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USGS Chesapeake Bay Activities

Response of Delmarva Fox Squirrels to Prescribed Fires in Mid-Atlantic Coastal Plain Forests

Project Number: 23029U3
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Period of Project: March 2002 through September 2006
Funding Source(s): Joint Fire Science Project (BLM)
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Statement of Problem: Prescribed fire is being used in the mid-Atlantic to reduce hazardous forest fuels, and to meet habitat management goals. No studies on the dynamics of prescribed fire and forest hazard fuels have been conducted in the region. Basic information on the environmental effects of hazard fuel reduction fires is also lacking. We will conduct burn treatments in four mid-Atlantic region sites. We will investigate the hypotheses that hazard fuel reduction fires during the growing season will (1) significantly reduce hazardous fuel loading, (2) cause significant mortality in the ground- and shrub vegetative layers, (3) temporarily decrease surface organic matter while elevating nutrient levels in the upper soil horizon, (4) enhance Delmarva Fox Squirrel habitat, (5) alter subcanopy breeding and wintering bird densities and (6) alter cover of invasive woodland plants.

Objectives: To provide forest managers in the mid-Atlantic with information on the effects of hazard reduction prescribed fire, focusing on fuel loads, soil nutrients, subcanopy plant communities, the endangered Delmarva Fox Squirrel, invasive plants, and breeding and wintering birds.

Approach: Four study sites will serve as replicates for the application of a hazardous fuel reduction burn treatment (2 sites within Chesapeake Marshlands National Wildlife Refuge Complex – Blackwater Unit, 1 site at Chincoteague National Wildlife Refuge, and 1 site at Linkwood State Wildlife Management Area). Each study site will have a control plot and a

treatment plot. Pre-treatment and post-treatment data will be collected on both treatment and control plots.

Selected Reports and Other Products:

Presentations, Delivered: Laura Mitchell, Oliver Pattee, Carol Bocetti, Prescribed fire in Atlantic coastal plains forest: a report to the DFS Recovery team, USGS

O. H. Pattee, C. I. Bocetti. Site fidelity and Delmarva fox squirrel movements following a prescribed burn

Relevance and Benefits: This task addresses goal 3 of Wildlife and Terrestrial Resources—Evaluate status of plant and animal species at risk and provide scientific guidance for their conservation and management.