



Deer Associates eNews

News from the Deer Research Program at the Caesar Kleberg Wildlife Research Institute

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How Deer Respond to Fire: A Hot Case at the Chaparral WMA

By John Lewis and David Synatzske

In March 2008 a catastrophic fire burned 95% of the 15,200-acre Chaparral WMA southwest of San Antonio. This created the perfect opportunity to study the effect of wildfire on white-tailed deer food habits and body condition. Because of the scale of the fire and the dry spring conditions, there was concern that deer may not be able to achieve a diet of sufficient quality to maintain body condition and support pregnancy.

Our objectives were to identify what foods are important after a large range fire, determine the relative importance of each of those foods, and monitor body condition and pregnancy of deer remaining after the fire.

We harvested 4 - 5 deer every two weeks from April 9th - June 20th for a total of 28 deer. We measured kidney and rump fat as indices of nutritional condition and recorded number, size, and sex of fetuses from does to ascertain reproductive quality. We also collected rumen contents to determine which foods were important to deer after a large-scale fire.

Results

- Kidney fat index averaged 19%, ranged from 4 - 41%, and did not decline significantly post-fire.
- Rump fat averaged 1.4 mm and also did not decrease as result of the fire.
- 16 of 23 does harvested carried twins, 1 carried triplets, and 6 carried singletons; no doe showed evidence of unhealthy fetuses.
- Deer relied heavily on cactus and emergent grasses shortly after the fire and switched to more palatable forbs, browse, and mast as the habitat recovered from the fire (Figure).

Take Home Message

White-tailed deer are resilient opportunists, and this study indicates deer were able to maintain body condition and pregnancy after a large-scale fire. Rainfall during April augmented soil moisture and probably decreased the time required for the habitat to recover from the fire.

Deer may have been unable to maintain body condition as well as they did if there had not been 2 inches of rain 6 weeks after the fire or if cactus or other succulents were unavailable.

About the Authors:

John Lewis is a Ph.D. Student at Caesar Kleberg Wildlife Research Institute, Texas A&M University-Kingsville. Under the guidance of Dr. David Hewitt, John is studying the factors that influence antler size in free-ranging white-tailed deer.

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*Images courtesy of Texas Parks & Wildlife Department,
Chaparral Wildlife Management Area Staff*