

UC Davis Center for Watershed Sciences –Research Summary

Dr. Megan Nguyen

Professor of Earth Sciences, University of California, Davis

The Center for Watershed Sciences is California's leading academic institute in water management. As an interdisciplinary research unit of the John Muir Institute of the Environment, the Center combines the talents of biologists, geologists, engineers, economists, legal scholars and others to help understand and solve California's complex water problems. The Center conducts problem-solving research and syntheses on restoration and water resource management, mainly in California, but also nationally and internationally. This presentation will review a handful of ongoing projects including:

Childs Meadow's Project (Building Beaver Dam Analogs) - Launched in 2015, this experiment is designed to test whether artificial and natural beaver dams are effective meadow restoration tools for reducing climate-warming gases and increasing biodiversity. Beaver dams increase carbon storage by trapping sediment high in carbon and raising the water table, which expands the growth of riparian and aquatic vegetation. The project tests the effects of two meadow restoration treatments on carbon sequestration, hydrology and sensitive species — one section of meadow with the mock beaver dams and the other without the structures.

Nigiri Project/Knaggs Ranch (Salmon + Rice) - The Center is investigating harvested rice fields as potential salmon nurseries that could help boost struggling Central Valley populations. Experimental releases of young hatchery salmon on the Yolo Bypass near Sacramento indicate that parts of the 57,000-acre floodway could make productive rearing habitat at relatively little cost to farmers.

Cosumnes/McCormack Williamson Tract (Zooplankton, Fish) – Owned by The Nature Conservancy California, the island offers opportunities for restoration of critical tidal freshwater marsh and floodplain habitat. There is also the potential that the island could be managed in such a way as to moderate flood flows in the North Delta. Shasta River (Reconciliation Ecology) - Center scientists are investigating causes for the decline of salmon and steelhead in Shasta River, historically one of the most productive tributaries in the lower Klamath Basin. Researchers are developing approaches to restoring and sustainably managing this unique resource for both native fish and for irrigating local ranches and farms.

Dr. Megan Nguyen is Communications Coordinator for the Center for Watershed Sciences. She manages the center's new science communication outreach program, SPEAK (Scientists for Public Engagement And Knowledge). SPEAK is a workshop series that helps scientists make their research accessible, engaging, and influential. In addition to SPEAK, Megan also manages the watershed social media accounts, contributes to the California waterblog as well as producing her own written and video

blog contributions. One of her most notable blog posts is the [Yolo Bypass: the inland sea of Sacramento](#). Prior to her communications role, she was a junior specialist GIS researcher for the Center. Megan brought her creativity and critical thinking to CWS, where she continues to promote science outreach via tools such as interactive web maps and the development of virtual hikes using field data visuals.