Species Diversity and Relative Abundance of Reptiles and Amphibians at Glacier Creek Preserve

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Introduction

• Tallgrass prairie preserve
• Has expanded to include wetlands, creeks, seeps, and woodlands
• Restoration began in 1970 to maintain habitat for native flora and fauna
• Since 1970, Glacier Creek has increased from 65 ha (161 acres) to 172 ha (425 acres)
• First investigation of reptiles and amphibians inhabiting Glacier Creek Preserve

Methods

• Seven sites were randomly selected to represent different habitats that occur in Glacier Creek Preserve
  • Prairie last burned in 2016
  • Prairie last burned in 2014
• Each site was coded by color and number for the purpose of marking reptiles and amphibians
• Sites were sampled using pitfall traps, cover boards, drift fencing, and collapsible minnow traps
• All specimens were released at capture site.

Results

• Data were collected from April 2016-October 2016 and from February 2017-March 2017
• Eight of the expected 23 species have been observed to date
• Seven of the species have been captured
• Preliminary paired t-Tests indicate no significant differences between the number of species found among habitat type (prairie versus non-prairie) and treatment type (burned prairie and unburned prairie)
• Preliminary Shannon Diversity Indices:
  • Prairie: 0.6304
  • Non-prairie: 0.6142
  • Burned prairie: 0.7591
  • Unburned prairie: 0.5147

Discussion

The species captured and observed at Glacier Creek Preserve were approximately one-third of those expected to inhabit the preserve. Though the results indicate low species diversity, it aligns with other research conducted on reptiles and amphibians in prairie landscapes, particularly those in burned treatments. It is likely that though sampling periods and frequencies were consistent among sites, capture rates would have been higher if the frequency of sampling was increased. As Glacier Creek Preserve continues to restore the landscape back to native prairie and increase in size, it is expected that the species diversity will increase. When there is a greater area of continuous habitat, the species specializing in such habitat will increase in diversity and abundance. This research will be used in future projects at Glacier Creek Preserve to discover the changes to the reptile and amphibian communities over time.

References


University of Nebraska Omaha. c2017. Omaha (NE): University of Nebraska Omaha; [accessed 2017 February 1]. http://www.unomaha.edu
