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## Alfred Bog Hydrology Study

The Alfred Bog is a unique and exceptional feature; it's the largest and highest quality peat bog in Southern Ontario with an area of 4,200 hectares. It is a class one provincially significant wetland (the highest class) and houses several rare and endangered species including a healthy moose population. Peat has been mined from the Bog for decades, accompanied by widespread artificial drainage. Most agree that this drainage threatens the Bog and the species it supports. A study of the hydrology of the Alfred Bob was initiated in early 2013 to establish a baseline understanding of water occurrence and fluxes in the Bog prior to any restoration activities.

The study is led by a research team at Carleton University, in partnership with SNC and Ontario Parks. The main objective is to determine the Bog's hydrology by installing long-term monitoring equipment to provide baseline data required for assess future restoration initiatives.



*Alfred Bog  
Meteorological  
Station*



*Alfred Bog Aerial Photo*

To date, the Hydrology Study has focused on installation of the monitoring network, including a complete meteorological station, and preliminary data collection. A description of some components is provided below:

**Meteorological station:** Instruments measure precipitation, humidity, temperature, solar radiation and wind speed/direction. Data is used to accurately measure evapotranspiration, which is an essential component needed to calculate the water budget. The station was installed in fall 2013; data is collected remotely through a cellular modem, and is uploaded regularly to a shared website for partner access. EOWRC funds helped purchase some met-station equipment.

**Water levels:** water level loggers were installed in stilling wells (water table wells) across the bog in summer 2013. Information will be used to support the water budget and estimates of fluxes. Continuous information in recorded at the loggers and downloaded manually.

**Streamflow:** an acoustic Doppler velocimeter (ADCP) will be used to measure surface water flow some of the streams by developing rating curves. This information will be used to develop and continuous record of the water budget at Alfred Bog starting.

Next steps include continued monitoring and analysis of hydrology and remote sensing data. In addition, a study of vegetation communities and restoration hydrology will complement the overall study objectives.