Floodplain Reconnection for Salmonid Habitat Restoration in California, USA

Mark Tompkins

*River and Floodplain Restoration, FlowWest, LLC*

*Oakland, CA 94612, United States*

Recent research in the Central Valley of California has demonstrated significant growth benefits for juvenile salmonids on natural and restored floodplains. Planning, design, and implementation of floodplain habitat restoration projects in the highly developed Central Valley requires highly resolved hydraulic and habitat modeling, multi-objective and collaborative design approaches, and carefully orchestrated construction methods. Completed and in-process projects in the Central Valley provide useful lessons learned for future planning, design, and implementation of floodplain habitat restoration projects. The lower Deer Creek floodplain habitat restoration project shows how highly resolved hydraulic and habitat modeling can be used to optimize levee setback design for juveniles salmonid floodplain habitat creation. Multiple floodplain habitat restoration projects on the Tuolumne River and San Joaquin River illustrate a range of multi-objective floodplain habitat design approaches used to achieve successful designs across a variety of land uses from urban to agricultural Finally, the East Sand Slough reconnection project on the Sacramento River demonstrates the value of adaptive construction and post-project management approaches to successful floodplain habitat restoration. We summarize the planning, design, and implementation of these projects and distill lessons learned into a set of guidance that can be applied to any floodplain habitat restoration project to address typical project challenges and achieve project goals.