

Talk Title:

Smokey the Beaver: can beaver dams keep riparian corridors green during wildfire?

Talk Abstract:

Beaver dams are gaining popularity as a low-tech, low-cost strategy to build climate resiliency at the landscape scale. They slow and store water that can be accessed by riparian vegetation during dry periods, effectively protecting riparian ecosystems from droughts. My research from a case study in Nevada indicates that beavers are able to create and maintain wetlands resistant to both seasonal and multiyear droughts. Whether or not this landscape wetting and drought buffering goes on to reduce or prevent burning in wildfire has been discussed anecdotally but has not been examined in a scientific context. My research from a study on 5 different fires in the American West indicates that it does and that beaver-dammed riparian zones burn on average 3 times less than those without beaver. Perhaps instead of relying solely on human engineering and management to create and maintain fire-resistant landscape patches, we could benefit from beaver's ecosystem engineering to achieve the same goals at a lower cost.

Speaker Bio:

Dr. Emily Fairfax is an Assistant Professor of Environmental Science and Resource Management at California State University Channel Islands. Dr. Fairfax double majored in Chemistry and Physics as an undergraduate at Carleton College, then went on to earn a PhD in Geological Sciences from the University of Colorado Boulder. She uses a combination of remote sensing and field work to research how beaver activity can create drought and fire-resistant patches in the landscape under a changing climate. Her colleagues and students can vouch that when Dr. Fairfax says she can talk about beavers all day, she's not kidding.

Relevant Publications:

Fairfax, E., & Whittle, A. (2020). Smokey the Beaver: beaver-dammed riparian corridors stay green during wildfire throughout the western United States. *Ecological Applications*, 30(8), e02225.

Fairfax, E., & Small, E. E. (2018). Using remote sensing to assess the impact of beaver damming on riparian evapotranspiration in an arid landscape. *Ecohydrology*, 11(7), e1993.