

Environmental  
Conservation  
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ENVIRONMENTAL  
STUDY AREAS  
of the  
*National Park System*



*The National Park Service  
Program for Environmental Conservation*

He who knows  
what sweets and virtues  
are in the ground,  
the waters,  
the plants,  
the heavens,  
and how to come at these enchantments,  
is the rich and royal man.

Emerson

*The National Park Service Program*

## ENVIRONMENTAL STUDY AREAS

. . . are areas of land, or land and water, so designated by the National Park Service because they possess outstanding educational potential. The Environmental Study Areas described in this brochure are the first to be so designated in the National Park System; others are now being studied and will soon be added to this list.

Wherever possible, Environmental Study Areas have been selected to provide as wide a variety of natural communities as is possible. In some units of the System, however, it has been desirable to designate several such Areas. Together, they present an environmental profile of the natural environment or as man has altered it.

Accessibility was the second most important factor in the designation of these Areas. Wherever possible they have been located close to visitor service facilities.

The National Park Service does not provide Environmental Education Programs for these areas, but we do advise and assist in their presentation. Programs for use in Environmental Study Areas must meet four simple criteria:

1. Educational programs must be organized. If they are part of school programs, they must be approved by the

school authorities and should be on a scheduled basis. (Approval by school authorities implies use by more than a single class.) Programs other than school oriented must be operated on a scheduled basis and be available to a large segment of the general public.

2. Leadership of environmental education programs must be qualified, i.e., either teacher conducted or led by knowledgeable amateurs.

3. Environmental education programs must be oriented to the qualities of the specific Environmental Study Area.

4. Environmental education programs must have as an objective the development of understanding of the total environment and the relationship of the individual to it.

**ENVIRONMENTAL STUDY AREAS** are part of the Cooperative program for Environmental Conservation of the National Park Service, a bureau of the Department of the Interior. For further information about this program, contact the Superintendent of the unit of the National Park Service nearest to you, or write:

The Cooperative Program  
for Environmental Conservation  
National Park Service  
Washington, D. C. 20240

## Anhinga Slough

**Location:** Paradise Key, Royal Palm Hammock, Everglades National Park, Florida.

**Educational Community Served:** Homestead (pop. 9,152), Dade County (pop. 955,047).

Paradise Key is an area of subtropical wilderness, a complex of unique plant-and-animal communities. Some of the habitats and animals are rare or unseen elsewhere in the United States. The Anhinga Slough Environmental Study Area, an area of open sweeps of Jamaica sawgrass contrasted with the lush, growing greenness of towering trees, hanging vines and fern cover, provides a dramatic display of nature in unspoiled surroundings and gives the student the opportunity to experience authentic wilderness.

Two trails offer excellent dimensional contrast to the student in two of the biotic units of the Everglades:

A 1/3 mile loop trail meandering through the Royal Palm Hammock. The student senses the atmosphere of a tropical hammock, where air-plants, ferns, orchids, and a great variety of tropical hardwoods, including the gumbo limbo, grow.

An elevated trail over the water areas with one of the finest and most dependable wildlife shows in the Everglades, especially during the winter months. Excellent views of sunning and feeding alligators, fish, water snakes, and birds, including the purple gallinule, American coot, and wading birds such as the anhinga and cormorant.

## Baptism Creek

*Location:* Hopewell Village National Historic Site,  
Pennsylvania.

*Size:* About 42 acres.

*Educational Community Served:* Reading (pop. 98,133), Pottstown (26,144), Phoenixville (13,797) and communities of northern Chester County, western Montgomery County, southern Berks County and eastern Lancaster County.

Located in the eastern portion of Hopewell Village National Historic Site, the Environmental Study Area includes the headwaters of the branches forming Baptism Creek.

The area has exceptional interest as an ecological community and has been used as a study area for college science students. Professor Kingsley Green, Eastern Baptist College has said of the Study Area: "Given time and proper care it could become a haven - or I should say - a last vestige of many of our native plants."

## Cades Cove

**Location:** Western end of Great Smoky Mountains National Park, Tennessee.

**Educational Community Served:** Blount County, Tennessee (pop. 57,525).

Cades Cove is a pioneer mountain community illustrating a way of life which has practically disappeared in the eastern United States. The settlers were rugged mountaineer descendants of colonists from England and Scotland. The open fields, homesteads of log cabins and barns and occasional little frame churches have been rehabilitated as a living historical exhibit. Here the student can study about how early Americans lived with their environment and became completely self-sufficient.

Cades Cove is surrounded by mountain wilderness with superlative natural history resources. Cove hardwoods include yellow buckeye, basswood, yellow-poplar, silverbell, eastern hemlock, white ash, sugar maple, yellow birch, American beech, black cherry, northern red oak and the cucumbertree. White tailed deer abound. The cardinal, Carolina wren, song sparrow, tufted titmouse, eastern phoebe, Carolina checkadee and various woodpeckers are permanent residents.

Cades Cove is also an excellent geology study center. The area exemplifies the powerful disturbances that altered the earth's crust and formed the mountains.

## Castillo de San Cristobal

**Location:** Eastern end of San Juan National Historic Site, Puerto Rico.

**Educational Community Served:** San Juan (pop. 432,508).

Castillo de San Cristobal is a Spanish-built fort on a rocky hill 150 feet above the cliff-shore of San Juan Island, constructed for defense of the land approaches to the city of San Juan. It is a superlative example of 18th century military engineering and the defense-in-depth concept of fortifications. It overlooks city, harbor and ocean, and thus touches the oceanic shoreline ecology and man's use of harbor and land.

The fortification contains large rooms adaptable for classroom use.

## Cheatham Hill

**Location:** Southern portion of Kennesaw Mountain National Battlefield, Georgia.

**Educational Community Served:** Atlanta (pop. 487,455), Marietta (25,565) and Cobb County (144,174).

This Study Area consists of a corridor of land traversed by a hiking trail. The land traversed is typical of the region in plant and animal life and is enhanced by the lush growth of a creek bottom. Portions are in the process of regeneration. In this area the National Park Service is cooperating with the Georgia Council on Preservation of Natural Areas in a study of the regeneration of deforested land. A Cobb County Youth Museum has been proposed to be located not far from Cheatham Hill, the northern terminal of the Study Area.

Geology, as represented by Kennesaw Mountain is nearby.

Human history involves pastoral use of the land; a historic building, the Kolb farmhouse; and important, well-preserved Civil War entrenchments.

## Cone

*Location:* Mose H. Cone Memorial Park, Blue Ridge Parkway, North Carolina.

*Educational Community Served:* Boone (pop. 3,868) and Watauga County (17,529), Caldwell County (49,552) and western Wilkes County.

A forest-plant-animal community of outstanding quality. Man's use of the land is demonstrated in the Pioneer Museum with displays of weaving, basketry, furniture, kitchen utensils and tools of the cottage crafts. Members of the Southern Highland Handicraft Guild present demonstrations of weaving, rugmaking, gemcutting and other crafts.

## DeRussy

**Location:** Central Rock Creek Park, a unit of North National Capital Parks, District of Columbia.

**Size:** About 100 acres.

**Educational Community Served:** District of Columbia (pop. 763, 956) and adjacent Montgomery County, Maryland.

This Study Area centers about the Rock Creek Nature Center and its programs designed especially for young people. The Center includes an exhibit hall, a 184-seat auditorium, and a planetarium seating 95. In the surrounding woodland are self-guiding nature trails and other interpretive helps. The Center publishes an annual schedule of nature walks and hikes conducted by park naturalists.

The mature forest of more than 50 species of eastern hardwood is an example of regeneration; during the Civil War, most of the trees in Rock Creek valley were cut. In addition to the hardwoods, there are more than 300 species of plants, shrubs and vines. Gray squirrels abound and raccoons and muskrats leave their footprints in wet sand. In spring and autumn, migrant birds rest briefly. The veery, woodthrush, towhee, redstart and cardinal are summer residents.

At Fort de Russy, an old Civil War fort, Coastal Plain sediments offer the geology student study material.

## Digges

**Location:** Along the Potomac River in Fort Washington, Maryland, a unit of Eastern National Capital Parks.

**Size:** About 200 acres.

**Educational Community Served:** Charles County (pop. 32,572) and Prince Georges County (357,395).

This Study Area, on the Potomac River opposite Mount Vernon at the confluence of Piscataway Creek, offers excellent opportunities for environmental study. The masonry and brick fort is an outstanding example of early 19th-century coastal defense, and of how man altered the land for military purposes. The site of the Warburton Manor, home of the Digges family from whom the Government purchased the land for the fort is marked, offering speculation on the choice of this site for a colonial estate.

Much of the land is now a mixed eastern hardwood forest, offering opportunities for the study of birds and small mammals.

The press of urban development adjoining the park offers study possibilities of the results of human pressures on natural areas.

## Great Falls

**Location:** Along the Chesapeake and Ohio Canal National Monument in Maryland, about 12 miles from Washington.

**Size:** About 100 acres.

**Educational Community Served:** Rockville (pop. 26,090), Montgomery County, Md., (340,928), northern Fairfax County, Va., and the District of Columbia.

The Potomac River passes through a gorge and drops to a new level, creating the Great Falls of the Potomac. The river and falls, in a setting of mixed eastern hardwood forest, is an area of natural beauty and ideal for environmental study.

Man's use of the natural environment is demonstrated with a dam across the Potomac, the C&O Canal and its locks, and the old Great Falls Tavern, once a rest stop for canal travelers and now housing exhibits of both the man-made and natural history of the area.

This is one of the most interesting and best-preserved sections of the canal.

## Lookout Mountain

**Location:** Chickamauga and Chattanooga National Military Park, Tennessee-Georgia.

**Educational Community Served:** Chattanooga (pop. 130,009), southern Hamilton County, Tenn., eastern Marion County, Tenn., and northern Walker County, Ga.

The Study Area is situated at the northern end of Lookout Mountain, in the Point Park section. Lookout Mountain demonstrates an interesting geological story, and on its slopes grow most varieties of the native regional plants.

The superb view of the Tennessee River from Point Park gives opportunity to study man's effect upon the land, from the beginnings of settlement along the river, the impact of the Civil War, and the changes wrought by developing transportation and industrialization. The TVA story is visible here in the form of a nearby dam and the formation of Chickamauga Lake.

From Point Park, air and water pollution is plainly seen.

## Marconi Station

**Location:** Cape Cod National Seashore, in Wellfleet, Massachusetts.

**Size:** About 106 acres.

**Educational Community Served:** Barnstable County (pop. 70,285).

This area contains excellent examples of three successional gradients. The salt spray gradient runs from the sea cliff back to where it joins the dry successional gradient in the pine-oak forest. This in turn runs into a wet successional gradient running up hill from the white cedar swamp.

A large, man-made earth scar is slowly being revegetated by natural plant invasion. Originally the area was planted with beach grass by man. Additional beach grass plantings to control erosion are found near the sea cliff around the Marconi interpretive shelter.

A loop trail leads from a parking area through the Atlantic White Cedar swamp. The portion of the trail in the swamp is all elevated boardwalk.

## Maryland Heights

**Location:** Harpers Ferry National Historical Park, on the Maryland shore of the Potomac River.

**Educational Community Served:** Southern parts of Washington and Frederick Counties, Maryland, northern Loudoun County, Va., and Jefferson County, West Virginia.

From Maryland Heights Environmental Study Area the student gains a good understanding of the role of Harpers Ferry in history and the struggles of man with his environment.

This is one of the few water-level gateways through the Blue Ridge Mountains.

The rocky terrain of Maryland Heights with its eastern hardwood forest offers excellent nature study opportunities.

## Meade

*Location:* Petersburg National Battlefield, Virginia.

*Size:* About 200 acres.

*Educational Community Served:* Petersburg (pop. 36,750), Hopewell (17,895), Prince George County (20,270), southern Chesterfield County and northeastern Dinwiddie County.

This is an area of steep canyons, streams and other natural features covered with second-growth pine forest and wilderness-type vegetation.

Human history centers on the use of the land during the siege of Petersburg. The area runs east from Harrison Creek, where the Confederate drive of March 25, 1865, was checked to about the site of Meade's Station, an important Union supply and hospital depot.

## Old Orchard

*Location:* Sagamore Hill National Historic Site,  
Long Island, New York.

*Size:* About 83 acres.

*Educational Community Served:* Nassau  
County, New York (1,300,171).

An outstanding environmental study area that includes trails used for nature study by President Theodore Roosevelt. The area begins in cherry and apple orchards and extends down hill to Cold Spring Harbor including creek, pond, bay-shore beach and woods ecological communities.

The area is of special interest because of its association with and use by President Roosevelt, the main spark of the first conservation efforts in America.

## Oxon Hill

**Location:** Prince Georges County, Maryland, just south of the District of Columbia, adjacent to the Capitol Beltway.

**Size:** About 200 acres.

**Educational Community Served:** District of Columbia (pop. 763,956) and Prince Georges County, Maryland (357,395).

This study area is an old farm bounded by Oxon Run and the Potomac, now being used as a children's animal farm. The old fields and orchards and mixed eastern hardwood forest makes it ideal for the study of man's use of the land. Adjacent housing developments and the densely populated Prince Georges County make it an interesting area to study the pressures of urban development.

## Peaks of Otter

*Location:* Blue Ridge Parkway, in Virginia.

*Size:* About 50 acres.

*Educational Community Served:* Northwestern Bedford County (31,028) and southeastern Botetourt County (16,715; 26 miles from Roanoke (97,110).

A natural area of scenic beauty with forest, flowers, wild-life, water, fish, birds and the remains of early mountain farms. The visitor center has as its theme the forest-plant-animal community.

## *Pisgah*

*Location:* Southern portion of Blue Ridge Parkway, North Carolina.

*Size:* About 50 acres.

*Educational Community Served:* Asheville (pop. 60,192) and Buncombe County (130,074).

This area was part of the 100,000-acre estate of George W. Vanderbilt. Nearby was the first forestry school in America. Here Gifford Pinchot practiced the new science he had studied in Europe and laid the groundwork for what was to become the first conservation wave in this country. This relatively natural area is in the Canadian Zone of the Southern Highlands.

## Price

*Location:* Julian Price Memorial Park, Blue Ridge Parkway, North Carolina.

*Educational Community Served:* Boone (pop. 3,868) and Watauga County (17,529), Caldwell County (49,552) and western Wilkes County.

A forest-plant-animal community of outstanding quality. Two-mile Green Knob loop trail from Sims Pond. Price Lake.

Man's use of the land is featured at adjacent Cone Environmental Study Area.

## Primrose Brook

**Location:** Jockey Hollow, Morristown National Historical Park, New Jersey.

**Educational Community Served:** Morristown (pop. 17,712) and adjacent Morris County (261,620).

An area of varied types of ground - brooksides, upland and lowland woods, meadows, and swampland - ideal for study of the natural scene.

This Study Area was one of the Park Service's early efforts to provide such facilities close to urban environments. It was developed during the Civilian Conservation Corps period as a "Wildflower Trail" and was later renamed the "Jockey Hollow Nature Trail." Interpretation was originally supported by the Morristown Garden Club.

## Province Lands

**Location:** Cape Cod National Seashore, Province Lands area, Massachusetts.

**Size:** About 142 acres.

**Educational Community Served:** Barnstable County (pop. 70,286).

Three major ecosystems exist in the area: shallow, fresh-water ponds in various stages of succession; a mature beech forest, a sample of the climax vegetation of Cape Cod; and sand dunes, some well stabilized, others with large blowouts and active movement.

In addition, smaller areas of natural cranberry bogs, pine plantations (part of the old Province Lands reserve conservation efforts), and new plantings of beach grass are in evidence.

The dunes and marshes of the Province Lands were set aside as early as 1670 by the "Plimoth Colony" in pioneering conservation action.

## Quantico Creek

*Location:* Prince William Forest Park, Virginia.

*Size:* About 200 acres.

*Educational Community Served:* Alexandria (pop. 91,023), Fredericksburg (13,639), Stafford County (16,876), Prince William County (50,164) and southern Fairfax County.

Only a few years ago, this was a patchwork of abandoned farms and woodlands in various stages of natural succession. Today it is a beautiful forest of 89 known species of trees and shrubs. A variety of habitats offer study opportunities: stream valleys, old fields, borders of field and woodland, and tree covered ridges. Animal life includes white-tailed deer, red and gray fox, beaver, raccoon, wild turkey, ruffed grouse, red-tailed hawk, and numerous species of song birds.

Man's history of the land began in the late 17th century when it was cleared for tobacco. The crops helped make the nearby port of Dumfries a thriving harbor. Misuse of the land brought about its downfall.

Nature exhibits in the Turkey Run Ridge Nature Center. Illustrated talks and conducted trips by a park naturalist.

## Skiff Hill

**Location:** Cape Cod National Seashore, in Eastham, Massachusetts.

**Size:** About 36 acres.

**Educational Community Served:** Barnstable County (pop. 70,286).

The area contains a section of salt marsh, some old fields that have been reclaimed by red cedar growth (a number of cultigens are found here), a mature red maple swamp and an excellent fresh water pond.

A combination natural surface and elevated boardwalk runs through the Red Maple Swamp.

## Stedman

*Location:* Petersburg National Battlefield, Virginia.

*Size:* About 200 acres.

*Educational Community Served:* Petersburg (pop. 36,750), Hopewell (17,895), Prince Georges County (20,270), southern Chesterfield County, and northeastern Dinwiddie County.

This is an area of second-growth pine forest with wildlife and wilderness-type vegetation. The terrain has steep canyons, streams and other natural features.

Human history centers on the use of the land during the siege of Petersburg. Just beyond the northern edge of the Study Area is Fort Stedman, object of Lee's last offensive and Colquitt's Salient, where it was launched. Beyond the southern end is the location of Union Battery XIII, now marked by three guns. To the west are the tracks of the Norfolk and Western Railway on the same approximate roadbed of the Norfolk and Petersburg Railroad of 1864-65.

## Theodore Roosevelt Island

*Location:* In Potomac River, District of Columbia.

*Size:* About 88 acres.

*Educational Community Served:* District of Columbia (pop. 763, 956), Arlington County, Va. (163, 401).

Theodore Roosevelt Island is managed as a natural area in living tribute to the energetic President who sponsored the first wave of conservation in America.

Three miles of foot trails give access to the variety of wild, natural habitats - marsh, swamp, upland forest, and meadow - each with its own kind of plants, animals, birds, and insects. Fifty species of trees of the mixed eastern hardwood forest ecology are found. About 300 species of plants, shrubs and vines have been identified.

The effects of man's use of the environment are present in the pollution of the Potomac, the noise intrusion from aeroplanes, and the siltation and slack water from the Chesapeake Bay.

## Virginus Island

**Location:** In Shenandoah River, Harpers Ferry National Historical Park, West Virginia.

**Educational Community Served:** Jefferson County, W. Va. (pop. 18,665), northern Loudoun County, Va., and parts of Washington and Frederick Counties, Md.

Virginus Island is an outstanding example of man's struggle with the forces of nature, with nature triumphant. Now basically a natural area with typical river island ecological communities, it was once covered with mills and factories dependent upon the river for power. Today, these structures are suggested by archeological remains.

## Watt

**Location:** Richmond National Battlefield Park, Va.

**Size:** About 60 acres.

**Educational Community Served:** Richmond (pop. 219,598) and suburban Henrico County (117,339).

This farm and woodland Study Area offers excellent opportunities to study man's use of the land. The wilderness that once covered the land was cleared to plant tobacco. When the soil became exhausted from tobacco, cotton was planted instead. In the 19th century, with the growth of the city of Richmond, the land was used to raise diversified crops to feed the growing population. Then one of the major battles of the Civil War raged across the fields and for years it lay fallow. Today it has been returned to farm and woodland again.

The Watt House, a landmark in the defense of Richmond during the Civil War, has been restored as an example of early 19th century Virginia farmhouses.

## Woods Trail

**Location:** Home of Franklin D. Roosevelt National Historical Site, New York.

**Size:** About 94 acres.

**Educational Community Served:** Poughkeepsie (pop. 38,330), Hyde Park (1,979), Rhinebeck (2,093), west-central Dutchess County and southeast Ulster County.

An area of woods, swamp, steep terrain and cliffs, rock outcroppings and views of the Hudson River. Many of the trees were planted by President Roosevelt during the period he was evolving his conservation ethic.

# BEFORE THE TRIP PREPARE YOURSELF

1. HAVE AN OBJECTIVE
2. KNOW YOUR TRAIL
3. KNOW YOUR SUBJECT
4. STUDY ECOLOGY
5. CORRELATE CONSERVATION CONCEPTS



## - AND GROUP

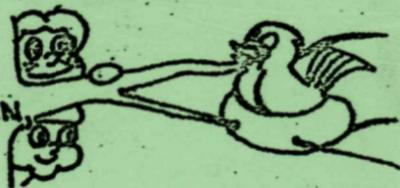
1. CREATE AN OBJECTIVE
2. RELATE TO OTHER SUBJECTS
3. BUILD UP ANTICIPATION



# DURING THE TRIP

## ORDER

1. EXPLAIN WHAT, WHERE, WHEN, WHY AND HOW
2. DEFINE THE RULES
3. KEEP ORDER
4. KEEP THEM BEHIND YOU
5. GATHER AROUND ON STOPS
6. ENCOURAGE QUESTIONS (WITHIN REASON)



## SAFETY

1. STAY ON THE TRAIL
2. WATCH WHERE THEIR FEET GO
3. WALK - DON'T RUN
4. BE PREPARED FOR EMERGENCIES



## CONSERVATION

1. USE GOOD OUTDOOR MANNERS
2. PRACTICE CONSERVATION