Developing Models to Monitor Ecological Restoration in Hardwood Bottomlands

Elizabeth A. Summers, *Department of Forestry, Wildlife, and Fisheries, University of Tennessee, 274 Ellington Plant Sciences Building, Knoxville, TN 37996*

Matthew J. Gray, *Department of Forestry, Wildlife, and Fisheries, University of Tennessee, 274 Ellington Plant Sciences Building, Knoxville, TN 37996*

Abstract: The majority of hardwood bottomland restorations in the United States have occurred via the NRCS Wetlands Reserve Program (WRP). A primary goal of WRP is to restore wetland habitat for wildlife. To evaluate the efficacy of WRP in restoring wildlife habitat, we measured avian, amphibian, and vegetation communities at 17 restoration and four bottomland reference sites in western Tennessee from March–August 2008. Avian species diversity and richness and relative abundance of seven bird habitat-use guilds were related with restoration age (i.e., duration since bottomlands were replanted with seedlings); no relationship existed for amphibian species diversity and richness or relative abundance of amphibian families. Of the 19 vegetation variables measured, 12 were related with restoration age. Our results indicate that differences exist in avian and vegetation communities between restoration and reference sites. Thus, these communities may be useful to monitor ecological restoration in hardwood bottomlands. Future efforts include using avian and vegetative metrics to develop index of biotic integrity models that can be used by biologists to monitor ecological restoration at hardwood bottomland sites.