Habitat, Security, and Connectivity for Elk & Mule Deer

Unlocking big, durable wins in Oregon with practical habitat, security, and migration fixes.

Mule deer and Black-tailed deer

- Oregon's mule deer have declined from about 306,000 in 1981 to roughly 163,000 in 2022.
- ODFW's own plans identify habitat loss and degradation, altered disturbance regimes, and human development as the leading long term pressures, with predation interacting on top of those baseline conditions.

Pronghorn

- Pronghorn in Oregon are largely a rangeland and shrub-steppe story.

Their key issues are:

- Habitat fragmentation by fences and roads
- Degraded sagebrush and bunchgrass communities
- Limited water
- Increasingly frequent large fires connected with invasive annual grasses

Elk

- Oregon still supports one of the largest elk populations in the Lower 48, with relatively stable numbers in some units and underperformance in others, especially where security habitat and private land issues constrain distribution.
- Elk distribution and use of public land respond strongly to pressures on public land including recreation, predators and road density, even where forage is abundant.

Forested habitats: early seral forage vs closed canopies

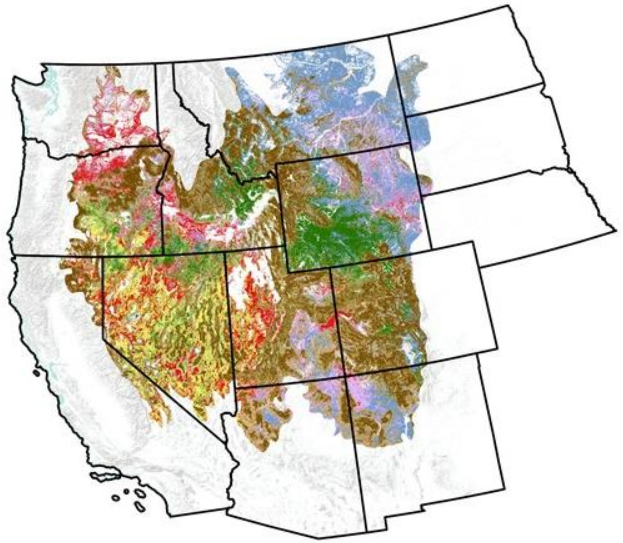
- In much of Oregon's forested country (Blue Mountains, Cascades, Coast Range), a legacy of fire suppression and even-aged management has pushed stands toward dense, closed canopies that shade out shrubs and forbs preferred by deer and elk.
- Mule deer and black-tails are early- to mid-seral specialists. They benefit when disturbance or active management opens the canopy and resets succession, creating a mosaic of shrubland, young stands, and older timber.
- Elk use those same treatments for high-quality forage, but also need adjacent security cover.

Rangelands and invasive annual grasses

Historic sagebrush systems burned at relatively long, patchy intervals and recovered slowly, providing a patchwork of sage, perennial grasses, and forbs that supported wintering mule deer and pronghorn.

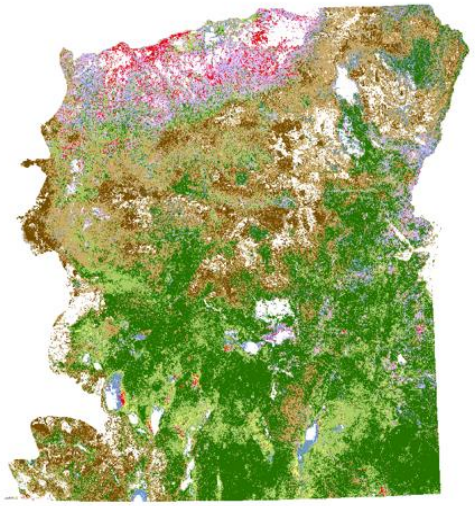
That pattern has shifted toward short fire-return intervals driven by invasive annual grasses such as cheatgrass, medusahead, and ventenata, which:

- Outcompete native species for soil moisture
- Create continuous fine fuels that carry large, frequent fires
- Push landscapes toward low-diversity monocultures with poor mule deer forage value

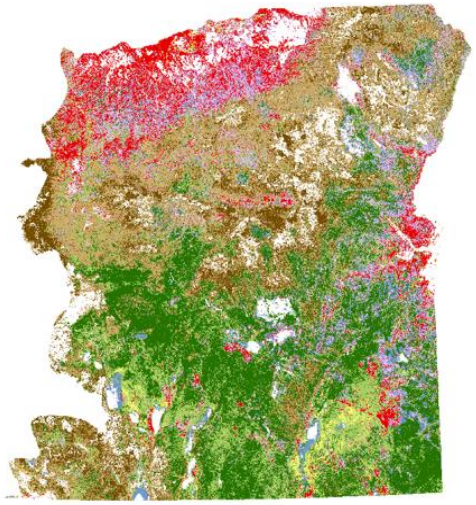


A: Good condition shrubland
A-C: Intermediate condition shrubland
C: Poor condition grassland
B: Good condtition grassland
B-D: Intermediate condition grassland
D: Poor condition grassland
Tree: low-mid cover
Tree: high cover

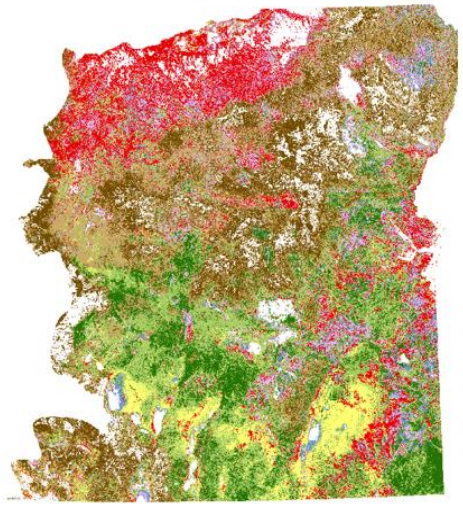
1989-1991



1999-2001



2019-2021



Disturbance, roads, and security

Security: = *low* open-road density + seasonal travel management.

- Research shows elk avoid roads & traffic: switching to vigilance at just**≥12 vehicles/day**; animals **>1 km** from roads feed **≥20%** more.
- During energy build-out, elk lost **~43%** summer and **~50%** winterhigh-use habitat due to road/development avoidance; shifted **~1.3 km**farther from roads.
- On densely roaded forests, elk typically stay **>700 m**—often **>1 km**—from primary/secondary roads during disturbance (i.e., hunting).

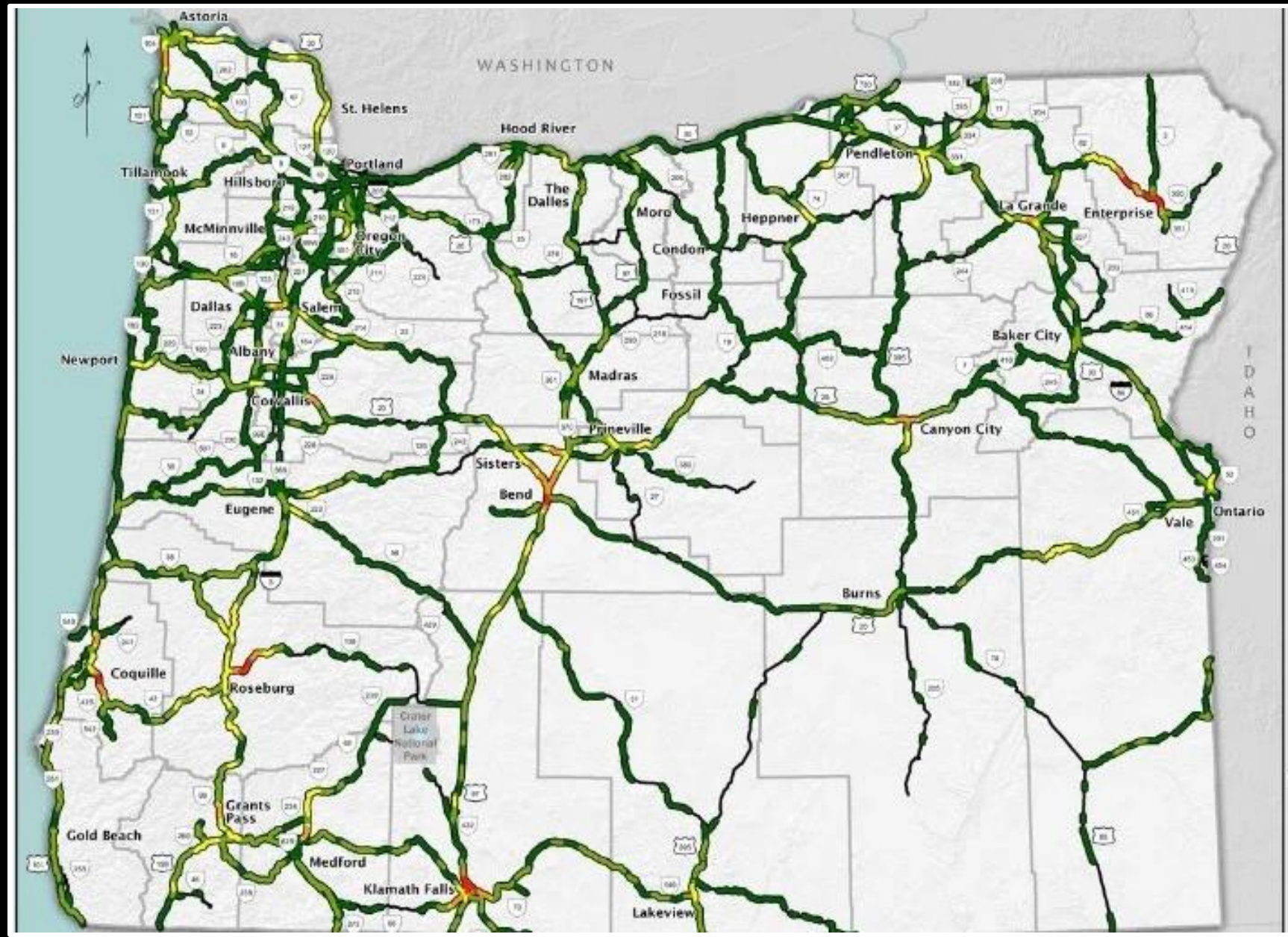
Connectivity, migration, and wildlife-vehicle collisions

Interruptions to that movement can:

- Reduce access to high quality forage
- Increase energy expenditure
- Lower pregnancy rates or winter survival in subsequent seasons

Wildlife-vehicle collisions may be the most fixable mortality source: Highways intersecting winter range and migration corridors create a two-fold problem:

- Direct mortality from wildlife-vehicle collisions
- Behavioral avoidance of crossing points that effectively fragment ranges



WILDLIFE COLLISION DENSITY

- 1 - 5 per mile
- 6 - 15 per mile
- 16 - 25 per mile
- 26 - 40 per mile
- 41 + per mile
- No Collisions Reported

All animal collision data included in this document are based on the Oregon Department of Transportation dispatch reports from January 2019 through December 2023 on all state highways.

Collision densities were derived from a point density analysis of the animal collision records and overlayed on the state highways system. Parameters included 100 x 100-ft grid cells and a 5,280-ft search radius. Each highway was processed seperately.

0 Miles 75

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Competition, Disease, and Predation

- **Competition and herbivory**
  - Domestic livestock, wild (feral) horses, and high densities of wild ungulates can over-browse sensitive riparian areas and winter ranges if stocking rates and timing are not carefully managed.
- **Disease**
  - Chronic wasting disease is expanding in the West and has now been detected in multiple neighboring states. It is a long term threat that will impact management decisions.
- **Predation**
  - Large predatory guilds (cougar, wolf, bear, coyotes) are now part of the modern baseline.
  - Experimental work in Idaho and elsewhere has shown that predator control can increase mule deer fawn survival in situations, particularly when herds are below carrying capacity and habitat is adequate. In short; where nutrition and habitat are limiting, predator removal alone has not produced sustained population rebounds.

Pulling it all together

Secure, productive habitat first

- Prioritize projects that create or maintain **early seral forage** in the right places
- Pair vegetation work with **security design** so animals can use it in daylight and during hunting seasons

Include travel management in habitat management decisions (Forest Planning)

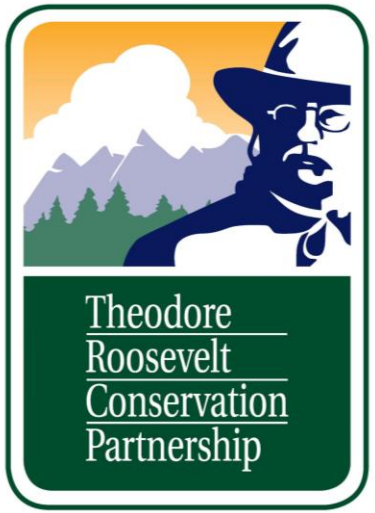
- Use best-available science to inform road and route standards on public lands.
- Maintain Seasonal Closures, Roadless Areas, TMAs & Oregon's Green-Dot restrictions.

Fix the most fixable mortality (

- Target wildlife-vehicle collision hotspots on key deer and elk ranges for crossings, fencing, and speed management
- This is the nexus of conservation and public safety.

Conserve and reconnect big landscapes

- Support mapping and formal recognition of migration corridors and stopovers
- Integrate those maps into BLM and USFS plans, travel management, and siting of energy and transmission projects



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