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Senate Interim Committee on Natural Resources & Wildfire

RE: Oregon's Ungulate Population and Its Related Impacts on Working Lands and Rural Landscapes Presentation

Chair Golden, Vice-Chair Nash, and members of the Committee,

The Theodore Roosevelt Conservation Partnership is a national, nonpartisan conservation organization working to guarantee all Americans quality places to hunt and fish by bringing sportsmen and women, land managers, and policymakers together to create durable conservation policy outcomes.

First, a primer on what these species need, and the challenges they face:

**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.

**Elk**

- Oregon still supports one of the largest elk populations in the Lower 48, with relatively stable numbers in some units and chronic underperformance in others, especially where security habitat and private land issues constrain distribution.
- Decades of work at Starkey Experimental Forest show that elk distribution and use of public land respond strongly to road density, open motorized use, and security cover, even where forage is abundant.

**Pronghorn**

- Pronghorn in Oregon are largely a rangeland and shrub-steppe story. Their key issues are:
    - Fragmentation by fences and roads

    - Degraded sagebrush and bunchgrass communities
    - Limited water and increasingly frequent large fires connected with invasive annual grasses

Across all three species, the common threads are **habitat quantity and quality, human disturbance, and connectivity.** Predation, disease, and hunter harvest matter, but they act on top of those foundations.

## Habitat quality, nutrition, and vegetation change

For all ungulates, **forage quality and quantity during the growing season** drive body condition, pregnancy rates, and overwinter survival. That is especially true for adult females, which are the engine of population growth.

### *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.

The upshot: simply "having trees" is not the same as having productive ungulate habitat. Where forests are locked in late-seral conditions, both deer and elk can be nutritionally limited even at low densities.

### *Rangelands and invasive annual grasses*

In eastern Oregon, the critical story is shrub-steppe and bunchgrass rangelands:

- Historic sagebrush systems burned at relatively long, patchy intervals and recovered slowly, providing a matrix 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

Once that conversion happens at scale, it can be difficult and expensive to reverse. For wintering mule deer and pronghorn, that is essentially a permanent loss of habitat function.

**Why nutrition ranks first:** Across ungulates, demographic analyses consistently show that adult female survival and pregnancy rates are highly sensitive to nutritional condition, which is in turn driven by habitat and forage.

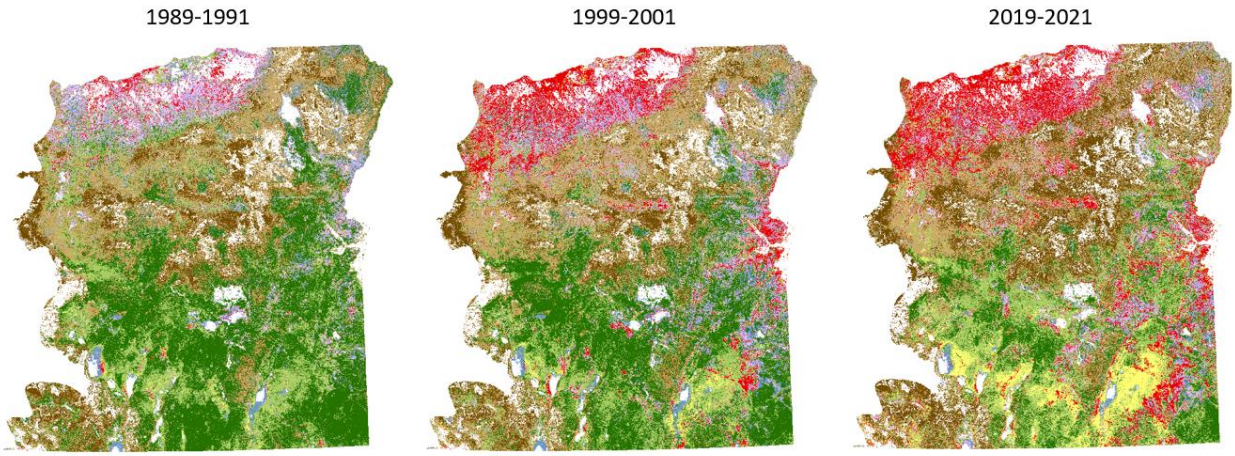
In other words: even if every predator vanished tomorrow, poor summer and winter range would still cap populations.

## Changing disturbance patterns, drought, and fire

- Earlier spring melt in some years
- Hotter, drier summers
- Longer and more intense fire seasons
- Multi-year droughts that bake out forage and dry up traditional water holes

For ungulates, these trends matter because they:

- Shorten the duration and quality of spring green-up, reducing the time animals can accumulate fat along migration routes
- Increase the frequency of large, high-severity fires in some forest types and shrub-steppe, which can erase decades of habitat in a single season and open the door for invasive grasses
- Reduce the reliability of surface water in already dry landscapes, pushing pronghorn and mule deer into tighter distributions around remaining water developments.




These are big, slow drivers that are hard to change directly, which is why it is even more important to get the local levers right: where we place treatments, how we design them, and how we protect the best remaining habitats.

## Disturbance, roads, and security

The second big lever is where ungulates are willing to spend time, especially during hunting seasons and severe weather.

**Elk:** Starkey Experimental Forest has been a productive laboratory for developing understanding of how elk respond to roads and disturbance:

- Elk strongly avoid open roads and daytime motorized traffic, even when those roads occupy only a small fraction of the landscape.
- When open road density is high, elk shift use onto private lands, steep cover, or nocturnal periods, reducing hunter opportunity and complicating damage issues.
- Classic elk security guidance emerging from Starkey and related work recommends that each analysis unit maintain at least 30 percent of the area in security blocks of 250 acres or larger, at least 0.5 mile from open motorized routes, with effective enforcement.

Oregon case studies such as the Dry Beaver and Ladd Canyon Travel Management Areas mirror this pattern: when managers reduce open routes during sensitive periods, elk spend more time on public ground and less on conflict-prone private lands.

**Mule deer and pronghorn:** For deer and pronghorn, disturbance plays out differently:

- Mule deer show strong fidelity to specific seasonal ranges and migration routes. Repeated disturbance in those key areas (energy development, off-road recreation, heavy traffic) can displace deer from preferred habitats and reduce effective carrying capacity.
- Pronghorn are less sensitive to cover and more sensitive to barriers. Fences that are not wildlife-friendly, high-speed highways, and dense human activity can fragment their already limited range.

## Connectivity, migration, and wildlife-vehicle collisions

Connectivity ties habitat and security together. For many Oregon herds, the ability to move between seasonal ranges is as important as the quality of any single patch.

**Migration and energy balance:** Work across the West has shown that migratory mule deer and elk "surf the green wave" of spring plant growth, gaining body fat as they move upslope.

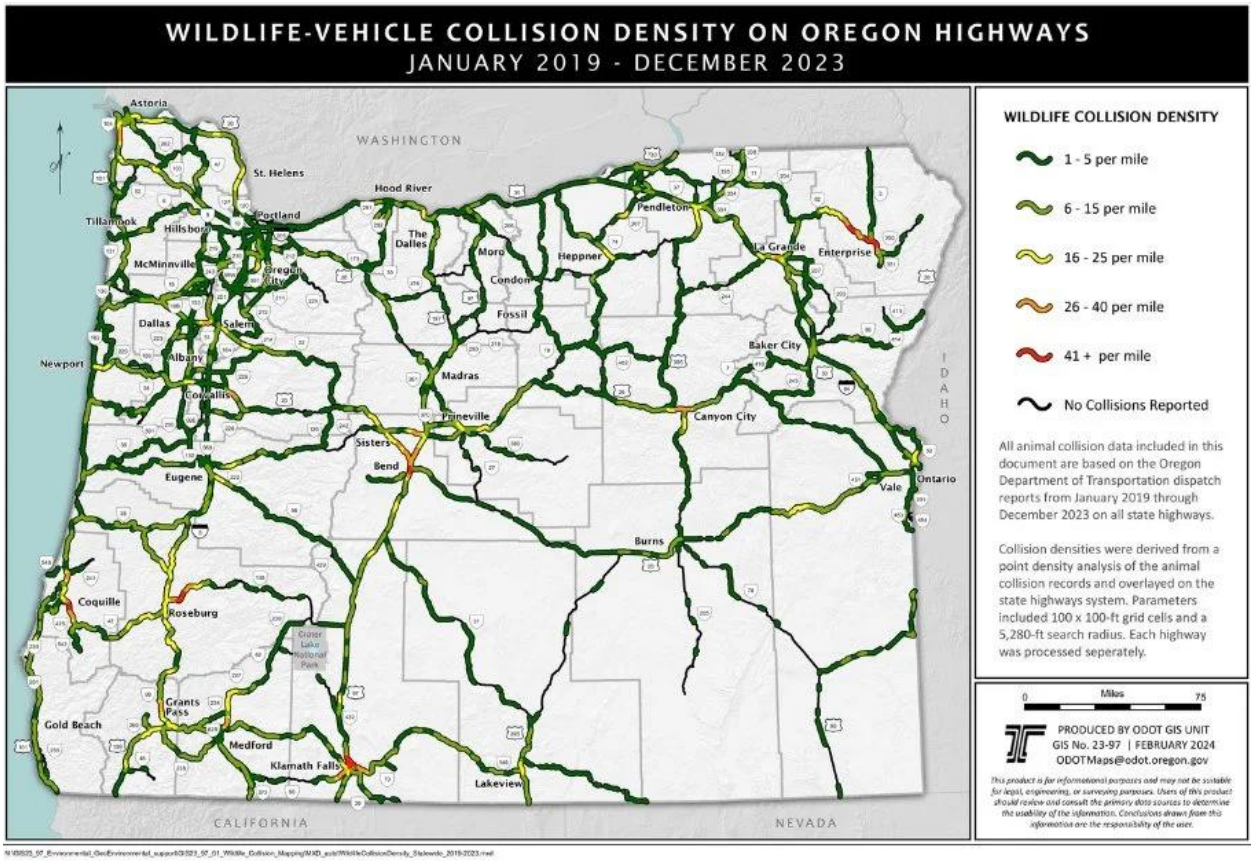
Interruptions to that movement can:

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

**Wildlife-vehicle collisions - the most fixable mortality source:** Highways intersecting winter range and migration corridors create a twofold problem:

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

For mule deer in particular, modern demographic syntheses show that adult female survival is the single most influential vital rate for population growth.




Small, sustained improvements in doe survival produce disproportionately large gains in lambda (population growth rate).

- Meta-analyses of ungulate demography show that a 3 to 5 percent increase in adult female survival is often enough to move a herd from shrinking to stable or modestly growing, all else equal.
- Crossing structures with effective fencing routinely reduce collisions with deer and elk by 80 to 90 percent and remain in place for many decades, making them one of the most durable conservation investments available.

For example; the Juntura and Devils Garden herd ranges, where highways intersect key routes ranges, vehicle mortality is quite high, represent high-leverage opportunities. Reducing a small, chronic trickle of adult female mortality in those bottlenecks can yield population-level gains that no feasible predator action can match.

## 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.
    - Over time this can shift plant communities away from the shrubs and forbs deer rely on.
- **Disease**
    - Chronic wasting disease is expanding in the West and has now been detected in multiple neighboring states. It is a long term, low-grade threat that interacts with density and movement patterns.
- **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 some situations, particularly when herds are below carrying capacity and habitat is adequate.
    - Where nutrition and habitat are limiting, predator removal alone has not produced sustained population rebounds.

So predation is real, but it is best understood as one piece in a system where habitat, disturbance, and connectivity still set the ceiling.

## Pulling it together: effective levers

1. **Secure, productive habitat first**
    a. Prioritize projects that create or maintain **early seral forage** in the right places
    b. Pair vegetation work with **security design** so animals can use it in daylight and during hunting seasons
2. **Treat travel management as habitat management**
    a. Use best-available science to inform road and route standards on public lands.
    b. Maintain Seasonal Closures, Roadless Areas, TMAs & Oregon's Green-Dot restrictions.
    c. Protect or expand units where at least **30 percent** of the land base meets elk security criteria (≥250 acre blocks, ≥0.5 mile from open motorized routes)
3. **Fix the most fixable mortality**
    a. Target wildlife-vehicle collision hotspots on key deer and elk ranges for crossings, fencing, and speed management

b. Emphasize that a 3–5 percent bump in adult doe or cow survival is enough to change the trajectory of many herds

4. **Conserve and reconnect big landscapes**
    a. Support mapping and formal recognition of migration corridors and stopovers
    b. Integrate those maps into BLM and USFS plans, travel management, and siting of energy and transmission projects

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