



North Satus Drain Ecosystem Restoration, Yakima County, WA; HDR Engineering for the US Army Corps of Engineers Seattle District

This project was a large-scale restoration effort conducted by the Yakama Nation and the US Army Corps of Engineers (USACE) to improve the aquatic ecosystem associated with Satus Creek and the Satus Wildlife Area. Agricultural return flows are known to contribute suspended sediment, nutrients, bacteria, metals, and pesticide loads to creeks and rivers in the Yakima River Basin. In particular, Satus Creek, located on lands of the Confederated Tribes and Bands of the Yakama Nation, receives loads from the North Drain return flow, resulting in increases of sediment, nutrients, bacteria, and pesticides, both in the water column and in streambed sediments. In addition, the deposition of suspended sediment from the North Drain return flow has created barriers to the migration of fish protected under the Endangered Species Act (ESA). The USGS, with funding from the USACE, monitored the hydrologic, water-quality, and possible biologic effects of the North Satus Drain Ecosystem Restoration to identify temporal and spatial changes in the system. The USGS also compiled selected historical data for Satus Creek, local shallow ground water, and North Drain.

WSI supported HDR Engineering and the USACE Seattle District in conducting this 5 ½ square mile aerial mapping project. WSI surveyors established primary control on-site using Static GPS methods, and control was tied to the Washington HARN Network and NAVD 1988 Benchmarks. WSI field crews established 132 Aerial Panels using RTK GPS to determine horizontal and vertical coordinates for each panel. WSI additionally provided five supplemental site surveys of the drainage control structures on specific sections throughout the project area. These supplemental surveys were merged into the aerial base mapping.

