
ELIGIBLE TRAILS FOR THE STATE TRAILS SYSTEM

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Shore Trail
Sussex Branch Trail
Cedar Creek
Delaware River
Great Egg Harbor River
Millstone River
Musconetcong River
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Wharton Water Trails

ELIGIBLE TRAILS FOR THE STATE TRAILS SYSTEM

A primary purpose of this plan is to identify trails and trail systems suitable for inclusion in the State Trails System. Trails may be recommended because they are considered of statewide significance and meet qualifications for being well managed and attaining a high quality trail experience. All trails first must be eligible by being publicly owned or, if on private property, deed restricted for public recreational use, as with an easement. The proposed regulations establish guideline traits on the basis of:

- **Scenic Quality.** The landscape through which the trail passes must be attractive, with either natural or cultural features. A variety of different features, e.g., forests, fields, farms, wetlands, and towns, and a variety of topographic landscapes are more desired than uniform characteristics. Any unique features that might be found along the trail, or the trail's association with an historic event, also add to the scenic quality of a trail.
 - **Accessibility.** The public must be able to get to the trail either by non-motorized transportation, auto or public transportation; for auto access, particularly where public transportation does not exist, there must be areas for parking. If there are few access areas for a significant length of trail, then the potential for added access points should exist.
 - **Length.** In order to be considered of statewide significance, the trail or trail system should be at least five miles in length. The exceptions to this would be a connector trail between two existing trails in the State Trails System and, in some cases, recreational trails, particularly for motorized use.
 - **Multiple Use.** Use by several compatible trail types is more desirable than single purpose use. There can be exceptions, however, depending on the trail. For example, extremely rocky areas of northern New Jersey may only be suitable for hiking, because other uses might be dangerous or environmentally deleterious.
- **Development and Maintenance Costs.** A trail path must be well-developed with an identifiable surface and affordable maintenance costs. Continual need for such items as surfacing and bridging make for high expenses, which might not always be made by the administering agency in tight financial times. Development and maintenance costs should also be considered for the potential acquisition of property for trails.
 - **Public Support.** The administering agency must agree to designation, and the designation should be supported by user groups and other public and private agencies.
 - **Environmental Impact.** The existing trail must not be a cause of environmental degradation. The two main types of degradation caused by trails are erosion on steep slopes and alteration of natural water courses where trails pass over streams or through wetlands. Efforts must be made to either prevent degradation or avoid environmental problems through trail design.

Rivers as trails can be examined with similar criteria, but with the addition of obstructions as a criteria. Obstructions can include dams, rocky areas, and downed trees and logs. The presence of dams can necessitate portaging; therefore, land around the dam must be accessible to the general public and clear to allow canoeists to take out, walk around the dam, and put in downstream. Information on obstructions is also important for the safety of the canoeist, who may be a novice and not experienced with canoeing or boating techniques to avoid accidents and overturning. Rivers are included as trails for both canoeing and motor boating. Just as certain land trails can be used for both non-motorized and motorized trail enthusiasts, so can rivers be used by both, with the river serving as a "vehicle" for recreational

use and enjoyment and appreciation of the river.

The trails, trail systems, and rivers listed below are a sample of trails that meet the above eligibility criteria. They were selected after a review of the trail inventories submitted by federal, state, and county park agencies. The inventories provided the basis for determining multiple use and length. Site inspections of each of the following trails were performed to determine scenic quality, accessibility, and environmental impact. A meeting or telephone interview with a representative of the administering agency provided information on development and maintenance costs, public support, and needs. Although not an eligibility criteria, "Needs" is included with each trail description for directing future funding.

Although there are many more trails that could potentially qualify for designation, the following group of trails is provided as a geographic representation of trails throughout New Jersey, and a broad representation for meeting a variety of trail uses. Examining them by physiographic region from north to south, they include:

APPALACHIAN RIDGE AND VALLEY

- Appalachian Trail
- Kittatinny Mountain Trail System
- Paulinskill Valley Trail
- Sussex Branch Trail
- Delaware River (partial)

HIGHLANDS

- Morris Area Trail System
- Patriots' Path
- Ramapo Mountain Trail System
- Delaware River (partial)
- Musconetcong River

PIEDMONT

- Delaware and Raritan Canal State Park
- Lenape Trail
- Long Path
- Shore Trail
- Delaware River (partial)
- Millstone River

COASTAL PLAIN - PINE BARRENS

- Batona Trail
- Belleplain State Forest
- Estell Manor Park Trail System
- Cedar Creek (non-tidal)
- Great Egg Harbor River (non-tidal)
- Wharton Water Trails

COASTAL PLAIN - COASTAL

- Cattus Island Park Trail System
- Island Beach State Park
- Cedar Creek (tidal)
- Great Egg Harbor River (tidal)

COASTAL PLAIN - NON-PINE BARRENS

- Cooper River Park
- Parvin State Park
- Delaware River (partial)
- Rancocas Creek

FIGURE 2.
Physiographic Regions of New Jersey

ALLAIRE STATE PARK TRAIL SYSTEM

Department of Environmental Protection

The Allaire State Park trail system consists of approximately 25 miles of multi-use trails, running through areas of the 3,000 acre park. The trail system is eligible for inclusion in the State Trails System as a scenic system based on the following criteria:

Scenic Quality: Allaire State Park lies within the Outer Coastal Plain Province. The southern section of the park, below the river, is characterized by an upland mixed oak forest with rhododendron as a dominant shrub understory. As the terrain descends, the surrounding forest changes to a scrub pine-oak forest. This section contains a network of multi-use trails. Hiking trails pass through the floodplains of the Manasquan River and a tributary, the Mingamahone Brook. Vegetation through areas of deciduous hardwood and pine forests and freshwater wetlands is diverse, adding interest to trail corridors. The multi-use trails north of the Manasquan River incorporate an abandoned railroad right-of-way of the Penn Central Railroad, the Freehold and Jamesburg Line. The wide trails in this area are bordered by meadows with surrounding woodlands. In addition to the natural scenic qualities encountered along trails in this system, Allaire Village, a restored 19th century iron works village, provides cultural and historical interest.

Accessibility: Allaire State Park is located on County Route 524 in Howell and Wall Townships. It is accessible from the major highways of I-195 and the Garden State Parkway. Most of the trails have convenient access and parking areas along roads bordering the park or within the park itself. Parking at trailheads includes horse trailer parking along Hospital Road and Route 524. Hikers with cars may also find parking within the main section of Allaire adjacent to Allaire Village and near the nature center. There are additional parking areas on Hurley Pond Road and Route 524. There is one canoe access within the park boundaries, located on Route 547 south of the I-195 interchange. Take-out is just above Hospital Road.

Length: The total mileage of the Allaire State Park trail system is approximately 25 miles. This may be broken down as 17 miles of multi-use trails, 4.1 miles of hiking and nature trails, and 3.9 miles of canoe trail that flow through the park.

Multiple Use: Much of the network of trails in the system is multi-use. The old railroad bed, undeveloped roads, and paths are mainly composed of packed dirt or mowed grass, wide enough to accommodate service vehicles, and provide ample opportunities to enjoy hiking, horseback riding, mountain biking and cross-country skiing. The canoe trail within the park boundary is on a section of the Manasquan River where one may make livery arrangements for canoe rental and transport through a local private outfitter, or access the river on Route 547 for a shorter run. Finally, the trails provide access to related activities such as picnicking, fishing and hunting and also historic re-creations of life in the village.

Development and Maintenance Costs: The trail system is already developed and is well used. Boardwalks and clearing are needed for the park's Red Trail, currently closed and not included in the trail system because of the costs involved to make the improvements. Basic maintenance costs for the current trail system are included in the park's budget; maintenance is performed by park personnel. Maintenance costs are also defrayed by assistance from volunteer organizations.

Public Support: Volunteer groups such as Friends of Allaire State Park, the New Jersey Trail Ride Association, and local mountain bike groups are among those that provide periodic cleanups and maintenance work within Allaire. Their support for designation would be requested.

Environmental Impact: The trail system is already in place, therefore no clearing is involved. The densely vegetated trail banks of the hilly terrain in the southern section help to prevent erosion so that negative environmental

impacts are limited on the multi-use trails. By limiting trail use in the floodplains to hiking and nature observation, the natural processes of the rivers are allowed to continue their role in maintaining diversity of the surrounding ecosystems. Problems in sensitive areas, such as the floodplains, occur only when the trails are used for unauthorized activities.

Trail Needs:

- An alternate route needs to be developed where I-195 abruptly interrupts the multi-use trail that runs along the old railroad bed. The feasibility of detouring the trail to follow a path behind the fenced-in abutment under the I-195 overpass on Route 524 (Allaire Road) must be discussed with NJDOT. This would achieve trail continuity with the section of the trail on the other side of the highway.
- Funding for boardwalk construction and maintenance on the 1.5-mile Red Trail needs to be addressed.
- An interconnection between the two multi-use trail systems at Hospital Road needs to be developed in order to avoid horses fording the Manasquan River at dangerous locations.
- Signage at trailheads indicating routes and uses and trail markers are ongoing needs of this trail system. Funding for the development of trail brochures that would include trail rules and etiquette in addition to trail maps would support park personnel's education efforts in reducing unauthorized trail use.

APPALACHIAN TRAIL
A DESIGNATED NATIONAL SCENIC TRAIL

*Department of Environmental Protection and
The National Park Service*

The Appalachian Trail extends for 73 miles from the Delaware Water Gap in the southwest to Hewitt State Forest, adjacent to the border with New York State in the northeast. This is a part of the trail system that extends from Maine to Georgia. The Appalachian Trail is designated as a scenic trail.

Scenic Quality: The Appalachian Trail traverses woodlands and fields within the Appalachian Ridge and Valley Province. From the western boundaries of Wawayanda State Park eastward it is in the Highlands Province. It crosses both mountains and lowlands, to offer a variety of landscapes and vistas to the hiker. Particularly scenic areas include the hemlock ravine in the Dunnfield Creek Natural Area of Worthington State Forest, The National Natural Landmark Sunfish Pond in Worthington State Forest, Sunrise Mountain in Stokes State Forest, Pochuck Mountain and the Wawayanda Escarpment in Wawayanda State Park, and Bearfort Ridge in Abram S. Hewitt State Forest. Within New Jersey, no heavily populated areas are encountered along the path, although in some sections, suburban development surrounds the trail, as in Vernon Township, at Pochuck Creek.

Accessibility: Because trail length is extensive, there are several access and parking areas along its path. Major access points are located at the Delaware Water Gap, Route 206, High Point State Park, local roads crossing the boundary corridor, and Route 94. Parking is located within the state parks and forests, and Delaware Water Gap National Recreation Area.

Length: With approximately 73 miles, there is sufficient length for short and long trail excursions.

Multiple Use: The trail is primarily a hiking trail. The narrow, dirt, sometimes rocky surface is not appropriate for other uses. Cross-country skiing is considered the only compatible use in some lowland areas.

Development and Maintenance Costs: The Appalachian Trail is administered by the State Park Service and the National Park Service where it enters Delaware Water Gap National Recreation Area. It is maintained by volunteers through a cooperative agreement with the New York-New Jersey Trail Conference. Because the trail already exists, little additional cost will be incurred for its designation. The only future projects involve bridge crossings over the Walkkill River and Pochuck Creek. Until these waterways are bridged, alternate routes adjacent to roads are being used to allow for continuity of the trail.

Public Support: The public has been actively involved in the planning, development, maintenance and management of the trail through the Appalachian Trail Conference and the New York-New Jersey Trail Conference.

Environmental Impact: Because the trail is an existing pathway, no added threats are expected to occur along the trail. The New York-New Jersey Trail Conference has maintained the trail to prevent erosion of the pathway. A study of endangered and threatened plants and animals is anticipated in the future. If any are found along the pathway, efforts will be made to relocate the trail to prevent destruction of the species or their habitat.

Trail Needs: The New York-New Jersey Trail Conference has developed a management plan for the trail. Included within the plan are recommendations for:

- Acquisition of adjacent properties or conservation easements on the properties in the corridor area to supplement acquisition efforts of the National Park Service. This will prevent incompatible uses next to the trail, as well as protect viewsheds surrounding the trail. Acquisition of conservation or access easements may also be used as an alternative to fee simple acquisition. Fee

simple acquisition and easement acquisition are to take place with funding under ISTEA.

- Development of parking areas in the corridor area.
- Bridges for stream crossings over the Walkill River, Pochuck Creek, and tributary to Wawayanda Creek.
- Signs posted at roads indicating hiker crossings and information signs at shelters and parking areas.
- Barriers to prevent vehicle access from roads and abandoned railroad rights-of-way.

- The section of the trail from Route 80 to Sunfish Pond is one of, if not the most, heavily used sections of the trail. This area will need restoration.

Other: The Appalachian Trail was designated as a National Scenic Trail under the National Trails System Act and a scenic trail under the New Jersey Trails System Act of 1974. Most recently, the U.S. Fish and Wildlife Service purchased land surrounding the trail route for the Walkill National Wildlife Refuge. The Service should be brought into the partnership relationship as a signatory of the Memorandum of Understanding between the National Park Service, the State of New Jersey, the Appalachian Trail Conference, and the New York-New Jersey Trail Conference.

BATONA TRAIL

Department of Environmental Protection

The Batona Trail is located in Burlington County, beginning at its northern end in Lebanon State Forest, through Wharton State Forest and ending in Bass River State Forest. The trail is eligible for inclusion in the State Trails System based on the following criteria:

Scenic Quality: Recognized as a National Reserve by the United States Congress in 1978 and as an International Biosphere Reserve by the United Nations in 1983, the Pinelands (incorporating the area traditionally called the Pine Barrens) is one of the last remaining relatively unspoiled regions on the Mid-Atlantic coast. The Batona Trail is the only established and maintained long-distance trail within the Pine Barrens region. This wilderness trail traverses a unique and fragile ecosystem that contains numerous rare plant and animal species, including several globally rare plant species. The trail passes through predominantly pine-oak forest but also passes beautiful cedar swamps, numerous streams and ponds, cranberry bogs and blueberry fields, and various historic sites, including Carranza Memorial, Batsto Village, and Martha Furnace. Batsto Village was founded in the eighteenth century, and consists of over 30 historic buildings and structures. Also along the trail is one of the highest points in the Pine Barrens, Apple Pie Hill, at 205 feet.

Accessibility: Access and parking for the Batona Trail include the northern terminus at Onga Hat, the State Forest Office and Pakim Pond, all within Lebanon State Forest; Carranza Memorial, the State Forest Office at Batsto, and Evans Bridge in Wharton State Forest; and Coal Road at the southern terminus in Bass River State Forest. There are also other access points, although not necessarily parking, where the trail intersects various roads.

Length: At 49.5 miles, the Batona Trail is the longest hiking trail in southern New Jersey and the second longest continuous trail in the entire state, exceeded only by the Appalachian Trail.

Multiple Use: Hiking, backpacking and nature observation are the only allowable uses on the dirt and sand Batona Trail within state lands. Camping along the Batona Trail is permitted in designated campsites. Campsites are available in Wharton State Forest at Batona Camp and Lower Forge, in Lebanon State Forest at the family sites or group camping area, and in Bass River State Forest near Lake Absegami.

Development and Maintenance Costs: The development of the trail, which began in 1961, has been undertaken by the volunteer organization, the Batona Hiking Club. With their physical labor and time, costs associated with development and routine maintenance, which they also perform, have been kept to a minimum. Future costs could involve state acquisition of private lands to have the trail under complete state ownership.

Public Support: The State Division of Parks and Forestry and the Batona Hiking Club must cooperatively support the designation of the Batona Trail being incorporated into the State Trails System.

Environmental Impact: Since the Batona Trail is well established, on sandy soil, and allows only hikers, there should be little impact on existing plant, animal, historic, or cultural resources. Any rerouting or trail extensions should continue to be performed with the least amount of disturbance to the surrounding biota and water resources. Also, most of the landscape the trail passes through is fairly flat with little opportunity for erosion problems.

Trail Needs: Because of the continuous volunteer work performed by the Batona Hiking Club, the few trail needs that must be addressed include:

- Acquisition by DEP of approximately four miles of trail between Lebanon and Wharton state forests. The majority of the trail is already under state ownership.

- Approximately twelve wet areas at various locations along the trail need replacement footbridges/boardwalks to be upgraded and

installed, the longest being approximately 15 feet in length. The majority of these areas are between Lebanon and Wharton.

BELLEPLAIN STATE FOREST

Department of Environmental Protection

Located at the southern tip of the Pine Barrens in Cape May and Cumberland counties, Belleplain State Forest is one of the most visited of state landholdings in southern New Jersey. It is located in the outer coastal plain, with its creeks part of the Delaware Bay watershed. Trails in Belleplain State Forest qualify for designation to the State Trails System based on the following:

Scenic Quality: The forest is on the edge of the Pine Barrens, and it traverses a variety of oak-pine and cedar swamp forests. At the same time, it exhibits vegetative transition zones with holly and laurel in mixed oak forests. The extensive trail system allows the visitor to experience these different forest types. Lake Nummy, a recreational focal point of the forest, is a former cranberry bog. Much of Belleplain's infrastructure and several of the buildings were constructed by the Civilian Conservation Corps in the 1930s.

Accessibility: The main entrance to Belleplain State Forest and the trail system is on Belleplain-Woodbine Road (Route 550), approximately two miles west of Woodbine. Other roads, including Weatherby Road (Route 548), Steelmantown Road, East Creek Mill Road (Route 347), and Delsea Drive (Route 47), traverse the forest, providing access to more undeveloped parts.

Length: There are over 40 miles of multiuse trails and sand roads within Belleplain. The East Creek Hiking Trail alone, is over six miles in length. Although Belleplain has many disconnected land-holdings, there are two major trail areas. Trails in the Lake Nummy area are all for hiking, and the majority of the 29 miles of multi-use trails and sand roads are in the northern sections of the forest, north of Belleplain Road. The state forest also includes over five miles of an old railroad bed that is now a multi-use trail.

Multiple Use: Belleplain State Forest has an extensive network of mapped old sand roads, used for both motorized and non-motorized trail users. It also has separate hiking trails,

including the East Creek Trail, two nature trails, and a separate fitness trail. The northern multi-use area is available for off-road vehicles, mountain bikes, snowmobiling, horseback riding, cross-country skiing, and hiking. These traverse a variety of woodland covers found within its boundaries. Belleplain also has an extensive camping area, a designated swimming area in Lake Nummy, boating and fishing in Lake Nummy and East Creek Pond, seasonal hunting, and picnicking facilities.

Development and Maintenance Costs: The biggest expense with trails in Belleplain State Forest is maintenance to keep them clear of encroaching vegetation. Some additional costs are also involved in maintaining and/or replacing foot bridges and boardwalks in swampy areas.

Public Support: There is support by citizens for the trails in Belleplain, based on the volunteer work they perform there. Local scout groups are involved with much of the trail maintenance. In addition, the Tri-County Sportsmen sponsor an annual clean-up along various segments of the trails.

Environmental Impact: Because the trail network uses existing routes, no negative environmental impact is expected to occur with its development or upkeep. Sensitive wetland areas have boardwalks, which need only maintenance and occasional replacement.

Trail Needs: Belleplain State Forest has identified the following needs for its trails:

- Trails need better designation and more comprehensive signage.
- The bridge connecting the two nature trails needs replacement.
- Develop and offer an audio tape for the sight impaired for use on the nature trails.
- Further develop the forest's northern section by converting Old Cape Road into a 4-5 mile historic trail. The Old Cape Road was first a

trail used by Leni Lenape Indians and then became one of the first stagecoach routes into Cape May County.

- Develop a parking area for equestrian use including pull-through horse trailer parking, hitching rails and mounting blocks.
- The East Creek Trail is in need of 6-8 boardwalk replacements.
- Acquisition of abandoned Pennsylvania-Reading Seashore Lines railroad corridor east and south of Belleplain to connect with other public lands.

CATTUS ISLAND PARK TRAIL SYSTEM

Ocean County Department of Parks and Recreation

Cattus Island Park is a peninsula extending out into the bay waters of central Ocean County, north of Toms River. Cattus Island has historic uses that included farming, raising livestock and cutting salt hay. In 1895, the land was bought by John V. A. Cattus, a New York importer who used the island and its buildings for weekend vacations. The park's trail system is eligible for inclusion in the State Trails System based on the following criteria:

Scenic Quality: The Cattus Island trails offer a variety of environments including pine-oak forest, Atlantic white cedar swamps, extensive salt marsh, freshwater bogs, maple gum swamps, holly forest, successional fields, and bay beaches.

Salt marshes and wetlands make up 70% of the Cattus tract and host various salt-tolerant plants such as bulrush, salt hay, chairmaker's rush, cord-grass, common reed and marsh mallow. Other native plants of the nearly 300 species in the park include swamp azalea, false heather, sundew, lady slipper, turkey beard, sand myrtle and pyxie. These ecosystems provide ample food and shelter for birds, mammals, fish and a number of smaller creatures that are part of the tidal salt marsh system. The trails and unpaved fire roads throughout the area allow the visitor to experience the variety of ecosystems and afford excellent views over vast marshes, across inlets and out over the bay.

Accessibility: Access and parking for the trails at Cattus Island begin at the Cooper Environmental Center within Cattus Island Park, located off Fischer Boulevard in Dover Township.

Length: There are approximately six miles of marked foot trails and four miles of dirt fire roads used as non-motorized trails within the park. One mile of the marked trails is wheelchair accessible.

Multiple Use: Allowable uses on the fire roads (which act as trails, only wider) include hiking, bicycling and cross-country skiing. The six miles of narrow (maximum four feet wide) trails are restricted to hiking. Other facilities at Cattus

Island include the Cooper Environmental Center which houses displays, exhibits and a library. All of the interpretive and environmental education programs emanate from the Cooper Center. There is also a public and group picnic area with a playground at the park.

Development and Maintenance Costs: Trail development might include a connecting trail through vacant, mostly forested land from Cattus Island Park to Shelter Cove Park (owned by Dover Township), which is just less than one mile south of Cattus Island along Barnegat Bay. Trail maintenance costs are kept to a minimum through the use of Community Service Workers and volunteers.

Public Support: The Ocean County Department of Parks and Recreation will have to give its support for the possible designation of the Cattus Island Trail System prior to it being incorporated into the State Trails System. The Cattus Island County Park Advisory Council will also have input into the county's decision. Other working support for Cattus Island comes from the Cooper Center volunteers and the Junior Naturalists.

Environmental Impact: Impact on the existing trail system should be minimal because the area is generally flat without much erosion. However, if a connector trail to Shelter Cove is constructed, parts of the trail would have to cross wetlands with boardwalks and/or footbridges being necessary.

Trail Needs: According to Cattus Island Park staff, the following tasks will help improve the trail system at the park:

- Clearing the trails from encroaching vegetation.
- Preparation and printing of new trail guides.
- Removing organic matter, such as wood chips, grass, etc., from the trail surfaces in an attempt to "tick proof" the trails.

COOPER RIVER PARK

Camden County Park System

Cooper River Park is a greenway park and one of the few large park and trail systems within New Jersey's Inner Coastal Plain. It extends from Pennsauken in the west to Haddonfield in the east, following the course of the Cooper River, a tributary of the Delaware River. It is eligible for the State Trails System based on the following:

Scenic Quality: Cooper River Park encompasses an area of rolling countryside, with woods and fields. Native forests of mixed oak are interspersed with fields and lawns along the river. An asphalt path follows the course of the river either next to the river or on the edge of the park next to North Park Drive, Park Boulevard, and South Park Drive. The park is an oasis of natural beauty in an environment consisting of light industry, suburban and commercial development, and highways. Over the last few years, pollution control efforts in the Cooper River have led to better water quality and increasing numbers of fish and waterfowl using the river as habitat. Sailing and rowing events also take place in the Cooper River.

Accessibility: Parking areas are available off of North Park Drive and South Park Drive. Also, other roads cross the park and trail, providing access to the park for nearby communities.

Length: The path is approximately nine miles in length, making it available for short or half day trips.

Multiple Use: With an asphalt surface, the trail is available for hiking, biking, and cross-country skiing. About seven miles are wheelchair accessible. Also within the park are facilities for picnicking, ballfields, and playgrounds.

Development and Maintenance Costs: The existing trail facility does not require additional expense in order to designate it to the State Trail System. However, maintenance projects needed within the park are discussed below.

Public Support: The Camden County Park System should endorse designation to the State Trails System.

Environmental Impact: Because the trail network is already established, no negative impact is expected to occur with trail development. As indicated below, efforts are being made to control erosion in hillier parts of the park.

Trail Needs: Several projects have been planned by the Camden County Park System:

- Better signage is needed in some areas for indicating trail path or warnings.
- Erosion control is needed in those areas of the park sloping down to the path. The county is experimenting with different erosion control measures along South Park Drive, including vegetative cover, rip-rapping, and sheeting.
- The county owns other parkland west of Route 130, where Cooper River Park currently ends, and long range plans are underway to extend the park to Wiggins Waterfront Park along the Delaware River. The county is working cooperatively with landowners, conservation organizations and private industry to extend the park that would link existing public open space. Bringing Cooper River Park to the Delaware River would extend the park for about another five miles.
- A particularly dangerous part of the trail system is the part that passes under the Penn-Central Bridge between Cuthbert Boulevard and Grove Street. Although the trail itself is not narrow, it winds around a sharp curve, the edge of which forms an embankment down to the river, and a mirror has been placed there so that park visitors may see bicycle or foot traffic coming the other way. The county has plans to widen the pathway and is seeking the appropriate permits to do so from the DEP.

DELAWARE AND RARITAN CANAL STATE PARK A DESIGNATED NATIONAL RECREATION TRAIL

Department of Environmental Protection

Delaware and Raritan Canal State Park, also called "D and R" Canal State Park, is located within four central New Jersey counties - Hunterdon, Mercer, Somerset, and Middlesex. It forms a "Y" with one section extending along the Delaware River from Milford southeast to Trenton; another section from Trenton northeast to New Brunswick, adjacent to first the Millstone River and then the Raritan River; and the final lower portion extending south from Trenton to Bordentown, along the Delaware River. A major portion of the park follows a part of the right-of-way of the Pennsylvania Railroad's Belvidere-Delaware Line, running along the Delaware River from Frenchtown, in Hunterdon County, to Trenton.

Scenic Quality: The park serves as a link between rolling countryside of the Piedmont and Inner Coastal Plain Provinces and urban areas. The western section along the Delaware River begins in the rural areas of Hunterdon County with farms that have been in operation for over 200 years. The feeder canal and Bel-Del line pass through historic towns of Frenchtown, Stockton, Lambertville, and Titusville. The main canal section passes through industrialized sections of Trenton, and continues into suburban sections of Lawrence and Princeton Townships, to enter a pastoral environment as it parallels the Millstone River. Towns along the route include Kingston, Rocky Hill, East Millstone, South Bound Brook and finally, New Brunswick.

Accessibility: Because the park is a narrow long strip, there are numerous access points and parking areas available throughout its length. Several access points are located off of Route 29 and River Road. Along the feeder canal section, parking lots provide access to the park as well as boat access to the Delaware River.

Length: The entire length of the park is about 70 miles. However, 60 miles are available for trail use. With almost 60 miles and numerous access points, there is enough length for both short and long trail trips.

Multiple Use: The main canal towpath of crushed stone or dirt is available for hiking, bicycling, and about 25 miles for horseback riding. The feeder canal of crushed stone and the Bel-Del line with a surface of cinders, are available for hiking and biking. The canal itself is used throughout its length for canoeing and boating. Cross-country skiing is allowable when the path is snow-covered.

Development and Maintenance Costs: The park is maintained by the State Park Service, under the New Jersey Division of Parks and Forestry. For the purpose of designation as a trail to the State Trails System, little additional work is needed. Specific project needs are addressed in **Trail Needs**.

Public Support: There are several citizens groups that have some interest in the park itself or a portion of it. Also, the Delaware and Raritan Canal Commission regulates land use in the surrounding area for impacts on the canal and its adjacent lands. They would be requested to support designation to the Trails System.

Environmental Impact: Designation of the existing trail will not alter the environmental resources of the trail and its adjacent land corridor. Because the canal is used for water supply, every effort has been made to maintain potable water supply of the river. The path passes near Bulls Island and Washington Crossing natural areas. However, neither of these areas will be affected by designation of the trail to the State Trails System.

Trail Needs: There are numerous projects to maintain and restore the trail and its resources:

- In order to maintain continuity, a crossing over Route One is needed for bicycle and hiking. The canal itself passes underneath the road, and is barely passable by canoe. Also, there is a missing section of the canal within Trenton. The original right-of-way was taken by Route One, and property needs to

be acquired for the route to maintain continuity from Old Rose Street to Mulberry Street. This would connect the feeder canal part of the park with the main canal section.

- The southerly two mile stretch of the canal park from Trenton to Bordentown has been neglected over the years. Major restoration of this section includes cleaning out the canal and removal of illegal trash within the canal itself and the adjacent land, rewatering of the canal, and rebuilding the towpath.

- In 1994, Delaware and Raritan Canal State Park assumed management of the 3,000 acre Six Mile Run property, adjacent to the park in Somerset County. Consisting of forests, wetlands, and leased agricultural fields, it has the opportunity to provide many additional miles of trails, and a trail plan and management strategy must be developed for the site.

Other: In May, 1992, a 60 mile section of Delaware and Raritan Canal State Park, including the canal, towpath and Bel-Del right-of-way, was designated a National Recreation Trail.

ESTELL MANOR PARK TRAIL SYSTEM

Atlantic County Park System

Estell Manor Park is located in the Pine Barrens of Atlantic County, between Stephen's Creek on the south, South River to the east, and Route 50 on the west. Both streams are tributaries of the Great Egg Harbor River, approved by the U.S. Congress to be designated into the National Wild and Scenic Rivers System. The park trail system is eligible for the State Trails System because it incorporates representative Pine Barrens native habitats, salt marshes, and historic structures and artifacts. Specific qualities include:

Scenic Quality: Estell Manor Park is centered around the ruins of the Estellville Glassworks. The glass works was founded in 1825 and manufactured window glass. It continued in operation until 1877. The trail network is founded on old rail beds and roads developed as a part of the Bethlehem Loading Company, a World War I munitions plant. This is part of the Belcoville Complex, which extended north towards Mays Landing. The complex was spread over six square miles, with houses, a school, stores, town hall and other structures. The town was abandoned when the war ended in 1918. Trails wind their way through representative Pine Barrens habitats, past the glassworks, and past the remains of munition buildings; a nature trail highlights the wetlands typical of the Great Egg Harbor River system. Some of the trails use the cinder bedding of the abandoned railroad line.

Accessibility: The park's main entrance and parking area is located on State Route 50, approximately three miles south of Mays Landing.

Length: There are approximately 16 miles of trails through the park, making it available for short or long trips.

Multiple Use: Trails are available for hiking, mountain biking, cross-country skiing, and horseback riding. Three miles are wheelchair accessible. The park serves a wide range of passive and active recreational uses, with

camping, picnicking, nature observation areas, a nature center, boat dock on Stephen's Creek, softball fields and a playground.

Development and Maintenance Costs: The park trails are established, mostly well maintained and marked. Therefore, little additional capital improvements or major reconstruction is required to improve the quality of the trails.

Public Support: The Atlantic County Park System will be requested to endorse designation to the State Trails System.

Environmental Impact: Because the trail network is already established, no negative impact is expected to occur with trail development to maintain significance. In fact, wildlife are frequently sighted along the trails, using them as pathways and browsing nearby vegetation.

Trail Needs: The trail network on the abandoned rail lines is in very good condition and well maintained. However, trails can be enhanced with the following:

- The nature trail, which also serves as a fire break, should be cleared of overgrown vegetation.
- A foot bridge along the nature trail should be built to cross Cribber's Creek.
- With designation of the Great Egg Harbor River and the South River into the federal Wild and Scenic Rivers System, an elevated observation deck overlooking the salt marshes along the route of the nature trail would be very desirable. Vegetation would only have to be trimmed in order to provide an unobstructed view of the marshes and the river beyond.

- A trail guide should be printed describing historic and natural features found along the trails, as well as allowable uses.
- The Swamp Trail, using the abandoned railroad bedding, needs to be decked in some areas of seasonal wetness. This trail
- could also be made wheelchair accessible to meet guidelines and standards of the federal Americans with Disabilities Act.
- The park administration would also like to erect trailside shelters on different trails for winter trail users.

ISLAND BEACH STATE PARK TRAIL SYSTEM

New Jersey Department of Environmental Protection

Island Beach State Park is located along the Atlantic Ocean just south of Seaside Park in Berkeley, Lacey and Ocean townships, Ocean County. The park is one of New Jersey's most heavily visited within the State Parks System. Trails at Island Beach qualify for designation to the State Trails System based on the following criteria:

Scenic Quality: As one of the last relatively undisturbed segments of barrier islands within the state, Island Beach State Park provides some 3,000 acres of ocean beach, sand dunes, saltwater marsh and freshwater bogs. The park occupies the entire barrier beach area between Seaside Park and the northern shore of Barnegat Inlet. This 10-mile strip is bounded on the east by the Atlantic Ocean and on the west by Barnegat Bay. Island Beach contains the Northern and Southern natural areas comprising approximately 1,900 acres. The many short paths crossing the low dunes leading to the ocean beaches are bordered by dense thickets of green briar and ivy, occasional cedars, clumps of holly and hardwood shrubs. Near the bay, reeds, green briars, cedars, holly and hardwood shrubs dominate areas that are often wet and interspersed with salt marsh. An enormous number of bird species migrate through Island Beach, while many songbirds use the briar thickets as a summer nesting ground. Off the southern end of the park are the Sedge Islands in Barnegat Bay. These tidal salt marshes offer a rich diversity of plant and animal life that can be explored by canoe.

Accessibility: All parking areas and trails are accessed from the 8.5-mile paved road through Island Beach. In addition to the two main parking lots at the swimming areas, there are parking areas at the Aeolium Nature Center and 21 smaller parking areas interspersed off the main road. Horseback riders must park horse trailers at the south end of Ocean Bathing Unit #1 and access the beach on a sand road by the Personnel Building. There are also three beach access areas for four-wheel drive vehicles.

Public Support: Volunteer groups provide

Length: There are over 13 miles of trails at Island Beach State Park. The multi-use Beach Trail is approximately seven miles in length for four-wheel drive vehicles and hikers, and six miles for horseback riding. There is also a 3.5 mile bicycle trail that is being developed for an additional 5 miles. Beginning in summer 1993, Island Beach added a two-mile canoe trail. The remainder of the trail mileage is contained in several nature trails and short trails to the ocean and bay.

Multiple Use: The Beach Trail along the ocean beach is the primary multi-use trail. Four-wheel drive vehicles are allowed on this trail; however, the users are restricted by Mobile Sportfishing permits which allow them to drive on the Beach Trail for fishing. In summer, May - September, users are not permitted to drive across the swimming (lifeguarded) zone. Horseback riding is permitted from October 1 until April 30. The current paved bike trail is located along the shoulders of each side of the main road from the entrance to the swimming areas. Island Beach staff leads canoe tours during the summer season, but the public is also allowed to launch their own canoe or kayak. In addition, there are interpretive nature trails throughout the park.

Development and Maintenance Costs: The largest current development cost will be the 5-mile extension of the bike path to the parking area at the southern end of the park. Other trail development might occur in conjunction with the proposed conversion of the old Coast Guard Station to an interpretive center. Basic maintenance costs for the trail system are included in the park's budget and work is performed by park personnel. These costs are also defrayed by assistance from volunteer organizations.

support to Island Beach State Park by getting

involved in various maintenance projects. The New Jersey Beach Buggy Association has been instrumental in dune restoration to help protect the beach. Other groups supporting Island Beach include Shore Audubon and the East Coast Bicycle Club.

Environmental Impact: There is little impact on existing trail routes where required maintenance consists of keeping the trails clear of encroaching vegetation. Island Beach State Park is unique in that trail maintenance is part of beach maintenance. Consideration should be given to the nesting grounds of shorebirds in the location of any new trails. Proposed new trail development in the natural areas must be reviewed and approved by the Natural Areas Council.

Trail Needs: Island Beach State Park has identified the following needs for its trails:

- Extension of the bike path to 8.5 miles so that bicyclists will be able to ride the entire length without riding in traffic lanes. Bicycle racks will also be needed at parking areas, particularly on the southern end of the park.
- Directional signs are needed to indicate the best route through the salt marshes along the Sedge Islands canoe trail in Barnegat Bay. An interpretive brochure for the canoe trail is also a possibility.
- Wayside interpretive trail signs are needed along several short trails leading to the ocean or bay, such as the trail leading to the Spizzle Creek Bird Blind.
- Several trail projects will be desirable if Coast Guard Station 112 is converted to an interpretive center.

KITTATINNY MOUNTAIN TRAIL SYSTEM
*New Jersey Department of Environmental Protection and
The National Park Service*

In northwestern New Jersey, state lands of Worthington State Forest, Stokes State Forest, and High Point State Park, and the federal Delaware Water Gap National Recreation Area, include a number of trails. The trail system in each park is of sufficient length to be designated to the Trail System. However, since the lands form continuous open space, are all within the land area of Kittatinny Mountain, and have trails that cross administrative borders, the whole trail system is eligible for designation to the State Trails System based on the following criteria:

Scenic Quality: The various trails in this system traverse northern woodlands, and frequently offer panoramic vistas of the Delaware River Valley to the west, and the Kittatinny Valley to the east. They cover a variety of terrain from steep, mountainous areas to rolling hills, and in some cases, flat floodplains. This part of the Delaware River is a National Wild and Scenic River. Within this trail system is the highest point in New Jersey, at 1,803 feet above sea level, found in High Point State Park. Within Delaware Water Gap National Recreation Area, Millbrook Village has been restored to its early nineteenth century origins with mills, barns, blacksmith and other working shops, church, school, and residences. Many of the trails pass through hemlock ravines with waterfalls, cedar swamp forests more typical of southern New Jersey, and glacial features, such as Sunfish Pond, a National Natural Landmark. Within Worthington State Forest and Delaware Water Gap National Recreation Area, Old Mine Road is a National Historic District, constructed by the Dutch over 200 years ago, and now a popular bicycle route. The Coppermine Trail in Delaware Water Gap passes historic copper mines. The Tinsley Trail in Stokes State Forest was developed to pass various glacial features common to northern New Jersey. The Monument Trail in High Point State Park leads to the High Point Monument at the highest point in New Jersey. Trails within the system also pass through designated state natural areas, including Dunnfield Creek, a chestnut oak forest and hemlock-mixed hardwood forest in Worthington

State Forest; Sunfish Pond, a glacial lake in Worthington State Forest; Tillman Ravine, a hemlock ravine in Stokes State Forest; and Dryden Kuser, an Atlantic white cedar swamp with black spruce and hemlock, in High Point State Forest.

Accessibility: Each of the public lands has parking areas, providing access to a variety of trails and related facilities. Park maps indicate existing parking lots.

Length: The total network of mapped trails, excluding the Appalachian Trail, which also runs through all four parks, comprises 140 miles. Because many of the trails loop and connect with other trails, anywhere from one hour to several days could be spent on the different trails in this network.

Multiple Use: The Kittatinny Trail System offers variety for almost all trail users. Many trails within the area are used for hiking only, such as all the trails in Worthington State Forest. Old Mine Road, although used for vehicular traffic, is used by cyclists. Horseback riding, mountain biking, and nature observation are allowed on specific trails in each of the other state lands. When snow-covered, several hiking and multi-use trails can be used for cross-country skiing. Certain multi-use trails can be used for dog-sledding, and in some areas of Stokes State Forest and High Point State Park, snowmobiling is allowed. Within Delaware Water Gap National Recreation Area, the Hamilton Ridge Road trail is wheelchair accessible for approximately two miles. Facilities at all parks include camping, swimming, fishing, and in Delaware Water Gap National Recreation Area, historic interpretation, thus allowing for a full range of recreational activities.

Development and Maintenance Costs: All trail maintenance and development is the responsibility of each park. However, volunteer groups play a significant role in planning, developing and maintaining trails. The New York-New Jersey Trail Conference has

volunteered to build and maintain hiking trails within this region as well as other public lands within northern New Jersey. Other clubs taking responsibility for trail maintenance include the University Outing Club and the Nordic Ski Club.

Public Support: Each of the above clubs would be requested to support designation along with the individual park administrators.

Environmental Impact: Due to the mountainous nature of this trail network, soil erosion caused by use of the trails on steep slopes must always be considered, and precautions taken for its prevention. Some trails are in great need of redevelopment to prevent further erosion, such as trails in the vicinity of Dunnfield Creek, which is one of the most heavily used parts of the Delaware Water Gap area. Care must be taken to protect habitats for endangered plants during any redevelopment. One problem that has emerged in the last few years throughout New Jersey, is the loss of hemlocks due to the hemlock woolly adelgid. With no known feasible method of protecting forest stands from this aphid, hemlock stands are dying. Trails on slopes with dying hemlocks will be subjected to greater threats of erosion, and in the future, some trails may have to be closed or re-routed until vegetative restoration takes place.

Trail Needs: With the vast network of trails in this system, and great amount of public use, there are several needs:

- If Old Mine Road continues to be open for vehicular traffic, then efforts should be made to more adequately accommodate bicycles and pedestrians with width improvements and paving for the road. Guardrails are also needed in several locations. These improvements would be located in those sections of the road running through both Worthington State Forest and the National Recreation Area.
- Signage is important for indicating use of trails, directions for interconnecting, and trailheads, regulated uses. They are needed throughout the Kittatinny Trail System.
- The Dunnfield Creek Trail is greatly eroded and requires major redevelopment. Also, four wooden foot bridges crossing Dunnfield Creek need to be replaced.
- Several of the hiking trails within Worthington State Forest require erosion and drainage controls. These include the Dunnfield Creek, Douglas, Garvey Springs, Blue Dot, and Red Dot trails; also, the intersection of the Dunnfield Creek and Holly Springs trails.
- Because of the large volume of hikers using the Douglas Trail, the existing parking lot off of Old Mine Road needs to be expanded, graded, and new stone surfacing applied.
- The upper parking area for the Van Campens Glen Trail needs to be redeveloped to allow safe passage of hikers, with new gravel, signing, and step work to get to the trail. Bicycle racks, bulletin boards, and trash cans are also needed. The trail itself needs work to control erosion, foot bridges at two locations, and steps at two steep sections of the trail.
- The abandoned railroad bed near the three minute light needs to be cleared of debris. This could connect with the Karamack Trail. Both trails could provide for an easy hike, compared to the mountainous hikes in most of Worthington and Delaware Water Gap areas.
- The Blue Mountain Lakes section within Delaware Water Gap National Recreation Area has several woods roads, which are maintained for cross-country skiing. However, interest has been expressed in allowing mountain bikes in this area. To develop trails in this area, new culverts, some trail grading, and signage are needed.
- Thunder Mountain School Boardwalk within Delaware Water Gap NRA needs new boardwalking through .1 mile of mostly wetlands.
- The American Youth Hostel volunteers plan to clear and prepare ski trails near the hostel. Funding is needed for trail signs and grading.

- Within Stokes State Forest, snowmobile trails need upgrading and identification. Signs, bulletin boards at access points, parking lots and trail head markers are needed.
- As winter uses increase within the parks, there is an increasing need for parking lots to accommodate trucks and trailers.

LENAPE TRAIL

Essex County Department of Parks, Recreation and Cultural Affairs

The Lenape Trail is located in Essex County, linking seventeen communities from Roseland to downtown Newark, with several extensions off the main trail. The existing portions of the Lenape Trail are eligible for inclusion in the State Trails System based on the following criteria:

Scenic Quality: The existing portions of the Lenape Trail link county and municipal parks, historic landmarks and districts, schools and other points of interest throughout Essex County. From the more manicured, urban Branch Brook and Belleville parks, through residential and commercial areas, to the suburban, heavily wooded park areas of South Mountain and Mills Reservations, the trail offers a variety of landscapes. In the west, the trail begins in West Essex County Park, at the Center for Environmental Studies, where it connects with Morris County's Patriots' Path. The route then branches out in several directions using county and municipal parks, abandoned railroad and utility rights-of-way, the Newark Aqueduct, and streets and sidewalks of Newark and suburban areas. The completed portions of the trail traverse nine additional county parks including South Mountain Reservation in West Orange, South Orange and Millburn, Branch Brook Park in Newark, Mills Reservation in Cedar Grove, Becker Park in Roseland, and Brookdale Park in Montclair and Bloomfield. From Cedar Grove on the Passaic County line south to Caldwell, a six-mile biking/hiking trail extension, the West Essex Greenway, is partially completed. This was an abandoned right-of-way, formerly the Caldwell Branch of the Erie-Lackawanna Railway. Municipal parks along the route include Clarks Pond Park, Yanticaw Brook Park, Mountainside Park, O'Connor Park and Military Park in Newark. It also passes Newark's James Street Historic Area. Some other places of interest are Applegate Farm in Montclair, Peckman River Gorge in Cedar Grove, Riker Hill Geology Museum in Roseland and Turtle Back Zoo in South Mountain Reservation.

Accessibility: The trail can be accessed at many locations where it intersects roads and

streets. Access and parking are available at many of the local and county park areas the route traverses.

Length: There are approximately 20 miles of existing trail with another 15 miles proposed. The trail's longest continuous stretch is approximately 12 miles from Military Park in Newark to Mills Reservation in Cedar Grove. Another continuous section of trail is six miles of the Lenape Trail through South Mountain Reservation.

Multiple Use: Hiking and pleasure walking are allowed on all 20 miles of trail. Of the existing mileage, 11 miles can be used for cross-country skiing, nine miles for horseback riding and seven miles are suitable for bicycles. There are many other recreational activities at the various parks linked by the Lenape Trail. Mountain bike use may be restricted in some parks and parts of the trail.

Development and Maintenance Costs: Maintenance costs involve those normally associated with regular trail upkeep. Where the trail crosses county or local parks, the trail often uses pathways maintained by that public agency as part of their regular park maintenance.

Public Support: The Sierra Club has taken the most active role in the planning, routing, and maintenance of the Lenape Trail. The Essex County Department of Parks, Recreation and Cultural Affairs must be actively involved in securing easements and/or licenses along sections of the trail in need of continuity. The department must also support designation of the Lenape Trail to the State Trails System.

Environmental Impact: The established portions of the trail should have little impact on existing plant, animal, historic or cultural resources. However, sections of proposed trail that will be developed should be carefully routed with regard to endangered species, erosion control, etc.

Trail Needs: Gaining increased trail continuity is the most important need for the Lenape Trail, which can be achieved by the following:

- Although a pedestrian underpass was provided with construction of I-280, access is interrupted by relocated Foulerton Brook, where a bridge is needed. Also, along the north side of the right-of-way, the trail needs better delineation, and broken fence posts must be replaced.
- A license or easement is needed from PSE&G to re-route the trail along their right-of-way in a section of Belleville and Nutley. This would decrease the number of street crossings.

- A license or easement along the PSE&G right-of-way between Route 23 in Cedar Grove and Passaic Avenue in West Caldwell is needed. An alternate route may be possible if portions of the Caldwell Branch rail line can be acquired through Caldwell.

Other trail needs include:

- Signs at trailheads, parking areas and sections of directional changes where the trail may be difficult to follow. Bulletin boards with trail maps are needed at trailheads and other key locations along the route.
- Creation of bike lanes should also be considered where the trail is on local streets.

LONG PATH
A DESIGNATED NATIONAL RECREATION TRAIL
Palisades Interstate Park - New Jersey

The Long Path is located on the top of the Palisades along the west shore of the Hudson River, extending from Fort Lee near the George Washington Bridge, north to the New York State line. The trail is eligible for inclusion in the State Trails System based on the following criteria:

Scenic Quality: The Palisades was designated a National Natural Landmark by the U.S. Department of the Interior in 1983 because it represents "the best example of a thick diabase sill in the United States." The cliffs here form an extremely steep escarpment, rising 500 feet straight up from the shore of the Hudson River. The Long Path follows the level cliff top of the Palisades through mostly a mixed oak forest, where five different species of oak (red, white, black, scarlet, and chestnut) dominate the forest canopy. Several locations along the trail afford the hiker tremendous views of the river and New York. Among these viewpoints include Rockefeller Lookout, Clinton Point, Alpine Lookout, Ruckman's Point, and State Line Lookout. Another interesting spot along the trail is a stone lookout memorial of the New Jersey Federation of Women's Clubs, erected in 1919 in memory of the clubs' work in preserving the Palisades. The many vistas are also excellent for watching thousands of migrating hawks each fall. The Long Path traverses many of the large estates that were destroyed during construction of the Palisades Interstate Parkway. A variety of vegetation and historic ruins can be found on these former estates.

Accessibility: Access and parking for the Long Path include year-round parking at Fort Lee Historic Park, Allison Park, Englewood-Bloomers Area, and Alpine Area. There is also seasonal parking at Ross Dock Area, and one hour parking at State Line Lookout. These parking areas can be reached from the Palisades Interstate Parkway, except for Fort Lee Historic Park, which can be reached from River Road in Fort Lee.

Length: The Long Path extends for 11 miles from Fort Lee to the New York State line. The

trail however, continues along the New York Palisades for 34 miles, before veering off towards other New York State Parks and open spaces. Running parallel to the Long Path is the Shore Trail, which traverses 11 miles along the shoreline of the Hudson River. Six sets of stone stairs connect the cliffs with the River and make for circular hiking routes.

Multiple Use: Hiking and nature observation are the only allowable uses on the Long Path. This is appropriate given the trail's large amount of foot traffic and the narrow nature of the trail. Other recreational activities at Palisades Interstate Park include picnicking, boating with the use of two marinas, bicycling on designated paved surfaces, fishing, and cross-country skiing on separate trails at the northern end of the park.

Development and Maintenance Costs: The Long Path is a well established dirt path and should require little capital development. Maintenance costs should involve the routine costs associated with regular trail upkeep. The trail is currently being maintained primarily by volunteers.

Public Support: The Palisades Interstate Park Commission will have to give their support for the possible designation of the Long Path prior to its being incorporated into the State Trails System. The Long Path was named a National Recreation Trail in 1971.

Environmental Impact: The established Long Path should have little impact on existing plant, animal, historic, or cultural resources. However, the increasing illegal use of mountain bicycles could impact the trail by increasing erosion, trampling vegetation, and conflicts with other trail users.

Trail Needs: According to the Palisades Interstate Park Commission, the local youth work programs have ceased and increased staff time and volunteer help will be necessary to maintain the trail with the following tasks:

- Clearing the trail from encroaching vegetation and clearing scenic trail vistas.
- Repairing treadway damage along the trail.

- Repairing stone stairs that connect the Long Path with the Shore Trail.
- Alternatives should be explored for resolving conflicts with mountain bicyclists.

Other: The Palisades Interstate Parkway parallels the Long Path, very closely in the southern part of the park, causing traffic noise to hikers. North of Park Headquarters, the trail gradually veers away from the Parkway, thereby diminishing vehicle noise.

MORRIS AREA TRAIL SYSTEM

Morris County Park System and National Park Service

This trail system encompasses a network of trails crossing several jurisdictional and county boundaries, including Lewis Morris Park and the Jockey Hollow Section of Morristown National Historic Park (NHP) in Morris County, and the New Jersey Brigade Section of Morristown NHP in Bernardsville, Somerset County. The Patriots' Path, located in Morris County, is considered separately in this plan. The trail network is eligible for inclusion in the State Trails System based on the following criteria:

Scenic Quality: The system of trails traversing this area a few miles southwest of Morristown leads trail users through a variety of natural features, including rugged hills, forest, fields, ponds, lakes, numerous streams and the upper reaches of the Passaic River, scenic vistas, as well as an area rich in historical interpretation. In much of the area, the mature mixed hardwood forest provides a dense canopy with huge tulip and oak trees. This trail area lies in the lower part of the Highlands physiographic region. A branch of The Patriots' Path links Morris County's Lewis Morris Park, Jockey Hollow, Morris Area Girl Scout Council property (there is an easement for Patriots' Path), to its terminus on Hardscrabble Road in the New Jersey Brigade Section of Morristown NHP. In Lewis Morris Park, the Patriots' Path meets the main artery of the Path as it follows the Whippany River through Morris County. There are also several trails besides Patriots' Path that connect Lewis Morris Park with Jockey Hollow. This interconnected system of trails allows the visitor to experience the many recreational opportunities the area offers.

Accessibility: Access and parking are available at several parking lots and trailheads within Lewis Morris Park, Jockey Hollow, and the New Jersey Brigade Area.

Length: There are over 26 miles of trails on some 2,900 acres within this area network of trails; this is in addition to Patriots' Path. The trail mileage includes the 5.3-mile Grand Loop

Trail in Jockey Hollow, 8 miles at Lewis Morris Park, and 13 miles of trail at Morristown National Historic Park.

Multiple Use: Hiking is allowed on all the trails in this area. Of the approximately 26 miles of trail, 22 miles can be used for cross-country skiing, and horseback riding is allowed on 12 miles of trail. Other recreational activities include: picnicking, group camping, swimming at Sunrise Lake, fishing, softball and sledding at Lewis Morris Park; historical and nature interpretation at Morristown NHP.

Development and Maintenance Costs: Maintenance costs are generally incurred for regular trail upkeep. Currently, there is a lack of funding for personnel to properly maintain the trails at Morristown NHP. However, the trails are well established and marked, and should require little or no capital development or major reconstruction. At Lewis Morris Park, there may be some costs associated with signage and/or blazes, which is necessary on many of the trails.

Public Support: The National Park Service and the Morris County Parks Commission must give their support for the possible designation of the Morris Area Trail System prior to its being incorporated into the State Trails System.

Environmental Impact: The established trail system throughout this area should have little impact on existing plant, animal, historic or cultural resources.

Trail Needs: In order to improve this area's trail network, the following tasks need to be considered:

- In Lewis Morris Park, trail signs and blazes are needed on most trails except Patriots' Path.
- A 3-person crew devoted to trail maintenance is needed at Morristown NHP.

- Consideration should be given to pursuing an easement on trails at New Jersey Audubon's Scherman-Hoffman Sanctuaries (a private non-profit organization that allows public use on this land) that adjoins the New Jersey Brigade Section of Morristown NHP, and has a trail connecting with the Patriots' Path.

Other: This area is rich in history, with Morristown NHP being the site of the Continental Army encampments at Jockey Hollow and the New Jersey Brigade Areas, during the winter of 1779-1780. The historical signs, plaques, reconstructed soldiers' huts and the visitor center provide the trail user with opportunities to appreciate the natural beauty of the area and our nation's history.

PARVIN STATE PARK TRAIL SYSTEM

Department of Environmental Protection

This park is one of the few state landholdings in southern New Jersey not within the Pine Barrens. Parvin State Park, once the site of a grist and sawmill owned by the Parvin Family, lies within the Outer Coastal Plain Province in Salem County. The park trail system qualifies for designation to the State Trails System for the following:

Scenic Quality: Oak forests and lakes dominate the predominantly flat landscape of Parvin State Park. Various trails loop around Parvin Lake, Thundergust Lake, and the borders of the park. Parvin Lake was built from damming Muddy Run, a tributary of the Maurice River, to support the nineteenth century mills. Holly and laurel dominate the understory of the oak forests, and holly sometimes forms a canopy over the trails. Approximately 400 acres of the park is a State Natural Area, designated for its oak-pine forest and swamp hardwood forest communities. Trails are dirt and gravel-based, except the Forest Loop Road, which is asphalt. In general, trails are dry year-round, except for the nature trail and the Long Trail running near Muddy Run. The park also retains a rustic air, as many of the structures were built during the 1930s by the Civilian Conservation Corps (CCC). The cabins built by the CCC are also popular with the public for overnight stays.

Accessibility: Entry is available at the main entrance to the park on Almond Road (County Route 540), and at the entrance to the campground, on Parvin Mill Road.

Length: Trails vary in length from three miles to less than 1/2 mile. They total 16 miles, making for a full day of hiking, if desired.

Multiple Use: The park trail system is available for hiking, horseback riding, and mountain biking; on the paved Forest Loop Road, bicycling, and wheelchairs are allowed. Boating/canoeing is possible on Parvin Lake and Muddy Run.

Development and Maintenance Costs: The trail system is currently maintained by park maintenance staff. Because the trails are already in existence and maintained, there is little or no need for additional development expenses.

Public Support: The Parvin Appreciation Committee prepared a trail map of the park, installed trail markers, and in general organizes various projects for maintenance and seasonal activities. They will be requested to support designation of the park to the State Trails System.

Environmental Impact: Because of the overall flatness of the area, there is little or no erosion from the trails. Present trail use has not deteriorated trail conditions.

Trail Needs: The following tasks should be considered to improve the park's trail system:

- Additional signs are needed to specify foot trails and multi-use trails.
- Because of the general flatness of the terrain and availability of an on-site gravel pit to supply trail bedding, some of the trails intersecting the Forest Loop Road can be made accessible for the disabled. For example, parking and bathroom facilities could be installed off of the Almond Road entrance at the area called Second Landing. Additional parking facilities and an accessible trail bordering Thundergust Lake could also be developed.
- Ongoing maintenance of the trails could be supplemented by a volunteer effort on the part of the Parvin Appreciation Committee.
- If the abandoned Bridgeton Secondary Line, only one mile west of the park, is ever developed for a trail, a connector to that line should be considered.

PATRIOTS' PATH
A DESIGNATED NATIONAL RECREATION TRAIL
Morris County Park System and
National Park Service

Patriots' Path is located almost entirely within municipalities in Morris County, and a small section within Bernardsville, Somerset County. The trail is eligible for inclusion in the State Trails System based on the following criteria:

Scenic Quality: This linear park encounters many different environments as it runs along old railroad beds, past lakes, across fields, through forests and residential areas, and alongside the Whippany River. Although there are many more miles of trail proposed, there is enough existing mileage to benefit large numbers of recreational users. Upon completion, the trail will link existing local, county, state and national parks and historic sites, as well as several schools, community pools and playgrounds. The existing trail already traverses Lurker and Central Parks, Frelinghuysen Arboretum, historic Speedwell Village, Lewis Morris County Park, Jockey Hollow Area and the New Jersey Brigade Hut Sites of Morristown National Historic Park, and India Brook and Ralston Corners Parks. On the eastern end of Patriots' Path, there is a connection with the Lenape Trail in Essex County. In 1980, the United States Department of the Interior designated completed sections of the path as a National Recreation Trail.

Accessibility: Entry points to Patriots' Path include various locations where the trail intersects the many roads it crosses. Access and parking are available at most of the local, county, and national park areas the path traverses.

Length: There are approximately 20 miles of existing trail with another 54 miles proposed. The proposed trail mileage would have the path going through portions of Black River Wildlife Management Area, Mount Paul Memorial Park, Dismal Harmony Brooks Natural Area, Troy Meadows, Hacklebarney State Park, and the Columbia Recreational Trail. An additional 12-

miles of trail will be available in the planned West Morris Greenway, which will include portions of the Columbia Trail, Patriots' Path, and abandoned or lightly-used rail lines, leading northward to upper Rockaway Township and connection to the Pequannock Watershed property. The trail's longest continuous stretch is approximately ten miles from Speedwell Village to Ralston Corners Park, with another five miles running into Lewis Morris County Park and the Jockey Hollow Section of Morristown National Historic Park.

Multiple Use: The existing 20 miles allows hiking and cross-country skiing on all 20 miles. Of that, 15 miles can be used for mountain bikes, 10 miles for horseback, and the two miles of paved surface can be utilized by bicycles and the wheelchair disabled. The proposed mileage will also have multiple uses with 30 miles available for mountain bikes, 20 miles for horseback, 20 miles for cross-country skiing, and the entire 54 proposed miles available for hiking.

Development and Maintenance Costs: The majority of development costs are associated with the proposed trail mileage including acquisition, if any, securing easements, and developing the newest portions of the trail as they become part of the Patriots' Path. Maintenance costs involve the costs normally associated with regular trail upkeep. Where the trail crosses public property, the public entity owning that property administers, funds, and maintains that section of trail. However, where Patriots' Path crosses private lands, or a public entity does not want to maintain its section of trail, the Morris County Park Commission enters into an agreement with the landowner to perform ongoing maintenance.

Public Support: With Morris County Park Commission as the lead agency, there has been continued cooperation from local and state governments, as well as the federal government, which named Patriots' Path a National Recreation Trail.

Environmental Impact: The established portions of Patriots' Path should have little impact on existing plant, animal, historic or cultural resources. However, sections of the proposed trail that will be developed should be carefully routed with regard to endangered species habitat, erosion control, etc.

Trail Needs: Gaining increased trail continuity is the most important need for the Patriots' Path.

Ways to gain continuity include:

- Entering into agreements or easements with various landowners is the most likely way to achieve continuity.
- The Morris County Park Commission, the lead agency, has approximately 24 specific land acquisitions or easements on which they are currently negotiating.
- A number of footbridges are needed in various places along the trail, including four or five bridges crossing the Whippany River.

PAULINSKILL VALLEY TRAIL
KITTATINNY VALLEY STATE PARK
Department of Environmental Protection

The Paulinskill Valley Trail is an abandoned railroad right-of-way of the New York, Susquehanna & Western Railroad and is part of Kittatinny Valley State Park. It passes through Knowlton, Blirstown, Frelinghuysen and Hardwick Townships in Warren County, and the Townships of Fredon, Stillwater, Hampton, Lafayette and Sparta in Sussex County. The trail is eligible for inclusion in the State Trails System as a scenic trail based on the following criteria:

Scenic Quality: The western point of the trail begins in Knowlton, where it follows the shoreline of the Paulins Kill and continues past working farms and lowland deciduous forests. The trail continues under the majestic Hainesburg Viaduct that was once part of the Erie Lackawanna Railroad system. For most of its length, the trail continues through rural landscapes, northern deciduous forests and wetlands. Developed areas along the corridor are only encountered in Blirstown and Route 206 in Hampton. Through Stillwater Township, the trail follows a hillside contour overlooking Paulinskill Lake. As the corridor cuts through bedrock, several small waterfalls cascade on the southern hillside. Light industry is only found at Hyper Humus in Lafayette. One mile after the Route 94 intersection, the trail crosses the Paulins Kill. This is the first of four bridge crossings in a two mile stretch, passing through forests and wetlands along stream corridors. At Warbasse Junction, the Paulinskill Valley Trail intersects the Sussex Branch Trail and then continues to its terminus in Sparta.

Accessibility: The trail crosses U.S. Route 206 and N.J. Route 94, as well as several minor roads. It is within two miles of Newton and within the developed area of Blirstown, major population centers in Sussex and Warren counties. It is adjacent to or near existing public recreational areas at Columbia Lake and Blirstown's Footbridge Park, and intersects the state-owned Sussex Branch Trail.

Length: The trail is approximately 27 miles long from Knowlton to Sparta. In addition, it connects with the 20-mile Sussex Branch Trail allowing for short or long distance trail use.

Multiple Use: With a flat, cinder base, the right-of-way is most suited for a variety of activities such as hiking, horseback riding, cross-country skiing and bicycling. In addition, it can provide access for fishing, canoeing, and individuals in wheelchairs.

Development and Maintenance Costs: With few exceptions, the cinder path is clear and capital construction costs are minimal to make a rewarding trail experience. Capital improvements do include fencing, gates, removal of rubbish, grading near some road intersections, creation of parking areas, decking over existing bridges and posting. Development costs are less for this trail than for creating a new trail, where land would have to be cleared and graded and bridges completely built.

Public Support: Trail and sports groups have been ardent supporters of the trail. Over the past several years, the Paulinskill Valley Trail Committee has been educating the public by leading hikes and sponsoring special events on the trail.

Environmental Impact: Because very little clearing must be performed, and the cinder bedding is firm with little erosion throughout most of the length, detrimental impacts on the environment are averted. Additionally, use of the corridor is restricted to non-motorized activities in order to preserve the character of the trail and its environs. Areas identified by the Natural Heritage Program, which supports special plant, or animal species are not to be developed for trail-related facilities.

Trail Needs: Development needs for the trail include the following:

- Establish a public advisory group to work with the State Park Service on management and maintenance of the right-of-way. The advisory group may include representatives from trail, sports and recreation groups, local and county governments as well as adjacent landowners.
- Complete decking of the bridges along the corridor. Of the ten standing bridges, five have been completed to date.
- Encroachments on the right-of-way must be evaluated separately to determine the appropriate action to be taken with each one.
- Parking facilities will be developed at several locations along the trail. Among the potential areas that will be considered are:
Hainesburg Junction at Station Road, Knowlton;
Footbridge Park, Blairstown; Spring Valley Road, Marksboro, Hardwick; Warbasse Junction at Route 633, Lafayette; and Limecrest Road, Lafayette.
- At parking lots, trailheads, and periodic resting spots, mounting blocks and hitching rails should be installed for equestrian users.
- Park signs on allowable uses and prohibited activities must be installed.
- Obstructions and rubbish must also be removed so that trail bed improvements may be made. This is an ongoing task.
- It is recommended that those parcels of open space between the trail and the Paulinskill be purchased. Also parcels to make a connector with Columbia Lake Wildlife Management Area should be purchased, which would continue the trail for another one-half mile.

RAMAPO MOUNTAINS TRAIL SYSTEM

New Jersey Department of Environmental Protection Bergen County Park System

The Ramapo Mountains Trail System encompasses a network of trails crossing state, county, and municipal boundaries in the Highlands Province. These include Ringwood State Park, Bergen County's Ramapo Valley County Reservation, and Ramapo Mountain State Forest. The trail network is eligible for inclusion in the State Trails System based on the following criteria:

Scenic Quality: This extensive trail system traverses the New Jersey Ramapo Mountain Range, from the New York State line in Ringwood Borough, and Mahwah Township southwest to Pompton Lakes. The Ramapo's contain elements of both mixed oak forest on the dry hillsides and ridges, and northern hardwood forest in the valleys and cooler, more shaded slopes. Throughout the area there are numerous ponds, lakes, waterfalls and streams.

The extensive amount of protected, contiguous forest in this area is also home to a great diversity of wildlife. Almost 1,500 acres of Ramapo Mountain State Forest is a state-designated natural area, Ramapo Lake Natural Area. The region is interconnected by a vast trail network, which affords trail users the opportunity to experience a variety of natural landscapes and scenic vistas. In addition to the abundant natural resources, the Ramapo's have a rich historical heritage that includes the iron industry dating to the Revolutionary War era. One trail, the Cannonball Trail, was once a road used to carry munitions during the American Revolution.

Historic sites include Ringwood Manor, former summer home of Ironmaster Abram Hewitt, and Skylands Manor and Botanical Gardens in Ringwood State Park.

Accessibility: Access and parking are available at several parking lots and trailheads within Ringwood State Park, Ramapo Valley County Reservation, and Ramapo Mountain State Forest.

Length: There are over 62 miles of trails on approximately 10,000 acres of land within the Ramapo Mountains Trail System. The trail mileage includes the long-distance Ringwood-Ramapo, Hoeflerlin Memorial and Cannonball

trails that connect Ringwood State Park and Ramapo Mountain State Forest. Ringwood also contains the Cooper Union and Crossover trails, each five miles in length. Ramapo Valley County Reservation has 13.5 miles of marked trails.

Multiple Use: Hiking is allowed on all of the trail mileage in the Ramapo Mountains Trail System.

Of the approximately 62 miles of trail, 46 miles can be used for cross-country skiing, and horseback riding is allowed on 27.5 miles of trail.

Ringwood State Park has 12 miles of snowmobile trails and 16 miles of mountain bike trails in addition to the above uses. Ramapo Mountain State Forest allows hiking and cross-country skiing on the trail paths, and five miles of woods road-type trails open for mountain biking.

Ramapo Valley County Reservation has trail mileage for hiking, cross-country skiing, horseback riding and two miles of trail that have disabled access. Other recreational activities include: swimming, picnicking, boating, fishing, and hunting; fishing at Ramapo Mountain, and fishing and backpack camping in designated areas at Ramapo Valley Reservation.

Development and Maintenance Costs: Trail maintenance at Ringwood and Ramapo Mountain State Forest is performed by volunteers of the New York-New Jersey Trail Conference. They also maintain the trails at Ramapo Valley Reservation together with county park staff. This alleviates most of the regular trail maintenance costs for the public agencies. Most of the trails in the Ramapo's have been established for a number of years and should require little capital development. Bergen County Department of Parks is considering trail development of their recently acquired northern acreage at Ramapo Reservation, which would incur development costs.

Public Support: State Park Service and Bergen County Department of Parks will have to give their support for the possible designation of the Ramapo Mountains Trail System to the State Trails System. The New York-New Jersey Trail Conference has been instrumental in supporting regional trail issues, as well as maintaining the

trails.

Environmental Impact: The established trails throughout the Ramapo's should have little impact on existing plant, animal, historic or cultural resources. Any new trails that will be developed should be carefully routed with regard to endangered species habitat, erosion control, etc.

Trail Needs: The following needs were identified for the Ramapo Mountains Trail System:

- Improved signage on trails at Ramapo Reservation, including directional signs and a bulletin board at the main trailhead with a topographic map of the area.
- Re-grading of the northern section of Ridge Trail in Ramapo Reservation.
- Extension of the Halifax Trail to reach Ramapo Reservation and Ringwood State Park.
- A parking area at Ramapo Reservation should be developed for equestrian use. The main parking lot is not appropriate for horse trailers because of the large volume of visitors in cars, especially on weekends.
- Improved trail signage in the southern section of Ramapo Mountain State Forest where trails were rerouted near I-287.
- Signage and/or fencing to prevent motorized access across the pedestrian bridge over I-287.

SHORE TRAIL
A DESIGNATED NATIONAL RECREATION TRAIL
Palisades Interstate Park - New Jersey

The Shore Trail is located along the west shore of the Hudson River, extending from Fort Lee near the George Washington Bridge north to the New York State line. The trail is eligible for inclusion in the State Trails System based on the following criteria:

Scenic Quality: The cliffs of the Palisades are considered "the best example of a thick diabase sill in the United States," and for this reason the Palisades was designated a National Natural Landmark in 1983. The Shore Trail lies at the base and provides fantastic views of these bold, steep cliffs. Most of the Shore Trail runs alongside the west bank of the Hudson River, with picturesque views of the river and New York on the opposite side of the river. The red sandstone at the bottom of the cliffs, and the gray vertical columns of the cliffs provide a scenic contrast along the trail. There is a surprising variety of trees, shrubs and flowering plants, some of them introduced from the former large estates that were part of the Palisades. With a diversity of habitats along the trail, a number of different wildlife species, including the endangered eastern wood rat, can be found at the base of the Palisades. There are also several historic sites along the Shore Trail, including former settlements, Indian camps, and ruins from early park facilities. The Shore Trail is mostly a broad and level path except for a half-mile of trail near the northern end where hikers must traverse large rocks and boulders on the talus bottom of the cliffs.

Accessibility: Access and parking for the Shore Trail include year-round parking at Fort Lee Historic Park, Allison Park, Englewood-Bloomers Area and Alpine Area. There is also seasonal parking at Ross Dock Area and one hour parking at State Line Lookout. These parking areas can be reached from the Palisades Interstate Parkway except for Fort Lee Historic Park, which can be reached from River Road in Fort Lee.

Length: The Shore Trail extends for 11 miles from Fort Lee to the New York State line. Running parallel to the Shore Trail is the Long Path, which traverses 11 miles along the top of the cliffs. Six sets of stone stairs connect the cliffs with the Hudson River and make for circular hiking routes.

Multiple Use: Hiking and nature observation are the only allowable uses on the Shore Trail. However, given the trail's vulnerable location at the base of the cliffs and because it crosses several recreation areas, these are the most appropriate uses. Other recreational activities at Palisades Interstate Park include picnicking, boating from two marinas, bicycling on designated paved surfaces, fishing, and cross-country skiing on separate trails at the northern end of the park.

Development and Maintenance Costs: Maintenance costs should involve mostly routine costs associated with trail upkeep. Over the last ten years, many of the development and maintenance costs have been alleviated because of tasks performed by local youth work programs. Sections of the seawall along the Hudson River side of the trail have deteriorated, and to repair or replace those portions will incur expensive development costs.

Public Support: The Palisades Interstate Park Commission will have to give their support for the possible designation of the Shore Trail prior to its being incorporated into the State Trails System. The Shore Trail was named a National Recreation Trail in 1971.

Environmental Impact: The established Shore Trail should have little impact on existing plant, animal, historic or cultural resources. However, the increasing illegal use of mountain bikes on the trail could impact the trail by increasing erosion, trampling vegetation and conflicts with other trail users. Solutions should be developed to alleviate this problem.

Trail Needs: According to the Palisades Interstate Park Commission, the local youth work programs have ceased and increased staff time and volunteer help will be necessary to maintain the trail with the following tasks:

- Brush clearing along the entire trail.
- New trail signs and blazes are needed.
- Flooded-out sections of the trail need raising.
- Catch basins far above trail need cleaning and repair to prevent erosion on Shore Trail.

- Alternatives should be explored for resolving conflicts with mountain bicyclists.
- Portions of the seawall along the Hudson River need repair and/or replacement.

Other: Henry Hudson Drive, which parallels the Shore Trail from Fort Lee to the Alpine Area, is open for vehicular traffic from April to October, causing some traffic noise to hikers. The Shore Trail also utilizes short portions of the paved roads at the recreation areas. From the Alpine Area north to the state line, there is no vehicular traffic near the trail.

SUSSEX BRANCH TRAIL
KITTATINNY VALLEY STATE PARK
Department of Environmental Protection

The Sussex Branch Trail is located primarily in Sussex County, with the extreme southern end lying in Morris County, near Netcong and Stanhope. The trail is part of Kittatinny Valley State Park. In Sussex County, it traverses Byram, Andover, Lafayette and Frankford Townships, Andover Borough, and part of the Town of Newton. The trail is eligible for inclusion in the State Trails System based on the following criteria:

section of

Scenic Quality: The former Sussex Branch of the Erie-Lackawanna Railway right-of-way passes through a variety of landscapes in Sussex and Morris Counties, with the majority being rural and forested. The trail also passes swamps, lakes, fields and several small communities. Since the trail's existence is so closely tied to its former use as a railroad, the right-of-way contains significant cultural features including man-made cuts, fills, grading and bridge abutments. In 1994, the New Jersey Division of Parks and Forestry acquired over 900 acres in Andover Township, adjacent to the Sussex Branch Trail. This facility also has a network of trails, which can be accessed from the Sussex Branch Trail. The Kittatinny Valley State Park headquarters are now located at this facility.

Accessibility: The trail is highly accessible from various roads, principally U.S. Route 206, N.J. Routes 94 and 15, and numerous county and local roads. It is located in or near the populated areas of Newton, Andover and Stanhope in Sussex County and Netcong in Morris County. It traverses a portion of Allamuchy State Park that includes access to Cranberry Lake and nearby Waterloo Village. Existing parking areas include Waterloo Road near the beginning of the trail, several areas at Cranberry Lake, Andover Borough Municipal lot, Route 206 at Andover Junction and Route 663 at Warbasse Junction.

Length: With almost 20 state-owned miles and great accessibility, the trail offers recreational use of various distances. Because there are bridges missing along the route, and a 1.3 mile

right-of-way missing in Newton, the trail's longest continuous stretch is currently about six miles.

Multiple Use: With most of the trail having a flat cinder base, all or sections of the right-of-way can be utilized for various trail uses, such as hiking, horseback riding, bicycling, cross-country skiing and dog-sledding. It can also provide access for fishing and individuals in wheelchairs.

Development and Maintenance Costs: No acquisition and settlement costs are necessary, with the possible exception of a bypass around Newton. There will, however, be costs for bridge construction and repair, parking lot development, gates, some trail reconstruction, and ongoing maintenance. Portable sanitary facilities are installed on a seasonal basis at major parking areas.

Public Support: Several clubs have shown their support of the trail by volunteering their time to help clean up trash and clear obstructions. The New Jersey Sled Dog Club has volunteered to clean up the northern section of the trail. New Jersey Rail-Trails has also expressed its support for trail improvements.

Environmental Impact: Minimal additional clearing is required for the trail. Vegetation will remain except to provide facilities and create scenic vistas. Areas planned for trail-related facilities will not be located in wetlands or at the location of other environmentally sensitive features.

Trail Needs: Some basic trail requirements for development and management include:

- Nine missing bridges need replacement to provide trail continuity. A study is underway to determine the type of bridges needed.
- The state may have to acquire or gain easements on private property around Newton.
- The entire trail should be surveyed with monuments and encroachments identified.
- The trail bed between Cranberry Lake and Andover Borough needs bank stabilization, compacted fill, and pipe and catch basins.

- Other drainage work needing correction is on the section of trail between Jefferson and Cranberry Lakes.

After major development is completed, other trail improvements will include:

- Additional parking areas with pass-through parking for horse trailers and mounting blocks for equestrians.

- Vegetative screening near adjacent landowners.
- New trail signs.
- Definitive trailheads at each end of the trail.
- Additional gates at all road crossings.
- Sanitary facilities in other areas, as needed.

The New Jersey Department of Transportation, as part of the Federal Aid Highway Program, has agreed to perform design and engineering work for the nine missing bridges, determine solutions to erosion and drainage problems, and design a boardwalk at Cranberry Lake.

CEDAR CREEK

For much of its course, Cedar Creek forms the boundary between Lacey and Berkeley Townships in Ocean County. It is part of the Outer Coastal Plain Physiographic Province. The most canoed section is a 10 mile stretch from Lacey Road to Route 9. However, a more convenient access is at Dover Forge, approximately 2 miles down stream from Lacey Road. Above Lacey Road, there is much overgrowth, making passage difficult. Below Route 9, the creek becomes tidal and is lined on both sides by residential development. Cedar Creek is in the Pine Barrens, and exhibits characteristic vegetation and tea colored water of the region. During periods of high water levels, the current is swift through the generally winding course that finally empties into Barnegat Bay.

Scenic Quality: Because much of the freshwater corridor passes through publicly-owned lands, including Double Trouble State Park, there is little opportunity for development; so the natural and scenic qualities, which dominate the canoe experience, are protected. From the river channel at Lacey Road, the surrounding vegetation is characterized as an inland red maple swamp that also includes a shrubby understory and other tree species such as black gum, ash and birch. The scenery varies as the corridor weaves through a series of islands supporting white cedar trees, adding to the natural diversity of the area. Abandoned cranberry bogs forming a pond with adjacent marsh areas, stands of white cedar lining the river banks, and sandy areas of pitch pine also dominate the scenic qualities of this creek. The banks of the river vary from dense shrubs, to sand and to grasses supported by marsh. Cultural features of the area include Double Trouble Village, which is listed as a National Historic District.

Accessibility: Access and parking may be found at Dover Forge off Dover Road, the Ore Pond Canoe Access point off Pinewald Keswick Road, and Western Boulevard. However, after Western Boulevard public access is limited. There is a private campground past the old railroad trestle

behind the left bank before Route 9, where livery arrangements may be made. There are also other canoe liveries in the area that provide rentals and transport.

Obstructions: After passing the Ore Pond Canoe Access point, portaging is necessary around the dam just after the pond. Caution should be taken in passing through the weir at Route 9. Throughout the journey there are deadfalls and submerged tree stumps, adding to the challenge of the experience. If the water level is high, no liftovers are necessary. During summer months the corridor may be shared with tubers along some sections.

Length: The main stem section of Cedar Creek from Lacey Road to Route 9 is about ten miles long. An eight mile canoe trip from Dover Forge to the old railroad trestle 1/2 mile west of Route 9, may take 5-6 hours including rest stops and portaging.

Needs: Acquisition of land for public access and parking above Dover Forge would allow canoeists to enjoy an additional two-mile extension to their trip. Although there is a municipal beach at Route 9 in Berkeley Township, use of the facilities at William J. Dudley Park is limited to local residents. Canoe take-out is possible by advanced arrangements with the town. However, additional public access and parking need to be secured at the eastern terminus of the run in the vicinity of Route 9. It has also been suggested that an interpretation of the river be developed along the corridor. Numbered sign posts placed periodically along the river trail at natural or cultural areas of interest, could be explained in a corresponding printed guide. The effects of excessive tubing on underwater grasses in vulnerable areas should be identified and monitored so the impact can be assessed and appropriate action determined.

DELAWARE RIVER

The Delaware River forms New Jersey's western border with Pennsylvania. This section of approximately 115 miles consists of the freshwater section from the New Jersey-New York-Pennsylvania border to the city of Trenton. It represents a natural physiographic delineation as well as an administrative one, as the segment starts at the state's borders, in the Ridge and Valley Province, through the Highlands Province, and ends at the geologic fall line, the boundary between the Piedmont above and the Coastal Plain below. The southern border also represents the end of tidal changes in the river. Below Trenton, the river is tidal, and although it is used for recreation, it also receives heavy commercial use.

Scenic Quality: Many consider the Delaware River Valley one of the most scenic areas of the Mid-Atlantic States. It is certainly diverse, with palisades, the Delaware Water Gap cutting through the Kittatinny Mountains, forested islands, gently rolling valleys, power plants, towns, historic villages, and farms. It also serves as a section of a major flyway for migratory birds. In recent years bald eagles have been seen wintering along parts of the river corridor. Black bear and white-tailed deer are among the many mammals present in the forested areas along the river. The water quality of the river has improved tremendously over the last decade, with shad and other varieties of fish now common in its waters. A five-mile stretch of Interstate Route 80, within Delaware Water Gap, borders the river, but that is the only major highway that can be seen from the river, until one reaches Trenton, where State Highway 29 becomes a dual-lane highway.

Accessibility: The amount of access varies throughout the length of the river. Within Delaware Water Gap National Recreation Area, access from either the New Jersey or Pennsylvania side is scattered approximately every eight to ten miles. After that, public access is limited to a few locations, at Belvidere, Phillipsburg, and Frenchtown. South of Frenchtown, where the Delaware and Raritan Feeder Canal begins, there are six access points for about 30 miles.

Obstructions: There are only two obstructions on the entire length of the freshwater Delaware River - a wing dam at the entrance to the Delaware and Raritan Canal at Bulls Island, and another dam at Lambertville. Rapids are encountered at Foul Rift, below Belvidere, and at Scudders Falls, north of the Route 95 crossing.

Length: With 115 miles and several launch sites on both sides of the river, trips of varying length can be made, from one half day to several days. Canoe camping sites are also located along the river within Delaware Water Gap National Recreation Area, at Worthington State Forest's Tocks and Labar Islands, Dildine Island, managed by Jenny Jump State Forest, and also at Bulls Island Recreation Area.

Needs: The National Park Service has plans to upgrade existing and build new canoe access points within Delaware Water Gap National Recreation Area. Below that, public access points for small boats and canoes are needed on the New Jersey side of the river. A new launch was opened in 1994 near Belvidere, but added launches are needed near Riegelsville and Delaware Township, Warren County. Designated canoe camping areas on islands within the river not mentioned above should also be considered.

Other: The segment within Delaware Water Gap National Recreation Area is designated to the National Wild and Scenic Rivers System, and a segment south of that to Washington Crossing is being studied for federal designation. The study will also produce a river management plan, addressing resource protection measures, recreational resource opportunities and needs for controls, especially for jet skis.

GREAT EGG HARBOR RIVER

Considered the longest canoeable river in the Pine Barrens, there are several sections of the Great Egg Harbor River that can be canoed at different times. In October, 1992, 129 miles of the river and several of its tributaries were designated into the National Wild and Scenic Rivers System. This is only the second river in New Jersey to be included in the national system (the first is the section of the Delaware within the Delaware Water Gap National Recreation Area).

The river is part of the Atlantic Coastal Basin, within the Outer Coastal Plain Province. The 31-mile freshwater section runs from the New Brooklyn Lake dam in Winslow Township, Camden County, to Lake Lenape at Mays Landing. Below the Lake Lenape dam, the river is tidal. The first few miles of the upper stretch have many deadfalls, making travel difficult. A more commonly run segment runs approximately 16 miles from Penny Pot, near Route 322, to Lake Lenape, a trip of six to eight hours. An additional 15 miles of river is tidal, and used extensively by sailboats and motorboats.

Scenic Quality: The freshwater portion of the Great Egg Harbor River is characterized largely by a winding narrow corridor through forests of red maple, and on occasion, white cedar, sweet gum, and pine. Starting at Penny Pot, there are houses along the relatively high and sandy banks, but the scenery soon changes to woodlands. Weymouth Furnace has ruins of a nineteenth century furnace and mill. This is a popular picnic area, and take-out is possible. The section between Eighth Street and Weymouth Furnace is not far from Route 322, a four lane highway, and noise from traffic can be heard on the river. However, after Weymouth Furnace, the road passes more to the east, and the traffic sounds are less frequent. From here to Lake Lenape, the river is surrounded by lands that are part of Atlantic County's Lake Lenape Park. The river then meanders through hardwood swamp vegetation and an occasional cedar swamp up to the beginning of Lake Lenape. Take-out is to the right of the dam on the right shore.

Below the dam at Lake Lenape, the river is largely surrounded by vast salt marshes predominating, until it reaches Great Egg Harbor Bay. What development exists is either residential or boat marinas. Land adjacent to the river in this segment is owned by Atlantic County as well as by the state for wildlife management areas.

Accessibility: There are several areas for parking and access to the river. The major areas, established by the Atlantic County Department of Parks and Recreation, are 8th Street near Penny Pot and Route 322, Route 559 at Weymouth Furnace, and Lake Lenape, just outside of Mays Landing. Several roads cross the river, such as Routes 54, 561, and 322, but parking is not convenient at these crossings. In the tidal areas of the river, several private boat basins and marinas provide access to the river or its tributaries.

Obstructions: The northern section of the river above Penny Pot can have many fallen trees, and a weir dam is located at Route 54. Between Eighth Street and Lake Lenape there are no built obstructions, although at times, fallen trees in the river may pose a hazard.

Length: There is sufficient length for a trip of a few hours to all day. The dam at Lake Lenape divides the types of trips between freshwater and tidal portions of the river.

Needs: With designation to the National Wild and Scenic Rivers System, a local management plan will be prepared for the river. Part of that plan will address recreational uses of the river. At this time, overuse of the freshwater section of the river has not been realized.

MILLSTONE RIVER

The route of the Millstone River is unusual in that it forms an arc following a path from the Coastal Plain into the Piedmont Province. The corridor flows northwesterly from Millstone in Monmouth County, curving north as it borders Middlesex and Mercer counties, and continuing northeast through Somerset County until it empties into the Raritan River at Manville and Franklin, approximately 43 miles from its source. It is characterized by its wide floodplain and gentle curves. Much of the canoeable section parallels the Delaware and Raritan (D&R) Canal. Because it is not directed by a strong current, the canal may be used as a return route. Considering access and parking, the most canoeable part of the Millstone begins at the D&R Canal access at Lake Carnegie in Princeton, and continues for approximately 18 miles to the confluence with the Raritan River in Manville.

Scenic Quality: Lake Carnegie is bordered by a landscape of homes and the D&R Canal. Continuing past the lake, the characteristic high banks and broad floodplain are evident. For much of its length, the river banks support floodplain forests, which have high diversity where a dominant species is difficult to identify. Sycamore, box elder, and river birch are among the trees that may be identified in the drier areas of the floodplain. On the poorly drained areas, trees such as white ash, red maple, and pin oak may be found. Spicebush is the most common shrub found in the understory of the floodplain forest. The general scenery along the river corridor remains natural with periodic villages, farms, houses, and very few areas that are considered unattractive.

Accessibility: There is public access and parking at several areas along the 18 mile stretch of the river that parallels the D&R Canal. For example, access and parking may be found at Lake Carnegie in Princeton, Kingston (Route 27), Rocky Hill (Route 518), Griggstown (Canal Road), and East Millstone (Route 514). In addition, the D&R Canal may be used as a return route, allowing for flexibility when planning a canoe trip.

Obstructions: Below Lake Carnegie in Kingston there are two dams and another one in Manville, all of which must be portaged. There may be some fallen branches and trees for almost two miles past Rocky Hill.

Length: The distance of the Millstone between the D&R aqueduct at Lake Carnegie and the confluence with the Raritan River is approximately 18 miles. To accomplish a round trip using the D&R Canal, two or more day trips would have to be planned, considering that a one way trip from Lake Carnegie to Manville may take up to eight hours. In addition, the current is generally not swift on the Millstone and even less on the D&R, so energy expended in paddling must also be taken into account when planning an excursion.

Needs: Although much of the adjacent land use is regulated under state laws or protected as a state park, the river itself needs to be monitored for debris and tree falls along its course. Because the river for much of its length is in close proximity to the Delaware and Raritan Canal and towpath, any water trail facilities will be developed to compliment the canal and its activities. Also, for the section of the river in Somerset County, the county is in the planning stages of developing a greenway park linking the Raritan River with the Millstone River. A cooperative effort will be made to work with county officials in planning this greenway.

MUSCONETCONG RIVER

The Musconetcong flows approximately 44 miles from Lake Hopatcong to the Delaware River. Along its generally southwesterly route, the river serves as the boundary between Sussex and Morris, Warren and Morris, and Warren and Hunterdon counties. It drains part of the Highlands Province. Although there are frequent dams and weirs, which must be portaged, the course may be canoed for most of its length after heavy rainfalls. However, the most viable canoe run is from the confluence of Lubber's Run in Allamuchy State Park to Bloomsbury for a distance of approximately 31 miles. Below Bloomsbury there are at least three or four dams, which must be portaged, in addition to two water diversions from the river to canals operated by paper mills. After periods of heavy rains, the current may be swift and canoes can clear the rocky river bed. Between Hackettstown and Bloomsbury, Class II rapids may also be encountered.

Scenic Quality: The landscape varies throughout the trip. Sections of the Musconetcong flow through public lands at Allamuchy Mountain and Stephens state parks, and downstream it passes property of the Hunterdon County Park System. In these protected areas as well as private lands along the route, the natural surroundings include deciduous mixed oak forests, as well as freshwater wetlands in the northern section. The banks are low along some stretches, offering views of the countryside with a backdrop of mountains in the distance. There are also cultural and historic sites along the way, such as Waterloo Village, a restored iron mining and mill town, which is open to the public. Farms and villages dominate the landscape, with residential areas, industries and commercial areas adding to the mix of scenic quality encountered along the river.

Accessibility: At Saxton Falls in Stephens State Park, public parking and access to the Musconetcong is provided. Other public access areas are limited to local parks, such as those in Hackettstown and Hampton.

Obstructions: There are at least eight weirs or

dams between the Lubbers Run confluence and Bloomsbury, which must be portaged. Care must be taken with anglers who share the stream during fishing season.

Length: The distance between the Lubbers Run confluence and Bloomsbury is approximately 31 miles. Canoeing the Musconetcong may be divided into two or more smaller excursions. For example, a run between Lubbers Run and Hackettstown may take four hours for this nine mile stretch. For a longer trip, the distance between Hackettstown and Bloomsbury is 21 miles, which could take eight or nine hours.

Needs: Through the Green Acres Program, property has been acquired along the Musconetcong that is to be part of a Musconetcong Greenway, which would include development of a pedestrian path along the river as well as access for river recreation. Recent acquisitions include property in Franklin, Washington and Allamuchy townships in Warren County; Mount Olive and Washington townships in Morris County; and Lebanon Township in Hunterdon County. Current needs include acquiring easements or title to areas along the river in order to close gaps and have a continuous greenway for protection of the river while accommodating appropriate public access. A canoe camping site along the river should also be considered. With technical assistance from the National Park Service, the Musconetcong Watershed Association is identifying areas of concern in the watershed and developing recommendations. Recreational use of the river is being studied and direction provided to develop appropriate uses. A coordinated effort among state, county and local governments and volunteer groups would need to be organized to implement recommendations from the citizen study.

RANCOCAS CREEK

The Rancocas Creek and its tributaries drain the west part of the Coastal Plain Province. It stretches west from its Pine Barrens source in Burlington County, 30 miles to the Delaware River. The Rancocas consists of the North Branch, South Branch, Southwest Branch, Mount Misery Brook and the Greenwood Branch.

The most canoed branch of this river is the North Branch between Browns Mills and Mount Holly. Below Mount Holly the river becomes tidal and is used mostly by motor boats.

Scenic Quality: Along its route, the North Branch passes through deciduous oak and beech forests with a dense shrub understory covering high banks, interspersed with pine and cedar stands, freshwater wetlands, scattered houses, towns and some industry. Although the scenery is dominated by stately woodlands and calming freshwater marsh between Browns Mills and Pemberton, the tranquility of the trip is periodically interrupted by low flying aircraft from McGuire Air Force Base, located north of the river corridor. After passing Pemberton, deciduous forest stretches along high banks, past Birmingham Road. Industry and housing are in evidence along the rest of the route from Birmingham Road to Mount Holly. A place of interest is Smithville, a mill town dating back to the early nineteenth century, and listed on the National and State Registers of Historic Places. It is now owned by Burlington County. Smithville is located west of Route 206. After passing Mount Holly, the river has extensive marshlands on both banks with some residential and small town development. Rancocas State Park is on the north side of the creek up to the New Jersey Turnpike. Five miles outside of Mount Holly, the North Branch is joined by the South Branch and continues to be bordered by marsh and tidal flats to the Delaware River.

Accessibility: There are few public parking areas for access along the North Branch. There is parking on the south side of Route 530 below the dam in Browns Mills, as well as in Pemberton, Smithville, and Mount Holly and along some roads that cross the corridor, such as Birmingham Road. There are commercial canoe outfitters in the area, which may provide

transport and access to other areas. For the tidal segment, boat launches are mostly available at private marinas. Rancocas State Park, on the south side of the Rancocas, off of Timberline Drive, has a boat launch suitable for canoes and small boats.

Obstructions: Below the dam in Browns Mills, the corridor is blocked numerous times by fallen trees. Also, the thick vegetation and high banks make numerous canoe lifts necessary through the first two miles, especially if the water level is below three or four feet. The fallen logs also catch a lot of garbage making part of this section particularly unattractive. Portaging is required around dams at New Lisbon, Pemberton, Smithville and Mount Holly. (Note: The portage at New Lisbon poses some difficulty because of the high and very sandy bank).

Length: The distance between Browns Mills and Mount Holly is approximately 17 miles. If the water level is low and the current slow, it may take over three hours from Browns Mills to New Lisbon. In favorable conditions with few carry-overs, the same distance may take no more than two hours, or a total of seven hours through to Mount Holly. Downstream from Mount Holly the tidal section of the river to its confluence with the Delaware River is 12 miles.

Needs: Public parking and access are needed along this corridor, especially in the vicinity of New Lisbon. The nature of the high banks makes it difficult to stop for a break along the route. Therefore, rest areas need to be developed. Finally, a coordinated effort needs to be encouraged and developed among county and local governments, property owners along the Rancocas, and user organizations, such as the Rancocas Conservancy, for upkeep and maintenance of the corridor.

WHARTON WATER TRAILS

The four rivers flowing through Wharton State Forest in Burlington and Atlantic Counties originate in the Pine Barrens of the Outer Coastal Plain. The Lower Atsion segment of the Mullica, the Batsto, the Wading and the Oswego Rivers flow southeast, eventually converge into the Mullica, which empties into the Great Bay on the Atlantic coast. The basin of these rivers form the largest watershed in the Pine Barrens. Most of the canoed sections of these rivers are within Wharton State Forest. Below Route 542 the rivers flow into the Mullica, where it is tidal and motorboat use is popular.

Scenic Quality: The main canoeable routes of the rivers wind through a variety of typical Pine Barrens landscapes. The surrounding natural environment of Wharton State Forest flourishes, free from the pressures of development. The clear waters are tea colored due to the chemistry of the regional soils and vegetation. The corridors are narrow, opening to wide ponds, which are the result of prior cranberry farming or recent beaver activity. Red maple swamps, stands of cedar, pines on high sandy banks, dense shrubs of viburnum and blueberry, and grassy marshes are part of the variety of vegetation seen from the water routes. There are sand roads that parallel the rivers in some places, such as along the east shore of the Lower Atsion and the west shore of the Batsto, and a few camp sites on shore such as Godfrey Bridge Campground on the Wading. However, they generally do not intrude on the sense of isolation one encounters in a wilderness area. The meandering easy flowing nature of the rivers allows for uninterrupted appreciation of the scenic variety encountered along these corridors. As the waters wind toward the bay, they become tidal. Wooded areas on shore disappear and salt marsh is the dominant natural ecosystem. The Lower Atsion between Route 206 and the Batsto nature trail footbridge is designated as a wild river segment under the New Jersey Wild and Scenic Rivers Program. The Wading and Oswego are the most canoed corridors. During spring and summer, the surrounding scenic qualities may be subdued because of heavy use on weekends.

Accessibility: There are access and parking areas along the rivers in several locations within or near Wharton State Forest. Access to the Lower Atsion is located at Atsion off a sand road on the east side of Route 206, a short distance below the south bank of the river. Parking is available at the take-out off Route 542 at Pleasant Mills. Hampton Furnace and Quaker Bridge, located along packed sand roads off Route 206, provide Batsto River access in addition to a take-out and parking area at Batsto on the west side of the river off Route 542. The most canoed section of the Wading may be accessed at Speedwell, Hawkin Bridge, Evans Bridge and take-out at Beaver Branch below Bodine Field. The Oswego flows into the Wading so take-out may also be below Bodine Field. Access sites along the Oswego include Oswego Lake and Harrisville Road. There are local commercial canoe outfitters that provide canoe rentals and transportation to the main access areas along the river routes. At Crowley Landing on the Mullica River, below Route 542 there is a public canoe and motorboat launch ramp that is part of Wharton State Forest.

Obstructions: In some areas of the Lower Atsion, occasional beaver dams make portaging necessary. Along most of the canoe corridors, deadfalls are little more than an inconvenience when the water level is high. On the Wading between Godfrey Bridge Campground and Evans Bridge, there are the remains of a small dam, which may have to be portaged when water levels are low. Generally, river runs are clear of blow-downs and well maintained by Wharton State Forest officials with help from local canoe liveries.

Length: The approximate total canoeable miles of the Wharton River Trails which flow through Wharton State Forest is 52. The distance of the Lower Atsion between Atsion and Pleasant Mills is approximately 14 miles. The Batsto River from Hampton Furnace to Batsto is approximately 11 miles. The Wading River between Speedwell and Beaver Branch is about 15.5 miles. The Oswego River from Oswego Lake to its confluence with the wading is approximately 7 miles.

Finally, the Mullica between Pleasant Mills and Crowley Landing provides approximately 4.5 miles of canoeing.

Needs: Although access and parking areas may be considered primitive, it is the nature of the environment and the quality of the wilderness experience, which are priorities, especially along the Lower Atsion and the Batsto.

Recommendations include developing and printing brochures with maps showing river access and parking areas, and numbered sections of the river along sand access roads to help rangers locate and respond to emergencies. The brochures could be distributed to the public and local liveries that use the river. Maintenance of sand access roads and crossings such as Hampton and Quaker Bridge roads, is an ongoing and costly effort that could be alleviated with additional funding for materials and personnel. Litter requires ongoing attention. Programs such as "carry-in/carry-out" and volunteer services through Clean Communities grants need to be continued.

There is also a need to relieve the problems of heavy use on the Wading and Oswego Rivers. At times, excess river canoe use on weekends with associated noise, litter and canoe traffic congestion detracts from the natural experience most users come to enjoy. To approach the problem, a study needs to be done to determine the use patterns on all of the rivers in the Wharton system so that an accounting of the numbers of users, peak periods of use and the types and extent of the environmental impact can be accurately assessed. Discussions for solutions to the problem should include all interested parties such as the Division of Parks and Forestry, the Pinelands Commission and local commercial liveries. Based on the study, solutions may be found and implemented. These may include recommendations to alleviate the pressures on the Wading and Oswego by improving access along the Lower Atsion and the Batsto, or development of agreements for designated or restricted access, between the Division of Parks and Forestry and local liveries, so that park service officials may have authority to better monitor and manage river use.