Oregon's Ungulate Populations

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Overview

- Ungulate population trends and management strategies
- Predators of ungulates
- Ongoing research – mule deer
- Improving elk management

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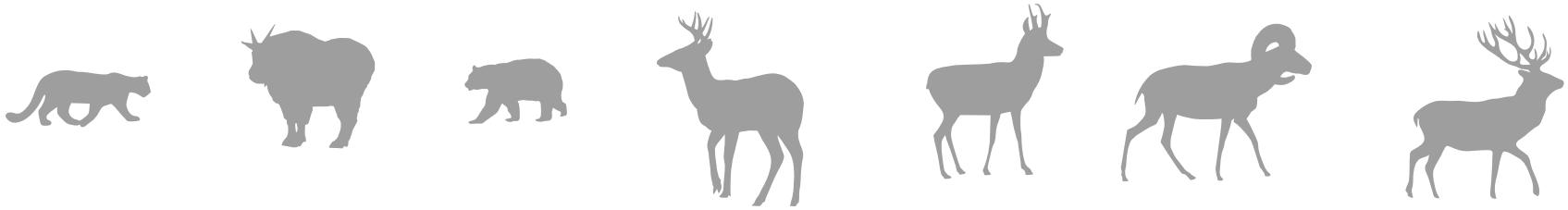

Manage Populations for Long Term Health

Informed by data

Population surveys

Habitat surveys

Disease sampling

Harvest reporting

Research

Guided by plans

Strategies and actions to address limiting factors

Sustainable harvest frameworks

On-the-Ground-Action

Protect & restore habitat

Manage conflict

Manage harvest

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Ungulates

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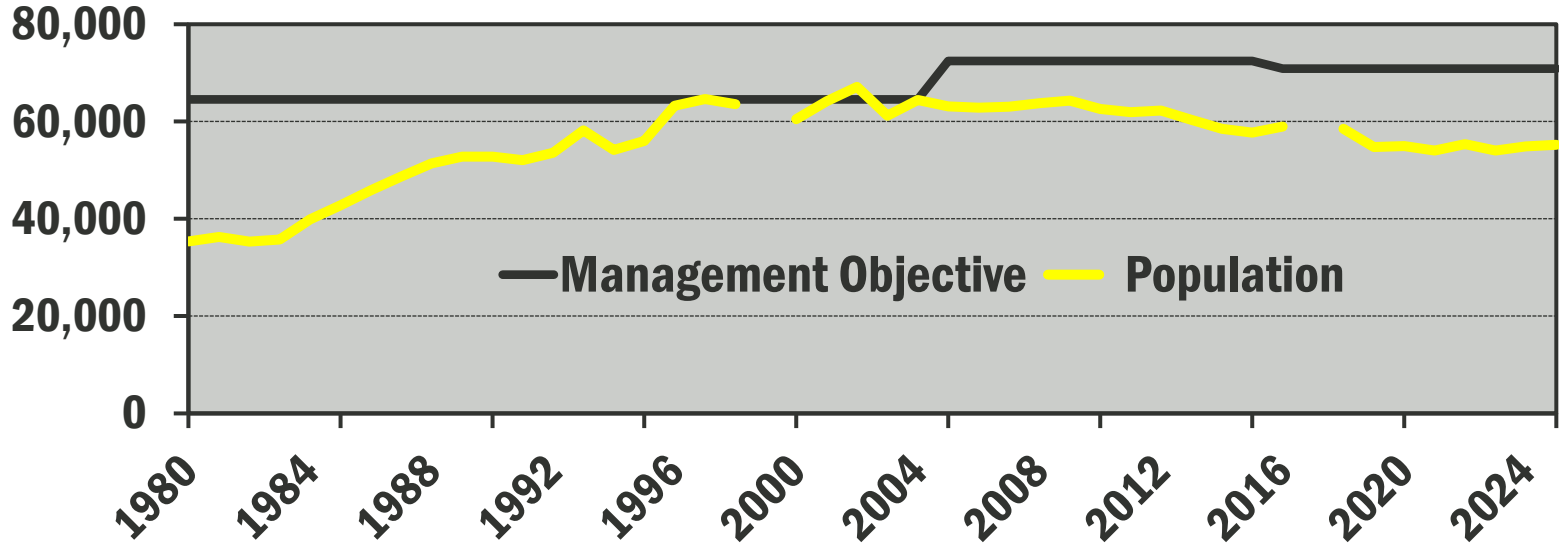
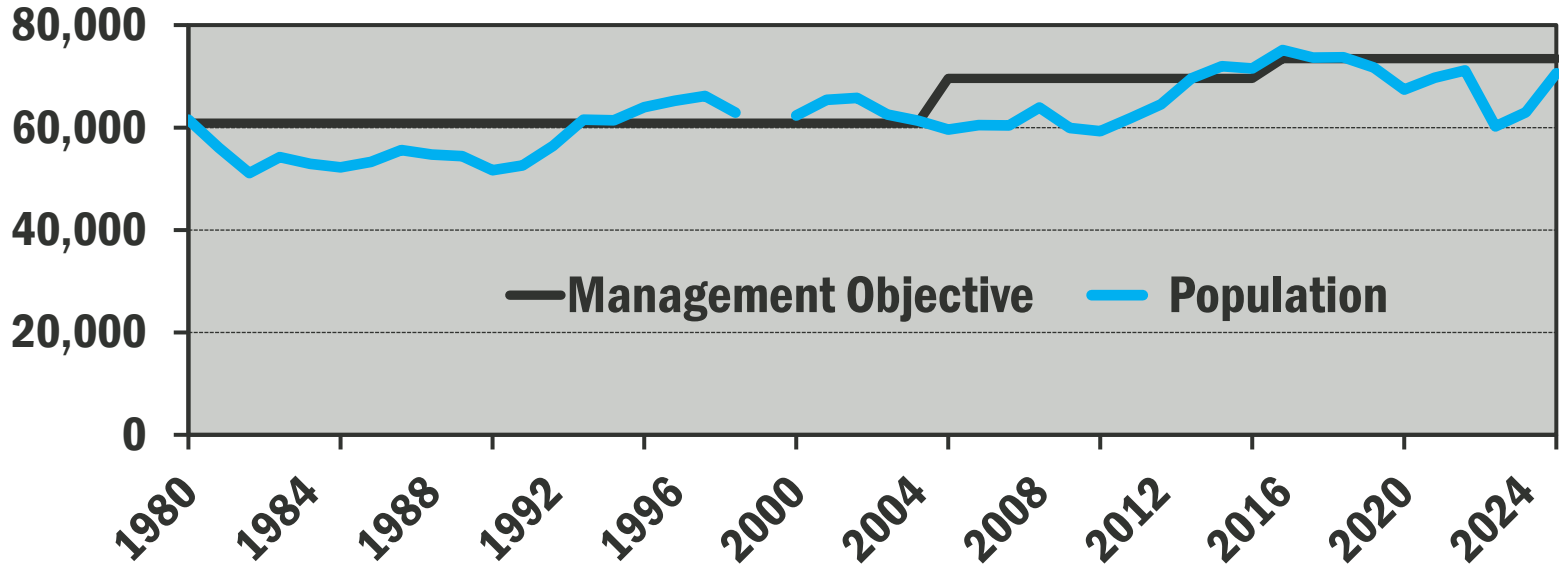
Elk Population Estimates

Roosevelt Elk



Rocky Mt Elk



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Elk Populations

Conservation Success

Near or above population management objectives

- 24 of 35 eastern Oregon units
- 6 of 19 western Oregon units

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Elk Populations

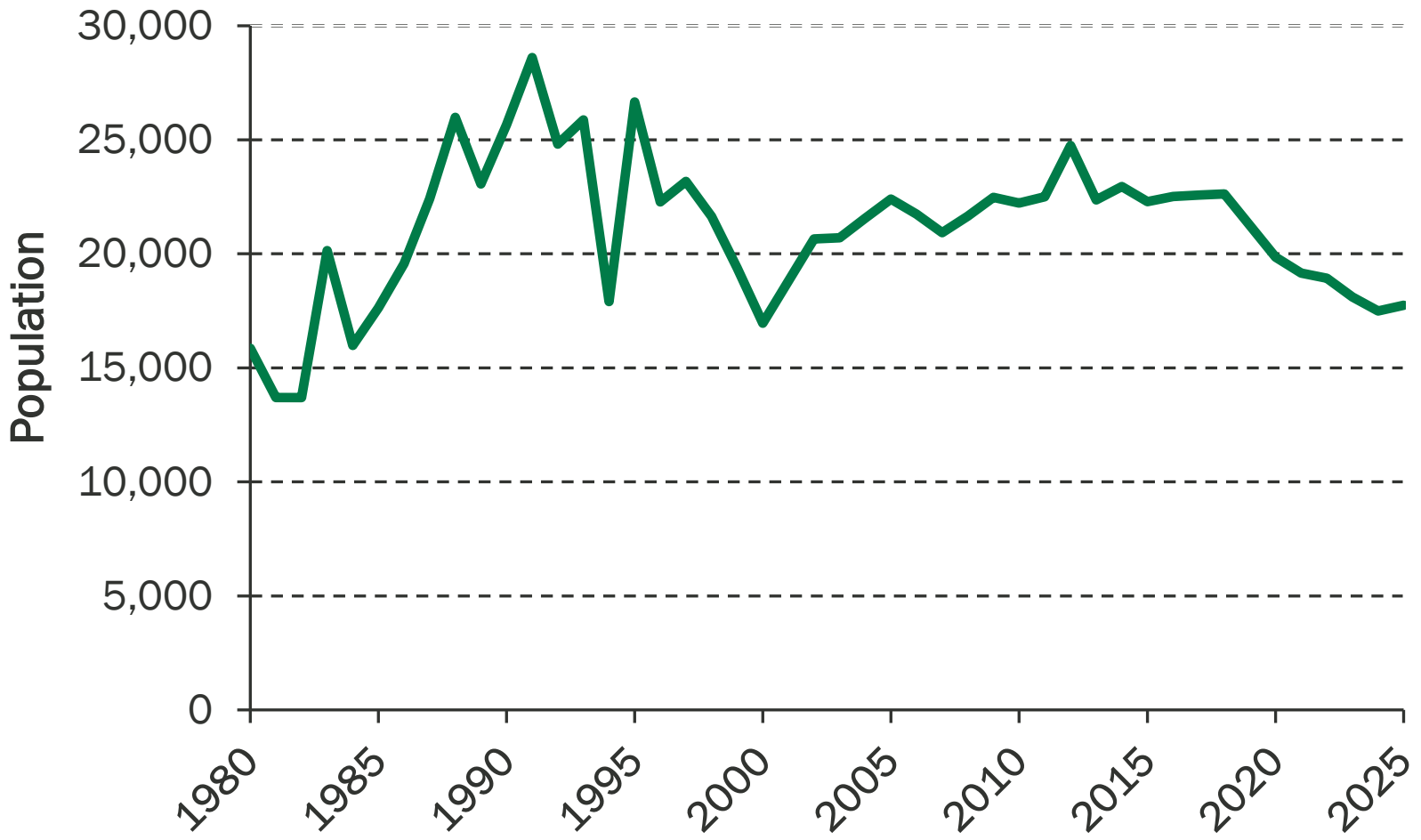
Conflicts with agriculture

Manage populations to reduce conflicts

Special hunting opportunities

- Landowner damage tag program
- General season antlerless elk damage hunt

Pronghorn Population Mirrors Recent Drought



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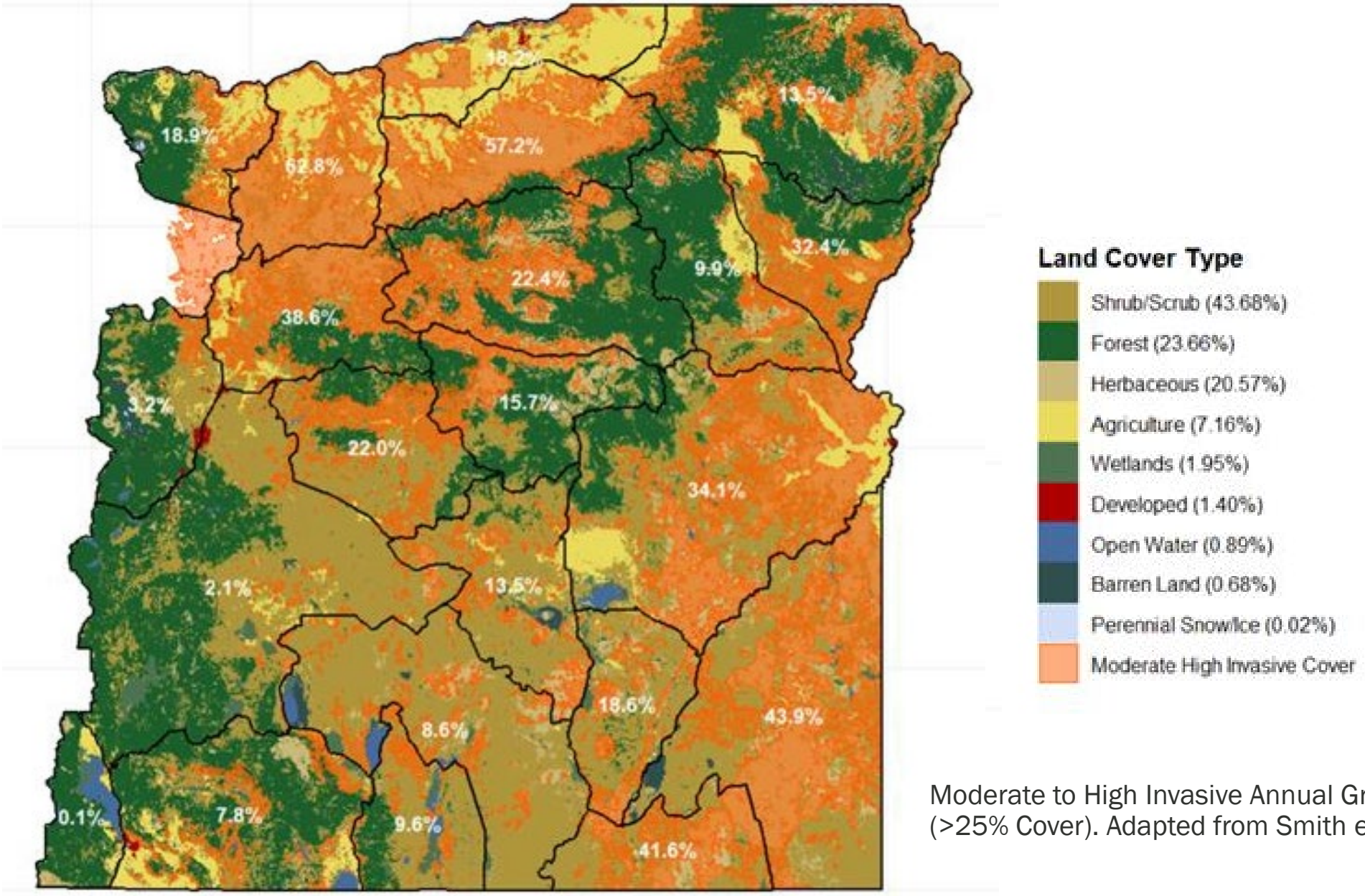
National Land Cover Database – Eastern Oregon



Moderate to High Invasive Annual Grass (>25% Cover). Adapted from Smith et al. 2025

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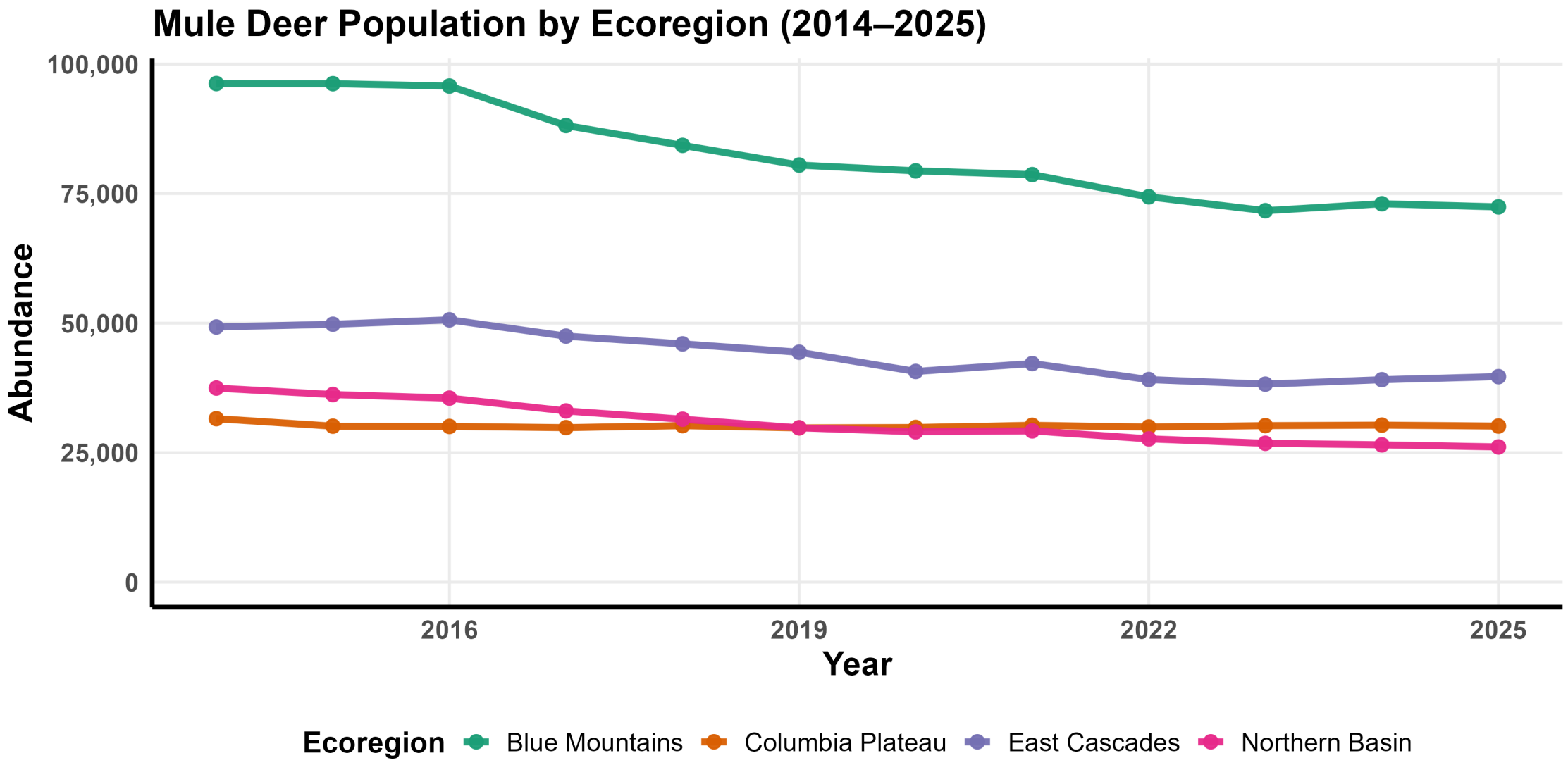
Mule Deer


Mule Deer Population by Ecoregion (2014–2025)
Abundance
100,000
75,000
50,000
25,000
0
2016
2019
2022
2025
Year
Ecoregion
Blue Mountains
Columbia Plateau
East Cascades
Northern Basin

Mule Deer

- Declining across geographic range
  - Estimate 2.5% average annual decline
- Declines due to combination of factors
- Mule Deer Working Group member

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Black-tailed Deer

- Challenging species to survey
  - Deer density highly variable
  - Canopy cover most predictive variable
- No population management objective
  - Benchmarks for buck ratios

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Primary Predators of Ungulates

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Predator Management

Big Game

Cougar

Black Bear

Gray Wolf*

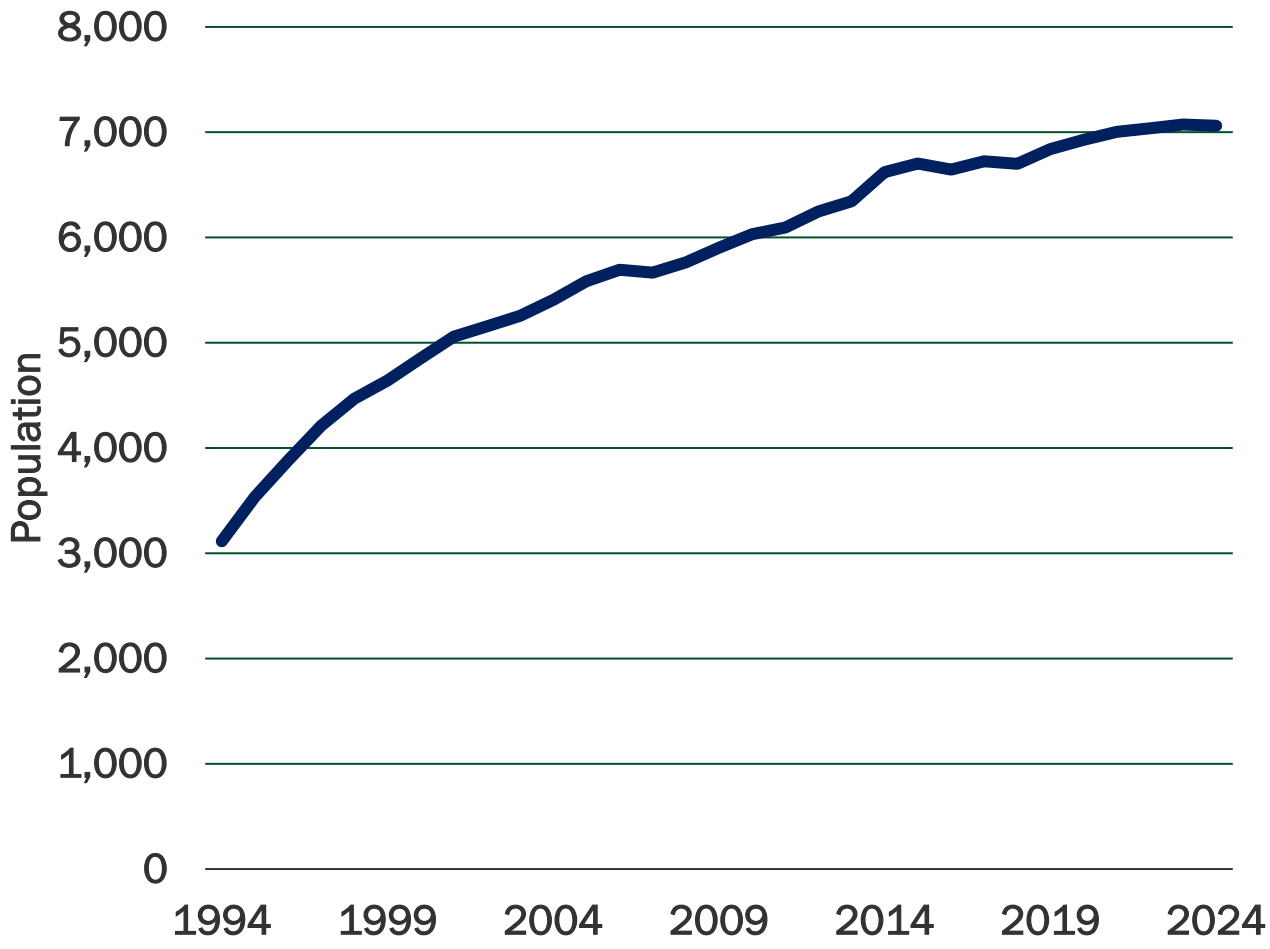
Unprotected / “Predatory Animal”

Coyote

Furbearers

Bobcat

Cougar



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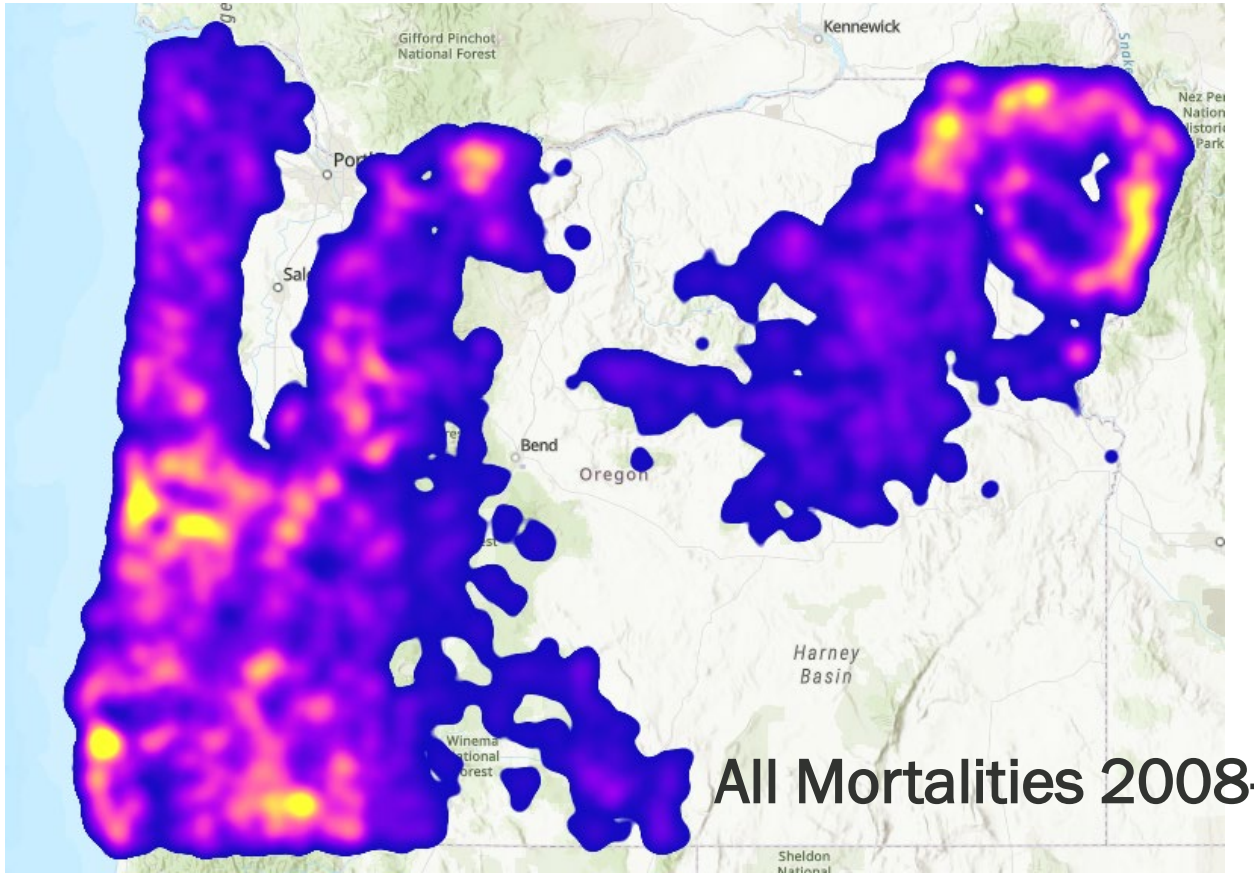
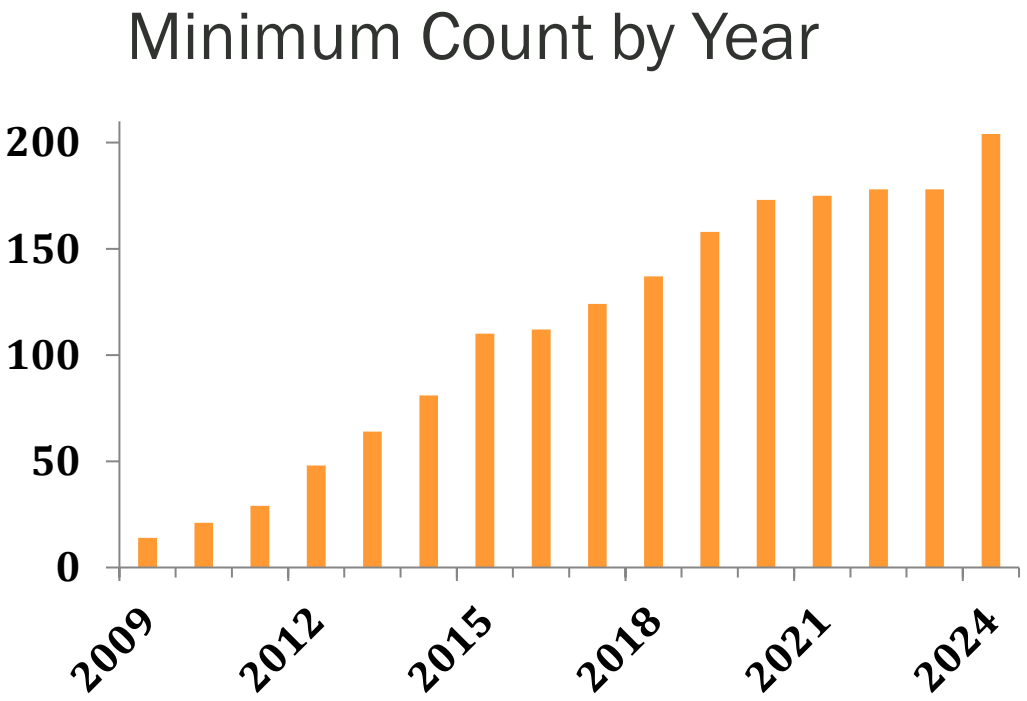
Black Bear

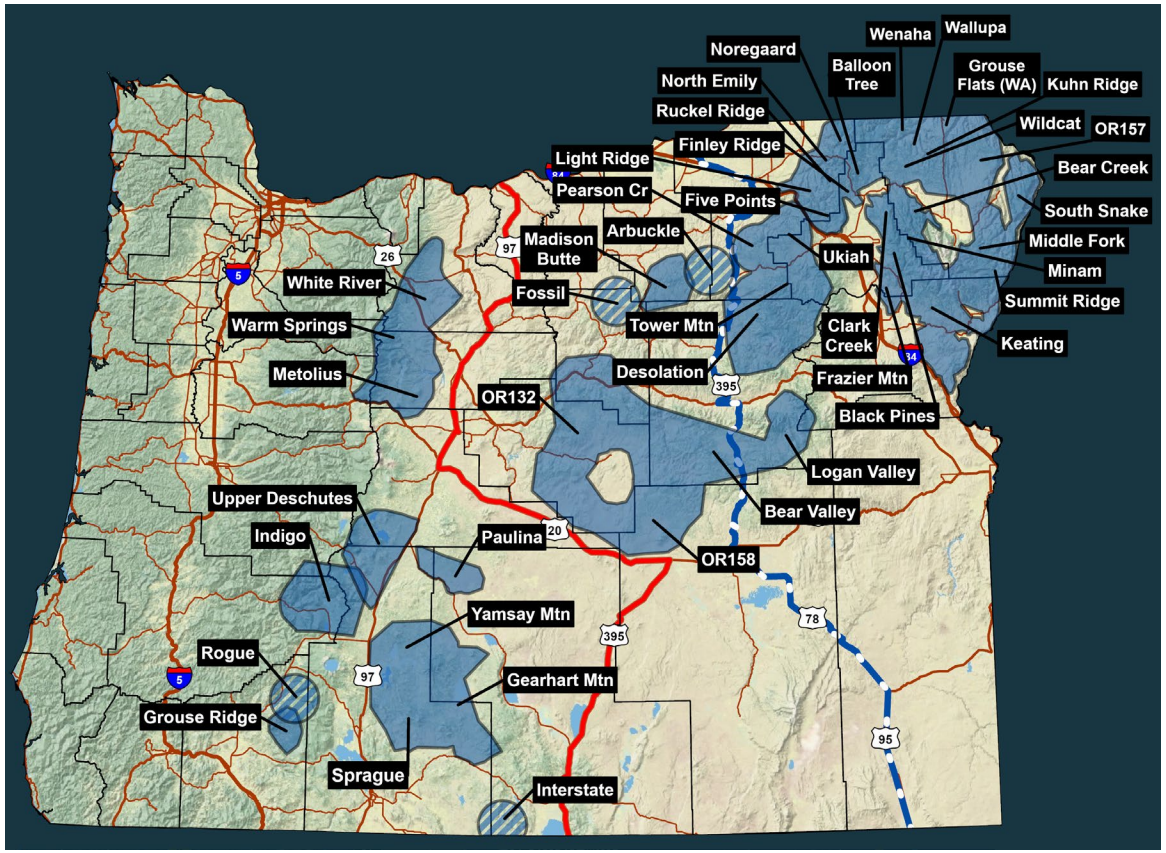
- Robust populations
  - Est. 43,000 (±7,000) in 2024



All Mortalities 2008-2023

Gray Wolf





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Mule Deer Research

Oregon Department of Fish and Wildlife

Declining Mule Deer Populations

Many hypotheses for declines

- Habitat loss
- Land management changes
- Climate change
- Declining habitat quality
- Predation
- Vehicle collisions

Research Focus

Habitat and nutrition

- Habitat effects on forage
- Body condition of does
- Demographic effects

Predation

- Cause-specific mortality
- Carnivore abundance
- Compensatory mortality

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Study Areas

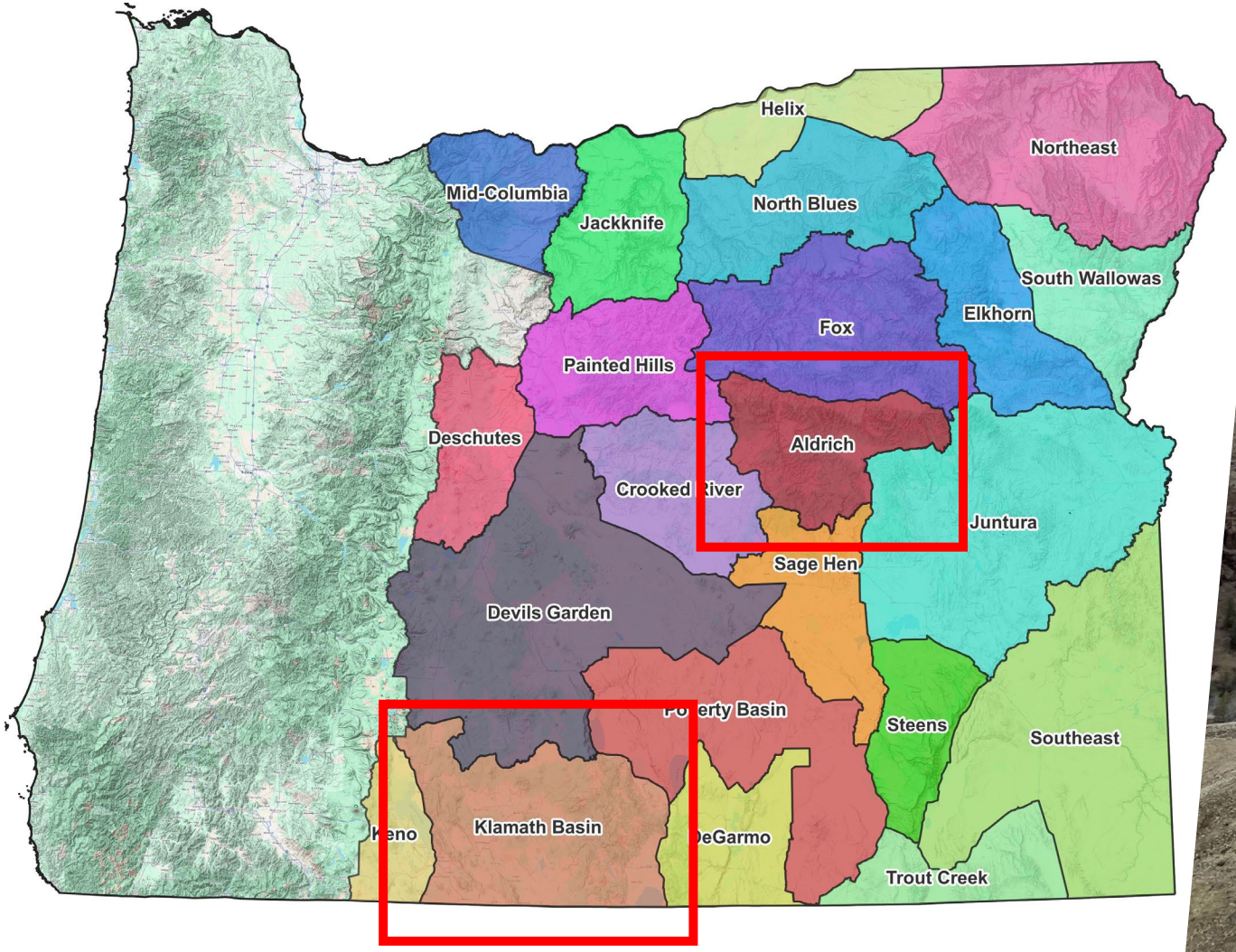
Aldrich Herd Range

- Started winter of 2022/23
- Conclude summer 2028

Klamath Basin Herd Range

- Started winter of 2023/24
- Conclude summer 2029

Study Areas



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Mule Deer Monitoring

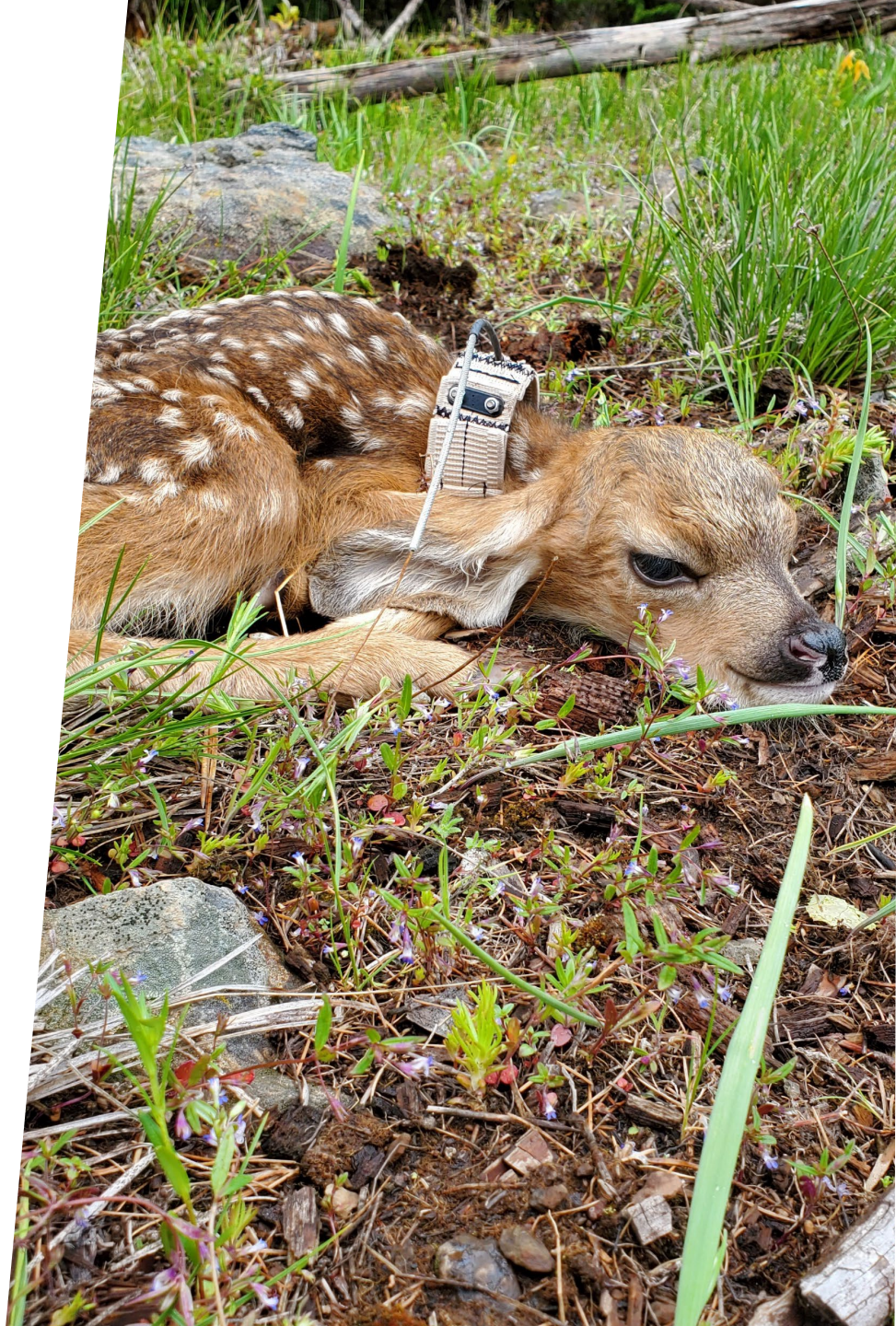
Mule deer does

- Capture during winter months
- Equip deer with GPS collar
- Measure body fat levels
- Assess pregnancy and fetal rate
- Equip with VIT to determine birth events the following spring

Mule Deer Monitoring

Mule deer fawns

- Capture during late spring
- Equip deer with GPS collar
- Weigh and determine sex
- Document any siblings



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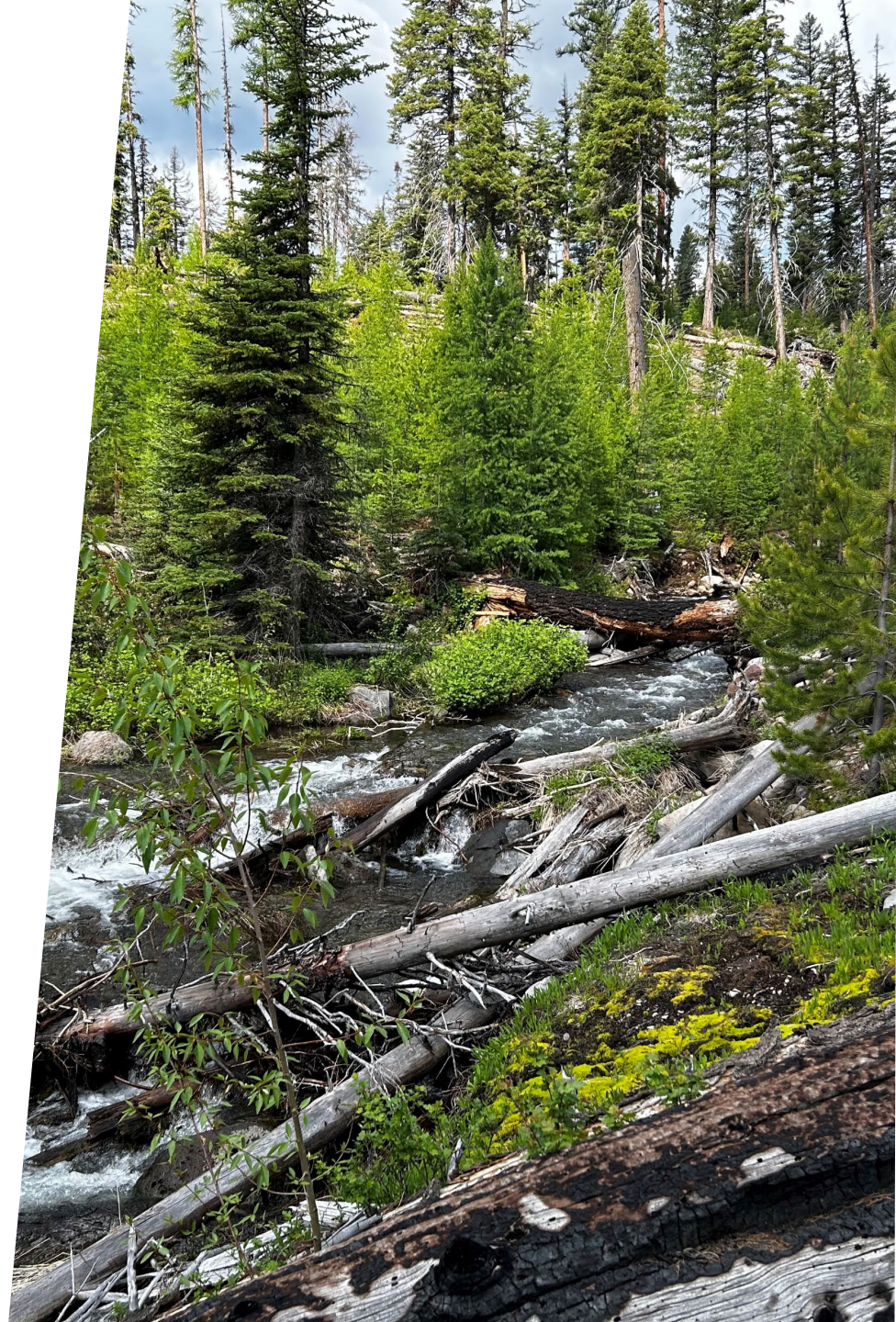
Habitat

Habitat use

- GPS locations
- Use of vegetation types and environmental features

Vegetation sampling

- Forage availability
- Forage quality
- Link back to habitat features



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Predation

Document cause-specific mortality

- Accurately assign predator species
- Calculate the percent of mortality caused by each predator

Predation

Estimate carnivore populations

- Collect carnivore scat
- Genetic analysis
- Statistical models
- Annual study area estimate
- Spatial surface of density

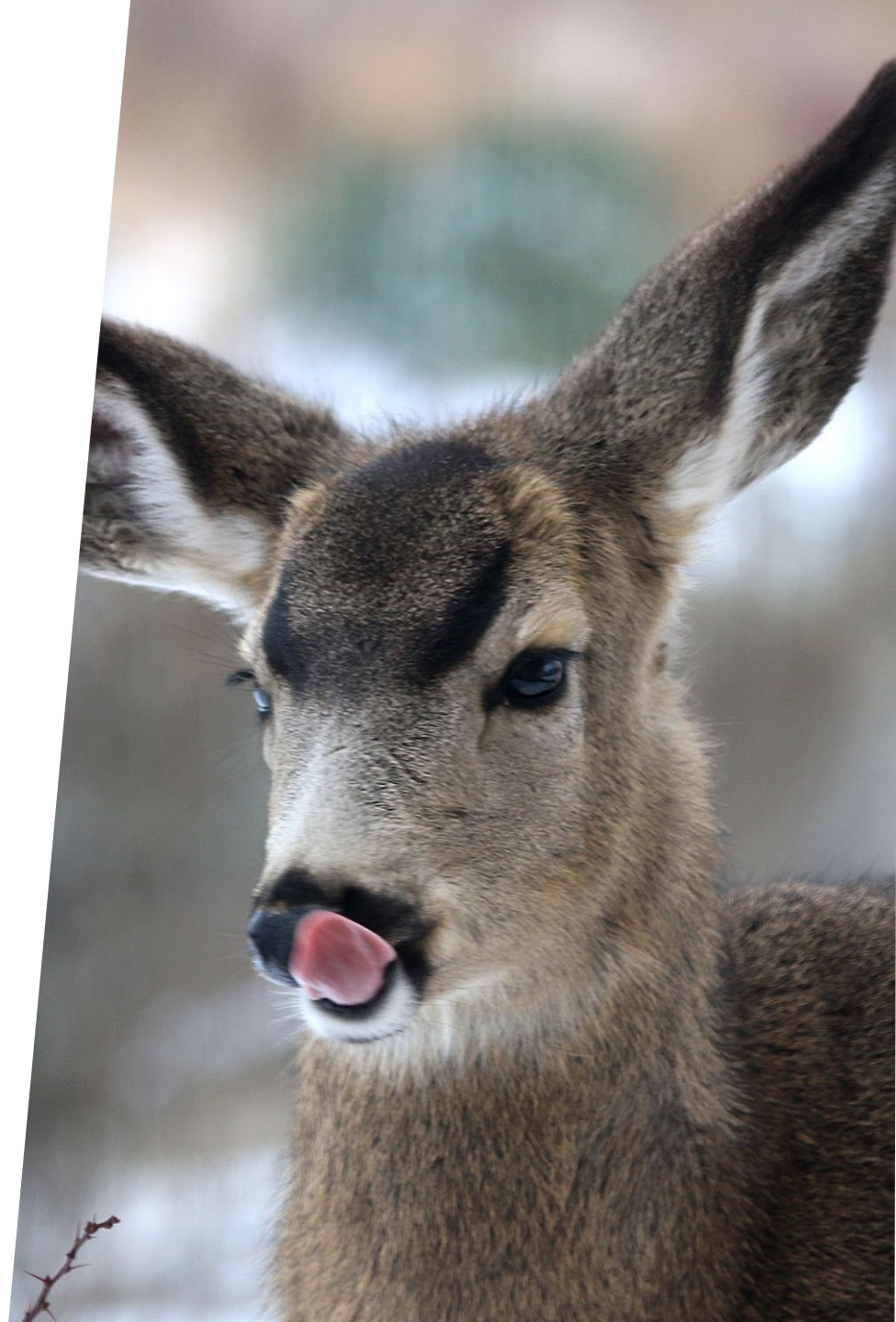
Expected Outcomes

Identify factors affecting mule deer

- Habitat
- Predation
- Nutrition

Quantify effects of each factor

- Population models
- Relative effect on population growth rates



Learning Opportunities

Nutrition and habitat

- Wyoming
- Utah
- Colorado

Predation

- Utah
- Colorado
- Washington

Elk Management

Oregon Department
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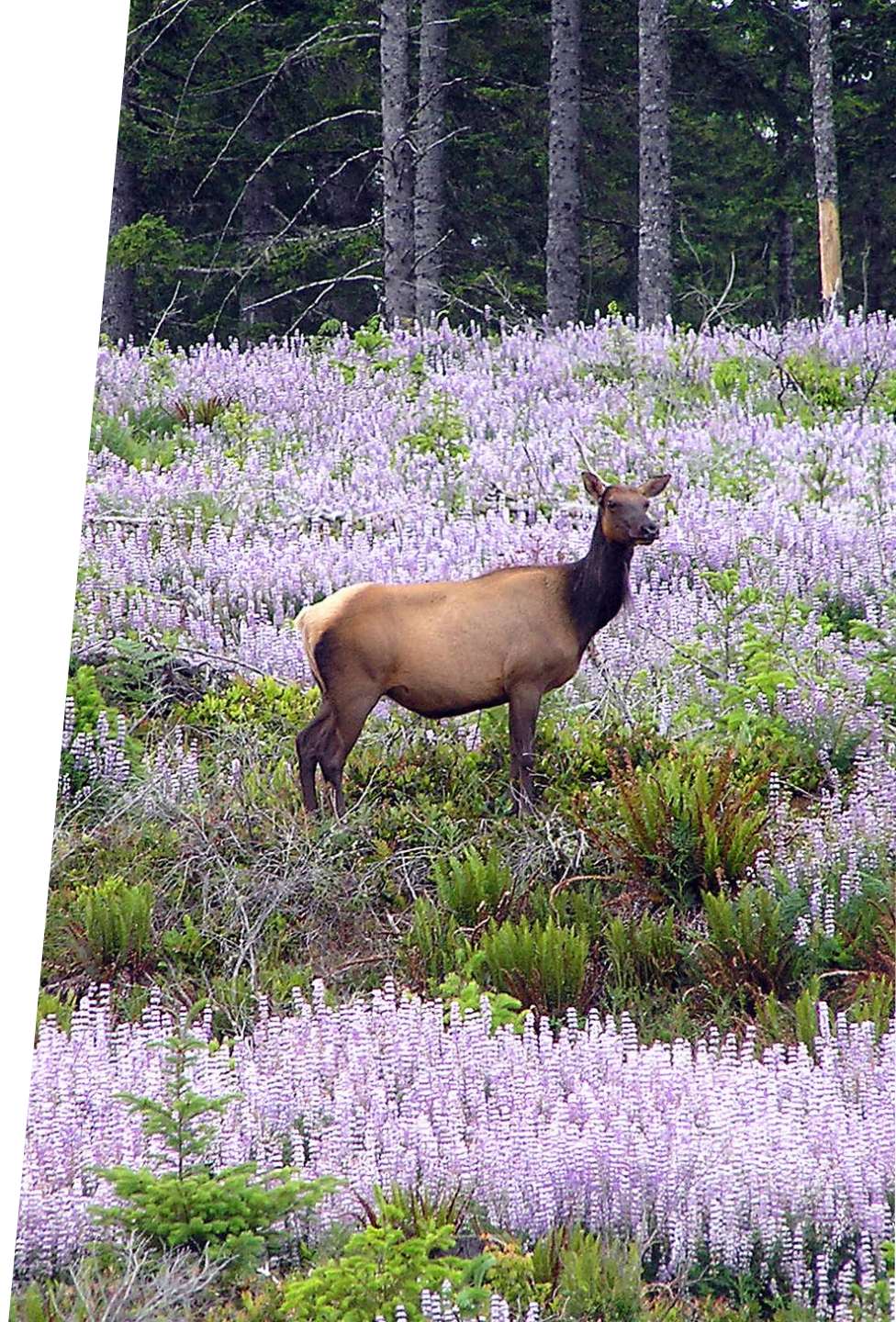
Elk Management Changes

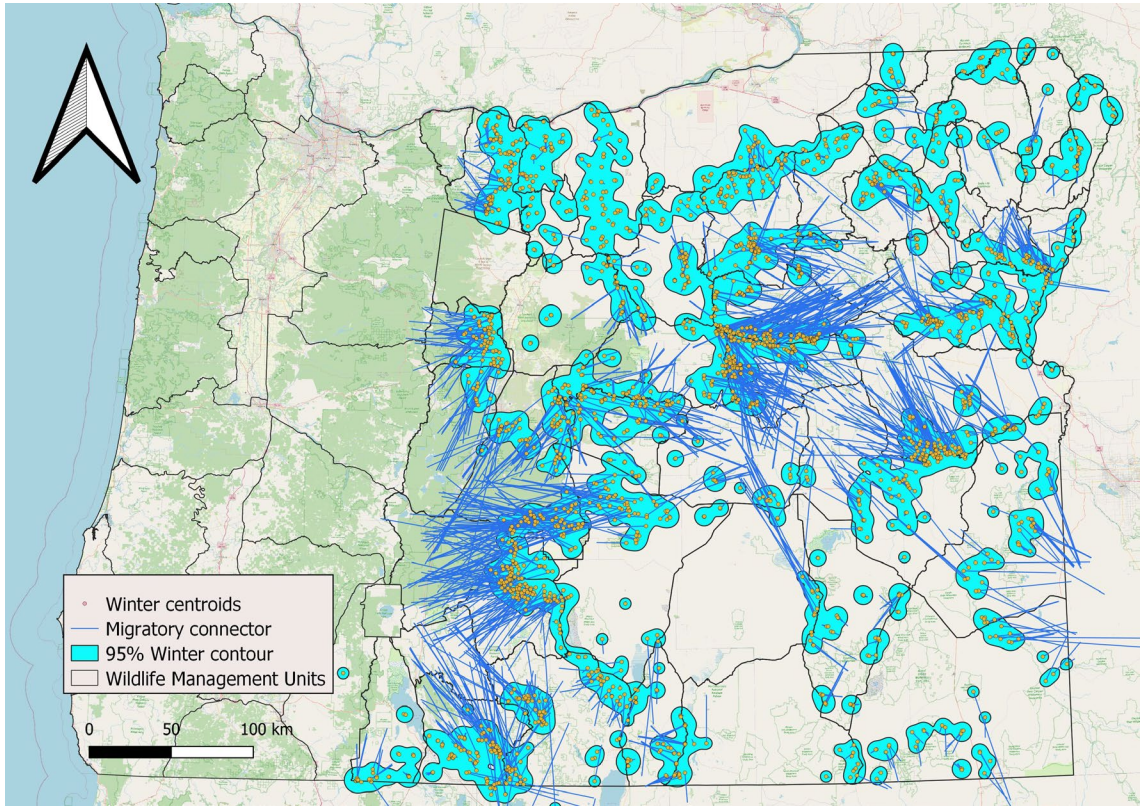
Objectives

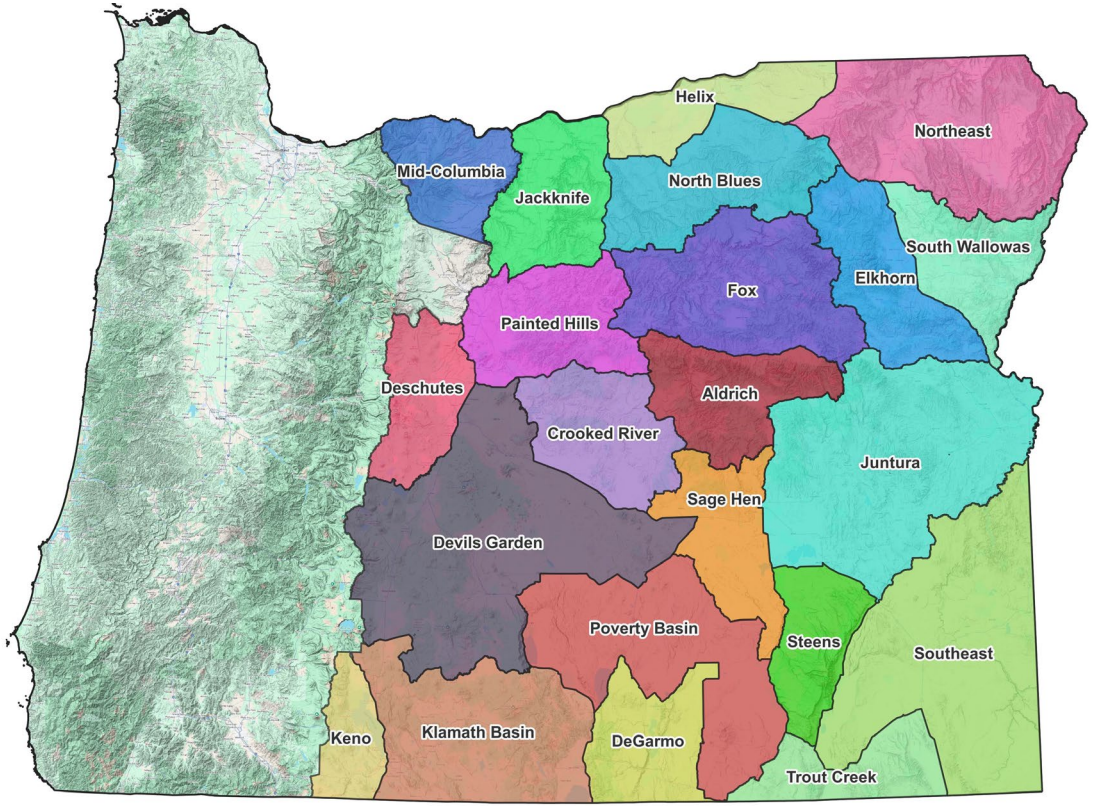
Follow the approach for mule deer:

- Identify population boundaries
- Develop survey methods
- Create new population models
- Assess hunt boundaries



Herd ranges: a mule deer example





Use GPS collar data to identify seasonal ranges and movements.

Create population boundaries that encompass winter and summer ranges.

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New Survey Methods

Rocky Mountain Elk

- Statistically robust aerial surveys
- Multi-species approach
- Reduce flight time
- Pilot efforts this winter

Roosevelt Elk

- Trail camera-based efforts
- Pilot efforts this winter

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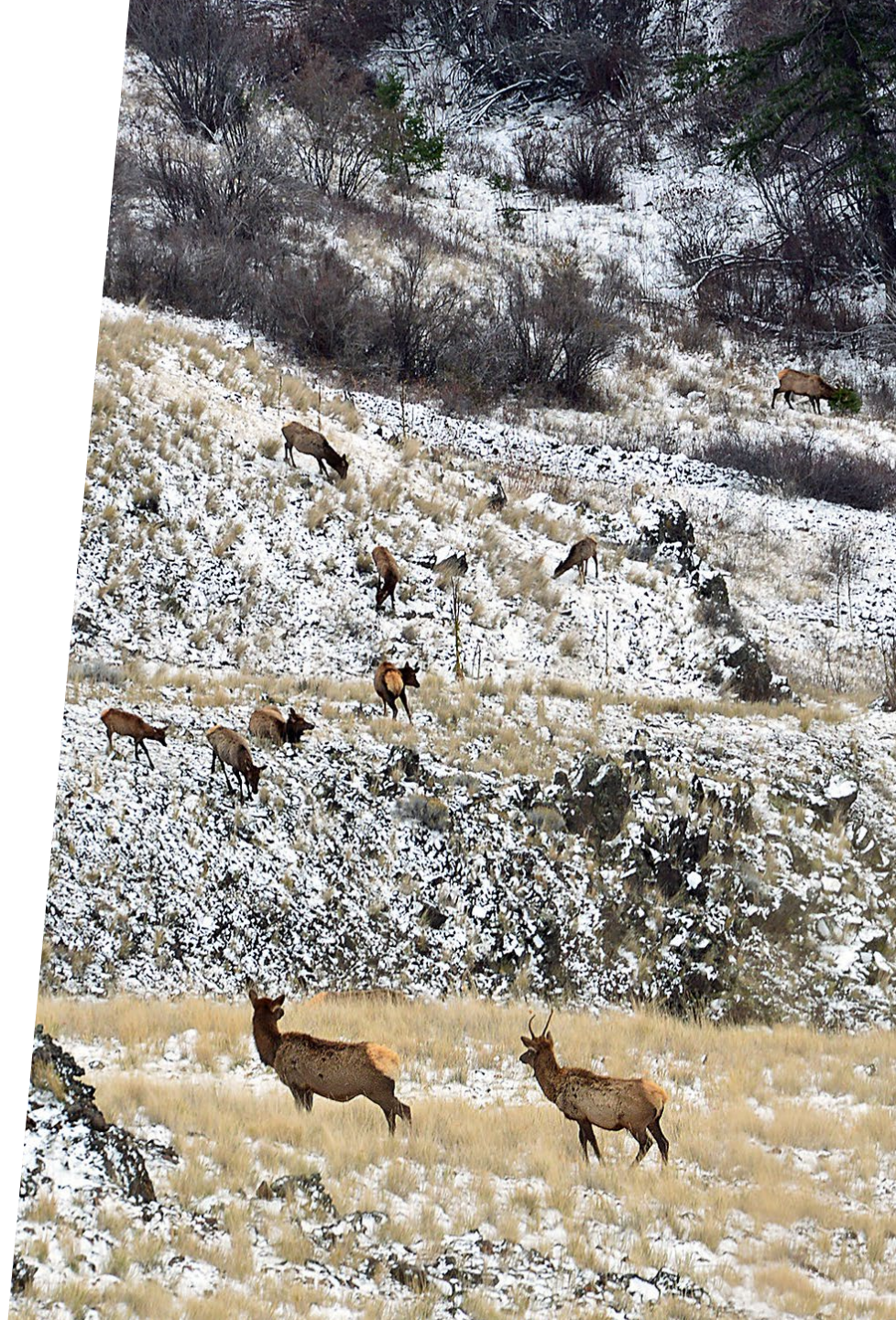
Integrated Population Models

Multiple data sources

- Harvest
- Herd composition
- Abundance
- Survival



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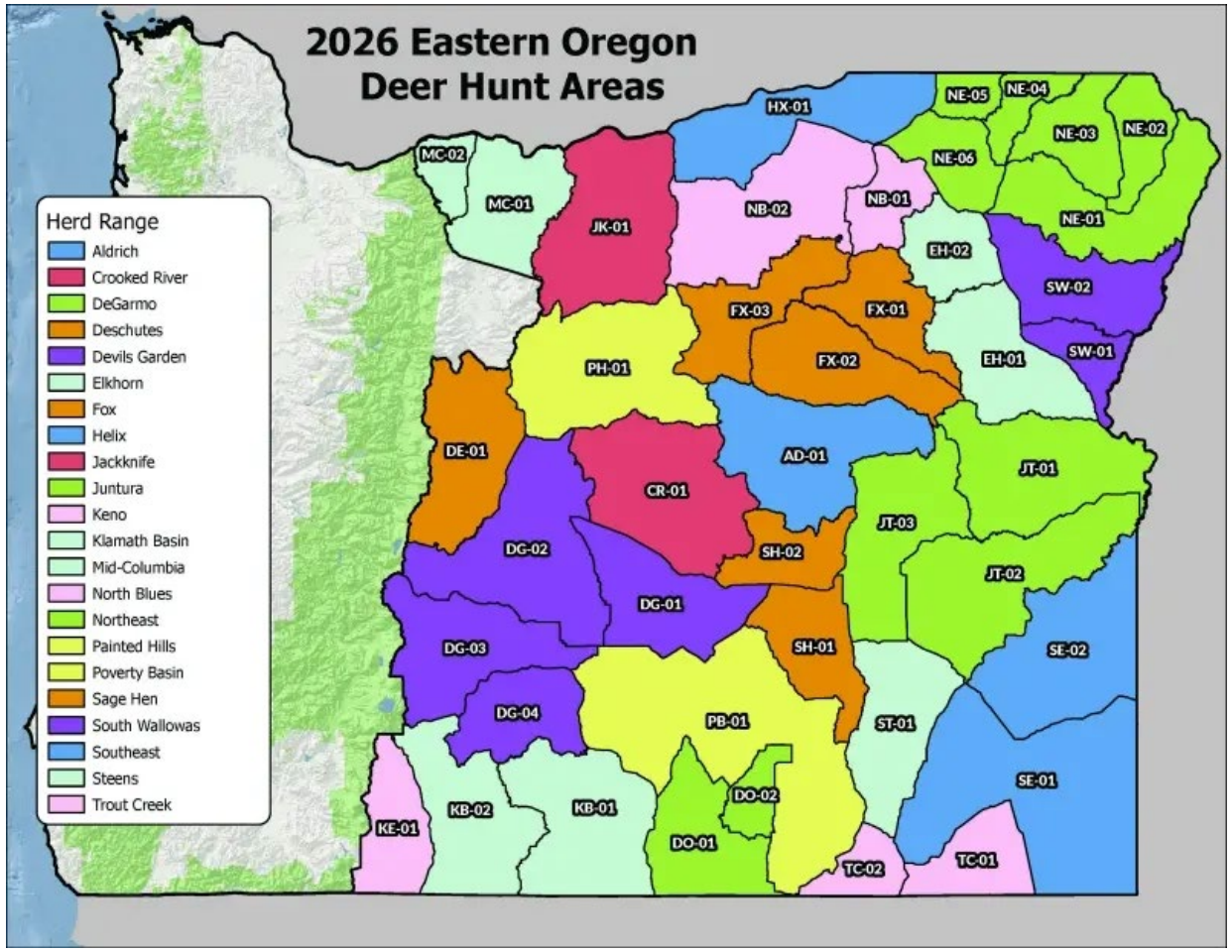
Assess Hunt Unit Boundaries



Ensure hunt unit boundaries align with populations.

Thank you!

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