

MEASURING EVAPOTRANSPIRATION IN THE OPE³ RIPARIAN ZONE

Establishing the water budget (and ultimately the nutrient balance) in a riparian zone within an agricultural setting requires accurate measurements of water loss in the system from both stream flow export and evapotranspiration (ET). There should be little water storage capacity within the wetland because of lack of a vadose zone, so water inputs (groundwater, surface runoff, direct precipitation onto the wetland) should roughly equal outputs (stream flow and ET).



This photo shows a transect of trees instrumented with sap flow sensors that record the rate of sap flow in trees within the riparian zone. Dual probes determine the extent of heat dissipation, as a measure of sap flow velocity. Each tree has three probes, so variabilities in sap flow rates through the trunk are averaged. Readings are logged every 10 minutes. Estimation of leaf area index (as a function of trunk width) allows conversion of sap velocities to real ET rates, which will then be scaled up to the entire riparian area based on vegetative density surveys.

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