The first two decades of development and research at the Olentangy River Wetland Research Park

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Abstract: This presentation will summarize the first 20 years of development of the Olentangy River Wetland Research Park (1991-2012) fiscally, structurally with the introduction of park features, and scientifically, including patterns of succession and long-term predictions of nutrient and carbon dynamics.

With a current endowment estimated to be $2.2 million and with new funding opportunities happening every year, the Olentangy River Wetland Research Park is now a permanent feature of The Ohio State University’s campus. Park features built in the first 20 years included 2 experimental wetlands with boardwalks with river-water pumped inflows, several other created or restored wetlands and floodplains, the Sandefur Wetland Pavilion, The Heffner Wetland Building, The AEP Bikepath Shelter, and an ever-expanding Mesocosm Compound.

A multi-year planting experiment at the ORWRP kidney wetlands began immediately after we added river water for the first time in March 1993 demonstrated that planting of wetlands did not influence vegetation diversity after 5 to 10 years. Furthermore, the vegetation that will happen in most cases in soils and water quality along the Olentangy River is a cattail (Typha) community regardless of what is planted because of high nutrient concentrations in the river system. Planting had little if any impact on water quality, especially on the retention of nutrients (nitrogen and phosphorus species). Wetlands such as those at the ORWRP showed significant carbon sequestration with low methane emissions that would otherwise negate that carbon sequestration. Thus the ORWRP wetlands are models for contributing to a positive solution for climate change.

A riverine living laboratory like the ORWRP provides immense opportunities for teaching at two levels: 1. educating graduate students to a deep level of wetland ecology which will enhance our next generation of wetland scientists and ecological engineers, and 2. providing opportunities for younger students to have their first introduction to a live scientific experiment related to wetland ecology and creation. With the immense number of graduate students who completed and published wetland science theses and dissertations during the first 20 years of the ORW (1991-2012) the first opportunity has already happened. During the first 20 years, we gave thousands of tours to pre-university school groups, encouraging many of these students to careers in wetland and aquatic ecology and related topics.

Location: Kottman Hall 103