John Day Watershed Restoration Program

The Confederated Tribes of the Warm Springs Reservation of Oregon

John Day Basin Office
Prairie City, Oregon

Presented By Linda Brown
JDBO Restoration Coordinator
Develop a partnership of conservation within the John Day Basin to identify and address factors limiting ESA species recovery and overall watershed health. While maintaining the social and economic integrity of our communities.
# Limiting Factors

## Riparian
- Habitat loss
- Passage Barriers
- Sedimentation
- Flow
- Water Quality

## Uplands
- Habitat loss
- Noxious weeds
- Erosion
- Juniper Encroachment
- Land Management
ACCOMPLISHMENTS

- 118 passage impediments removed
- 28 water efficiency projects – conversion from flood to sprinkler irrigation, piping of open ditches.
- 12 Return flow cooling systems installed.
- 45 off channel water developments
- 61 miles of riparian protection.
- 9 Riparian Habitat Enhancement Projects.
- 3 Historic Channel Reconnection Projects.
• 6800 acres of juniper control

• 80,000+ native plants planted in riparian and upland.

• Largest and Most Diversified Native Plants Nursery in Eastern Oregon

• 27 Fair and Field Day Presentation to Youth and Adults.

• Active community participant in conservation, economic growth and planning.

• Established long term monitoring program.
Primary Species To Benefit from Projects

- Spring Chinook
- Bull trout
- Mid Columbia Steelhead
- Pacific Lamprey
- Westslope cutthroat
Primary Project Partners

- Bonneville Power Administration
- US Forest Service
- Bureau of Reclamation
- Oregon Watershed Enhancement Board
- Natural Resource Conservation Service
- OR Water Resources Department
- US Fish and Wildlife Service
- OR Dept. Fish & Wildlife
- Grant and Wheeler Soil & Water Conservation Districts
- Oregon Water Trust
- North and South Fork Watershed Councils
- Private landowners
2008 Program Investment

2008 Total - $3,832,162

- BPA/CTWSR: 29%
- Landowners: 12%
- OR Water Trust: 2%
- OWEB: 8%
- USFS: 4%
- BOR: 15%
- ODFW: 18%
- Grant Co: 3%
- ODA: 4%
- USFWS: 4%
- BLM: 1%
Objectives of Restoration Project:

- **Improve Fish Passage**
  - Agricultural Irrigation Diversions
  - Culverts

- **Improve Water Quality & Flow**
  - Irrigation Efficiency
  - Return Flow Cooling
  - Riparian Protection
  - Juniper Control
  - Riparian Planting

- **Increase In-Stream Habitat**
  - Large Wood Structures
  - Channel Reconnection
  - Channel Complexity
• **Education**
  - School Field Days
  - Classroom Presentations
  - Resource and County Fairs
  - Community Involvement, Workshops and Tours
  - Oregon Youth Conservation Corps

• **Monitor Effectiveness of Projects**
  - Landowner Input
  - Water Quality and Quantity
  - Population Surveys, Plant – Fish - Macroinvertebrates
  - Cross Sections, Thermal Profiles
  - Local Weather Conditions
  - Upland Conditions
  - Pipeline Efficiencies
  - Passage Effectiveness
  - Lamprey Baselines
Fish Passage Projects:

- **Agricultural Irrigation Diversions**
  - Gravel push-up replacement with a permanent Lay-Flat Stanchion Structure with approved fish passage.
  - Modify existing structure to improve operation and provide approved passage.
  - Retirement of site. (pump station conversion, combine multiple diversion sites).

- **Culverts**
  - Replacement (Open arch or embedded)
  - Modification (Back watering or baffles)
  - Removal
Panama Diversion, After (During Operation)
Panama Diversion Fish Passage
Panama Diversion, After (Check Boards Removed)
Modify existing structure to improve operation and provide approved passage.
Blue Mountain Diversion, Before
**Culverts**

- Replacement (Open arch or embedded)
- Modification (Back watering or baffles)
- Removal
Replacement
Modification
Removal

Dead Cow Gulch, Before

Dead Cow Gulch, After
Watershed Benefits Provided:

- Improve water quality
- Provide unrestricted fish passage and access to critical habitat for all life stages
- Stabilize riparian vegetation normally scoured by push-up dam construction
- Improve irrigation water management
- Reduce risk of natural resource regulation (Install head gate, measuring device, fish screen/passage)
Water Quality & Flow Projects:

- **Irrigation Efficiency**
  - Irrigation application conversion. Wild flood to pressurized pump/sprinkler, open ditch to enclosed pipe.

- **Return Flow Cooling Systems**
  - Filter, cool, collect and deliver irrigation water directly back to the stream channel.
  - Provide cool water refugia.
  - Improves field productivity.
Riparian Protection
► Protect stream banks and vegetation from concentrated livestock impacts. (Fencing and offsite water developments)
► Promote native species recovery through development of local nursery stock and implementation of planting actions for disturbed construction and degraded sites.

Juniper Control
► Control junipers to release sequestered water back into the hydrologic cycle of the watershed.
Efficiency

Harlan & Gillespie Pump Stations

Hashknife Pipeline Project
Return Flow Cooling
Juniper Control

Laycock Creek, Upper John Day

– 5 years of 7% sustained flow increase

- 16 historic springs resurfaced within 14 months
Watershed Benefits Provided:

- Increase irrigation management
- Improve water quality & flow
- Reduce introduction of poor quality irrigation tail water
- Stabilize channel and promote riparian vegetation establishment & growth
- Create filtering buffer to limit introduction of fecal matter
- Improve Upland Forage Utilization
In-Stream Habitat Projects:

- **Large Wood Structures**
  - Install or incorporate large wood as an alternative to rock bank stabilization structures.
  - Strategically place large wood structures to increase cover & pool development in deficient reaches.

- **Channel Reconnection**
  - Re-activate historic stream channels to increase complexity, habitat & promote flood plain interaction.

- **Restriction Removal**
  - Re-distribute & shape historic dredge mining rock away for the stream to allow natural channel processes to occur.
  - Remove rock armaments to promote channel development.
Large Wood Structures

Forrest/Emmel Project

Placer to Davis Project
Channel Reconnection

Dead Cow Gulch Project, Before

Dead Cow Gulch Project, After
Granite Creek Dredge Tailing Project, Before

Restriction Removal

After
Watershed Benefits Provided:

- Increase channel cover & habitat complexity
- Increase total habitat
- Restore natural channel function.
- Restore flood plain interaction.
Education and Outreach:

School Field Days ~ Classroom Presentations ~ Resource and County Fairs
Community Involvement ~ Workshops and Tours ~ Oregon Youth Cons. Corps
Community Involvement
This will have to be another presentation or you can come talk to me cause we’re out of time, but the results are very favorable.

Thank You,
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