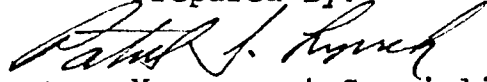


DRAFT

Saratoga National Historic Park
Vegetation Treatment Plan: 1989

Prepared By:

A handwritten signature in cursive script, appearing to read "Patrick J. Lynch".

Resource Management Specialist

Approved By:

Superintendent, Saratoga NHP

Introduction

This report is an attempt to synthesize the cultural and natural resource data for the historic landscape of the park and create a vegetative treatment plan to restore and maintain this landscape in the future. This plan is not intended to analyze alternatives to the proposed actions nor be all things to all people. Rather this document is intended for use in the field by park managers and maintenance chief to develop vegetation restoration treatments.

This action plan should be combined with the Fire Management Plan for a complete vegetation / landscape management scheme. The parks Fire Management Plan addresses the issue of historic field maintenance. The Fire Plan also details the methods of field maintenance including the cyclic use of fire and mowing as treatments. The Fire Plan has targeted all fields and overlooks in the park as potential prescribed fire management areas. These plans should be updated in relation to the parks resource management plan and are considered evolving documents that can change due to budget and staffing limitations at the park. The type of actions addressed in this plan will need compliance documentation with NEPA and Historic preservation requirements. After careful inventory of park resources the past three years the following proposed actions in these specific areas would not impact any listed rare or endangered plant or animal species.

The direction for landscape management at (SNHP) can be found in the parks primary management document, "Statement for Management for SNHP." The primary goal for maintaining historic landscape as explained in the Statement for Management is, " Restore the park's landscape to approximate the

configuration of fields, woodlands, roads, fencing, and other elements existing just prior to the battle on October 7, 1777."¹

The approximate locations, dimensions and configurations of historic fields and forests at SNHP are framed upon "The Historic Base Map" made by NPS Historian Charles Snell in 1950. Snell's base map is an interpretation of maps developed by British engineer, Lt. W.C. Wilkinson at the time of the battles of Saratoga in 1777. Snells' base map became the peripheral "Graphic" related to the parks first attempt at landscape treatments by then park ranger Koke.²

Discussion / Statement of Problems

Simply put, the problem to be addressed is; Fields and forests of the park are not completely in line with the configuration of the landscape as it looked on October 7, 1777. The park has been attempting vegetation restoration since 1951 with good results. Roughly 70% of the park landscape is in conjunction with how it should have looked on October 7, 1777. It has been stated in a recent report by Underwood (1989)³ that white tailed deer seem to retard forest regeneration in the park. This fact, combined with present fields that must revert to historic forest and vice versa is the essence of the vegetation treatment issue.

¹National Park Service; Statement for Management for Saratoga National Historical Park; Prepared by W. Glen Gray; September 26, 1988.

²National Park Service; A Report on the Reforestation Program for Saratoga National Historical Park; Prepared by Richard J. Koke, Historian; September 1, 1947.

³ Brian Underwood, Kelly Austin et al; Final Report - Deer and Vegetation Interactions on Saratoga National Historical Park; Unpublished NPS report; October 1, 1989.

The vegetation types and content of this park has changed dramatically since the historic period of 1777.⁴ Vegetation change in this century as documented by photograph in 1927, shows the land that now comprises the park was dominated by agricultural fields. This fact is important to remember as a starting point when recreating historic fields and forests at the park. In an ideal world where biological processes (including vegetation growth) are not influenced by mans "Handywork", the areas of the park that were forested according to the base map would be allowed to regrow to their historical appearance. Historic fields would be maintained accordingly. A perfectly natural biological state does not exist at this park. Ecological interactions and understanding become the prudent premise for vegetation management at the park. To this ecological premise must be added the influence of white tailed deer on the present (and future) historic forests. According to Underwood et al, "...Vegetation regeneration at Saratoga is progressing albeit (at a slower than normal) rate due to the browsing pressure imposed on the resource by the deer." This fact cannot be stressed enough.

The foundation of vegetation management is the Historic Base Map of Snell. This graphic interpretation was analyzed in 1989 for historic accuracy using known facts surfaced since Snell's work back in 1950. According to the researchers who analyzed Snell's work, "Except for a few small areas requiring further research, the Base Map by Snell (and the configuration of

⁴ Nancy M. Gordon; The Saratoga Battlefield: A Vegetative History; Unpublished Report; March 15, 1987.

fields and forests) seems to have withstood the test of time..."⁵

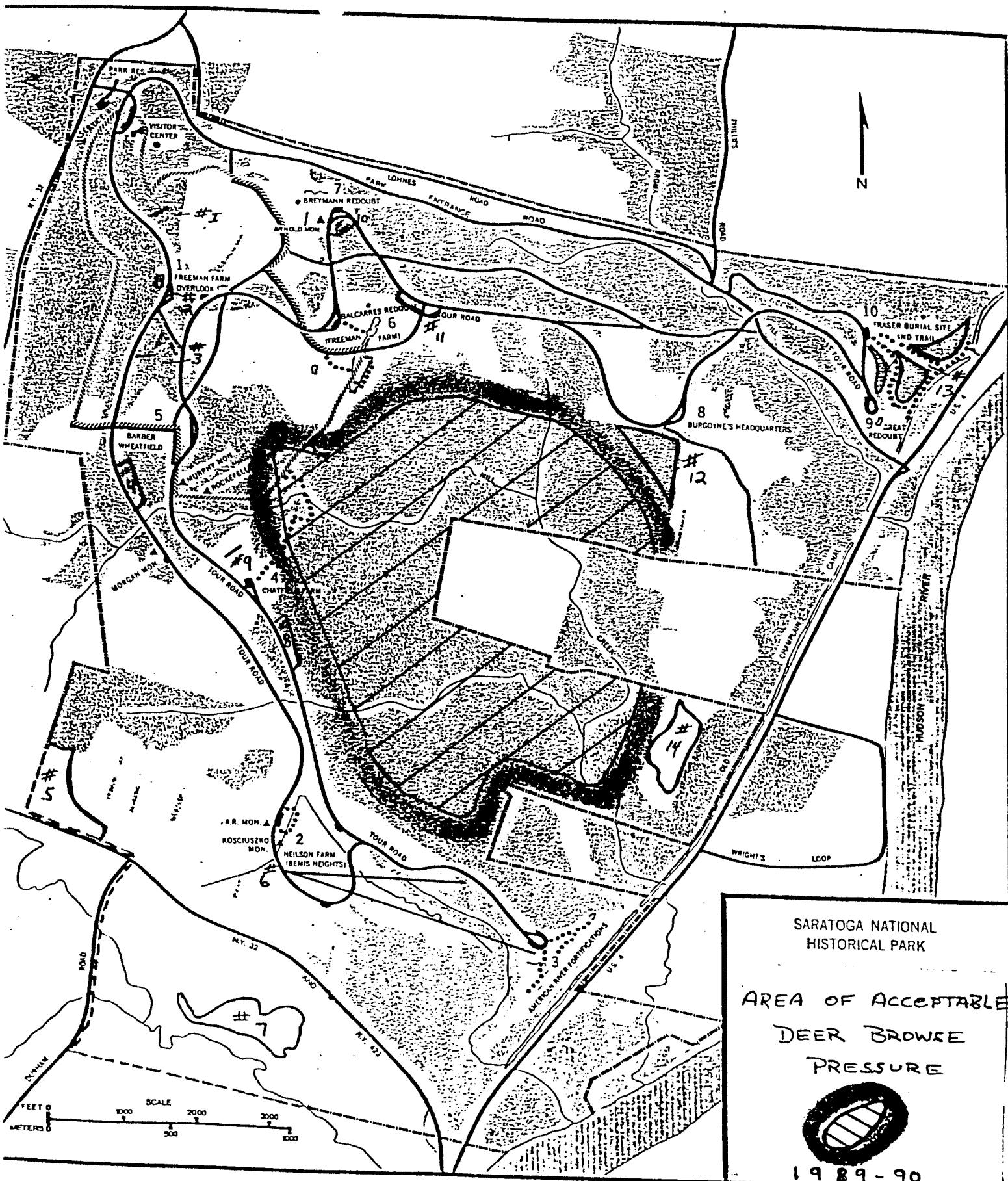
Finally, the facts and issues can be summarized here;

1. The park has an inaccurate (30%) historic landscape.
2. The regrowth of historic forests at the park have been altered by man and by deer browse pressure.
3. The present historic base map can be used as the foundation for vegetation restoration treatments.

Historic Vegetation Treatment Objectives

1. Browse pressure on vegetation by white tailed deer in the center portion of the park (see following map), is at an acceptable level at this time. Exceedance of this frequency of browsed vegetation (at all life stages) after further sampling in the future would "Step up" management of the resource to a different level. IPM methods including injury thresholds will be used for this problem. The range of deer management scenario's are spelled out in Underwoods deer report. The methods and techniques used by the deer researchers to determine the rate of browse pressure on the various measured life stages of vegetation will be used in the future to monitor this browse pressure over time.
2. As explained in the final deer report, regeneration of forest is proceeding at a slower than normal rate. This slower process of vegetation regeneration should now be considered the "Natural" state for this park ecosystem. Therefore, this slower rate of regeneration is acceptable at this

⁵ Susan R. Schrepfer; Analysis of Saratoga National Historical Park Base Map; An unpublished NPS Report; 1989.



SARATOGA NATIONAL
HISTORICAL PARK

AREA OF ACCEPTABLE
DEER BROWSE
PRESSURE



1989-90

time as a vegetation management objective. This will not alter the cultural resource objectives due to other specific vegetation action plans that this report will address. A fifty year time frame will be established for the succession of old field / shrubland to a forest that consists of greater than 50% tree canopy cover per unit area.

3. Specific areas of the park are more critical to the historical interpretation of the battlefield. In these specific sections the now "Natural" timeframe of forest regeneration is unacceptable. These areas will be delineated and targeted for treatments which will include some or all of the following;

- Fencing of small parcels (one to two square acres);
- Planting of specific sapling sized hardwood trees in fenced exclosures. Species content and tree distribution will be determined by the specific site;
- Using non-electrified fencing of exclosures for public safety.
- Cutting of trees and forest will take place in areas of the park that must convert from forest to field. Cutting would include the grinding out of stumps from the site to make field regeneration and maintenance more acceptable. The emphasis for this major operation would be east of tour road stop # 2 down to the Hudson River to help delineate the victorious American Rebel fortification lines. The other major aspect of clear cutting would be at the British fortification lines at stop # 8 and at the slopes of stop 10.

These items spell out the broader objectives. More specific action plans will now follow on a site by site analysis basis.

Specific Vegetation Treatment Actions

The method for addressing site specific vegetation treatments will be; start at the beginning of the parks tour road and follow the ten mile loop around the park and back to the Visitor Center area. Each area needing help to restore and maintain the historic landscape will be noted on a park map and labelled, and a listing of treatments proposed. Potential funding sources for vegetation treatment will also be identified.

Treatment actions for vegetation should be prepared by the Resource Management Specialist, concurred by park Historian, approved by the Superintendent, and where possible at small areas (less than two acres) performed by hired park staff. Park staff would include either maintenance personnel or seasonal staff under the direction of the Resource Specialist. Possible funding sources would include leftover park position lapse money or the NRPP funds, or through special yearly regional resource management and or science funds.

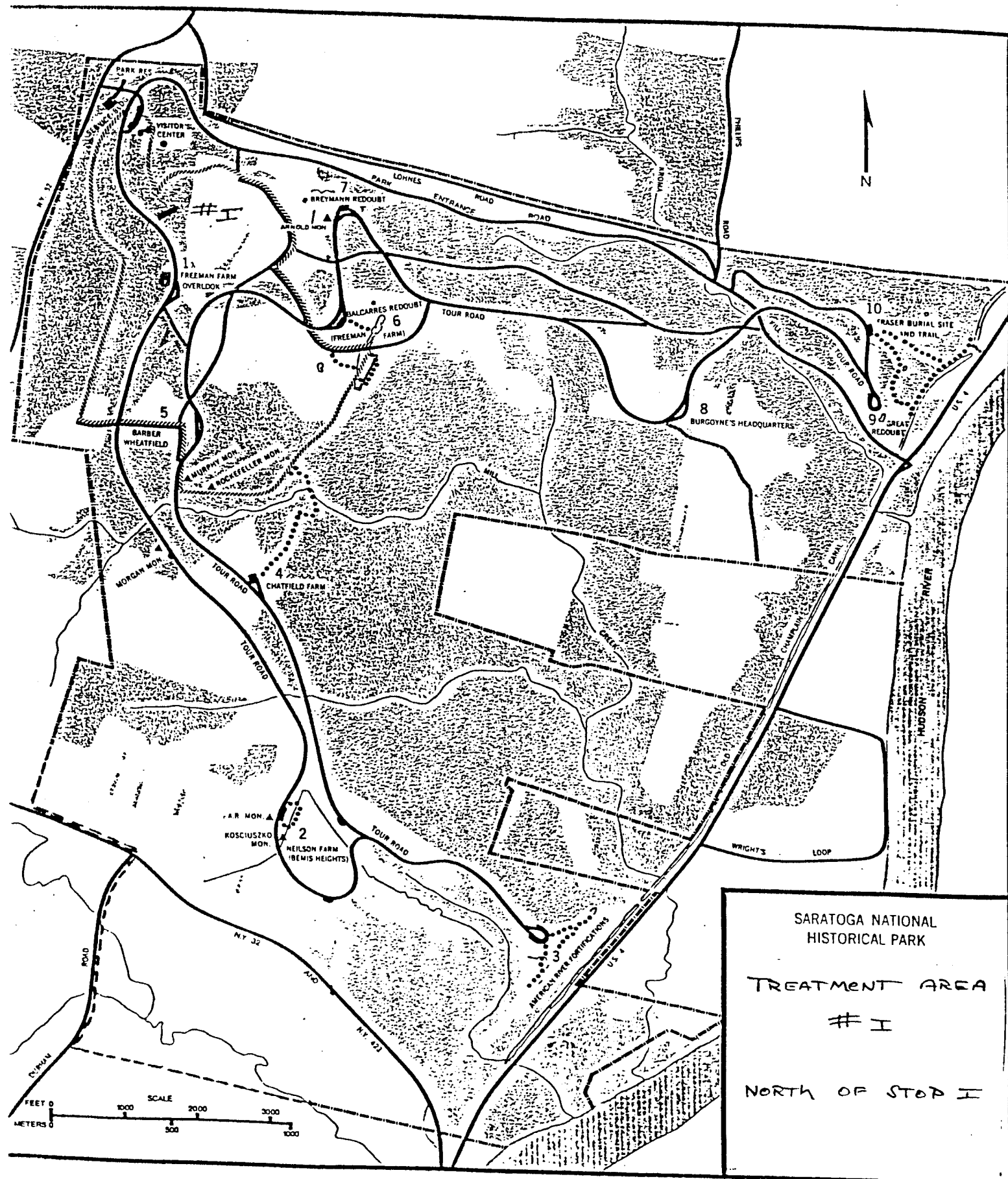
Treatment Sites and Actions

1. Abandoned Old Road: 1/4 Mile North of Stop 1

This is a small (one and one half acre) abandoned roadway that was historic forest in 1777. The area is now grassland.

Treatments - This area should be planted with sapling sized hardwood tree species. The deer have proven to leave this type and size of tree free of their browsing pressure. Due to this fact, no fencing is needed here.

Funding Source - Park operating funds for this small area.

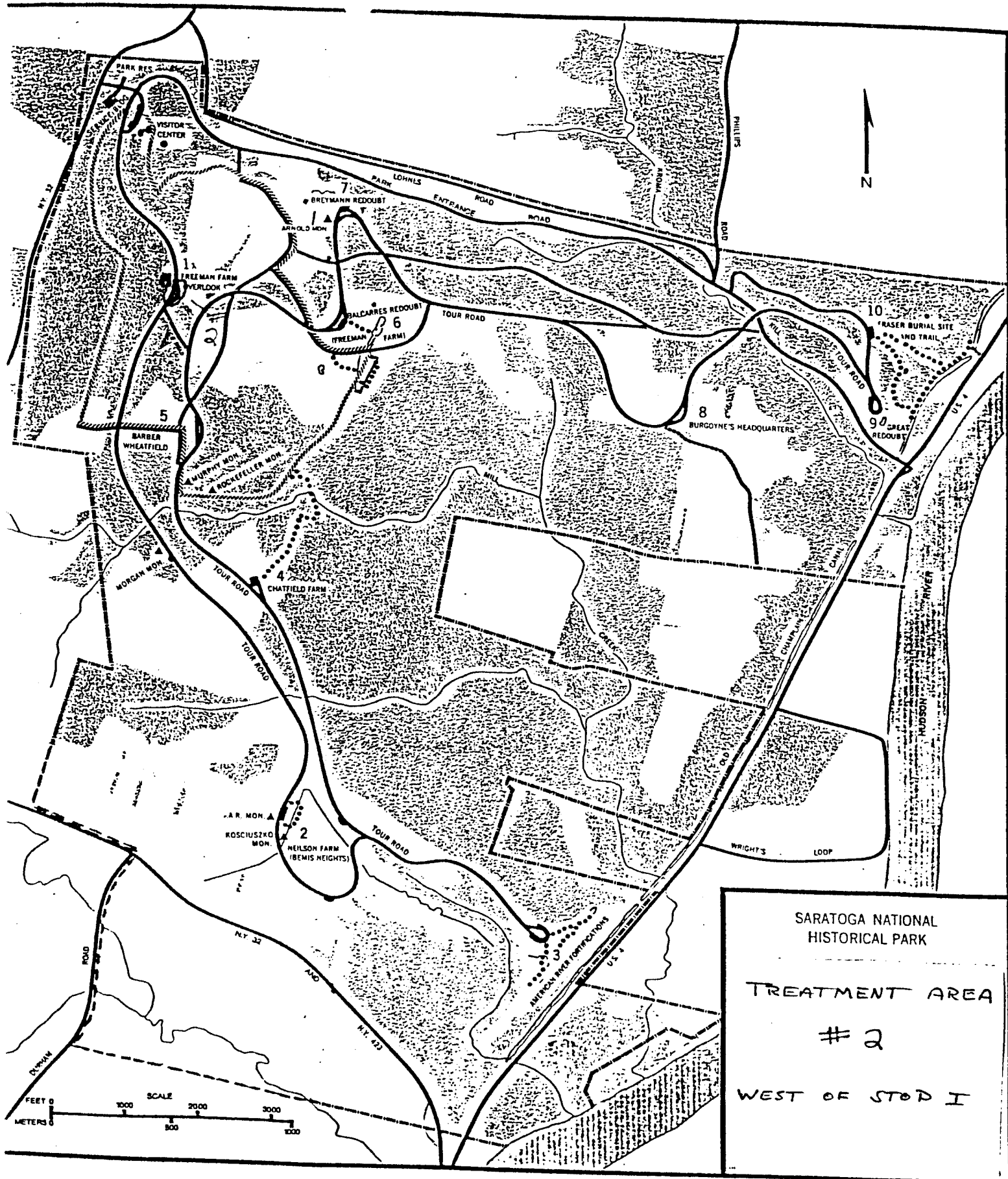


2. Area West of Stop 1 Interpretive Site

This small (1/2 acre) area of trees and shrubs stands between the parking area at Stop 1 and the interpretive area at Stop 1. This site was cleared in 1777 and needs clearing now to restore the historic landscape.

Treatments: Remove the trees and stumps from this area, plant with native grass seed and maintain by mowing.

Funding Source: Park operating funds for this small area.



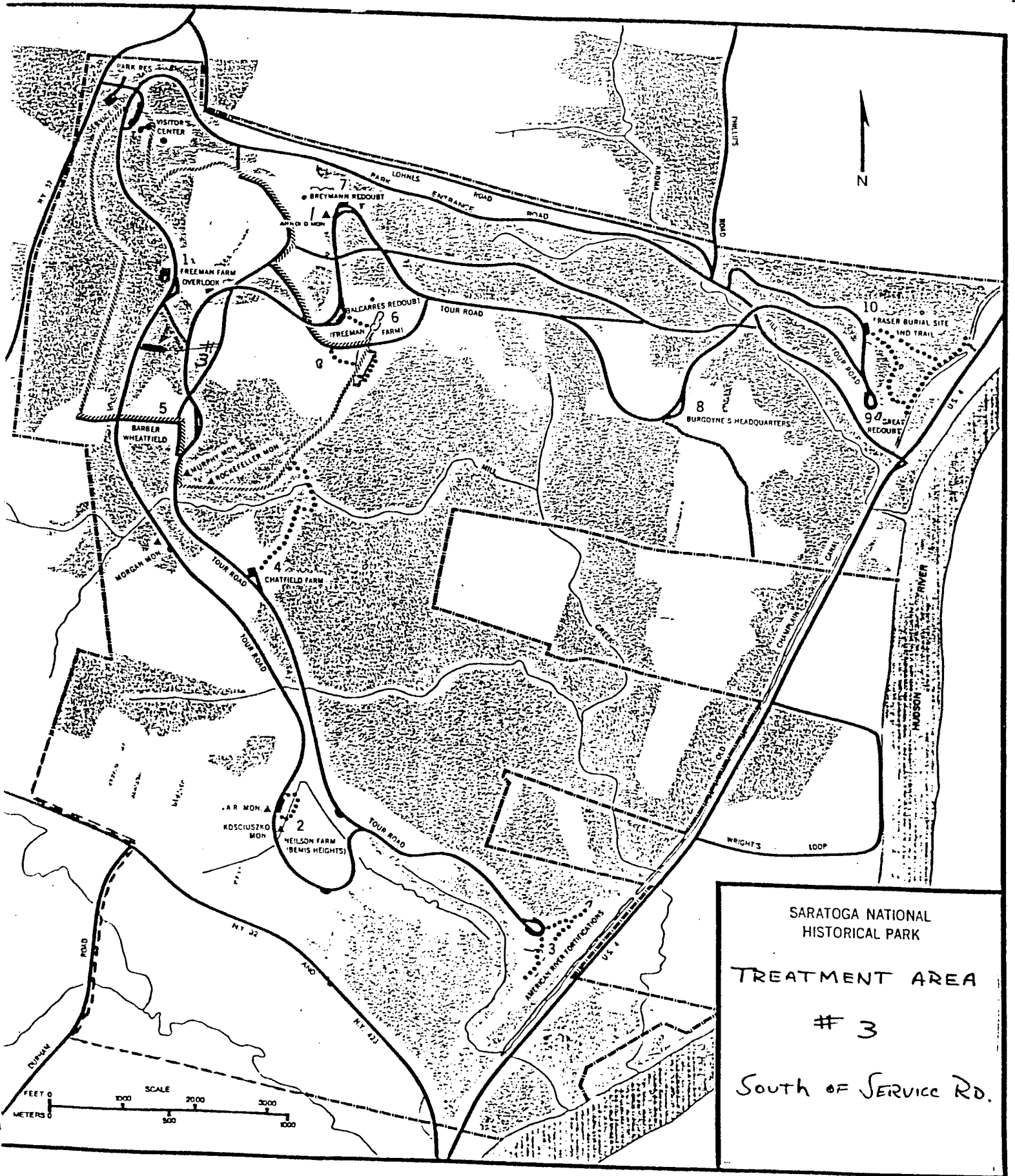
3. Small Area 1/4 mile South of Service Road

Like area number one, this area is some sort of abandoned roadway that was forested in 1777. It needs trees to become historically accurate.

Treatments: This area should be fenced in contrast to treatment area #1. No planting of sapling trees should take place here. As a test of similar areas to see what works best, this area should be allowed to regrow naturally within an exclosure. The fence should be maintained for a minimum of five years to allow for proper establishment of tree species.

Fencing should be at least six to eight feet in height to keep deer out. The fencing design made by the deer researchers for their experiments would act as a good model. If at all possible, all fencing used in recreating historic forest should incorporate some historical look to them. This impersonation of old fencing might help the interpretation of these areas. Support on a design for such a fence could come from regional landscape architects.

Funding Source: Fence design funds could come from regional resource management accounts. Implementation of work for this area should be undertaken by park staff through park operating funds.



SARATOGA NATIONAL
HISTORICAL PARK

TREATMENT AREA

3

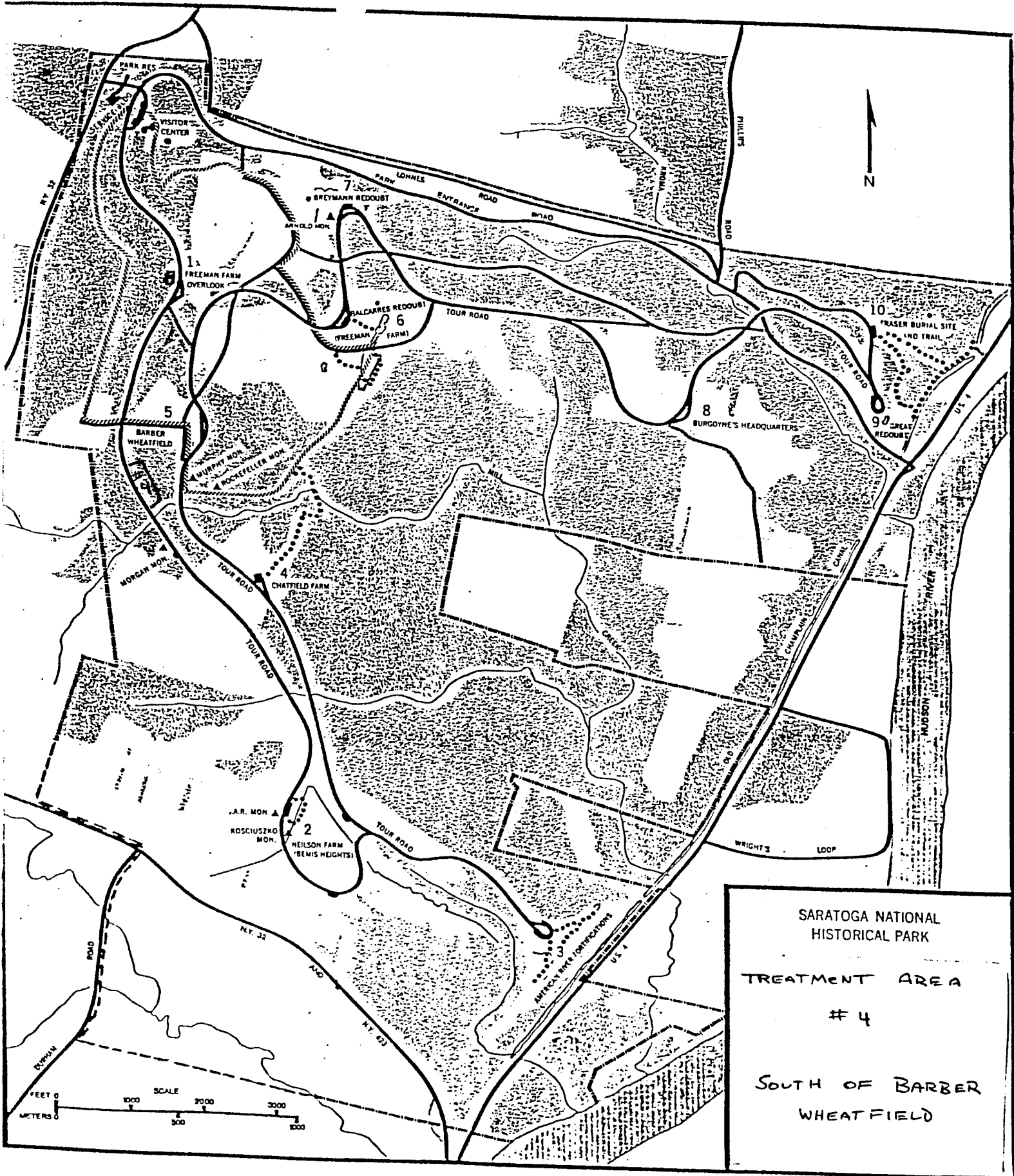
SOUTH OF SERVICE RD.

4. Area After Barber Wheatfield and East of Tour Road.

This is one of a few areas in the park that was forested historically and the present tree density is now too low and inviable as historic forest. The dominant tree cover in this area was elm (Ulmus americana). Most of these trees are now dead and the dominant cover type seems to be the shrub, gray dogwood, (Cornus racemosa).

Treatments: This area should be fenced to speed up regeneration of the forest in this area.

Funding Source: Funding for this area should come from regional resource management account funds. The resource management specialist should know the procedure for securing these funds.



SARATOGA NATIONAL
HISTORICAL PARK

TREATMENT AREA

4

SOUTH OF BARBER
WHEATFIELD

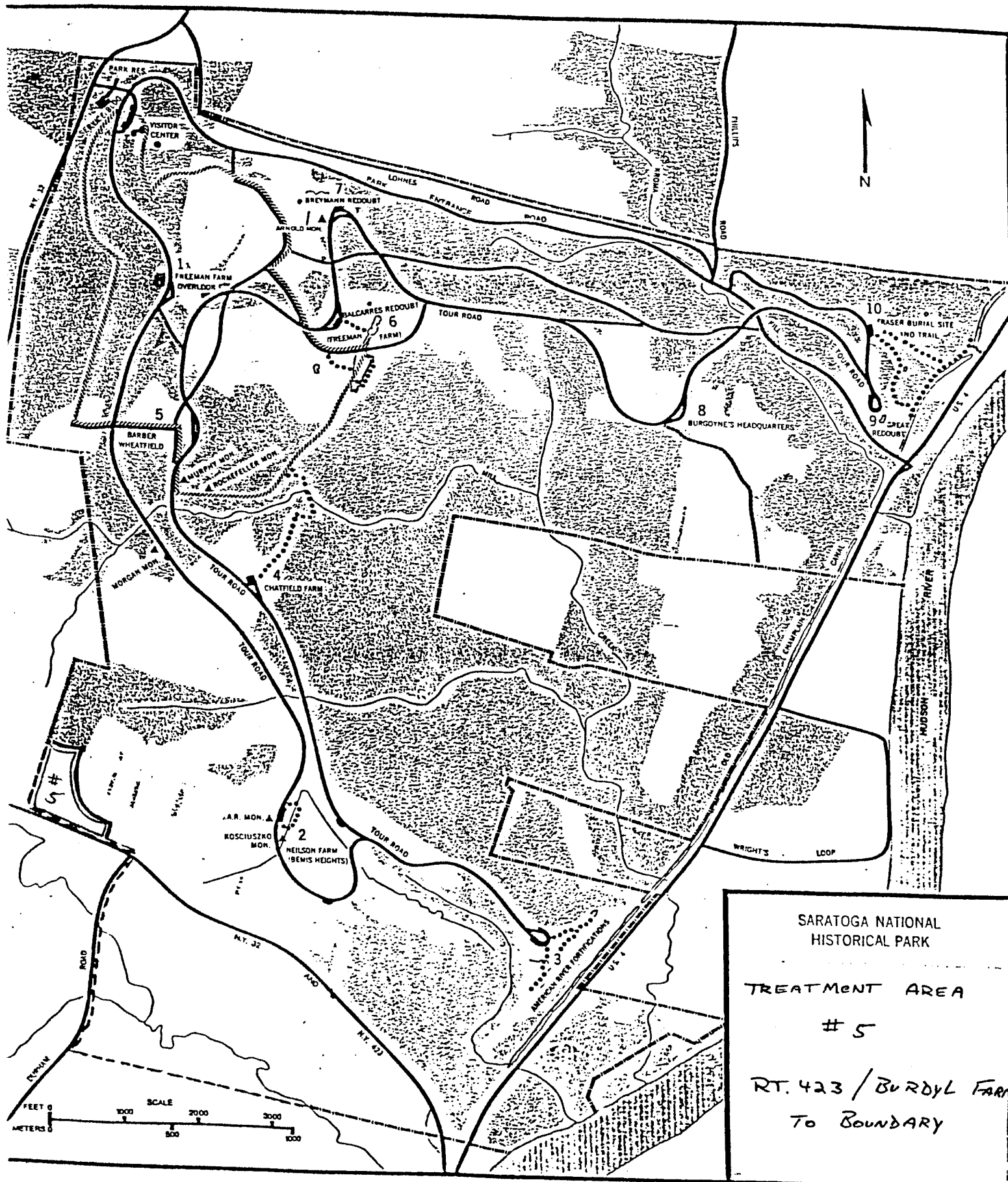
5. Area Along Rt.423 From Burdyl Farm Northwest to Boundary

This area was forested back in 1777. The area was recently purchased by the park and needs treatment to restore the historic landscape.

Treatments: An approximate ten square acre area needs to be forested.

A linear line running perpendicular to rt. 423 should be planted with sapling sized white pine and other hardwood tree. The remainder of the area inside this planting zone should be fenced off in two acre square parcels to permit regrowth of seed source. The fenced areas will require up to ten years to allow proper growth of seedling trees.

Funding Source: This large treatment area should be targeted as part of the NRPP funding account. The resource management specialist will need to keep on top of this tricky account process and make sure that the park maintains the present high ranking on this WASO account.



6. Forested Area Between Tour Road Stops 2 and 3

This area will become the focal point of historic landscape restoration at Saratoga NHP. It is only fitting that this area be restored since it was the Southerly defended area of the victorious American Rebels. The British army did not get beyond this point on their march toward New York City in 1777. This specific plan calls for a major cutting of trees and removal of stumps to restore a more battlefield appearance to the site. Obviously, this is going to be a tricky restoration requiring much field truthing of maps and accuracy of viewsheds.

Treatments: The interpretive viewshed focus will be from on top of the hill at Stop #2, directly across the tour road (see map) from the Neilson Farm. While looking east from this site, a line must be drawn on an angle toward stop 3 and all trees, shrubs and tree stumps north of that line will be removed. Care must be taken for specific natural resources in this area. Number one would be the drainage stream (Americans Creek). Care must be taken not to denude this area of so much vegetation as to cause erosion in the linear wetland area that is the stream bed itself. No alteration should take place in wetland habitat. Wetland habitat can be defined by the types of plant species present overlayed on the soils of the site.

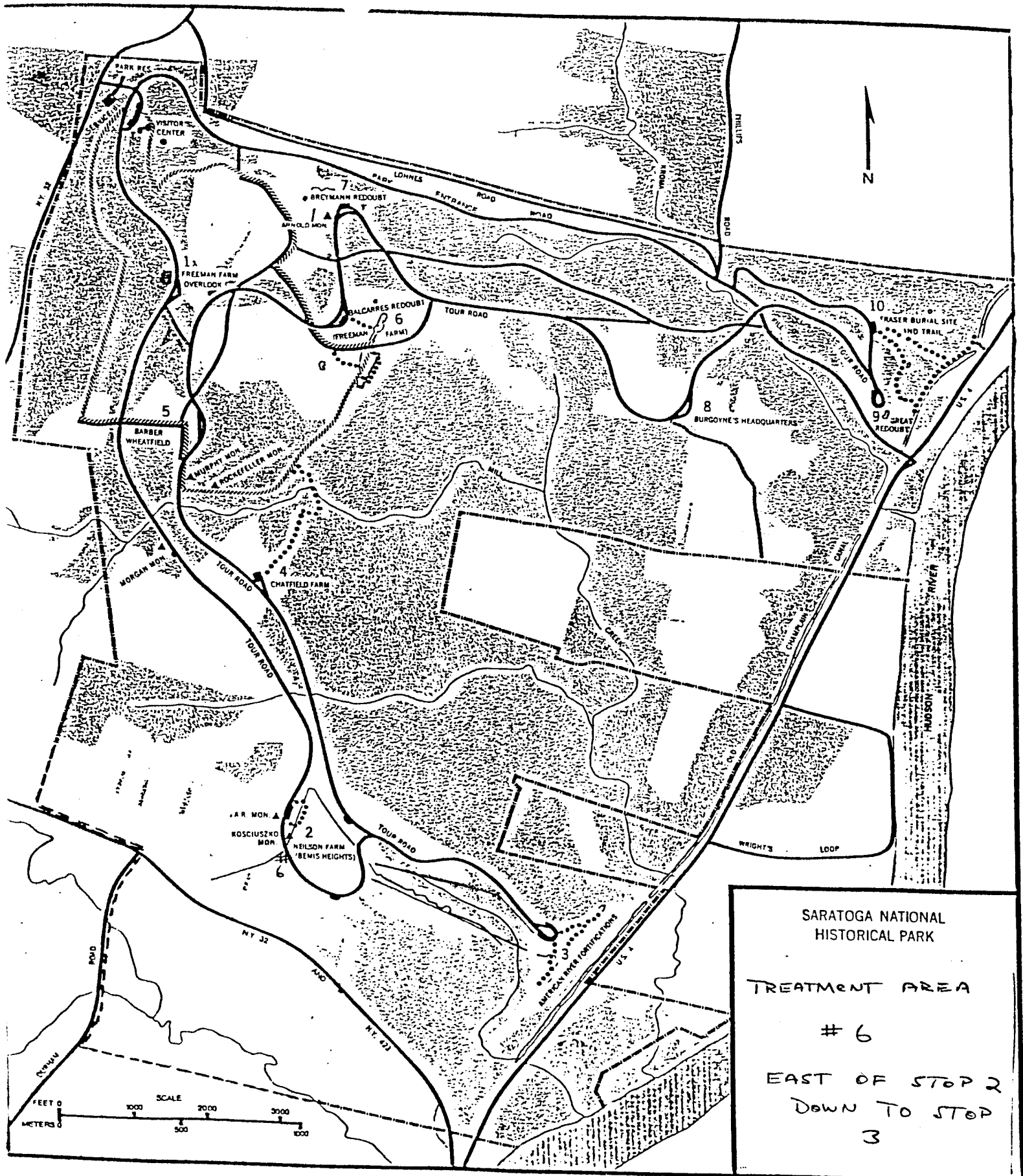
Secondly, the wooded area to the south of the drainage is some of the best climax hardwood forest area in the park. This area supports breeding red tail hawks, eastern coyote, porcupine and other upland wildlife species. This area even though was cleared according to the base map, should not be cleared now. The perturbation on that site would be too dramatic and no other secluded areas in the immediate vicinity of the park preserve this habitat in such a

6. Forested Area Between Tour Road Stops 2 and 3 (Cont.)

way thus reducing viable populations of wildlife.

After tree and stump removal, this area should be burned to prepare the soil. After a burn treatment, native grasses should be hydroseeded in this new field. After these grasses become viable, this entire area should be included in the parks cyclic maintenance fire/mow program.

Funding Source: The funding for this major project should be the NRPP account. As noted earlier, the park started to bid for this project in 1986 through the NRPP process. Saratoga should be near the top of the list in FY 90 or 91 for funding of up to \$150,000.. The resource specialist should not let the region forget this fact!



7. Area in Devils Hollow.

This area which is now in historic lease for hay production until 1992 was forested in 1777. At the end of the term of this lease, all agricultural activities should cease and reforestation efforts should begin.

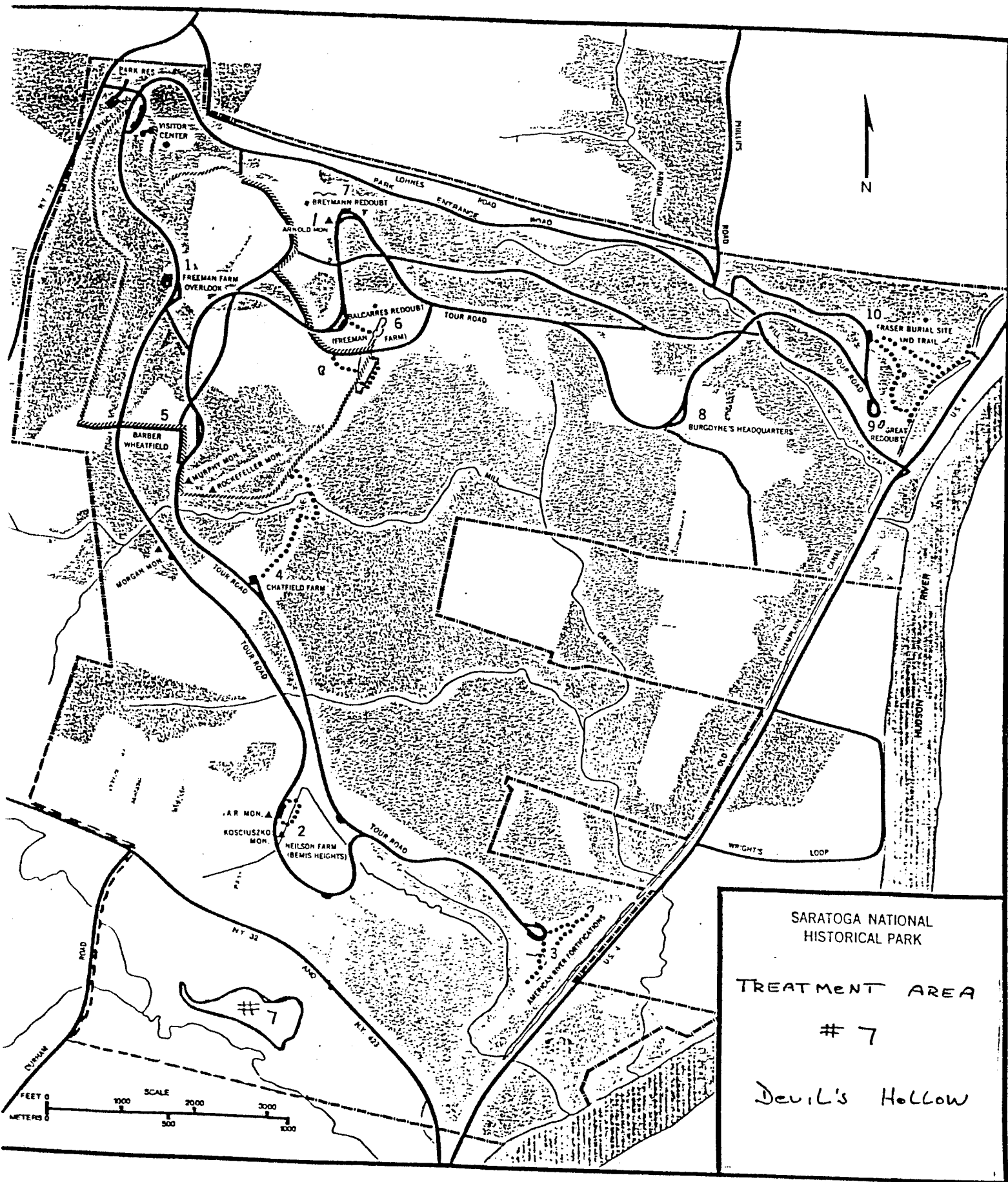
Treatments: Various one to two acre fences should be put up to allow the area to reclaim itself. These efforts would require at least ten years of excluding deer to allow a viable seedling/sapling stand to become established.

The remaining area will have to be incorporated into a cyclic maintenance program of mowing and burning that is consistent with present field management policies.

Funding Source: NRPP funds should be used to purchase and stockpile the fencing material needed for this project and implemented as staffing levels permit.

The maintenance division at the park may want to take notice of this and other areas of the park that will require more effort and staffing than presently exists at the park. Now is the time for maintenance to put in for a funding and staffing increase based on this plan and all the supporting documentation that went into making this plan.

Assistance with this documentation can be found directly with the resource management specialist.

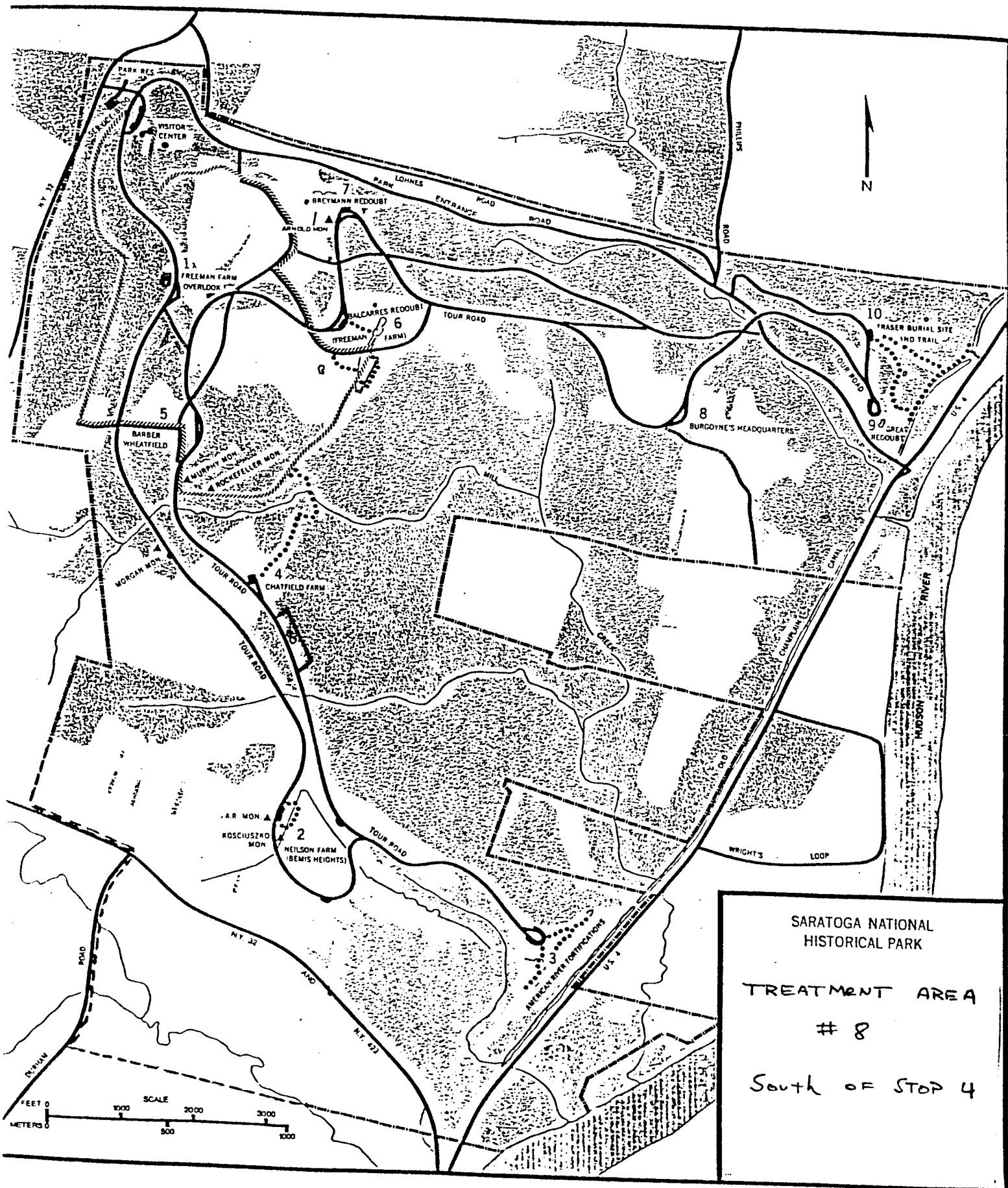


8. Area East of Tour Road, South of Stop #4.

This area was forested in 1777 and is now an area of shrubby dogwood intermixed with pine and dead elm trees. The tree density in this area is low and needs help to be considered viable forest.

Treatments: The area outlined on the map should be fenced to allow regeneration of tree species present.

Funding Source: NRPP, or regional funding accounts should be used to purchase the supplies needed for this fencing.

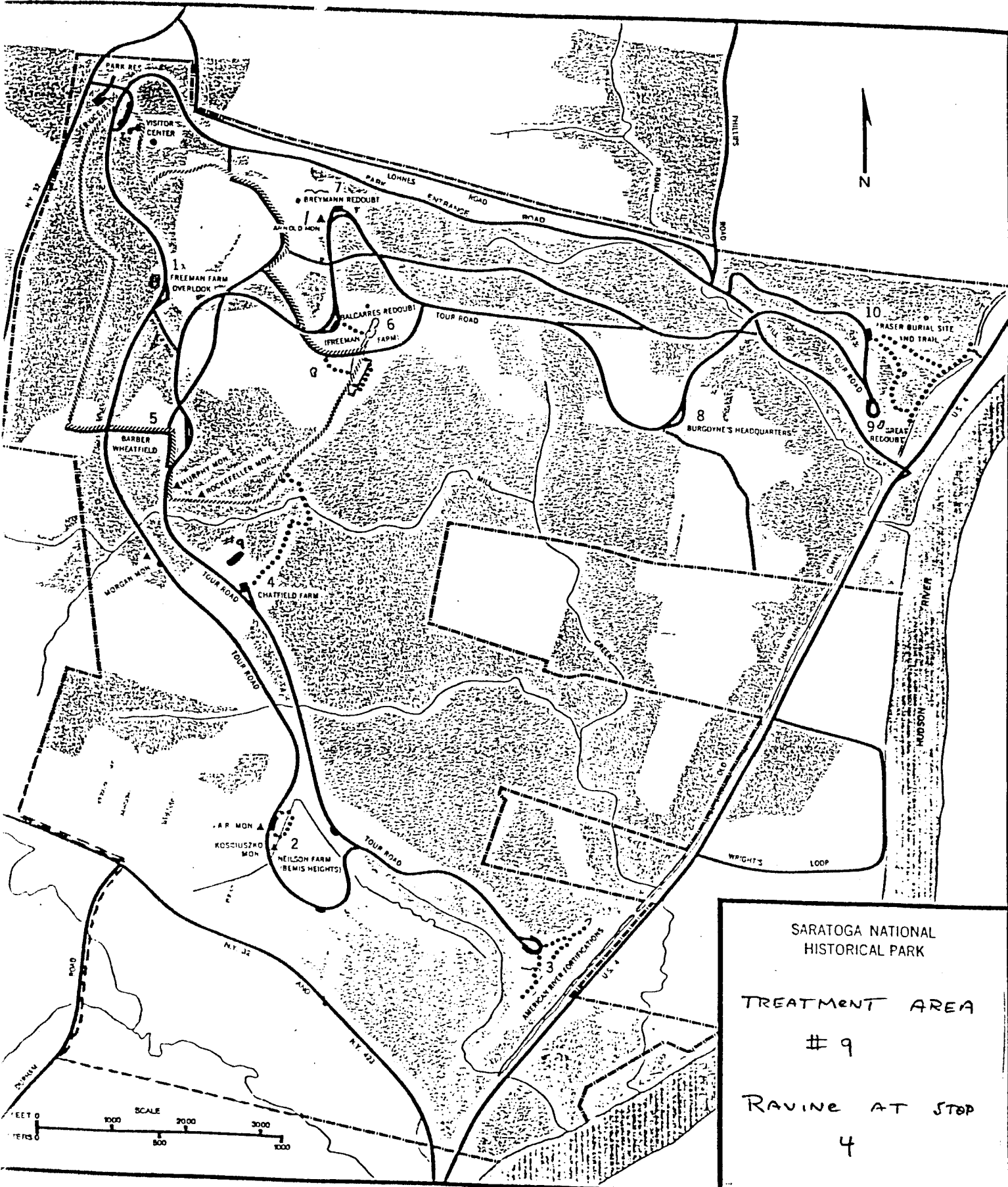


9. Tree Cluster in Ravine of Stop #4.

This area was cleared in 1777 and needs clearing now.

Treatments: Clear and remove trees from this area. Stump removal is not recommended for this area because this action may interrupt the local drainage pattern. Incorporate this cut area into the parks cyclic fire program.

Funding Source: This small job could be performed by park maintenance staff through park operating funds.

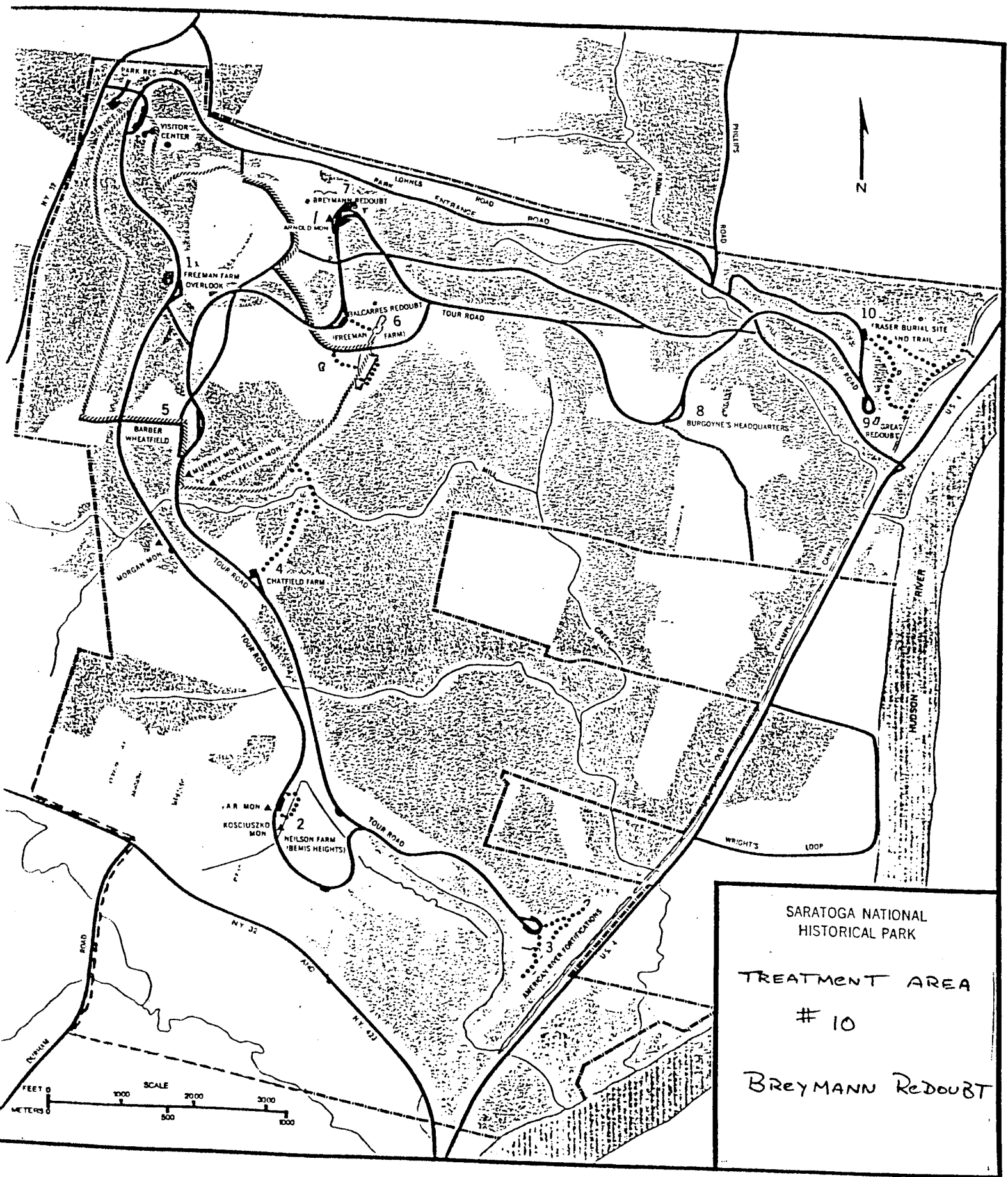


10. Forested Area In and Around The Breymann Redoubt

According to the base map of Snell, this area was cleared during the second battle of Saratoga. I do however disagree with the extent of clearing Snell shows on his map. I feel some clearing is needed at this time but after much review in the field, I see no interpretive benefit to clearing the entire area.

Treatments: Clear and remove all trees and shrubs from this area. Stump removal is also needed. This newly cleared area should be seeded with native grasses and mowed according to present maintenance practices.

Funding Source: Funding for this part of the plan should come from NRPP or regional resource management fund accounts.

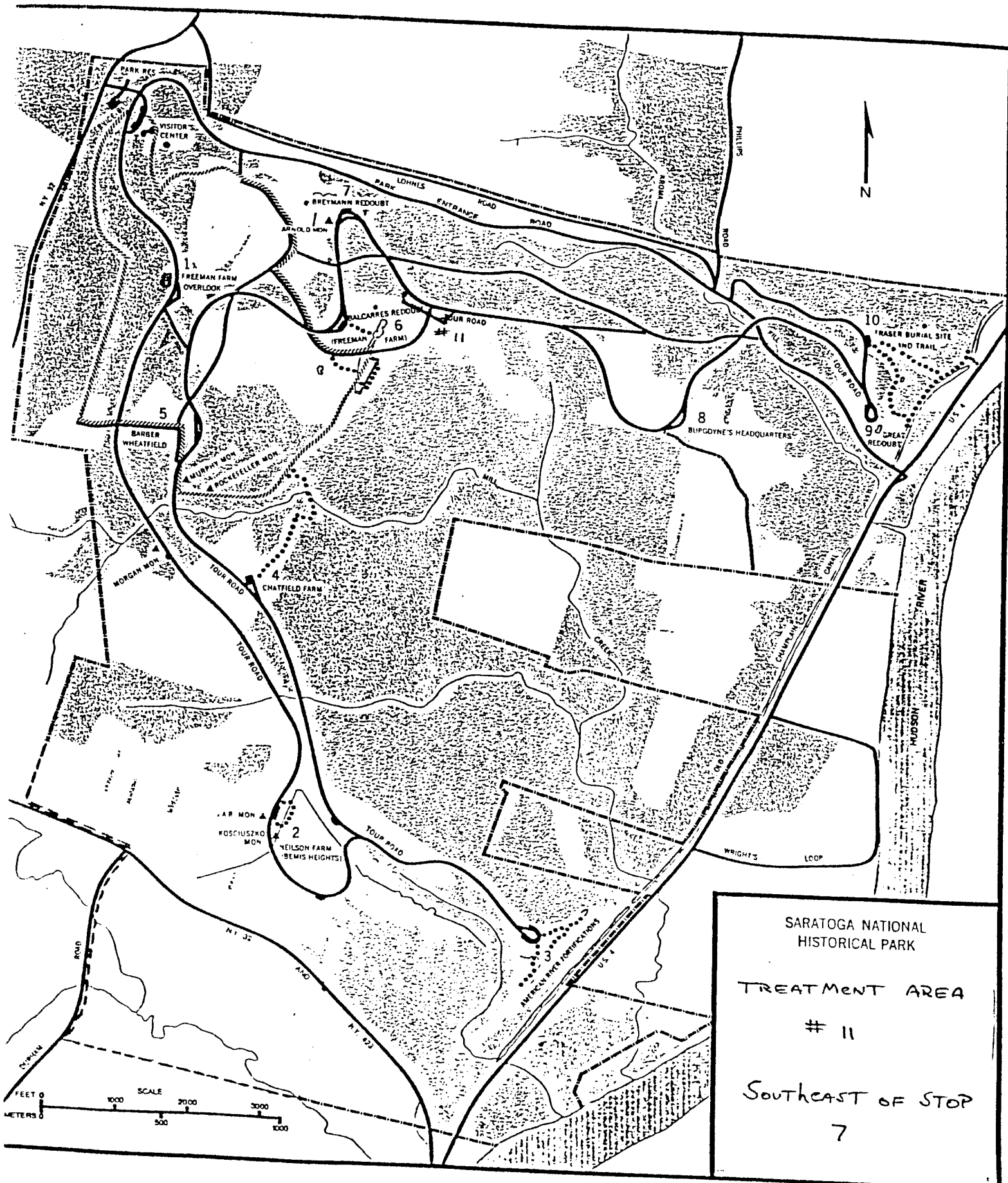


11. Forested Area Southeast of Stop #7.

This area was cleared in 1777 and needs clearing now.

Treatments: This small area needing clearing is not dense with trees at all. In fact it is more of a screening type of forest than a community structured forest. It just happens that the area of screening should not be there according to the base map. After clearing, the tree stumps should be removed and native grasses should be planted.

Funding Source: This small clearing can easily be accomplished through park staff and funds.



SARATOGA NATIONAL
HISTORICAL PARK

TREATMENT AREA

11

Southeast of STOP

7

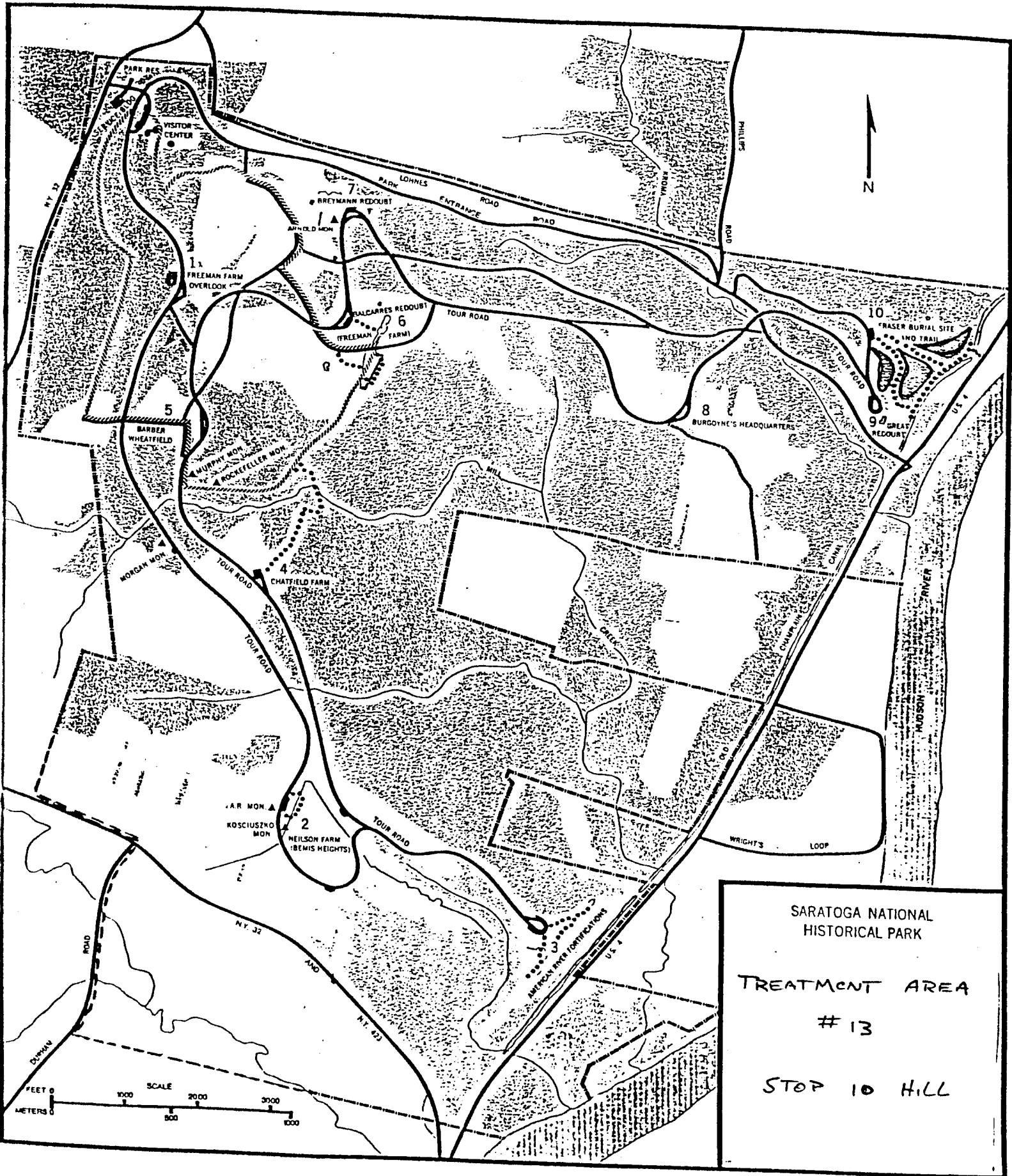
12. The British Woods Area at Stop 8.

This area was cleared in 1777 only to the top of the ridgeline where the present earthworks line exist. This earthworks line makes common sense because it takes advantage of the topography of the area. Clearing of forest to recreate the historic British fortification area will be a major undertaking. The task of killing the trees however will be done most probably by the latest infestation of gypsy moth. This conclusion was reached with help by the US Forest Service in a gypsy moth biological evaluation of the park performed in November 1989. This area of park had an infestation rate of between three and nine thousand egg masses per acre. Unless this area is treated with pesticides or the caterpillar is infected with fungus, the park can expect die off of these trees in two to three years.

Treatments: Professionally remove the extensive hardwood trees in this area before the trees are killed by gypsy moth. Design this action under an historic lease arrangement and recoup the moneys into park operating base. This money could then be used to continue historic vegetation treatments like removing tree stumps.

If this option does not materialize, I recommend that the forest be allowed to die off and then a fire prescription designed to remove the litter. After litter is removed the area should have tree stumps removed and seeded with native grasses and mowed and burned according to the fire management plan.

Funding Source: Funding for this (and even for other tree removal areas) could be self generated through timber sales of historic lease arrangements. Otherwise, this area could only be restored through NRPP funds or through regional resource management or cyclic maintenance funds.



SARATOGA NATIONAL
HISTORICAL PARK

TREATMENT AREA
13

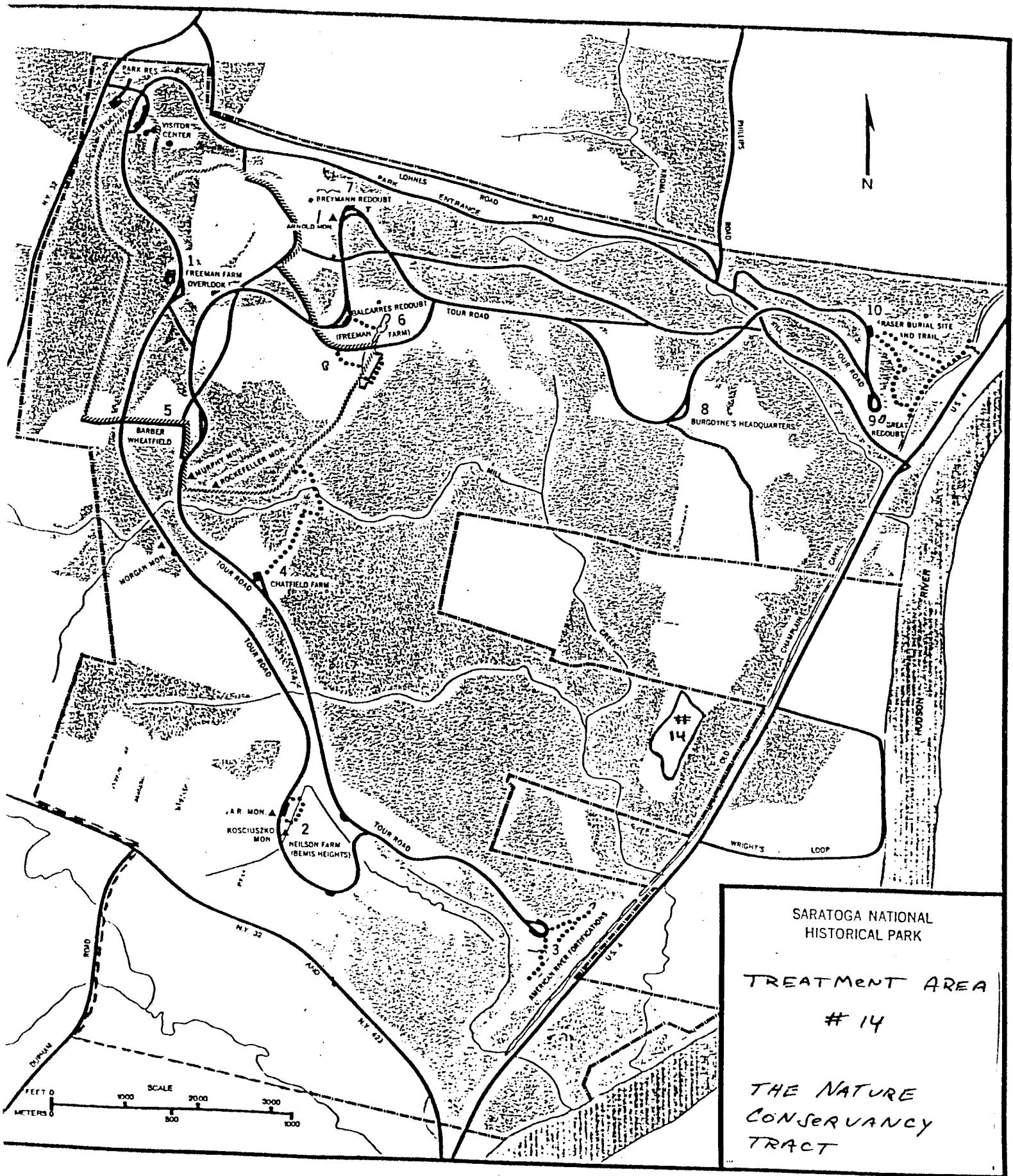
STOP 10 HILL

14. Open Field in Park - Nature Conservancy Tract.

According to the base map this entire area was forested on October 7, 1777. This large area should be forested again if the park wishes to have an accurate historic landscape. Of course, the proposed Veterans Administration Cemetery could alter the historic landscape at this park forever.

Treatments: Patches of fencing should be erected in this old corn field and allowed to regrow naturally. Seeding of the area will be necessary because of the deep soil impact of corn crop to this site. Fences which will be pretty much out of view to the public and should stand for a minimum of ten years.

Funding Source: The fencing material should be purchased as soon as possible and put up as soon as possible to recreate the historic scene and preserve it forever! Any funding source would work. The important thing to remember is get the job done (or at least started) as soon as possible.



Other Management Considerations

This plan is not designed or intended to be a deer management document. This plan only relates to man and deer impacts and interactions with the parks historic landscape.

Other concerns that relate to deer management that need more research and management action are:

1. The impacts of deer browse pressure on neighboring crops.
2. The accident rate of motor vehicles with deer in and around the park.

My recommendation for neighboring crop damage by deer that utilize the park would be to establish with NYSDEC, a comprehensive deer damage permit system in the spring of each year. This stepped up action coordinated by the state and used outside park boundary may help in the goals and objectives of game conservation in this management unit (DMU-40). This action may help release some of the pressure by deer on neighboring crop lands.

As for deer / automobile accidents in and near the park, a study is needed to determine the real issues and data associated with this problem to make a more informed management decision.

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