

# Deer Management in New York State Parks

## The Letchworth Model

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# Overview

- Managing Deer to Protect Biodiversity
- Letchworth State Park Model
  - Overview of Letchworth
  - Deer Impacts at Letchworth
  - Letchworth Biodiversity and Deer Impact Assessment
  - Letchworth Deer Management
- Next Steps

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# Managing Deer to Protect Biodiversity

- Many studies have shown overabundant deer can have significant impacts to forest regeneration and biodiversity.
- The preferred method of controlling these impacts is to reduce deer populations through regulated hunting.
- Hunting in State Parks can be a controversial.
  - Hunting is viewed by some people as inhumane.
  - Potential user conflicts and safety issues need to be considered when new areas are opened for hunting.

# Letchworth State Park Model





# Overview of Letchworth State Park

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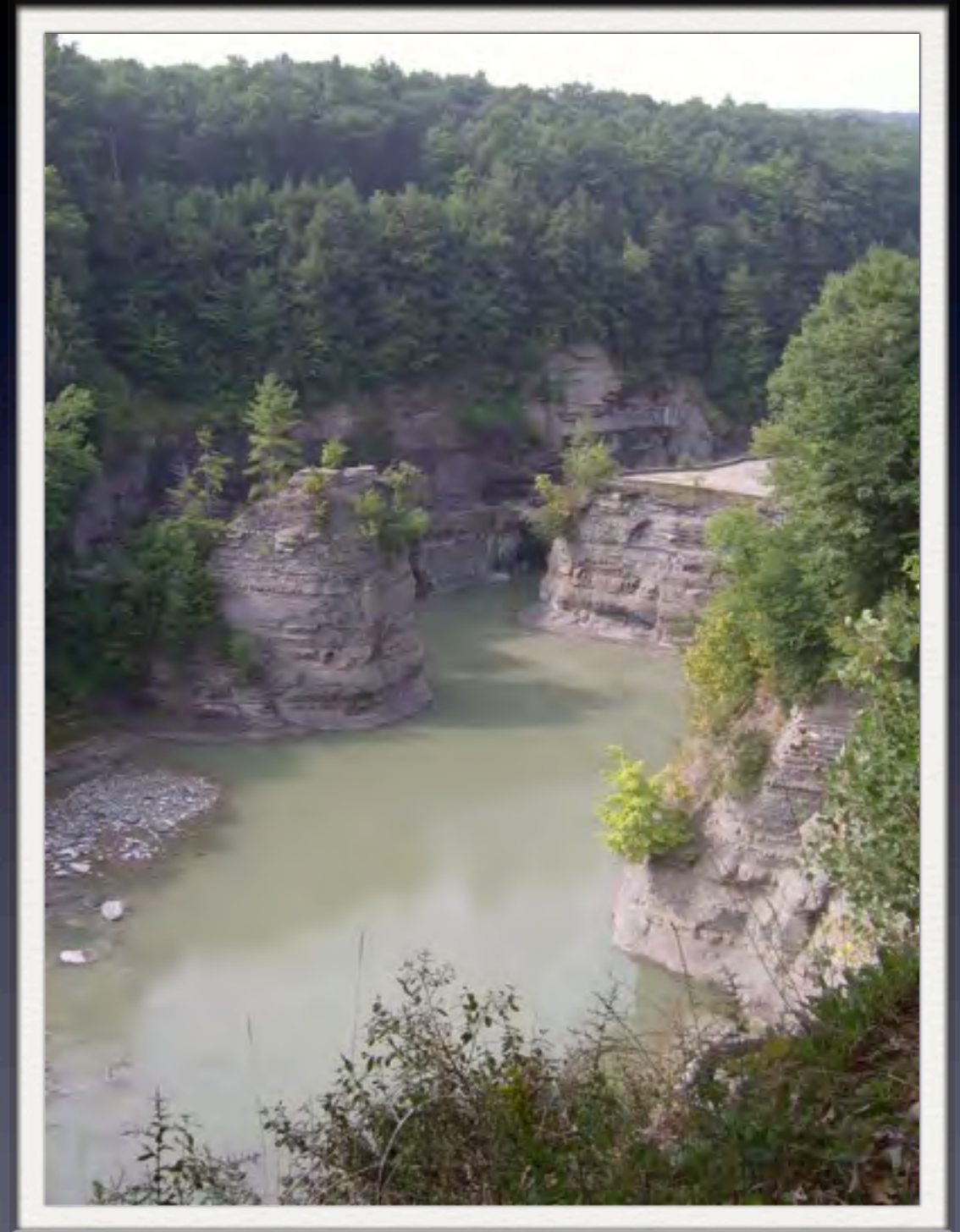
# Overview of Letchworth State Park

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- ~75% Forested



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- Grand Canyon of the East





# Overview of Letchworth State Park

## NY Natural Heritage Program Surveys

- 3 significant forest community types
  - Maple-basswood Rich Mesic (MBRM)
  - Appalachian Oak-hickory (AOH)
  - Hemlock-northern Hardwood (HNNH)
- 37 occurrences of 15 rare plant species



# Deer Impacts in the Park

- In the late 1970's a no-hunting zones were created in the northern and southern areas of the park
- Deer impacts in the southern no-hunting zone
  - Lack of forest regeneration in southern no-hunting zone
  - Disappearance of wildflowers and ferns
- 2001 Natural Heritage Program Report:
  - Deer considered the greatest threats to the forests
  - Significant amounts of browsing noted in some areas





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# 2004 Management Plan

- Open a portion of the southern no-hunting zone to a late muzzleloading season hunt.
- Public meeting held in October 2004
- Strong public opposition to the plan based on lack of data and poaching concerns
- Muzzleloading season cancelled

# Lesson from the public meeting:

There is a need for better documentation of deer impacts to justify the need to reduce deer populations through hunting.



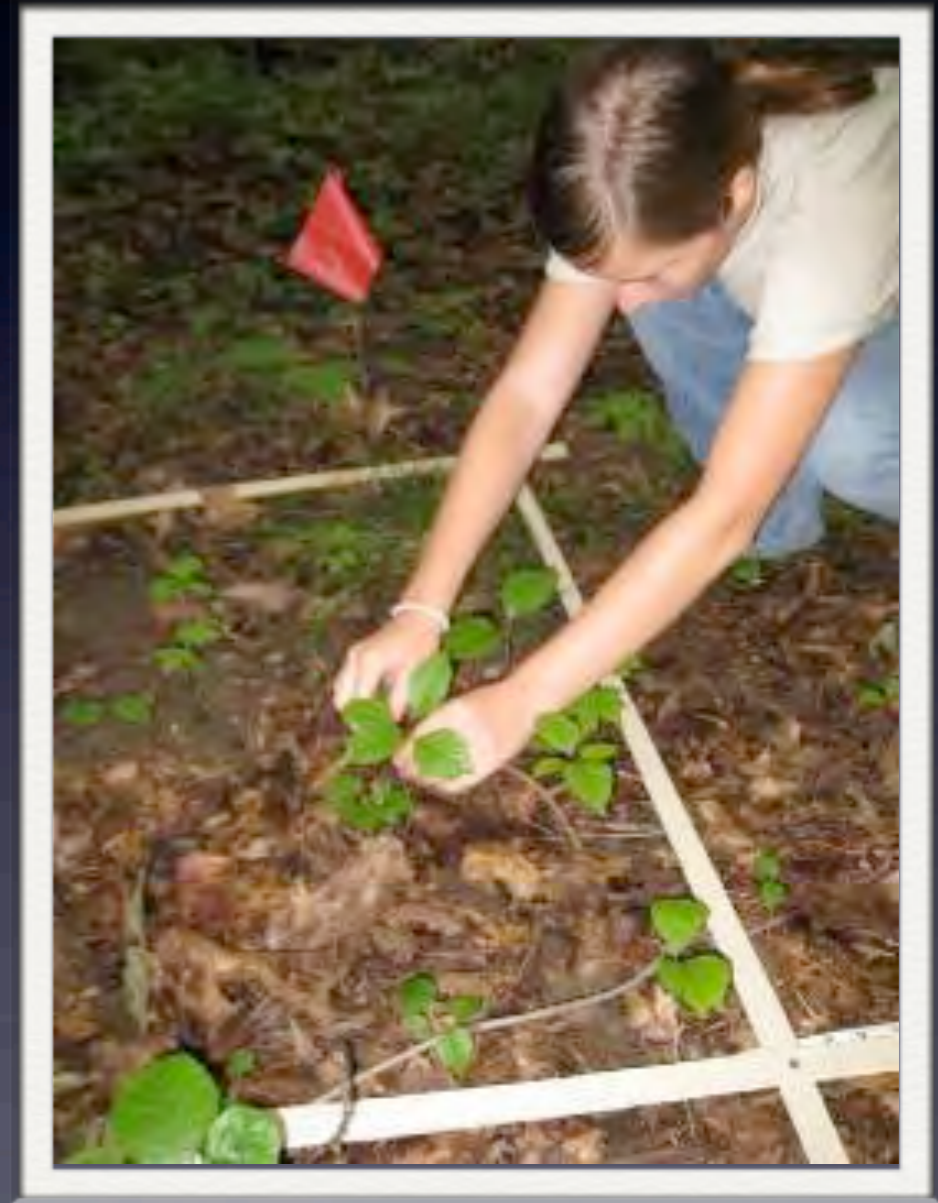


2009 Biodiversity  
and Deer Impact Assessment  
at  
Letchworth State Park



# Permanent Vegetation Monitoring Plots

- 1 in each forest type in hunting area and no-hunting zone for a total of 6
- Protocol based on the Carolina Vegetation Survey
  - 10m x 10m plots
  - Woody stems counted by species and height/DBH class
- Presence/absence noted for herbaceous plant species
- Presence of nonnative invasive species





# Deer Exclosures

- Three exclosures
  - two in no-hunting zone, one in hunting area
- Research and public education





# Deer Population Estimates

- Aerial Survey
- Standard Point Counts

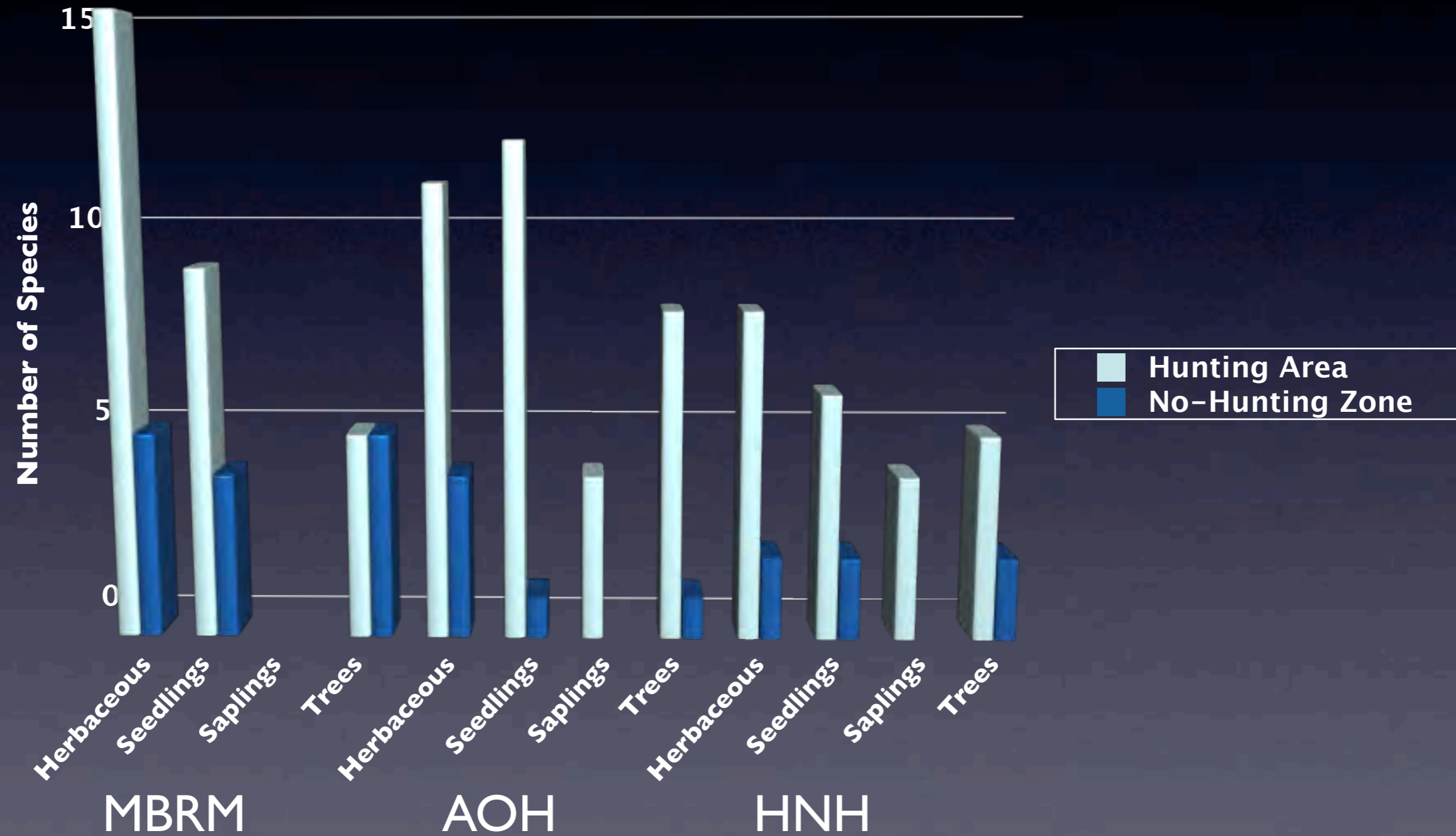


- Remote Cameras
- Deer Runs

# Results



# 2009 Vegetation Monitoring Plots



# Maple-Basswood Rich Mesic Hunting Area vs. No-Hunting Zone



Leatherwood

- Blanket of may-apple in hunting area plot
- No shrubs or saplings in no-hunting zone plot



# Appalachian Oak-Hickory Hunting Area vs. No-Hunting Zone



Hickory seedling

- Abundance of native plants in hunting area plot
- Japanese barberry, an invasive species, the only shrub in no-hunting zone plot



# Hemlock-Northern Hardwood Hunting Area vs. No-Hunting Zone



- Invasive species present in no-hunting zone plot
- Higher herbaceous layer diversity in hunting area plot



Browsed  
beech seedling



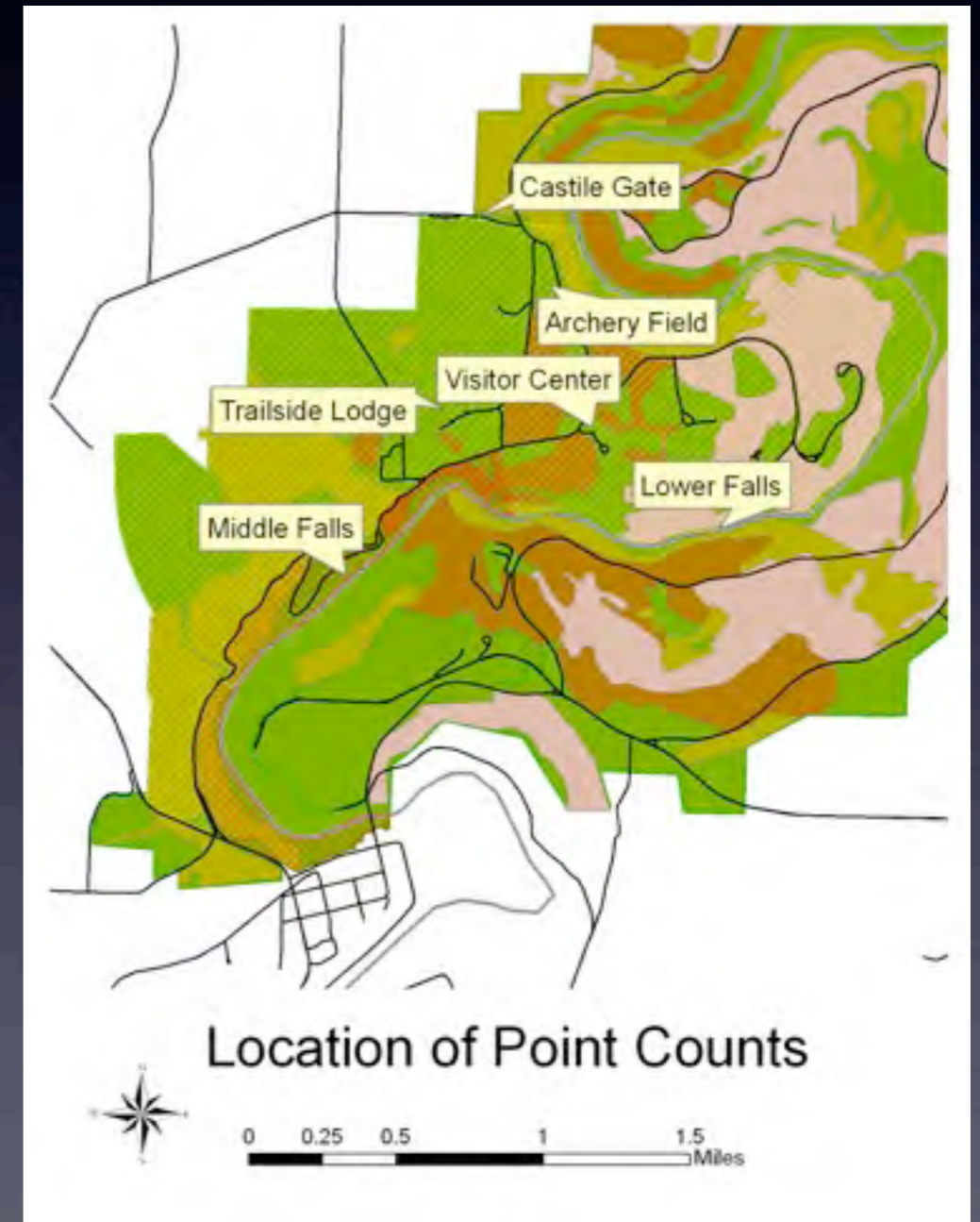
# Deer Population Estimates

- Aerial survey
  - 98 Deer in southern zone of park
  - 113 Deer in fields just outside of the southern part of the park.
  - Not enough snow to get a good count in the northern part of the park



# Deer Population Estimates

Location	Average Number of Deer
Archery Field	19
Middle Falls	14
Lower Falls	12
Visitor Center	11
Trailside	21
West of Castile Gate	25





# Findings

- Substantial damage to biodiversity in the no-hunting zone
- Very high deer population in the no-hunting zone
- Increase in number of nonnative invasive species in no-hunting zone





# 2009 Management Plan

- Open a portion of the southern no-hunting zone to a late archery season hunt.
- Goal: Reduce deer population in the southern zone by 100 does using DMAP's.
- Consider the use of deer damage permits if goal was not met
- Public meeting held in September 2009
- Some public opposition to the plan but some support as well.



# 2009 Results - Archery

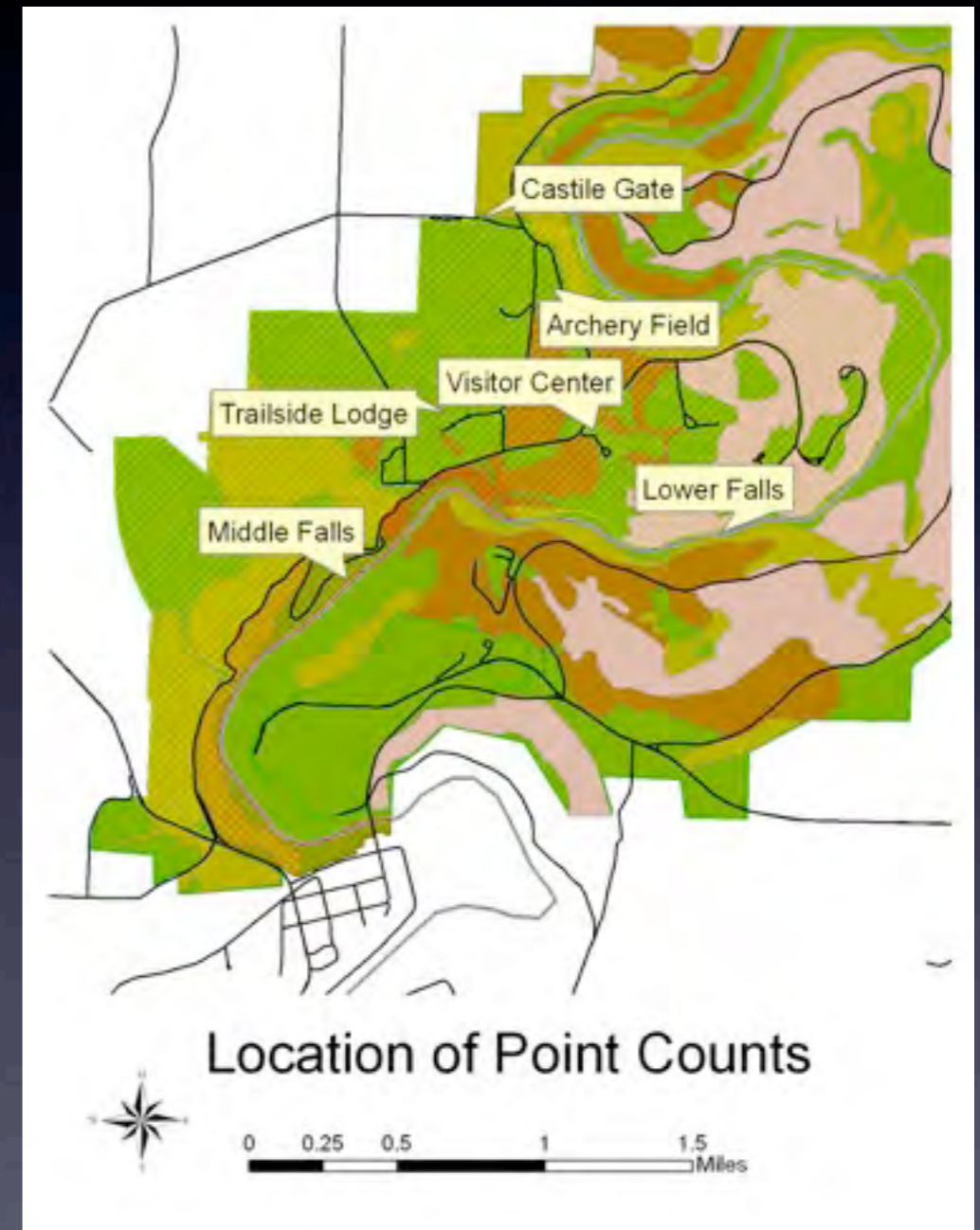
- Archery season ran Nov. 30- Dec 22
- Over 250 applications received 38 were allowed to hunt.
- 17 hunters successfully took 40 deer
- An additional 52 deer were taken using deer damage permits.



# Point Counts Pre and Post Hunt

Location	Pre Hunt	Post Hunt	% Change
Archery Field	19	14	-26.32%
Middle Falls	14	10	-28.57%
Lower Falls	12	11	-8.33%
Visitor Center	11	8	-27.27%
Trailside	21	14	-33.33%
West of Castile Gate	25	18	-28.00%

Average % change -25.30%



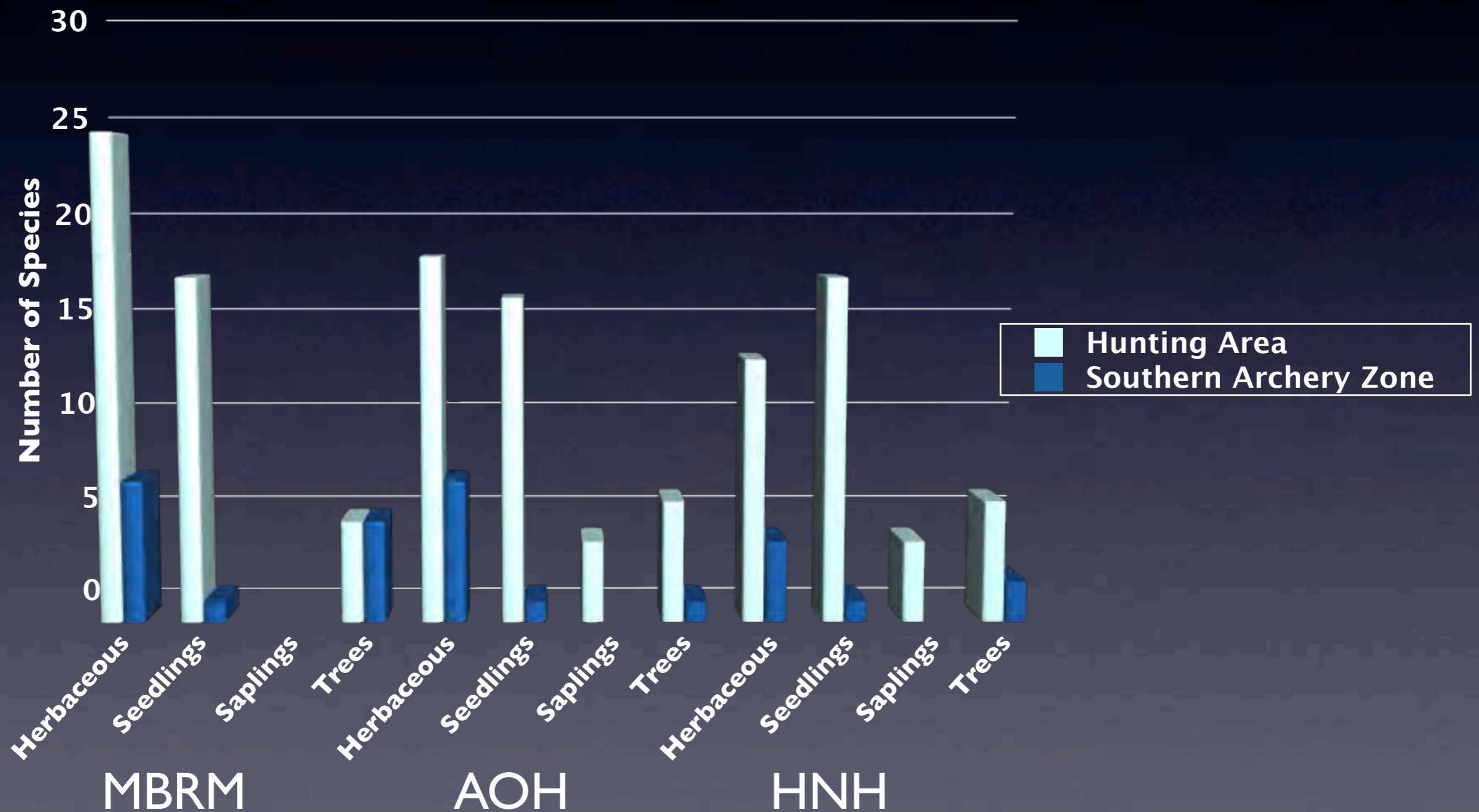


# Changes in 2010

- Increase the number of monitoring plots.
- Reevaluate hunting program to increase the number of deer taken by hunters.

# 2010 Vegetation Monitoring Plots

Increased the number of plots to 2 in each forest community





# 2010 Changes to Hunting Program

- No specific objective was set for the number of does to be taken
- Increased the number hunters to 99
- Increased the length of the season to Nov. 1–Dec. 21
- The use of deer damage permits was not considered

# Next Steps

- Work on better population estimates
- Continue research in monitoring plots and exclosures
- Inspect exclosures biannually
- Evaluate short term and long term approaches to deer management
- Identify strategy for control of invasive species



Questions?