

## EXECUTIVE SUMMARY

The North Carolina Forest Service (NCFS) requested that Kee Mapping and Surveying, PA (Kee) develop a Water Resources Restoration Master Plan for DuPont State Recreational Forest (SRF). This Master Plan identifies future water resources restoration efforts to improve the water quality and ecological function of waters within DuPont SRF, located in Henderson and Transylvania Counties, North Carolina. It is anticipated that the NCFS will utilize this master plan, which includes conceptual design information on selected stream reaches, to prioritize restoration efforts and to request grant funds and other support to complete selected restoration work.

Assessment forms were developed to document stream conditions and areas of concern encountered within DuPont SRF. Two forms were created: one named "Stream Condition Assessment" and one named "Area of Concern Assessment". The "Stream Condition Assessment" form documents conditions for a stream reach, and results in an overall score based on site and watershed conditions, channel morphology and condition, floodplain morphology, vegetation, and habitat. The "Area of Concern Assessment" form was developed to document problems observed that do not correspond to a long stream reach. These areas of concern typically occur at a point, such as a trail crossing of a stream, and do not necessarily represent a systemic problem along the stream.

All mapped trails and roads within DuPont SRF were covered by walking, biking, or driving. Water bodies visible from the trails and roads were visually assessed to determine if an assessment form should be completed. As needed, field personnel bushwhacked along or through the streams. Additionally, NCFS personnel provided information about known problem areas. A total of 17 stream reaches and 51 areas of concern were documented using the field forms. Each of these 68 sites was also photo-documented and mapped using hand-held GPS. All digital data has been organized into a GIS-based project geodatabase. A large (22 x 34 inch) base map was created showing the location of each of the 68 sites. Additionally, an 11 x 17 inch sheet was created for each site, showing photographs, assessment data, and site detail overlaid over an aerial photo.

All sites were categorized as High, Moderate, or Low priority for implementation of restoration efforts. Priorities represent best judgment based on observed conditions and the potential for improvement from restoration efforts. Of the 68 sites, 10 are High priority, 23 are Moderate priority, and 35 are Low priority. Commonly observed problems in the stream assessments included: trail within riparian buffer, lack of appropriate riparian vegetation, and sediment input to the stream (often from adjacent trail and/or eroding streambanks). Many of the areas of concern are locations where a trail or road crosses a stream, resulting in sediment and stormwater input to the stream. These types of areas could be improved by relocating/closing the trail or improving the trail in the vicinity of the crossing to reduce sedimentation. Such sites should be considered as a part of future master planning for trails within DuPont SRF.

The 10 High priority sites include:

- S02, Little River above Bridal Veil Falls
- S15, Shoal Creek
- S17, Little River at Hooker Falls Road
- P06, Bridge/crossing near Little River
- P17, Airstrip Trail below Airstrip
- P34, Triple Falls Trail along Little River
- P42, Stone Mountain Trail
- P44, Stream at Switchback Trail
- P48, Fawn Lake
- P49, Power lines at Fawn Lake Road

A narrative is provided for each of these 10 High priority sites, with additional information about existing conditions and potential restoration approaches. For the High priority stream sites (S02, S15, S17), conceptual design plans are included, as well as conceptual design information related to typical riffle and pool cross-sections, longitudinal profiles, and planting information appropriate for these projects.