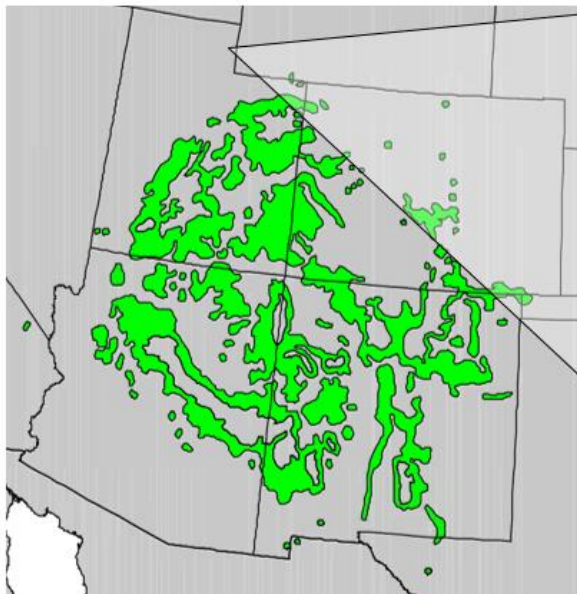




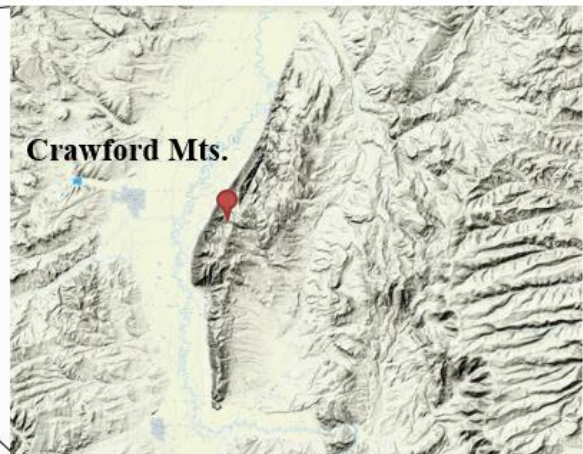
## PACKRAT MIDDENS AND PAST ENVIRONMENTS

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**Geography Department**

The purpose of our research was to find preserved remains of the Colorado piñon (*Pinus edulis*) in packrat middens from the Crawford Mountains of northern Utah. The vegetation remains help determine the timing of the arrival in the farthest northern distribution of this important species. Radiocarbon dating is then used to supplement the dendrochronological data by extending the time depth of data. This project is contributing to research already being done by Professor Larry Coats mapping piñon migration across the Colorado Plateau. We found that the Crawford Mountains is the farthest that the Colorado piñon has been found. A sample also pushed the arrival timing to be around 100 years earlier than the current record. This has helped with expanding the dendrochronological data. It could alter our understandings of the past climates in relation to tree distributions, and help us to better understand the impacts of current and future climate changes on plant migrations.



**Green = current Piñon distribution**



**Piñon remains from packrat middens in the Crawford Mts.**