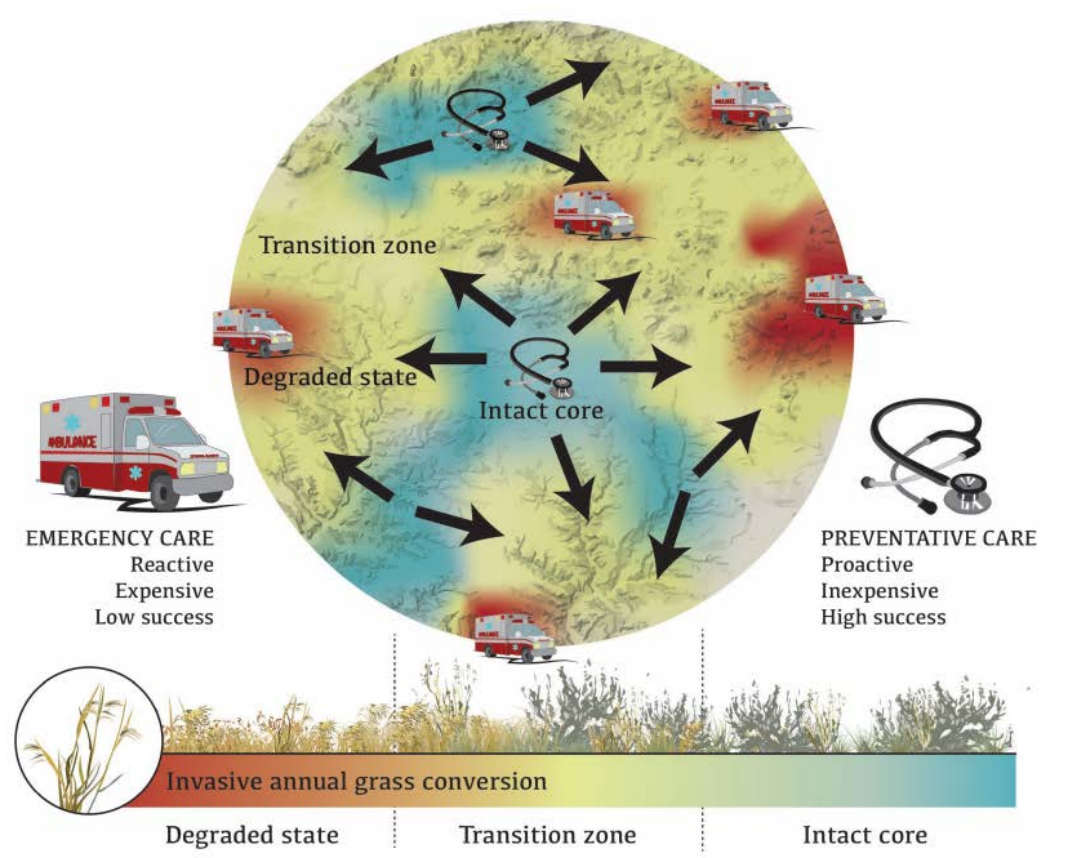
Priority Areas For Invasive Annual Grass EDRR and Treatment Planning

Triaging Nevada's response

Photo: Robert Hathorne

Triage Focused Weed Control

- Threat-based core identification needed.
- Resources for guiding IAG control efforts are sparse:
  - USGS Near Realtime MODIS Data (250km)
  - Rangeland Analysis Platform and NLCD indicate extent and density of IAG
  - Coates HSI shows suitability to GRSG
  - None indicate risk of invasibility, where core habitats are, or identify at risk adjacent areas.
- SETT wanted to determine:
  - Where are annual grasses *not* present and,
  - Where is habitat generally in “good” condition
  - Where these criteria line up should be high priority to prevent further invasion



Suitability Analysis

- Common process: layer criteria to determine optimal locations
  - Often done for locational planning (city planning, where can I put a starbucks etc.)
  - Nevada Department of Forestry
  - Habitat Suitability Index
  - HQT

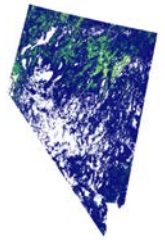
- Data sources are highly dependent on question
  - SETT question was “where are our core functional ecosystem areas from a wildfire and invasive annual grass standpoint?”

Suitability Analysis

1 = low *value* in terms of ecosystem function
5= high *value* in terms of ecosystem function

Fractional Annual Herbaceous

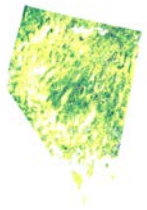
Reclassify



Annual Hrb % Cover
5 = 1-10%
4 = 11-20%
3 = 21-30%
2 = 31-40%
1 = 41-100%

Fractional Sagebrush

Reclassify



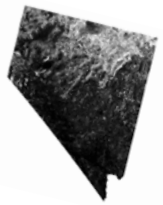
Sage % Cover
1= 1-10%
2 = 11-20%
3 = 21-30%
4 = 31-40%
5 = 41-100%

GRSG Breeding Density

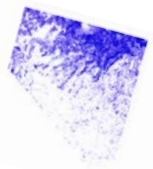
Polygon => Raster =>Reclassify

Breeding Density
1 = 0%
2 = 25%
3 = 25-50%
4 = 50-75%
5 = 75-100%

Perennial Herbaceous

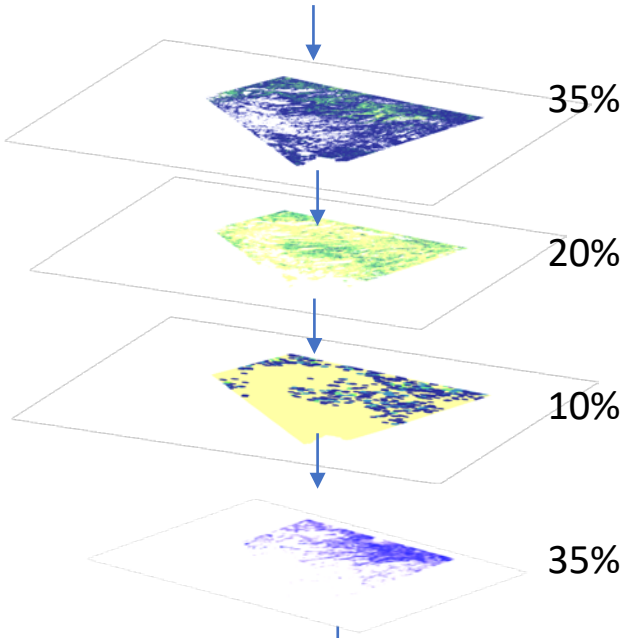


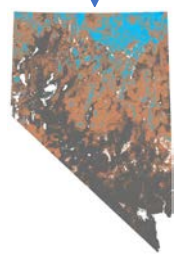
Reclassify



Perennial Hrb % Cover
1 = 0-10%
2 = 11-20%
3 = 21-30%
4 = 31-40%
5 = 41-100%

Weighted Overlay Analysis

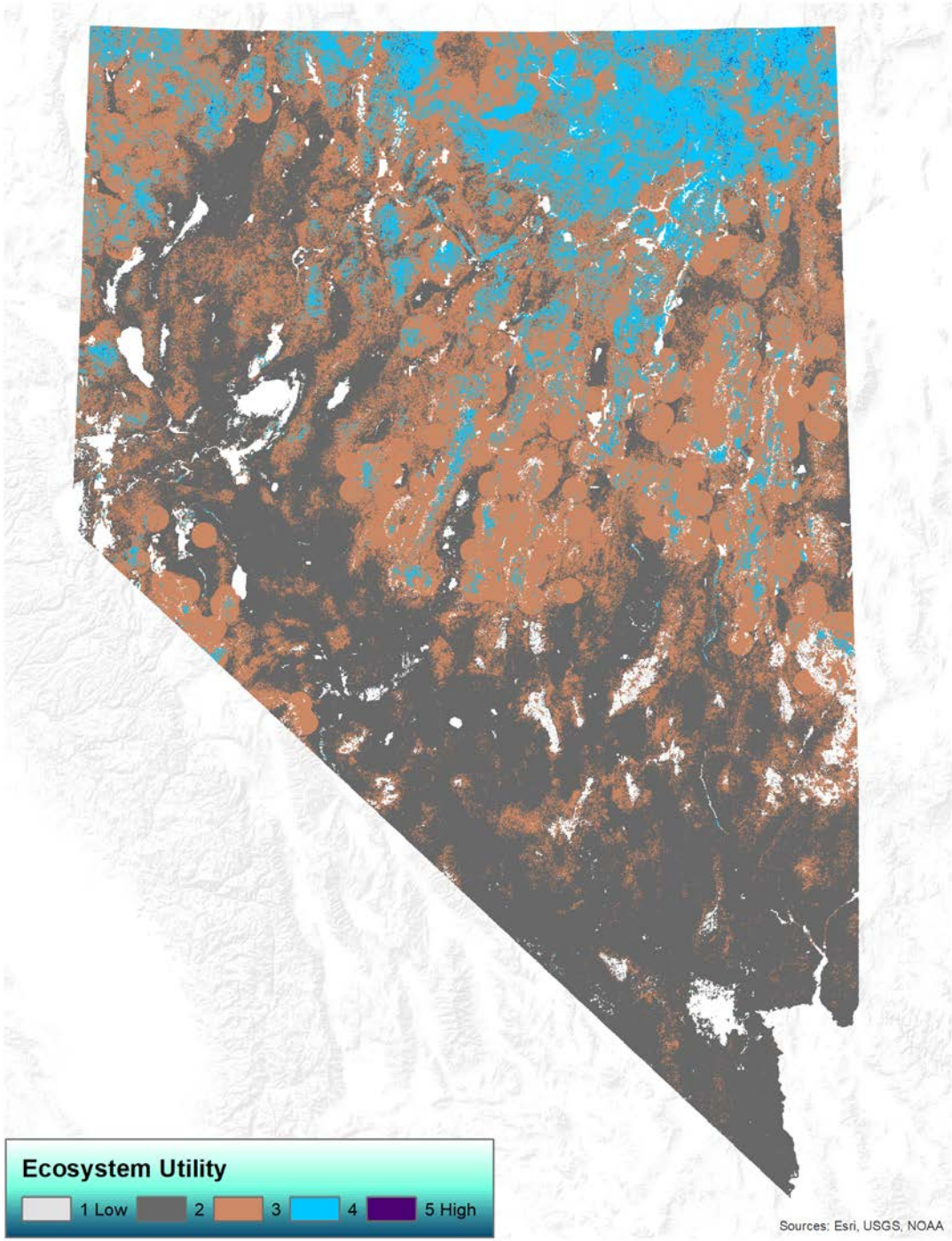




Suitability Layer

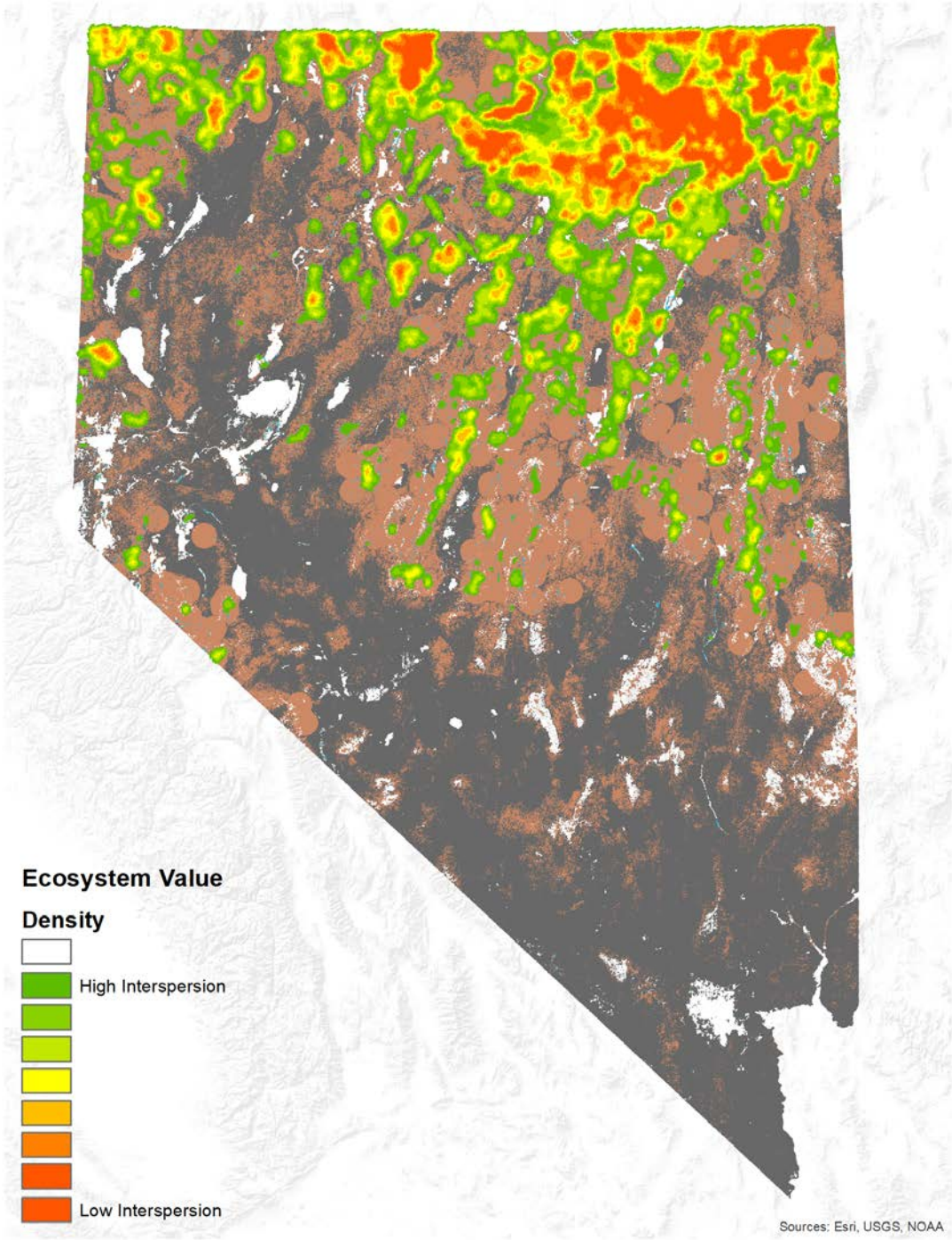
Suitability Layer

- Colors reflect value for ecosystem function driven from IAG and perennial grass % cover.
- Very little extremely low or extremely high value
- Agriculture, urban, water are masked



Suitability Layer

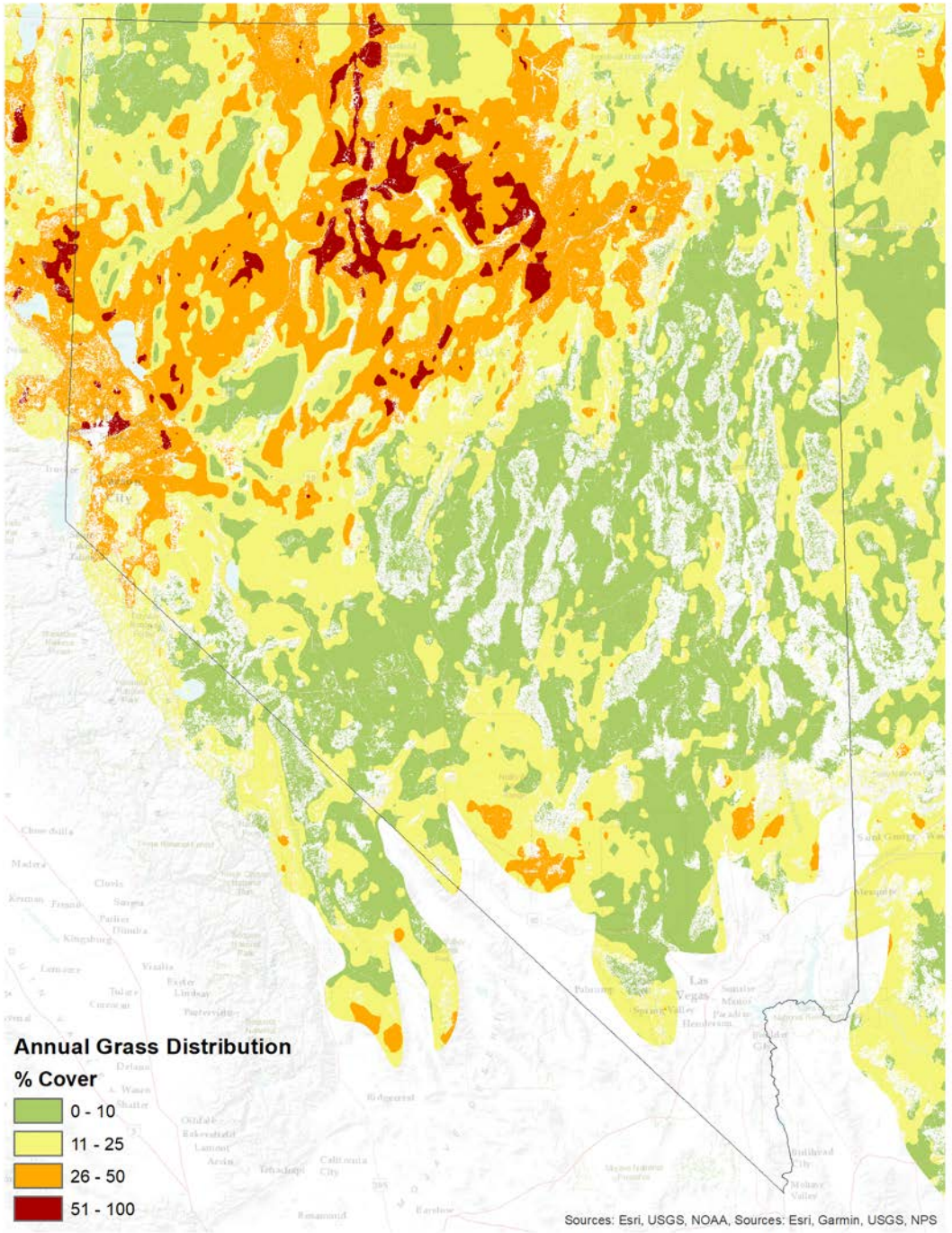
- Colors reflect value for ecosystem function driven from IAG and perennial grass % cover.
- Very little extremely low or extremely high value
- Agriculture, urban, water are masked
- Kernel smoothing of point measurements of 4-5 categories. Visually differentiate areas with high density of category 4-5 vs. areas with more “mixed” values.



Suitability Layer
Suitable for what?

Cover is so wide that IAG treatments need to be strategic

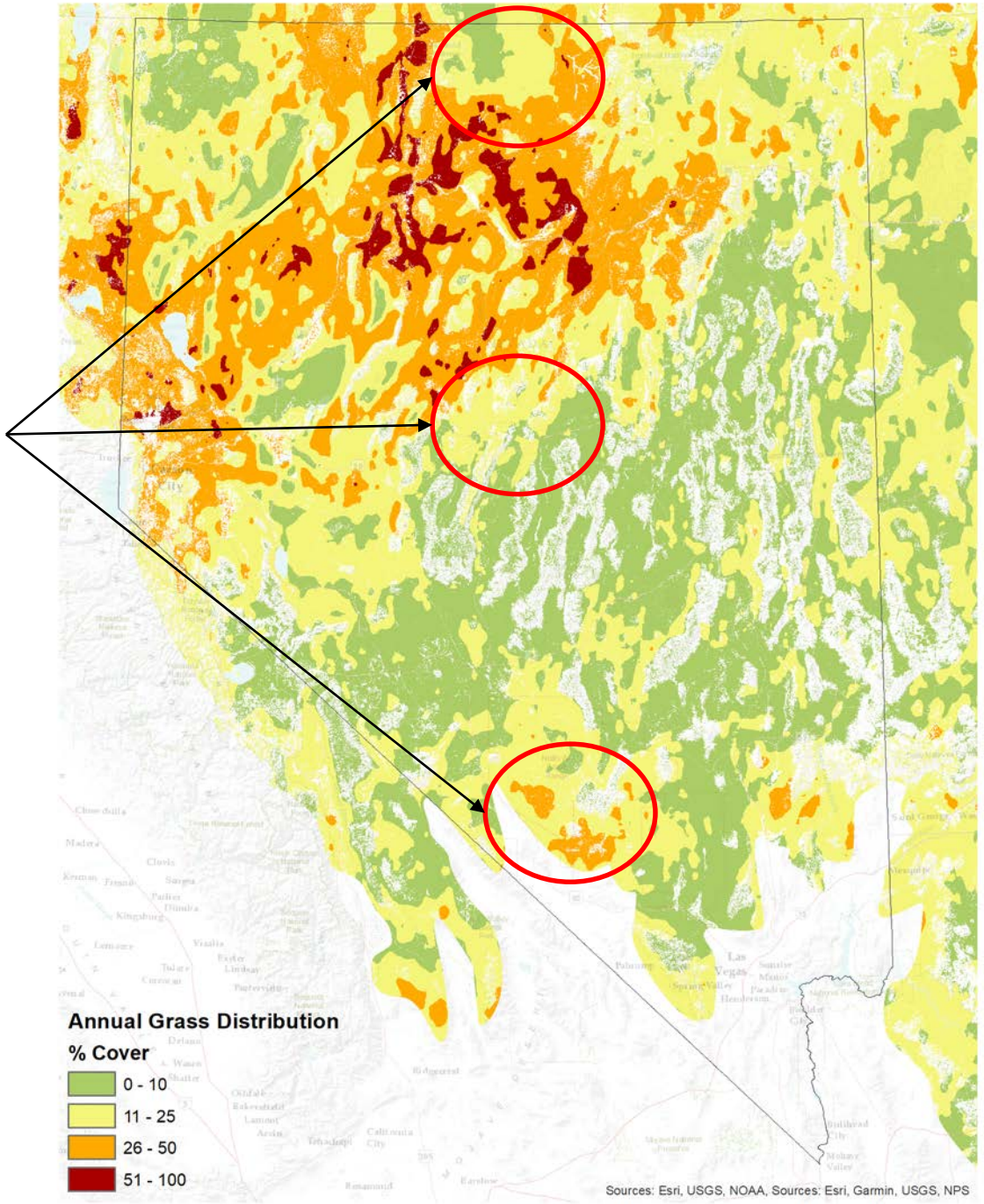
Where do we get the best bang for our buck?



Suitability Layer
Suitable for what?

Cover is so wide that IAG treatments and monitoring need to be strategic

Where do we get the best bang for our buck?



Suitability Layer
Suitable for what?

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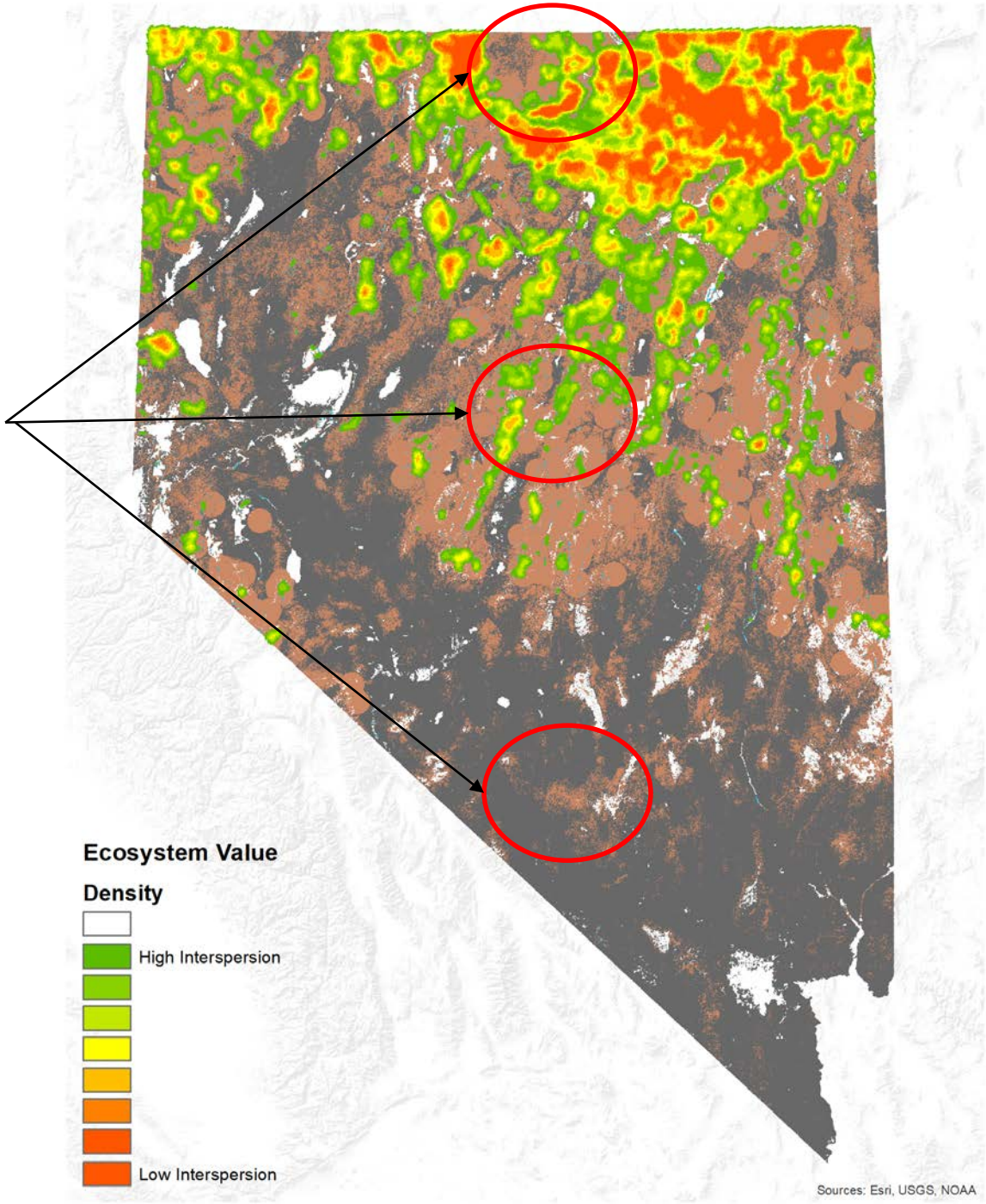
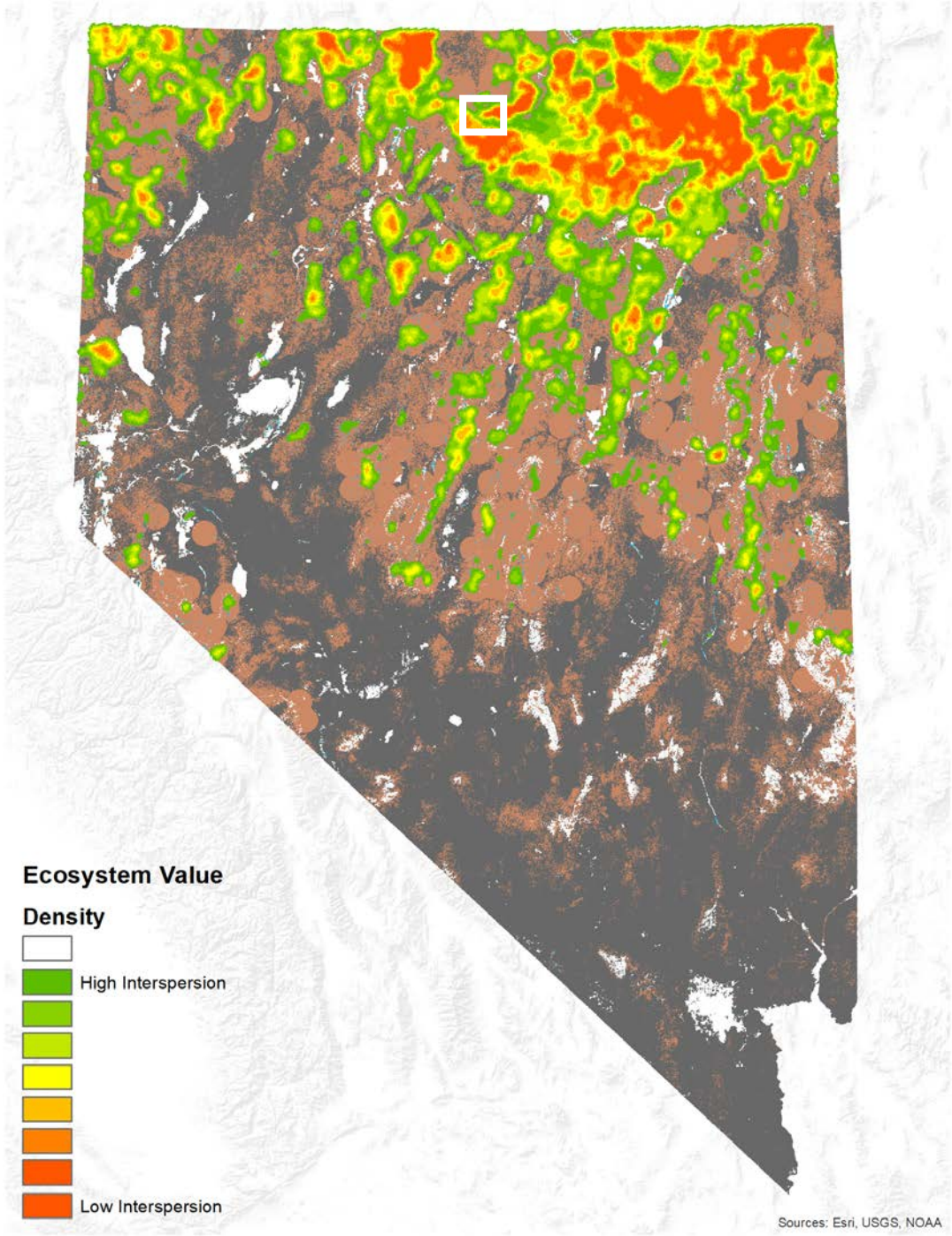
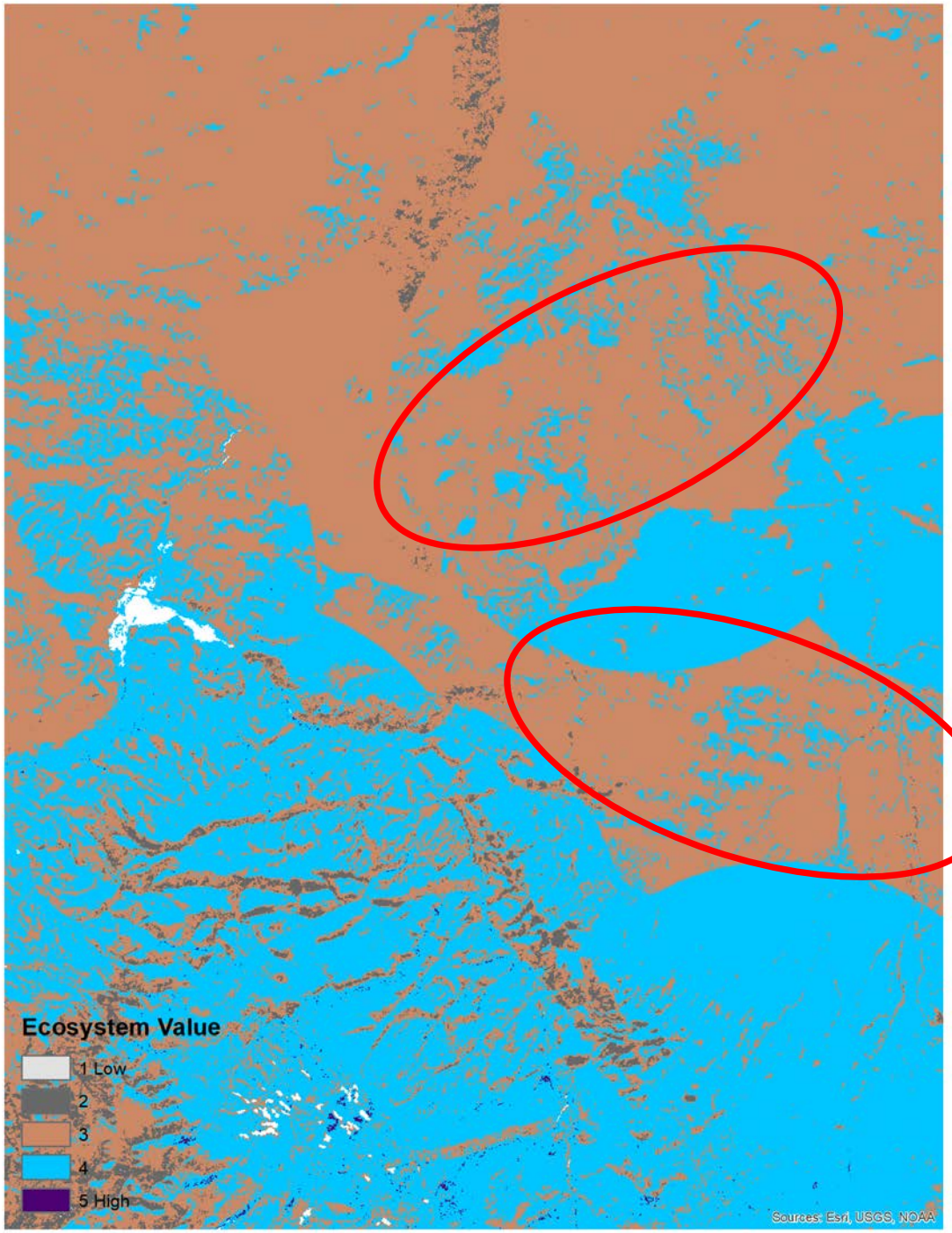


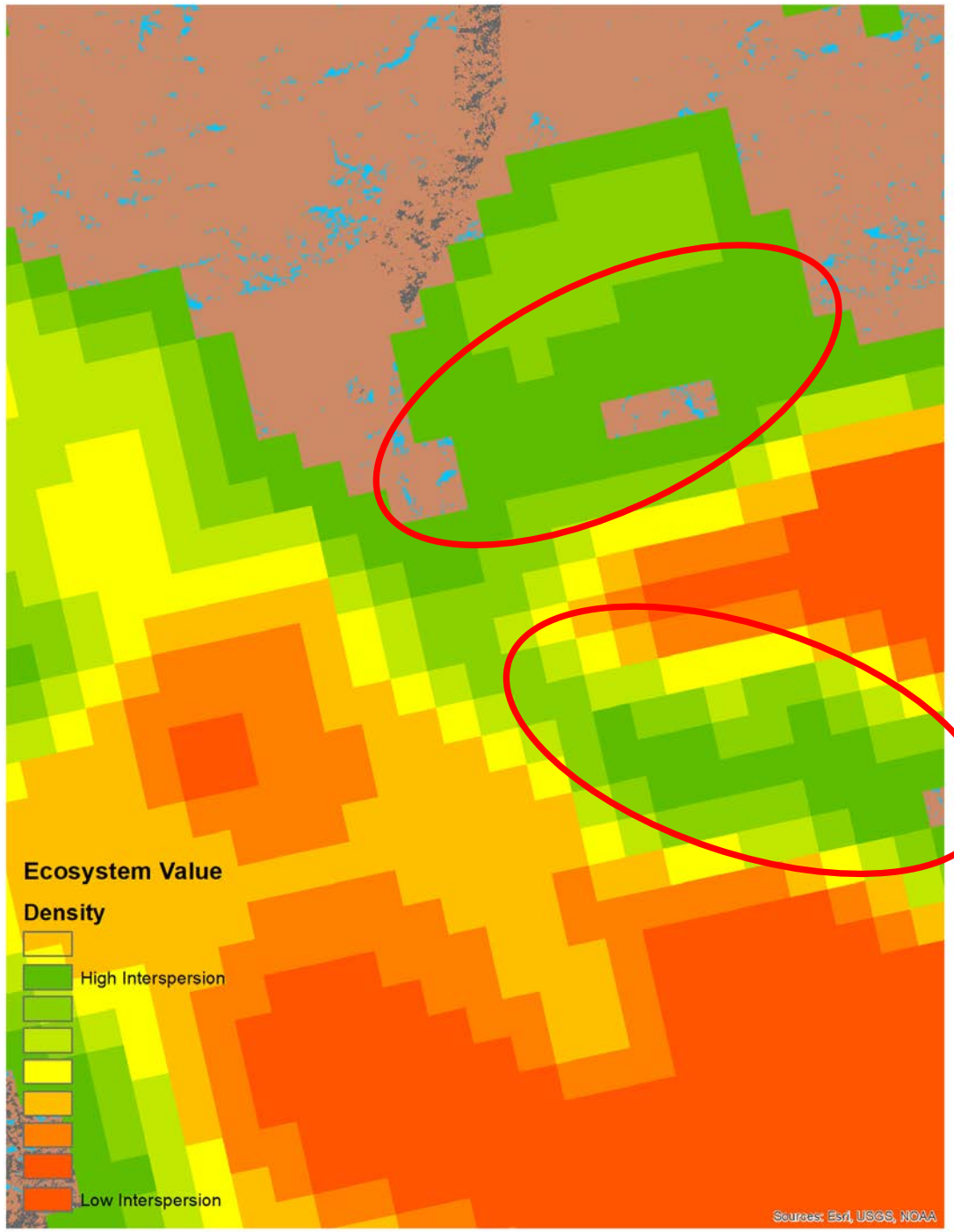
Suitability Layer
Suitable for what?

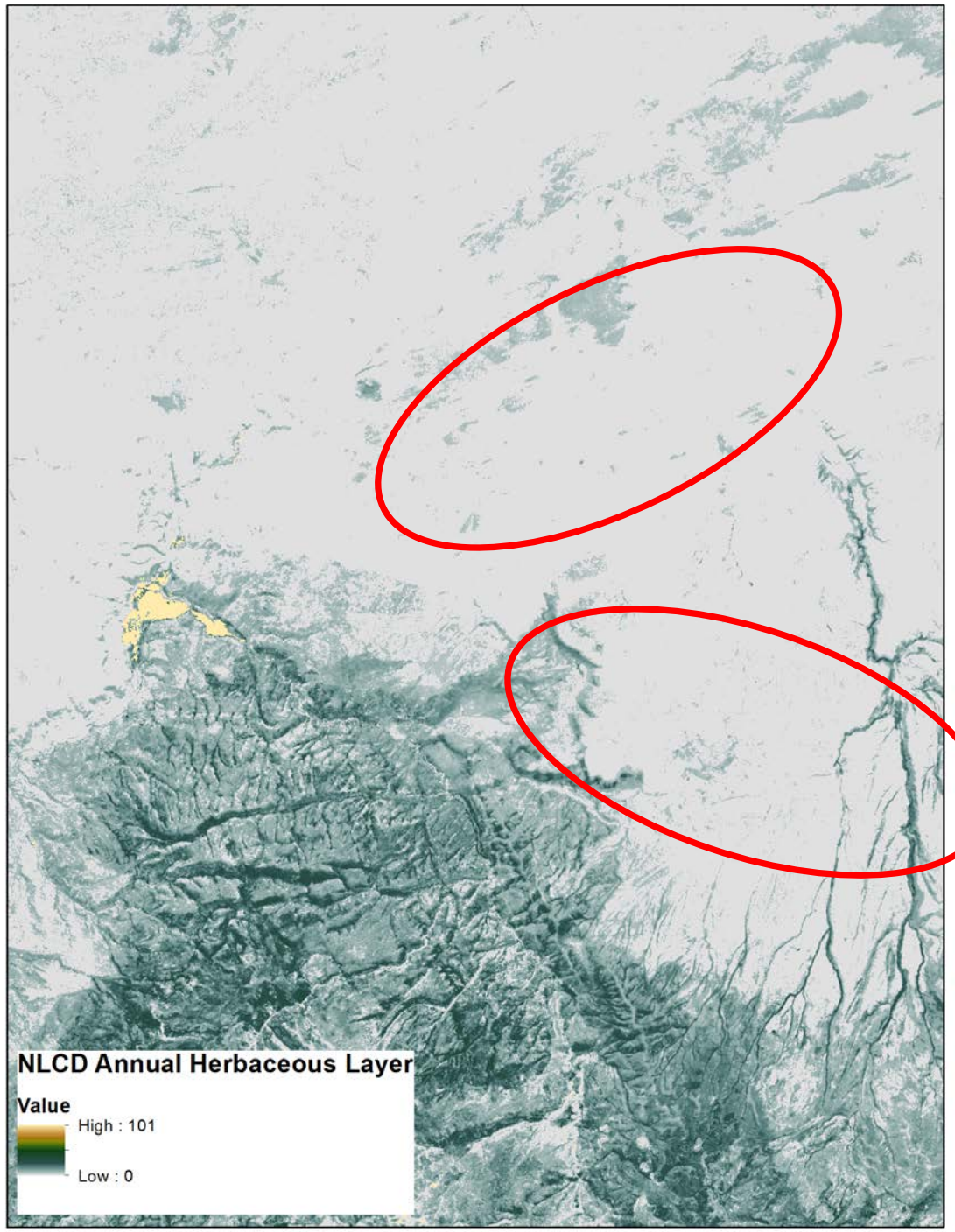
Cover is so wide that IAG treatments, EDRR, and Monitoring need to be strategic

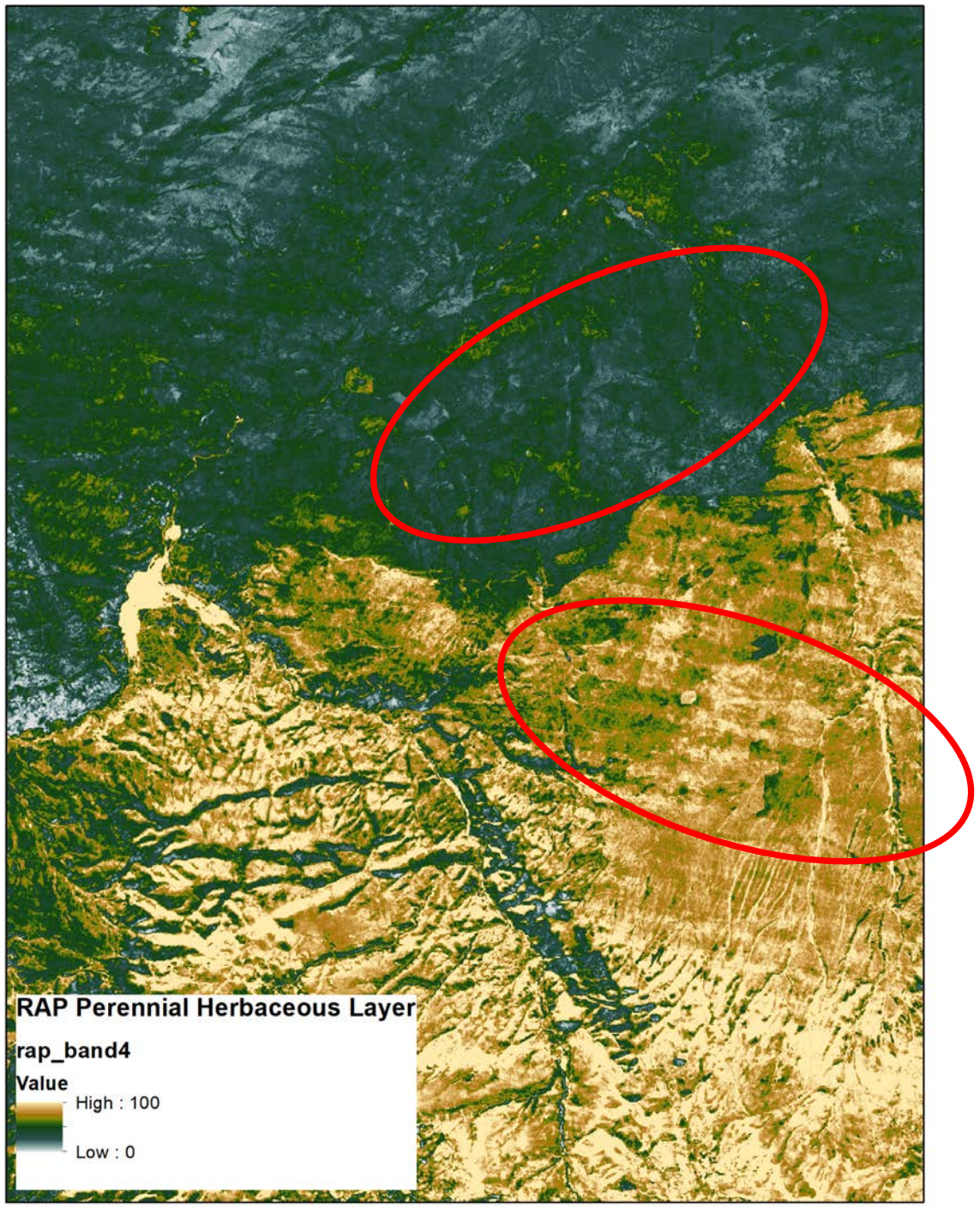
Where do we get the best bang for our buck?




Ecosystem Value
1 Low
2
3
4
5 High
Sources: Esri, USGS, NOAA


Ecosystem Value
Density
High Interspersion
Low Interspersion
Sources: Esri, USGS, NOAA


NLCD Annual Herbaceous Layer
Value
High : 101
Low : 0


RAP Perennial Herbaceous Layer
rap_band4
Value
High : 100
Low : 0

Suitability Layer
Suitable for what?

Specific applications:

- Best bang for the buck
- SETT intends to work with partners to develop additional funding for EDRR
- Assist in targeted grazing location
- Guide treatment planning from local and state perspectives
    - When local planning is conducted, finer resolution resources should be used in conjunction

Access:

- High resolution image available on website
- Contact info listed and SETT can assist with mapping if needed, or supply layer.