2021 Oregon Pronghorn Essential and Limited Habitat

This document summarizes the Oregon Department of Fish and Wildlife's (ODFW) criteria and rationale for identifying, categorizing, and mapping essential and limited pronghorn (*Antilocapra americana*) habitat in Oregon.

Content:

1. Overview

ODFW's mission includes managing wildlife populations at healthy and sustainable levels compatible with the primary uses of the land (ORS 496.012). However, ODFW has no direct authority to regulate land use and relies on recommendations to a variety of other federal, state, and county governments, and private landowners to address wildlife habitat needs and/or concerns.

The Oregon Fish and Wildlife Commission directs ODFW to make its habitat recommendations consistent with the ODFW Fish and Wildlife Habitat Mitigation Policy (Oregon Administrative Rules Chapter 635 Division 415; hereafter, Mitigation Policy). ODFW strives for consistency and transparency in its interpretation and implementation of the Mitigation Policy, and in some cases supplemental guidance documents such as this ODFW Pronghorn Essential and Limited Habitat White Paper become useful tools in that endeavor.

This document is similar to the ODFW Big Game Winter Range (BGWR) White Paper for Eastern Oregon (2013) as it provides guidance and support for ODFW's recommendations for avoiding, minimizing, and mitigating impacts to pronghorn essential habitat. However, it is different from the BGWR white paper in that the pronghorn essential and limited habitat is not limited to winter range. The areas identified as essential and limited pronghorn habitat can also include summer range, year-round range, and transitional/corridor habitats.

The essential and limited pronghorn habitats identified and described in this document do not encompass the entire range of pronghorn in Oregon. Rather it is the subset of pronghorn habitat which, if diminished in quality or quantity, would result in depletion of the species. Areas mapped include known migration corridors, high-quality sagebrush-steppe or grassland, and areas of high annual pronghorn concentration. These areas have unique functions and values to pronghorn that are much more limited in amount relative to the surrounding landscape, and therefore ODFW interprets the essential pronghorn habitat described and mapped in this guidance as meeting the habitat category 2 definition in the Mitigation Policy. This interpretation is more fully explained in Section 3, below.

While ODFW district wildlife biologists used the best available information to identify these areas for pronghorn, there are a couple caveats worth noting.

1. There may be site-specific cases where a district wildlife biologist may recommend deviation from the areas mapped as essential and limited pronghorn habitat, given the scale at which these areas were mapped, therefore ODFW always recommends site-specific consultation with district wildlife biologists at the project level.

2. The map presented in this guidance is subject to updates based on best available information, and users should be advised that mapped areas are likely to change pending the ongoing work of the Oregon Connectivity Assessment and Mapping Project (OCAMP) and as other information becomes available.
3. Areas not mapped as essential and limited pronghorn habitat may still play an important role for pronghorn habitat connectivity and seasonal use, likely meeting definitions for Habitat Category 3 or lower.

2. Pronghorn natural history and habitat use

Pronghorn are found only on the North American continent and occupy a unique position among Oregon's native wildlife species. Unlike deer and elk, pronghorn have no living relatives in the Old World (Europe and Asia), and they are not related to true antelope of Africa and India. Pronghorn are the fastest North American land animal. The high desert of eastern Oregon represents the western-most edge of their distribution.

Pronghorn rely on keen eyesight and speed to avoid predators. They select their habitat based on a combination of factors including long-distance sightability of predators, forage quantity, and adequate nutritional quality. In Oregon, pronghorn fill an ecological niche in low sagebrush-steppe habitats and grasslands with very low tree density. There are some herds on the eastern slope of the Cascades and southern Blue Mountains, however, that spend extended periods during summer in forested habitat. Late summer water shortages often restrict distribution as waterholes dry up and pronghorn gather at those that remain. In the late fall and early winter, pronghorn migrate to lower elevation ranges where snow depths are lower, and food is more readily available. Hard, crusty snow that persists for long periods can be devastating to pronghorn populations because the animals are unable to travel, and it is more difficult to forage. Movement to fawning grounds and higher summer ranges occurs as spring approaches. Areas with high forb diversity and abundance are preferred foraging sites for pronghorn to meet their nutritional needs, and sites experiencing re-growth of herbaceous cover will receive higher visitation by pronghorn due to the higher nutritional content of younger plant shoots.

Given pronghorn's reliance on sagebrush-steppe habitats in Oregon, they are subject to the same threats common to those habitat types. The total area of suitable pronghorn habitat throughout the west is estimated to be roughly 50% of their historic range, with declines driven by fencing, habitat loss, competition with livestock, and historic unregulated hunting that accompanied European settlement. Conservation efforts in the mid-20th century, such as the regulation of hunting, reduction in intensive livestock practices, and restoration of pronghorn back into historic range helped recover pronghorn populations back to sustainable levels. It was during this time that Oregon saw the establishment of Hart Mountain National Antelope Refuge in southeastern Lake County in 1936. However, the more modern threats of climate change, drought, non-native grass invasion and subsequent disruption of natural fire regimes, and habitat fragmentation due to land use change have further limited pronghorn habitat availability and connectivity in sagebrush habitat types.

Pronghorn populations in Oregon are partially migratory where some portion of the population migrates seasonally, and others remain year-round residents. Pronghorn are known have some of the longest migrations among North American ungulates and are sensitive to human-caused sources of habitat fragmentation with particular sensitivity to fences, but also roads, as well as residential and energy development. For example, studies in the Greater Yellowstone Area found that pronghorn migrations have been lost by 75% over the last decades from the cumulative impacts of habitat fragmentation. This

loss of habitat connectivity can disrupt pronghorn's ability to move and reach their overwintering grounds or fawning areas, and ultimately lead to population decline.

Pronghorn are a prized big game species for Oregon hunters, contributing significantly to rural economies in hunting-related travel expenses. Current pronghorn population estimates in Oregon are between 16,000 and 19,000 animals. Trends over the last decade indicate a relatively stable population, however the harsh winter of 2016-2017 did significantly impact populations in southeast Oregon. In Eastern Oregon, hunting makes up almost 10% of the tourist economy with an estimated annual travel and local expenditure of roughly $36 Million. Sustaining habitat for pronghorn translates into sustainable huntable populations, which further translates into sustainable travel-based economies for rural communities.

3. Designation of essential and limited pronghorn habitat as Habitat Category 2

The essential and limited pronghorn habitats identified and described in this document do not encompass the entire range of pronghorn in Oregon. Areas mapped by ODFW District Wildlife Biologists included known migration corridors, areas of high-quality sagebrush-steppe or grassland, and areas of high annual pronghorn concentration. Biologists considered the areas within their wildlife districts that had fewer barriers to pronghorn movement (fences, roads, residential and energy development), and areas with productive and diverse native vegetation cover within the sagebrush-steppe habitat type.

The central focus of the District Wildlife Biologists was to identify the areas **essentia**l to meeting pronghorn life history requirements and maintaining population sustainability: seasonal migration, overwinter survival, and fawn production and recruitment. These areas have unique functions and values to pronghorn that are much more **limited** in amount relative to the surrounding landscape. It is the subset of pronghorn habitat which, if diminished in quality or quantity, would result in depletion of the species. Therefore, ODFW considers the essential and limited pronghorn habitat mapped in this effort to meet the Category 2 Habitat definition of the Mitigation Policy.

The following habitat definitions from the Mitigation Policy were used to determine pronghorn essential and limited habitat identified in this effort warranted a category 2 classification:

> **Habitat**: The physical and biological conditions within the geographic range or occurrence of a species, extending over time, which affect the welfare of the species or any sub-population or members of the species.
>
> **Essential Habitat**: Any habitat condition or set of habitat conditions which, if diminished in quality or quantity, would result in depletion of a fish and wildlife species.
>
> **Limited Habitat**: An amount of habitat insufficient or barely sufficient to sustain fish and wildlife populations over time.

The implication of ODFW's determination of pronghorn essential and limited habitat as Habitat Category 2 is that ODFW will make its recommendations for avoidance, minimization, and mitigation of impacts in a manner consistent with goals of the Mitigation Policy. The Oregon Fish and Wildlife Commission directs ODFW to use the framework of this policy when implementing its own development actions, when permitting projects under its statutory authority, or when providing technical guidance or comments on development actions other than those taken by ODFW. This policy follows the standard

mitigation hierarchy of 1) avoid, 2) minimize, 3) mitigate impacts for fish and wildlife habitats that may result from development actions.

The mitigation goal for unavoidable impacts to Category 2 Habitat is no net loss of either habitat quantity or quality and to provide a net benefit of habitat quantity or quality. In the case of potential impacts to Category 2 Habitat, ODFW shall recommend or require (if authorized):

A) Avoidance of impacts through alternatives to the proposed development action; or
B) Mitigation of impacts if unavoidable, through reliable in-kind, in-proximity habitat mitigation to achieve no net loss of either pre-development habitat quantity or quality. In addition, a net benefit of habitat quantity or quality must be provided.

ODFW will recommend monitoring and reporting, and establishment of success criteria all set forth in a mitigation plan, and that mitigation measures be completed prior to or concurrent with the development action. If neither A) or B) above can be achieved, ODFW will recommend against or shall not authorize the development action. See OAR 635-415 for more information.

4. Identifying and mapping essential and limited pronghorn habitat

Mapping was performed by ODFW District Wildlife Biologists in the Fall of 2020. Using a combination of existing county Goal 5 maps, historic information, GPS- and radio-collar location data, aerial survey and field observation, biologists identified specific areas particularly essential for pronghorn movement and survival and limited in availability.

ODFW biologists hand-digitized essential pronghorn habitat within their districts using ArcMap, coordinating with neighboring districts to avoid uneven designations along district boundaries. Mapped information was then combined into a shapefile and assessed for quality by ODFW's GIS Program within the Management Resources Division in early 2021. The scale of the map used was 1:40,000 because this offered an intermediate resolution relative to perceivable boundaries such as roads, creeks, and ridgelines.

Each mapped polygon was classified in the following manner:

- *Habitat Type: What makes this habitat function as essential and important?*
  - *Winter range*
  - *Summer range*
  - *Year-round range*
  - *Migration corridor or transitional range*
  - *High-concentration area*
  - *Multiple and/or Other*

- *DataSource*: *What information did you use to inform your polygon drawing?*
  - *Existing County Goal 5 maps*
  - *Historic district maps*
  - *Population Survey Data Collar data*
  - *Current district knowledge*
  - *Multiple and/or Other*

- *Threats: What are the primary threats to pronghorn in this polygon?*
  - *Highways, roads, fences*

- *Urban development*
- *Agricultural development or conflict*
- *Energy development*
- *Habitat degradation (fire, annual grass, overgrazing, juniper expansion, etc.)*
- *Predator density*
- *Multiple and/or Other*

Note: The Oregon Conservation Strategy identifies 'Land Use Changes' and 'Barriers to Animal Movement' as two of its Key Conservation Issues threatening Oregon's species and habitats. To understand and mitigate barriers to wildlife movement in Oregon, ODFW and its partners have embarked on the Oregon Connectivity Assessment and Mapping Project (OCAMP). Pronghorn are one of the species stakeholders selected to represent habitat connectivity in shrub-steppe habitat types. Models of connectivity and recommendations are expected sometime in 2022-2023 and will likely replace or significantly modify the essential and limited pronghorn habitat maps included with this white paper. However, this product is still useful in the interim and represents our current best available information.

5. ODFW Essential and Limited Pronghorn Map

A pdf version of the ODFW Essential and Limited Pronghorn Map is attached to this white paper. The shapefile, KMZ, and a pdf version can also be found in the ODFW Data Clearinghouse at https://nrimp.dfw.state.or.us/DataClearinghouse/default.aspx?p=202&XMLname=42052.xml.

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