



USING HELICOPTERS AND NETGUNS, 200 pronghorn were translocated to the Trans-Pecos.

The Pronghorn Predicament: A Research Update

Article and Photos by

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The plight of the pronghorn herds of the Trans-Pecos has been well documented in previous issues of *Texas Wildlife* and other news and media outlets across the state and nation. Their numbers have plummeted from over 17,000 to less than 4,000 in 2011. The Borderlands Research Institute, along with Texas Parks and Wildlife Department, the Trans-Pecos Pronghorn Working Group, conservation organizations and concerned citizens across the state have joined forces to help identify causes for their decline and help reverse their downward trend. Herein, we provide a brief report on the status of our research and restoration efforts.

PRONGHORN AND DISEASES

One of our leading hypotheses regarding the decline of pronghorn includes the presence of diseases or parasites. During a pronghorn die-off in the summer of 2009, we identified unprecedented parasite loads of barber pole worms (*Haemonchus spp.*) from several pronghorn that we were able to necropsy. To better understand the role diseases and parasites have in pronghorn survival, we initiated a thorough investigation.

In the fall of 2009, 2010, and 2011, we collected samples of hunter-harvested pronghorn to evaluate parasite loads, as well as the occurrence of blue tongue, epizootic hemorrhagic disease, and copper

and selenium levels. We obtained 102, 95, and 41 pronghorn samples in 2009, 2010, and 2011, respectively. Over 95 percent of the pronghorn evaluated in our study had *Haemonchus* in their abomasum. Some parasite loads exceeded 4,000 individual worms. The herd units in the Marfa Plateau had the highest parasite loads in the Trans-Pecos; they also had the lowest fawn production during this time.

Although *Haemonchus* have been documented in pronghorn prior to our findings, infestations of this magnitude have not been reported previously. The high levels of parasites can have detrimental impacts on pronghorn survival. Infested pronghorn can become anemic and weak, mak-



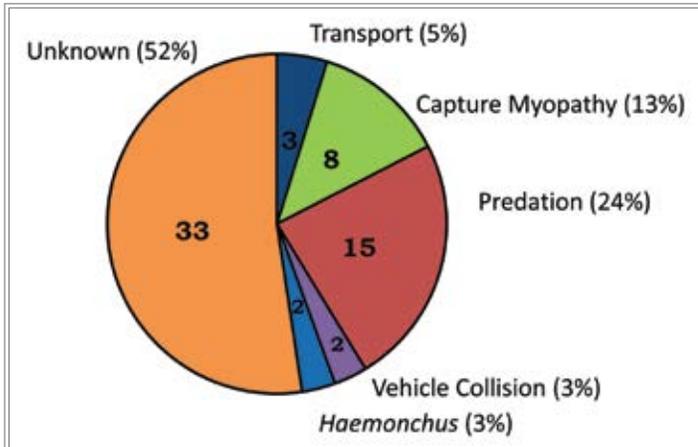
ing them more susceptible to predation and other mortality factors. Most recently, our collaborators suggest that the strain of *Haemonchus* does not appear to be from livestock and that it may be a new strain specific to pronghorn, desert environments, or both.

incidence for twinning (approximately 98 percent), including yearling does, on a high nutritional plane.

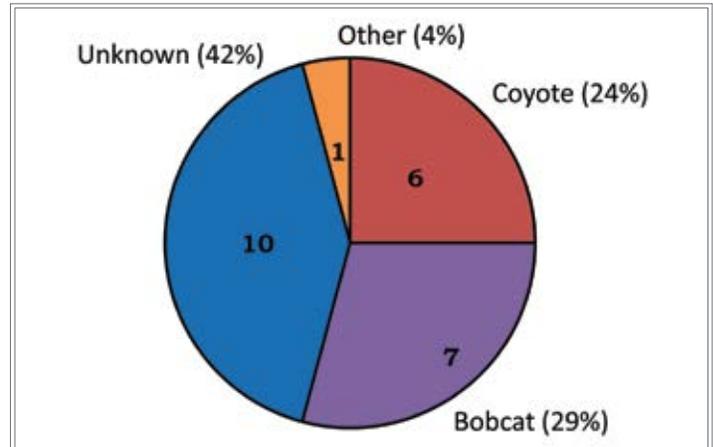
Since 2008, annual pronghorn surveys have revealed exceptionally low fawn recruitment. In fact, most of the Trans-Pecos experienced fawn recruitment of less than

we captured and radioed 26 neonate fawns over four study sites throughout the Trans-Pecos region. Results can be found in the pie graph below.

One of the more alarming statistics we documented was the extremely low body weights of fawns. The abnormally low body



CAUSES OF MORTALITY for translocated pronghorn in Trans-Pecos, Texas. The extended drought wreaked havoc on pronghorn survival.



CAUSES OF MORTALITY for pronghorn fawns monitored in the Trans-Pecos, 2011.

FAWN SURVIVAL

For wildlife populations to sustain or grow, births must exceed population deaths. Thus, for pronghorn populations suffering from a region-wide decline, pronghorn recruitment is paramount to population recovery. Fortunately, pronghorn have the reproductive potential to recover from catastrophes, given that adult does have high

10 percent for two consecutive years in 2010 and 2011. These low fawn crops are a major contributing factor to the overall pronghorn decline in the Trans-Pecos. To address fawn recruitment in the Trans-Pecos, we initiated a fawn survival study. Fawns were captured prior to two weeks of age using hoop-nets and spotlights at night, radioed and monitored from afar. In 2011,

weights suggest that the nutrition of fawns was compromised. We speculate that the drought conditions experienced in 2011 depleted the nutritional reserves of pregnant does during their last trimester of pregnancy and during lactation following parturition. The nutritional condition of pronghorn was further jeopardized by high concentrations of *Haemonchus*. Fawn production across the Trans-Pecos was consistent with our malnutrition hypothesis in that many pregnant does were documented, but few fawns survived to 3 months of age.



NEONATE PRONGHORN FAWNS were captured and outfitted with radiocollars to monitor survival.

RESTORATION AND SURVIVAL

Translocating pronghorn has been a common management technique to improve and sustain pronghorn populations in Texas and North America. In fact, since the 1930s, almost 6,000 pronghorn have been translocated across Texas. Because of the severity of the declining pronghorn population, we initiated efforts to supplement existing pronghorn herds in the Trans-Pecos from a surplus of pronghorn in the Panhandle, where pronghorn were depredate agricultural crops. Working with landowners in the Panhandle and Trans-Pecos, we coordinated one of the largest translocations in the state.



In February 2011, we captured 200 and released 194 pronghorn (176 F, 18 M) to five release sites in the Marfa Plateau. Because previous studies had not documented translocation success, and we anticipated subsequent translocations, we took the opportunity to monitor site-fidelity, movements, survival, and fawn production of the translocated pronghorn. To monitor mortality and investigate limiting factors affecting their survivability, 80 (40 percent) pronghorn were equipped with radiocollars (62 F, 18 M).

During the first eight weeks following release, we documented 26 mortalities primarily from capture myopathy and predation. Food resources started to become more scarce as temperatures began to climb, and the body condition of the translocated pronghorn started showing signs of malnutrition. We documented an additional 38 mortalities from April-July that were a combination of predation, Haemonchosis, vehicle collisions, and unknown causes. In late July, the rains returned to portions of the Trans-Pecos, stimulating forb growth. Mortalities waned, but the fawn production was nonexistent.

To date, we recorded 63 mortalities of the 80 radio-collared pronghorn (82 percent). Various natural and climatic events had dramatic impacts on our efforts to restore pronghorn, including record setting freezes, drought, heat, and wildfires.

It appears that younger pronghorn were more adaptable to the harsh conditions that prevailed following the release. Despite the outcomes of the translocated pronghorn, translocations will continue to serve as a vital tool in sustaining and recovering pronghorn populations in the future.

MOVEMENTS

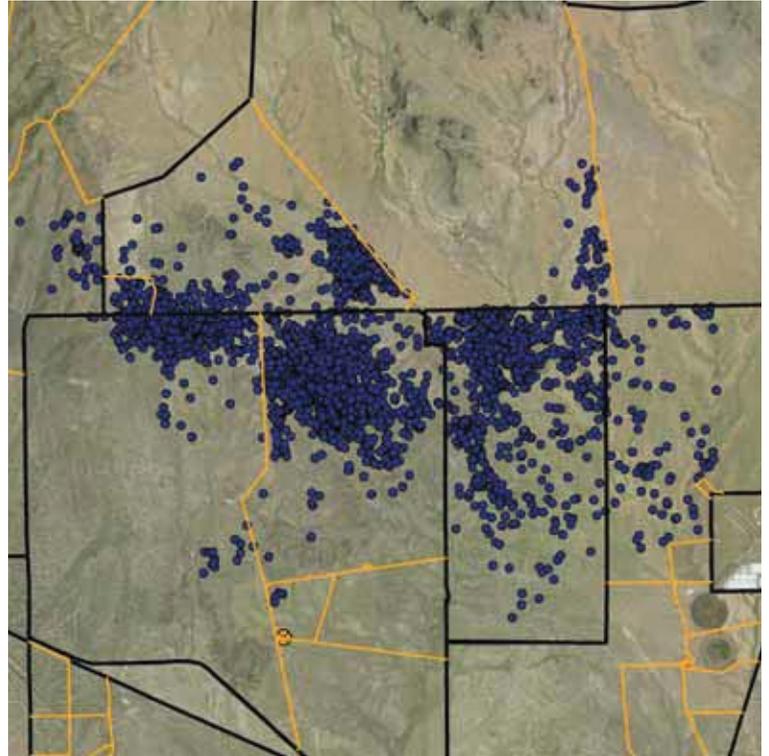
We also assessed the behaviors and movements of translocated pronghorn by

equipping 28 (15 F, 13 M) pronghorn with GPS radiocollars. GPS radiocollars were designed to obtain 1 location/hr with a 300-day battery life.

Mean distances of locations in relation to the initial release site were measured for dispersal. Within 24 hours of release, pronghorn dispersed from 3.6-10 mi. As time progressed, mean distances gradually decreased. The differences in these values suggest habitat and resource availability, fences, resident pronghorn, and other factors influenced the degree of site fidelity exhibited.

Pronghorn also used exceptionally large areas. On average, pronghorn home ranges were 9,521 acres. Range use areas generally decreased from month-to-month. Translocated pronghorn selected areas of disturbance or low-lying areas (e.g., swales and draws) that contained deeper, moister soils with higher forb availability. Scatter plots of radioed pronghorn also revealed some interesting data. Movement patterns were much larger than anticipated, and many pronghorn were not able to navigate the existing fences. We speculate that the extensive fencing system may have

contributed to the death of several pronghorn. In fact, during a severe drought in the 1960s, net-wire fences in the Trans-Pecos prevented a pronghorn herd from moving into areas with available forage. That population subsequently experienced a 60 percent die off due to malnutrition.



NET-WIRE FENCING impaired the movements of translocated pronghorn.

THE FUTURE OF PRONGHORN

The Borderlands Research Institute, Texas Parks and Wildlife Department, and Trans-Pecos Pronghorn Working Group are dedicated to restoring pronghorn to their former habitats. We will continue our investigations into the pronghorn decline and will resume restoration efforts once the drought breaks. 🌱

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