WORKHORSE WETLAND - 6

WETLAND GEMS

PHEASANT BRANCH

DANE COUNTY

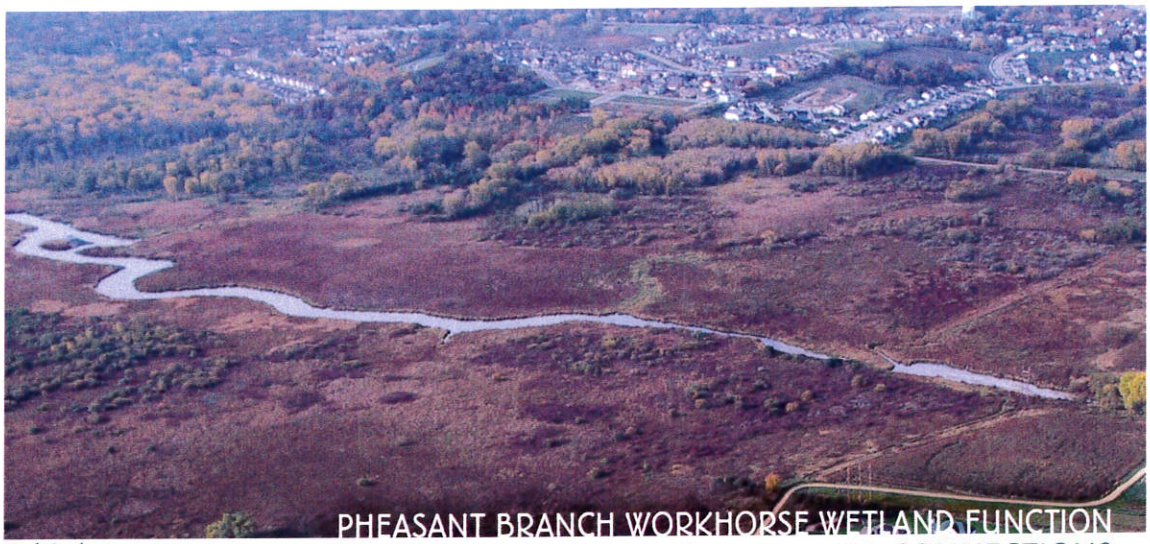
Property Owners: Pheasant Branch Conservancy, City of Middleton, Dane County

Wetland Types Present: marsh, sedge meadow, fen, shrub carr, floodplain forest

Funding for this project provided by ***The McKnight Foundation,*** *which seeks to improve the quality of life for present and future generations through grantmaking, coalition-building and encouragement of strategic policy reform, and the* ***Wisconsin Coastal Management Program and National Oceanic & Atmospheric Administration,*** *Office of Ocean and Coastal Resource Management under the Coastal Zone Management Act, Grant # NA07NOS4190064.*

Wisconsin Wetlands Association

wisconsinwetlands.org



Dick Lathrop

PHEASANT BRANCH WORKHORSE WETLAND FUNCTION
GROUNDWATER CONNECTIONS

WETLANDS ARE SITES OF GROUNDWATER RECHARGE & DISCHARGE

Groundwater is unquestionably a precious resource. Underground aquifers store 97% of the world's unfrozen freshwater, and in Wisconsin, drinking water for 70% of residents comes from groundwater. While some wetlands are "perched" atop a layer of rock or soil with low permeability that isolates them from groundwater, many wetlands are closely connected to groundwater. Some wetlands recharge groundwater. In these wetlands, surfacewater permeates down through wetland soils to replenish groundwater aquifers. Many wetlands are groundwater discharge areas, or areas with springs where groundwater flows to the surface, at least for some portion of the year. Some wetlands, including fens, are dependent on groundwater as their primary water source. In other wetlands, the direction of water flow changes seasonally depending on water table conditions; water moves out of the wetland when water levels in the wetland are higher than surrounding groundwater levels, and into the wetland when they are lower. Groundwater-wetland connections are important to the maintenance of water quantity and quality in watersheds. Groundwater discharge through riverine wetlands can be important for stabilizing stream flows during dry months. Many trout streams originate in clear, cold, headwater wetlands that are groundwater-fed. And because of the filtering capacity of wetland plants and soils, groundwater-wetland connections help protect the quality of groundwater and surfacewater in lakes, rivers and streams.

PHEASANT BRANCH & GROUNDWATER

The Pheasant Branch Conservancy is a 550-acre natural area that includes a high quality wetland complex flanking Pheasant Branch Creek. A 1998 functional assessment of wetlands at this site found that they have groundwater connections of high significance. Two large sets of springs discharge into Pheasant Branch wetlands – each day more than 2.6 million gallons of clear groundwater flow from these springs. Significant volumes of groundwater seep into other marshy areas of the site as well. These wetlands in turn contribute to flow in Pheasant Branch Creek and ultimately feed Lake Mendota. Because of the clear quality of this water, northern pike and other Lake Mendota fish species once used the lower channel and marshes for spawning. Upland areas of the watershed, which have been experiencing urbanization in recent years, provide recharge for the springs. A detailed hydrological study by the U.S. Geological Survey determined the location of recharge areas and quantified the potential loss in spring flow associated with projected development scenarios. The study results have been used by the City of Middleton and the Friends of Pheasant Branch Conservancy to guide efforts to preserve the natural hydrology and groundwater-wetland connections in this system.

Groundwater bubbles up in the site's springs — Laura England

MULTIPLE VALUES

Pheasant Branch wetlands are also important stopover habitat for migratory birds, and provide warbler and vireo watchers with one of the best seasonal birding spots in the state. The Conservancy offers urban area residents a tranquil spot for outdoor recreation; visitors can observe a variety of wildlife and take in scenic views while hiking or biking the site trails.

ACCESS

Visit the Friends of Pheasant Branch Conservancy website: www.pheasantbranch.org.

OTHER EXAMPLES OF THE GROUNDWATER CONNECTIONS VALUE OF WETLANDS

Other sites where wetlands have strong groundwater connections include Jefferson Tamarack Swamp State Natural Area in Jefferson County, West Bend wetlands in Washington County, Mecan Springs in Waushara County, and Culver Springs and Nine Springs E-Way in Dane County.

Sources:

Evaluating the Effects of Urbanization and Land-Use Planning: Using Ground-Water and Surface-Water Models. Randall J. Hunt and Jeffrey J. Steuer. USGS Fact Sheet FS-102-01

Friends of Pheasant Branch Conservancy

Wisconsin Department of Natural Resources: Wetland Functional Values

USEPA Watershed Academy Web Module: Wetlands Functions and Values

Ramsar International Convention on Wetlands Fact Sheet Series: Groundwater Replenishment