

In the Midwest, an extensive system of subsurface drainage pipes and drainage ditches has been installed to drain wetlands for farming. However, because of wet soil conditions and ponding, some former wetlands are marginally suited to farming. Many of these wetlands are being restored through initiatives such as the Wetlands Reserve Program. The restoration of wetlands benefits biodiversity, improves water quality, and provides basins for the temporary storage of flood waters. The restoration of the wetlands requires locating and removing or plugging of subsurface drainage pipes. Using conventional tile-probe rods, this is a slow, costly and labor intensive job. Alternative, more efficient methods for locating buried agricultural drainage pipes are needed. During the week of 13 to 17 August, soil staffs from the NSSC, the Ohio State Office, and the Findlay MLRA Soil Survey Office, explored the potential of using ground-penetrating radar to detect drainage pipes in several very poorly drained to well drained soils formed in moderately-fine and fine textured tills of western Ohio (Champaign, Darke, and Logan Counties). This study evaluated the impacts of soil texture, hydrology, and surface conditions on the detection of buried agricultural drainage pipes constructed of different materials, having different diameters and orientations, and buried at different depths.