THE UNIVERSITY OF ARIZONA

School of Natural Resources and the Environment

Seminar Series: Spring 2024

NATURAL INFRASTRUCTURE IN DRYLAND STREAMS (NIDS) CAN ESTABLISH REGENERATIVE WETLAND SINKS THAT REVERSE DESERTIFICATION AND STRENGTHEN CLIMATE RESILIENCE

SPEAKER: Laura Norman, US Geological Survey

DATE: Wednesday, January 31st

TIME: 3:00 - 4:00 pm

LOCATION: ENR2 S210 & Zoom

ABSTRACT:

Nature-based solutions are being explored for international water resource management, disaster risk reduction, and climate change adaptation. Efforts to develop more sustainable, regenerative agricultural ecosystems, that maintain cover and promote soil health, can help restore natural processes. People living in dryland climates have historically installed rock detention structures to hold water in place and secure fertile crops. “Natural infrastructure” is one option that offers a cost-effective and flexible approach for disaster-risk and water-resource management. This presentation will introduce research conducted by the USGS Aridland Water Harvesting Study that has proven using natural infrastructure in dryland streams (NIDS), such as rock detention structures, can restore and/or create perennial freshwater wetlands, support riparian vegetation, sequester carbon and improve channel morphology and groundwater processes. This traditional ecological knowledge, using NIDS to slow flows, has been documented for millennia in riparian ecosystems of the southwestern United States and northern Mexico, and is comparable to beaver-engineered systems of North America. NIDS can mitigate climate-related disturbances and stressors, such as drought, water shortages, and flooding.

Norman, L. M., Lal, R., Wohl, E., Fairfax, E., Gellis, A. C., & Pollock, M. M. (2022). Natural infrastructure in dryland streams (NIDS) can establish regenerative wetland sinks that reverse desertification and strengthen climate resilience. Science of The Total Environment, 849, 157738. https://doi.org/10.1016/j.scitotenv.2022.157738

The School of Natural Resources and the Environment
ENR2, 3N
1064 E. Lowell St.
Ph.: (520) 621-7255 | Fax: (520) 621-8801