June 2001

Pine Hollow Watershed Project

Annual Report

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Pine Hollow Watershed Project

FY 2000 Projects

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Environment, Fish and Wildlife Division

Project Number: 9901000

Contract Number: 00000610-0000-1 (99AP16300)

Abstract

The Pine Hollow Project (1999-010-00) is an on-going watershed restoration effort administered by Sherman County Soil and Water Conservation District and spearheaded by Pine Hollow/Jackknife Watershed Council. The headwaters are located near Shaniko in Wasco County, and the mouth is in Sherman County on the John Day River. Pine Hollow provides more than 20 miles of potential summer steelhead spawning and rearing habitat. The watershed is 92,000 acres. Land use is mostly range, with some dryland grain. There are no water rights on Pine Hollow. Due to shallow soils, the watershed is prone to rapid runoff events which scour out the streambed and the riparian vegetation. This project seeks to improve the quality of upland, riparian and in-stream habitat by restoring the natural hydrologic function of the entire watershed. Project implementation to date has consisted of construction of water/sediment control basins, gradient terraces on croplands, pasture cross-fences, upland water sources, and grass seeding on degraded sites, many of which were crop fields in the early part of the century. The project is expected to continue through about 2007. From March 2000 to June 2001, the Pine Hollow Project built 6 sediment basins, 1 cross-fence, 2 spring developments, 1 well development, 1 solar pump, 50 acres of native range seeding and 1 livestock waterline. FY2000 projects were funded by BPA, Oregon Watershed Enhancement Board, US Fish and Wildlife Service and landowners. In-kind services were provided by Sherman County Soil and Water Conservation District, USDA Natural Resources Conservation Service, USDI Bureau of Land Management, Oregon Department of Fish and Wildlife, Pine Hollow/Jackknife Watershed Council, landowners and Wasco County Soil and Water Conservation District.

Background

In 1993, landowners in the Pine Hollow Watershed approached the Sherman County Soil and Water Conservation District (SWCD) to help organize a watershed management project. Their goal was to improve the functioning of the Pine Hollow Watershed by implementing improved land management practices.

The SWCD assisted them in the formation of a watershed council, and in finding partners in the state and federal agencies that could provide technical assistance. The Watershed Council has since performed an assessment of riparian conditions using Proper Functioning Condition, and has adopted an action plan. The SWCD contracts with a private range planner to provide rangeland assessments and grazing management plans for each of the participating private ranches.

Watershed Council partners include Sherman County SWCD, USDA Natural Resources Conservation Service, USDI Bureau of Land Management, Oregon Department of Fish and Wildlife, Sherman County Weed District, PG&E Gas Transmission Northwest, and Wasco County Soil and Water Conservation District.

The Pine Hollow Watershed is a tributary of the John Day River covering 92,000 acres, and containing more than 20 miles of fish-bearing stream. The watershed is located primarily within Range 16 and 17 east and Township 4 and 5 south. The creek flows through a deep canyon bisecting shallow-soiled uplands. The creek provides habitat for summer steelhead, redband trout, dace, bridgelip suckers and other fish.

The Pine Hollow Watershed Action Plan (1999) provides the overall direction of the plan, whereas site-specific conditions and objectives are determined by the on-going individual ranch management planning process.

Restoration funds acquired by the SWCD on behalf of the watershed council have been leveraged with additional resources from landowners to restore habitat for both anadromous and resident salmonids, and to improve upland conditions for wildlife.

Sherman County SWCD began administering restoration projects on behalf of the Pine Hollow Watershed Council in 1996. BPA funds were used for the first time in 1999. 9 projects were funded in FY2000. Locations are highlighted on the map. This report summarizes these projects.

Objectives

Objective 1: Assess condition of upland areas.

Objective 2: Mitigate peak flow events, enhance summer flows, and reduce summer temperatures.

Objective 3: Encourage riparian and stream channel recovery.

Objective 4: Monitor progress.

Objective 5: Administrative and technical support of watershed council and project planning efforts.

Project Description

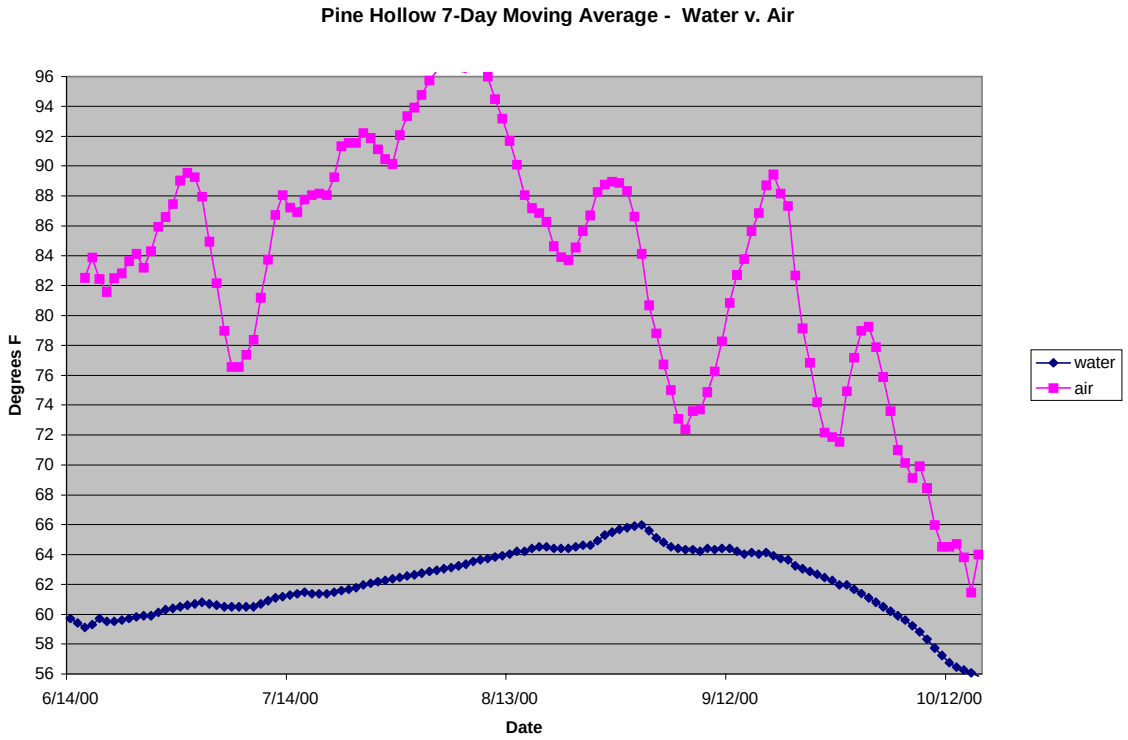
The project consists of on-going improvements to land management techniques, focusing on ranch and farm management practices. Funding is used for installation of improved ranch infrastructure which allows more careful and intensive management of domestic livestock. Specific practices are identified during the course of ranch planning.

Practices implemented in FY 2000 (March 2000 to June 2001) are as follows:

Practice	Extent	Total Cost	BPA Cost	Cost share
Sediment basins	6	$14,895.56	$13,406.40	$1,489.16
Range Seeding	59.3 acres 124 acres contracted, not complete	$15,344.99	$5,412.50	$9,932.49
Cross Fences	9,825 feet	$5,523.00	$4,970.70	$552.30
Water Developments	1 well/trough 1 solar pump 1 waterline 2 spring developments	$20,079.02	$12,937.83	$7,141.19
TOTAL		**$55,842.57**	**$36,727.43**	**$19,115.14**

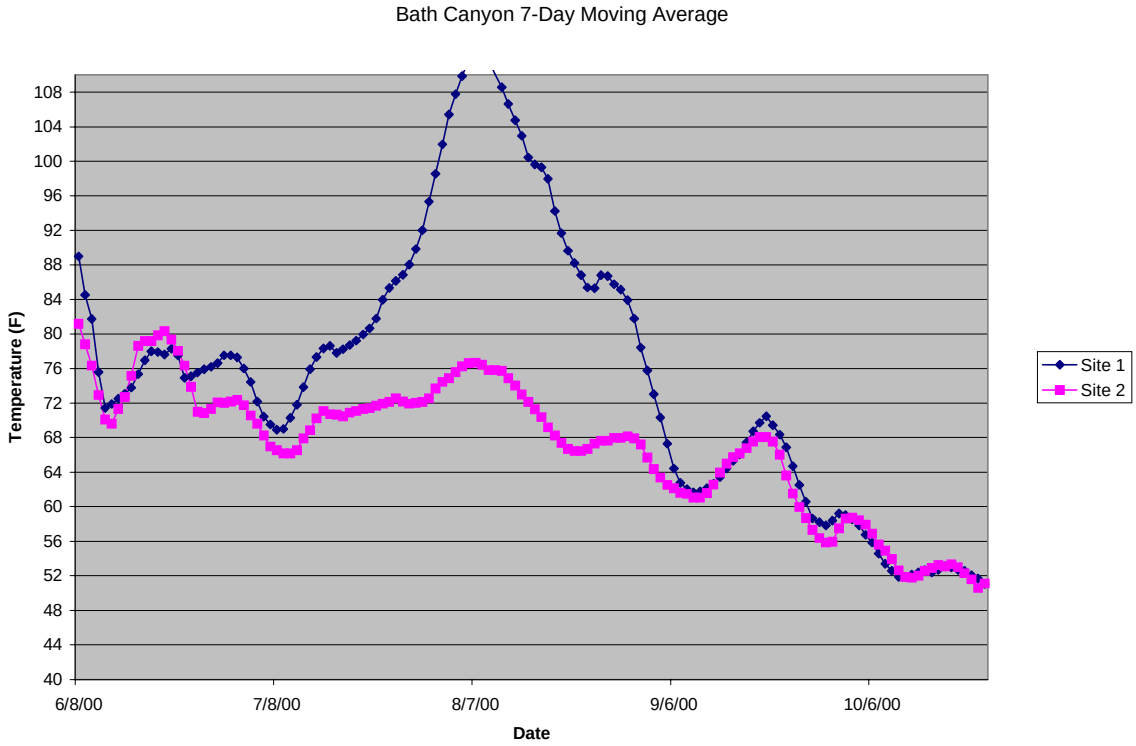
Project Monitoring

Temperature:



In 2000, 2 HOBO Temperature Monitors were placed in Lower Pine Hollow and 2 in Bath Canyon. One of the monitors in Pine Hollow was used to monitor air temperature for a comparison with stream temperature.

The above chart shows air and water temperature data from Lower Pine Hollow. Water temperature in Lower Pine Hollow exceeded the state temperature standard of 64°F for 30 days with a maximum seven-day moving average high temperature of 66°F. This section of the creek flows subterraneously for large distances in late summer, which probably explains the



consistency of the water temperature throughout the summer. The previous year, water temperature at this site never exceeded the State standard. The second chart shows data from two sites separated by about one mile in Bath Canyon. Bath Canyon is a tributary of Pine Hollow with much lower flow. Site 1 is upstream of site 2, and appears to have suffered from extreme low flow in late July and August.

Photos:

Photopoints were taken at sites in Pine Hollow and Bath Canyon in 2000 and 2001. Selected photopoint sites are included at the end of this document and are compared to previous years.

Spawning Survey:

Spawning surveys have been conducted along four miles of Pine Hollow since 1998. Prior to that, spawning surveys were conducted along three miles in 1996 and 1997. Results were as follows:

1996:	0
1997:	1
1998:	4
1999:	7

2000: 14
2001: 2

Low returns in 2001 are blamed on drought conditions.

Training

Sherman County SWCD used Pine Hollow Watershed Project funds to send the District Technician to Stream Geomorphology training with David Rosgen. The job of the District Technician is to conduct resource inventories and assessments for private landowners throughout Sherman County and use the resulting information to provide planning assistance, including NEPA and ESA consultation, project design and project inspection. The two weeks of training in stream geomorphology provides the technician with the background to determine the functional condition of a stream reach.

Start Date

Project implementation in Pine Hollow began in 1996 with a demonstration phase funded by Oregon Department of Agriculture. Upland practices were funded in 1998 by a grant from the Governor's Watershed Enhancement Board. Bonneville Power Administration was first used as a funding source in 1999, and was matched by Governor's Watershed Enhancement Board funds. Upland practice implementation continues through the present.

Completion Date

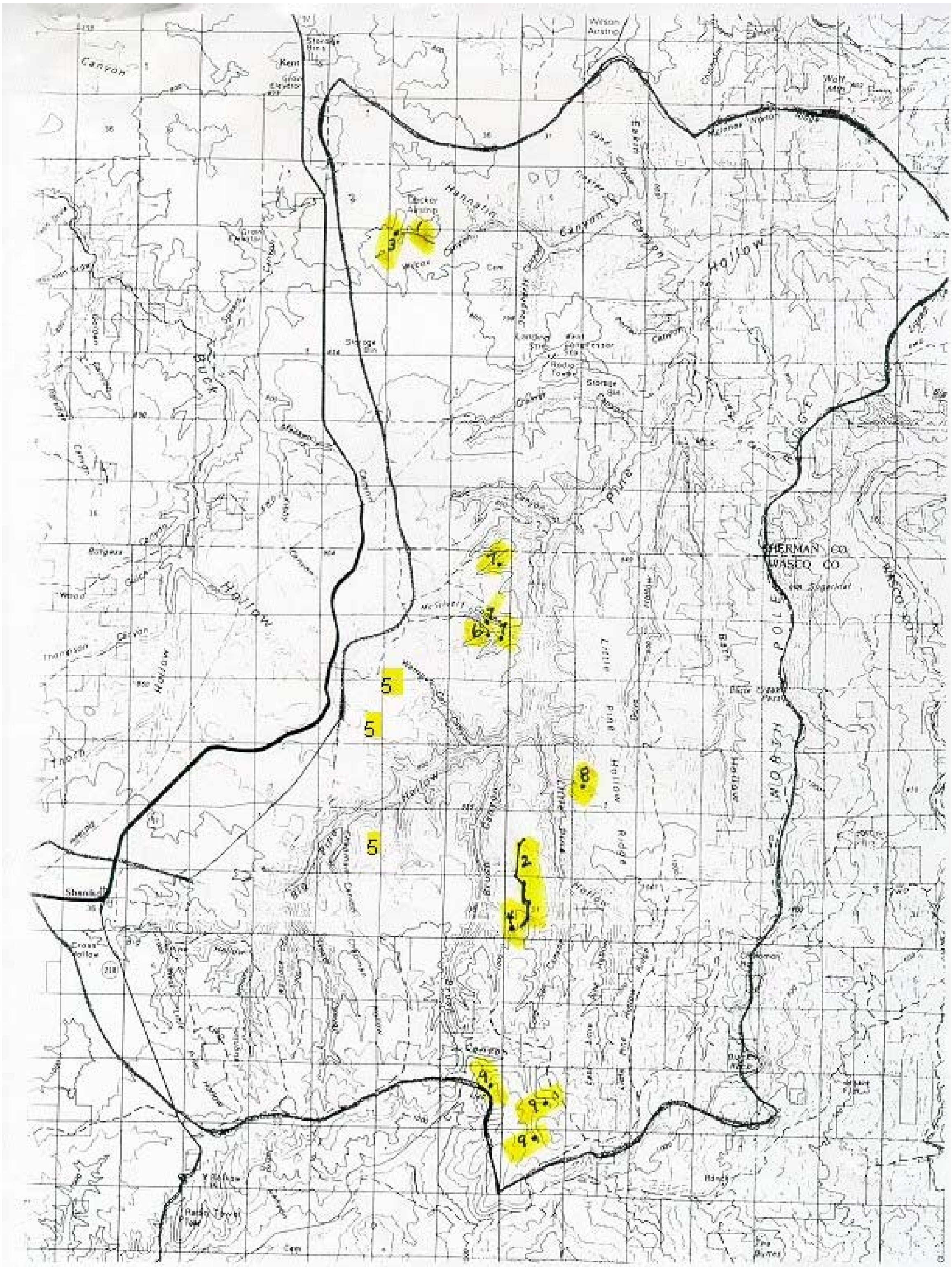
The Pine Hollow Watershed Action Plan calls for upland practice implementation to continue through 2005, while riparian practices begin in 2000 and increase through 2005, continuing until 2007. These dates should be considered estimates.

Collaborators

Major partners in 2000 were:

Agency or organization	**2000 activities**
Sherman County Soil and Water Conservation District	Administration, watershed council support, coordination and participation in spawning survey and temperature monitoring, policy input
Linnea Holmes, Private Contractor	Range assessment, planning, temperature and photo monitoring, overall project planning for watershed council, inspection of practices
USDA Natural Resources Conservation Service	Design and inspection of practices, cultural resource review, ESA Consultation, etc.
Pine Hollow/Jackknife Watershed Council	Project direction and policies.
USDI Bureau of Land Management	Participation in spawning survey, weed management activities, council discussions.
Oregon Department of Fish and Wildlife	Participation in spawning survey, council discussions.
PG&E Gas Transmission NW	On-going funding
Wasco County Soil and Water Conservation District	Participation in and equipment for spawning survey

Pine Hollow Watershed Project
FY2000 Projects



1. Waterline
2. Fence
3. Well & Trough
4. Solar Pump
5. Native Range Seeding
6. Spring Development
7. Water & Sediment Control Basins
8. Spring Development w/ trough
9. Water & Sediment Control Basins

Selected Photopoints, 1998-2001

Photos were taken in selected locations on June 17, 1998, July 21, 1999, May 30, 2000, June 17, 2000, November 1, 2000 and May 10, 2001. Sites included here contract view of creek in either 1998 or 1999 with view in 2000 or 2001.

Bath Canyon

1: Bath Canyon at fenceline, looking upstream. T6S R18E s34, NE ¼ of NW1/4
Left photo: 6/17/98 Middle photo: 6/17/00 Right Photo: 11/1/00

2: Bath Canyon at fenceline, downstream. T6S R18E s34, NE ¼ of NW 1/4
Left photo: 6/17/98 Middle photo: 6/17/00 Right Photo: 11/1/00

11: Bath Canyon, facing upstream, T6S R18E s27
Left photo: 6/17/98 Right photo: 6/17/00

13: Upper Bath Canyon HOBO Temperature logger location, looking upstream. T6S R18E s34 NE1/4 of NW1/4.
Left Photo: 7/21/99 Middle Photo: 6/17/00 Right Photo: 11/1/00

Upper HOBO in location: 6/17/00

Downstream:

Left: 7/21/99 Middle: 6/17/00 Right: 11/1/00

Pine Hollow

1. Temperature Logger Site: Logger was placed in 2 feet of water, where flow emerged from gravel. Water level in pool changed little between two dates.
Left Photo: 7/8/99 Middle: 5/30/00 Right: 5/10/01

2: Pine Hollow Hobo site as viewed from ridge 5/10/01.
Close Up

Mosaic