

Northern Great Basin Appropriate use of REA data

Future status products



Future Status Products

- Understanding Data and Science Gaps
 - What are the future status products?
 - Significant Data Gaps?
- Limitations and strengths
- Interpreting and misinterpreting REA results
- Examples of REA results utilized
 - Wind power possibility



Understanding Future Risk Data

- Change Agents
 - Long-Term Climate data/changes
 - Annual/month grouped PPT/Temps
 - Long-Term Development Potential
 - Renewables
 - Urban Growth

How these datasets are used depends on the question...



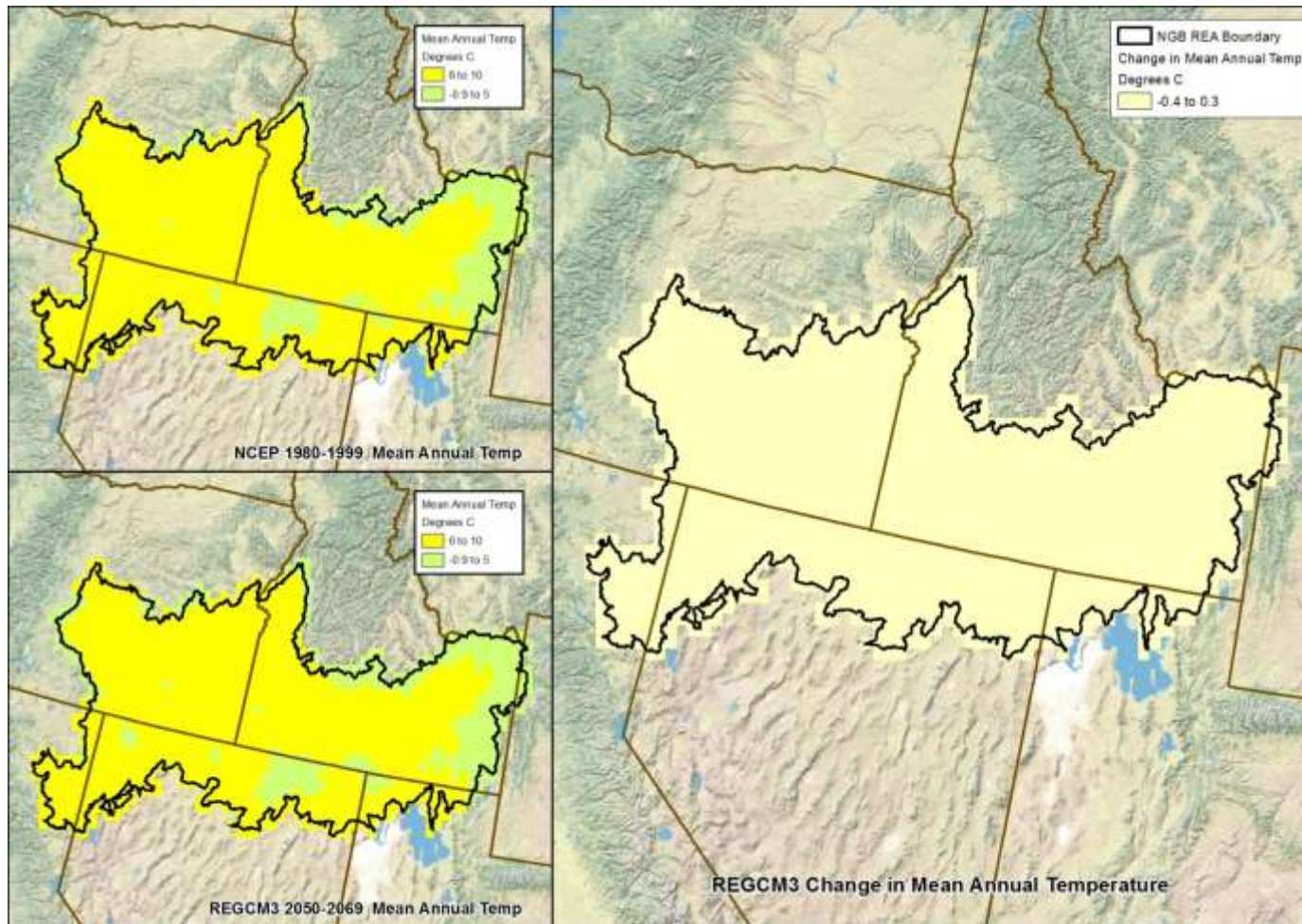
Long-Term Climate Data

- Climate Change Results
 - What level of change is significant
 - 1 degree, 0.5 degree
 - 1 millimeter, 1 centimeter, 1 inch, 1 foot
 - How to symbolize change
 - Collapse to single color
 - Flush out in equal increments
 - Use Natural Breaks



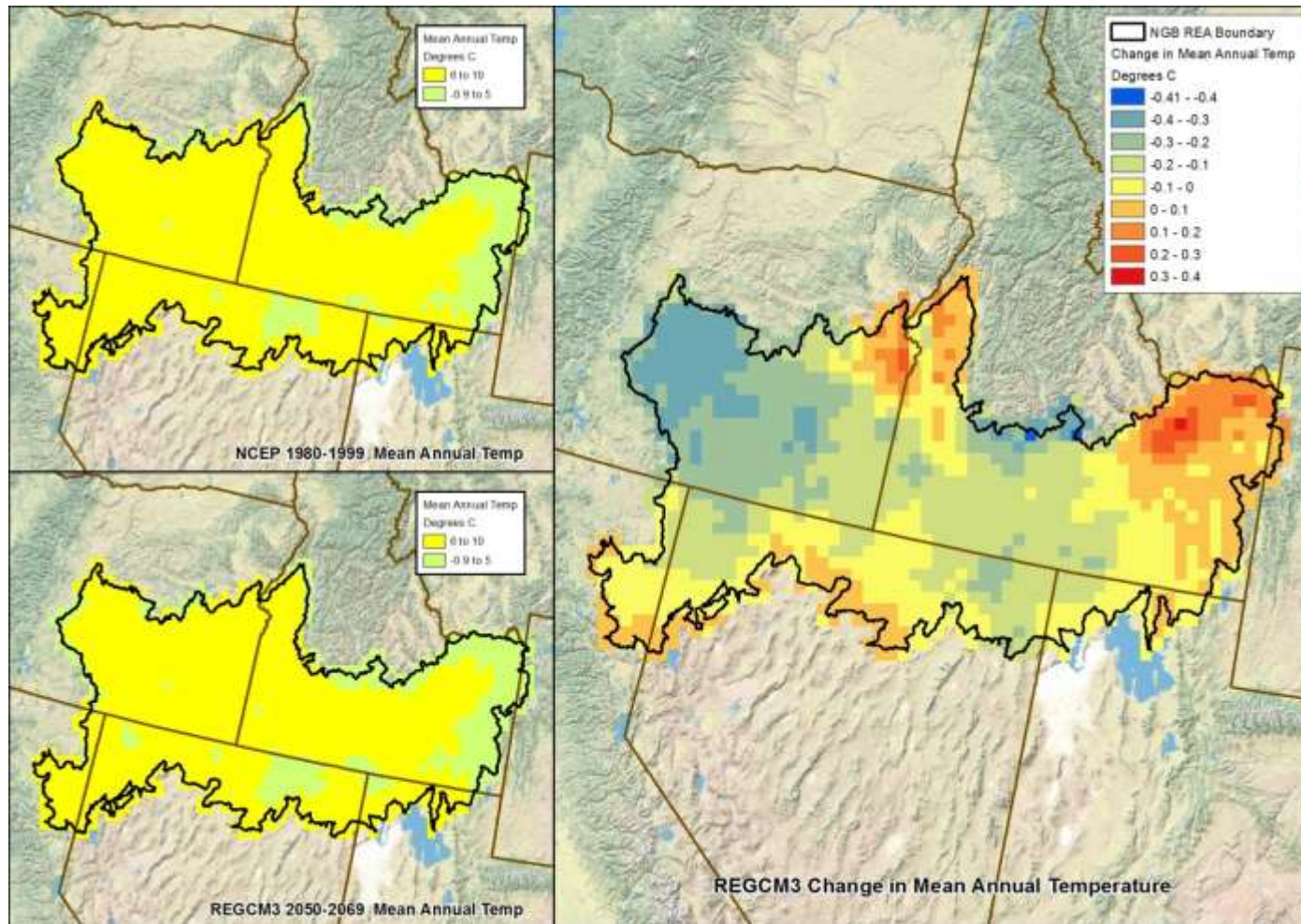
Long-Term Climate Data

- Change in Temperature shown as single color since change was $-0.4 - 0.3$



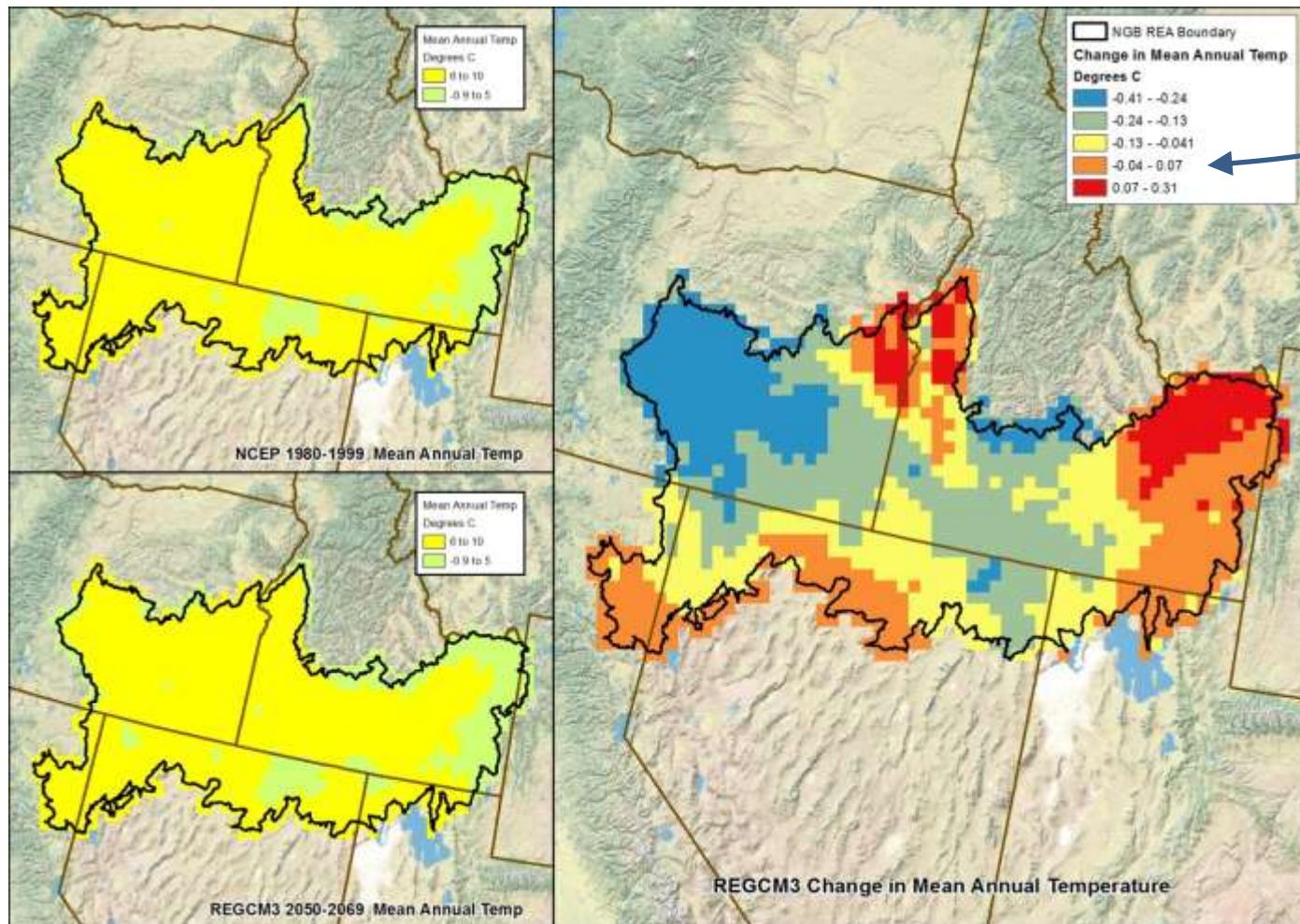
Long-Term Climate Data

- Change in Temperature at a 0.1 increment



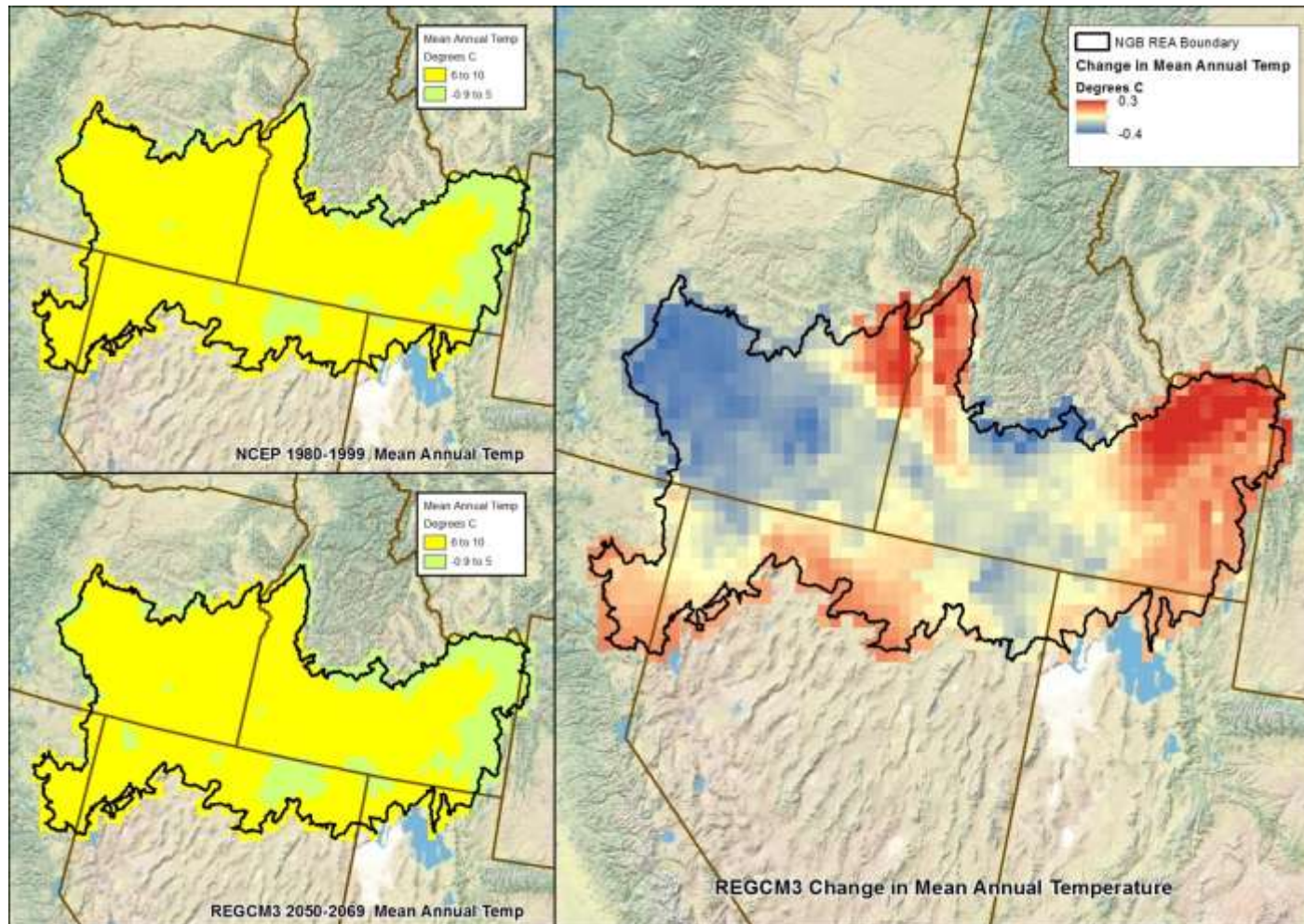
Long-Term Climate Data

- Change in Temperature using Natural Breaks (one class is both above and below zero).



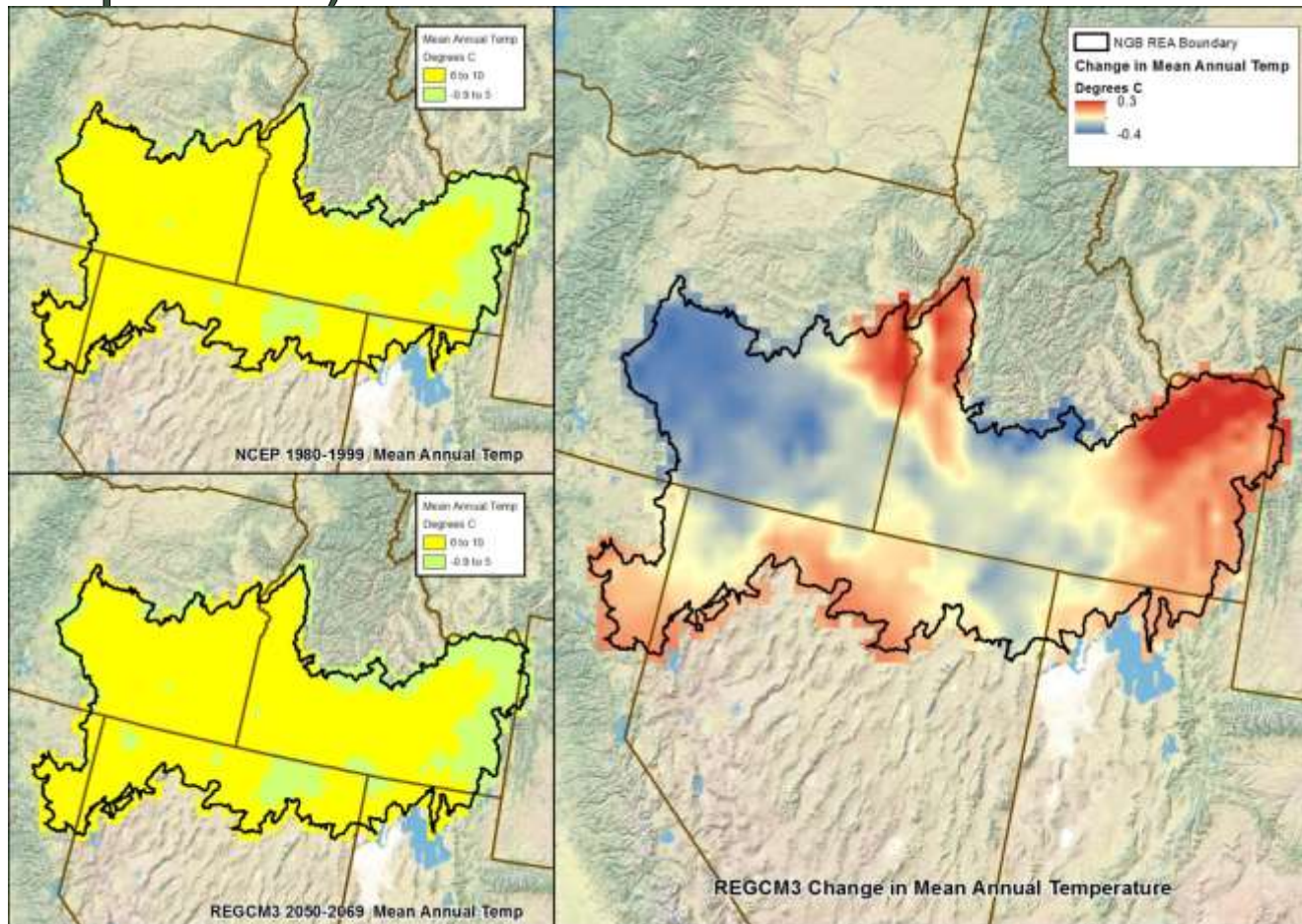
Long-Term Climate Data

- Change in Temperature shown as a stretched raster



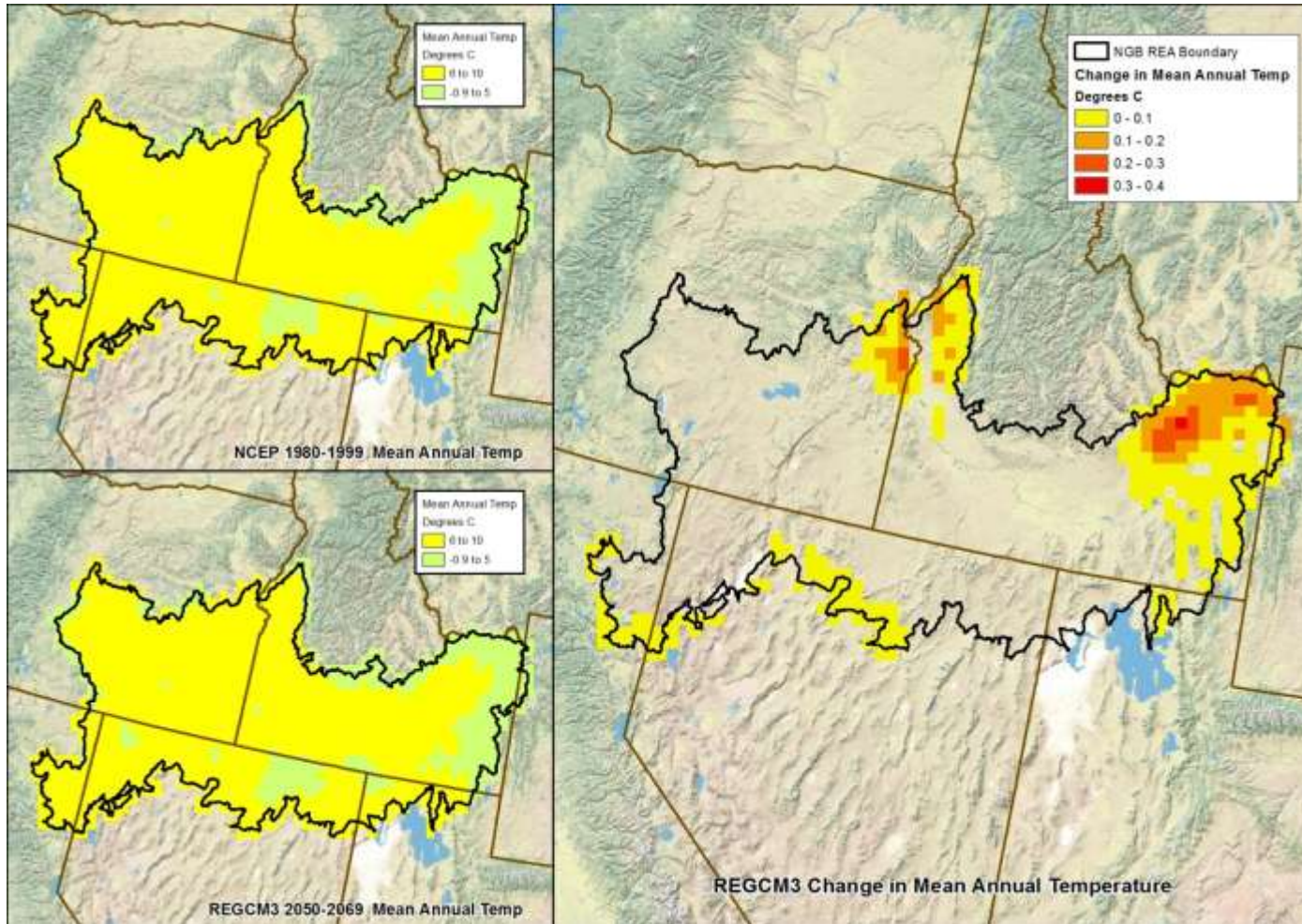
Long-Term Climate Data

- Change in Temperature shown as a stretched raster using bilinear interpolation (Display Properties) turned on to hide raster resolution.



Long-Term Climate Data

- Change in Temperature - only increase shown



Data limitations

- No formal accuracy assessment done, but a thorough data evaluation was completed
- Often poor or no surrogate was available to represent an important process for a CE, especially for future
 - Stretched raster gives a relative condition across the gradient, not biological capacity
- Geospatial inequality across landscapes
 - Regional data wasn't always available, higher quality data sometimes not complete for entire ecoregion



Data limitations: Data gaps

- Additional analysis or data gathering is suggested to address management questions for:
 - Lack of ecoregion wide datasets
 - Point occurrence data biased as researchers are actively seeking out the species. Species absence not usually recorded.
 - Grazing Data Gaps
 - Fences, livestock management infrastructure (pipelines, troughs, corrals)
 - Non BLM Land (Private) Datasets
 - Bats
 - Cottonwood Galleries
 - Off Highway Vehicle Areas
 - Aquatic Ecological Integrity



Interpreting and misinterpreting REA results

- Depends on use
- Future predictions are not a certainty
- Occurrence vs. development probability
- Risk vs. reasonably foreseeable



Northern Great Basin Appropriate use of Future REA data

Golden Eagle and Wind Turbine Products

Demonstration



Future Status Products

- **Examples of REA results utilized**
 - Where are Wind Power allocation areas with the least impact on golden eagles?
 - REA CE and CA data interactions
- **Understanding Data and Science Gaps**
 - Included Greater sage-grouse PPH as an exclusion based on feedback
 - Doesn't take into account existing Wind Farms
- **Limitations and strengths**
 - Doesn't take into account Visual Resource Mgmt
 - Weighting can be altered to emphasize proximity to urban areas or existing transmission lines
- **Interpreting and misinterpreting REA results**



Analysis

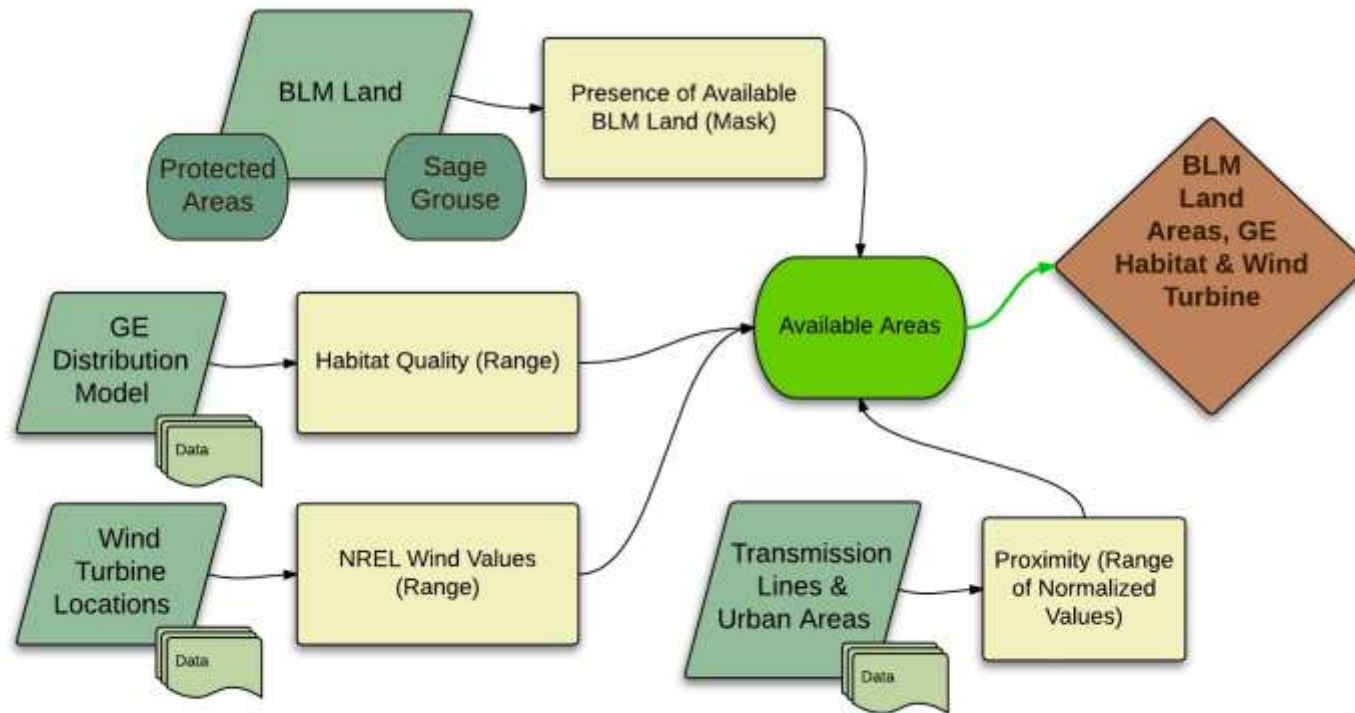
- At least two options available for analysis
- Binary Analysis
 - Identify areas that are “good” or “bad” as they relate to golden eagles and wind turbine interactions
- Suitability Index Analysis
 - Identify a range of values that represent potential wind turbine allocations in relation to golden eagles
 - Suitability Index Analysis was used for this example



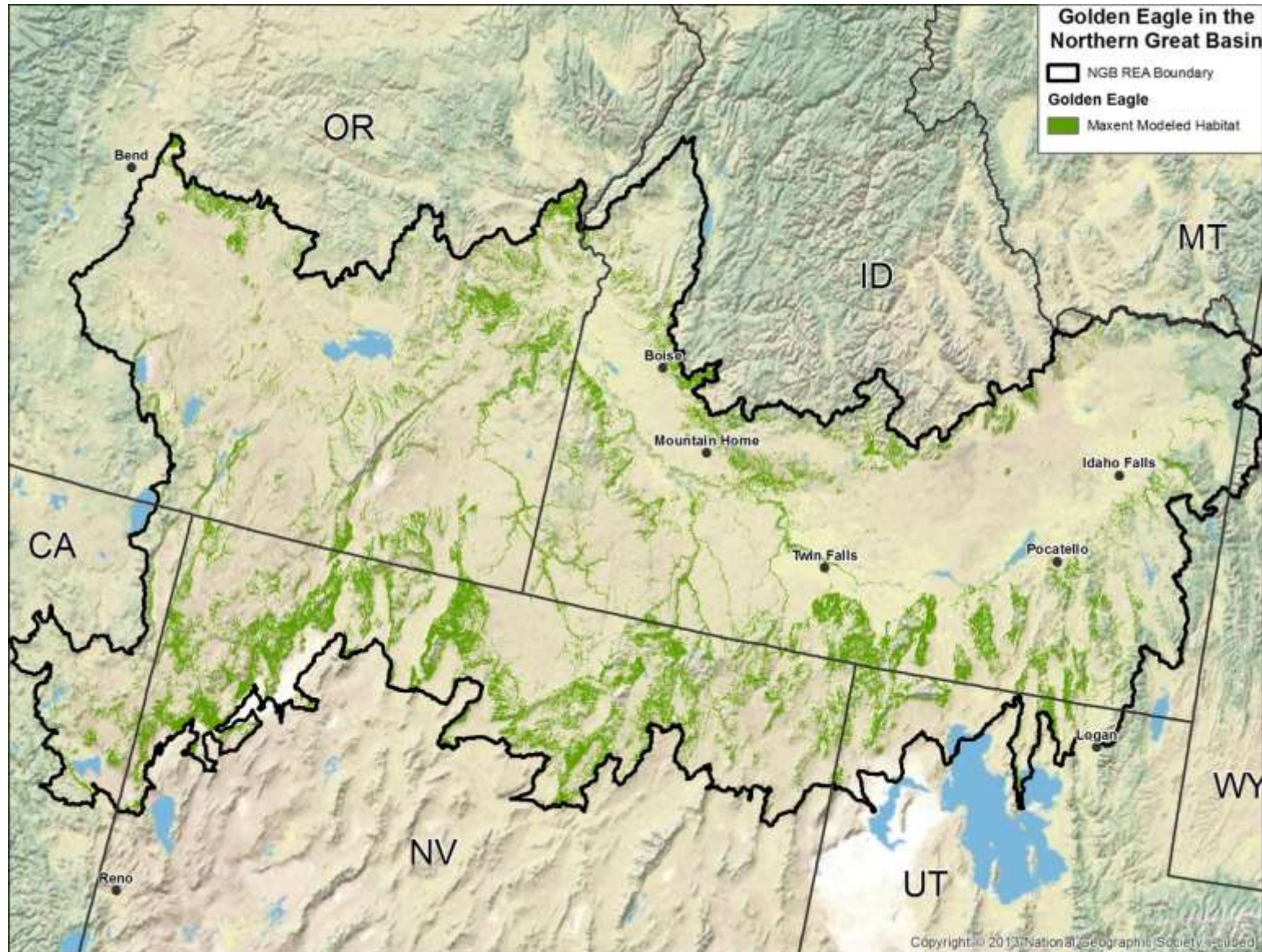
Suitability Index Diagram

Golden Eagle and Wind Turbine REA Application

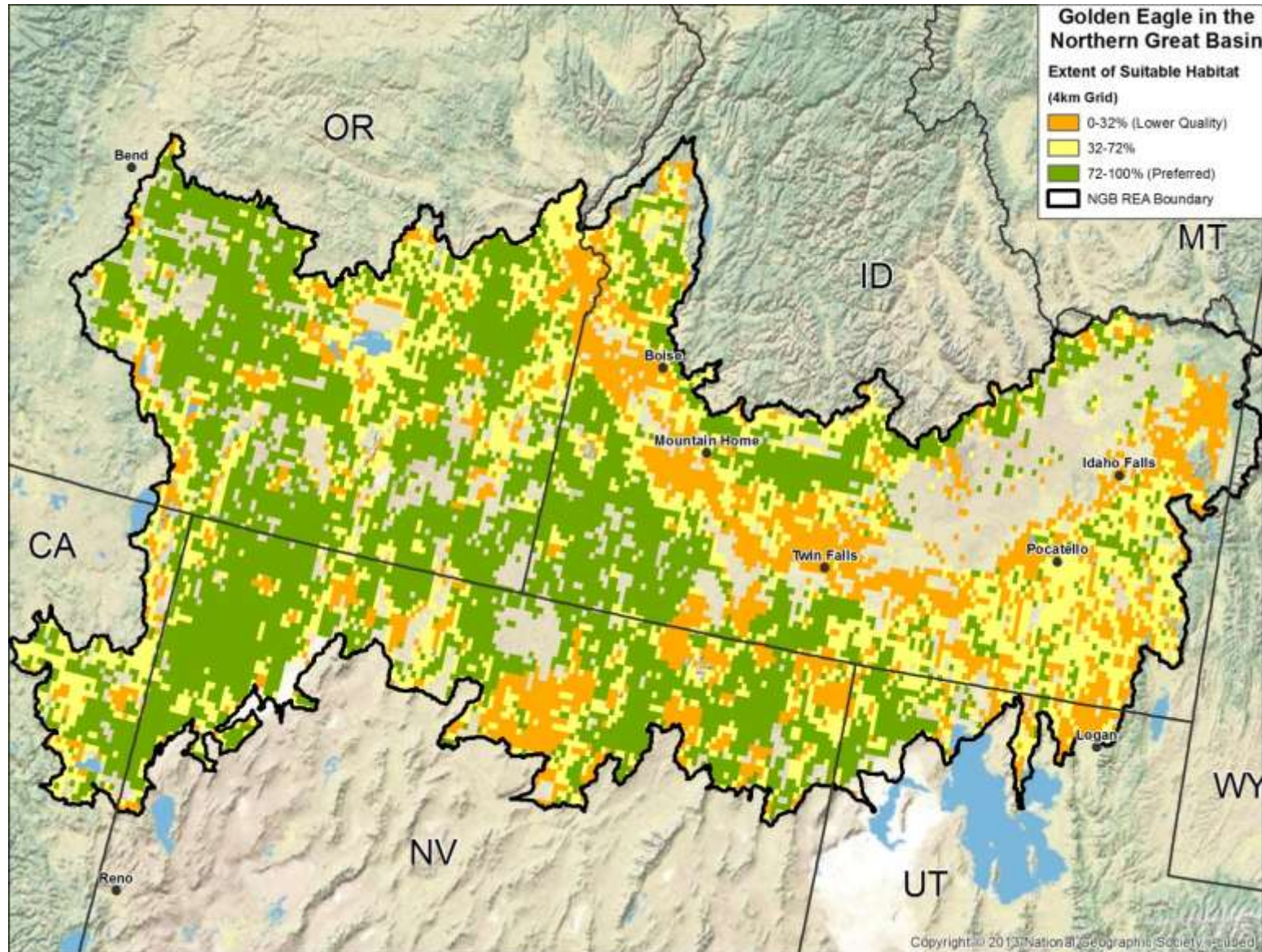
Q. Can we evaluate areas of BLM land that are suitable for allocation of wind turbines and that will have a limited effect on golden eagles?



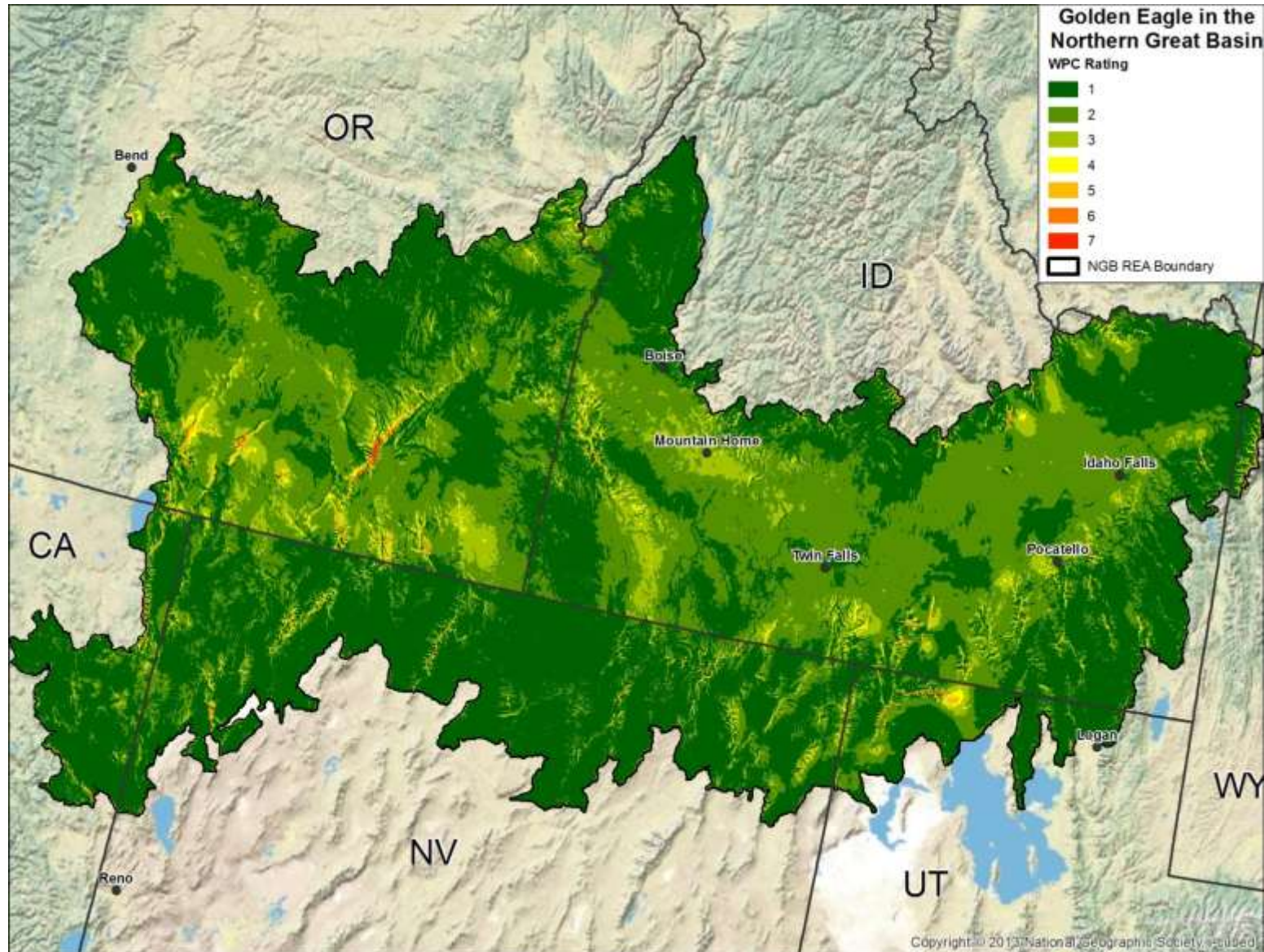
Golden Eagle Distribution



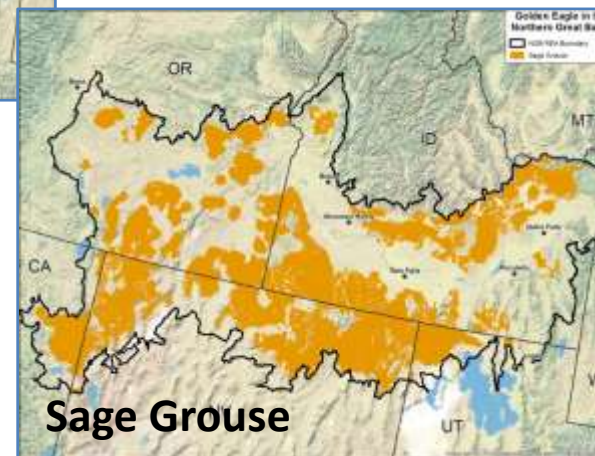
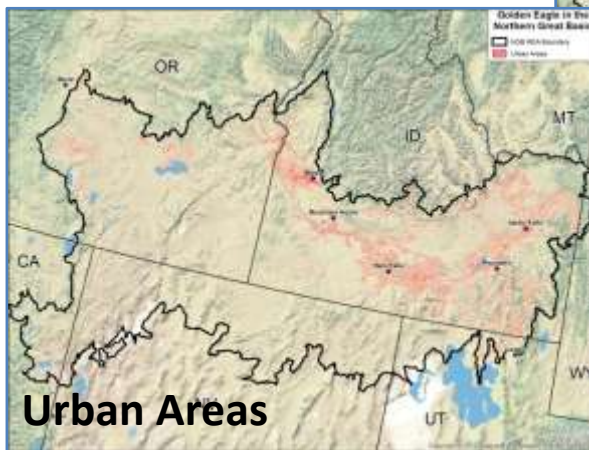
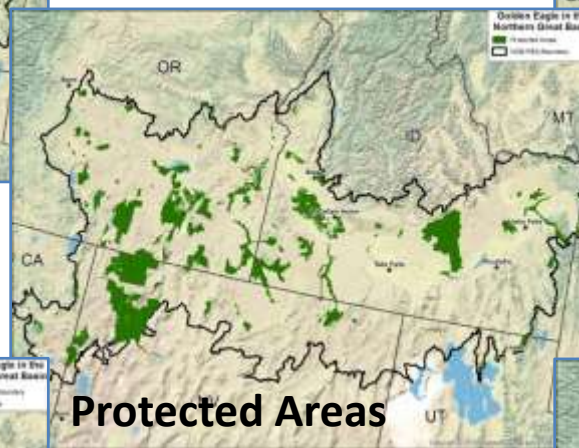
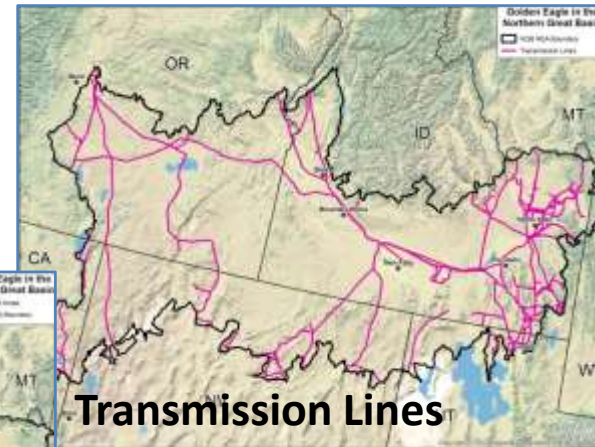
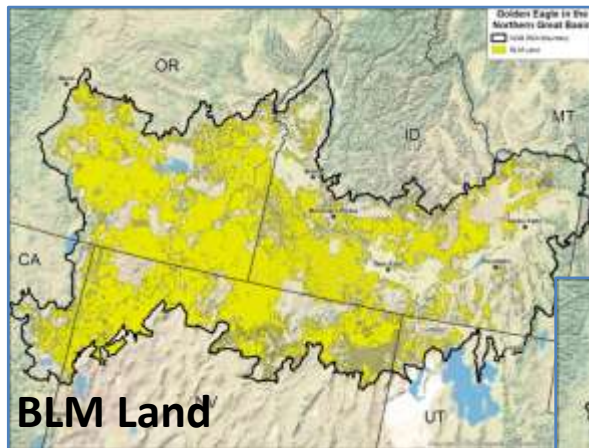
Golden Eagle Habitat Analysis



Wind Turbine WPC Ratings



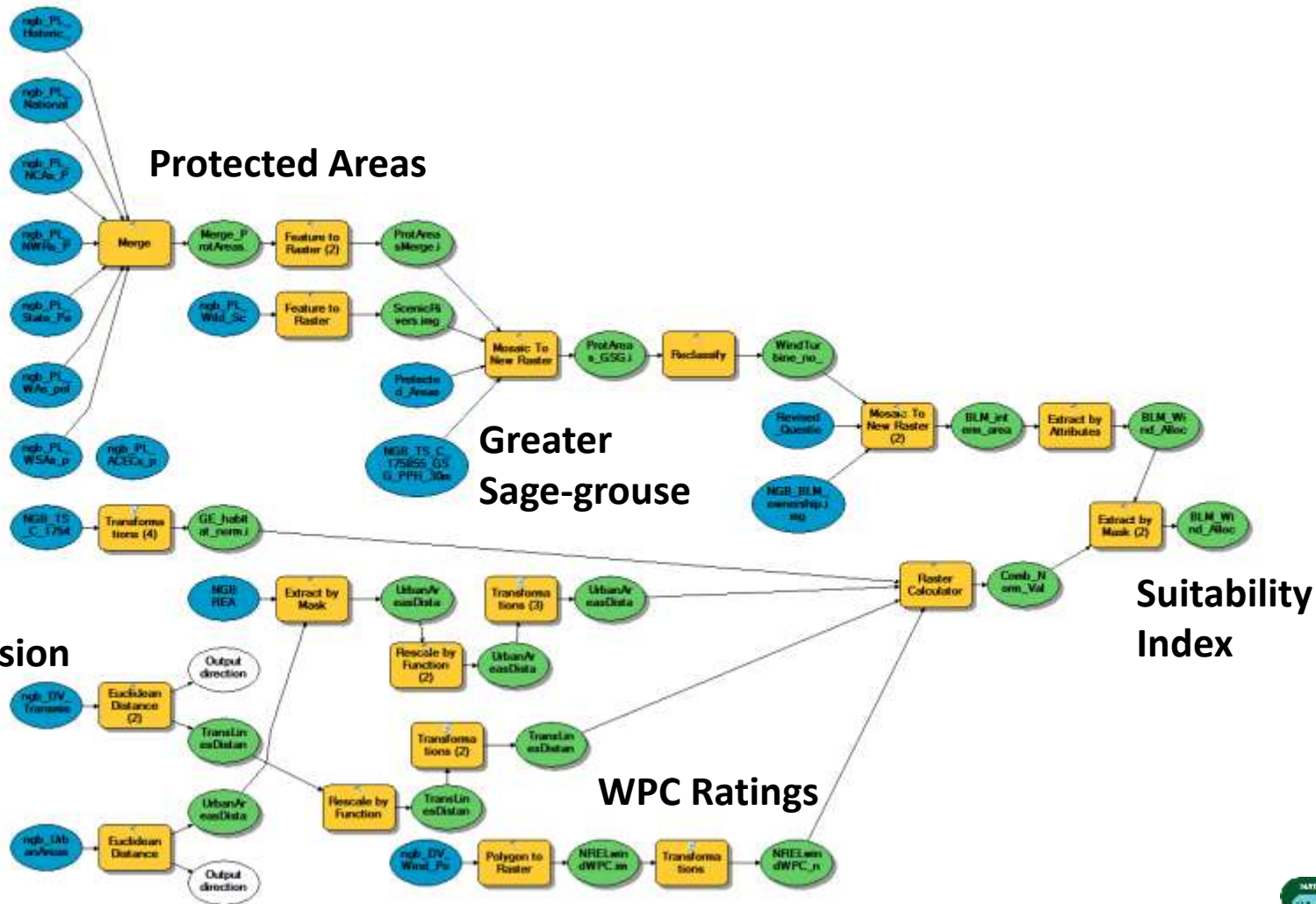
Other Data Layers



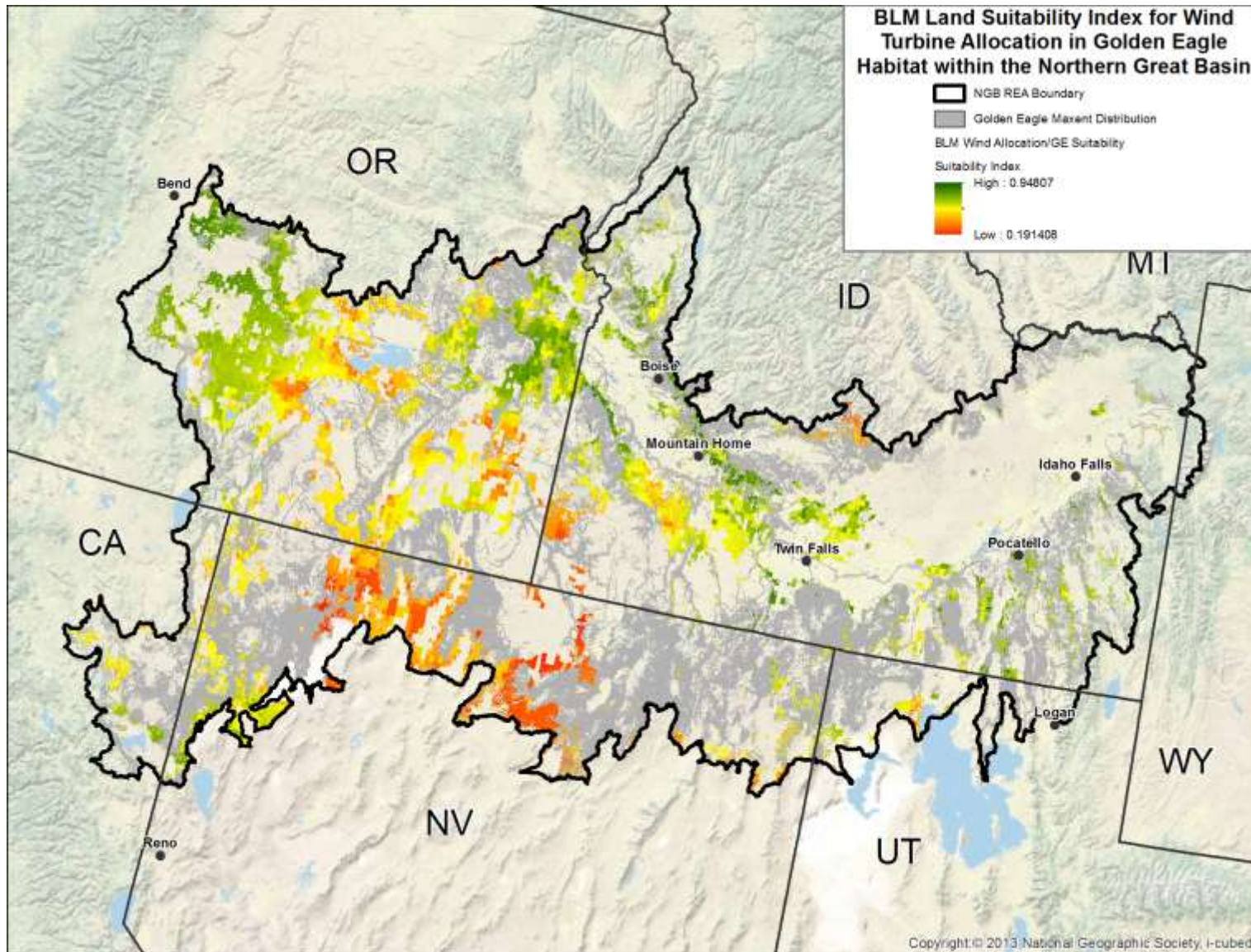
Analysis Steps

Golden
Eagle
Habitat

Transmission
Lines &
Urban
Areas



Suitability Index Result



Discussion of Results

- Multiple methods available for analysis
- Relatively quick and easy to implement
- Inclusive rather than exclusive analysis
- Broad results over a coarse scale
 - Meant to aid in management options
 - Leeway available for interpreting/modifying results or model

