

## **Invasive Species Distribution Model from the effects of climate change in Arizona**

*Sara Souther<sup>1</sup>, Kayla Yazzie<sup>2</sup>, and Collin VanBuren<sup>3</sup>*

<sup>1</sup>Northern Arizona University: School of Earth & Sustainability, Flagstaff, AZ USA

<sup>2</sup>Northern Arizona University, Flagstaff, AZ USA

<sup>3</sup>Northern Arizona University: School of Earth & Sustainability, Flagstaff, AZ USA

As climate change rises, it sends a ripple effect with both land and water ecosystems. One of the effects is the rise of non-native species, because it involves the displacement of native plants, fisheries, and wildlife. These non-native species can also be poisonous or toxic to humans and livestock. Which leads to negative effects on crops and rangeland of an area. This gives exotic plants a chance to prosper if they are not controlled properly. These non-native species are very difficult to maintain and control because there needs to be proper identification, replacement with native species, and creating management plans. One method to help monitor these exotic species is creating Species Distribution Models (SDMs) to help calculate and give predictions of the level of invasion that these species have before and after restoration treatments. The data collected will display the distribution of Native and non-Native species that could potentially affect the Emory oak restoration management plans. There will also be data about climate change and how it affects both restoration management and the species distribution models. The future direction of these models will to be used to help Indigenous communities that are more impacted by climate change and the increasing rate of invasive species. This will be done by looking at Emory oak ecosystems because it is culturally valuable for the Western Apache tribe. These models will calculate varied invasive grasses and forbs that will be available for future land management and restoration practices. This will also be great information by using SDM to allow land managers and practitioners to utilize their focus on time and resources.

Contact Information: Kayla Yazzie, Post-Bacc Scholar, Northern Arizona University, SES, NAU School of Forestry, Flagstaff, AZ, 86011, USA, Phone: 928-523-2669, Email: [anita.antoninka@nau.edu](mailto:anita.antoninka@nau.edu)