

results in the creation of numerous variable-sized peat islands scattered throughout the swamp (Cypert, 1972). By being somewhat isolated from terrestrial communities, plant species invasion would be restricted. Gordonia seeds, much like P. elliotii seeds, are wind disseminated, increasing the potential for dispersal to remote areas. These species are expected to gain an early advantage in encroaching on habitable sites. Seeds of Persea, Magnolia, and Nyssa, on the other hand, are much larger and are probably restricted to dispersal primarily by animals or on rare occasion by floating to a site during flood events. Based on the apparent restricted water flow pattern in this section of the Okefenokee, seed transport to this site by flooding is highly improbable. Although mature, seed-producing individuals do occur in the site, it is still not known whether or not Persea, Magnolia, or Nyssa will become codominants in the canopy. Magnolia has a sufficient number of seedlings and saplings and may eventually share canopy dominance with Gordonia. The trend for Nyssa is not clear, yet evidence suggests it will not secure a dominant role in community structure. However, based on our observations and on those of Duever (1979) regarding Persea, it appears that Persea is stressed in communities in the Okefenokee. Almost all individuals of Persea observed in the present study, except for seedlings and a few small saplings, consisted of only one or two small live apical branches; the primary bole was generally dead. This concurs with observations of Duever (1979). He states "the larger red bay (Persea) were invariably hollow..." (p. 32). Thus, Persea is not expected to increase in importance in the community, even with the eventual demise of Taxodium, and may eventually be all but eliminated from the site.

CONCLUSIONS

The apparent eventual demise of Taxodium as the community dominant and the replacement with evergreen hardwood species in this old-growth cypress community supports the successional scheme for these swamp communities (Hamilton, 1978, 1981; Monk, 1968). The old-growth cypress stand cannot be perpetuated without major disturbance because there are no Taxodium in the understory to succeed it. Disturbances of the last 100-200 years, including numerous fires and attempts to drain the swamp, have not been of sufficient magnitude to alter the successional trend in the community. This stand will eventually be a Gordonia-dominated bay swamp, a variation of the red bay-sweet bay community type occurring within the peaty swamp series described by Penfound (1952).

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