Modeling Pygmy Rabbit Sites & Habitat

Background

Pygmy rabbits declining populations have made the species a candidate for classification under The Endangered Species Act.

There are no Federal protections in place at this time.

Habitat Characteristics and Range

Burrows are located in areas of sagebrush steppe of the Great Basin Desert.

Fragmented pygmy rabbit populations are found in Washington, Oregon, Northern California, Nevada, Southern Idaho, Wyoming, and Utah.

Study Area

The study area comprises 1187 square miles located in Washoe county in NW Nevada.

Issues

Energy development and livestock grazing have contributed to habitat fragmentation

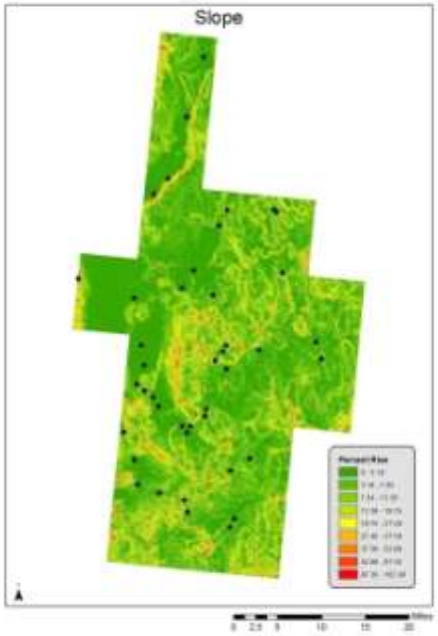
Objective 1

Prioritize 42 known pygmy rabbit burrows based on four criteria

- Slope
- Aspect
- Distance from perennial streams
- Elevation

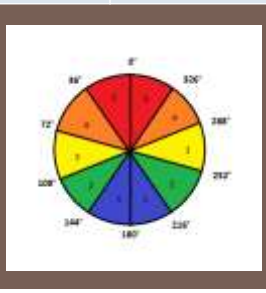
Slope

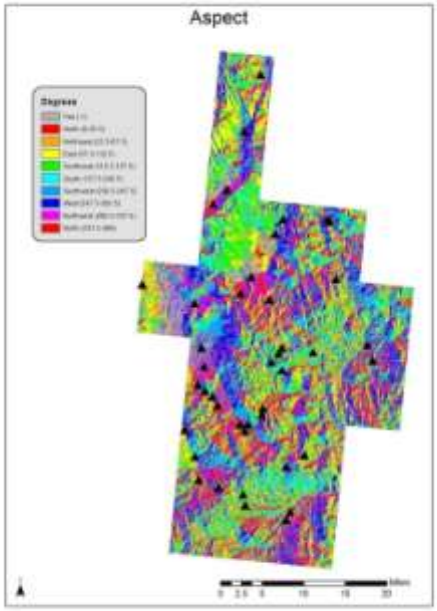
Rating		Range
5	More Ideal	0 to 4%
4		4 to 8%
3		8 to 12%
2		10 to 16%
1	Less Ideal	16 to 20%



Aspect

Rating		Range
5	More Ideal	0° to 36° and 326° to 360°
4		36° to 72° and 288° to 326°
3		72° to 108° and 252° to 288°
2		108° to 144° and 216° to 252°
1	Less Ideal	144° to 180° and 180° to 216°

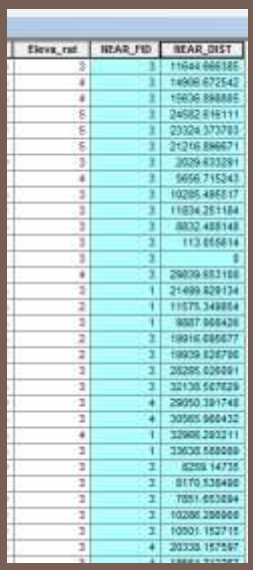




Distance to Perennial Streams

- Mean 8784 meters
- Close is optimal

Rating		Range
5	More Ideal	0 to 8784 meters
4		8784 to 13176 meters
3		13176 to 17568 meters
2		17568 to 21960 meters
1	Less Ideal	> 21960 meters

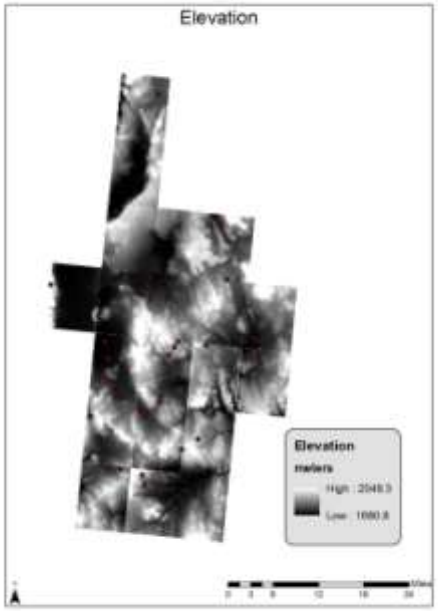


Elevs_rst	NEAR_FID	NEAR_DIST
3	3	11644.666385
4	3	14908.672542
4	3	15636.886885
5	3	24582.616111
5	3	23324.373793
5	3	21216.886671
3	3	2029.633291
4	3	5656.715243
3	3	10285.486817
3	3	11834.251184
3	3	8832.488148
3	3	113.655614
3	3	0
4	3	29839.653166
3	1	21499.829134
2	1	11575.349864
3	1	9587.966426
2	3	19916.695677
2	3	19939.826706
3	3	26285.026091
3	3	32136.567629
3	4	29050.391748
3	4	30565.966432
4	1	32986.293211
3	1	33630.568089
3	3	8259.14735
3	3	8170.536496
3	3	7851.653084
3	3	10286.286908
3	3	10501.152715
3	4	20338.157597

Elevation

- Found within an elevation of 1500 to 2400 meters
- Mean of 1950 meters

Rating		Range
5	More Ideal	1860 to 1950 and 1950 to 2040 meters
4		1770 to 1860 and 2040 to 2130 meters
3		1680 to 1770 and 2130 to 2220 meters
2		1590 to 1680 and 2220 to 2310 meters
1	Less Ideal	1500 to 1590 and 2310 to 2400 meters



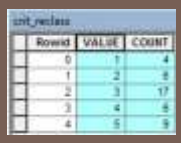
Methods

Objective 1

- Raster creation
- Map Algebra
- Re-classification
- Feature creation

Results

Objective 1



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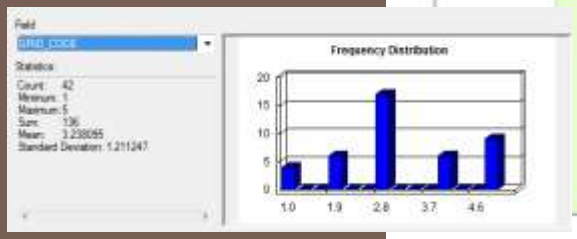
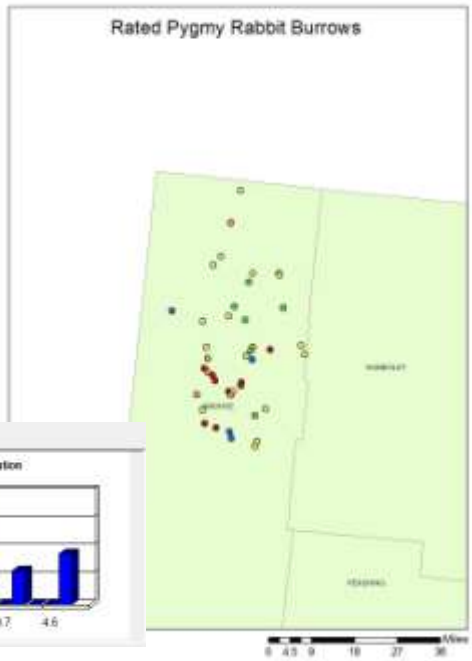
2	3	17
3	4	6
4	5	9





Objective 2

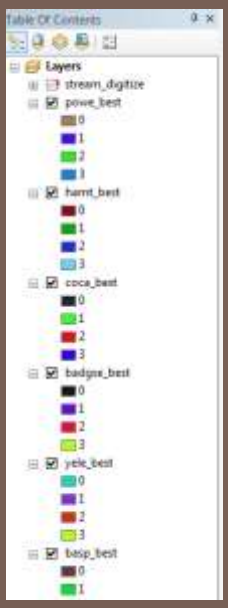
Determine critical habitat within study area based upon category rank of criteria

Criteria	Class	Range
Slope	5	0 to 4%
Aspect	5	0° to 36° and 326° to 360°
Distance	5	0 to 8784 meters
Elevation	5	1860 to 1950 and 1950 to 2040 meters

Methods

Objective 2

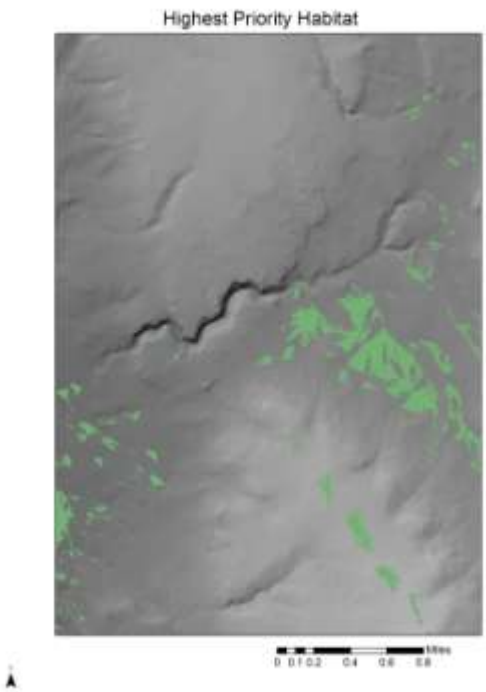
- Re-classification
- Clip from stream
- Map Algebra



Results:

Objective 2

- Study Area: 1187 square miles
- Critical Habitat: 750.4 acres
  ≈ 1.2 square miles
- Percent of Total: 0.1



Conclusion

Objective 1 and 2 separate goals

Objective 1: majority of sites on marginal habitat land

Objective 2: small amount of of high quality land to conserve