

Red fox populations in Central Mongolia are defined by the IUCN RedList as “near threatened”. The use of Geographic Information Systems in the field of wildlife and conservation biology can help show red fox distribution and aid in forming conservation strategies. A study by Jackson et al. analyzed land cover in Central Mongolia in and around the Ikh Nart Nature Reserve. The study also provided a statistical equation that determines the probability of finding a red fox in a given area based on the surrounding land cover. For this project, I analyzed the land cover maps in order to determine occupancy probability. First, I converted the Shapefile habitat maps into raster layers. Due to the large nature of the original dataset, I chose to focus my analysis on a smaller area of interest of about 370 points. I buffered each point (which symbolized the center of a 30m grid cell) in the area of interest by 250m. Then, I used Zonal Statistics as Table to determine the area of dense rock and shrubland in each buffer. I determined percent cover of each habitat type and then used these values in Jackson et al.’s occupancy probability equation. I then joined the occupancy probability values to my point layer and created a new raster that was color-ramped based on occupancy probability. I found that the range of occupancy probabilities for the area of interest was between 0.086 and 0.089. These data can be used to make future management decisions for the area. For example, it would likely be detrimental to the fox population if an area of high occupancy probability were developed into a residential area.