

Swimming River Natural Area Management Plan

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Introduction

This management plan for the Swimming River Natural Area will describe the resource features which this site contains 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 at N.J.A.C. 7:5A-3 as "an area of land or water, owned in fee simple or 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 or 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. 7:5A-3).

Swimming River Natural Area lies within Tinton Falls Borough, Monmouth County and is part of the Inner Coastal Plain physiographic province of New Jersey. The natural area is located immediately east of the Garden State Parkway and south of Route 520. Figure 1 shows the general location of the natural area. The boundaries of the natural area are indicated in Figure 2.

Swimming River Natural Area, which consists of two separate pieces, was acquired in four purchases by the State of New Jersey through Green Acres bond monies from 1967 until 1973. The initial purchase consisted of approximately 25 acres and subsequent purchases increased the acreage to 108.81 acres. The main portion is approximately 107 acres and the disjunct parcel is approximately 1 acre. Upon state acquisition, Swimming River Natural Area was first administered through Sandy Hook State Park. When Sandy Hook was transferred to the National Park Service, the natural area came under the administration of Allaire State Park.

The designation objectives for this natural area under the Administrative Code include "preservation of habitat diversity including fresh water marsh, salt water marsh, woodlands, fields and estuary." The Administrative Code also mandates the preparation of this management plan.

The Division of Parks and Forestry, through Allaire State Park, serves as the administering agency, being responsible for implementing policy and, after consultation with other Divisions, organizations and individuals, making land management decisions affecting Swimming River Natural Area. Allaire State Park shall implement the management policies necessary to achieve the designation objectives of this plan.

The Office of Natural Lands Management (ONLM) is responsible for overall administration of the Natural Areas System, promulgation and revision of rules governing System lands, and preparation of management plans. The ONLM also periodically monitors implementation of the management techniques outlined in management plans, and may propose amendments to plans as needed.

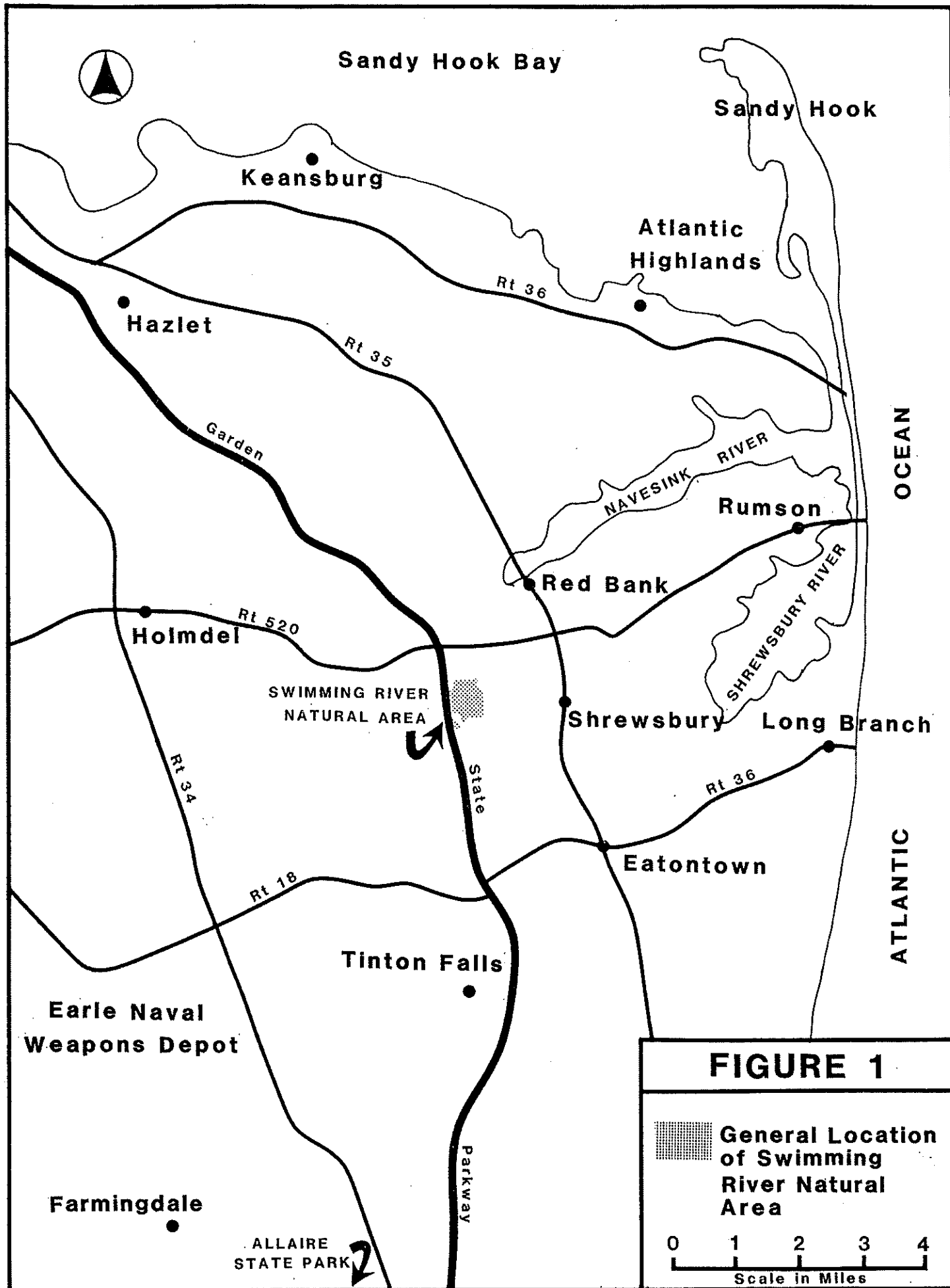
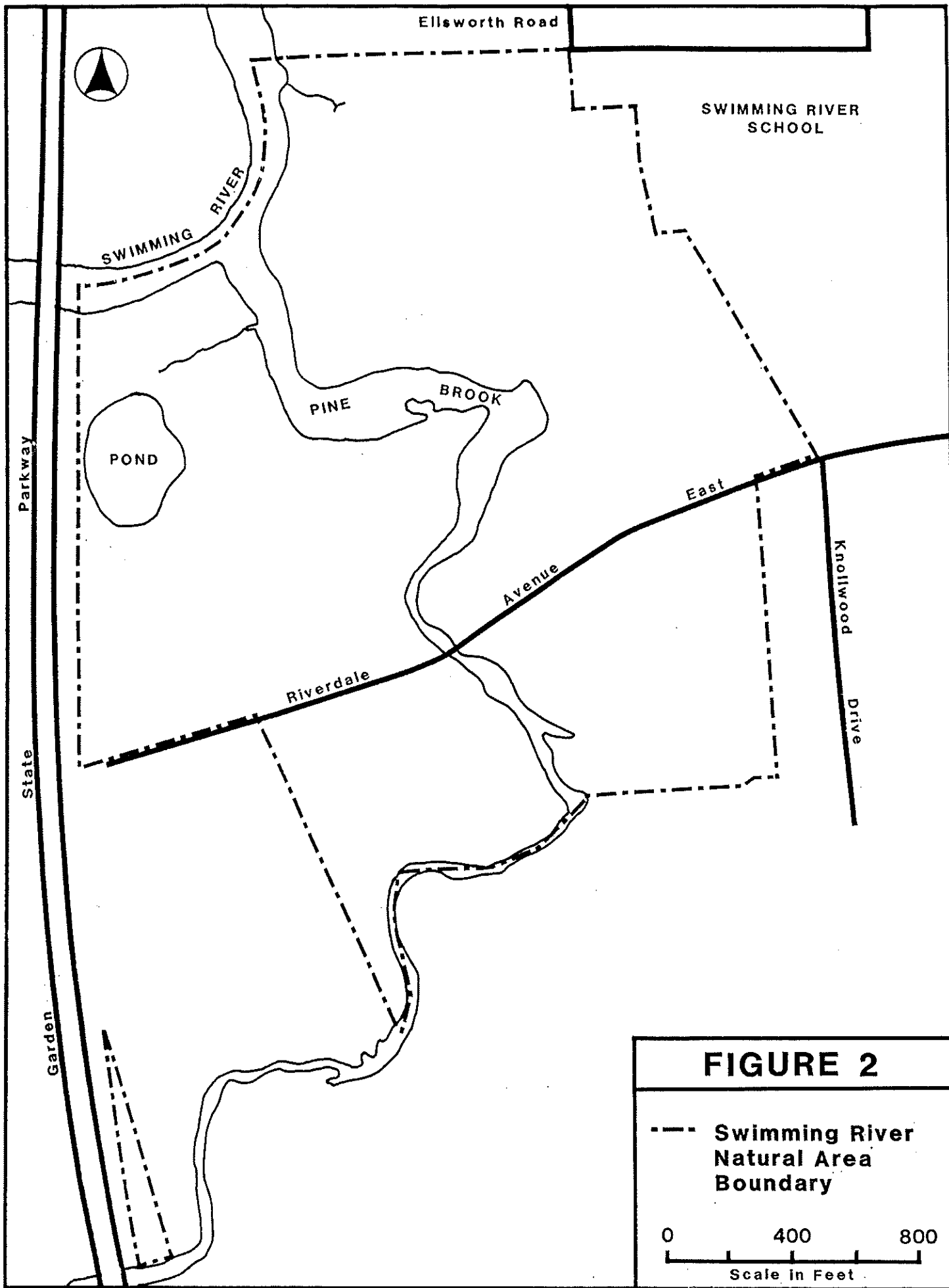


FIGURE 1

 General Location of Swimming River Natural Area

0 1 2 3 4
Scale in Miles



Description and Management Concerns

Geology and Soils

The Coastal Plain area consists geologically of unconsolidated clays, marls, silts and sands of Late Cretaceous and Tertiary age (Wolfe, 1977).

The predominant soil association within the natural area is Tinton - Collington - Colts Neck. Representative soil series include Tinton loamy sand, Evesboro sand, Freehold sandy loam and Udorthents (smoothed). Manahawkin muck occurs on the low lying areas along Pine Brook and Swimming River (U.S. Department of Agriculture, 1989).

Topography and Surface Hydrology

Swimming River Natural Area lies within the Inner Coastal Plain physiographic province, but is very close to the Outer Coastal Plain border (Geologic Map of New Jersey, 1910-1912). The topography of the area is not typical of the Coastal Plain. Erosion caused by the Swimming River and Pine Brook has given the area moderately steep inclines along the banks of the waterways. Elevation ranges from sea level along Pine Brook to 60 feet on the disjunct one-acre parcel southwest of Riverdale Avenue East (Figure 2).

The natural area is part of the Atlantic Coastal Basin and is within the Navesink Watershed. Three bodies of water are associated with the natural area. The Swimming River, a tributary of the Navesink River, borders the natural area to the north. Pine Brook, a tributary of the Swimming River, meanders through the natural area, then forms a portion of the southern boundary. A man-made freshwater pond is located within the natural area immediately east of the Garden State Parkway and north of Riverdale Avenue East.

Biotic Communities

The community classifications and Figure 3 were derived from aerial photographic analysis by James Mortimer, Office of Resource Development, information obtained from Breden (1989) and field examination by the author on November 1 and 19, 1990, December 11, 1990 and January 28, 1991. Figure 3 indicates only general locations and approximate boundaries for the various community types. Representative animal species for the individual communities were derived from the Natural Heritage Program database (January 1991).

Mesic Coastal Plain Mixed Oak Forest

This upland community comprises a large portion of the natural area. The canopy is dominated by numerous oaks including white oak (*Quercus alba*), black oak (*Q. velutina*), northern red oak (*Q. rubra*), and chestnut oak (*Q. prinus*). Other trees in the overstory include hickory (*Carya sp.*), tulip poplar (*Liriodendron tulipifera*), beech (*Fagus grandifolia*), and

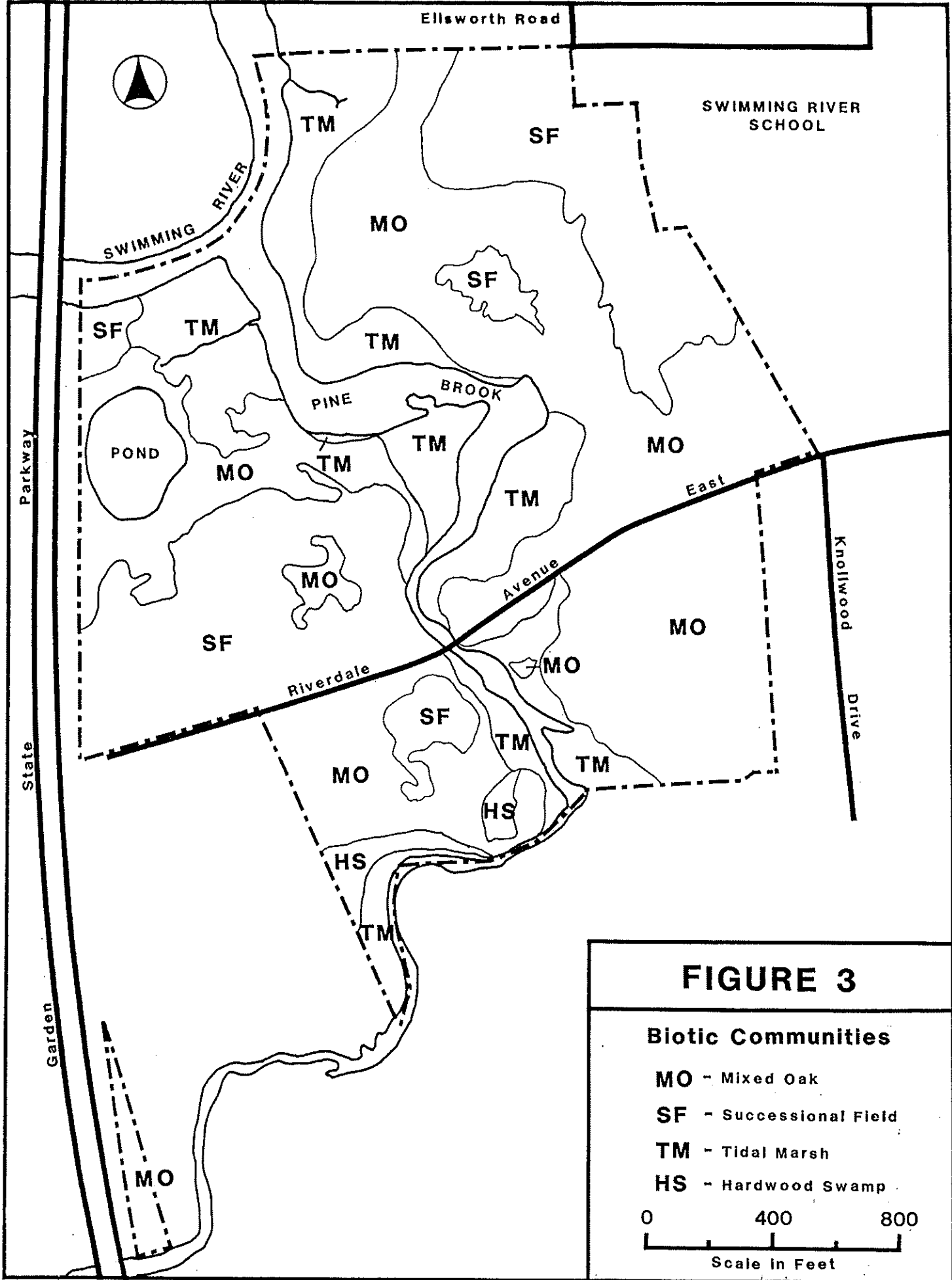
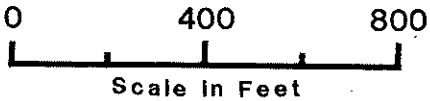


FIGURE 3

Biotic Communities

- MO** - Mixed Oak
- SF** - Successional Field
- TM** - Tidal Marsh
- HS** - Hardwood Swamp



scattered white pine (*Pinus strobus*). Mountain laurel (*Kalmia latifolia*) dominates the shrub layer, while striped wintergreen (*Chimaphila maculata*), partridgeberry (*Mitchella repens*), cut-leaved grape fern (*Botrychium dissectum*) and various grasses dominate the herbaceous layer.

The mixed oak forest can be expected to contain a variety of mammals including star-nosed mole (*Condylura cristata*), eastern chipmunk (*Tamias striatus*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), woodchuck (*Marmota monax*) southern flying squirrel (*Glaucomys volans*), white-tailed deer (*Odocoileus virginianus*), mice and bats.

Upland portions of the mixed oak forest can support a number of reptiles and amphibians including common garter snake (*Thamnophis sirtalis*), eastern fence lizard (*Sceloporus undulatus*), eastern box turtle (*Terrapene carolina*), wood turtle (*Clemmys insculpta*), two-lined salamander (*Eurycea bislineata*) and Woodhouse's toad (*Bufo woodhousii*).

A variety of birds can occur in the mixed oak forest habitat including black-capped chickadee (*Parus atricapillus*), wood thrush (*Hylocichla mustelina*), chestnut-sided warbler (*Dendroica pensylvanica*), downy woodpecker (*Picoides pubescens*), great horned owl (*Bubo virginianus*), northern flicker (*Colaptes auratus*) and red-tailed hawk (*Buteo jamaicensis*).

Successional Fields

Large portions of the natural area are in various stages of succession. These stages include open fields and young woodlots. Black locust (*Robinia pseudoacacia*), black cherry (*Prunus serotina*), ailanthus (*Ailanthus altissima*), and eastern red cedar (*Juniperus virginiana*) dominate the overstory. The shrub layer is composed of sumac (*Rhus sp.*), Japanese honeysuckle (*Lonicera japonica*), northern bayberry (*Myrica pensylvanica*) and young locust and cherry trees. Groundcover includes round-headed bush clover (*Lespedeza capitata*) and various lichens, mosses and grasses.

Successional fields provide habitat for numerous mammals including eastern cottontail (*Sylvilagus floridanus*), meadow jumping mouse (*Zapus hudsonius*), meadow vole (*Microtus pennsylvanicus*), white-footed mouse (*Peromyscus leucopus*) and many of the species found in the mixed oak forest. Probable reptiles and amphibians found in the fields include northern black racer (*Coluber constrictor*), eastern hognose snake (*Heterodon platirhinos*), rat snake (*Elaphe obsoleta*), and Woodhouse's toad. Possible bird species include American goldfinch (*Carduelis tristis*), dark-eyed junco (*Junco hyemalis*), field sparrow (*Spizella pusilla*), northern bobwhite (*Colinus virginianus*), ring-necked pheasant (*Phasianus colchicus*) and yellow-rumped warbler (*Dendroica coronata*).

Freshwater Tidal Marsh Complex

The tidal marsh complex occurs within the central portion of the natural area. Common plants include reed grass (*Phragmites communis*), cattail (*Typha latifolia*), sweetflag (*Acornus calamus*) and wild rice (*Zizania aquatica*) (Nancy Gahn, pers. comm.).

This wetland community can be expected to support many of the same species found in other portions of the natural area. Mammals may include mink (*Mustela vison*), muskrat (*Ondatra zibethicus*) and masked shrew (*Sorex cinereus*). Reptiles and amphibians expected in the marsh community include eastern ribbon snake (*Thamnophis sauritus*), northern water snake (*Nerodia sipedon*), spotted turtle (*Clemmys guttata*), eastern mud turtle (*Kinosternon subrubrum*), spring peeper (*Pseudacris crucifer*) and gray treefrog (*Hyla versicolor*). Common birds of marshes include American bittern (*Botaurus lentiginosus*), American black duck (*Anas rubripes*), pied-billed grebe (*Podilymbus podiceps*), marsh wren (*Cistothorus palustris*) and northern harrier (*Circus cyaneus*).

Lacustrine

The man-made pond represents this community type in the natural area. A pond survey conducted by Monmouth County Park System naturalists in 1980 indicate that small patches of spatterdock (*Sagittaria latifolia*) occur on the pond bottom while free-floating masses of waterweed (*Elodea canadensis*) occur on the pond surface.

This habitat is likely to support a variety of wildlife. Probable reptiles and amphibians include bullfrog (*Rana catesbeiana*), green frog (*Rana clamitans*), northern cricket frog (*Acris crepitans*), southern leopard frog (*Rana sphenoccephala*), pickerel frog (*Rana palustris*), snapping turtle (*Chelydra serpentina*) and common garter snake. Mammals occurring in or near the pond may include mink, muskrat, and raccoon. Avian species frequenting the pond may include those which occur in the freshwater marsh along with wood duck (*Aix sponsa*), northern shoveler (*Anas clypeata*) and blue-winged teal (*Anas discors*).

Liquidambar/Acer Hardwood Swamp

Two small areas within the natural area consist of hardwood swamp. Dominant tree species include red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*) and black tupelo (*Nyssa sylvatica*). Skunk cabbage (*Symplocarpus foetidus*) grows throughout the area. A small patch of tree clubmoss (*Lycopodium obscurum*) occurs in an open area on the edge of the swamp in the northeast portion of the natural area.

Endangered and Threatened Species

According to the Natural Heritage Database, there are currently no known records for endangered or threatened species within the natural area, but to our knowledge the area has never been surveyed.

David Jenkins, Central Regional Zoologist with the Endangered and Nongame Species Program, indicates that although osprey (*Pandion haliaetus*) have not been documented as nesting in the natural area, there are records of nesting on the Navesink, into which the Swimming River drains (pers. comm.). He also indicates that the habitat of the natural area appears suitable for nesting and that placement and maintenance of an osprey nesting platform could enhance the natural area. Mr. Jenkins examined the area for suitable sites and

recommends two possible locations for the single pole nesting structure. In addition, he indicates that the Red Bank-Freehold Council of Telephone Pioneers of America should be contacted for assistance in obtaining the pole and that members of local groups, such as New Jersey Audubon and scout troops, as well as students at neighboring schools, could volunteer to build and place the structure.

Other endangered or threatened avian species which might be expected to use the natural area include: Cooper's hawk (*Accipiter cooperii*), red-shouldered hawk (*Buteo lineatus*), and sedge wren (*Cistothorus platensis*). Nesting by these species has not been recorded on or near the natural area but should not be ruled out. The natural area may also contain potential habitat for bog turtles (*Clemmys muhlenbergii*) and possibly wood turtles (*Clemmys insculpta*) (JoAnn Frier-Murza, pers. comm.).

Boundaries

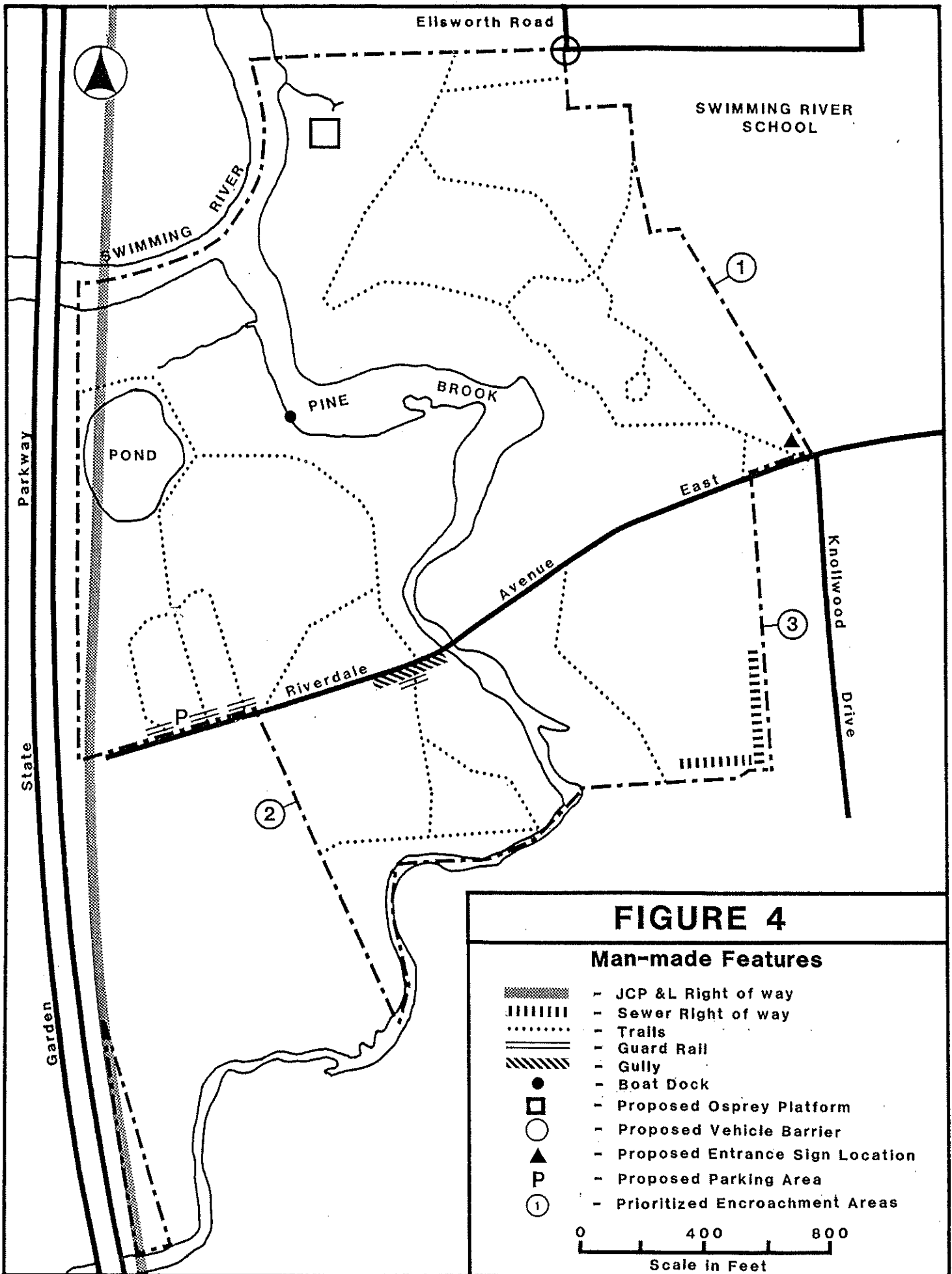
Encroachment onto the natural area may be occurring in three different locations indicated in Figure 4, in order of priority. In Area #1 the Swimming River School may be encroaching into the natural area with the backstop of their baseball diamond. In Area #2 the two homeowners along the property line may be encroaching into the natural area with a parked boat, woodpiles, trails and a shed. In Area #3 the backyards of homeowners along Knollwood Drive may be encroaching into the natural area. Lawn furniture and a fire pit have been observed. Formal surveys of these property lines have not been conducted.

Two easements occur within the natural area (Figure 4). A sewer easement and right-of-way, held by Tinton Falls Borough, is located along the southeastern boundary of the natural area. The easement is 30 feet wide and is located on a small segment of the natural area. Mr. Carl Bowles of Tinton Falls Borough Public Works Department indicates that the sewer line easement off of Knollwood Drive is not maintained on any regular schedule. The right of way is only visited when a problem within the sewer line needs to be corrected.

A second easement, a 50-foot wide right-of-way held by the Jersey Central Power and Light Company for their power lines, occurs on both the main section and the 1-acre disjunct parcel of the natural area adjacent to the Garden State Parkway. Mr. Stanley England of Jersey Central Power and Light indicates that this right of way is inspected at least annually and most likely twice a year. Certain management techniques are used on their right of ways to allow access for maintenance. These techniques include topping trees that are growing into the power lines, cutting down dead trees bordering the power line to prevent the possibility of them falling into the power lines, and cutting down small fast growing trees such as black locust which grow in the path of the power lines. Mr. England also indicates that the use of herbicides for maintaining access was terminated in the late 1970's.

Public Use

Current public recreational uses include biking, walking, fishing, canoeing, bird-watching and jogging. ATV tracks have been observed at the guard-railed access near the bridge across Pine Brook. Hunting and trapping activities are prohibited in the natural area due to the small



size and close proximity of the natural area to the Swimming River School and private residences.

Man-made Features

Riverdale Avenue East, a Borough road, passes through the natural area and serves as the main access road to the State land and four adjacent private residences (Figure 4). Riverdale Avenue East is now paved through the natural area to its terminus at the power line easement along the Garden State Parkway. According to the Tinton Falls Borough Public Works Department, the portion of Riverdale Avenue East which passes through the natural area was paved in 1989. A small bridge, which is County maintained, is located on Riverdale Avenue East where it crosses Pine Brook.

The freshwater pond, which was created, has naturalized over the years (Figure 4). In the mid-1970's a wooden plug was inserted into the outflow pipe and the water level rose approximately three feet (Nick DeMicco, pers. comm.). In recent years the water level in the pond has remained relatively unchanged. The outflow pipe has deteriorated to the point that excess pond water now overflows the dike. At the point of overflow, the trail along the top of the dike is showing signs of erosion.

Al Payne, Division of Parks and Forestry, Office of Capital Planning and Programming, indicates that the dam appears stable but the area of overflow over the dike is a weak point. The erosion problem can be rectified by using fill dirt, with a clay core if needed, to build up the dike in the area where the overflow occurs (pers. comm.). Another option for stabilizing the dike includes installing an L-shaped outflow pipe which would keep the water level of the pond at the same height as the pipe and allow the excess to be drained on the other side of the dike. Not only is this method expensive, but it could entail draining the lake and acquiring the necessary wetlands permits. A culvert spillway could be constructed, but a stable bank is needed and the dike is not stable. A concrete spillway could be built at the site of overflow over the dike. Two other options are to drain the pond to eliminate the chance of dike failure or take no action to repair the dike. After observing the dike the Natural Areas Council feels that the current overflow appears quite natural and does not seem to be progressing or causing any significant impacts. They feel that more damage to the area might be done by bringing in equipment to construct a spillway. The consensus of the Council is that a spillway should not be installed unless there are overriding circumstances, not currently apparent, that would threaten the viability of the pond. George Horzepa, Division of Water Resources, Planning and Standards Element, indicates that if long-term stabilization of the dike is needed a flow-regulating spillway would be optimal. John Ritchey, Dam Safety Section, will prepare a report on options and alternatives and design of the preferred option for any dam rehabilitation.

There are numerous trails throughout the natural area that offer access to the various community types (Figure 4). Portions of some trails are overgrown and difficult to follow. Some show signs of erosion and should be improved. Trails promoted for use should be marked with color-coded signs and maintained on a regular basis. There are a number of dirt roads originating at Swimming River School and a residential development, adjacent to the natural area, which crisscross through the northeastern portion of the natural area. Evidence

of campfires and associated litter can be seen along the trails in the natural area.

Currently there is no parking area or interpretation point for the trail system.

An old wooden dock and the remains of a second dock occur in the northwest portion of the site on Pine Brook (Figure 4). The old dock, which appears structurally sound, is at the end of an offshoot of the main trail.

Foundations of a former 19th Century farmhouse and its associated outbuildings, which were demolished in 1982, are believed to still exist in the natural area but were not found during field searches.

A log bridge crosses an intermittent stream in the northeast portion of the natural area on the trail bordering Pine Brook. The bridge is approximately four feet long and two feet wide and is in good condition.

The remains of two tree houses occur in the natural area. One is located in the southeast section of the natural area in a tree along Riverdale Avenue East. The house is visible from the road and is at least 25 feet up in the tree. The second is built in a tree on the edge of the man-made pond. Neither of them appear to be structurally sound.

Sections of snow fence occur in two places within the natural area. A 10-foot section borders the trail heading downhill to the man-made pond. A 15-foot section borders Riverdale Avenue East in the northwest section near Pine Brook.

Considerable dumping has occurred throughout the natural area along the trails. Items dumped include grass clippings, brush, construction debris, tires, an old riding mower, two empty drums and a trash can. Litter occurs along Riverdale Avenue East and along many of the trails.

Guard rails have been installed at four access points to prevent vehicular access into the natural area. Three access points are at the end of Riverdale Avenue East where the circular driveway and access path meet the road (Figure 4). A serious erosion problem exists at the fourth guard-railed access point on the other side of the road, also shown on Figure 4. Grading of Riverdale Avenue East apparently left an exposed embankment, which has eroded to the point where it is an eyesore and is causing siltation of Pine Brook. The erosion problem has also made access to the trail very difficult. ATV use at this access point has contributed to the erosion problem. A gully has formed on the south side of Riverdale Avenue East, which is causing additional erosion and siltation of Pine Brook (Figure 4).

A guard rail also exists within the northeast portion of the natural area (Figure 4). This guard rail appears to guide users along the trail which leads to Pine Brook.

Janice Reid of the Soil Conservation Service, Freehold Office, indicates that at least three options are available to rectify the erosion problem. A gabion wall could be built, but this is expensive and does not allow easy access to the area. A step system could be built into the side of the embankment. This is less expensive and allows access to the area. A final option would be to close the guard-railed access completely and create a new access point further

west on Riverdale Avenue East at an area where the bank is less steep. Ms. Reid also suggests that a small berm be built within the roadside gully to keep the water on the road and prevent further erosion and siltation.

John Chmielowiec Jr., consulting engineer for Tinton Falls Borough, indicates that the gully formed along Riverdale Avenue East will be addressed in the 1991 Road Plan and that the Borough intends to curb the area from the bridge to the first telephone pole (approximately 60 feet on the south side of the road). He added that this curbing may be completed by the Summer of 1991. The Borough's other alternative is to place stone in the gully, but that method would exceed the square footage allowed by their permit. He also indicates that the Borough has no plans for stabilization of the eroded banks along the south side of Riverdale Avenue East because the only option is constructing an expensive retaining wall which the Borough cannot afford.

A three-inch diameter pipe was observed along the edge of a sand road behind the school. The pipe is approximately 12 feet long and is partly covered by sand.

Other Issues

The Earle Naval Weapons Station, located southwest of the natural area (Figure 1), has recently become a Superfund site. Water originating in and around Earle flows into Pine Brook and Hockhockson Brook, a tributary of Pine Brook. Information is not currently available about the groundwater in the vicinity of Earle, but the New Jersey Division of Hazardous Waste Management is now pursuing a Remedial Investigation Study (RIS), the results of which will not be known at least until late 1991 (Bob Hayton, pers. comm.).

According to Milton Reevy, Fire Inspector for Tinton Falls Borough, the potential for fire at Swimming River Natural Area is minimal due to the fact that the area is relatively open and because it is bordered by Swimming River, the Garden State Parkway and two residential areas. He indicates that if a fire was to start it could possibly burn about one to two acres before being extinguished. The natural area is accessible due to Riverdale Avenue East, and the area fire departments are equipped with off-road brush trucks which would allow them to get to the fire quickly.

George Koeck, Regional Forester with the Bureau of Forest Management, indicates that oak constitutes a high enough component of the overall forest within the natural area to warrant yearly monitoring for gypsy moth populations. If average egg mass counts exceed 500 per acre and if serious defoliation is predicted a suppression program will be necessary.

Management Techniques

Natural Areas System Rules

Relevant sections of the rules and regulations concerning Natural Areas and the Natural Areas System (N.J.A.C. 7:5A-1 et seq.) appear in Appendix A. An important function of these rules is to provide general interim management guidelines for all natural areas for which management plans have not been prepared. Upon preparation of a management plan, interim management guidelines may continue or may be superseded by management techniques more appropriate to fulfill the designation objective of the natural area. The following analysis will outline management and uses contrary or supplemental to existing rules. Appendix A should be consulted by managers for guidance on issues not covered below.

Designation Objective

The designation objective for Swimming River Natural Area is "preservation of habitat diversity including fresh water marsh, salt water marsh, woodlands, fields and estuary."

The following management techniques are directly related to previous sections of this plan and the interim management guidelines found in Appendix A. The techniques do not apply to the disjunct one-acre parcel, as there will be no physical management of that area. Techniques are based in part on consultation with appropriate agencies, individuals and the Natural Areas Council, and are designed to adequately maintain and, if possible, enhance the quality of the natural area. A checklist for completion of the various tasks below, arranged by responsible party, may be found in Appendix B.

Throughout this section, administering agency refers to the Division of Parks and Forestry, through Allaire State Park.

The following section lists many items that will be the responsibility of the administering agency to complete. It must be noted that all of these items will be completed on schedule, provided there is adequate funding and additional personnel available to do so. Under the present budgetary constraints and reduced personnel levels, many of these items could not be completed as scheduled.

Endangered and Threatened Species

1. The Office of Natural Lands Management (ONLM) will conduct a survey for endangered and threatened species on sites targeted for maintenance and/or construction activities.
2. Portions of the natural area, Swimming River and Pine Brook, offer suitable habitat for osprey (*Pandion haliaetus*). To encourage osprey to nest in the natural area, ONLM will coordinate efforts with the Division of Fish, Game and Wildlife by December 31, 1991 to erect a nesting platform in Pine Brook at the preferred location shown in Figure 4.

Boundaries

1. The administering agency will post State Natural Area signs on trees along the boundaries of the natural area at a maximum density of ten signs per mile by December 31, 1991. In an area where there are no trees on which to post signs the administering agency shall construct boards on which to post signs. Signs will be replaced as needed.
2. The administering agency, in conjunction with ONLM, will attempt to locate existing natural area boundary monuments in critical areas 1, 2 and 3 in Figure 4. If monuments cannot be located, ONLM will pursue means by which a survey may be conducted by December 31, 1991.
3. The administering agency will provide formal notification to landowners encroaching upon natural area boundaries by February 29, 1992.
4. The administering agency will draft and post a Rules and Regulations sign at each access point into the natural area by December 31, 1991.
5. ONLM will provide the administering agency with State Natural Area boundary signs and Rules and Regulations signs as needed.

Public Use and Education

1. The administering agency will obtain all applications to conduct research or collect specimens, forward a copy to ONLM, and provide a response within 30 days of application submittal. The Administering Agency shall coordinate response with ONLM.
2. ONLM will prepare information regarding the natural area, such as the habitats found there, locational map, rules and regulations, etc. and send to organizations and schools in the vicinity by October 31, 1992. These groups are encouraged to use the area for educational and interpretive purposes.

Man-made Features

1. The administering agency will continue to monitor the dike of the man made pond, but will not pursue further stabilization unless the condition of the dike deteriorates.
2. The administering agency will stabilize the eroded bank at the guard-railed access indicated in Figure 4 by installing wooden poles (one at the guard rail and one up the slope from the guard rail), filling in with dirt behind the poles, and planting trees and shrubs. The administering agency will construct a pedestrian stair system at the above guard railed access indicated in Figure 4 by December 31, 1993.

3. The administering agency will construct and install a sign identifying the natural area at the preferred access point located on Riverdale Avenue East by December 31, 1991 (Figure 4).
4. The administering agency will construct and maintain a small unpaved parking area capable of accommodating approximately ten cars at the preferred parking location indicated in Figure 4 by October 31, 1992.
5. The administering agency will construct and maintain an information board at the parking area by October 31, 1992.
6. The administering agency will prohibit vehicular access to the natural area behind Swimming River School by constructing a vehicle barrier (guard rail) at the location shown in Figure 4 by December 31, 1991.
7. The administering agency will make determinations about which trails will be maintained and blazed and which will not by September 30, 1992. Maintenance will include clearing and installation of erosion control structures such as water bars.
8. ONLM will, in conjunction with Allaire State Park staff, delineate trails with colored blazes by October 31, 1992.
9. ONLM will prepare a trail map of the natural area, to be displayed on the information board, by October 31, 1992.
10. The administering agency will remove litter and large refuse items that have been dumped along the trails within the natural area by December 31, 1991 and thereafter on an ongoing basis as needed.
11. The administering agency, in conjunction with ONLM, will remove remains of the tree houses and snow fence by December 31, 1991.
12. The administering agency will remove the dock on Pine Brook by December 31, 1991 and each time a new one is illegally constructed.

Enforcement

1. The administering agency will conduct law enforcement patrols at a minimum of twice per month.
2. Due to the distance between the natural area and Allaire State Park, volunteers from the neighborhood should be sought to monitor the natural area. ONLM will contact residents by December 31, 1991 to see if they would like to become volunteers. The volunteers will oversee the natural area and report any problems or concerns to Allaire State Park.

Other Issues

1. ONLM will contact the Division of Hazardous Waste Management regarding the Earle Naval Weapons Station Remedial Investigation Study by December 31, 1991 in order to keep informed on possible contamination of Pine Brook.
2. The Bureau of Forest Management will monitor the natural area for gypsy moth yearly to determine the status of the gypsy moth population. If it is decided that a suppression program is necessary a program will be prescribed for review by the Natural Areas Council.

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Appendix A

INTERIM MANAGEMENT PRACTICES FOR NATURAL AREAS

From Natural Areas System Rules
(N.J.A.C. 7:5A-1 et seq.)

7:5A-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 listed at (e) or (f) below 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 upon designation to the System and until and unless superseded by the provisions of an adopted management plan:
 - 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; new structures and enlargement of existing structures may be undertaken upon approval by the Commissioner, provided the structures directly or indirectly contribute to the designation objective; new structures, of a temporary nature, may be constructed for research purposes in accordance with N.J.A.C. 7:5A-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 upon approval by the Commissioner of a specific habitat manipulation plan prepared by the Department.
13. Gypsy moth control activities may be implemented as an interim management practice after approval of a gypsy moth control plan by the Commissioner; the Commissioner shall review a gypsy moth 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 mosquitoes; the application of larvicides may be permitted in salt marshes only and only as follows:
 - i. The application of *Bacillus thuringiensis* var. *israelensis* (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 mosquito control plan submitted by a mosquito control agency; the plan shall identify the specific area where a larvacide 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. 7:5A-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 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 of natural areas:
 - 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. 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

6. 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.

Appendix B

MANAGEMENT PLAN TASKS AND RESPONSIBILITIES

Natural Area: SWIMMING RIVER

Plan Adoption Date: October 21, 1991

Name:

Date:

	<u>Date Indicated in Plan</u>	<u>Proposed Accomp. Date</u>	<u>Date Accomp.</u>
I. Allaire State Park Superintendent			
1. The administering agency will post State Natural Area signs on trees along the boundaries of the natural area at a maximum density of ten signs per mile by December 31, 1991. In an area where there are no trees on which to post signs the administering agency shall construct boards on which to post signs. Signs will be replaced as needed. (p. 16)	12/31/91	_____	_____
2. The administering agency, in conjunction with ONLM, will attempt to locate existing natural area boundary monuments in critical areas 1, 2 and 3 in Figure 4. If monuments cannot be located, ONLM will pursue means by which a survey may be conducted by December 31, 1991. (p. 16)	12/31/91	_____	_____
3. The administering agency will provide formal notification to landowners encroaching upon natural area boundaries by February 29, 1992. (p. 16)	2/29/92	_____	_____
4. The administering agency will draft and post a Rules and Regulations sign at each access point into the natural area by December 31, 1991. (p. 16)	12/31/91	_____	_____

<p>5. The administering agency will obtain all applications to conduct research or collect specimens, forward a copy to ONLM, and provide a response within 30 days of application submittal. The administering agency shall coordinate response with ONLM. (p. 16)</p>	Ongoing	Ongoing	Ongoing
<p>6. The administering agency will continue to monitor the dike of the man-made pond, but will not pursue further stabilization unless the condition of the dike deteriorates. (p. 16)</p>	Ongoing	Ongoing	Ongoing
<p>7. The administering agency will stabilize the eroded bank at the guard-railed access indicated in Figure 4 by installing wooden poles (one at the guard rail and one up the slope from the guard rail), filling in with dirt behind the poles, and planting trees and shrubs. The administering agency will construct a pedestrian stair system at the guard railed access indicated in Figure 4 by December 31, 1993. (p. 16)</p>	12/31/93	_____	_____
<p>8. The administering agency will construct and install a sign identifying the natural area at the preferred access point located on Riverdale Avenue East by December 31, 1991 (Figure 4). (p. 17)</p>	12/31/91	_____	_____
<p>9. The administering agency will construct and maintain a small unpaved parking area capable of accommodating approximately ten cars at the preferred parking location indicated in Figure 4 by October 31, 1992. (p. 17)</p>	10/31/92	_____	_____
<p>10. The administering agency will construct and maintain an information board at the parking area by October 31, 1992. (p. 17)</p>	10/31/92	_____	_____
<p>11. The administering agency will prohibit vehicular access to the natural area behind Swimming River School by constructing a vehicle barrier (guard rail) at the location shown in Figure 4 by December 31, 1991. (p. 17)</p>	12/31/91	_____	_____

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|-----|---|----------|---------|---------|
| 12. | The administering agency will make determinations about which trails will be maintained and blazed and which will not by September 30, 1992. Maintenance will include clearing and installation of erosion control structures such as water bars. (p. 17) | 9/30/92 | _____ | _____ |
| 13. | The administering agency will remove litter and large refuse items that have been dumped along the trails within the natural area by December 31, 1991 and thereafter on an ongoing basis as needed. (p. 17) | 12/31/91 | _____ | _____ |
| 14. | The administering agency, in conjunction with ONLM, will remove remains of the tree houses and snow fence by December 31, 1991. (p. 17) | 12/31/91 | _____ | _____ |
| 15. | The administering agency will remove the dock on Pine Brook by December 31, 1991 and each time a new one is illegally constructed. (p. 17) | 12/31/91 | _____ | _____ |
| 16. | The administering agency will conduct law enforcement patrols at a minimum of twice per month. (p. 17) | Ongoing | Ongoing | Ongoing |

II. NJ DEPE Office of Natural Lands Management

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|----|--|-----------|-----------|-----------|
| 1. | ONLM will conduct a survey for endangered and threatened species on sites targeted for maintenance and/or construction activities. (p. 15) | As needed | As needed | As needed |
| 2. | Portions of the natural area, Swimming River and Pine Brook, offer suitable habitat for osprey (<i>Pandion haliaetus</i>). To encourage osprey to nest in the natural area ONLM will coordinate with the Division of Fish, Game and Wildlife by December 31, 1991 to erect a nesting platform in Pine Brook at the location shown in Figure 4. (p. 15) | 12/31/91 | _____ | _____ |
| 3. | ONLM will provide the administering agency with State Natural Area boundary signs and Rules and Regulation signs as needed. (p. 16) | As needed | As needed | As needed |

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|----|--|----------|-------|-------|
| 4. | ONLM will prepare information regarding the natural area, such as the habitats found there, locational map, rules and regulations, etc. and send to organizations and schools in the vicinity by October 31, 1992. These groups are encouraged to use the area for educational and interpretive purposes. (p. 16) | 10/31/92 | _____ | _____ |
| 5. | ONLM will, in conjunction with Allaire State Park staff, delineate trails with colored blazes by October 31, 1992. (p. 17) | 10/31/92 | _____ | _____ |
| 6. | ONLM will prepare a trail map of the natural area, to be displayed on the information board, by October 31, 1992. (p. 17) | 10/31/92 | _____ | _____ |
| 7. | Due to the distance between the natural area and Allaire State Park, volunteers from the neighborhood should be sought to monitor the natural area. ONLM will contact residents by December 31, 1991 to see if they would like to become volunteers. The volunteers will oversee the natural area and report any problems or concerns to Allaire State Park. (p. 17) | 12/31/91 | _____ | _____ |
| 8. | ONLM will contact the Division of Hazardous Waste Management regarding the Earle Naval Weapons Station Remedial Investigation Study by December 31, 1991 in order to keep informed on possible contamination of Pine Brook. (p. 18) | 12/31/91 | _____ | _____ |

III. NJ Bureau of Forest Management

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|----|--|--------|--------|--------|
| 1. | The Bureau of Forest Management will monitor the natural area for gypsy moth yearly to determine the status of the gypsy moth population. If it is decided that a suppression program is necessary a program will be prescribed for review by the Natural Areas Council. (p. 18) | Yearly | Yearly | Yearly |
|----|--|--------|--------|--------|