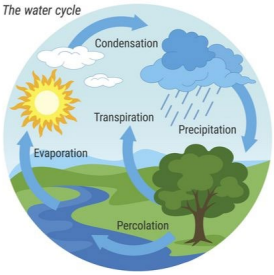
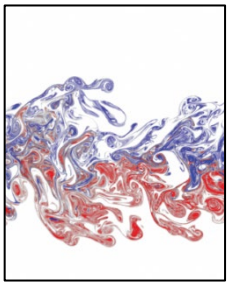
Boase Seminar Series in Hydrology and Water Resources Engineering

Department of Civil, Environmental and Architectural Engineering





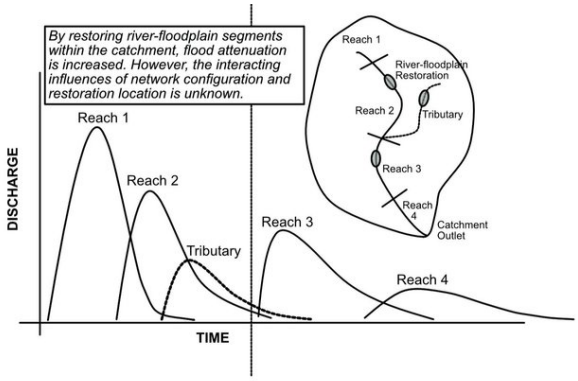
Floodplains in the Anthropocene

Prof. Ryan Morrison
Department of Civil and Environmental Engineering
Colorado State University
Fort Collins, CO, USA

Wednesday, October 5, 2021 | 11:15 AM | ECCE 1B41 &
Zoom: https://cuboulder.zoom.us/j/95668504496
(passcode: water)

Abstract:

Despite the numerous hydrological, geological, and ecological benefits produced by floodplain landscapes, floodplains continue to be degraded by human activities at a much higher rate than other landscape types. This large-scale landscape modification has been widely recorded, yet a comprehensive, national dataset quantifying the degree to which human activities are responsible for this degradation has not previously been evaluated. In this presentation I describe recent research to better understand the large-scale degradation of floodplains caused by human stressors using an index of floodplain integrity. I present on the prevalence of human modifications, including new evidence for the widespread construction of artificial levees, which can be used to quantify floodplain integrity for five essential floodplain functions of flood attenuation, groundwater storage, habitat provision, sediment regulation, and organics and solute regulation. Finally, I discuss the implications of floodplain degradation on floodplain resilience, management, and restoration.



Speaker Bios: Ryan Morrison is an Associate Professor in the Department of Civil and Environmental Engineering at Colorado State University. He earned his PhD at the University of New Mexico and his BS and MS in Civil Engineering from Washington State University. He has also spent part of his career as a water resource engineer in Portland, OR, and has also worked for the USGS as a Research Engineer. Ryan's research primarily focuses on understanding the links between human and natural systems, particularly the impacts of human activities on river and floodplain processes.