



This semi-annual newsletter is published by the USDA-NRCS Brooksville Plant Materials Center, 14119 Broad Street, Brooksville, FL 34601-4525, Tel: 352-796-9600, FAX: 352-799-7305.

Seeding Rates for Phosphate Minelands

By Janet Grabowski

The companies that mine phosphate in Florida are required by both state and county regulations to revegetate mine spoils following removal of the phosphate-containing layer, or as they call it, the matrix. There are thousands of acres of mineland that must be revegetated each year. The regulatory agencies prefer that the mining companies move away from introduced species, such as bahiagrass, and try to plant native species whenever possible. However, seed of Florida natives is not readily available and the establishment methods are not as well known as for the introduced species. As a result, there have been many failures when native seed has been planted on the minelands.

Rosemarie Garcia (below right, in white hard hat), a restoration specialist at Mosaic, LLC, and a member of the Florida Plant Materials Technical Committee, asked the PMC to investigate the establishment success of a commercial native seed mix at a restoration site in Polk County, FL. On the minelands, you are generally working with two types of "soils". One is the overburden, which is the soil that was above the layer containing the matrix, but it has been all mixed up, so it has no remaining horizons. The second type is sand tailings, which is what is left after the phosphate matrix is washed out - it looks like a fine, white sand like you find on the better Florida beaches. The planting site prepared for us had an area of overburden adjacent to an area of sand tailings. We planted our treatments in replicated plots on both soil types in January of this year.



Native seed in planter box

Rosemarie obtained native seed that had been harvested from a native stand with a Woodward Flail-Vac harvester and was marketed with little further cleaning (left). PMC personnel

conducted a purity analysis on some small samples and found that there was about 37% seed (by weight) in the lot. The majority of seed was wiregrass; however, more than one species of bluestem was also present, as well as

seed of an unidentified composite. Recommendations given by the supplier were to plant at a rate of 20 pounds to the acre. However, the soil and environmental condition on these mineland restoration sites is so poor, we suspected that the seeding rate needed to be increased. The planting rates that we used were 20, 40, and 60 pounds to the acre.

The seed was planted using a Grasslander planter (below). This model of planter has the capability to handle seed with high percentages of inert matter, as long as the pieces are not too large. Most state agencies and other groups in Florida that are currently planting native species to restore rangeland and create wildlife habitat also use this type of planter because they are generally either harvesting their own seed or purchasing seed like that used in this planting. However, because the seed drops out of the distribution tubes (white PVC above the yellow bar in the picture below left) several inches above the soil surface, light seed such as this can easily be blown away from the planter before the press wheels firm it into the soil. We put heavy vinyl shields on ei-



ther side of the planter to try and minimize wind effects. However, the wind speed was fairly high on the day we planted and we could see that there was some seed drift. The plots were rolled as quickly as possible after planting to stop further drifting.

The plots have been evaluated monthly for seed germination (see picture on following page). It was very dry for the first three months after planting and this affected germination. Seed germinated about a month

PMC Technician Mary Anne Gonter looking for seedlings



faster on the overburden, probably because this finer textured soil provided a greater amount of water for germination. However, previous research conducted by the PMC has found that long-term survival of native seedlings on overburden was less than on sand tailings due to greater weed

pressure. This may turn out to be true for this planting as well because bermudagrass is becoming established in the overburden plots and may out-compete the native species. Initial germination percentages for the 40-pound rate appear to be consistently greater than the 20-pound rate, but no consistent difference between the two higher rates is apparent at this time. We will continue monitoring these plantings through 2009.

There is a New Gardener at the PMC

By Janet Grabowski

Jonathan Connolly (below, back row center) joined the PMC staff in February. He previously worked at the USDA, Agricultural Research Service, Subtropical Agricultural Research Station. He also has property in Dade City where, with his wife Michele, he raises cattle, chickens, dogs, and kids, Dakota and Ethan.

In other staffing news, the Brooksville PMC was chosen to host a career intern for the next two years. Three interns are being hired by the Plant



PMC staff members

Materials Program, with the other interns to be stationed at the PMCs in Kansas and California. PMC staff, along with the Plant Materials Specialist, will provide training to this individual to enable them to eventually become a PMC Manager or Specialist. We will introduce you to our new intern in our next newsletter.

Sea Islands Sweetgrass Germplasm

By Mimi Williams

Sweetgrass (a.k.a. gulf hairawn muhlygrass, *Muhlenbergia sericea*) is native to the coastal areas of the south Atlantic and the Gulf. It is the foundation material for African-coiled basketry of the Gullah/Geechee community around Mt. Pleasant, South Carolina.

Development pressure along that area of the coast has greatly reduced sweetgrass stands. At the request of Mr. Tommy Socha of the U.S. Corps of Engineers (COE), Charleston District the Brooksville PMC is releasing Sea Islands sweetgrass germplasm this year. By having this sweetgrass in the Plant Materials Program, the COE can now specify exactly which sweetgrass they need for South Carolina restoration work. In fact, an almost \$30 million renourishment project calls for 10,000 Sea Islands sweetgrass divisions, over 100,000 'Northpa' bitter panicum, and 25,000 'Flageo' marshhay cordgrass plants, all products of the Brooksville PMC program.



COE publication about sweetgrass

Plant Materials Available

Seeds and/or plants of the following PMC releases are available for production purposes and can be requested from Mimi Williams at mj.williams@fl.usda.gov or (352) 338-9544. These plants were selected to meet conservation needs and are recommended by USDA, NRCS for planting throughout the Florida PMC service area. Contact the PMC for additional information at (352) 796-9600.

- ◆ Floral Passion blazing star
- ◆ Miami, Stuart, and Wabasso switchgrass
- ◆ 'Flora Sun' beach sunflower
- ◆ 'Northpa' and 'Southpa' bitter panicum
- ◆ 'Sharp' and 'Flageo' marshhay cordgrass
- ◆ Morning Mist hairawn muhly
- ◆ Gator blue maidencane
- ◆ Citrus maidencane
- ◆ 'Florigraze' and 'Arbrook' perennial peanut
- ◆ 'Chapingo' Mexican teosinte
- ◆ Martin and St. Lucie eastern gamagrass
- ◆ Brooksville 67 and Brooksville 68 perennial peanut
- ◆ Ghost Rider purple bluestem
- ◆ Ft. Cooper splitbeard bluestem

Look up the Brooksville, FL PMC at <http://plant-materials.nrcs.usda.gov> or <http://www.fl.nrcs.usda.gov/programs/flplantmaterials.html>

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