



# Clark County Rare Plant Surveys

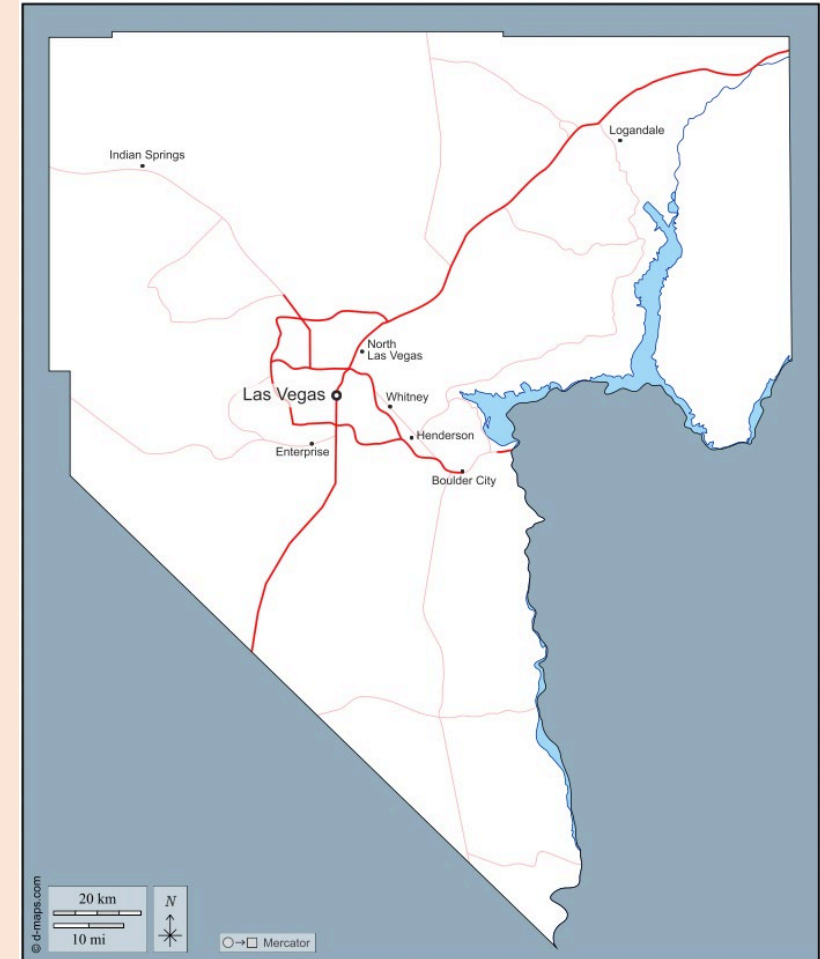
2020 – 2021

Ironwood Consulting, Inc.

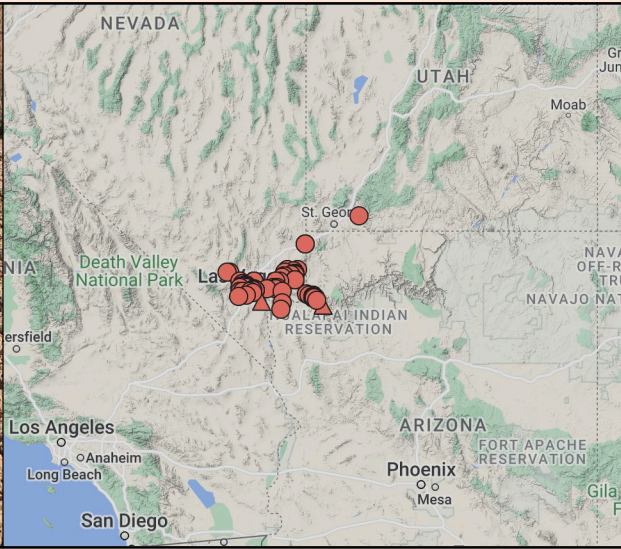


# Project Objectives

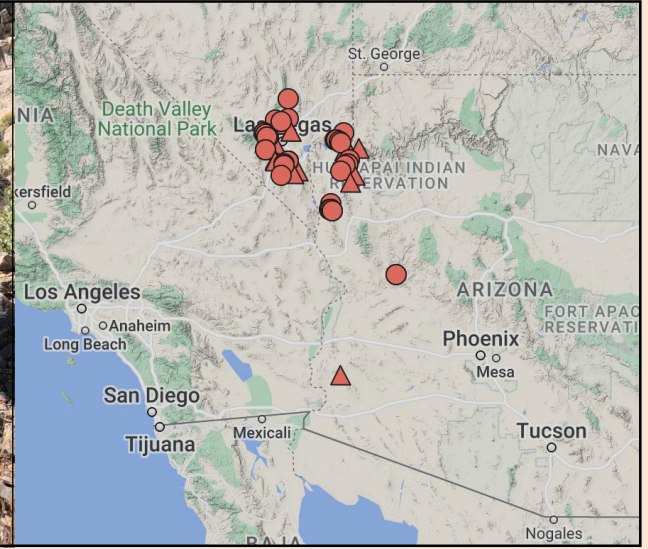
- Survey for rare plants
  - 1°, 2°, and 3° target taxa
  - Prioritize four taxa
- Ground-truth modeled habitat
  - Target multi-species habitat
- Distribute survey sites
  - Inform abundance and range



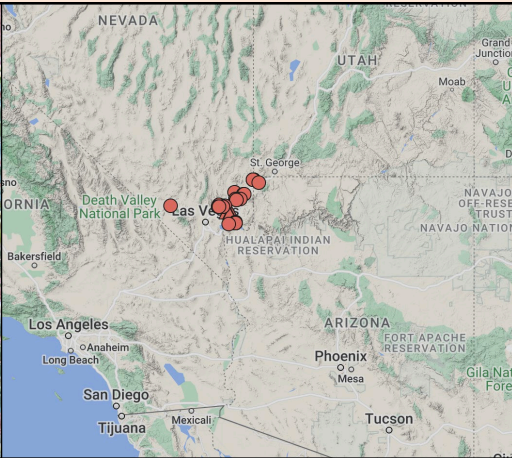
# Four Critically Endangered Target Taxa



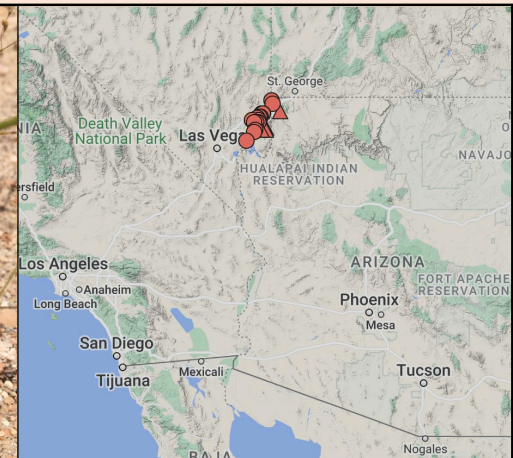
*Arctomecon californica*



*Cyndropuntia multigeniculata*

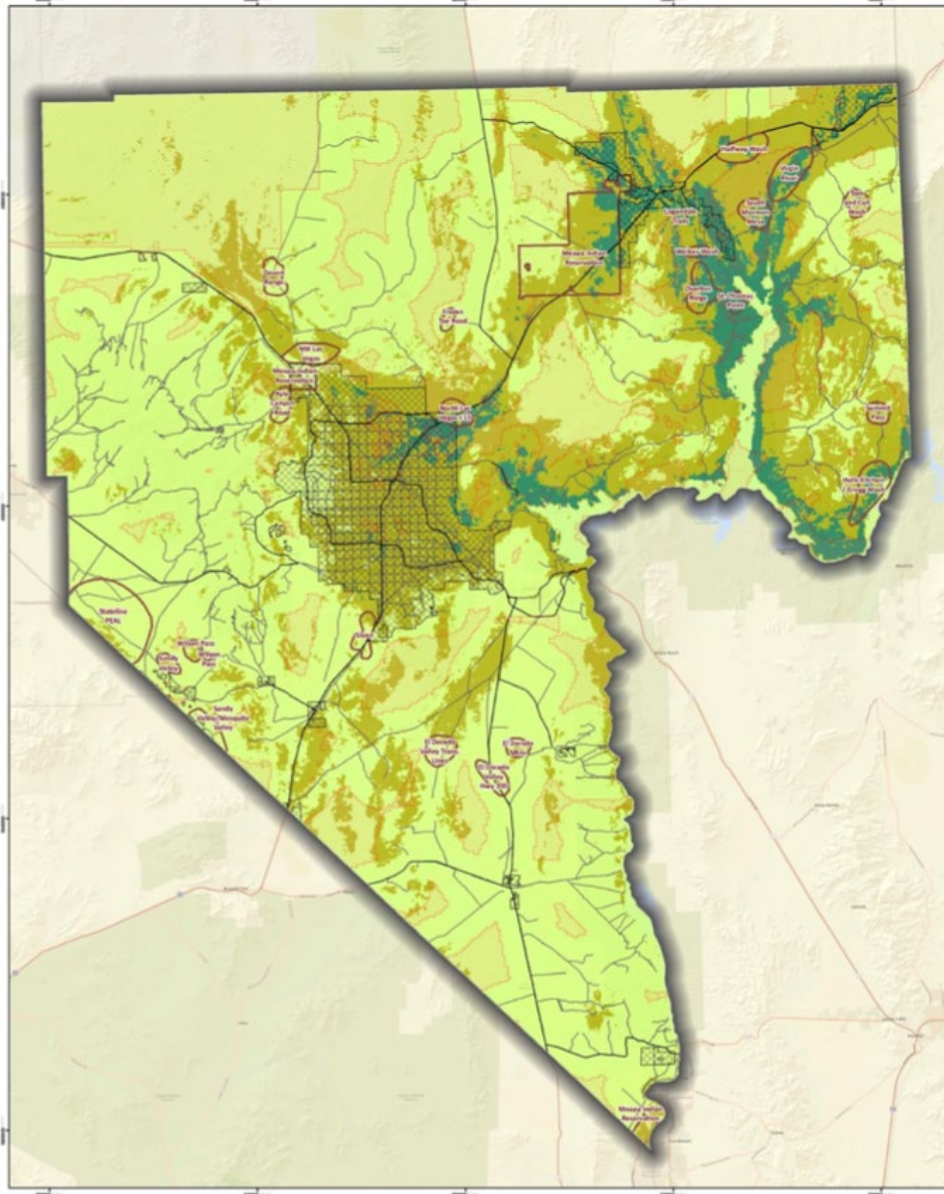


*Astragalus geyeri* var. *triquetrus*



*Eriogonum viscidulum*

Figure 1. General Field Survey Area Locations with Target Species Modeled Habitat Suitability

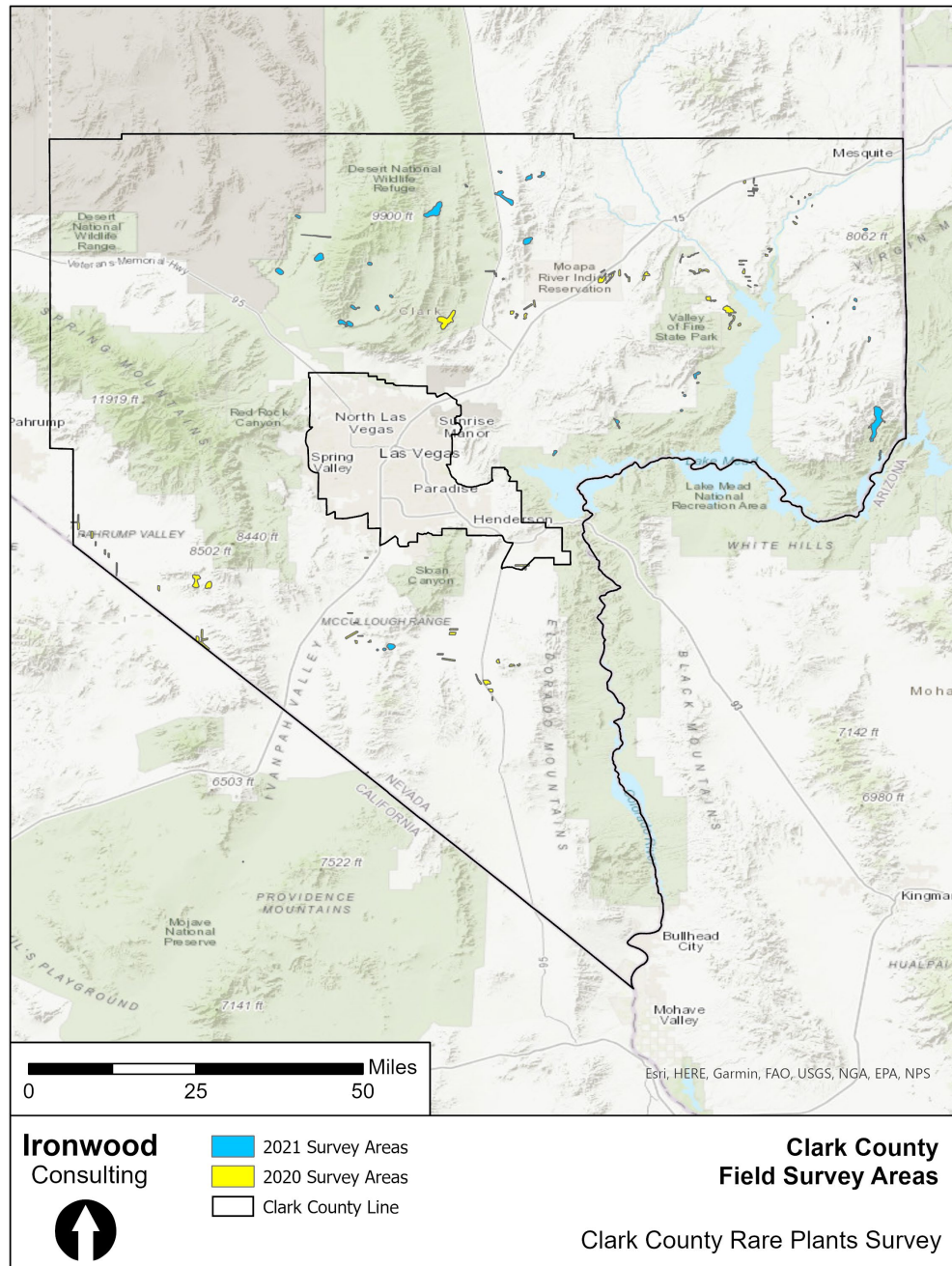


# Clark County Survey Sites *Results*

- 24 proposed survey sites

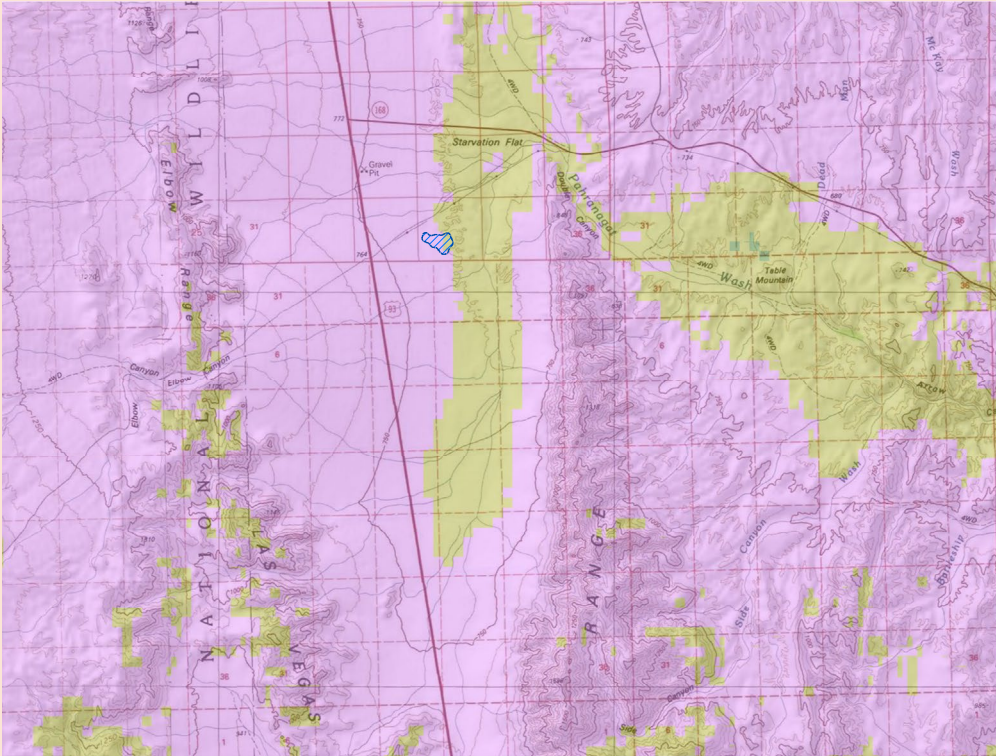
# Clark County Survey Sites *Results*

- 42 surveyed sites
- 22,051 surveyed acres
- 16 target taxa encountered



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- 16 target taxa encountered



Base map: ESRI National Geographic Society, ©Cubed, 2012,  
Coordinates in UTM, Zone 11N, WGS84, meters

# Rare Plant Encounters

Primary Target Taxa (9)	EO Records	Occupied Acres	No. Individuals
<i>Anulocaulis leiosolenus</i> var. <i>leiosolenus</i>	5	19	90
<i>Arctomecon californica</i> *	10	57	1,269
<i>Astragalus geyeri</i> var. <i>triquetrus</i> *	14	4	259
<i>Cylindropuntia multigeniculata</i> *	7	1,428	16,863
<i>Enceliopsis argophylla</i>	13	39	1,753
<i>Eriogonum bifurcatum</i>	3	13	17,573
<i>Eriogonum corymbosum</i> var. <i>nilesii</i>	1	2	232
<i>Eriogonum viscidulum</i> *	3	1	271
<i>Penstemon albomarginatus</i>	4	55	8,691
Secondary Target Taxa (6)			
<i>Arctomecon merriamii</i>	3	38	135
<i>Astragalus mohavensis</i> var. <i>hemigyryus</i>	2	1	44
<i>Cirsium mohavense</i>	1	0.1	300
<i>Mentzelia polita</i>	2	1	36
<i>Pediomelum castoreum</i>	4	7	1,320
<i>Penstemon bicolor</i> ssp. <i>roseus</i>	4	117	12,081
Tertiary Target Taxa (1)			
<i>Eriogonum heermannii</i> var. <i>clokeyi</i>	2	1	75
<b>Totals</b>	<b>78</b>	<b>1,782</b>	<b>60,992</b>



*Enceliopsis argophylla*



*Penstemon bicolor* ssp. *roseus*



*Pediomelum castoreum*



*Mentzelia polita*



*Eriogonum heermannii* var. *clokeyi*



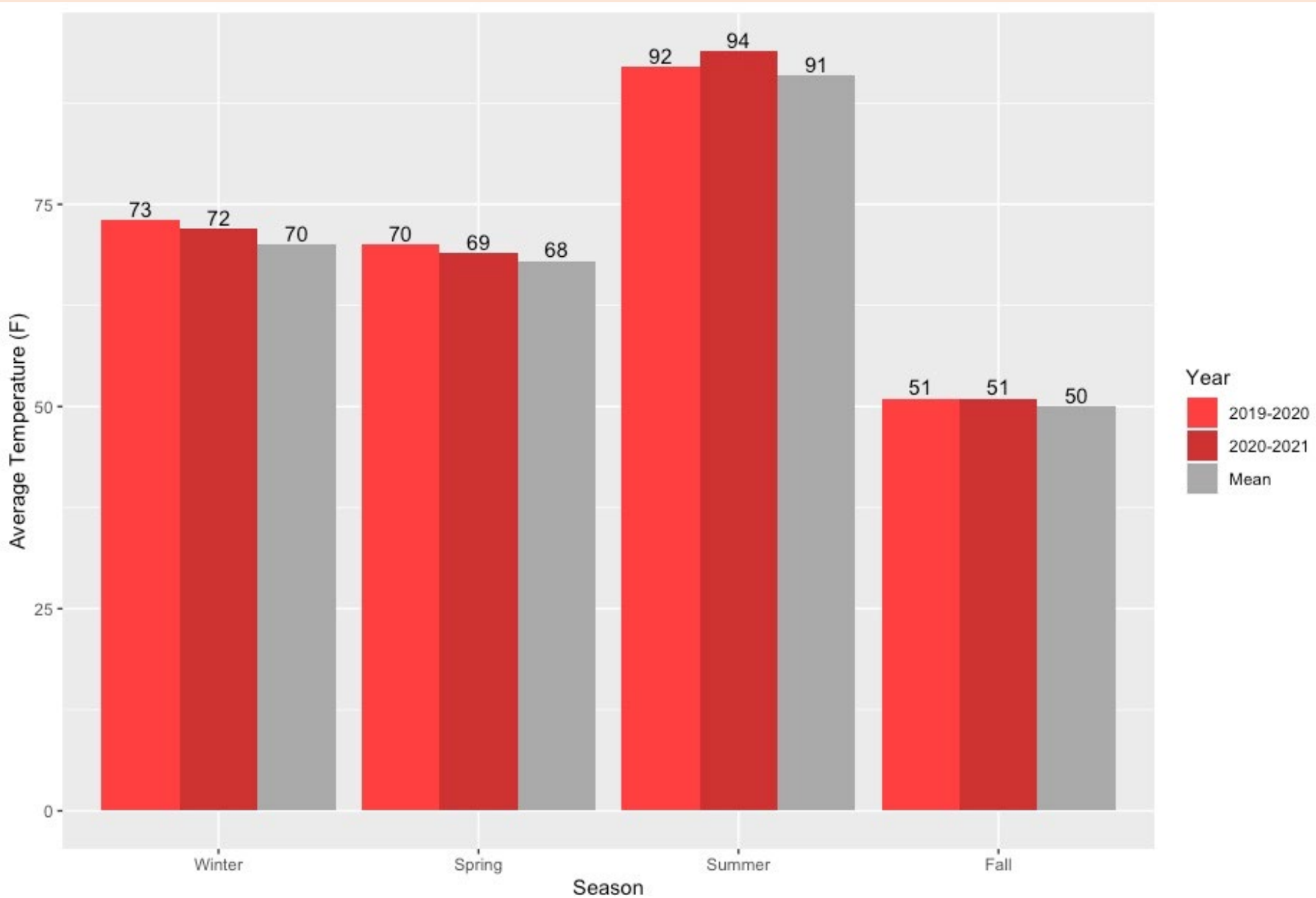
*Eriogonum bifurcatum*



*Penstemon albomarginatus*

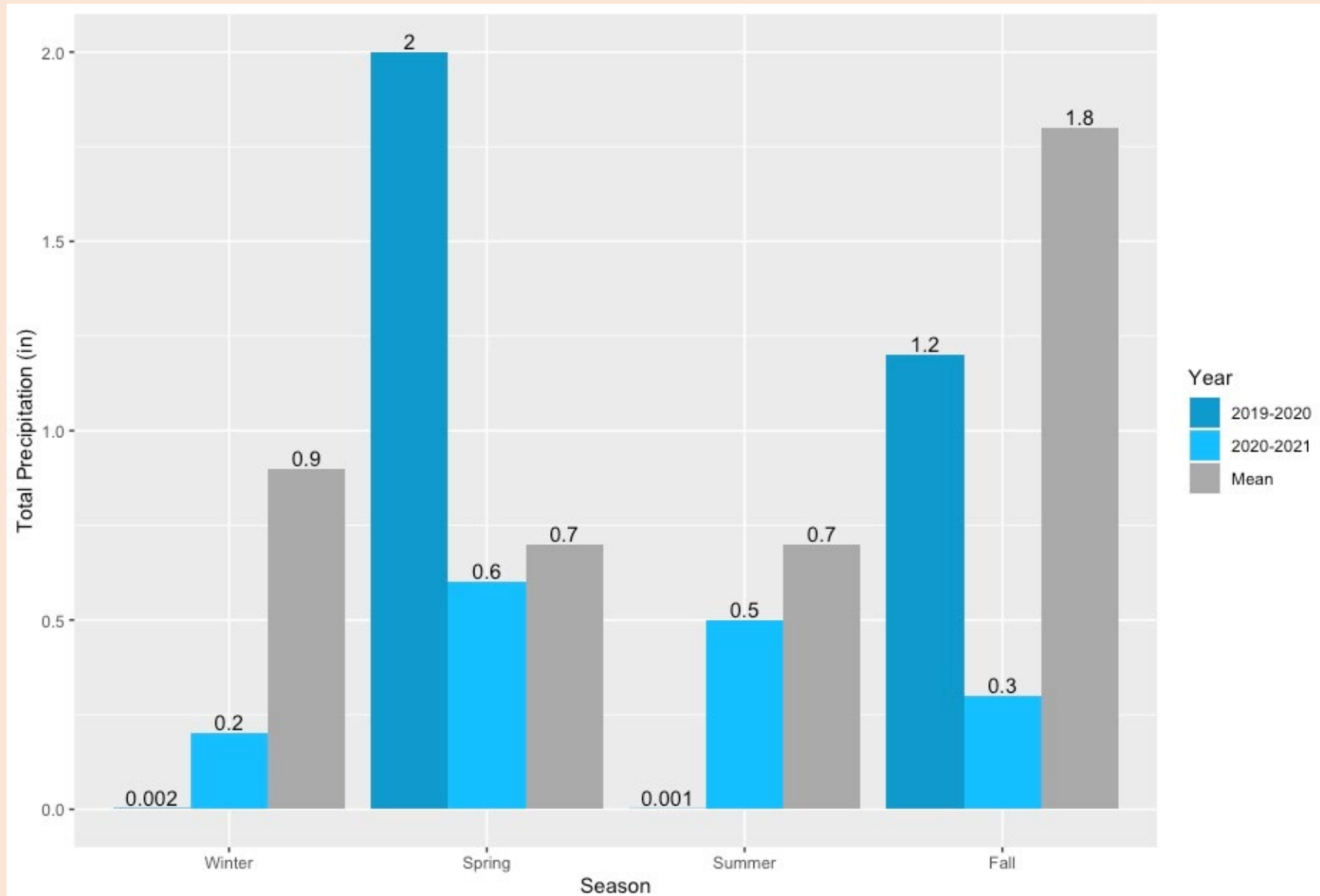
\* Critically endangered in NV

# *2019-2021 Average Temperature*





# *2019-2021 Precipitation*



# *Arctomecon californica*

## Las Vegas bearpoppy

### Summary

- 10 EOs (6 new)
- 57 acres (48 acres new)
- 1,269 individuals (1,155 new)

### Manager

- NPS
- BLM

### Occupied Area

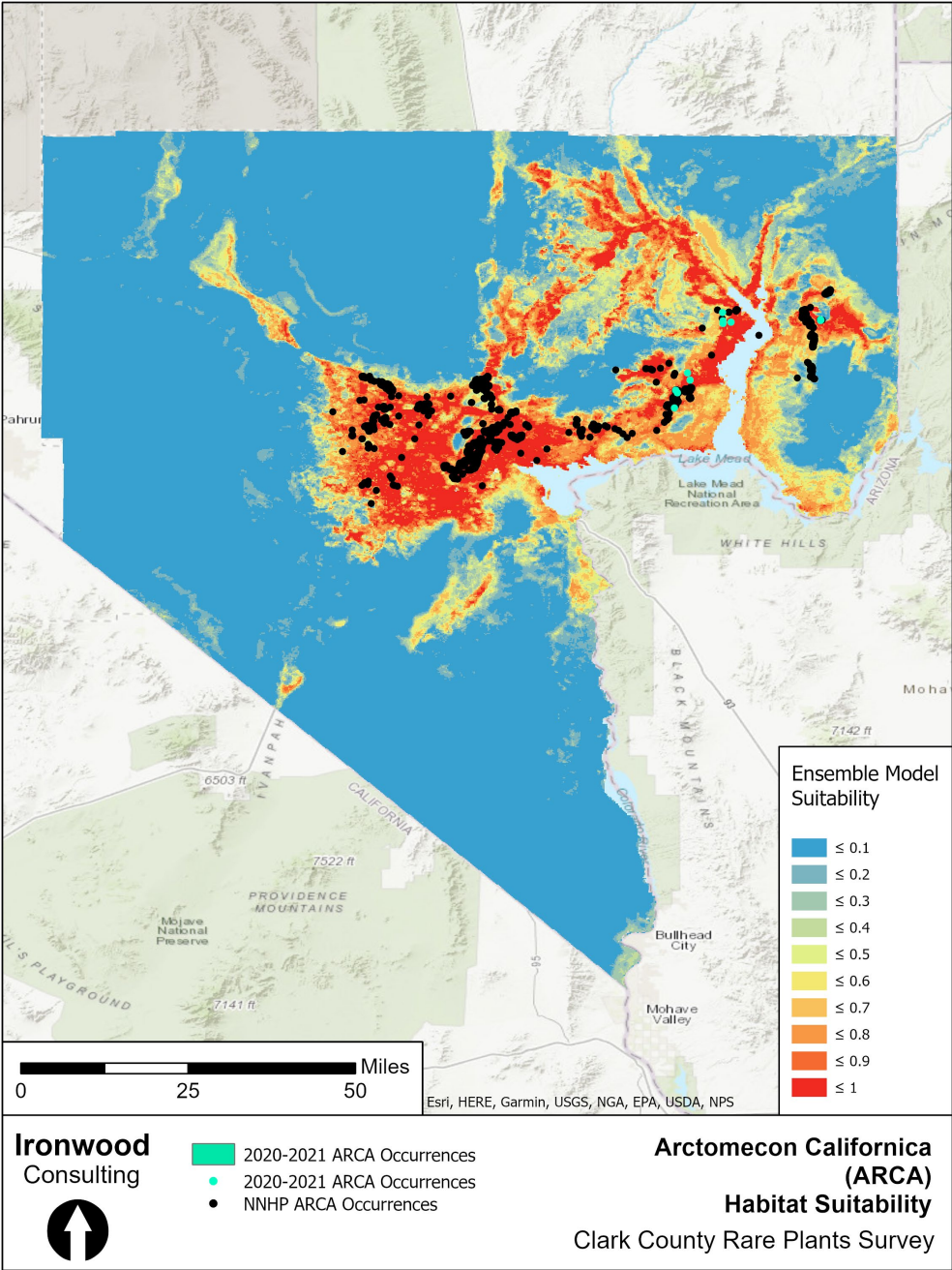
85%

15%

### Individuals

91%

9%



# *Arctomecon californica*

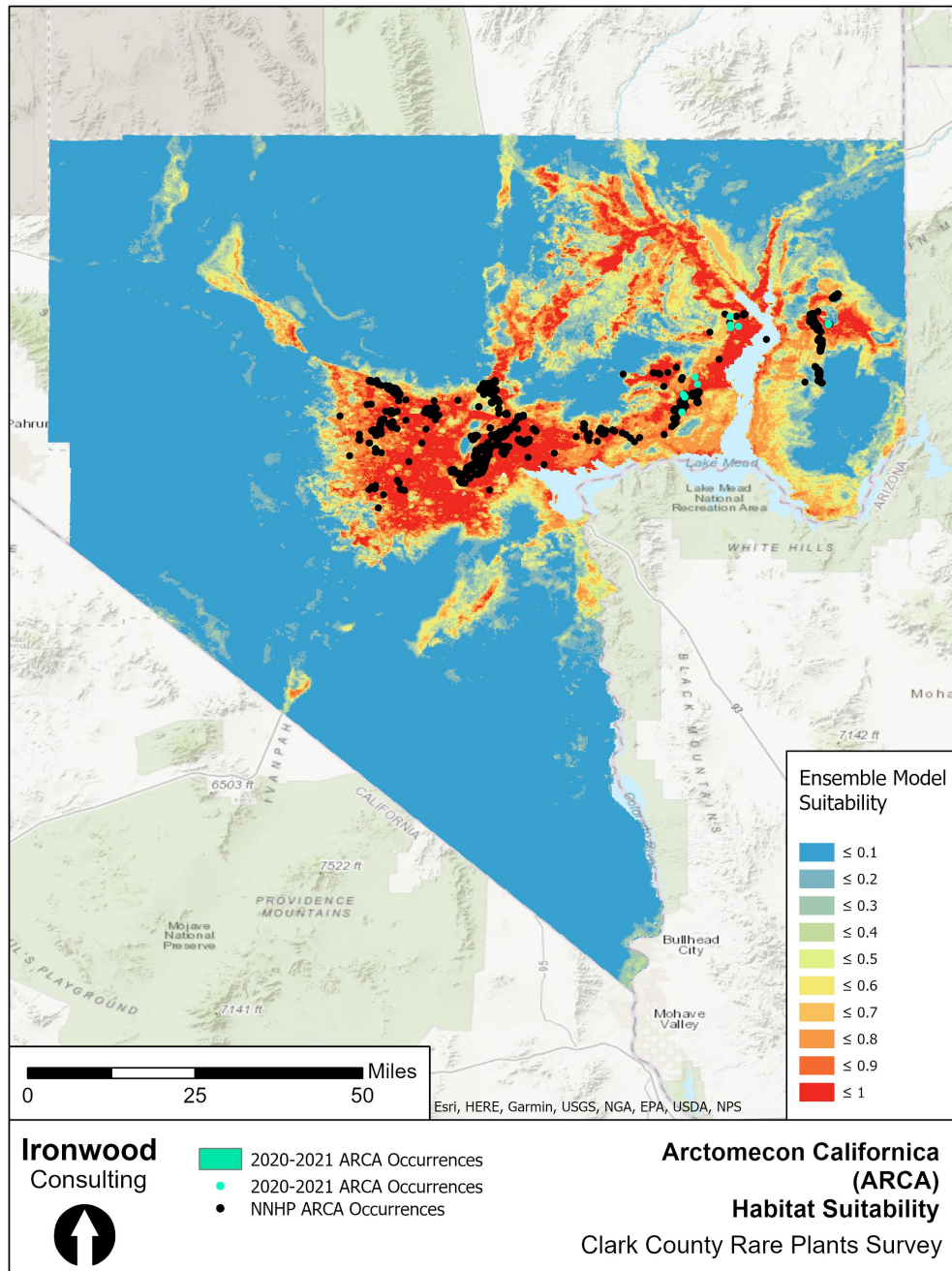
## Las Vegas bearpoppy

### Habitat Rating

- Excellent (4), Good (6)

### Observed Threats

- Mortality from dry conditions
- Livestock (Gold Butte NM)
- OHV off-trail use (Gold Butte NM, Bitter Spring)



# *Astragalus geyeri* var. *triquetrus* Threecorner milkvetch

## Summary

- 14 EOs (13 new)
- 4 acres (4 acres new)
- 259 individuals (257 new)

## Manager

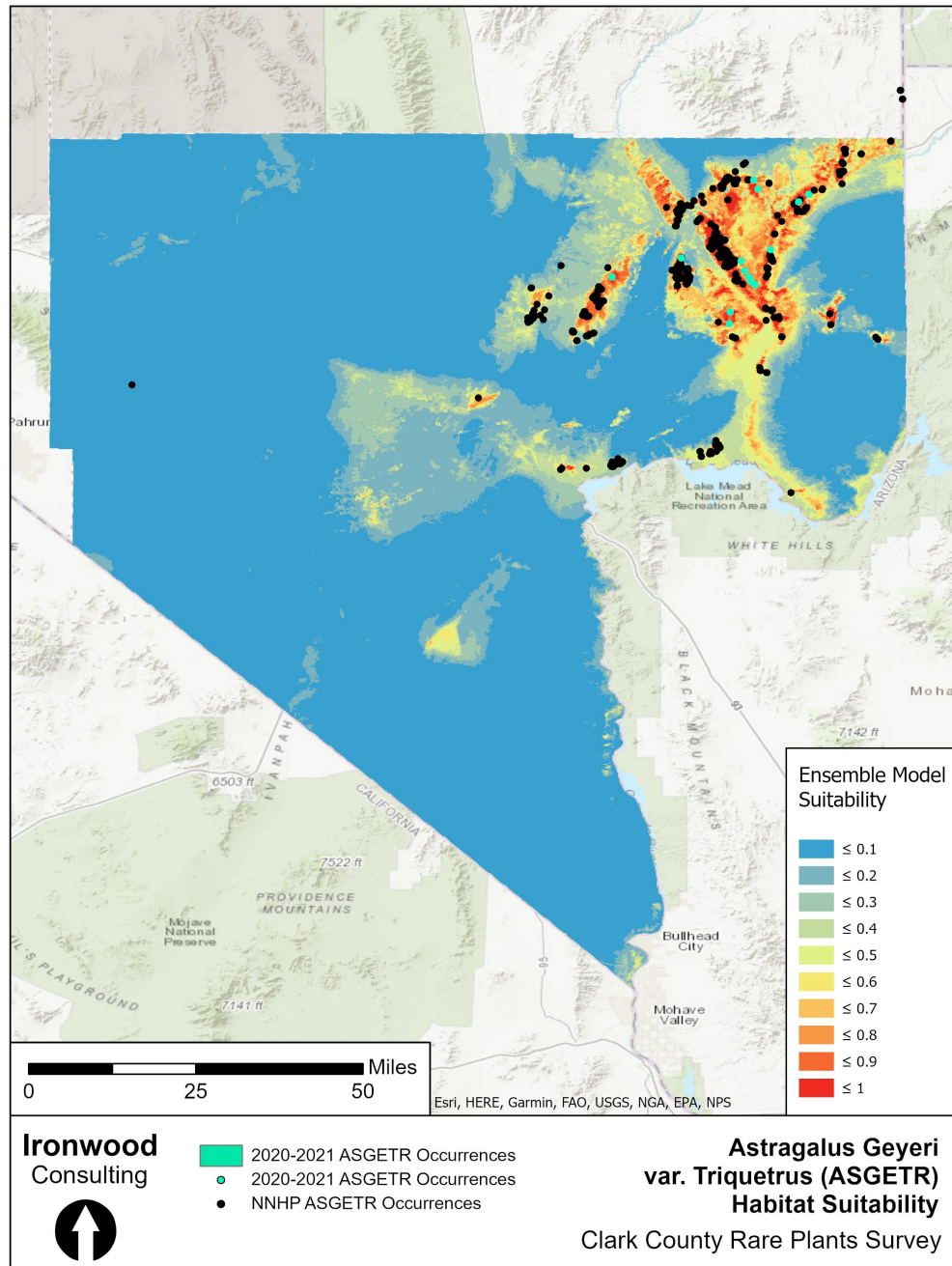
- Tribal
- BLM
- NPS

## Occupied Area

- 7%
- 86%
- 7%

## Individuals

- 63%
- 31%
- 6%



# *Astragalus geyeri* var. *triquetrus* Threecorner milkvetch

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- 259 individuals (257 new)

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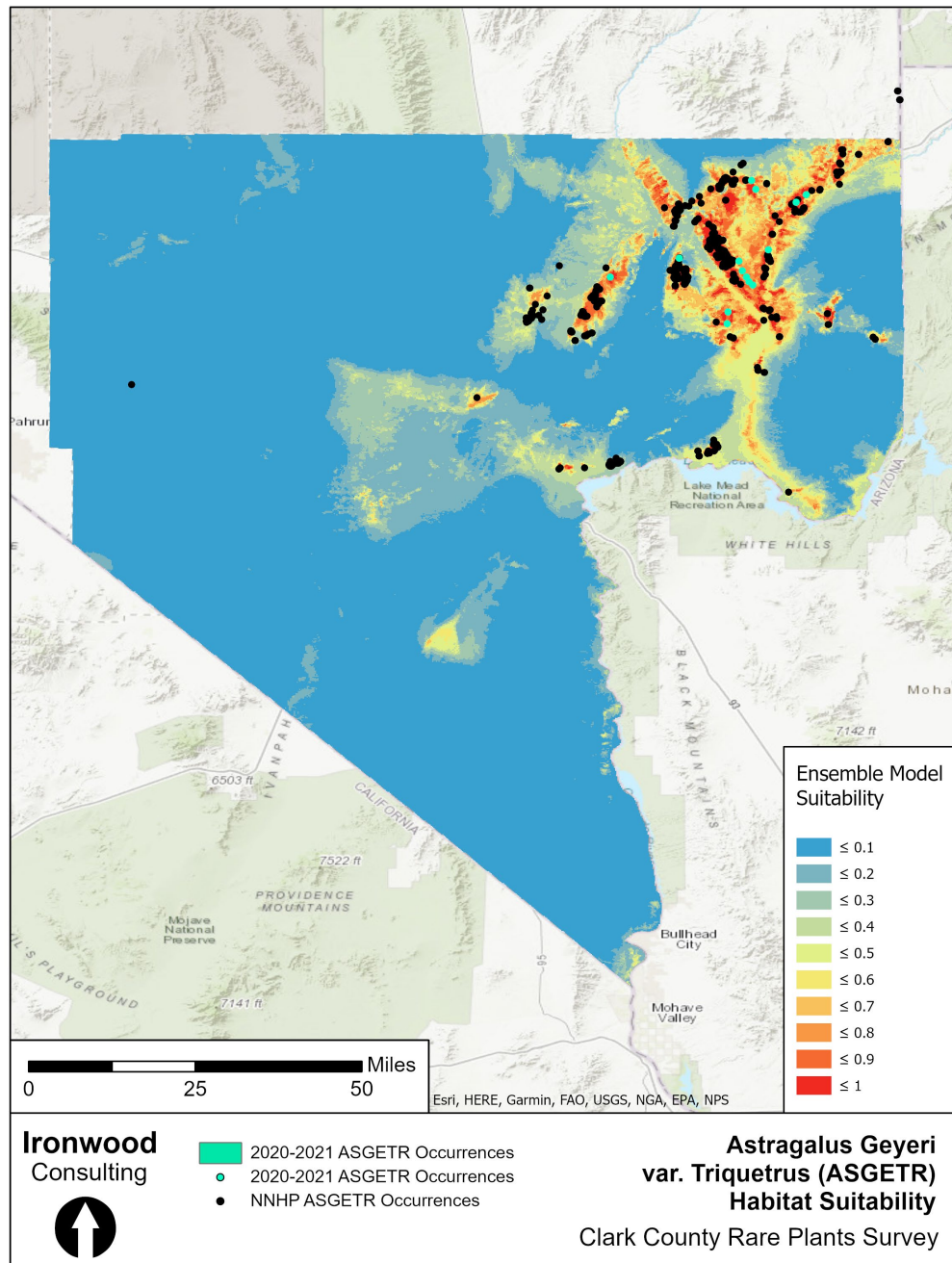
- Tribal
- BLM
- NPS

## Occupied Area

- 7%
- 86%
- 7%

## Individuals

- 63%
- 31%
- 6%



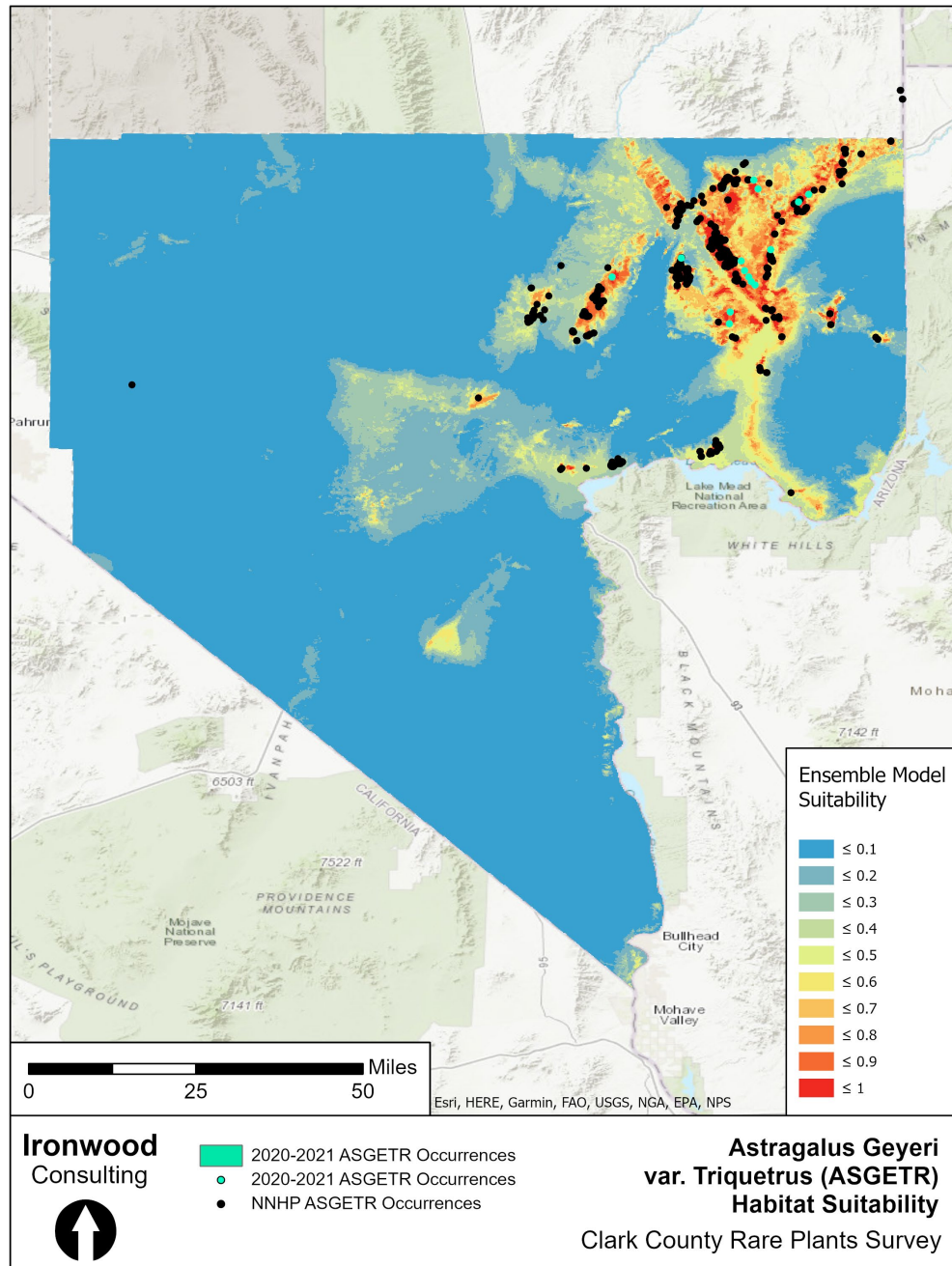
# *Astragalus geyeri* var. *triquetrus* Threecorner milkvetch

## Habitat Rating

- Excellent (1), Good (8), Fair (4), Poor (1)

## Observed Threats

- Climate change
- Habitat loss (solar development, Mormon Mesa)
- Small, scattered populations (genetic diversity)
- OHV off-trail use (Logandale Trails)
- Weed competition (Logandale Trails, Tribal Land)



# *Cylindropuntia multigeniculata*

## Blue Diamond cholla

### Summary

- 7 EOs (7 new)
- 1,428+ acres
- 16,570 individuals

### Manager

- BLM/NPS
- USFWS
- BLM

### Occupied Area

70%

19%

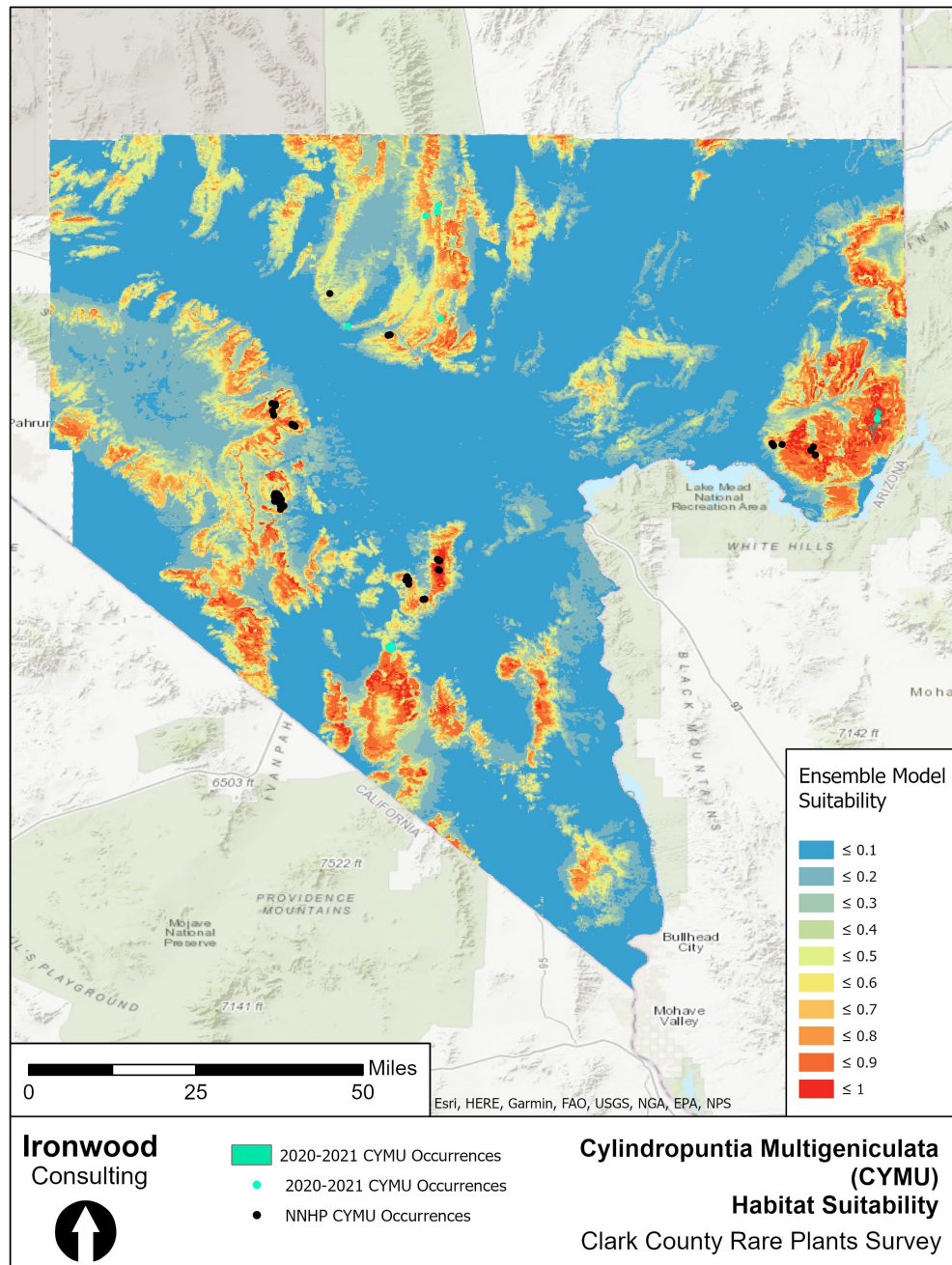
11%

### Individuals

85%

10%

5%



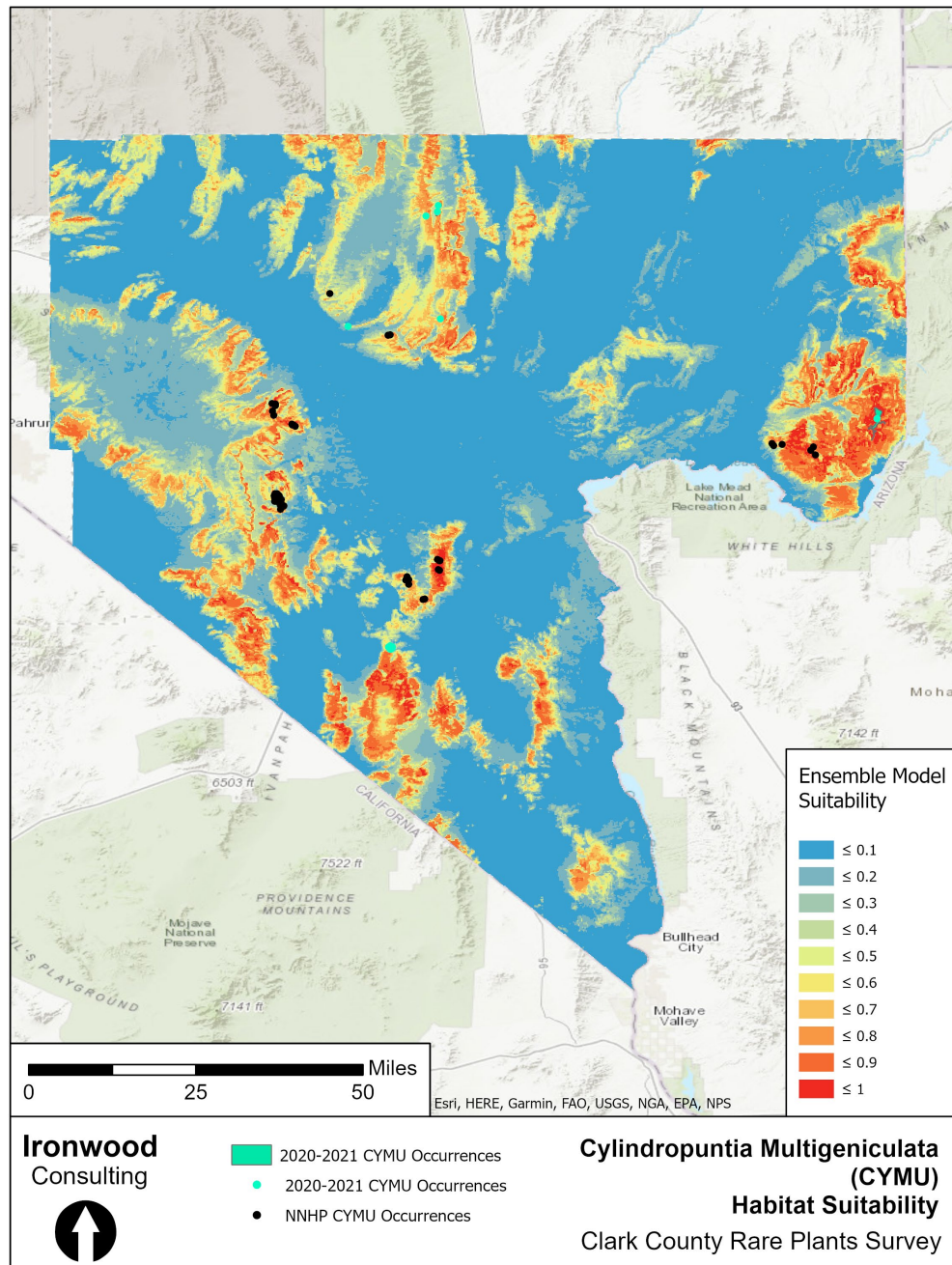
# *Cylindropuntia multigeniculata* Blue Diamond cholla

## Habitat Rating

- Excellent (1), Good (6)

## Observed Threats

- Wildfires
- Powerlines (McCullough Mountains)
- Low recruitment (Summit Pass)





# *Cylindropuntia multigeniculata*

## Blue Diamond cholla

- Summit Pass Survey Area (Gold Butte NM)
- Largest known occurrence
- > 1,000 occupied acres
- > 14,000 individuals estimated



# *Eriogonum viscidulum* Sticky buckwheat

## Summary

- 3 EOs (3 new)
- 1 acre
- 271 individuals

## Manager

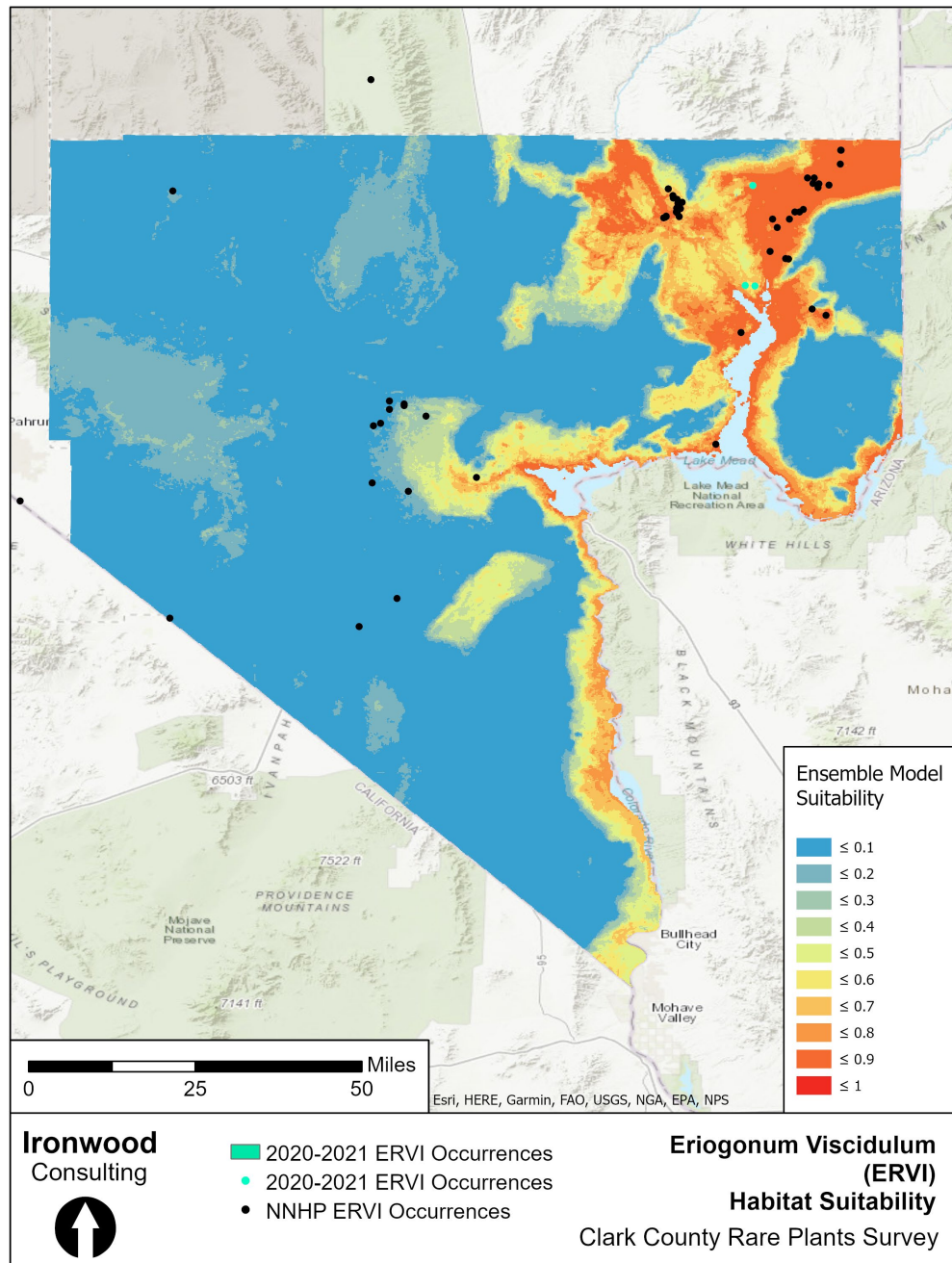
- BLM

## Occupied Area

100%

## Individuals

100%



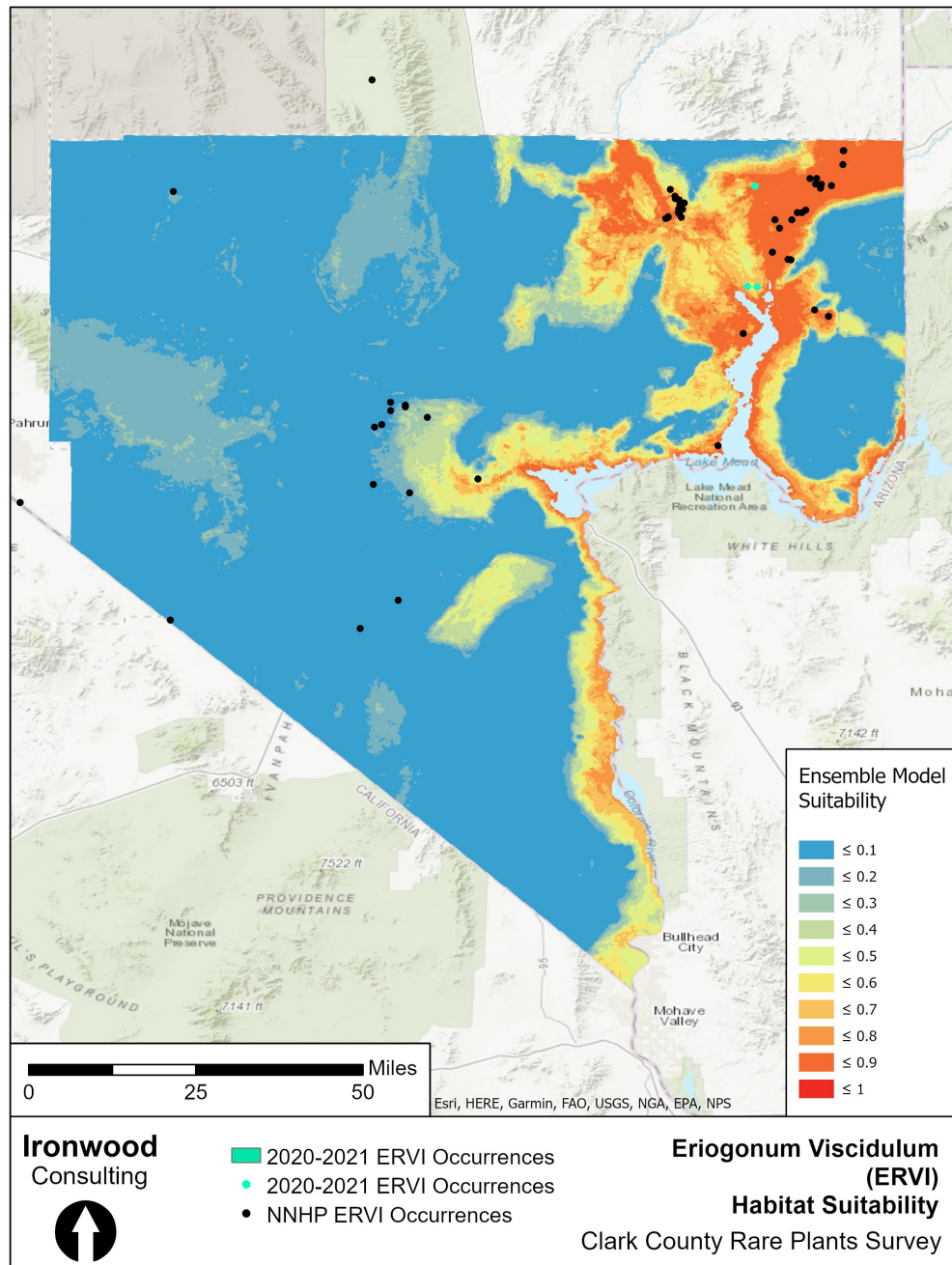
# *Eriogonum viscidulum* Sticky buckwheat

## Habitat Rating

- Excellent (1), Good (2)

## Observed Threats

- Climate change
- Habitat loss (solar development)
- Scattered populations





blm.gov

# Conclusion

- **Annual Species - Vulnerable**
  - Habitat loss + Climate change
  - Long-term seed storage
- **Habitat Conservation - Vital**
  - Unique habitats (gypsum/sand)
  - Habitat diversity (microsites/refugia)
  - Genetic diversity
- **Additional Surveys Recommended**
  - *Cylindropuntia multigeniculata*
  - Long-term monitoring of critically endangered annuals?



Questions?