

ABSTRACT: The Klickitat Monitoring and Evaluation Project, as a part of the larger BPA-funded Yakima/Klickitat Fisheries Project (YKFP), continues existing efforts to monitor status and trends and gather baseline information on the abundance, distribution, demographics, life history, and habitat of Klickitat spring Chinook, fall Chinook, and coho salmon, and steelhead. Methods of evaluating and monitoring effectiveness of hatchery and habitat actions are also being developed. Focal anadromous species in the Klickitat subbasin include native populations of spring Chinook and ESA-listed Middle Columbia River steelhead.

Primary monitoring activities include: spawning ground surveys (redd counts); adult salmonid monitoring at the Lyle Falls fishway; juvenile outmigration monitoring; juvenile and resident salmonid population surveys; scale analysis; sediment monitoring; temperature and water quality monitoring; habitat surveys; pathogen sampling; genetic data collection and analysis; and PIT tagging of spring Chinook juveniles.

Adult salmonid population monitoring comes from redd counts (conducted since 1989), hatchery returns, harvest monitoring (from Yakama Nation [YN] and Washington Department of Fish and Wildlife [WDFW] databases), and more recently, monitoring at Lyle Falls fishway (adult trap operation and mark-recapture population estimates were initiated by WDFW in 2004-5 and are being continued by YN staff). Spring Chinook population levels appear to be fluctuating substantially. Since reaching a very low level in 2005, the wild fish returns appear to be rebounding slightly, while hatchery returns have remained relatively low for the last several years. Adult steelhead trends are more difficult to discern due to yearly variations in redd survey conditions, but populations appear to be a little more stable and at a slightly higher abundance level. Additional years of mark-recapture estimates should assist in population assessments. One useful product of redd surveys has been better documentation of steelhead spawning distribution and identification of important tributary spawning habitat (e.g., White Creek watershed), where habitat restoration efforts are now improving conditions. Notable results also include a recent increase of spring Chinook spawner escapement and passage above Castile Falls at RM 64 on the upper Klickitat River (following improvements in 2005 to non-functioning fish ladders that inhibited natural passage), and identification of a probable steelhead redd in the upper Little Klickitat River in 2007 upstream of a partial barrier falls at RM 6 (steelhead adults and redds were also observed in this area following high flow events in 1996 and 1997).

Juvenile monitoring is conducted via floating rotary screw traps, fished year round in the lower Klickitat River (above Lyle Falls) and at Klickitat Hatchery, and seasonally in the upper Klickitat River (above Castile Falls). Stream temperatures are monitored via continuously-recording thermographs at approximately 36 locations throughout the subbasin (data collection began at most sites in 1996). Sediment monitoring is conducted with McNeil core sampling at 12 locations on the Klickitat River and several important tributaries. Habitat surveys are conducted using Timber, Fish, and Wildlife (TFW) methodology; to date over 80 sites on more than 40 streams have been surveyed.