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Bibley: 117464
United States Department of the Interior

NATIONAL PARK SERVICE

Morristown National Historical Park

Washington Place

Morristown, New Jersey 07960

STANDARD OPERATING PROCEDURE # 602

Morristown National Historical Park

Deer Exclosure

Vegetation Sampling of Deer Exclosures

In 1987, the Resource Management Specialist of Morristown National Historical Park began monitoring the impact that white-tailed deer were having on the park's vegetation. In order to do this, two deer exclosures were established in 1987 and three in 1988. All of the exclosures were built along the existing transect lines and each was placed in a different forest type. The exclosures are placed as follows:

Exclosure #1 Built in 1987

#1 was on transect line #2 along the Mt. Kemble Ridge in a mature broadleaf forest consisting of mixed oak and yellow poplar. Directions to this exclosure, located near the Stark's Brigade area are as follows:

- From the intersection of Tempe Wick Rd. and Rt. 202 (Mt. Kemble Ave.), bear left (north on 202);
- Go approximately 1/2 mile on Rt. 202;
- Bear left on the road (Old Camp Rd.) that leads to Quarters 65 (Hartshorne House);
- On the right, is a fire road. Park in front of the black iron gate.
- Follow the Mt. Kemble Loop Trail to the right approximately 1/4 mile.
- The exclosure is about 30 feet from the right hand side of the trail.

Exclosure #2 Built in 1987

#2 is on transect line #5 in a successional broadleaf forest made up of white ash and yellow poplar. Directions from the Comfort Station are as follows:

- Bear right out of the Comfort Station onto Western Avenue;
- Bear left onto the Grand Loop Trail;
- Walk on the Grand Loop Trail 460 feet;
- The exclosure is 20 feet to the right.

2. The dimensions of the control plots are identical to the exclosures or 20 ft. x 20 ft. (6.1 m x 6.1 m).
3. In 1992, four posts 5 feet high were dug into the corners of the control plots. Since the exclosures had corner posts which acted as bird perches, it was felt that in order to equalize the potential for seed dispersal - posts needed to be erected at the corners of the control plots. String was tied around the posts to prevent trampling of the control plot by deer.

Sampling Methods

1. Each exclosure should be sampled once a year using a square meter frame. Sampling should be conducted in May or June. Density of cover increases throughout the summer. As a result, rare species are more apt to be missed later in the season.
2. In 1991, a more intensive and randomized sampling procedure was initiated. The directions are as follows:
 - a. Mark off a 5 x 5 m plot in the middle of each exclosure and control to avoid problems with edge effect in the exclosures.
 - b. Within the 5 x 5 m plot, 3 points, located by pairs of random numbers, each marked the corner of a 1 square meter subplot.
 - c. Data were recorded using cover classes as follows:
 - r= solitary with small cover
 - t= few with small cover or solitary with ~ 5% cover
 - 1= numerous with ~ 5% cover
 - 2= 5 to 25% cover
 - 3= 26 to 50% cover
 - 4= 51 to 75% cover
 - 5= 76 to 95% cover
 - 6= 96 to 100% cover
3. All data will be maintained on a data base in such a manner that individual species can be tracked according to percent cover from year to year for each exclosure and control plot. This will facilitate data analysis.
4. Whenever possible, a voucher specimen should be taken from the exclosure and control plot for each different species found and placed in the herbarium in order to facilitate future identification.
5. Photographs will be taken of the deer exclosures on a yearly basis during early summer to provide year to year comparison.

Submitted by:

Robert Masson
Robert Masson, Biologist

Date: 10/25/92

Concurred by:

L.R. Wightman
Lynn R. Wightman, Chief Ranger

Date: 10/22/92

Approved by:

Diane H. Dayson
Diane H. Dayson, Superintendent

Date: 10/22/92

Personnel _____

Date _____

Common Name

Cover*

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

*Cover classes: r = solitary with small cover; t = few with small cover; 1 = numerous with <5% cover; 2 = 5-25%; 3 = 26-50%; 4 = 51-75%; 5 = 76-95%; 6 = 96-100%

