

UMATILLA FISH HABITAT IMPROVEMENT

8710002

SHORT DESCRIPTION:

Improve habitat access, and the quantity and quality of spawning and rearing habitat available to steelhead and other salmonid species that utilize the Umatilla River Basin.

SPONSOR/CONTRACTOR: ODFW

Oregon Department of Fish and Wildlife
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SUB-CONTRACTORS:

Project normally handles the planning, implementation, operations, and maintenance activities with our own personnel and equipment. However, there are times when we must contract certain aspects to handle task(s) that are outside the realm of our capabilities. In these cases we contract with local and/or outside vendors who are capable of providing the services we need. These vendors include: heavy equipment/construction contractors, bioengineering/design consultants, labor services, fence contractors, noxious weed control experts, project material suppliers, etc.

GOALS

GENERAL:

Supports a healthy Columbia basin, Maintains biological diversity, Maintains genetic integrity, Increases run sizes or populations, Provides needed habitat protection

ANADROMOUS FISH:

Habitat or tributary passage

NPPC PROGRAM MEASURE:

7.6, 7.7, 7.8

RELATION TO MEASURE:

This program establishes long term riparian and tributary passage improvement on private lands through riparian leases, cooperative agreements, and easements for up to 15 years in length. Individual projects contribute to ecosystem and basin wide watershed restoration and management efforts that are underway by state, federal and tribal agencies. Planning for project implementation includes the participation and involvement of private landowners, state and federal agencies, tribes, model watersheds, and watershed councils as called for in measure 7.7 of the Program. The program goal is to rehabilitate and improve anadromous fish spawning, rearing habitat, and tributary passage as outlined in Program measure 7.6 to contribute to the Northwest Power Planning Council's interim goal of doubling anadromous fish runs in the Columbia River basin. Individual

BIOLOGICAL OPINION ID:

N/A (project not directly associated with mainstem Columbia River hydroelectric projects, nor ESA requirements.)

OTHER PLANNING DOCUMENTS:

Confederated Tribes of the Umatilla Indian Reservation - Wildlife Mitigation Plan (Draft) May 1996. Confederated Tribes of the Umatilla Indian Reservation - Water Assessment Report. 1994. Confederated Tribes of the Umatilla Indian Reservation - Columbia Basin Salmon Policy. 1995, pg. 9-10. National Marine Fisheries Service - Salmon & Steelhead Enhancement Plan for the Washington and Columbia River Conservation Areas, Volume 1. Chapter 4, Habitat Improvement, 37 pgs. Oregon Department of Fish and Wildlife - Umatilla River Drainage Anadromous Fish Habitat Improvement Implementation Plan. 1988, 37 pgs. Oregon Department of Fish and Wildlife and Confederated Tribes of the Umatilla Indian Reservation - Umatilla Hatchery Master Plan. 1990, pg. 25 and 43. Umatilla Basin Report - Oregon Water Resources Department. 1988, pg. 138-150. Umatilla Basin Project Planning Report - Bureau of Reclamation. 1986, chapter 3, pg. 7. Umatilla County - Comprehensive Plan. 1983, chapter 8. Umatilla National Forest Land and Resource

TARGET STOCK

Umatilla River Coho

LIFE STAGE

All Freshwater Lifestages

MGMT CODE (see below)

A,S

Umatilla River Chinook	All Freshwater Lifestages	A,S
Umatilla River Steelhead	All Freshwater Lifestages	N,S,W

AFFECTED STOCK

Riparian dependent species including: upland game birds, waterfowl, big game animals, non-game birds/wildlife, amphibians, reptiles, and insects

Non-game fish species such as dace, shiner, suckers, and squawfish

Non-game fish species such as cottids, and game species such as coho salmon, chinook salmon, redband trout, and bull trout

BENEFIT OR DETRIMENT

Beneficial

Beneficial

BACKGROUND

STREAM AREA AFFECTED

Stream name:

Tributaries of the Umatilla River, Primarily (Birch and Meacham Creeks)

Stream miles affected:

Directly, 12.5 miles. Indirectly ???, these projects presumably influence riparian, floodplain, and stream habitat function downstream of the affected reaches. i.e., they are part of the total overall cumulative impact of positive and negative land uses that are ongoing in the Columbia River Basin.

Hydro project mitigated:

The intent of this project is to provide offsite mitigation for mainstem losses of habitat and fish productivity caused by the construction and operation of Bonneville, The Dalles, John Day, and McNary Dams on the Columbia River.

LAND AREA INFORMATION

Subbasin:

Umatilla River

Land ownership:

Private lands exclusively

Acres affected:

310 directly, indirectly these projects (presumably) influence up to thousands of acres of riparian/floodplain habitat downstream.

Habitat types:

Instream, riparian, and floodplain (primarily this is a fish habitat restoration project of which wildlife species are secondary beneficiaries to the riparian habitat improvement).

HISTORY:

This project is comprised of numerous smaller projects throughout the Umatilla River subbasin. These projects will restore degraded instream and riparian habitats and improve fish passage. All elements of these projects that are beneficial to improving/increasing natural production of steelhead (our target species) are also beneficial to our other coldwater fishes in this basin. Prior to FY 1993 the program was 100% funded by BPA. In FY 1993 ODFW began supplementing BPA funds with outside funds (i.e. GWEB, R&E, TU, UPRR, FEMA etc.) in order to continue some level of new project implementation. The uncertainty of outside funding however has made it extremely difficult to plan and implement new projects in an efficient manner.

BIOLOGICAL RESULTS ACHIEVED:

This project has benefited our primary target species of summer steelhead in addition to our other resident fish and wildlife in this basin by re-establishing key riparian habitat features inside the corridors we have leased from private landowners. In addition, these projects have stabilized eroding streambanks, improved floodplain function, and have begun to provide overhead shading of the stream reaches we have been treated. These outcomes are measurable through our photopoint records which today for example show: cottonwood and willow trees up to 25 feet tall inside of our leases, where our initial photopoints of these same areas show the absence of these species under preproject implementation conditions. This is quite remarkable recovery when you consider our oldest projects in the Umatilla program are only eight years old!

Habitat achievements to date using BPA funds include: 15.5 miles of riparian fencing, 12.5 miles of stream restoration with varying quantities of instream fish habitat structures, 35 livestock water gaps, one off-site water development, removal of two man-made fish passage barriers (flood irrigation dams), four bioengineered streambank restoration projects, and 310 acres of fenced riparian areas that are now lush with riparian vegetation and are inspected and treated for noxious weeds as needed. In 1995 outside funding (R&E, GWEB, TU, UPRR, etc.) and volunteer assistance enabled us to put on an educational riparian habitat bioengineering workshop for about 250 people. In 1995/96 this funding also enabled us to implement a major bioengineering demonstration project on private lands for landowners, in-house, and outside interests to observe these techniques in practice and to study and evaluate their effectiveness for habitat restoration over a 15 year lease period.

PROJECT REPORTS AND PAPERS:

Quarterly activity reports and annual progress reports.

ADAPTIVE MANAGEMENT IMPLICATIONS:

Enhanced instream and riparian habitat results in improved water quality and quantity, and therefore can increase the carrying capacity for salmonid populations within the system. Modification/removal of fish passage barriers allows adult and juvenile salmonids better access to preferred habitat at critical times of the year and during critical life stages for the organism. A few of the things we have learned over the years that influence our approach to stream restoration are:

- 1) At the initiation of this project, several riparian enhancement strategies were considered including: intensive pasture management, development of riparian exclusion zones, and intensive planting and/or instream structures, etc. (often coupled with either of the first two strategies). Based on our experience, it seems clear that riparian exclusion requires the least amount of effort to achieve the same result as other strategies and probably fits best with the most commonly used cattle management strategy used by our landowner participants. Our experience has also found that high elevation zones (areas) require much longer recovery periods than lower elevational zones. This is due in large part to the length of the annual growing season associated with these areas.
- 2) The effectiveness of instream structures alone at improving habitat is variable, and that they must be installed to address specific limiting factors in order to be successful. Based on our experience, we have learned that most of our project areas have suffered worse degradation than just loss of instream habitat attributes such as wood and boulder structures. Loss of flood plain functions and upslope habitat where instream structure material naturally originates is a major component that is lacking in many areas of our project reaches. Recognition of this aspect of lost attributes has made us realize that streambank stabilization and riparian plant restoration first, will bring us these other essential attributes later for free. As a result, in planning habitat projects we have focused on restoring our flood plain/riparian areas first and have chosen to include instream structures only on a case by case basis where this element is highly warranted.
- 3) Given a particular flood plain problem there are a number of different treatment approaches, our experience has shown that in most situations, bioengineering and riparian fencing can achieve the same and/or better results than the more traditional hard structural techniques such as just rip-rapping the streambanks.
- 4) Bioengineering and riparian planting success is largely dependent on donor plant selection and/or brood source. In the past we have used both local and distant plant stocks including exotics and our experience has shown that using local indigenous stocks are most likely to succeed in our projects.
- 5) As originally conceived, riparian fences were thought to be relatively maintenance free. Our experience has shown that a successful program is both dependent on project design that includes a consideration of geomorphology and hydraulics of the stream in its design, as well as a modest yet continuous level of maintenance is vital to the overall success of the program.

PURPOSE AND METHODS

SPECIFIC MEASUREABLE OBJECTIVES:

The program OBJECTIVE is to increase natural salmonid production by reducing sediment loading and water temperatures, and improving riparian habitat, instream habitat diversity, and salmonid access to preferred habitats.

To achieve this objective we will continue fencing riparian areas, planting grasses, forbs, shrubs and trees, adding off-site watering developments to replace instream watergaps, improving instream habitat diversity and modifying/removing fish passage barriers. We will also inspect, maintain, monitor and evaluate existing projects. Implementation and maintenance activities will concentrate on using bioengineering techniques to mitigate instream and riparian habitat degradation.

In FY 1997 we will continue to work with cooperating landowners to protect as many miles of riparian habitat as possible. The program will also perform routine maintenance on its existing projects and provide additional maintenance following severe

flooding that occurred in February of 1996 and January of 1997. Flood damage repairs to our projects will be covered partially with FEMA funds. We will also correct any new damages (windstorms, ice flows, additional flooding, etc.), and monitor the effectiveness of completed projects.

CRITICAL UNCERTAINTIES:

It has been identified in the Eastern Oregon Anadromous Fish Habitat Restoration Project - Umatilla River Basin Planning Aid Report of 1982, that overall habitat conditions on private lands are poor in the Umatilla basin and that recovery of these areas will enhance natural fish production. In the Umatilla Habitat Program we have chosen to operate under the premise that "if we build it, they will come"! The actual improvement in fish numbers that we will realize from our project work effort could certainly be compromised by factors that are beyond our control such as problems associated with OUT OF BASIN issues like mainstem fish passage, consumptive fisheries, ocean conditions, etc. and IN BASIN variables such as public/private land management issues, changes in instream flow conditions, land development, and changes in land use laws and regulations. Our critical uncertainties for these issues stems from the uncertainty of not knowing whether or not these variables will be adequately addressed to maximize our habitat enhancement efforts.

BIOLOGICAL NEED:

Low summer stream flows and the associated high water temperatures adversely affect salmonids throughout much of the Umatilla subbasin. Degradation of riparian areas and their effective hydrologic function has contributed significantly to these flow/temperature problems. In 1982, 74 miles of degraded stream habitat on private lands within the Umatilla subbasin were identified as in need of habitat restoration (USFWS and NMFS 1982). After eight years of intensive efforts, ODFW has effectively treated 12.5 miles of stream habitat on these same lands. Contingent on securing future funding for new project implementation work, the Umatilla program will strive to address the remainder of these untreated stream mile needs.

HYPOTHESIS TO BE TESTED:

Restoring and/or enhancing riparian habitat and instream habitat diversity will result in improved quantity and quality of salmonid spawning and rearing habitat, and the fish's access to it.

ALTERNATIVE APPROACHES:

Less restrictive agreements (i.e. shorter lease terms, pasture management rather than livestock exclusion) were considered. These techniques have been used by others but are often ineffective, or take much longer periods of time to produce recovery. Since our target species are at low populations, the most rapid method of recovery was chosen.

JUSTIFICATION FOR PLANNING:

N/A

METHODS:

Control livestock utilization of riparian areas by: a) fencing riparian areas to exclude grazing and b) developing off-site water sources to encourage livestock to focus their attention away from riparian areas. Revegetate riparian areas by: a) planting shrubs and trees, b) seeding grasses and legumes and c) controlling noxious weeds. Improve streambank stability and instream habitat diversity by: a) using bioengineering techniques to stabilize streambanks and provide stream channel/grade control and b) installing large wood and/or boulder structures inchannel in key areas to increase habitat diversity. Improve fish access to preferred habitat by modifying or removing fish passage barriers.

PLANNED ACTIVITIES

SCHEDULE:

Planning Phase **Start** ongoing **End** indefinite **Subcontractor**

Task For FY 1998 and beyond we will continue to incorporate bioengineering design/techniques into our O & M activities on existing projects and to all new projects we undertake.

Implementation Phase **Start** ongoing **End** indefinite **Subcontractor**

Task For FY 1998 and beyond we will continue to work cooperatively with landowners to implement new habitat enhancement projects as opportunities arise, and attempt to implement flood damage repairs to our existing projects. In addition we will carry out all scheduled maintenance and monitoring activities.

O&M Phase **Start** ongoing **End** Indefinite **Subcontractor**

Task For FY 1998 and beyond we will continue to provide/conduct scheduled operation and maintenance activities on all existing projects.

PROJECT COMPLETION DATE:

Indefinite. Program should continue until all 74 miles of private lands within the basin that were identified in need of habitat restoration in the Umatilla River Basin Planning Aid Report of 1982 have been restored. [BPA shortened].

CONSTRAINTS OR FACTORS THAT MAY CAUSE SCHEDULE OR BUDGET CHANGES:

- a) Potential for reduced benefits from completed projects due to catastrophic natural events (e.g. floods, wind storms etc.).
- b) Change of landownership and the level of commitment to the project by the new landowner.
- c) Potential for reduced benefits from change in local landuse laws, increased development within basin flood plains, and reduction and/or gutting/weakening of environmental regulations that protect critical habitat values.
- d) Timeliness of procuring funds.

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

Expected performance of target population or quality change in land area affected:

Increased natural production for summer steelhead will result from improvement of the quantity and quality of spawning and rearing habitat by implementation and maintenance of planned habitat enhancement activities. Improved: stream/floodplain function, water quality/quantity, riparian habitat quality/quantity, landscape aesthetics, and awareness of stream ecosystem functions are other anticipated benefits from these projects.

Present utilization and conservation potential of target population or area:

Birch and Meacham creeks are two of the primary spawning/rearing tributaries for steelhead in the Umatilla basin. Both tributaries are protected from the harvest of steelhead by anglers. Present utilization of adult steelhead is in Columbia/Umatilla river sport and tribal harvest. Enhancement of degraded habitat in Birch and Meacham creeks will help to increase the level of natural production by increasing the range of available habitat into (downstream) mainstem reaches within each system .

Assumed historic status of utilization and conservation potential:

Birch and Meacham creeks continue to support spawning and rearing habitat for steelhead however it is believed today that this is at "well below optimal levels" due to habitat degradation that have occurred throughout these sub-watersheds since arrival of early Euro-american pioneers in the mid 1800's. Historically, Birch and Meacham creeks supported spring chinook spawning and rearing in the mainstem reaches. Today Meacham creek continues to support some limited habitat for this species while Birch creek is currently void of utilization by spring chinook. Bull Trout continue to reside in the upper Umatilla River basin with historical utilization noted for Meacham Creek including current documentation of this species in that watershed. Both Birch and Meacham creeks, and the Umatilla River Basin for that matter, have high potential for quick habitat recovery response. This is due to many factors including: highly productive soils within basin floodplains, 15 plus inches of annual precipitation, and a 6 to 7 month growing season.

Long term expected utilization and conservation potential for target population or habitat:

The long term expected/desired utilization and conservation potential for both of these sub-watersheds is to re-extend the spawning and rearing habitat of the upper reaches back down into the lower mainstem reaches of these systems and to re-establish stable fisheries for our cold water species in the mainstem of the Umatilla River.

Contribution toward long-term goal:

More (naturally produced) summer steelhead and other riparian dependent fish and wildlife species through improved habitat conditions.

Indirect biological or environmental changes:

We anticipate increased utilization of the Meacham Creek watershed by spring chinook and bull trout. Other indigenous fish species such as redband trout, and non game varieties including the margined sculpin (a state listed candidate species "threatened") are expected to be secondary beneficiaries of habitat improvement in both watersheds. Wildlife species including numerous varieties of birds, mammals, amphibians, reptiles, and insects will also benefit by improved riparian habitat conditions as over 80% of these species are documented utilizing these areas in their day to day activities. These projects also increase the numbers of indigenous plant species, including numerous varieties of trees, shrubs, grasses, and aquatic vegetation that can only be found in riparian/floodplain type habitats. We also anticipate improvements in water quality and quantity within project streams and the Umatilla River basin as habitats are resurrected. This includes a projected reduction in flooding impacts to unvegetated

Physical products:

Currently the program has 15.5 miles of fence, 310 acres of riparian habitat, 35 watergaps, 1 offchannel water development, numerous inchannel habitat improvement structures, four bioengineered habitat restoration sites, and thousands of indigenous trees and shrubs growing within these leased areas. In the future we will continue to maintain our existing projects, make adjustments/improvements where necessary, and implement new projects as opportunities arise and funding sources develop.

Environmental attributes affected by the project:

As the projects grow and develop, riparian vegetation is beginning to: shade the stream, filter sediment from overland run-off, provide allochthonous input(s) to the stream ecosystem, reduce the negative impacts of flooding, improve landscape aesthetics, increase habitat diversity, improve water quality and quantity, and improve stream channel morphology and characteristics.

Changes assumed or expected for affected environmental attributes:

By protecting these areas from intensive landuses (15 years minimum with our leases), attributes will become more and more pronounced as time goes on. We are allowing the plant community(s) inside these fenced areas to evolve through natural stages of plant succession. Eventually, this will lead to a climax plant community, characterized by an overstory of deciduous hardwood tree species and/or conifers or a mixture of both, depending on site elevation, accompanied with a functional mid and understory plant/shrub community. Large wood material (an important attribute for instream fish habitat) would become available for the stream system naturally from the late succession/climax plant community thriving within the floodplain and upslope habitats. The climax stage would last inside these areas until a major disturbance returns the system to an earlier stage of plant succession, whereby through continued protection, these areas will evolve back through the stages of succession to reach a climax condition.

Measure of attribute changes:

Project has no means or sufficient funds to quantify this question for this project. The Umatilla Basin Watershed Council however is currently embarking on a program to assess TMDL's (total maximum daily load) for water quality parameters in all streams within the Umatilla basin that were recently listed as "water quality limited" by the Oregon Dept. of Environmental Quality. Results of this study will help the council decide which systems and what types of corrective measures to take to bring water quality standards back into compliance within acceptable ranges.

Assessment of effects on project outcomes of critical uncertainty:

We will continue to monitor the program as described below and look for opportunities to improve our monitoring techniques and assessments. Results will be included in our quarterly and/or annual reports. Assessment of the effects of critical uncertainties (such as mainstem passage problems, etc.) has not been undertaken by this project. However, we expect our project outcomes will be beneficial to all of our other riparian dependent species, even if our target species (summer steelhead) fail to recover.

Information products:

Repeated photopoints showing the rate of riparian/habitat recovery on project leases in one year increments. Stream temperature a

nd cross sectional profile responses to riparian recovery. Physical and biological stream surveys of project streams to assess stream and fish species response to habitat changes (once every five years). This information is reported in quarterly and annual reports.

Coordination outcomes:

By 1996, 12.5 miles of Birch and Meacham creeks had been leased and had projects completed. Coordinated resource management planning has resulted from these projects. In planning and implementing these projects, DSL, ACOE, DEQ, NRCS, SWCD, individual landowners, tribes, etc., etc., have been involved in one form or another in the planning process to ensure that other needs were incorporated into the project(s).

MONITORING APPROACH

- Measure streambank vegetative recovery using stream transects and yearly photopoints. - Continue to fund physical and biological stream surveys (every five years) to assess habitat recovery. - Incorporate/synthesize this program's data with other Umatilla Basin monitoring programs/projects. - Continue to monitor adult salmonid returns to the Umatilla River and it's tributaries.

Provisions to monitor population status or habitat quality:

Umatilla River basin has many programs and agencies working on fish management and habitat issues. This includes a state managed fish research program and state/federal/tribal fisheries programs that monitor fish populations and habitat parameters throughout the Umatilla River basin.

Data analysis and evaluation:

By comparing yearly measurements to pretreatment/baseline measurements and/or benchmarks.

Information feed back to management decisions:

Through the Quarterly and Annual reporting process. Through annual meetings and information exchanges.

Critical uncertainties affecting project's outcomes:

This could be handled by establishment of a research and development program/section devoted solely to the study of fish habitat improvement projects/programs.

EVALUATION

of salmon and steelhead stocks in the Columbia basin and recent flood events that have caused severe damages to floodplain properties have helped to increase interest.

RELATIONSHIPS

RELATED BPA PROJECT

8802200 ODFW/CTUIR Fish Passage Improvement project.

9000501 CTUIR Natural Production Monitoring.

9604600 CTUIR Riparian and Fish Habitat Analysis, Protection, and Enhancement.

8710001 CTUIR Habitat Enhancement project.

RELATIONSHIP

Addresses fish passage issues around Umatilla River water diversions.

Assesses natural fish production within the Umatilla River Basin.

Address issues affecting the quality and quantity of fish habitat in the Umatilla River Basin.

This project is the counterpart to the Umatilla project that addresses watershed, riparian and instream habitat diversity, enhancement, and fish passage improvement as a means of improving the quantity and quality of water, and salmonid spawning and/or rearing habitats in the Umatilla River Basin on tribal lands.

8402500 Grande Ronde Habitat Enhancement project.

This project focuses on watershed, riparian and instream habitat diversity, enhancement, and fish passage improvement as a means of improving the quantity and quality of water, and salmonid spawning and/or rearing habitats in the Grande Ronde River Basin on private lands.

8402100 John Day Habitat Enhancement project.

This project focuses on watershed, riparian and instream habitat diversity, enhancement, and fish passage improvement as a means of improving the quantity and quality of water, and salmonid spawning and/or rearing habitats in the John Day River Basin on private lands.

RELATED NON-BPA PROJECT

RELATIONSHIP

USDA Natural Resource Conservation Service

Federal funding and technical assistance for private landowners to implement conservation practices/projects on private agricultural lands. Agency often consults with State agencies for technical expertise and adherence to state land use laws and environmental policies/procedures.

Umatilla Basin Watershed Council

Grant funded and can provide/facilitate assistance/support to landowners, agencies, and private entities interested in issues that affect watershed concerns.

Trout Unlimited

Volunteer group and funding entity (grants) for restoration of cold water fisheries.

Environmental Protection Agency and Oregon Department of Environmental Quality

State and Federal funds for projects and programs to address air and water quality concerns.

Bureau of Reclamation - Umatilla Basin Project (Phases I & II)

Federal funds to screen large irrigation diversions and a water exchange project to improve instream flows in the mainstem Umatilla River

Oregon Water Trust

Purchase or lease instream flows for fish benefits from private landowners. Currently this group is focusing on the Birch Creek watershed.

Mitchell Act (Columbia River Fisheries Development Program)

Upstream/Downstream protection/enhancement of fish passage/screening in the Umatilla Basin.

Umatilla County Soil and Water Conservation District

Source for private landowners to attain assistance with soil and water conservation project planning and fund procurement. District works side by side with the USDA Natural Resource Conservation Service and often attains funds through NRCS for projects. Program works extensively with both groups.

Umatilla National Forest

Federally funded programs to restore fish and wildlife habitat on Federal (public) forest lands located within the Umatilla River Basin. Occasionally provides technical assistance to the program and is a major source for large wood material used in our projects.

OPPORTUNITIES FOR COOPERATION:

a) Compliance with regulations from state and federal agencies (e.g. COE, DEQ, DSL, WRD, etc.) and their respective permitting/waiver/review processes are easier to accomplish when cooperation between other projects and programs/agencies is achieved. b) Timelines of procuring funds from outside sources can be achieved much easier with cooperation/support from other projects and programs/agencies. c) Recent development of the Umatilla Basin Watershed Council should facilitate better working relationships between agencies/groups and affected interests of natural resource utilization within the Umatilla River basin. d) The success of this project depends largely on forming cooperative agreements with private landowners, local high school students, volunteer groups, conservation groups, local planning departments, city councils, private industry, grant programs, etc.

COSTS AND FTE

This project protects and enhances riparian and wetland areas. Approximately 80% of all wildlife species utilize these important habitats for part or most of their life cycle. In this project, important riparian plant communities such as cottonwood galleries are protected from harvest or other human related damage. Research is showing that these plant communities are critical for many wildlife species for food, shelter, migration corridors, nesting, etc.