

Attachment 5.

Barb Crane, Regional Geneticist

USDA Forest Service Southern Region (Region 8), National Forest System (NFS)

R8 states: AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, VA, VI & PR

Genetics Program Mission: Reforestation & Restoration, Genetic Conservation, Partnerships.

SFTIC Committee June 2015 updates:

Genetics Program news and Seed orchard information:

- Chat with Chief Tom Tidwell in March, about the state of FS forest genetics programs.
- New R8 Director of Forest Management, Frank Beum, is very supportive of the genetics program.
- FS funding continues to decline but funding for the orchards remain stable.
- Succession planning underway for all seed orchard managers & Reg. Geneticist, all will be retiring in 3-5 years. Job opportunities coming up -
- Visit all 7 seed orchards annually (NC, TN, SC, MS, LA, AR).
- Both a Long-Term Management Plan and Technical Operation Manual are being finalized for each orchard.
- Seed orchards serve multiple purposes: 1/ provide tree seed for operational reforestation, 2/ provide areas for establishment of conservation banks for sensitive tree species, 3/ provide areas to expand understory native plant seed beds.
- FS manages 70% of all Longleaf and 95% or all Shortleaf seed orchards that exist in the south.
- Fall 2014 bumper crop of longleaf, shortleaf and sand pine cones collected.
- Working with EFETAC on climate change impacts > hence developing new planting zone maps, will be mixing seed lots and seed zones for future reforestation.

Reforestation & Restoration:

Pine species activities

- Longleaf and shortleaf pine restoration continues. NFS planted approximately 4 million seedlings in 2014. NFS seedlings planted are 95% container shortleaf & longleaf pines.
- **Longleaf:**
 - All FS **longleaf** pine progeny tests (54) have been visited, monumented, data collection completed and silvicultural prescriptions written. PTs are being groomed for future seed production areas and scion collection for future seed orchards. PT data will be analyzed FY15.
 - 2009 south wide Longleaf survey (seed, seed orchard resources) will be updated.
 - All orchards are being fingerprinted for clonal purity and identity.
- **Shortleaf:**
 - All FS **shortleaf** pine progeny tests (152) have been visited, monumented, silvicultural prescriptions written. PTs are being groomed for future seed production areas and scion collection for future seed orchards. Proposed data collection FY17.
 - On-going shortleaf MOA with NC Div. Forest Resources: exchange of germplasm and establishing 2nd gen seed orchards.
 - Participating with the Shortleaf pine Initiative. Completed south wide Shortleaf survey (seed, seed orchard resources).
 - Provided funding to OK State U, shortleaf hybridization study (Rod Will).
 - All orchards are being fingerprinted for clonal purity and identity.

Hardwood species activities

- Collaboration continues with Drs. Stacy Clark (FS SRS) & Scott Schlarbaum (UT) on American chestnut putative blight resistant B3F3 test plantings.
- Current MOU or MOA with: Ozark Chinquapin Foundation, MOU between the FS NFS, FS Research and UT TIP – hardwood TIP.
- Challenge Cost Share Agreement & funding provided to Schlarbaum for oak orchard assistance.
- Continue planting a variety of oak species in seed production areas, enrichment areas and reforestation areas on the NFs. Continue to establish of Northern red and White oak seed orchards.
- Participating Agreement with UGA Dr. Scott Merkle, funding work on tissue culture & cryopreservation of sensitive tree species.

Genetic Conservation:

- Completed longleaf pine genetic evaluation of coastal vs. piedmont vs. mountain longleaf, with NFGEL & SIFG. Preliminary results show no significant genetic differences.
- Completed a 4-year Table Mountain pine project, cone collections across the range, seed now in inventory. JV partnership with Camcore. Genetic diversity & pop. gen. studies being done by NFGEL.
- Ongoing collections of Atlantic white cedar, 3-yr. partnership with Camcore. Project is funded by Washington Office Forest Health. AWC Symposium workshop summer 2016.
- Ongoing collections of Carolina & Eastern hemlocks, partnership with Camcore, funded by Washington Office Forest Health.
- Red spruce collections, partnership with Camcore, funded by Washington Office. Serve on Southern Appalachian Spruce Restoration Initiative (SASRI) Committee, (<http://www.restoredspruce.org/>, go to SASRI link)
- Partnership with EFETAC on project *CAPTURE* (Conservation And Prioritization of Trees Under Risk of Extirpation), a 3-yr agreement, ranks tree species across the country that are at risk, funded by Washington Office (based on R8's *FORGRAS* Forest Tree Genetic Risk Assessment System. Potter & Crane 2010).
- Native plants: continue to work with botanists to facilitate use of native plants and local seed sources, National Seed Lab (NSL) assisting.

Partnerships:

Eastern Forest Environmental Threats Assessment Center (EFETAC)
Camcore (C&E hemlocks, Table Mountain pine, Atlantic white cedar, Red Spruce, Frasier & Balsam Fir)
The American Chestnut Foundation (TACF)
Ozark Chinquapin Foundation (OCF)
Longleaf Alliance
Shortleaf Initiative
State and private nurseries: East TN State nursery, GFC Flint River state nursery, IFCO
University of Tennessee TIP (oaks, butternut, American chestnut)
North Carolina State University TIP Co-op (longleaf pine)
FS Southern Research Station (SIFG, Upland Hardwoods, various species & projects)
National Seed Lab
National Forest Genetics Lab (NFGEL, genetic diversity, pop.gen. studies)
Auburn Nursery Co-op.
ARS & NCGRP (longterm seed storage at Ft. Collins, CO)

NRCS (native plants)

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