Project Highlight – SD State Wildlife Grant

Project Type Research

Title Genetic variation in the smooth green snake in South Dakota

In a nutshell In South Dakota, the smooth green snake occurs in the Black Hills and in parts of the northeast and southeast. This species has declined in many parts of its range, and it is considered rare in the state. This study was conducted to determine whether populations are genetically distinct within the state and distinct from smooth green snakes in other parts of the country.

Relevant Habitats moist habitats of meadows and prairies

Cooperators Black Hills State University (Dr. Brian Smith)

Purpose

- analyze the extent of genetic variation in this species within South Dakota
- examine genetic distance amongst South Dakota populations relative to those outside of the state

Timeframe 2005 - 2007

Location Black Hills and northcentral South Dakota

Summary or Important Findings

- Smooth green snakes from the Black Hills and Ordway Prairie in South Dakota were not separate subspecies, although these populations differed genetically from each other.
- Smooth green snakes from the Black Hills and Bear Lodge Mountains populations are likely contiguous populations and are distinct from individuals sampled from Ordway Prairie.
- The species selects moist habitats, likely explaining its limited distribution in the northern Great Plains; it can be locally common in suitable habitats.

Best contact person Dr. Brian Smith, Black Hills State University

More Information

Smith, B. E., C. Anderson, S. Sarver, and L. R. Cottingham. 2007. Genetic variation in the Smooth Green Snake, *Opheodrys vernalis*, in South Dakota. Final Report Submitted to the South Dakota Department of Game, Fish, and Parks. July 23, 2007. Black Hills State University, Spearfish, SD.

<u>Scientific publication resulting from this project:</u>

Sarver, S.K., C.M. Anderson, F. Cain, and B. Smith. 2010. Development of polymorphic microsatellite markers for the smooth green snake *Opheodrys vernalis*. Molecular Ecology Resources, Database I.D. #43323-43330, 7 pp.