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Impacts of a Modified Patch Clearcut on Delmarva Fox Squirrels

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The Delmarva fox squirrel (Sciurus niger cinereus) is an endangered species found only in 10% of its former range. It only persists naturally in portions of Kent, Queen Anne's, Talbot, and Dorchester Counties, Maryland. First listed as endangered in 1967, it was adversely impacted by habitat loss and fragmentation from agriculture and timber harvest. Throughout its range, the Delmarva fox squirrel is found in mature stands of pine and oak, or pine and mixed hardwoods, both characterized by a relatively open understory. Most of this habitat is privately owned on the Delmarva peninsula. The squirrel is locally abundant in these areas but may be under increasing pressure from current timber management and land development trends. Little is known about the life history and habitat use of this endangered fox squirrel in response to different forest management practices. Biologists and forest managers must work together to find an economically productive and ecologically viable forest management method conducive to private land owner use in order to recover the Delmarva fox squirrel. Thus far, only one study has been done, and it showed that the current timber management method of clearcutting causes the dispersal of fox squirrels to adjacent stands. Our project provides an opportunity to determine the effect of a modified patch clearcut on Delmarva fox squirrels by studying 3 treatment sites at the Chesapeake Bay Forest Demonstration Area (owned by The Conservation Fund) where such a timber harvest was conducted, and 3 reference sites at Blackwater National Wildlife Refuge where no harvest occurred. Capture-recapture data were collected from the spring 1996 through the spring of 1998 to determine baseline estimates on the density, demography, and movements of Delmarva fox squirrels and gray squirrels on all sites. Radio telemetry was done on fox squirrels in treatment sites during 1997 to determine base-line habitat use. The timber harvest was initiated on 1 of the 3 treatment sites in late August of 1998, and was completed on all sites by the fall of 1999. Radio telemetry was conducted before, during, and after the harvests in 1998 and 1999. Post-harvest capture-recapture data was started in the fall of 1999 and completed in the spring of 2002. Results from this project will provide the scientific groundwork for the development of Habitat Conservation Plans on the Delmarva Peninsula. However, this is merely the first alternative to clearcutting that has been investigated, and the method under investigation may fail to fulfill the life history needs of the fox squirrels. Additional research must be done to find alternative forest management methods that both