Advantages of monitoring vegetation restoration with the Carolina Vegetation Survey protocol

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Since May 2005, the Carolina Vegetation Survey (CVS) has collaborated with North Carolina's Ecosystem Enhancement Program (EEP) to develop protocols for monitoring vegetation on wetland restoration projects. To reduce sampling bias and error, and to ensure that measurements are repeatable across restoration sites, CVS designed a monitoring scheme that utilizes fixed-area plots to record vegetation data. Furthermore, a multi-tiered approach has been incorporated into the protocol to accommodate varying project goals. With increasing level, the information gathered on vegetation and environment becomes increasingly detailed. Sampling levels include: 1 - Planted Stem Inventory, 2 - Total Woody Stem Inventory, 3 - Community Occurrence, 4 - Community Composition, and 5 - Community Composition and Structure. Between May 2005 and June 2010, 30 design/monitoring firms used Level 1 and 2 CVS protocol across 78 sites within North Carolina. CVS uses levels 4 and 5 to document high quality reference areas. In addition to protocol development, the CVS has designed data entry and quality-control tools to optimize the quality and flow of vegetation and environmental data from field sites into a common CVS-EEP data archive. This rigorous data system allows for efficient report generation by project. Summary reports include survival/growth of planted stems, direction of compositional change between sample years, and warnings such as increased abundance of exotic species. The CVS protocol and its associated tools were designed to improve quality and efficiency of resampling events and to track individual planted stems for more accurate assessment of restoration success/failure. Also, the use of a consistent methodology across the region has increased efficiency as well as predictability of success. In this presentation, we explore advantages of using the CVS protocol and tools for monitoring restoration projects. We also examine plans for improvement of the protocol, including automated species selection based on site criteria.