

Woodland Vegetation Patterns at the Litzsinger Road Ecology Center



By Abigail Carroll

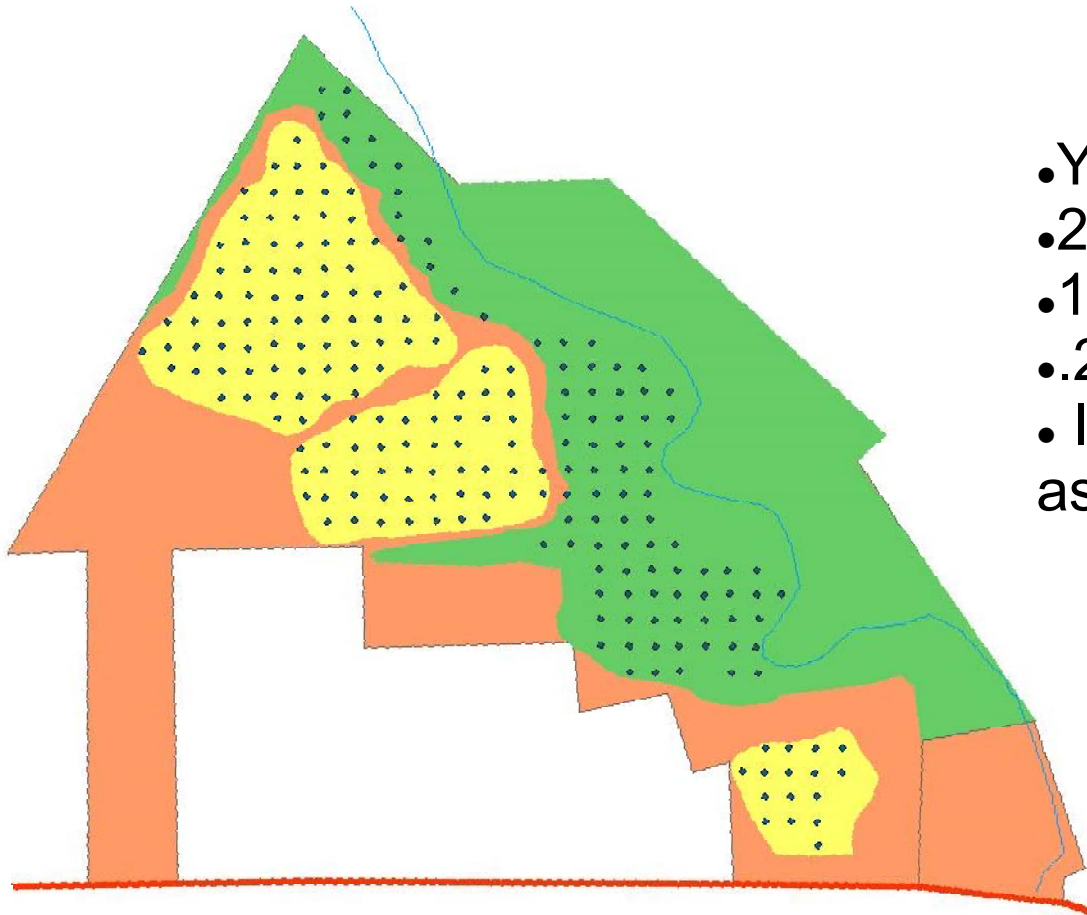


Objectives

- To analyze woodland monitoring data that has been collected over the past 5 years
- Look at how vegetation patterns in the woodlands have changed
- To better understand the results of LREC staff restoration work

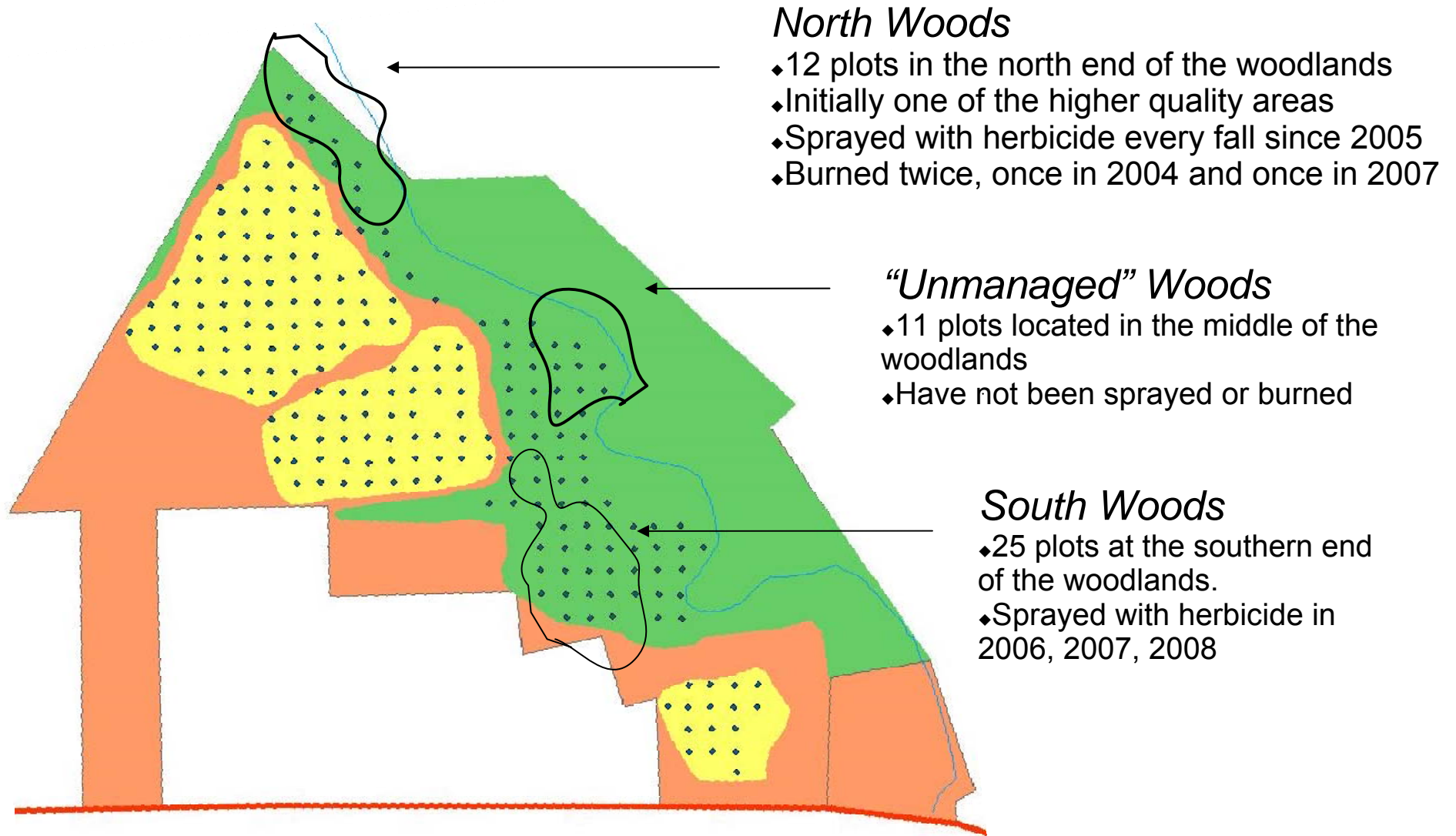
Methods and Materials:

Woodland Monitoring



- Years: 2004, 2006, 2009
- 2x per summer (May, July)
- 15 meter square grid system
- .25m sq. plots
- Identify plant species and assign cover class from 1-5

Woodland Monitoring Regions





Methods and Materials:

Data Analysis

General Overview of the Woodlands

- ◆ Focusing on invasive species population vs. native species

Comparison between the Three Regions

- ◆ Total Cover (Invasive v. Native)
- ◆ Average Cover (Invasive v. Native)
- ◆ Euonymus
- ◆ Species Richness (Invasive v. Native)
- ◆ Coefficient of Conservatism

*Comparison between the native and invasive populations

- ◆ Missouri Exotic Pest Plant (MOEPP) list provided on the MOBOT website

The Woodlands

Total Species: increased from 37 → 80
(*possibly affected by the staff's
increased ability to identify plants)

% Coverage Invasive Species:
decreased from 61% →
28.5%

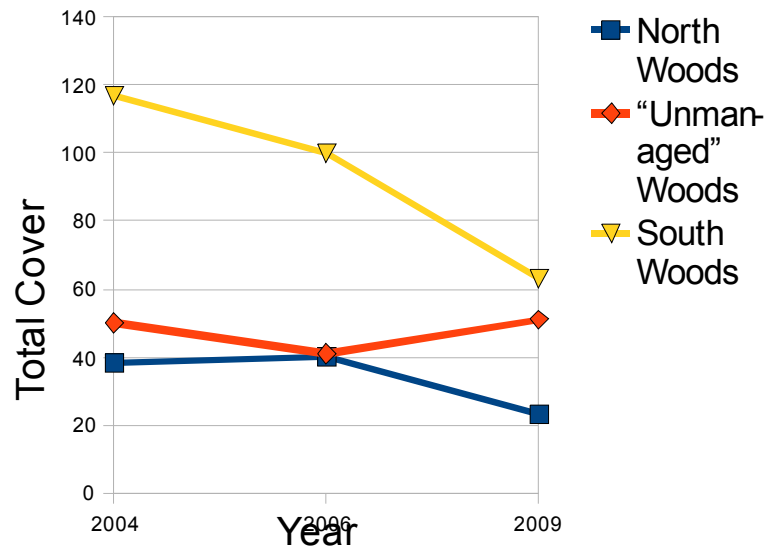
Avg. Cover of Invasive Species:
decreased from 3.37 → 2.61

Avg. Cover of Non-Invasive Species:
increased from 1.76 → 2.13

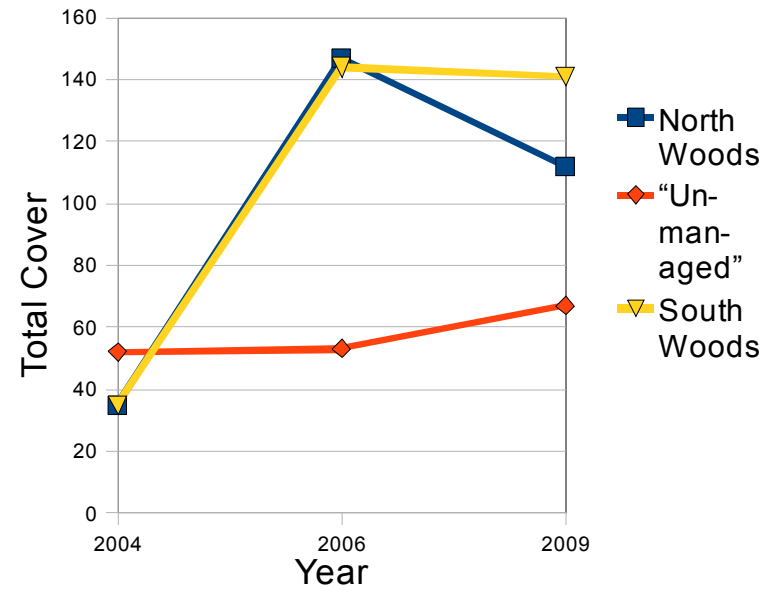
Avg. Coefficient of Conservatism:
decreased from 3.83 → 3.29
(*possibly affected by misidentification
of Lesser Celandine)

Total Cover

Total Cover of Invasive Species

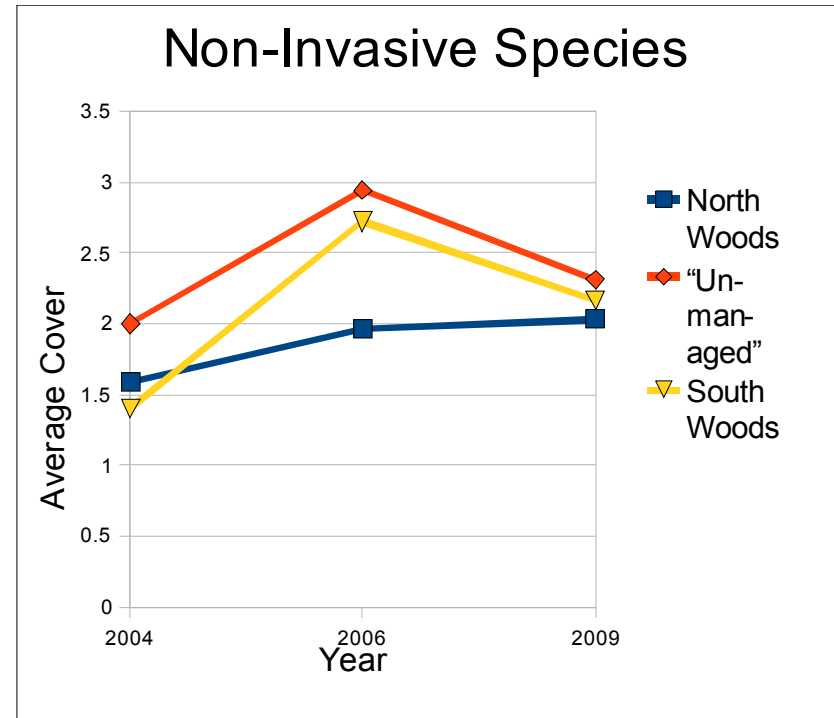
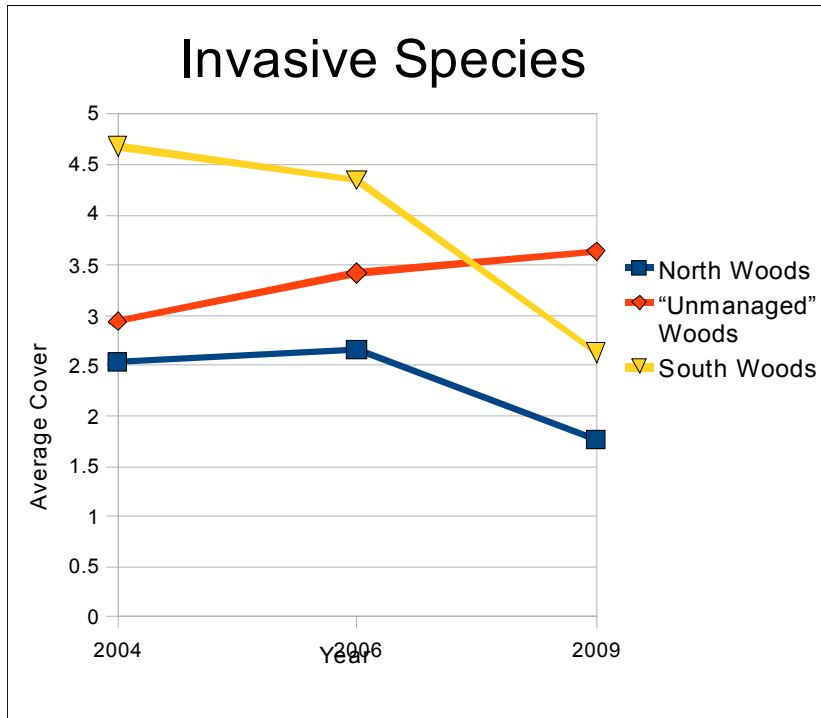


Total Cover of Non-Invasive Species



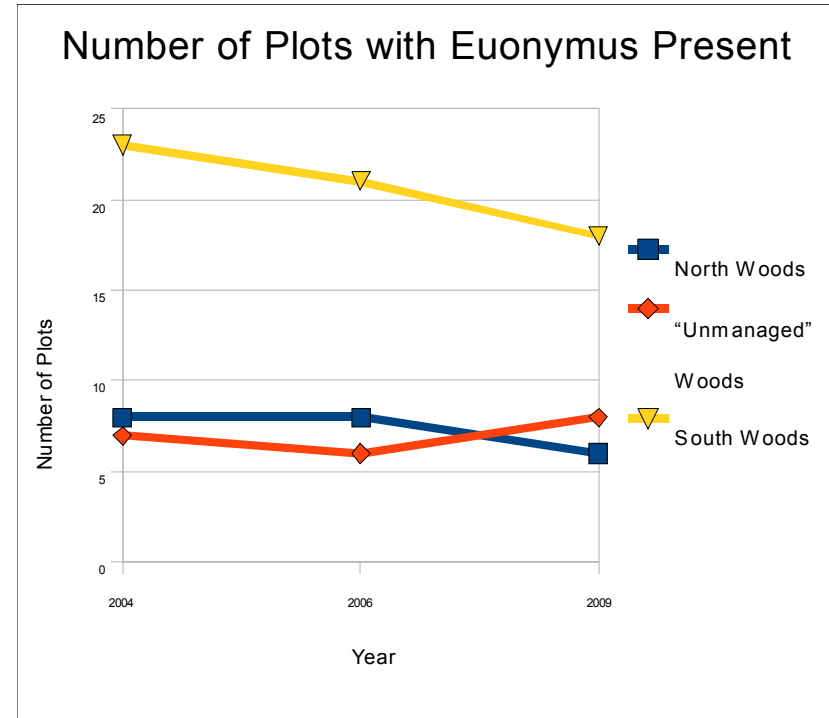
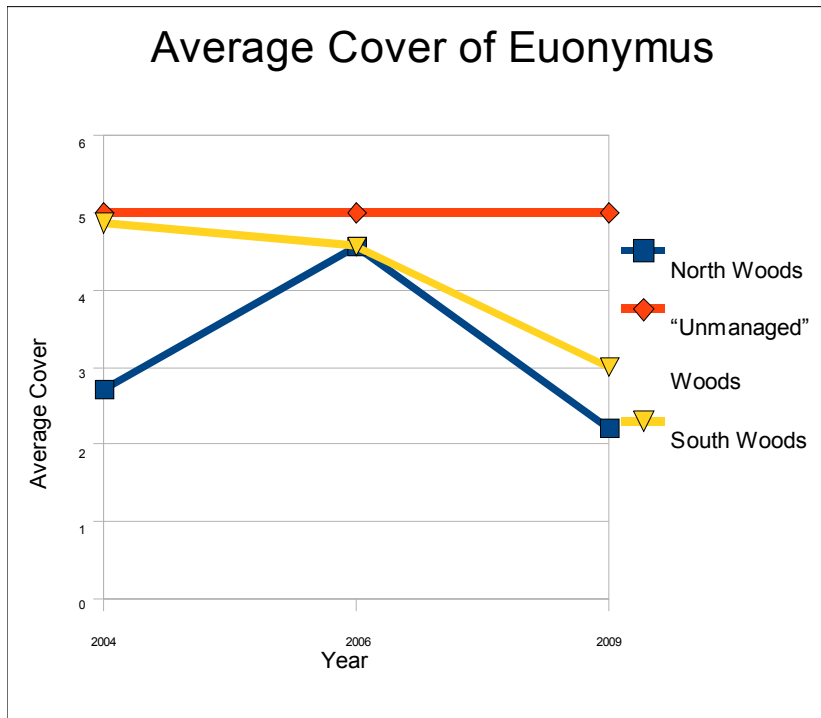
*Total cover is not defined by specific units. Rather, it is the product of the average cover and the total number of plots.

Average Cover



*The average cover class assigned to invasive and non-invasive species

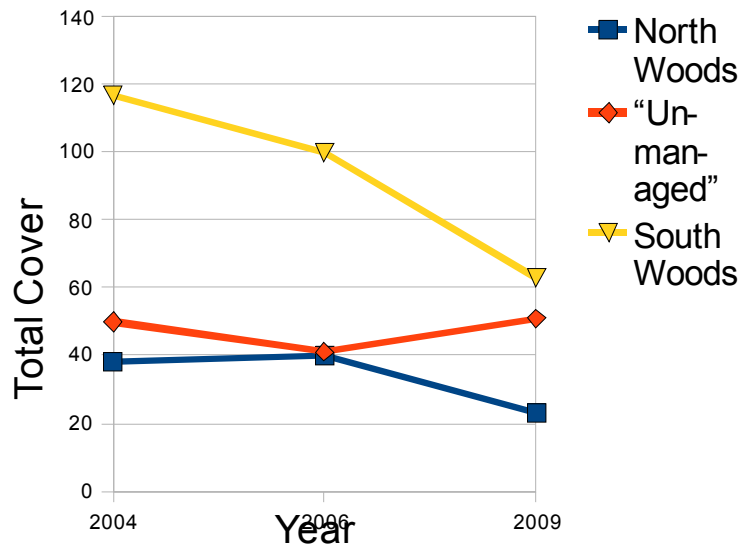
Average Cover of Euonymus



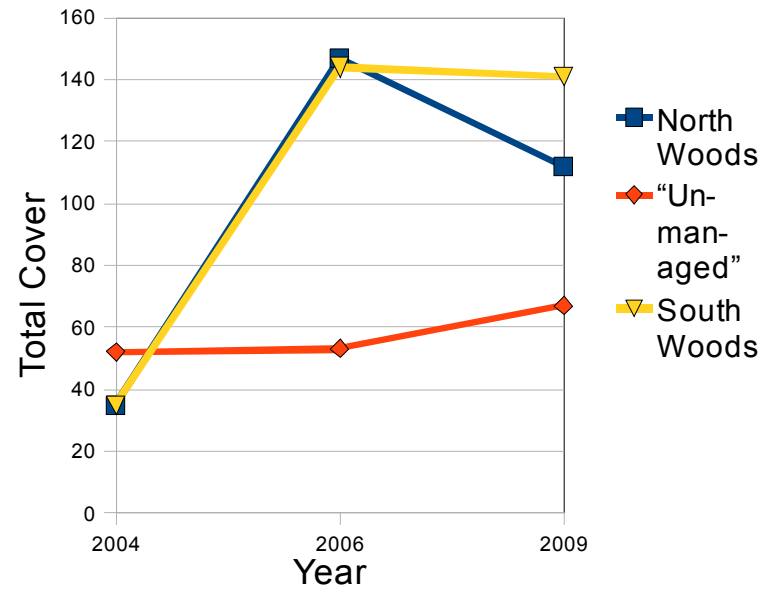
*Since euonymus fortuneii has such a dominant presence in the LREC woodlands and is the focus of much restoration work, I decided to look more closely at this plant species in particular

Species Richness

Total Cover of Invasive Species

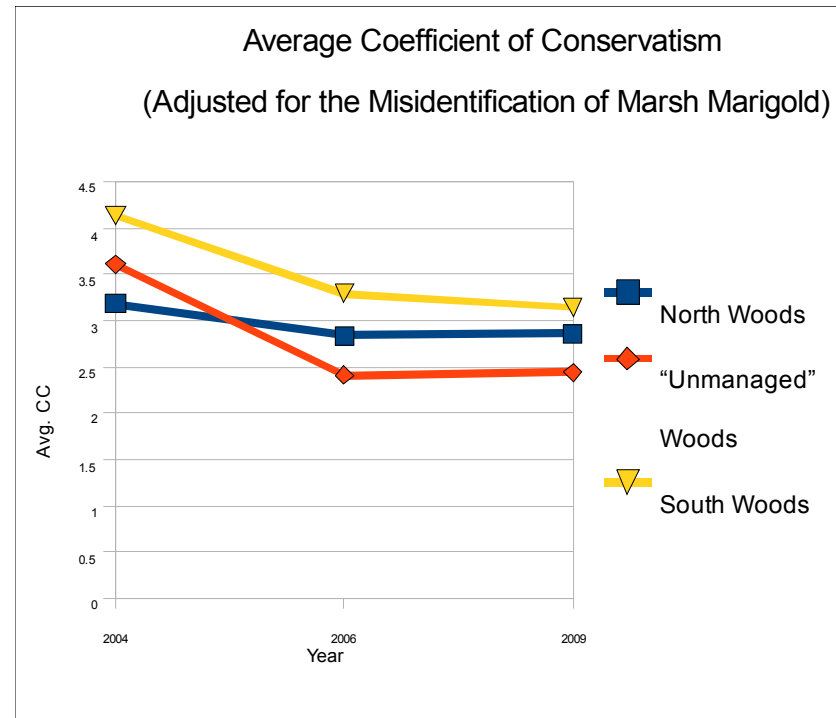
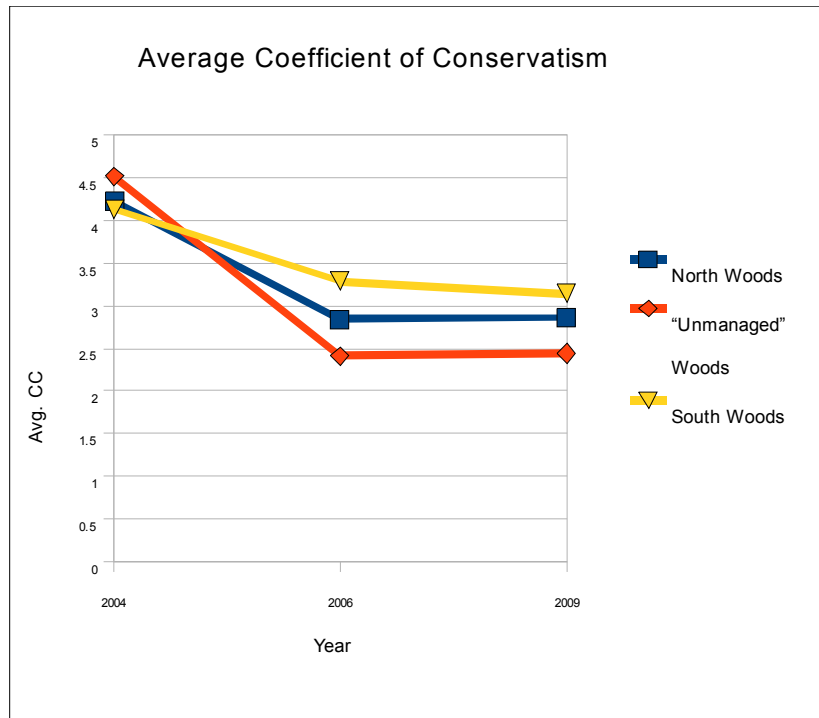


Total Cover of Non-Invasive Species



*Species Richness indicates the total number of species found in the area.

Coefficient of Conservatism



*Coefficient of Conservatism is a ranking system (0-10) used to describe the conservative value of a plant.



Conclusions

- ◆ In general, positive trends in the woodlands
 - Decreasing invasive species
 - Increasing native species
 - Increasing species richness
- ◆ North and South Woods much more favorable trends than the “Unmanaged” Woods, showing that restoration work is producing positive results
- ◆ Coefficient of Conservatism: Low and decreasing! (why?)
 - Misidentification of Lesser Celandine
 - Lower CC's of introduced species
 - Frequent flooding