Wind Erosion and Dryland Restoration on the Navajo Nation

***Amber Renee Archie**, Audrey Harvey, Karen Anne Haubensak*
Northern Arizona University, Flagstaff, AZ, USA

Arizona's enduring drought, spanning nearly three decades, presents a formidable challenge to sustainability, especially in its desert ecosystems. These arid landscapes inhabit around one-third of Arizona's territory, distributed across four unique desert regions. Historically, these resilient desert biomes have adapted to their harsh environment over millennia, but the persistent drought, coupled with desertification, poses a grave threat. Desertification, the degradation of arid and semi-arid land due to climate variations and human activities, carries severe socio-economic and environmental repercussions. Prolonged droughts, soil erosion, and human interventions are driving forces behind this phenomenon. A concerning consequence is the migration of sand dunes, which results from wind-driven soil erosion. To address desertification, particularly the issue of migrating sand dunes, I've initiated an experimental project. The project's primary goal is to restore drylands using native vegetation, combating soil erosion by creating a stable soil structure. We are cultivating a variety of native grasses and forbs found in northern Arizona, with a focus on lands belonging to the Navajo Nation. This approach not only preserves traditional ethnobotanical resources but also diversifies land coverage in these areas. Over the next year, we will collect seeds from various northern Arizona locations and plant them on the project site, located on the Navajo reservation. This initiative aims to observe the growth of native plants and evaluate their effectiveness in preventing wind erosion by compacting the soil.In battling Arizona's persistent drought and desertification, this project holds promise as a sustainable solution to safeguard the state's fragile desert ecosystems while promoting resource diversity and resilience.

Contact Information: Amber Archie, Northern Arizona University, Biology, NAU School of Forestry, Flagstaff, AZ 86011, USA, Phone: 928-523-2669, Email: anita.antoninka@nau.edu