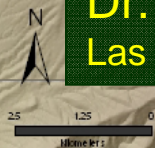


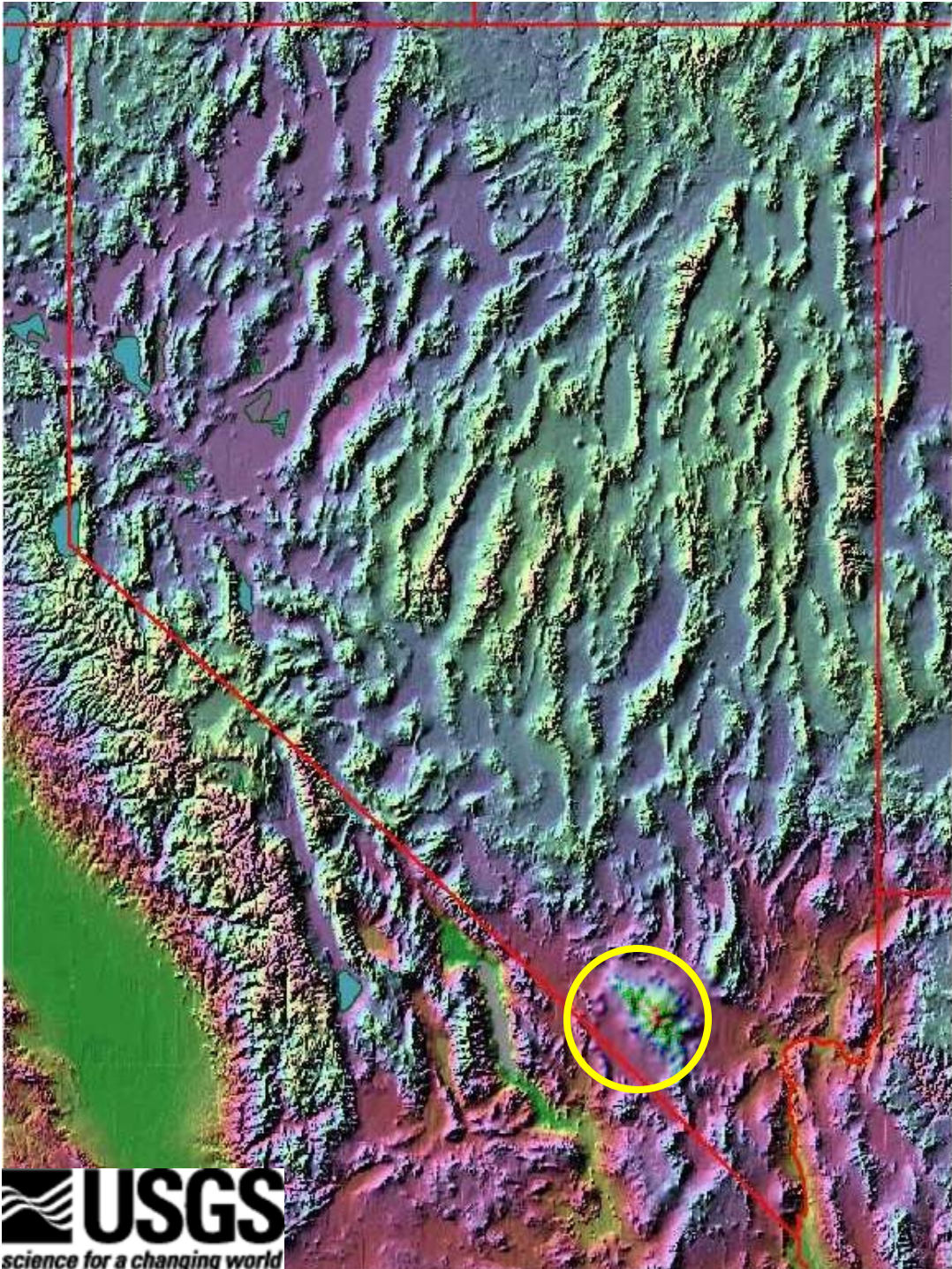
Palmer's Chipmunk Ecology Project



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Tamias palmeri



- Diurnal Ground squirrel
- Hibernator
- Food
- Seed disperser
- Prey species
- Social structure

Broader Justification



- A Unique Island in a Sea of Desert
- Contribution to Biodiversity
- Growing Human Impacts

Earlier Development: Research conducted by UNLV and Nevada Division of Wildlife from (Before) 2000 to 2002.

- Abundance estimates occurred across 14 randomly placed grids of 3 hectares each (8 used for analyses)
- Estimated habitat variable correlations with relative abundance and occurrence
- Preliminary track plate comparison to relative abundance
- Preliminary GIS models developed from results



Grid Locations 2000

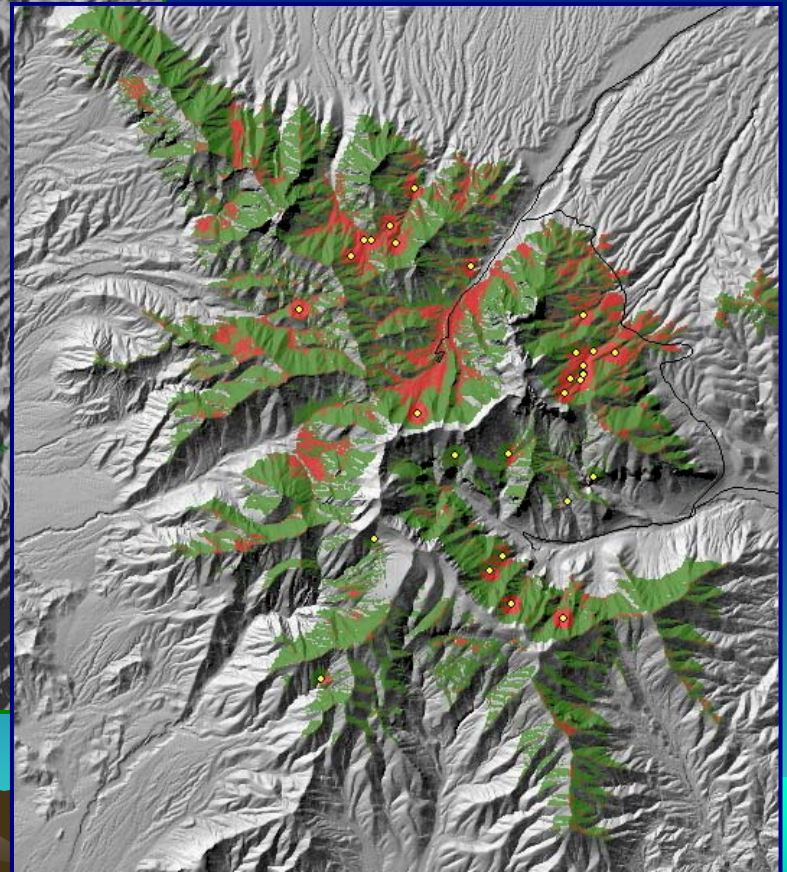
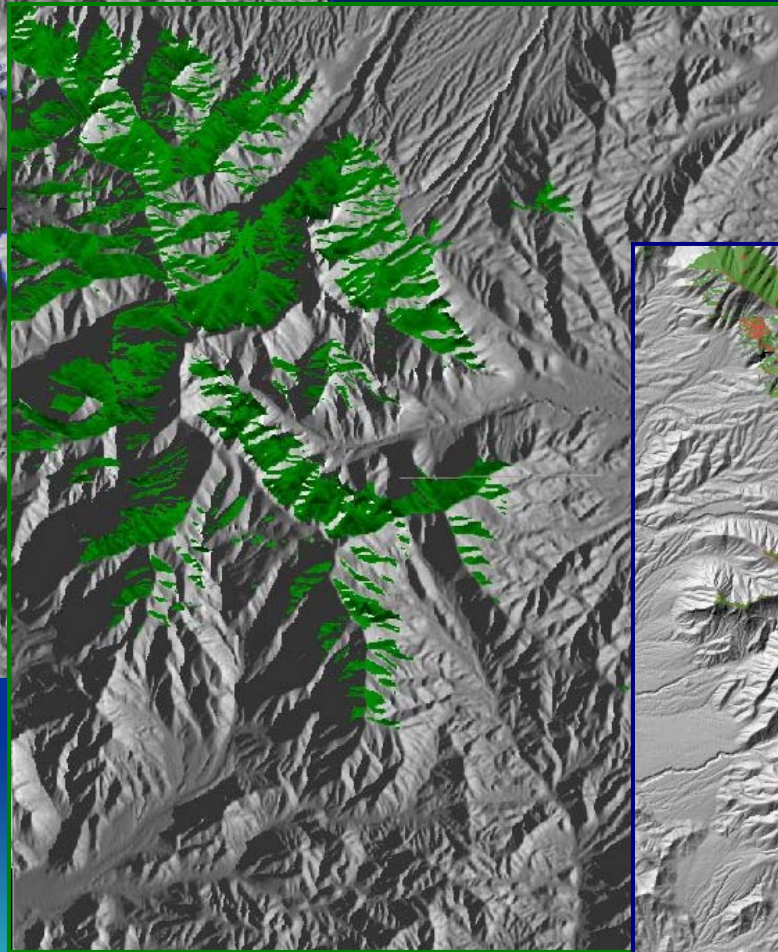
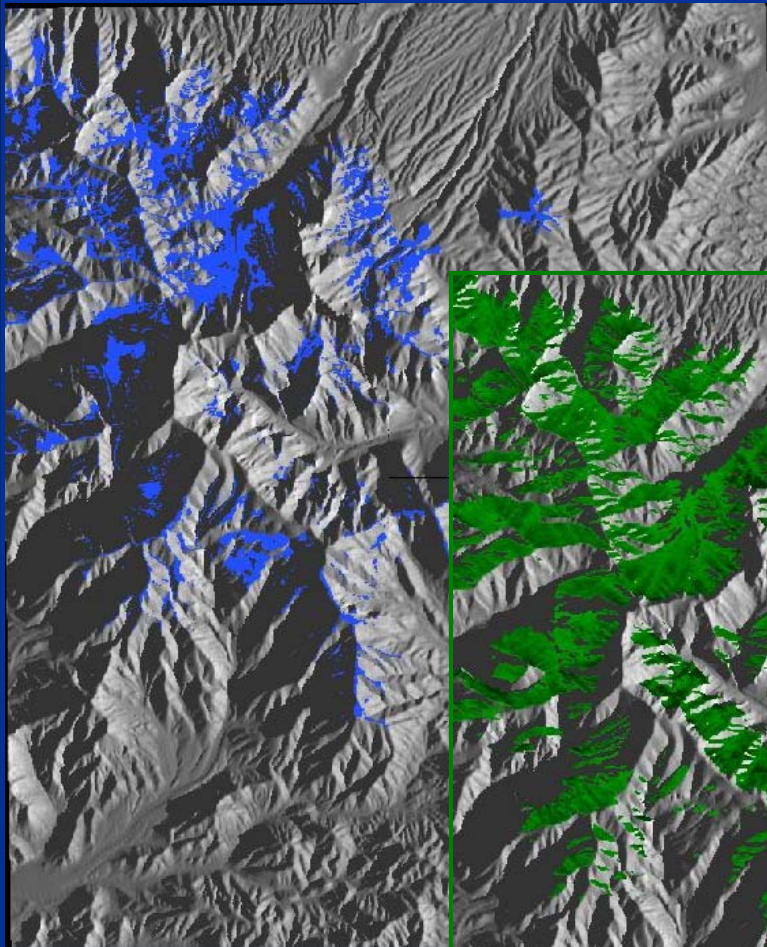


Earlier Study Results

- Abundance between 2 - 45 animals per hectare
- Palmers' chipmunk abundance positively correlated with lower slopes and greater shrub cover
- Potential positive correlation with water sources
- Preliminary GIS models developed predicting areas of greatest abundance and survivorship



Previous GIS Model Development



Moving from past work to the present project

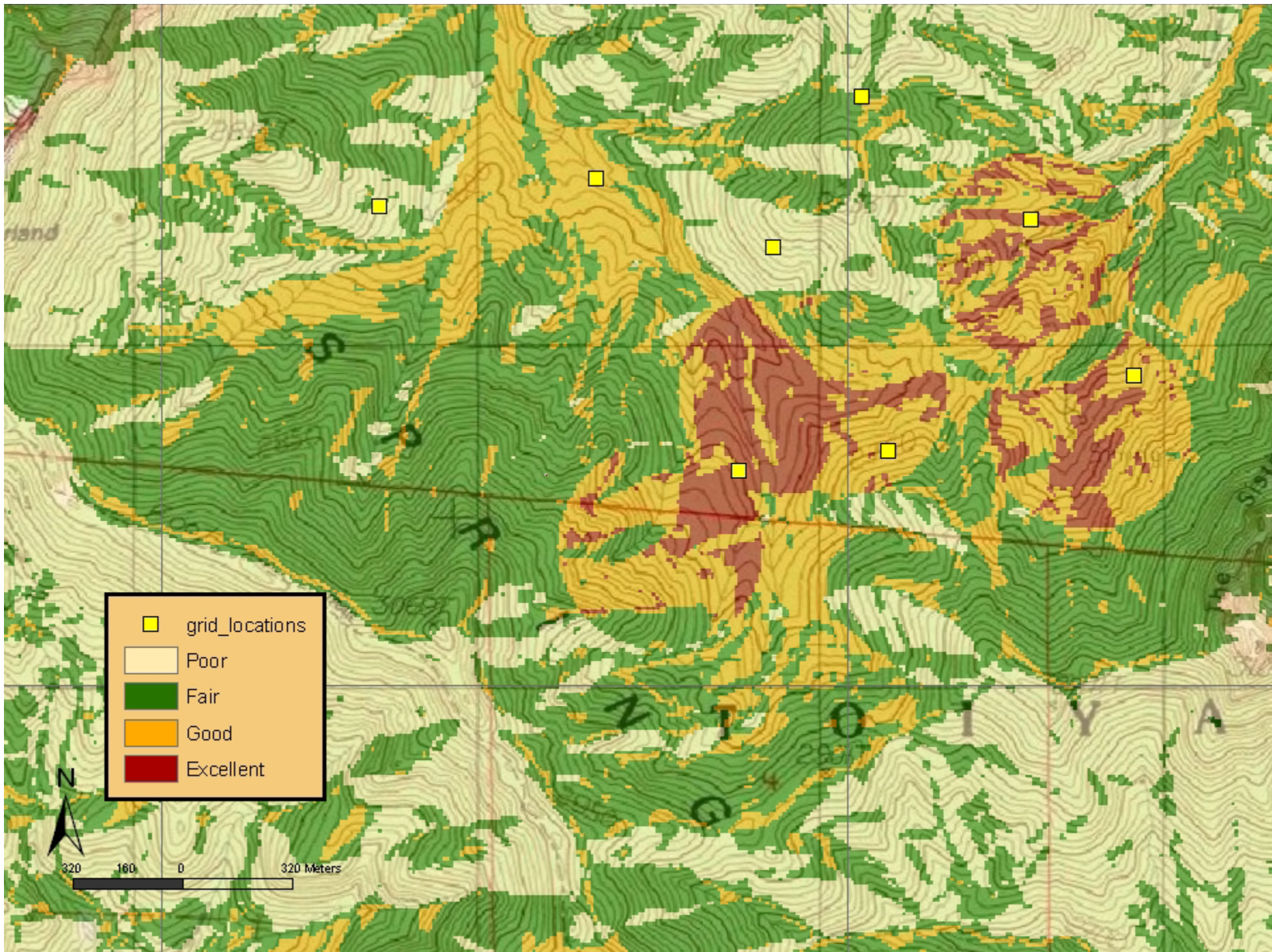
- Previous findings allow us to directly address concerns of Palmers conservation
- **Present Study.....**
 - What is the actual distribution of this species?
 - How do specific topographic and habitat components affect population size and survival?
 - What is the potential of GIS technology to both predict species occurrence and formulate a conservation plan?

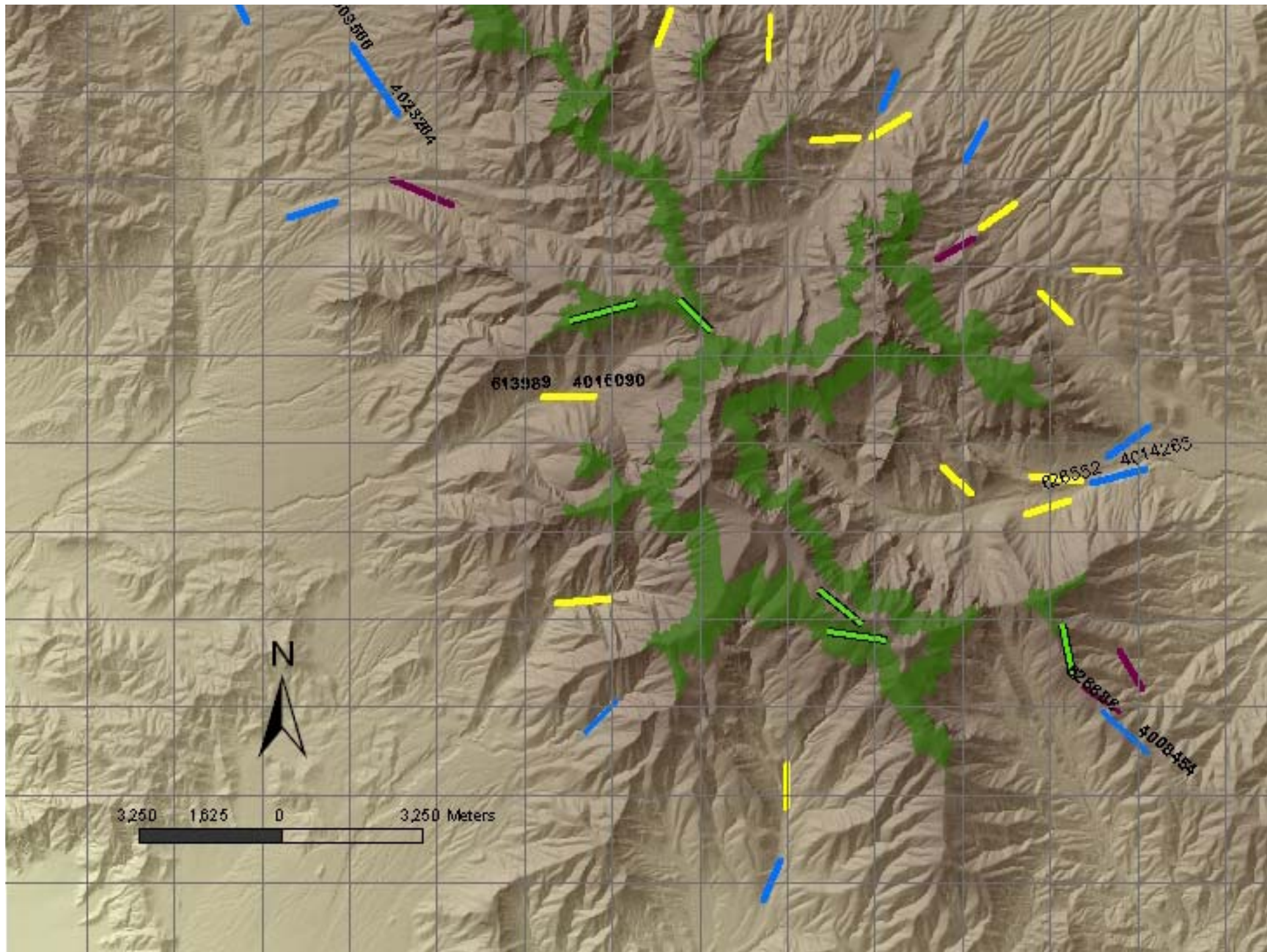
Methodology

- 24 trapping grids each covering 3 hectares
 - Population size, survival, birth rates, habitat variables measured surrounding each trap.
 - Track plates tested against trapping data
- Thirty 1-km transects placed along transition zones and high elevation areas
 - Distribution
 - Transition zones between species

250 145 0 250 Meters









Methodology

- Abundance estimated with a closed-model Jolly-Seber using program MARK
- Probability of occurrence estimated using binary logistic regression
- GIS probability maps generated from Resource Selection Functions

Progress to Date

- Data being collected.....24 grids.....30 transects...
- 14,100 trap / track days x 2 years
 - Vegetation composition
 - Vegetation structure
 - Slope, Aspect, elevation
 - Distances to water
 - Genetic samples
 - Other species
- Data will be used to modify existing habitat model, develop a long-term monitoring plan for *Tamias palmeri*, and identify new paths of research.

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