



## Longley Meadow habitat restoration project

### Background

The project area is located entirely within the Alta Cuhna Ranches, River Ranch, owned and operated by Shauna Mosgrove. This project is a partnership between a number of interested parties including the landowner, Grande Ronde Model Watershed Program, Confederated Tribes of the Umatilla Indian Reservation, Oregon Department of Fish and Wildlife, and Natural Resource Conservation Service. The Confederated Tribes of the Umatilla Indian Reservation is the lead technical agency.

Historically, Bear and Jordan creeks, which flow through Longley Meadow on private ranch land, provided habitat for steelhead. In 1999, biologists observed juvenile spring chinook near the mouth of Bear Creek where it empties into the Grand Ronde River. Past land uses such as road and railroad construction, logging and channelization (straightening out and deepening the creek to drain a wetlands area to grow hay and pasture cattle) had seriously degraded the stream conditions. The Bear Creek had high water velocity and high temperatures during the summer, an unhealthy condition for salmon and steelhead.

### Purpose of Longley Meadow habitat restoration project

The primary purposes of the project include restoring degraded riparian and floodplain habitat, improving instream habitat diversity, and improving water quality for adult and juvenile summer steelhead and spring chinook salmon. A combination of livestock control, floodplain reconnection, in-stream work, tree/shrub planting were used to restore high quality habitat. Habitat parameters addressed included high summer water temperatures, low summer flows, winter icing, unstable streambanks, poor riparian conditions (both overstory and understory components) and poor instream habitat diversity (shortage of complex pool habitat).

Restoration work began in the fall of 2002 and was completed by March the next year. A new, meandering

channel was created following a carefully thought-out plan intended to create a slow water velocity flowing over a gravelly stream bed where salmon and steelhead could build their redds. Tree root wads and boulders were placed at strategic locations to create pools where juvenile fish could shelter and feed. After biologists captured and relocated about 40 juvenile steelhead and nearly 700 non-game fish, they diverted the stream to its new course and used the nearly 15,000 cubic yards of soil left over from digging the new channel to fill in the old one. Between 2002 and 2004, crews from the Confederated Tribes of the Umatilla Indian Reservation planted nearly 50,000 trees and shrubs in Longley Meadow, which Bear Creek flows through.

Data collected from groundwater monitoring wells indicate that groundwater elevations have improved with individual wells showing increases in water table elevation over a longer duration following spring high-flow periods. Improved groundwater storage and elevated water tables can improve summer base flow and provide cold water to Bear Creek and downstream areas to benefit salmonids. Shorebirds, waterfowl, bald eagles and beaver are all benefiting from the project as habitat develops and native vegetation becomes re-established.

### Costs

Total cost:	\$265,000
BPA cost:	\$145,000

Other financial contributors included the Natural Resource Conservation Service, Oregon Department of Fish and Wildlife, Oregon Department of Transportation, Alta Cunha Ranches and the Confederated Tribes of the Umatilla Indian Reservation, which also managed the project.

