

# **Characteristics and Management of Nesting Habitat Constructed for Blanding's Turtle in Southeastern New York**

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# *Emys blandingii*: NYS Threatened Species

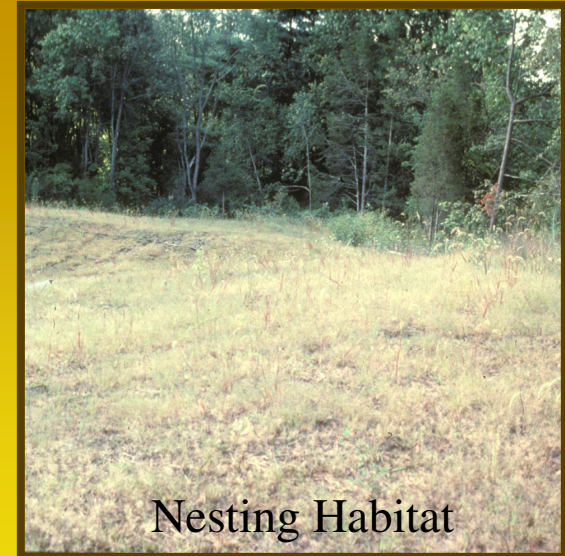
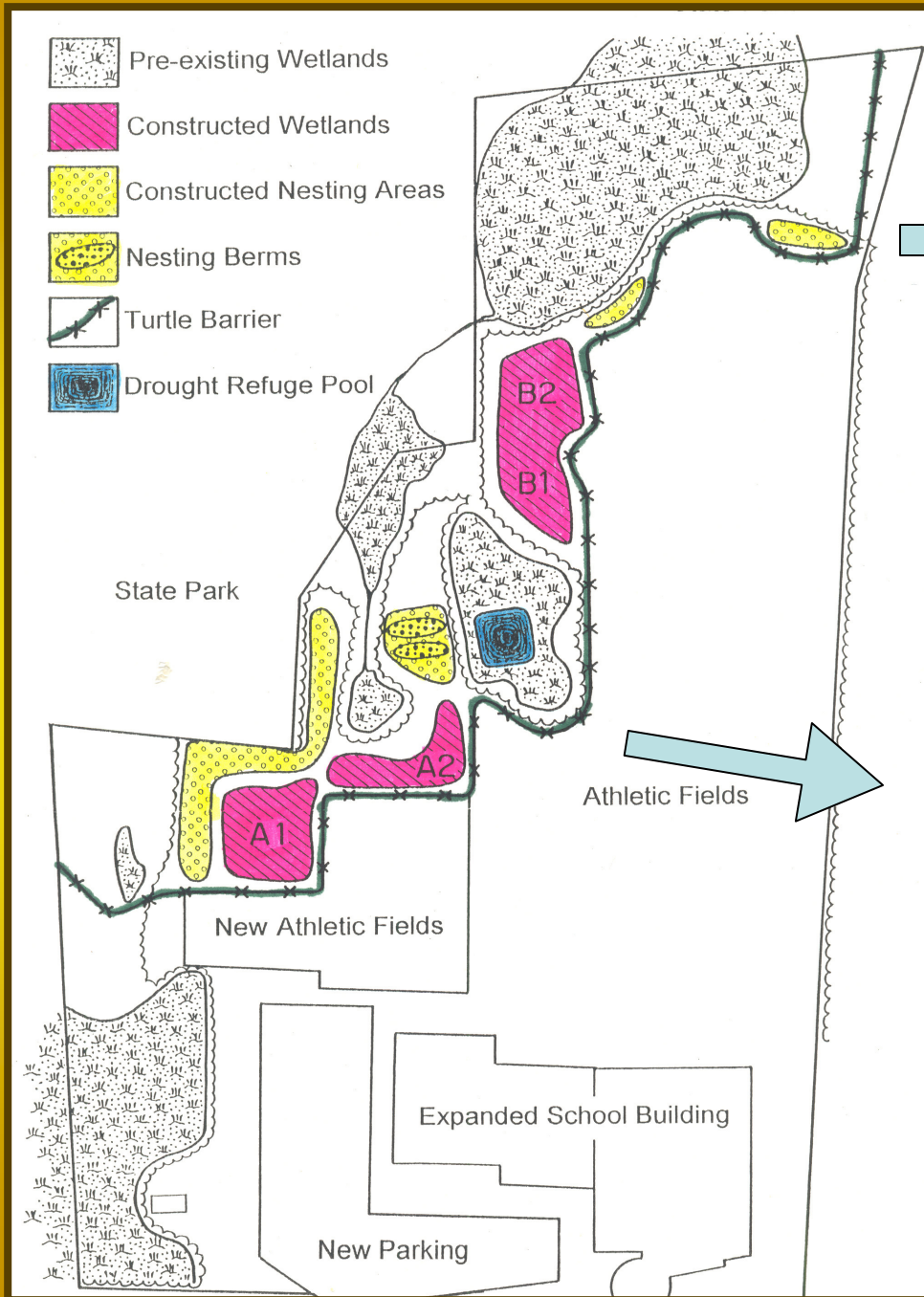
## Threats in Dutchess County, NY:

- roads, construction, farm equipment
- habitat degradation and loss
- landscape fragmentation and sprawl
- subsidized predators
- collecting

# Nesting Habitat



Poorly vegetated, sunny, gravelly loam soils; often glacial outwash



**Constructed Habitats,  
1996-1997**

# Methods

- May and June 1997-2004
- Turtles trapped and radios attached
- Turtles radiotracked to their nest site and nests covered with predator guards
- Vegetation variables estimated within 1 m of nest and collected soil sample within 0.3 m of the nest and a random site
- Hatchlings measured and released in nearby wetlands



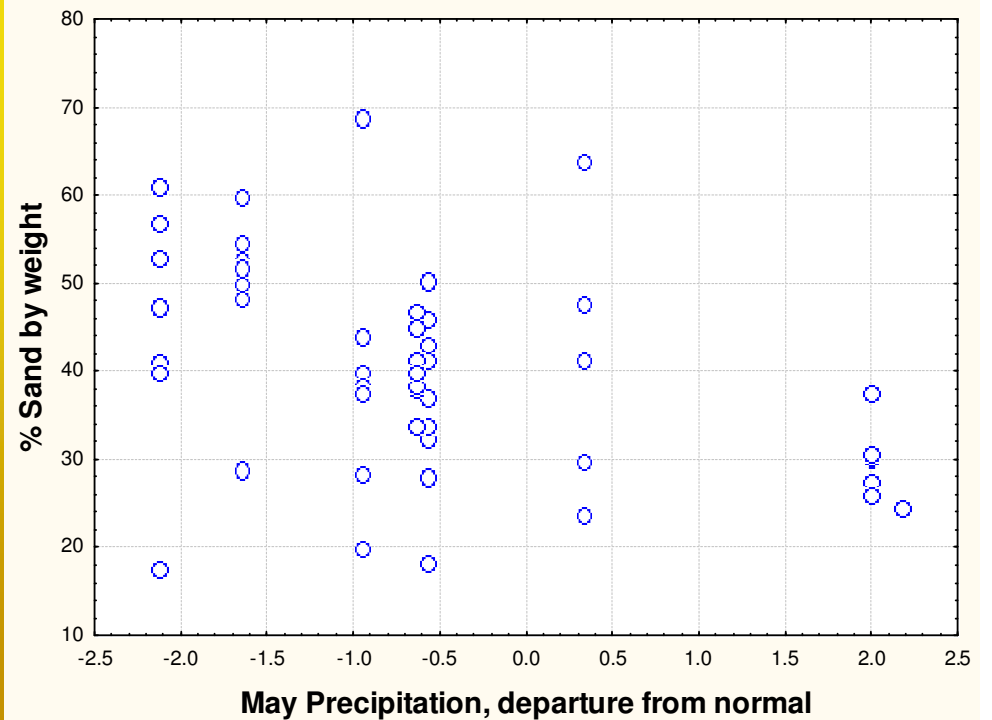
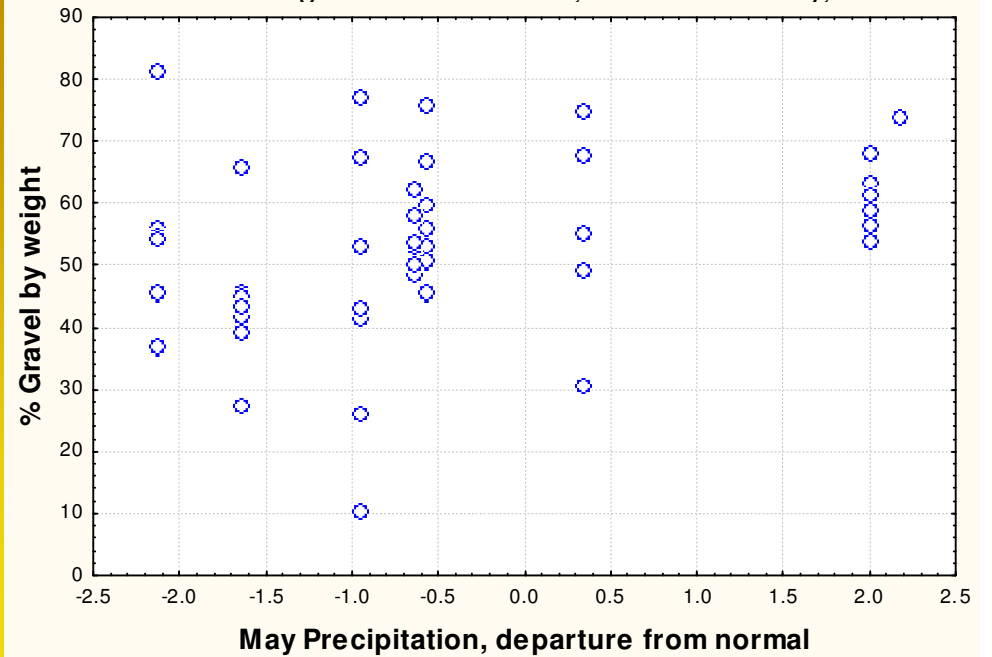
# Nest Site Selection



Females select nest sites by soil texture



Soil at Blanding's Turtle Nest Sites, Dutchess County, NY



# Blanding's turtle hatchling data during wet and dry years (1997 – 2004)

Wilcoxon-rank sum test

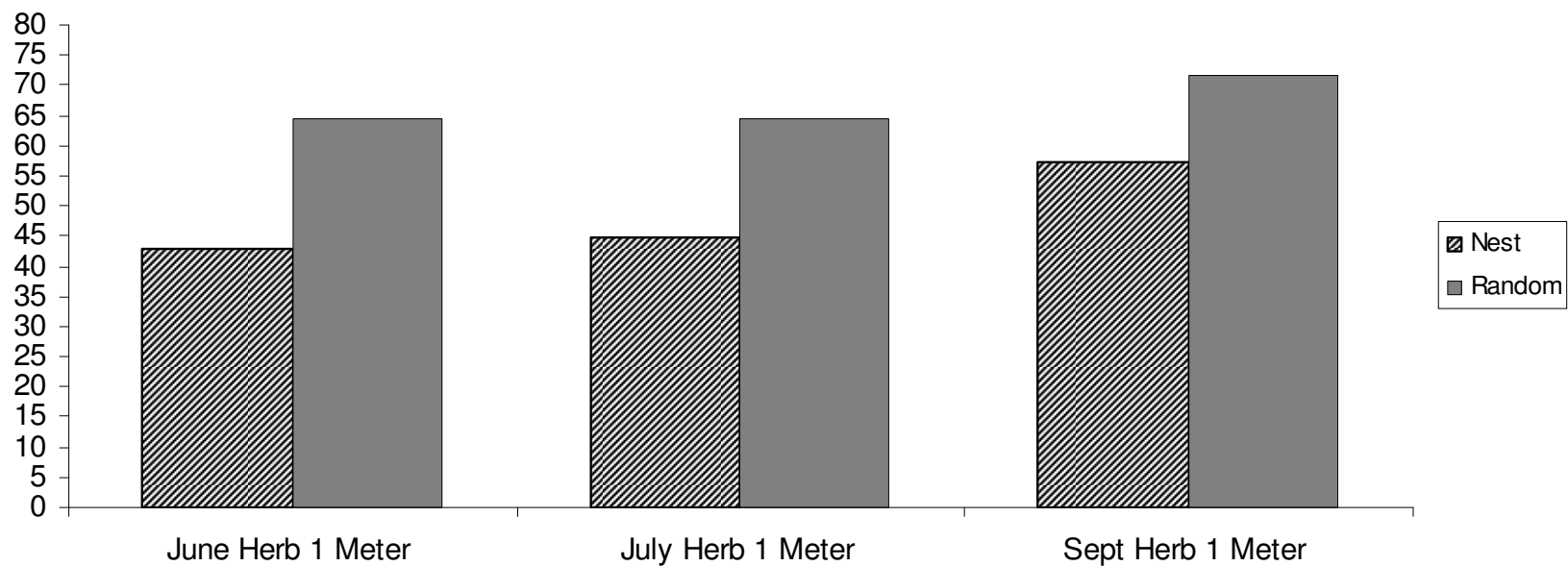
Standard deviations in parentheses following means.

Hatchling Data	DRY (4)	WET (3)	Z	Probability>Z
Emerged hatchlings	9.75 (2.27)	8.39 (0.79)	-0.7644	0.4446
Live Hatchlings	0.57 (0.71)	0.22 (0.25)	-0.9625	0.3357
Dead Hatchlings	0.47 (0.48)	1.29 (0.67)	1.0173	0.3090
Undeveloped Eggs	1.27 (0.99)	1.28 (0.48)	0.6939	0.4877
Carapace Length	35.58 (0.65)	35.05 (0.65)	-0.9158	0.3598
Weight	8.85 (0.50)	8.96 (0.28)	-0.2864	0.7746



## Herbaceous cover within 1 m of Blanding's turtle nest sites and randomly selected sites.

Percent Coverage of  
Vegetation at Nest and Random Sites



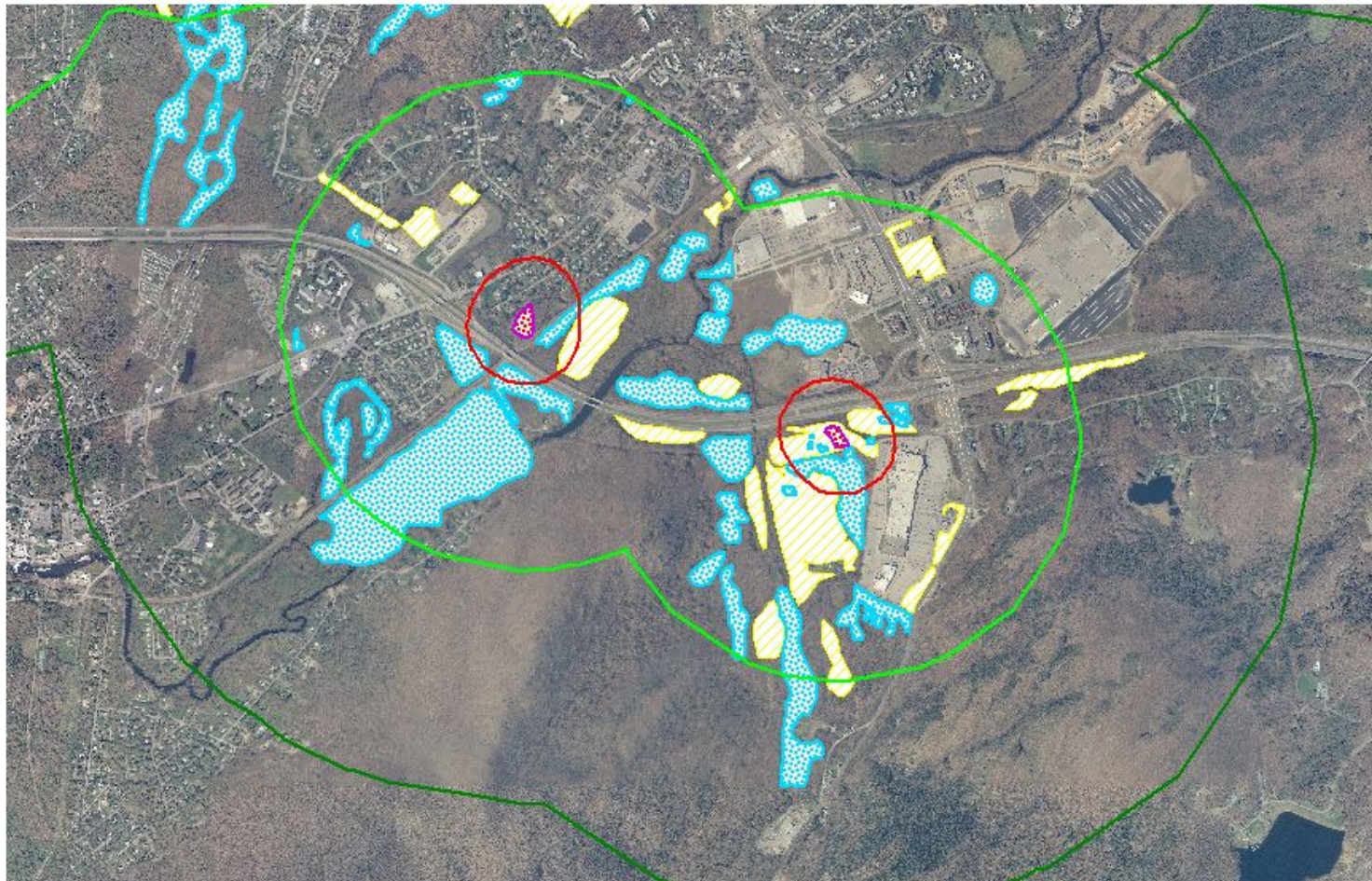


# Management Opportunities




- Nesting habitat is simple to create but must be managed to avoid overgrowth by dense tall vegetation
- Nitrogen fixers (e.g. crown vetch and white sweet clover) may increase vegetation growth rate


# Suburbanization




0 300 600 Meters





 Blanding's turtle core wetland

 associated wetland

 potential nesting area

 200 meter boundary

 1000 meter boundary

 2000 meter boundary

# Nest Habitat Management

## Methods:

- Eight plots with three 5 x 7 m treatments each
- Treatments: mowed, handweeded, and rototilled to a depth of 15 cm



↑  
Handweeded, mowed, and  
rototilled treatments

←  
Typical pre-treatment plot

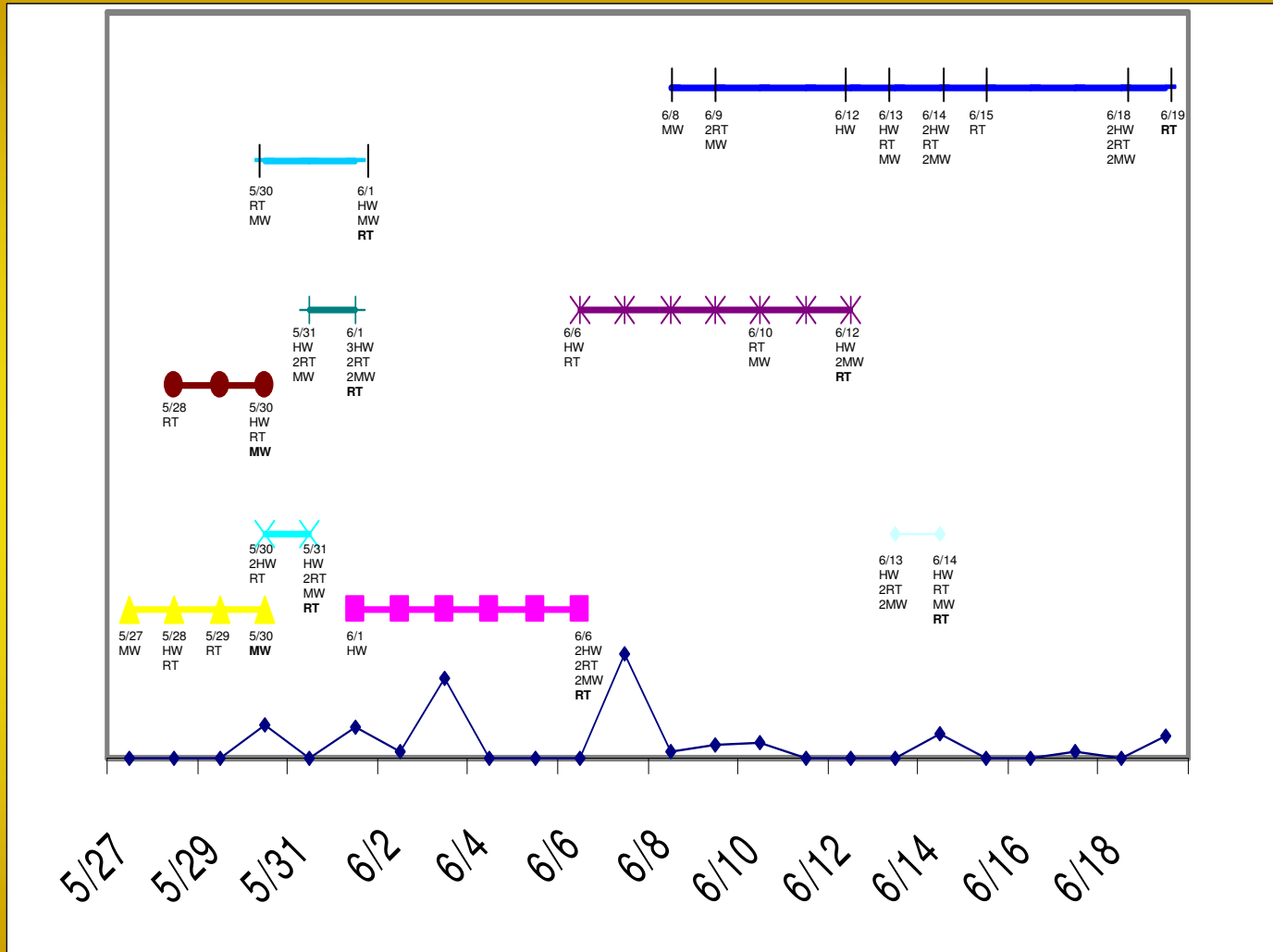


- Thread bobbins attached to gravid females found on land

- Thread trails followed the next day to determine movement patterns of nesting females



# Nesting Movements



# Conclusions

- Nesting habitat should include a variety of sparsely-vegetated, friable, and coarse-textured soils to accommodate varying weather conditions
- Long-term management of the nesting habitat should be incorporated in the construction plan
- Nesting Blanding's turtles often travel long distances, and this habit needs to be addressed when building nest habitat, managing a population, or determining conservation zones



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