

Development of Fort Cooper source-identified germplasm of *Andropogon ternarius* for rangeland restoration in Florida

Janet M. Grabowski and Mary Anne Gonter¹

At the time of European settlement, 24 million acres or about 70 percent of the total land area of Florida was rangelands. Now only about 4 million acres of rangeland remains. Concerns about habitat loss, water availability and quality, and the need to enhance sustainability of grazing enterprises are causing a reversal of the historic trend in rangeland conversion. Another source of localized pressure on Florida rangelands is presented by the phosphate mining industry. The rich phosphate deposits located 15 to 50 feet below the soil surface in central Florida's Bone Valley provide American farmers with 75 percent of their phosphate fertilizer requirements and a quarter of the World's needs. Mining companies are required by state and local environmental regulations to restore land that has been mined on an acre by acre basis to its pre-mined functional status (i.e., rangeland to rangeland, wetland to wetland, etc.). Direct seeding remains the most economical method for rangeland and mineland restoration. In a 10-yr project, USDA, NRCS Brooksville Plant Materials Center (PMC) worked to identify and evaluate native upland species with suitable characteristics for restoration use (i.e., stand persistence; erosion control; livestock forage production; wildlife food and habitat, etc.) and to develop cultural methods to produce and establish these species. One of the species that showed excellent potential was splitbeard bluestem (*Andropogon ternarius*). Splitbeard bluestem is a clump-forming native grass that is found on dry upland sites in the Coastal Plain. The plants produce slender culms that are up to 1 m tall. The racemes are generally paired and the spikelets are white and villous. A key distinguishing characteristic is a fringe of white hairs that remains at the base of the raceme following seed dispersal. PMC staff used a Woodward flail-vac seed stripper to collect seed from a population of splitbeard bluestem growing in the northern section of Ft. Cooper State Park in Citrus County, FL in 1995. This collection was given the NRCS accession number 9060084. Germination of seed produced in non-irrigated fields at the PMC was 36% and estimated yields were 86 pounds per acre. Germination increased to 92% when seed was dehulled to the bare caryopsis using a hammermill; however, sufficient research has not been conducted to determine if this treatment may cause damage to the seed coat that will reduce storage ability. In testing on reclaimed minelands near Ft. Meade, FL conducted from 1997 to 2001, 9060084 consistently germinated and established better on sand tailings than any of the other 34 accessions of grasses and forbs that were direct-seeded on the plots. Growth of 9060084 was reduced on plots located on overburden, which is likely due to the higher clay content of these substrates. In 2008, this accession was released as a source-identified material and given the name Ft. Cooper Germplasm. Splitbeard bluestem provides forage for livestock in the spring and provides excellent cover for many wildlife species; it has been found to be a preferred nesting site for Northern Bobwhite Quail (*Colinus virginianus*). However, the greatest potential use for Ft. Cooper is as a nurse crop to protect slower establishing native grasses.

¹USDA, NRCS; Brooksville Plant Materials Center, Brooksville, FL