

ABSTRACT

Soil organic matter, content, matrix chroma, bulk density, total nitrogen, and pH were compared in naturally occurring reference wetlands and wetland creation projects in Pennsylvania. Soil samples were collected at two depths, 5 cm and 20 cm, from randomly selected points in 20 reference wetlands and 44 wetland creation projects. Reference sites contained more organic matter at 5 cm than wetland creation projects. Reference wetlands were higher in organic matter at 5 cm than at 20 cm, while wetland creation projects were uniform between the two depths. No relationship was found between time elapsed since construction and soil organic matter content in wetland creation projects. Neither landscape position nor wetland class significantly accounted for the variance in soil organic matter between reference wetlands and wetland creation projects. Organic matter was negatively related to pH, bulk density, and chroma and was positively related to total nitrogen. Hence, reference wetlands had lower pH, bulk density, and matrix chroma and were higher in total nitrogen than wetland creation projects. Wetland creation projects contained more sand and less clay than reference wetlands at 20 cm, and reference wetlands were siltier at 5 cm.