Tucannon River Habitat Enhancement Projects

What is LW? Large wood (LW) is a critically important component of streams, fish habitat, and stream function. Historically, streams in this area would have had large amounts of LW throughout the system. Human activity has removed much of the LW from the river system. The lack of LW is a limiting factor for creation and maintenance of pools, providing fish cover and stream function, and is critical for salmonid (spring Chinook and steelhead) recovery.

What happened to the LW? The Tucannon River is currently in the process of recovering from human disturbance and is re-establishing more natural conditions. It has been slowly recovering from clearing and straightening of the channel, although many simplified portions of the channel remain because of confinement by infrastructure.

Why do we need LW? LW creates hydraulic diversity within the stream system, and wood collected along the stream bank can redirect or absorb the energy of high stream flows. LW in the stream creates pools that are very important deep water habitats for many life stages of salmonids and other fish species. LW also provides overhead cover, shelter from high flows, smaller hiding places (especially for juveniles), and critical hiding and resting habitat. LW decreases water velocities and collects gravel, which often raises the water table. This helps create side channels and off-channel habitat, providing more edge habitat and increased productivity of all aquatic life.

Major LW restoration efforts for the Wooten Wildlife Area began in 2006 following the 2005 School Fire. Fires have historically played a major role in LW recruitment to rivers, and WDFW staff concluded the 2005 School Fire was a natural starting point for LW restoration for the Tucannon River and its tributaries. A small scale project was conducted in Cummings Creek in 2006, and another project was conducted in the Tucannon River in 2008. Both projects were successful at enhancing in-stream habitat complexity and reconnecting the river and its floodplain.

In August 2012, a LW project was completed using an S64 Sky Crane Helicopter to place 260-270 large trees with root balls, 25 boulders (10K-15K lbs), and 600-700 smaller "racking" trees into the Tucannon River between Beaver Lake and Campground 6. The helicopter phase of the project followed construction of 4 engineered log jams (ELJs) just above Beaver Lake. The ELJs are going to function as control structures at the downstream end of the treated reach of the river. This project was funded by the Snake River Salmon Recovery Board and Bonneville Power Administration.

At beginning of LW project. Single channel with steep banks.

After 4 years. Braided channel with gravel bars and higher water table.

Why use a helicopter? A helicopter makes it possible to treat large reaches that have poor accessibility with minimal impact to the riparian area. It also provides an opportunity to use whole trees with the root ball and branches intact, which enhances the longevity and stability of the LW structures.

In July 2014, an LW project was completed using a helicopter to place large trees with root balls in the Tucannon River between Camp Wooten and the Panjab bridge. Engineered log jams were also put in the river near Camp Wooten to protect the camp and near the Panjab bridge to reconnect some old channels in the floodplain. This project was sponsored by the Confederated Tribes of the Umatilla Indian Reservation and funded by the Snake River Salmon Recovery Board and Bonneville Power Administration.

Completed projects: 1998 – Hartsock Unit LW project
2006 – Cummings Creek LW project
2008 – Tucannon River LW project (south of Campground 6)
2010 – Russell Spring Creek rehab
2011 – Hartsock Spring Creek rehab
2012 – Tucannon River LW Heli project (south of Beaver Lake)
2014 – Tucannon River LW project (Hatchery to Headquarters)
2014 – Tucannon River LW Heli project (south of Camp Wooten)

Future Projects: 2014 – LW project on Russell Unit (partially completed)
2015 – LW project from Watson Lake to Hatchery Inlet Dam

Cooperators:

Washington Department of FISH and WILDLIFE

FOREST SERVICE U.S. DEPARTMENT OF AGRICULTURE

Snake River Salmon Recovery

BONNEVILLE POWER ADMINISTRATION

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