Abstract

Prehistoric sites and artifacts are common across the country side in the high elevation desert of California's northeastern corner. For decades archaeologists have been researching, surveying and cataloging archeological sites on lands managed by the Bureau of Land Management (BLM). While thousands of sites have been recorded, it is hard to say how many remain undiscovered. Multiple archaeological site prediction models have been completed covering the area to assist archaeologists in locating and recording sites. This project tests the hypothesis that the site type Maxent model can be as good or a better predictor of archaeological site probability than the Maxent models that do not categorize by site type. The site type Maxent model will also be as good or a better predictor of archaeological sites than the previous models at a project scale. To test this hypothesis three models were run (1) the "kitchen sink", all 3,729 sites within the study area, (2) ecological region, using all sites categorized by the ecological region in which they fall, and (3) site type, a subset of 1,332 sites, categorized by the prehistoric people use at that site. Maxent uses the spatial location of individual archaeological sites and environmental variable rasters to produce a probability of distribution raster. At the study area scale the Maxent software's built-in validation tools, environmental variable performance and Area Under the Receiver Operator Curve (AOC) the three Maxent models were compared and to test the hypothesis. At a project scale a 5,800 km^2 archaeological survey area was used to compare how well the Maxent models and the previous models were able to predict recorded site locations. This project was unable to definitively prove the hypothesis; however the results show that the site type Maxent method of modeling provides a successful method for predicting archaeology site locations at the study area and project scales, with some additional work being needed.