the stilling basin immediately below Mason Dam.
6. Describe the attenuation of DO in the Powder River downstream of Mason Dam.

Work with ODEQ on developing a Section 401 application. We will consider Section 303 (water quality standards and implementation plans) in applying for a 401-certification evaluation for the FERC license.

As the parameters and specifics of the project are finalized, Baker County will work with ODEQ staff on the necessary studies to achieve 401 Certification.

Construction activities associated with the building of the Project will be 'best management practices' as identified by consensus of all resource agencies.

1.2 Relevant Resource Management Goals

Adequate concentrations of dissolved oxygen are required by aquatic organisms for subsistence, and are therefore essential to the integrity and sustainability of a healthy ecosystem.

Ensuring that the effect of the project construction and operation pertaining to this resource is considered in a reasoned way is relevant to the Commissions public interest determination.

401 Certification with the State of Oregon is mandated by federal and state laws and guidelines. Baker County is a public entity and as such is bound by best management practices and the preservation of all natural resources.

1.3 Background and Existing Information

The project does not propose changing the intake point for water from Mason Dam. The effect on water quality should be minimal but baseline data is lacking for possible effects to the project. This data will be needed in order to receive 401 certification from ODEQ.

1.4 Project Nexus

Water quality issues do fall within the Project boundary. Currently, water releases made from Mason Dam are drawn from the hypolimnetic region of Phillips Reservoir. The water released from Mason Dam demonstrates high levels of kinetic energy as demonstrated by its extremely turbulent nature. Turbulence increases the surface area of water, allowing for greater assimilation of atmospheric gases (including oxygen) into the water. Project-related actions, such as the installation of a turbine, will harness the kinetic energy of the water, thereby reducing the turbulence of water entering the stilling basin. This will result in a reduction in the amount of surface area, limiting the water's ability to dissolve oxygen into solution. If water in the vicinity of the intake structure within Phillips Reservoir has a low dissolved oxygen content, operation of the project could result in the perpetuation of low DO waters downstream of Mason Dam; Potentially resulting in biological consequences. Since the project's intake system will remain the same, little impact to temperature and thermal stratification are anticipated.

The dissolved oxygen study will help establish a baseline condition for the system in question, and form the basis for inclusion of potential license articles to protect the water quality of the Powder River downstream of Mason Dam. All other water quality studies as identified by ODEQ to achieve 401 Certification will result in sound water quality baselines and results.

1.5 Proposed Methodology

The proposed methodology for this study is contained in the following Quality Assurance Project Plan.

1.6 Level of Effort and Cost

Baker County will work with all agencies to tie together, when possible, all studies effecting water and fish issues.

The estimated cost of dissolved oxygen and temperature assessment work is approximately \$6400. The study should be completed within one year. When this study will be performed will be determined after consultation with all involved agencies. It is expected to take one or two technicians four or five hours per week, for approximately 12 weeks to conduct the fieldwork. Report preparation should take a biologist a half workday.

The cost of 401 Certification and level of studies are to be determined.

QAPP goes here

STUDY PLAN 2: Vegetation, Rare Plant and Noxious Weeds

These studies were requested by FERC and US Forest Service. In consultation with US Fish and Wildlife and the Oregon Dept. of Fish and Wildlife these issues also arose.

2.0 Introduction

Baker County filled for their preliminary license and received it on October 8, 2003 for the 3 MW Mason Dam Hydroelectric Project (Project No. P-12058-002). The project is run of release meaning Baker County does not and will not have any control over the release of the water at Mason Dam. The Bureau Of Reclamation and Baker Valley Irrigation District have control of the release of water and will not change water flows at Baker County's request.

The project consists of two small turbines that will be housed in a power plant at the base of Mason Dam. The power generated will be sent approximately 1 mile to an existing Idaho Power Company 138kv transmission line. The 34.5kv power line connecting the power plant to the substation and then to the 138kv transmission line will be buried in the Black Mountain Road right of way.

The project boundary consists of 100 feet beyond the area that contains the powerhouse and tailrace facilities, and the substation to the interconnect with IPC transmission line. It also includes 50 feet on each side of the underground power line that will be placed in the Black Mountain Road right of way.

2.1 Goals and Objectives

The goal of this study is to evaluate the effects of project construction, operation and maintenance and other related activities on the distribution and composition of botanical resources, including wetland and riparian habitats, rare plants, and noxious weeds, in the project area. The objectives of the study are to:

1. Identify, describe, classify, and delineate land map vegetation cover types on a map. Describe each cover type by species composition, successional stage, and aerial extent (acreage). Wetland classifications should distinguish the degree of inundation (seasonally flooded, permanently flooded) in areas affected by project construction, operation and maintenance.
2. Determine the extent and relative quality of wetlands and riparian habitat in the tailrace, along the Powder River and in areas that would be affected by project construction, operation and maintenance.
3. Determine the presence and distribution of rare plants and noxious weeds within the influence of project construction, operation and maintenance activities through ground truth mapping efforts.
4. Identify project-related actions that may influence the distribution of wetlands, riparian habitat, rare plants and noxious weeds.
5. After collection of the above information is complete prepare a report that includes the above mapping effort, and identifies, describes, and assesses the extent to which project-related actions and activities may affect riparian and

wetland habitats (and species dependent on these habitats), rare plants, and noxious weeds.

The project is proposed to work primarily in areas that have previously been disturbed. The goal to protect vegetation and rare plants and to control noxious weeds can be accomplished with a compilation of known and gathered data.

2.2 *Relevant Resource Management Goals*

All resource agencies are responsible for the protection of sensitive or threatened and endangered species. In making its license decision, the Commission must equally consider the environmental, recreational, fish and wildlife, and other non-developmental values of the project, as well as power generation. Any license issued shall be best adapted to a comprehensive plan for improving or developing a waterway for all beneficial public uses.

Wetlands, riparian habitat, rare plant communities, and invasive and noxious weeds are resources of particular interest because of their rarity and/or ecological functions. Ensuring that environmental measures pertaining to these resources are considered relevant to the Commission's public interest determination.

Control of noxious weeds is a priority in Baker County and we have a Weed Department that works with all resource agencies to formulate plans and control noxious weeds.

2.3 *Background and Existing Information*

Information on botanical resources in the following attachments:

1. A list of federally designated and special status species that have been documented or may occur in the Wallowa-Whitman National Forest or Powder River Subbasin. (Attachment A)
2. A list of state and federal special status plant species found in the Upper Powder River Subbasin. (Attachment B)
3. A map of wetland and deep-water habitats in the State of Oregon. (Attachment C)
4. A list of noxious weeds designated in the Baker County Noxious Weed Rating System. (Attachment D)

While this information is useful in narrowing the scope of the requested studies, we agree that an assessment of the area within the project boundary is necessary. As the project boundary and work area are all to be contained within previously disturbed areas, assessment for special status species, rare plants, wetlands and other types of vegetation can be accomplished in a cost effective manner. The issues associated with invasive and noxious weeds will be mitigated with effective baseline data, revegetation of disturbed areas and control of post construction weeds during the life of the project. Baker County intends to work with all agencies to identify and mitigate these issues.

2.4 *Project Nexus*

Project related activities, especially ground disturbing activities, related to construction of powerhouse, power lines and substation, could adversely affect wetland and riparian habitats and their associated wildlife and botanical resources. These could include special status species, and rare plant communities, through direct loss, disturbance or habitat alterations. If potential effects on these resources are identified, environmental measures may be developed to reduce or eliminate these effects. Baker County agrees that there is a project nexus within close proximity to the Project Boundary.

2.5 *Study Area and Methods*

A vegetation, rare plant, and noxious weed survey in the Mason Dam project area will identify the vegetation type, rare plant and noxious weed species, and their distribution and abundance in the project area. The following sections describe the planned survey.

2.5.1 Study Area

The study area is defined in section 2.0 as the project boundary.

2.5.2 Survey Methodology

The rare plant and noxious weed survey of the Mason Dam study area will be performed using commonly accepted botanical survey methods to systematically locate and identify rare plant and noxious weed presence and distribution. Survey methods are straightforward, and involve visually searching the study area for the presence of rare plants and noxious weeds. The timing of field surveys will be concurrent with the flowering times and identifiability of potential plant and weed species. A spreadsheet will be formulated by the surveyor of the plant and weed species found on attachments A, B, and D of their flowering and identifiability times prior to the field survey. Findings will be documented on Forest Service forms TES Plant Element Occurrence field forms (Attachment E) and TES Plant Survey field form (Attachment F) for the plant survey. Findings for the weed survey will be documented on Forest Service Invasives Plant field form (Attachment G) and Rangeland General Form (Attachment H). The following Forest Service reference guides will be used The Threatened, endangered and Sensitive Plants Survey field guide, The Threatened, Endangered and Sensitive Plant Element Occurrence field guide, and The Invasive Plant Inventory, Monitoring and Mapping Protocol field guide.

The vegetation survey of the Mason Dam study area will be done by using existing Forest Service GIS vegetation data. From this data, base maps will be created of the study area. Field sampling points will be selected from these maps. Each major cover type will be sampled. The general locations for each sample point will be assigned prior to fieldwork; exact location will be determined in the field to ensure that sample points are representative of the cover type. Major vegetative and structural characteristics will be documented using a plotless, rapid vegetation assessment technique. The following data will be collected at each point:

- Universal Transverse Mercator (UTM) coordinates
- Representative photograph(s)
- Species and estimated cover for dominant and subdominant trees and shrubs
- Estimated diameter at breast height (DBH) of dominant trees, or height of dominants in non-forested areas
- Plant community type
- Plant association, if defined for the habitat

- Estimated local density of snags and coarse woody debris
- Potential for or occurrence of special status species
- At wetland sites, observe source(s) of wetland hydrology
- At wetland sites, hydrogeomorphic classification
- At wetland sites, classification of dominant wetland types

Revisions to the draft maps will be digitized and final GIS vegetation coverage will be prepared, with all sampling information included in a layer of the GIS map data. The total acreage of each cover type will also be determined.

The focus of the rare plant survey will be on those listed on the State and Federal special status plant species in the Powder River Subbasin as listed in attachments A and B.

The noxious weed survey will be focused on Baker County Weed Control Noxious Weed List (see attachment D). Baker County's list is composed of four major classifications; the Watch List, the "A" List, the "B" List, and the "C" list.

The Watch List is defined as small, isolated and identified sites of very high concern. These sites are designated for periodic treatment by the Baker County Weed Supervisor. At this time, there are no known sites of this classification of noxious weeds within the project boundary.

The second classification, known as the "A" List, is defined as those noxious weeds that are found in limited numbers and distribution, but have a high likelihood of detrimentally affecting Baker County's agriculture and environment. The Baker County Board of Commission and the County Weed Board has designated these weeds "Mandatory Control" countywide.

The third classification, known as the "B" List, is defined as those weeds that are widespread, but still of economic and environmental concern throughout the county.

The fourth and final classification, known as the "C" list, is composed of weeds that are widespread and of moderate concern. This classification includes species that are ubiquitous throughout the county, and therefore are of lesser priority than the above-defined classifications.

Rare plants and noxious weeds will be identified using the Flora of the Pacific Northwest (Hitchcock and Cronquist, 1973) and Weeds of the West (Western Society of Weed Science, 2000).

Once identified, sites for each species will be quantifiably surveyed using the measurement of Density (the number of individual plants in a given unit of area) and Frequency (the number of species within a given site) using a Line-Transsect methodology as outlined in Measurement of Terrestrial Vegetation (Bonham, 1989). Individual sites where species are located will be mapped using GPS and ArcView® technology. Given the modest size of the study area, this process will be a simple but highly effective method at defining the amount of individual plants within each species present in the study area.

2.5.3 Products

With this information:

1. A noxious weed report will be prepared by Baker County Weed Control that includes the above mapping effort. This report will identify, describe, and assess the extent to which project-related activities may potentially affect all noxious weeds present within the study area. In addition, this report will also outline effective noxious weed management strategies to address and alleviate project-related actions.
2. A rare plant report will be prepared that discusses the rare species found, their distribution, and habitat associations. If results indicate that there is a demonstrated impact or likely impact, a management plan will be developed to include some combination of avoiding impacts, protecting resources, and conducting mitigation as needed.
3. A vegetation coverage report that will include study objectives, study area, methods, tabulated results, descriptions of habitats, and electronic GIS files of vegetation cover types and sample points.

2.6 Level of Effort and Cost

A literature review to obtain information on rare and special status species will need to be done. The mapping and survey efforts can be completed within one year.

Technicians would be expected to spend approximately one to two days to assess and review ground vegetation. With the relative low acreage of the project boundary and working in disturbed areas, aerial photos would be of little use. Baker County intends to contract with local agency personnel to do the appropriate mapping, assessment and report preparations.

It is proposed this study will begin with the field season starting in May 1, 2007 and ending in October 31, 2007. A draft report will be submitted by December 15, 2007. Comments will be due by January 15, 2008. The final report will be completed by February 15, 2008.

Attachment A

**FEDERALLY LISTED THREATENED, ENDANGERED, PROPOSED, CANDIDATE SPECIES
AND SPECIES OF CONCERN WHICH MAY OCCUR WITHIN BAKER COUNTY, OREGON**

LISTED SPECIES^{1/}

Birds

Bald eagle *Haliaeetus leucocephalus* T

Fish

Bull trout (Columbia River Basin)^{3/} *Salvelinus confluentus* CH T

Plants

Howell's spectacular thelypody^{4/} *Thelypodium howellii* ssp. *Spectabilis* T

PROPOSED SPECIES

None

CANDIDATE SPECIES^{5/}

Birds

Yellow-billed cuckoo *Coccyzus americanus*

Amphibians and Reptiles

Columbia spotted frog *Rana luteiventris*

Plants

Slender moonwort *Botrychium lineare*

SPECIES OF CONCERN

Mammals

Pygmy rabbit *Brachylagus idahoensis*

Pale western big-eared bat *Corynorhinus townsendii pallescens*

California wolverine *Gulo gulo luteus*

Silver-haired bat *Lasionycteris noctivagans*

Small-footed myotis (bat) *Myotis ciliolabrum*

Long-eared myotis (bat) *Myotis evotis*

Fringed myotis (bat) *Myotis thysanodes*

Long-legged myotis (bat) *Myotis volans*

Yuma myotis (bat) *Myotis yumanensis*

California bighorn *Ovis canadensis californiana*

Preble's shrew *Sorex preblei*

Birds

Northern goshawk *Accipiter gentilis*

Western burrowing owl *Athene cunicularia hypugea*

Ferruginous hawk *Buteo regalis*

Greater sage-grouse *Centrocercus urophasianus*

Olive-sided flycatcher *Contopus cooperi*

Willow flycatcher *Empidonax trailli adastus*

Yellow-breasted chat *Icteria virens*

Lewis' woodpecker *Melanerpes lewis*

Mountain quail *Oreortyx pictus*

White-headed woodpecker *Picoides albolarvatus*

Amphibians and Reptiles

Tailed frog *Ascaphus truei*

Northern sagebrush lizard *Sceloporus graciosus graciosus*

Fishes

Interior redband trout *Oncorhynchus mykiss gibbsi*

Plants

Wallowa ricegrass *Achnatherum wallowaensis*

Upward-lobed moonwort *Botrychium ascendens*

Crenulate grape-fern *Botrychium crenulatum*

Mountain grape-fern *Botrychium montanum*

Twin spike moonwort *Botrychium paradoxum*

Stalked moonwort *Botrychium pedunculatum*

Clustered lady's-slipper *Cypripedium fasciculatum*

Cronquist's stickseed *Hackelia cronquistii*

Red-fruited desert parsley *Lomatium erythrocarpum*

Cusick's lupine
Oregon semaphore grass
Snake River goldenweed
Biennial stanleya

Lupinus lepidus var. *cusickii*
Pleuropogon oregonus
Pyrrocoma radiata
Stanleya confertiflora

(E) - Listed Endangered (T) - Listed Threatened (CH) - Critical Habitat has been designated for this species

(PE) - Proposed Endangered (PT) - Proposed Threatened (PCH) - Critical Habitat has been proposed for this species

Species of Concern - Taxa whose conservation status is of concern to the Service (many previously known as Category 2 candidates),
but for which further information is still needed.

* Consultation with NOAA's National Marine Fisheries Service may be required.

^{1/} U.S. Department of Interior, Fish and Wildlife Service, October 31, 2000, Endangered and Threatened Wildlife and Plants, 50 CFR 17.11 and 17.12

^{2/} Federal Register Vol. 60, No. 133, July 12, 1995, - Final Rule - Bald Eagle

^{3/} Federal Register Vol. 63, No. 111, June 10, 1998, Final Rule - Columbia River and Klamath River Bull Trout

^{4/} Federal Register Vol. 64, No. 101, May 26, 1999, Final Rule - *Thelypodium howellii* ssp. *spectabilis*

^{5/} Federal Register Vol. 69, No. 86, May 4, 2004, Notice of Review - Candidate or Proposed Animals and Plants

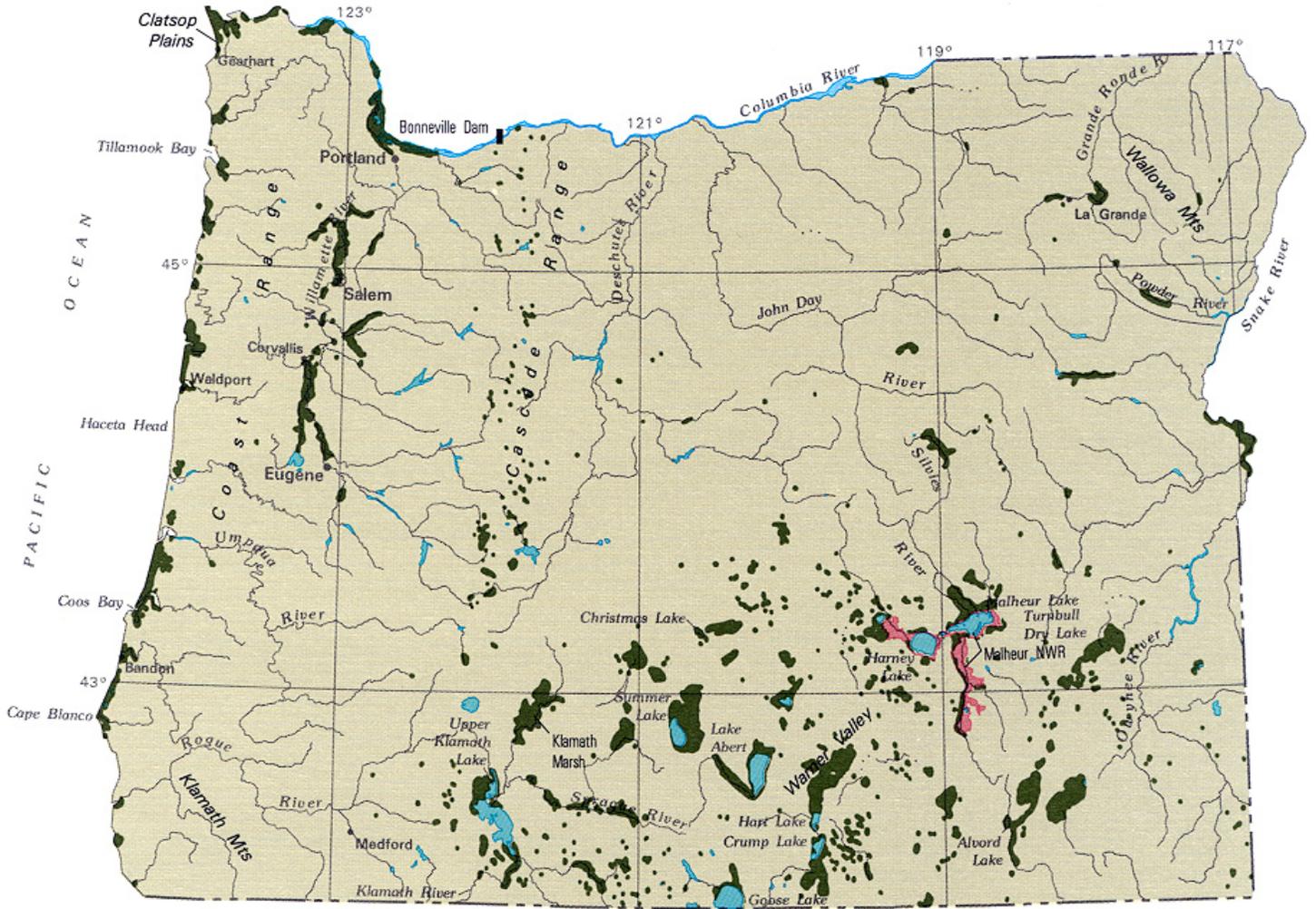
Attachment B
State and Federal Special Status Plant Species in the Powder River
Subbasin

Table from Powder River Subbasin Plan (10)

Common Name	Scientific Name	Federal Status	State Status	Documented Locations (drainages)
Upward-lobed moonwort	<i>Botrychium ascendens</i>	Species of Concern	Candidate Species	Powder, Upper John Day
crenulate moonwort	<i>Botrychium crenulatum</i>	Species of Concern	Candidate Species	
skinny moonwort	<i>Botrychium lineare</i>	Species of Concern	None	
Twin-spike moonwort	<i>Botrychium paradoxium</i>	Species of Concern	Candidate Species	Powder, Upper John Day, NF John Day
Clustered lady's-slipper	<i>Cypripedium fasciculatum</i>	Species of Concern	Candidate Species	
Red-fruited lomatium	<i>Lomatium erythrcarpum</i>	Species of Concern	Listed Endangered	Powder
Oregon semaphoregrass	<i>Pleuropogon oregonus</i>	Species of Concern	Listed Threatened	Powder
Snake River goldenweed	<i>Pyrrocoma radiata</i>	Species of Concern	Listed Endangered	
Howell's spectacular thelypody	<i>Thelypodium howellii</i>	Listed Threatened	Listed Endangered	Powder

10. M. Cathy Nowak, Cat Tracks Wildlife Consulting. Powder River Subbasin Plan. May 28, 2004. Prepared for the Northwest Power and Conservation Council.

Attachment C

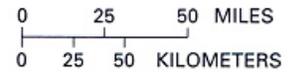


A WETLANDS AND DEEPWATER HABITATS

Distribution of wetlands and deepwater habitats—

This map shows the approximate distribution of large wetlands in the State. Because of limitations of scale and source material, some wetlands are not shown

- Predominantly wetland
- Predominantly deepwater habitat



Attachment D
Baker County Noxious Weeds List
2006-2007

“Watch List”, “A”, “B” & “C” Designated Weeds

“Watch List” – Known Sites; Controlled by Weed Supervisor County-Wide

- | | |
|-----------------------|-------------------|
| 1. Musk Thistle | Carduus nutans |
| 2. Mediterranean sage | Salvia aethiopsis |
| 3. Dyers Woad | Istaxis tinctoria |

“A” Designated Weeds – Mandatory Control County-wide

- | | |
|-------------------------|------------------------|
| 1. Tansy ragwort | Senecio jacobaea |
| 2. Leafy spurge | Euphorbia esula |
| 3. Rush skeletonweed | Chondrilla juncea |
| 4. Spotted knapweed | Centaurea maculosa |
| 5. Diffuse knapweed | Centaurea diffusa |
| 7. Dalmation toadflax | Linaria dalmatica |
| 8. Yellow starthistle | Centaurea solstitialis |
| 9. Perennial pepperweed | Lepidium latifolium |
| 10. Purple loosestrife | Lyrum salicaria |
| 11. Black henbane | Hyoscyamus niger |
| 12. Jointed goatgrass | Aegilops cylindrica |
| 13. Buffalobur | Solanum rostratum |
| 14. Common bugloss | Anchusa officinalis |
| 15. Japanese knotweed | Polygonum cuspidatum |
| 15. Myrtle spurge | Euphorbia myrsinites |
| 16. Scotch Thistle | Onopordum acanthium |
| 17. Whitetop | Lepidium draba |

Whitetop is listed as an “A” weed in designated areas of the County. Pine Valley, West Baker Valley and the Bowen Valley-Sumpter areas North and West of Oregon State Highway 7 are classified as Mandatory Control for whitetop.

“B” Designated Weeds – Widespread and/or of High Concern

- | | |
|-------------|----------------|
| 1. Whitetop | Lepidium draba |
|-------------|----------------|
- (Whitetop is a “B” weed in all other areas of the County not listed in the above section.)
- | | |
|---------------------|----------------------|
| 2. Russian knapweed | Centaurea repens |
| 3. Canada thistle | Cirsium vulgare |
| 4. Venice mallow | Hibiscus trionum |
| 5. Yellow toadflax | Linaria vulgaris |
| 6. Dodder | Cuscuta campestris |
| 7. Chickory | Cichorium intybus |
| 8. Teasel | Dipsacus fullonum |
| 9. Common Tansy | Tanacetum vulgare |
| 10. Klamathweed | Hypericum perforatum |
| 11. Puncturevine | Tribulus terrestris |

“C” Designated Weeds – Widespread and/or of Moderate Concern

- | | |
|-----------------------|----------------------------|
| 1. Water hemlock | Circuta maculata |
| 2. Poison hemlock | Conium maculatum |
| 3. Morningglory | Convolvulus arvensis |
| 4. Russian thistle | Salsola iberica |
| 5. Medusahead wildrye | Taeniatherum caput-medusae |
| 6. Kochia | Kochia scoparia |
| 7. Common mullein | Verbascum thapsis |
| 8. Moth mullein | Verbascum blattaria |
| 9. Bur buttercup | Ranunculus testiculatus |

R6 TES PLANT ELEMENT OCCURRENCE - FIELD FORM - USDA FOREST SERVICE 2005

® = required field, ®* = conditionally required field, ® = R6 REQUIRED FIELD

General Information

1) FS SITE ID: ®		2) DATE: ®	3) SITE NAME:	
4) NRCS PLANT CODE: ®				
5) SCIENTIFIC NAME: ®				
6) RECORD SOURCE: ®		7) SURVEY ID: ®*		8) Survey Name:
9) EXAMINER(S)- LAST: ®			FIRST:	MIDDLE INITIAL:
LAST:			FIRST:	MIDDLE INITIAL:
10) OWNERSHIP: ®				
11) E.O. #			12) NEW OCCURRENCE – YES: OR NO:	
13) STATE: ®*		14) COUNTY: ®*		
15) REGION: ®*	16) FOREST: ®*		17) DISTRICT: ®*	
18) Entire extent mapped: Yes: No: Uncertain:		19) Area (Est):		20) Area UOM: ®*
21) Canopy Cover Method ®* (circle one): COVER PERCENT; DAUBEN; NRMCOV				

Element Occurrence Data

22) EO Canopy Cover: ® %Cov: or Cover Class Code:		23) Lifeform:		
24) Number of subpopulations:				
25) Plant Count: ®	26) Count Type: ® Genet/Ramet/Undetermined		27) Count: ® Actual or Est.	
28) Revisit needed - Yes or No		29) Revisit Date:		
30) Revisit Justification:				
31) Phenology (%) ® (Sum to 100%): Vegetative ____ Flower/Bud . . . ____ Fruit/Dispersed . ____ Seedlings/ Juvenile ____		32) Population Comments: (e.g., distribution, vigor, density, phenology, dispersal)		
33) Evidence of disease, competition, predation, collection, trampling, or herbivory: Yes ___ or No ___				
34) Evidence Comments:				
35) Pollinator observed – Yes or No		36) Pollinator type(s):		
37) Pollinator comments:				

Site Morphometry

38) Percent Slope: ®		39) Slope position: ®		
40) Aspect: ® azimuth: or cardinal:				
41) Elev.: ® Ave: Min: Max:		42) Elev UOM: ®*		

Soil Characteristics and Light Conditions

43) Substrate on which EO occurs:				
44) Parent Material:		45) Soil Moisture:		46) Soil Texture:
47) Soil Type:			48) Light Exposure: ®	

Site Classifications

Record taxonomic units of the given type(s) if published classifications exist for the area.			
CLASS TYPE	CLASS CODE	CLASS SHORT NAME	CLASS SET
49) Existing Veg			
50) Potential Veg	®	®	®
51) Ecotype			

Habitat Quality and Management Comments

52) Habitat Description:	
53) Dominant Process:	
54) Community Quality (L, M, H):	55) Landscape Integrity (L, M, H):
56) Process Comment:	
57) Disturbance/Threats (present or imminent):	
58) Disturbance/Threats Comment:	
59) Non-Native Comment:	
60) Current Land Use Comment:	

Canopy Cover

Record % canopy cover by actual percent, <i>or</i> by cover class (as indicated in General Information Block).			
Lifeform Canopy Cover	61)% Cov or Code	Ground Cover	62) % Cov or Code
Tree		Bare	
Shrub		Gravel	
Forb		Rock	
Graminoid		Bedrock	
Non-vascular		Moss	
Lichen		Litter/Duff	
Algae		Basal Veg	
		Water	
		Road surface	
		Lichen	

Image Information ® (IF IMAGES TAKEN)

77) Image ID	78) Image Description

Location Information

(State, County, Region, Forest, District will be auto-populated by the database application when the spatial feature is entered)

79) USGS Quad Number:	80) USGS Quad Name:
81) Forest Quad Number:	82) Forest Quad Name:

83) Legal Description: ® Required where public land survey is available.				
Meridian:	Township and Range:			
Section: _____	Q Sec: _____	QQ Sec: _____	QQQ Sec: _____	QQQQ Sec: _____

84) Latitude and Longitude (either in degrees, minutes, seconds or in decimal degrees)		
Geodetic Datum:		
Latitude: Degrees ____ N	Minutes	Seconds ____.
Longitude: Degrees ____ W	Minutes	Seconds ____.
GPS Datum:		
GPS Lat. Dec. Degrees:	GPS Long. Dec. Degrees:	

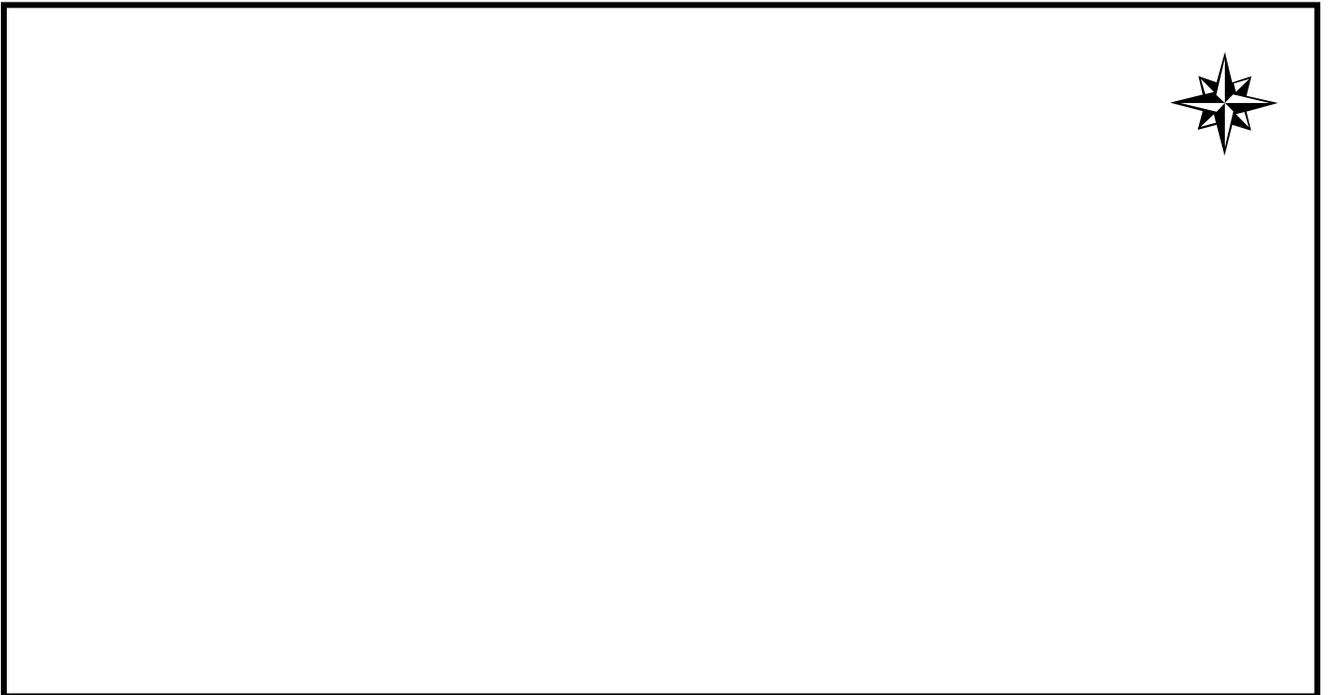
85) UTM	
UTM Datum:	UTM Zone:
Easting: _____	Northing: _____

86) GPS Equipment Used (Manufacturer and Model):

87) Metes and Bounds

88) Directions to Site

89) Sketch of Site or Area



Optional Location Information

Location information to represent the survey area may be recorded,
in addition to entering the spatial feature in the application

33) USGS Quad Number:	34) USGS Quad Name:
35) Forest Quad Number:	36) Forest Quad Name:
37) Legal Description: Required where public land survey is available.	
Meridian: _____	Township and Range: _____
Section: _____	Q Sec: _____ QQ Sec: _____ QQQ Sec: _____ QQQQ Sec: _____
38) Latitude and Longitude (either in degrees, minutes, seconds or in decimal degrees)	
Geodetic Datum: _____	
Latitude: Degrees ___ N	Minutes _____ Seconds _____. ____
Longitude: Degrees ___ W	Minutes _____ Seconds _____. ____
GPS Datum: _____	
GPS Lat. Dec. Degrees: _____	GPS Long. Dec. Degrees: _____
39) UTM	
UTM Datum: _____	UTM Zone: _____
Easting: _____	Northing: _____
40) GPS Equipment: Manufacturer: _____	Model: _____
41) Metes and Bounds	

42) Directions to Survey Area

43) Sketch of Survey Area



ATTACHMENT G

INVASIVES PLANT FIELD FORM

G

General Information

SITE ID _____ R	DATE (MMDDYYYY) _____ R
EXAMINER: LAST _____ R	FIRST _____ R
Middle Initial _____	

Data Elements

Plant Code _____ R	Common Name _____
Genus _____	Species _____
Subspecies _____	Variety _____
Authority _____	
Phenology _____	Life Form _____
Distribution _____	
Infested Area _____ R	Unit of Measure _____ R
Gross Area _____	Unit of Measure _____
Gross Area to Infested Area Calculation: Gross area _____ X _____ (%of land area occupied by weeds) = _____ Infested Area	
Plant Status _____	Plant Treatment Priority _____

Canopy Cover

Canopy Cover is a required data element. You can describe canopy cover by either entering the actual percent, (*Canopy Cover Percent*) or by using canopy cover classes (*Canopy Cover Set and Cover Code*). **R**

Canopy Cover Set _____	Cover Code _____	Canopy Cover Percent _____ %
------------------------	------------------	------------------------------

Distance to Water

Horizontal Distance to Water _____	Unit of Measure _____ l
Vertical Distance to Water _____	Unit of Measure _____

Associated Species

Associated Species Code _____	
Assoc. Genus _____	Assoc. Species _____
Assoc. Subspecies _____	Assoc. Variety _____
Associated Species Code _____	
Assoc. Genus _____	Assoc. Species _____
Assoc. Subspecies _____	Assoc. Variety _____
Associated Species Code _____	
Assoc. Genus _____	Assoc. Species _____
Assoc. Subspecies _____	Assoc. Variety _____

RANGELAND GENERAL FORM – FOR INTERIM INVASIVE TOOL

(® INDICATES A REQUIRED FIELD)

Site Information

SITE ID _____ ®	
DATE (MMDDYYYY) _____ ®	
Project Name _____ ®	Project Purpose _____
Site Sample Type _____ ®	

General Information

EXAMINER:	LAST Name _____ ®	FIRST Name _____ ®	Middle Initial _____
Ownership _____ ®			
Region _____ ®	National Forest/Grassland _____ ®	District _____ ®	
Proclaimed National Forest/Grassland _____			
Proclaimed National Forest/Grassland Name _____			
State _____ ®	County Number _____ ®	County Name _____	
Sample Area Size _____		Unit of Measure _____	

Location Information

QUADS	
USGS Quad Number _____	USGS Quad Name _____
Forest Quad Number _____	Forest Quad Name _____

Data Entry is Required in at least one of the displayed location methods below.

The site location can be described through at least one, and maybe more of the following methods.

Users with GIS technology may link the location directly with that information. Some users may substitute Metes and Bounds (**Required.**)

Legal Description:				
Meridian _____	Township/Direction Range/Direction _____			
SEC _____	Q SEC _____	QQ SEC _____	QQQ SEC _____	QQQQ SEC _____

Latitude and Longitude				
Geodetic Datum _____				
Lat dms:	Degrees _____ N	Minutes _____	Seconds _____	
Long dms:	Degrees _____ W	Minutes _____	Seconds _____	
Geodetic Datum _____				
GPS Latitude Decimal Degrees _____				
GPS Longitude Decimal Degrees _____				

UTM	
UTM Datum _____	UTM Zone ____
Easting: _____	Northing: _____

Metes and Bounds: (narrative) Metes are the bearing and distance to get to someplace or to return to the place of origin. Bounds are the written directions going to something or someplace.

Management Area

Allotment (RMU) Number _____	Allotment Name _____
Pasture (Sub-RMU) Number _____	Pasture Name _____
Key Area Number _____	Key Area Name _____

Area Number _____	Area Name _____
-------------------	-----------------

Watershed HUC # ** _____ ®
HUC Name _____
**Required for aquatic invasive species

Site Information

Elevation Average _____	Min Elevation _____
Max Elevation _____	Elevation UOM _____

Aspect-Azimuth _____	Aspect-Cardinal Direction ____
Percent Slope _____	Slope Position _____

Existing Vegetation Information

Please enter one or more of the three listed existing vegetation classification types.

Plant Community	
Class Set Name _____	Class Code _____
Class Name _____	
SAF Cover Type Code _____	SAF Cover Type _____
SRM Cover Type Code _____	SRM Cover Type _____

Dominant Life Form _____ ®
Dominant Species _____ (Genus, Species, Subspecies, Variety)
Co-Dominant Species _____ (Genus, Species, Subspecies, Variety)
Co-Dominant Species _____ (Genus, Species, Subspecies, Variety)
Co-Dominant Species _____ (Genus, Species, Subspecies, Variety)

Potential Vegetation Information

Range Site/Eco Classification _____	
Class Code _____	Class Name _____

Habitat Type Code _____	Habitat Type Name _____
HT Phase Code _____	HT Phase Name _____
Plant Association Code _____	Plant Association Name _____
Seral Stage _____	Ecological Status (%) _____

Ecological Map Unit Code _____
Ecological Map Unit Name _____
Ecological Type Code _____
Ecological Type Name _____

Soil/Geo Climate Information

Soil Name _____	Class Level _____
Texture _____	Common Landform Code _____
Common Landform Description _____	
Mean Annual Precipitation _____	UOM _____

Reference

Include information in locating the starting point for the traverse leg and other important description information.

Narrative (detailed description of location, direction to site and map location if applicable.)

Traverse information for start point to sample point.

Azimuth (degrees) _____	Distance _____
Distance UOM _____	

Photo/Image

Aerial Photo Information	
Photo Label _____	Aerial Photo Set _____
Photo Number _____	Flight Line Code _____
Photo Date\Time (mm/dd/yyyy hh:mm) _____	

Photo Information	
Photo Number _____	Film Type _____
File Name _____	File Directory _____

Comments

Comments

STUDY PLAN 3: THREATENED, ENDANGERED AND SPECIAL SPECIES ASSESSMENT

These studies were requested by FERC. In consultation with US Fish and Wildlife, US Forest Service and Oregon Department of Fish and Wildlife these issues also arose.

3.0 Introduction

Baker County filled for their preliminary license and received it on October 8, 2003 for the 3 MW Mason Dam Hydroelectric Project (Project No. P-12058-002). The project is run of release meaning Baker County does not and will not have any control over the release of the water at Mason Dam. The Bureau Of Reclamation and Baker Valley Irrigation District have control of the release of water and will not change water flows at Baker County's request.

The project consists of two small turbines that will be housed in a power plant at the base of Mason Dam. The power generated will be sent approximately 1 mile to an existing Idaho Power Company 138kv transmission line. The 34.5kv power line connecting the power plant to the substation and then to the 138kv transmission line will be buried in the Black Mountain Road right of way.

The project boundary consists of 100 feet beyond the area that contains the powerhouse and tailrace facilities, and the substation to the interconnect with IPC transmission line. It also includes 50 feet on each side of the underground power line that will be placed in the Black Mountain Road right of way.

3.1 Goals and Objectives

The goal of this study is to evaluate the effects of project construction and other related activities on federally threatened, endangered or candidate species in the project area. The objectives of the study are to:

1. Identify, describe, classify, and map any appropriate habitat for threatened, endangered and special status species in areas affected by project construction and operation.
2. Determine the presence and distribution of threatened, endangered and special status species within the influence of project construction and operation.
3. Identify project-related actions that may influence the distribution of threatened, endangered and special status species or their habitat and measures that may be taken to protect, mitigate, or enhance habitat.

The project boundary does not include known eagle nesting area. Baker County will work with relevant resource agencies to schedule construction times to be outside of bald eagle nesting times.

3.2 Relevant Resource Management Goals

All resource agencies are responsible for the protection of sensitive, threatened and endangered species. In making its license decision, the Commission must equally consider the environmental, recreational, fish and wildlife and other non-developmental

values of the project, as well as power generation. Any license issued shall be best adapted to a comprehensive plan for improving or developing a waterway for all beneficial public uses.

Threatened, endangered and special status species are of particular interest because of their rarity and ecological functions. Ensuring that environmental measures pertaining to these resources are considered in a reasoned way is relevant to the Commission's public interest determination. Additionally, this information is needed to ensure compliance with the Endangered Species Act.

3.3 Background and Existing Information

Information on wildlife and botanical resources attached include:

1. A list of federally designated and special status species that have been documented or may occur in the Wallowa-Whitman National Forest or Powder River Subbasin. (Attachment A)
2. A list of state and federal special status plant species found in the Upper Powder River Subbasin. (Attachment B)
3. A map of wetland and deep-water habitats in the State of Oregon. (Attachment C)
4. A list of noxious weeds designated in the Baker County Noxious Weed Rating System. (Attachment D)

While this information is useful in narrowing the scope of the requested studies, we agree that an assessment of the area within the project boundary for threatened and endangered is necessary. The bald eagles in the Phillips Lake area are currently managed under the Phillips Reservoir Bald Eagle Management Area (BEMA) plan by the US Forest Service. This plan requires:

1. The protection and maintenance of the nest tree and surrounding stand.
2. The protection and maintenance of all known perch trees, and future perch trees with a zone from the high water line to at least 200' upslope from the high water line around the reservoir.
3. Prey populations be monitored (if FS funds are used).
4. Fish habitat be protected and improved by maintaining a diverse fishery that includes game fish and non-game fish in substantial numbers.
5. Water bird populations be protected and improved by maintaining and installing nesting structures.
6. Public use of the area is monitored and measures are taken to control activities that disturb eagles or their habitat.

Baker County intends to adhere to the Phillips Reservoir BEMA plan and assess the effects of the project on Eagle nest sites. We believe that the timing of the construction and the project covering disturbed ground can mitigate most issues.

3.4 Project Nexus

Project related activities, especially ground disturbing activities, related to construction of powerhouse, power lines and substation, could adversely affect wetland and riparian habitats and their associated wildlife and botanical resources. These could include threatened, endangered and special status species. If potential effects on these resources are identified, environmental measures may be developed to reduce or eliminate these effects. Baker County agrees that there is a project nexus within close proximity to the Project Boundary.

3.5 Proposed Methodology

Baker County will use a Forest Service biologist to conduct the threatened, endanger, and special species assessment.

A biologist shall first gather all data needed to identify suitable habitat for each species found on attachment A. Then use the information from the vegetation study and research all available data to create a map that contains any suitable habitat for any threatened or endangered species that could potentially occur in the project area within 100' of the proposed project boundary. This should narrow down the list; however, if it does not then research will need to be done on the methodology in order to conduct a visual survey for direct or indirect indicators of the species presence. Specifically for the bald eagle, provide a map of the bald eagle management area, and in consultation with all relevant resource agencies, map the location of any active eagle nesting, wintering or foraging areas within the project vicinity using existing information. Assess bald eagle activity in the vicinity of the project using pre-existing studies and map any direct or indirect observations. Prepare a report that includes the above mapping effort, and identifies, describes and assesses the extent to which project-related actions and activities may affect the bald eagle. This shall be done on all threatened, endangered and special status species that were surveyed for.

Baker County intends to work cooperatively with all relevant resource agencies to effect full protection for all threatened, endangered and special status species.

3.6 Level of Effort and Cost

The estimated cost of this work is approximately \$7200, depending upon the level of information that might be obtained from existing sources and the Vegetation, Rare Plant and Noxious Weed Assessment, which may show suitable habitat for the threatened, endangered and special status species. The mapping and survey efforts can be completed within one year.

It is proposed this study take place in the field season of May 1, 2007 through November 30, 2007. The draft report would be due on December 31, 2007 with comments due January 31, 2008. The final report would be completed by March 1, 2008.

Attachment A

FEDERALLY LISTED THREATENED, ENDANGERED, PROPOSED, CANDIDATE SPECIES AND SPECIES OF CONCERN WHICH MAY OCCUR WITHIN BAKER COUNTY, OREGON

LISTED SPECIES^{1/}

Birds

Bald eagle ^{2/} *Haliaeetus leucocephalus* T

Fish

Bull trout (Columbia River Basin) ^{3/} *Salvelinus confluentus* CH T

Plants

Howell's spectacular thelypody ^{4/} *Thelypodium howellii* ssp. *Spectabilis* T

PROPOSED SPECIES

None

CANDIDATE SPECIES^{5/}

Birds

Yellow-billed cuckoo *Coccyzus americanus*

Amphibians and Reptiles

Columbia spotted frog *Rana luteiventris*

Plants

Slender moonwort *Botrychium lineare*

SPECIES OF CONCERN

Mammals

Pygmy rabbit *Brachylagus idahoensis*

Pale western big-eared bat *Corynorhinus townsendii pallescens*

California wolverine *Gulo gulo luteus*

Silver-haired bat *Lasionycteris noctivagans*

Small-footed myotis (bat) *Myotis ciliolabrum*

Long-eared myotis (bat) *Myotis evotis*

Fringed myotis (bat) *Myotis thysanodes*

Long-legged myotis (bat) *Myotis volans*

Yuma myotis (bat) *Myotis yumanensis*

California bighorn *Ovis canadensis californiana*

Preble's shrew *Sorex preblei*

Birds

Northern goshawk *Accipiter gentilis*

Western burrowing owl *Athene cunicularia hypugea*

Ferruginous hawk *Buteo regalis*

Greater sage-grouse *Centrocercus urophasianus*

Olive-sided flycatcher *Contopus cooperi*

Willow flycatcher *Empidonax traillii adastus*

Yellow-breasted chat *Icteria virens*

Lewis' woodpecker *Melanerpes lewis*

Mountain quail *Oreortyx pictus*

White-headed woodpecker *Picoides albolarvatus*

Amphibians and Reptiles

Tailed frog *Ascaphus truei*

Northern sagebrush lizard *Sceloporus graciosus graciosus*

Fishes

Interior redband trout *Oncorhynchus mykiss gibbsi*

Plants

Wallowa ricegrass *Achnatherum wallowaensis*

Upward-lobed moonwort *Botrychium ascendens*

Crenulate grape-fern *Botrychium crenulatum*

Mountain grape-fern *Botrychium montanum*

Twin spike moonwort *Botrychium paradoxum*

Stalked moonwort *Botrychium pedunculatum*

Clustered lady's-slipper *Cypripedium fasciculatum*

Cronquist's stickseed *Hackelia cronquistii*

Red-fruited desert parsley
Cusick's lupine
Oregon semaphore grass
Snake River goldenweed
Biennial stanleya

Lomatium erythrocarpum
Lupinus lepidus var. *cusickii*
Pleuropogon oregonus
Pyrrocoma radiata
Stanleya confertiflora

(E) - Listed Endangered (T) - Listed Threatened (CH) - Critical Habitat has been designated for this species

(PE) - Proposed Endangered (PT) - Proposed Threatened (PCH) - Critical Habitat has been proposed for this species

Species of Concern - Taxa whose conservation status is of concern to the Service (many previously known as Category 2 candidates), but for which further information is still needed.

* Consultation with NOAA's National Marine Fisheries Service may be required.

^{1/} U.S. Department of Interior, Fish and Wildlife Service, October 31, 2000, Endangered and Threatened Wildlife and Plants, 50 CFR 17.11 and 17.12

^{2/} Federal Register Vol. 60, No. 133, July 12, 1995, - Final Rule - Bald Eagle

^{3/} Federal Register Vol. 63, No. 111, June 10, 1998, Final Rule - Columbia River and Klamath River Bull Trout

^{4/} Federal Register Vol. 64, No. 101, May 26, 1999, Final Rule - *Thelypodium howellii* ssp. *spectabilis*

^{5/} Federal Register Vol. 69, No. 86, May 4, 2004, Notice of Review - Candidate or Proposed Animals and Plants

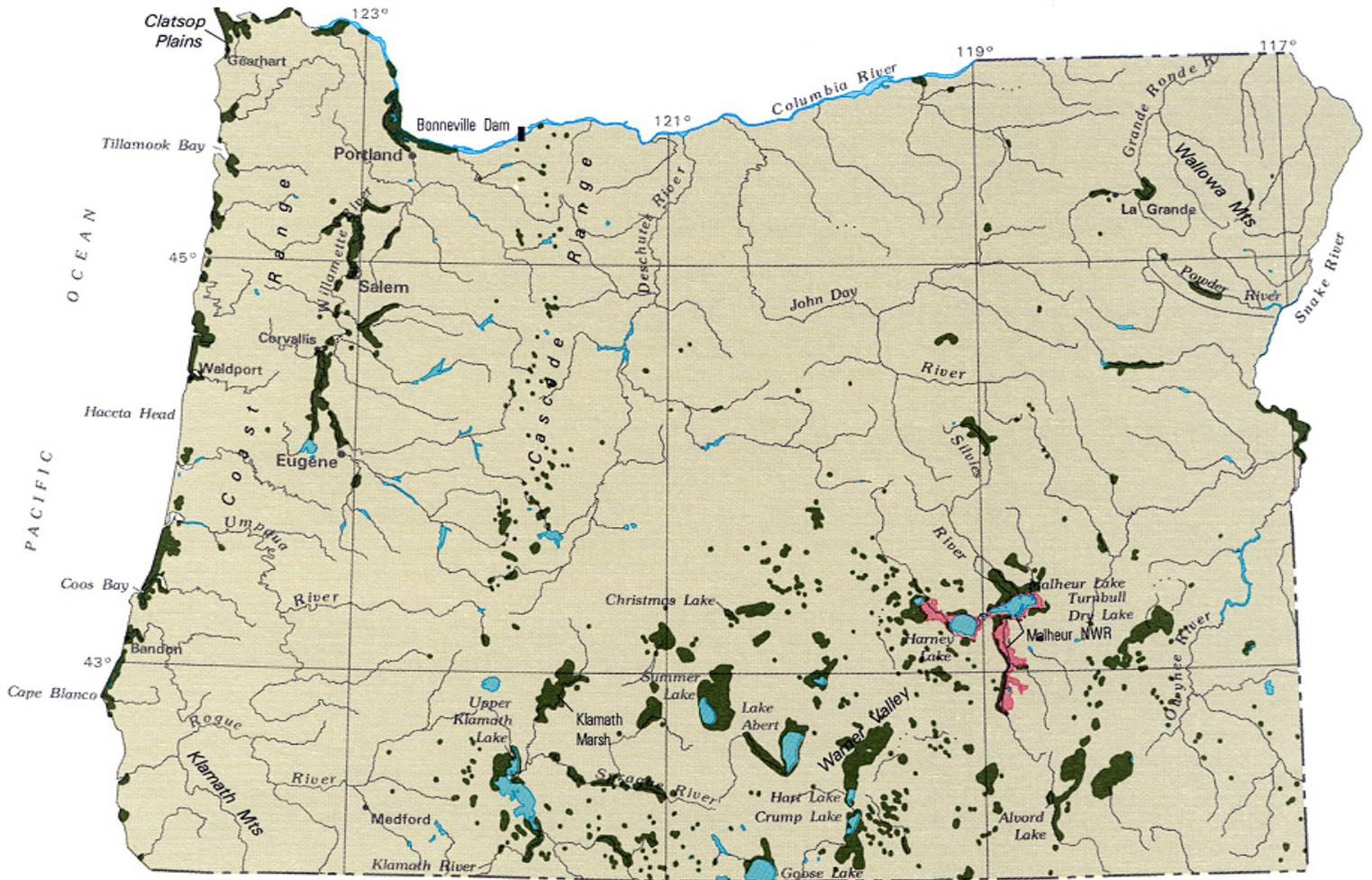
State and Federal Special Status Plant Species in the Powder River Subbasin

Table from Powder River Subbasin Plan (10)

Common Name	Scientific Name	Federal Status	State Status	Documented Locations (drainages)
Upward-lobed moonwort	<i>Botrychium ascendens</i>	Species of Concern	Candidate Species	Powder, Upper John Day
crenulate moonwort	<i>Botrychium crenulatum</i>	Species of Concern	Candidate Species	
skinny moonwort	<i>Botrychium lineare</i>	Species of Concern	None	
Twin-spike moonwort	<i>Botrychium paradoxium</i>	Species of Concern	Candidate Species	Powder, Upper John Day, NF John Day
Clustered lady's-slipper	<i>Cypripedium fasciculatum</i>	Species of Concern	Candidate Species	
Red-fruited lomatium	<i>Lomatium erythrcarpum</i>	Species of Concern	Listed Endangered	Powder
Oregon semaphoregrass	<i>Pleuropogon oregonus</i>	Species of Concern	Listed Threatened	Powder
Snake River goldenweed	<i>Pyrrcoma radiata</i>	Species of Concern	Listed Endangered	
Howell's spectacular thelypody	<i>Thelypodium howellii</i>	Listed Threatened	Listed Endangered	Powder

10. M. Cathy Nowak, Cat Tracks Wildlife Consulting. Powder River Subbasin Plan. May 28, 2004. Prepared for the Northwest Power and Conservation Council.

Attachment C

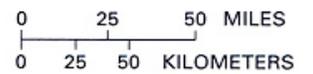


A WETLANDS AND DEEPWATER HABITATS

Distribution of wetlands and deepwater habitats—

This map shows the approximate distribution of large wetlands in the State. Because of limitations of scale and source material, some wetlands are not shown

- Predominantly wetland
- Predominantly deepwater habitat



Attachment D
Baker County Noxious Weeds List
2006-2007

“Watch List”, “A”, “B” & “C” Designated Weeds

“Watch List” – Known Sites; Controlled by Weed Supervisor County-Wide

- | | |
|-----------------------|-------------------|
| 1. Musk Thistle | Carduus nutans |
| 2. Mediterranean sage | Salvia aethiopsis |
| 3. Dyers Woad | Istaxis tinctoria |

“A” Designated Weeds – Mandatory Control County-wide

- | | |
|-------------------------|------------------------|
| 1. Tansy ragwort | Senecio jacobaea |
| 2. Leafy spurge | Euphorbia esula |
| 3. Rush skeletonweed | Chondrilla juncea |
| 4. Spotted knapweed | Centaurea maculosa |
| 5. Diffuse knapweed | Centaurea diffusa |
| 7. Dalmation toadflax | Linaria dalmatica |
| 8. Yellow starthistle | Centaurea solstitialis |
| 9. Perennial pepperweed | Lepidium latifolium |
| 10. Purple loosestrife | Lyrum salicaria |
| 11. Black henbane | Hyoscyamus niger |
| 12. Jointed goatgrass | Aegilops cylindrica |
| 13. Buffalobur | Solanum rostratum |
| 14. Common bugloss | Anchusa officinalis |
| 15. Japanese knotweed | Polygonum cuspidatum |
| 15. Myrtle spurge | Euphorbia myrsinites |
| 16. Scotch Thistle | Onopordum acanthium |
| 17. Whitetop | Lepidium draba |

Whitetop is listed as an “A” weed in designated areas of the County. Pine Valley, West Baker Valley and the Bowen Valley-Sumpter areas North and West of Oregon State Highway 7 are classified as Mandatory Control for whitetop.

“B” Designated Weeds – Widespread and/or of High Concern

- | | |
|--------------|----------------|
| 12. Whitetop | Lepidium draba |
|--------------|----------------|
- (Whitetop is a “B” weed in all other areas of the County not listed in the above section.)
- | | |
|----------------------|----------------------|
| 13. Russian knapweed | Centaurea repens |
| 14. Canada thistle | Cirsium vulgare |
| 15. Venice mallow | Hibiscus trionum |
| 16. Yellow toadflax | Linaria vulgaris |
| 17. Dodder | Cuscuta campestris |
| 18. Chickory | Cichorium intybus |
| 19. Teasel | Dipsacus fullonum |
| 20. Common Tansy | Tanacetum vulgare |
| 21. Klamathweed | Hypericum perforatum |
| 22. Puncturevine | Tribulus terrestris |

“C” Designated Weeds – Widespread and/or of Moderate Concern

- | | |
|-----------------------|----------------------------|
| 1. Water hemlock | Circuta maculata |
| 2. Poison hemlock | Conium maculatum |
| 3. Morningglory | Convolvulus arvensis |
| 4. Russian thistle | Salsola iberica |
| 5. Medusahead wildrye | Taeniatherum caput-medusae |
| 6. Kochia | Kochia scoparia |
| 7. Common mullein | Verbascum thapsis |
| 8. Moth mullein | Verbascum blattaria |
| 9. Bur buttercup | Ranunculus testiculatus |

STUDY PLAN 4: FISH ENTRAINMENT STUDY

This study was requested by the Oregon Dept. of Fish and Wildlife.

4.0 Introduction

Baker County filled for their preliminary license and received it on October 8, 2003 for the 3 MW Mason Dam Hydroelectric Project (Project No. P-12058-002). The project is run of release meaning Baker County does not and will not have any control over the release of the water at Mason Dam. The Bureau Of Reclamation and Baker Valley Irrigation District have control of the release of water and will not change water flows at Baker County's request.

The project consists of two small turbines that will be housed in a power plant at the base of Mason Dam. The power generated will be sent approximately 1 mile to an existing Idaho Power Company 138kv transmission line. The 34.5kv power line connecting the power plant to the substation and then to the 138kv transmission line will be buried in the Black Mountain Road right of way.

The project boundary consists of 100 feet beyond the area that contains the powerhouse and tailrace facilities, and the substation to the interconnect with IPC transmission line. It also includes 50 feet on each side of the underground power line that will be placed in the Black Mountain Road right of way.

Baker County proposes to mitigate in lieu of the study by screening the intake for Mason Dam

The results of the proposed study on entrainment may come back inconclusive or inaccurate unless a barrier can be used. Currently perch pass through the existing intake system, which would lead us to the expectation, that other resident fish of Phillips Lake will likely pass through the turbine during the life of the project. In order to prevent any mortality to the resident fish population Baker County believes screening the intake is the most effective solution to this situation.

Screen design will be developed in consultation with, but not limited to, National Marine Fisheries Service, The U.S. Fish and Wildlife Service, Oregon Department of Fish and Wildlife, Forest Service, Bureau of Reclamation, and Baker Valley Irrigation District. The proposed screen will be built to NOAA and ODFW specifications.

In the event that an unforeseen situation arose, which would be classified as any agencies which have greater authority than Baker County deem that a screen could not be used as mitigation, Baker County would recommend the following alternative study.

4.1 Goals and Objectives

An entrainment study is necessary to provide data for ODFW to quantify the impacts of Project operations on native game fish. ODFW will use this information to make recommendations as to whether the project and any mitigation will result in no net loss to native game fish populations. ODFW will also use this information to determine the need for fish screens and to develop and implement strategies for fish management.

4.2 *Relevant Resource Management Goals*

Proposals and construction of new hydroelectric projects in the State of Oregon are subject to state regulation. ORS 543 governs new projects and sets minimum standards for development of hydroelectric projects. A new project can not be approved by the state if the project will have a net loss of wild game fish, unless the losses are mitigated. ODFW considers information on downstream fish passage to be important for concluding whether the applicant can construct the project to meet the minimum standards for developing hydroelectric power in Oregon.

4.3 *Background and Existing Information*

The only information that is known is the letter (attachment A). In this letter perch have been observed in the pool below Mason Dam. No other information exists on entrainment of fish from the reservoir into the stream below the dam. ODFW will require this information to assess the potential impacts of Project operation, and to determine whether the Project can be constructed and operated consistent with state law.

4.4 *Project Nexus*

Resident fish species of Phillips Reservoir could conceivably also pass through the dam. This conclusion directly impacts the project scope and boundary.

4.5 *Proposed Methodology*

Observe and catalog the existing fish in the pool downstream of the stilling basin below Mason Dam. The information that would be cataloged would be:

- The number of fish captured through entrainment
- The species of fish
- The weight and length on native species

Methods that have been discussed are rotary screw traps, electro-fishing, and fyke nets. For Baker County purposes, rotary screw traps are expensive and have a high potential of being damaged in the location proposed. Electro-fishing will not be effective in as large a pool as is the stilling pool below Mason Dam. Fyke nets with live boxes attached may be used but will not prevent upstream migration of fish. Due to the cfs output these nets may have to be removed. In order to obtain accurate information Baker County believes that upstream movement/passage of fish into the stilling pool directly below Mason Dam needs to be restricted. The best possible method is using a barrier that spans the entire distance from one side of the river to the other. This barrier may also need to be removed during high flow in order that it does not become damaged. Once the barrier is in place then seine the pool to remove the existing fish and place them into the Powder River below the barrier. This process will need to be repeated for every time the barrier is removed/replaced or if it becomes damaged. For the first month the pool will be seined once a week, the fish cataloged, and released into the Powder River below. Based on the number of fish cataloged, the seining schedule may be adjusted.

Baker County intends to consult with ODFW in cataloging fish and netting to insure the data collected will provide the most useful data while still being cost effective.

4.6 *Level of Effort and Cost*

The cost of this study is estimated to be \$15,000 (fifteen thousand dollars). It is proposed this study will begin in the spring of 2007 and continue through fall of 2007, with the draft report being submitted by December 20, 2007. Comments on the draft will be received by January 15, 2008. The final report will be completed by March 1, 2008.

Alternative Study Plans

ALTERNATIVE STUDY PLAN 5: RECREATION VISITOR SURVEY AND USE STUDY

This study was requested by FERC.

5.0 Introduction

Baker County filled for their preliminary license and received it on October 8, 2003 for the 3 MW Mason Dam Hydroelectric Project (Project No. P-12058-002). The project is run of release meaning Baker County does not and will not have any control over the release of the water at Mason Dam. The Bureau Of Reclamation and Baker Valley Irrigation District have control of the release of water and will not change water flows at Baker County's request.

The project consists of two small turbines that will be housed in a power plant at the base of Mason Dam. The power generated will be sent approximately 1 mile to an existing Idaho Power Company 138kv transmission line. The 34.5kv power line connecting the power plant to the substation and then to the 138kv transmission line will be buried in the Black Mountain Road right of way.

The project boundary consists of 100 feet beyond the area that contains the powerhouse and tailrace facilities, and the substation to the interconnect with IPC transmission line. It also includes 50 feet on each side of the underground power line that will be placed in the Black Mountain Road right of way.

5.1 Goals and Objectives

The goal of this Recreation Visitor Survey and Use Study is to obtain additional information regarding utilization, including activity types and locations in the proposed project area around Mason Dam, as well as utilization of the developed recreation access areas located below the dam. Information should also be obtained to determine amount of usage of access routes to recreation areas within the project area.

Information gathered would be used to estimate average weekday, weekend, and holiday recreational use at the developed recreation access areas below the dam. Surveys would be employed to gather information about visitors' recreation activities and attitudes in the project area.

5.2 Relevant Resource Management Goals

Construction operations and staging may displace recreation visitors within the proposed project area. Reasonable consideration of the effect of project construction and operation pertaining to recreational access and opportunities in the area is in the public interest.

Baker County maintains a road system throughout the county that is used for the local population as well as tourists and other recreational visitors. Black Mt. Road accesses homes within the area and construction of the powerline in the road area is a concern. It is anticipated that the road will not be closed during construction, though one way, flag car passage may be required. Baker County will comply with standard local and state rules and regulations to work around the construction project.

5.3 Background and Existing Information

No data exists specifically for the Project Boundary area. This area is part of the Phillips Reservoir recreation area. The major impact of the powerline project aside from local residential traffic would be the construction during deer and elk hunting season. Baker County intends to do the work on the powerline outside of existing deer and elk hunting season.

Forest Service personnel have a great deal of knowledge of the use of the sites located on the Mason Dam river road. Baker County intends to assess Forest Service recreational personnel to determine usage of these parking areas in the projected construction months of October and November. We believe that this assessment will confirm that little public use occurs during this time and a temporary shutdown of this area will not greatly effect recreational opportunities.

During the winter the Mason Dam river road and site 2 parking lot (see attached map, attachment A) are plowed. Site 1 does not get plowed and in some winters the snow would make access to this area difficult.

5.4 Project Nexus

Black Mountain Road provides motorized access to the Wallowa-Whitman National Forest. It provides for local residential as well as recreational use by the public. Baker County intends to keep this road open during construction though delays may occur. The developed parking area immediately below the dam will be used as a staging area but the time of year the work will be performed will cause little effect on visitor and recreational satisfaction.

5.5 Proposed Methodology

Baker County proposes to work in conjunction with the Forest Service to minimize impacts to recreation and visitors to the National Forest. The project will be scheduled to cause the lowest disruption to recreational use. Local Forest Service employees and Baker County Road Department personnel working collaboratively will be able to most adequately set construction schedules that have the least impact to the area. The following outlines the study area and methodology proposed to conduct the recreation Resources Study.

5.5.1 Study Area

The proposed study area is the recreational area below Mason Dam with the two sites that are accessible off of the Mason Dam river road. Attachment A shows the area with the two sites. The study will include a list of recreational resources within this area provided by the Forest Service.

5.5.2 Methodology

Baker County proposed Recreation Resources Study will include an inventory of recreational resources in the study area, data collection, on-site surveys and observations to determine recreational use patterns, and user attitudes in the Mason Dam area and upper Powder River. A traffic counter will be installed on the Mason Dam river road.

5.5.2.1 Recreation Inventory

Dispersed day-use areas around Mason Dam will be identified and mapped. Other recreational use facilities including toilet and water facilities, interpretive displays and wilderness stations in the Project area will be identified. The status of recreational use facilities around Mason Dam will be described, and maintenance, inspection, or management practices will be identified.

5.5.2.2 Data Collection

Information will be obtained from the Forest Service, and any other identified entities who may have recreational use information available to supplement on-site field surveys, observations, and traffic counter data. We will ask Baker Valley Irrigation District to document their visits to Mason Dam in order to get accurate information on those that visit the area for recreation.

5.5.2.3 On-Site Surveys and Observations

On-site surveys and observations will be conducted to obtain information regarding use on weekday, weekend, and holiday recreation use in the Mason Dam and the upper Powder River area. Surveys will also provide information regarding attitudes of Mason Dam area visitors.

On-Site Surveys

The on-site survey will be an exiting survey with the survey site being the exit to the first parking lot (on map, attachment A). The survey will be conducted between 8:45 am and 4:15 pm. A calendar showing survey days will be provided in this study plan. Survey days will consist of 20 days randomly selected through the months May-Sept. for the main hunting and fishing seasons, and Oct.-March which is the construction window proposed. Those months that correspond to a hunting or fishing season will be weighted heavier do to higher activity. Attachments G, H, and I are included showing the hunting, fishing, and game bird seasons respectively. The days will be generated through a program made for random number generation in a weighted calendar format by the Baker County Technology Department. The dates generated have been added to the calendar following section 5.6.

The surveyor will count all vehicles entering the area on the Mason Dam river road. The surveyor will ask visitors to respond to the questionnaire upon exiting. One representative from each party will be surveyed. The surveyor will either interview the visitors or will hand out the survey forms for visitors to fill out and give back to the surveyor.

Information on the survey will attempt to identify the following, without being unduly long and time consuming:

- Number of visitors and size of group
- Length of stay/use
- Return visitors
- Access route (FS road, Trail, or Wading upstream)
- Access method (hike, ATV, Bicycle, Motorcycle, Vehicle)
- Destination (River, Recreation sites)
- Activities participating in

- Concerns and desires for improvements
- Visual appeal

A pre-test of the survey will be conducted in the field prior to full implementation of the survey. If problems with the clarity of this survey are encountered, the survey form will be modified. Attachment B is the survey form for exiting visitors. Attachment D will be used to track Baker Valley Irrigation District employee visits. Attachment F will document Baker County, other agencies, and contractor use. Attachment E will be used by residents located at the operators house, if it is agreeable by them, in order that the information from the traffic counter gives us the most useful information.

5.5.2.4 Traffic Counters

One pressure sensitive counter will be placed on the road that accesses Mason Dam. It will be placed at the start of the road off of Highway 7.

The counter will be installed at the beginning of the field survey period May and will be removed at the end of the survey period in March. The counter will be checked for working order and data will be collected during Baker County personnel visits to Mason Dam. Attachment C will be utilized to document counter status and data collected.

5.5.3 Product

Recreation Resources Study

The product of the Recreation Resources Study will be draft and final reports discussing the results of the recreation inventory, data collection, on-site surveying, observations, and traffic counter data. Draft copies of the Recreation Resources Study report will be provided to the Forest Service and other stakeholders for review and comment. The final study report will be provided to the Forest Service and other stakeholders for their files.

5.6 Level of Effort and Cost

Local Forest Service personnel and Baker County road officials will assess the project and determine a scope of work and timing of construction issues that least effect recreation and visitors. Baker County will use pressure sensitive counters on the river road to Mason Dam in order to determine construction times. Baker County will keep Black Mt. Road open to all during the construction of the power line in the road right of way. Baker County will work with the local Forest Service landscape architect after construction to restore any damage to the staging area. In collaboration with the Forest Service, we will agree on a site plan as part of the FERC Licensing agreement.

Study efforts outlined above for the Recreation Resources Study are intended to provide relevant information regarding recreational use in the Project area. Efforts will include data collection, on-site inventory and mapping of formal and informal recreation facilities, database development and on-site surveying, observations and traffic data collection. Several person-days of time will be required for data collection and for the on-site inventory and mapping efforts. Development of the database for the study will also require several person-days of time. It is expected that one person can effectively conduct the on-site surveys and observations. On-site surveys and observations will require approximately 20 person-days of time. Additional time will be required for hiring and training the surveyor and on-site pre-testing of the survey. Costs will also include

pressure sensitive automatic counter, approximately 1 person days to install and 15 days to monitor the counters and collect data. Following completion of data collection and on-site monitoring efforts several weeks of work will be required for data input and analysis, and preparation of draft and final reports.

It is proposed that the trial survey be done from April 1-31, 2007 once a week with revisions made as needed. The survey will start May 1, 2007 and end March 31, 2008. The draft report shall be completed by April 31, 2008. Comments on the draft will be due by May 15, 2008. The final report will be completed by June 15, 2008.

Calendar

Survey

Mason Dam pictures

ALTERNATIVE STUDY PLAN 6: ASSESS TRADITIONAL CULTURAL PROPERTIES

These studies were proposed by FERC and the US Forest Service

6.0 Introduction

Baker County filled for their preliminary license and received it on October 8, 2003 for the 3 MW Mason Dam Hydroelectric Project (Project No. P-12058-002). The project is run of release meaning Baker County does not and will not have any control over the release of the water at Mason Dam. The Bureau Of Reclamation and Baker Valley Irrigation District have control of the release of water and will not change water flows at Baker County's request.

The project consists of two small turbines that will be housed in a power plant at the base of Mason Dam. The power generated will be sent approximately 1 mile to an existing Idaho Power Company 138kv transmission line. The 34.5kv power line connecting the power plant to the substation and then to the 138kv transmission line will be buried in the Black Mountain Road right of way.

The project boundary consists of 100 feet beyond the area that contains the powerhouse and tailrace facilities, and the substation to the interconnect with IPC transmission line. It also includes 50 feet on each side of the underground power line that will be placed in the Black Mountain Road right of way.

The APE for this study will include the project boundary as described above. It will also include Phillips Lake and up to 5 meters above the high water mark.

6.1 Goals and Objectives

The goal of this study is to develop the essential information to address issues pertaining to Traditional Cultural Properties (TCPs) Objectives in support of this goal include:

1. Identification and documentation of TCPs associated with the Project.
2. Identification of Project-related effects on these TCPs.
3. Evaluation of affected TCPs for National Register of Historic Places (NRHP) eligibility.

6.2 Relevant Resource Management Goals

The licensing of the project is a federal undertaking and a license issued by the Commission will permit activities that may "...cause changes in the character or use of historic properties, if any such historic properties exist..." (36CPR 800.16(d)). The commission must, therefore, comply with Section 106 of the National Historic Preservation Act, as amended, which requires the head of any federal department or independent agency having authority to license an undertaking to take into account the effect of the undertaking on historic properties. Historic properties are any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the NRHP. TCPs are a type of historic property eligible for inclusion in the NRHP because of their association with cultural practices or beliefs of a living community.

Project construction, operation, and maintenance may affect the value and integrity of TCPs in the vicinity of the project. Ensuring that the effect of project construction and operation pertaining to this resource is considered in a reasoned way is relevant to the Commission's public interest determination.

6.3 Background and Existing Information

During consultation with the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), the tribe indicated that the project is located in what was historically their ceded area and therefore TCPs might be present. Due to the possibility of TCPs, a survey of the project's APE is needed. Once known sites in the APE have been documented, potentially eligible TCPs and any project effects upon them should be identified.

The Project Boundary basically encompasses already disturbed ground. The dam itself and Black Mt. Road. The likelihood of TCPs being located in these areas is remote.

6.4 Project Nexus

Project-related activities, especially ground-disturbing activities, related to construction of the project could adversely affect TCPs through disturbance or direct loss. Baker County has no intention of adversely affecting any Traditional Cultural Properties.

6.5 Proposed Methodology

The scope of work identified by the CRPP related to the ethnographic, sacred site, and traditional cultural property investigation includes the following:

1. Research data housed at the CTUIR archives for pertinent information about past and present use of the project area.
2. Document relevant traditional use of the project area, e.g., hunting, fishing, food or medicinal plant gathering, settlements (including camps or villages), and ceremonial activities as gathered from this project research.
3. Notify tribal members via letters and/or public flyers of the project, its purpose, how the information gathered will be used, and how they can participate in this project.
4. Travel to the project area and conduct oral history interviews with tribal members. All interviewees will be paid a stipend for their participation.
5. Record interviews using digital audio equipment. Transcribe and store interviews in the CRPP archives and enter relevant data into the oral history database. This information will remain the property of the CTUIR and will only be released if consent is given to the CRPP by the interviewee.

6.6 Identification of traditional Cultural Properties

In the event, there is a potential identification of TCPs; there will be tribal consultation. Guidelines from the National Register Bulletin for evaluating and documenting TCPs will be consulted as well. Baker County anticipates that the tribes will obtain any tribal information on TCP that may be needed as part of the consultation needed for the project. Baker County understands that the tribes may be reluctant to disclose the location of potential TCPs due to confidentiality. If this situation occurs, Baker County will work with the tribes to identify the general issues and concerns regarding potential impacts upon the resources from the project and develop agreeable measures to alleviate them.

6.7 *Products*

1. A confidential oral history report for CTUIR internal use only.
2. A summary report for Baker County, FERC and other agencies as appropriate.

This document will:

- a. Document for the official consultation record the CTUIR's participation in the process of identifying and evaluation cultural resources associated with the project area that are deemed important to the CTUIR.
- b. Provide a non-confidential summary report of the traditional use data pertaining to the study area.

6.8 *Level of Effort and Cost*

The project is considered an undertaking under Section 106 of the NHPA and as such Section 106 Compliance is a Federal requirement for the issuance of a FERC license.

It is proposed this study will begin May 1, 2007 and end November 30, 2007. The draft report will be due on January 31, 2008 with comments on the draft due by February 14, 2008. The final report will be completed on March 1, 2008

See Attachment A for Costs

									Attachment A
Oral History and Ethnographic Research Budget									
Personnel									
	Salaries and Wages								
		Personnel				Rate	Hours	Total	
		Principal Investigator				\$ 36.01	8	\$ 288.08	
		Archaeologist/Ethnographer				\$ 27.34	30	\$ 820.20	
		Oral History Coordinator				\$ 17.85	120	\$ 2142.00	
		cultural Resource Technician				\$ 12.50	70	\$ 875.00	
							Subtotal	\$ 4125.28	
	Benefits								
		Fringe Benefits @ 30%						\$ 1237.58	
							Subtotal	\$ 5362.86	
Non-Personnel									
						Miles	Rate		
	Vehicle/Mileage					500	0.445	\$ 222.50	
	Supplies							\$ 100.00	
	Communications							\$ 5.00	
	Equipment Fee				Day	2	15.75	\$ 31.50	
							Subtotal	\$ 359.00	
							Subtotal	\$ 5721.86	
							Personnel and Non-Personnel		
Pass Through Cost									
	Stipends							\$ 1500.00	
Indirect cost									
	Indirect Rate @ 39.5%							\$ 2260.14	
							TOTAL COSTS	\$ 9482.00	
This is a fixed price budget for 2007									

ALTERNATIVE STUDY PLAN 7: ASSESS ARCHAEOLOGICAL AND HISTORIC-ERA PROPERTIES

This study was requested by FERC.

7.0 Introduction

Baker County filled for their preliminary license and received it on October 8, 2003 for the 3 MW Mason Dam Hydroelectric Project (Project No. P-12058-002). The project is run of release meaning Baker County does not and will not have any control over the release of the water at Mason Dam. The Bureau Of Reclamation and Baker Valley Irrigation District have control of the release of water and will not change water flows at Baker County's request.

The project consists of two small turbines that will be housed in a power plant at the base of Mason Dam. The power generated will be sent approximately 1 mile to an existing Idaho Power Company 138kv transmission line. The 34.5kv power line connecting the power plant to the substation and then to the 138kv transmission line will be buried in the Black Mountain Road right of way.

The project boundary consists of 100 feet beyond the area that contains the powerhouse and tailrace facilities, and the substation to the interconnect with IPC transmission line. It also includes 50 feet on each side of the underground power line that will be placed in the Black Mountain Road right of way.

For this study the project boundary as described above will also serve as the APE.

7.1 Goals and Objectives

The goal of this study is to develop the essential information to address issues pertaining to archaeological and historic-era properties. Objectives in support of this goal include:

1. Identification and documentation of archaeological and historic-era properties within the area of potential effect (APE).
2. Determination of potential project effects on archaeological and historic-era properties within the APE.
3. Evaluation of National Register of Historic Places (NRHP) eligibility (as appropriate and necessary) for properties affected by the project.

7.2 Relevant Resource Management Goals

The licensing of the project is a federal undertaking and a license issued by the Commission will permit activities that may "...cause changes in the character or use of historic properties, if any such historic properties exist..." The Commission must, therefore, comply with Section 106 of the National Historic Preservation Act, as amended, which requires the head of any federal department or independent agency having authority to license an undertaking to take into account the effect of the undertaking on historic properties. Historic properties are any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the NRHP. Assessment of historic properties is conducted in continuous consultation with

the Commission, SHPO, US Forest Service, US Bureau of Reclamation, CTUIR and any other interested party.

Project construction may affect the value and integrity of cultural resources in the vicinity of the project. Ensuring that the effect of project construction and operation pertaining to this resource is considered in a reasoned way is relevant to the Commission's public interest determination.

7.3 Background and Existing Information

The "Supplemental No. 1 to Pre-Application Document for P-12058-002" identified two properties on the NRHP, the Sumpter Valley Railway Historic District land and the Sumpter Valley Gold Dredge. Due to the possibility of additional historic properties or archeological sites, a survey of the project's APE is needed. Once known sites in the APE have been documented, potentially eligible historic properties, and project effects upon them, should be identified.

The Project as planned will pass through disturbed property and the likelihood of Archaeological and Historic-era properties is remote.

7.4 Project Nexus

Project related activities, especially ground disturbing activities related to construction could adversely affect archaeological and historic properties through disturbance or direct loss. Additional information will provide data on historic and archaeological sites located with the APE. Results of data gathering will provide information on which sites are potentially eligible for the NRHP and any potential effects of the project on these sites. If there would be an adverse effect on Historic Properties, an applicant prepared Historic Properties Management Plan would be developed with all stakeholders.

7.5 Proposed Methodology

The generally accepted practice is to conduct a literature review and field reconnaissance. Since the Project Boundary is very narrow, we propose:

1. Literature review of Oregon SHPO, US Forest Service, Bureau of Reclamation and CTUIR records for Archaeological and Historic-era properties.
2. The survey will be done by a Forest Service archaeologist using a systematic pedestrian survey with 15 meter transect intervals. The survey shall be undertaken without ground-disturbing archaeological test excavation to preserve Native American and Euro-American archaeological sites.

A preliminary report identifying any discovered sites should be completed. The report should be reviewed by Baker County and all related parties. Based on consultation regarding the preliminary report, the parties should determine if a more intensive field survey is necessary.

7.6 Level of Effort and Costs

Baker County asserts that the project area has been disturbed and that there are no Historic-era properties in the Project Boundary. The likelihood that archaeological sites exist within the APE are remote. To comply with state and federal rules and regulations is imperative. We believe that if a literature review and pedestrian survey confirm these facts, this is a much more cost effective way of ascertaining the existence of any Archaeological and Historic-era Properties. We intend to collaborate with all relevant resource agencies on the scope of the work.

If any sites are found in this survey, Baker County agrees to work with all interested parties on a more intensive field study.

It is proposed this study will begin May 1, 2007 and end November 30, 2007. The draft report will be due on January 31, 2008 with comments on the draft due by February 14, 2008. The final report will be completed on March 1, 2008

ALTERNATIVE STUDY PLAN 8: BULL TROUT AND REDBAND TROUT AT UPPER CONFLUENCE OF PHILLIPS RESERVOIR

This study was requested in general by ODFW, US Forest Service and the USF&W services.

8.0 Introduction

Baker County filled for their preliminary license and received it on October 8, 2003 for the 3 MW Mason Dam Hydroelectric Project (Project No. P-12058-002). The project is run of release meaning Baker County does not and will not have any control over the release of the water at Mason Dam. The Bureau Of Reclamation and Baker Valley Irrigation District have control of the release of water and will not change water flows at Baker County's request.

The project consists of two small turbines that will be housed in a power plant at the base of Mason Dam. The power generated will be sent approximately 1 mile to an existing Idaho Power Company 138kv transmission line. The 34.5kv power line connecting the power plant to the substation and then to the 138kv transmission line will be buried in the Black Mountain Road right of way.

The project boundary consists of 100 feet beyond the area that contains the powerhouse and tailrace facilities, and the substation to the interconnect with IPC transmission line. It also includes 50 feet on each side of the underground power line that will be placed in the Black Mountain Road right of way.

Baker County proposes to mitigate in lieu of the study by screening the intake for Mason Dam.

Rainbow trout and redband trout are known to occur in Phillips Lake. The redband trout population density and migration are unknown. Bull trout are known to have resident populations in tributaries of the upper Powder River above Mason Dam. Bull trout are not presently known to occur in Phillips Reservoir.

The results of the proposed studies on bull trout may come back inconclusive. However, the potential of the bull trout habitat could change over the life of the project. Currently perch pass through the existing intake system which would lead us to the expectation that rainbow and redband trout will likely pass through the turbine during the life of the project. In order to prevent any mortality of the resident fish in Phillips Lake, screening the intake is the most effective solution to this situation.

Screen design will be developed in consultation with, but not limited to, National Marine Fisheries Service, The U.S. Fish and Wildlife Service, Oregon Department of Fish and Wildlife, Forest Service, Bureau of Reclamation, and Baker Valley Irrigation District. The proposed screen will be built to NOAA and ODFW specifications.

In the event that an unforeseen situation arose, which would be classified as any agencies which have greater authority than Baker County deem that a screen could not be used as mitigation, Baker County would recommend the following alternative study.

Baker County proposed alternative study

8.1 *Goals and Objectives*

The objective of this study would be to determine seasonal bull trout and redband trout use of Phillips Reservoir behind Mason Dam, including size and age class distribution.

Bull trout are currently known to occur in the tributaries of the Powder River, which flow into Phillips Reservoir. It is currently unknown whether bull trout use Phillips Reservoir for various life functions. Redband trout do occur in Phillips Reservoir but little is known about their tributary use or migration patterns.

8.2 *Relevant Resource Management Goals*

The relevant resource agencies general goals are as follows:

1. Ensure that protection, mitigation and enhancement measures are commensurate with Project effects and help meet regional fish and wildlife objectives for the basin.
2. Recover federally proposed and listed species.
3. Conserve, protect, and enhance the habitats of fish, wildlife and plants that continue to be affected by the Project.
4. Ensure that once the licensing is complete, there is an adaptive management plan that allows for the use of new information or new management strategies over the term of the license, bringing us closer to the desired level of protection for fish and wildlife resources. The adaptive management approach is particularly appropriate where there is insufficient data and/or biological uncertainties about those measures that will be most effective for meeting ecosystem goals and objectives.

In addition, the goals for Endangered, Threatened and Proposed Species are as follows:

1. Reduce project effects on threatened, endangered, and proposed species on or adjacent to the Project.
2. Explore opportunities for potential protection, mitigation and enhancement measures for threatened, endangered and proposed species.
3. Gain a better understanding of bull trout/redband trout population trends, migration, habitat loss, present usage, and continuing impacts as related to the Project.

In addition, an overarching service goal is for the new licensing of the Project to succeed in having the Commission include, as license conditions, protection, mitigation, and enhancement measures that sustain, to the extent possible, normal ecosystem functional processes including geomorphic, hydrological and hydraulic patterns and water chemical and physical parameters. Maintaining and improving these functional processes throughout the term of the license will, in turn, provide habitat to support healthy fish and wildlife populations.

8.3 *Background and Existing Information*

The most recent information states that bull trout are not presently known to occur in Phillips Reservoir. All fish sampling to date have yet to find any bull trout in Phillips Reservoir. In the fall of 2004, the Idaho Dept of Fish and Game netted over 96,650 yellow perch from Phillips Reservoir to be re-introduced into Idaho. Again in the fall of 2005, Idaho fish and game netted over 193,700 yellow perch. Other fish netted were 1 Walleye, Black crappie, smallmouth bass, suckers, pike minnow, and trout. These netted fish were returned back into Phillips Reservoir and ODFW received data on species and size of native fish. No bull trout were netted in this large-scale operation. The potential does exist for bull trout to inhabit Phillips Reservoir but additional sampling will not result in reintroduction at this time. Of the trout that were netted 131 and 235 were unclipped trout. These trout could be offspring of hatchery rainbow trout due to the visual inspection given. There was no information available to suggest that these fish were not rainbow trout.

8.4 *Project Nexus*

USF&W response: Project related effects could involve entrainment of fish into the intake pipe. Sampling can provide information on the level of use by bull trout and help better determine the actual impact of the project on the species.

Baker County response: Baker County is proposing an entrainment study. Prior to the entrainment study, it would be premature to say that the bull trout study meets the nexus test between the project operations and effects on the resource to be studied. If native species are not encountered in the entrainment study, the need for additional bull trout studies would be mute. In addition, project operations will not change water level fluctuations in Phillips Reservoir. If bull trout are not currently using Phillips Reservoir, sampling will not provide information on the level of use by bull trout.

US Forest Service response: Operation of a hydroelectric facility has the potential to directly effect bull trout if one were in the lake or were to go through the dam. Fluctuations in water depth that currently occur have the potential to affect the suitability of the habitat for use by bull trout at least during some portions of the year.

Baker County response: Same as above. If water fluctuations in water depth that currently occur are a nexus to this project, Baker County has no response. We have no control of water discharge now or in the future.

Baker County is concerned about fish passing through the intake. With the implementation of screening the intake as mitigation, the migration of fish in and out of the tributaries becomes difficult to correlate a project nexus.

8.5 *Proposed Methodology*

Relevant agencies' methods and alternatives are as follows:

1. Weirs will be used to capture salmonids at the mouth of Deer Creek and the Powder River where it enters Phillips Reservoir. Sampling will occur weekly throughout the fall to sample and estimate downstream migration.

2. There may be alternative ways to sample bull trout and redband trout use of Phillips Reservoir. Any alternative sampling methods should be discussed with relevant resource agencies.

Spring sampling was suggested along with the use of screw traps and pit tags. However, sampling during spring run off may not be feasible and screw traps may not be suitable for use in these stream sizes as well as the damage that could occur to the traps. Pit tags would be very expensive, however, if the agency would like to contribute financially in purchasing the pit tags to gather additional information Baker County would support this endeavor.

8.6 Level of Effort and Costs

Baker County believes that a bull trout study should not take place, unless evidence presented in the Phillips Reservoir Fish Entrainment Study, which has been proposed, shows some empirical data that native fish are migrating out of Phillips Reservoir into the Powder River below Mason Dam. We believe that it is very hard to prove a Project Nexus based on considerable data available from the recent netting operations done by Idaho Fish and Game.

If the Phillips Reservoir Fish Entrainment Study shows native fish passage, Baker County believes that fish screening of the intake valve would be the most cost effective method of protecting native fish in the reservoir.

It is proposed that this study would begin in August of 2008 and end when ice prevents any additional sampling efforts.

ALTERNATIVE STUDY PLAN 9: HYDROLOGY AND STREAM FLOW ANALYSIS

These studies were requested by the US Forest Service and the Oregon Dept. of Fish and Wildlife.

9.0 Introduction

Baker County filled for their preliminary license and received it on October 8, 2003 for the 3 MW Mason Dam Hydroelectric Project (Project No. P-12058-002). The project is run of release meaning Baker County does not and will not have any control over the release of the water at Mason Dam. The Bureau Of Reclamation and Baker Valley Irrigation District have control of the release of water and will not change water flows at Baker County's request.

The project consists of two small turbines that will be housed in a power plant at the base of Mason Dam. The power generated will be sent approximately 1 mile to an existing Idaho Power Company 138kv transmission line. The 34.5kv power line connecting the power plant to the substation and then to the 138kv transmission line will be buried in the Black Mountain Road right of way.

The project boundary consists of 100 feet beyond the area that contains the powerhouse and tailrace facilities, and the substation to the interconnect with IPC transmission line. It also includes 50 feet on each side of the underground power line that will be placed in the Black Mountain Road right of way.

Baker County has determined that there is no need for any studies as this will be a run of release and flows will not be controlled by the project. Hydrology and stream flows are dependent on water released by the Bureau of Reclamation and Baker Valley Irrigation District.

9.1 Goals and Objectives

To determine what effects the proposed hydroelectric operation would have on stream flows and as a result, determine what effects would occur to the river channel, water quality, stream temperatures, stream biota, etc. The study should determine existing amounts and duration of river flows through the post-dam period on the river below Mason Dam and compare that to expected releases below the hydroelectric facility. This should be done for low dam storage years and years where the reservoir is near capacity.

Baker County will do a historic review of reservoir levels, water discharge from the dam and other flow data as part of the project scope but believes any further studies are not cost effective.

9.2 Relevant Resource Management Goals

All resource agencies are responsible for protecting water quality, restoring native fish and wildlife populations for use and enjoyment by present and future generations. Key directives for implementing fish and wildlife strategies include: avoidance of impacts to these, protection of genetic diversity and protection and restoration of natural habitats on which these populations are dependent.

9.3 Background and Existing Information

Historic data exist for the entire 41 years of operation. Flows have varied depending on reservoir levels, snow pack, weather, flood control plans and irrigation. The project will be run of release. According to a letter written to FERC, dated Aug. 7th, 2006, the Bureau of Reclamation wrote:

“Operation of the power plant shall be subordinate to all rights, both explicit and implied, of the Baker Project and its sub features. The power plant shall only receive flows and with associated timing that would normally have been delivered through the outlet works of the dam. Additional water will not be diverted or released through the project other than for authorized project purposes. Reclamation in no way guarantees the reliability or quantity of flow to the project.”

Baker County intends to compile the historic flow data as part of our economic analysis and will share this data with all relevant resource agencies and FERC. Baker County will collaborate with all agencies to share available data.

9.4 Project Nexus

Water flows through the project do provide a nexus for the project. Entrainment and fish passage through the existing dam will be addressed in related studies.

9.5 Proposed Methodology

Baker County will provide the following information that will be obtained from existing sources:

1. Daily average flow by month, presented as an average of all years for Post Mason Dam construction. (Attachment A)
2. Average monthly flow for each year since Mason Dam was constructed. (Attachment A)
3. Average flow for all years by month. (Attachment B)
4. Average flow for all years by month (graphical representation) (Attachment C)

9.6 Level of Cost and Effort

The data exists and the County will compile the above data. Need for additional studies will not add to the project and aid in resource management.

Study Plan 9 Attachments

Studies Not Proposed

STUDY NOT PROPOSED 2: SALMONID SPAWNING AND JUVENILE DENSITY STUDY.

This study was requested by the Oregon Department of Fish and Wildlife and the US Forest Service.

The purpose stated for this study is to determine the location, quality and use spawning habitat by salmonids; and determine juvenile salmonid occurrence and density in the upper two miles of the Powder River below the project. Potential sediment releases during Project construction, as well as operation of the Project may impact the success of spawning adult fish and rearing of juvenile fish. During consultation with ODFW and USFS they brought up the need for fish density studies in case of a catastrophic event caused by project operation.

Baker County believes that construction of the Project will not impact sedimentation of the Powder River downstream. Construction of the Powerhouse and discharge area will be done during low flow (10 second feet release by Baker Valley Irrigation District) and using best practices, sedimentation will be incidental. . We continue to believe that construction of the Powerhouse and discharge area will be accomplished with no impact to spawning habitat or fish density. It is important to note that this area has steep topography and sedimentation is a naturally occurring event.

The issue of a catastrophic event caused by project operations are remote but could potentially happen. If an event were to happen caused by Baker County's project, we believe we would be held responsible for mitigation for damages. The issue, therefore is how will the mitigation be determined. According to ODFW, over 6.4 million trout have been planted either in Phillips Reservoir or in the reach of the Powder River below Mason Dam since 1968. This has been ongoing through the years and has aided greatly in the fishery of the Powder River. The Powder River from Thief Valley Dam to Mason Dam has been a resident population since the 1930's with the construction of the Thief Valley Dam. We therefore believe that the current population of salmoids in this reach of the river are descendants of hatchery fish. Mitigation of any catastrophic event would be planting of additional fish. Baker County has no intention of not mitigating damage to one of the County's prime fisheries. We would work with ODFW on mitigation in the unlikely occurrence of a catastrophic event.

Baker County believes that short of a breach of Mason Dam, the spawning grounds have no nexus to the proposed project. After reviewing Forest Service protocols for stream inventory program management it appears that nothing has been done to inventory fish density or to map habitat in the region below Mason Dam. We believe that the lack of agency data on this stretch of the Powder River and the low probability of a catastrophic event that could not be mitigated with fish plantings, make a nexus to the proposed project very unlikely.

We believe it is important to state that we appreciate the work that all the resource agencies have put forth on this project. It is incumbent on Baker County and FERC to look realistically at the Nexus of this project. Potential exists in hundreds of ways to potentially have a piece of Nexus to a hydro project when it comes to water and fish. At some point, a line needs to be established to make the determination of what is project related and how do we achieve win-win projects like we believe this project to be. State and federal policy is shifting towards prioritizing green, renewable energy as a priority. Safeguards and resource preservation are extremely important and Baker County is a

willing participant in this process. We caution that any change of the status quo must not be 'license' for agencies to have field work done that does not relate materially to any new projects.

If the Commission finds that this study is indeed necessary, Baker County would like to provide the following.

Goals and Objectives

The objective of this study would be to determine salmonid spawning and juvenile density.

Relevant Resource Management Goals

The relevant resource management goals would be to

1. Ensure that protection, mitigation and enhancement measures are commensurate with Project effects and help meet regional fish and wildlife objectives for the basin.
2. Conserve, protect, and enhance the habitats of fish, wildlife and plants that continue to be affected by the Project.

Background and existing Information

To date Mason Dam has not had any problems of de-watering below the dam. There is very little existing information if any available on existing inventories which are an integral part of an effective management program.

Project Nexus

Through current engineering and advances in technology, the probability of de-watering or other effects from the addition of the hydroelectric plant is very minimal. The nexus to the project is the flow of water through the hydroelectric plant.

Proposed Methodology

The study will involve three phases

Phase I and Phase II

These phases will be done as outlined in the Stream Inventory Handbook Level I & II Appendix Reference in Text, Pacific Northwest Region 6, 2006 Version 2.6. Discharge information will be gathered from the Bureau of Reclamation and the gauging station operated by the Oregon Water Resources Dept.

Phase III

This phase is the biological survey. The surveys will be completed on the sections of water that were observed in phase II. To prevent any mortality Baker County proposes that snorkeling be used for the biological sampling method. Sampling will be done in every measured slow water unit and every other measured fast water unit.

In order that the river is stocked to what it can support year round, Baker County recommends that the survey be done in late winter/early spring during minimum flow.