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Demographic consequences of climate Change in the Uinta Ground Squirrel

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I. Introduction

One important impact of climate change is shifts in the timing of life events such as reproduction and flowering. Hibernators like the Uinta Ground Squirrel are especially sensitive to potential shifts because they depend on food at essential times.

II. Methods

A. Trapping protocol
   • Live traps & peanut butter
   • Ear-tags & Pit-tags
   • Survival over time

B. For each captured individual:
   • Body size
   • Body mass
   • Sex
   • Age

III. Results

Preliminary comparisons of modern to historical data show increased body mass (figure 2) and survival (figure 3), indicating a match could be occurring in these years. Discrepancies in body mass between 2013 and 2014 are likely due to vastly different climates in those years.

Trends in the proportion of good and bad years will emerge with additional years of data.

IV. Conclusions

Understanding how the timing of important life events will be affected by climate change is essential for forming a clear picture of how communities will be changing in the future. This research represents the first steps in assessing impacts on a prominent member of Utah’s alpine ecosystems, the Uinta Ground Squirrel.

Figure 1 – Temperature trend in Logan Canyon, UT

Figure 2 – Comparison of body mass in historic and modern data by age and sex

Figure 3 – Average historic and modern survival rate

<table>
<thead>
<tr>
<th></th>
<th>Historical Survival</th>
<th>Modern Survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yearling</td>
<td>0.432</td>
<td>0.429</td>
</tr>
<tr>
<td>Adult</td>
<td>0.416</td>
<td>0.437</td>
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