

## Wetland Delineation

### Introduction:

Wetlands are ecologically important for the habitat they provide for migrating birds, other wildlife and rare species. Wetland habitats are vital for a variety of reasons. Not only do wetlands provide habitat for many different forms of life, but they also offer protection against floods and provide water quality maintenance (USDOI, 1984). The USDOI (1984) reported that prior to the 1960's, the value of wetlands was not fully understood, instead they were filled to make room for housing projects, industrial facilities, and a place to dump landfill items. Today wetlands are recognized for the many values and functions that they provide, including benefits to fish and terrestrial wildlife that inhabit them, improvement of environmental quality (water filtration and storage), and socioeconomic benefits to humans (US DOI, 1984). Efforts are made to delineate wetlands to better understand the area and to determine if the area studied is a wetland.

The research objectives include:

Objective 1: To determine which study sites should be ecologically and legally classified as a wetland; and

Objective 2: To compare species composition (dominant species), physiognomy (cover by stratum), diversity, and wetland status at increasing in distance from the New River:

Study Sites for Comparison:

- 1) Floodplain immediately adjacent to the New River (~10 m)
- 2) Floodplain more distant from the New River (~30 m)
- 3) Elevated bike path above the New River floodplain (> 50 m from River.)

**Method:**

The study area included four study sites near Dudley's Landing in Radford Virginia. Each study site was 10x10 meters. In each site tree cover, shrub cover, and herbaceous cover were recorded. The type and number of invasive species were also recorded in each plot. Physical features such as soil color and the "rotten egg" smell is typical of wetland. This study site was selected because it is located in a floodplain adjacent to the New River.

**Results:**

All sites are wetlands according to the tests that were performed. Three different tests, the prevalence test, the dominance test and the rapid test are performed to determine if the site tested is a wetland. All four plots at the floodplain that is adjacent to the New River failed the rapid test, this test looks at the species in the wetland but does not perform any calculations to determine species dominance. Based solely on the prevalence test each of the four sites passed and are classified as wetlands. Of the three study sites one was close to the river while the other two were located further from the river. Each site had different species cover and composition. The study site closest to the river was mainly comprised of Box Elder (*Acer negundo*) Silver Maple (*Acer saccharinum*). Of the four plots studied at the floodplain the sites furthest from the river had more percent cover of Boxelder, 17.5 % and 62.5 % than the sites closest to the river. The site at the bike path, above the flood plain consisted of some Box Elder (*Acer negundo*) as well as other trees and shrubs such as Black Walnut (*Juglans nigra*) and Hackberry (*Celtis occidentalis*). According to the data there is more shrub cover in the study site above the floodplain nearest the bike path.

**Conclusion:**

According to the data collected at the study sites, the floodplain sites studied can be considered wetlands. The species recorded in each site also determine that the sites studied are wetlands.

The dominant species in the sites are of those found in “typical” wetlands.

**Reference:**

National Wetlands Inventory (1984) Wetlands of the United States: Current Status and Recent Reports