EVALUATING SLASH PINE SEED SOURCES FOR USE IN RESTORATION OF A BARRIER ISLAND

Ronald C. Schmidtling[1], C. Dana Nelson[1,2]

[1]USDA Forest Service, Southern Institute of Forest Genetics, Saucier MS; [2]Forest Health Research and Education Center, USDA Forest Service, Southern Research Station, Lexington, KY

Many barrier islands in the northern Gulf of Mexico were severely damaged by Hurricane Katrina in 2005. Now that restoration of the islands is being considered, questions arose about suitable seed sources for replanting of the native slash pine (*Pinus elliottii)*. Would seedlings obtained from local nurseries be well enough adapted to the pure-sand soil and the occasional inundation with salt water, or should seed be collected from barrier islands? We installed a small test planting on Deer Island, a near-shore barrier island off of Biloxi, Mississippi that was severely damaged. The western end recovered well with successful natural regeneration of Slash Pine and Live Oak (*Quercus virginiana)*. Our experimental planting to evaluate seed source differences was installed on the nearly treeless eastern end. Seedlings from half-sib families of 12 Deer Island mother trees and 38 north Harrison County mother trees (30 miles north of the Coast) were planted in January 2017. Survival in the fall of 2017 averaged 46%, with little differences among sources. A storm in summer of 2018 resulted in flooding of the planting with brackish water. Subsequent survival in early 2019 averaged 27% in the Deer Island source and 32% in the north Harrison source. Height measured in early 2019 averaged 7.8 ft. for the Deer Island source vs 8.0 ft. for the north Harrison source, a non-significant difference. Differences among families within sources were highly significant for height, however. At this early point in the study, it does not appear that collecting seed from island sources will be necessary. However, it does appear that selection of families for growth on the islands could be productive.