Cramer Fish Sciences (CFS), cbec, inc. ecoengineering, and South Yuba River Citizen’s League, funded and directed by the United States Fish and Wildlife Service’s Anadromous Fish Restoration Program (USFWS AFRP), teamed to plan, design, monitor, perform regulatory compliance for the Hallwood Side Channel and Floodplain Restoration Project (Project) on the Yuba River, California. The Project is designed to restore and enhance ecosystem processes, with a primary focus on improving productive juvenile salmonid rearing habitat to increase natural production of fall and spring-run Chinook Salmon (Oncorhynchus tshawytscha) and steelhead (O. mykiss) in the Yuba River. The Project would enhance and/or create up to 157 acres of seasonally inundated riparian floodplain habitats, 1.7 miles of perennial side and alcove channels, and more than 6.1 miles of seasonal side channels. The design approach focuses on removing unnatural constraints (such as a mid-river training wall and very coarse surface materials left from mining activities) in order to allow natural river and floodplain processes to function. Construction planning efforts include multi-year phasing to remove about 3.2 million cubic yards of material from the site while optimizing habitat establishment in early years and minimizing disturbance to existing high quality riparian and aquatic habitat.

The Project included a robust monitoring program that measured the effect of restoration on a range of ecological parameters thought to influence salmonid habitat use and productivity and riparian ecosystem function using a Before-After-Control-Impact study framework. Specifically, we monitored salmonid and non-native predator density, juvenile salmonid growth and residence time, predation, invertebrate prey (drift) density and biomass, and changes in acreage of a range of habitat types, including terrestrial and aquatic vegetation. We also examined factors influencing natural riparian tree recruitment following restoration.