



Habitat relationships of mule deer; what drives deer distribution?

L. Bender, J. Boren, H. Halbritter, & S. Cox

New Mexico Cooperative Fish and Wildlife Research Unit, Cooperative Extension Service, & Corona Range and Livestock Research Center



Mule deer distribution and landscape greenness: a relationship?

Deer distribution mapping

Methods

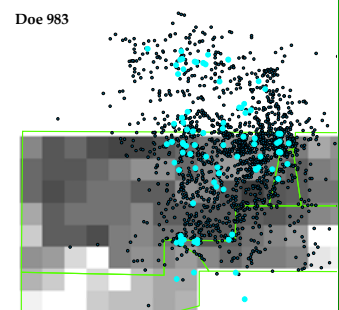
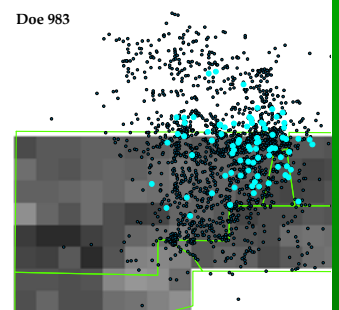
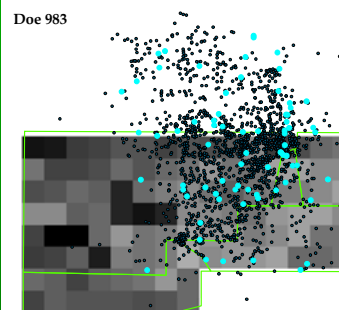
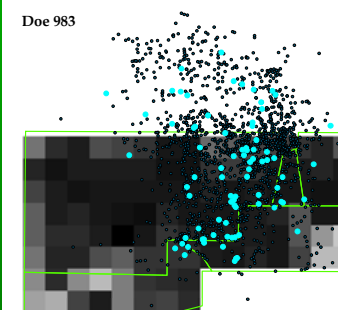
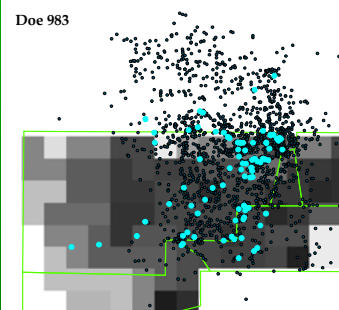
- Capture & radio-collaring
 - Used GPS collars to record deer locations every 4 hours
- Model landscape "greenness"
 - Used NVDI MODIS landscape "greenness" index at 250-m resolution
- Relate spatial and temporal variation in "greenness" to deer locations
 - Overlay coverages in ArcMap 9.2 GIS
 - Compare biweekly distribution of mule deer to 3 "greenness" classes (low, medium, high) using Fisher's exact tests
 - Stratify based on vegetation types for analysis

Key to distribution maps:

- Landscape grey scale: Lighter = "greener"
 - Only areas within CRLRC boundaries show landscape "greenness" or more photosynthetically active tissue
- Deer locations (●): Highlighted (●) = locations during the specified 2 week period
- CRLRC boundaries = - - - - -

Results

- Stratified deer distribution seasonally positively related to landscape "greenness" class
 - June - September: Fisher's exact P = 0.047
 - October - May: Fisher's exact P = 0.697
- 27 - 74% of deer locations were off CRLRC
 - Habitat evaluations need to include adjacent ownerships
- Deer home ranges
 - Annual home range sizes relatively large (2.7 square miles)
 - Deer must move long distances to meet food and cover needs
 - Seasonal and annual home ranges spatially overlap



17 January - 1 February 21 March - 5 April 24 May - 8 June 27 July - 11 August 13 September - 28 September

