Application of Carolina Vegetation Survey inventory data for generation and evaluation of restoration targets

Robert K. Peet*, Thomas R. Wentworth, Michael Schafale, Alan S. Weakley, and M. Forbes Boyle

*Department of Biology CB# 3280, University of North Carolina, Chapel Hill, NC 27599-3280; peet@unc.edu

Effective design of targets for vegetation restoration requires detailed information from appropriately selected, high-quality reference areas. The Carolina Vegetation Survey (CVS) is a multi-institutional research program designed to document the composition and status of the natural vegetation of the Carolinas for purposes of inventory, monitoring of environmental impacts, assessment of conservation status, and generation of scientifically rigorous restoration targets. Toward this end CVS uses a standard protocol to collect, prepare, and database high-quality reference-area data. The North Carolina Ecosystem Enhancement Program supports the work of CVS so as to provide optimal targets for vegetation restoration. Over the past 23 years, CVS has acquired consistent quantitative records from over 7,000 vegetation plots distributed across the Carolinas and containing occurrences of over 2500 species. These plot records include information on total species composition, vegetation structure, tree size distributions and environmental setting and have allowed for the first time an accurate documentation of the range of natural communities and species habitats found in the region. Approximately 495 vegetation types recognized in the federally mandated U.S. National Vegetation Classification (NVC) are represented by vegetation plots in the CVS database and have been used to generate quantitative summary information about typical site conditions, distribution, and species frequency and abundance. CVS is currently using these plot data to propose refinements in the NVC to make it more effective for our region and as a tool for generating restoration targets. Application of the CVS database of plots and community composition allows relatively easy generation of otherwise unattainable, state-of-the-art predictions of the natural vegetation of a site that should satisfy the most stringent current and future restoration guidelines. As a consequence, application of the CVS database can greatly increase the efficiency and effectiveness with which agencies and contractors conduct restoration work while significantly reducing their costs.