February 2011

Are deer more or less active during drought?

by Tim Fulbright and Dean Wiemers

Food availability for deer in south Texas is literally feast or famine. Wet years result in a tremendous flush of groceries; whereas, plant leaves, twigs, and fruits are in scant supply during drought. Deer are faced with a dilemma during periods of scarce food supply. Lying under a bush and spending relatively brief periods of time searching for food may allow deer to burn less energy. Moving around trying to find something to eat during the day not only burns calories from exercise, but exposure to the hot south Texas sun increases their heat rate, causing them to burn even more energy.Further, ingesting poor quality foods such as dry leaves slows digestion. Restricting movement during times when food is scarce might help deer to conserve fat reserves accumulated when conditions were better. Grazers in Africa such as blesbok utilize the strategy of reducing foraging activity during the dry season to cope with low forage nutritional quality.

Other African herbivores, such as impala and springbok, do the opposite. They increase activity during times when forage is in short supply, and concentrate more on eating browse from woody plants than they do when times are good. White-tailed deer diets are more similar to impala and springbok than to blesbok because white-tails eat little grass. Thus, it makes sense to predict that they too would increase feeding activity during drought, a prediction supported by recent research on the King Ranch.

We placed GPS collars on 14 adult bucks on the King Ranch during 2008 and 2009 and monitored their movements during the summer. One of the worst droughts south Texas has experienced occurred during 2009. The Palmer Drought Severity Index was at its most severe levels from January through September in 2009. Drought prevailed during 2008 as well, but was not as severe as in 2009. Forb standing crop was 218% greater during summer 2008 than in summer 2009, and browse standing crop was 19% greater in 2008.

Sign Up Now!

If you received this email from a friend, [click here]
to sign up for the Deer Associates eNews!

Register Today

2011 Deer Associates Meeting
Thursday, March 3, 2011
10:00 a.m. to 2:00 p.m.
(lunch included)
Hyatt Hill Country Resort
San Antonio, TX

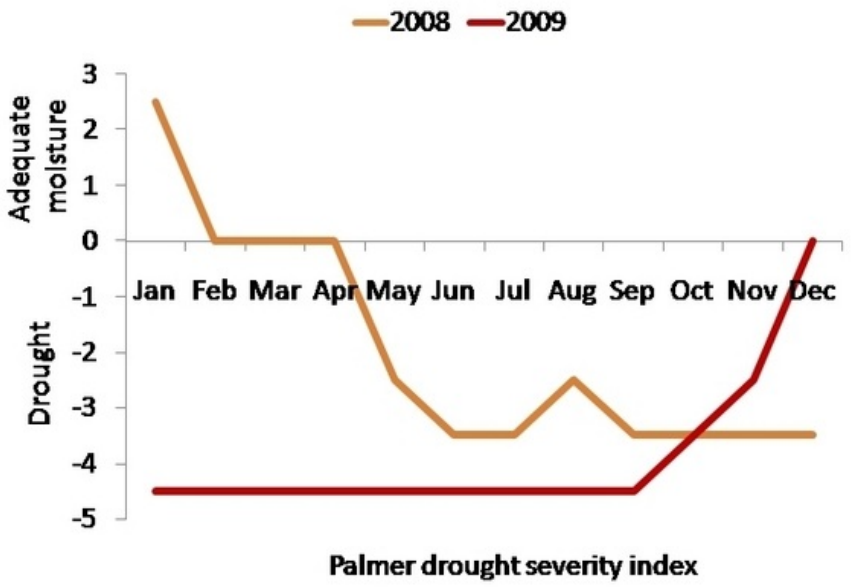
Register

Tenative Agenda

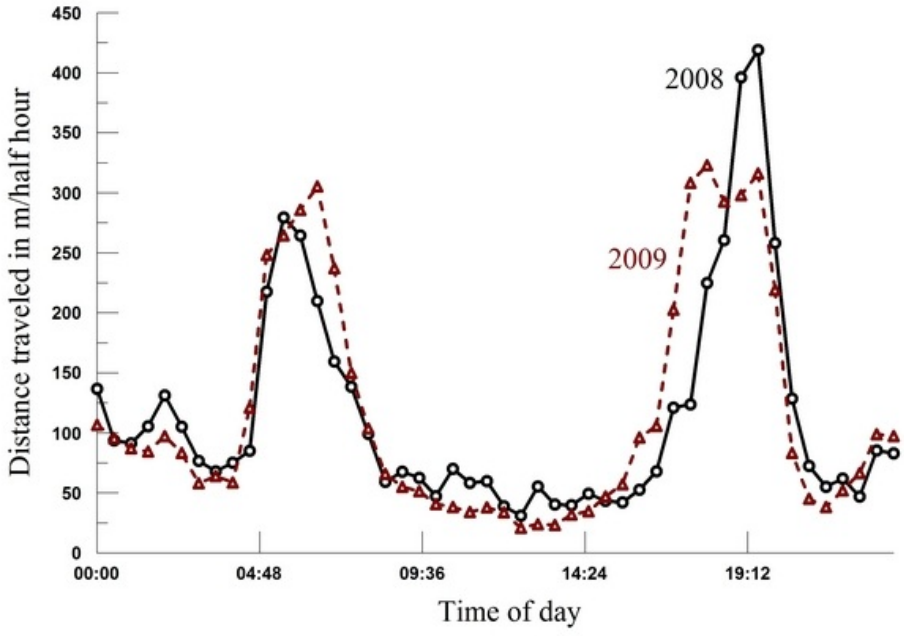
Accuracy of Aging Deer
Dr. Mickey Hellickson

Field Tests fo Culling to Improve Antler Size
Dr. Charles DeYoung and Donnie Draeger

Applying the Bell Curve in Antler Size to Deer Management
Stuart Stedman



During the summer 2009 drought, deer became active at about the same time in the morning as in 2008, but maintained a higher level of activity, based on distances traveled, later into the morning. They also got out of their midday beds and started foraging earlier in the afternoon during 2009. They walked around foraging for a longer period of time during the severe drought, but did not travel as far during the peak of activity as they did during 2008.



Most likely, deer spent more time foraging during severe drought simply because it took them longer to secure enough food to meet dietary needs than it does when more food is available. Although they spent more time foraging, they tended to not travel as far to obtain food, particularly in the afternoon and evening. Possibly, they restricted the distance they traveled in the evening to reduce energy expenditure, which would be greater in the afternoon heat than in the relative cool of the morning. Thus, white-tailed deer in the torrid environment of south Texas appear to employ a mixture of strategies to minimize energy loss while maximizing energy gain.

Deer have to make certain tradeoffs to spend more time searching for food during drought. Active deer are at greater risk of predation. Furthermore, coyotes and bobcats may be more inclined to pursue deer during drought because populations of rodents may be low. Restricting foraging activity to nighttime exacerbates the risk of predation. Walking around in the morning and evening during summer droughts increases heat loads, raises heart rates, and increases the amount of energy expended in searching for food. If energy gained by eating does not compensate for the energy burned during foraging, digestion, and body maintenance resulting from greater activity, deer begin to use fat reserves to support metabolism. If that process continues too long, starvation will ensue.

In conclusion, the strategy used by white-tailed deer to deal with diminished forage availability during drought appears to be similar to the strategies employed by other small ruminants in other ecosystems. Managing habitats to ensure availability of drought hardy woody plants to provide browse is important to allow deer to deal with droughts, which are always just around the corner in south Texas!

Visit our Website

http://ckwri.tamuk.edu/research-programs/deer-research-program/

Contact Us

David G. Hewitt
Stuart W. Stedman Chair in White-tailed Deer Research

Texas A&M University-Kingsville
Caesar Kleberg Wildlife Research Institute
700 University Blvd., MSC 218
Kingsville, Texas 78363
361-593-3963
david.hewitt@tamuk.edu

About the Authors: Dr. Tim Fulbright is the Meadows Professor in Semiarid Land Ecology and Research Scientist with Caesar Kleberg Wildlife Research Institute. Dean Wiemers is a graduate student working on his doctoral research under Dr. Fulbright.

Forward this message to a friend