



STATE OF NEVADA

DEPARTMENT OF WILDLIFE

Game Division

6980 Sierra Center Parkway, Ste 120 • Reno, Nevada 89511
(775) 688-1500 Fax (775) 688-1987

MEMORANDUM

August 30, 2017

To: Nevada Board of Wildlife Commissioners, County Advisory Boards to Manage Wildlife, and Interested Publics

From: Brian Wakeling, Administrator, Game Division *BFW*

Title: Pronghorn Antelope Translocation

Description: A request for up to 200 pronghorn has been received by the Department from the Yakama and Colville Tribes in Washington. The Department will provide an update on the status of Nevada's pronghorn population and potential source herds for translocations. The Commission may approve the translocation requests for 2017 and 2018, as well as provide direction to the Department for fulfilling these requests.

Presenter: Game Division Administrator Brian F. Wakeling

Summary:

At the August Commission meeting, the Commission was provided with a briefing of the effects of wildfires on mule deer and pronghorn antelope in the Eastern Region. At that meeting, the Commission voted to endorse the Department's proposed emergency hunting seasons to reduce the abundance of the species during critical winter periods. The Department noted during that presentation that the possibility existed that pronghorn translocations could be implemented that would further alleviate crowding on burned winter ranges.

Since the August Commission meeting, the Department has been coordinating with two tribes in the state of Washington and the State of Washington in consideration of two requests for pronghorn from Nevada. On May 15, 2015, the Nevada Board of Wildlife Commissioners approved a request from the Colville Federated Tribes of Washington for up to 100 pronghorn. During the winter of 2015–2016, the Department was able to fulfill a request for about half of this request, and was unable to coordinate the second half during the winter of 2016–2017. In

coordination with the Colville Tribe, the potential exists that they may be able to accept up to 100 during the upcoming fall months.

Earlier this year, the Department received a request from the Yakama Tribe in Washington for up to 100 pronghorn with a status report regarding prior activities (attached). The Department's initial inclination was to delay fulfilling this request, but the wildfire conditions in the Eastern Region presented an opportunity to benefit both Nevada and Washington.

Recommendation:

The Department recommends that the Commission **VOTE TO APPROVE THE TRANSLOCATION OF UP TO 200 PRONGHORN TO THE COLVILLE FEDERATED TRIBES AND THE YAKAMA TRIBE IN WASHINGTON.**

Summary report
Pronghorn antelope abundance survey in south-central
Washington

March 16-17, 2017

Yakama Nation Wildlife

Washington Department of Fish and Wildlife



Photo by Mark Vekasy

Jared Oyster - Wildlife Biologist, WDFW

David Blodgett III – Wildlife Biologist, YNWP

Gabe Swan – Wildlife Biologist, YNWP

Rich Harris – Section Manager, WDFW

May 8, 2017

SUMMARY

By the start of the 20th century, pronghorn antelope had become extirpated from Washington. Ninety-nine pronghorns were reintroduced onto the Yakama Reservation, Washington in 2011; these pronghorns have since dispersed from their release locations and increased in abundance. We conducted aerial surveys on March 16-17, 2017 in Benton, Klickitat, and Yakima Counties in south-central Washington, both on the Yakama Reservation and off the Reservation. The objective of the survey was to obtain a minimum population estimate for pronghorn. We counted a total of 116 pronghorns during our aerial survey and an additional 5 from ground surveys, for a total minimum population estimate of 121 pronghorns. The true abundance is likely to be underestimated because small group sizes made detecting pronghorns difficult and they may reside in locations outside of our survey area. Despite the harsh winter of 2016-2017, there is little evidence that the pronghorn population has declined since 2015. Human-induced mortality must be kept low to protect this small population. The Yakama Nation and Washington Department of Fish and Wildlife (WDFW) consider that the population will require a few more years of growth before recreational harvest should be considered.

INTRODUCTION

Paleontological and archeological evidence indicates that pronghorn antelope (*Antilocapra americana*) were historically present in Washington (Lyman 2007), but were never abundant relative to other ungulates in the area (Lyman 2007). Pronghorn had become extirpated from Washington by the beginning of the 20th century (Taylor and Shaw 1929). In the winter of 2011, 99 pronghorns were translocated onto the Yakama Reservation from central Nevada (Yakama Nation [<https://www.ynwildlife.org/pronghorn.php>]). Since the release,

pronghorn have dispersed off of the Yakama Reservation (Swan 2011) and have grown slightly in abundance (Oyster et al. 2015). The first survey of pronghorn in south-central Washington since the 2011 reintroduction was conducted in 2015 (Oyster et al. 2015). That survey estimated a total minimum of 132 pronghorns (71 on the reservation and 61 off the reservation), suggesting an estimated growth rate of 7.5% per year. The pronghorns had spread south into Klickitat and Benton counties, Washington. The objective of the 2017 pronghorn survey was to reassess the status of the population and to provide information on how to guide management of pronghorn in the future.

STUDY AREA

Our survey was conducted in portions of Benton, Klickitat, and Yakima counties in southcentral Washington (Fig. 1). The dominant habitat types are a mix of croplands (primarily winter wheat and crops with center pivot irrigation), Conservation Reserve Program (CRP) land, grazed rangeland, and shrub-steppe communities. In the central Basin of Washington, the winter of 2016-2017 was the coldest in over 30 years, with above average snowfall (NOAA 2017).



Figure1. The survey area (red) including portions of Benton, Klickitat, and Yakima counties.

METHODS

We used a strip transect method, flying parallel transects in a north-south direction (Fig. 2). Transects were established prior to the survey in ArcGIS 10.1 (Environmental Systems Research Institute, Inc., Redlands, CA). Transects were spaced at 1.6 km apart on the Yakama Reservation, 2 km apart in Klickitat/Yakima Counties, and 3 km apart in Benton County. Transects with shorter spacing were selected based on higher perceived pronghorn abundance in

that area, and because terrain and vegetation in Yakima County (uneven, characterized by shrubs) made it more difficult to detect pronghorn than the typically flat terrain with agricultural fields in Benton County.

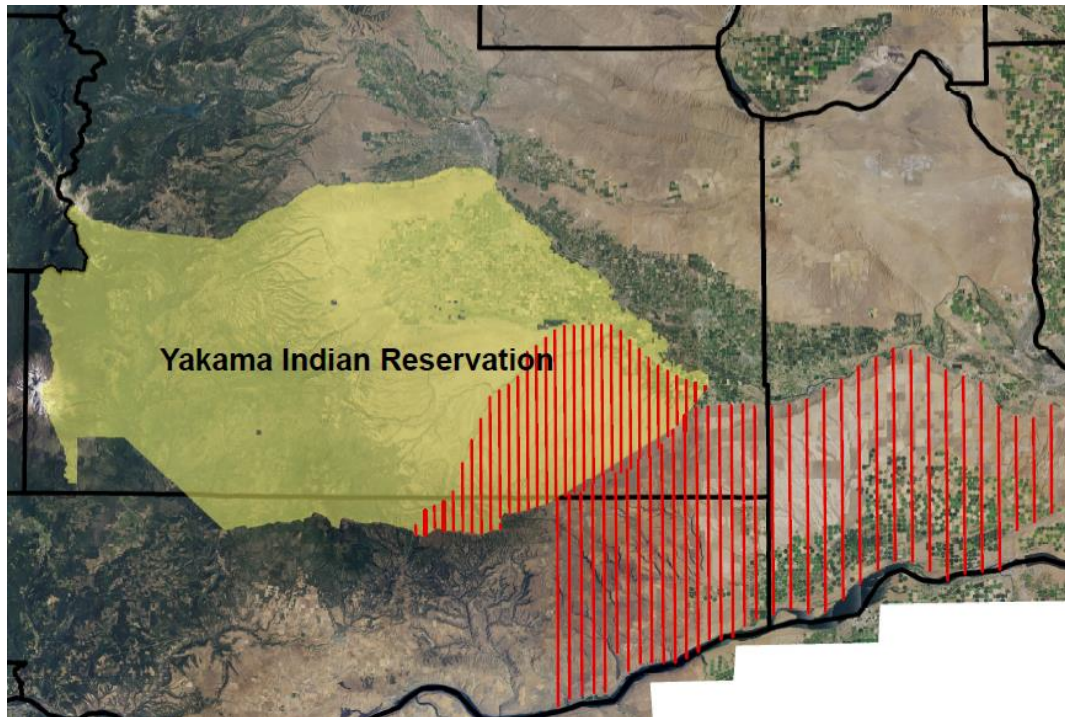


Figure 2. Transects (red) flown in search of pronghorn, March 16-17, 2017.

We conducted aerial surveys in a Cessna 182 fixed-wing aircraft at an approximate speed of 80—90 knots and at 100—150 meters above ground level. A ground survey crew, conducted by the Safari Club International (SCI), was actively searching for pronghorn concurrently with the aerial survey. When the ground crew detected a pronghorn group, they relayed the location to the aerial crew. The aerial crew then obtained a second count of that group from the plane to ensure a full count. We had 3 observers positioned in the plane: the front right, back right, back left; the pilot was seated in the front left. The main duty of the pilot was flight safety and remaining near the transect line; however, we included any pronghorns he detected in our count as well.

We began our survey at the western-most transect in Klickitat County and continued

west through all the transects in Benton County. The transects over the Yakama Reservation were flown last. When we observed a pronghorn group we left the transect and recorded: (1) a waypoint, (2) the total number of pronghorns, (3) the number of distinguishable bucks, (4) any pronghorns with collars or ear tags, (5) the observer that detected the pronghorns, (6) pronghorn activity (e.g. standing, bedded etc.), and (7) habitat type (crop, Conservation Reserve Program lands, or range). Bucks, does, and fawns are not as easily distinguished during the winter as other times of year. Nevertheless, we documented the number of bucks we were confident in identifying within each group. We surveyed for about 6 hours in Klickitat/Yakima County, 4.5 hours in Benton County, and 3.5 hours over the Yakama Reservation. We also recorded the number of coyotes (*Canis latrans*) detected during the survey. Surveys were conducted March 16-17, 2017.

RESULTS

We detected 19 pronghorn groups, a total of 116 animals, 44 of which were on the Yakama Reservation, 72 of which were south and/or south-east of the Reservation. One additional group of 5 pronghorns was observed from the ground, outside of the surveyed area (west of US Highway 97). Combining this ground observation with those from the aerial surveys results in a minimum count of 121 pronghorns. Twenty-two (20%) pronghorns were classified as bucks. Of the 12 aerial detections southeast of the Reservation, 7 were in non-irrigated cropland, and 5 were in rangelands. All detections on the Reservation were in rangelands.

Mean group size was 6.1; group sizes varied from 1 to 16. We did not identify any pronghorn wearing collars or eartags. We counted a total of 37 coyotes during the survey: 18 in the Klickitat/Yakima County portion, 15 in Benton County, and 4 on the Yakama Reservation.

MANAGEMENT IMPLICATIONS

Pronghorn form large groups during winter months. When temperatures warm and new vegetation begins growing, pronghorn split up into smaller groups (O’Gara and Yoakum 2004, Bernt 1976). We had planned surveys several times beginning in late January, but were never able to conduct them do to unsafe flying conditions. Smaller pronghorn group sizes, typical of our mid-March timing, have a lower detection probability than larger groups (Fig. 3; Oyster 2014).

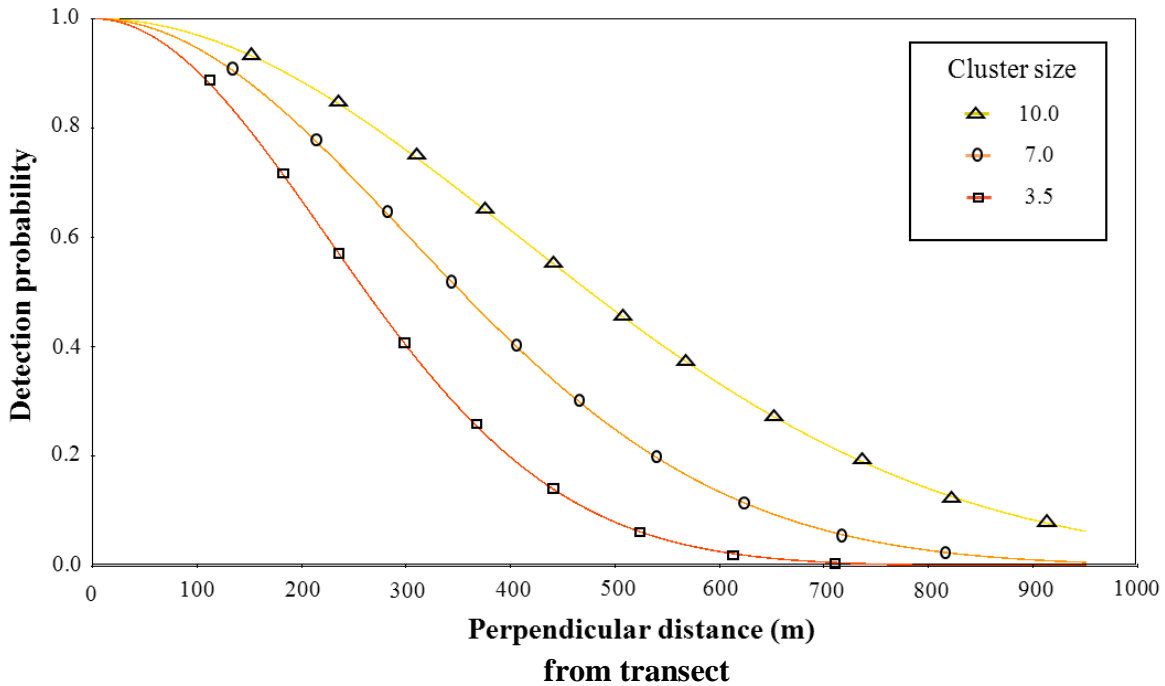


Figure 3. Adapted from Oyster (2014). Detection function curves for 3 different pronghorn group sizes in western Kansas, summer 2012.

Thus, our overall count may be lower than what it could have been if the survey had been conducted earlier, in mid-winter, when pronghorn groups are typically larger. Ideally, future pronghorn surveys should be conducted in December or January. Pronghorns also may have been missed if located in areas outside our survey area. Despite these potential negative biases, we detected 10 more pronghorns (9% more) than we had during our 2015 aerial survey.

Additionally, although we benefited from ground crews during survey reported here, ground-

based effort was lower than those that augmented our aerial survey in 2015 (in part, because the 2017 survey was scheduled in haste due to weather complications, when many from the ground crew were busy at other events). Lower levels of concurrent survey effort from ground crews and from public sightings may have contributed to a negative bias. Despite the harsh winter of 2016-2017, there is little evidence that the pronghorn population in this part of Washington State has decreased since the last survey in 2015.

Does and fawns are not easily distinguished during this time of year because fawns are nearly full-grown. Yearling bucks are also difficult to distinguish from does and fawns because their horns (~ 7 inches) are only about as long as their ears (5-6 inches), and their dark cheek patches are only about 50% the size they attain during the pre-rut and rut (O’Gara and Yoakum 2004). Therefore, buck:doe ratios from our survey are likely underestimated and should be considered cautiously.

Coyotes can be effective predators of pronghorn adults (Bright and Hervert 2005) and fawns (Gregg et al. 2001). High coyote densities have been shown to have a direct impact on fawn survival (Berger et al. 2008). If there is a high coyote density relative to pronghorn density, they could effectively limit population growth by consuming a large proportion of pronghorn fawns every year (Holling 1965, Berger et al. 2008, Gregg et al. 2001)). For example, coyotes killed 72% (75 of 104) of collared fawns in south-central Oregon (Gregg et al. 2001) Although we saw more coyotes in 2017 than we did in 2015, this should not be interpreted that coyote densities were definitively higher in 2017, because we did not make a concerted effort to record all coyote sightings in 2015. In 2015, we began to record coyote sightings as an afterthought after a few groups were seen. Furthermore, the pilot in 2017 was an avid and experienced coyote hunter and he detected many of the coyotes.

Contacts made by the SCI ground crew with local landowners indicated that the majority of landowners viewed pronghorn favorably. However, there are some landowners that are still intolerant of having pronghorns on the landscape. For pronghorns to become self-sustaining and secure, it will be important to assure that human-induced mortality (e.g., from poaching or poor fence construction) remains low, and that any conflicts with agricultural use are minimized so as to maintain landowner acceptance. Both the Yakama Nation and WDFW consider that the population will require at least a few more years of growth before recreational harvest should be considered. Although recent surveys from Yakama Nation biologists indicate that the feral horse (*Equus caballus*) population has declined during the last few years, there is still likely competition between horses and pronghorns. Although horses and pronghorn do not overlap substantially in diet, indirect impacts likely exist (Gooch et al. 2017). Potential conflicts between pronghorns and feral horses should be investigated and described. If possible, it would also be desirable to assess genetic diversity in this herd to help understand the usefulness of additional transplants (Stephen et al. 2005)

ACKNOWLEDGMENTS

We thank Baker Aircraft and Wayne Bailey for safe and effective flying. Jason Fidorra and Stefanie Bergh (WDFW) were effective observers during the aerial survey. Stefanie also helped coordinate available aircraft vendors. We are grateful to Paul Whelan (WDFW) for flight-following during the survey. We thank SCI for coordinating ground surveys to locate pronghorn and making connections with local landowners. We especially thank SCI members Deb Barrett and Joe Greenhaw for coordinating ground surveys. We also offer thanks to Jim Stephenson, former big game biologist of the Yakama Tribe, who in coordination with the Yakama Nation Wildlife Department, Department of Natural Resources, SCI, and the Yakama Nation, as a

whole made the pronghorn antelope reintroduction project possible.

LITERATURE CITED

Berger, K.M., E.M. Gese, and J. Berger 2008. Indirect effects and traditional trophic cascades: A test involving wolves, coyotes, and pronghorn. *Ecology* 89: 818 – 828

Bernt, W.C. 1976 Observations on a pronghorn antelope winter range. M.S. thesis. Idaho State University. Pocatello, ID.

Bright, J.L. and J.J. Hervert. 2005. Adult and fawn mortality of Sonoran pronghorn. *Wildlife Society Bulletin* 33: 43 – 50.

Gooch, A.J., S.L. Petersen, G.H. Collins, T.S. Smith, B. McMillan, and D.L. Eggett. 2017. The impacts of feral horses on the use of water by pronghorn in the Great Basin. *Journal of Arid Environments* 138:38-43.

Gregg, M.A., Bray, M., Kilbride, K.M., Dunbar, M.R. (2001) Birth synchrony and survival of pronghorn fawns. *Journal of Wildlife Management* 65: 19 - 24.

Holling, C.S. 1965. The functional response of predators to prey density and its role in mimicry and population regulation. *Memoirs of the Entomological Society of Canada* 45: 3 – 60.

Lyman, R.L. 2007. The Holocene history of pronghorn (*Antilocapra americana*) in eastern Washington State. *Northwest Science* 81: 104 – 111.

NOAA National Centers for Environmental information, Climate at a Glance: U.S. Time Series, Minimum Temperature, published March 2017, retrieved on March 23, 2017 from <http://www.ncdc.noaa.gov/cag/>

O’Gara, B. W., and J. D. Yoakum. 2004. Pronghorn ecology and management. Wildlife Management Institute, Washington, D.C., USA.

Oyster, J. H. 2014. Distance Sampling as a technique to monitor pronghorn in Kansas. Thesis,

Fort Hays State University, Hays, Kansas, USA.

Oyster, J., Blodgett III, D., Swan, G., Harris, R. 2015. Pronghorn antelope abundance survey in south-central Washington. Yakama Nation Wildlife and Washington Department of Fish and Wildlife. Unpublished report.

Stephen, C.L., D. G. Whittaker, D. Gillis, L. L. Cox, and O. E. Rhodes, Jr. 2005. Genetic consequences of reintroductions: An example from Oregon pronghorn antelope (*Antilocapra americana*). *Journal of Wildlife Management* 69: 1463-1474.

Swan, G.W. 2011. Pronghorn antelope field survey. Preliminary survey report for 2011. Yakama Nation Wildlife. Unpublished report.

Taylor, W.P. and W.T. Shaw. 1929. Provisional list of land mammals of the state of Washington. *Occasional Papers of the Charles R. Conner Museum* 2. Washington State University, Pullman. 32 pp.