

# The Influence of Greater Sage-Grouse Management on Golden Eagles in the Wyoming Basin

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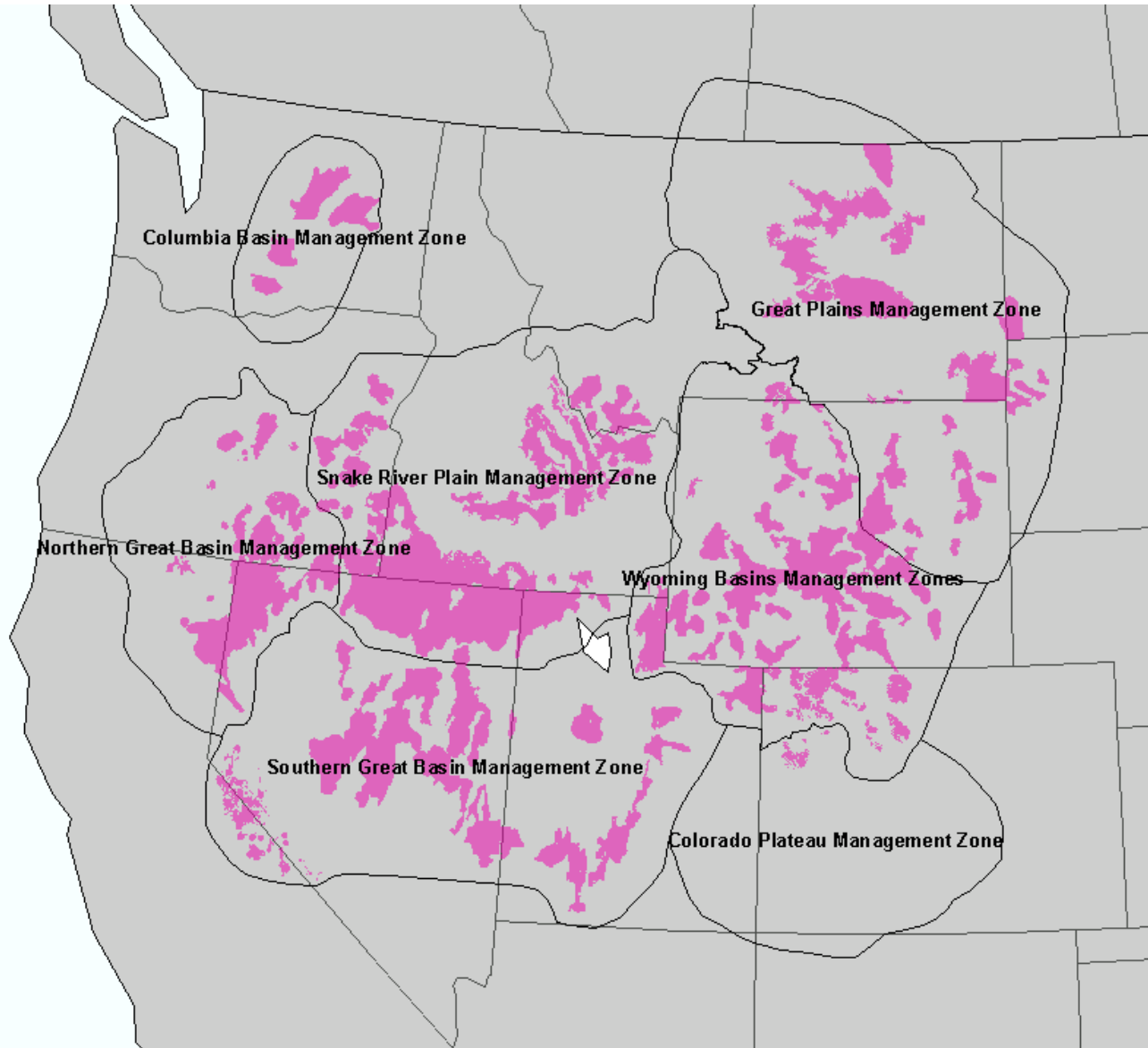
<sup>1</sup>Western EcoSystems Technology, Inc.

<sup>2</sup>Western Golden Eagle Team, USFWS



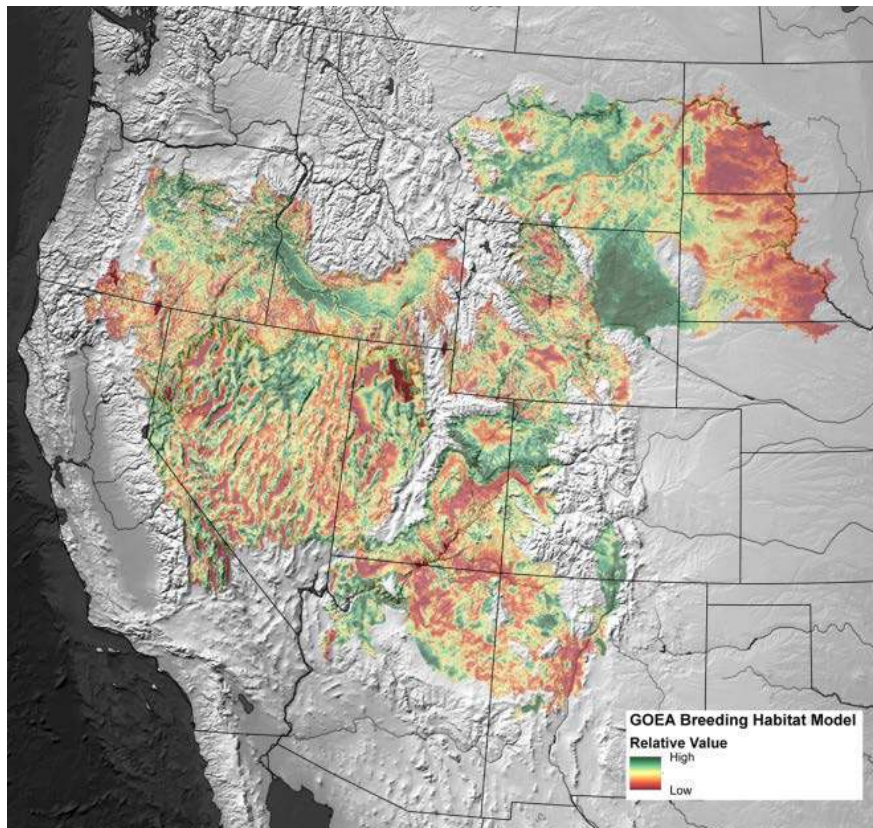
WY TWS Meeting, 15 November, 2016

# Management Zones (MZs) with Priority Areas for Greater Sage-Grouse Conservation (PACs)

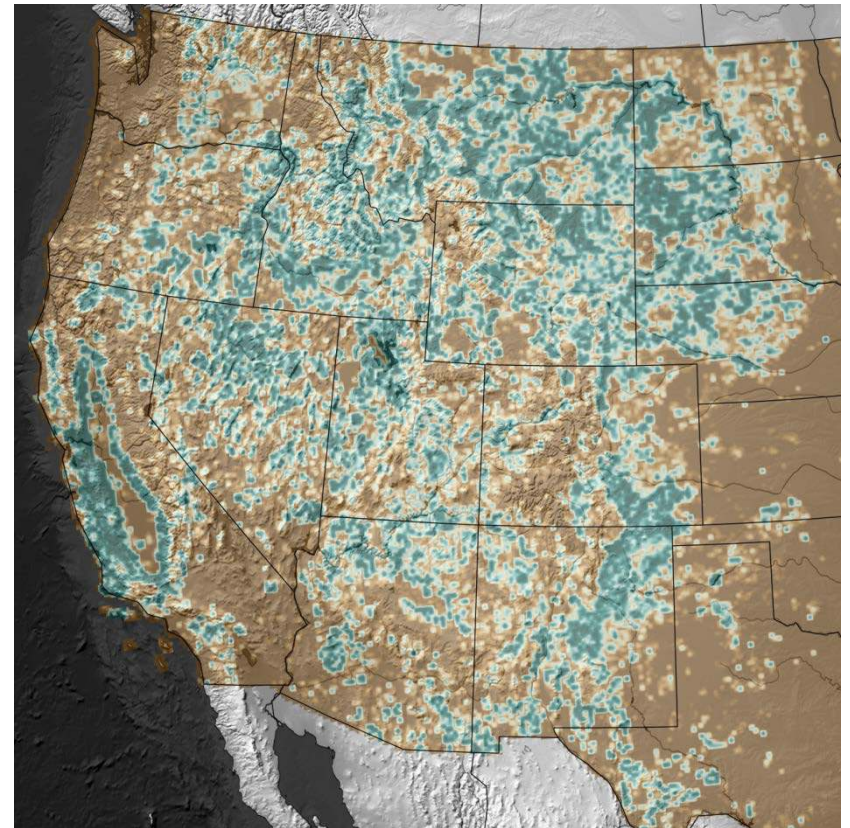


# WGET Golden Eagle Relative Habitat Suitability (RHS) Models

## Breeding Habitat

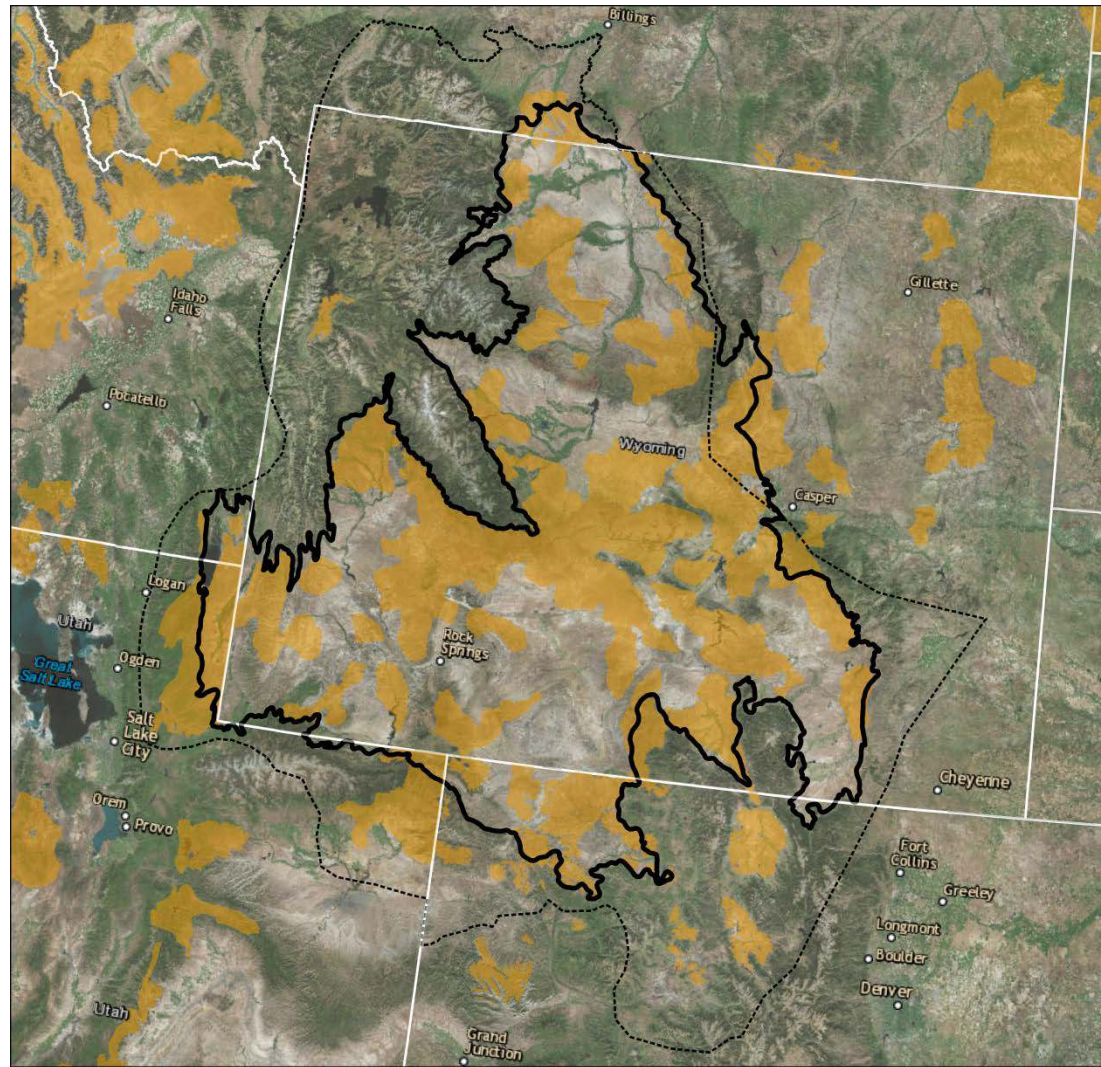


## Winter Habitat

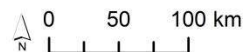




# Wyoming Basin Study Area, with PACs



- Study Area
- Greater Sage-Grouse MZ II
- Greater Sage-Grouse PACs



Imagery Basemap: ESRI  
Projection: USA Contiguous Albers  
Equal Area Conic (USGS version)

# Conceptual Model

Phase I

## Management Actions

Minimize

Surface  
Disturbance

Improve

Habitat Condition

Reduce

Rangeland Fire

GRSG PACs

GOEA  
Habitat

Exposure  
(Spatial Overlap)

Reduce  
Habitat Loss

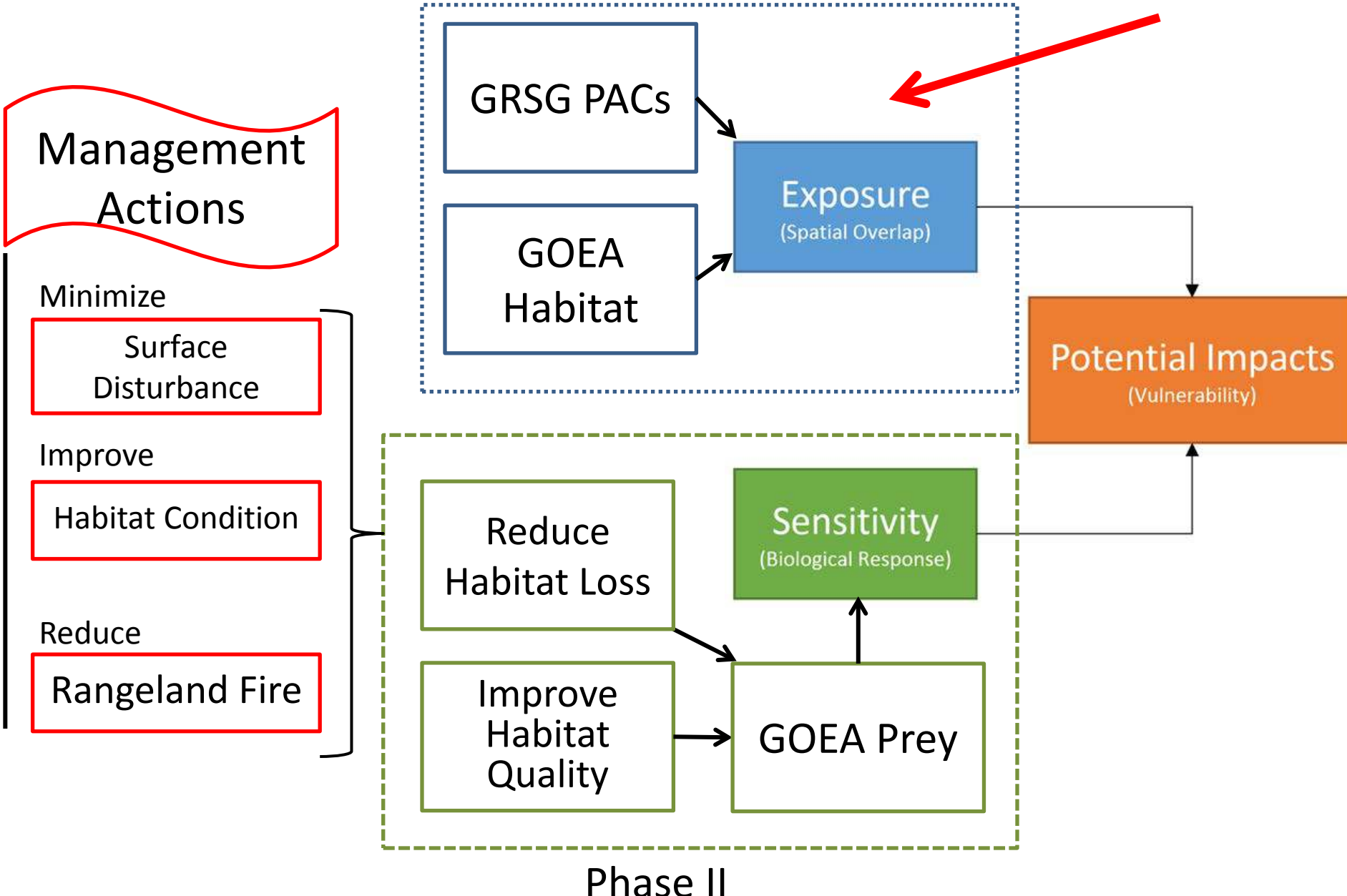
Improve  
Habitat  
Quality

Sensitivity  
(Biological Response)

GOEA Prey

Potential Impacts  
(Vulnerability)

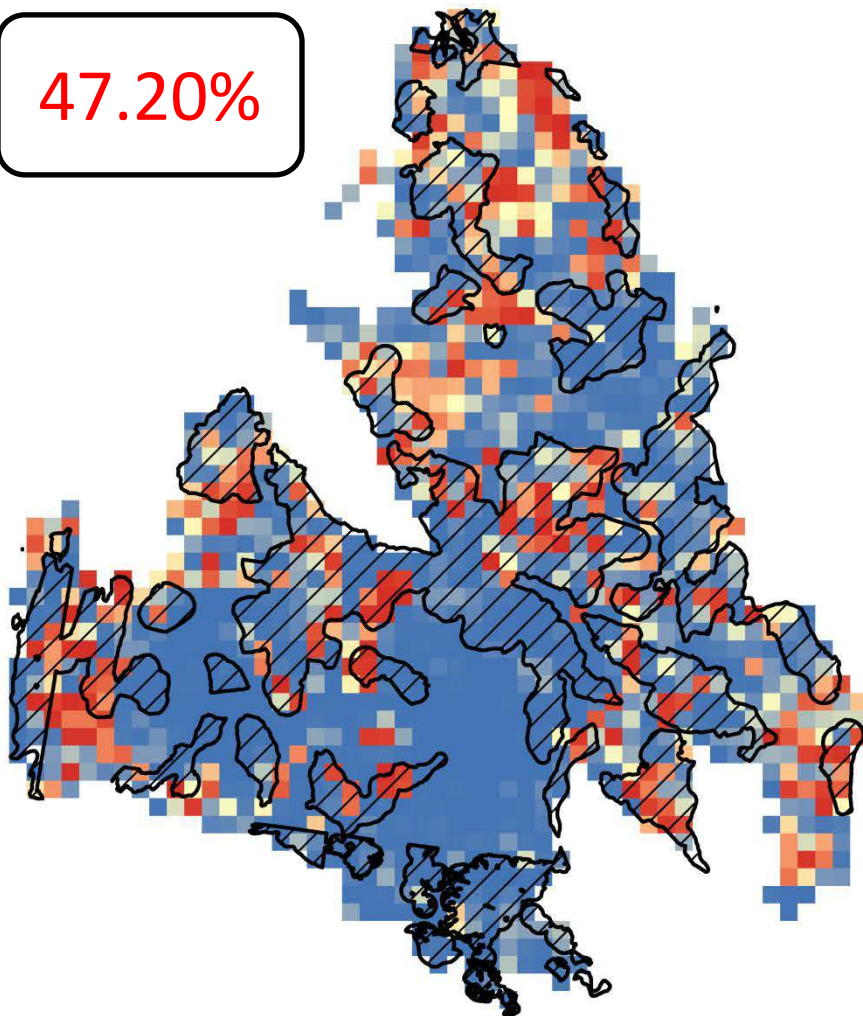
Phase II





## Winter Habitat

47.20%

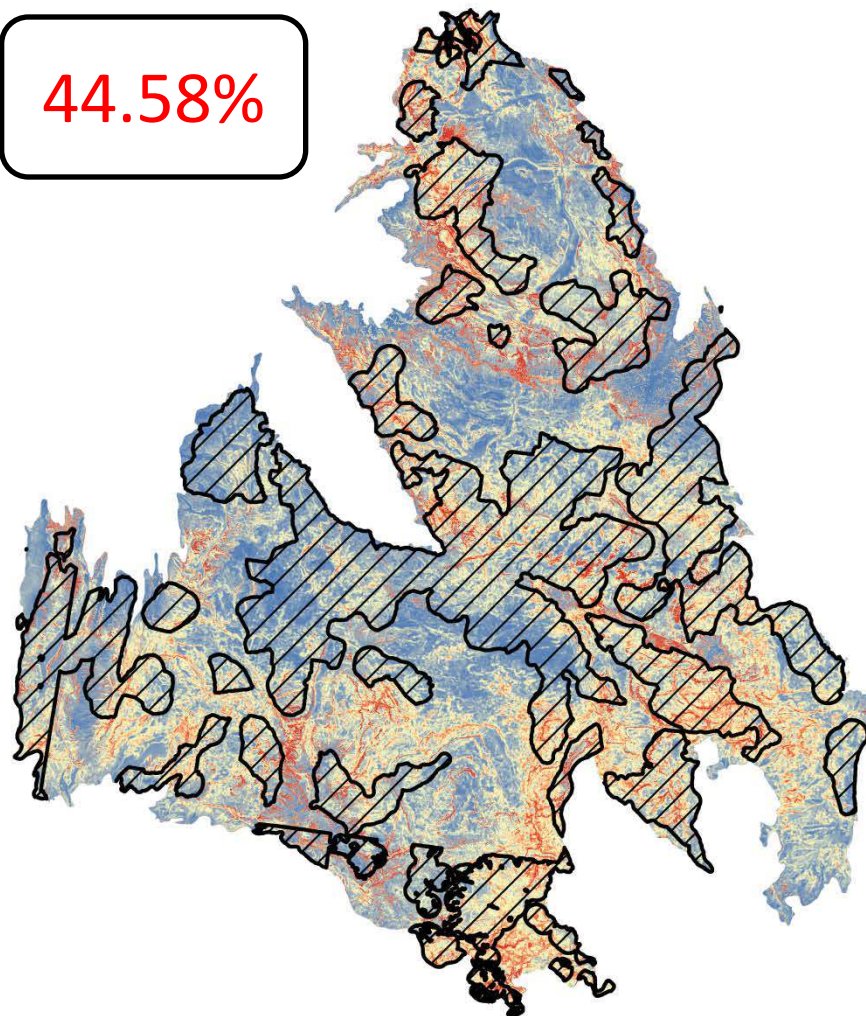


Golden Eagle  
Relative Habitat Suitability

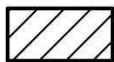


## Breeding Habitat

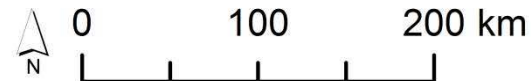
44.58%



Greater Sage-Grouse  
PACs

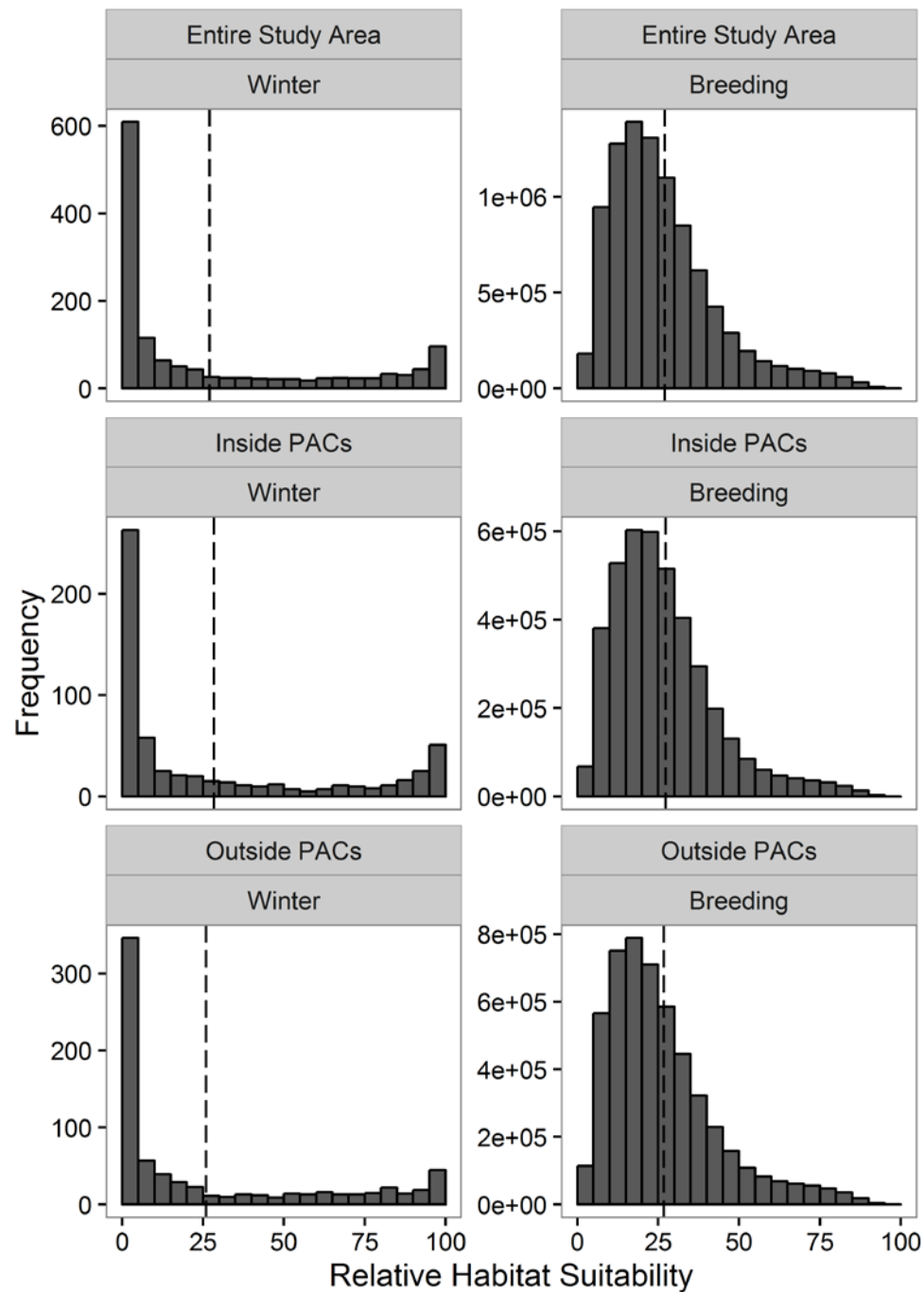
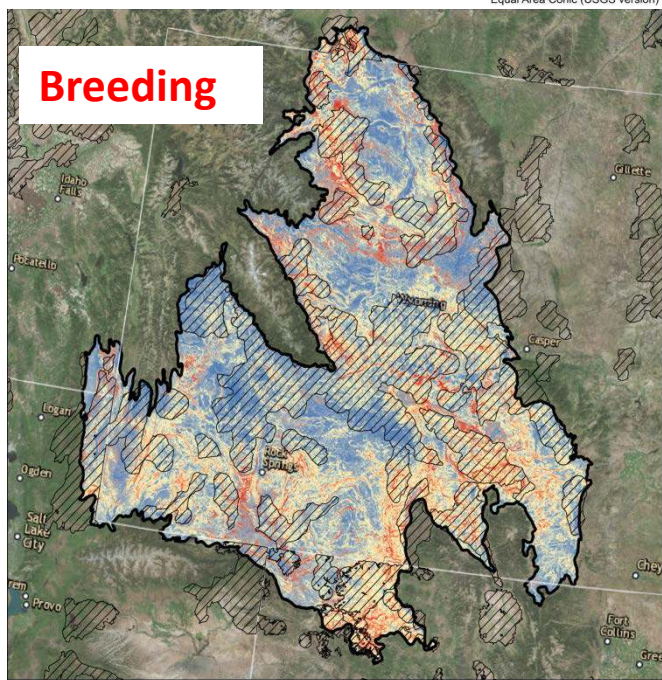
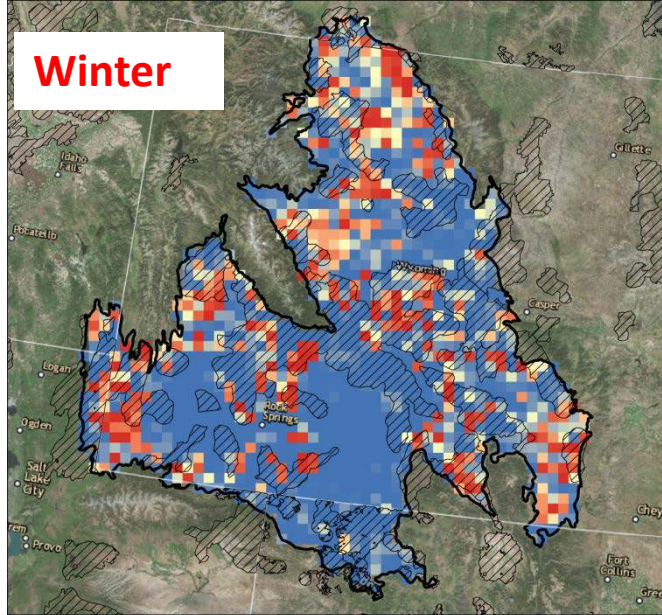


44.08%  
(by area)



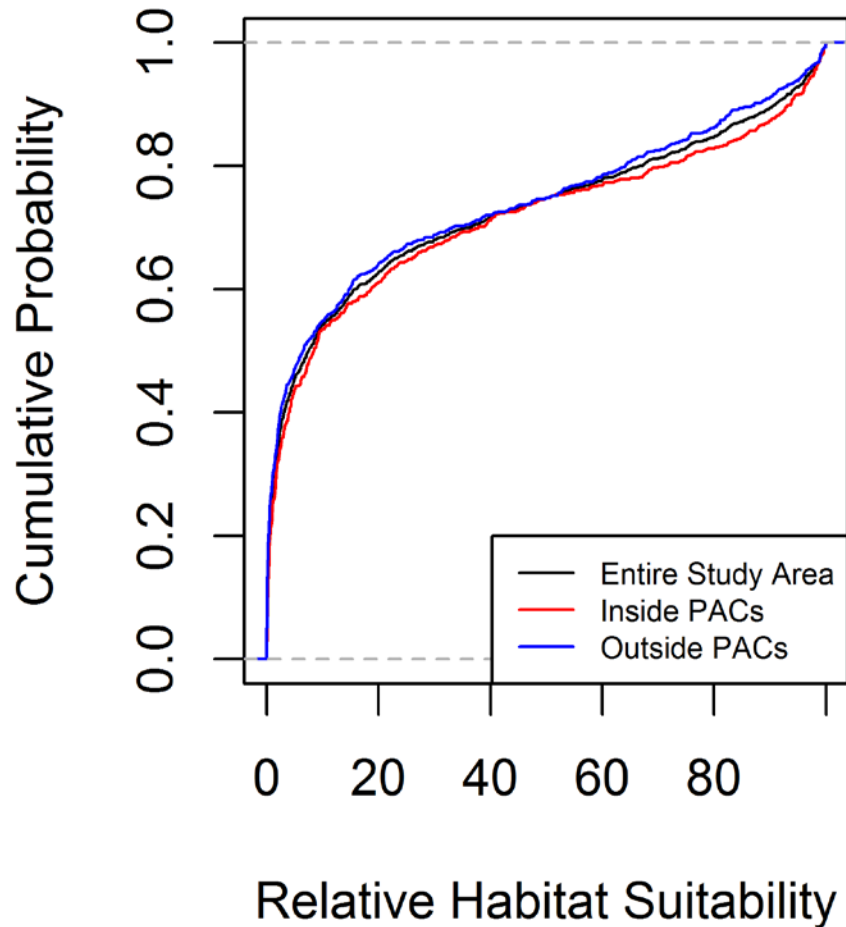
Projection: USA Contiguous Albers  
Equal Area Conic (USGS version)



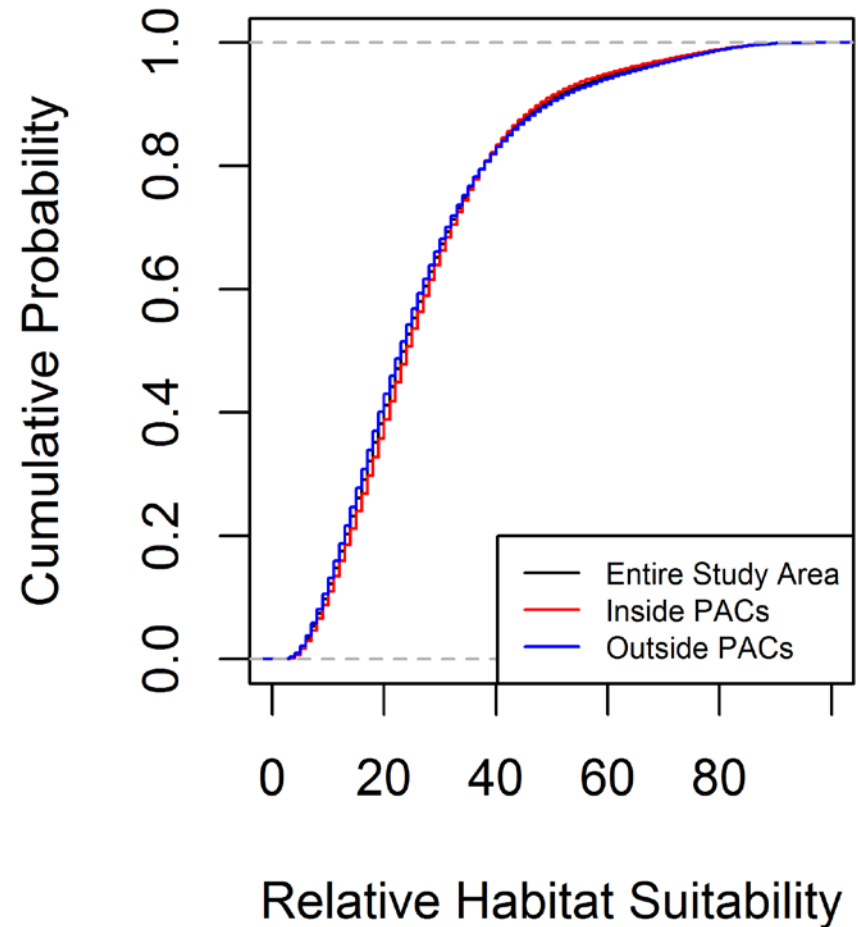


# Comparing RHS Distributions

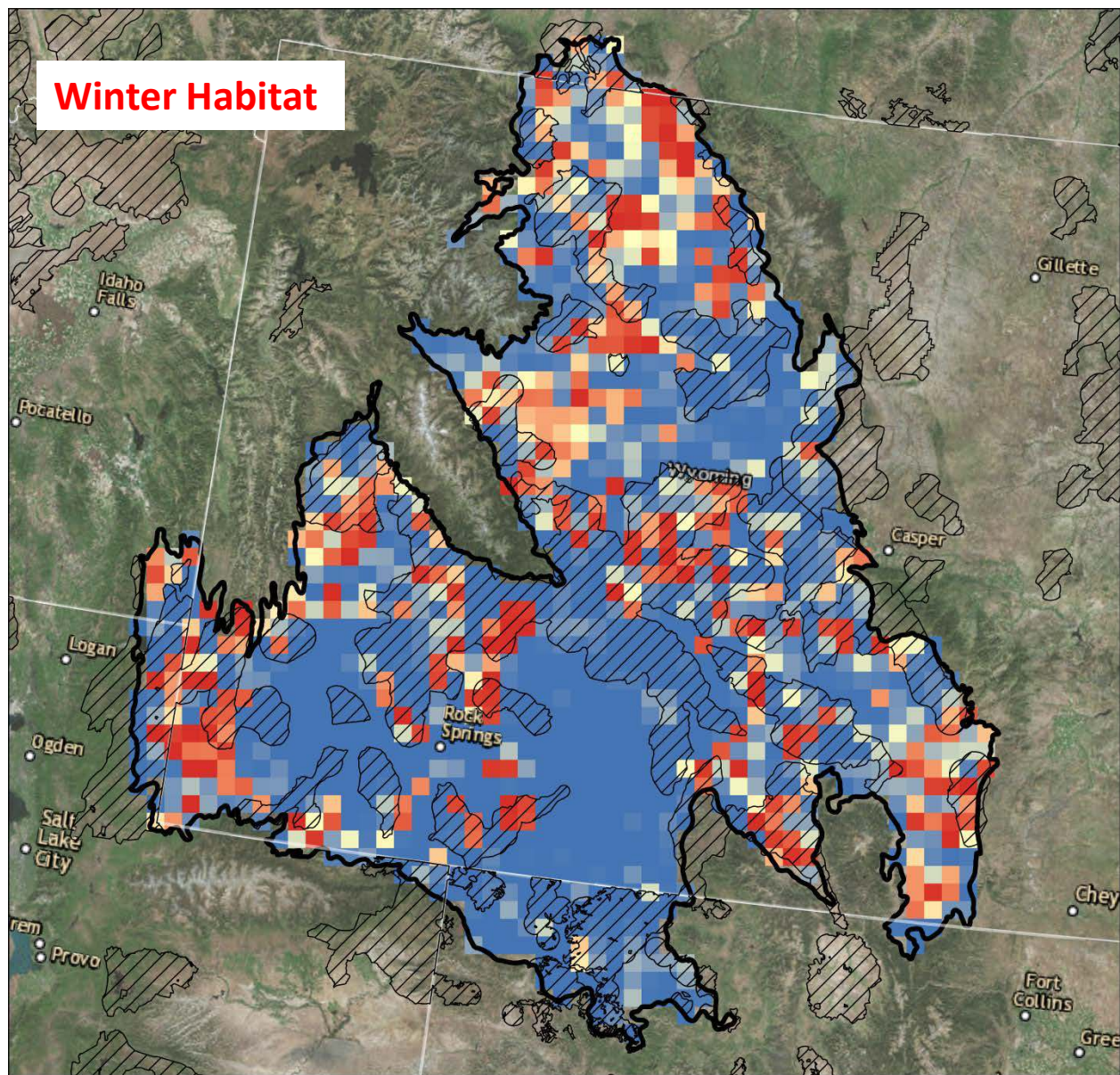
## Winter Habitat



## Breeding Habitat






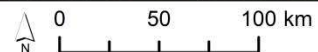


Golden Eagle  
Relative Winter  
Habitat Suitability



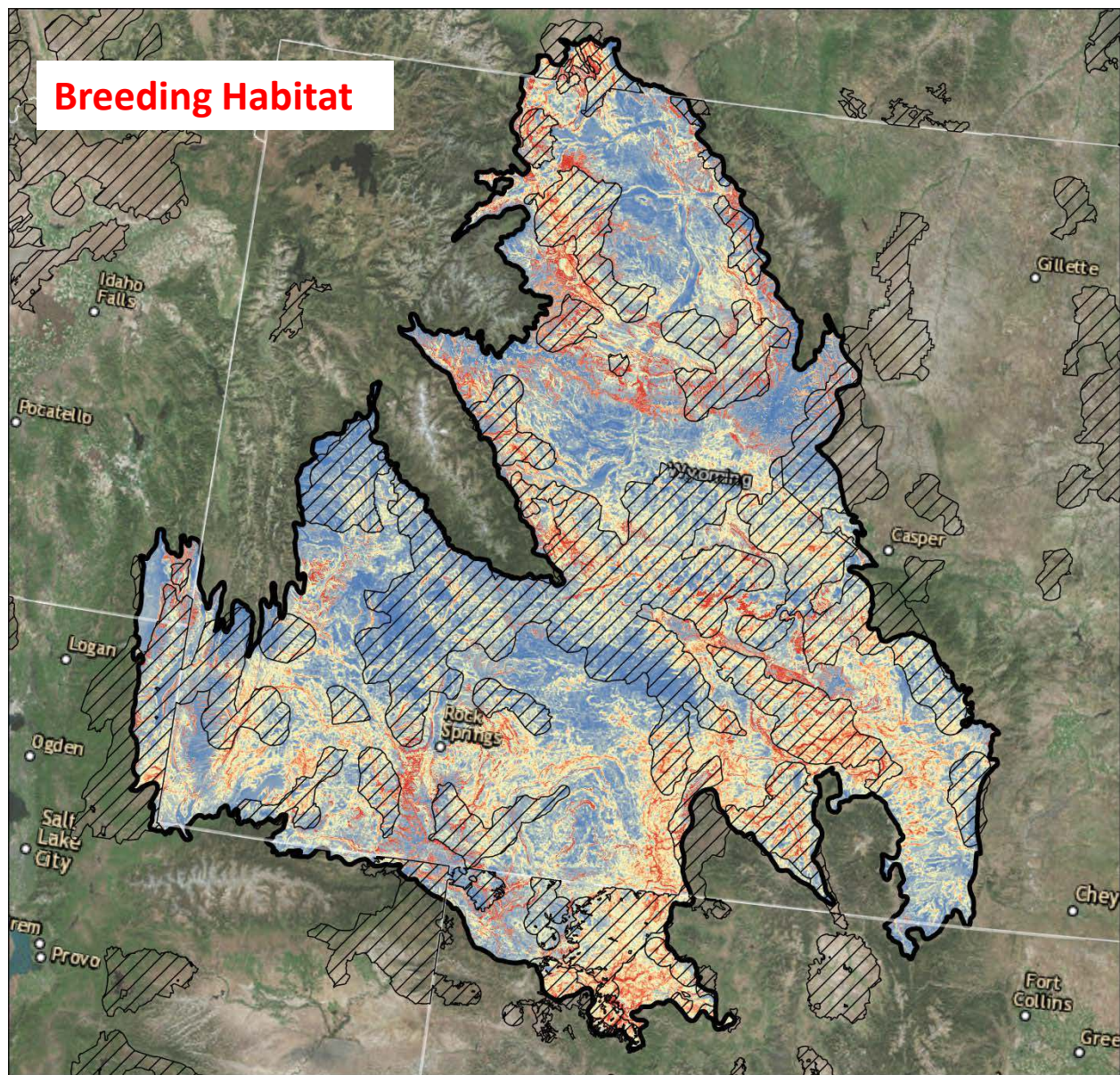
 Study Area

 Greater Sage-Grouse PACs



Imagery Basemap: ESRI  
Projection: USA Contiguous Albers  
Equal Area Conic (USGS version)



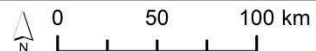


Golden Eagle  
Relative Breeding  
Habitat Suitability



Study Area

Greater Sage-Grouse PACs

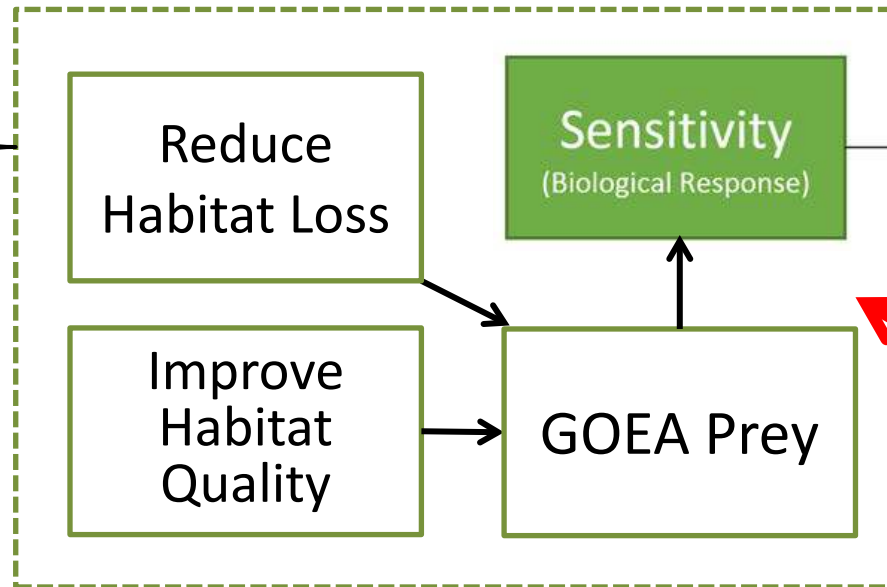
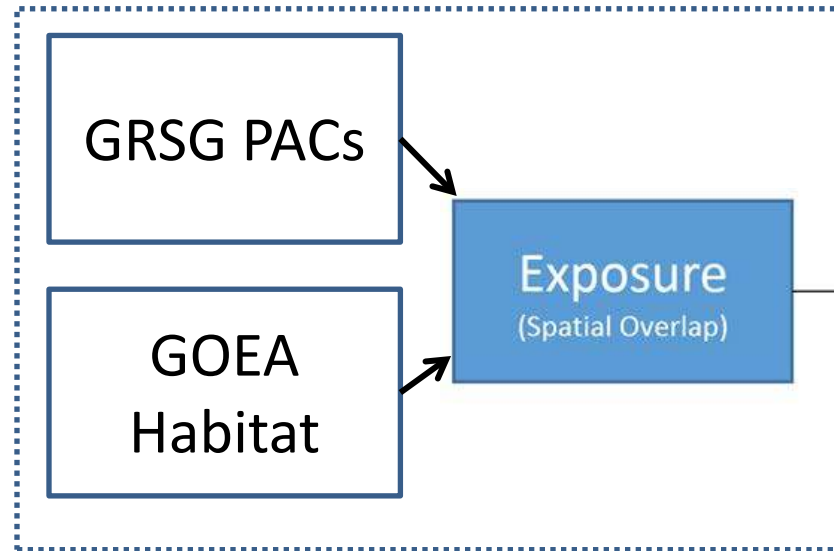


Imagery Basemap: ESRI  
Projection: USA Contiguous Albers  
Equal Area Conic (USGS version)



# Conceptual Model

Phase I



Phase II

Management  
Actions

Minimize

Surface  
Disturbance

Improve

Habitat Condition

Reduce

Rangeland Fire

# Next Steps:

## Important Golden Eagle Prey Species

### *Big*

*Leporids*



Photo Credit: Sky  
DeLight



Photo Credit: Sky  
DeLight

*Sciurids*



Photo Credit: Sky  
DeLight



Photo Credit: Sky  
DeLight

*Birds*



Photo Credit: Kent  
Keller

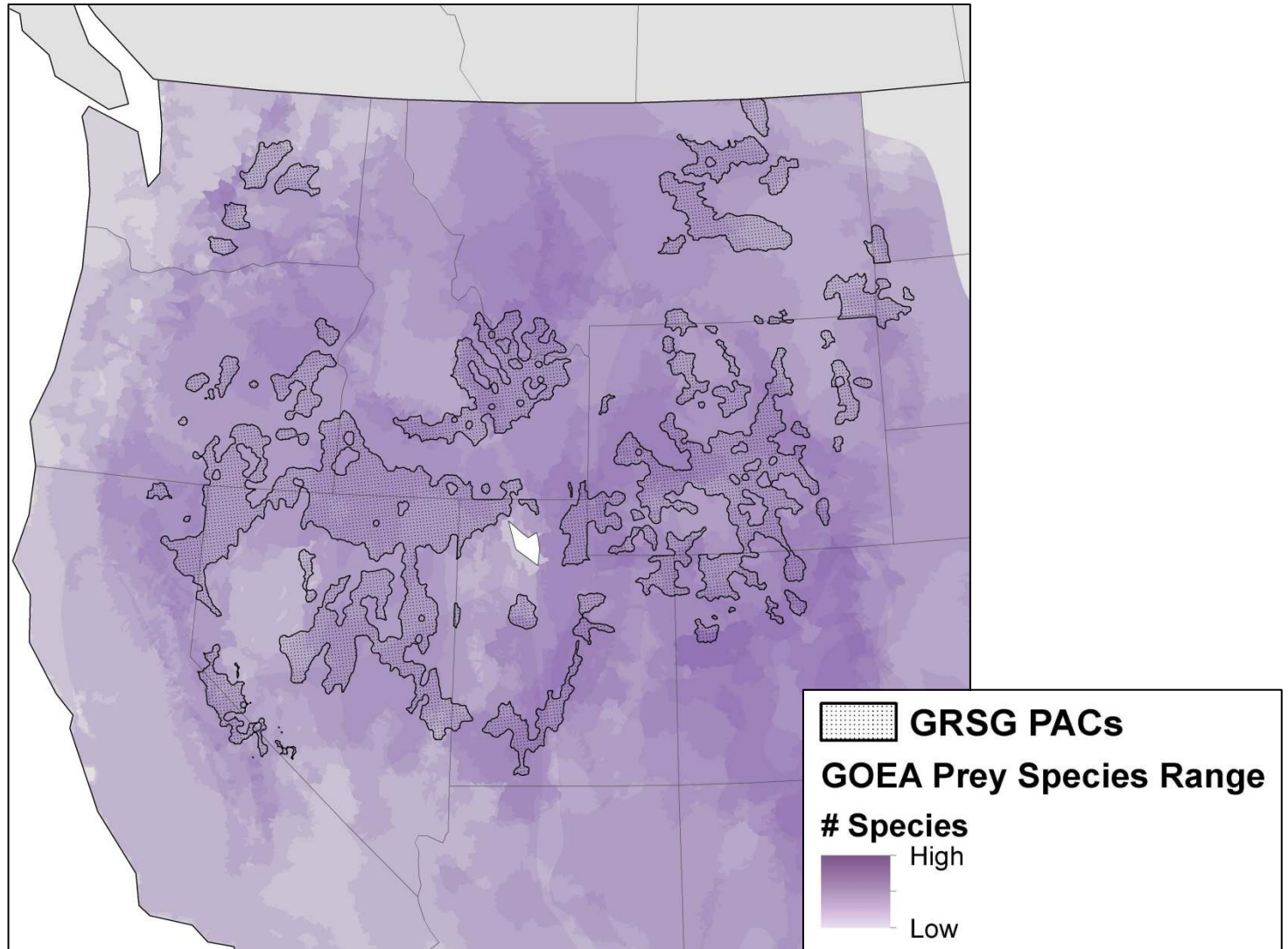
*Game*  
*Carrion*



Photo Credit: Todd  
Katzner



# GRSG / GOEA Prey Overlap



GOLDEN EAGLE PREY SPECIES DIVERSITY AND GRSG PACs

Powell et al. 2015

# Next Steps: Other Ecoregions

