

# The Effects of Timber Harvest on Grizzly Bear Habitat Use and Diet

Island Park, ID; Greater Yellowstone Ecosystem

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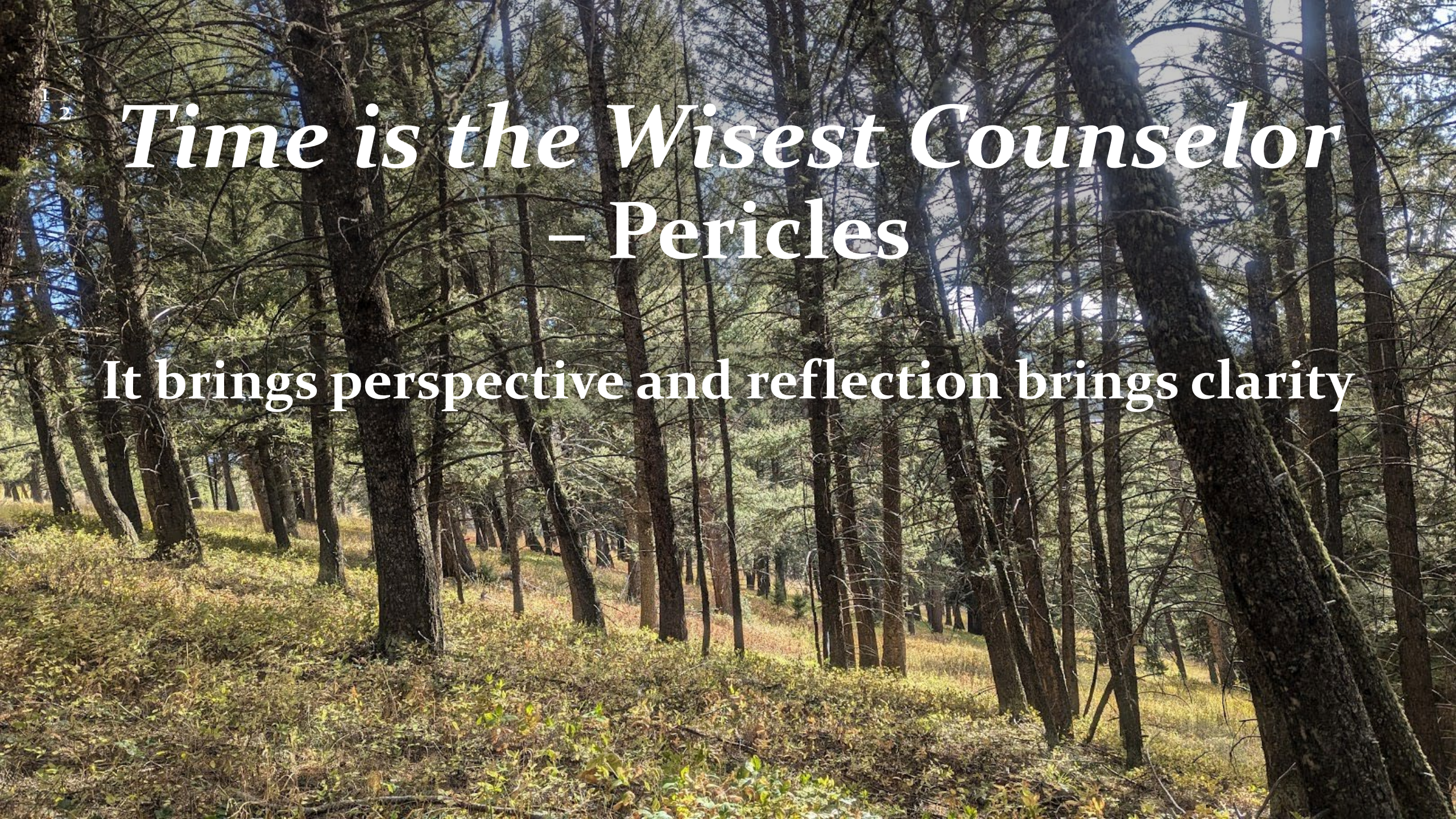
Forest Service



1  
2

# *Time is the Wisest Counselor* – Pericles

It brings perspective and reflection brings clarity



# Island Park Project Summary

If so, after 15 years – perspective on bear use of a timber management landscape



# Project Origin

## *GYE 2011 - Agency Managers Summit*

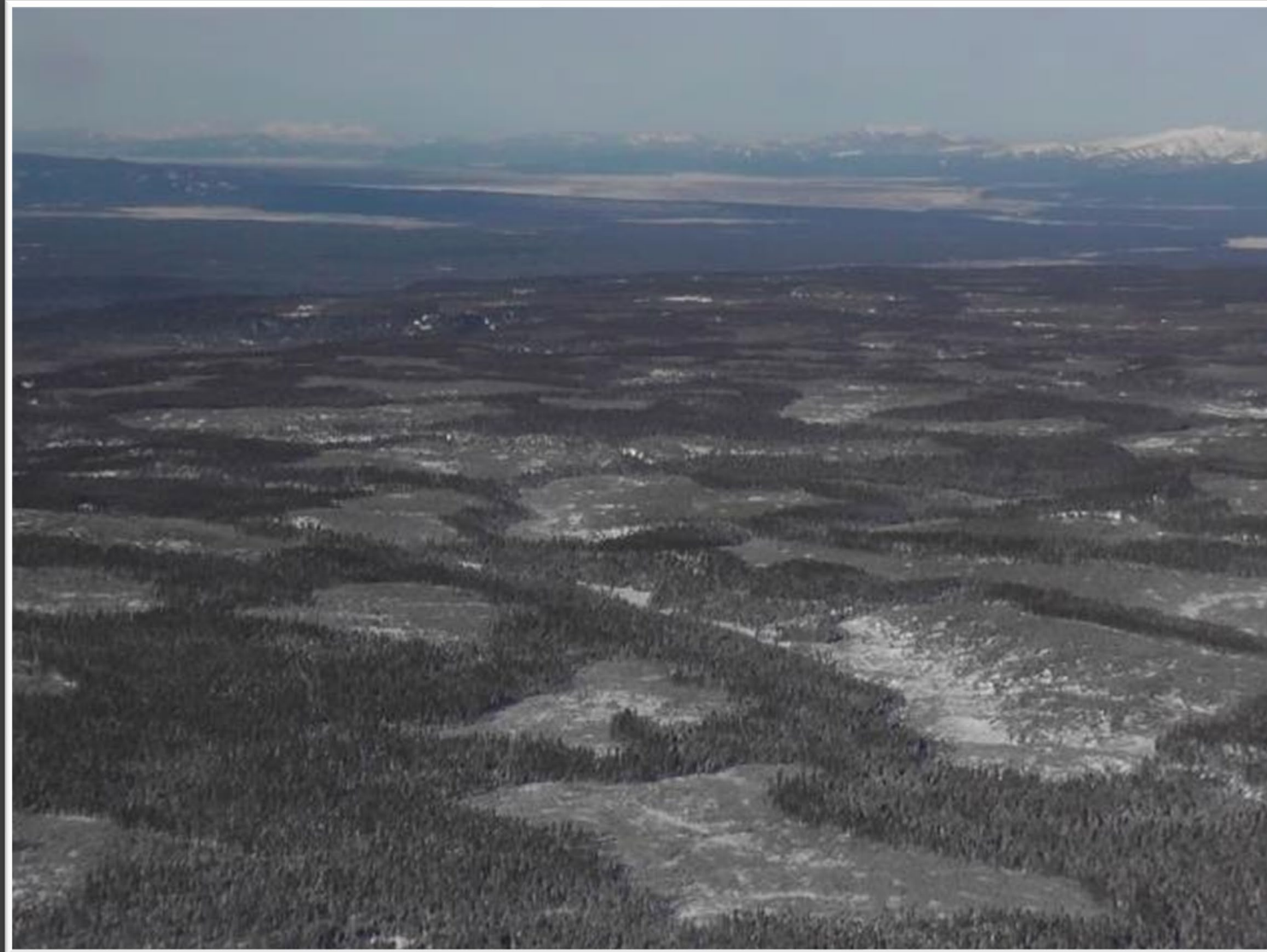
- Grizzly bear related info gaps:
  - *#1 Priority* – Effects of timber harvest on grizzly bear habitat use and diet



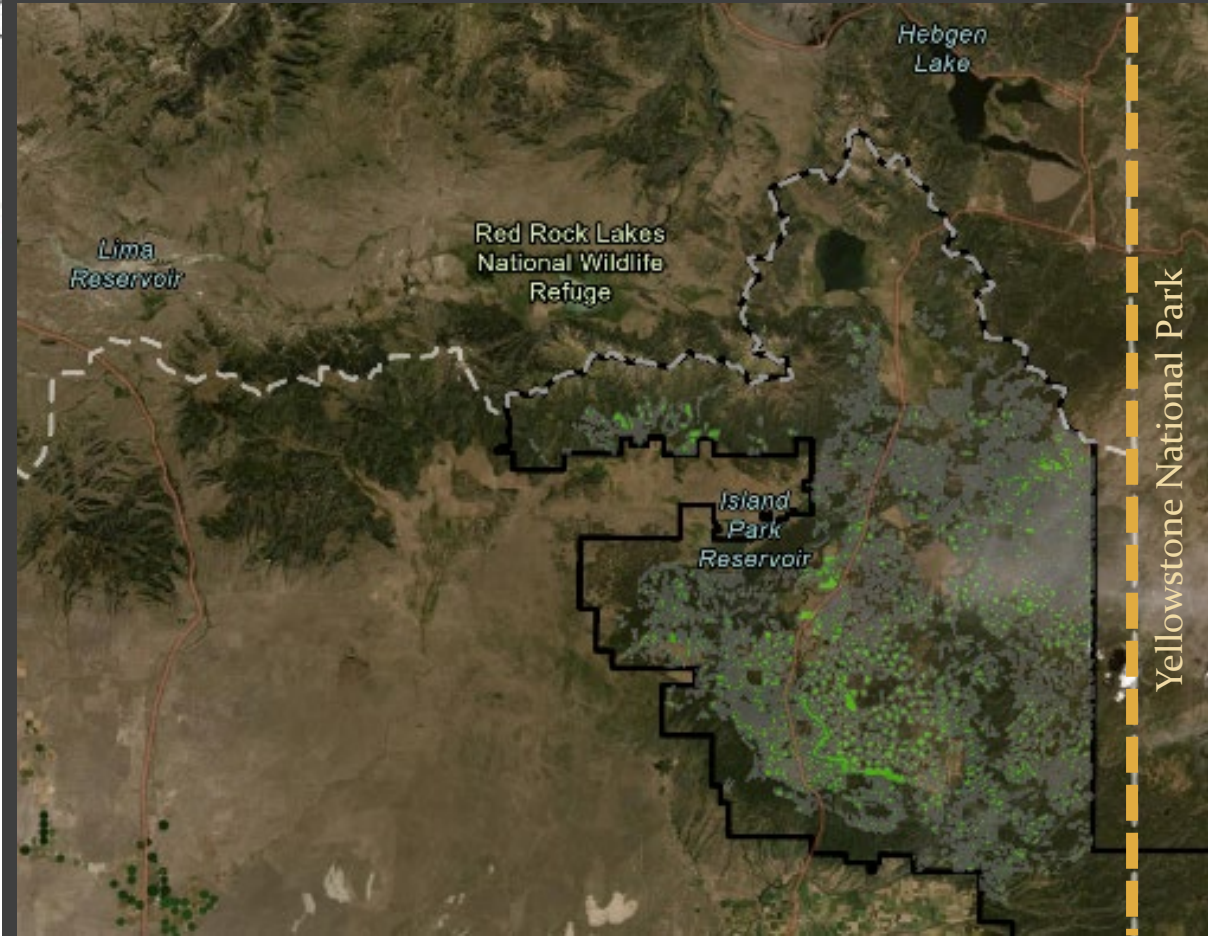
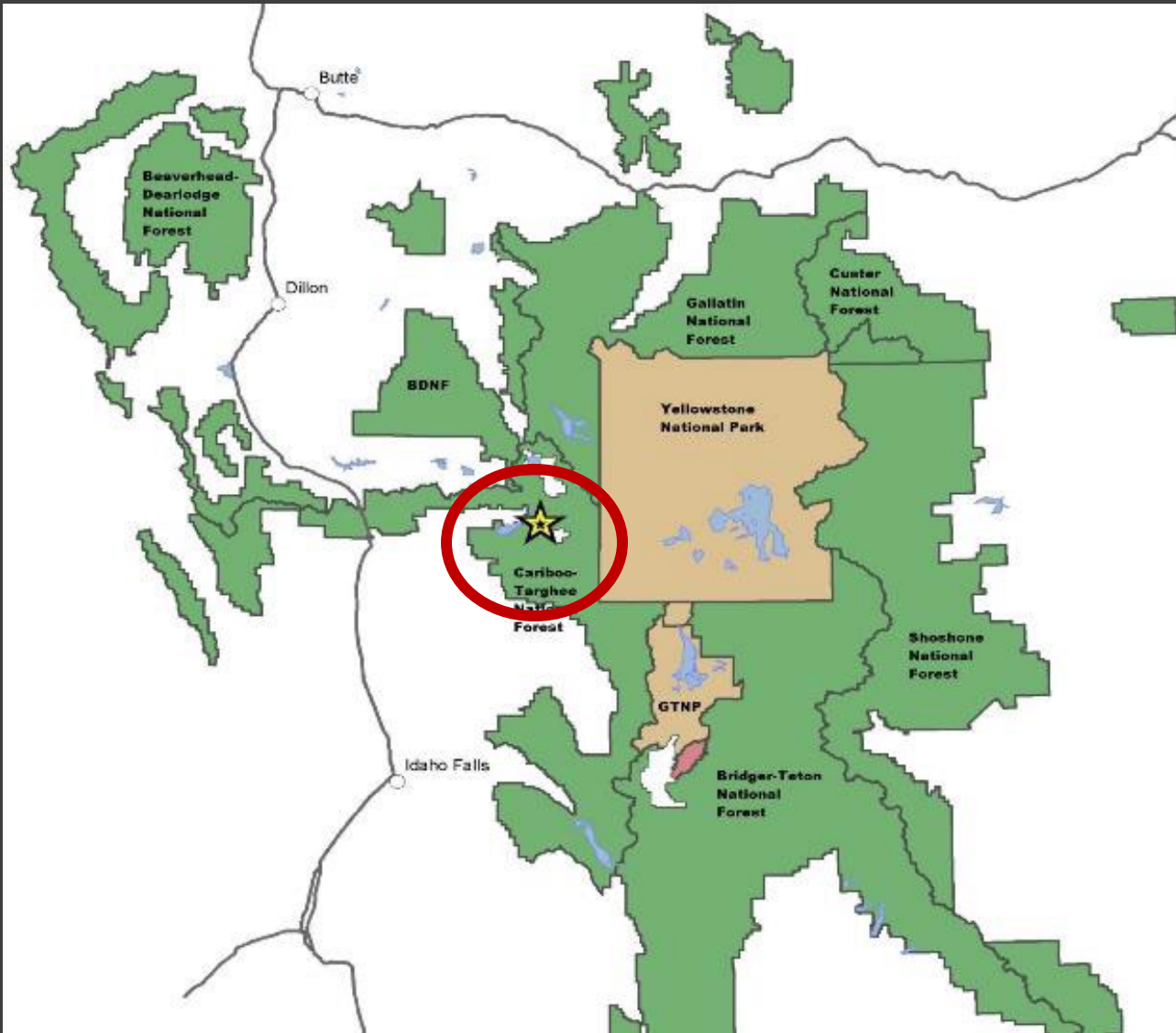
# A Continuum



*In the beginning:*  
Timber harvest in grizzly bear habitat - controversy



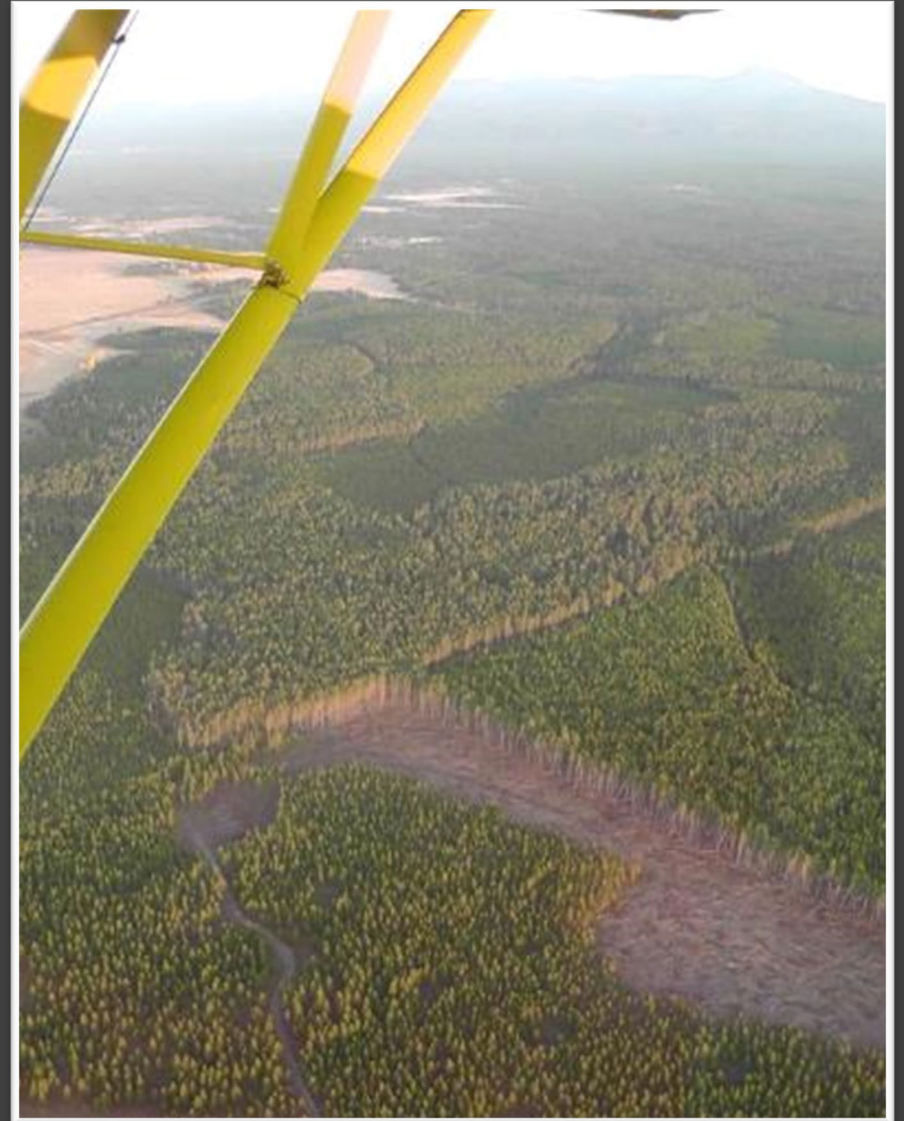
# Central to the Discussion: The Island Park Area



# Island Park Study Area (261,000 acres) Significant Silvicultural Treatment

1960 and following:

- 120,000 ac LPP beetle kill treated
  - 46% of area
    - 96% clearcut / regeneration cut
- Forest Plan supported



# Linking Research to Management

- Caribou Targhee Forest
  - Forest Plan Revision
    - Refine grizzly bear habitat and timber harvest guidelines
    - High risk fire-shed analysis area
  - GYE-wide application



# The Right Team



*Caribou-Targhee  
National Forest*



**Greater Yellowstone  
Coordinating Committee**

# Research Objectives

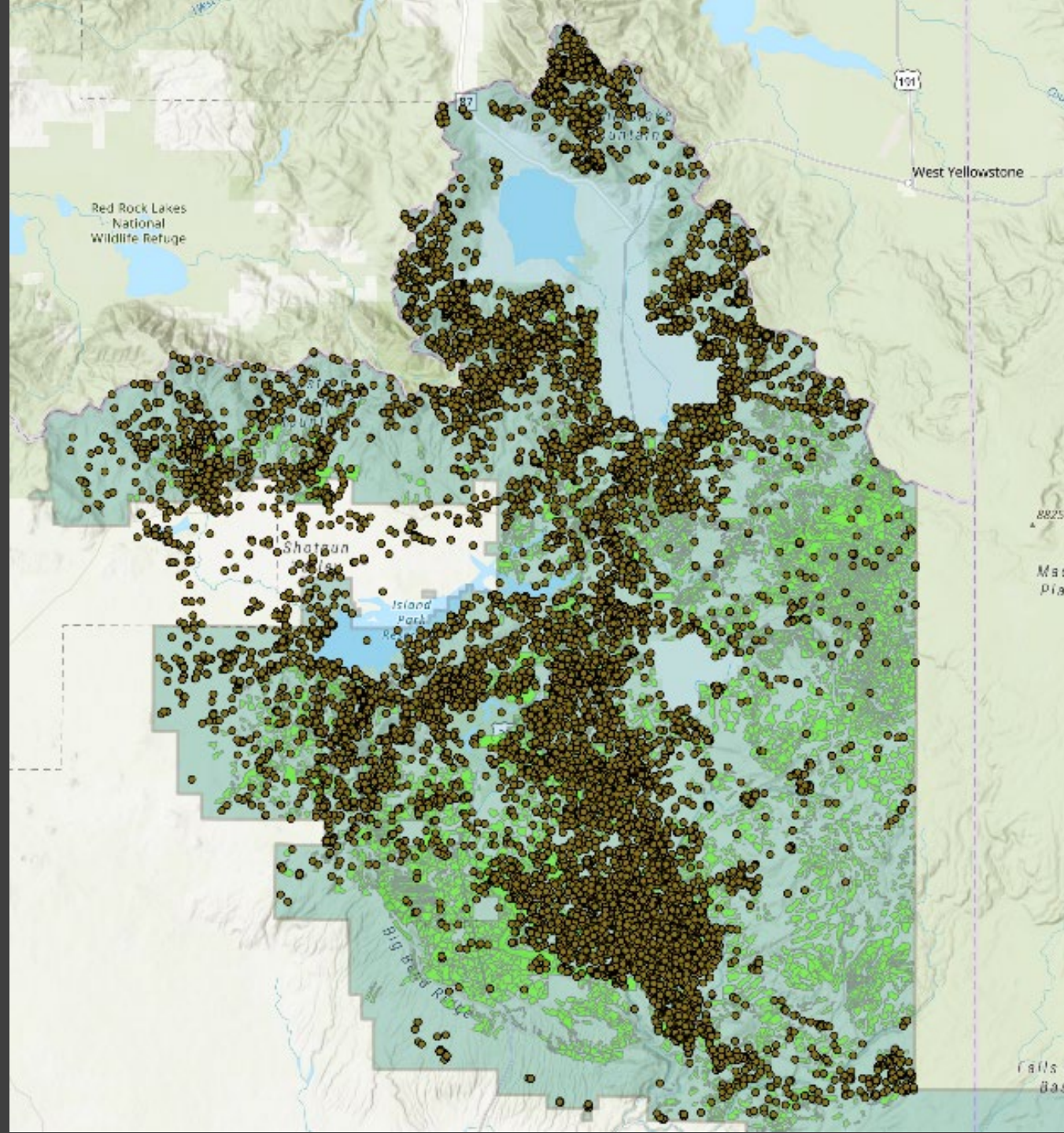
- Impacts of timber harvest on habitat use
- Features of timber harvest used or avoided
- Impacts of timber harvest on behavior
- Diet changes due to timber harvest

# Research Methods

- GPS collars
- Multiple daily locations
- 2000-2010 and 2012-2014

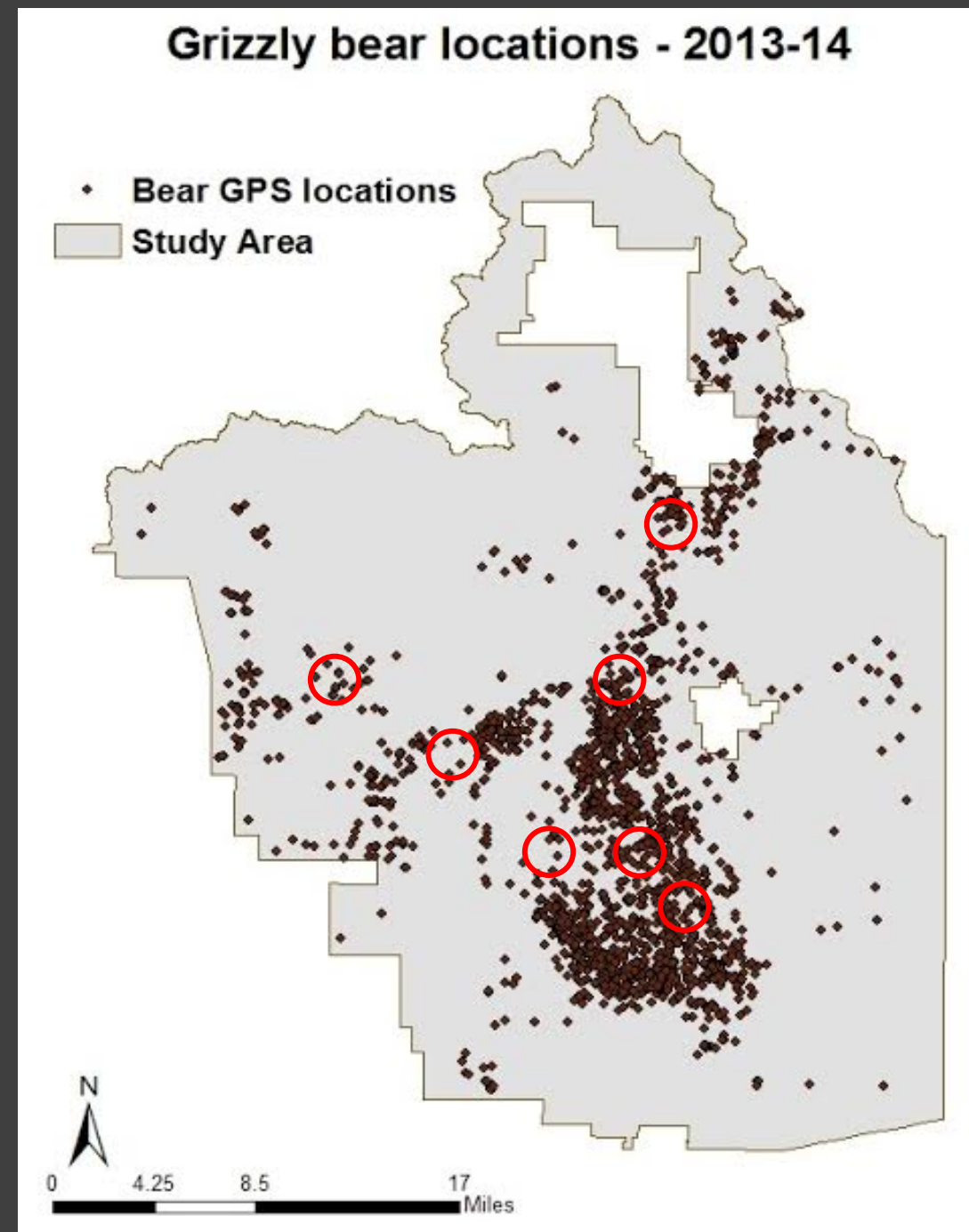


# GPS Collar Locations (2000-2014)



# Grizzly Bear Behavior

- Visited 957 random points
  - Forest characteristics
  - Bear Behavior
  - Scats



# Grizzly Bear Behavior

*Was bear behavior affected by vegetation cover?*



- Timber harvest
- Distance to edge
- Canopy Cover

**Foraging, resting, traveling**

# Food Habits

Grizzly Bear Diet?

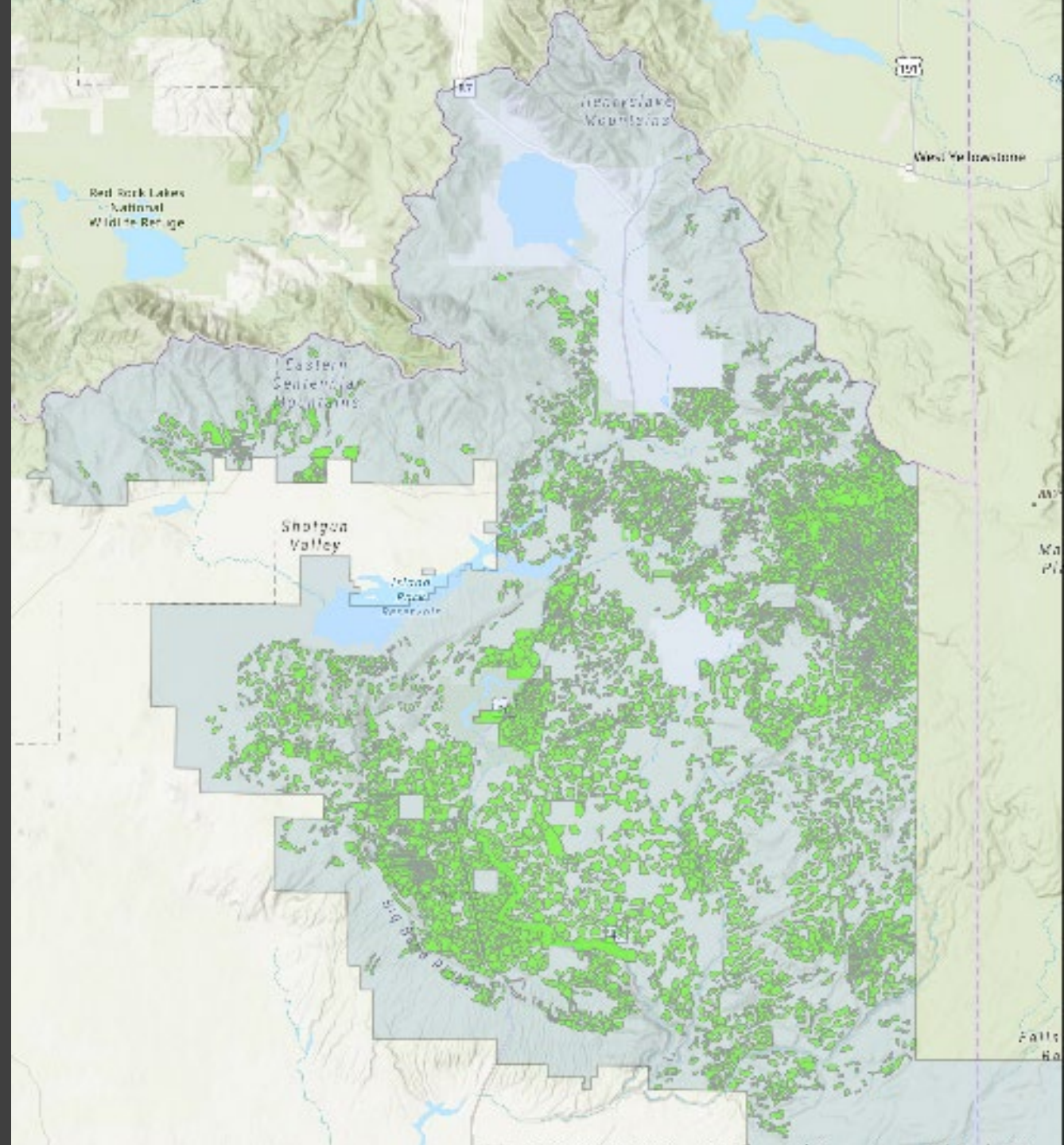
Island Park vs. GYE



# Habitat Analysis

## 7000 Timber Stands

- Vegetation Cover
- Clearcut Age
- Road density





7,000 Stand Exam Folders?!



A large, dimly lit warehouse filled with stacks of cardboard boxes. A person is visible in the center aisle, illuminated by a bright light source. The scene is dark and atmospheric, with the boxes creating a sense of depth and scale.

We found the ark!

# Grizzly Bear Use of Treatments

## Roads All Seasons

AVOIDED

## Spring Treatments

USED AS AVAILABLE (low canopy)

## Summer Treatments

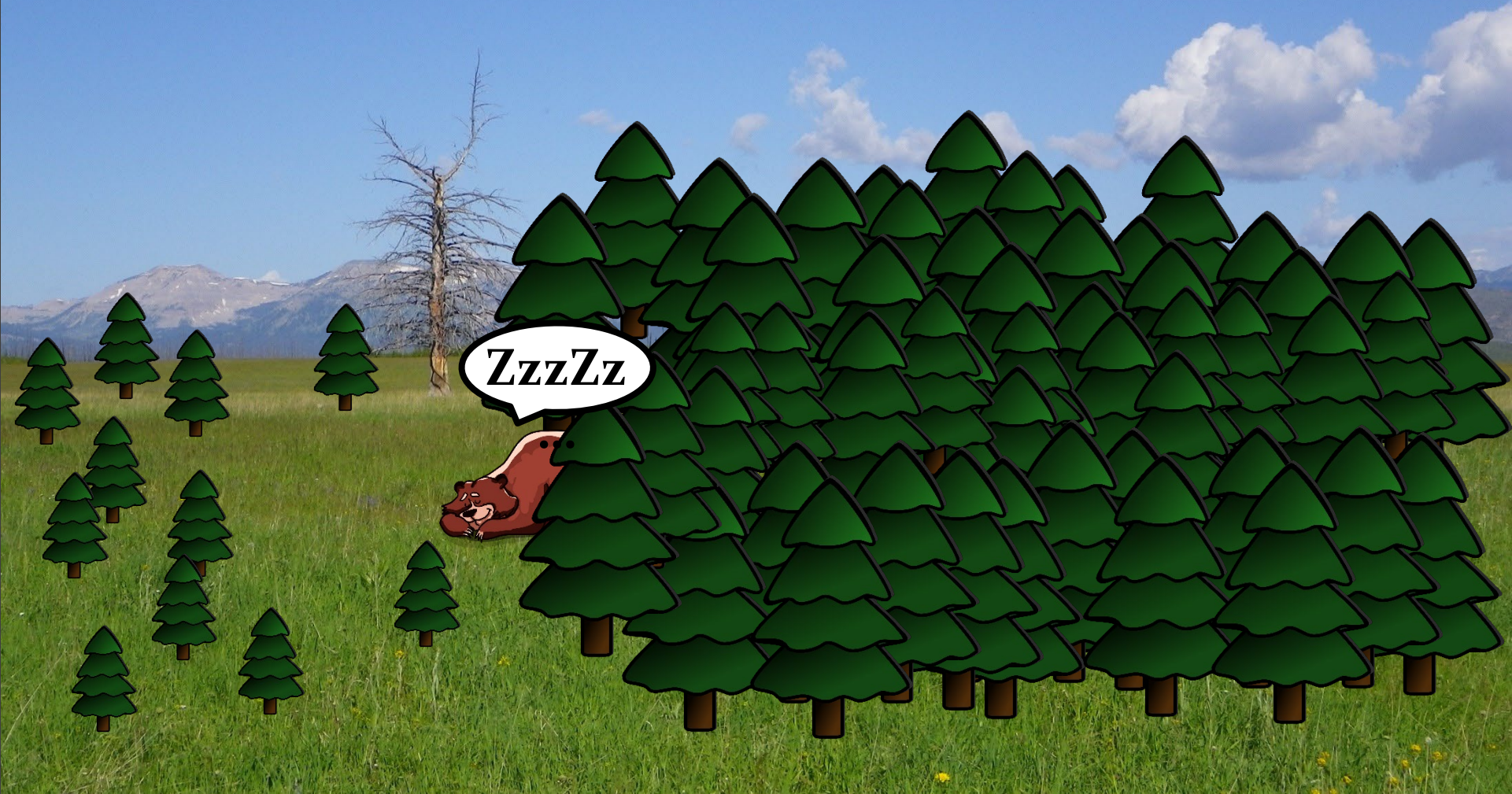
AVOIDED COMPARED TO FORESTS

## Fall Treatments

USED AS AVAILABLE (high canopy)

# Behavior in Treatment Areas: Resting

Higher canopy cover - edge



# Behavior in Treatment Areas: Traveling

Lower canopy cover



# Behavior in Treatment Areas: Foraging

## Treatment



# Results – Diet

## Island Park Diet – 2013-2014

1. Invertebrates (Ants)

2. Ungulates

3. Roots

4. Vegetation

5. Berries

## GYE Diet<sup>1</sup> – 1943-2009

1. Vegetation

2. Invertebrates (Ants + Moths)

3. Whitebark Pine

4. Roots

5. Ungulates

Volume & Occurrence of Item in Scat

Occurrence of Item in Scat

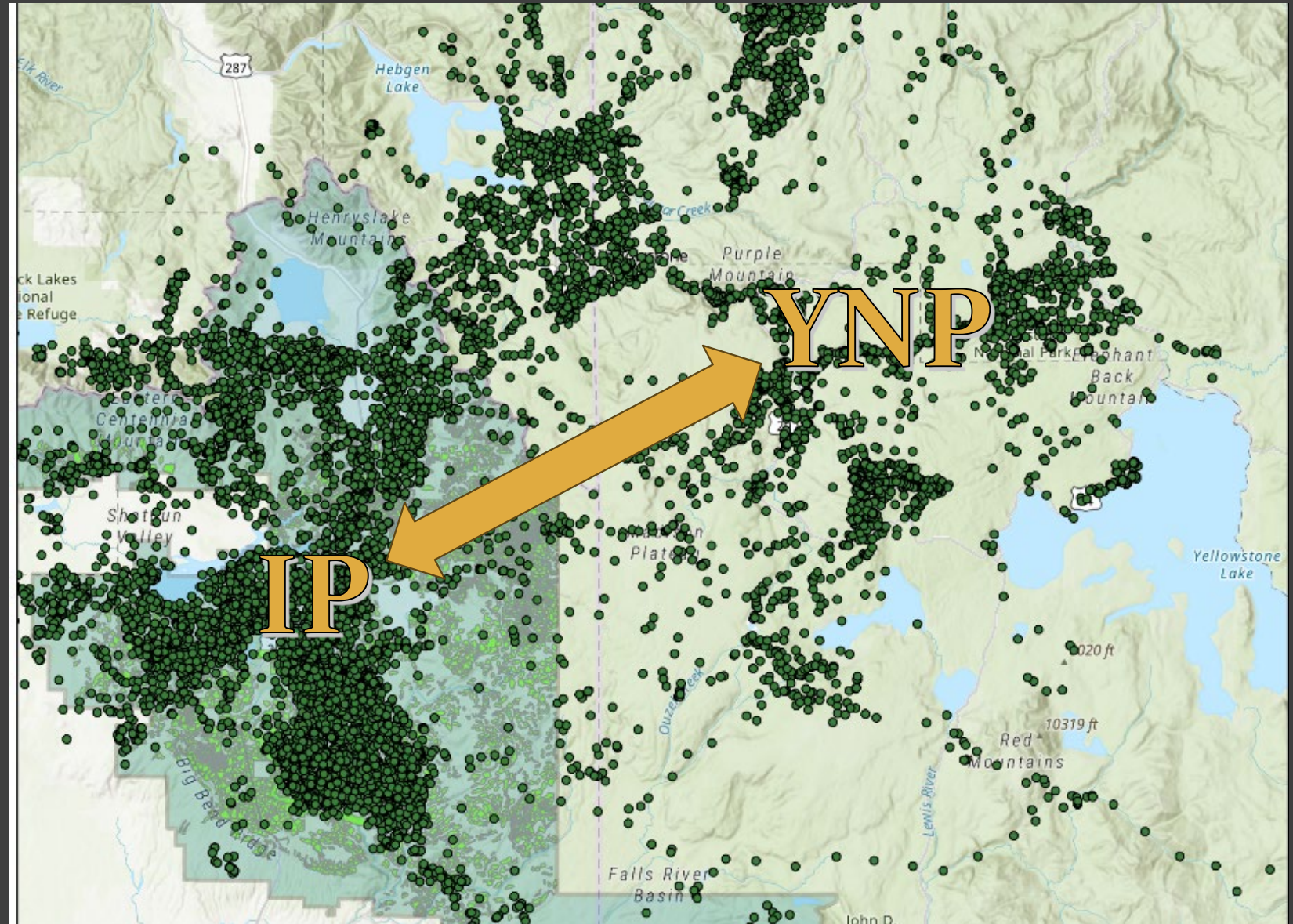
<sup>1</sup>Gunther et al. 2014. *Ursus* 25:60-72

# Island Park Diet



# Island Park Bear Use - Landscape Scale

- GPS Collar Locations
- 40 bears



# Conclusions

- Roads negatively impacted habitat selection AND behavior
- Avoided timber harvest in summer
- Foraged spring & fall in timber harvest
- Used edge security cover



# Management Implications



- Size, shape, and age of clearcuts impact use
- Open roads prevent use of timber harvest
- Timber harvests provide valuable mosaics
- Landscape-level use: IP  $\longleftrightarrow$  YNP

**The effects of timber harvest on grizzly bear habitat use,  
behavior, and diet; Island Park, Idaho**



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# From Pericles to Phil Collins

“I can feel it coming in the air tonight...”

“Oh Lord...”

“And I’ve been waiting for this moment, for all my life...”

“Oh Lord...”

