SCALING UP
TO ADDRESS
LANDSCAPE-SCALE THREATS TO SPECIES

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OREGON CASE STUDY

Sage-Grouse/Sage-Steppe Mitigation Decision Support

THE NATURE CONSERVANCY
AND
INSTITUTE FOR NATURAL RESOURCES

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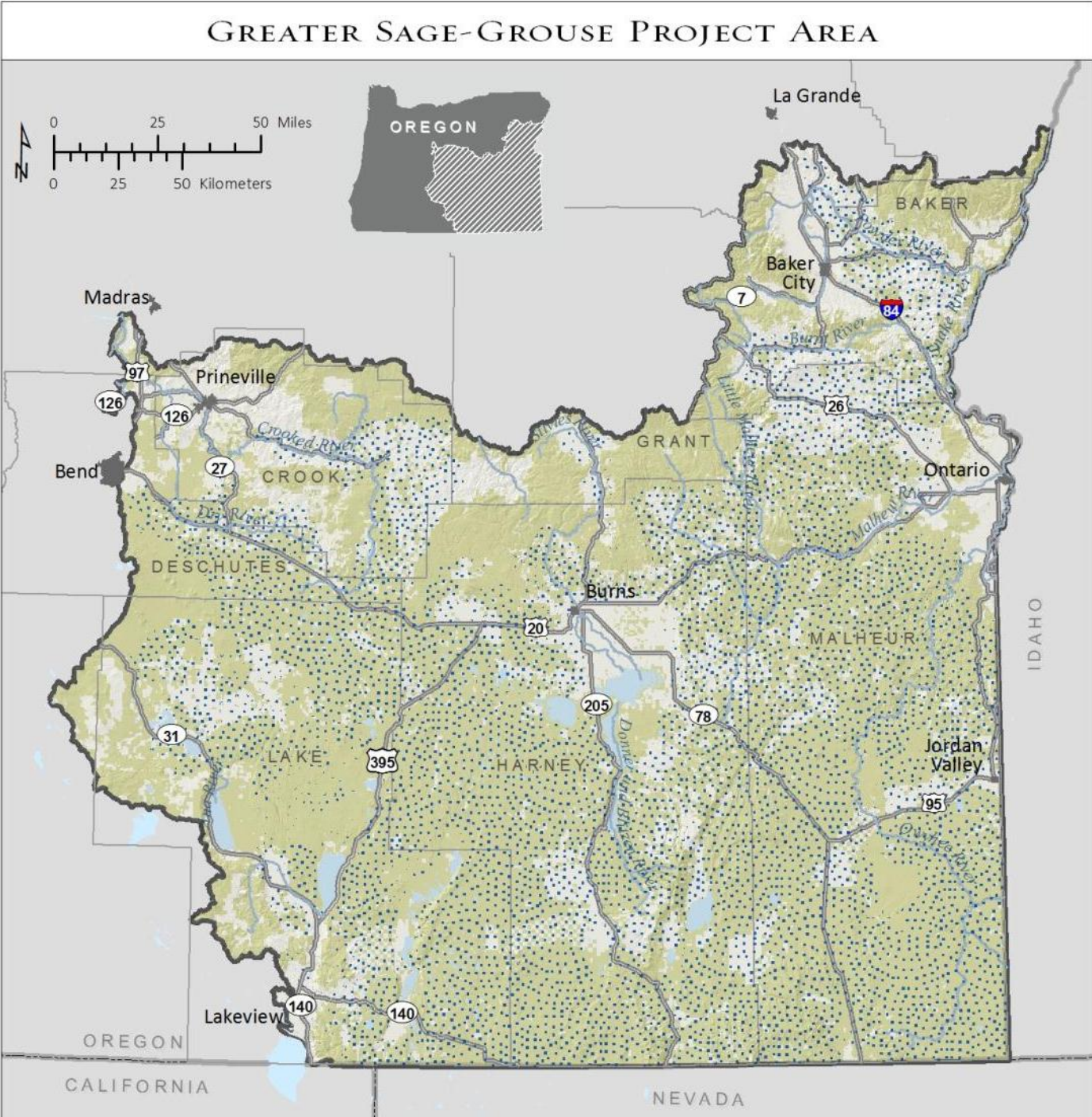# Sage-Grouse/Sage-Steppe Mitigation Decision Support

Ingredients for success

- **landscape scale**

- **integration with other conservation efforts**

- **technical tools; transparent and engaged locally**

- **adaptive**

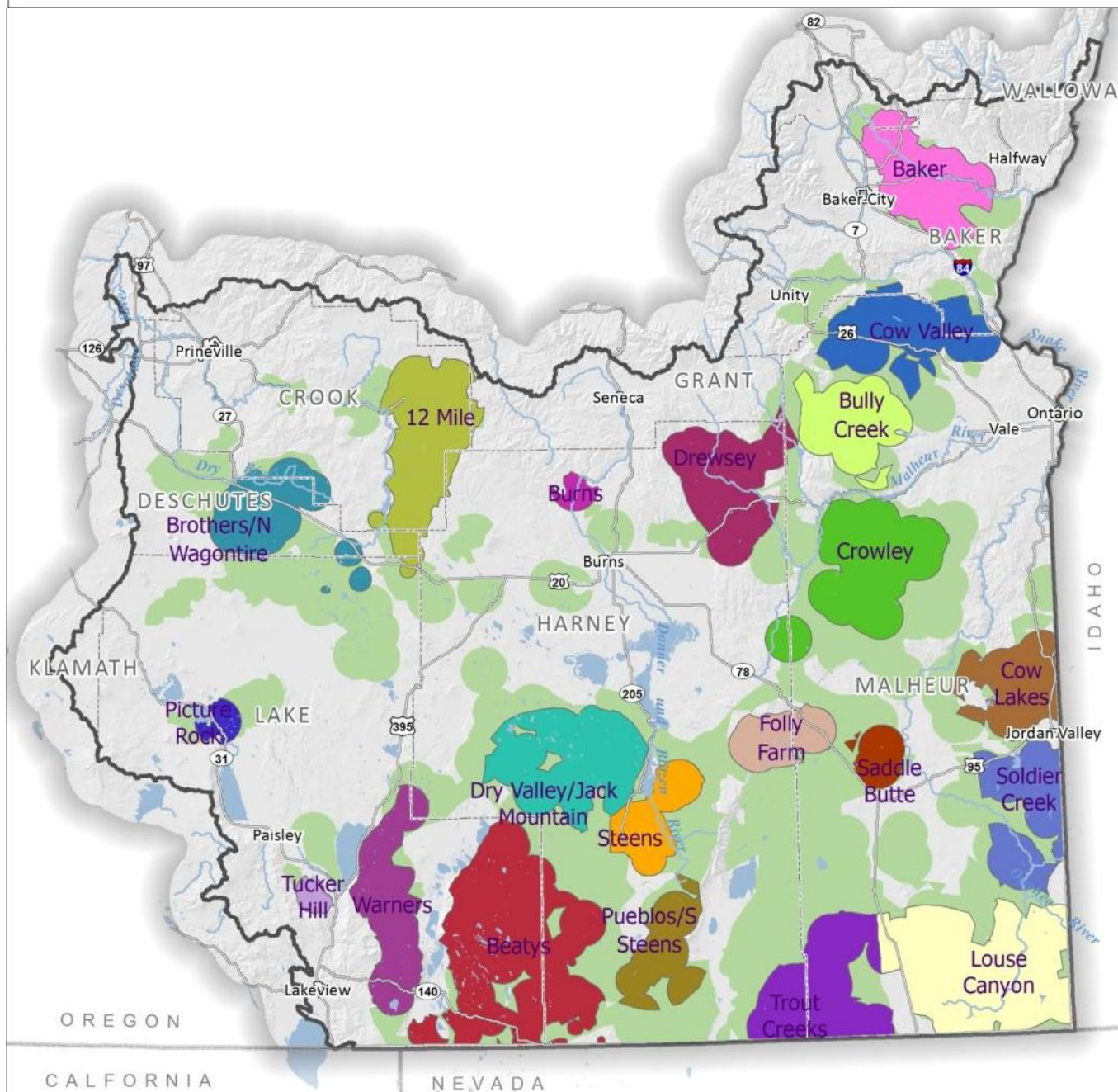# Landscape scale

37,370 square miles

GREATER SAGE-GROUSE PROJECT AREA

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GSG as an umbrella species

Spatial and Temporal Habitat requirements

Meta-population structure

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Integration with other conservation efforts

❑ **Informs priorities for variety of investments**

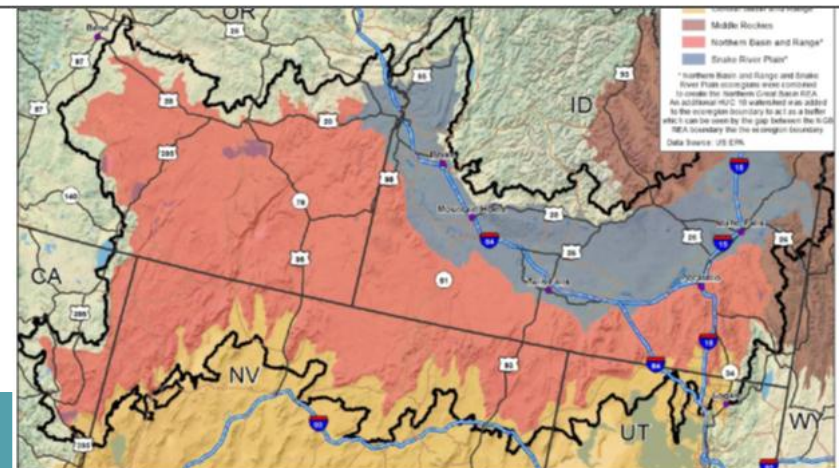 ○ **Priority Places and Practices**

   the **where** and the **what**

Integration with other conservation efforts

☐ **Informs priorities for variety of investments**

○ **Priority Places and Practices**

Integration with other conservation efforts

complement and integrate, not compete

o **USFWS - CCAA (private lands), CCA (public lands)**

o **BLM – RMP focal areas and implementation**

o **Sage-Grouse Initiative (SGI - NRCS)**

o **State/ODFW – Local Implementation Teams**

o **Sage-SHARE Habitat Response guides/manual**

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Sage-Grouse/Sage-Steppe Mitigation Decision Support

Technical tools; transparent and engaged locally

Sage-grouse Habitat Importance	Current Natural Condition	Current Human Modification	Development Potential	Natural Risks	Biodiversity Co-benefit

PEAK UNDER THE HOOD

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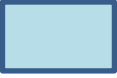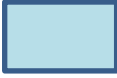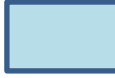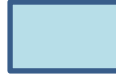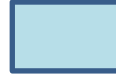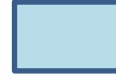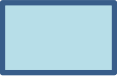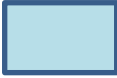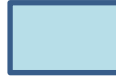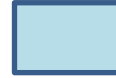
SUPPORTING DATA ATTRIBUTED TO HEXAGONS

$(37,370 mile^2)$
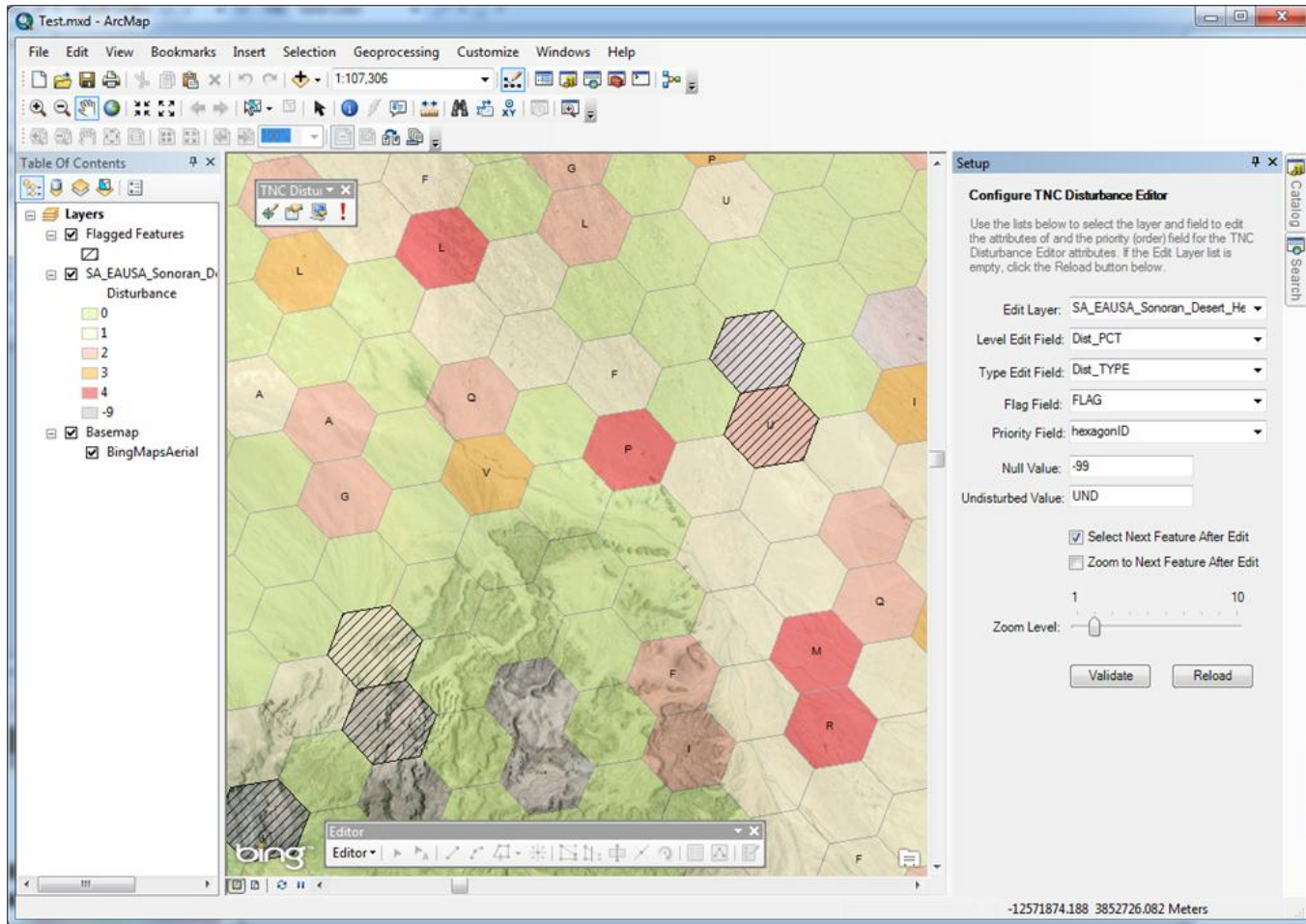
Data Structure

- Broad themes developed to reflect important aspects of sage-grouse ecology, landscape condition and related management issues.
- Best available data that support each theme are combined into an index.
- Each theme's index is spatially explicit and ranks all portions of the study area relative to that theme.

Theme 1	Theme 2	Theme 3	Theme 4	Theme 5	Theme 6

Data Structure Themes

Sage-grouse Habitat Importance	Current Natural Condition	Current Human Modification	Development Potential	Natural Risks	Biodiversity Co-benefit

The themes are designed to allow a user to quickly identify portions of the landscape that meet general criteria,

Data Structure Themes

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Data Structure Themes

Sage-grouse Habitat Importance	Current Natural Condition	Current Human Modification	Development Potential	Natural Risks	Biodiversity Co-benefit

The themes are designed to allow a user to quickly identify portions of the landscape that meet general criteria, e.g. "*Show me areas that are not important to sage-grouse, that are in poor natural condition and likely to support energy development.*"

The supporting data for each theme are also retained, so more specific questions can also be asked, e.g. "*within this subset, where are wind energy developments most likely to be situated?*"

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Sage-grouse Habitat Importance
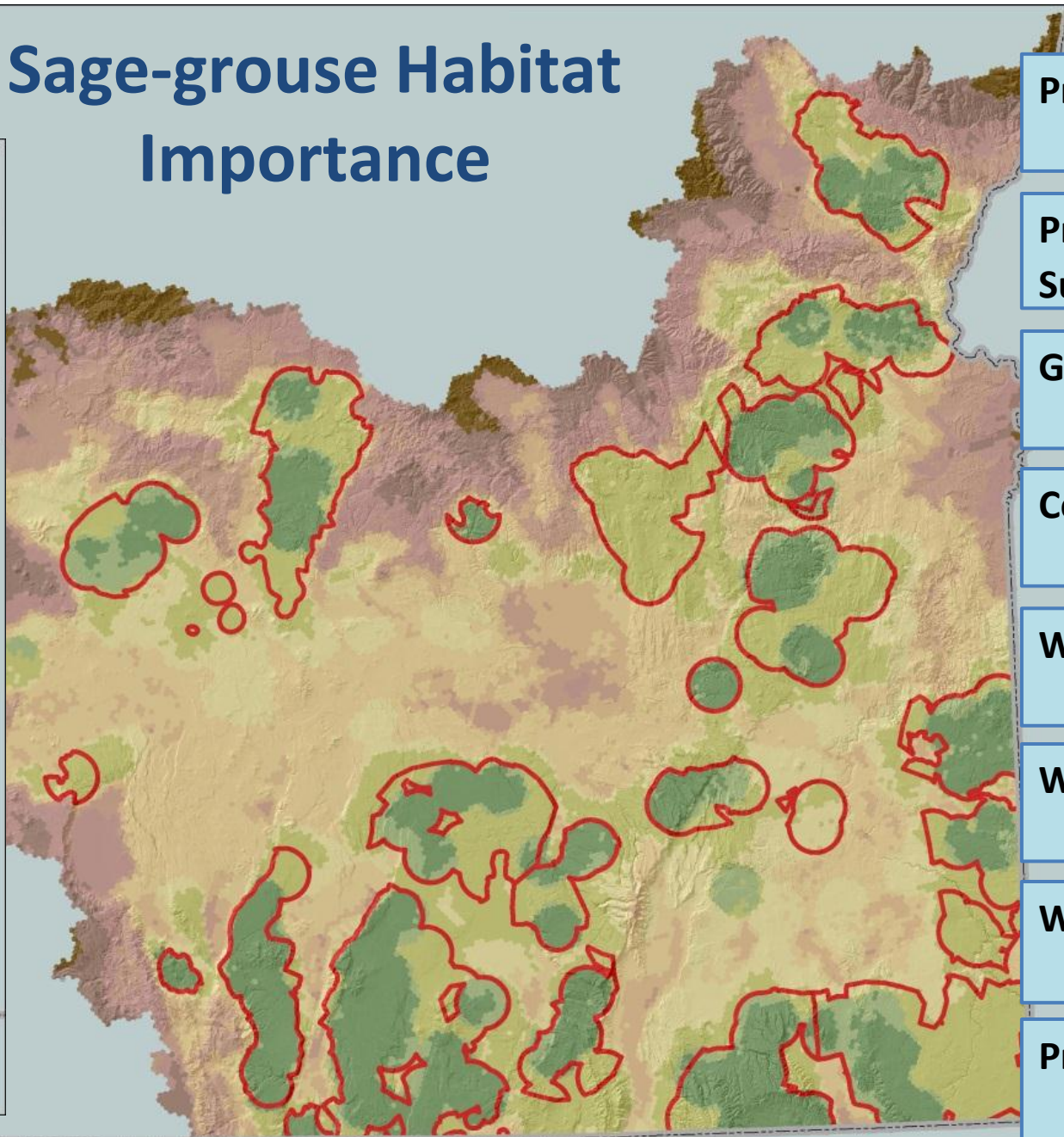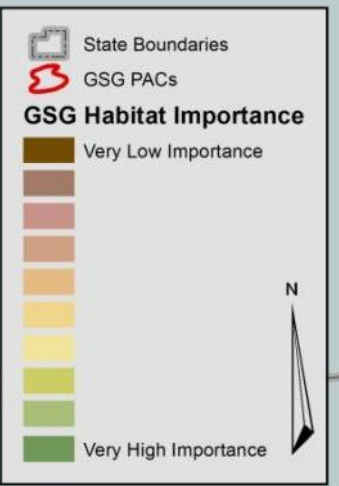
Proximity to Core Habitat

Proximity to Summer Habitat

GSG Habitat Use (INR)

Connectivity Habitat

Within Core Habitat

W/in Low Density Habitat

Within Occupied Habitat

Proximity to Lek

Oregon

Project Boundary

State Boundaries
GSG PACs
GSG Habitat Importance
Very Low Importance

Very High Importance

N

Kilometers
0 15 30   60   90   120

Draft Development Potential

is a measure of resource potential and allowable land uses under current zoning.

Legend

GSG Core Areas

Leks
- Occupied
- Occupied Pending
- Unknown

Development Potential by Hex
- Far Above Average
- Above Average
- Average
- Below Average
- Far Below Average
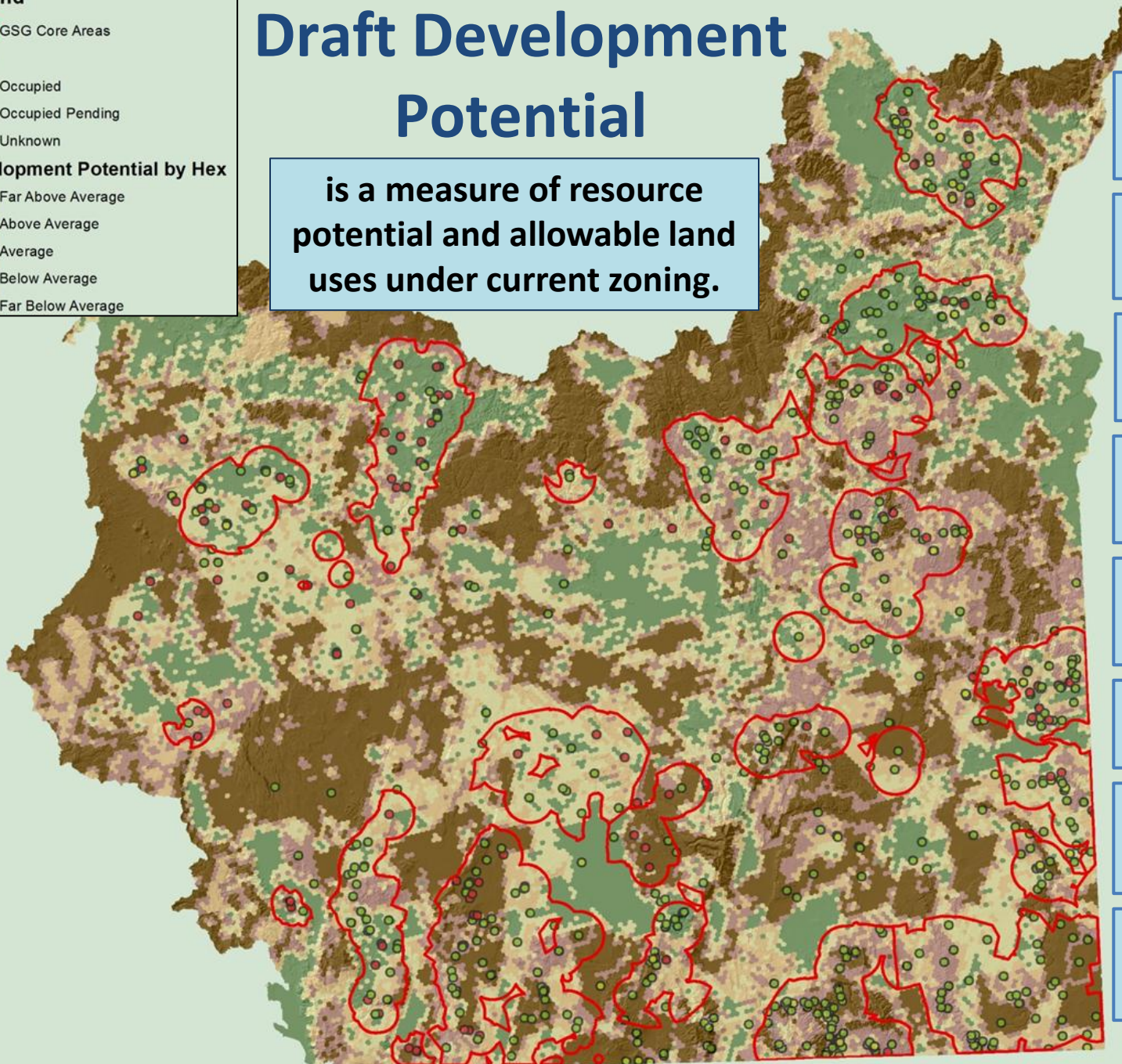
Geothermal Potential

Wind Dev Potential

Solar Potential

Agricultural Potential

Private Lands Zoning Class

Proposed Mines

Existing Transmission

Proposed Transmission
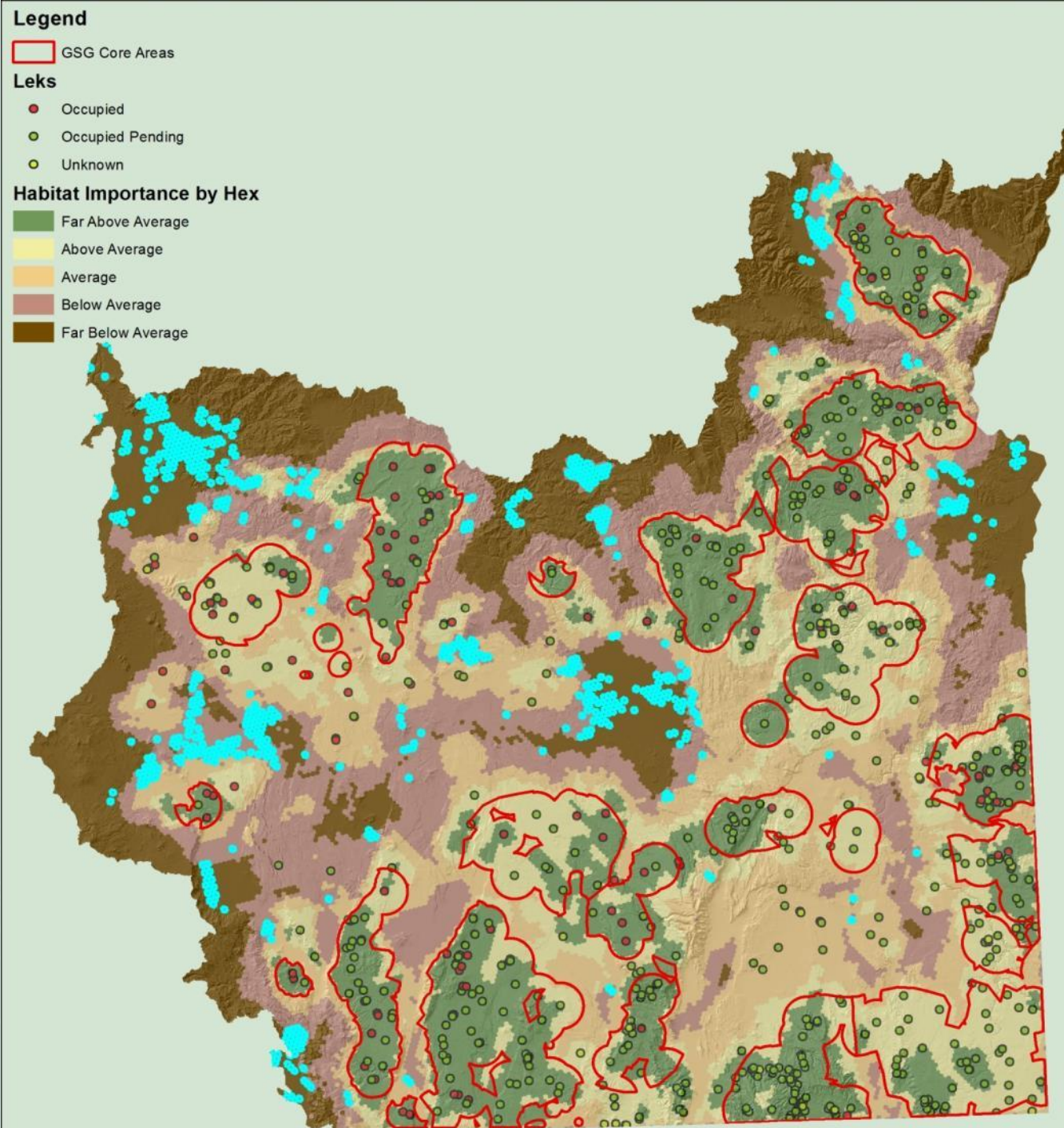
Legend

GSG Core Areas

Leks
- ● Occupied
- ○ Occupied Pending
- ○ Unknown

Habitat Importance by Hex
- Far Above Average
- Above Average
- Average
- Below Average
- Far Below Average

Example Query
Areas that are not important to sage-grouse,

that are in poor natural condition

and likely to support energy development.

Legend

GSG Core Areas

Leks
- Occupied
- Occupied Pending
- Unknown

Habitat Importance by Hex
- Far Above Average
- Above Average
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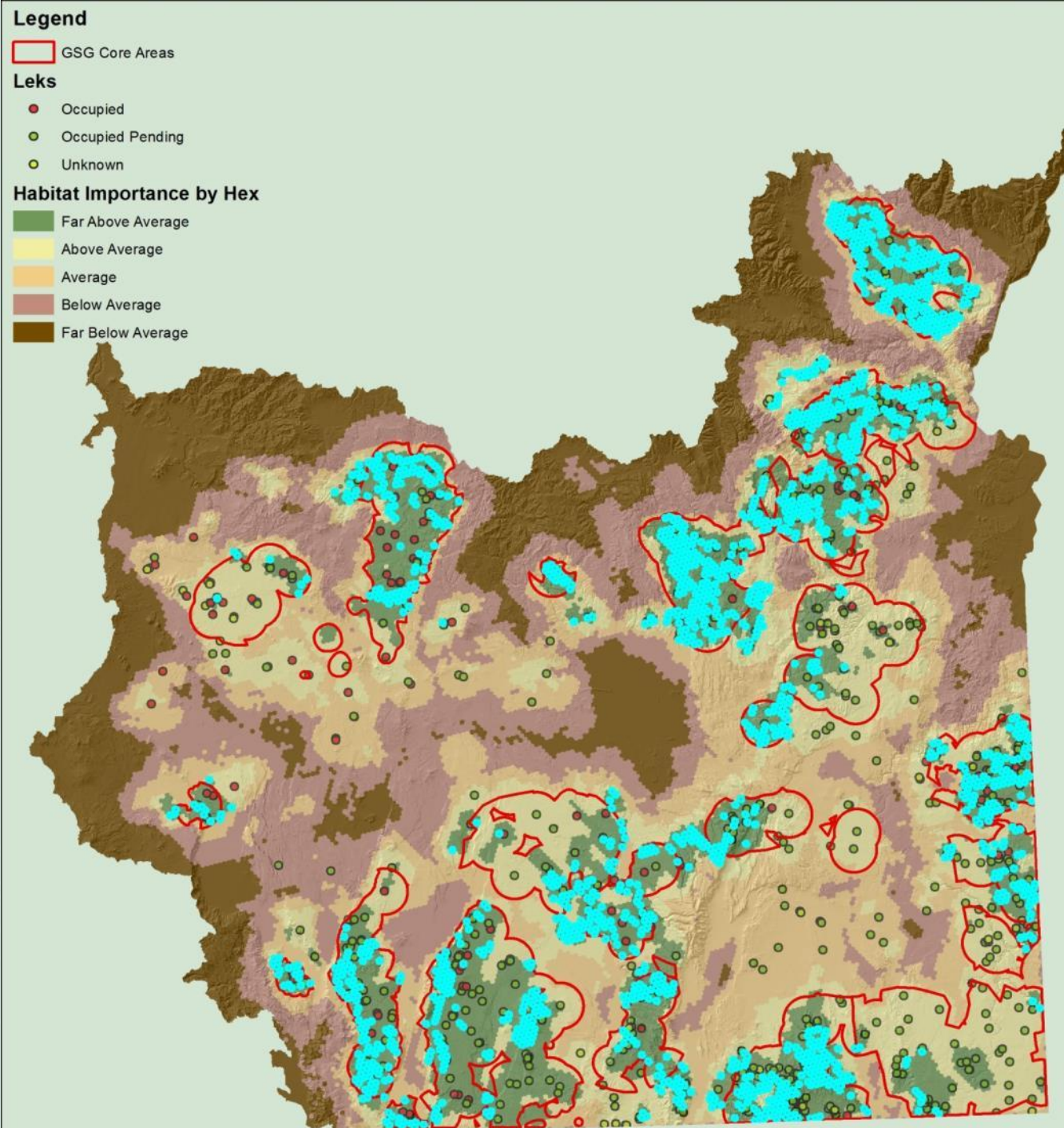
Example Query
Areas that are very important to sage-grouse,…

and that are in Average natural condition
(good not great)

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Legend

GSG Core Areas

Leks
- ● Occupied
- ○ Occupied Pending
- ○ Unknown

Habitat Importance by Hex
- Far Above Average
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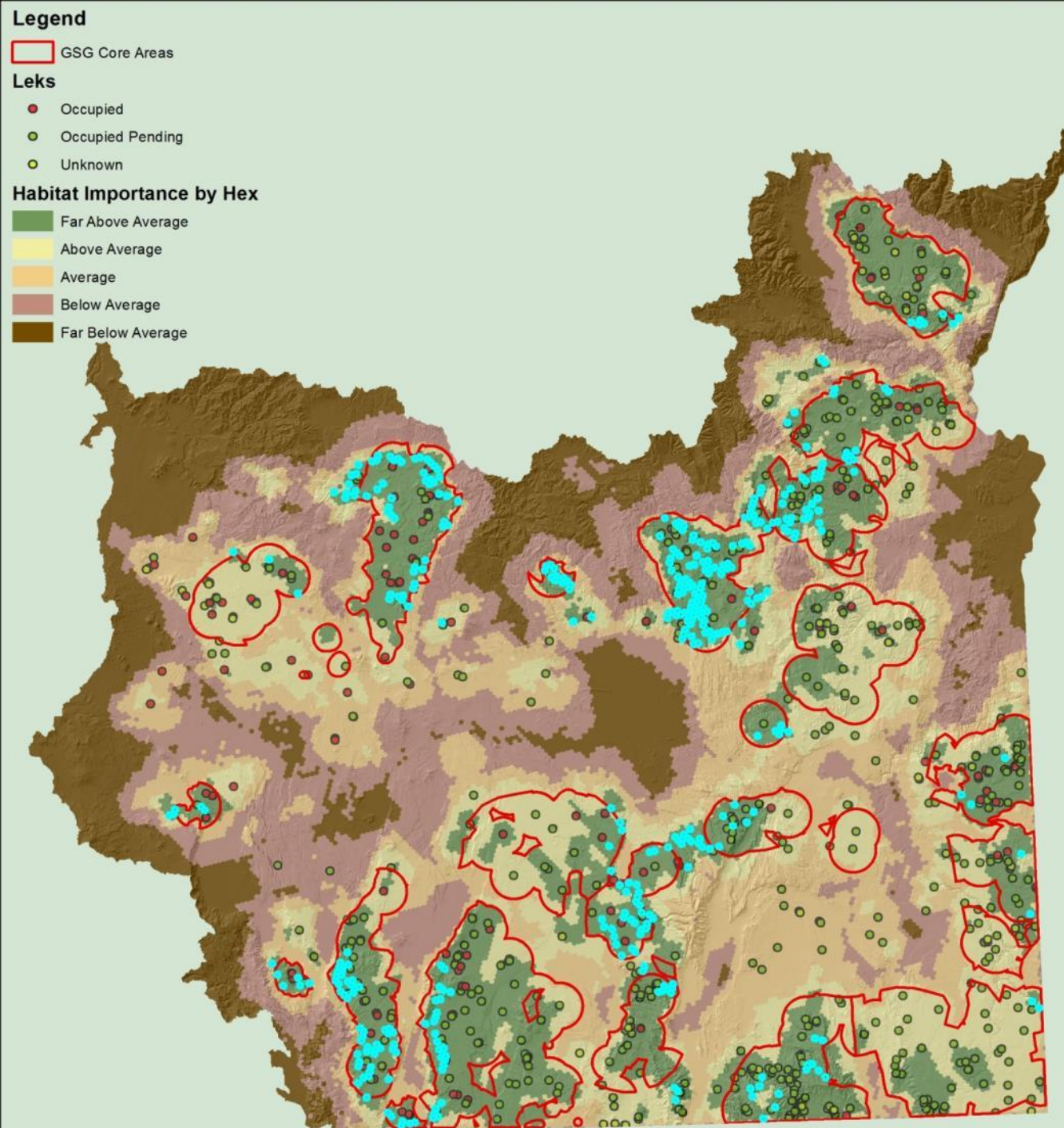
Location for Potential credits

Within this subset,

where might juniper removal be an important restoration activity?

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Greater Sage-grouse: Risk from Fire and Invasives

State Boundaries
GSG PACs
Risk from Fire and Invasives
Low Risk

High Risk

Proximity to Invasive Grass

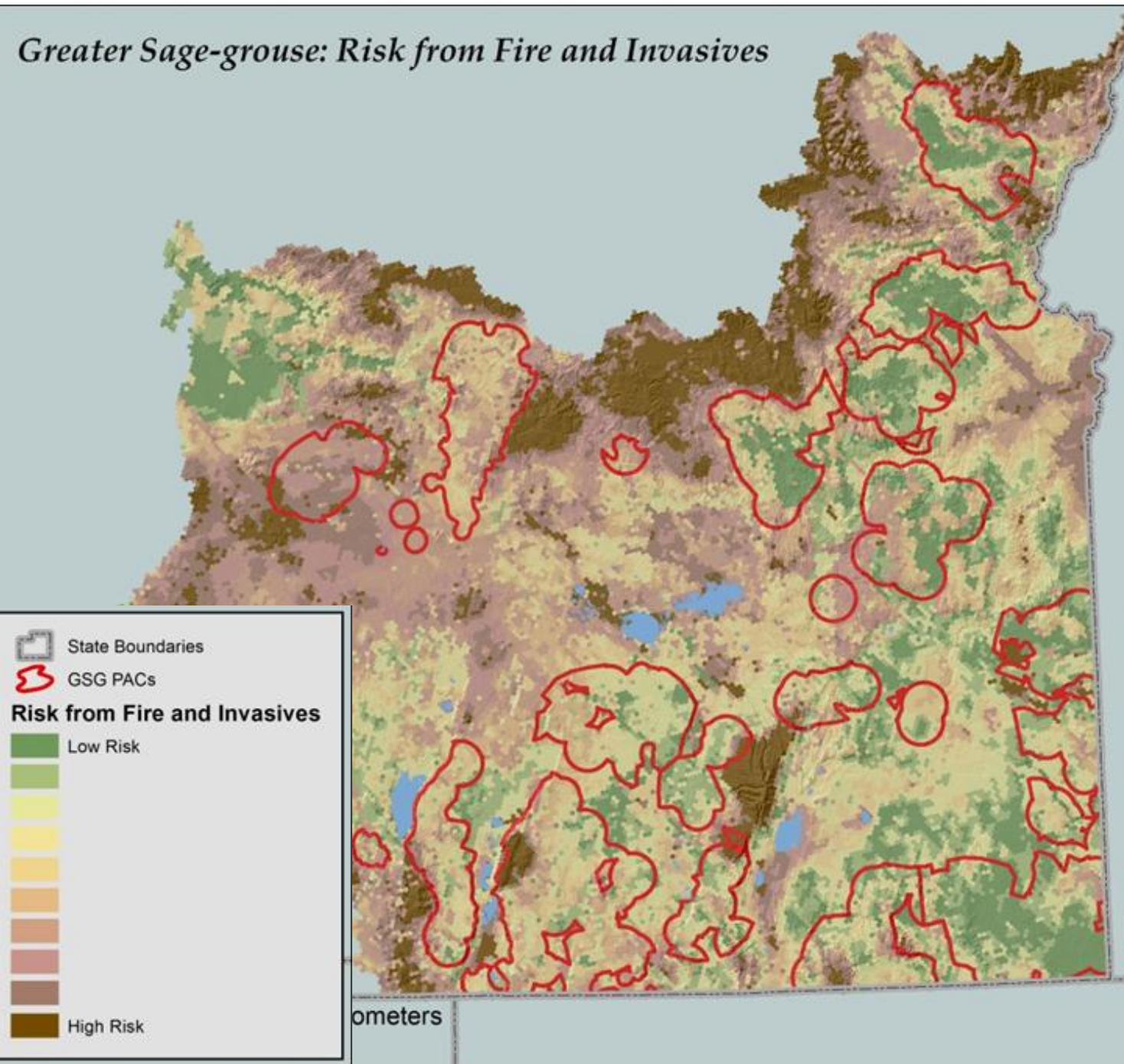Proximity to Juniper
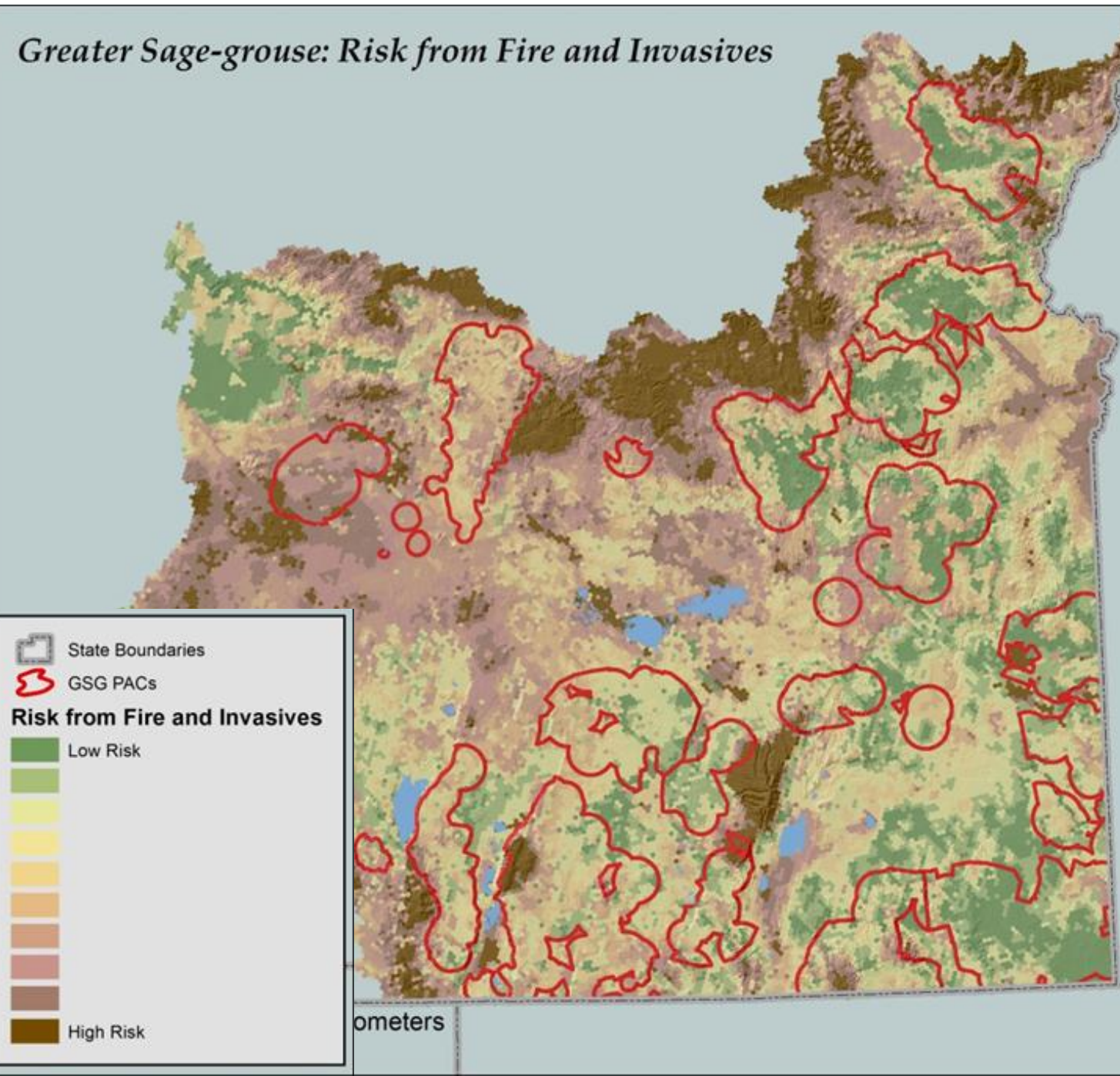
Resistance & Resilience

Fire Threat Index

Wildland Fire Potential

Cheatgrass Suitability

Medusahead Suitability

Greater Sage-grouse: Risk from Fire and Invasives

Legend:
- State Boundaries
- GSG PACs

Risk from Fire and Invasives
- Low Risk
- High Risk

Places where credits may be at risk

And/or places where other practices may be necessary to ensure credit viability

SCALING UP
TO ADDRESS LANDSCAPE-SCALE THREATS

Ingredients for success

- Adaptive

Sage-SHARE Database

SAGE STEPPE HABITAT RESPONSE

GSG Mitigation
HQT - calculator

HABITAT QUANTIFICATION TOOL

Iterative

Sage-Grouse/Sage-Steppe Mitigation Decision Support

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