

ABSTRACT

THESIS: FLORISTIC INVENTORY OF HAYES ARBORETUM CONSTRUCTED WETLANDS AND ASSOCIATED WOODLAND

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A floristic quality assessment was conducted on the two detention ponds, the flood ditch, and associated mesic woodland at Hayes Arboretum, Richmond (Wayne County), Indiana. The ponds were constructed in 2007 and the assessment was conducted in 2015. For the entire study area, 335 taxa representing 211 genera in 80 families were reported; 229 taxa were native and 106 were non-native. The native FQI and mean C for the study site were 45.2 and 3.0, respectively. The assessment of Pond 1: 80 taxa, 56 native, native FQI = 17.8, and native mean C = 2.4. The assessment of Pond 2: 71 species, 56 native, native FQI = 22.3, and native mean C = 3.0. The assessment for all ditches combined: 113 species, 89 native, native FQI = 28.7 and native mean C = 3.0. As expected, the assessment quality of the constructed wetland at Hayes Arboretum falls far below those of natural sites in Wayne County and in Indiana in general. However, when compared to other constructed wetland sites, the floristic quality of Arboretum's constructed wetland is similar for 10 years post construction. PCQ analysis of the associated mesic woodland determined the three most important species (bases on RIV) were *Acer saccharum* (34.4%), *Tilia americana* (17.8%) and *Liquidambar styraciflua* (12.8%), for a combined RIV = 65.0%. The other 35% is divided between 13 species, with none exceeding

4.2%. The unusual composition of this woodland is the result of past management procedures. In summary based on the floristic quality assessment, it was determine that that the study area is not nature preserve quality from a scientific point of view.