GIS Tool for Evaluating the Impact of Proposed Cuts on Red-cockaded Woodpecker Habitat

Donald J. Lipscomb, Department of Forestry and Natural Resources, Clemson University, Clemson, SC 29634

Thomas M. Williams, Baruch Institute of Coastal Ecology and Forest Science, Clemson University, Georgetown, SC 29442

The 2003 Red-cockaded Woodpecker (RCW) Recovery Plan changed the standards for good quality foraging habitat significantly. Instead of the 5 or 6 criterion previously used, the new guidelines use 11 to 16 to evaluate foraging habitat. An early attempt (2003) to evaluate RCW foraging habitat using 11 criteria on partitions mapped using RCWFAT, resulted in 97 percent failure of RCW habitat to meet the guideline for both increasing and declining populations. The realization that the requirements for good quality foraging habitat in the plan were really ideal goals resulted in attempts to develop a score or foraging index placing habitat into categories ranging from poor to excellent. At the time of this abstract the aforementioned scoring system is still being developed by the U.S. Fish and Wildlife Service. In this paper we present a GIS program and a proposed index system built on data that can be derived from forest inventory, but with parameters chosen that correspond to 11 of the core criterion in the 2003 recovery plan. The indexing system proposed appears sufficiently sensitive to be used at any level from the basic management unit to a whole forest. The GIS model contains the tools previously in the RCWFAT AML program plus added interfaces to allow evaluating the impact of different cutting intensities on RCW foraging habitat. Results are stored in the partition attribute tables and can also be reported (output) as tables and text files. The interface for evaluating cutting intensities is interactive at the stand or basic unit level; however it will accumulate scores and evaluate the impact for any selected set of stands in a data set. The process performs a set of evaluations for before and after purposed stand alterations evaluating the change in habitat quality on the fly and updating attribute tables for the exported data sets.

Keywords: Red-cockaded woodpecker, recovery plan, foraging habitat

5th Southern Forestry and Natural Resources GIS Conference
June 12-14, 2006
Asheville, NC