Exhibit Planning & Design

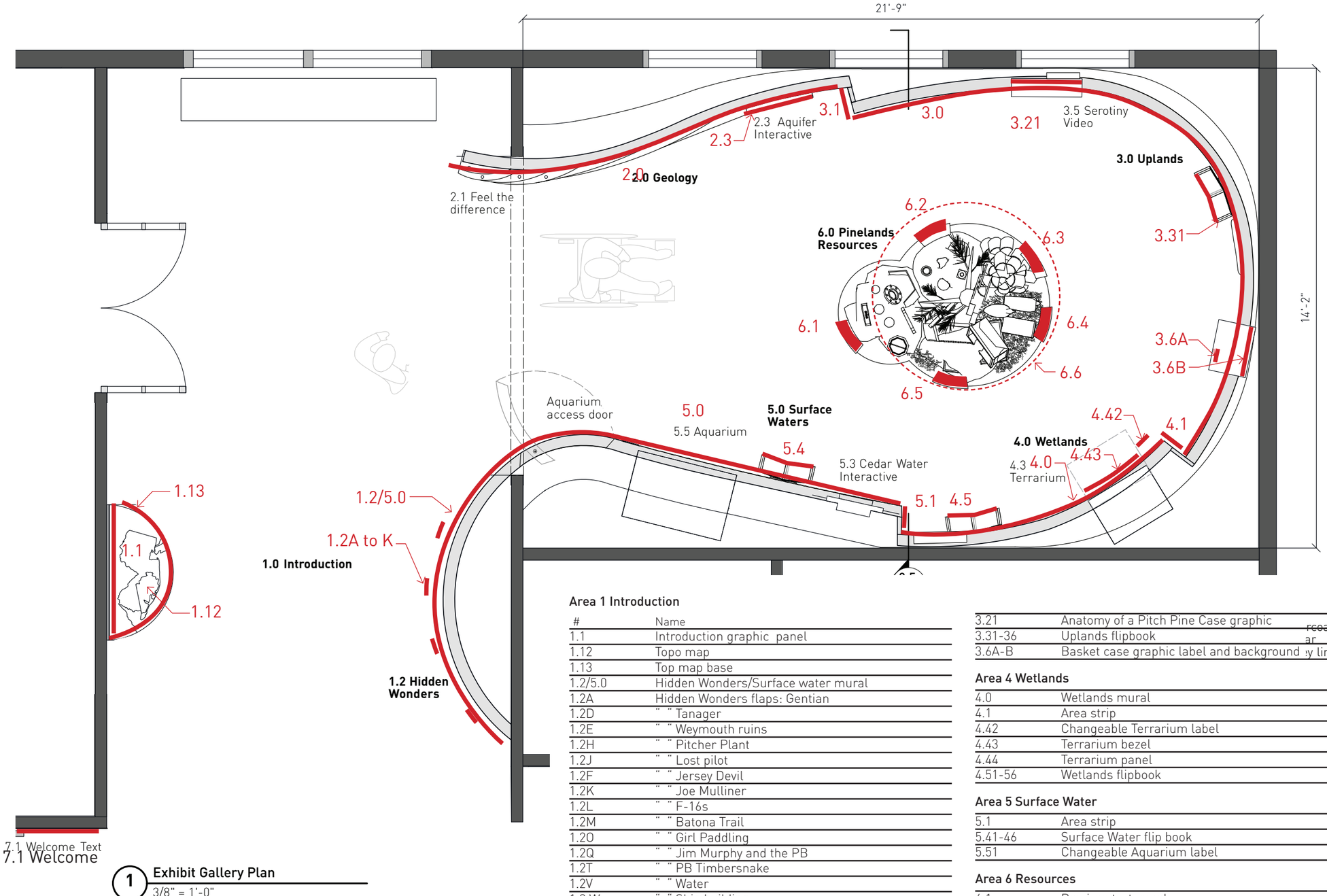
Task 4 Submittal
RFP 11-001

Production Documents, Book 2 of 3
Graphic Design Package

- Elevations
- Final Text Galley Pages

Submitted to:
NJ Pinelands Commission
New Lisbon, NJ

Submitted by:
Content • Design Collaborative LLC
Scituate, Massachusetts



1 Exhibit Gallery Plan
3/8" = 1'-0"

Not shown:
7.2 Orientation Map

Area 1 Introduction

#	Name
1.1	Introduction graphic panel
1.12	Topo map
1.13	Top map base
1.2/5.0	Hidden Wonders/Surface water mural
1.2A	Hidden Wonders flaps: Gentian
1.2D	" " Tanager
1.2E	" " Weymouth ruins
1.2H	" " Pitcher Plant
1.2J	" " Lost pilot
1.2F	" " Jersey Devil
1.2K	" " Joe Mulliner
1.2L	" " F-16s
1.2M	" " Batona Trail
1.2O	" " Girl Paddling
1.2Q	" " Jim Murphy and the PB
1.2T	" " PB Timbersnake
1.2V	" " Water
1.2 W	" " Ship building
1.2X	" " Hindenburg
1.2Z	" " Dr. James Still

Area 2 Geology

2.0	Geology mural
2.3	Interactive graphic

Area 3 Uplands

3.0	Uplands mural
3.1	Area strip
3.21	Anatomy of a Pitch Pine Case graphic
3.31-36	Uplands flipbook
3.6A-B	Basket case graphic label and background

Area 4 Wetlands

4.0	Wetlands mural
4.1	Area strip
4.42	Changeable Terrarium label
4.43	Terrarium bezel
4.44	Terrarium panel
4.51-56	Wetlands flipbook

Area 5 Surface Water

5.1	Area strip
5.41-46	Surface Water flip book
5.51	Changeable Aquarium label

Area 6 Resources

6.1	Bog iron text panel
6.2	Sand panel
6.3	Charcoal panel
6.4	Cedar panel
6.5	Piney Lingo panel
6.6	Ceiling Graphic inset panel

Area 7 Orientation

7.1	Welcome wall text
7.2	Map graphic panel with brochure

Graphics Location Plan

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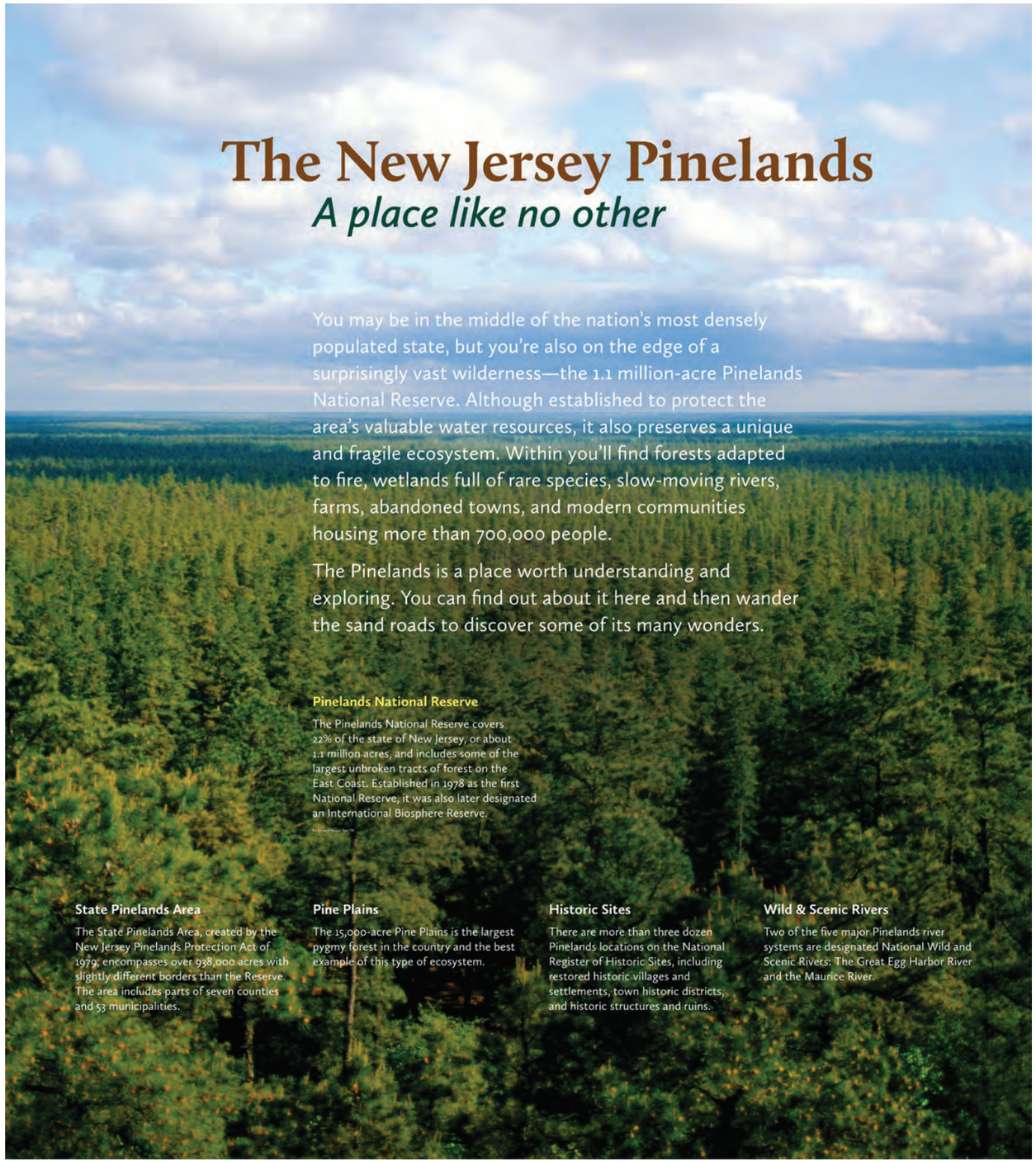

The New Jersey Pinelands
A place like no other
You may be in the middle of the nation's most densely populated state, but you're also on the edge of a surprisingly vast wilderness—the 1.1 million-acre Pinelands National Reserve. Although established to protect the area's valuable water resources, it also preserves a unique and fragile ecosystem. Within you'll find forests adapted to fire, wetlands full of rare species, slow-moving rivers, farms, abandoned towns, and modern communities housing more than 700,000 people.
The Pinelands is a place worth understanding and exploring. You can find out about it here and then wander the sand roads to discover some of its many wonders.
Pinelands National Reserve
The Pinelands National Reserve covers 22% of the state of New Jersey, or about 1.1 million acres, and includes some of the largest unbroken tracts of forest on the East Coast. Established in 1978 as the first National Reserve, it was also later designated an International Biosphere Reserve.
State Pinelands Area
The State Pinelands Area, created by the New Jersey Pinelands Protection Act of 1979, encompasses over 938,000 acres with slightly different borders than the Reserve. The area includes parts of seven counties and 53 municipalities.
Pine Plains
The 15,000-acre Pine Plains is the largest pygmy forest in the country and the best example of this type of ecosystem.
Historic Sites
There are more than three dozen Pinelands locations on the National Register of Historic Sites, including restored historic villages and settlements, town historic districts, and historic structures and ruins.
Wild & Scenic Rivers
Two of the five major Pinelands river systems are designated National Wild and Scenic Rivers: The Great Egg Harbor River and the Maurice River.

1.12 Topo Map Graphic Layout Panel size 48’ wide Content•Design Collaborative LLC

1.13 Topo Map base Graphic Layout Panel size 75”x 38’’ Content•Design Collaborative LLC

A Sandy Foundation

The unique character of the Pinelands begins underground

The sand you see throughout much of the Pinelands provides a peek into what makes this area so important. The soil is almost pure quartz sand. It holds little moisture near the surface and few minerals or nutrients. European settlers discovered that their crops wouldn't grow here and called the area "barren." But many unusual plants flourish here.

If you could look below the surface, you'd discover a vast reserve of water held in deep layers of sand. This underground resource—more than 17 trillion gallons of fresh water—feeds rivers, wetlands, and wells throughout the Pinelands.

Pine-Oak Uplands

Forests of pine and oak grow in dry areas above the ground water table, where water drains quickly away from the surface of the land. Today, homes are built in some of these upland areas.

Homes/People

Wells bring drinkable water from the aquifer to most residents of Southern New Jersey.

Wetlands

In those wet places, the land surface can be near, at, or below the ground water table, resulting in swamps, savannas and ponds. These habitats provide a great diversity of plants, and filter runoff, which protects surface waters.

Surface Water

The many rivers and streams flow slowly across the Pinelands to the coastal bays and eventually the Atlantic Ocean. The lakes present today were formed by damming these waterways to provide power and water for crops like blueberries and cranberries.

Gravel

This layer has mostly eroded away, but you can see it on the hilltops. It is the most recent formation and may have been deposited by the ancient Hudson River when it was once much more extensive than it is today.

Coarse Sand–The Cohansey Formation

This is the layer of the surface in most of the Pinelands. It is composed mostly of coarse-grained quartz sand and reaches an average depth of 300 feet. The honeycombed, clumpy clay and gravel in this layer excel at taking in rainwater, which travels easily through it.

Fine Sand–The Kirkwood Formation

This formation, ranging from 200 to 1000 feet thick, is composed mostly of fine to medium-grained sand with clay in places.

Clay

Layers of fine particles of clay prevent water from penetrating. The clay acts like the bottom of an immense bowl, keeping water in the sand layers above.

The shore of an ancient sea

The thick layers of sand that lie beneath the surface in the Pinelands were deposited by oceans millions of years ago. Rising and falling seas sifted and sorted the sand particles. This left deep, extensive layers (geologic "formations") of similar-size particles on the flat coastal plain of New Jersey, as if it were a vast beach.

A world-class natural reservoir

The sandy soils beneath the Pinelands in the Kirkwood and Cohansey formations make up one of the nation's major natural groundwater reserves, called the Kirkwood-Cohansey aquifer. It extends 3,600 square miles and stores enough water to fill a 60-foot-deep lake the size of New Jersey.

The sand in these formations can absorb as much as six inches of rain per hour. Water travels easily into and through the aquifer, replenishing the groundwater supply and feeding streams year-round. Pollution can also enter and spread through the aquifer, so this valuable resource must be carefully maintained and protected.

Aquifer Water Cycle

Aquifer in action

Water comes to the Pinelands as rain and snow and is stored underground and at the surface as wetlands, ponds, lakes, and streams.

Push the button to watch as:

- Rain falls on the land.
- Sandy soils hold water between the grains.
- A deep layer of clay stops the water from soaking out.
- In times of abundance (when the underground supply of water is full), the top of the water supply is near the surface — sometimes it's even exposed as surface water.

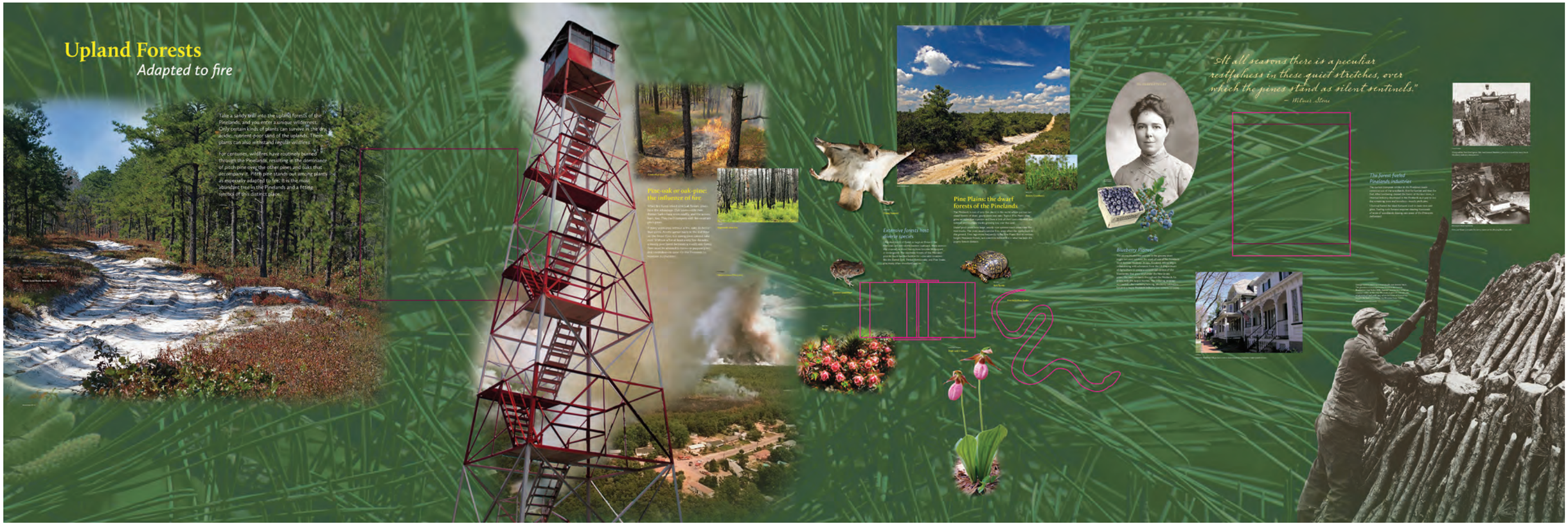
Location of 2.1 Feel the Difference sand and gravel cases

Location of the 2.3 Aquifer interactive

Graphics applied to inside of clear acrylic or glass surface

2.3 Aquifer Interactive Graphic

Graphic Layout Panel size 24" Content•Design Collaborative LLC



3.21 Case location

3.3 Flipbook

3.4 Snake Model

3.6 Case

Upland Forests

Adapted to fire

Take a sandy trail into the upland forests of the Pinelands, and you enter a unique wilderness. Only certain kinds of plants can survive in the dry, acidic, nutrient-poor sand of the uplands. These plants can also withstand regular wildfires.

For centuries, wildfires have routinely burned through the Pinelands, resulting in the dominance of pitch pine over the other pines and oaks that accompany it. Pitch pine stands out among plants as especially adapted to fire. It is the most abundant tree in the Pinelands and a fitting symbol of this distinct place.

3.2 Case

White Sand Road, Warren Grove

Controlled burn

Pine-oak or oak-pine: the influence of fire

When fire burns mixed pine/oak forests, pines have the advantage. Oak trees—with their thinner bark—burn more readily, and the acorns burn, too. They can't compete with fire-resistant pitch pines.

If many years pass without a fire, oaks do better than pines. Acorns sprout easily in the leaf litter on the forest floor, but young pines cannot take root. Without a fire at least every few decades, a mostly pine forest becomes a mostly oak forest. Fires must be allowed to burn—or purposely set and controlled—in order for the Pinelands to maintain its character.

Regrowth after fire

Warren Grove Fire, 2007

Controlled burn

Regrowth after fire

Warren Grove Fire, 2007

Flying Squirrel

Eastern Spadefoot

Pixie

Pink Lady's Slipper

Broom Crowberry

Box Turtle

Northern Pine Snake

ELIZABETH WHITE

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Extensive forests host diverse species

Unbroken tracts of forest as large as those of the Pinelands are rare on the eastern seaboard. Many animals that depend on these forests have become threatened or endangered. The extensive forests of the Pinelands provide much-needed habitat for vulnerable creatures like the Barred Owl, Timber Rattlesnake, and Pine Snake, plus many other woodland species.

Pine Plains: the dwarf forests of the Pinelands

The Pinelands is one of very few places in the world where you can see dwarf forests of short, gnarly pines and oaks. Typical Pine Plains trees grow no taller than a person and have a look all their own—stunted and twisted with multiple trunks growing low over the sand.

Dwarf pitch pines have large, woody root systems much older than the tree trunks. The roots usually survive fires, even when the trunks burn to the ground. Fires rage more frequently in the Pine Plains than in normal-height Pinelands forests, and scientists believe this is what has kept the pygmy forests distinct.

Blueberry Pioneer

The plump blueberries you see in the grocery store might not exist without the work of one of the Pinelands' most famous residents. In 1911, Elizabeth White began collaborating with a botanist from the US Department of Agriculture to create a commercial version of the blueberries that grew wild under the New Jersey pines. She paid residents throughout the Pinelands for plants with the largest berries. The breeding program succeeded. Like cranberry farming, blueberry cultivation became a major Pinelands industry and remains so today.

3.6 Case

Flying Squirrel

Broom Crowberry

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Eastern Spadefoot

Box Turtle

Northern Pine Snake

Pyxie

Pink Lady's Slipper

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"At all seasons there is a peculiar restfulness in these quiet stretches, over which the pines stand as silent sentinels."

– Witmer Stone

3.6 Case

Historic Medford Village has a scenic downtown that includes many quaint shops.

The forest fueled Pinelands industries

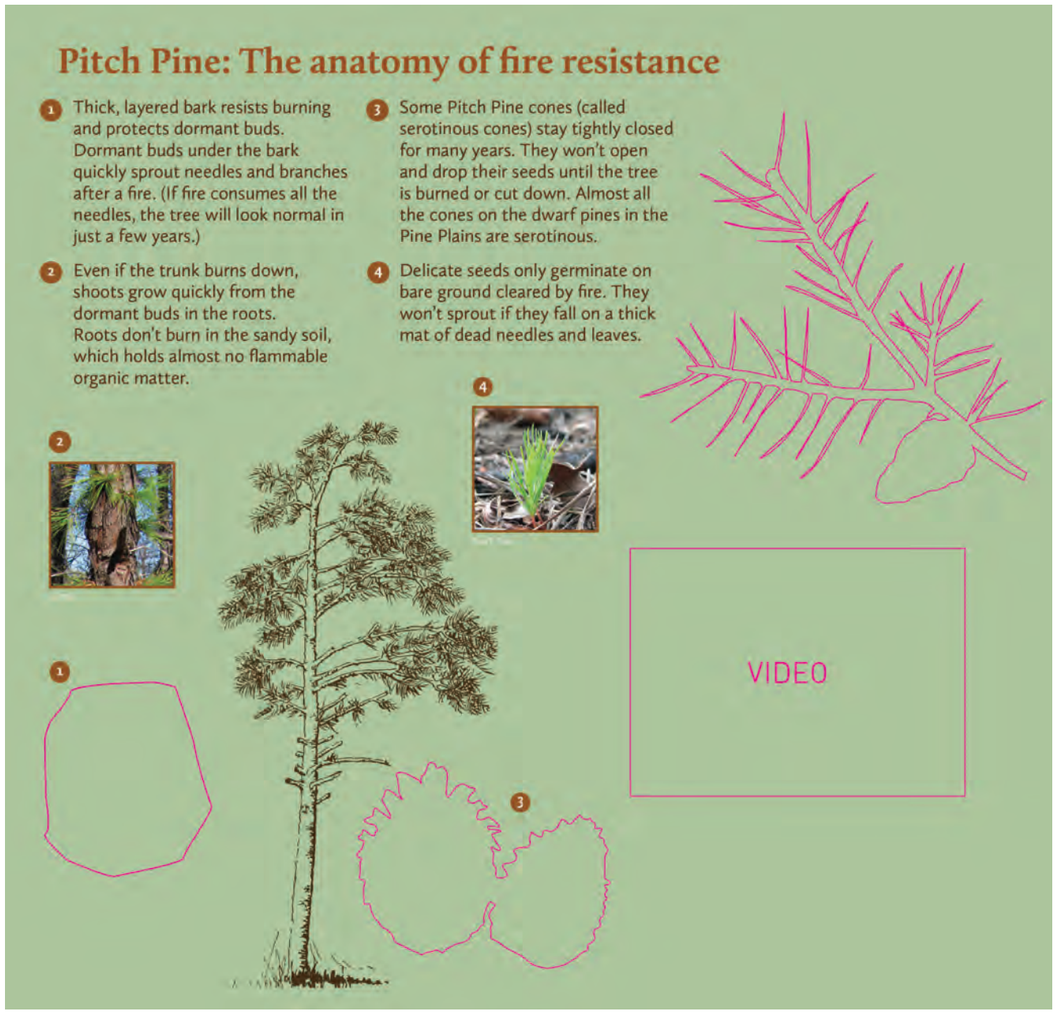
The earliest European settlers in the Pinelands made extensive use of the woodlands, first for lumber and then for fuel. After lumbering cleared the forest of the best trees, a charcoal industry developed in the Pinelands as a way to use the remaining trees and branches—mostly pitch pine.

Charcoal fueled the blast furnaces used to make iron and glass. Fueling each furnace required clearing thousands of acres of woodlands, leaving vast areas of the Pinelands deforested.

Designed by Tom Darlington, this mechanized blueberry picker is one of the many local blueberry industry innovations.

Here Joe Wave cuts slats for berry crates at his Wading River saw mill.

George Kummel building a charcoal pile near Jenkins Neck. The grandson of a Lenape Indian from the Brotherton Reservation near Indian Mills, Kummel was the last commercial charcoal maker in the area. He made dozens of charcoal piles on 50 acres of land until 1954, when the State of New Jersey bought the land and created the Wharton State Forest.



Pine branch specimen

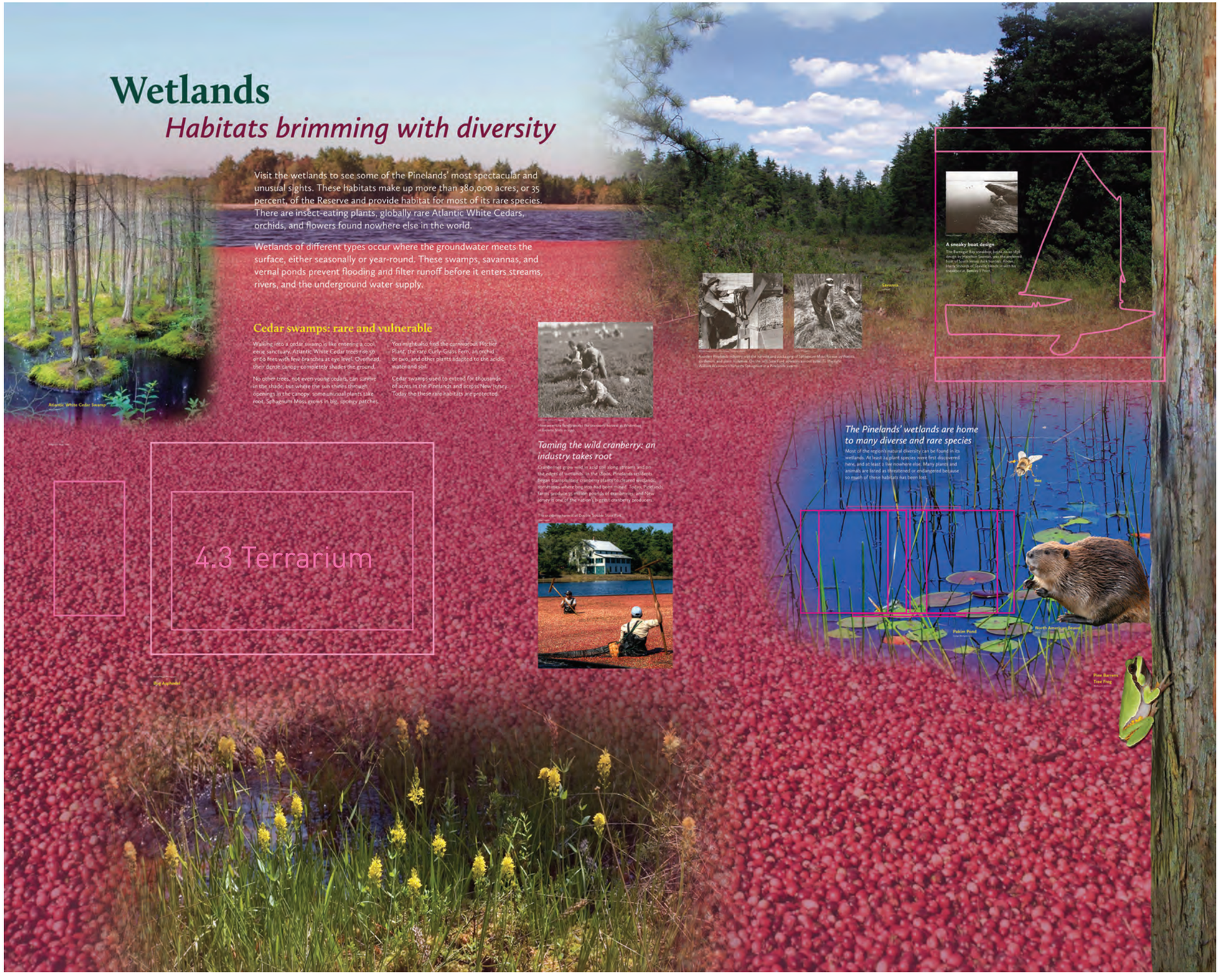
Inset video panel

Pine Bark specimen

Pine Cone specimen

3.21 Pitch Pine Case

Graphic Layout Panel size 25"x 24''

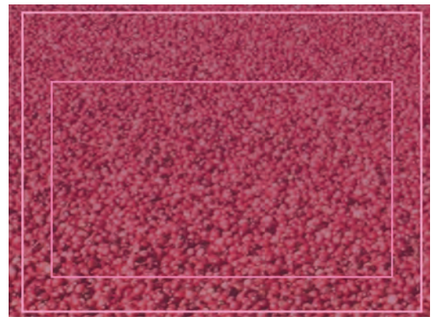


4.43 Changeable label

4.3 Terrarium Tree Frog

4.5 Flipbook

4.6 Boat case



4.43 Terrarium Bezel

4.44 Terrarium Panel

3.1 Area Strip

4.1 Area Strip

5.1 Area Strip

5.3 Cedar water interactive

5.4 Flipbook

5.5 Aquarium

5.51 Changeable label

Access door

1.2 Hidden Wonders doors

See Book 3 for door images and text

5.0 Surface Waters Graphic Layout

1.12 Hidden Wonders Graphic Layout Mural size 257"x 82'' Content•Design Collaborative LLC

Surface Waters

One of the Pinelands' greatest resources

One of the best ways to see the Pinelands is by canoeing one of its many rivers and streams. These slow-moving waterways mostly start in the Pinelands and flow out, feeding the marshes and bays of southern New Jersey.

Pinelands rivers attracted settlers to this area. They built dams and waterwheels to operate mills, forges, and furnaces; transported natural resources and products on Pinelands waterways; and established towns and villages near rivers and industrial sites.

Pinelands lakes offer a peek into the past

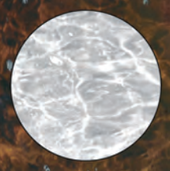
All lakes in the Pinelands were created by people. Some were formed when settlers dammed streams to harness water power; others are former cranberry bogs or mine sites.

The aquifer's "back door"

Pinelands surface waters link directly to the Kirkwood-Cohansey aquifer, Southern New Jersey's vast underground water supply. Pollutants like chemicals and fertilizers that drain into surface waters can easily enter the aquifer and contaminate groundwater throughout the region. Likewise, pollution that enters the groundwater from upland sources can travel into wetlands and streams.

What makes the water so dark?

When plants like cedar trees and Sphagnum Moss soak in standing water, acidic dyes called tannins leach into the water. A similar process and compound gives tea its color. Combined with dissolved iron and organic matter, the tannins make the water very dark.



Cedar water: dark but sweet

Pinelands tea-colored "cedar water" was naturally good tasting. Sea captains used to fill their casks with it, because it stayed fresh longer than any other water they could find and actually tasted sweet. Today, no surface water is guaranteed drinkable, because it may contain harmful microorganisms.

Rare species survive in acid waters

Pinelands water is too acidic for a lot of common freshwater animals. Some fish can't reproduce in acidic water, and many mollusks and crustaceans need less acidic water to produce their shells. But you will find native frogs, toads, and fishes that thrive in swamps and other acidic waters, plus oodles of damselflies, dragonflies, and whirligig beetles.

Blackbanded Sunfish

White Water Lily

5.5 Aquarium

Rich opportunities for recreation

You can swim, fish, or watch wildlife in a Pinelands lake or kayak one of its rivers through the wild interior of this vast reserve.

Skeleton Pond

This is an example of an intermittent pond — sometimes it is there, sometimes it is not.

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More than just pines

Discover the secrets of the

It may look like just pine trees and sand, but investigate a little further and you'll encounter a fascinating natural and cultural landscape. The Pinelands is a vast mosaic of forests, streams, and wetlands, plus farms, villages, and homes—some long abandoned and some modern and vibrant.

We invite you to discover what's beneath the surface.

View from Apple Pie Hill Fire Tower

K

Legendary Robbers

L

Roaring Era

More than just pines

Discover the secrets of the Pinelands

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View from Apple Pie Hill Fire Tower

Background image: Tue '14

F
Rich Folklore

D
Rest Stops

T

Z
A Pioneering Healer

A
Endangered Plants

E
Old Industries

X
A National Tragedy

K
Legendary Robbers

W
A Boat Building Tradition

M
Nature Trails

O
A Wilderness to Enjoy

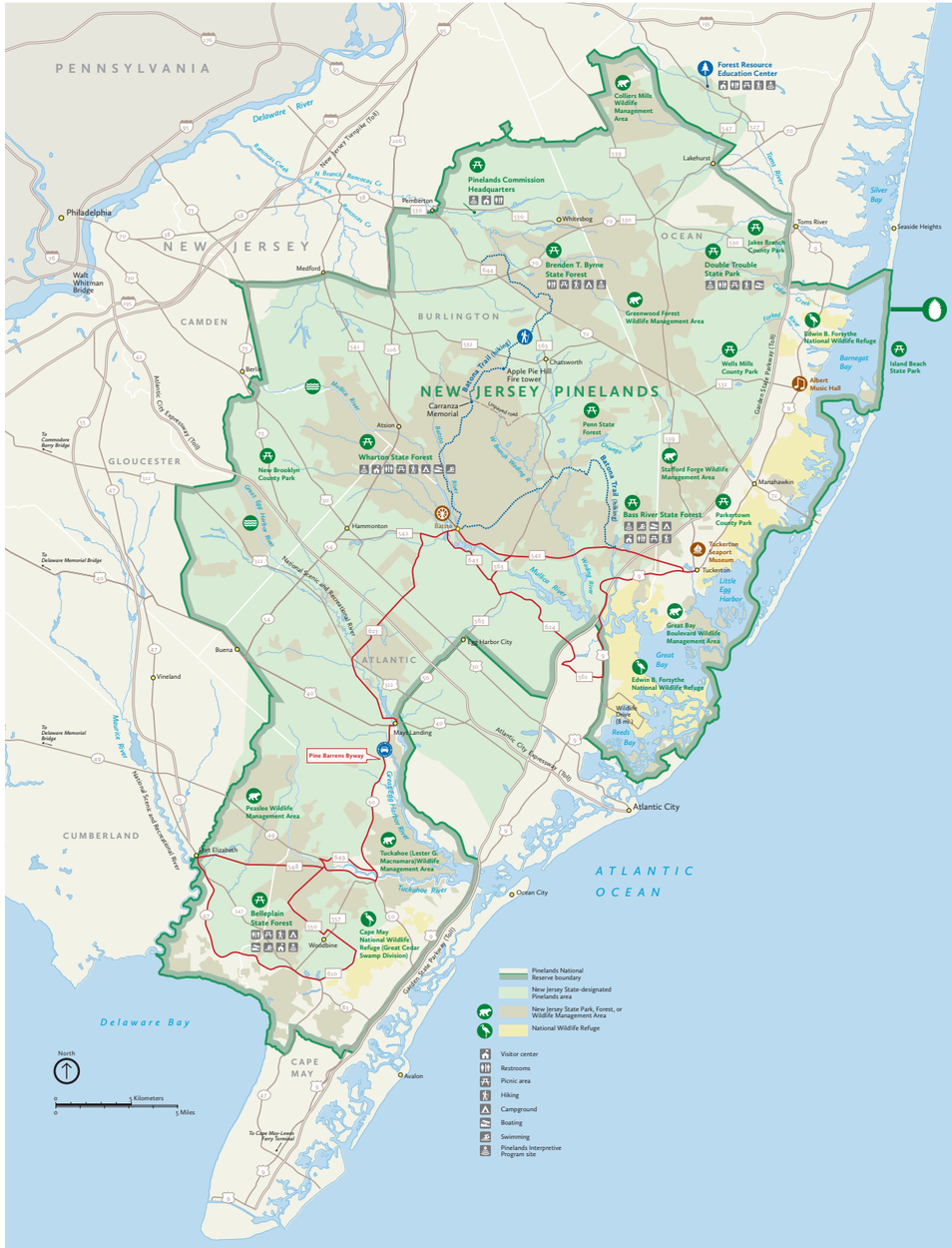
J
A Lost Pilot

L
Roaring Fires

H
Unusual Plants

Q
Our Own Cultural Flare

V
An Enormous Aquifer



The New Jersey Pinelands

A place like no other

Nature

Pinelands National Reserve
Explore 1.1 million acres of private and public land where rivers, trails, and roads lead to wetlands, dwarf forests, mysterious ruins, and ghost towns.
Photo: Paul Leakan

National Wildlife Refuge Areas
Observe native and migratory wildlife in a variety of grassland, salt marsh, bog, and coastal habitats.
Photo: Chris M Morris

Scenic & Recreational Rivers
Accessible by kayak, canoe, or boat, these Pinelands rivers are among America's most pristine.
Photo: Bill Bessette

State Parks & Forests
Walk through former villages and historic landmarks surrounded by pygmy pines and cedar swamps. Camping, mountain biking, horseback riding and cross-country skiing offer year-round outdoor opportunities.
Photo: iStock

State Wildlife Management Areas
Encounter diverse wild lands where over 43 animals listed as endangered or threatened make this their home. You might see bald eagles, swans, ospreys, river otters or foxes.
Photo: Les Howard

County Parks
Enjoy open space for picnics, hiking, golfing and scenic views. Programs include music festivals, crafts and environmental education. Jakes Branch is called *The Gateway to the Pines*, and Wells Mills hosts the annual Pine Barrens Jamboree.
Photo: Cathy Antener

Culture

Albert Music Hall
An institution for over 30 years, and now home to 350-seat concert hall, Albert Hall is the cradle of traditional Pinelands music. Check schedules for performances and weekly jam sessions.

Historic Villages
Visit an active historic village at Batsto or a deserted village at Atsion. Explore the ruins of Harrisville, Weymouth Furnace, and Esterville.
Photo: Paul Leakan

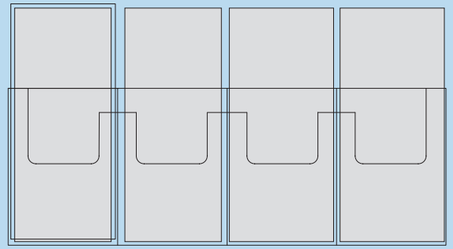
Tuckerton Seaport and Baymen's Museum
Relive the unique coastal heritage of the Jersey Shore. Observe local craftspeople, boat builders, and live aquatic displays.

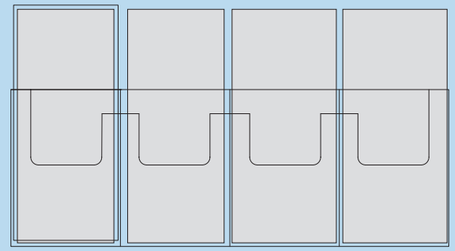
Venture

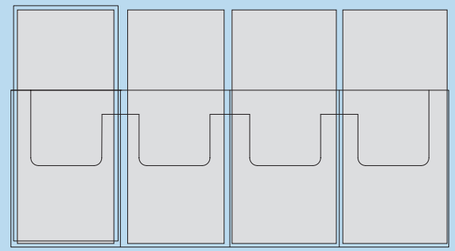
Batona Trail
Winding over 50 miles, this easy trail passes through forests, crosses streams, and connects once bustling historic towns. Don't miss the view from Apple Pie Hill and the history of Batsto Village.
Photo: Carol Cawafel

Forest Resource Education Center
Explore the forests and learn about wildlife through indoor and outdoor exhibits, and environmental education programs.
Photo: USFS

Pine Barrens Byway
Drive 130 miles through the undiscovered pure scenic beauty and historic heritage of the Pinelands from Batsto and Tuckerton in the north to Dennisville and Port Elizabeth in the south.
Photo: Dustin Farnum







Blackbanded Sunfish

The majority of Pinelands fish species are found in the richly vegetated, quiet backwaters of streams and rivers.

Many are common throughout the state of New Jersey, but one such species—the Blackbanded Sunfish—is found only in Pinelands habitats.

5.51 Changeable Aquarium label size 6" x 9.25"

Pine Barrens Treefrog

You can hear this tiny, beautiful symbol of the Pinelands calling loudly from its breeding areas around shallow temporary pools in the late spring. Unlike most amphibians, it thrives in acidic environments like the Pinelands' cedar swamps. It's protected in New Jersey because its habitat is so limited. The only other populations are in the Sandhills of the Carolinas and the Florida panhandle.

4.42 Changeable Terrarium label size 6" x 9.25"

Lenape Basket

Reproduction of a typical Lenape basket woven by Mary Carty from the Pinelands Folk Music & Basketry Center.

3.6 Basket label size 4" x 4"