

CONFEDERATED TRIBES OF THE UMATILLA INDIAN RESERVATION

CC 44 SOUTHERN CROSS PROJECT

Grande Ronde Subbasin Fish Habitat Restoration

Allen Childs, Jake Kimbro, Travis Dixon, Ian Wilson, Dave Mack, Zach Harmon, Daniel Cribbs

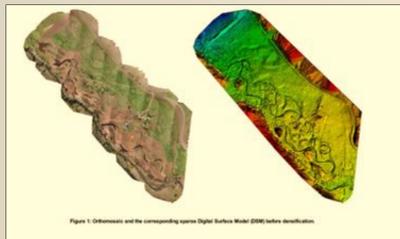
Project Statement/Goal: Use the River Vision concept to protect, enhance and restore first foods through functional and sustainable floodplain and watershed processes that benefit fisheries and aquatic species in the Grande Ronde Basin.



CATHERINE CREEK (CC44) SOUTHERN CROSS 2015/2016 PROJECT IMPLEMENTATION

The Southern Cross Project is part of the Catherine Creek River Mile 44 project complex (CC44), involving 6 private landowners and approximately 4 miles of main stem Catherine Creek. The 545 acre Southern Cross property was acquired in fee title for fish habitat conservation through the CTUIR-BPA Accord from Western Rivers Conservancy in 2015, and presents one of the largest and most significant opportunities to restore core spawning and rearing habitat for Snake River Basin ESA spring-summer Chinook salmon and summer steelhead. Catherine Creek was channelized for agriculture in the early 1940's and is located within a high priority geographic reach with very high intrinsic potential and significant habitat uplift for multiple life stages of salmonids and other native fish. The Vision for the project reach is to restore watershed processes and functions and address habitat limiting factors including: flow, passage, temperature, channel/floodplain conditions, habitat complexity and diversity, and riparian/wetland communities. Ultimate planned output includes improved summer and winter rearing conditions for juvenile salmonids, bull trout, and resident fish, holding habitat for adult Chinook salmon, and an overall increase in habitat suitability. Project planning and design included using reference conditions, habitat suitability models, and expertise from multiple project partners to develop the project design. Project actions included realigning Catherine Creek into a sinuous, lower gradient channel connected to its historic floodplain and constructing a network of floodplain swales and channels. Habitat features included large wood, constructed riffles, alcoves, and large pool habitat. Project metrics include:

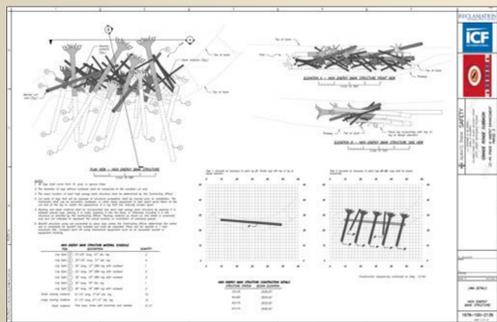
- Construction of 4,200 linear feet of new main channel
- Construction of 995 linear feet of perennial side channel
- Construction of 425 linear feet of new ephemeral side channel
- Construction of 1,425 linear feet of alcoves and spring channels
- Construction of 9,200 linear feet of floodplain wetland complexes
- Construction of 15 riffles in the main channel
- Construction of 142 main channel wood structure components
- Construction of 570 linear feet of edge roughness
- Construction of 1,075 feet of brush mattress
- Construction/placement of 336 floodplain roughness features



Orthomosaic and corresponding DSM



Southern Cross Project overview



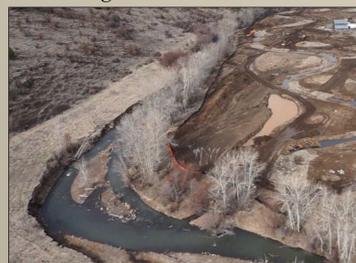
High energy bank structure



Isolated channel and large wood structure construction-7/19/2016



Aerial photo point pre project-4/17/2013



Aerial photo point mid construction-2/16/2016



Aerial photo point early activation-6/16/2016



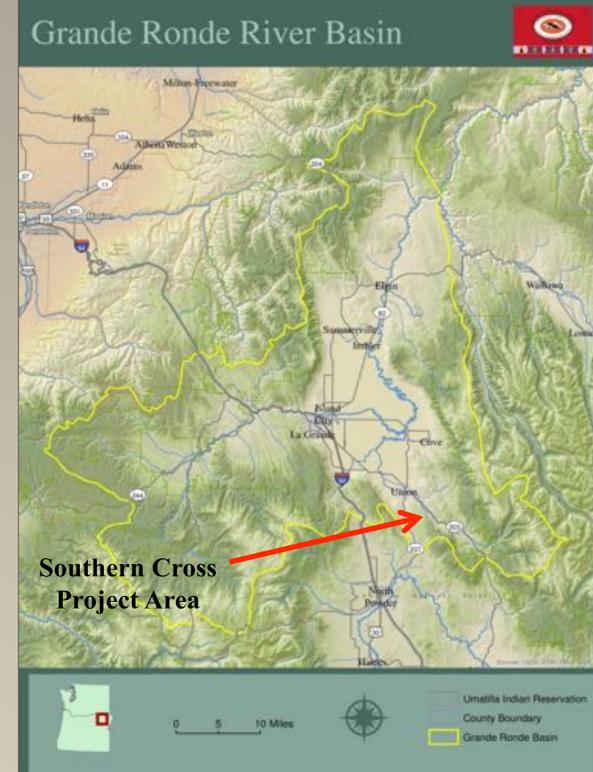
Swale complex-6/16/2016



Large wood structure installation-1/8/2016



Adult Chinook salmon



FISH SALVAGE

From July 5 to July 27, 2016, fish salvage operations were conducted on the Catherine Creek 44 Southern Cross and Kinsley/Shoemaker Fish Habitat Enhancement Projects by staff from CTUIR, Oregon Dept. of Fish and Wildlife, Bureau of Reclamation, Union County Soil and Water Conservation District, Nez Perce Tribe, and the Grande Ronde Model Watershed. Salvage operations were conducted on sites that had been isolated from the main channel of Catherine Creek in preparation for channel and engineered large wood structure construction. Sites were isolated by placing large sandbags around the perimeter of the site and allowing an opening at the downstream end of the site, which was then blocked by a seine net on the day of the salvage. Salvage work was generally done in the morning when stream temperatures were less than 18° C, and most sites were salvaged until depletion was achieved or temperatures reached 18° C. A total of 1511 O. mykiss, 862 Chinook, 107 Lamprey ammocoetes (larvae), and 5476 freshwater mussels were salvaged and relocated.



Salvaging Catherine Creek main channel-7/6/2016



Isolated main channel-7/6/2016

PLANTING PLAN

The long-term goal of the Southern Cross Planting Plan is to restore natural riparian and wetland plant communities. Black cottonwood, Alder, and River birch dominated riparian forests and native sedge communities currently exist on the Property, but have been suppressed or modified from historical conditions. Tree and shrub species to be planted within the project area include: Mountain alder, Serviceberry, Water birch, Red osier dogwood, Black hawthorn, Cascara, Mock orange, Ninebark, Black cottonwood, Chokecherry, Golden currant, Woods and Nutka rose, Booth willow, Coyote willow, Blue elderberry, Snowberry, and Ponderosa pine. Upland areas, access roads, and disturbed areas will be planted with locally-adapted grass species which include Idaho fescue, Bluebunch wheatgrass, Basin wildrye, and Tufted hairgrass. Swale complexes/wetland areas and side channels will be planted with sedges which include Nebraska sedge and Beaked sedge. The planting plan is divided into 6 zones, with each zone having different species composition, planting methods, and locations.



Auguring containerized floodplain plants-4/18/2016



Trenching willow whips-4/18/2016

