



— BUREAU OF —
RECLAMATION

Revitalizing the LA River: From Car Chases to Fish Passage

Environmental Research Webinar Series

Sponsored by Reclamation's Science and Technology Program



Presenters Biographies:

Nathan Holste is a hydraulic engineer for the Bureau of Reclamation. He works in the Sedimentation and River Hydraulics Group in Denver, CO and previously worked in Reclamation's Albuquerque Area Office. Nathan's projects include design, numerical modeling, and field data collection.

Melissa Shinbein works for the Bureau of Reclamation in the Hydraulic Investigations and Laboratory Services group as a hydraulic engineer. After receiving her M.E. from Cornell University, she worked for several years doing river restoration and environmental remediation work in the greater Philadelphia area before moving out west to join Reclamation's Denver Office.

WEBINAR INFORMATION

DATE/TIME: December 9, 2019, 10-11am MST

WEBINAR PLATFORM: Web Ex

Meeting number (access code): 906 410 347

Meeting password: RMgF6gGy

JOIN MEETING:

<https://bor.webex.com/bor/j.php?MTID=m2e66ac eb153224446f4707144c4272c1>

JOIN BY PHONE: +1-415-527-5035 US Toll

Many rivers and streams have been severely impacted by anthropogenic development and urbanization. Degraded ecological conditions have resulted from alterations to watershed hydrology and sediment yield, along with imposed constraints that limit natural channel adjustment and floodplain access. Urban streams have suffered from a decline in biological habitat values and species diversity. In some urban corridors, such as the Los Angeles (LA) River, streams have been completely channelized and lined with concrete to efficiently convey floods and minimize erosion. These original goals have largely been accomplished but have resulted in limited ecosystem services. Shallow depth and high velocity eliminate refugia and create hydraulic fish passage barriers in concrete lined channels thereby preventing fish from accessing their historical spawning grounds.

This presentation highlights the recently completed Science and Technology Program report entitled "*Design and Analysis of Ecosystem Features in Urban Flood Control Channels.*" The research examines how to redesign the channel bed to provide increased flow complexity and habitat heterogeneity within confined and sometimes steep urban streams. Urban channels can be revitalized by considering ecosystem services over a range of flows, thereby converting a single purpose waterway to a multi-purpose feature of the urban landscape. The goal of developing ecosystem features for confined urban rivers is to create suitable depth and velocity conditions for native fish. A two-dimensional (2D) numerical model and a physical model are utilized to analyze existing conditions and assess the efficacy of various ecosystem features. It may not be feasible to restore all biological conditions needed for aquatic habitat in heavily urbanized streams, so the analysis focuses on fish passage to allow migrating salmonids to reach higher quality headwater streams.

Project Web Page:

<https://www.usbr.gov/research/projects/detail.cfm?id=1726>

Please direct webinar questions to Jennifer Bountry at jbountry@usbr.gov or (303) 445-3614