

EFFECT OF MINOR DRAINAGE ON HYDROLOGY OF FORESTED WETLANDS

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A simulation study was conducted to determine the impacts of minor drainage for silviculture on wetland hydrology. Long-term DRAINMOD simulations were used to determine the threshold drainage intensity (ditch depth and spacing) that removes wetland hydrology from forested wetlands. Analyses were conducted for 13 soil series and profile combinations at ten locations in the Atlantic and Gulf coastal states. Threshold ditch spacings (LT) were obtained for all combinations of soil profiles and locations. Analysis of the results showed that LT (m) can be approximated as $LT = C\sqrt{T}$, where T ($\text{cm}^2 \text{h}^{-1}$) is the horizontal hydraulic transmissivity of the soil profile, and C is a coefficient dependent on ditch depth and geographic location. The threshold spacings can be used as benchmarks to directly evaluate the impact of drainage alternatives on wetland hydrology. Lateral impacts were determined for a 0.9 m (3 feet) deep drainage ditch for all soils and locations considered.

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