

WATER MANAGEMENT: KEY TO WETLAND FOREST IMPROVEMENT IN THE SOUTHEAST

By Cortland E. Young, Jr.¹

The Hydrology and Soil Improvement Research Project, Southeastern Forest Experiment Station, Forest Service, USDA, which is headquartered in Charleston, S. C., began a more active program of water management research on coastal plain wetland forests in July 1962. Included in this program is emphasis on 4 broad aspects: (1) Changes in site productivity that result from water management; (2) hydrologic properties of wetland forest soils; (3) hydrology of the various types of wetland forests; and (4) development of methods of water management.

From southern Virginia to northwest Florida, almost 1/4 of the commercial forest land falls into the wetland forest category; about 18 million acres of this lies in the coastal plain. Water appears to be a primary problem associated with these forests. Excess water can retard pine tree growth, limit accessibility, hinder regeneration and restrict intensive management. One or all of these factors has led woodland owners to initiate some form of water management on their holdings.

One consequence of the water management already under way has been to improve accessibility to over 1 million acres of wetland forests in the southeastern coastal plain. There is some evidence that a better environment for timber production has also been created on some of this drained land, but this has not been adequately documented. However, early research results indicate that loblolly pine survival and growth can be improved by lowering average growing water table levels on drained wetland forest land in the South Carolina coastal plain. Additional results from a study in northwest Florida indicate similar results can be achieved with slash pine.

Present research places emphasis on determining more completely the roles water, aeration, and soil properties play in the improvement of wetland sites before and after water management. Hydrologic data from small-gaged forested watersheds will provide information on storm and flood flows, runoff coefficients and rates, and total annual flow and distribution. In addition, a waterbalance study being conducted on a 400-acre watershed will indicate the amount and frequency of water excess to the needs of the forest and should provide sounder criteria for proper water management of this and similar type forested areas.

Water management is a long way from being a fully developed tool for the woodland owner to apply to his wetland forests. More understanding of soil potentials, hydrologic processes, tree requirements, and water management techniques are needed before completely scientific solutions to their water management problems will be possible.

¹Agric. Engr., Watershed Management Project, Southeastern Forest Experiment Sta., Forest Service, U. S. Dept. of Agric., Charleston, S. C.

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