Chesapeake Forest Vegetation and Community Monitoring at Campbell Complex Ecologically Significant Area

The Campbell Complex Ecologically Significant Area (ESA) is located in Wicomico County south of the town of Pittsville and west of Sixty Foot Road, adjacent to the Wicomico Demonstration Forest. This ESA contains 395.15 acres of Chesapeake Forest (CF) lands previously managed by Chesapeake Forest Products Corporation to maximize pulpwood production of loblolly pine (*Pinus taeda*) by such silvicultural practices as windrow creation, bedding, wetland ditching, chemical hardwood control, fertilizing, planting of a loblolly pine monoculture and extensive road construction. Though the industrial forest persists for the majority of the site, 21 rare species of plants and animals tracked by DNR's Natural Heritage Program are found here.

In 2004 a 20-acre portion of a sand ridge (late Pleistocene dunes having dry sandy soil within the Parsonsburg Formation) had the planted loblolly pine removed. Before the harvest, the dense loblolly pine stand let little light penetrate to the soil surface, greatly limiting the herbaceous plants present. Directly after the harvest, sparse woody plants remained on the ridge with the most common species being water oak (*Quercus nigra*), horse sugar (*Symplocos tinctorium*), huckleberries (*Gaylussacia* spp.) and blue berries (*Vaccinium* spp.). Extensive areas of exposed sands and downed woody debris were also present.

In the early spring of 2005 a prescribed burn was conducted at the site to reduce the woody debris and control the reestablishment of loblolly pine. Due to the combination of loblolly pine removal and prescribed burning a drastic change in the vegetation was evident (picture below). A rich and dense grass and sedge layer replaced the areas that were previously dominated by loblolly pine. The herbaceous plant response was outstanding and included large amounts of grasses and sedges that had been largely absent from the area prior to harvest and burning. Dominant species present after the management activities were broom sedge (*Andropogon virginicus*), warty panic-grass (*Panicum verrucosum*), a panic-grass (*Dichanthelium aciculare*), and a sedge (*Cyperus retrorsus*).

After the prescribed burn the horse sugar population significantly declined, most probably due to the intensity of the fire, with mortality rates > 80%. Stump sprouts were not observed in the summer of 2005 suggesting this is a fire sensitive species. Additionally, loblolly pine recruitment in the burn area was not evident, meaning the burn was successful in controlling loblolly pine reestablishment. In subsequent field seasons additional surveys will be conducted to continue documenting the vegetation change at the site.