

Underwood Navigation Project: Using Dredge Sediments to Recreate Diverse Riparian Habitat, White Salmon Delta, WA.

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Abstract: The intent of the Underwood In-Lieu Navigation Channel Project was to restore navigation by dredging sediments from the 2011 breach of Condit Dam. Restoring navigational boat access will allow tribal members to continue utilizing this economically and culturally important site. The tribal village of *Namnit* has been an active place of fishing and tribal commerce for well over a thousand years. Underwood, as we know it today, was one of the first Treaty In-Lieu Fishing Access sites established to mitigate for federal hydro-system impacts. The sites were built by the US Army Corps of Engineers and are now administered by the Bureau of Indian Affairs. The secondary objective was to use the dredged material to create a riparian island complex to the north of the navigation channel and a gently sloping cobble shoreline on the north side of the boat basin to mimic habitat frequently utilized by juvenile salmonids. Constructed islands will support diverse native riparian vegetation communities with low, medium and high target elevations, as well as an upland zone based on a nearby reference island and hydrologic analyses of the site. These features are expected to provide off-channel and riparian habitat for native fish species at moderate to high Columbia River stages and minimize shallow areas prone to standing of juvenile fish during Bonneville Pool ramping events. The long-term trajectory of the riparian community is towards higher plant diversity and larger proportion of mature woody species such as cottonwoods and willows. It is thought that this newly created habitat will provide better conditions for fish and wildlife species than a riparian zone that is dominated by small woody vegetation with grasses and forbes. This presentation will describe our design and construction methodology and the potential for application elsewhere at tributary deltas in the hydro-system.