

Project Highlight – SD State Wildlife Grant

Project Type Research

Title Biology of American three-toed woodpeckers in the Black Hills

In a nutshell This study was designed to learn more about foraging, nesting and home range habitat selection as well as estimate population abundance and investigate genetic population structure of American three-toed woodpeckers in the Black Hills of South Dakota.

Relevant Species of Greatest Conservation Need

- American three-toed woodpecker (*Picoides tridactylus*)

Relevant Habitats high-elevation conifer forests of Black Hills

Cooperators University of South Dakota (Dr. David Swanson and graduate student Amanda Ervin)

Purpose

- survey Black Hills white spruce habitat for resident American three-toed woodpeckers
- characterize Black Hills white spruce habitats and other habitats used by American three-toed woodpeckers
- locate nests and monitor production
- band American three-toed woodpeckers in the Black Hills with standard FWS bands and color bands and use radio transmitters to track movements of a subset of banded birds
- collect information on foraging behavior and attempt to relate this to habitat
- record presence and nesting of sympatric avian species inhabiting Black Hills white spruce habitats and evaluate competition
- collect DNA samples from the Black Hills population of American three-toed woodpeckers and sequence mitochondrial and microsatellite DNA
- obtain samples from other populations and determine the genetic uniqueness of the Black Hills population

Timeframe 2005 - 2008

Location Black Hills, South Dakota

Summary or Important Findings

- relative abundance was 0.20 birds per census point in white spruce forests of the Black Hills
- birds showed preference for large living and dead spruce and large ponderosa pine trees compared to small living spruce
- aspen was an important nest site selection characteristic

- most nest failures were attributed to predation
- results indicated limited recent gene flow between the Black Hills population and others

Best contact person Dr. David Swanson, Dept. of Biology, University of South Dakota

More Information

Ervin, A.M. 2011. Habitat selection, nesting success and genetic structure of American three-toed woodpecker (*Picooides dorsalis*) in the Black Hills of South Dakota. PhD Dissertation, University of South Dakota, Vermillion. 157 pp.