



## Measurement and Simulation of Evapotranspiration at a Wetland Site in the New Jersey Pinelands: Usgs Scientific Investigations Report 2012-5118

By David M Sumner, Robert S Nicholson

Bibliogov, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book \*\*\*\*\* Print on Demand \*\*\*\*\*.Evapotranspiration (ET) was monitored above a wetland forest canopy dominated by pitch-pine in the New Jersey Pinelands during November 10, 2004-February 20, 2007, using an eddy-covariance method. Twelve-month ET totals ranged from 786 to 821 millimeters (mm). Minimum and maximum ET rates occurred during December-February and in July, respectively. Relations between ET and several environmental variables (incoming solar radiation, air temperature, relative humidity, soil moisture, and net radiation) were explored. Net radiation ( $r = 0.72$ ) and air temperature ( $r = 0.73$ ) were the dominant explanatory variables for daily ET. Air temperature was the dominant control on evaporative fraction with relatively more radiant energy used for ET at higher temperatures. Soil moisture was shown to limit ET during extended dry periods. With volumetric soil moisture below a threshold of about 0.15, the evaporative fraction decreased until rain ended the dry period, and the evaporative fraction sharply recovered. A modified Hargreaves ET model, requiring only easily obtainable daily temperature data, was shown to be effective at simulating measured ET values and has the potential for estimating historical or real-time ET...



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