

READINGTON NATURAL AREA
MANAGEMENT PLAN

New Jersey Department of Environmental Protection
Division of Parks and Forestry
Office of Natural Lands Management
CN 404
Trenton, New Jersey 08625

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Based on a draft by:
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August, 1988

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF PARKS AND FORESTRY

MANAGEMENT PLAN FOR READINGTON NATURAL AREA

TAKE NOTICE that Christopher J. Daggett, pursuant to the Natural Areas System Act, N.J.S.A. 13:1B-15.12a et seq., and N.J.A.C. 7:2-11.8, has adopted the recommendations of the Natural Areas Council regarding the management plan for Readington Natural Area.

The Readington Natural Area is located in Readington Township, Hunterdon County, on land that is owned and administered by the State of New Jersey, Natural Lands Trust. The purpose of the management plan is to identify specific long and short term management techniques which are necessary to achieve the designation objective of the Natural Area. For Readington Natural Area, the designation objective is preservation of early stages of secondary field succession.


The Natural Areas Council reviewed the staff recommendations and public comments at their meeting on September 24, 1986. By unanimous resolution, the Natural Areas Council adopted recommendations for management and has submitted these recommendations in the form of a management plan to the Commissioner of the Department of Environmental Protection.

Copies of the adopted plan may be obtained from:

Department of Environmental Protection
Division of Parks and Forestry
Office of Natural Lands Management
CN 404
501 E. State Street
Bldg., #5, 2nd Flr.
Trenton, New Jersey 08625

This notice is published as a matter of public information.

Date AUGUST 11, 1985


CHRISTOPHER J. DAGGETT, Acting Commissioner
Department of Environmental Protection

ABSTRACT

Readington Natural Area became incorporated into the Natural Areas System in 1975. The Natural Area is located in Readington Township, Hunterdon County, and is within the Piedmont physiographic province. In addition to being a State natural area, Readington is a New Jersey Natural Lands Trust Preserve. The New Jersey Conservation Foundation donated Readington Preserve in fee to the Natural Lands Trust in 1969. Readington was designated to the Natural Areas System for preservation of early stages of secondary field succession.

This management plan has been developed pursuant to N.J.A.C. 7:2-11.1 et seq. which mandates that management plans be prepared for all areas designated to the Natural Areas System. Management is aimed at prescribed uses and practices that will be allowed and implemented in order to maintain and, if practicable, enhance the natural features which the site contains.

The following is a summary of major management techniques recommended in this plan. Chapter III should be consulted for detailed information on prescribed management techniques.

Classification

Readington Natural Area is classified as a Conservation Preserve which means that the area will be managed such that habitat manipulation is permissible in order to preserve a plant or animal species, community type or ecosystem.

Boundaries

Readington Natural Area is comprised of two parcels of land totalling 36.2 acres. The parcels are separated by private lands. The New Jersey Natural Lands Trust should pursue negotiating a conservation easement with the adjacent property owners that would link the two parcels.

The area is also a Trust Preserve and the Trust owns and will administer the two parcels as a natural area. Therefore, the existing Trust signs will remain in place. Additional State natural area signs will be posted at entrance points.

Human Use

Current uses including hunting, fishing, trapping, hiking and birdwatching shall be allowed to continue. Because there is little or no demand for hunting on the south parcel and most of the parcel would be excluded from firearm hunting under State hunting regulations, individuals requesting access for deer hunting will be directed to the north parcel, while all other recreational users will be granted access to the south parcel. Nevertheless, both parcels will remain available for hunting. Other than deer hunting season, visitors will be directed to either or both parcels.

A Preservation Cooperative using surrounding landowners shall be set up by the Trust to monitor the area. Problems requiring law enforcement will be handled by Park Rangers from Round Valley, the State Police, and Wildlife Conservation Officers.

Man-made Features

Features include concrete boundary posts, an old foundation, sections of barbed wire fence, scattered refuse and tree stands. Refuse on the natural area shall be removed by the managing agencies. The Preservation Cooperative shall remove smaller items on an as-needed basis while the larger items will be the responsibility of Round Valley Recreation Area.

Any long, unbroken interior sections of standing barbed wire fence shall be removed by Round Valley personnel within one year of adoption of this management plan.

Habitat Manipulation

The two fields at Readington will continue to be mowed on a yearly basis by personnel from Round Valley Recreation Area. This will be in accordance with deed restrictions and will also conform with the designation objective for this area.

If an easement agreement is negotiated linking the two Readington parcels, construction of a narrow footpath linking the existing trails should be considered. The Trust shall determine materials needed, personnel required and type of construction to be used for establishing a footpath.

External Features

The possible septic seepage on the south parcel should be monitored by the Preservation Cooperative and the Trust to make sure there is not a reoccurrence of the problem. The Trust Board of Trustees shall take action to curtail any possible contamination should the seepage reoccur.

NATURAL AREAS COUNCIL

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This management plan was written and prepared by Larry S. Miller of the Office of Natural Lands Management. Gratitude is expressed to the following persons for their contributions towards the completion of this document: The Natural Areas Council, Natural Lands Trust Board of Trustees, Maude M. Backes, Richard F. Barker, Robert J. Cartica, Russell A. Cookingham, Leslie A. DiCola, Frank F. Guidotti, Garrett Keating, Anthony A. Petrongolo, Jane E. Saks, David B. Snyder and Robert H. Soldwedel. Appreciation is extended to James R. Apffel, Superintendent of Round Valley Recreation Area, whose past and current management practices have been instrumental in maintaining Readington consistent with its designation objective. Finally, special thanks are reserved for Steven K. Brush, Consultant, whose draft plan for the New Jersey Natural Lands Trust formed the basis for this management plan.

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INTRODUCTION

This management plan for the Readington Natural Area will describe the resource features of this site and then prescribe uses and practices that will be allowed and implemented to maintain and, if practicable, enhance these features.

Creation of the Natural Areas System was mandated under the Natural Areas System Act of 1976 (N.J.S.A. 13:1B-15.12a et seq.). A "Natural Area" is defined as "an area of land or water, owned in fee simple, or held as a conservation easement by the Department, which has retained its natural character, although not necessarily completely undisturbed, or having rare or vanishing species of plant and animal life or having similar features of interest which are worthy of preservation for present and future residents of the State" (N.J.A.C. 7:2-11.3).

In addition to being a State natural area, Readington is a New Jersey Natural Lands Trust Preserve. The Natural Lands Trust was created by legislative mandate in 1968 (N.J.S.A. 13:1B-15.119 et seq.) as an independent non-profit organization within the Department of Environmental Protection. The Trust encourages and expedites donated land, and manages these as preserves.

Readington Natural Area is located in Readington Township in easternmost Hunterdon County between Route I-78 and Route 22 near the village of Whitehouse (Figure 1). Readington lies within the Piedmont physiographic province. The natural area boundaries are indicated in Figure 2.

The New Jersey Conservation Foundation donated Readington Preserve in fee to the New Jersey Natural Lands Trust in 1969. Thus, it became one of the first preserves acquired by the Trust. The Conservation Foundation had received donation of the land in 1968 from Gurdon W. and Anita B. Wattles. Readington became part of the State Natural Areas System in 1975. The area is comprised of two parcels of land separated by private lands. The northern parcel has 19.45 acres and the southern parcel 16.74 acres for a total of 36.19 acres. Prior to acquisition, the property had, at least in part, been used for agriculture. Stipulations of the deed include the following:

- "... the premises shall be used only for conservation and open space preservation; no building or structure shall be erected, except as accessory to and not in conflict with the purposes named above; wooded areas are to remain in their natural condition and field areas are to be mowed once each year".
- The Trust shall convey the Preserve to either Readington Township or Hunterdon County when requested to do so by the grantor, the New Jersey Conservation Foundation.

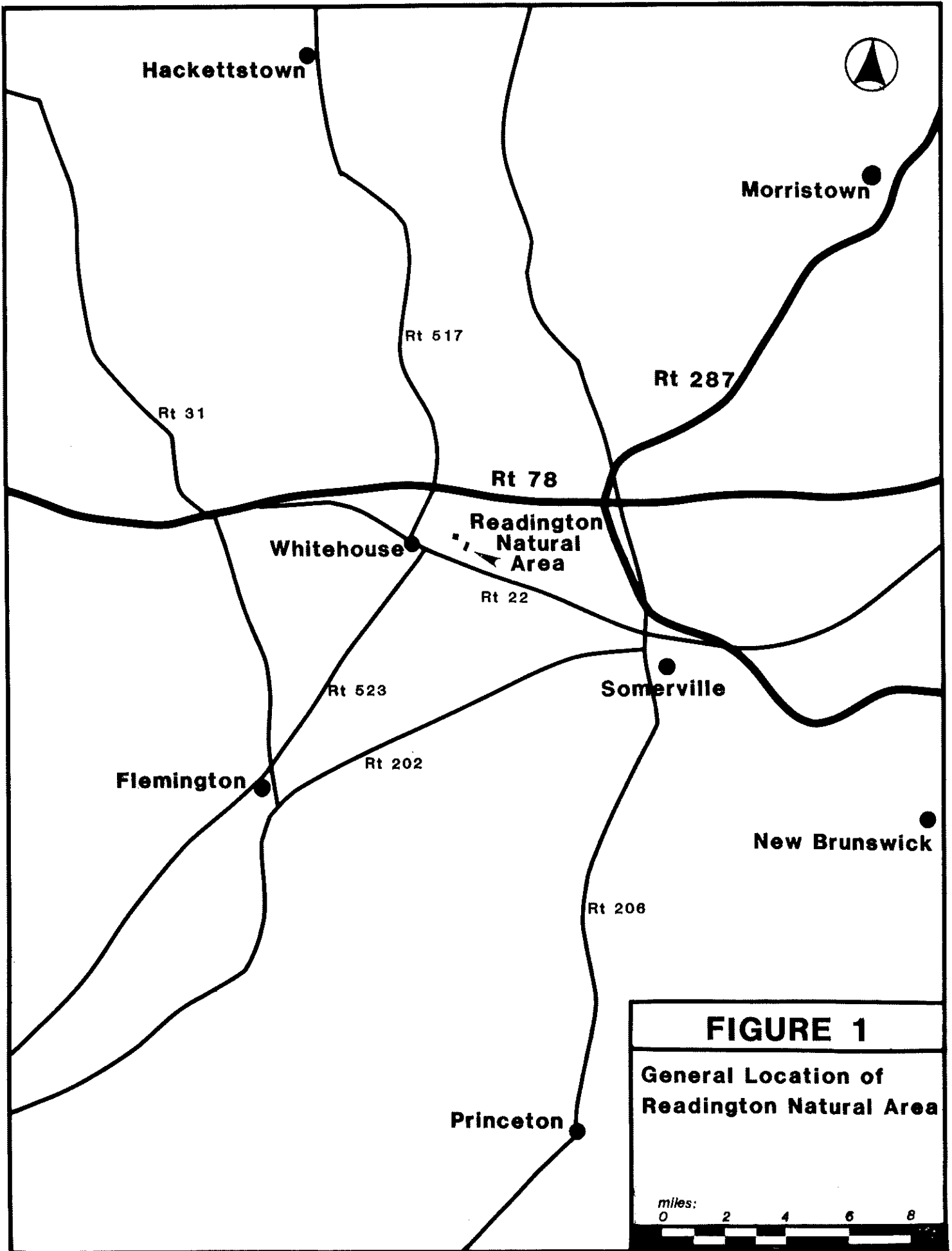


FIGURE 1
General Location of Readington Natural Area

miles:
0 2 4 6 8

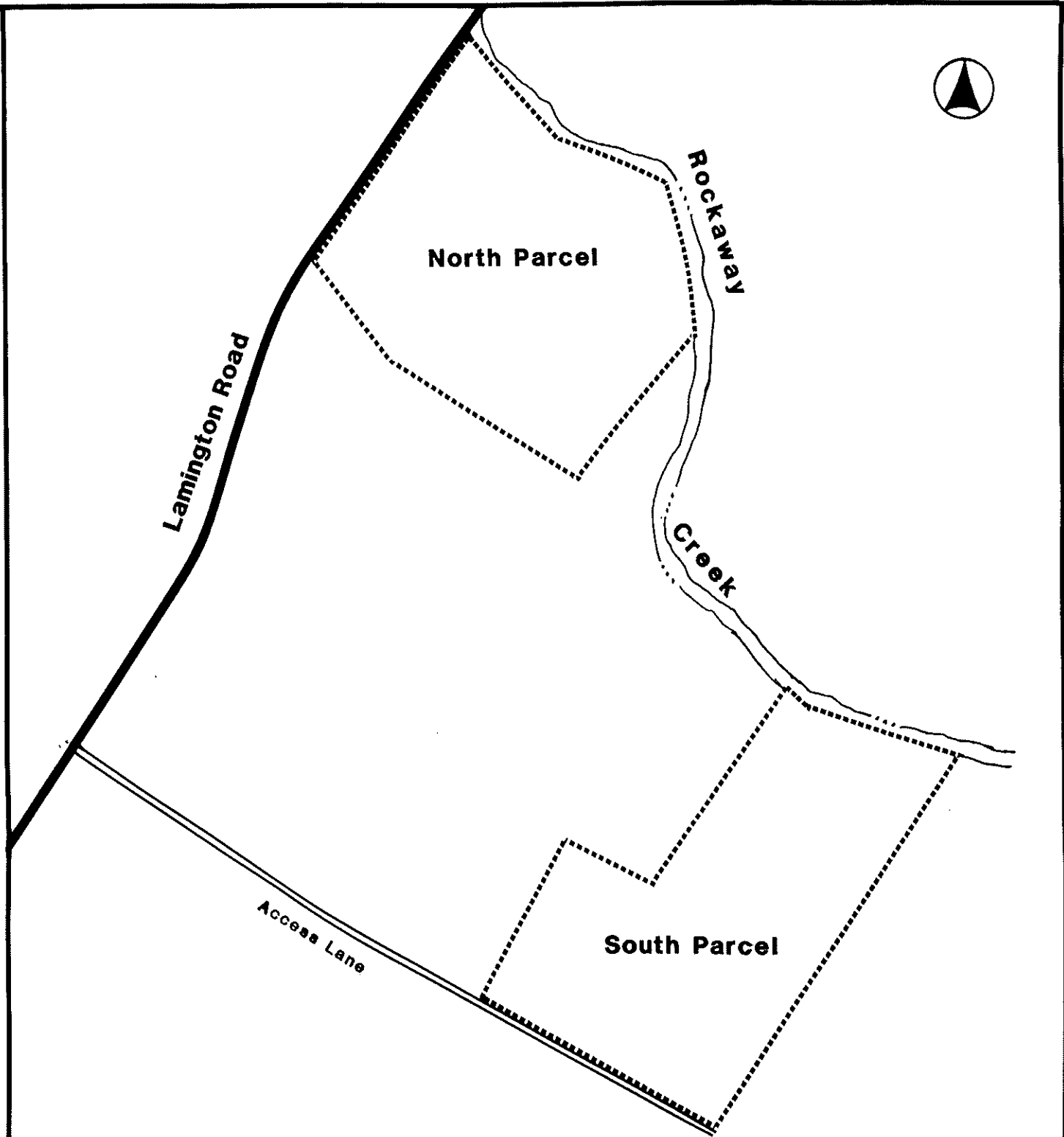


FIGURE 2
Boundaries of
Readington Natural Area

0 200 400 800
SCALE IN FEET

- The Trust is "authorized to place any other restrictions it deems appropriate on the land for the intended future conveyance to the named agencies".
- The Trust also holds reversionary interest in the land for purposes of protection beyond what the Township or County could provide.
- The deed also includes an easement and right to travel in common with others on the access lane from Lamington Road to the southern parcel.

The designation objective for this natural area under the Administrative Code includes "preservation of early stages of secondary field succession" (N.J.A.C. 7:2-11.12). The Administrative Code also mandates the preparation of this management plan.

The New Jersey Natural Lands Trust shall serve as the administering agency, being responsible for establishing policy and making land management decisions affecting Readington. The Division of Parks and Forestry, through Round Valley Recreation Area and a Preservation Cooperative to be set up by the Trust, shall act as managers and carry out those physical actions necessary to achieve the designation objectives of this plan.

SITE DESCRIPTION

Topography and Geology

Readington lies within the Piedmont physiographic province. The northern parcel lies along the floodplain of Rockaway Creek at 100 feet above mean sea level. The land rises approximately three feet above the Creek and slopes upward towards the western edge of the property at a less than six percent gradient to an elevation of 120 feet. Downstream, the southern parcel has a more rugged topography. Much steeper, higher slopes result in a bluff above Rockaway Creek. The land surface varies in steepness between the bluff and the 200 feet elevation at the west corner of the parcel. A swale traverses south across the mid-section while steeper slopes exist in the pine forest (Brush, 1986).

The natural area is underlain by Brunswick red shale. The shale is normally a red argillaceous shale with local beds of red sandstone, siltstone and black shale (Keating, 1984). The sediments of this Piedmont formation were deposited approximately 200 million years ago with the shale being eroded into a rolling lowland. Exposed bedrock occurs along the bluffs of Rockaway Creek and in the stream bottom (Brush, 1986).

Soils

The following information on soils was obtained from the Soil Survey of Hunterdon County, New Jersey (U.S. Department of Agriculture, 1974) and field inspection. Most of the soils of the northern parcel are wet, with water at or near the surface during winter and spring. Rowland silt loam, which consists of nearly level, moderate to poorly drained, moderately permeable and frequently flooded soils, lines the banks and floodplains of Rockaway Creek. The soil of the higher open field is Lansdowne silt loam (nearly level to gently sloping, moderate to poorly drained, moderately permeable).

The majority of the southern parcel contains Penn shaley silt loam with slopes of 12-18 percent. This soil type is derived from upland red shale which gives it a characteristic reddish-brown color. The Penn soil is subject to erosion which results in gullying and the soil being shallower to bedrock. This leaves a surface of shale fragments and sometimes quartzite pebbles and boulders which result in low soil fertility. Such erosion has occurred at several locations in the southern parcel. A small area along the northwest boundary of the property is comprised of Norton loam which has slow permeability and a 2 to 6 percent slope.

Surface Hydrology and Water Quality

The surface water from both parcels drains into Rockaway Creek. The 20-30 feet wide creek borders more than a quarter mile of the northern parcel. Downstream from the road bridge, the creek is divided by a low island approximately 450 feet long. The main channel flows between the natural area and the island. The creek periodically rises over its banks and floods the low-lying areas of this tract.

The southern parcel is drained by a small brook originating in the pine forest and the swale. After being joined by a spring-fed rivulet flowing from the edge of the field, the brook flows into Rockaway Creek near the eastern corner of the parcel. Readington's southern tract fronts Rockaway Creek for approximately 500 feet.

As part of the Raritan River watershed, Rockaway Creek is used as a conduit for "flow augmentation" of the lower river. In some cases, up to 100 million gallons per day is released into the creek from Round Valley Reservoir. This volume is compared with the 300,000 gallons per day which the creek normally receives as seepage through the Round Valley earthen dam. The most recent flow augmentation took place in 1980. Flooding of the low-lying areas of the northern parcel can be expected to result from these releases (Brush, 1986).

Vegetation

Figures 3 and 4 were derived from field examination by Steven K. Brush, a consultant retained by the Trust. The figures indicate only approximate boundaries for the various community types. However, the maps are a useful tool for management purposes. The vegetation description which follows was obtained from field examination by Steven Brush, (consultant), Leslie DiCola (ecologist for the Trust), Garrett Keating of the New Jersey Conservation Foundation and Larry Miller (State Natural Areas Program).

North Parcel

This tract of the natural area contains approximately 60 percent open field. The field is mowed yearly to suppress woody-stemmed plants and tall, herbaceous growth to preserve the early stages of secondary field succession as stated in the designation objective. Thick hedgerows of smooth sumac (Rhus glabra), wild rose (Rosa spp.) and red cedar (Juniperus virginiana) line two sides of the field. The hedgerows have encroached a few feet into the field. Several of the field edges have grown in and now contain goldenrod (Solidago spp.), Queen Anne's lace (Daucus carota) and black-eyed Susan (Rudbeckia hirta). The most common wildflowers in the open field are golden ragwort (Senecio aureus) in the spring and blue vervain (Verbena hastata) in the summer. Some common grasses include wool grass (Scirpus cyperinus), timothy (Phleum pratense) and redtop (Agrostis spp.). Common cattail (Typha latifolia), cinnamon and sensitive ferns (Osmunda cinnamomea, Onoclea sensibilis) can be found in the wetter soil conditions along the southern border of the northern tract.

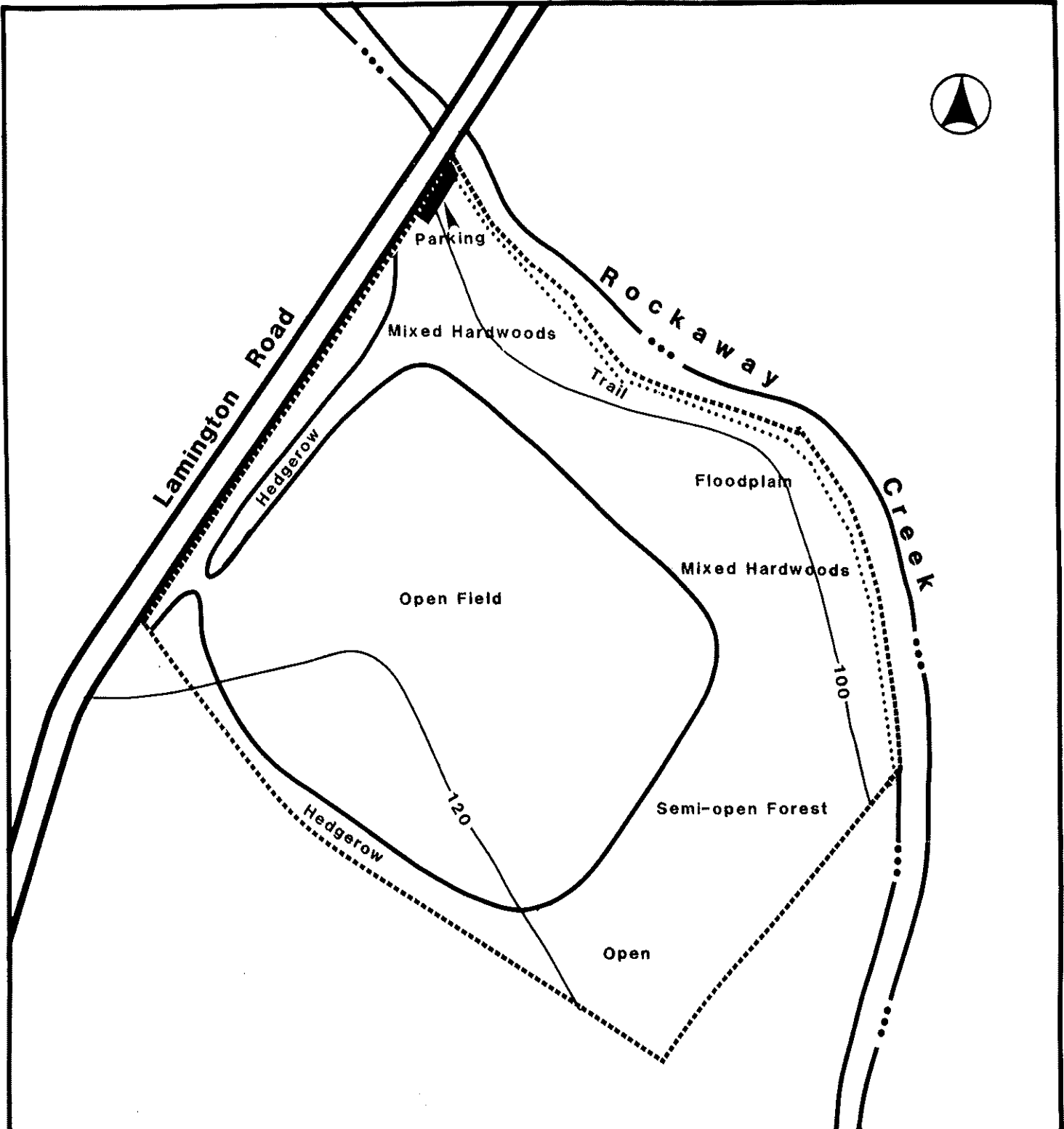


FIGURE 3
Resources and Man-made Features (North Parcel)

0 100 200 400
SCALE IN FEET

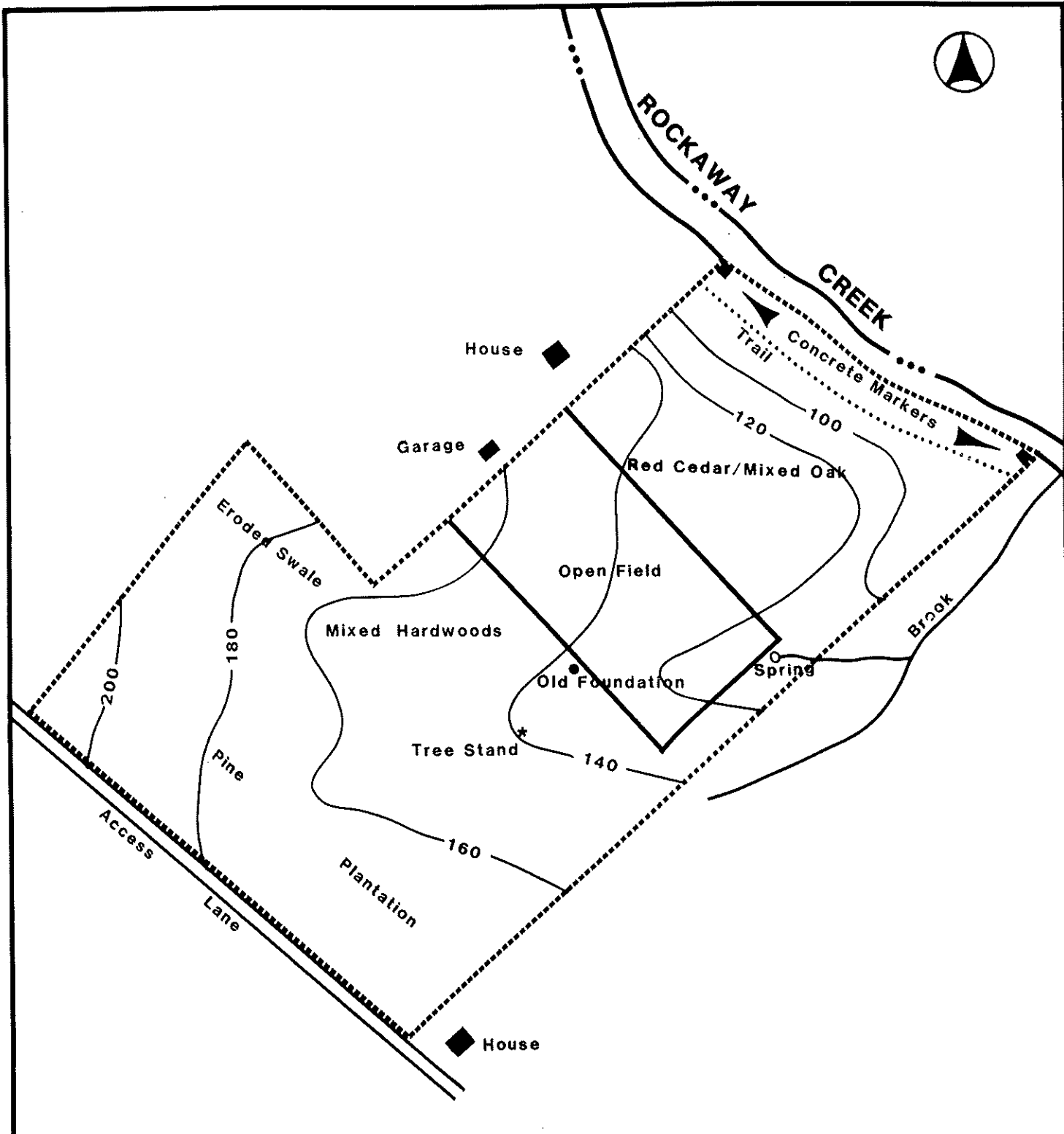


FIGURE 4
Resources and Man-made Features (South Parcel)

0 100 200 400
SCALE IN FEET

The remainder of the north parcel contains an open canopied forest. Red maple (Acer rubrum), sycamore (Platanus occidentalis), pin oak (Quercus palustris), white ash (Fraxinus americana) and black walnut (Juglans nigra) are the primary trees in the canopy layer. The trees are interspersed with such shrubs as spicebush (Lindera benzoin), arrowwood (Viburnum spp.) and wild rose.

South Parcel

This tract is divided into four distinct sections; pine plantation, hardwoods, open field and red cedar/oak. A thick grove of white pine (Pinus strobus) dating to approximately 1950 covers almost one-third of the parcel. The understory of the pine grove is sparse with only an occasional clump of greenbrier (Smilax rotundifolia) where a gap in the canopy allows sunlight to reach the ground. Along the access lane on the southwestern boundary bordering the pines, many rhododendrons (Rhododendron spp.) have been planted. Trees lining the lane include several large Norway spruce (Picea abies) and black cherry (Prunus serotina).

Northeast of the pines is a semi-open, grass covered swale running the width of the property. This eroded drainage basin has a discontinuous hardwood cover up to 50 feet tall. Black walnut, slippery elm (Ulmus rubra) and white ash are the predominant trees. Wild rose is the primary shrub in the understory. At the southeastern boundary, this hardwood section narrows and extends at a right angle to the creek.

A third section of the south parcel contains a two to three acre open field. The field is bordered on two sides by the hardwoods described above. Like the field on the north parcel, this field is mowed on a yearly basis. The field includes golden ragwort, daisy fleabane (Erigeron annuus), Deptford pink (Dianthus armeria) thistle (Cirsium spp.) dogbane (Apocynum androsaemifolium) and goldenrod.

Lying between the field and the creek, the last section is predominantly red cedar and oak (Quercus spp.). It is an area of poor soil with a surface of crumbled red shale. Red oak (Q. rubra) are the larger trees and more dominant along the bluff; they mix with a few white oak (Q. alba) in the eastern corner. The largest oaks are one and one-half to two feet in diameter. The understory contains spicebush, Virginia creeper (Parthenocissus quinquefolia), witch-hazel (Hamamelis virginiana) and pinksterflower (Rhododendron nudiflorum). Little bluestem grass (Andropogon scoparius) is the most common groundcover for this section of the tract.

Wildlife

Mammals

The following description of mammals was derived from a 1984 Inspection Report by Garrett Keating of the Conservation Foundation.

The open fields support a population of Eastern cottontail (Sylvilagus floridanus), woodchuck (Marmota monax), meadow mole (Microtus pennsylvanicus), shrews and Eastern mole (Scalopus aquaticus).

Forested areas contain whitetail deer (Odocoileus virginianus), gray fox (Urocyon cinereoargenteus), red fox (Vulpes vulpes) and striped skunk (Mephitis mephitis), which are in the more open forest. Species occurring nearer the creek include raccoon (Procyon lotor) and Eastern gray squirrel (Sciurus carolinensis).

Reptiles and Amphibians

Although there are no lists for reptiles and amphibians, the following are a few species that can be expected to inhabit the natural area.

Reptiles that can most likely be found at Readington include Eastern box turtle (Terrapene carolina carolina), Northern black racer (Coluber constrictor constrictor) and Eastern garter snake (Thamnophis sirtalis sirtalis). Rockaway Creek can support such species as snapping turtle (Chelydra serpentina) and Northern water snake (Natrix sipedon sipedon).

Several species of salamanders are likely to occur including Northern red salamander (Pseudotriton ruber ruber), its habitat being in or near streams. The red-backed salamander (Plethodon cinereus cinereus) is characteristically found in forested areas. Streams such as Rockaway Creek usually support several frog species including green frog (Rana clamitans melanota) and pickerel frog (R. palustris). Another probable dweller of the natural area is American toad (Bufo americanus).

Fish

Electrofishing data from Rockaway Creek near the natural area in 1969 and 1977 and personal communication with Robert Soldwedel of the New Jersey Division of Fish, Game and Wildlife have provided information for this summary. The creek has and probably still does support a wide variety of fishes. Smallmouth and largemouth bass (Micropterus dolomieu, M. salmoides), rock bass (Ambloplites rupestris), pumpkinseed (Lepomis gibbosus) and bluegill (L. macrochirus) are representatives of the Sunfish Family that reside in the stream. The Carp Family was also well represented in the electrofishing data with the following species: golden shiner (Notemigonus crysoleucas), common shiner (Notropis cornutus), spottail shiner (N. hudsonius), creek chub (Semotilus atromaculatus) and numerous fallfish (S. corporalis). Some additional species include American brook lamprey (Lampetra lamottei), white sucker (Catostomus commersoni), brown bullhead (Ictalurus nebulosus), American eel (Anguilla rostrata) and banded killifish (Fundulus diaphanus).

Rockaway Creek is also stocked with hatchery reared trout; brown and rainbow trout (Salmo trutta, S. gairdneri) and brook trout

(Salvelinus fontinalis). The creek is classified as trout maintenance with spring stocking every year. This is not considered a trout production stream.

Birds

The most current bird sightings for Readington Natural Area were compiled in May and July 1986 field inspection reports (DiCola, 1986). Although the list is abbreviated, it provides a basis for a description of birds that frequent the area.

The open field and hedgerows of the north parcel provides a breeding habitat for common yellowthroat (Geothlypis trichas), song sparrow (Melospiza melodia), indigo bunting (Passerina cyanea) prairie and yellow warbler (Dendroica discolor, D. petechia). Birds sighted in or near Rockaway Creek include belted kingfisher (Ceryle alcyon) and spotted sandpiper (Actitis macularia). Red-bellied woodpecker (Melanerpes carolinus) and Northern flicker (Colaptes auratus) inhabit the open forest of the northern tract. Breeding birds of this community include Northern oriole (Icterus galbula galbula), gray catbird (Dumtella carolinensis), house wren (Troglodytes aedon) and great crested flycatcher (Myiarchus crinitus).

The south parcel contains many of the same species as the north parcel in its open field and open forested areas. The pine plantation of the southern tract includes blue jay (Cyanocitta cristata) and the migratory yellow-rumped "Myrtle" warbler (Dendroica coronata). Other breeding species that frequent the forested areas in the southern tract are Eastern wood-pewee (Contopus virens) and red-eyed vireo (Vireo olivaceus).

Invertebrates

Field investigations by DiCola (1986) revealed the following species of butterflies: spring azure (Celastrina ladon), large wood nymph (Cercyonis pegala), spicebush swallowtail (Pterourus troilus) and monarch (Danaus plexippus). In addition, skipper (family hesperiidae) and sulphur (family Pieridae) butterflies were sighted. A more extensive list of invertebrates is not known to exist.

Endangered/Threatened Plant Species

There are currently no known records for rare plant species within Readington Natural Area.

Endangered/Threatened Wildlife Species

The New Jersey Division of Fish, Game and Wildlife has records of the endangered upland sandpiper (Bartramia longicauda) and threatened bobolink (Dolichonyx oryzivorus) in the vicinity of the natural area. Although there are no records of verified sightings of other

endangered and threatened species, that does not necessarily indicate the absence of those species for that area. Based on the types of habitat available in the natural area, it is possible that the following endangered (E) and threatend (T) species may occur here (Cookingham, 1986):

wood turtle (Clemmys insculpta - T)
 long-tailed salamander (Eurycea longicauda -T)
 Cooper's hawk (Accipiter cooperii -E)
 upland sandpiper (Charadrius melodus -E)
 vesper sparrow (Pooecetes gramineus - E, breeding population only)
 red-shouldered hawk (Buteo lineatus -T)
 barred owl (Strix varia -T)
 red-headed woodpecker (Melanerpes erythrocephalus-T)
 great blue heron (Ardea herodias -T)
 bobolink (Dolichonyx oryzivorus -T)
 vesper sparrow (Pooecetes gramineus-E)
 savannah sparrow (Passerculus sandwichensis -T)
 grasshopper sparrow (Ammodramus savannarum -T)

Man-made Features

There are no buildings, roads or major structures within the natural area (Figures 3 and 4). Man-made features are primarily the result of habitat manipulation. Examples of this are the pine plantation, yearly mowing of the fields, and shrubs and trees planted along the access lane in the south parcel. A path along the Rockaway Creek floodplain in the north parcel which had previously been mowed is now growing in.

Approximately twenty circular depressions exist within the pine plantation. The holes, which appear to have been mechanically excavated, probably resulted from the removal of individual trees for transplantation. This must have been performed at an earlier stage of growth. Other man-made features on the southern tract include concrete corner boundary markers, an old foundation and two partially rotted tree stands. Sections of rusting and decaying barbed wire fence can be located on both parcels. Other evidence of man consists of past indiscriminate dumping. Recent visits have shown much of the trash has been removed by the Trust, neighbors and the Round Valley staff.

Features of Potential Impact

Because of the small amount of use in the natural area, impacts have been kept to a minimum. One potential impact occurs at the corner of the field of the south parcel where a fifteen feet in diameter area of ground was saturated with what appeared to be septic seepage from the adjoining property. This was first detected during a site visit in mid-winter 1986 by Steven Brush. Out of several other site visits in 1986, the seepage was detected once more in September.

More recent inspections in 1987 revealed none of the seepage in that area.

Area residents have reported parties near the Lamington Road bridge pulloff in the north parcel. The youths are reported to be noisy, leaving litter and according to one neighbor, have driven vehicles across the creek.

The natural area is in an area zoned "rural residential" with the dominant land use being horse and livestock farming to the north and east. West of Readington, there has been more residential development adjacent to the south parcel. If the area surrounding Readington remains rural, and with the abundance of nearby public outdoor recreational facilities (e.g., Round Valley, Spruce Run, Voorhees, Hacklebarney), the natural area should maintain its present quality.

MANAGEMENT ISSUES AND TECHNIQUES

Rules and Regulations

A portion of the Natural Areas Rules (N.J.A.C. 7:2-11.1 et seq.) appears in Appendix A. An important function of these rules is to provide general interim management guidelines for all natural areas. An "interim management practice" means any use, activity or management conducted within a natural area prior to adoption of a management plan. Upon preparation of a management plan, interim management guidelines may continue or may be superceded by management techniques more appropriate to fulfill the designation objective of the natural area. The following analysis will outline management uses contrary or supplemental to existing rules. Appendix A should be consulted by managers for guidance on issues not covered below.

Designation Objective and Classification

The designation objective for Readington Natural Area is "preservation of early stages of secondary field succession" and, at the time of rule preparation, the area was assigned an interim classification of conservation preserve (N.J.A.C. 7:2-11.12). This classification reflects an initial view that, in order to attain the designation objective, habitat manipulation is permissible throughout a majority of the natural area to preserve a plant or animal species, community type or ecosystem.

Because the deed stipulates that the field areas of Readington are to be mowed once each year and the mowing constitutes habitat manipulation in order to achieve the designation objective, this area will continue to be classified a conservation preserve.

Following is an analysis of issues, problems and management activities which are directly required to achieve the objectives listed above. These topics are treated separately both for convenience and to accentuate their importance. However, these issues should not be considered independent of each other. Techniques are based in part on consultation with appropriate agencies, individuals, Natural Lands Trust Board of Trustees and the Natural Areas Council, and are designed to adequately maintain and, if possible, enhance the quality of the natural area.

Throughout this section, administering agency refers to the New Jersey Natural Lands Trust, and managing agency refers to the Division of Parks and Forestry, through Round Valley Recreation Area, and a Preservation Cooperative, to be set up by the Trust.

Boundaries

Issues

1. The north and south parcels of the natural area are split by lands of two private property owners. There is currently no access to allow the public to walk between the tracts.
2. The natural area boundaries are currently posted with Natural Lands Trust signs and not Natural Areas System signs.

Techniques

1. The Trust has given thought to and should pursue negotiating an agreement with the adjacent property owners for a conservation easement that would link the two parcels. Because of existing residences on the two properties, the easement would probably have to be confined to a corridor along Rockaway Creek.
2. Readington Natural Area is also a Trust Preserve and the Trust owns and will administer the two parcels as a natural area. Therefore, the existing Trust signs will remain in place. These signs display the Trust's telephone number whereby the public can call for access onto the two parcels. Additional signs indicating Readington is a State natural area will be posted at entrance points to the two parcels.

Human Use

Issues

1. Current allowable uses include hunting, fishing, trapping, hiking and birdwatching. These uses must be examined to determine whether they could conflict with the designation objective.
2. Park Rangers from Round Valley Recreation Area currently patrol Readington from the road approximately once a week. In addition, neighbors sometimes watch over the natural area and keep in touch with the Superintendent of Round Valley.

Techniques

1. Current uses shall be allowed to continue since these activities appear to have no serious or long term effects on the integrity of the area. Thus far, requests for hunting the preserve have been limited to the north parcel and to people requesting to hunt deer. There is little or no demand for hunting on the south parcel. Further, most of

the south parcel would be excluded from hunting with a firearm under the current State hunting regulations. Therefore, during the deer hunting season, individuals requesting access for deer hunting will be directed to the north parcel, while all other recreational users will be directed to the south parcel. Other than deer hunting season, visitors will be directed to either or both parcels. Nevertheless, both parcels will remain available for hunting. If a substantial demand for hunting other than during deer season becomes evident, consideration will be given for further segregation of recreational uses.

2. A Preservation Cooperative shall be set up by the Trust using surrounding landowners. Because these landowners have vantage points over much of the Preserve, they would be responsible for monitoring the area. The Cooperative members would not have law enforcement powers, which means law enforcement agencies would still have to be summoned by Cooperative members for problems requiring enforcement. These agencies include Park Rangers from Round Valley, the State Police, or Division of Fish, Game and Wildlife Conservation Officers when wildlife regulations (including water pollution) are involved. Conservation Officers can be summoned from the Northern District Law Enforcement office in Clinton, New Jersey.

Man-made Features

Issues

1. Features include concrete boundary posts, an old foundation, sections of barbed wire fence, scattered refuse and two tree stands. Management must address whether these features conform to the designation objective and therefore should remain or be removed.

Techniques

1. Refuse on the natural area should be cleaned up by the managing agencies (either the proposed Preservation Cooperative or Round Valley Recreation Area personnel). Smaller items needing removal shall be the Cooperative's responsibility and the larger items shall be removed by Round Valley or a crew they appoint; e.g., juvenile offenders from a State Correctional facility. Smaller items shall be removed on an as-needed basis while the larger items are to be removed only when an amount accumulates that creates a hazard or becomes aesthetically displeasing.
2. Any long, unbroken interior sections of standing barbed wire fence shall be removed by Round Valley personnel within one year of adoption of this management plan. Removal of the

fence would eliminate a possible safety hazard and allow increased mobility for recreational users of the area.

3. The temporary use of portable tree stands for hunting is permitted, providing they are immediately removed by the hunter after use. Construction of "permanent" type tree stands is prohibited and any such existing structures shall be removed by Round Valley personnel within one year of adoption of this management plan.
4. All other features mentioned either cannot be removed or do not negatively impact the natural area.

Habitat Manipulation

Issues

1. The two fields at Readington are currently mowed on an annual basis in late summer-early fall by personnel from Round Valley Recreation Area (James Appfel, Superintendent of Round Valley, personal communication).
2. If an easement agreement is negotiated that would link the two parcels, consideration should be given to constructing a narrow footpath linking the existing trails along the creek corridor.

Techniques

1. The mowing will continue in accordance with deed restrictions and to conform with the designation objective for this area. This task will be continued on a yearly basis by Round Valley personnel. However, future mowing will be conducted in late fall to enhance fall wildflower production.
2. The Trust shall determine materials needed, personnel required and type of construction to be used for establishing a footpath on the proposed easement.

External Features

Issues

1. The possibility of septic seepage on the south parcel should be cause for close scrutiny.

Techniques

1. The area in question should be monitored periodically by the Preservation Cooperative and the Trust to make sure there is not a reoccurrence of the problem. If the seepage should

reoccur and continue to be a source of possible
contamination, the Board of
Trustees shall take action to curtail the problem.

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APPENDIX AINTERIM MANAGEMENT PRACTICES FOR NATURAL AREAS

From Natural Areas System Rules
(N.J.A.C. 7:2-11.1 et seq.)

7:2-11.9 INTERIM MANAGEMENT PRACTICES

- (a) Interim management practices shall be implemented by the administering agency, provided that:
 - 1. The practice will have no direct or indirect adverse impact on natural features of concern;
 - 2. The administering agency notifies the secretary of the Council, in writing, no later than 30 days after initiating the practice;
 - 3. Approval of the Commissioner is not required by provision elsewhere in this subchapter; and
 - 4. The practice is consistent with terms of any conservation easement held by the Department.
- (b) Interim management practices which require the approval of the Commissioner shall first be submitted to the Council for its review and recommendation.
- (c) Upon finding that an interim management practice listed below at (e) or (f) would be detrimental to achieving a specific designation objective, the Council shall recommend to the Commissioner the substitution of a more appropriate interim management practice. Should the Commissioner concur with the recommendation of the Council, the Commissioner may approve substitution by a more appropriate interim management practice.
- (d) Where there are conflicts between general practices described below at (e) and practices specific to a natural area classification described below at (f), the latter shall apply.
- (e) The following interim management practices apply generally to all natural areas:
 - 1. Natural area boundaries shall be made clearly evident by posting signs at a maximum density of ten signs per mile; entrance points shall be posted to indicate to users that they are entering a natural area; boundary signs shall be of a standard size and format as approved by the Commissioner and provided by the Division;
 - 2. Boundary fences that are needed to protect the natural area may be installed provided the fence shall not have a

detrimental effect on movement of wildlife, air circulation, or other natural conditions;

3. Vehicular access lanes may be maintained within a natural area but may not be enlarged in any manner except upon approval of the Commissioner.
4. Existing firebreaks within a natural area may be maintained for safety purposes; temporary firebreaks made by mowing, raking, plowing or wetting, may be used in conjunction with prescribed burning for habitat management;
5. Existing structures may be maintained in a natural area but may not be enlarged; new structures, of a temporary nature, may be constructed for research purposes in accordance with N.J.A.C. 7:2-11.10;
6. No measures, such as cutting of grass, brush, or other vegetation, thinning of trees, opening of scenic vistas, or planting, shall be taken to alter natural processes or features for the purpose of enhancing the beauty or neatness of a natural area;
7. Except as otherwise provided in this section, there shall be no introduction, removal or consumptive use of any material, product, or object to or from a natural area; prohibited activities include grazing by domestic animals, farming, gathering of plants or parts thereof, mining or quarrying, and dumping, burying, or spreading of garbage, trash, or other materials; structures or materials may be removed as follows:
 - i. Old interior fences may be removed, giving consideration to leaving posts to mark boundaries between former land uses;
 - ii. Rubbish or any other waste material may be removed; and
 - iii. Structures having no historic, scientific or habitat value may be demolished and removed unless such structures are deemed essential for administrative purposes;
8. Water levels within a natural area shall not be altered except to restore water levels which have been altered due to a sudden natural phenomena or man-induced conditions off-site; routine repairs to existing water control structures may be undertaken but the structures may not be enlarged;
9. All wildfires shall be brought under control as quickly as possible; after a fire within a natural area, there shall be no cleanup or replanting except as approved by the Commissioner to achieve the designation objective or for reasons of health and safety;

10. Prescribed burning, to eliminate safety hazards and to manage habitat, may be conducted upon review of a proposal for prescribed burning by the Council and approval by the Commissioner; use of vehicles and equipment shall be specified in the proposal for prescribed burning;
11. Erosion control within a natural area shall not be undertaken except to restore existing grades which have been altered due to a sudden natural phenomena or man-induced conditions within or beyond the natural area;
12. Habitat manipulation may be undertaken if preservation of a particular habitat type or species of native flora or fauna is included in the designation objective of the natural area and the prior approval of the Commissioner is obtainable;
13. Gypsy moth control activities may be implemented as an interim management practice after approval by the Commissioner; the Commissioner shall review a control plan only after the State Forester has determined that egg mass counts and prior year defoliation indicates that tree mortality will be severe without intervention; to the extent practicable, biological controls, rather than chemical means, shall be used to control gypsy moths;
14. There shall be no physical manipulation of a natural area or application of chemicals known as adulticides for the purpose of controlling mosquitos; the application of larvacides may be permitted in salt marshes only and only as follows:
 - i. The application of Bacillus thuringensis var. israeliensis (BTI) may be initiated by a mosquito control agency at any time; and
 - ii. The application of other larvacides may be initiated upon approval by the Commissioner of a specific plan submitted by a mosquito control agency; the plan shall identify the specific area where an application will be made, the types and amount of larvacide to be applied, the need for the application, and the reason why BTI cannot be used for this application;
15. Research activities and the collection of specimens may only be conducted in accordance with N.J.A.C. 7:2-11.10 and upon approval of the administering agency; and
16. Public use of natural areas shall be allowed only to the extent and in a manner that it will not impair natural features; the administering agency may restrict access and use as necessary to protect the natural area; the following are permissible public uses:
 - i. Hunting, trapping, and fishing are permitted in accordance with N.J.A.C. 7:25-5 and 7:25-6; except for the stocking of fish and game, habitats may not be

manipulated for the purpose of enhancing hunting, trapping, or fishing;

ii. Occasional camping along trails, boating, and swimming may be permitted in specified locations of natural areas in accordance with N.J.A.C. 7:2-2, 7:2-5, 7:2-7, 7:2-8, and 7:25-2, and are further limited as follows:

- (1) No permanent structures may be erected;
- (2) No motorized methods of boating or camping are permitted;
- (3) Trailside shelters of the type called lean-tos are permitted, but there may not be two such shelters within three miles of each other; and

iii. Existing trails may be maintained, but not enlarged in any manner, by the administering agency to allow public use and prevent erosion, trampling of vegetation beyond the trails, and other deterioration as follows:

- (1) New trails or enlargement of existing trails for interpretive purposes may be initiated subsequent to review of a plan by the Council and approval of that plan by the Commissioner;
- (2) Rare plants may not be removed for the purpose of maintaining existing or constructing new trails; and
- (3) To the extent possible, natural materials shall be used on and along trails; and

iv. All pets shall be kept caged or leashed and under immediate control of the owner except that dogs used while legally hunting shall be exempt from the leashing requirement.

(f) The following interim management practices, unless superseded by an adopted management plan, apply to the appropriate specified natural area classifications:

1. Location markers identifying interpretation points of interest may be installed except within ecological reserves;
2. Trail blazes may be used within any natural area;
3. Existing vehicular access lanes may not be enlarged in any manner within an ecological reserve;
4. New vehicular access lanes may be constructed only within buffer areas and upon approval by the Commissioner;

5. New structures and enlargement of existing structures may be undertaken by the administering agency only within buffer areas, provided the structures directly or indirectly contribute to the designation objective;
6. The alteration of natural processes or features for the purpose of enhancing public use of the natural area may be conducted by the administering agency only within buffer areas; and
7. The following management practices shall not be permitted within ecological reserves:
 - i. New, existing, or temporary firebreaks;
 - ii. Construction of new trails;
 - iii. Alteration or restoration of water levels;
 - iv. Prescribed burning;
 - v. Erosion control measures;
 - vi. Gypsy moth control activities; and
 - vii. Manipulation of vegetation and wildlife habitats.