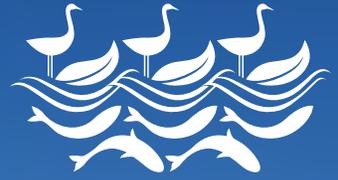


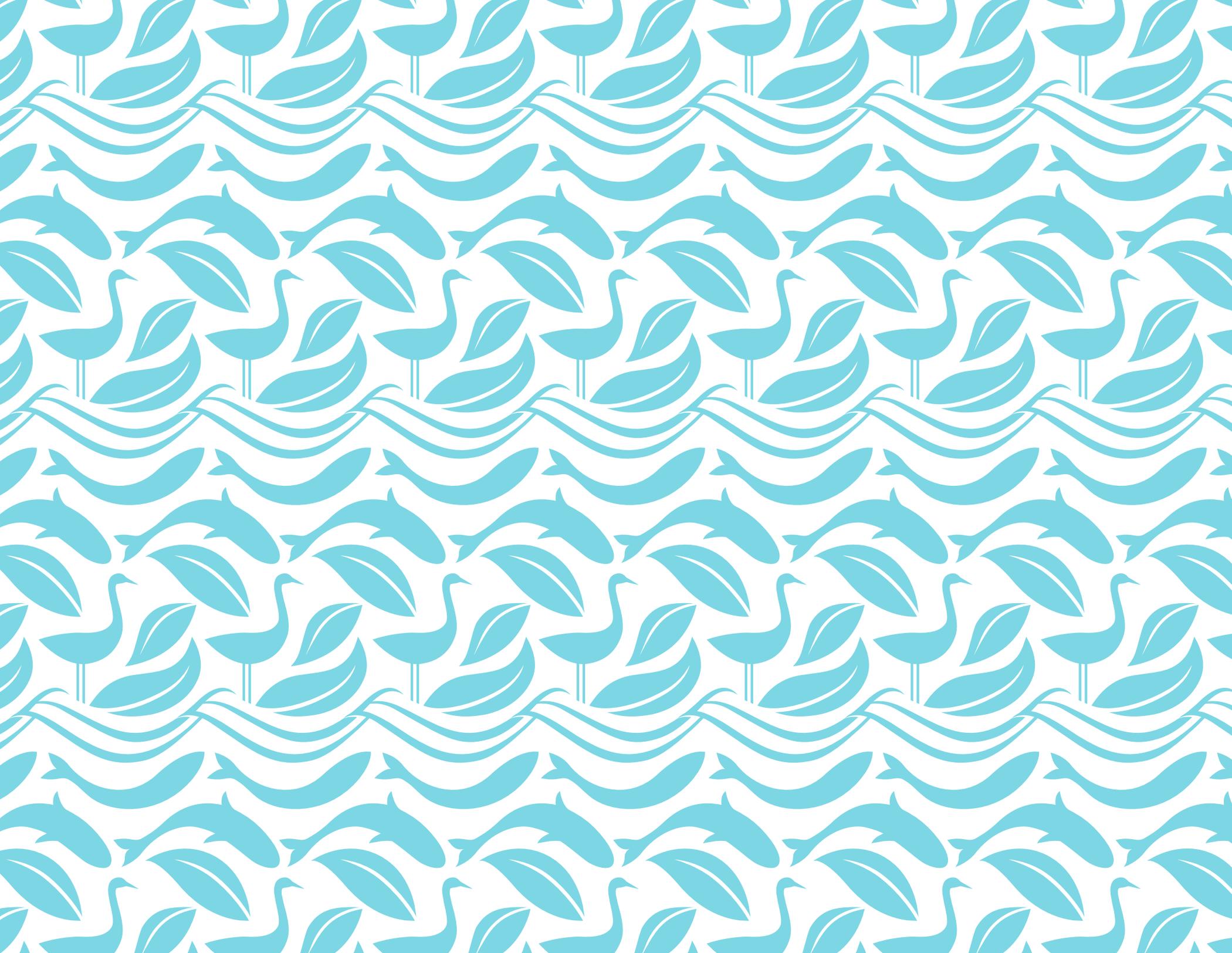
ALABAMA'S  
**GULF  
STATE PARK**

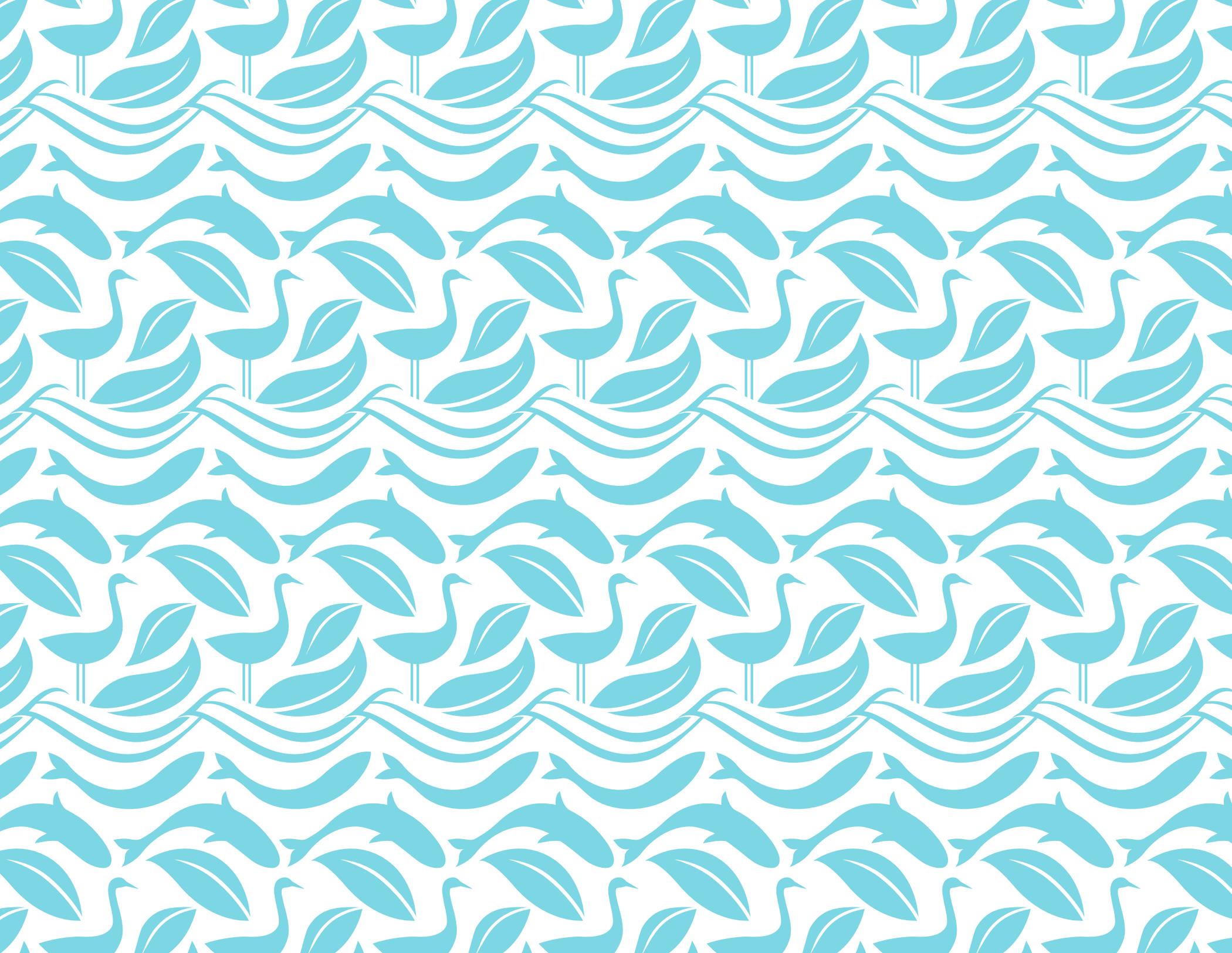


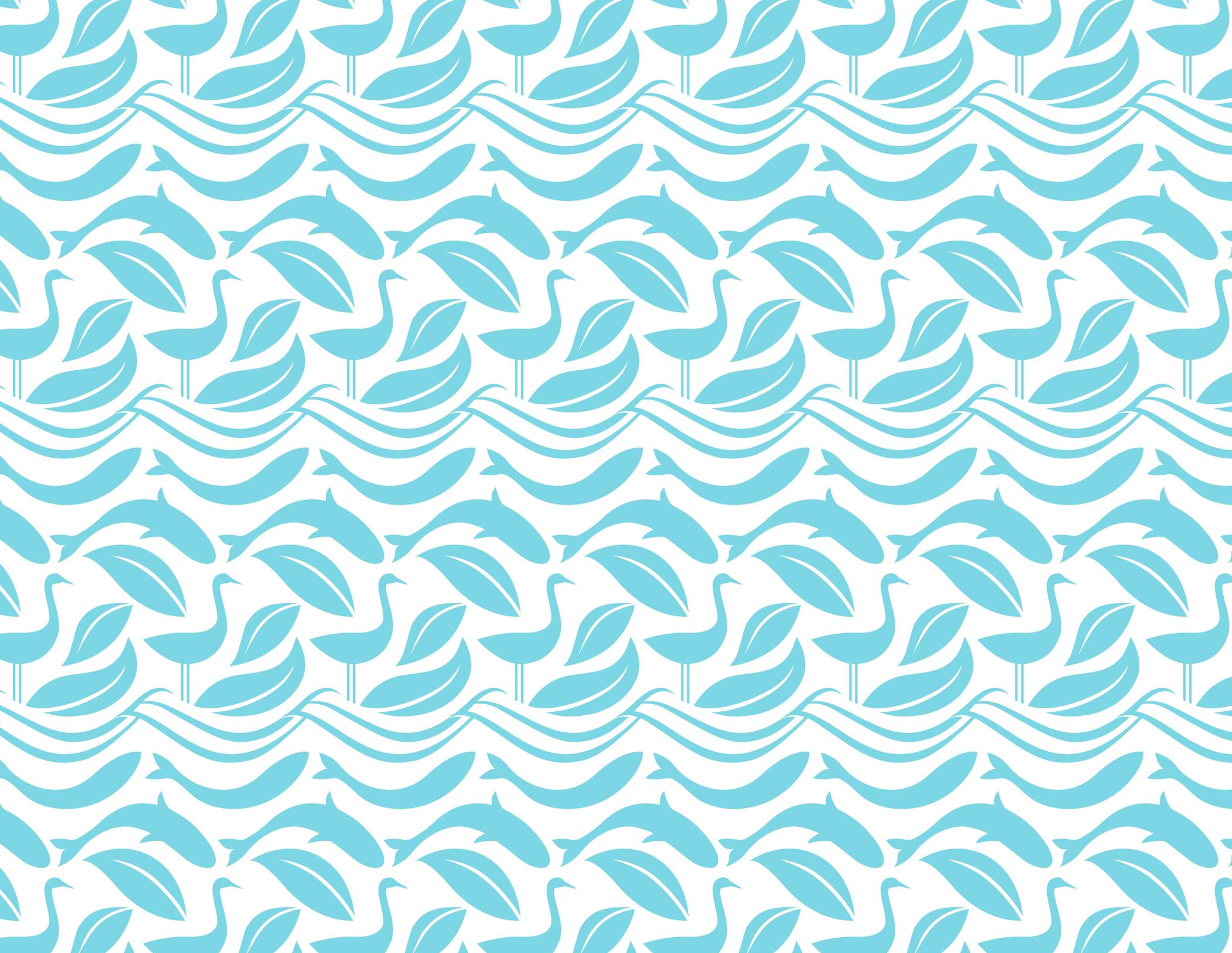
Master Plan

2016









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I One page overview

## MASTER PLAN

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Appendix B:  
Sensitive Species  
Recommendations

Appendix C:  
Branding User Guide

Thanks to all of the locals, stakeholders, officials, and park staff that participated in the online survey, numerous open houses, meetings, and phone calls that contributed to the creation of this master plan.

Your support and involvement are greatly appreciated and were necessary for a master plan that truly reflects Gulf State Park, the region, and the state of Alabama.

## **S A S A K I**

Team: Watershed, Spackman Mossop and Michaels, Barry A. Vittor & Associates, Biohabitats, and Inkhouse.

# How to Read This Document

There are three parts to the Gulf State Park Master Plan; each provides a different level of detail. How would you like to learn about the plan's ideas?

## TELL ME THE QUICK TAKEAWAYS

### GO TO THE EXECUTIVE SUMMARY.

The Executive Summary is a one page overview of the Master Plan's key projects and phases.

## TELL ME THE BIG PICTURE

### GO TO THE MASTER PLAN GUIDE.

The Master Plan Guide is a summary of the ideas in the plan. It introduces the projects, phases, goals, and helps the reader imagine the future.

## TELL ME ALL THE DETAILS

### GO TO THE MASTER PLAN.

The Master Plan is the complete story of the proposed vision and road-map for Gulf State Park. It dives into each goal and explains all the projects, providing additional details about how implementation will work. If you want to learn about everything, just start at the beginning. If you're curious about a particular topic, follow the steps shown to the right.

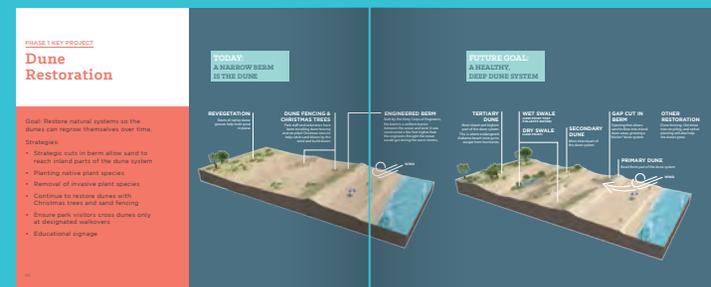
## TELL ME ALL THE DETAILS

### I WANT TO KNOW ABOUT A PROJECT

There are fourteen key projects in the Master Plan, and they are organized in three phases. Each phase is represented with a different color: red for Phase 1, yellow for Phase 2, and green for Phase 3.

KEY PROJECTS	Dune Restoration	Enhancing the Visitor Experience (Phase 1 Trail Enhancement)	Learning Campus	Interpretive Center	Rebuilding the Lodge
<p><b>Master Plan Phase 1</b></p> <p>At the foundation of the Master Plan are the five Enhancement Project elements, which focus on increasing the park and increasing knowledge of Alabama's environment. These elements are funded by the National Resources Damage Assessment (NRDA) as the required to recover. All of the five elements will be completed by 2018.</p>	<p>Innovative techniques and native knowledge will increase the resiliency of beach dunes by faster beach recovery, enhanced dune structure and vegetation, and the creation of new dunes and beach systems.</p> <p>These elements are funded by the National Resources Damage Assessment (NRDA) as the required to recover. All of the five elements will be completed by 2018.</p>	<p>Visitors will enjoy a fully enhanced experience with improved trail network, enhanced wayfinding, parking, and restroom facilities. Highlighting interpretive and educational opportunities, the trail network will provide an enhanced visitor experience and a new, state-of-the-art trail system. The trail network will be completed by 2018.</p> <p>These elements are funded by the National Resources Damage Assessment (NRDA) as the required to recover. All of the five elements will be completed by 2018.</p>	<p>With its interpretive and educational opportunities, the Learning Campus will provide an enhanced visitor experience and a new, state-of-the-art trail system. The Learning Campus will be completed by 2018.</p> <p>These elements are funded by the National Resources Damage Assessment (NRDA) as the required to recover. All of the five elements will be completed by 2018.</p>	<p>The interpretive center will provide an enhanced visitor experience and a new, state-of-the-art trail system. The interpretive center will be completed by 2018.</p> <p>These elements are funded by the National Resources Damage Assessment (NRDA) as the required to recover. All of the five elements will be completed by 2018.</p>	<p>The project will be a new, state-of-the-art trail system. The project will be completed by 2018.</p> <p>These elements are funded by the National Resources Damage Assessment (NRDA) as the required to recover. All of the five elements will be completed by 2018.</p>

The Summary Guide includes an overview of all projects. Start here, and look for a page number at the bottom of the project overview.



Turn to that page in the Master Plan to learn more. In the Master Plan, each project begins with a summary page. Keep reading to learn even more about the project!

# I WANT TO KNOW ABOUT A GOAL

There are four main goals and they each have a dedicated chapter in the Master Plan. Look for icons representing restoring the environment, learning, mobility, and visitor experience.

# HOW CAN I GET INVOLVED?

Interested in helping out? Each chapter concludes with a list of additional actions to support the plan. Look here for ideas about how to get involved.

### Master Plan Goals

Reflecting the high priority needs consistently mentioned by the community, stakeholders, and park visitors, these four goals are the foundation of all Master Plan recommendations and projects.

The goals support Gulf State Park as:

- An Alabama Treasure
- Alabama's Outdoor Classroom
- Routed to the Gulf Coast
- Our Front Porch on the Gulf

### Restoring the Environment

Restoring and enhancing the park's beauty, the environment, and the natural resources that support the enjoyment of all ages in environmental inquiry and discovery.

**Ecological Inquiry Learning Goals:**

- identify visible natural assets
- understand the natural environment
- explore programs and assets with cultural history
- understand development

What to learn more about: Restoring the Environment? Check the Page 80 of the Master Plan.

### Learning Everywhere (and all the times)

Restoring the full potential of the park as an outdoor classroom that supports the enjoyment of all ages in environmental inquiry and discovery.

**An educational park:**

- environmental education programs
- environmental learning
- interpretive signage, interpretation, and activities
- programming

What to learn more about: Learning Everywhere? Check the Page 81 of the Master Plan.

### Improving Mobility

Restoring the park's beauty, the environment, and the natural resources that support the enjoyment of all ages in environmental inquiry and discovery.

**A park for everyone:**

- accessibility (physical and virtual)
- diverse range of activities and experiences
- transportation, signage for all ages
- parking
- amenities

What to learn more about: Improving Mobility? Check the Page 82 of the Master Plan.

### Enhancing the Visitor Experience

Restoring the park's beauty, the environment, and the natural resources that support the enjoyment of all ages in environmental inquiry and discovery.

**A park for everyone:**

- accessibility (physical and virtual)
- diverse range of activities and experiences
- transportation, signage for all ages
- parking
- amenities

What to learn more about: Enhancing the Visitor Experience? Check the Page 83 of the Master Plan.

The Summary Guide includes an overview of all goals. Start here, and look for a page number at the bottom of the goal you're interested in.

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What to learn more about: Enhancing the Visitor Experience? Check the Page 83 of the Master Plan.

Would you like to help with environmental restoration, learning, mobility, or visitor experience? Choose the goal that fits your interests.

## IMPROVING MOBILITY

Enhancing Gulf State Park includes expanding mobility options for park visitors. The goal is to make the park a place where it's possible to park once, and then explore all the park has to offer – on foot, bicycle, or by horse on the new Park Trail.

This chapter illustrates mobility options and enhancements.

### IN THIS CHAPTER:

- TRAILS PHASE 2 ..... 93
- TRAILS PHASE 3 ..... 99
- NEW PARK TRAIL IN CONSTRUCTION ..... 103
- PARK TRAIL ..... 104
- BEACHFRONT PARKING ..... 108
- ADDITIONAL MOBILITY ACTIONS ..... 112

### MORE WAYS TO GET AROUND THE PARK

The High 10 River Recreability, Park and Ride, and other mobility options for the park's destination include:

- Capacity of parking spaces near the park
- Interpretive signage, interpretation, and activities
- Signage for all ages and visitors
- Amenities

**IMPROVING WALKING AND BICYCLING IN THE PARK WAS THE #3 PRIORITY FOR LOCALS AND THE #3 PRIORITY FOR VISITORS WHO TOOK THE ONLINE SURVEY**

Turn to that page in the Master Plan to learn more.

### SUPPORTING ALL PHASES Additional Environmental Actions

**MY FOREST NEEDS TO BE BETTER OFF BY YEAR 2030. I WANT TO SEE:**

- **MY FOREST NEEDS TO BE BETTER OFF BY YEAR 2030. I WANT TO SEE:**
- **RESTORE AND ENHANCE THE PARK'S BEAUTY, THE ENVIRONMENT, AND THE NATURAL RESOURCES THAT SUPPORT THE ENJOYMENT OF ALL AGES IN ENVIRONMENTAL INQUIRY AND DISCOVERY.**

**THE FOREST ARE:**

- **RESTORE AND ENHANCE THE PARK'S BEAUTY, THE ENVIRONMENT, AND THE NATURAL RESOURCES THAT SUPPORT THE ENJOYMENT OF ALL AGES IN ENVIRONMENTAL INQUIRY AND DISCOVERY.**

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- **RESTORE AND ENHANCE THE PARK'S BEAUTY, THE ENVIRONMENT, AND THE NATURAL RESOURCES THAT SUPPORT THE ENJOYMENT OF ALL AGES IN ENVIRONMENTAL INQUIRY AND DISCOVERY.**

In addition to the key projects, other opportunities to improve the environment include these actions, policies, and partnership opportunities.

- **Restoration and enhancement of the park's beauty, the environment, and the natural resources that support the enjoyment of all ages in environmental inquiry and discovery.**
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- **Restoration and enhancement of the park's beauty, the environment, and the natural resources that support the enjoyment of all ages in environmental inquiry and discovery.**

The final section of each chapter is called "Additional Actions." What items in this list would you like to help with?

# Master Plan Executive Summary

## 2016

Gulf State Park stands out from other Gulf Coast destinations because of its size and diversity of preserved ecosystems; there is simply nowhere else like it on the Gulf Coast. This project is about building on the park's unique assets to transform the park into **an international benchmark of economic and environmental sustainability demonstrating best practices for outdoor recreation, education, and hospitable accommodations.**

The proposed improvements will further enhance the park as an economic engine for the state. Key goals of all improvements are to increase revenue and enhance the visitor experience, without creating new burdens on park staff.

### PHASE 1: Five NRDA Elements

The first phase of the Master Plan is the five elements supported through Early Restoration funding from the National Resource Damage Assessment Process (NRDA):

- Enhancing the visitor experience (Phase 1 Trail Enhancements)
- Learning Campus
- Interpretive Center
- Dune Restoration
- Rebuilding the Lodge\*

### PHASE 2: Additional Elements to enhance Gulf State Park

The second phase of the Master Plan includes additional opportunities to strengthen the economic potential of the park:

- State Park Road 2 Conversion
- Phase 2 Trail Enhancements
- Campground Improvements
- Golf Course Conversion / Park Adventure Launch
- Park Tram

### PHASE 3: Long-term opportunities

Phase 3 includes long-term opportunities to add even more value to the park, including additional overnight accommodations, trail network enhancements, and more places to gather and socialize.

- Picnic Area Enhancements
- Phase 3 Trail Enhancements
- Beachfront Parking Improvements
- Lake Shelby North Improvements

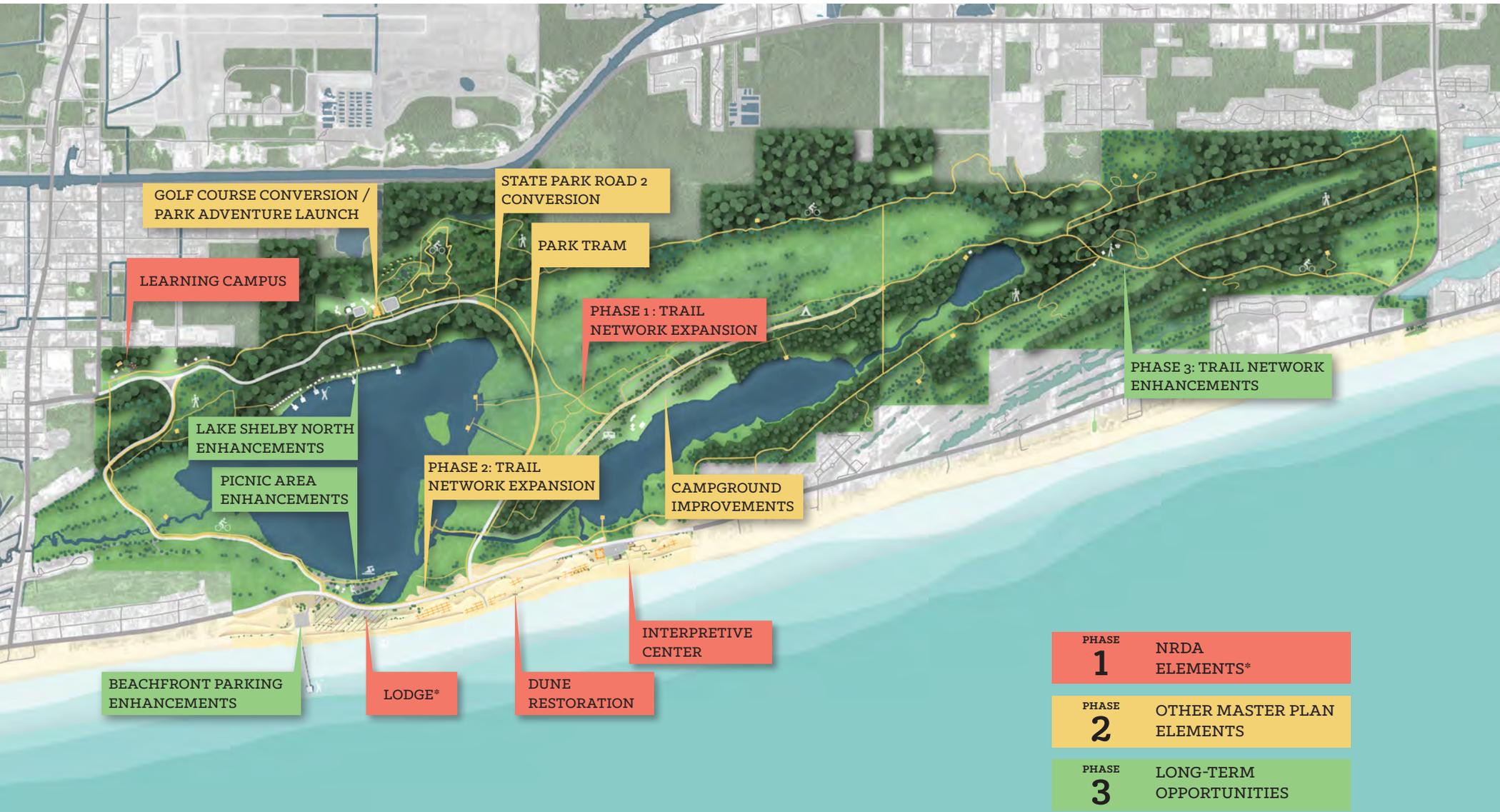
### STRENGTHENING PARK OPERATIONS

The Master Plan considers operational recommendations to support the physical enhancements, ensuring maximum long-term revenue potential. Key recommendations include upgrading technology systems; improving the visitor experience with service standards and physical guidelines; expanding support for HR, marketing, and events; and strengthening reinvestment in the park.

### A SHARED VISION

The Master Plan was shaped by feedback from 2,600+ responses in the online survey (MyGulfStatePark), attendees at the three community open houses and two mini-open houses, and stakeholders, officials, and park staff.

\*The use of \$58.5 million of NRDA funds allocated to the Lodge are stayed pending the completion of additional analysis pursuant of NEPA and OPA.



<b>PHASE 1</b>	NRDA ELEMENTS*
<b>PHASE 2</b>	OTHER MASTER PLAN ELEMENTS
<b>PHASE 3</b>	LONG-TERM OPPORTUNITIES

\*The use of \$58.5 million of NRDA funds allocated to the Lodge are stayed pending the completion of additional analysis pursuant of NEPA and OPA.

# Master Plan Elements

# **Alabama State Parks Mission Statement**

To acquire and preserve natural areas; to develop, furnish, operate, and maintain facilities; and to extend the public's knowledge of the state's natural environment.

–Alabama Code Section 9-2-100 to 9-2-108

The background is a solid teal color with several large, overlapping, semi-transparent leaf-like shapes in a lighter shade of teal. The leaves are oriented diagonally, with their tips pointing towards the top right.

**1**

**INTRODUCTION**

# Enhancing a Cherished Asset

## THE OVERARCHING VISION IS FOR EVERY VISITOR TO BE ABLE TO CONNECT WITH NATURE.

Gulf State Park is one of Alabama's most cherished assets; it preserves 6,150 acres of pristine coastal scenery and wildlife habitat on the historic Alabama Gulf Coast and has more than 600,000 annual visitors.

Gulf State Park stands out from other Gulf Coast destinations because of its size and the diversity of its preserved ecosystems; there's simply nowhere else like it on the Gulf Coast.

The Gulf State Park Master Plan is a comprehensive approach to restoring and enhancing Gulf State Park. The Master Plan builds on the park's unique character

to enhance the park as an international benchmark of environmental and economic sustainability, making it a place where every visitor can connect with nature.

The idea is that the Master Plan provides long-term vision for Gulf State Park; it is the road-map to making the park an "international benchmark of economic and environmental sustainability demonstrating best practices for outdoor recreation, education, and hospitable accommodations." The Master Plan integrates the five Gulf State Park Enhancement Project components with existing park elements like the Campground and Pavilion, ensuring these near-term investments in the park are best leveraged to create an environmentally and economically sustainable park for Alabama. The Enhancement Project elements include

enhancing the visitor experience, building a learning campus, creating an interpretive center, rebuilding a lodge at Gulf State Park, and restoring the dunes. These five elements are Phase 1 of the Master Plan. The Master Plan also suggests opportunities for additional improvements to enhance the park's potential to become a one-of-a-kind environmental and education destination on the Gulf Coast. These additional improvements are included in Phases 2 and 3 of the Master Plan.

## IMPLEMENTATION TIMELINE

The first work to take place will be the dune restoration, occurring during the beginning of 2016. The five Gulf State Park Enhancement Project elements (Phase 1 of the Master Plan) will be complete by 2018. This first phase

## HOW DOES THE MASTER PLAN RELATE TO THE OIL SPILL?

In 2010, the Deepwater Horizon Disaster devastated the Gulf Coast. In Alabama, beaches were closed, and the economic impacts were long-lasting. The Gulf State Park Enhancement Project (Phase 1 of the Master Plan) is an early restoration project. The goal is to help expand access to one of Alabama's most ecologically rich treasures, bringing more visitors to the coast and helping them learn about the region's special ecosystems.

**Gulf State Park Enhancement Project (5 NRDA elements)\***

**Other ideas for economic & environmental sustainability**

**Integrating ideas with existing park activities**

## THIS MASTER PLAN

- **Phase 1: GSP Enhancement Project (Five NRDA elements)\*.** Launched through an \$85.5 million allocation of early restoration dollars. Completed by 2018.
- **Phases 2 and 3: Long-term Enhancements.** Additional ideas to improve Gulf State Park. Some may be completed by 2018; others are longer-term ideas.

\*The use of \$58.5 million of NRDA funds allocated to the Lodge are stayed pending the completion of additional analysis pursuant of NEPA and OPA.



## ECONOMIC & ENVIRONMENTAL SUSTAINABILITY: COMPLEMENTARY IDEAS

**Environmental sustainability** means taking care of the park's health, ensuring it can thrive over time. **Economic sustainability** is about ensuring sufficient financial support is available to maintain the park. **Both are important and support one another.**

Ecological health requires stewardship and maintenance; it's not something that's achieved by leaving nature alone. For example, some forests need controlled burns to stay healthy and other ecosystems in the park need help combatting invasive species that are choking out native wildlife. **Landscapes require care and support to make sure they are as healthy as possible, so it's important to make sure the park is healthy economically as well to support these efforts.**

Economic and environmental sustainability together ensure that Gulf State Park can be an unparalleled destination on the Gulf Coast that's as good for visitors as it is to the many critters, birds, and fish that call it home.

The AL State Park system as a whole has been challenged by declining budgets. Supported almost entirely by user fees, it's more important than ever to identify new sources of revenue. The goal is to strategically find good fits for the park that enhance the park experience for visitors, are a good fit for its environment, and provide new revenue streams, helping the rest of the park experience stay affordable.

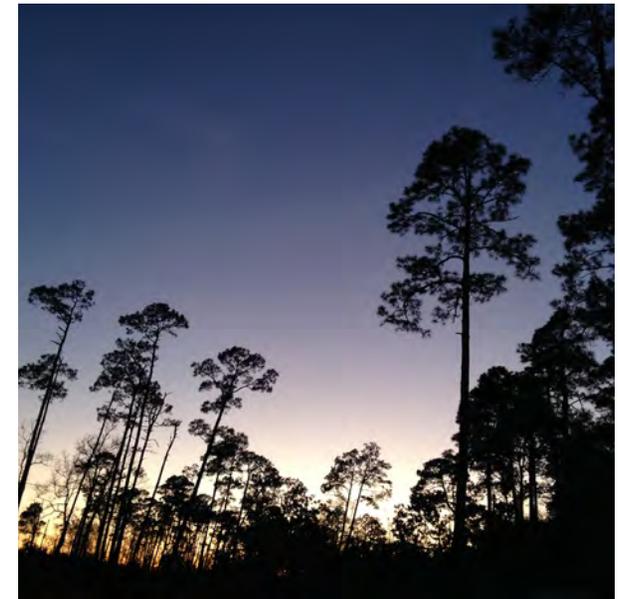
**These two goals of Environmental Sustainability and Economic Sustainability, along with public input, have guided the ideas in this Master Plan.**

will be launched through an \$85.5 million allocation of early restoration dollars from BP to compensate for lost recreational use visits to the park during the Deepwater Horizon oil spill.

In addition, the Master Plan also looks ahead to the next decade, with additional longer-term recommendations (Phases 2 and 3).

## BENEFITS OF PARK ENHANCEMENTS

- Restoring the shoreline and dunes
- Restoring natural habitat for wildlife (beach mice and nesting sea turtles)
- Creating educational opportunities
- Enhancing sustainable recreation in the park
- Creating new trail connections, making the park more pedestrian friendly
- Creating economic opportunities for the greater community
- Providing construction jobs
- Creating long-term employment opportunities for local residents
- Generating tax revenue
- Increasing the state revenue to fund the operation and maintenance of Alabama's State Parks, which currently face a deficit, while also allowing an increase in reinvestment in Gulf State Park, ensuring its success is sustained



CLOCKWISE FROM TOP:  
DUNES, FORESTS, LAKES,  
AND THE EDUCATION PIER

## Gulf State Park is a special place to many people

Feedback received throughout the Master Plan process highlights the importance of Gulf State Park to Alabamians and out-of-state visitors. Below are just a few examples of how much the park means to visitors and local residents.

“OUR FAVORITE VACATION DESTINATION! WE HAVE BEEN COMING TOGETHER AS A FAMILY (OF ~30) FOR OVER 40 YEARS.”

“THE STATE PARK IS A WONDERFUL OASIS IN THE MIDST OF WHAT I FEEL IS A VERY OVER DEVELOPED AREA.”

“ONE OF THE BEST STATE PARKS WE HAVE HAD THE PLEASURE OF VISITING...AND WE LIVE NEARBY!”

“THE GULF STATE PARK IS MY FAVORITE PLACE TO BE IN THE WHOLE WORLD. I HAVE HUNDREDS AND HUNDREDS OF MEMORIES OF MY WIFE AND KIDS IN THE PARK.”



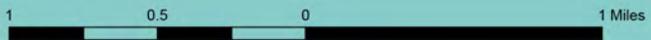
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CLOCKWISE FROM TOP: CENTRAL MARSHES, BEACH ACTIVITY, AND SAW PALMETTO



 **MASTER PLAN STUDY AREA**

THE MASTER PLAN FOCUSES ON THE PARK'S CORE AREA - BOUNDED BY E 2ND STREET, CANAL ROAD, AL 161, AND THE GULF - AS WELL AS THE COTTON BAYOU AND ROMAR BEACH ACCESS POINTS.





# **2** **EXISTING** **CONDITIONS**

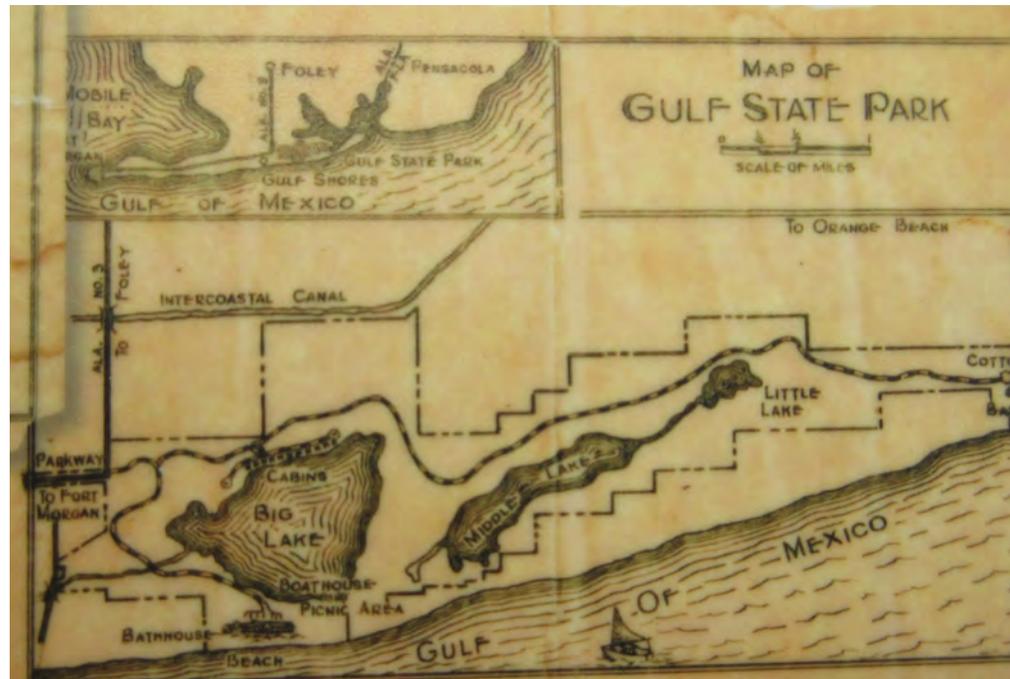
# History

## GULF STATE PARK OVER THE YEARS

In 1927, the Alabama legislature passed the State Land Act to provide for the development and operation of state parks. About twelve years later, the U.S. government deeded the land now partially encompassing Gulf State Park to the State of Alabama. The State officially opened the park in 1939. The Civilian Conservation Corps (CCC) played a significant role in the initial development of the park, including building roads, cabins, and even a casino on the beach.

Gulf State Park, along with the completion of the Gulf Intracoastal Waterway in 1937, played a significant role in regional development. The Park helped attract new visitors and residents to the area; Gulf Shores and Orange Beach both grew up around the park. Over the years, Gulf State Park expanded its size and facilities, adding roads, cottages, campsites, fishing piers, and trails, and rebuilding from hurricanes, fires, and flooding.

In 2010, the Deepwater Horizon Disaster impacted the entire Gulf Coast. With beaches closed, Gulf State Park - and the state of Alabama - suffered economically and ecologically. Today, the Enhancement Project is a chance to rebound once again, creating an even better park for current visitors and future generations.



TOP: EARLY MAP OF THE PARK; BOTTOM: THE PREVIOUS LODGE



IMAGE SOURCE: VOLKERT / GULF STATE PARK

“I LOVED THE OLD  
GULF PARK HOTEL  
AND CABINS ALONG  
THE BEACH. THE  
ARCHITECTURE  
AND SETTING WAS  
BEAUTIFUL. THE  
DANCE FLOOR  
OVERLOOKING  
THE GULF WAS  
AWESOME.”

—Survey Respondent

## GULF STATE PARK TIMELINE

**1933:** The Civilian Conservation Corps (CCC) began construction, building roads, cabins, a dance casino, and their CCC camp.

**1939:** Gulf State Park officially opened.

**1968:** An 825 ft. saltwater pier was built.

**1972-1974:** Multiple new elements were added including the campground, golf course, beach pavilion, and the previous lodge.

**1979:** Hurricane Fredric destroyed the lake-side cabins and damaged the lodge and pier. The next year, new lake-side cabins and a camp store were built.

**1984:** The campground was evacuated when a large wildfire burned 1,500 acres.

**1985:** Hurricane Elena left the park in disrepair.

**1995:** Hurricane Opal damaged more park structures.

**1998:** Hurricane Georges brought further destruction.

**2001:** The beach pavilion was deemed unsafe from years of hurricane damage and was demolished.

**2004:** Hurricane Ivan made a direct hit, damaging the pier, lodge, and cabins.

**2006:** Eleven cottages, two playgrounds, and a new beach pavilion were built.

**2007:** The previous lodge was demolished, and the rubble was used as an artificial reef. Amenities were built at Romar Beach, Cotton Bayou, and Florida Point.

**2009:** The new 1,520 ft saltwater Education Pier opened.

**2010:** The campground opened a new swimming pool and renovated the laundry, camp store, and Nature Center.

**2010:** The Deepwater Horizon Oil Spill impacted the regional environment and significantly reduced area visits.

**2011:** The Nature Center classroom and outdoor amphitheater were completed.

**2011:** A wildfire in the park burned about 1,000 acres.

**2014: Enhancement Project initiated.**

# The Park's Environment

There are no other parks along the Gulf Coast with as many different ecosystems and as many acres preserved overall.

Gulf State Park is a very diverse park, with many different ecosystems within its 6,150 acres. The park includes:

- Evergreen Forests
- Pine Savannas
- Maritime Forests
- Dune Ridges / Sand Scrub habitats
- Fresh and Salt Marshes
- Freshwater and Brackish Lakes
- Coastal Swales
- Dunes
- The Beach And Gulf

As the largest contiguous preserved open space along the Gulf Coast with such a diversity of landscapes, the park is home to great diversity of wildlife and an important rest stop for migrating birds and butterflies. Some of the animal species that call Gulf State Park home are not found in many other places. For example, the Alabama beach mouse that lives in the park's dunes is a federally endangered species. Dune restoration will help the park be an even better home for this sensitive creature.

## SHAPED BY FORCES OF NATURE: THE PARK'S ECOLOGICAL AND GEOLOGICAL HISTORY

Gulf State Park has been shaped by the forces of nature for thousands of years. The area has experienced wild fires, wind, and hurricanes, and all of these natural occurrences have sculpted its landscapes.

The Gulf's shoreline has shifted over the years and in earlier times was much farther inland. The ridge lines that run through the park today mark the positions of previous shorelines.

These ridges are historic dunes, which were built up over many years as sand carried by the Gulf's longshore current accumulated. Over time, these natural processes gradually built a dune system outward and left ridges behind inland.

The park's ecosystems adapted to disturbances, rebounding from hurricanes, flooding, and fire in particular. Natural disturbances are caused by forces of nature, including weather, geologic and physical processes, and biological fluctuations.

---

FROM THE DUNES TO COASTAL LAKES AND WETLANDS TO UPLAND FORESTS, GULF STATE PARK BOASTS A TREMENDOUS VARIETY OF LANDSCAPES!





**Plant Communities**

-  Evergreen Forest
-  Mixed Maritime Forest
-  Pitcher Plant Bog
-  Upland Shrub/Scrub
-  Coastal Swale
-  Marsh
-  Fresh/ Brackish Water
-  Salt Water
-  Beach/ Dune
-  Existing Development
-  Roads

**Gulf State Park's Diverse Ecosystems**

# The Park's Diverse Ecosystems



## EVERGREEN FOREST

These pine flatwood plant communities are characterized by an upper tree canopy of longleaf and slash pine with saw palmetto beneath.

Slash pine  
Longleaf pine  
Live oak



## PINE SAVANNA

A close relative to the Evergreen Forest, but more open, Pine Savannas are highly diverse with a wide variety of orchids, asters, and sunflowers. Pitcher plants and other carnivorous plants are often in abundance. Historically maintained by frequent natural fire, savannas today are threatened by fire suppression, which allows more shrubs and trees to dominate the landscape.

## MARITIME FOREST

Maritime Forests are important rest stops for migrating birds on their annual journeys. These forests possess a mixture of pines and live oaks. Southern Magnolia is often present. The understory contains saw palmetto and bracken fern.



Wild Olive  
Common Persimmon  
Live Oak



Coralbean  
Yaupon  
Saw Palmetto  
Bracken Fern



White Tailed Deer



Southern Flying Squirrel



Wood Thrush

## DUNE RIDGE / SAND SCRUB

Coastal scrub habitats possess dry, sandy soils dominated by shrubs and small trees like myrtle oak, sand heath, and Florida Rosemary. Sand Pine and Sand Live Oaks are often present. These communities exist atop ancient dunes, and sand continues to move, blown by the wind.



Large leafed jointweed  
Sand live oak  
Sand pine  
Saw palmetto



Godfrey's golden aster  
Gulf coast frostweed  
Pinebarren flatsedge  
Purple sandgrass



Red fox



Eastern diamondback rattlesnake

## FRESH + SALT MARSH

Distinguished by permanently wet soils, marshes typically have plants like sawgrass and black needlerush. Marshes can be freshwater or brackish - a mixture of salt and fresh water. In both cases, they are fertile environments for plants and animals.



Slash pine  
Common buttonbush



Marsh fern  
Scarlet hibiscus  
Sawgrass  
Black needlerush



Golden topminnow



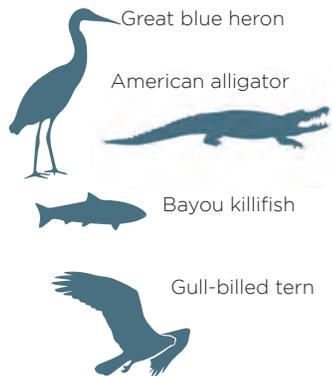
Southern leopard frog



Cottonmouth snake

## OPEN WATER

Coastal ponds are either freshwater or brackish, often alternating between the two. They serve as havens for large numbers of migratory birds and also are prime habitat for alligators and various fish.



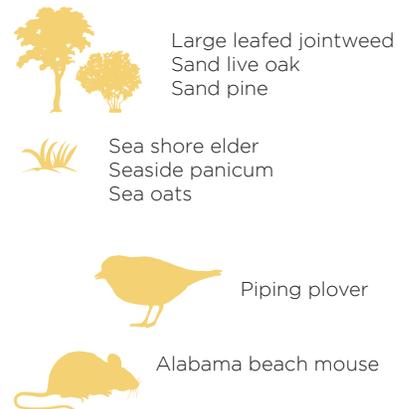
## COASTAL SWALE

Coastal swales are dry or wet depressions in sandy soils, found within the dune system. They are dominated by grasses and provide important habitat for a variety of wildlife.



## DUNES

The coastal dunes are a highly dynamic system formed through complex processes including shoreline erosion, Gulf currents, and prevailing winds. Dunes defend against storm surge and flooding. Vegetation varies from grasses along the beach edge to shrubs and trees further inland.



## BEACH + GULF

These areas are the open sand beaches fronting the Gulf. They serve as important foraging and nesting habitats for shorebirds, gulls, and terns.





SOME OF THE PARK'S ECOSYSTEMS, LIKE ITS PINE SAVANNAS AND MANAGED PINEWOODS, NEED FIRE TO STAY HEALTHY AND FUNCTIONAL.

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These obstacles had led to insufficient prescribed burning in the park for many years, ultimately contributing to the rapid, widespread impacts of a large fire in the park in 2011. Caused by a stray spark from a campfire grill during a drought, the fire spread quickly, eventually burning about one thousand acres. This fire would not have burned as intensely if regular prescribed burns had occurred.

Since this fire, the park has employed small-scale prescribed burns, but not all of the areas that need to be burned are burned as frequently as they need to be.

The immediate aftermath of a disturbance often looks devastating, but healthy ecosystems have an amazing ability to bounce back. In fact, disasters like fire and hurricanes are part of a natural cycle that is resilient and regenerative. These disturbances often play important roles in the long-term health of local ecosystems. For example, the threatened Southern Longleaf Pine needs fire to clear out undergrowth that out-competes its saplings. Sometimes the ecosystem will go back to its former structure, with the same plant and animal species. Other times, the disturbance will create something new by allowing new species to move in.

When wildfire cannot occur naturally, prescribed burns are often employed to help reset the ecosystem. Prescribed burning is essentially a

hybrid between human and natural disturbance. Regular burning helps remove low-lying brush, fallen leaves, and other organic material on the forest floor.

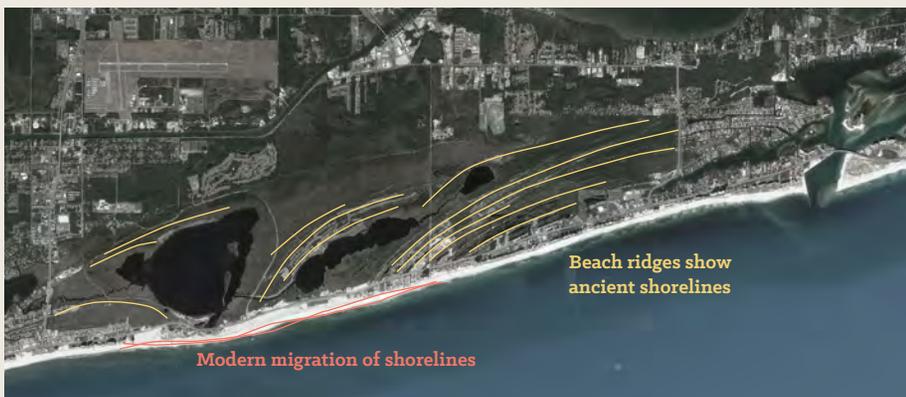
Without regular fires, these materials accumulate, and then when a fire occurs, it is much more intense, fueled by the build-up of materials. In a place like Gulf State Park, located adjacent to Orange Beach and Gulf Shores, prescribed burning can be difficult to implement. Fires cause smoke, which can be a nuisance for tourists and residents, and must be carefully controlled to ensure no unintended consequences occur. Clear communications are important to alert residents to scheduled burning, and burning must be conducted during appropriate weather conditions.

## NEW KINDS OF DISTURBANCES POSE NEW CHALLENGES TO PARK'S ECOSYSTEMS

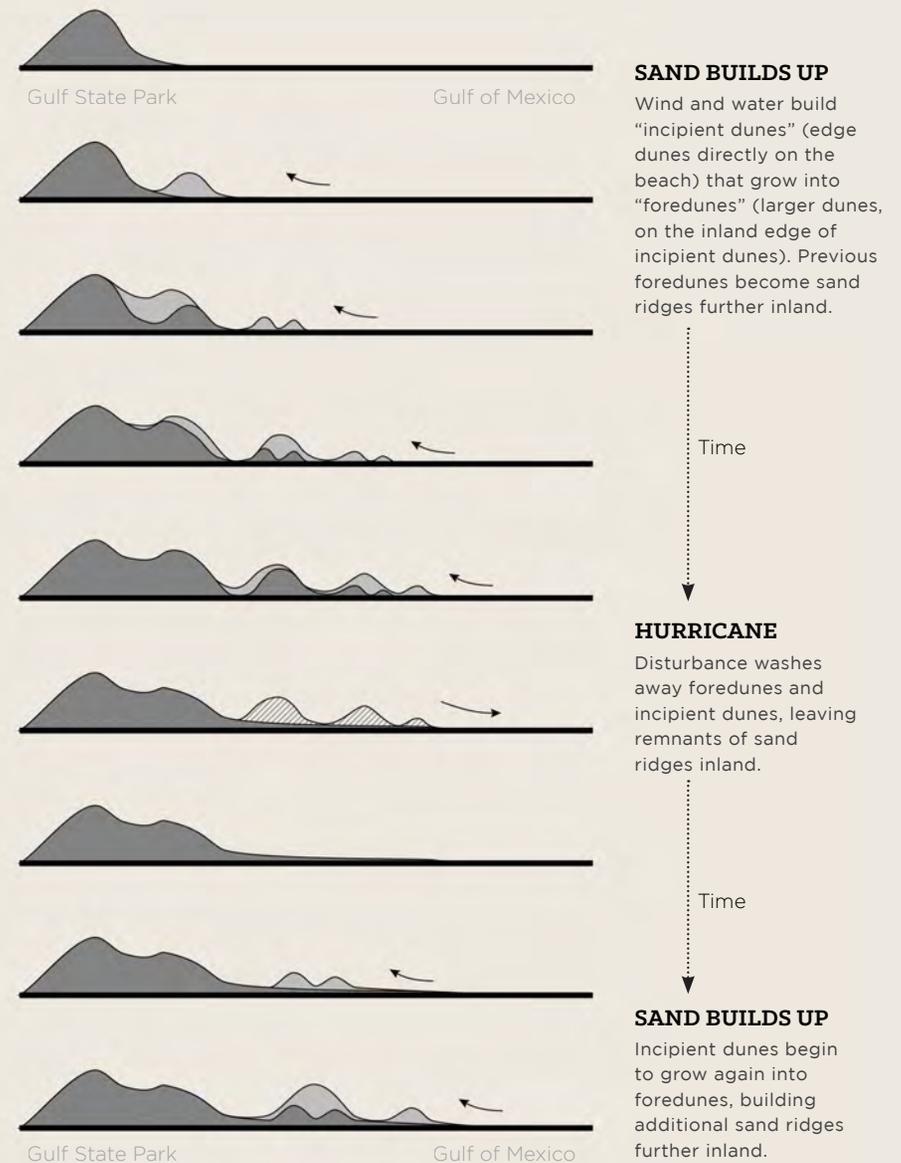
Not all disturbances are natural: in fact, many of the disturbances we see in ecosystems today have their roots in human actions. Common examples include pollution and clear-cutting of forests. Another human disturbance, the Deepwater Horizon oil spill is fresh in the minds of Gulf Coast communities. The long-term effects of this disaster are still being evaluated. Ecosystems can often recover from human disturbances in the same manner as natural disturbances, unless too many stresses build on one another or the disaster is too significant to allow the ecosystem's natural processes to rebound.

## BUILDING THE COASTLINE OF GULF STATE PARK

Beach ridge lines are an iconic and recognizable feature of Gulf State Park's landscape. These ridges are the remains of historic shorelines. Sediments brought up the coast by the longshore current build up here, gradually growing a dune system outward and leaving ridges behind inland.



## Historic Progression of Dunes



## EXAMPLE: PRESCRIBED BURNING AS TOURIST ATTRACTION

### Fire Fest, Jonathan Dickinson State Park, Florida

Fire Fest is an annual event at Jonathan Dickinson State Park to help visitors learn about prescribed burning and the important role it plays in maintaining ecosystems.

The festival occurs around Halloween and runs from lunchtime until after dark. Activities include:

- Two prescribed burn demonstrations (led by the Florida Park Service's District Five Fire Team) including explanations of the process and equipment
- Opportunities to ask the firemen questions
- Live music
- Campfire for marshmallow roasting
- Arts and crafts
- Live animal demonstrations by the Busch Wildlife Sanctuary
- Halloween-theme events like hayrides and a Spooky Trail

Learn more at:  
<http://www.friendsofjdsp.org/#!fire-fest/cliqh>

Other impacts can gradually grow and become a persistent challenge. Development in the region, for instance, is changing the Gulf's ecosystems. Fewer and fewer areas provide unbuilt natural areas that offer good homes - "habitat" - to local wildlife and migrating species. Development fragments habitat, reducing the size of suitable area overall and separating areas from one another. Stormwater runoff from homes, businesses, roads, and parking lots stress regional waterways. When it rains, developed areas are less able to absorb rainfall into the soil. Instead, more rain flows off building roofs and paved areas, picking up oil, dirt, and other pollutants along the way and ultimately impacting downstream water quality.

These stresses from humans can make it harder for the park's natural systems to rebound from disturbances. For example, Hurricane Ivan flattened the area's dunes, eliminating suitable habitat for the Alabama beach mouse. Historically, beach mice retreat to inland dunes ("tertiary dunes") during hurricanes, but regional development had eliminated almost all inland dune areas and roads created barriers that prevented the mice from accessing any remaining areas. Without a place to go, the Alabama beach mouse could not retreat from the hurricane, and following the hurricane the US Army Corps of Engineers declared the damage to the dunes had left none of them suitable for the beach mouse.



## DISCOVERY!

*Hypericum tetrapetalum*, a flowering shrub, was found in the park as part of the Master Plan research. This species was previously unrecognized in Alabama, so the site represents the first (and only) known occurrence in the state. This discovery expands the known range of the species!

## CREATING HEALTHY ECOSYSTEMS: THE ROLE OF STEWARDSHIP AND MANAGEMENT

People and development do not only do harm, however, to environmental health. In fact, active management is critical to the long-term health and resiliency of the park's ecosystems.

For example, "invasive plants" are non-native species like Chinese Tallow Tree and Cogon Grass that spread quickly when they are introduced to a new area, choking-out existing vegetation and disrupting natural cycles. (Kudzu

## LEARNING FROM THE REGION: MANAGEMENT STRATEGIES FOR HEALTHY PARKS

### Prescribed Burning



**Knoll Park, Fairhope.** Knoll Park contains one of the oldest natural stands of Longleaf Pine in the region. The city manages the area with regular prescribed burns, which regenerates pine saplings, clears out undergrowth, and promotes wildflowers.

IMAGE SOURCE: [HTTP://PHOTOS.AL.COM/ALPHOTOS/2014/10/KNOLL\\_PARK\\_RESTORATION\\_COMMITT.HTML](http://PHOTOS.AL.COM/ALPHOTOS/2014/10/KNOLL_PARK_RESTORATION_COMMITT.HTML)

### Stewardship & Education



**Weeks Bay National Estuarine Research.** The greatest threat to the Reserve's health ecologically is new development within the area, which tends to decrease water quality in Weeks Bay. Management at Weeks Bay includes a strong emphasis on education, to help visitors become better stewards of the park and their own communities.

IMAGE SOURCE: [HTTP://WWW.OUTDOORLABAMA.COM/VOLUNTEER-OPPORTUNITIES](http://WWW.OUTDOORLABAMA.COM/VOLUNTEER-OPPORTUNITIES)

### Rules & Regulations



**Bon Secour National Wildlife.** At Bon Secour, strict rules for visitors help preserve the park's ecosystems. For example, the park is open only during daylight hours and special events like weddings cannot take place in the Refuge. Visitors are not allowed to walk on the dunes, and walking on Little Dauphin Island is prohibited entirely.

IMAGE SOURCE: [HTTP://BLOG.AL.COM/LIVE/2013/04/BP-FUNDED\\_13\\_MILLION\\_DUNE\\_REST.HTML](http://BLOG.AL.COM/LIVE/2013/04/BP-FUNDED_13_MILLION_DUNE_REST.HTML)

### Invasive Species Control



**Invasive Species Removal.** Today, parks face "invasive" newcomers: non-native plants that out-compete native vegetation and disrupt natural cycles. Dauphin Island Bird Sanctuary has partnered with the Weeks Bay Foundation to help manage invasive species, including cogon grass and Chinese Tallow Tree.

IMAGE SOURCE: [HTTP://WWW.NPS.GOV/GATE/LEARN/NEWS/HABITAT-DEFENDERS.HTM](http://WWW.NPS.GOV/GATE/LEARN/NEWS/HABITAT-DEFENDERS.HTM)

is well-known example of an invasive that thrives elsewhere in Alabama.) The high winds and disruptive nature of hurricanes increase the spread of invasive species at Gulf State Park. Removing invasive species and restoring native plant communities is an example of active management needed to improve ecosystem health in the park.

Nature tourism and its subset ecotourism are growing industries, dependent on a healthy environment. Cultivating a culture of stewardship is another way the park can help improve the environment across the state. Visitors to the park can gain a greater awareness for natural ecosystems and can take this knowledge back home with them. By caring for our state's tremendous natural resources and landscapes, we can all do our part to help our home remain "Alabama the Beautiful."



## Key Opportunities: Environment

**Prescribed Burning:** Wildfires can threaten our homes and businesses, but they are also an essential component for the regeneration of some of Gulf State Park's ecosystems, like its pine savannahs. Prescribed burning is a strategy to use carefully managed fires to maintain the health of these ecosystems.

**Resiliency:** Hurricanes are a part of life on the Alabama coast, and their power often reshapes our coastlines and communities. This plan recommends considering recurring disasters in early stages of project planning, ensuring buildings and infrastructure are resilient in the face of hurricanes.

**Safe & Clean Landscapes:** While the Deepwater Horizon Oil spill in 2010 is fresh in the minds of Gulf Coast residents, pollution can also enter the park through inland waterways, air, and visitors. We should all do our part to preserve Gulf State Park.

**Dune Restoration:** Dunes are a dynamic system, constantly shaped by water and wind. Gulf State Park's engineered berm as well as ongoing regional beach nourishment projects have affected how the dunes function on a regular basis and during storms. Dune restoration efforts aim to build healthy dunes more naturally.

**Wildlife Habitat Conservation:** Gulf State Park's dunes and beaches are home to the endangered Alabama beach mouse and host seasonal nesting of loggerhead and Kemp's Ridley sea turtles.

**Cultivating Native Plants:** "Invasive plants" are non-native species that spread quickly when they are introduced to a new area, choking out existing vegetation and disrupting natural cycles. Management practices are needed to remove invasive species and help enhance and restore more robust native plant communities.

**Regenerative Design:** Design and build facilities and infrastructure that improve the environment.

**Nature Tourism:** Gulf State Park is a beloved local resource and also draws visitors from around the globe. Our interaction with the natural world is a critical component in fostering environmental stewardship.



# Park Activities & Accommodations

## DIVERSE ACTIVITIES: PLAY, LEARN, EXPLORE, STAY

Gulf State Park already offers many activities. For locals and visitors alike, the top draw of the park is its miles of beaches including the longest pier on the Gulf Coast. Opportunities to swim, splash, fish, and get out on the water abound!

Park visitors can also explore the backcountry trails on foot or on bike, visit the nature center, picnic with friends and family, watch for wildlife and enjoy the scenery, play golf, go ziplining, and more! Many of these activities benefit from the rich diversity of ecosystems in the park.

The Nature Center offers programs for school groups, campground and park guests, and opportunities for anyone who drops in to learn more about the special ecosystems, plants, and animals of Gulf State Park. The Nature Center's popularity is on the rise; over the past three years visitation has increased 177%. Its programs host over 9,600 participants every year, of which 25% are students visiting with a school group. The success of the Nature Center points to the growing demand to learn more about the park and the region's environment.

Demand has also been increasing for the rental opportunities in the park. In fact, the Pavilion is so popular, that it cannot keep up with demand. According to staff there were approximately thirty-five reservations at the Pavilion that could not be accommodated between April and October 2014. In addition, there were two

rentals that were not accommodated at the Activities Building. That's a combined total of \$23,350 in potential sales that were turned away.

## OVERNIGHT OPTIONS - DEMAND EXCEEDS SUPPLY

The park also offers several options for staying overnight. Cabins and cottages provide one, two, and three bedroom options along Lake Shelby and in a forested setting. Located on Middle Lake, the campground provides another option for guests. Almost all campsites are improved sites that include water, sewer and electric hookups (496 sites total). 11 newer tent-only "primitive" sites offer a more rustic experience within the campground.

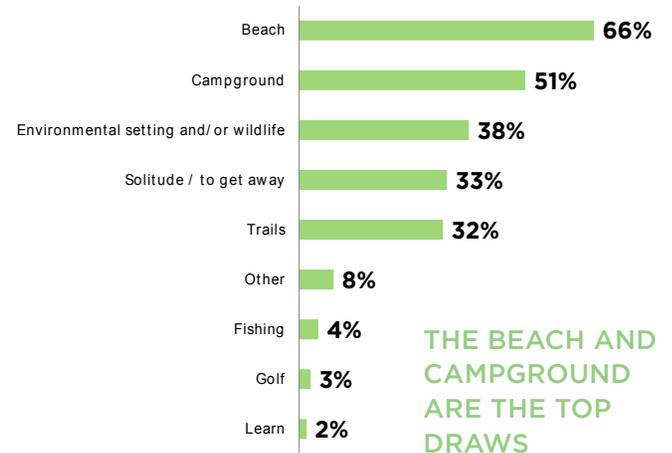
The campground functions as a community within the park, anchored by the central hub of the Nature Center, swimming pool, laundry, and camp store. The campground is full year-round, and in the winter, "snowbirds" flock to Alabama from Michigan, Indiana, Illinois, and other places across the Midwest, Canada, and beyond. These park residents return year after year. Because the campground is so popular, reservations throughout the year can be difficult to obtain. The newest addition to the camping options at the park is the "Gulf State Park Outpost," offering three canvas tents accessible only by the trail network.

Before Hurricane Ivan, the Gulf State Park Lodge was another popular park destination. Built

in the 1970s, this facility provided overnight accommodations at rates more affordable than the average beachfront hotel and also functioned as a community center, providing a space for local groups to meet while enjoying the lodge restaurant's renowned buffet. The loss of the Lodge following Hurricane Ivan has had significant impacts on the park, and the Alabama State Park system as a whole. The revenue from this facility helped support state parks across Alabama; ten years without this facility has been felt deeply in park budgets.

The loss of this facility has also limited the types of overnight accommodations available in the park. Not everyone is interested in camping, and with a limited number of cabins and cottages, it can be hard to get a reservation even months in advance.

## What are the top reasons you visit Gulf State Park?



## THE PARK TODAY

- Swimming in the Gulf, Lake Shelby, or the campground pool
- Wildlife watching - including birds and alligators like Lefty
- Site seeing
- Fresh and salt-water fishing
- Fishing & Education Pier
- Camping - 496 full hook-up campsites, 11 primitive tent sites, and 3 new backcountry canvas tent sites
- 11+ miles of Trails
- Refuge Golf Course, including 18 hole course, driving range, pro shop, and the Refuge Grill
- Nature Center & Amphitheater
- Activities Building
- Camp store
- Tennis Courts
- 20 Cabins and 11 Cottages
- Play areas
- Picnic Area & picnic shelters
- Gulf Adventure Center, including Hummingbird Ziplines
- Dog Park
- Geocaching (more than 130 caches in Gulf State Park)
- Butterfly Garden & Boulder Park
- Beach Pavilion



CLOCKWISE FROM TOP LEFT: GULF STATE PARK EDUCATION PIER, CAMPGROUND, PICNIC AREA

# The Park Today: Activities & Accommodations





**CONCENTRATIONS OF ACTIVITY TODAY:**  
MyGulfStatePark Feedback

Survey responses show where different kinds of activity are currently concentrated in the park. The campground and beach are “hot spots” in many of these maps, showing how these areas act as key gathering and community centers in the park.

“I MUST ADMIT IN LOOKING AT THIS MAP, I DID NOT REALIZE ALL THE ACTIVITIES THAT ARE AVAILABLE AT GULF STATE PARK. I LOOK FORWARD TO OUR NEXT VISIT AND TAKING ADVANTAGE OF THE ZIPLINE, SEEING ALLIGATOR ISLAND AND EXPLORING OTHER PARTS OF THE PARK.”

—Survey Respondent

# You Asked for Many Different Kinds of New Activities!

Sample responses from MyGulfStatePark Survey

- The park is perfect now but anything parents or grandparents could do with their kids.
- Evening concerts, park ranger hosted multi-class educational courses, guided kayak tours for beginners.
- We wish the Lodge would be rebuilt.
- More Campground options.
- Better playground in campground for children.
- Short term fishing license should be available at a reasonable cost.
- Separate trails for bikers and walkers.
- Festivals, food, crafts, music.
- None, keep it a natural park area with low noise so we can enjoy the nature. We do not need to be entertained in the park.
- Concerts in the campground.
- Fishing seminar.
- Photography weekends.
- Fewer of everything. The park is being overdeveloped and overrun.
- Miniature golf, boat rentals and pontoons.
- Bird watching weekends like they have at Guntersville.
- Better picnic areas.
- More lodging options and restaurants.
- Canoe, kayak and bike rentals.
- It's perfect. One of our Alabama favorites.
- More interactive environmental education programs.

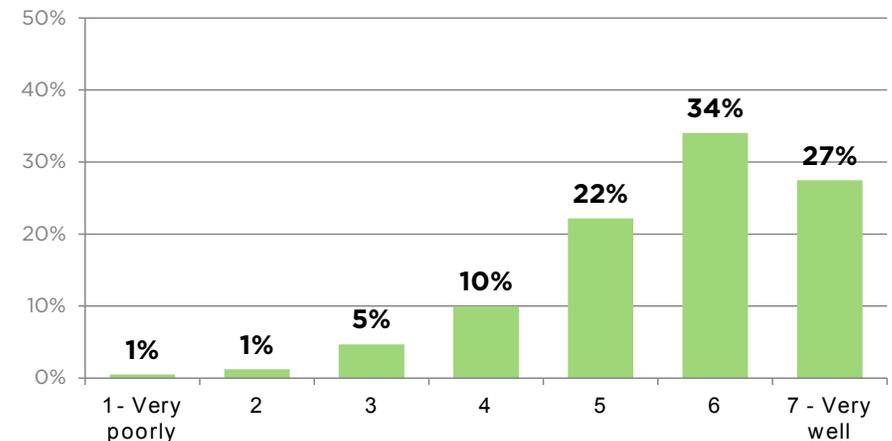
## That's a lot of variety!

As you can see, different visitors imagine a very broad range of new activities at the park. How can we provide a range of activities and accommodations - and maintain places for quiet reflection?



GULF STATE PARK  
OUTPOST CAMPSITES -  
THE NEWEST ADDITION  
TO OVERNIGHT OPTIONS  
AT THE PARK

## My Gulf State Park Survey Results: How well is the park maintained?



## Key Opportunities: Park Activities & Accommodations

**Nature tourism opportunities:** Broaden the range of activities and overnight accommodations to make Gulf State Park an unparalleled nature tourism destination on the Gulf Coast. Nature tourism is a type of travel that focuses on visiting natural destinations.

**Wayfinding and publicizing park's amenities:** Not all of the park's great features are well known. The Nature Center, for example, functions as a beloved community center in the Campground, but non-campers do not always realize it exists. For example, one survey comment said, "We've been staying in the park for 15 years now and just last year went to the Nature Center for the first time. We should have been visiting it sooner. Great place!" How can it be easier for park visitors to learn about all the great activities and places to see in the park?

**Think of the whole park as a classroom:** What are the opportunities to build on the success of the Nature Center and deeply integrate learning and environmental education into all aspects of the park experience?

**More overnight accommodations:** The park is so popular that demand for the campground, cottages, and cabins exceeds the available supply. More overnight beds are needed to give more park visitors the opportunity to stay overnight.

**Greater variety of overnight accommodations:** Rebuilding the Lodge will provide a greater range of overnight accommodations for park guests. Opportunities also exist to expand primitive camping by adding more places to pitch a tent in remote parts of the park and to provide new kinds of camping options like yurts. Providing a greater variety of overnight options makes the park accessible to a broader range of visitors.

**More rental opportunities for group gatherings:** Because the Pavilion cannot keep up with demand, potential revenue is turned away. Adding additional rental facilities that can accommodate weddings, family reunions, and other gatherings are needed. The facilities could be located to take advantage of the variety of natural experiences and ecosystems of the park, including Lakefront and forest settings.

**Keep it affordable:** Significant input has described the importance of keeping the Gulf State Park experience affordable for Alabamians. The range of overnight accommodations should also include a range of prices.



# Mobility: Getting Around the Park

## BACKCOUNTRY TRAILS ARE A TREMENDOUS RESOURCE, BUT ARE CHALLENGED BY THEIR OWN POPULARITY

The Hugh S. Branyon Backcountry Trail system is one of the most popular elements of the park, drawing bicyclists, runners, and walkers. More than 14 miles of trails provide access to the northern and eastern parts of the park, through forested areas, along ridgelines, and alongside wetland pockets. Orange Beach has been an important partner for Gulf State Park helping with the initial development of the trail system and with continuing maintenance.

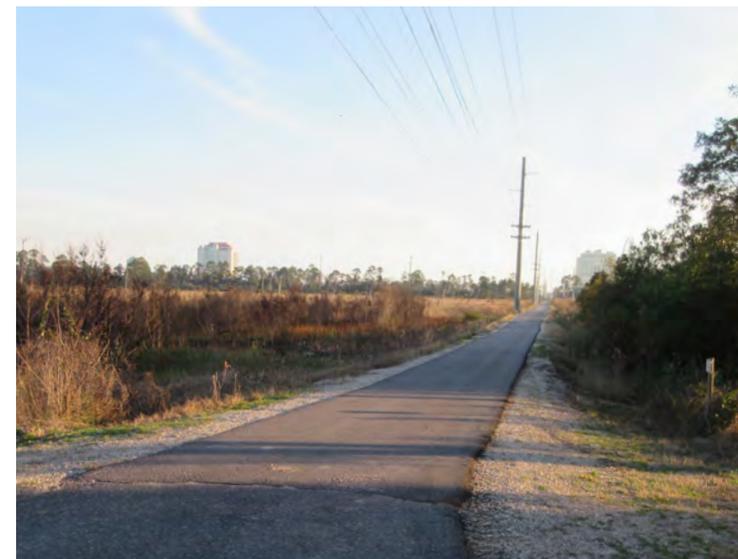
One of the highlights of the trail network is the Pavilion, Butterfly Garden, and Boulder Park located near the intersection of the Catman Road and Rosemary Dune trails. This multi-functional hub offers something for all ages and is a popular draw into the park. The trails offer frequent benches, mileage markers, and are well-signed.

Trails are so popular, however, that they can feel over-crowded. Fast bicyclists, casual riders, hikers, and families all share the same trails. All trails are paved, which creates an even, level surface for all users. This helps park users of all abilities use the trails, but it also contributes to conflicts between road bicyclists who ride quickly and other trail users. Bird watching or quiet, solitary enjoyment can be hard to find with so many other trail users. Currently, the

only place to rent a bicycle in the park is in the campground, and renting a bicycle requires calling ahead-of-time to make a reservation.

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CLOCKWISE FROM TOP: THE BACKCOUNTRY TRAILS LET PARK VISITORS EXPLORE THE PARK'S SCENIC LANDSCAPES; POWERLINE TRAIL ; HOW COULD PARK GATEWAYS BE MORE SIGNIFICANT AND HELP CARS REALIZE THEY ARE ENTERING A STATE PARK?





-  Vehicular Parking
-  Existing Trailhead
-  Backcountry Destination
-  Bicycle Rental
-  Paved trail

## Gulf State Park Existing Road & Trail Network

## GETTING AROUND OTHER PARTS OF THE PARK TYPICALLY REQUIRES A CAR

Gulf State Park is accessible by many roads. At the southern edge of the park, Perdido Beach Blvd provides access to the park's beaches and Beachfront destinations like the Education Pier and Pavilion. A loop road comprised of State Park Road 2 and AL HWY 135 runs around Lake Shelby, providing access to the Campground, Refuge Golf Course, cabins and cottages, and Park Headquarters. AL HWY 135 continues and connects with Ft Morgan Road (AL HWY 180) at the park's northeastern entrance. AL HWY 161 runs along the park's eastern border and provides access to the eastern trailhead of the Backcountry Trail.

Outside of the trail network, it is more difficult to get around without a car for most park visitors. The internal park roads have a 35 mph speed limit, but wide lane widths and a low number of cars contribute to speeding. Riding on these roads on a bicycle is uncomfortable for all but the most experienced cyclists. Park roads do not have sidewalks. As a result, many park guests opt to drive between different parks of the park, even for short distances. Crossing Perdido Beach Blvd is dangerous and discourages walking to and from the beach. The volume of traffic and high speeds (>45 MPH) of the road are barriers between the beach and inland parts of the park. Drivers run red lights in the park, especially at the State Park Road 2 intersection, so crossing even at designated points in a crosswalk can be dangerous for

pedestrians and bicyclists. In addition, existing crosswalks do not have much room to stand while waiting for the light to change.

The west side of the Lake Shelby loop along AL HWY 135 does include a narrow bicycle lane, but the rest of the loop does not. Perdido Beach Blvd includes a bike lane, which is helped by a few foot separation from the driving lane. These existing bicycle lanes are not enough to provide safe and convenient bicycle access to all destinations within the park.

The largest vehicle, pedestrian, and bicycle conflict zone is the State Park Road 2 / Perdido Beach intersection north to the campground entrance off State Park Road 2. This stretch of road is used by traffic cutting through the park, park guests, and also any campground guests - including families - walking or bicycling to the beach. Today, there is a sidewalk along a portion of the road, but it does not fully connect to the beach. There is no designated bicycle lane, and only a very narrow shoulder.

“IT’S UNSAFE  
TO GET  
AROUND  
ANY WAY  
OTHER THAN  
DRIVING.”

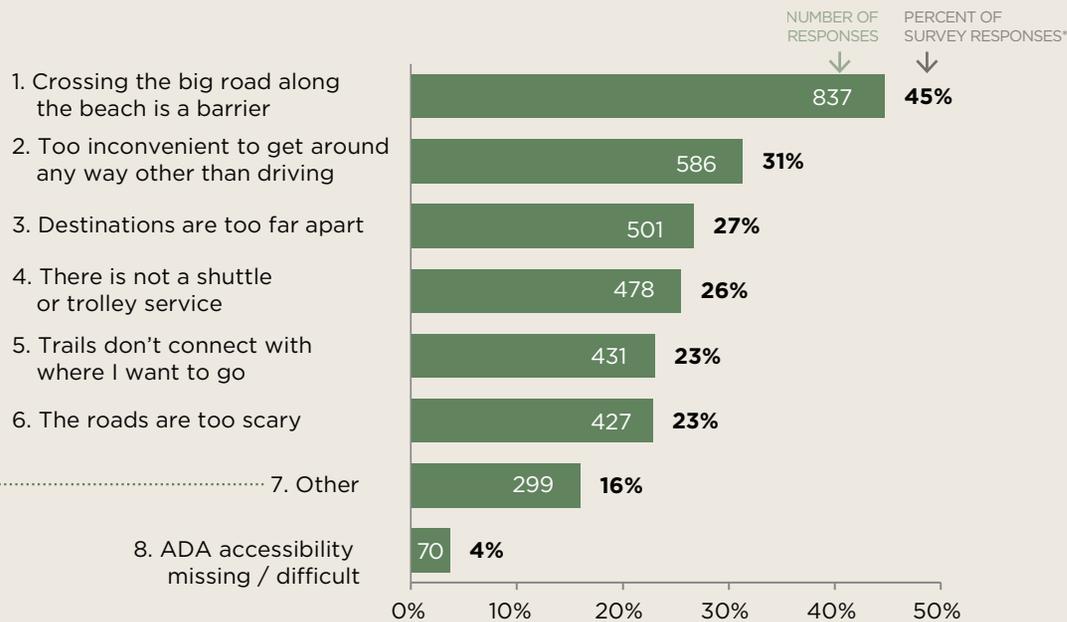
— Southern Alabama  
resident and park visitor.  
MyGulfStatePark Survey

RIGHT: CROSSING PERDIDO  
BEACH BLVD. CAN BE  
DANGEROUS FOR PEDESTRIANS



# Improving walking and bicycling was the #1 priority for locals and the #2 priority for visitors

## WHAT FACTORS DISCOURAGE WALKING & BICYCLING TODAY?



\* survey takers could select more than one answer, so percentages do not sum to 100%

### “Other” - 5 most frequent responses

- It's already easy to get around by bicycle or walking (4% / 69 answers)
- I'm not able to walk or bicycle (health, age, etc.) (2% / 40)
- There aren't enough paths, sidewalks, and/or bicycle lanes (2% / 31)
- There's too much traffic / It's not safe (1% / 21)
- Weather / It's too hot and humid to walk or bike! (1% / 13)

## WHAT WOULD IMPROVE BICYCLING?

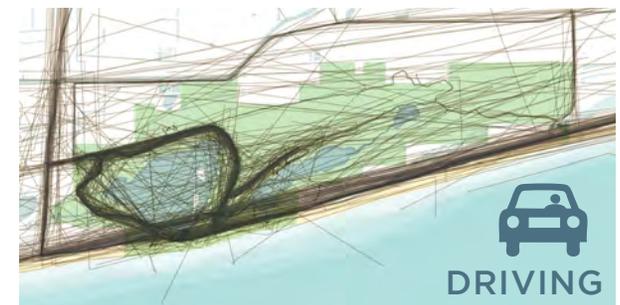
“THE SHOULDER/BIKE LANE FROM THE CAMP ENTRANCE TOWARD THE GOLF COURSE IS ALMOST NONEXISTENT.”

“SEPARATE TRAILS FOR BIKERS AND WALKERS.”

“NEED SIDEWALKS THROUGHOUT PARK.”

“CARS AND BIKES ARE ALLOWED TO GO TOO FAST; SPEED LIMITS ARE NOT ENFORCED.”

STATE PARK ROAD 2 TODAY: WITH WIDE LANES AND FAST-MOVING TRAFFIC, THIS ROAD CAN BE DANGEROUS. HOW CAN WE MAKE IT SAFER FOR FAMILIES AND PARK VISITORS WHO WANT TO WALK OR BICYCLE TO THE BEACH?



## PARKING AT GULF STATE PARK IS CONVENIENT BUT HAS ENVIRONMENTAL IMPACTS

The large parking lots along the beachfront at the Education Pier and Pavilion reflect the high percentage of park mobility that occurs by car today. Currently, all park destinations include a separate parking lot; the park as a whole has more than 1,100 parking spaces currently spread across 19.6 acres of parking lots (that's half the size of Little Lake!).

Inconsistent pricing leads to overuse of some

lots and less use of others. In Gulf State Park, park guests do not need to pay to park at the Pier, but parking at the Pavilion is \$6 per vehicle. The pier lot more often nears capacity in the summer; the pavilion lot rarely fills up. Even on summer weekends, the pavilion lot can be less than two-thirds full. In contrast, parking at Romar Beach and Cotton Bayou is free, and parking demand exceeds the available supply of spaces. Cars that cannot find a designated parking spot end up parking partially off the pavement, impacting adjacent dunes. A beachfront tram or trolley could provide access to the park's beach access points, providing a

THE MAPS ABOVE SHOW ROUTES IN GULF STATE PARK TRACED BY SURVEY RESPONDENTS AS PART OF THE MYGULFSTATEPARK ONLINE SURVEY. STATE PARK ROAD 2 AND PERDIDO BEACH BLVD. ARE MAJOR CONFLICT AREAS BETWEEN VEHICLES AND PEDESTRIANS / BICYCLISTS.

# How did the beach mouse (and other critters) cross the road?

Roads connect people with destinations, but they can have the opposite effect on wildlife, creating barriers between different parts of animals' homes.

Small tunnels or passages under roads can help animals move more safely. The design of these passageways should consider:

- Openings sized appropriately for the species being considered (for example, gopher tortoises would need a larger opening than a beach mouse)
- Low-scale fencing or barriers may be needed to direct animals to the safe crossing point



IMAGE SOURCE: [PARKSAUSTRALIABLOG.FILES.WORDPRESS.COM/2013/11/CRAB-BRIDGE-IN-USE-NOV-2013-ROB-MULLER1.JPG](http://PARKSAUSTRALIABLOG.FILES.WORDPRESS.COM/2013/11/CRAB-BRIDGE-IN-USE-NOV-2013-ROB-MULLER1.JPG)

## Red Crab Overpass

Australia

In Christmas Island National Park, over-road bridges are helping the annual migration of the red crabs. Scientists found crabs would not use underpasses, possibly because dark underpasses could feel like entering burrows of predators.

## Frog Crossings

France, Switzerland, and Belgium

Several European Countries have implemented small-scale wildlife crossings for frogs. Tunnels are placed at 50 meter intervals, and fencing guides animals to the underpasses.



IMAGE SOURCE: [HTTP://WWW.ACTU-ENVIRONNEMENT.COM/MATERIELS-SERVICES/PRODUIT/SOLUTION-CRAPAUDUC-CORRIDOR-ECOLOGIQUE-POUR-BATRACIENS-ET-PETITS-ANIMAUX-1883.PHP](http://WWW.ACTU-ENVIRONNEMENT.COM/MATERIELS-SERVICES/PRODUIT/SOLUTION-CRAPAUDUC-CORRIDOR-ECOLOGIQUE-POUR-BATRACIENS-ET-PETITS-ANIMAUX-1883.PHP)



IMAGE SOURCE: [HTTP://ENVI2BIO.COM/2011/07/03/52-GESTES-POUR-AGIR-EN-FAVEUR-DE-LA-BIODIVERSITE-8/CRAPAUDUCS/](http://ENVI2BIO.COM/2011/07/03/52-GESTES-POUR-AGIR-EN-FAVEUR-DE-LA-BIODIVERSITE-8/CRAPAUDUCS/)

way to get to the beach from nearby hotels, restaurants, homes, and businesses without getting in a car.

In other parts of the park, parking is free, although there is a \$2/vehicle charge to enter the campground as a guest.

These large parking lots provide convenient parking, but they impact the environment. Paved areas are “impervious”; they do not absorb water like natural areas. When rainfall runs off parking lots, it carries with it oil, trash, and other debris, which impacts the surrounding areas. Paved areas are also hotter than more vegetated areas, known as the “heat island” effect. Paved areas take up space that could be providing home to more local wildlife and migratory birds.



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TOP: ON A SATURDAY AFTERNOON IN MID JUNE, THE PAVILION PARKING LOT IS NOT AT CAPACITY.

BOTTOM: IN CONTRAST, PARKING AT ROMAR BEACH, WHICH IS FREE, EXCEEDS CAPACITY.

## GULF STATE PARK PARKING SUMMARY

Location	Car-sized spaces	Longer spaces (suitable for RV, bus, or boat trailer)	Paved Acres	Price
Pier	241	0	2.2	Free
Pavilion	452	16	4.6	\$6 / car
Picnic Area / Gulf Adventure Center	103	13	3.9	Free*
Campground central lot (does not include campsites)	97	12	1.9	\$2 / car for non-campers to enter campground
RV Lot	0	Approx. 160	2.9	\$50 / month
Park Headquarters	41	0	0.5	Free
Golf Course	183	0	1.5	Free
Trailheads	48	0	0.9	Free
Romar Beach Access	42	0	0.6	Free
Cotton Bayou Beach Access	103	0	0.8	Free
<b>TOTAL</b>	<b>1,310 spaces</b>	<b>200 spaces</b>	<b>19.8 acres</b>	

\* Historically, it did cost about a dollar to park in the picnic area, but following the addition of the Gulf Adventure Center, the parking fee was eliminated.



### GREAT EXAMPLE: A DIFFERENT KIND OF BEACH EXPERIENCE

*Topsail Hill Preserve State Park, Florida*

Down the coast, 30A and Topsail Hill Preserve State Park in Florida are two areas known for a different kind of beach experience, characterized by smaller-scale beach access points that are not dominated by large parking lots.

Gulf State Park offers its own unique kind of beach experience, but it could learn from the success of these other places. By minimizing parking lot sizes and adding more trees for shade, visitors will be able to enjoy the views of the Beach without seeing as much pavement!

AT TOPSAIL HILL, THE ONLY WAY TO GET TO THE BEACH IS ON FOOT, BY BICYCLE, OR BY TAKING THE PARK TRAM. THE ENTRANCE TO THE BEACH (SHOWN ABOVE) INCLUDES A TRAM STOP AND BICYCLE RACKS - NO PARKING FOR CARS AT ALL!



PICNIC AREA PARKING



AL 135



THE CAMPGROUND POOL IS A POPULAR DESTINATION

## Key Opportunities: Park Mobility

**Create an integrated multi-modal circulation system that invites exploration and discovery while providing convenient, safe access for all.** How can moving through the park be part of the park experience? The journey between different parts of the park can be an opportunity for learning and fun in itself. There's a need to provide a greater variety of options so people have more choices about how they get around - bicycle, car, tram, or on foot. Let's make the park a place where visitors can park once and then explore!

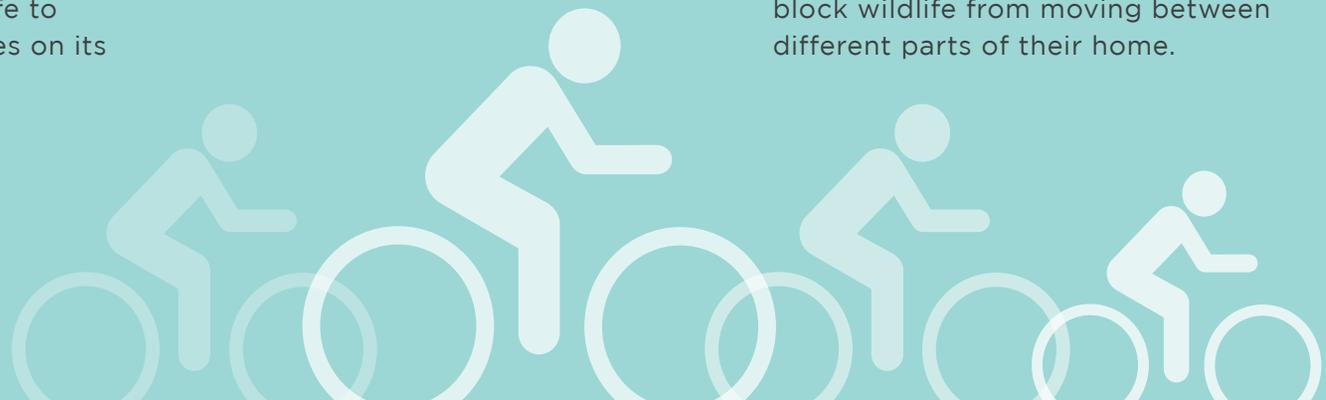
**Safer Beach Access:** Perdido Beach Blvd (AL HWY 182) is a major east-west thoroughfare along the beach. In the park, this road can be tricky for pedestrians and bicyclists, who must cross it to travel from inland parts of the park to the beach. Improving crossings would make it easier to walk across this high-speed road. In addition, this road runs through the edge of the main dunes, and hinders the natural flow of sand and wildlife to inland secondary and tertiary dunes on its northern edge.

**Enhance, diversify, and extend the trail network:** The Hugh S. Branyon Backcountry Trail system is one of the park's greatest features. Extending the system and providing a greater diversity of trails will make the trail network work even better for park visitors.

**Gateways & Identity:** Today, it is easy to drive through Gulf State Park and not realize you are inside the park. Signs mark entry points, but they are easy to overlook. Improving the character of park roads could enhance the park experience, providing a more clear and inviting moment of entry when someone arrives at the park.

**Greener, smaller parking lots:** Opportunities to "green" the existing parking lots by adding trees would help them be more hospitable for park guests and also less harmful to the park. Scaling back some of the larger lots could improve the visitor experience by creating a more intimate beach experience and reduce the negative impacts of large paved areas on the park. Let's improve mobility choices - making walking and bicycling safer - so park visitors have the option to get around without getting in a car.

**Safe Park Roads:** State Park Road 2 and AL HWY 135 provide convenient car access around Lake Shelby, but the speed of auto traffic makes this loop uncomfortable and unsafe for bicyclists. Design and traffic calming could help create an environment where bicyclists feel welcome and can ride safely. In addition, considering under-road crossings along park roads would create crossing opportunities for park wildlife. Currently, roads can create barriers that block wildlife from moving between different parts of their home.



# Communications & Messaging

## A HIDDEN JEWEL?

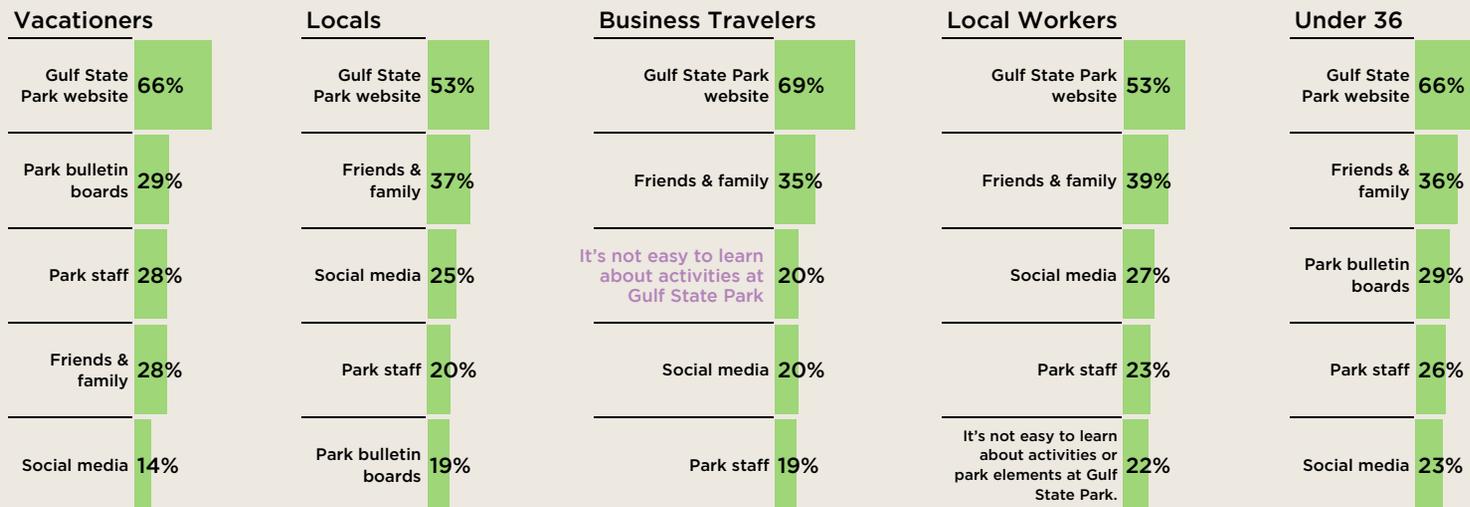
Gulf State Park is known for its beach, Backcountry Trail, and campground, but the overall diversity of activities and ecosystems is not as widely known. The online survey found only one quarter of respondents thought the park was well or very-well known; in contrast forty percent thought others knew little or nothing about the park. Twenty percent of business travelers who took the survey said that it was difficult to learn activities and park elements.

The most common way survey takers reported learning about the park is through its website; in second place is information from family and friends. The State Park System updated their website within the past year, which will help improve marketing. Gulf State Park also added a marketing position recently, filling a critical previous gap. This position, however, is also responsible for managing events - quite a lot for one person! Supporting marketing is critical for creating an economically park.

“ENJOY LEARNING ABOUT WILDLIFE, FLORA AND FAUNA. IS THAT AVAILABLE HERE?”

— Survey Respondent, Vacationer from AL

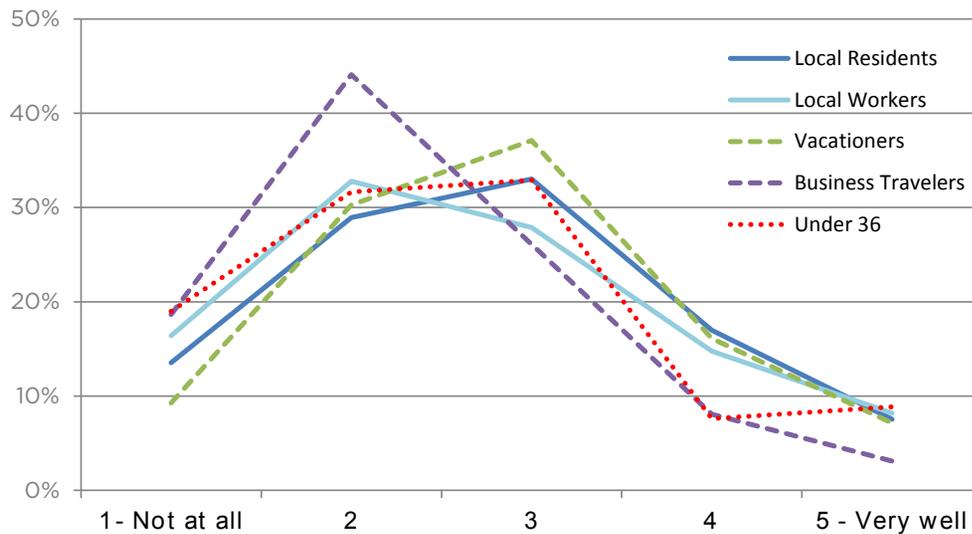
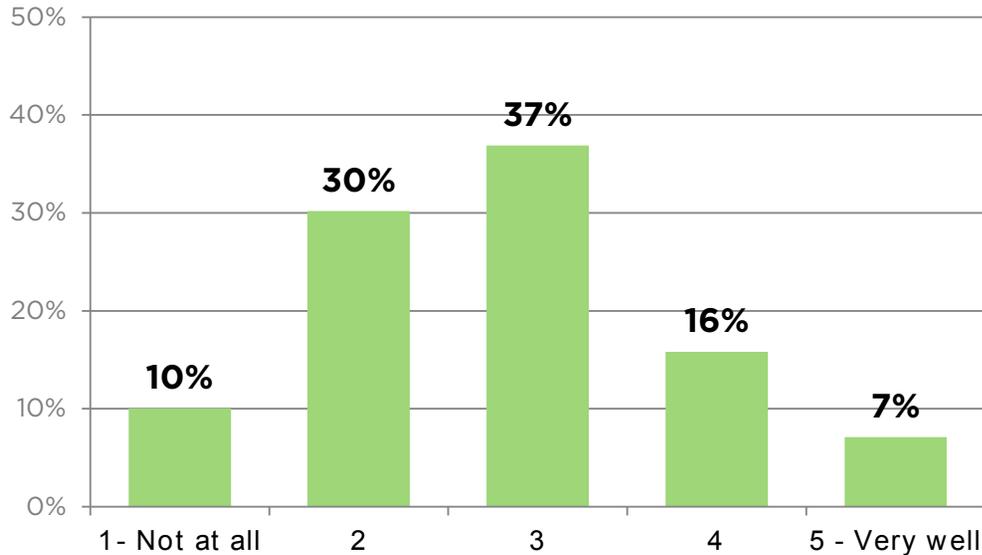
## How do you find out about activities and special resources at Gulf State Park? Top 5 responses shown.



THE WEBSITE IS THE GO-TO FOR LOCALS AND VISITORS ALIKE.

20% OF BUSINESS TRAVELERS SAY IT IS DIFFICULT TO LEARN ABOUT GULF STATE PARK.

How well do you feel most people know about Gulf State Park, including its wide range of activities and its special ecosystems?



My Gulf State Park Survey Results

## Key Opportunities: Communications, Messaging, & Branding

**Develop a new brand for Gulf State Park:** A new brand brings more visual recognition and creates consistency across diverse elements of the park, enhancing the visitor experience.

**Continue to expand support for marketing of park:** Marketing is key to spreading the word about all the park has to offer and drawing more participants in its programs and activities.

**Promote Gulf State Park and the AL Gulf Coast as a region:** Orange Beach, Gulf Shores, Foley, and Gulf State Park could work together to promote the wide range of activities and destinations available in the region. This will help increase awareness of many destinations in the area and encourage visitors to stay longer by seeing all the different things they could do during a visit.

# Economic Context

## TOURISM DRIVES THE REGIONAL ECONOMY AND IT IS HIGHLY DEPENDENT ON A HEALTHY ENVIRONMENT

The Gulf Shores and Orange Beach market draws visitors from across the southeastern United States. The beach and mild climate attract visitors year-round, peaking during the spring and summer months, though a significant number of “snowbirds” spend the winter in this area and in the park. In the past year, 1.5 million people visited the Alabama Gulf Coast. The beach predominantly attracts visitors that live within a day’s drive of the area, though 60% of them come from out of state.

Tourism is the key driver of local economies, and it is highly dependent on the health of the region’s ecosystems. The Deepwater Horizon Disaster in 2010 showed the strong links between economy and environment. Without healthy, clean beaches, tourism plummeted.

The Baldwin County economy relies significantly on the tourism industry to create jobs and generate tax revenues. Over eighty percent of the existing jobs in the county are within the service industries, primarily in the retail trade, accommodations, and food sectors. The economic impacts of tourism are significant: in 2013, people visiting Baldwin County spent

\$3.2 billion in travel related expenditures and supported 45,000 workers employed in travel-related jobs. Baldwin County generated the largest portion of the state of Alabama’s lodging revenues with more than \$16.3 million in lodging tax collections.<sup>1</sup> The tourist economy brings challenges from a workforce perspective. It can be hard for business owners to find and retain skilled employees with the region’s seasonal ebbs and flows. Seasonal jobs are plentiful, but year-round jobs are harder to find. In addition, workers face challenges finding affordable housing in a convenient location.

The loss of the former Gulf State Park Lodge following Hurricane Ivan in 2004 has impacted the regional economy, especially for business visitors. Currently, the market demand for meeting exceeds supply along the Alabama Gulf Coast. Alabama groups instead travel to neighboring states for meetings, a lost opportunity for the state economy. Local tourism groups see business travelers as an important market because of potential spin-off benefits. With a great experience, these visitors could find an opportunity for a new business deal, project, or office, helping increase employment in the area and also contributing to the real estate market.

<sup>1</sup> 2013 Baldwin County Economic Impact of Tourism

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## QUICK FACTS:

- Gulf State Park receives 2,000,000 visitors annually.
- The Nature Center hosts 40,000 visitors per year.
- Over the past three years, the Nature Center saw a 177% increase in visitation. Its programs host over 9,600 participants every year, of which 25% are students visiting with a school group.
- “Snowbird” programs that run between November and March attract approximately 11,000 participants annually.

*(Source: Gulf State Park)*

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\$ Investment for Park Improvements



# GULF STATE PARK

INCREASED VISITATION & INCREASED LENGTH OF STAY

Investments in Gulf State Park benefit the economic health of local communities and the region

## direct benefits



New Jobs Created (short and long term jobs)

New Employment Wages

Purchasing Goods from Suppliers

## indirect benefits

New Spending by Suppliers

New Spin Off Jobs

New Employment Wages

## induced benefits

Employees spending their income in the local economy and subsequent re-spending by other businesses and employees

## fiscal impacts

New Tax Revenue from Increased Sales Tax, Lodgings Tax, Rental Tax and Wage Tax Returns

## spillover benefits

FOLEY  
GULF SHORES  
ORANGE BEACH



New Tourism Spending

New Local Businesses

New Jobs and Wages

## GULF COAST COMMUNITIES

The Gulf Coast region is made up of diverse communities that vary in size, income, and age. In comparison to the rest of the state, these communities tend to have an older population with higher income. Baldwin County's population has increased by more than seven percent since 2010 and is expected to continue growing at a rapid pace. This growth will increase visitation to the Park, which will become an even more important amenity to local communities, especially Foley, Gulf Shores, and Orange Beach.

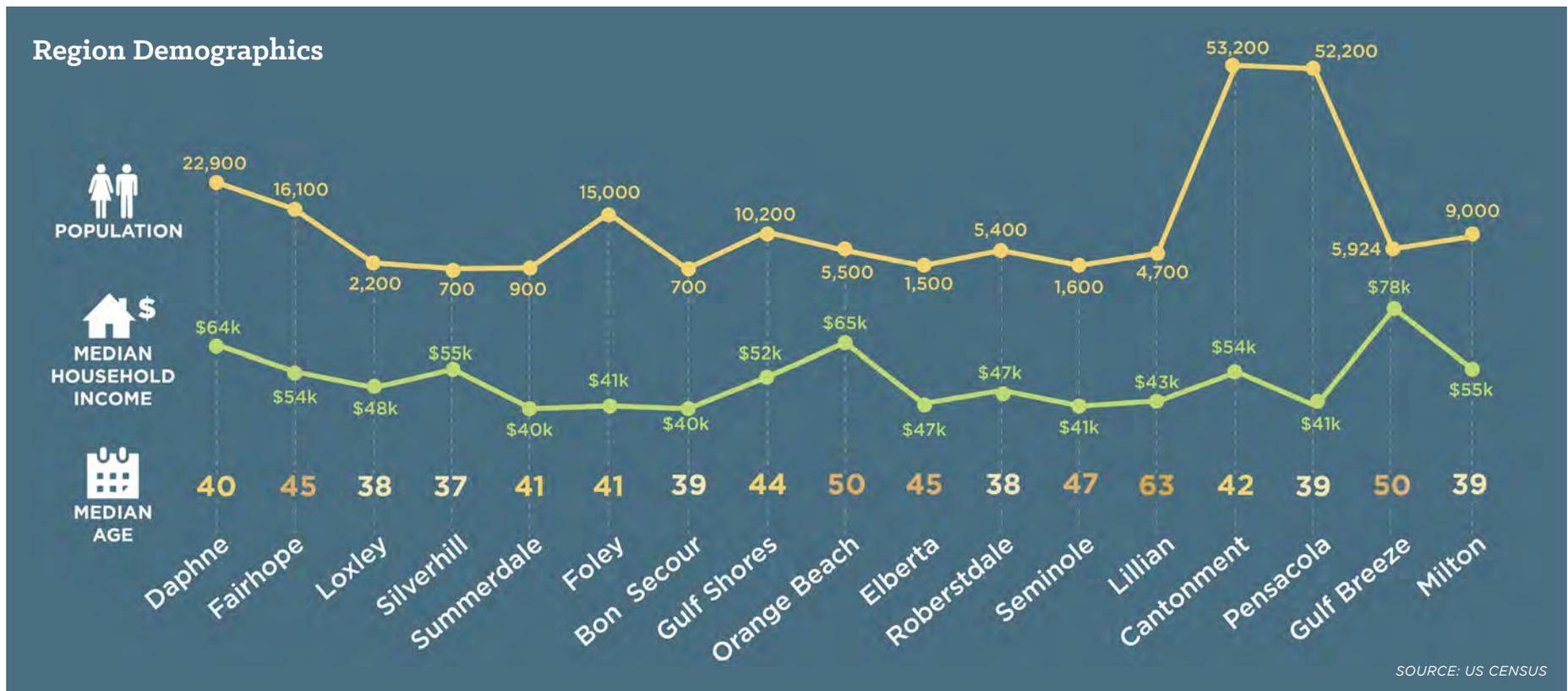
## SPIN-OFF OPPORTUNITIES: LOCAL & STATEWIDE

Gulf State Park supports regional economies by attracting visitors to the area. Park visitors support local economies by dining in local restaurants and shopping in stores.

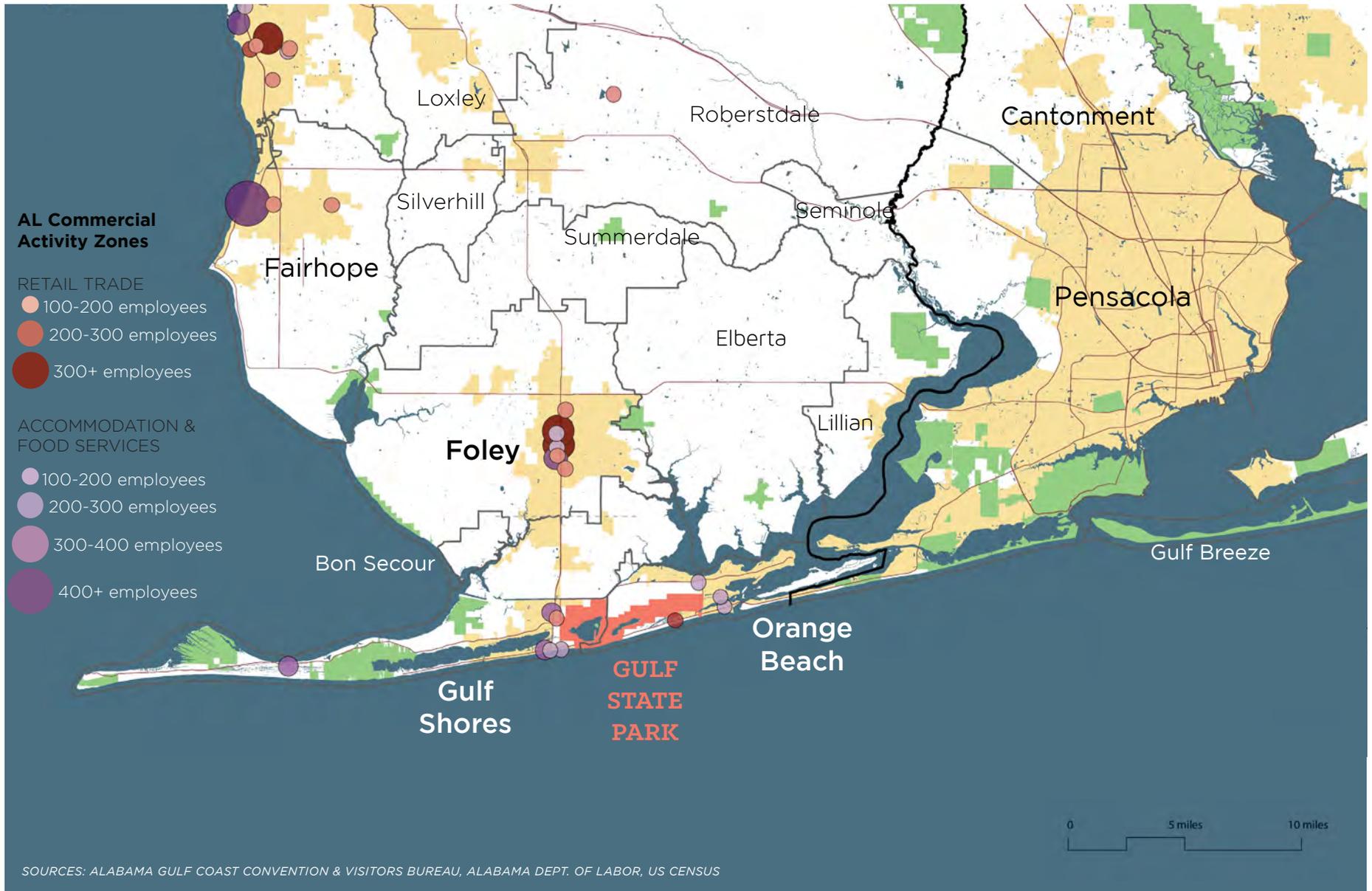
Gulf State Park also plays an important economic and environmental role across the state. The revenue from Gulf State Park helps support the Alabama State Park system, accounting for 23% of the total annual guest

revenue in 2012.<sup>2</sup> With the enhancements of this Master Plan, the park will be poised to contribute more to the overall system, but it will be important to also retain sufficient funding internally to allow for reinvestment and maintenance at the park, ensuring financial benefits can continue for years to come.

<sup>2</sup> Alabama State Parks: A Reflection on 75 Years of Successful Public Service



## COMMERCIAL, HOSPITALITY, AND RETAIL CENTERS



## ALABAMA STATE PARKS' ECONOMIC CONTEXT

**The Alabama State Park System's challenging economic outlook points to a need for more revenue-generating uses in parks**

Alabama State Parks operate under a user-pay model. This means that state taxes do not support State Parks. Instead, 80 to 90 percent of the annual funding comes from customer fees.<sup>1</sup> The remaining funding has historically come from cigarette and use tax revenues, but securing these funds has proven more and more difficult.

For the past five years, the park system funding has been transferred to the general fund to

<sup>1</sup> In contrast, the percent of operating expenses covered by guest revenue in neighboring states ranges from 44% (Tennessee) to 66% (Mississippi). (Alabama State Parks: A Reflection on 75 Years of Successful Public Service)

plug state budget gaps. In 2015, the transfer of \$3 million in September resulted in the announcement that several state parks would close.

The impacts of a user pay model are that parks must look for new revenue sources to support themselves. Economic sustainability is critical to preserving the quality of parks and ensuring their long-term availability. **State parks are a significant asset to Alabama with an economic impact of \$375 million that supports more than 5,300 jobs.** Environmentally, the parks preserve some of Alabama's most special landscapes.

MYGULFSTATEPARK  
SURVEY: PARK  
VISITORS HELP THE  
REGIONAL ECONOMY  
BY STAYING IN LOCAL  
HOTELS, EATING AT  
LOCAL RESTAURANTS,  
AND SHOPPING AT  
AREA STORES.

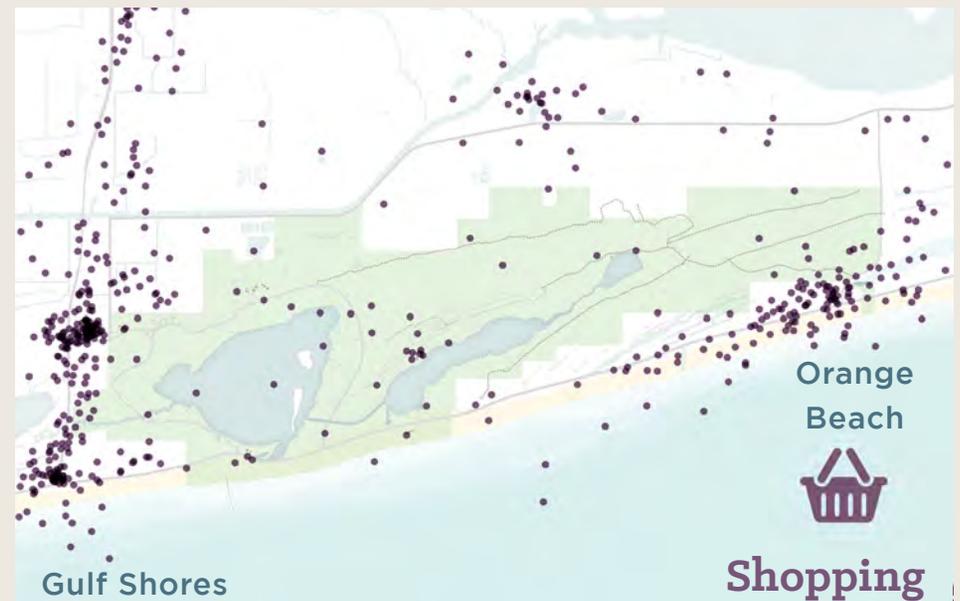
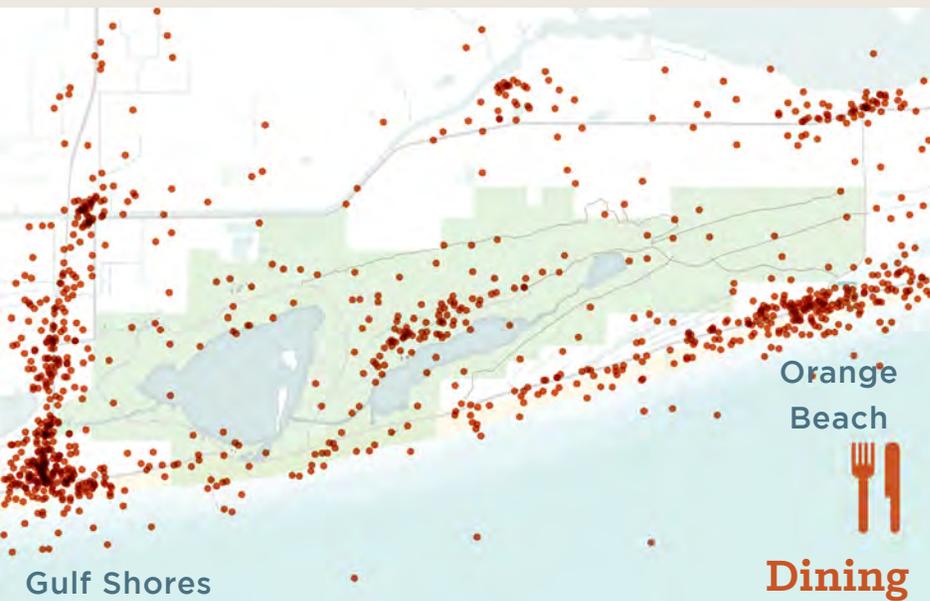


How can we look for new revenue sources to support our state's natural treasures that also contribute to the park's experience? These new uses must be good fits for the park, balancing affordability and accessibility, appropriate in character, and sensitive to the park's special environment.

Statistics from: Alabama State Parks: A Reflection on 75 Years of Successful Public Service; economic statistics cited in the report come from a study by the Center for Business and Economic Research at the University of Alabama's Culverhouse College of Commerce.

Decision-making principles for evaluating potential new revenue-generating uses:

- **Be selective:** Ensure that new uses are good fits for the park, with light environmental footprints.
- **Site uses carefully:** Uses that generate a range of revenues are needed to keep the rest of the park experience affordable, but uses should be carefully sited so they do not give the impression of impeding access to the park.
- **Keep the feel of the park natural:** Private operators and partnerships can be a great opportunity for the park to expand programming and needed revenue without increasing maintenance/operational costs for park staff. Guidelines are needed to make sure the character of concessionaires fits the natural setting of the park and does not feel over developed or over commercialized.

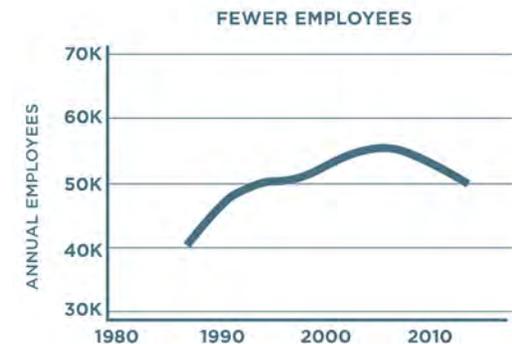
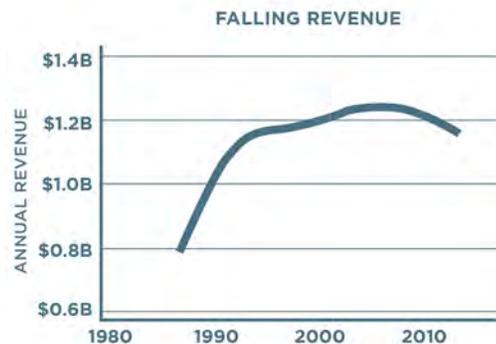
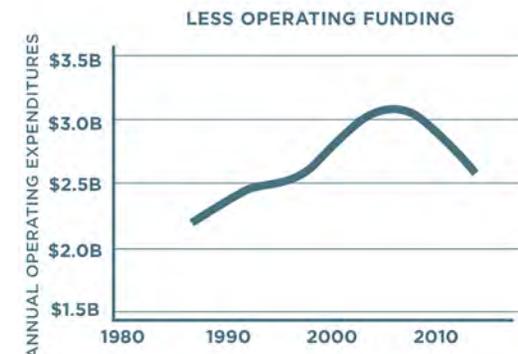
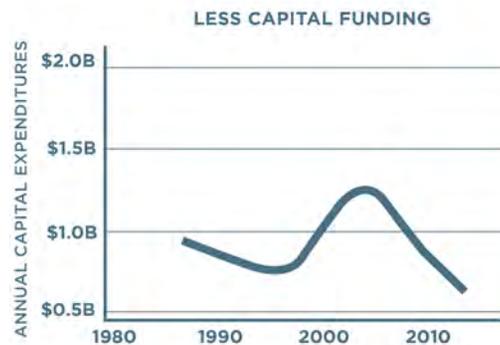
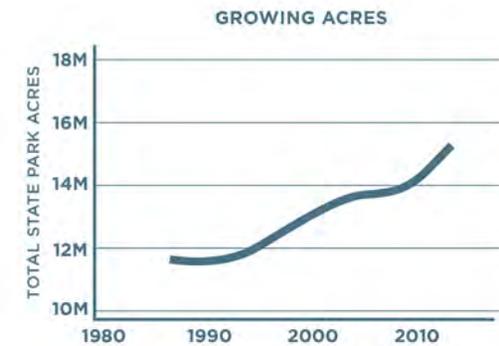
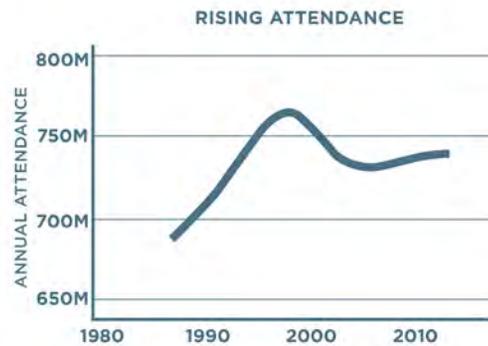


## NATIONAL ECONOMIC OUTLOOK FOR STATE PARKS

**Alabama's challenges to do more with less are consistent with other state park systems around the country**

State Parks as a whole have seen budgets cut, while visitation and total park acreage is on the rise. With increasing needs and less funding, state park systems around the country are facing economic challenges.

## Trends in State Parks: 1984 - 2014



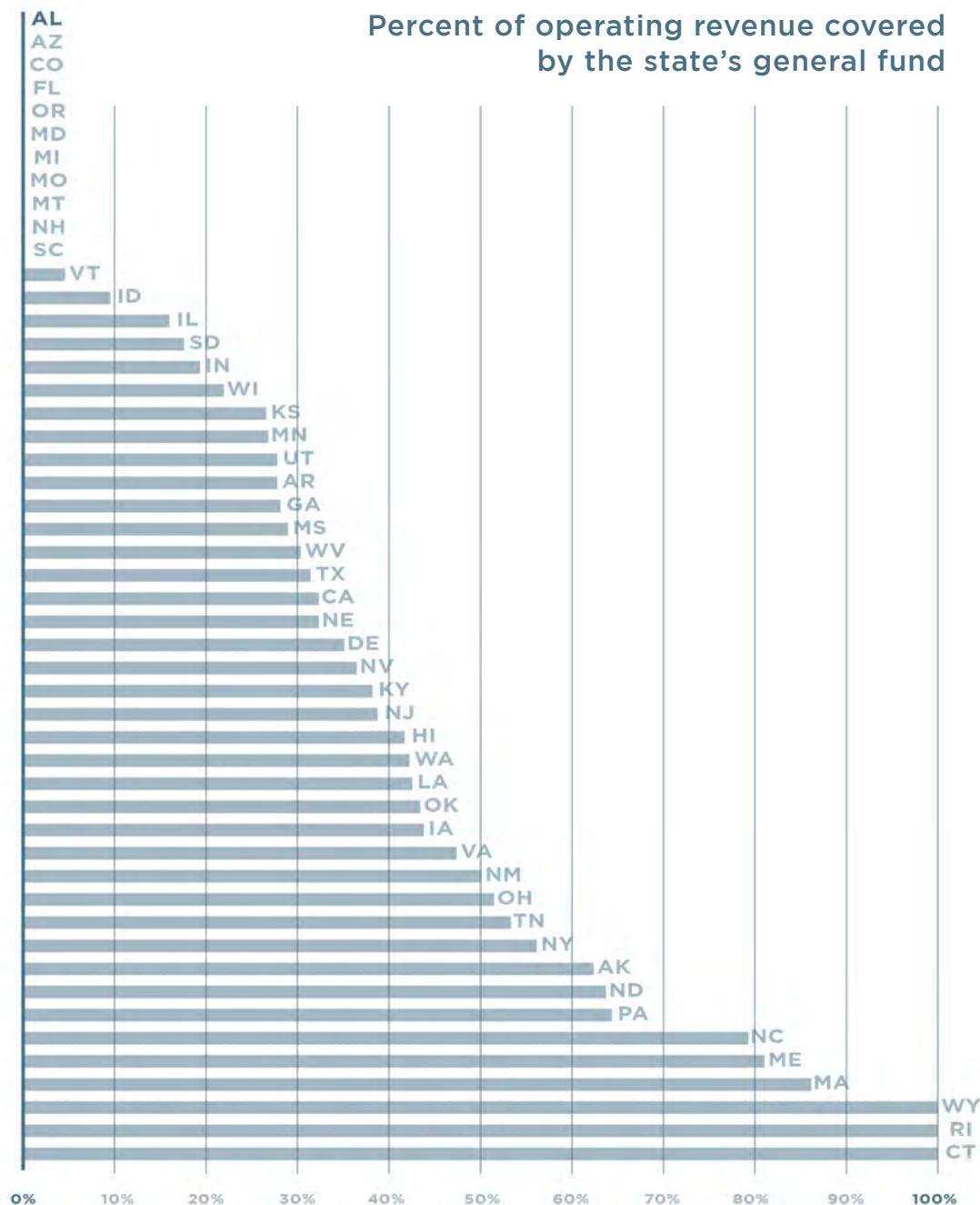
SOURCE: 2015 OUTLOOK LETTER, AIX -- ANNUAL INFORMATION EXCHANGE, STATISTICAL REPORT OF STATE PARK OPERATIONS, FITTED MEDIAN SPLINE SHOWN, RETRIEVED FROM: [HTTP://RESEARCH.CNR.NCSU.EDU/RERN/AIX/AIX2015\\_OUTLOOK\\_LETTER.PDF](http://research.cnr.ncsu.edu/RERN/AIX/AIX2015_OUTLOOK_LETTER.PDF)

**Support from the General Fund for State Park systems varies widely around the country**

Alabama is one of the 11 states that does not receive support from the state general fund; as a result, it is much more reliant on revenue generated from user fees than most other states.

SOURCE: WELLS, MARGARET (2013). PAYING FOR STATE PARKS: EVALUATING ALTERNATIVE APPROACHES FOR THE 21ST CENTURY. RESOURCES FOR THE FUTURE. RETRIEVED FROM: [HTTP://WWW.RFF.ORG/FILES/SHAREPOINT/WORKIMAGES/DOWNLOAD/RFF-RPT-WALLS-FINANCINGSTATEPARKS.PDF](http://www.rff.org/files/sharepoint/workimages/download/rff-rpt-walls-financingstateparks.pdf)

**Percent of operating revenue covered by the state's general fund**



“I’VE TRIED TO VISIT IN THE PAST BUT THE CAMPGROUND IS ALWAYS FULL.”

—Survey Taker

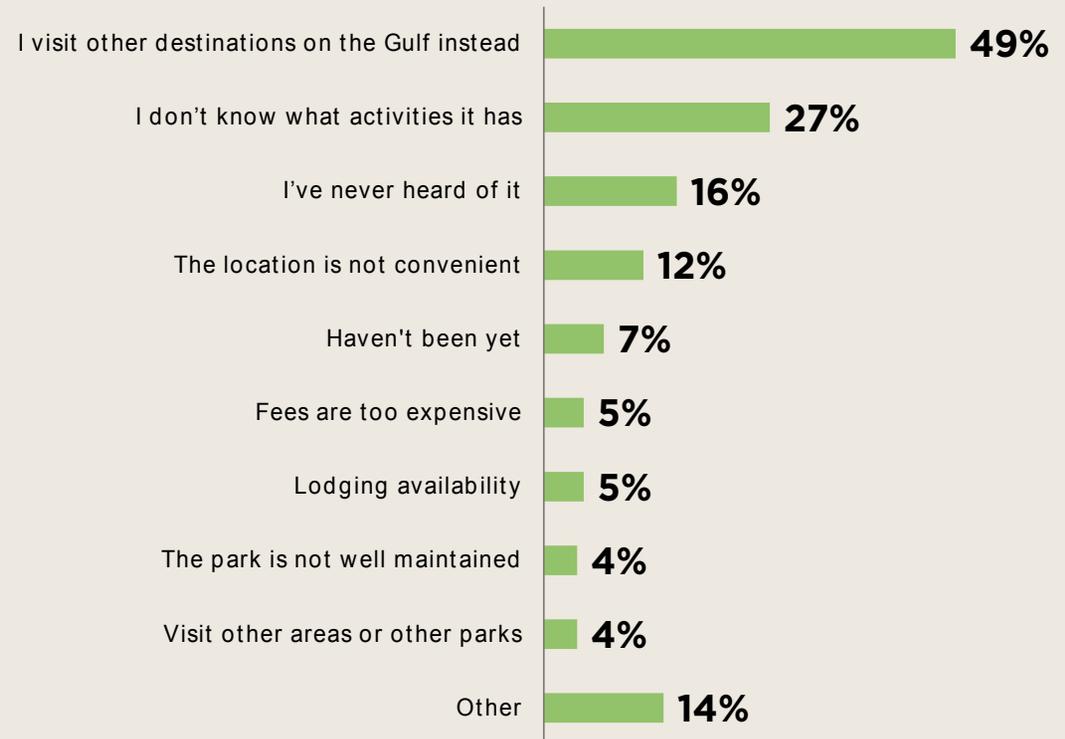
“I ONLY RECENTLY DISCOVERED [GULF STATE PARK] EXISTS AND WOULD REALLY LIKE TO GO.”

—Survey Taker

## OPPORTUNITIES TO INCREASE VISITORS

95% of survey respondents said they had visited Gulf State Park. The other 5% have a variety of reasons for not visiting. Respondents indicate they visit other places instead or don’t know enough to choose Gulf State Park.

### Why haven’t you visited Gulf State Park?



## Key Opportunities: Economy

**Year-round jobs:** New accommodations and activities in the park can provide new year-round jobs.

**Meeting space:** The meeting space at the Lodge will provide an in-state option for moderately-sized Alabama gatherings, helping stem meeting leakage to Florida and Mississippi.

**Vocational training:** The Lodge or other parts of the park could provide training in hospitality, tourism, and green jobs.

**Community space:** Facilities in the park should provide spaces for community events and classes.

**Group accommodations and sports tourism:** There are opportunities for the park to accommodate larger groups for camps, sports tournaments, family gatherings, or other special events.

**Learning and Research:** There are opportunities for Gulf State Park to be a place for research, in collaboration with environmental organizations, agencies, K-12 schools, and higher education institutions.

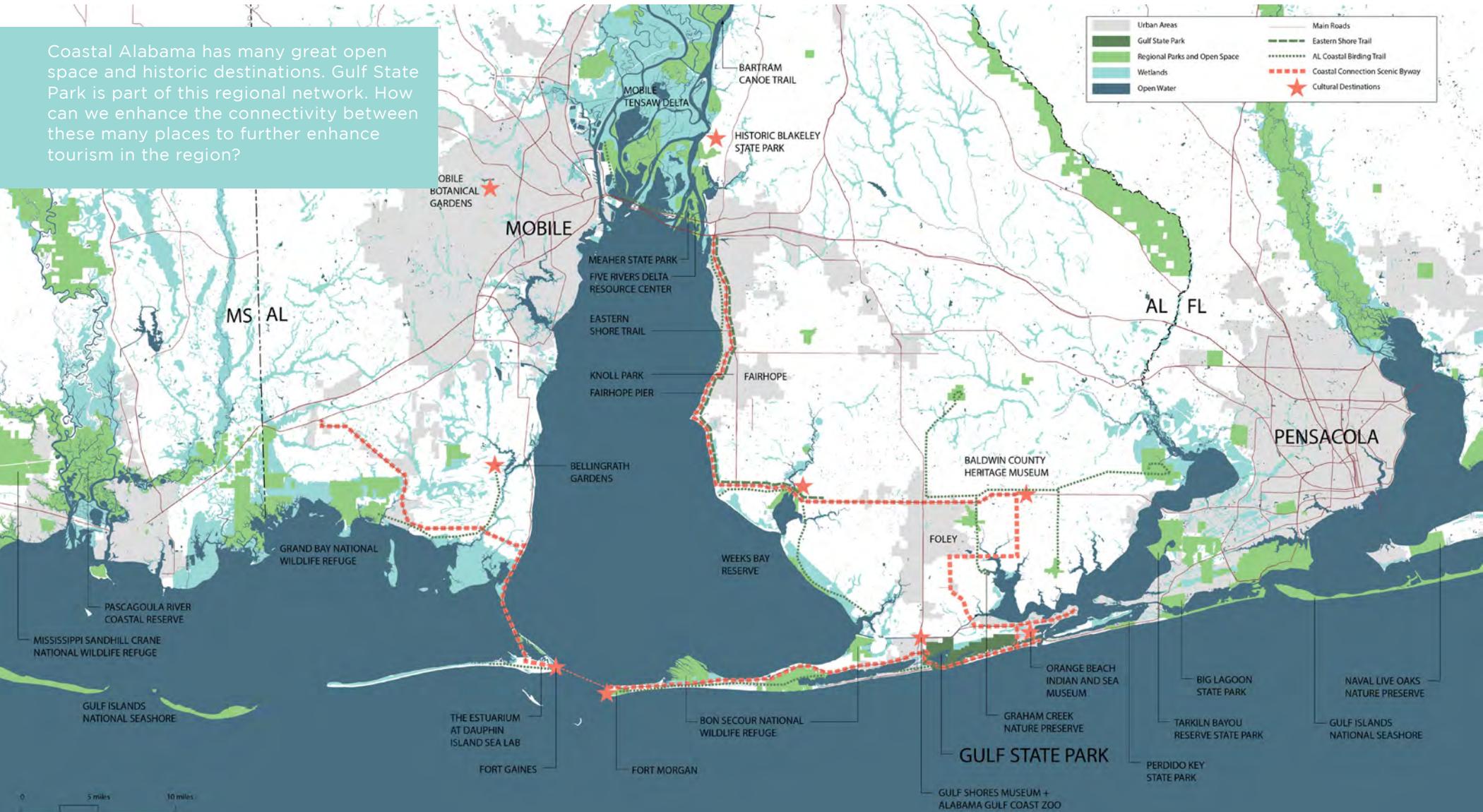
**Regional tourism opportunities and spin-off effects:** There are opportunities for Gulf State Park and other parks in the region to collaborate together, branding and marketing the Gulf Coast experience. The park can help attract more tourists to the area, resulting in spin-off effects – more hotel stays outside the park, restaurant and retail spending, and beyond.

**Creating an economically sustainable park to help statewide conservation:** Additional revenue can help create a sustainable park for the future, while also providing support for other parks throughout the Alabama State Park system. There is also a need to ensure that sufficient park revenue stays within Gulf State Park so it can continue to thrive. Reinvestment in the park will help create even more spin-off opportunities that can contribute to the overall state economy and park system.



# The Region: Nearby places to get outdoors, explore, play, and learn

Coastal Alabama has many great open space and historic destinations. Gulf State Park is part of this regional network. How can we enhance the connectivity between these many places to further enhance tourism in the region?



## Dauphin Island Sea Lab & Estuarium



Dauphin Island Sea Lab (DISL) focuses on marine research and education. The Estuarium is part of the Sea Lab, and it offers opportunities for the public to learn more about coastal Alabama's ecosystems.

IMAGE SOURCE: [PHOTOS.AL.COM/MOBILE-PRESS-REGISTER/2013/07/DAUPHIN\\_ISLAND\\_SEA\\_LAB\\_SUMMER\\_4.HTML](https://photos.al.com/mobile-press-register/2013/07/dauphin_island_sea_lab_summer_4.html)

## Weeks Bay Reserve



The Weeks Bay Interpretive Center offers opportunities to learn about coastal habitats through its exhibits, live animal displays, and plant and animal collections. Self-guided nature trails wind through wetlands, marshes, forests, and a pitcher plant bog.

IMAGE SOURCE: [GCOOS.TAMU.EDU/WP-CONTENT/UPLOADS/2014/04/STUDENTS-AT-BOG-.JPG](https://gcoos.tamu.edu/wp-content/uploads/2014/04/students-at-bog-.jpg)

## Bon Secour National Wildlife Refuge



The trail system at Bon Secour National Wildlife Refuge offers a variety of experiences for visitors. From short hikes to four mile expeditions, the trails give diverse opportunities to discover different habitats of the refuge: dunes, swales, wetlands, forests, and scrub habitats.

IMAGE SOURCE: [WWW.TRIPADVISOR.COM/ATTRACTION\\_REVIEW-G30531-D1367807-REVIEWS-BEACHRIVER\\_CANOE\\_AND\\_KAYAK\\_RENTALS-FOLEY\\_ALABAMA.HTML#PHOTOS](https://www.tripadvisor.com/attraction_review-G30531-D1367807-Reviews-BeachRiver_Canoe_and_Kayak_Rentals-Foley_Alabama.html#photos)

## Big Lagoon State Park



At Big Lagoon, the beaches, shallow bays, nature trails, and open woodlands offer splendid opportunities for nature study. The park also beckons visitors to camp, swim, fish, boat, canoe, and hike. Crabbing in the shallow waters of Big Lagoon is a popular activity as well.

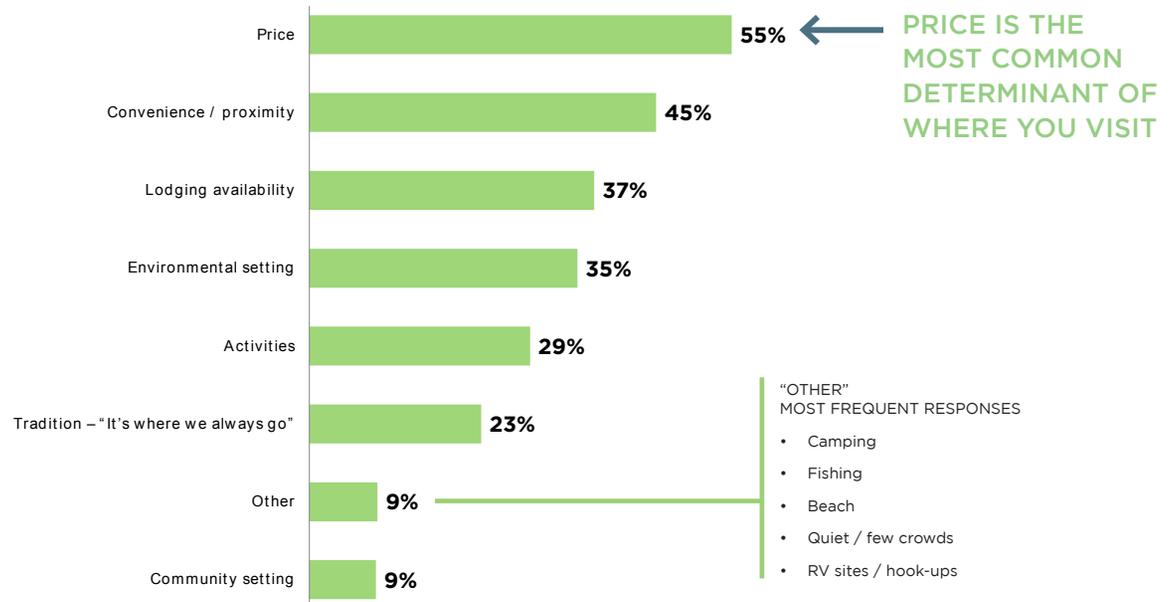
## OTHER REGIONAL DESTINATIONS: PROMOTING COASTAL ALABAMA'S DIVERSE ATTRACTIONS

The Gulf Coast is a popular destination for Alabamians and beyond. Nearly all survey respondents have visited Gulf State Park (95%), and many have visited other nearby destinations as well.

How can we build on these successes, and promote a broader itinerary of potential stops in coastal Alabama? Helping visitors better understand the variety of available destinations could translate into longer and new vacations, supporting the region's economy that depends on tourism.

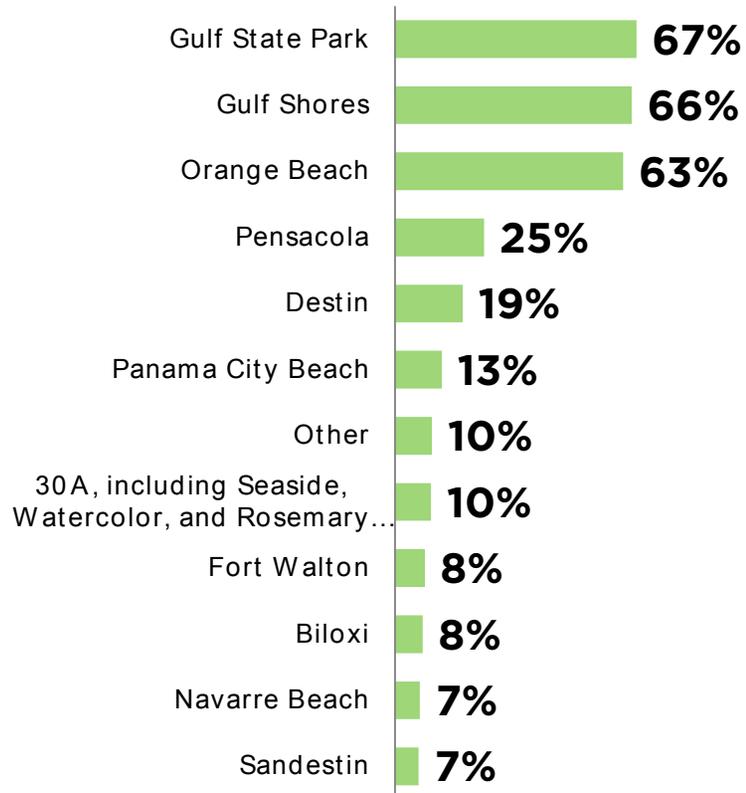
### What factors most determine where you visit?

MyGulfStatePark Survey Results



### Which gulf beach destination(s) do you usually visit?

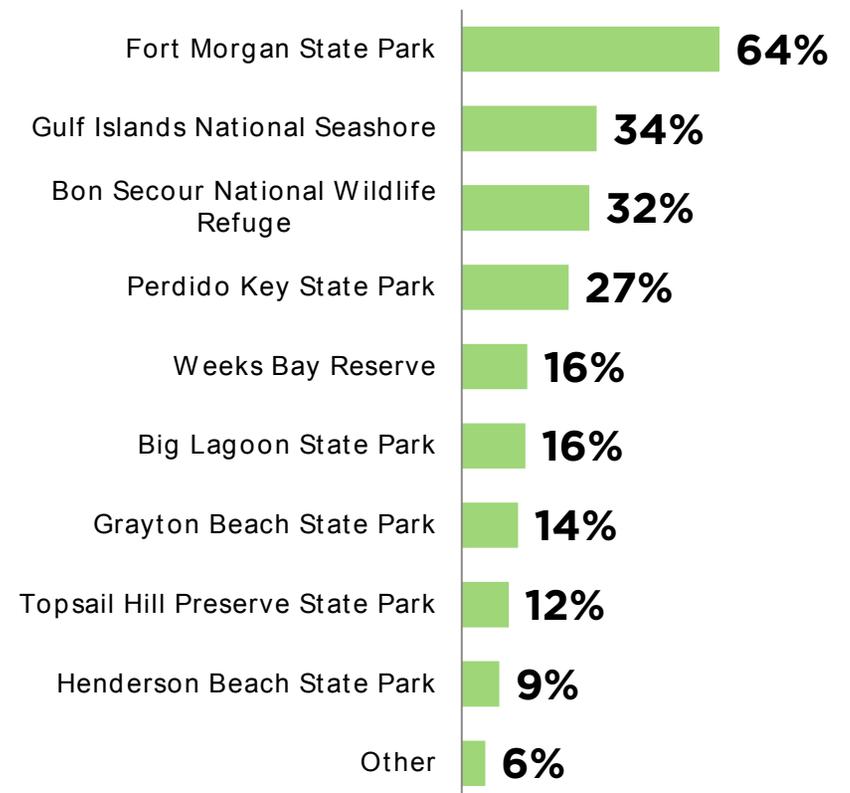
MyGulfStatePark Survey Results



**Top 5 "Other" - Dauphin Island, Fort Morgan, Perdido Key, Port St. Joe, and St. George Island**

### Which other parks in the region do you visit?

MyGulfStatePark Survey Results



**Top 5 "Other" - St. Andrews, None, Dauphin Island, Meaher, and Blakeley**



The background is a solid teal color with several large, overlapping, semi-transparent leaf-like shapes in a lighter shade of teal. The leaves are oriented diagonally, with their tips pointing towards the top right.

# 3 PROCESS & FEEDBACK

# Overview of the Master Plan Process

The Master Plan was a year-long process to integrate the Five Enhancements Project Elements, new ideas, and the existing park.

## THIS MASTER PLAN PROVIDES THE CONTEXT AND OVERARCHING VISION FOR GULF STATE PARK.

The Master Plan integrates the five enhancement project components with existing park elements (Phase 1). It suggests additional improvements to enhance the park’s potential to become a one-of-a-kind environmental and education destination on the Gulf Coast (Phases 2 and 3).

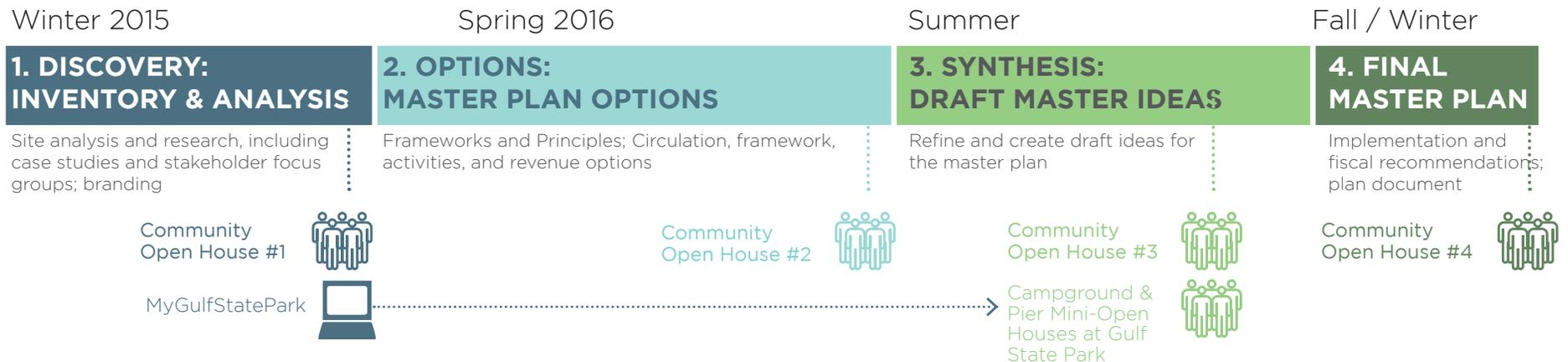
## FOUR STEPS OF DEVELOPING THE MASTER PLAN

The 11 month process began with **Step 1: Discovery**. This first step focused on analyzing existing conditions in order to understand key opportunities and challenges. A comprehensive study of the park and the surrounding area, this process examined environmental health, economic drivers and tourism trends, and transportation characteristics, along with other factors. Stakeholder Focus Group Meetings and interviews with park staff helped our team understand the local context and opportunities. Community Open House 1, at the conclusion of this phase, provided an opportunity for the public to learn more about the project, see our team’s research, and to provide feedback and ideas.

Discovery also included the launch of “MyGulfStatePark,” an interactive online survey intended to gather feedback from a broader range of park users. Gulf State Park holds a special place for residents across the state as well as throughout the country, and our team wanted to ensure that future ideas for the park reflected its broad significance. The survey ultimately gathered more than 2,600 responses – including Alabamians from all parts of the state as well as responses from other parts of the Southeast, the Midwest, and beyond.

The focus of **Step 2: Options** was about developing different ideas for the future of the park. All options started with the 5 elements of the Gulf State Park Enhancement Project and

### Master Plan Timeline



explored what additional opportunities could further improve the park, as desired by public and stakeholder feedback. This broad range of ideas was presented at Community Open House 2, grouped under three options - Enhance, Diversify, and Imagine.

**Step 3: Synthesis** took the feedback from the public meetings, stakeholder meetings, and online survey and refined the ideas into a shortlist of opportunities to enhance Gulf State Park. These “Draft Master Plan Ideas” were presented at Community Open House 3 and two outdoor “mini open houses” at the Pier and Campground, providing a final checkpoint for public feedback.

**Step 4: Final Master Plan** focused on implementation and developing this Master Plan document. It included prioritizing key projects and additional actions based on public feedback, building an implementation timeline (3 phases), and developing operational recommendations for implementation. Community Open House 4 marked the conclusion of the Master Plan, letting community members see how their feedback contributed to the long-term vision and roadmap for the park.

An international benchmark for  
ENVIRONMENTAL & ECONOMIC SUSTAINABILITY,  
demonstrating best practices for  
OUTDOOR RECREATION, EDUCATION, & HOSPITABLE ACCOMMODATIONS



HOW DOES THE MASTER PLAN FIT IN?

# Feedback Summary

Input from park visitors, local residents, residents from across Alabama, and stakeholders was critical to the development of the Master Plan

The following needs are the most frequently mentioned by attendees at the Master Plan's three community open houses, 2,600 responses in the online survey (MyGulfStatePark), and stakeholders:

- **Restoring the park's environment:** Gulf State Park's natural beauty and diverse ecosystems are its greatest assets. How can we ensure that the park's environment is even healthier and continues to be a welcoming home for local wildlife and migrating species?
- **Improving walking & bicycling in the park:** The trails are too crowded – add more trails and make them different from one another, so different kinds of trail users can have their own space. Most importantly, make it easier to cross the road to get to the beach.
- **Improving the campground:** Make it shadier, easier to reserve a specific spot, and safer to bicycle or walk through the campground, and improve the Wi-Fi!
- **Adding more overnight accommodations:** Rebuild the Lodge, and add other options too. The cabins, cottages, and campsites always seem full!
- **Offering more environmental education programs & similar activities:** Tell us more about the park's ecosystems, wildlife, and plants!
- **Balancing new development with the park's natural character:** The park is already great! Be careful that anything new does not detract from its natural beauty.
- **Increasing business visitors:** In-state groups should not have to go to Florida or Mississippi to meet. Let's keep them here in Alabama!
- **Keeping the park affordable:** Make sure that the park is affordable to visitors, especially families, senior citizens, and veterans.
- **Alleviating strained operations:** The great size of Gulf State Park makes it an environmental treasure, but it is also a very large area to maintain. How can we help park staff keep-up with maintenance needs, improve staff retention over the course of a year, and find ways to add more jobs in the park?
- **Improving marketing & branding:** Gulf State Park and the other open spaces and cultural destinations around the Alabama Gulf Coast offer many engaging, fun activities, but the draw of the region is not as well-known as it could be.

---

THE FOUR COMMUNITY OPEN HOUSES AND OUTDOOR MINI-OPEN HOUSES AT THE PIER AND CAMPGROUND WERE OPPORTUNITIES TO SHARE MASTER PLAN PROGRESS AND OBTAIN FEEDBACK.





# Input from across Alabama and beyond!

**MyGulfStatePark, an interactive online survey, gathered more than 2,600 responses from across the state and throughout the United States.**

An online survey, MyGulfStatePark was launched as part of the Master Plan process. The goal was to obtain feedback from a broad range of park visitors, including visitors from across the state who could not attend the community open houses. MyGulfStatePark included a series of multiple choice and open-ended questions plus a mapping activity.

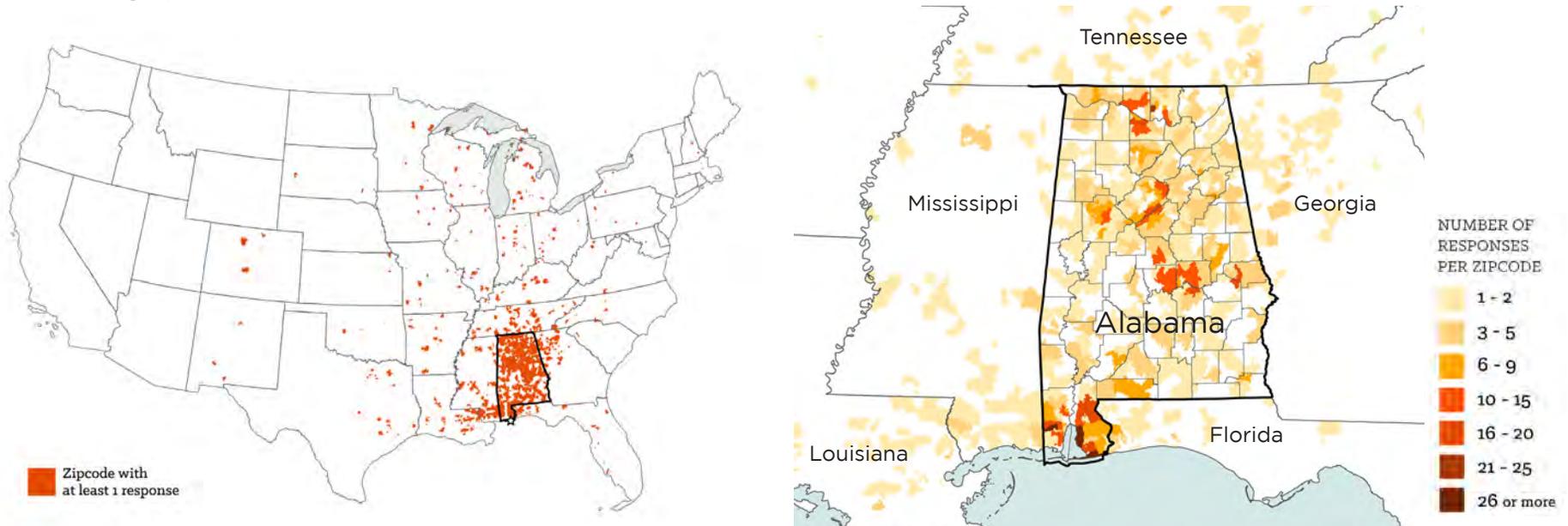
The survey's results were impressive: more than 2,600 responses that included visitors from across the state, and also from other parts of the country, including the Midwest, where many of the park's "snowbirds" live in warmer months.

The number and content of responses confirmed the importance of Gulf State Park to the state. Overall, many comments reflected the existing success of the park, praising its variety of

activities, campground, natural setting, and more. Feedback revealed requests for a very broad range of activities, but also the strong desire to protect the natural character of the park.

Results from the survey contributed to the goals, recommendations, and projects of the Master Plan.

## Broad Geographic Feedback





I think the park is great. I'm not sure what I would improve upon.  
- Vacationer from MS

Bringing less tourists and encouraging our own state residents to visit...  
- Local resident

I wish the park would talk more about the health of its forests.  
- Vacationer from AL

Golf Course needs more work to get up to a better level.  
- Vacationer from AL

Have been playing the golf course for 40 years! Always enjoy.  
- Vacationer from AL

I wish the entire area was preserved as much as possible as in a natural state with very little development.  
- Business Traveler from AL

I generally bike from my home.  
- Local resident and worker

The park needs more simple hiking (only) trails through the wooded portions.  
- Vacationer & Business Traveler from AL

Shelby is also great canoe/kayak paddling. So serene and seemingly remote from all the traffic in the beach area.  
- Local resident and worker

On campsite 288. Hoping to get it again or 290 for next March. On waiting list.  
- Vacationer from Michigan

Great place to take family or just to be by yourself.  
- Vacationer

Enjoy learning about wildlife, flora and fauna. is that available here?  
- Vacationer from AL

High quality except for lack of internet.  
- Vacationer from Wisconsin

More trails....for bikes  
- Local Resident

I miss the Lodge like most who ever went there, it's a shame it has taken so long to think about putting it back.  
- Vacationer from AL

ADA wheelchair areas.  
- Local Resident

The Gulf State Park is my favorite place to be in the whole world. I have hundreds and hundreds of memories of my wife and kids in the park.  
- Vacationer from AL

My husband pretty much lives on the pier when we go to Gulf Shores!  
- Vacationer from MS

Keeping it affordable for Alabamians.  
- Vacationer from AL

Like to stay in the overnight facilities when they were available.  
- Local Resident

Sample Comments from My Gulf State Park Survey

# Top Priorities for Park Visitors - Overall

WHAT REQUIRES THE MOST SUPPORT IN THE NEXT 3-5 YEARS?

Rank	Response	Count	%
1	Campground	846	40%
2	Improving walking and bicycling in the park	819	39%
3	Restoring the park's environment	760	36%
4	Adding more overnight accommodations	745	36%
5	Park maintenance	391	19%
6	Providing more activities for adults	286	14%
7	Wayfinding Signage to make it easier to get around park	281	13%
8	Providing more activities for children	262	13%
9	Other	245	12%
10	Educational activities and signage	205	10%
11	Marketing and branding	204	10%
12	Golf course	150	7%
13	More space for events	143	7%
14	Bringing more tourists to the region	103	5%

ONE OF THE SURVEY QUESTIONS ASKED RESPONDENTS TO RANK THEIR TOP PRIORITIES FOR THE PARK OVER THE NEXT THREE TO FIVE YEARS. THE CAMPGROUND, WALKING AND BICYCLING, RESTORING THE PARK'S ENVIRONMENT, AND ADDING MORE OVERNIGHT ACCOMMODATIONS ROSE TO THE TOP.

# Top Priorities for Park Visitors - separated by type of park user

WHAT REQUIRES THE MOST SUPPORT IN THE NEXT 3-5 YEARS?

THE TOP PRIORITIES ARE CONSISTENT AMONG DIFFERENT PARK USERS. FOCUSING ON THESE NEEDS WILL ENHANCE THE PARK EXPERIENCE FOR ALL VISITORS.

	Locals	Local Workers	Visitors	Business Travelers	Under 36
TOP 5	1. Restore the park's environment (41%)	1. Improve walking & bicycling (40%)	1. Campground (43%)	1. More overnight accommodations (51%)	1. Restore the park's environment (44%)
	2. Improve walking & bicycling (40%)	2. Restore the park's environment (37%)	2. Improve walking & bicycling (39%)	2. Restore the park's environment (34%)	2. Improve walking & bicycling (43%)
	3. More overnight accommodations (34%)	3. More overnight accommodations (33%)	3. More overnight accommodations (36%)	3. Improve walking & bicycling (32%)	3. Campground (34%)
	4. Campground (28%)	4. More space for events (19%)	4. Restoring the park's environment (36%)	4. Marketing and branding (23%)	4. More overnight accommodations (28%)
	5. Park maintenance (18%)	5. Campground (18%)	5. Park maintenance (18%)	5. Campground (20%)	5. More activities for children (25%)
BOTTOM 3	12. Providing more activities for adults (9%)	12. Providing more activities for adults (9%)	12. Golf course (7%)	12. Other (10%)	12. More space for events (6%)
	13. Golf course (7%)	13. Golf Course (9%)	13. More space for events (6%)	13. Providing more activities for adults (10%)	13. Other (6%)
	14. Bringing more tourists to the region (6%)	14. Bringing more tourists to the region (8%)	14. Bringing more tourists to the region (5%)	14. Golf course (8%)	14. Golf course (5%)

# Three Options for the Future Park

## EXPLORING A RANGE OF IDEAS FOR GULF STATE PARK

Before creating the final Master Plan, we explored several options for future activities in the park. These three options were presented at Community Open House #2 to understand which aspects were preferred by community members. Options explored a range of ideas to enhance Gulf State Park, improving its:

- Environmental and fiscal health
- Educational opportunities
- Range of activities, programs, and accommodations
- Connectivity and access

All options started with the 5 elements of the Gulf State Park Enhancement Project (enhancing the visitor experience, restoring the dunes, building an interpretive center, building a learning campus, and rebuilding a lodge).

Then, they explored additional opportunities to improve the park, based on feedback from Community Open House #1, stakeholder focus group meetings, and thousands of responses from across the state to the online survey.

The ideas were grouped into three options: 1) Enhance, 2) Diversify, and 3) Imagine.



### Traditional PLUS

1. Preserve, enhance, and restore existing natural resources (all options).
2. Additional revenue helps support additional environmental restoration and management efforts (all options).
3. Supplement existing park programming.
4. Add more overnight accommodations.
5. Improve conditions for walking and bicycling, while also keeping driving the main way to get around most of the park.

### YOU SAID ...

Favorite 3 Parts of Enhance:

- Dune restoration
- More trails
- Add planting

Feedback from Community Open House #2

2



3



**Exciting New Choices**

1. Add additional programs and park uses to appeal to new users.
2. Add a greater range of overnight accommodations.
3. Diversify the trail network.
4. Make it as easy to get around by bicycle and on foot as it is to drive.
5. Promote biodiversity through natural resource management, restoration, and expanded education and stewardship opportunities.

**YOU SAID ...**

**Favorite 3 Parts of Diversify:**

- Dune restoration
- Add planting
- Differentiated trails

Feedback from Community Open House #2

**Focus on Discovery + Adventure**

1. A New Park Adventure Gateway.
2. Greatly expand outdoor recreation, adventure, and education opportunities.
3. Further expand and diversify overnight accommodations.
4. Make it possible to park once and get around the park by bicycle, shuttle, or on foot.
5. Reduce development & parking footprints and conserve more land.

**YOU SAID ...**

**Favorite 3 Parts of Imagine:**

- Expanded learning campus
- Adventure Center
- New Park Adventure Gateway

Feedback from Community Open House #2

# Modeling economic impact: Sasaki's Smart Park

## RECOMMENDATIONS GROUNDED IN DATA AND ANALYSIS

The recommendations of this Master Plan have been informed by economic analysis, ensuring recommended uses are good decisions economically. **Smart Park** is a tool that our team developed and used to support decision-making.

## WHAT IS SMART PARK AND HOW IS IT USEFUL?

**Smart Park** is a new decision-making tool developed as part of this Master Plan to model the costs and impacts of park land uses (for example, reforestation currently developed areas like the campground and golf courses) and park activities/accommodations. With this tool, Designers and planners can see the cost and visitor impacts of each design and program change.

**Smart Park** quickly calculates various land areas and uses. It visually displays existing research on costs and impacts, for much more efficient testing and refinement of designs. **Smart Park** also encourages “whole systems” thinking around tradeoffs between different land uses and programs as they relate to a total park capital costs, operating costs, revenue, and staffing impact.

## METHODOLOGY

The Master Plan team used the outputs from **Smart Park** to analyze order-of-magnitude costs and impacts.<sup>1</sup> The tool relies on broad research across land use and program categories; it draws from existing projects at national and state parks across the country that are adjusted for regional cost differences as well as drawing from internal park cost data and staffing needs. The tool serves as a way to bring a lot of diverse information into one place where it can be leveraged quickly and easily. Where possible, the tool helps to quantify non-monetary impacts to help understand the best design choices that may not be financially driven, such as considerations of cultural or environmental value.

## CONCLUSIONS & FINDINGS

**Smart Park** analysis focused on comparing two future scenarios. Scenario 1, our baseline, is Gulf State Park with the planned Gulf State Park Projects funded with Early Restoration (NRDA). Scenario 2 examines the impact of additional programming efforts and land use changes. The key question: how much greater could Gulf State Park be with additional investment?

The analysis help evaluate small-scale decisions, for example, which segments of trail to prioritize based on cost tradeoffs between unpaved trail and boardwalk.

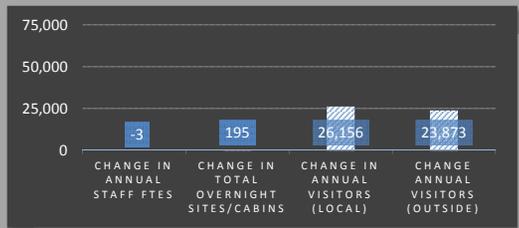
It also helped understand what the largest cost and operating expense drivers were. The **future of the golf course** was a major driver of overall future budgets because of necessary renovations (if it stayed in operation), and **Smart Park** reinforced that removal of the golf course allowed reinvestment elsewhere in the park. The analysis also made it clear that **partnerships with third party vendors** (like the Gulf Adventure Center) can be a key low risk component to enhancing the park experience without requiring expansion of park staff and park budgets. Finally, creating an **additional wedding pavilion and gathering space** in a forested setting could be a great driver of revenue at the park.

<sup>1</sup> Smart Park is a planning-level tool. Its outputs are not considered detailed project budget estimates or staffing plans.

# SmartPark 1.0

PROGRAM INPUTS	var/on/off	New Total	Future wi/GSPP	Net New
Food Concessions*		3	0	3
Large Pavilions (equiv. to Beach Pav.)		1	1	0
Small Pavilions		12	2	10
Performing Arts Events		1	0	1
Activity & Rental Store*		1	0	1
Ropes Course / Team Building Facilities*	<input checked="" type="checkbox"/>	1	0	1
Bike Rental*	<input checked="" type="checkbox"/>	1	0	1
Golf Club House	<input checked="" type="checkbox"/>	1	1	0
Rustic Outdoor Wedding Venue	<input checked="" type="checkbox"/>	1	0	1
Zipline*	<input checked="" type="checkbox"/>	1	1	0
Rustic Camping		60	11	49
Houseboats		10	0	10
Yurts		10	0	10
Treehouses		15	0	15
Bunkhouse (Education & Research Center)		60	0	60
Foot Golf (on Golf Course)	<input type="checkbox"/>			
Disc Golf (on Golf Course)	<input checked="" type="checkbox"/>			
Shuttle	<input checked="" type="checkbox"/>			
Open Air Shuttle	<input checked="" type="checkbox"/>			
Play Areas		6	0	6
Golf 9 Holes	<input type="radio"/>			
Golf 18 Holes	<input type="radio"/>			
Remove Golf Course	<input checked="" type="radio"/>			
Foot Bridge		3	0	3
Cottages		11	11	0
Lake Side Cabins		16	16	0
Forest Cabins		11	4	7
Glamping Sites		19	5	14
Full Hookup Camping [pixel counter]		526	496	30
Miles of Paved Trail [pixel counter]		24.2	13.1	11.1
Miles of Unpaved Trail [pixel counter]		7.8	0.0	7.8
Miles of Mountain Bike Trail [pixel counter]		1.5	0.0	1.5
Boardwalk [pixel counter]		1.5	0.0	1.5

Okay in golf or no golf scenario  
 Community/park connection  
 Between internal destinations  
 Assumes \$5M Capital Upgrades  
 Assumes \$10M Capital Upgrades  
 Assumes \$15M to restore nature



\* program item operated by an outside vendor; cost to GSP is zero, revenue is est. % of anticipated rever Calculation needs to include current revenue +/- net revenue

PARK MANAGEMENT			
Expand Forest Management	<input checked="" type="checkbox"/>	Controlled burns, \$30/acre	
PRICING INPUTS			
Existing Elements		New Price	Existing Price on/ off
Pier Admission		\$ 4.00	\$ 4.00
Campground Admission		\$ 2.00	\$ 2.00
Nightly Rental - Full Hookup Camping		\$ 38.00	\$ 38.00
Nightly Rental - Rustic Camping		\$ 18.00	\$ 18.00
Nightly Rental - Cottages		\$ 275.00	\$ 275.00
Nightly Rental - Lake Side Cabins		\$ 188.00	\$ 188.00
Nightly Rental Forest Cabins		\$ 133.00	\$ 133.00
Monthly Rate - RV Storage		\$ 50.00	\$ 50.00
Reservation - Pavilion		\$ 55.00	\$ 55.00 <input checked="" type="checkbox"/>
Daily Reservation - Beach Pavilion		\$ 525.00	\$ 525.00
Parking - Picnic Area		\$ 4.00	\$ 4.00 <input checked="" type="checkbox"/>
Parking - Beach Pavilion		\$ 6.00	\$ 6.00 <input checked="" type="checkbox"/>
Nightly Rental - Glamping		\$ 100.00	\$ 100.00
Parking - Pier		\$ -	\$ - <input checked="" type="checkbox"/>

GULF STATE PARK LODGE	
Net revenue after financing & profit used to subsidize other park expansions	
Guest Rooms**	350
Target Capital Cost	\$85.0 M
Room Rate**	\$ 191.00
<b>Est. Annual Lodge Revenue**</b>	<b>\$29.0 M</b>
<b>Additional Park Visitors</b>	<b>217,175</b>

\*\*Source: Pinkowski & Company Feasibility Study

## SCREENSHOT OF SMART PARK'S DASHBOARD

SMART PARK CONSISTS OF AN EXCEL MODEL LINKED TO A PHOTOSHOP FILE THAT FEEDS IN AREA AND LENGTH CALCULATIONS. CHANGES IN PHOTOSHOP AUTOMATICALLY UPDATE IN EXCEL, ALLOWING REAL-TIME, DYNAMIC EXPLORATION OF TRADEOFFS AND RESULTS.



The background is a solid teal color with several large, overlapping, semi-transparent leaf-like shapes in a lighter shade of teal. The leaves are oriented diagonally, with their tips pointing towards the top right.

# 4 KEY THEMES

# MASTER PLAN GOALS

These goals reflect consistent high priority needs mentioned by online survey respondents (2,600 total), community open house participants (4 open houses and 2 mini-open houses in the park), and stakeholder feedback.

GULF STATE PARK WILL  
BE AN INTERNATIONAL  
BENCHMARK FOR ECONOMIC  
AND ENVIRONMENTAL  
SUSTAINABILITY  
DEMONSTRATING BEST  
PRACTICES FOR OUTDOOR  
RECREATION, EDUCATION,  
AND HOSPITABLE  
ACCOMMODATIONS.

—Gulf State Park Vision Statement



## Restoring the Environment

Gulf State Park:

### An Alabama Treasure

Preserving and enhancing the park's unique and diverse mix of ecosystems to ensure healthy function and habitat.

An **ecologically healthy** park:

- wildlife habitat, native plant communities, and natural processes
- balance programs and uses with natural setting
- concentrated development

## Learning Everywhere (and all the time!)



Gulf State Park:

### Alabama's Outdoor Classroom

Maximizing the full potential of the park as an outdoor classroom that engages students of all ages in environmental inquiry and discovery.

An **educational** park:

- environmental education programs and experiential learning
- regenerative design, construction, and operations
- stewardship

## Improving Mobility



Gulf State Park:

### Rooted in the Gulf Coast

Improving bicycling and walking (and beyond!) in the park, so you can park your car once and explore.

A **connected** park:

- ecological connections
- cultural and historic connections
- walking and bicycling connections

## Visitor Experience



Gulf State Park:

### Our Front Porch on the Gulf

Ensuring that park amenities like lodging and picnic areas meet the needs of diverse user groups.

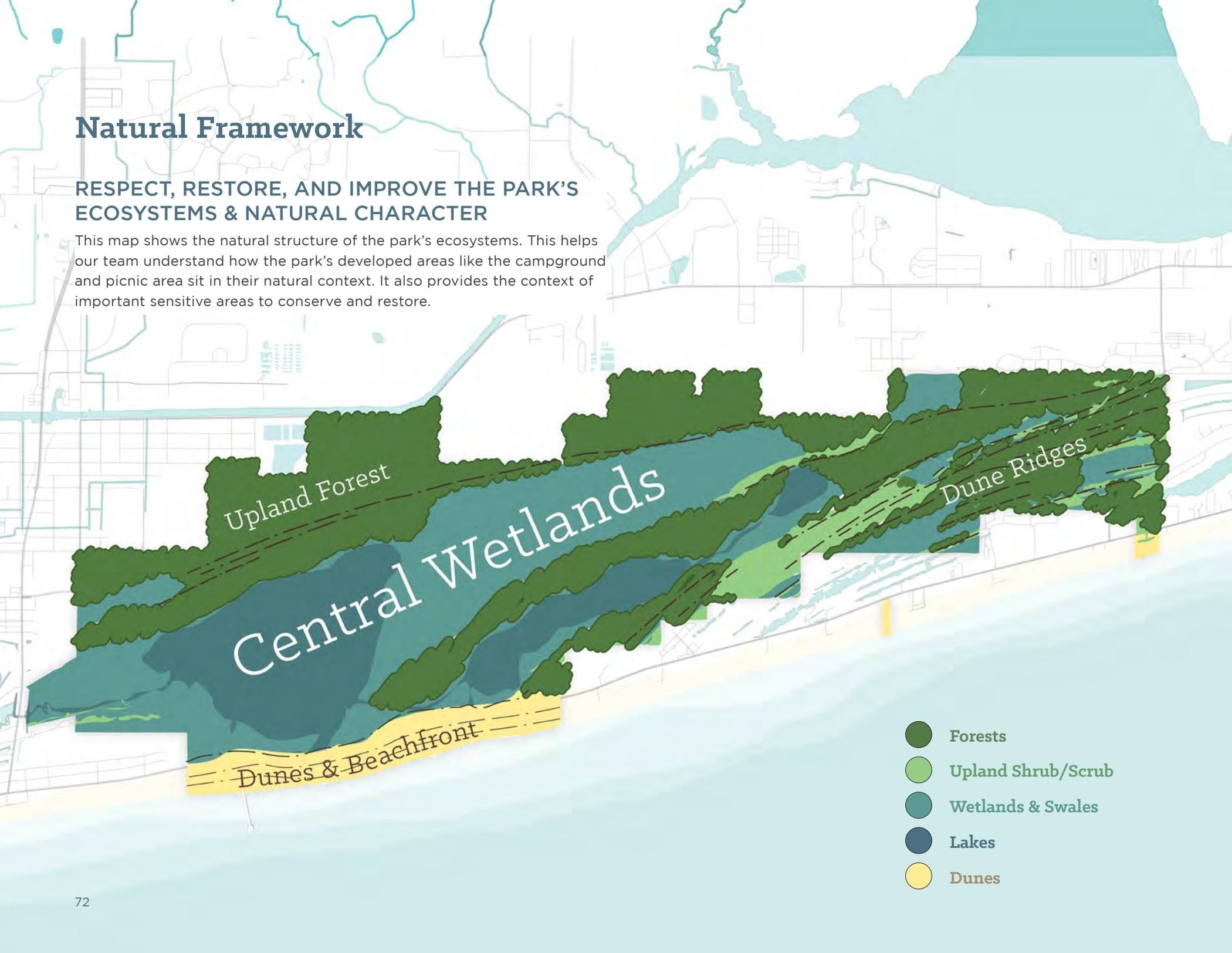
A park **for everyone**:

- affordability
- accessibility (physical and electronic)
- diverse range of activities and accommodations, suitable for Gulf State Park's natural and cultural context

# Natural Framework

## RESPECT, RESTORE, AND IMPROVE THE PARK'S ECOSYSTEMS & NATURAL CHARACTER

This map shows the natural structure of the park's ecosystems. This helps our team understand how the park's developed areas like the campground and picnic area sit in their natural context. It also provides the context of important sensitive areas to conserve and restore.



# Built Framework

## BE SENSITIVE WITH DEVELOPMENT, AND DON'T “OVERDEVELOP” THE PARK!

This map provides a guide for future development in the park. It suggests that any future development occur within areas that are already developed or were developed previously.



<b>Primary Developed Area</b>	Highest priority locations for new activities in the park. Focusing new program on previously developed land minimizes environmental impacts.
<b>Secondary Developed Area</b>	Smaller-scale, lower impact uses. For example, the edges of the campground could offer more rustic tent sites.
<b>Light Footprint / Trail Outpost</b>	Hubs for learning, playing, and gathering like the Boulder Play Area & Butterfly Garden; encourage visitors to explore the diverse environments.

## Activity Gradient

### THE PARK'S VISION IS FOR EVERY VISITOR TO CONNECT WITH NATURE

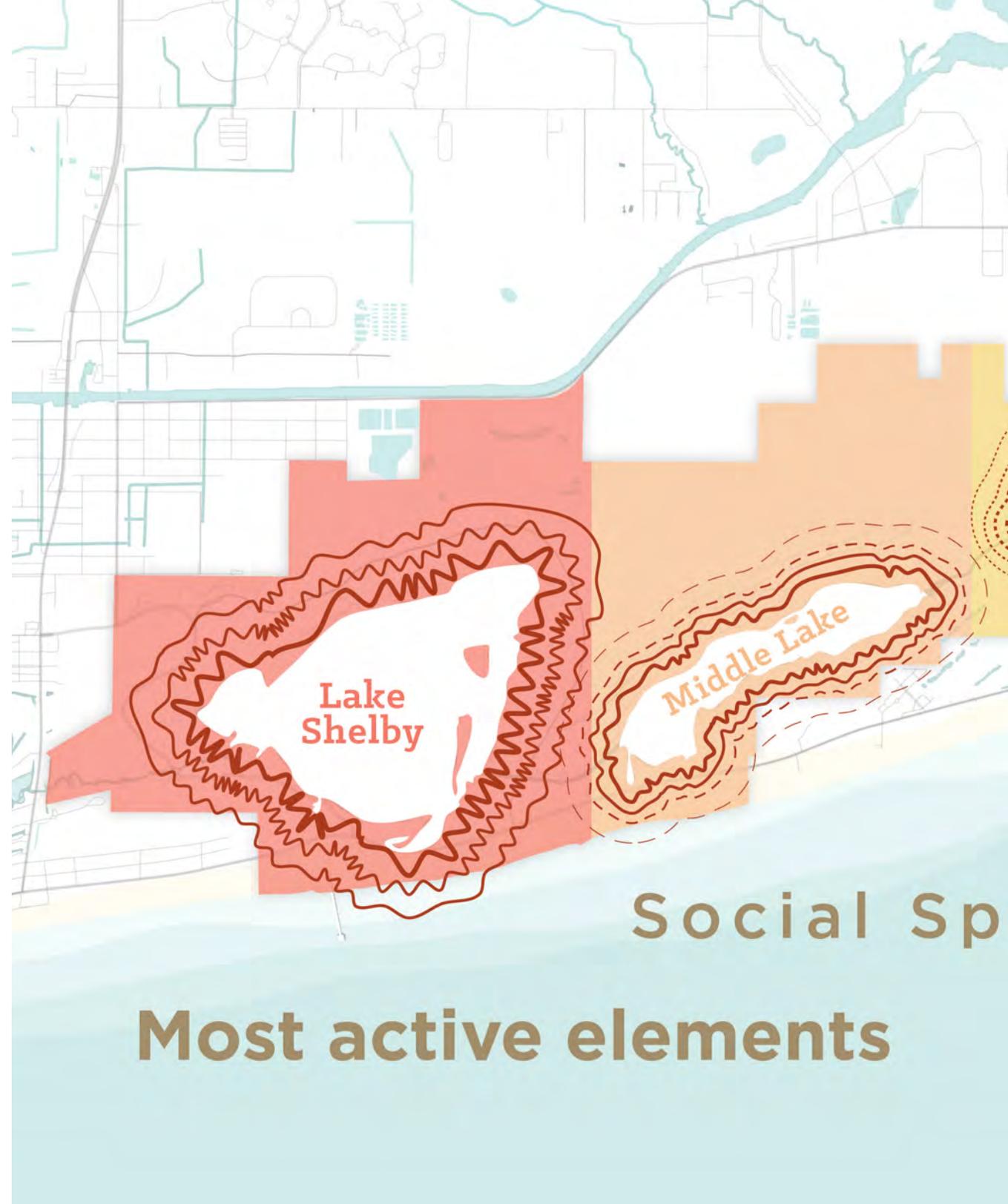
To further guide activities and new programs in the park, the Master Plan proposes separating the busiest, most vehicle-intensive uses away from the quieter, less developed parts of the park, like the Backcountry Trail System.

There are many different kinds of people and many different ways to connect with nature. Let's provide a range of options!

### PARK "USER PROFILES"

- Naturalist
- Culturalist
- Local worker
- Business tourist
- Adventurer or extremist
- Socializers & play enthusiasts
- Recreational exerciser
- Competitive exerciser or bicycle commuter
- Historians
- Students and researchers
- And more!

There are many different kinds of park visitors. How can we provide a range of activities and accommodations - and maintain places for quiet reflection? What type(s) of park user are you?





more rustic,  
low-impact uses

aces

“THE WHOLE  
CAMPGROUND IS A  
GREAT SITE SEEING  
ENVIRONMENT.”

—Survey Respondent

“ALABAMA HAS THE MOST  
BEAUTIFUL NATURAL  
RESOURCES IN THE  
COUNTRY (IN MY OPINION).  
WE HAVE MOUNTAINS,  
FORESTS, LAKES, RIVERS,  
AND THE GULF OF MEXICO.  
WHY GO ANYWHERE ELSE,  
WHEN IT’S ALL RIGHT HERE,  
JUST A CAR RIDE AWAY.”

—Survey Respondent



GOLF COURSE CONVERSION /  
PARK ADVENTURE LAUNCH

STATE PARK ROAD 2  
CONVERSION

PARK TRAM

LEARNING CAMPUS

PHASE 1: TRAIL  
NETWORK EXPANSION

LAKE SHELBY NORTH  
ENHANCEMENTS

PHASE 2: TRAIL  
NETWORK EXPANSION

CAMPGROUND  
IMPROVEMENTS

PICNIC AREA  
ENHANCEMENTS

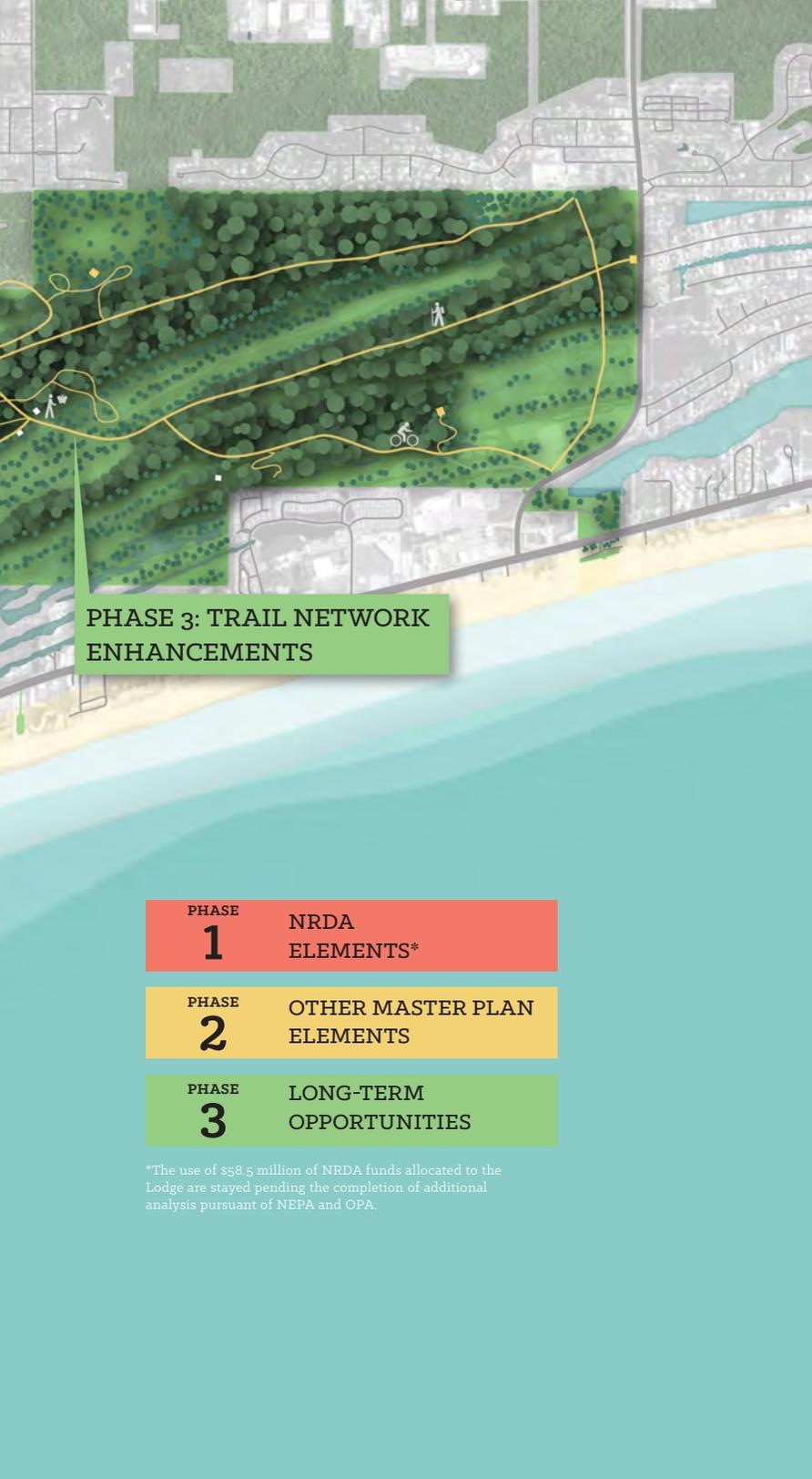
INTERPRETIVE  
CENTER

BEACHFRONT PARKING  
ENHANCEMENTS

LODGE\*

DUNE  
RESTORATION

# Master Plan Elements



**PHASE 3: TRAIL NETWORK ENHANCEMENTS**

<b>PHASE</b> <b>1</b>	<b>NRDA ELEMENTS*</b>
<b>PHASE</b> <b>2</b>	<b>OTHER MASTER PLAN ELEMENTS</b>
<b>PHASE</b> <b>3</b>	<b>LONG-TERM OPPORTUNITIES</b>

\*The use of \$58.5 million of NRDA funds allocated to the Lodge are stayed pending the completion of additional analysis pursuant of NEPA and OPA.

# The Gulf State Park Master Plan: Long-term Vision

The Master Plan proposes a range of ideas to enhance Gulf State Park, creating an economically and environmentally healthy park that provides an unmatched visitor experience.

## OTHER ACTIONS:

- Improving park operations
- New brand & improved marketing
- Strengthening regional network of outdoor and education destinations
- Sustainable Development guidelines for park buildings
- Additional overnight accommodations
- Additional improvements for walking & bicycling
- Additional environmental management recommendations
- Improve ecological connectivity



# 5

## RESTORING THE PARK'S ENVIRONMENT

# ENVIRONMENT

Gulf State Park is a one-of-a-kind environmental treasure, with a rich diversity of ecosystems and 6,150 acre area. Restoring the environment and promoting stewardship are key elements of the Master Plan, creating a place where everyone can connect with nature. Dune Restoration will be the first project to be implemented. This chapter focuses on environmental aspects of the Master Plan.

## IN THIS CHAPTER:

<b>DUNE RESTORATION</b> .....	<b>82</b>
<b>ENVIRONMENTAL ASPECTS OF KEY PROJECTS</b> .....	<b>86</b>
<b>ADDITIONAL ENVIRONMENTAL ACTIONS</b> .....	<b>88</b>



# Restoring the Park's Environment

## PRESERVING AND ENHANCING THE PARK'S UNIQUE ECOSYSTEMS

In terms of ecosystem diversity, there is almost nothing like Gulf State Park anywhere else on the Gulf. Its forests, swales, marshes, inland lakes, and dunes provide habitat for a wide variety of local and migrating species. The opportunity to experience this ecosystem diversity is a significant attraction for park visitors.

At the same time, the cumulative effects of natural disturbances, like hurricanes and forest fires, as well as human impacts, like the oil spill, development, and pollution, have taken their toll on the park's environment.

The Master Plan prioritizes restoration of the park's environment through a variety of projects and management strategies:

- Dune Restoration
- Protection and restoration of wildlife habitat
- Respecting and restoring natural water movement
- Prescribed burning for appropriate ecosystems that need fire to stay healthy
- Cultivating stewardship and learning
- Model sustainable architecture for the Gulf Coast

## TO RESTORE THE PARK'S ENVIRONMENT WE MUST FIND NEW SOURCES OF REVENUE

Restoring the environment isn't an easy job! The park has many different ecosystems, and each one has different needs to be healthy.

These management efforts will require time, attention, and funding, and park staff is already strained. The AL State Parks System is 80-90% funded by user fees (not taxes), so the park has to find ways to generate more revenue internally to afford the additional work needed to make it a better place to connect with nature.

Successful environmental restoration depends on creating an economically sustainable park to fund conservation activities.



**RESTORING THE PARK'S ENVIRONMENT WAS THE #1 PRIORITY AMONG LOCALS AND PEOPLE UNDER AGE 40.**

- MY GULF STATE PARK SURVEY RESULTS

PHASE 1 KEY PROJECT

# Dune Restoration

Goal: Restore natural systems so the dunes can regrow themselves over time.

Strategies:

- Strategic cuts in berm allow sand to reach inland parts of the dune system
- Planting native plant species
- Removal of invasive plant species
- Continue to restore dunes with Christmas trees and sand fencing
- Ensure park visitors cross dunes only at designated walkovers
- Educational signage

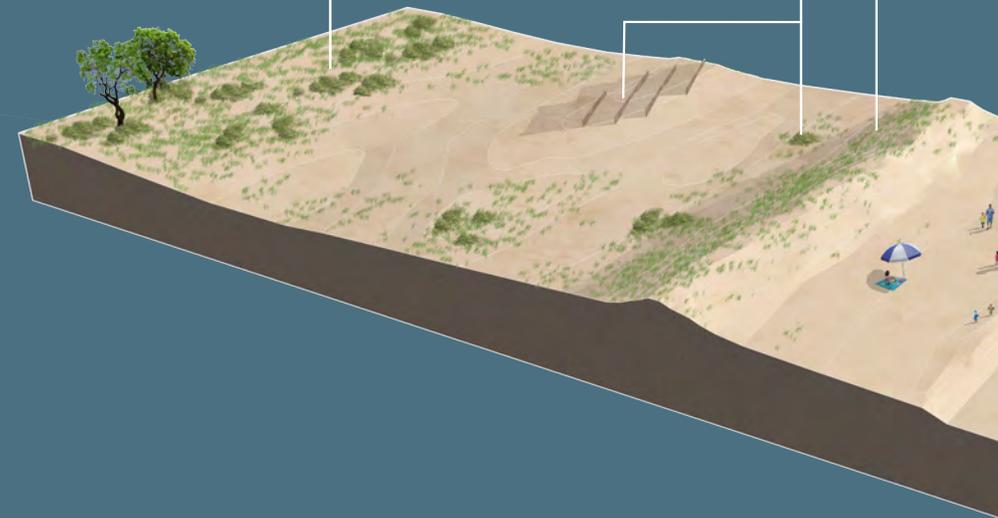
**TODAY:**  
**A NARROW BERM**  
**IS THE DUNE**

**REVEGETATION**

Roots of native dune grasses help hold sand in place.

**DUNE FENCING & CHRISTMAS TREES**

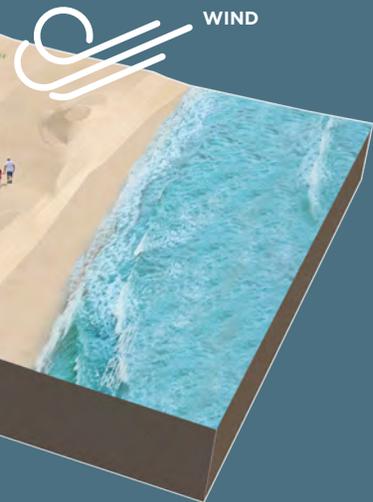
Park staff and volunteers have been installing dune fencing and recycled Christmas trees to help catch sand blown by the wind and build dunes.



**FUTURE GOAL:  
A HEALTHY,  
DEEP DUNE SYSTEM**

**ENGINEERED BERM**

Built by the Army Corps of Engineers, the berm is a uniform barrier between the ocean and land. It was constructed a few feet higher than the engineers thought the ocean would get during the worst storms.



**TERTIARY DUNE**

Most inland and highest part of the dune system. This is where endangered Alabama beach mice go to escape from hurricanes.

**WET SWALE  
(LOW POINT THAT COLLECTS WATER)**

**DRY SWALE  
(LOW POINT)**

**SECONDARY DUNE**

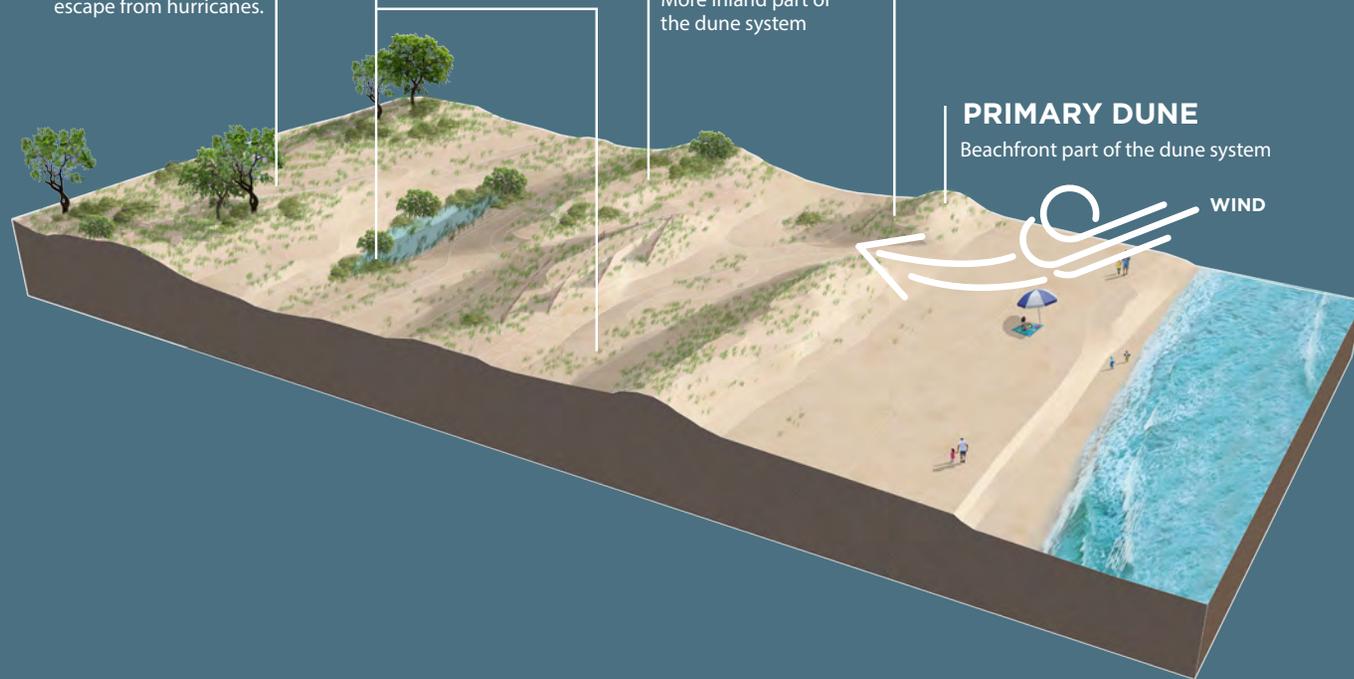
More inland part of the dune system

**GAP CUT IN BERM**

Opening that allows sand to flow into inland dune areas, growing a "thicker" dune system

**OTHER RESTORATION**

Dune fencing, Christmas tree recycling, and native planting will also help the dunes grow.



**PRIMARY DUNE**

Beachfront part of the dune system

## Growing Healthy Dunes

### HISTORY OF THE DUNES & CONDITIONS TODAY

Gulf State Park's dunes are a complex and dynamic system with immense cultural and ecological value. They serve as a primary defense to protect our communities from flooding during major storms, and they are home to endangered species, such as nesting loggerhead sea turtles, least terns, and the Alabama beach mouse.

However, the cumulative effects of recent storms - especially Hurricane Ivan, which destroyed the dunes in 2004 - have degraded the surge protection and coastal habitat that dunes provide. In 2005 the Army Corps of Engineers began construction on a uniform berm along the coast to protect local communities.

Other restoration efforts at the park - including installing dune fencing, recycling Christmas trees and planting native grasses - have focused on

strengthening the dune system behind the berm.

Unfortunately these inland dune areas are still having trouble recovering. The theory is that the height of the engineered berm blocks sand from blowing farther into the dune system.

### DUNE RESTORATION PROCESS

The Gulf State Park Dune Restoration process aims to restore a healthy, dynamic, and complete dune system. Strategic cuts will be made in the engineered berm to allow sand to move more deeply into the dune system. At the same time, more dune fencing, recycled Christmas trees and native plantings will help trap and stabilize wind-blown sand. Invasive species will also be removed, helping native plants thrive.

These efforts will improve the dunes for endangered species, such as the Alabama beach mouse, and increase flood protection

by building a thicker and more resilient dune system. A "Quick Win," the dune restoration will be implemented early in 2016, and the results will be monitored over time to measure how the strategic cuts are impacting dune growth.

### GOAL: A DYNAMIC & RESILIENT DUNE SYSTEM

A healthy coastal dune system is a layered system, made up of many parts that work together. It includes a primary dune adjacent to the beach, an undulating field of secondary dunes that contains both high mounds and lower swales, and a field of higher and drier tertiary dunes further inland.

In this balanced ecosystem, native plants stabilize sand and provide food and shelter for nesting birds and beach mice. Forces of nature - like the wind, rain, and high tides - constantly redistribute sand and reshape the dunes.

#### Gulf State Park's Dunes: Past, Present and Future



**2004**

Hurricane Ivan strikes the Gulf coast and flattens local dunes



**2005**

Berm construction begins



**2015**

GSP Dune Restoration begins

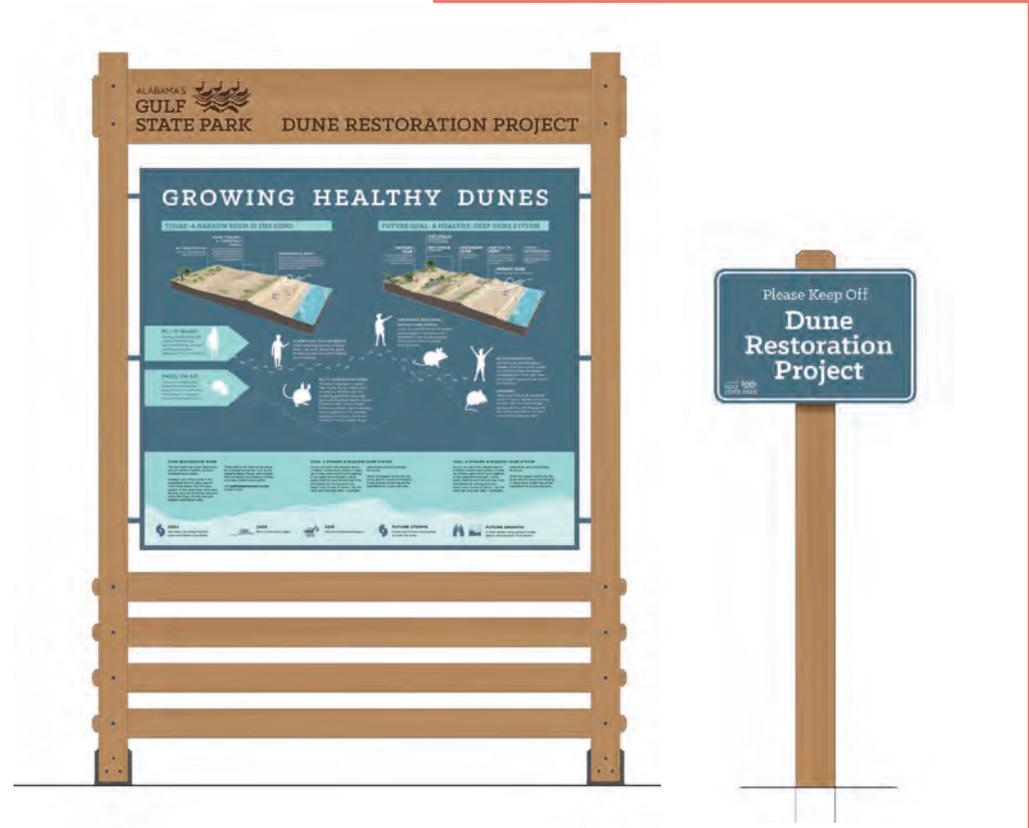
When the biggest storms hit, the dunes absorb waves and flooding. A robust dune system has all the ingredients for a quick recovery.

## DUNE RESTORATION IS DIFFERENT THAN BEACH NOURISHMENT

Beach nourishment, a common practice along the Gulf, involves bringing in new sand and placing it on the beach. Over time, this sand erodes and the beach nourishment process is repeated.

Beach nourishment is not dune restoration because it does not improve the ecosystem health of the dunes.

In contrast, dune restoration focuses on restoring natural dune building processes. The result is dunes that grow on their own over time, creating a more resilient, self-sustaining system.





### FUTURE STORMS

Future storms have the potential to lower the dunes





### FUTURE GROWTH

A more resilient dune system is better able to “bounce back” from storms.



## QUICK WIN

### DUNE SIGNAGE

Supplementing the strategic berm cuts, native plantings, and other restoration tactics, new signage at the Pier and Pavilion will help visitors of all ages understand dune restoration.

ALL PHASES KEY CONCEPT

# Environmental Aspects of Key Projects

Environmental sustainability is built into all projects. Achieving the vision of an “international benchmark of economic and environmental sustainability” means all parts of the park must enhance the park’s rich environment.

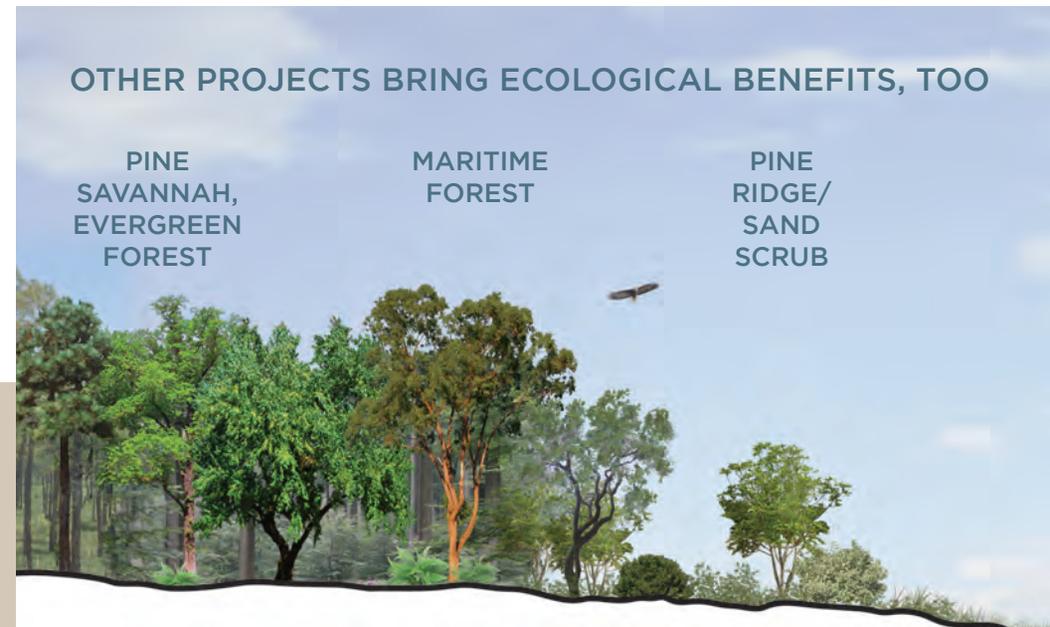
Projects focus on modeling environmentally friendly building practices, promoting stewardship, and supporting learning throughout the park. The goal is to create a park where all visitors can connect with nature, instilling a greater appreciation for the environment.

OTHER PROJECTS BRING ECOLOGICAL BENEFITS, TOO

PINE SAVANNAH, EVERGREEN FOREST

MARITIME FOREST

PINE RIDGE/ SAND SCRUB



**LEARNING CAMPUS**

- Promotes learning and environmental research for K-12 students and beyond
- Cultivates stewardship through interactive environmental programming
- Sited on an already disturbed site with no impact to floodplain, wetlands, or other sensitive ecosystems.
- Models best practices for sustainable architecture

*WANT TO LEARN MORE?  
FLIP TO PAGE 102.*



**FRESH  
& SALT  
MARSHES**

**FRESHWATER  
LAKES**

**COASTAL  
SWALE**

**DUNES**

**BEACH +  
GULF**

**TRAIL NETWORK ENHANCEMENTS**

- Allow park visitors to experience more of the park's diverse ecosystems
- Learning moments along trail provide chances to develop a greater understanding and appreciation of our natural world
- Promote walking and bicycling, which have a lighter environmental impact than driving (less noise and air pollution, for example)

*WANT TO LEARN MORE?  
FLIP TO PAGE 112.*

**LODGE**

- Sustainable and resilient architecture, providing a new model for coastal development for the region
- Set-back from the primary dune to allow room for natural dune movement
- Rebuilt on a smaller site than previous lodge (21 acres vs. 30 acres) to allow for additional dune restoration
- Acts as an economic engine funding management of Gulf State Park's diverse ecosystems and supports conservation throughout Alabama's State Park System

*WANT TO LEARN MORE?  
FLIP TO PAGE 148.*

**INTERPRETIVE CENTER**

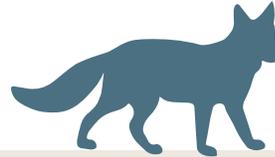
- Promotes stewardship through interactive environmental programming
- Targetting "Living Building" certification, which recognizes architecture that gives back to the environment, achieving and exceeding the highest standards for environmentally-friendly architecture
- Sited to minimize environmental impact

*WANT TO LEARN MORE?  
FLIP TO PAGE 96.*

## SUPPORTING ALL PHASES

# Additional Environmental Actions

MY FORESTS NEED TO BURN EVERY FEW YEARS: IT CLEARS OUT THE UNDERGROWTH SO I CAN HUNT.



EVEN THE BUILDINGS AND THEIR LANDSCAPES AT THE PARK ARE FRIENDLY TO BIRDS!



In addition to the key projects, other opportunities to improve the environment include these actions, policies, and partnership opportunities.

- Continue to identify new sources of revenue. Creating an **economically sustainable park** is important for continued financial support of environmental management.
- **Concentrate new development** in already disturbed areas.
- Protect and expand **core habitat** areas for sensitive species throughout the park & **improve connectivity** within the park for wildlife.
- Respect and restore **natural water movement** throughout the park.
  - Stormwater infiltration
  - Bioswales to clean water
  - Protect wetlands
- **Sponsor an acre:** Opportunities like sponsoring a bench have helped increase stewardship in the park. Creating a program to let visitors sponsor an acre of wetlands or an acre of dunes, for example could further broaden stewardship in the future.
- Continue to implement **prescribed burning** and expand to include all ecosystems that need fire to be healthy, including pitcher plant bogs and pine savannas. The Alabama Forestry Commission generally recommends a 50-foot fire break around burn areas and that burns be performed in 40-acre blocks to facilitate control. (Prescribed burns are not recommended for mixed pine-oak forest, maritime forest, or marshes.)
- Create a **maintenance plan** to monitor and manage invasive species when they are discovered in the park. Collaborate with local partners to control invasive species.
- Develop a **Sustainable Operations Plan**.
- Conduct a **park-wide environmental assessment** to document species and sensitive communities.
- Evaluate current staffing levels for **park maintenance** and add positions as needed.

I LOVE FLYING  
TO GSP: THERE IS  
SO MUCH GREAT  
MARSHLAND WITH  
NO ROADS TO CROSS!



THE DUNES ARE A  
GREAT PLACE TO  
LIVE! THEY PROVIDE  
FOOD AND SAFE  
PLACES TO BURROW!



THE BEACHES HERE  
ARE THE BEST PLACE TO  
BUILD MY NEST EVERY  
YEAR.



- Evaluate the feasibility of connecting Gulf State Park to the nearby Gulf Shores Water Treatment facility to provide **recycled water** for park water uses like irrigation that do not require potable water (water cleaned to be suitable for drinking).
- Partner to promote **species movement and migration** between Gulf State Park and other regional open spaces.
- Look for **more ways to create a healthy, functional dune system**. Additional dune management recommendations:
  - Limit dune crossings for park visitors and ensure that visitors cross only at these designated walkways
  - Improve connectivity between different parts of the dune system for wildlife like the Alabama beach mouse
  - Protect all parts of the dune system - including the more inland portions (“tertiary dunes”) and the low-lying areas between dunes (“interdunal wet and dry swales”)

- Continue Christmas tree recycling, native planting efforts and other existing dune restoration programs
- Continue to encourage stewardship by park visitors, including program’s like Baldwin County’s Grasses in Classes program

### Dune Restoration Techniques

Technique	Condition/Location
Angled sand fencing	All dune crossovers and dune field walkways
Planting of suitable coastal plants	All native landscapes, parking lot islands, road buffers
Revegetation of stabilized dunes	Barren or eroded dunes areas (e.g., storm damage) Dune enhancements, new dune restoration areas
Recycled Christmas trees	Front side of engineered berm, strategic area in secondary dune field (lacking dune formation)
Biomimicry with shims*	Incipient and primary dune (face) experiments and also potentially secondary dunes
Strategic berm breaches	Engineered berm (to be tested by dune restoration project and the outcome monitored)

\*“Biomimicry with shims” means using thin sticks planted in the dunes, mimicking vegetation and helping to trap sand and grow dunes.

# Additional Environmental Actions (Continued)

## PARK-FRIENDLY DEVELOPMENT: SUSTAINABLE DEVELOPMENT GUIDELINES

Standard building practices can be harmful to the environment, creating air pollution, water pollution, wasting precious natural resources, and displacing habitat.

These guidelines offer a set of best practices in Sustainable Development that allow buildings and built environments to function more like natural systems, supporting park goals for ecological conservation and restoration.

These guidelines can be used to inform renovations to existing park facilities as well as new facility design. **For example, the Lodge, Interpretive Center, and Learning Campus are all opportunities to demonstrate these principles.**

Each recommendation below offers an opportunity for the park facilities to support the Outdoor Classroom experience, educating the public about better ways to build in our coastal environment. This complements the ecological education offered across the park by giving visitors an example of stewardship that they can apply in their own lives.

- Design all buildings and site development to preserve and restore the natural hydrology of the park using low impact development (LID) practices.
- Stormwater management should be designed to serve as an aesthetic focal point in the park landscape.
- Building and site design should protect the quality of wildlife habitat, and when possible, enhance it. Dark sky lighting, turtle and bird friendly design, and wildlife crossings, among other strategies, shall be used to insure that park facilities do not interfere with breeding grounds or migration routes of wildlife.

- Park Facilities should employ principles of biophilic design, and make use of local natural materials in order to give visitors an experiential connection to park ecologies.
- Building materials should be screened to identify and avoid chemicals that are hazardous to human and ecological health. In particular, avoid the use of material ingredients known to contaminate Gulf waters and the immediate local environment, such as mercury.
- Prioritize the use of locally sourced, high recycled content, and salvaged or repurposed materials in order to reduce the embodied energy and carbon footprint of new facilities.
- Building and site design should conserve potable water (water that is safe for drinking), eliminate water use for irrigation, and look for opportunities to utilize rainwater and gray water for uses that do not require drinking-quality water.

- New facilities should be designed using best practices for energy efficiency and incorporate renewable energy when possible.
- Park facilities should be designed for resilience and passive survivability of natural hazards. Resilient strategies include not only structural strength and durability, but also well insulated building envelopes, generous shading, and the capacity for natural ventilation.
- Building and Site design should educate and inspire visitors about regionally appropriate sustainable development practices. Building signage, visible energy and water metering, and experiential elements like sundials and rain porches can be used to engage the public.

THESE GUIDELINES ARE SUPPORTED BY [SUSTAINABLE OPERATIONS RECOMMENDATIONS](#), WHICH ARE AVAILABLE IN CHAPTER 9, IMPLEMENTATION (SEE PAGE 200). TOGETHER, THESE RECOMMENDATIONS AIM TO CONTRIBUTE TO A PARK WHERE DEVELOPMENT AND OPERATIONS SUPPORT THE HEALTH OF THE OVERALL PARK.



A



B



C



D



E

A: "LIVING MACHINE" - NATURAL WATER TREATMENT SYSTEM  
 IMAGE SOURCE: [HTTP://WWW.EOMEGA.ORG/OMEGA-IN-ACTION/KEY-INITIATIVES/OMEGA-CENTER-FOR-SUSTAINABLE-LIVING/ECO-MACHINE%E2%84%A2](http://www.eomega.org/omega-in-action/key-initiatives/omega-center-for-sustainable-living/eco-machine%E2%84%A2)

B: SALVAGED WOOD REUSE  
 IMAGE SOURCE: WATERSHED, LAKE MARTIN RETREAT

C: RAIN GARDEN  
 IMAGE SOURCE: [HTTPS://VPR.TAMU.EDU/RESOURCES/ILSB/ABOUT/LEED](https://vpr.tamu.edu/resources/ilsb/about/leed)

D: WATER REUSE  
 IMAGE SOURCE: [HTTP://INHABITAT.COM/EVERYTHING-YOU-NEED-TO-KNOW-TO-BUILD-A-BACKYARD-GREYWATER-WETLAND/RECLAIMED-WATER/](http://inhabitat.com/everything-you-need-to-know-to-build-a-backyard-greywater-wetland/reclaimed-water/)

E: LEARNING MOMENTS  
 IMAGE SOURCE: [HTTP://LIVING-FUTURE.ORG/CASE-STUDY/BERTSCHSCIENCE](http://living-future.org/case-study/bertschscience)



6

**LEARNING  
EVERYWHERE  
(AND ALL THE TIME)**

# LEARNING

A key goal of the Master Plan is to enhance the whole park as an “outdoor classroom” where learning and discovery are part of every visit to Gulf State Park.

Throughout the Master Plan process, you shared desires to learn more about the park’s history, plants and animals, and fishing, kayaking, and other outdoor activities. This chapter looks at opportunities to enhance learning across the park in many ways.

## IN THIS CHAPTER

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ADDITIONAL LEARNING ACTIONS.....	106



# Learning Opportunities Across the Park

## LEARNING EVERYWHERE AND ALL THE TIME

Gulf State Park's Nature Center, with its displays, live animals, friendly staff, and educational programming, is a well-loved park destination. Yet there is no question that park visitors are thirsty for more learning opportunities throughout the park.

The Master Plan sees the whole park as Alabama's outdoor classroom, providing opportunities for all visitors to connect with and learn about the natural world.

## A NETWORK OF LEARNING

To promote learning across the park, the Master Plan suggests creating a three-part educational network:

- 1. Primary Learning Destinations - Nature Center, Interpretive Center, and Learning Campus:** The major draws for visitors, school groups, and researchers, these facilities provide exhibits, programming and formal research and classroom space to learn more about the park's environment. The Lodge and new Park HQ may also have complimentary functions.
- 2. Dispersed Learning Hubs - Exploration Stations:** These launching points for environmental programs, guided walks, and other activities will be distributed throughout the park, on in each ecosystem. Explore them all!

## 3. Learning everywhere - Distributed Learning Moments:

These smaller-scale learning opportunities occur throughout the park, celebrating a sense of discovery. Signage along the trail network, for example, can teach visitors about the different ecosystems along the way.

Each of these three types of learning destinations is supported by a broad range of educational programming. Park visitors of all ages will be able to take classes and guided tours, volunteer for stewardship opportunities, like dune restoration, or join groups like the Junior Rangers. Come learn in your park!



“WE’VE BEEN STAYING IN THE PARK FOR 15 YEARS NOW AND JUST LAST YEAR WENT TO THE NATURE CENTER FOR THE FIRST TIME. WE SHOULD HAVE BEEN VISITING IT SOONER. GREAT PLACE!”

—Survey Respondent

PHASE 1 KEY PROJECT

# Interpretive Center

- The Interpretive Center will include indoor and outdoor exhibits, highlighting information about our unique environment.
- Sited to minimize environmental impact
- Target Living Building certification, reflecting most environmentally friendly architecture and design
- A Gateway to the Park that launches visitors into all park environments



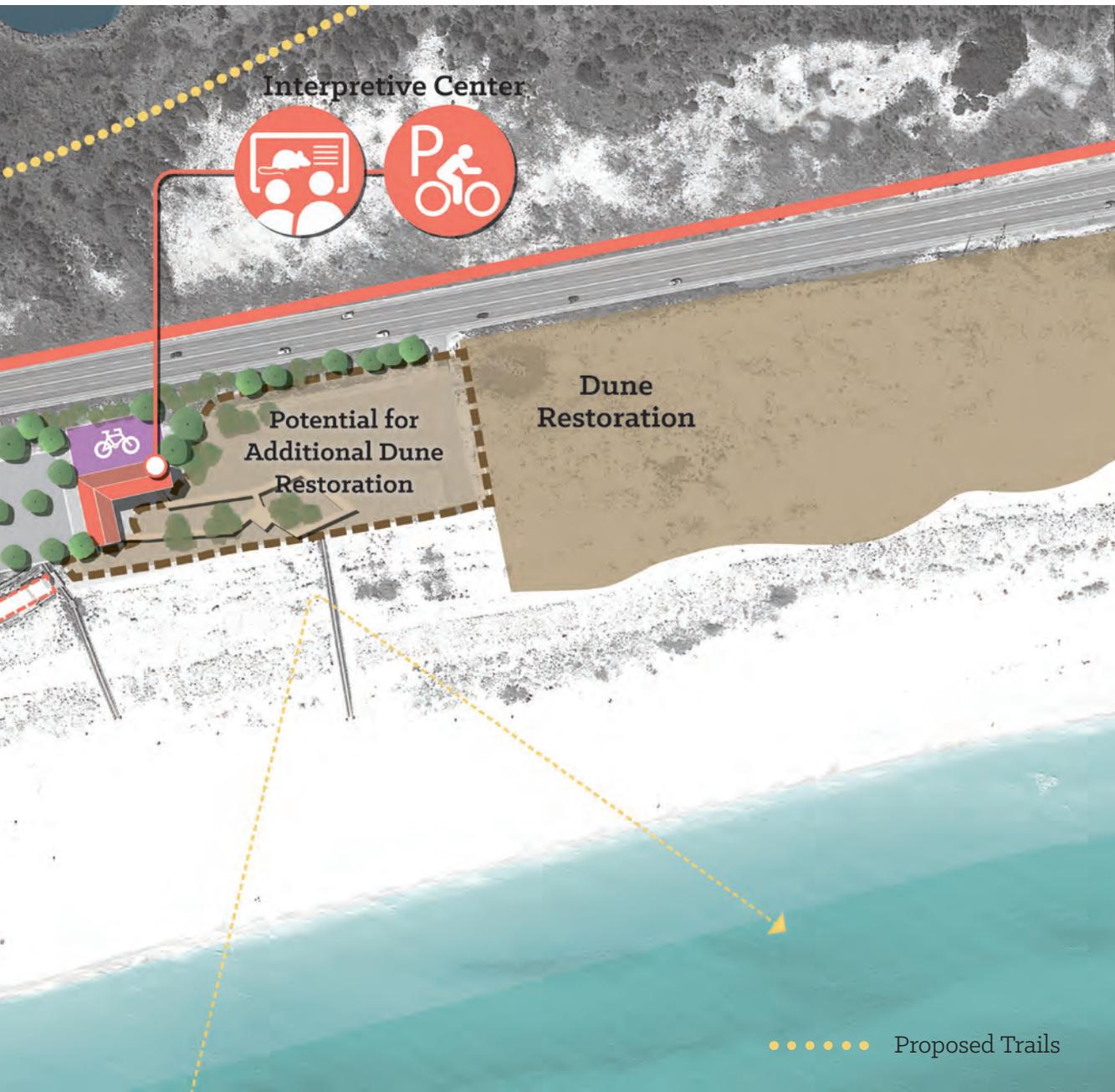


# The Interpretive Center

The Interpretive Center will be one of the Park's primary learning destinations, joining the Nature Center and Learning Campus as a major draw for visitors, school groups and researchers. A combination of indoor exhibits including interactive components and outdoor exhibits along the center's decks and boardwalks will teach visitors about dune ecosystems and our Gulf coast environment. The Interpretive Center will also serve as a launchpoint to engage visitors in a variety of educational programming park-wide.

The Master Plan recommends that the Interpretive Center be constructed to minimize impact on the dune system and allow additional dune restoration to occur. This facility should target the Living Building Challenge, to demonstrate the park's commitment to environmentally-friendly architecture. More details about Living Buildings are available on the next page.





## AT A GLANCE:

- The Interpretive Center teaches visitors more about the dune ecosystems, environmentally friendly architecture, and acts as a launch-point to other parts of the park
- Indoor and outdoor exhibits including interactive displays and boardwalks that help get visitors out into the dune environment
- The Interpretive Center should target Living Building as a model for a resilient, regenerative coastal construction (see the following page for more information!).
- Safer intersections to connect to the park trail system.
- Over the long term, an opportunity to design a more environmentally sensitive shared parking lot serving both the Pavilion and Interpretive Center with more shade and swales to capture stormwater
- Dune restoration, with appropriate crossings to beach and educational signage

THIS DIAGRAM SHOWS ONE POTENTIAL OPTION FOR THE PERMITTED AREA. THE MASTER PLAN RECOMMENDS THAT THE **INTERPRETIVE CENTER** BE CONSTRUCTED TO MINIMIZE ENVIRONMENTAL IMPACT.

## Creating a Living Building

The Interpretive Center will be one of the most visible and public components of the Gulf State Park Enhancement Project and offers a unique opportunity to cultivate environmental stewardship. The center will aspire to meet the most rigorous green building standard in the world: the Living Building Challenge.

Living Buildings use nature itself as the measure of success. Like a living organism, the Interpretive Center will be adapted to the local climate and site, harvest its energy and water from renewable sources, operate pollution free, and be beautiful. The Interpretive Center has the opportunity to become the first Living Building in the Gulf Coastal environment, and a global example of sustainable architecture for the Gulf Coast.

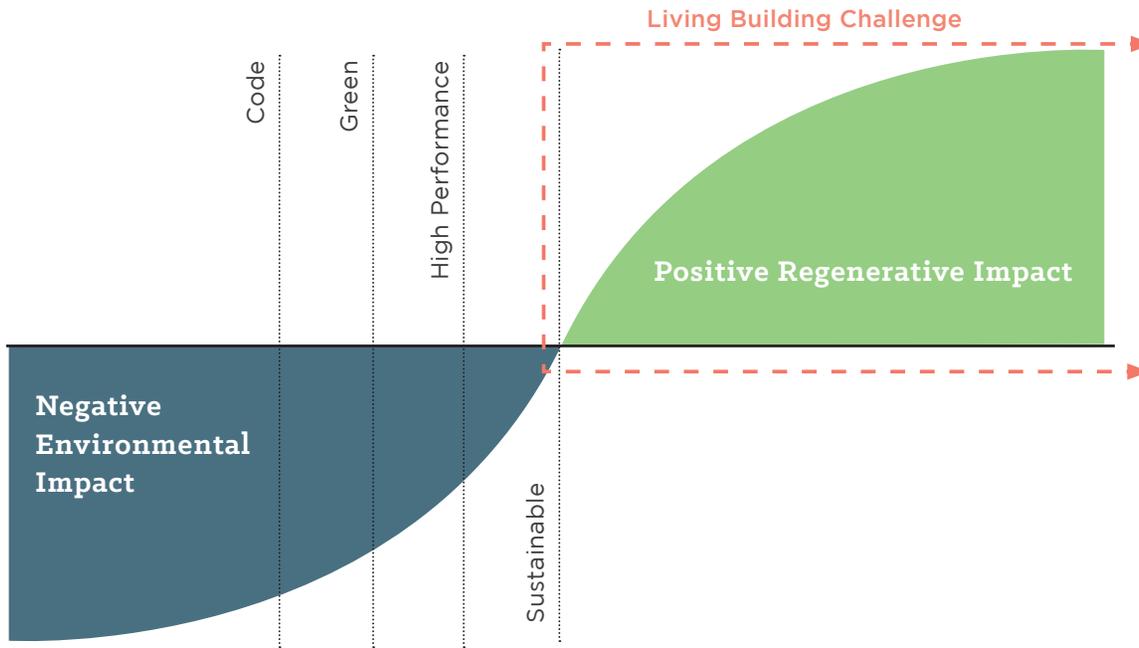


IMAGE ADAPTED FROM LIVING BUILDING CHALLENGE MATERIALS.

“WE HOPED TO  
RAISE THE BAR FOR  
ENVIRONMENTALLY  
SMART BUILDINGS...  
AND I THINK WE’VE  
DONE THAT WITH  
THIS REMARKABLE  
BUILDING.”

—Chesapeake Bay Foundation  
President Will Baker





## LIVING BUILDING EXAMPLE: THE BROCK ENVIRONMENTAL CENTER

Chesapeake Bay Foundation,  
*Virginia Beach, VA*

The Chesapeake Bay Foundation's Brock Environmental Center is one of the most energy efficient, environmentally smart buildings in the world. Key features:

- Solar panels
- Wind turbines
- Geothermal wells
- Rain cisterns
- Waterless toilets
- Natural landscaping
- Elevated fourteen feet above sea level to protect from flooding



FROM TOP:  
IMAGE SOURCE: [HTTP://S3.AMAZONAWS.COM/SMITHGROUP/PROJECT\\_IMAGES/IMAGES/000/002/010/NORMAL/CBFBROCKENVIRONMENTALCENTER36.JPG?1432052402](http://s3.amazonaws.com/smithgroup/project_images/images/000/002/010/normal/CBFBROCKENVIRONMENTALCENTER36.JPG?1432052402)

IMAGE SOURCE: [HTTP://WWW.RESILIENTDESIGN.ORG/THE-BROCK-ENVIRONMENTAL-CENTER-A-PINNACLE-OF-SUSTAINABILITY-AND-RESILIENCE/](http://www.resilientdesign.org/the-brock-environmental-center-a-pinnacle-of-sustainability-and-resilience/)

PHASE 1 KEY PROJECT

# A Learning Campus

- Provides classrooms and laboratories for K-12 students and beyond, expanding the park's capacity for in-depth research and education programs
- Location near park HQ allows learning to extend beyond the park, with connections to the Gulf Shores community
- Additional flexible lodging option for student groups as well as park visitors
- New dining opportunity to serve park visitors and the wider community





Gulf Shores Elementary School

Gulf Shores High School

Learning Campus



Maintenance



Woods Cabins



Gateway to Maintenance and Woods Cabins

- Existing Road
- Proposed Road
- Existing Trail
- Proposed Trail

# A Learning Campus

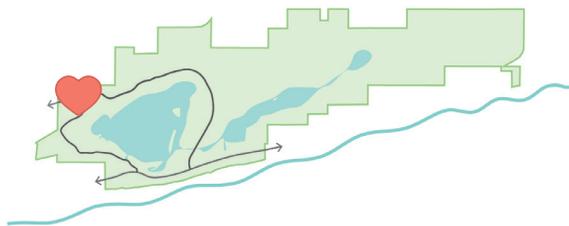
## CHOOSING THE PARK HQ LOCATION

The Learning Campus was originally considered in the Campground near the Nature Center, but after further investigation, this site revealed significant challenges:

- Site is flood-prone and drains poorly following rain storms
- Constrained site with limited flexibility for building placement and no room for potential future expansion
- Disrupts campground community with new user groups
- Creates additional traffic problems in the campground

For these reasons, the Master Plan recommends siting the Learning Campus near Park HQ. Locating the Learning Campus here has many advantages:

- 10 acre site with greater flexibility for building placement now and opportunities for future expansion within the campus
- Allows greater connectivity with Gulf Shores
- Less flood risk
- Linked to trail network
- More opportunities for food and beverage
- Reduced burden on park staff because lodge operator could manage and operate the facility



## ELEMENTS OF THE CAMPUS

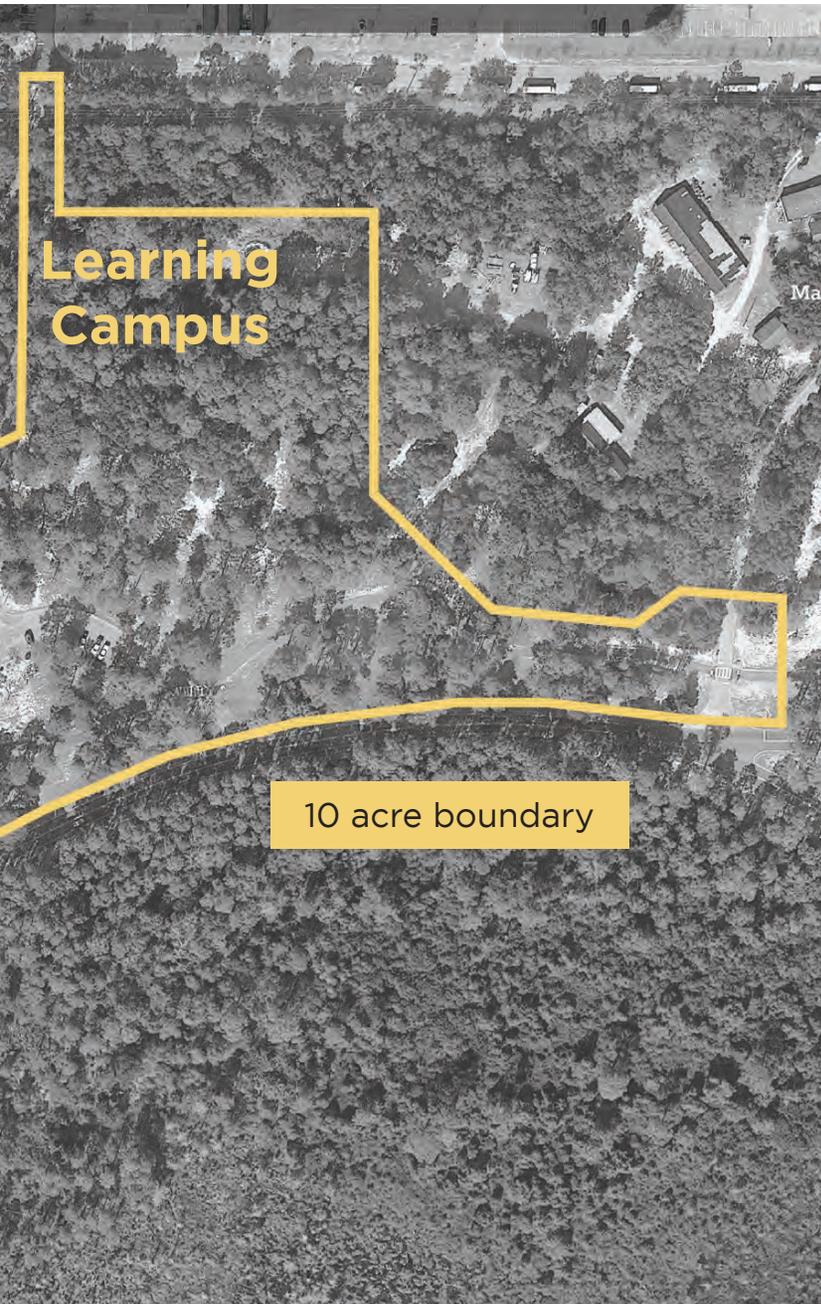
The Learning Campus expands capacity for research and education programs through its classrooms and laboratories. Flexible **learning space** will serve K-12 students as well as visiting researchers.

Complimenting these spaces, the campus will also include **flexible lodging options** for student groups as well as park visitors. **Dining options** in the campus will be open to all park visitors, students and researchers.

The **park trail network** will connect through the campus, providing opportunities for campus visitors to get out and explore the rest of the park. Located near Gulf Shores, the Learning Campus can also encourage local residents to enjoy Gulf State Park.



LEARNING CAMPUS:  
LIMITS OF DISTURBANCE



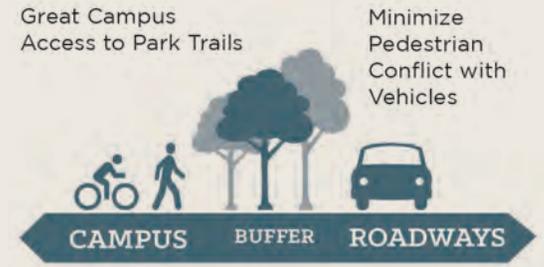
## CAMPUS DESIGN PRINCIPLES

Design principles for the Learning Campus help guide the next steps in laying out the physical campus.

### Consolidate Access Driveways



### Pedestrian Campus Core



### Share Parking & Services



### Concentrate Disturbance



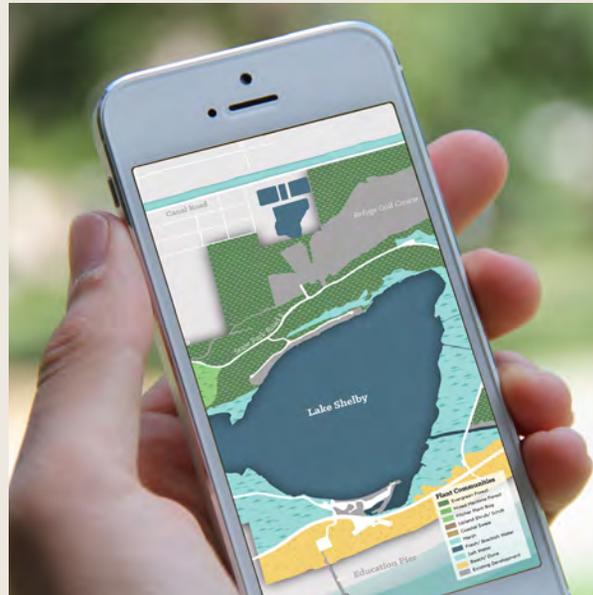
# Additional Learning Actions

Education is a key goal of future park improvements, providing more opportunities for park visitors to learn throughout the whole park.

In addition to the key projects, other opportunities to expand learning include these actions, policies, and partnership opportunities.

- **Geocaching** - increase marketing / awareness of the park's tremendous geocaching opportunities
- **Additional educational programming** on the park's ecosystems, plants, and wildlife; local history; and sustainability practices
- Develop the series of **Exploration Stations** and market them as a connected sequence to encourage park visitors to explore more of the park. Offer programming that departs from these locations.
- **Painted snippets & signage on trails** about surrounding ecosystems
- **Nature Center:** Enhancement opportunity: Eliminate the exterior bathroom doors and add more toilets inside to accommodate school groups better
- **Learning through Technology**
  - Monitoring sites that can be accessed by phone (ex. Nest cams)
  - Self-guided tour apps
- **Stewardship opportunities:** Continue to promote volunteer opportunities, including park visitors, local residents, and the snowbird community. Volunteers can help in the restoration of natural systems through programs such as Christmas tree recycling, sea grass or salt tolerant tree planting programs, wildlife monitoring, turtle watch programs, and invasive species removal.
- **Education for all ages.** for example: Junior Ranger program & Adult Naturalist classes
- **Demonstrate regenerative strategies that guests can apply in their own homes:** NWF Backyard Habitat Program
- **Additional programming:** family outdoor adventure camps, teen survival camps, yoga, mindfulness, tai chi
- Broaden network of outdoor and educational **destinations in region**

- Connections with **local schools and all state colleges and universities** - Explore opportunities for the park to partner with local schools, Faulkner State Community College, and University of South Alabama and expand access to outdoor education opportunities, research, and green internships. For example, programs like Baldwin County Grasses in Classes Program provide opportunities for students to contribute to dune restoration.
- Further partner with Gulf State Park **Friends Group** to help support the park, including providing more learning opportunities



DISCOVERY APPS ABOUT PARK'S ENVIRONMENT



PAINTED SNIPPETS & SIGNAGE ON TRAILS ABOUT SURROUNDING ECOSYSTEMS

IMAGE SOURCE: [HTTP://WWW.CITYLAB.COM/DESIGN/2015/06/PORTLAND-DEBUTS-RAIN-THEMED-CREATIVE-CROSSWALKS/395495/](http://www.citylab.com/design/2015/06/portland-debuts-rain-themed-creative-crosswalks/395495/)



A large, white, stylized number '7' with a thick stroke and a small square notch at the top left. It is positioned to the left of the main text.

# IMPROVING MOBILITY

# IMPROVING MOBILITY

Enhancing Gulf State Park includes expanding mobility options for park visitors. The goal is to make the park a place where it's possible to park once, and then explore all the park has to offer - on foot, bicycle, or by hopping on a new Park Tram. This chapter illustrates mobility options and enhancements.

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# More Ways to Get Around the Park

## MORE WAYS TO GET AROUND THE PARK

The Hugh S. Branyon Backcountry Trails are one of the most beloved and well-used elements of Gulf State Park today. Yet at times they are challenged by their own popularity with fast bicyclists and more leisurely walkers sharing the trails. Trail network expansion and enhancements will ensure a diverse trail system that connects people to destinations across the park.

- More miles of trails and better connectivity in loops
- A greater variety of trail experiences - hiking and nature trails in addition to major paved routes
- More “Pause Places” along trails
- Additional trailheads to access the system

Beyond the Backcountry Trail system, creating more safe and fun ways to access the park’s destinations include:

- Repurpose a section of State Park Road 2 to personal vehicles, becoming a dedicated way for pedestrians, bicyclists and the new park tram
- Safer beach intersections prioritizing pedestrians
- A park tram connecting destinations within the park
- Greener parking lots and beach parking lots with drop-off zones
- Additional bike rental locations

## GREAT TRAILS

A park’s trail system is the backbone of all interpretation and recreation. Park users have expressed desires for more kinds of trails. In fact, the trail design itself can be key to understanding the natural ecosystems of the park.

Trail size, materials, and events can diversify the visitor experience. Boardwalks, stepping stones, signage, decks, seating, shade, water, distance markers, and interpretive information can all be integrated into trail design.



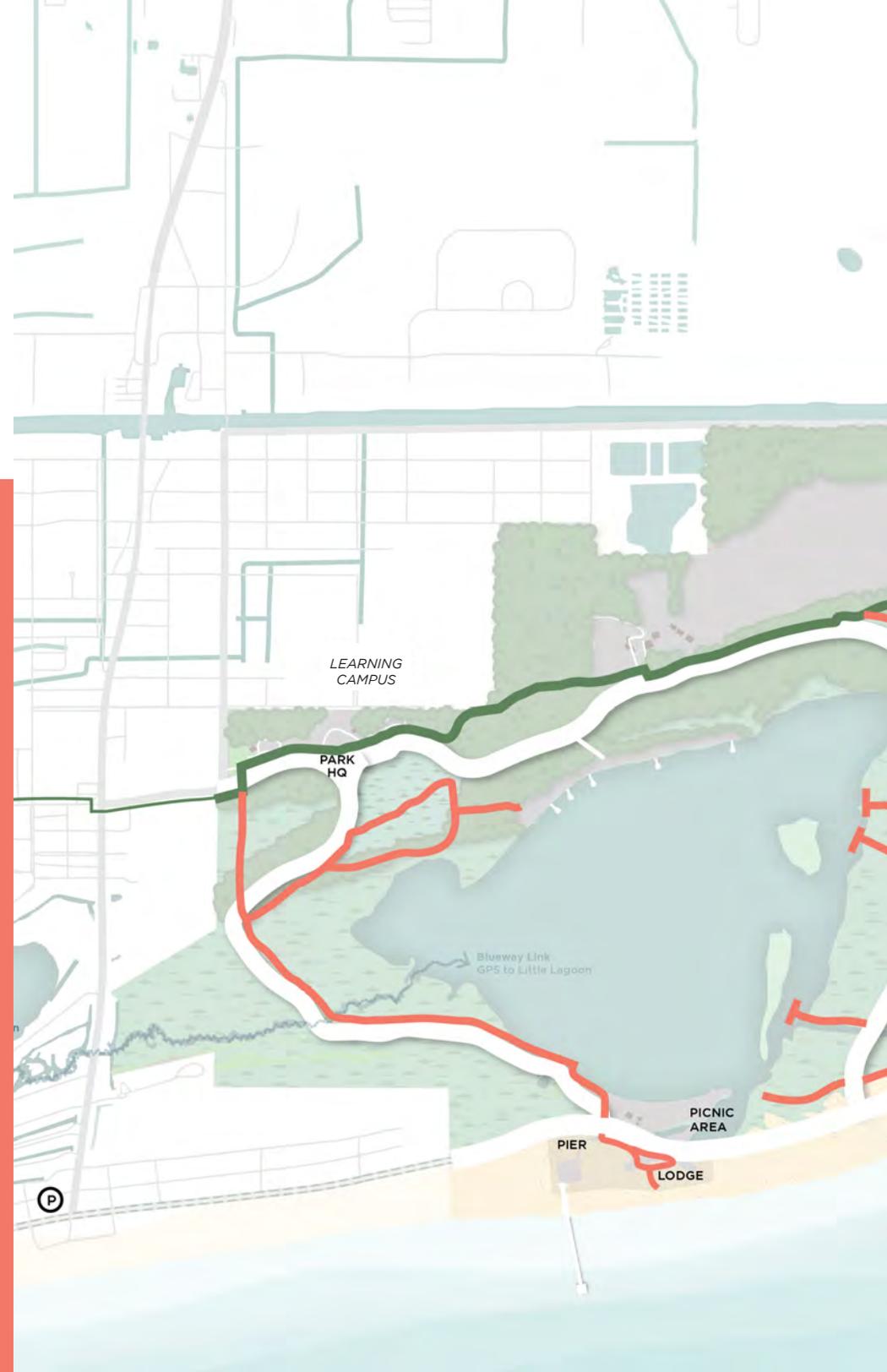
**IMPROVING WALKING AND BICYCLING IN THE PARK WAS THE #1 PRIORITY FOR LOCALS AND THE #2 PRIORITY FOR VISITORS WHO TOOK THE ONLINE SURVEY**

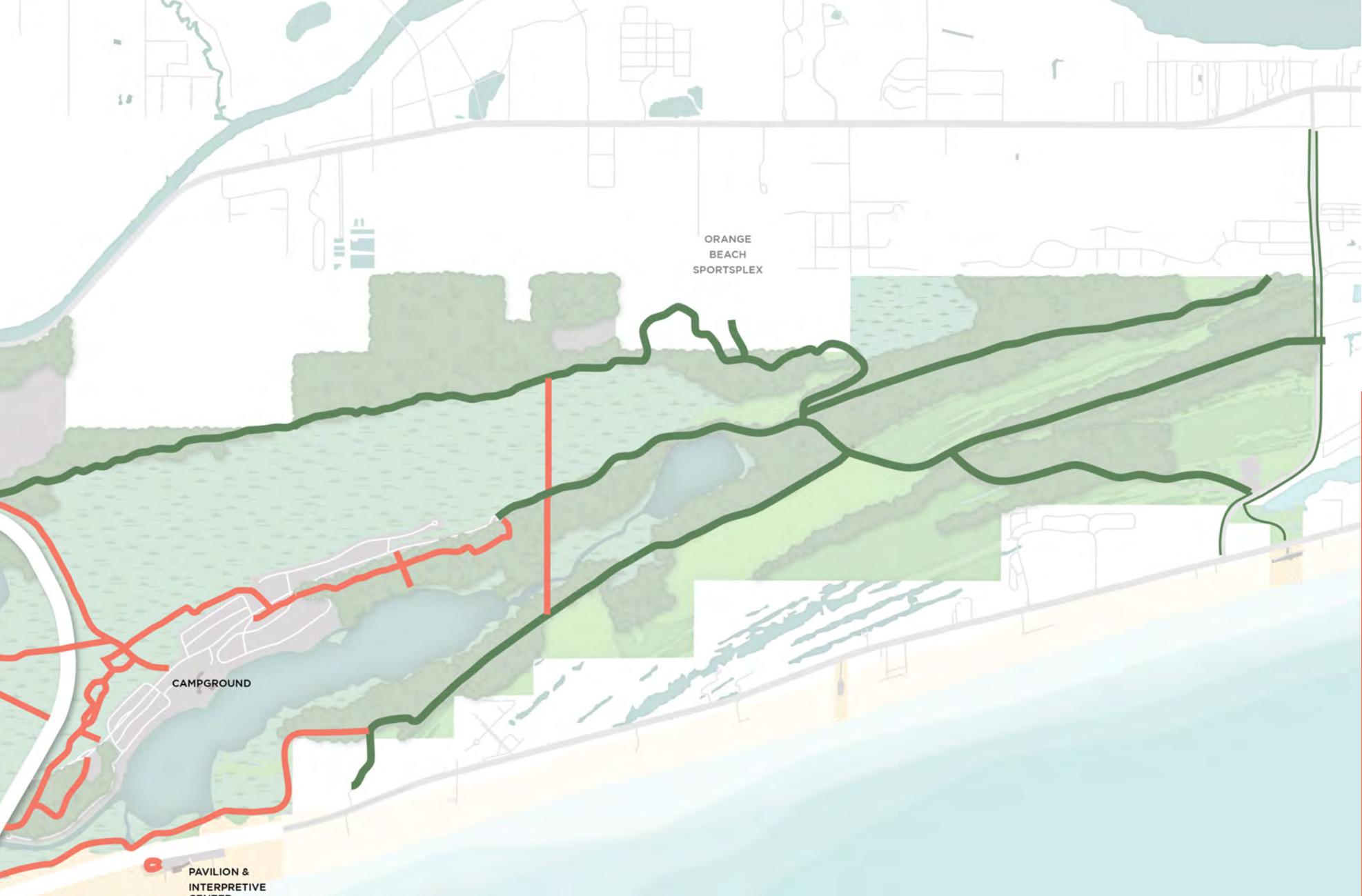
PHASE 1 KEY PROJECT

# Trail Network Enhancements Phase 1

The Hugh Branyon Backcountry Trail System is already one of the park's draws. More than 11.5 miles of trails allow visitors to explore many of the park's diverse ecosystems.

Phase 1 of the Trail Network Enhancements includes adding 9.5 miles of new trails & 3.5 miles of trail enhancements. New trails will include hiking trails, providing different places for bicyclists and walkers. All trails will be accessible to a wide variety of users. Explore and discover even more of the park!





ORANGE  
BEACH  
SPORTSPLEX

CAMPGROUND

PAVILION &  
INTERPRETIVE  
CENTER

-  Existing Trail
-  Ph 1 - New Trails & Trail Enhancements

## Balancing Different Trail User Groups

Today, bicyclists and hikers share the same trails; the goal in the future is to provide a variety of trails for different user groups. Adding unpaved nature trails will provide trail users looking for a quieter experience places to explore. The design of these trails should reinforce their identity as quieter, non-bicycle trails. Trail entrances can have signage and changes in material to indicate their desired use.

Adding dedicated mountain bike trails elsewhere will help non-road cyclists find a place of their own in the park as well. The design of the main, paved trails should also encourage appropriate speeds by bicyclists, discouraging racing on park trails.



### PAINT AS INDICATOR

Painted edges can provide visual cues for pedestrians and bicyclists. It's also a fun way to integrate art into the park experience!



### ELEVATION CHANGE

A change in elevation helps distinguish between the biking route and walking trail. A small ramp up to the walking trails elevation maintains handicapped accessibility.



### BOLLARDS

Physical obstructions make traveling from the paved major bike route to the hiking trail more challenging for bikers.

## More Kinds of Trails

Trail network enhancements provide greater diversity for walkers and bicyclists. They also adapt to the different environments they pass through. Despite their differences, all trails will be ADA accessible.



### MAJOR PATHS

Similar in feel to the existing Hugh S. Branyon Backcountry Trail, these trails have room for avid cyclists, walkers and groups.

# Trails Construction & Maintenance

Currently, paved trail edges suffer from erosion. The recommended construction technique below will help avoid this problem in the future.

**Asphalt Trail Edge Conditions:**  
Asphalt trails should incorporate steel edging or flush concrete curbing to limit edge degradation over time. These finished edges will aid in long-term maintenance of the asphalt surfacing.

**Nature Trails Construction and Maintenance**  
Using the most readily available imported aggregates, these trails should be lightly graded and compacted with a drum roller as necessary to maintain accessibility. If appropriate, consider the use of crushed concrete in lieu of imported aggregates. Given the smaller width and more relaxed character of the nature trails an improved edge is not recommended.



DECOMPOSED GRANITE



## NATURE TRAILS

These narrower and softer trails are made for walking and hiking. They traverse the park's upland environments.



WOOD BOARDWALK



## WETLAND CROSSINGS

Wooden boardwalks provide access to the park's wetter areas. These elevated paths include interpretive signage and places to pause and enjoy the view.

## PHASE 2 KEY PROJECT

# Trail Network Enhancements Phase 2

Phase 2 of the trail network enhancements focuses on closing loops, incorporating more educational learning elements, and adding “pause places” throughout.

Examples of Phase 2 enhancements:

- Lake Shelby south connection
- Campground Road path
- Cabin trail connection
- Eastern trail connections
- Pitcher Plant Bog Boardwalk
- Canopy Bypass along Gulf Oak Ridge
- Additional trails added with Golf Course conversion



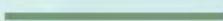
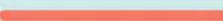


ORANGE  
BEACH  
SPORTSPLEX

**Canopy Walk**  
Resurface  
as unpaved;  
Add bypass trail

CAMPGROUND

PAVILION &  
INTERPRETIVE  
CENTER

-  Existing Trail
-  Ph 1 - New Trails & Trail Enhancements
-  Ph 2 - Additional Trail Links
-  Ph 2 - Cycle track
-  Ph 2 - Car-free Road
-  Bicycle Rental Location

## Pause Places

### MORE PLACES TO EXPLORE AND PLAY

“Pause places” are destinations and stopping points along the trail network. These areas, like the Boulder Park / Pavilion / Butterfly Garden, encourage visitors to explore the park.

The Master Plan recommends creating additional places to get up and off the main trail. Some of these pause places can be active and playful - combining play, education, and social spaces; others can provide opportunities for quieter nature and wildlife viewing.

---

AN EXISTING “PAUSE PLACE” AT LITTLE LAKE INCLUDES A BENCH, COVERED SWING, AND GREAT VIEWS OF THE WATER.



## IDEAS FOR PAUSE PLACES

All pause places could include educational signage and opportunities to learn about the park's ecosystems, plants, animals, and natural processes (rain and storms, prescribed burning, and wind, for example).

Pause places could be combinations of several of these elements.

- **Play/Social:** Combine play with ample seating, opportunities for all ages to enjoy.
- **Birding:** Birding suspension bridge or birding blind with adjacent habitat enhancements. Gulf State Park already includes six Alabama Coastal Birding Trail stops, mostly located along the beach or southern/western shores of Lake Shelby. There are opportunities to create more bird viewing places along the Backcountry Trail, with spurs that lead off the main trail to provide quieter places for birding.
- **Other Habitat:** Butterfly/hummingbird plantings in landscape or vines over shade structure.

- **Stormwater treatment rain garden/sculpture:** Shade structure with water-collecting roof and sculptural pathway from roof to cistern or basin. Drip lines connect to adjacent habitat improvement, like butterfly hummer plantings.
- **Ecosystem:** Guided walk through one of park's special ecosystems, like a pitcher plant bog.
- **Historical/Archaeological:** Highlight aspect of park's past.

## PAUSE PLACE AMENITIES

### Major Pause Place Amenities

Major pause places should include a seating area for eight to ten people, a water station and interactive signage / wayfinding. Certain locations would necessitate specific structures, such as the eagle nest viewing tower or little lake pier.

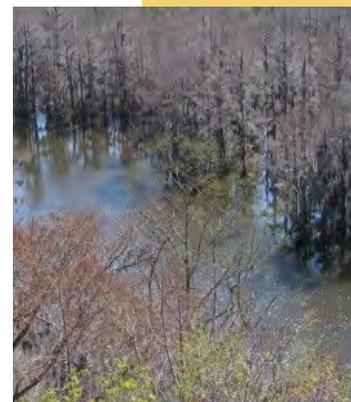
### Minor Pause Place Amenities

Minor pause places should include a seating area for three to five people with fixed signage/wayfinding. Activity specific pause places such as bird blinds will require discrete structures to aid in their successful use by park visitors.

## GREAT EXAMPLE: TRAIL & PAUSE PLACE EXPERIENCE

*Perry Lakes Park, Marion, AL*  
Perry Lakes Park includes a series of structures designed and built in the early 2000s by Auburn University's Rural Studio students. The trail system including boardwalks leads through a covered bridge and to the foot of a fire tower. The tower allows park visitors the chance to climb through the treetops and see the forest from a new angle. In addition, the park includes a covered pavilion and even innovative restrooms.

FROM LEFT: PAVILION, COVERED BRIDGE, RECYCLED FIRE TOWER, VIEW FROM THE TOP OF THE LOOK-OUT TOWER, TRAIL SYSTEM



## Scenic Parkways

The character of park roads plays a major role in defining the park experience for visitors. Gulf State Park roads should be more like scenic parkways, where the experience of traveling through the park is a special experience in itself.

Great park roads share these characteristics:

- Parkway feel connected to their natural setting. The design of the road is appropriate for the landscapes through which it passes.
- The focus is on the journey and enjoying the scenery rather than racing to a destination. Road design and speed limits should discourage speeding. Calming traffic also helps make roads safer for bicyclists and pedestrians.
- Parkway include great views and scenic pull-offs.
- Wayfinding signage at intersections and clarity around parking and hubs of activity makes it easy for travelers to find their way.
- Roads include dedicated room for bicycles.
- Roads minimize their environmental footprint and include crossing opportunities for wildlife.

### SAFE BICYCLING & WALKING ON PARK ROADS

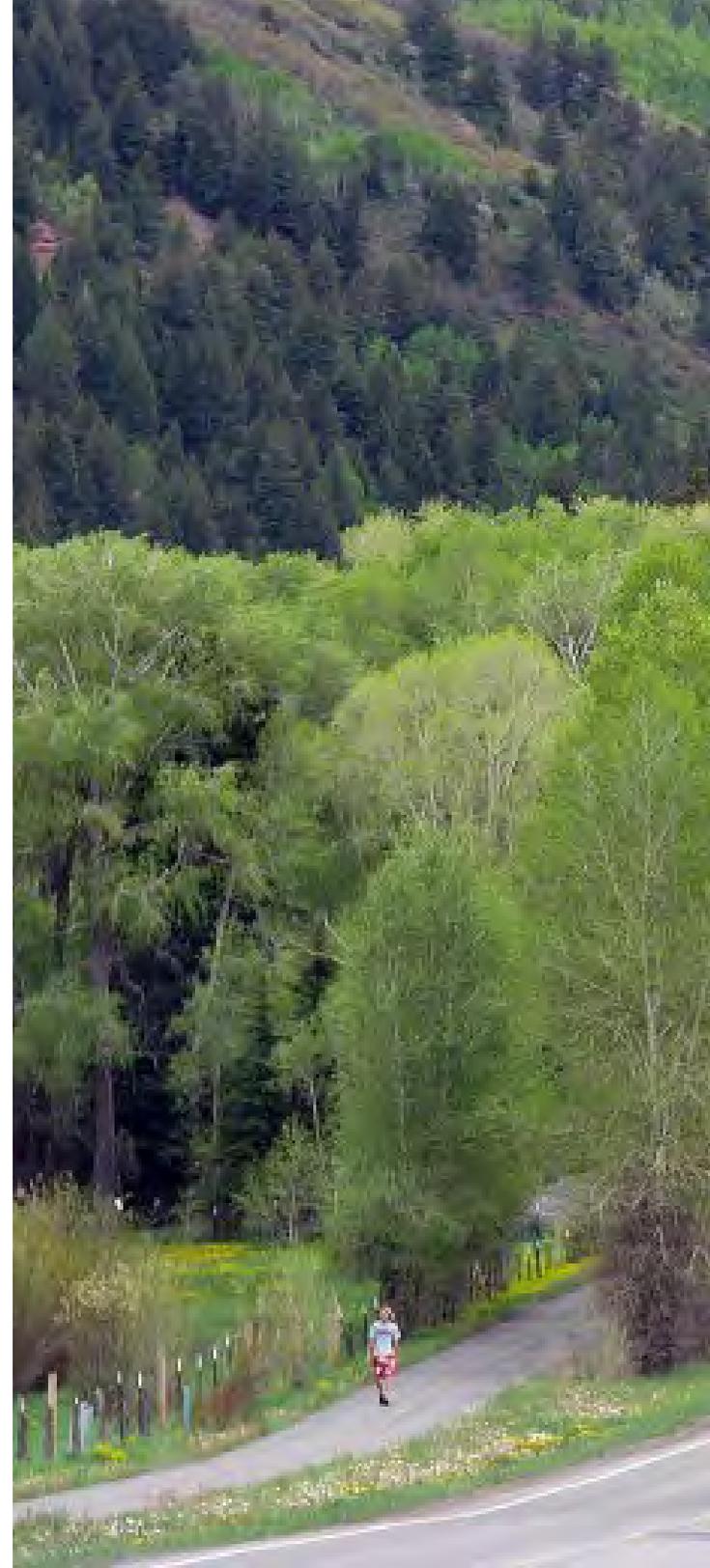
A 1.5 mile section of State Park Road 2 will be used only by pedestrians, bicyclists, and the park tram, but other roads in the park will need to be shared by vehicles and other modes of travel. Creating safe streets is critical.

Today, the design of Gulf State Park roads encourages cars to move quickly through the park. Traffic calming measures can help encourage vehicles to obey posted speed limits.

- **Reduce lane widths & reinforce the narrower lanes visually:** Reducing lane widths from 12 feet or more down to 10 feet on park roads will help cars stay within speed limits. Visually narrowing the roadway can strengthen the effectiveness of tighter lanes. For example, raised curbs rather than flat shoulders can make the lane widths more prominent. Wide-open views can make drivers go faster than they realize.
- **Provide dedicated room for bicyclists:** Bicycle lanes provide room for cyclists. Separated cycle tracks can be an even safer option. By giving bicyclists their own, separate zone, conflicts with vehicles are reduced.
- **Where possible, consider reducing speed limits to 25 - 30 mph for internal park roads (not including Perdido Beach Blvd) .** Above 25 mph, the risk of severe injury or death to a pedestrian struck by a vehicle jumps dramatically.<sup>1</sup>

<sup>1</sup> "A person is about 74 percent more likely to be killed if they're struck by vehicles traveling at 30 mph than at 25 mph." Brian Tefft, AAA Foundation for Traffic Safety (quoted in <http://www.wired.com/2014/11/lowering-nycs-speed-limit-just-5-mph-can-save-lot-lives/> ). AAA's original 2011 report available online - <https://www.aaafoundation.org/sites/default/files/2011PedestrianRiskVsSpeed.pdf>

IMAGE SOURCE: [HTTP://WASATCHCHOICE2040.COM/COMPLETE-STREETS/ITEM/326-WHAT-AND-WHY-OF-COMLETE-STREETS-IN-UTAH](http://WASATCHCHOICE2040.COM/COMPLETE-STREETS/ITEM/326-WHAT-AND-WHY-OF-COMLETE-STREETS-IN-UTAH)

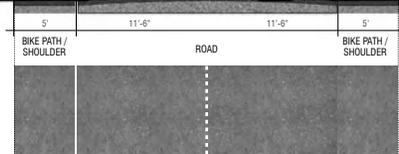




## AL 135 (West side of Lake Shelby Loop) IMPROVEMENT OPPORTUNITIES

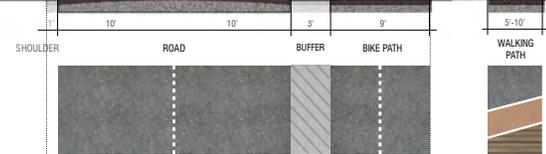
### Current Conditions

- Today, AL 135 is characterized by wide lanes
- Bicycle lanes exist on both edges of the road



### Proposed Conditions (Conceptual)

- Separated cycle track for safer bicycling
- Narrower lanes to slow down vehicles
- Parallel walking path
- No change in paved road width



(PAVED, UNPAVED, OR BOARDWALK)



CYCLE TRACK EXAMPLE

IMAGE SOURCE: [HTTPS://WWW.THEURBANIST.ORG/2014/10/06/FILLING-IN-THE-GAP-CYCLE-TRACK-NOW-OPEN-ON-THE-ISSAQUAH-PRESTON-TRAIL/](https://www.theurbanist.org/2014/10/06/filling-in-the-gap-cycle-track-now-open-on-the-issaquah-preston-trail/)

## Beachfront Boulevard

Improving intersections will help increase access from the beach to other parts of the park. In addition, enhancements along Perdido Beach Blvd will make it easier for pedestrians and bicyclists to move along the beach.



TOP: PERDIDO BEACH BLVD TODAY;  
BELOW: N ROOSEVELT BLVD,  
KEY WEST, FLORIDA, A GREAT  
EXAMPLE OF A FOUR-LANE BEACH  
BOULEVARD THAT IS WELCOMING  
TO PEDESTRIANS, BICYCLISTS, AND  
VEHICLES.

# PERDIDO BEACH BLVD. IMPROVEMENT OPPORTUNITIES

## Current Conditions

- High speeds and wide lanes
- Bicycle lanes with buffer areas from car lanes
- Sand blows onto edge of road, narrowing bicycle lanes

## Proposed Conditions (Conceptual)

- Separated Cycle Track for safer bicycling
- Narrower lanes to slow down vehicles
- New walking path added
- Walking path on north side of road to protect dunes south of the road by discouraging cut-throughs at non-designated locations
- No change in paved road width

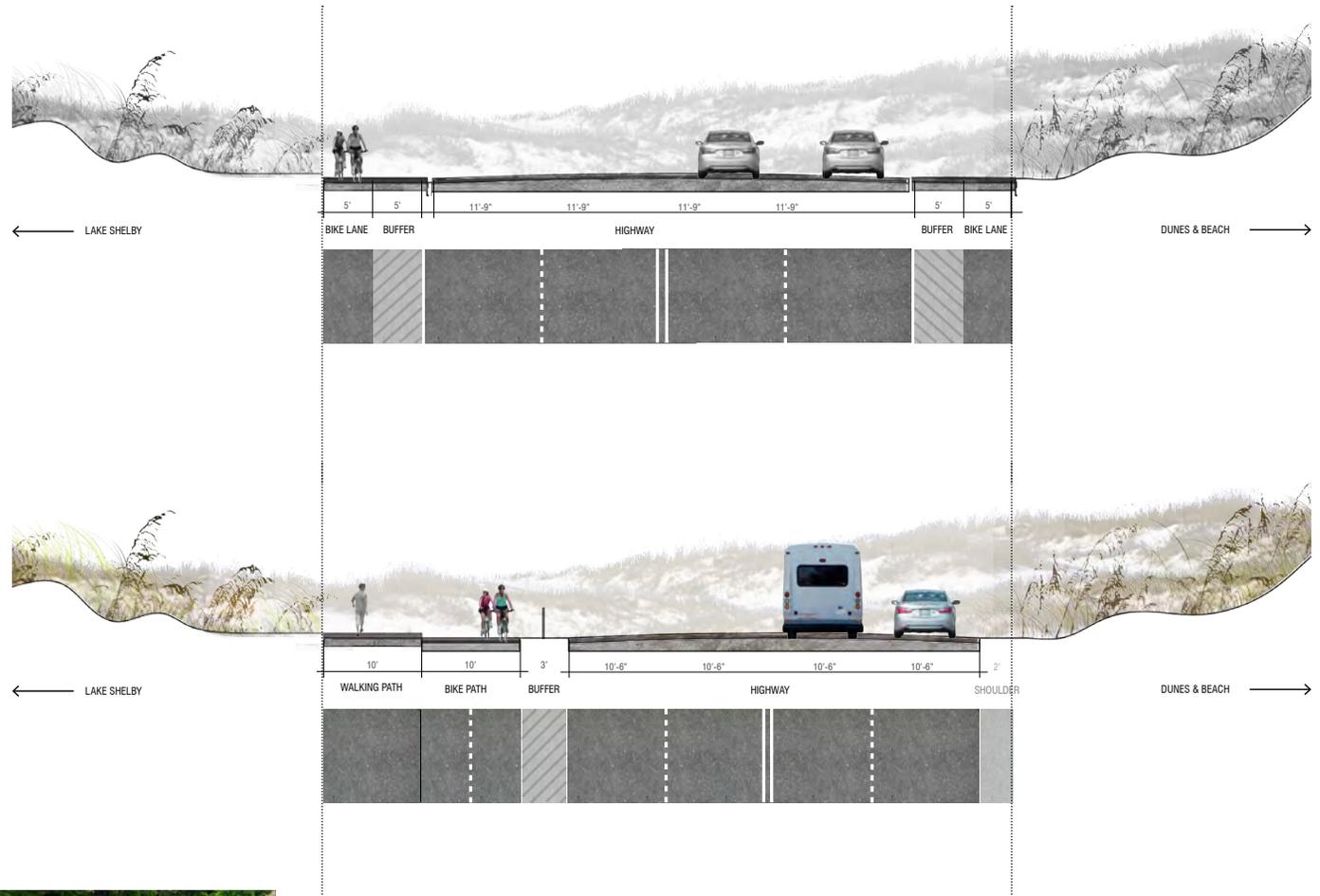


IMAGE SOURCE: [HTTP://WWW.FASTCOEXIST.COM/3031392/ THE-CASE-FOR-PROTECTED-BIKE-LANES](http://www.fastcoexist.com/3031392/the-case-for-protected-bike-lanes)

## SAFER BEACH INTERSECTIONS

### The Need for Safer Crossings

Today, Perdido Beach Blvd. acts as a barrier between the beach and other parts of the park. Crosswalks exist, but with cars that run red lights and high speeds, it can be a scary and dangerous place for pedestrians.

In the online survey, the #1 barrier to walking and bicycling in the park was crossing Perdido Beach Blvd (45% of respondents said it discouraged them from walking or bicycling).

Improving crosswalks is critical to promote greater exploration of the park, so visitors that come to the beach and Lodge can safely walk or bicycle to the park's inland lakes, forests, and marshes.

### Intersection Improvement Opportunities

A variety of tools are available to improve the visibility and safety of the crosswalks in the park, such as the signalized intersection of Beach Blvd. with Hwy. 135 and State Park Rd. 2, the main crossing point for campground guests traveling to the beach.

#### Physical Improvement Possibilities:

- **Refuge islands** could be installed to make the crosswalk more visible and to protect pedestrians mid-crossing.
- **Illuminated signage, in-pavement lighting, and/or overhead beacons** would help make the crosswalk more apparent to drivers.
- Other traffic-calming measures such as **rumble strips** on the approaches to the crosswalk could also help alert drivers.

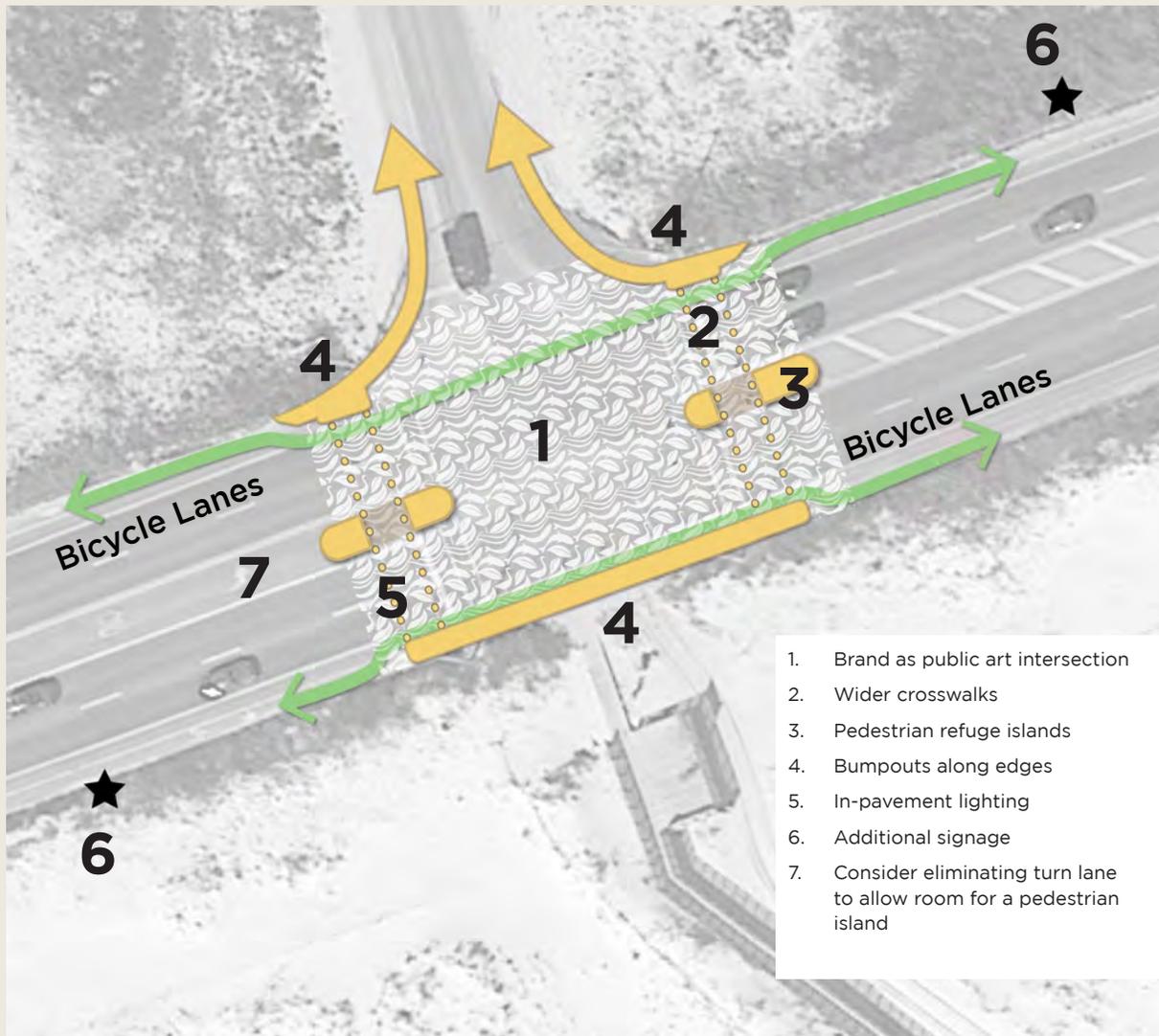


- **Painting the crosswalks**, a form of public art, can help make the crosswalks more visible, while also contributing to the park's distinct character. For example, intersections could be decorated with large-scale painting of the new Gulf State Park logo. Providing a broader area marked for pedestrians helps create more of a shared space, where drivers learn to expect pedestrians.



CURRENT CONDITIONS: LITTLE ROOM FOR PEDESTRIANS WHILE WAITING TO CROSS. EXISTING SIGNAGE IS RELATIVELY SMALL AND COULD BE HARD FOR DRIVERS TO SEE.

## INTERSECTION IMPROVEMENT POSSIBILITIES\*



1. Brand as public art intersection
2. Wider crosswalks
3. Pedestrian refuge islands
4. Bumpouts along edges
5. In-pavement lighting
6. Additional signage
7. Consider eliminating turn lane to allow room for a pedestrian island

\*ALL IMPROVEMENTS MUST FIT WITHIN THE EXISTING PAVED RIGHT-OF-WAY TO AVOID CRITICAL HABITAT THAT EXISTS OUTSIDE OF ROAD EDGES ALONG MUCH OF PERDIDO BEACH BLVD.



IMAGE SOURCE: [HTTP://WWW.ACHDIDAHO.ORG/PROJECTS/PUBLICPROJECT.ASPX?PROJECTID=142](http://www.achdidaaho.org/projects/publicproject.aspx?projectid=142)



IMAGE SOURCE: [HTTP://TEST.LIGHTGUARDSYSTEMS.COM/](http://test.lightguardsystems.com/)

RIGHT (FROM TOP): PHYSICAL IMPROVEMENT EXAMPLES — REFUGE ISLAND, OVERHEAD BEACONS, IN-PAVEMENT LIGHTING.

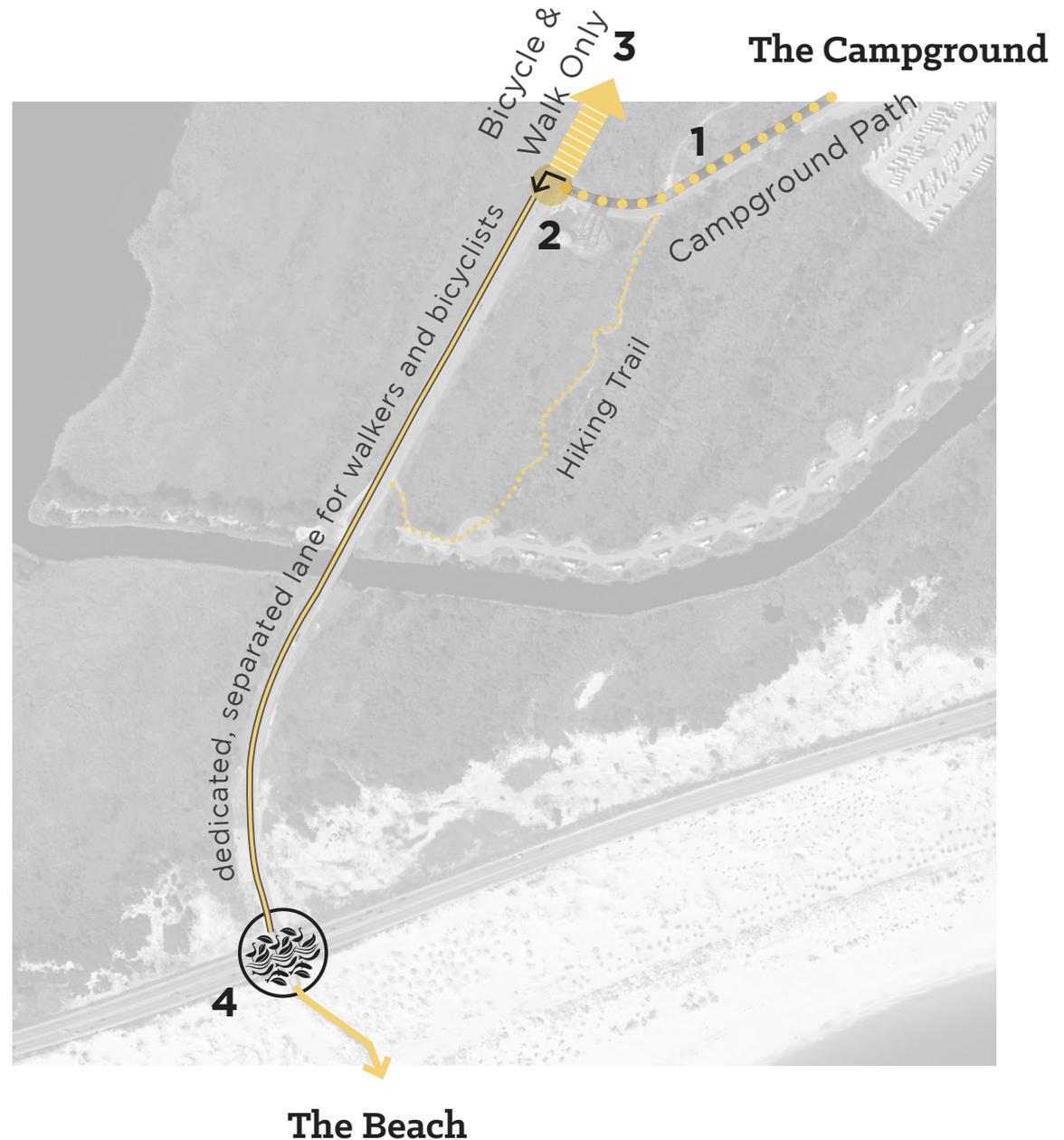
## SAFER CAMPGROUND TO BEACH TRAVEL

The campground entrance is only a 10 minute walk from the beach, but sidewalks do not go the whole way and crossing Perdido Beach Boulevard adds to the challenge.

Creating a safer route includes:

1. Adding a **bicycle and walking path beside Campground Road**. This path will provide safe travel to the campground entrance.
2. From this path, walkers and bicyclists will **cross State Park Road 2**, and head south along a **new dedicated lane for bicyclists and walkers**, separated from vehicles.
3. **Closing State Park Road 2** north of the Campground Entrance to vehicular traffic. The section of State Park Road 2 from Perdido Beach Blvd. to the Campground will remain open, but **traffic will be significantly reduced**. Now, this section of road will only include vehicles traveling to the campground, not through-traffic.
4. The **intersection improvements at Perdido Beach Blvd.** will provide safer travel for the last link in the journey.

For campground guests who prefer not to walk or bicycle, in the future they will have the option of taking the new Campground-Beach Park Tram, proposed as part of Phase II, for an open-air ride to the Beach.

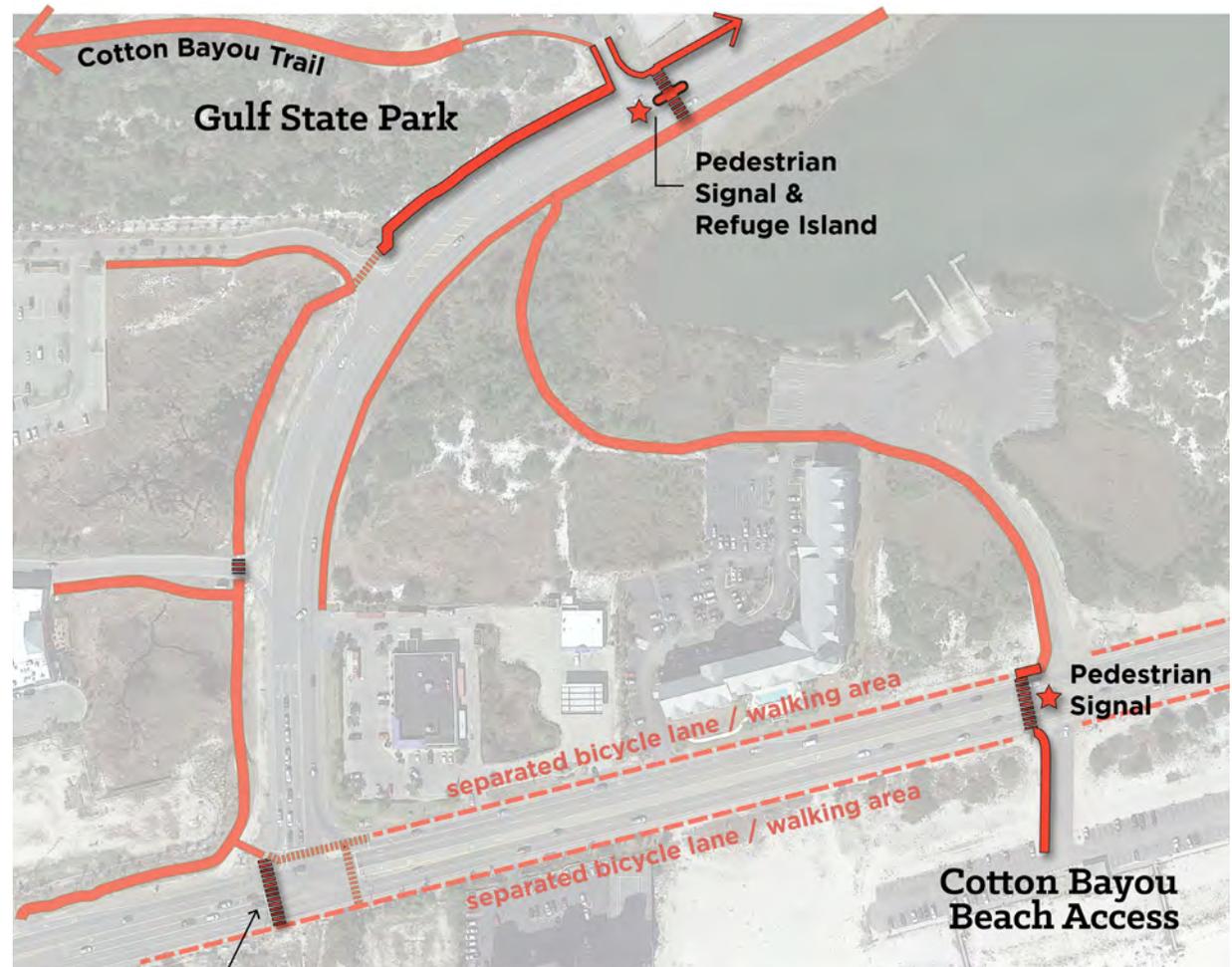


## BETTER CONNECTIVITY TO COTTON BAYOU BEACH ACCESS

The southeastern corner of Gulf State Park also connects to the Beach, but getting between the Cotton Bayou Trailhead and the Cotton Bayou Beach access is missing several key links.

With two pedestrian signals and a few short stretches of sidewalk, it will become much easier and safer to get to / from the Beach.

This conceptual plan requires partnerships and agreements with local landowners. Further study would be required.



**Crosswalk Addition**  
So pedestrians who want to cross north/south only need to cross once

**— New sidewalk / trail connection**  
**— Existing sidewalk**

## PHASE 3 KEY PROJECT

# Trail Network Enhancements Phase 3

Phase 3 of the Trail Network Enhancements focuses on enhancing the trails experience by improving the character of existing trails.

Examples of Phase 3 Enhancements:

- Opportunities to convert Rattlesnake Ridge and/or Cotton Bayou to unpaved surfaces
- Widen Catman Road trail to provide more room for walkers and bicyclists
- Resurface Powerline North to unpaved and enhance hydrological connectivity under trail





-  Existing Trail
-  Ph 1 & 2 - New Trails & Trail Enhancements
-  Ph 2 - Cycle track
-  Ph 2 - Car-free Road
-  Bicycle Rental Location
-  Ph 3 - Long-term Trail Enhancements

PHASE 2 KEY PROJECT

# State Park Road 2 Conversion

Repurpose State Park Road 2 by closing it to through-traffic from the Gulf Oak Ridge Trailhead to the Campground creates a new connection for pedestrians, bicyclists, and the potential park tram. (It will also remain open to emergency and service vehicles.)

This conversion will improve bicyclist and pedestrian safety and improve the health of the park's central wetlands.

Hwy 135 on the western side of the lake will remain open to vehicular traffic, so any vehicles who do desire to pass through the park can continue to do so.





STATE PARK ROAD 2 TODAY



## A PHASED PROCESS OF ROAD CONVERSION

The conversion of State Park Road 2 could be as simple as adding signage and barriers at the ends, and possibly restriping the road or adding landscaped zones for additional shade. This process could begin as a temporary closure on weekends (see “Quick Win” sidebar on opposite page) and then become a permanent closure later on.

Over time, the road could be adapted to improve water flow, reconnecting the wetland systems that run through the center of Gulf State Park.

## CLOSING STATE PARK ROAD 2 TO THROUGH-TRAFFIC WILL NOT WORSEN REGIONAL TRAFFIC

Closing State Park Road 2 will require through-traffic to use an alternate route. Hwy 135 would be the most likely alternative route chosen by drivers, and its current traffic volumes are well below its maximum capacity. Traffic analysis shows that - even with the most conservative estimates - the amount of traffic diverted from State Park Road 2 to Hwy 135 will not cause congestion. Even if traffic on Hwy. 135 were to double as a result of restrictions on State Park Rd. 2, and if (as is typical) approximately ten percent of daily traffic is concentrated in each of the daily peak hours, the highest hourly volume

a lane would carry would be about 500 vehicles, or less than a third of the volume that would cause congestion.<sup>1</sup> Restriction of traffic on State Park Rd. 2 will therefore not cause operational deficiencies on Hwy 135, from a vehicular point of view. However, pedestrian/bicycle safety is a serious concern. Planning for safe traffic operations should focus on management of vehicular speeds on Hwy 135.

<sup>1</sup> A single travel lane, such as Hwy. 135 in either direction, can carry approximately 1,900 vehicles per hour before appreciable congestion develops.



SECTION OF STATE PARK ROAD 2 TO BE CONVERTED TO A CAR-FREE ROAD



**QUICK WIN**

**STATE PARK 2 SUNDAY MORNING TEST-RUN**

The Master Plan recommends closing State Park Road 2 to traffic on Sunday mornings, either at the same time as Trails Phase 1 opening or earlier, possibly as early as this Spring. This allows the opportunity to test the closure and for bicyclists, runners, and walkers to enjoy about a 1.5 mile segment of car-free road.



**Great Example: Cades Cove Loop Road**  
*Great Smoky Mountains National Park, Tennessee*

Cars and bicyclists usually share the 11 mile, one-way loop road, but on Saturday and Wednesday mornings from May to September, the road is only open to non-motorized visitors.

## PHASE 2 KEY PROJECT

# Park Tram

Imagine watching the scenery go past from an open-air tram!

A Park Tram will make it possible to get around the park without a car, even if you're not a walker or bicyclist. The Park Tram will connect park destinations, including the Campground, Beach, and Lodge.

### Benefits:

- Enhances park experience
- Increasingly expected for operators to provide service like this for guests
- Avoided parking costs
- Opportunities to get around without driving for all park visitors





**State Park SHELBY - LODGE EXPLORER**

**Gulf State Park CAMPGROUND-BEACH CONNECTION**

**Gulf Shores - Orange Beach LOCAL LINK / BEACHFRONT EXPRESS**

### Shuttle / Tram Stops

- ● Park Routes
- Local Link Possibility
- Transfer Station

### Shuttle / Tram Access



“WE WALK A  
LOT, BUT SOME  
PLACES ARE  
TOO FAR.”

— Survey Respondent

## A new way to get around the park

### TIMING & IMPLEMENTATION

The tram system could be implemented in a series of stages:

- Stage I: Campground-Beach Loop (Quick Win opportunity)
- Stage II: Extend to Lodge & Lake Shelby East Loop
- Long-term: The Park Tram could connect with a local shuttle network, which could run along Perdido Beach Blvd. and AL 59. Orange Beach is in the process of conducting a Trolley Study, which could help inform connections between the park and surrounding communities.

A good goal would be to provide a tram stop within a five to ten minute walk of all overnight guests (no more than a half-mile).

Open Air Trams like Topsail Hill would be a good fit for Gulf State Park because they offer a more park-like experience, would allow people to enjoy the scenery more, and have lower capital and operations costs.



## OPERATIONAL MODELS

Several different models of park tram services exist.

- Model 1: Capital costs donated; trams operated by volunteers
  - example: Topsail Hill Preserve - tram donated by South Walton Tourism Development Board and operated by 2 volunteers)
- Model 2: Trams operated by vendor/operator, supported financially through other internal revenue sources
  - example: Sandestin Resort provides two tram loops that are free to park guests)
- Model 3: Trams operated by independent provider; capital and operational costs supported by strong partner
  - example: Acadia National Park - Island Explorer Bus System supported by L.L. Bean)

Any of these models could be a good fit for Gulf State Park, providing an improved park experience for visitors without increasing the burden on park staff.



TOPSAIL HILL PRESERVE  
STATE PARK, FLORIDA

“TOPSAIL STATE PARK  
IS OUR FAVORITE.  
SHUTTLE SERVICE  
TO THE BEACH AND  
WE CAN RIDE BIKES  
IF WE CHOOSE.  
BEACHES ARE NOT  
CROWDED AND NICE  
FACILITIES.”

—MyGulfStatePark Survey Respondent

## PARK TRAM EXAMPLE: TOPSAIL HILL PRESERVE, FLORIDA

An open-air Beach Tram links several stops to the beach. The tram runs hourly, and each stop includes a shelter with benches.



PHASE 3 KEY PROJECT

# Beachfront Parking Enhancements

Emphasizing walking, bicycling, and healthy dunes, the Master Plan sees the opportunity to shrink the existing parking lots. This allows the beach experience to be more walkable, vibrant, and active, and it also creates additional habitat restoration opportunities.





# A Different Kind of Beach Experience

## PARKING STRATEGY: RIGHT-SIZE LOTS WITH DEMAND

Parking lots are the first stop for many park visitors; the Master Plan recommends improving beachfront parking to set a more welcoming, environmentally friendly first impression. The Master Plan recommends monitoring parking over time, and downsizing the lots so they are more appropriate for demand. Some parts of the parking lots could be designated as overflow zones, designed to only be used in peak seasons. These changes are made possible through the improvements to walking, bicycling, and the Park Tram. With

more ways to get around, there will not be a need for as much parking.

Reduce demand for Beachfront parking by:

- Park Tram and bicycling and walking improvements increase access without driving.
- Provide drop-off zones to allow unloading without parking at the Pier and Pavilion.
- Equalize the cost of parking at the Pier and Pavilion. Reduce the cost of pier admission by the parking charge (the result is that walking on the pier will be free for anyone who arrives without parking, or for anyone who pays the parking fee).

- Begin charging for hourly parking at Romar Beach and Cotton Bayou (install meters that take credit cards).
- Monitor parking availability to understand how much parking capacity is needed at different times of year; allows potential to downsize parking lots over time (allowing more room for dunes or other park uses).



THE EDUCATION PIER PARKING LOT CONCEPT



THE PAVILION & INTERPRETIVE CENTER PARKING LOT CONCEPT

### PIER & PAVILION/INTERPRETIVE CENTER RECOMMENDED PARKING LOT IMPROVEMENTS

- **WELCOME VISITORS:** PROVIDE AN INVITING ENTRY AREA WITH ROOM TO WAIT. MAKE THIS SPACE COMFORTABLE WITH SHADE AND BENCHES. ENSURE MAINTENANCE VEHICLES AND DUMPSTERS ARE NOT BLOCKING MAIN SIGHT LINES.
- **DROP-OFF ZONE:** PROVIDE EASY CIRCULATION FOR SOMEONE TO DROP-OFF OTHERS AND UNLOAD BEACH GEAR.
- **GREEN PARKING:** ADD TREES IN THE PARKING LOTS TO PROVIDE SHADE AND BREAK UP THE LARGE LOTS. INCLUDE PLANTED AREAS DESIGNED TO CAPTURE AND ABSORB STORMWATER.
- **SIMPLIFIED SIGNAGE:** STREAMLINE THE WIDE VARIETY OF EXISTING SIGNAGE AND POST INFORMATION IN A CONSISTENT, ORGANIZED MANNER. PROVIDE A CLEAR HIERARCHY SO THE MOST IMPORTANT INFORMATION IS THE MOST PROMINENT.



HERMANN PARK CENTENNIAL GARDENS PARKING LOT, HOUSTON, TX

## PARKING LOT DESIGN: BEST PRACTICES

- **Welcoming design & appearance**

- Arriving in a parking lot is often the beginning of the park experience for guests. How can the design of the parking lot be a great, welcoming first impression?

- **Design to absorb rain**

- Planted areas like “swales” (low-lying landscaped areas) help absorb rain runoff. As these areas capture water draining across the site, they also filter and clean it.

- **Bicycle parking**

- Parking lots aren't just for cars! Parking lots should include convenient, abundant bicycle parking for park guests who ride to the destination.

- **Shade & comfort**

- Trees help break up paved areas. Providing shade helps the parking lot feel more comfortable for park visitors, and it also reduces the temperature so the parking lot is less of a “heat island” that warms up the surrounding area.

- **Right-size lots**

- Parking lots should only be as large as they need to be, and breaking up larger lots into a few smaller ones can help reduce their visual and environmental impacts in the park.

## PROMOTING WALKING, BICYCLING, AND TRAM USE ALSO HELPS THE PARK'S ENVIRONMENT

Making it possible to get around the park by tram, bicycle, or on foot reduces the need for parking.

Reducing parking and promoting alternative forms of transportation has positive spin-off benefits:

1. **Less space for parking = more room for wildlife and improved absorption of rainfall**
2. **Less driving = fewer emissions and cleaner air**
3. **Fewer cars = safer walking and bicycling**

# Additional Mobility Actions

In addition to the key projects, other opportunities to improve park mobility include these actions, policies, and partnership opportunities.

- **Bicycle parking** at all destinations.
- More **bicycle rental** locations.
- Strictly **enforce speed limits and traffic laws**; pull over cars that are driving too fast or run red lights.
- Walk or bicycle between park destinations. Can you **park once and explore** all of Gulf State Park's destinations and trails?
- **Equalize the cost of parking at the Pier and Pavilion.** Reduce the cost of pier admission by the parking charge (the result is that walking on the pier will be free for anyone who arrives without parking, or for anyone who pays the parking fee).
- Begin **charging for hourly parking** at Romar Beach and Cotton Bayou (install meters that take credit cards).
- **Monitor parking availability** to understand how much parking capacity is needed at different times of year; allows potential to downsize parking lots over time (allowing more room for dunes or other park uses).

- Participate in **regional bikeways**: Visible, designed connections between park and local ped/ bikeways.
- Participate in regional **blueways**: improve access from park lakes to Little Lagoon by creating launch points and marking trail. Design and sign for human-powered/small boats only.
- Follow the **Orange Beach Trolley Study**, and encourage **local transit connectivity** between destinations.
- Improve the **marsh bridge pull-out on AL 135**, providing a designated place to pause, enjoy the view, and watch for birds like osprey, bitterns, and rails. This is one of the six Alabama Coastal Bird Trail stops within Gulf State Park.



ENJOY THE MANY MILES OF BACKCOUNTRY TRAILS

“A CANOE TRAIL FROM THE PARK TO LITTLE LAGOON WOULD BE FABULOUS. TO BE USED BY NOVICES A SLIGHT IMPROVEMENT AT THE WEIR HEADING FROM LAKE SHELBY DOWN TO THE CREEK AT THE 135 BRIDGE IS ALL THAT WOULD BE REQUIRED OTHER THAN MAYBE SOME SIGNAGE.”

—Survey Respondent



**8**

**ENHANCING  
THE VISITOR  
EXPERIENCE**

# VISITOR EXPERIENCE

Gulf State Park is Alabama’s front porch on the Gulf. The goal is that the park welcomes all kinds of visitors and provides a diverse range both of things to do and places to stay.

This chapter focuses on enhancing the visitor experience so that everyone can enjoy the park and connect with nature.

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# Enhancing Visitor Experience

## EXPANDING OVERNIGHT ACCOMMODATIONS AND IMPROVING THE EXPERIENCE OF VISITING THE PARK

Gulf State Park already offers many things to do for park visitors, but there is unmet demand for more education, outdoor activities, and overnight accommodations. Enhancing the visitor experience is about making the park even better for all visitors. Key considerations are balancing new uses with the park's sensitive ecosystems and keeping the park experience affordable.

A key element is rebuilding the Lodge. This facility will welcome everyone and will expand access to the Park by providing a greater range of overnight accommodations.

Beyond the Lodge, other enhancements include frisbee golf, more picnic areas and shelters, improving play areas, more campsites, gear testing and outdoor activity classes, more shade, converting more land to conservation, and a new Visitor Center.

The goal is to always ensure that new activities and facilities are good fits for the park, providing park-friendly ways to enjoy being outside. Some of these new uses will help bring much-needed new revenue streams to the park, which can help keep the overall park experience more affordable while also supporting conservation across Alabama.

**Creating an economically sustainable park is critical to ensure sufficient funding to maintain the park's landscapes. Economic sustainability and environmental sustainability go hand-in-hand.**

### Key Elements include

- Rebuilding the Lodge
- Improving the Campground
- Repurposing the Golf Course as a new Park Adventure Launch
- Enhancing the Picnic Area
- Developing a less-paved beachfront

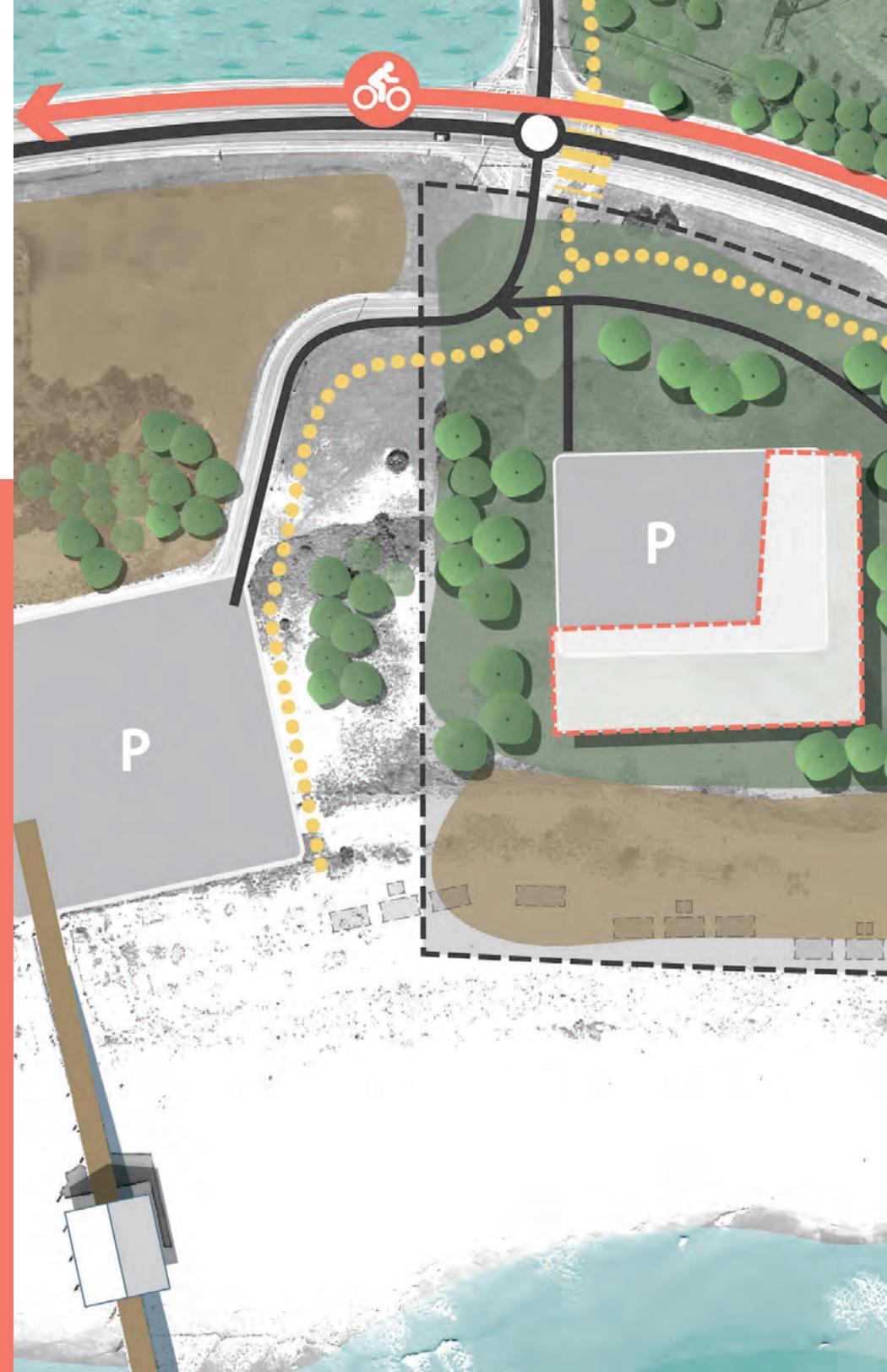


**IMPROVING THE CAMPGROUND WAS THE NUMBER ONE PRIORITY AMONG PEOPLE WHO TOOK THE ONLINE SURVEY.**

PHASE 1 KEY PROJECT

# Rebuilding the Lodge

This overnight stay and meeting facility will welcome everyone and will improve access to the park's beaches, trails, freshwater ecosystems and other natural resources. Reconstructed on a smaller site than the previous lodge (which was destroyed by Hurricane Ivan in 2004), the new lodge will serve as a model of resilient, environmentally-friendly coastal development. In addition to overnight accommodations, the facility will include meeting space designed to host modestly-sized groups and ample outdoor space with native plantings to expand and restore the surrounding dune ecosystem.





Dune Restoration



Former Lodge Footprint,  
for Reference

# Rebuilding the Lodge: A Smaller Footprint in the Dunes

The new lodge and meeting facility will be rebuilt at the site of the previous lodge, which was destroyed during Hurricane Ivan. With its dispersed construction, parking, lawns, and recreational facilities, the previous lodge had a footprint that impacted over 30 acres of Gulf State Park's dunes.

FEMA standards by respecting a buffer between the primary dune and building. This area has been identified by coastal ecologists as a prime zone for the kind of secondary dune growth that supports both native and migratory species. This zone of secondary dunes will also help protect the new lodge structure during storms.

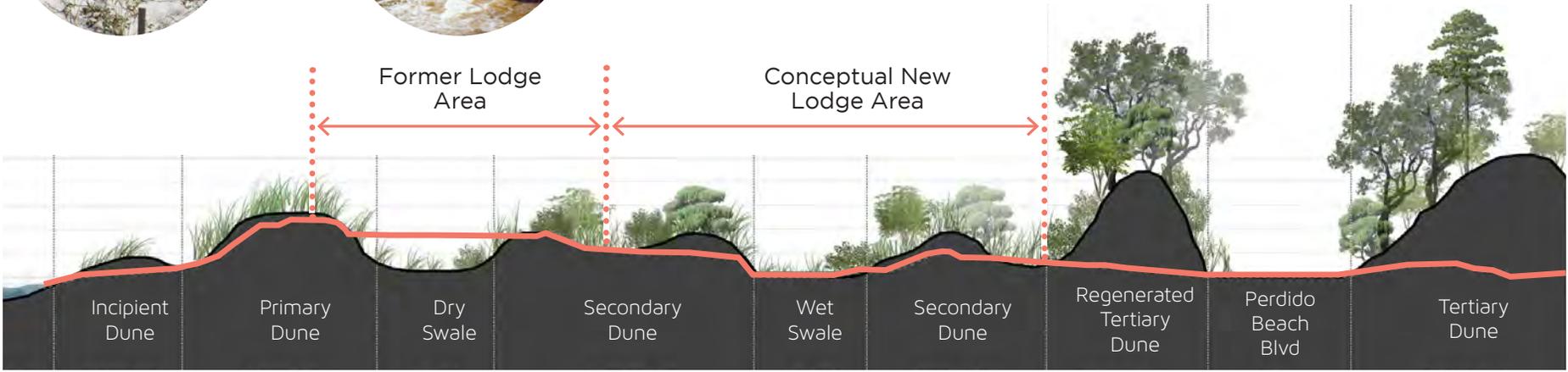


In contrast, the currently permitted lodge site is 21 acres and a substantial portion of this smaller site will consist of preserved and restored dunes rather than development.

The new construction will go above and beyond

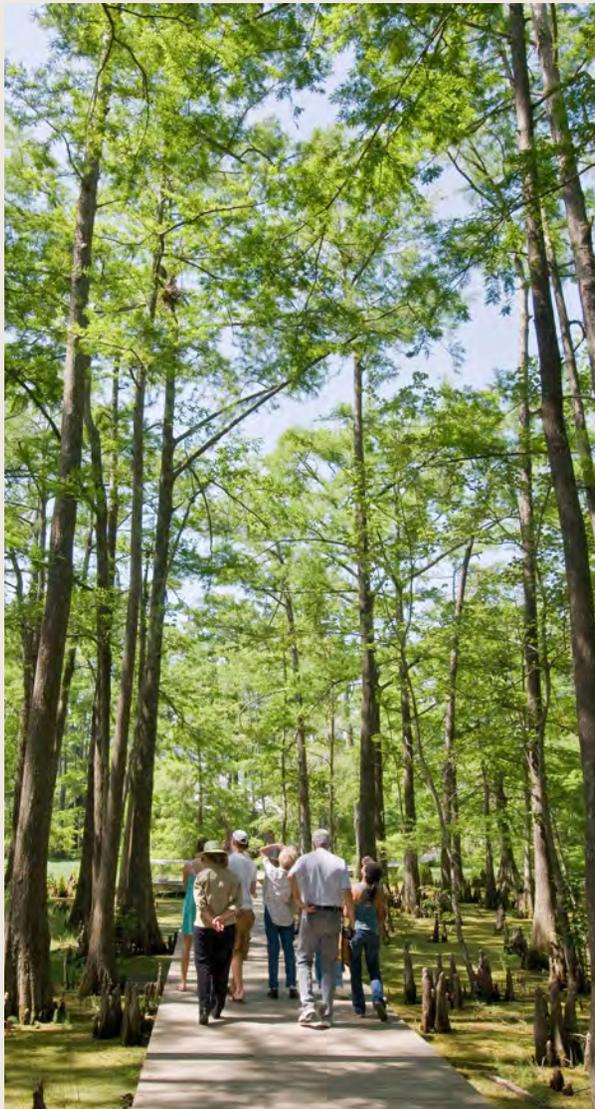


Setting the new lodge further back from the primary dune will give the dune system room to grow. This provides better habitat for the Alabama beach mouse and better storm protection for the new lodge.



“I WISH THAT GULF STATE PARK HAD A LODGE AGAIN WITH ROOMS TO RENT – WE USED TO LOVE STAYING AT THE PARK.”

—Survey Respondent



### LODGE DESIGN PRINCIPLES:

- **A Comfortable Stay** - The lodge experience will be accessible to all visitors, and will include indoor and outdoor spaces comfortable throughout the year.
- **Energy Efficiency** - Blending innovative low-energy building solutions with time-honored building traditions that are appropriate for the region.
- **Southern Vernacular** - A design informed by regional traditions in both building and culture.
- **Resilient Materials and Construction** - The lodge construction will model sustainable coastal development that can withstand strong Gulf storms and sun.
- **Healthy, Functional Dunes** - The lodge building and landscape will integrate seamlessly with the surrounding dunes and support a dynamic, regenerative and biodiverse ecosystem.
- **Smart Water Management** - Harnessing the power of Gulf rainstorms for selected lodge functions as well as cleaning and absorbing it right on site.
- **An Educational Building and Site** - A transparent design that celebrates nature and engages visitors in the story of sustainable coastal development.
- **Launch-point for the Park** - Pedestrian and bicycle-friendly site connected to the park's trail network with safe intersections.

PHASE 2 KEY PROJECT

# Campground Improvements

The Campground already functions well and is regarded as a great campground. Opportunities to make it even better include:

## Improve Campground Road

- Safer for bicyclists and pedestrians
- More shade
- Better entry experience

## Visitor Enhancements

- Planting and shade
- Reliable Wi-Fi
- Reservation system improvements
- Improved playgrounds

## More site and a greater variety of camping options

- More campsites
- More tent sites
- Social campsites





## Campground Improvements: Enhancing a beloved park destination

In the near-term, adding a **path** beside Campground Road will make it safer for walkers and bicyclists to get around the campground. Removing a few campsites that overlap with trail access will make the nature trails that begin in the campground easier to find.

A new **Campground-Beach Tram** will provide a way to get to the beach without needing to drive, and **trail system improvements** will also improve safety for campground guests who want to walk or bicycle instead. Operationally, the campground has recently implemented an **improved reservation system**, and there is an opportunity to continue to improve this system. Upgrading **campground Wi-Fi** should also be a near-term priority.

Over time, additional campground improvements are made possible by relocating the RV storage parking lot to the converted Golf Course. In its new location at the converted Golf Course, the **RV lot can be larger**, accommodating more vehicles that now are on the waiting list. The current RV

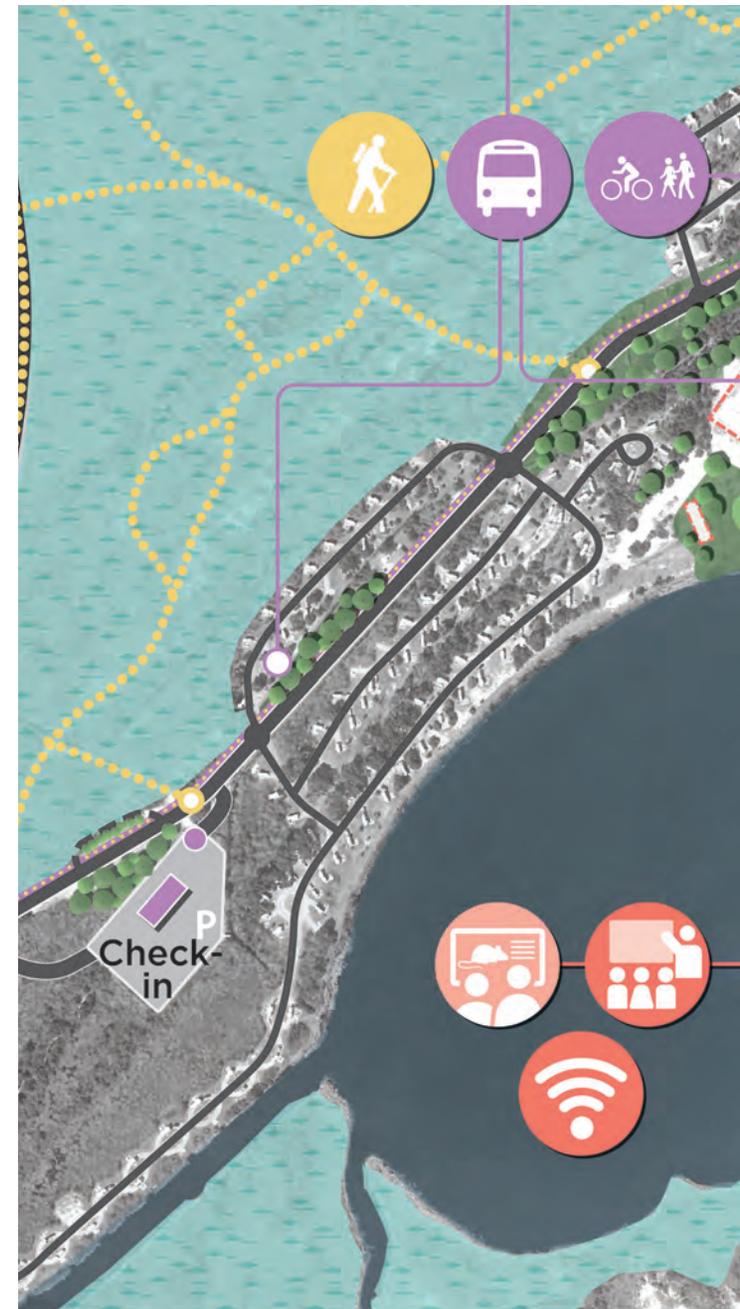
lot at the Campground can be converted to a **new entry lot**. When campers enter the campground to check-in, they can pull into this area. With check-ins accommodated in this new zone, returning guests can continue into the campground without needing to wait in line.

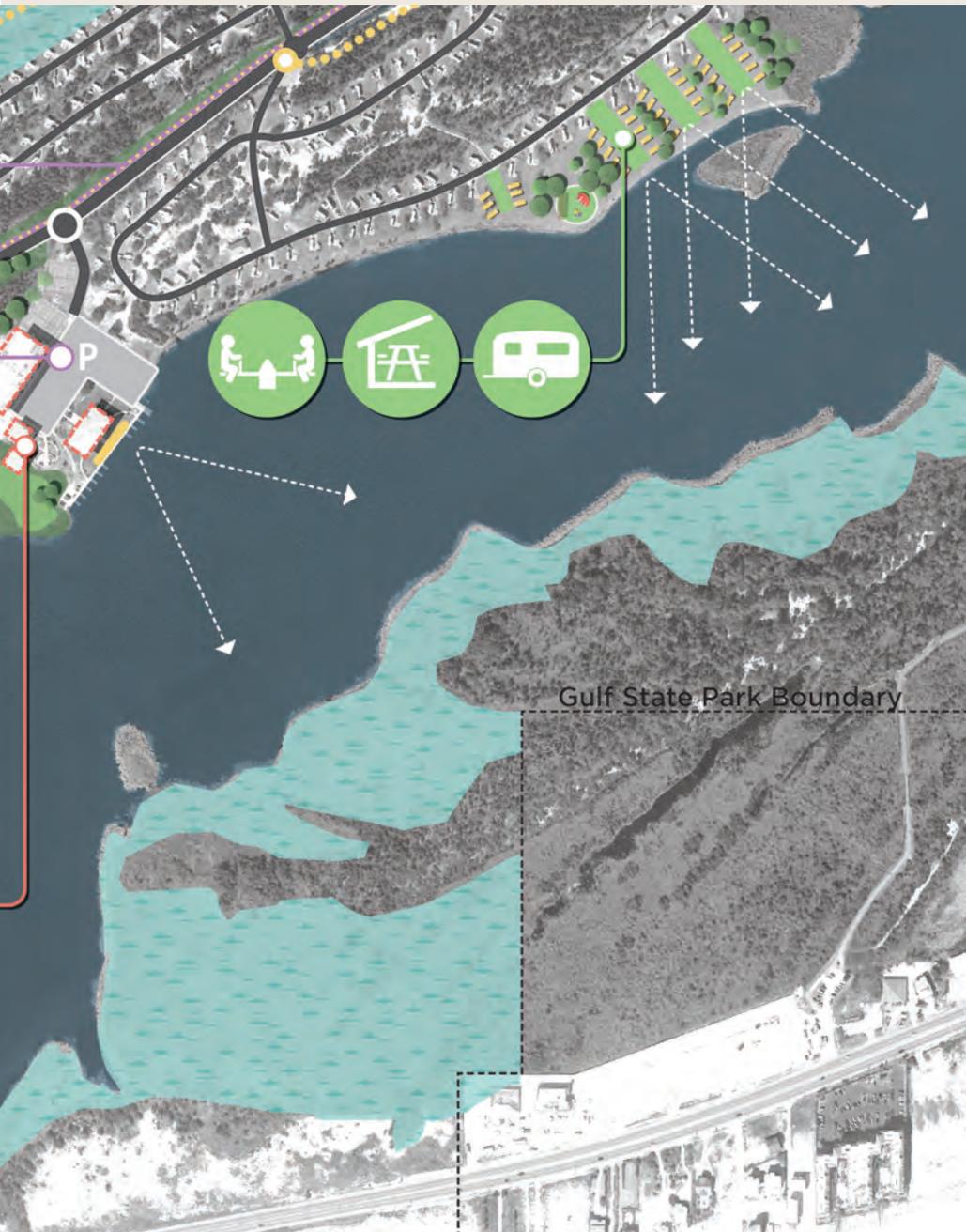
New camping opportunities are added along the north shore of Middle Lake. Grouped around shared common spaces, these sites offer **group camping opportunities**. These new campsites will be supplemented with additional camping opportunities at the new Park Adventure Launch.

Complimenting these enhancements, the **Nature Center** will continue to play a key part of the campground experience, offering campers opportunities to learn about the park's special landscapes and wildlife. This area will benefit with additional toilets added, and exterior access modified. These changes will help the Nature Center function better for school group visits.

“ONE OF THE BETTER  
CAMPGROUNDS THAT  
WE CAMP IN.”

—Survey Respondent

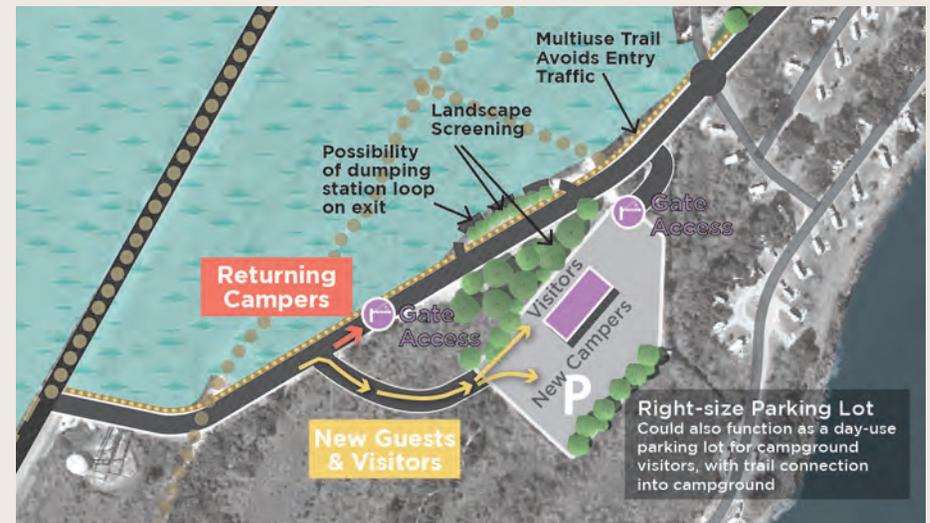




### Campground Road Bike + Walk Path



### Improved Entry Sequence



PHASE 2 KEY PROJECT

# New Park Adventure Launch

Adventure Launch will be able to include a broad range of outdoor activities for all ages:

- Potential for new conservation land with hiking trails
- New gateway that lets visitors park and then explore park by other means (there is no new road into park; the new entrance leads directly to a parking lot only)
- Outdoor Center and Lake Outpost with retail partner
- Ziplining (relocated) & ropes course
- Frisbee golf, picnic shelters, and nature-based playgrounds
- Pavilion for gatherings



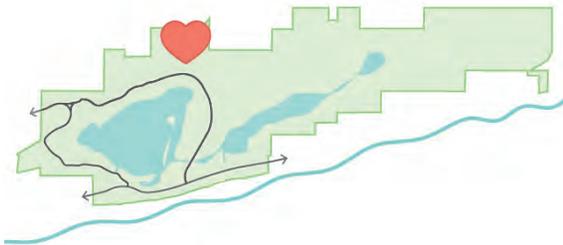


## The Park Adventure Launch: A New Center of Outdoor Activities in the Park

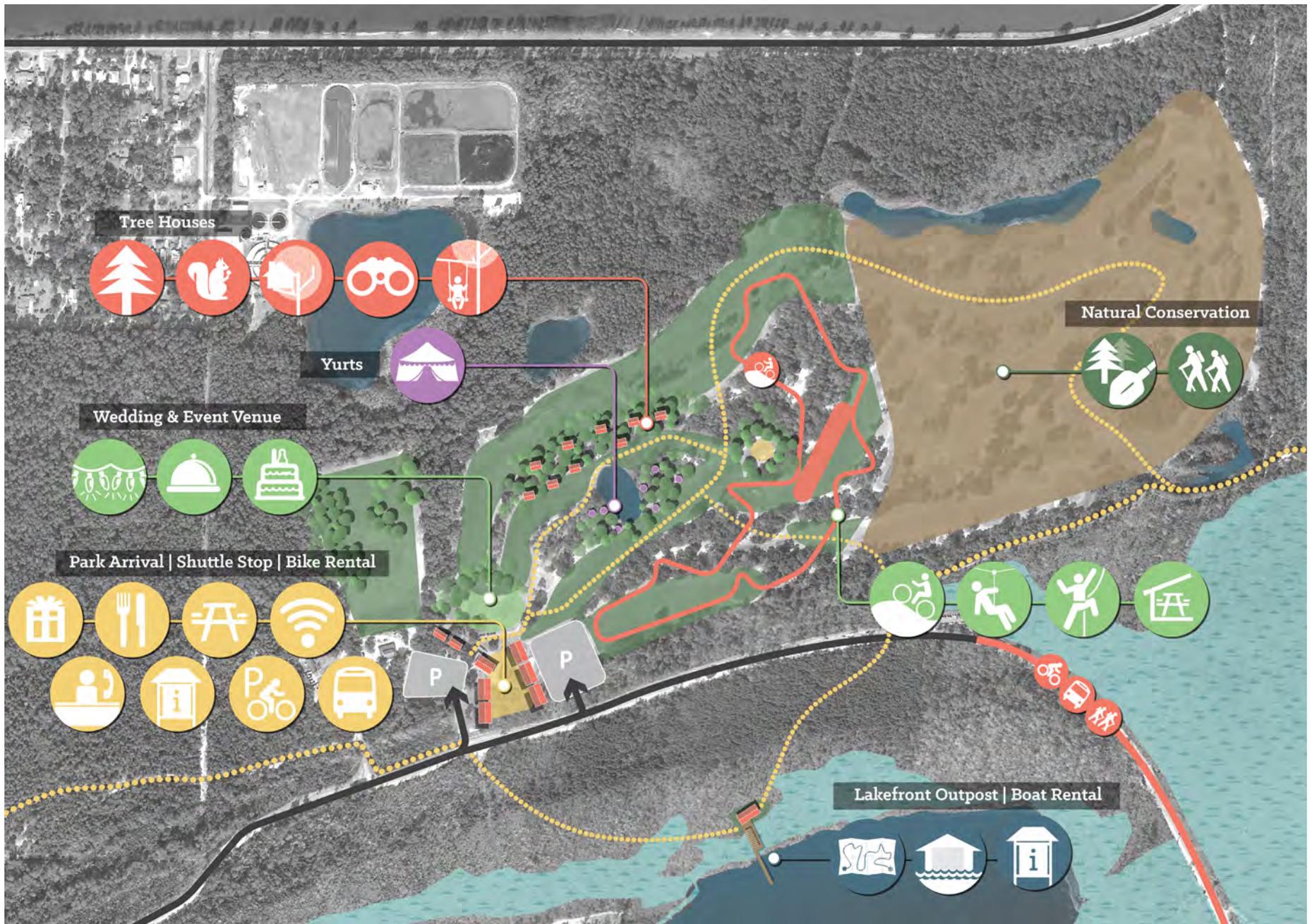
The existing golf course is a beloved part of the park for some visitors, but with revenue falling quickly (down 26% from 2012-2014) and golf as a whole on a downward trend, the park system simply cannot afford to continue maintaining the course. In addition, the high pesticide use and water consumption required by the golf course do not align with the goal of the park to be a **model of environmental sustainability**.

The potential to reuse the golf course to meet growing demand for **nature-tourism activities** can expand the use of this part of the park in a way that is economically responsible and environmentally sensitive.

The vision is to allow part of the existing golf course to return to a more natural state. This **new conservation land** will include additional tree plantings, and less frequent mowing will allow the landscape to become a grassy meadow, home to animals like the gopher tortoise. Existing golf cart paths will become **hiking trails** through the evolving landscape, featuring



THE GOLF COURSE FEATURES A MORE OPEN LANDSCAPE THAN OTHER PARTS OF THE PARK. IMAGINE THE GOLF CART PATHS CONVERTED TO WALKING TRAILS, AND MOWED LAWNS AS RESTORED MEADOWS.



THIS DIAGRAM SHOWS ONE POSSIBLE CONCEPT FOR THE PARK ADVENTURE LAUNCH. ADDITIONAL FINANCIAL MODELING, IDENTIFYING POTENTIAL PARTNERS, AND SITE DESIGN IS NEEDED NEXT.

## EXAMPLE: PARTNER-OFFERED OUTDOOR INSTRUCTION

### L. L. Bean Outdoor Discovery Schools

These classes and events offer opportunities to learn about and try out outdoor activities like kayaking, camping, bird watching, fishing, and wilderness first aid skills.

The events accommodate a range of skill levels and ages. Events include “Kid’s Camps” and “Teen Adventures.” The “Discovery Series” offers guided activities for beginners to try a new activity. Other events help more experienced participants hone their skills or achieve certification as a Wilderness First Responder (WFR).

Events range in price and duration. Some are free like guided bird watching walks, volunteering for conservation activities, and catch-and-release demonstrations. Others in the \$25-\$40 range allow participants to participate in lessons (like kayaking, for example) and include guided instruction and gear rental. Multi-sport trips and Overnight Adventures are events that stretch over several days and offer guided trips like Camping, Bike and Kayak, River Fishing, and Bike and Paddleboard. These adventures vary in cost based on duration.

opportunities for birding outlooks and other scenic “pause places.” Other portions of the golf course will be repurposed to provide a range of **rustic overnight accommodations** along with **outdoor adventure activities**.

A new entrance will create a new gateway that will be very different than other park entrances. The road into the park will terminate quickly into a parking lot at the new **Park Headquarters/ North Visitor Center**. Park visitors will **leave their car behind to explore the park** by bicycle, on foot, or via the new park tram. Relocated from the eastern entrance and expanded, Park Headquarters will function as a first-stop in visitor’s adventures, welcoming them to the park and offering park information, food options like a picnic lunch pick-up, bicycle rental, and a tram stop. (The Interpretive Center will have a similar Visitor Center function, welcoming visitors who enter the park from its southern entrances.)

Nearby, an **outdoor center** will offer outdoor education classes and opportunities to test-drive gear like fishing rods and kayaks. This center could be offered in partnership with a retail partner, which would generate more revenue for the park while also expanding access to more outdoor activities. A “Lake

Outpost” along the northern edge of Lake Shelby will provide water activities connected with the adventure center.

The outdoor center will be complimented by **relocating the ziplines** to this area, and expanding them to include a broader range of adventure activities like a ropes course and mountain bike circuit. The forested setting will create a new kind of elevated experience, and the zipline towers will blend into the forest, becoming a more integrated part of the park visually. Other activities like **frisbee golf, picnic shelters, and nature-based playground areas** will provide free activities families can enjoy.

Elsewhere, rustic **overnight accommodations like yurts, canvas tents, and possibly even tree houses** will provide opportunities to spend the night tucked amid the groves of trees. The site also has capacity to accommodate more camping; it could be a good option for a new campground area, with full hook-up campsites, and it could also provide un-serviced tent sites scattered more remotely.

The existing golf clubhouse will remain, functioning as a **rental space**, capable of accommodating catering for group events. A rustic **outdoor pavilion** will provide a forested setting for family reunions, weddings, corporate retreats, or other groups. Adding additional rental locations like this will accommodate demand that is currently unmet by the Beachfront Pavilion. Revenue-generating uses like the pavilion and accommodations help **support park maintenance**, improving the park for visitors and keeping the park experience affordable.



IMAGE SOURCE: [HTTP://WWW.DFWFLYCASTING.COM/SERVICES](http://www.dfwflycasting.com/services)

## EXAMPLE: FROM GOLF COURSE TO NATURE PRESERVE

### Wildflower Preserve, Placida, Florida

Florida's Wildflower Golf Club was an eighteen-hole golf course that operated from the 1970s to 2006. In 2010 it was purchased by the Lemon Bay Conservancy and became Wildflower Preserve. The transformation of the 80 acre site from golf course to public nature preserve has included removing invasive species like Brazilian Pepper, building several miles of trails, and restoring habitat including a wildflower meadow and butterfly garden (all by volunteers!). The site drains into Lemon Creek, and the restoration efforts have helped improve water quality on the preserve and in the surrounding water bodies.

Today, a research study is underway to study juvenile tarpon (fish that live the creek system), and the next phase of restoration is planned. These restoration efforts will create new wetlands, improve edges of creeks and ponds, improve water flow between wetland areas, and add more native tree and shrubs. The estimated design and construction cost of this restoration is \$800,000.

The Preserve is funded entirely through grants and donations, and managed by volunteers. Annual maintenance costs are approximately \$10,000.



WILDFLOWER PRESERVE TRAIL MAP

SOURCE: [HTTP://LEMONBAY CONSERVANCY.ORG/WILDFLOWER-PRESERVE/TRAIL-MAP/](http://LEMONBAY CONSERVANCY.ORG/WILDFLOWER-PRESERVE/TRAIL-MAP/)

## Why Change the Golf Course?

The question about the future of the golf course is a challenging one especially because the course is a well-loved part of the park for some visitors. However, declining use, heavy environmental impacts, and a challenging future outlook for the sport paint a tough future.

What are the opportunities to think ahead to the next generation and imagine other outdoor recreation activities that may be a good fit for the park?

### Golf in Decline Nationally<sup>1</sup>

- The golf industry nationally has lost 5 million players in the last decade; a projected twenty percent of existing golfers are likely to quit in the next few years.
- Golf popularity is declining the fastest among people under 35.

### Decline in Golf at Gulf State Park

- The golf course is currently operating in the black; however, if current decline in revenue continues the course will be operating at a loss soon.
- Revenue from green fees decreased 26% from 2012 to 2014.
- Significant capital investment (roughly estimated at \$5 to \$10 million) would be needed to bring the course up to today's competitive standard.

### Golf courses have a heavy environmental footprint

- The average American Golf Course consumes 50 million gallons of water per year, usage comparable to that of a village of 1,400 people.
- Demand for water is so high that the golf course water pump is the largest in Gulf Shores and Orange Beach
- Golf courses are sources of pollutants from fertilizers and chemicals.

### Other Golf In the Area

There are eight golf courses (one municipal, six private with day play, and one totally private) within ten miles of the Gulf State Park Refuge Golf Course. These courses accommodate a wide range of price points and difficulty levels. Magnolia Springs, for example, offers all day play on their 9-hole course for just \$14. Orange Beach Golf Course, a municipal 9-hole course, is a twenty minute drive from the Gulf State Park campground. A round of nine holes runs just \$20. While the golf course at Gulf State Park is a well loved amenity for park visitors, a future closing of the course would not leave a recreational deficiency for those who seek affordable golf in the area.

## FEEDBACK & OPINIONS

Overall, feedback shows desires for a broad range of new activities and more opportunities to stay overnight in the park. At the same time, survey takers and community open house participants have stressed the importance of preserving the natural feel of the park. Reimagining the golf course as an adventure launch with new outdoor uses is a great opportunity to fulfill both of these desires.

The Golf Course today is facing declining use and dropping revenue, and at Community Open House #2, our team presented the challenges with the golf course and three options for its future. These options were: 1) keep 18 holes of golf, but diversify by adding foot golf and disc golf and enhancing the club house to support weddings; 2) keep 9 holes and convert the rest of the golf course to an outdoor adventure center; 3) replace the golf course with half conservation land with hiking trails and half new uses, including new kinds of rustic lodging, an expanded adventure center, and mountain biking. We also asked meeting attendees to suggest other ideas.<sup>1</sup>

<sup>1</sup> Another option, not presented, would be to invest in the existing course so it could be competitive with other courses in the area, which would cost \$5 - \$10 million. With existing budget challenges in the state and the challenging future outlook for golf, this investment cannot be justified.

We received a broad range of feedback on the idea of converting the golf course. Sample Quotes<sup>2</sup>:

- “Repurpose entire golf course - who uses golf course - locals, visitors staying in park, visitors staying in other locations? Other golf courses are available in area. Offer discounts there to park visitors.”
- “Please keep the golf course. It is an asset to the park.”
- “Eliminate golf course: save water, save costs.”
- “Partner with private funding (RSA/RTJ, Jr Golf Trail) and make the course something to be proud of again.”
- “I think by reducing golf course to 9-holes you may virtually eliminate its use, keep 18 or reuse all land.”
- “If strong pressure for some golf, reduce to 9 holes and cut maintenance costs by 50% (purists can play 2x9).”
- “I like the idea of disc golf/footgolf, but I’m not sure how much it will improve fees (and it still seems like you would have to maintain a lot of grass).”
- “Yes - Get rid of the golf course. Shuttle and have people park. Water shuttle perhaps.”
- “I like closing the golf course and using half for disc golf, etc. and put half back to wilderness.”

<sup>2</sup> Sample quotes from Community Open Houses #2 and #3 and the My Gulf State Park online survey

The ability to restore part of the course to a more natural state appealed to many and should be a key part of future planning for the golf course.

OPTIONS TO CLOSE THE GOLF COURSE REVENUE GAP	PERCENT IN FAVOR
Expanded overnight accommodations	63%
Expanded adventure center + 9 hole golf	58%
Golf course as new park gateway (repurpose entire course)	47%
Add disc golf/footgolf (keeping 18 holes)	37%

PHASE 3 KEY PROJECT

# The Picnic Area & Lake Shelby North Enhancements

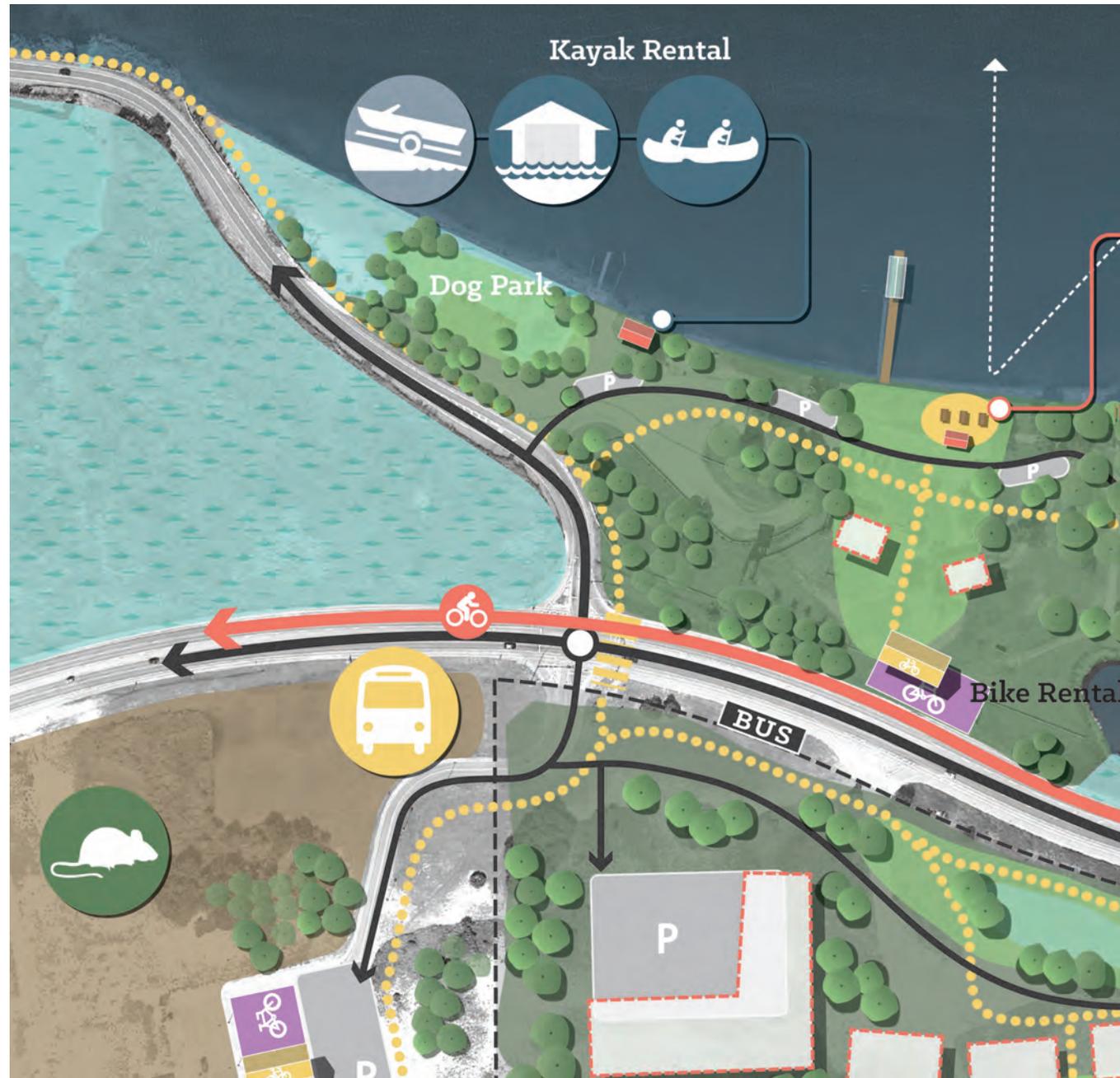
Lake Shelby is surrounded by destinations, and the Master Plan includes recommendations to enhance the Picnic Area on its south shore, as well as the cabin and cottage area at its north edge. These improvements will further improve the lake as a great place to visit and stay overnight for families and other park visitors.





## The Picnic Area: A Great Community Gathering Space

Over the years, the Picnic Area has been a favorite local gathering spot. The Master Plan sees the opportunity to restore this area as a great space for families, friends, and groups. Relocating the ziplines to the Park Adventure Launch (Phase 2) frees up space to improve circulation, consolidate parking in the Picnic Area, and add amenities for everyone to enjoy, like a playground, pavilion, and more great shady picnic sites. With great access to the park's trail system as well as more ways to get out on Lake Shelby this will be a hub to park your car once and explore.





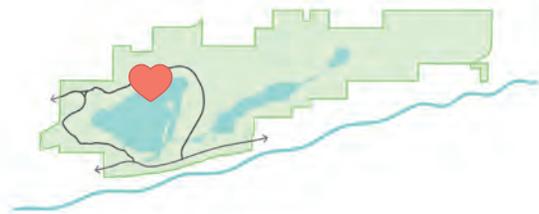
## AT A GLANCE:

- Improved circulation with less pavement overall. Distributed, small parking lots provide access to Picnic Area amenities.
- More picnic tables and a moderately-sized Lakefront pavilion
- Nature-based play area
- Enhanced dog park with additional planting along lake edge to improve water quality
- Ziplines relocated to northern part of park
- One zipline tower preserved and converted to a free site-seeing platform
- Lakefront landing: expand kayak and canoe rentals

## Lake Shelby North Enhancements: Improving overnight accommodations

The north edge of Lake Shelby will be enhanced as a great place to stay. Adding more trees between buildings for greater privacy, lakefront fire pits, and improving the existing play area will make the cottages and cabins even more popular overnight destinations. A trail connecting from the cabins and cottages to the broader trail network is also envisioned.

A long-term opportunity is to add additional overnight options on the opposite side of the road. Treehouses, perched on taller stilts, could sit lightly on the park's landscape and provide elevated views towards Lake Shelby. Staggered with the existing cabins and cottages, these treehouses could peek between the other buildings for their own lake views.





“I WISH THE TRAIL SYSTEM CONNECTED TO THE COTTAGE AREA. THE ROAD GETTING TO THE TRAILS IS BUSY AND WE HAVE YOUNG KIDS. THAT PART OF THE RIDE MAKES ME FEEL NERVOUS.”

—Survey Respondent

LAKEFRONT ACCOMMODATIONS TODAY



# Additional Visitor Experience Actions

Other opportunities to enhance the visitor experience include these actions, policies, and partnership opportunities.

In addition, operational improvements will support these enhancements. For example, branding and landscape guidelines will help create a consistent, unified park experience reflecting Gulf State Park's unique character.

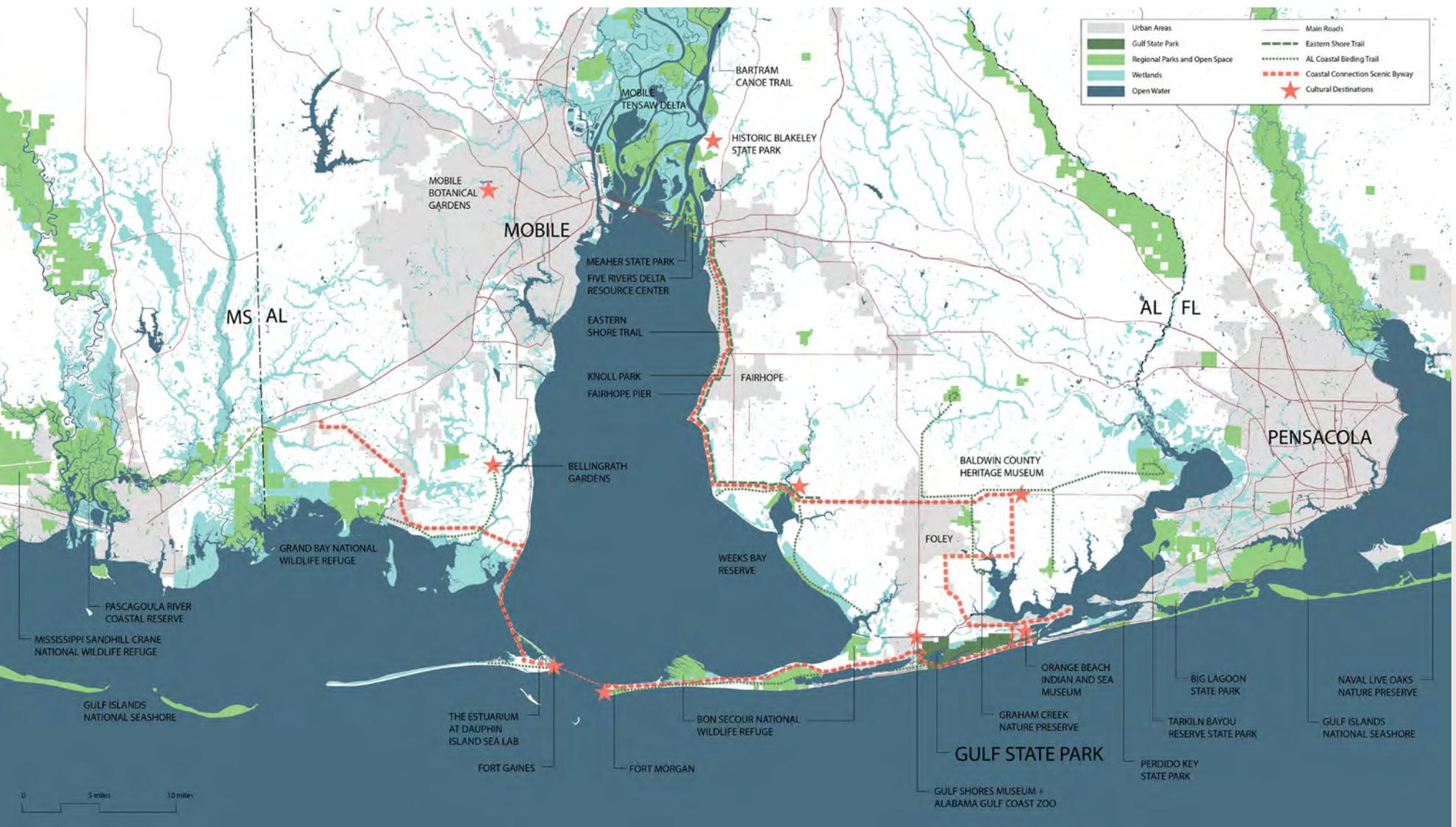
- Additional **cultural programming** - evening concerts (small-scale), outdoor theater, outdoor movies, etc.
- **Play area improvements** - improve existing play areas in campground and by cottages/cabins
- More locations with **food kiosks & food trucks** throughout the park
- **Fishing** - more places to access water; more rental equipment locations and classes
- More **gathering places** - for families, groups, and others

## Regional Marketing Opportunities

Coastal Alabama has many great destinations in addition to Gulf State Park. Opportunities exist to build on this concentration and further market the region as a place with many opportunities to get outside, explore, play, and discover.

Key action items include:

- Identify opportunities for **joint marketing** between Gulf Shore, Orange Beach, Foley, and regional outdoor destinations. Promote the area's destinations as a complete outdoor itinerary, where families and other visitors can find many things to do.
- The Alabama Coastal Connection Scenic Byway or Coastal Birding Trail could be the foundation of this marketing. **Improved wayfinding, pavement marking, or other distinction** of the routes could highlight these routes and their stops.
- Continue to **enhance destinations in the region**, promoting environmental and economic sustainability. For example, by the Perdido Pass seawall at **Alabama Point** could be restored as a great Gulf destination, where all people of all abilities can get close to the water's edge.



COASTAL ALABAMA OFFERS MUCH TO VISITORS, AND MANY OPPORTUNITIES FOR LOCALS ALIKE TO GET OUT AND LEARN ABOUT THE REGION'S SPECIAL ENVIRONMENTS. HOW CAN WE ENHANCE THIS CHARACTER OF THE REGION SO IT'S KNOWN WORLDWIDE AS A GREAT PLACE TO VISIT AND ENJOY A BEAUTIFUL NATURAL SETTING?



The background is a solid teal color with several large, overlapping, semi-transparent leaf-like shapes in a lighter shade of teal. The leaves are oriented diagonally, with their tips pointing towards the top right.

9

**IMPLEMENTATION**

# Implementing the Vision

## IMPLEMENTATION IS PHYSICAL AND OPERATIONAL

Achieving the goal of the park as an international benchmark of economic and environmental sustainability will be a long-term effort. Implementation, here, is about enabling the park to achieve this vision.

Implementation must address both the physical changes that the park will experience but also operational improvements that will enable greater long-term success. Accordingly, this chapter includes two main sections: 1) Physical Changes and 2) Operational Improvements.

The Physical Changes are organized by the three main phases. Operational improvements include Branding and Marketing, Park Operations, Sustainable Operations Guidelines, and Landscape Guidelines.

The overarching goals of implementation is to increase park revenue and enhance the visitor experience - without increasing the burden on park staff, who are already doing a tremendous job with limited resources.

## PHYSICAL ENHANCEMENTS

This Master Plan provides a long-term vision for the park. The focus of the Phase 1 of implementation is the Gulf State Park Enhancement Project's five elements. These enhancements will be completed by the end of 2018.

The Master Plan process has also revealed additional opportunities for strengthening the park as an international benchmark of economic and environmental sustainability. These are Phases 2 and 3 of the Master Plan.

## THE IMPORTANCE OF OPERATIONS

The long-term success of the Enhancement Elements, other enhancements, and the park as a whole depend upon a strong park operations foundation to support them. Operations includes sufficient staffing levels; appropriate budgets to fund operations, maintenance and reinvestment; support for programming, marketing, and events; guidelines for the park's landscapes and built elements; and technology. Underlying these operations is the importance of an economically sustainable park. The park needs sufficient revenue to support its overall health - fiscally, environmentally, and socially.

# Implementing the Master Plan

## PHASE 1

*The five elements supported through Early Restoration funding from the National Resource Damage Assessment Process (NRDA):*

- Enhancing the visitor experience (Phase 1 Trail Enhancements)
- Learning Campus
- Interpretive Center
- Dune Restoration
- Rebuilding the Lodge\*

## PHASE 2

*Additional opportunities to strengthen the economic potential of the park:*

- State Park Road 2 Conversion
- Phase 2 Trail Enhancements
- Campground Improvements
- Golf Course Conversion / Park Adventure Launch
- Park Tram

## PHASE 3

*Long-term opportunities to add even more value to the park:*

- Picnic Area Enhancements
- Phase 3 Trail Enhancements
- Beachfront Parking Improvements
- Lake Shelby North Enhancements

## Strengthening Park Operations

Underlying all of the phases, the Master Plan includes operational recommendations (like enhancing technology systems) to support the physical enhancements. The intent is to ensure maximum long-term revenue potential.

\*The use of \$58.5 million of NRDA funds allocated to the Lodge are stayed pending the completion of additional analysis pursuant of NEPA and OPA.

IMPLEMENTATION  
PRIORITY  
CONSIDERATIONS

# Master Plan Phase 1

The five Phase 1 projects will all be completed by 2016. Launched through an \$85.5 million allocation of early restoration dollars, these projects will be the first wave of enhancements that will improve the economic and ecological health of the park.

## Dune Restoration

Innovative techniques and native plantings will restore the equivalent of more than 50 football fields of dunes, which protect us from storms and provide habitat for important animals like the Alabama beach mouse and nesting sea turtles.

## Enhancing the Visitor Experience (Phase 1 Trail Enhancements)

Visitors will enjoy a vastly improved experience with approximately 9.5 miles of new walking, cycling, or running trails and approximately 3.5 miles of enhancements to existing park trails. Better connections throughout the park mean visitors won't need to drive as much to see all that it has to offer.

## Learning Campus

With its classrooms and laboratories for students K-12 and beyond, the Learning Campus will expand the region's capacity for research and education programs. In addition, it will provide an additional flexible lodging option and a new dining experience for student groups, park visitors, and the wider community.

*Additional implementation information:*

- Two campus framework options - page 178

## Interpretive Center

This interactive exhibit space near the Pavilion will include indoor and outdoor exhibits, highlighting information about our unique environment. Aspiring to be a Living Building, the most rigorous green building standard in the world, the Interpretive Center will demonstrate forward-thinking architecture and cultivate environmental stewardship.

## Rebuilding the Lodge\*

Like many other Phase 1 projects, the Lodge is also currently in the design phase. Site construction has begun with an expected opening in 2018.

*Additional implementation information:*

- Lodge parking strategy - page 179

\*The use of \$58.5 million of NRDA funds allocated to the Lodge are stayed pending the completion of additional analysis pursuant of NEPA and OPA.

# Learning Campus Additional Information

## TWO OPTIONS FOR LEARNING CAMPUS ORGANIZATION

The Master Plan has identified a 10 acre site area for the future Learning Campus. This area does not have any conflicts with wetlands, sensitive species, or archaeological resources. Within this area, the Master Plan has identified opportunities for how this campus connects with the broader park. The two diagrams to the right show options for the relationship between the campus, main park roads, internal access drives, and the trail network.



# Lodge Additional Information

## PARKING STRATEGY

The parking lot provided at the Lodge has been sized by the Lodge design team to accommodate typical demand. The broader parking strategy looks for opportunities to integrate the Lodge visitor experience with the broader park to minimize the need for additional parking. Park-wide enhancements in bicycling and walking connections, the Park Tram (in Phase 2), and other mobility improvements will make it possible for guests to park once and explore, increasing park access.

### • Lodge parking

- Parking provided on-site to accommodate overnight guests, meeting attendees, restaurant users, and other lodge visitors
- Parking for non-lodge guests should be considered. Ideally, non-overnight guests should pay for parking (hourly or daily rate).
- Encourage lodge staff to park at Golf Course and take the park tram to the lodge during peak demand times
- As a back-up, hotel service vehicles could pick-up at Golf Course parking lot
- If parking demand exceeds supply, then valet service could be provided. Cars could be parked in the picnic area during the day and pier after dark. The pavilion could be used as a secondary overflow location.
- Bus parking: 12-15 spaces are easily available at the Golf Course parking lot. Partner with Gulf Shores to develop an agreement to use the High School parking lot in the summer if additional spaces are required.



IMPLEMENTATION  
PRIORITY  
CONSIDERATIONS

# Master Plan Phase 2

Phase 2 of the Master Plan includes additional near-term opportunities to strengthen the economic potential of the park. The goals of this phase are increasing revenue without increasing the burden on park staff and continuing to enhance the visitor experience, proving more activities and opportunities to explore the park.

## State Park Road 2 Conversion

Revenue Generator	<input type="checkbox"/>
Visitor Experience	<input checked="" type="checkbox"/> Safer mobility
Capital Cost	Very Low Low-cost implementation: barriers at road ends, signage, and possibly restriping
Maintenance	Low burden on park staff
Timing Considerations:	<ul style="list-style-type: none"><li>• Early implementation critical to ensure closure occurs</li><li>• Could occur as early as next spring or in tandem with first phase of trails</li></ul>

## Phase 2 Trail Enhancements

Revenue Generator	<input type="checkbox"/>
Visitor Experience	<input checked="" type="checkbox"/> Improvement
Capital Cost	Low - High Flexible - costs depend on selected alignments, distance, and trail typologies
Maintenance	Moderate burden on Trails will require park staff maintenance and upkeep
Timing Considerations:	<ul style="list-style-type: none"><li>• Flexible implementation timing</li><li>• Individual elements could be implemented at different times</li></ul>

Additional implementation information in this chapter:

- Determining Pause Places - page 182

## Campground Improvements

Revenue Generator



Moderate increase

Visitor Experience



Improvement

Capital Cost Low - Moderate

Maintenance Low

burden on Additional sites will park staff need maintenance

but technology upgrades and adjusting sites on campground road will reduce conflicts

Timing Considerations:

- Many improvements - flexible implementation potential
- Improved Entry: requires relocation of RV lot to golf course

Additional implementation information in this chapter:

- Implementation stages - page 186

## Golf Course Conversion/Park Adventure Launch

Revenue Generator



Very significant

Visitor Experience



Transformative

Capital Cost Low - High

Partnership model could cover significant portion of new activities and accommodations

Maintenance Low

burden on Partnership model park staff could help cover new maintenance needs

Timing Considerations:

- Decision-point nearing when golf course expenses will exceed revenue
- Converting Golf Course allows Campground and Picnic Area improvements to occur

Additional implementation information in this chapter:

- Implementation stages - page 187

## Park Tram

Revenue Generator



Revenue neutral

Visitor Experience



Transformative

Capital Cost Low: \$0 - \$200K

Capital costs could be covered through donation, partnership, or Lodge operator

Maintenance None - Low

burden on Could be operated by park staff lodge operator or by volunteers

Timing Considerations:

- Flexible implementation timing
- Campground-Beach loop could start operation soon; Lodge loop could begin in 2018
- Ideally in operation when the Park Adventure Launch is complete
- Supports State Park Road 2 closure

Additional implementation information in this chapter:

- Operator models & implementation details - page 188

# Additional Information: Trail Network Enhancements Phase 2

## RECOMMENDED PROCESS FOR DETERMINING PAUSE PLACES

For trails implementation, a key step will be identifying locations for new “Pause Places” and interpretive signage.

The Master Plan conducted a preliminary survey along a portion of the trails with regional experts. This process, which focused on ecosystems, plants, and animals, is a model for how additional pause places can be identified.

This process has suggested a number of potential pause places along several of the main trails, and it could be repeated on the rest of the park trails for a complete list of potential ecological pause places. In addition, similar processes could be followed to identify other types of points of interest, such as archeological, park history, ecosystem management, and beyond.

## SAMPLE PROCESS FOR IDENTIFYING PAUSE PLACES RECOMMENDED AS A MODEL FOR FUTURE RESEARCH

### *1. On-the-Ground Survey, guided by regional experts*

Over the course of a one-day site visit, our team met with park staff and a group of local and regional experts familiar with the park’s unique features. Concentrating on botany, ornithology and herpetology, we toured several miles of park trails on foot and by car.

Along the way, the experts identified specific areas of interest, which we recorded with handheld GPS. The outcome of this survey is a long-list of possible pause places with recorded locations and focus.

### *2. Refine List and Identify “Major” and “Minor” Pause Places*

The next step is to prioritize the list and consider the possible suitability of each location as a public pause place. (It’s possible that places identified as significant may be so sensitive that direct public visiting should not be encouraged.)

Locations should be considered for suitability as either “major” or “minor” pause places. Major pause places should present opportunities for a more developed visitor experience. In contrast, many locations are suitable for a more intimate use (such as bird blind locations); these are more appropriate as minor pause places.

The selection of major pause places should consider:

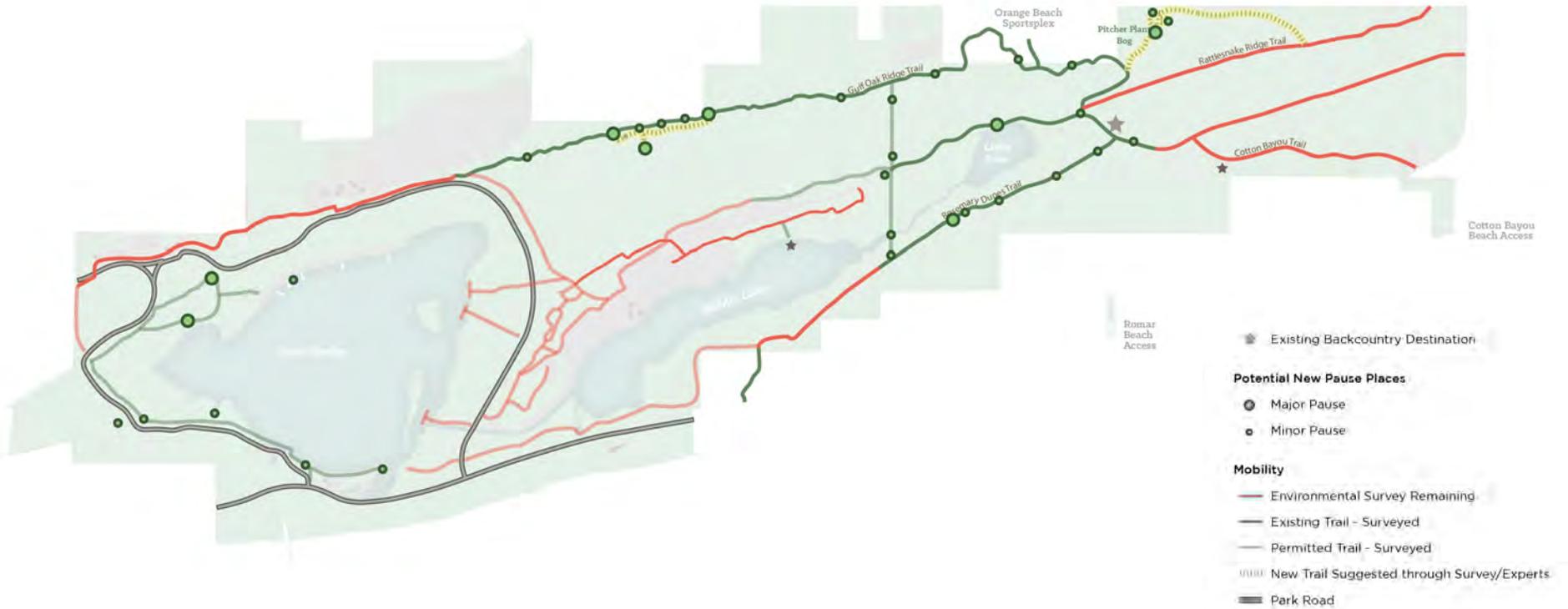
- The potential visitors drawn to the feature(s) being experienced
- Its physical location as a rest point along the trail network
- Amount of historic visitor use
- Significance for use as an educational component.

With an appropriate wayfinding and interpretative language, the number of minor pause places could be expanded as needed to enrich the park experience.

### *3. Design Pause Places and Develop Interpretive Signage*

The information from experts can help inform the character of the trails and the design of the pause places. It will also be a key part of the educational story shared with park visitors through interpretive signage. Working from all the content collected, the trail signage designers can craft a rich, layered story to make visitors’ experience memorable, fun, and also educational.

## Areas surveyed with Environmental Focus



# Potential Pause Places



Left to right: Palm Glade (4\*); Pitcher Plant Bog (2\*, 8, 9); Closer view of the Pitcher Plant Bog

## POTENTIAL ENVIRONMENTAL PAUSE PLACES

**Major\*** / Minor distinction indicated

### Major Pause Places (indicated with \*)

1. **Little Lake Pier: Former home site, lake edge already impacted, possible pier**
2. **Hat Pin Boardwalk: entrance to pitcher plant bog**
3. **Oak Grove: begin canopy walk bypass**
4. **Palm Glade: Needle palms**
5. **Frog Pond: adjacent to trail, end canopy walk bypass**
6. **Gator Viewing**
7. **North Birding site**
8. **South Birding site**

### Minor Pause Place

1. Folsom Hole
2. Weir Overlook: Existing Weir, divides fresh marsh from salt marsh. Good location for wading birds and osprey
3. Least Bittern Viewing
4. Wetland Education: Old Boathouse. Potential for wetland demonstration area
5. Lake Overlook
6. Fire Education: Area was burned in 2011, location for

7. interpretive station about fire ecology.
7. Vernal Pool: Adjacent to trail
8. Purple Top Boardwalk: Purple top and parrot pitcher plants. Club moss. Pinewoods tree frogs. Sundew
9. White Top Boardwalk
10. Bird Blind Along Oak Ridge Trail: cedar wax wing, painted bunting. Callicarpa / ilex opaca
11. Bridge Widening for emergency access
12. Dune Ridge
13. Mushroom Glade
14. Swamp Overlook
15. Gopher tortoise burrow / road crossing
16. Bird Blind (power line): Green heron, red tail, red shoulder, osprey, kestrels
17. Cottonmouth Habitats
18. Mini Bog: adjacent to trail
19. Gopher Tortoise Zone: several active burrows
20. Sand Pine Grove
21. Bog Overlook
22. Middle Lake Bridge
23. Middle Lake Overlook
24. Permanent Vegetation (by lake cabins)

Left to right: Gator Viewing (6\*); Another view of Gator Viewing (6\*); Little Lake (1\*)



# Campground Additional Information

Enhancing the campground can occur over a series of stages. The timeline below gives examples of which improvements could happen soon, and which ones will need to be coordinated with other projects.

## Stage 1: Near-term (as early as next 6-9 months)

- Finish updating reservation system allowing campers to reserve a specific site.
- Study check-in process and campground access to identify opportunities for near-term improvements to reduce wait times at the gatehouse.
- Remove sites that overlap with trailhead entrances or internal paths: 110 or 112, 122, 159 or 160, 442. Currently, these campsites block trail access - visually and physically - because trail users must walking through someone's campsite to access the trail. These changes will help paths be more visible to campground guests and will better promote the use of the trail system.
- Begin running a Park Tram connecting the campground to the beach.
- Screen the dumpsters.
- Upgrade the wi-fi system.

## Stage 2

- Add multiuse path along campground road and remove campsites on north side.
- Add a trailhead at the end of Campground Road where the Catman Road trail begins.
- Improve signage in the campground: Trailheads, Roads, Destinations, etc.

- Construct new group campsites along the shore of Middle Lake.
- Develop a plant palette (as part of Landscape Guidelines) and increase re-forestation of the campground to enhance shade and privacy to campers.

## Stage 3: Long-term (in sync with golf course conversion)

- Relocate and expand the RV lot to the golf course.
- Reconfigure the campground entry area to separate check-in/visitor entry from camper re-entry.
- Relocate the dumpsters / waste disposal stations. These facilities could either be distributed throughout the campground for dispersed access, or could be relocated towards the campground exit as a more screened separate loop option.
- Consider removing campsites along main road from south side as well.
- Enhance the outdoor space around the Breezeway by the Campground Store, to create more outdoor social space between the Breezeway and the water's edge.
- Additional campsites, including yurts and primitive tent sites, could be added in the golf course.

# Park Adventure Launch Additional Information

Converting the Golf Course to the Park Adventure Launch will not be a one step process. Initial planning and financial modeling will need to occur first, to ensure the long-term success of this area. The Golf Course is approaching a point where expenses will soon exceed revenue. Completing the planning stages of Park Adventure Launch soon will ensure the transformation of the golf course is ready to begin.

## Stage 1 (next 6-9 months):

- Complete a Sub-Area Plan and Revenue & Operations Plan for the Golf Course Conversion.
- Complete a vendor scan & identify potential partners. Partners will be critical to the conversion of the Golf Course to ensure the Park Adventure Launch does not add burdens to existing park staff.
- Finalize the Partnership model and vendors. Develop agreements.

## Stage 2

- Implement Master Plan, converting the golf course to a combination of more natural areas with hiking trails and other activities and accommodations.
- Relocate the Ziplines to the Golf Course.
- Relocate and enlarge the RV Parking.



# Park Tram Additional Information

This page provides additional details on the implementation of a park tram, including how many trams would be needed and possible operational models..

## NUMBER OF TRAMS

Gulf State Park would need approximately three to four trams:

- Two trams to make a campground to beach loop - approximately 1/2 hour frequency. This route could be implemented next year, focusing on the campground to beach connection.
- One tram to make a Lodge-Lake Shelby loop approximately every hour. With a second tram, this route could serve the new Learning Campus and/or to run more frequently.

## TRAM: POSSIBLE OPERATIONAL MODELS

- **Goal 1: At least revenue neutral operation**
- **Goal 2: No additional burden on park staff**
- Capital expenses: \$110,000 in near-term for campground-beach loop; total capital costs around \$165,000-\$220,000 for tram network operating at half-hour frequency (open-air style tram like Topsail Hill)
- Operator needs: 4 in near-term; up to 8 for complete network

### Model 1

**Capital costs donated;  
Trams operated by volunteers**

Opportunity at GSP: Partnership with Gulf Shores, Orange Beach, or the Alabama Gulf Coast Convention & Visitors Bureau could provide trams; volunteers could operate

#### Topsail Hill Preserve

Santa Rosa Beach, Florida

- Tram donated by South Walton Tourism Development Board
- 2 volunteers operate the system (other operational costs are so minimal that the park does not track them)

### Model 2

**Trams operated by vendor within park, supported financially through other internal revenue sources**

Opportunity at GSP: \$1-2 fee per night for each lodge room could support system; lodge operator could be responsible for operating tram.

#### Sandestin Tram Service

Miramar Beach, Florida

- Sandestin provides two tram loops that are free to park guests

### Model 3

**Trams operated by independent provider; capital and operational costs supported by strong partner**

Opportunity at GSP: Potential financial partner would need to be identified; could be operated as part of a broader Beachfront trolley network

#### Acadia National Park

Mt. Desert Island, Maine

- Downeast Transportation operates the service, supported by more than \$3M in donations from L.L. Bean



GULF STATE PARK SHUTTLE

Transportation Provided by:  
RENT-A-CAR  
RENTAL BY JOHN WALLER  
Northwest Florida's Gulf Coast  
CAUTION: STAY BACK 100 FEET.  
DO NOT PASS

KEY PROJECTS

# Master Plan Phase 3

Phase 3 includes long-term opportunities to add even more value to the park, including additional overnight accommodations, trail network enhancements, and more places to gather and socialize.

## Phase 3 Trail Enhancements

- Revenue Generator
- Visitor Experience
- Capital Cost Low - High  
Flexible - costs depend on selected alignments, distance, and trail typologies
- Maintenance Low burden on park staff
- Timing Considerations:
  - Flexible timing
  - Trail resurfacing could be undertaken when current surfaces are nearing end of expected life

## Beachfront Parking Improvements

- Revenue Generator
- Visitor Experience
- Capital Cost Low - Moderate
- Maintenance Low burden on park staff
- Timing Considerations:
  - Flexible timing
- Additional implementation information in this chapter:
  - Implementation stages - page 192
  - Quick win plaza opportunity - page 193

## Lake Shelby North Improvements

Revenue Generator



Moderate increase

Visitor Experience



Improvement

Capital Cost Moderate

Maintenance Moderate burden on New lodging will park staff need maintenance, but revenue can help support additional staff

Timing Considerations:

- Flexible timing

Additional implementation information in this chapter:

- Implementation stages - page 194

## Picnic Area Enhancements

Revenue Generator



(Medium-sized pavilion rental)

Visitor Experience



Capital Cost Low - Moderate

Maintenance Low burden on park staff

Timing Considerations:

- Flexible timing; best if occurs after ziplines relocated

Additional implementation information in this chapter:

- Implementation stages - page 194

# Beachfront Parking Additional Information

## Quick Wins (within next 6-9 months)

- Create the new entry plaza area at the Pavilion Area.
- Increase traffic enforcement at State Park Road 2 / Perdido Beach Blvd intersection to catch drivers who do not obey traffic laws (especially running red-lights and/or speeding).
- Implement Beachfront pricing changes: Pier and Pavilion to have same cost with hourly meters installed at Cotton Bayou and Romar Beach. Reduce the cost of walking on the pier (free) and reduce the cost of fishing by the amount that parking costs.

- Monitor the use of the Pavilion throughout the peak summer season to identify surplus capacity. This analysis will help inform the design of the Interpretive Center and give a better idea for how many spaces should be provided in this parking lot in the near-term.

## Stage 1 (in sync with Trails Phase 1)

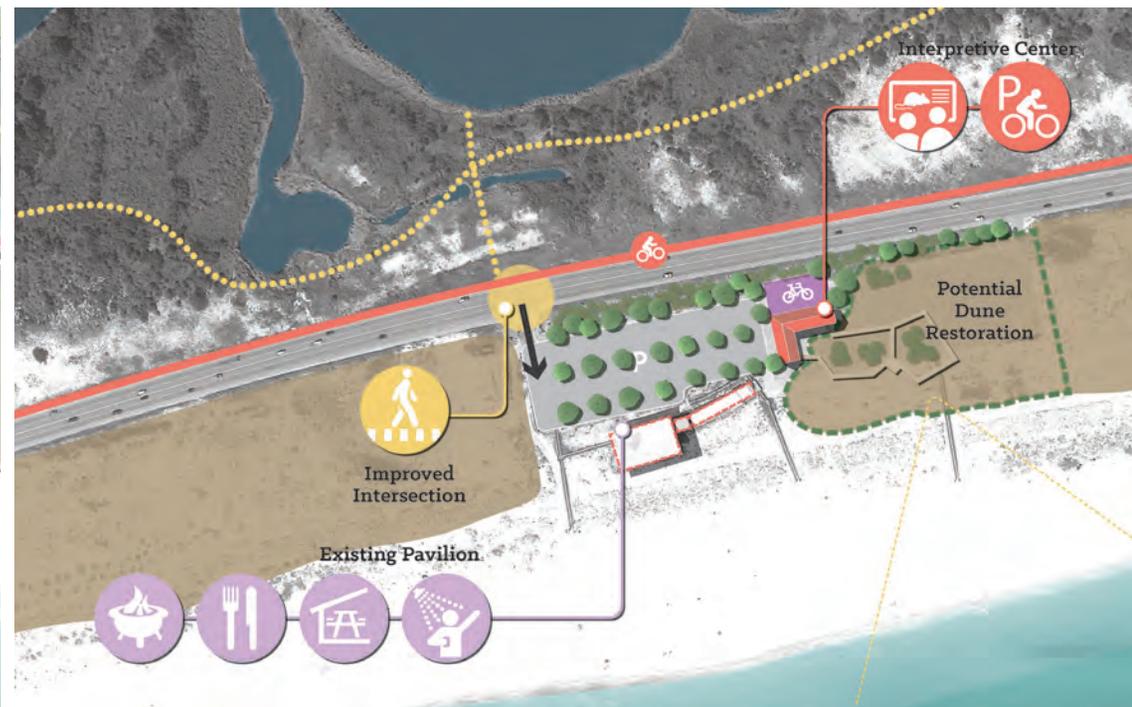
- Improve intersections along Perdido Beach Blvd and continue increased enforcement of traffic laws.
- Convert the small parking lot at the State Park Road 2 / Perdido Beach Blvd intersection to bicycle parking and tram stop.

## Stage 2 (completed 2018)

- Improve the pavilion parking lot in sync with Interpretive Center Construction.
- Relocate the Ziplines to the Golf Course (in sync with Golf Course conversion).
- Perdido Beach Blvd – consolidate bicycle lanes to a cycle track on the road’s north side and add a pedestrian path. All changes to occur by restriping the existing roadway (no impact to non-pavement areas).

## Stage 3

- Enhance the pier parking lot





DETAIL OF PLAZA AREA

To the Beach



QUICK WIN

## Creating an Entry Plaza

A few simple upgrades can create an improved entry experience at the Pavilion. The goal is to create a comfortable, welcoming arrival point.

- **Defined entry plaza:** painting the asphalt is a low-cost way to create a new, distinct space. A planter helps create a space that feels separate from the parking lot.
- **Shade:** New trees provide relief from the hot sun.
- **Benches** (1 minimum): A place to rest while waiting to be picked up or for others
- **Signage improvements:** A new dune sign tells the story of on-going dune restoration. In addition, streamlining the existing signage helps visitors find key information in a more organized, consistent manner.
- **Maintenance and service vehicle parking relocation:** Shifting park vehicle parking slightly away from the main entrance provides a more welcoming experience. Now, when visitors enter the parking lot, they will have a view of the new entry plaza and the dunes and beach beyond, instead of having a view blocked by park vehicles.



EXISTING CONDITIONS:  
CURRENTLY, MAINTENANCE  
VEHICLE PARKING, TRASH  
CANS, AND MANY DIFFERENT  
KINDS OF SIGNAGE WELCOMES  
VISITORS TO THE PAVILION.

# Picnic Area Additional Information

## Stage 1 (in sync with Phase 2)

- Relocate the Ziplines to the Golf Course (in sync with Golf Course conversion).

## Stage 2 (in sync with Phase 3)

- Enhance the picnic area
- Enhance the pier parking lot



# Lake Shelby North Additional Enhancements

## Stage 1

- Lakefront upgrades including increased planting (using species/placement based on Landscape Guidelines)

## Stage 2

- Construct treehouses on the north side of the cabin/cottage road





# Park Operations

Improving park operations is key to the long-term success of Gulf State Park, ensuring the park remains a cherished asset for generations to come.

Revenue  
Generator



Significant revenue + cost savings

Visitor  
Experience



Significant

Capital Cost **Very Low**

Most investments (new positions and technology upgrades) can pay for themselves with additional revenue generated

Maintenance Significant  
burden on benefits  
park staff

Timing Considerations:

- Operational improvements support physical enhancements
- Improvements help increase revenue potential of park, improve operating efficiency, and benefit park staff
- Quicker implementation means benefits experienced sooner

Additional implementation information in this chapter:

- Operational implementation action items - page 198
- Marketing action items - page 199
- Sustainable operations recommendations - page 200
- Landscape guidelines - page 202
- Branding - page 204

## **The success of the park today is a result of the hard work and dedication of park employees, in the face of challenging budgets**

The parks staff increasingly seek to do more with less, but limited staff numbers and tight budgets can only go so far. Budget constraints affect many areas of the operation, from staffing levels and lack of technology to not being able to handle reservation demands and outdated equipment and vehicles. This is a particular area of concern, moving forward. As a result of operating budget constraints, the park's ability to generate revenue is of great importance.

Additional revenue streams are needed to ensure long-term success of the park by supporting

reinvestment, maintenance, operations, and replacement of outdated technology and equipment.

Feedback has stressed the importance of maintaining the affordability of the Gulf State Park experience, and new revenue streams must find a balance. What are the revenue opportunities that can help the park be economically sustainable and also support other elements of the park experience to keep it affordable to visitors?

# Operational Implementation Action Items

- Develop a **strategic plan that includes mission, vision and values and goals and objectives** for the next three to five years, aligned with Park renovations.
- Increase **technology support** for park operations
- Offer **free Wi-Fi service** throughout the Park at selected locations such as campground, cabins and lodge.
- Upgrade the **existing reservation system**.
- Change the **pricing** of the Pier and Pavilion for consistency and begin charging for Cotton Bayou and Romar Beach.
- Establish **lease agreement guidelines**.
- Perform a **cost of service analysis** to determine true costs of service.
- Establish **job descriptions**, clearly outlining job duties and responsibilities.
- Add **human resources, marketing and programs/events support**. This includes adding a Human Resources staff position and adding a full-time programming staff position (oversee programming and coordinate with contractual instructors, and oversee volunteers). There is an opportunity to grow programs and events through this position, and it could pay for itself with program revenues generated. Supplement the recently added Marketing Position with college interns.
- Current staffing levels are insufficient for managing such a large park. Determine appropriate staffing levels throughout the park, including park maintenance. This should include developing a **five year Human Resource Plan** that identifies future park positions as a result of the enhancements.
- Develop a **service system** that includes the development of **service standards** for the various operations of the Park. The development of standards requires an audit system to identify how well the actual delivery of service compares to the standards. This can be done through trained volunteer mystery shoppers. One area of service that is a significant strength of the park is the cleanliness of bathrooms and cabins. This is an extremely important customer requirement.
- Develop a **park-wide service training program**. Customer service training has been offered; it needs to be developed and documented and provided as part of an orientation program and ongoing training. Sales training should also be offered to those staff involved in telephone and in person transactions.
- Expand the process to **measure customer satisfaction**. The staff previously handed out pre- stamped customer satisfaction postcards. Now there is an online survey printed on receipts. The park should consider using additional forms of measuring customer satisfaction.
- Identify **key customer requirements** by facility. This includes the service attributes that are most critical to the customer. An example includes campground registrations. What are the customer requirements that are most important? They may include the cost of the reservation, the ease of registration, the time it takes to complete a reservation, friendliness of staff, and staff knowledge about campground reservations.
- Develop **partnership guidelines** for future partners.
- Develop **design standards** to create a more consistent experience for park visitors throughout the park.
- Develop a **sustainable operations plan**.
- Support the **Gulf State Park Friends Group**
- Operations and maintenance facilities should be located and designed

# Marketing Action Items

## INCREASING AWARENESS OF GULF STATE PARK

Recent improvements will help marketing of the park. The State Park System website updates provide an improved online gateway to Gulf State Park. In addition, the park also recently added a marketing position. This investment is a great start that can be built upon.

The need for marketing services exceeds the ability of one person to deliver, however, so the new position could be supplemented with support from college interns. In addition, adding a programming staff person would allow the marketing position to focus on marketing exclusively (currently this position is also responsible for events). This programming position could oversee programming and coordinate volunteers; it could pay for itself through program revenues generated from contractual arrangements with program instructors. (These instructors would lead new programs that supplement existing park programs.)

## LOCAL & REGIONAL MARKETING OPPORTUNITIES

Promoting the region as a great destination for families and visitors could be a shared effort. This teamwork can start with joint marketing, and be supported by staff in the park and beyond.

For example:

- Gulf State Park staff could promote other regional destinations to park visitors. In this way, the park can function as a gateway to the broader network of outdoor and educational destinations along Alabama's Gulf Coast. Park staff could also share information about area
- Local hotel, restaurants, and stores could share information about current events at Gulf State Park and encourage them to visit.

# Sustainable Operations Recommendations

Across the outdoor recreation, hospitality, and eco-tourism industries, there is a growing awareness of the environmental impacts of facility operations. Industry best practices for outdoor recreation and hospitality have shifted in focus to address energy conservation, water conservation, waste reduction, maximizing the useful life of facilities, and enhancing the natural environment. Sustainable Operations not only benefit the environment, but can have economic benefits for the park as well. As Alabama's Outdoor Classroom, Gulf State Park has an opportunity to demonstrate industry best practices in sustainable operations to the public and to other Alabama businesses.

Sustainable Operations begin with the development of a plan that outlines sustainability efforts on a system-wide basis, establishes measurable goals, and targeted completion dates. This ensures a systematic rather than a random approach to sustainable practices, and can generate performance metrics that contribute to the educational experience of the park. How many plastic bottles were recycled last year, how much mercury was kept out of the waste stream, how much water conserved?

## IMPLEMENTATION:

*Park staff can use this list as a starting point for developing a sustainable operations plan. The idea is to discuss each item and see how current practices compare. Gaps should be identified and prioritized over a three-year timeframe. This plan can be developed in integration with the Operations Strategic Plan (described at the top of page 198).*

The following best practices illustrate the components of a Sustainable Operations plan:

### **TRANSPORTATION**

- Perform regular engine tune-ups and scheduled preventative maintenance of motorized vehicles and equipment. After performing regular maintenance, recycle and/or properly dispose of all vehicle fluids and engine parts.
- Develop a program to conserve fuel and energy with respect to fleet operations (e.g. mileage/fuel efficiency tracking, no idling policy).
- Transition to electric, alternative fuels, and/or hybrid vehicles for staff transportation and maintenance.

### **LANDSCAPE / SITE MAINTENANCE**

- Create a maintenance plan to monitor and manage invasive species when they are discovered in the park.
- Train staff in Integrated Pest Management policies. Seek out alternatives to pesticides such as physical controls, biological controls, and encouraging beneficial wildlife species like purple martins and bats.
- Reduce mowing by transitioning sod areas to native landscapes. Native ground cover, mulch, shrubs, wildflowers, or tall grasses are all alternatives to sod.

### **WATER CONSERVATION**

- Restrooms, bathhouses, and changing rooms should have water-saving devices (low flow showers and toilets, and motion-activated faucets).
- Require all new plumbing fixtures be Water-Sense Certified.

### **ENERGY CONSERVATION**

- Perform energy audits of existing facilities to identify high priority physical upgrades and operational strategies.
- Transition all lamps in lighting fixtures to either LED, low mercury florescent, or equivalent. Purchase only low mercury lighting for new fixtures.
- Require all new maintenance equipment, office equipment and appliances to be Energy Star certified.

### **SUSTAINABLE PURCHASING**

- Identify and purchase from vendors of environmentally friendly products. Use a set of guidelines (EPA's Environmentally Preferred Products {EPP} program, Green Seal.org or similar) to assist in purchasing decisions of environmentally preferred products and services.

### **BUILDING MATERIALS & MAINTENANCE**

- Use low emitting furnishings, floorings, paints, adhesives, and sealants.
- Promote the use of environmentally-friendly, low toxicity and/or fragrance free cleaning products that meet Green Seal, LEED or other standards.

### **WASTE MANAGEMENT**

- Provide opportunities for staff to recycle waste products in office areas, lunchrooms, work areas, etc.
- Provide opportunities for patrons to recycle waste products in public areas. Encourage patrons to recycle via education, policies, promotion and signage. Ensure recycling containers are visible, well-marked and easy to locate.
- Properly dispose of/recycle the following per Material Safety Data Sheets (MSDS) or manufacturer's labels:
  - Energy Efficient Lighting
  - Batteries
  - Electronics
  - Ink and Toner Cartridges
  - Paints
  - Cleaning Products

# Landscape Guidelines

The goal of design guidelines is to achieve a comprehensive park environment that is memorable and unique, economical and practical to maintain, responsible to functional and environmental constraints, and in which all parts of the park relate to each other to establish an integrated whole.

The purpose of design guidelines is to encourage visual unity and functional consistency in the overall development of the built environment, while at the same time creating a distinctive and pervasive sense of place appropriate for Alabama's Gulf State Park. The guidelines do not prescribe specific designs for the park, but rather establish a design direction and series of performance objectives for landscape character.

The park should be understood as a composition of several related landscape types, each of which has a desired set of qualities that contribute to the campus as a whole. Landscape Guidelines prescribe a set of principles and goals for each type, and offers examples of how the landscape should be developed for several enhancement areas as models for all future implementation. For Gulf State Park, this could include:

- Park Entries and Gateways
- Public Spaces
- Trails and Roadways
- Parking

The park's landscape also contains a whole host of objects, materials, and elements. Landscape Guidelines can help provide a framework for the unification of these elements across the park. Guidelines prescribe both the composition quality standard for the element itself, as well as principles for the arrangement and siting of elements. For Gulf State Park, the elements could include:

- Planting: species, composition, character, irrigation, maintenance
- Furnishings: seating, lighting, trash receptacles, signage, bicycle facilities
- Ecological system: sensitive species, management practices, stormwater management

Landscape Guidelines support the upkeep and maintenance of existing park landscapes and also support the design of new spaces throughout the park to establish a premier sense of place and identity. Most importantly, the guidelines should grow out of a lengthy engagement process of meetings and workshops between the consultant team, park leadership and staff, and the community.

**Opposite page: Signage, benches and furnishings, and fencing is inconsistent today. How can the physical design of all elements of the park support a cohesive identity?**



# Branding

## THE STORY BEHIND THE LOGO

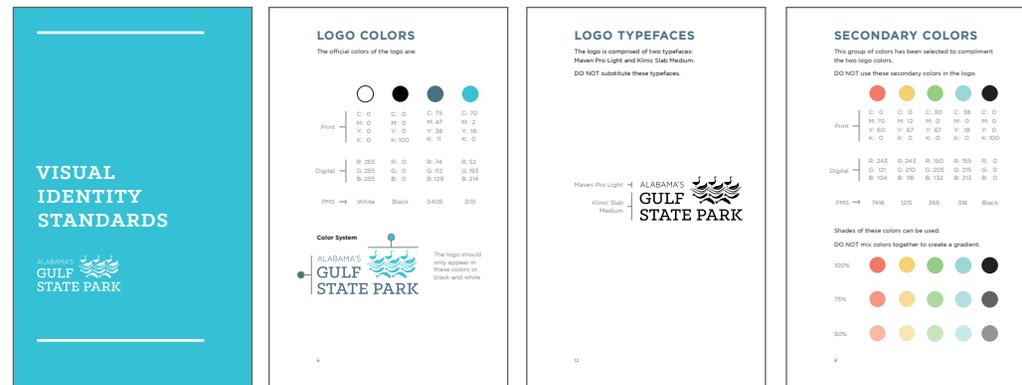
Gulf State Park attracts a wide variety of visitors looking to explore, discover and play. The logo is a fun and bold representation of the various ecosystems and wildlife that make Gulf State Park unique. The mark explores the transition from waterfront to forest, highlighting the varied experiences available within the park.

## THE IMPORTANCE OF CONSISTENT BRAND USAGE

The success of the visual identity depends on the consistent application of the brand across all communication tools.

Adhering to the typographic, color, and size guidelines will make the Gulf State Park brand easily identifiable and will strengthen its place as a special visitor destination.

A more detailed user guide, the Gulf State Park **Visual Identity Standards** is provided as a supplemental document. This document provides detailed information about each element of the brand (colors, typography, logo mark, and pattern) and how to use them.



Sample pages from the Visual Identity Standards

## QUICK WIN: BRAND IMPLEMENTATION OPPORTUNITIES

### Construction Fencing



Dune Interpretive Signage



Dune Restoration Signage

Other opportunities:

- **Public art / Intersection and Gateway branding**
- **Trails interpretive path painting.** Elements of the mark could indicate transitions between ecosystem types, edges of watersheds, etc. Trail painting is an inexpensive opportunity to enhance the trails experience.



## **Summary: A Lasting Legacy for Alabama**

The Master Plan is the long-term vision for Gulf State Park, providing a road-map to achieve the vision of an international benchmark of environmental and economic sustainability. These enhancements will strengthen Gulf State Park as a special treasure, showing the nation and the world “Alabama the Beautiful.”







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VIEW FROM GULF OAK  
RIDGE TRAIL LOOKING  
SOUTH ACROSS PARK



# MASTER PLAN APPENDICES

APPENDIX A  
COASTAL DUNE ECOLOGY MEMORANDUM

APPENDIX B  
SENSITIVE SPECIES RECOMMENDATIONS

APPENDIX C  
BRANDING USER GUIDE



APPENDIX A

**COASTAL DUNE  
ECOLOGY  
MEMORANDUM**

## MEMORANDUM

Date: May 1, 2015

To: Jill Dixon, Gina Ford, & Zach Chrisco with Sasaki Associates

From: Ed Morgereth and Jennifer Dowdell, Biohabitats, Inc.

**RE: Gulf State Park Master Plan – Coastal Dune Ecology**

**Subject: Site Assessment and Ecological Change Analysis Technical Memorandum**

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## I. INTRODUCTION

Biohabitats is part of a multifaceted planning team tasked with understanding the current conditions and examining the potential for the future of Gulf State Park in Gulf Shores, Alabama. Our work is in support of an ecologically sustainable master plan being developed by a team led by Sasaki Associates. Biohabitats' specific focus was on the ecological function of the beach/dune system along the Gulf of Mexico shoreline— examining existing conditions through a combination of data assessment and a rapid field reconnaissance, review of past studies and plans, and observations from key team members who have been involved with the environmental projects at the Park and long term conservation, management and enhancement of the dune system in Gulf Shores. We are also tasked with outlining the sensitivity of these valuable natural systems and the resources they provide and understanding the form and function of the typical dune system within the context of master planning.

Once the existing conditions assessment was completed we began an analysis of ecological change, focused specifically on the shoreline dune system within the Park. We used existing data and geospatial mapping to examine the patterns and shifts of the dune system over time along the Gulf State Park property, as well as conditions at a relevant reference site where less development has occurred over time, the Bon Secour National Wildlife Refuge. Biohabitats explored how to anticipate change and support natural functions in the dune system, along with implications for development, programming, and recreation at Gulf State Park.

Based on the above assessment, Biohabitats developed a summary of conservation and restoration considerations in support of dune function at Gulf State Park. This focused on historic and recent dune changes, projected sea level rise and the anticipated changes to the shoreline in the next 50+ years, and also considered the occurrence of storms in the area and the current beach nourishment regime for this stretch of coastline. This resulted in a proposed setback for development. Suggestions are offered for conservation and restoration actions to be



integrated in the master plan and future development projects. Other important considerations include the enhancement and conservation of the dune system including wetland swales, the protection of rare species, and the planned dune restoration.

## II. EXISTING CONDITIONS

### A. Field Assessment

In late February two professional staff from Biohabitats conducted an on-site assessment of current conditions at Gulf State Park over the course of two days. Our task was to consider the relationship between the dune systems and the prior existing and proposed development along the shoreline of the park. This rapid field reconnaissance provided an opportunity for an examination of the existing dune system at Gulf State Park, as well as on-site discussion with the environmental scientists and engineers who are involved with other concurrent projects including the dune restoration efforts (Volkert and staff from Gulf State Park) and the new fishing pier (Thompson). The team walked the length of the shoreline, examining the physical form of the dune system and the plant composition, and we discussed the successes and challenges of the past restoration & management projects.



*The existing wetland in the foreground and the existing tertiary dune fragment in the background.*

This provided valuable insight into the existing dune conditions including the primary dune (the engineered berm acting as the primary dune), the swales behind the dune, and then the variably-developing secondary dune as well as remnant tertiary dune fragments. Other existing site features of note included the wetland, incipient dunes, remnant tertiary scrub shrub fragments, and existing features associated with the prior development at the former lodge site. We visited the Bon Secour National Wildlife Refuge to see a more intact dune system and a residential development project just west of the Refuge where swales (including mitigated and restored wetlands) and integrated green infrastructure practices had been woven throughout the residential development footprint.



## Gulf State Park Master Plan – Site Assessment and Ecological Change Analysis



*Bon Secour National Wildlife Refuge dune system.*



*Integrated native landscape with green infrastructure practices (left) and recreated dune habitat (right) in a residential development to the east of Bon Secour NWR.*

### **B. Existing Information Collection and Review**

Biohabitats conducted a literature review of existing studies and available data for the site, with a focus on the dune system. Information was gathered from peer-reviewed scientific journals, governmental natural resource agencies, and environmental and engineering consultant sources. The intent of the literature search was to compile information relevant to the project. Subject matter gathered included topical data on subjects such as:

- Alabama beach mouse- habitat analyses using GIS and other software, individual and population responses to habitat variations, population viability analyses, etc.
- Least tern and snowy plover protection, monitoring, and stewardship
- Local sea turtle information and nest summaries
- Local flora and fauna, including plant and faunal communities, and rare, threatened and endangered species lists
- Geological dune monitoring reports, local dune analyses, dune management information
- Engineered berm information and
- Bon Secour NWR characterizations



## Gulf State Park Master Plan – Site Assessment and Ecological Change Analysis

The information was reviewed and synthesized to help better understand existing conditions of the site, the historical context of the dunes, the work that has already been done, and how it can be best applied to future planning efforts. The information gathered was also used to gain a more detailed understanding of the technologies available to help predict and manage future conditions and challenges to the dune system.

The literature indicates that current conditions at Gulf State Park are the result of a combination of ongoing ocean and geological processes, hurricane impacts, other natural and man-made disturbance, and natural and human responses to those perturbations. The parkland between State Road 182 and the ocean, from Orange Beach to the east and Gulf Shores to the west, totals approximately 140 acres of primarily undeveloped natural dune and coastline habitat. The synopsis of information in the *Dune Restoration and Management Plan* written by Volkert, Inc. (March 2014) on the existing site-specific conditions of the dunes in the project area was reviewed for further context, as well as an understanding of on-going dune habitat enhancement techniques and the management planning needed. While the dunes have been impacted from numerous recent storms, the restoration process is underway and is described in the *Dune Restoration and Management Plan*.

The dunes of Gulf State Park are ecologically sensitive, providing habitat for numerous rare, threatened and endangered species, in an inherently dynamic location where the land and the Gulf of Mexico meet. Disturbances to these systems can come in many forms such as tropical storms, hurricanes, human development, invasive species, and ocean-borne pollution. These can alter the landscape and the flora and fauna that occupy it, so that maintaining the ecological balance and a functioning ecosystem can be challenging. Rare turtles and shorebirds rely on certain beach and dune characteristics for nesting, resting and feeding, and the Alabama beach mouse prefers and depends on rather specific dune geomorphology and habitat. An understanding of dune conditions and habitat/organism interactions can inform a holistic approach to master planning and design guidance.

### **Key Species**



*Sea oats seeds at the entry of an Alabama beach mouse burrow on backside of the primary dune.*



Documentation from multiple sources confirms that rare, threatened and endangered species, such as the Alabama beach mouse (*Peromyscus polionotus ammobates*), are an important consideration in this master planning process. The *Habitat Conservation Plan, Gulf State Park Infrastructure Improvements and Restoration, Gulf Shores, Alabama*, prepared by Volkert, Inc. (March 2014) is an important resource pertaining to the Alabama beach mouse and future Park improvements. The mouse burrows in the primary dunes, collecting, eating and dispersing seeds of native plants like sea oats. The mouse has been known to move inland to tertiary dunes during large storm events. It also uses scrub-shrub plants of the interdunal swales as cover against predators like birds. The habitat conservation plan provides more detailed descriptions of existing habitat and future habitat needs, as well as recommendations for dune restoration techniques, and future management.

Other rare species, including migratory birds and sea turtles also utilize the Park beaches. Piping plovers (*Charadrius melodus*) and red knots (*Calidris canutus*), threatened shorebird species, are known to use the Gulf Coast area for migration stopovers. Least terns (*Sternula antillarum*) and snowy plovers (*Charadrius nivosus*) are known to nest at Gulf State Park, per the *Least Tern and Snowy Plover Protection, Monitoring, and Stewardship at Gulf State Park, AL Final Report*, August 29, 2014, produced by the American Bird Conservancy. Recommendations for bird population stewardship and public outreach for these species will be considered in the development of the master plan.

Each year loggerhead turtles (*Caretta caretta*) use the Gulf State Park beaches for nesting, and though much more rare, Kemp's ridley (*Lepidochelys kempii*) and green turtle (*Chelonia mydas*) nests have been documented on Alabama beaches over the past few years as well. Consequently, the future of those species at the site is a major management concern if they are to maintain their viability.

The GSP Master Plan presents an opportunity and responsibility to manage future development in a way that acknowledges the delicate balance of nature at the site and facilitates stability and improving habitat conditions in the future.

### **The Dunes**

The coastal dunes of the northern Gulf of Mexico are a highly dynamic system formed through complex processes including shoreline erosion, longshore currents, and prevailing winds. The wind and currents move sand from the intertidal zone landward toward the back shore. As waters retreat and small berms of sand are left to dry, the prevailing winds blow the sand along the beach until it is caught by the structure of the vegetation or other organic materials. Sand builds up behind these materials until small mounds begin to form, creating further vertical form to capture the sand. The dunes' shifting forms absorb and regulate the energy of the wind and water blowing in from the Gulf, redistributing sand and deflecting water to provide shoreline protection during large storm events.





*New incipient dunes are formed as blowing sand is caught in native vegetation along the shore.*

A functional dune system is made up of incipient dunes, primary dunes, dry and wet swales, secondary dunes, and tertiary scrub dunes (Appendix A). The more active shoreline and dune field area experiences seasonal changes and annual changes, as well as changes associated with large storm events. The beach/dune system is characterized by Holocene deposits within the Coastal Lowlands district of the East Gulf, the Plain section of the Coastal Plain Province and Mississippi Alabama shelf section of the Continental Shelf Province (Jones et al, 2009).

Primary dune vegetation currently includes sea oats (*Uniola paniculata*) and coastal panic grass (*Panicum amarum ell. Var. amarulum*), and could be enhanced with inclusion of coastal bluestem (*Schizachyrium littorale*), gulf bluestem (*Schizachyrium maritimum*), beach elder (*Iva imbricata*), and beach panic grass (*Panicum amarum*). Secondary dune vegetation currently includes sea oats (*Uniola paniculata*), beach evening primrose (*Oenothera drummondii*), beach elder (*Iva imbricata*), and coastal panicgrass (*Panicum amarum ell. Var. amarulum*), and could be enhanced with the inclusion of groundsel tree (*Baccharis halimifolia*), false rosemary (*Conradina canescens*), beach rosemary (*Argusia gnaphalodes*), woody goldenrod (*Chrysoma pauciflosculosa*), and saw palmetto (*Serenoa repens*). Dry swale vegetation is characterized by adjacent dune species and can include rustweed (*Polypremum procumbens*), squareflower (*Paronychia erecta*), saltgrass (*Distichlis spicata*), beach elder (*Iva imbricata*), and gulf bluestem (*Schizachyrium maritimum*). Wet swales have yet to develop in the project area, but characteristic reference vegetation that may become established includes salt meadowgrass, (*Spartina patens*), yaupon (*Ilex vomitoria*), black needle rush (*Juncus roemerianus*), umbrella grass (*Fuirena scirpoidea*), and various sedges. The tertiary scrub-shrub dune includes sand live oak (*Quercus geminate*), myrtle oak (*Quercus myrtifolia*), Chapman's oak (*Quercus chapmanii*), and sand pine (*Pinus clausa*); and could be enhanced to include false rosemary (*Conradina canescens*), gopher apple (*Licania michauxii*) and laurel leaf greenbrier (*Smilax laurifolia*).

An engineered berm was constructed in February 2005 along the shore, using 7.9 million cubic yards of sand (Jones et al. 2009) to act as a protective primary feature along the beach, for both the natural and human community after Hurricane Ivan. Following completion of the beach fill,

the newly constructed berm/dune feature was augmented with salt tolerant vegetation and sand fencing.

***Wetlands***

Interdunal swales and wetlands are the lower elevation portions of a complex dune system, often formed by roughly parallel sandy ridges and low swales. These low-lying, sometimes wet areas are often found in proximity to groundwater or ponded rainwater. They are often influenced by saltwater inundation from storm surges, blowing sands, and flooding. In mature dune systems, swales can be fairly wide between secondary and tertiary dunes. The interdunal swales provide important habitat for birds and mammals.



*Interdunal wetlands at Bon Secour NWR*

There is one existing disturbed interdunal swale wetland along the Park shoreline. Although disturbed, and potentially created by anthropogenic influences, it is a regulated wetland feature (subject to permit authority) that requires an exploration of conservation and restoration potential in the master planning development scenarios. The overall conservation and enhancement of the existing wetland is ideal for supporting ecosystem function.

**Conversations with GSP project team members’ summary**

During on-site assessment visits in February 2015 Biohabitats met with other team members who have prior project experience at the park or work there. Brett Gaar, Volkert, Inc., described existing alterations and impacts to the dune system including the engineered berm, historic disturbance at the Lodge site and other areas along the dunes, and the general nature of the conditions of permitted allowable under the permitting work he has been involved with. This includes permit conditions associated with the Habitat Conservation Plan for the Alabama Beach Mouse and the resulting incidental take permit. The permitted activities are for the defined 137.9 acre Gulf State Park Action Area. The Action Area, the planned Lodge and Conference, the planned Interpretive Center, the rebuilt Fishing Pier, and the constructed Beach Pavilion. It also includes an area of approximately 50 acres of proposed dune enhancement

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and restoration at the Park (plans designed by Volkert). Volkert also shared information on the permitted regulated wetland impacts at the Lodge site.

Jay Morgan, Thompson Engineering, described Thompson's role in the Lodge project engineering design as well as the project accreditation potential for LEED and SITES standards. He also discussed consideration for not fragmenting existing wetlands and conserving/improving them, issues related to potentially modifying the engineered berm for dune restoration purposes and habitat connection and associated considerations for not impacting coastal protection functions.

Kelly Reetz, Naturalist, Gulf State Park, met us onsite and described the Park's prior and on-going dune restoration and enhancement efforts over nearly the last decade. These efforts have involved Christmas tree recycling collection and deployment to rebuild dunes, volunteer planting of native dune grasses, and prior placement of sand fencing, all resulting in 26 acres of dune enhancement and restoration areas with limited changes to the engineered berm.



*Current dune restoration at Gulf State Park*

### Project Team Dune Conversation Call

In order to unify collective project team thinking and to establish a basis for dune system conservation, restoration and management at GSP, Matt Leavell, GSP Project Team, held and led a conference call discussion on April 3, 2015 as a joint team conversation on this subject. This conversation started with a review of the context, including the Vision Statement for the GSP Project and discussing a Draft Mission Statement for the dune system as follows:

*Create a dune system that encourages a connection to nature and maximizes the ability of that system to provide protection, habitat, and resiliency for all types of communities.*

The following items were discussed amongst the team of experts working on the project:

- Define the ideal dune ecology



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- Provide continuous protection for buildings, infrastructure, and communities
- Balance protection and ecology considerations
- Consider what event(s) or moment(s) the projects will be designed for
- Consider long-term implications of the design decisions
- Allow for the Dune Restoration component of the Project to be executed during the summer of 2015
- Allow the Lodge Design team to consider the integration of their facility into a dune environment
- Provide clear guidance for the design team for the Interpretive Center

The objectives of the call that were fulfilled included arriving at a consensus on the Mission of the beach and dune work at Gulf State Park for the master planning effort, providing a framework for Volkert's work on the dune restoration project they are designing, and providing guidance for the Lodge team in coordinating the dune component their project design work.



### III. ECOLOGICAL CHANGE ANALYSIS

#### A. Shoreline change evaluation and geospatial mapping

##### *Geospatial analysis of how the dune system has changed over time (Identify data used, sources)*

Dune migration at Gulf State Park was measured by utilizing digital elevation models, aerial and satellite imagery and light detection and ranging (LiDAR). In order to understand dune migration from 1998-2015 available data layers, LiDAR Digital Elevation Models of the study area with accuracy of 20 cm or better were retrieved from NOAA Digital Coast and post processed into 1-ft contours using GIS Spatial Analyst tools. NAIP aerial imagery and High Resolution Ortho imagery was compiled from USGS Earth Explorer to supplement and cross reference LiDAR and contour data.

##### *Historical shoreline position change mapping*

Historical shoreline change data was retrieved from USGS: Coastal and Marine Geology Program and mapped using ArcGIS. Short and long term shoreline change evaluations are based on comparing three historical shorelines with the more recent shorelines derived from LiDAR and topographic surveys. Long term rates of change were calculated by using transects and linear regression applied to all shoreline positions from the earliest to the most recent. Linear regression was selected because it has been shown to be the most statistically robust method when a limited number of shorelines are available. Short term rates of change are calculated using simple calculations between the two most recent shorelines. All datasets combine a range of years into a single shoreline at the mean high water level with a 95% confidence level. The range of years included in this analysis include:

- 1849-1867
- 1918-1957
- 1978-1981
- 2001
- 2015

Additionally, the most recent shoreline from NOAA called Continually Updated Shoreline Product (CUSP) was added to the mapping. This layer emphasizes the most current positioning versus the most accurately acquired data and accounts for mean high water but excludes the effects of seasonal and storm response on spatial variability of beach morphology.

All of these historical shoreline layers are displayed in vector format and symbolized using different colors in the overview mapping of the Gulf State Park shoreline (Appendix B).

##### *Dune migration mapping and analysis of primary dunes*

Digital elevation model data and aerial photograph imagery was employed for available year 1998, 2001, 2004 (Pre-Ivan), 2004 (Post-Ivan), 2005 (Post-Dennis), 2005 (Post-Katrina), 2010 and 2015. Using the 1 foot contours developed from LiDAR, the study area was divided into eight 150' scale maps and plotted out for each year of interest. Utilizing these maps, a manual approach was used to delineate an estimated primary and secondary dune line for each year.

## **Gulf State Park Master Plan – Site Assessment and Ecological Change Analysis**

The manual delineations were then put into GIS for use as a visual tool to display dune movement (Appendix C).

Original DEM datasets were used to calculate dune migration rates. Eight longitudinal cross sections were drawn along the study area and elevation points were extracted every ½ ft. along each transect. The data was divided into two time periods, 1998 to 2004 Pre Ivan and 2005 Post Dennis to 2015, due to the dramatic impact Hurricane Ivan had on the dune field. These two separate calculations were also averaged into an aggregate rate of dune migration between 1998 and 2015.

Utilizing the cross sections and subsequent maps, a manual dune tracking procedure compared each year visually and the primary dunes were overlaid. The migration rate was calculated by finding the distance between the windward start point, peak elevation and lee ward ending point of the primary dunes. The difference of these numbers between years was then combined into an average and divided by the range of years resulting in aggregate rates of horizontal and vertical migration (Appendix D).

### ***Corresponding reference site elevation for Bon Secour NWR dunes***

A supplemental dune migration analysis was performed on Bon Secour National Wildlife Refuge in an attempt to understand how dunes migrate in a more natural environment with fewer anthropogenic impacts like berm construction and development impacts. This analysis used the same source data that was used for the Gulf Shores State Park calculations. The same methodology was used and transects were developed to the west, central and eastern portions of the study area (Appendix E).

Results from Bon Secour reference site dune analysis were also used to help inform typical and more natural dune morphologies and to help anticipate or project the relationship of the future potential dune systems elements for the GSP Master Plan coastline; in order to provide a representation of a more natural or ideal relationship of primary, secondary, dune swales and tertiary dune features in terms of relative spacing and elevations.

## **B. Ecological Change Analysis**

### ***Historical Shoreline Position Change***

The historic shoreline position mapping revealed that there have not been dramatic changes to the shoreline of this portion of the coast since the 1849-1867 mapping period. During that 165-year period the overall shoreline positions varied within about a 250-ft range. However, within the Park's stretch of beach there is some variability in shoreline change by location along shoreline. In general, the shoreline was in a more retreated position during the 1849 – 1867 period compared to the modern day 2015 shoreline position. The shoreline position at the Fishing Pier location is about 250 feet water-ward than the historic position, shoreline location directly below the closest point of Lake Shelby show a very consistent location of shoreline during the compared periods, the area directly in line with the Park entry road shows a shoreline that has retreated landward by about 190 feet since the period of 1978- 1981, and the area of shoreline at the Pavilion location shows up to 190 feet more extensive waterward shoreline in

2015 than some of the historic positions. The shoreline positions during this lengthy history have been influenced by regional manipulation of the coastline, associated development, the closing or fixing of position of inlets, development patterns, and periodic beach nourishment and dune system modifications. The other key factor in shaping the shoreline position is the legacy of the natural phenomenon of hurricanes and tropical storms that have influenced this area including Hurricane Frederick (1979), Hurricane Ivan (2004), Dennis (2005), and Katrina (2005).

### ***Dune Migration Mapping Analysis***

The mapping of primary and secondary dune locations over the years in the period for which we have digital elevation data reveals a variable pattern and magnitude of dune movement. The profiles of eight cross sections along the GSP coastline over the seven analysis years are provided in Appendix C. The movement of the dunes has included dune field building and loss revealed as landward and waterward movement of the primary and secondary dunes. The annual movement of the primary dune field for example ranges from 1 to 7 feet per year on average along this stretch of dunes. However, this is highly variable, particularly based on episodic storm events and human alterations such as the engineered berm built at the primary dune location in 2005 and physically functioning to replace it thereafter. The reasons for this variability have multiple drivers and influences. These include the natural wind and water transport of sand, the trapping of sand by vegetation and vertical structure, and the array of human induced disturbances, including beach access points, development such as prior building foundations/pad sites, parking lots and roadways at the former Lodge site, and other anthropogenic alterations such as periodic beach nourishment projects, the placement of the engineered berm, and dune restoration & enhancement activities.

The overall fixed position and available width of the dune field between the beach shoreline and Perdido Beach Boulevard (Route 182) is a key limiting factor to natural dune migration and establishment. The road, along with the previously mentioned human disturbances and development plays a significant role in the ability of the dunes to adjust, move and change over time. The added complexity of regional coastline management and periodic beach nourishment of sand supply (anticipated frequency of 8-12 years) is another major influence on dune configuration, height and movement. The coastal engineers on the GSP project team, CB&I, are providing additional engineering study results to support the project regarding beach sand movement, impacts of sand supply and transport and related implications for primary dune/engineered berm elevations, and related issues of coastal protection provided by these features. Engineers associated with the project and prior work along this coastline have suggested that the engineered berm in the primary dune position may be too high for natural function and dune file adjustment and development. When this is explored further a more complex answer may well be that the current engineered berm is too high for the space provided to and beyond the road for natural dune and swale morphology adjustments by natural processes. This is further complicated by several anecdotal references to the way some local community members recall the dunes decades ago consisting of more of a mosaic of dunes, more robust vegetation and generally referred to higher dune elevations (e.g., perhaps 20+ feet in elevation above mean sea level).

The other major factor in dune field location, elevation and movement is the influence of hurricanes and tropical storms. In the analysis years, this influence is most dramatically depicted by the dune impacts of Hurricane Ivan in 2004. The impacts were manifested as nearly a complete loss of the primary dune, landward movement of the secondary dune field and referenced movement of sand offshore by the storm as well as sand transported inland onto and across the road. A completely natural functioning historic dune system would still encounter these storms but have the resiliency of sand supply, transport processes and vegetation community dynamics to adjust and recover over time, minus anthropogenic factors.

### ***Bon Secour NWR Dune Reference***

In order to provide a more natural movement reference site, with relatively less human disturbance impacts, three cross sections were evaluated at Bon Secour NWR. These profiles are provided in Appendix E. The most recent profiles depicted are for 2010 because we did not have digital elevation data for 2015 to be able to depict that year as well for comparison purposes to the GSP transects. The western most Bon Secour transect is the closest to development features, thereby revealing a natural system in proximity to disturbance, the central transect #2 is the most natural and un-impacted (and widest reach to the road), and the eastern transect #3 is influenced by its proximity to an altered lake edge and roadways (somewhat similar condition to parts of GSP). These sections reveal a few key observations; there is similar significant impact by Hurricane Ivan (2004); the primary dunes do not have a high elevation profile (only to about elevation 14 in any depicted year, and secondary dune maximum elevation 16); and there is little sign of recovery of the primary dune in the most recent years after Ivan. This last point may well be related to overall sand supply at this location and not showing the results of more sand occurring along this reach after the most recent beach nourishment to the east (this theory may need to be discussed with the project's coastal engineers). Bon Secour's dune migration cross sections were also utilized as a reference condition for potential dune setback widths; see section IV.A below.



*Bon Secour dunes*

#### **IV. ANTICIPATED NEEDS AND CONDITIONS**

##### **A. Dune migration and protection & setback needs**

Biohabitats has proposed that a minimum 225' setback be respected along the entire shoreline of Gulf State Park in all master planning scenarios in order to provide space for natural dune movement and function (Appendix F). There may be some areas where a slightly larger setback is suggested to respect the current dune system dynamics. Biohabitats considered a number of factors in order to come to this conclusion, including a review of historic shoreline data, the movement of the primary and secondary dune systems over time and their relationship, the current beach nourishment programs, projected sea level rise scenarios, and the role of the engineered berm in the dune system.

Biohabitats focused on the patterns of dune movement over time, concentrating on a review of available topographic data from 1998 to the present. We examined cross sections for dune location and morphology along a series of transects across the entire shoreline, 8 total transects with an average of approximately 225' (Mean of 8 transects = 227.75) between the center of the primary dune and the general landward edge of the secondary dune field reviewing the period of assessment years in aggregate. Those distances ranged from 165' to over 290'. This allowed for an understanding of the primary and secondary dune relationship and general movement over time. The most dramatic changes and impacts are visible after major storms have wiped out portions of the beach and dunes, along with the resulting beach nourishment and engineered dune projects that followed.

The engineered berm, as the primary dune portion of this system, will play an integral role in several ecological and coastal processes. It is the protected and occupied habitat for the Alabama beach mouse but beyond the primary dune the mouse needs access to secondary and tertiary dune habitats as refugia during large storms and high water events. The primary dune is also the first line of defense in the complex dune system, helping with coastal protection and buffering the effects of large storms. The dune's ideal and historic elevations are subject to variable information and anecdotal accounts, and it is significantly influenced by beach replenishment projects and periodic tropical storms and hurricanes. Beach nourishment is typically on an 8-12 year cycle in this portion of the Gulf of Mexico.

Beyond the historic patterns of movement at Gulf State Park, the Bon Secour National Wildlife Refuge was examined as a reference site and model for functional dune system dynamics, since it is located just 9 miles to the west of the park, due to its location on the Fort Morgan Peninsula. Bon Secour is the largest contiguous tract of habitat for the Alabama beach mouse. Established in 1980 with the name "safe harbor" it is one of very few remaining intact coastal strand dune systems that provides important habitat for migratory birds, turtles, and the beach mouse. As the first land that migratory bird species encounter, after flying over the Gulf of Mexico there are more than 310 species of birds found at Bon Secour NWF. The beach also serves as an important nesting site for loggerhead, Kemp's ridley, and green sea turtles.

It is also one of the largest most intact parcels of coastal dune ecosystem in Alabama, including a rich and dense diversity of naturally formed primary, secondary, with interdunal swales,

mature oak-overgrown scrub tertiary dunes, scrub forest, maritime forest and pine flatwoods. Rarely do all of these ecological elements transition uninterrupted across the landscape as they do at Bon Secour. It is one of the last places to find a successional spectrum of dunes of different ages. At Bon Secour the primary dunes show a maximum height of 14' and the distances between primary and secondary dune vary between 8 and 16 feet above MSL.

Sea level rise is expected to impose dramatic changes along the shores of the Gulf of Mexico over the coming decades. In the past there has been a trend of 3.19 mm a year, which results in a 1.05 foot rise in 100 years. However future projections forecast a probable range of 2 to 4 feet sea level rise by 2100. Using the online *Sea Level Visualization for Alabama, Mississippi and Florida* (hosted by the USGS) we examined the proposed sea level rise effects from 1 foot to 6 feet of rise. This mapper illustrates the scale of potential flooding, not the exact location, and does not account for erosion, subsidence, or future construction. Water levels appear as they would during an average high tide (Appendix G).

Rising sea levels will cause daily high tides to reach farther inland. With a 5-6 foot rise many isolated portions of the park are inundated. With 6 feet of rise, all surrounding lakes north of the road floods, and there is a significant reduction of the beach, which will also likely affect dune movement. There is further uncertainty concerning whether or not there may be an accelerated rate of rise in the future, as the implications of climate change are more deeply understood. Based on all of these observations, and in the interest in supporting a functional dune system, the 225' setback is proposed for the entire length of the beach.

### **B. Informing conservation and restoration needs**

There are a number of important considerations for conservation and restoration specifically associated with the dune system, from conservation of important refugia habitat to rare species, and restoration of portions of the dune system and its functionality.

The conservation of existing tertiary dune fragments is of utmost importance, as these are some of the most mature stands of vegetation on the property. Tertiary dunes provide important refugia for sensitive species like the Alabama beach mouse, especially in large storm events. As part of their conservation, there needs to be unimpeded access and connection between the primary and secondary dune habitat, and the tertiary scrub-shrub dune. It is also advisable to expand on the tertiary dune with enhancement plantings so as to not further isolate those patches.

A well-developed, multi-tiered dune system is the cornerstone of habitat for the Alabama beach mouse and achieving an ecologically diverse ecosystem. Moving toward the Gulf, the beach and beach/primary dune interface are critical habitat for rare sea turtles and shorebirds. In order to strengthen the viability of habitat for these sensitive species, and other more common species that some of these sensitive species depend upon for habitat and food, the dune system must be comprehensively restored, managed and maintained to maximize its habitat value. Many important steps have already been taken, but there is on-going work to be done in the future, to ensure that the quality of habitat does not decline, and further jeopardize the

viability of this unique site, that so many rare organisms depend on for habitat, and ultimately, survival.

As documented in the *Dune Restoration and Management Plan* produced by Volkert, Inc., (2014) a major step in dune restoration to be accomplished is adaptive management of the primary dune/engineered berm and the application of techniques to bolster incipient and secondary dunes. The development of the secondary and tertiary dunes, with the characteristic interdunal swales must be more fully realized to enhance Alabama beach mouse habitat more comprehensively. The various geomorphic dune habitats and their associated vegetation are all important habitat components, both for the Alabama beach mouse and for other less rare, but important species. Restoration efforts to restore incipient dunes with Christmas trees are an example of on-going practices, as well as the construction of sand fences on the engineered dune, which promote sand accumulation and pioneering native vegetation such as sea oats (*Uniola paniculata*) and coastal panic grass (*Panicum amarum var. amarulum*). Continuing interdunal swale habitat development behind the engineered swale is important to the diversity of habitats available at the site. Both wet and dry swales are components of healthy habitat systems, and their associated varying vegetative communities. Some wet swale emergent wetland restoration (mitigation for any impacts) is required by the permit for the project. The opportunities for the creation of more of this type of habitat will increase as the interdunal swales develop over time. Further development of secondary dunes is also important to the habitat diversity at the site. The vegetation on some secondary dune areas between State Road 182 and the engineered berm has been restored, and the recruitment of natural species such as camphorweed (*Heterotheca subaxillaris*) has been noted. And finally, remnant scrub dune habitat between SR 182 and the Gulf has been reduced to a very small area, with limited vegetation diversity. The restoration of this type of habitat needs to be addressed in the future.

With the restoration of the dune/vegetation system, its protection and conservation, and the continued stewardship and protection of the shoreline areas, the ecosystems that naturally occur in areas similar to the project area will continue to develop, mature and diversify. And the rare species that depend on these habitats will benefit from the restoration and conservation efforts.

Interdunal swales and wetlands are an important part of a dynamic dune system and should be enhanced and restored within the Gulf State Park dune system. Where there are remnant wetlands there should be steps taken to enhance and restore the native plant palette and wetland hydrology. Further fragmentation and destruction of the wetlands and swales should be avoided when possible. Dune restoration efforts that support a dynamic system of swales and dunes should be supported.

There are a number of approaches for restoration of the primary and secondary dunes that have been utilized or suggested for Gulf State Park. These strategies and techniques include the use of angled sand fencing to direct sand to certain locations to build incipient and secondary dunes; the application of the sand fencing is often accompanied by the planting of suitable dune plants, such as 70% sea oats and 30% of coastal panicgrass or seaside evening primrose, potentially mixed with other native species; the use of revegetation to stabilize sand within the coastal dune

## **Gulf State Park Master Plan – Site Assessment and Ecological Change Analysis**

– the salt-resistant plant species grow upward through the sand and spread laterally forming a dense mat of roots and rhizomes that help lessen erosion; the use of recycled Christmas trees to help create areas that collect and stabilize blowing sand; the biomimicry use of shims as vertical structures that help direct and collect sand to create new dunes; the use of strategic location and elevation breaches in the berm that help provide openings for sand movement.



## References

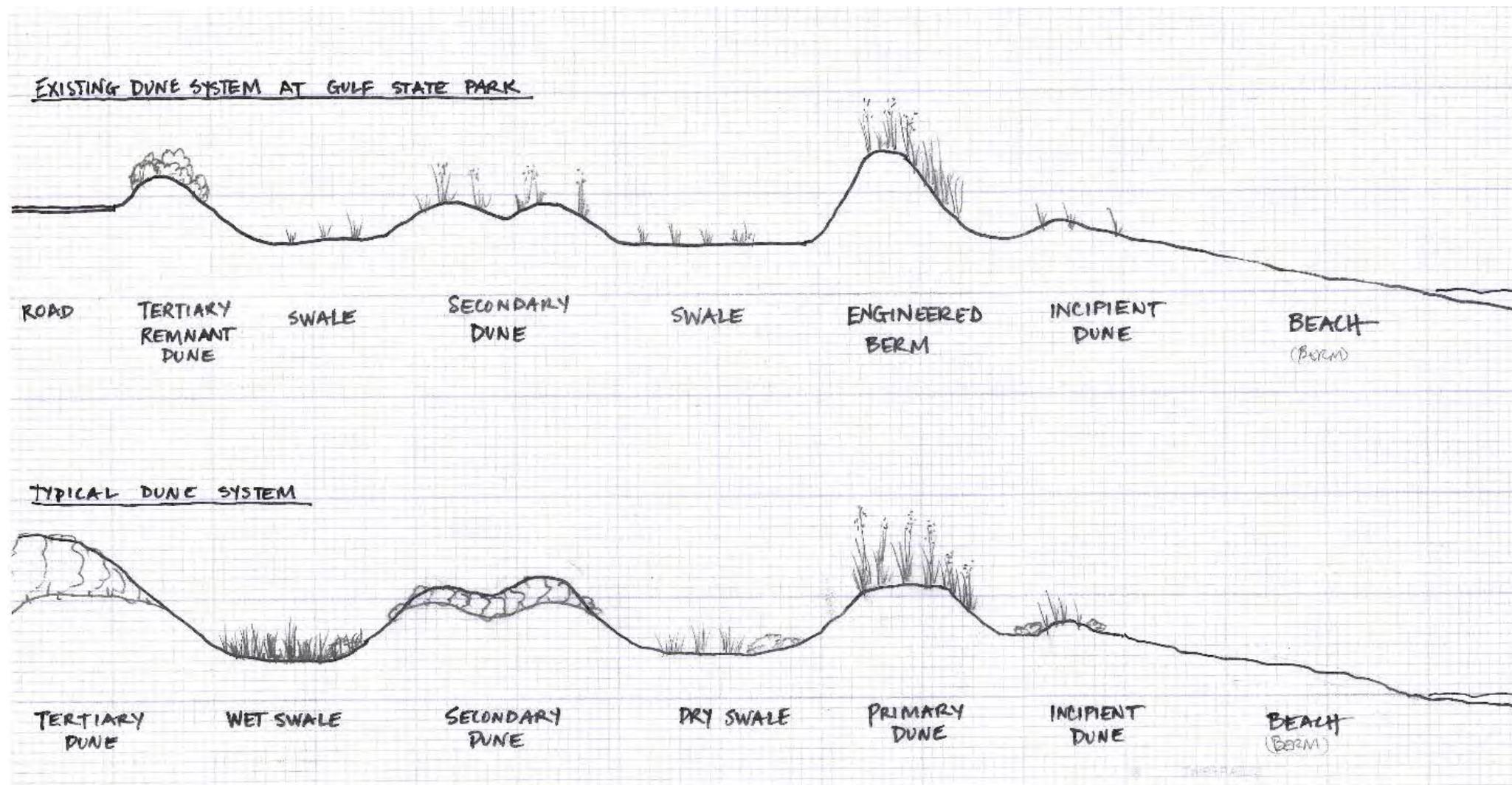
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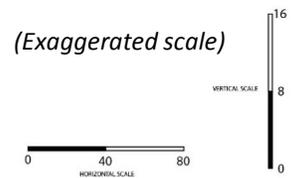
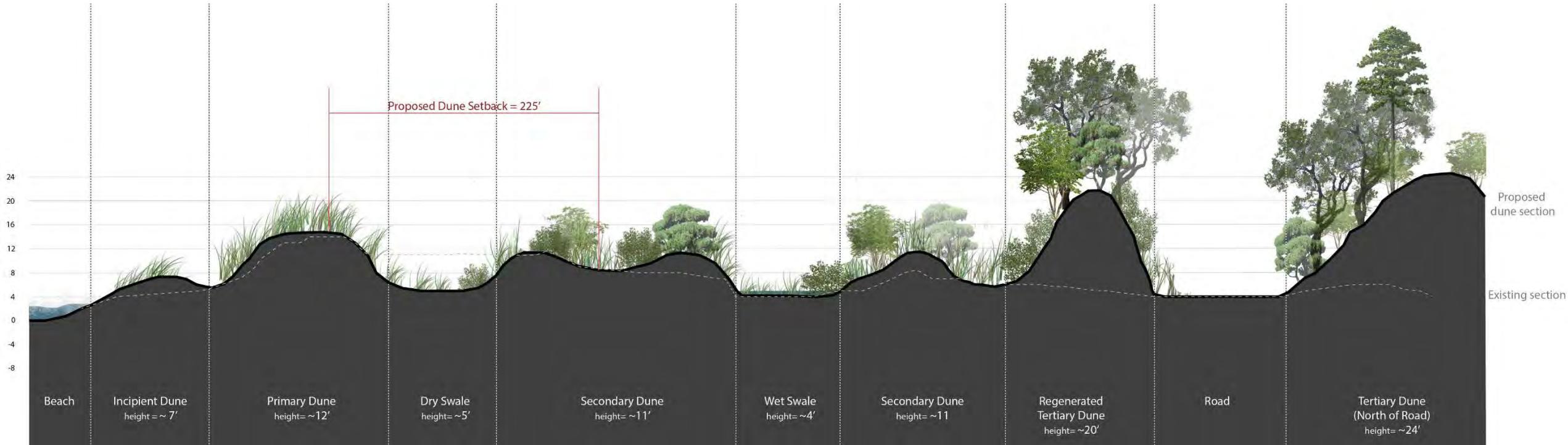
**Appendix A – Dune System Cross Section Sketches**

# Coastal Dunes

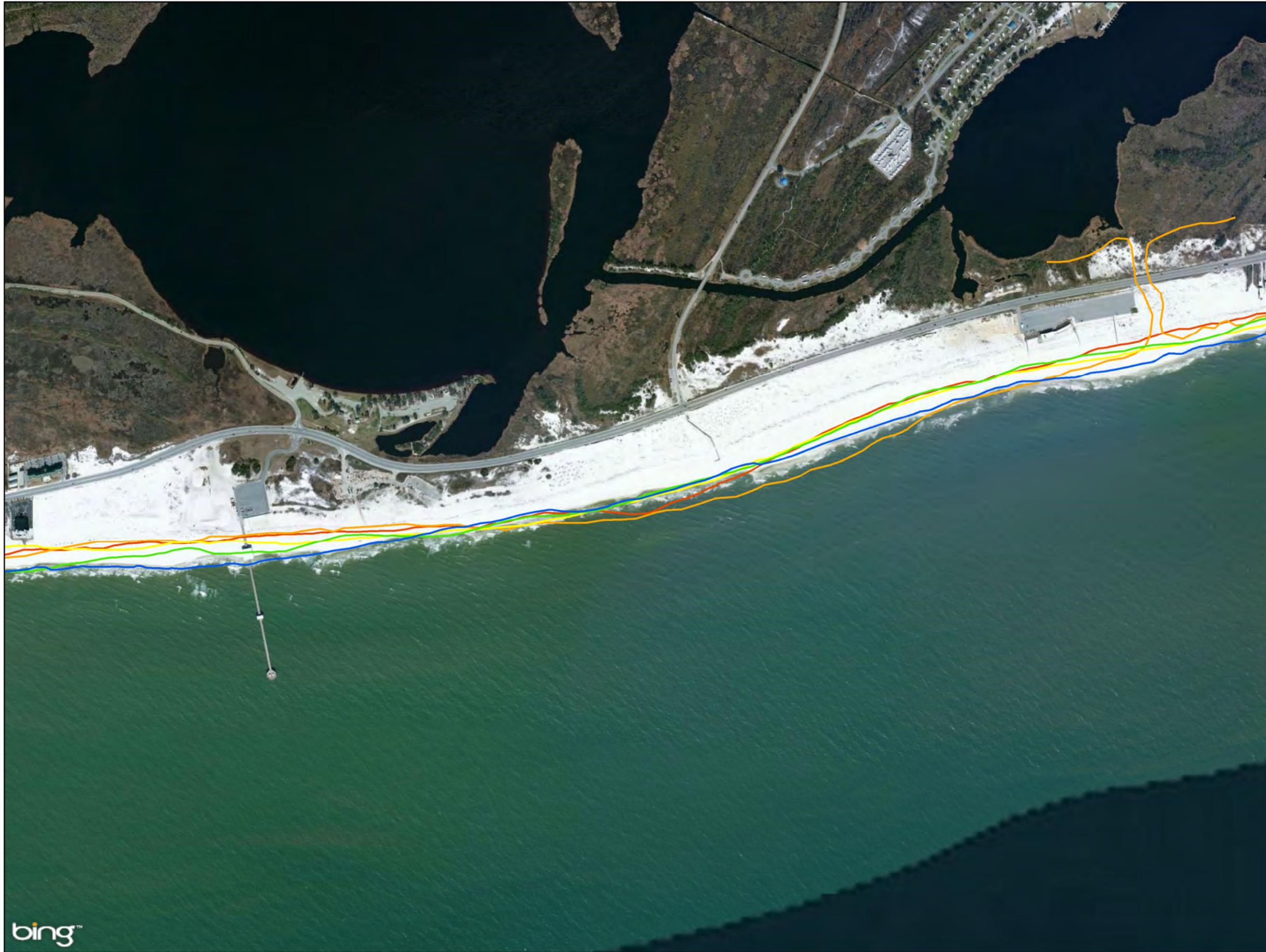
## A HEALTHY DUNE SYSTEM



# More naturally functioning dune cross-section (section cut through Lodge site)



**Appendix B – Gulf State Park Historic Shorelines**



## Shoreline Mapping

Gulf State Park  
Gulf Shores, AL

## Historical Shoreline Movement

### Legend

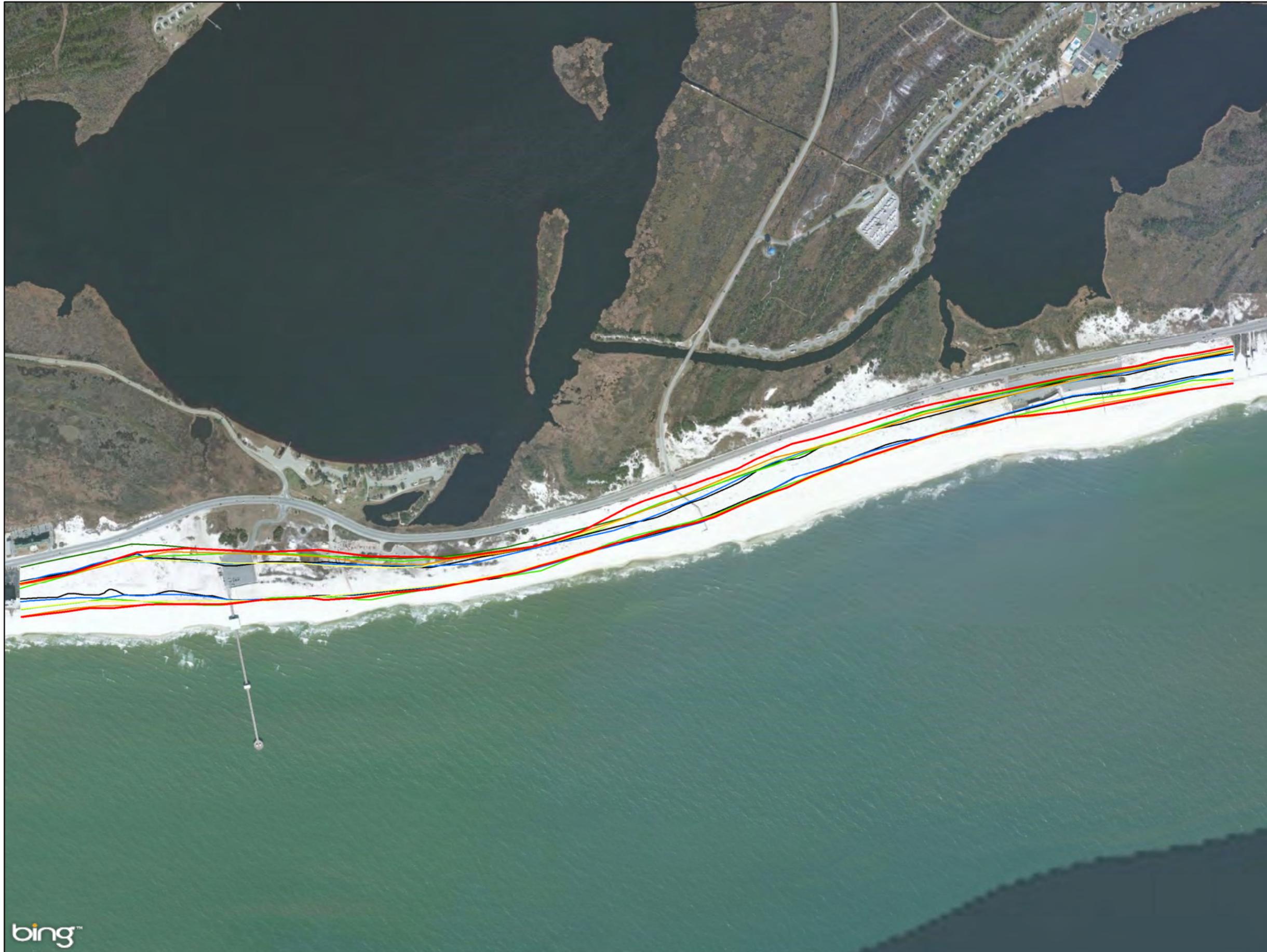
-  2015
-  2001
-  1978-1981
-  1918-1957
-  1849-1867

0 900 Feet



April 2015

**Appendix C – Primary and Secondary Dunes – Change Over Time**



## Dune Migration

Gulf State Park  
Gulf Shores, AL

## Historical Dune Movement

### Legend

#### Year

- 1998
- 2004 Pre Ivan
- 2004 Post Ivan
- 2005 Post Dennis
- 2005 Post Katrina
- 2010
- 2015

0 900 Feet



April 2015



### Map Index

Gulf State Park  
Gulf Shores, AL

### Historical Dune Movement

### Legend

#### Year

- 1998
- 2004 Pre Ivan
- 2004 Post Ivan
- 2005 Post Dennis
- 2005 Post Katrina
- 2010
- 2015



April 2015



### Map 1

Gulf State Park  
Gulf Shores, AL

## Historical Dune Movement

### Legend

#### Primary Dune

- 1998
- 2004 Pre Ivan
- 2004 Post Ivan
- 2005 Post Dennis
- 2005 Post Katrina
- 2010
- 2015

#### Secondary Dune

- - - 1998
- - - 2004 Pre Ivan
- - - 2004 Post Ivan
- - - 2005 Post Dennis
- - - 2005 Post Katrina
- - - 2010
- - - 2015



April 2015



## Map 2

Gulf State Park  
Gulf Shores, AL

## Historical Dune Movement

### Legend

#### Primary Dune

- 1998
- 2004 Pre Ivan
- 2004 Post Ivan
- 2005 Post Dennis
- 2005 Post Katrina
- 2010
- 2015

#### Secondary Dune

- - - 1998
- - - 2004 Pre Ivan
- - - 2004 Post Ivan
- - - 2005 Post Dennis
- - - 2005 Post Katrina
- - - 2010
- - - 2015

0 300 Feet



April 2015



### Map 3

Gulf State Park  
Gulf Shores, AL

## Historical Dune Movement

### Legend

#### Primary Dune

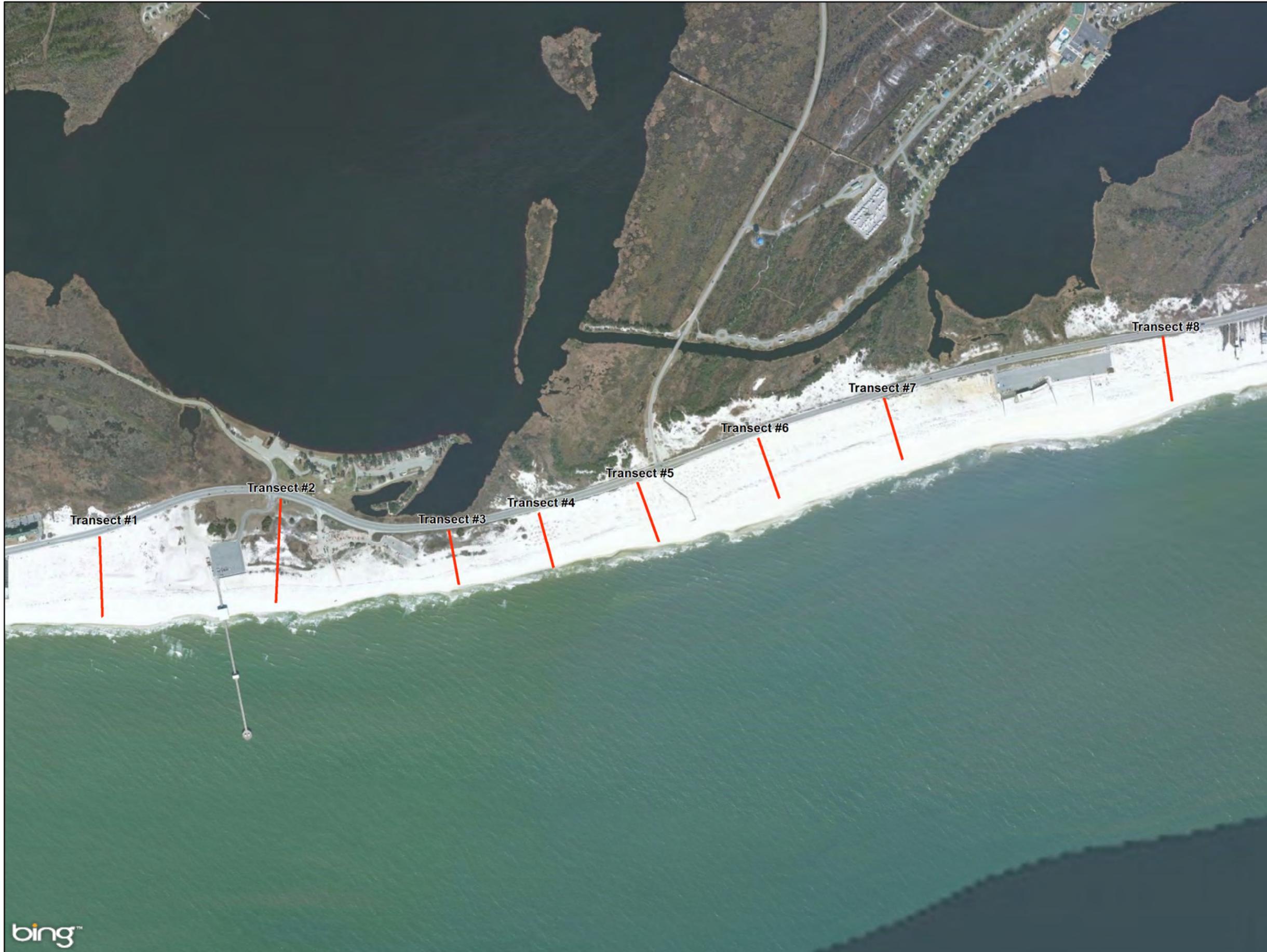
- 1998
- 2004 Pre Ivan
- 2004 Post Ivan
- 2005 Post Dennis
- 2005 Post Katrina
- 2010
- 2015

#### Secondary Dune

- - - 1998
- - - 2004 Pre Ivan
- - - 2004 Post Ivan
- - - 2005 Post Dennis
- - - 2005 Post Katrina
- - - 2010
- - - 2015



April 2015



## Dune Profiles

Gulf State Park  
Gulf Shores, AL

## Dune Transects

## Legend

— Transects

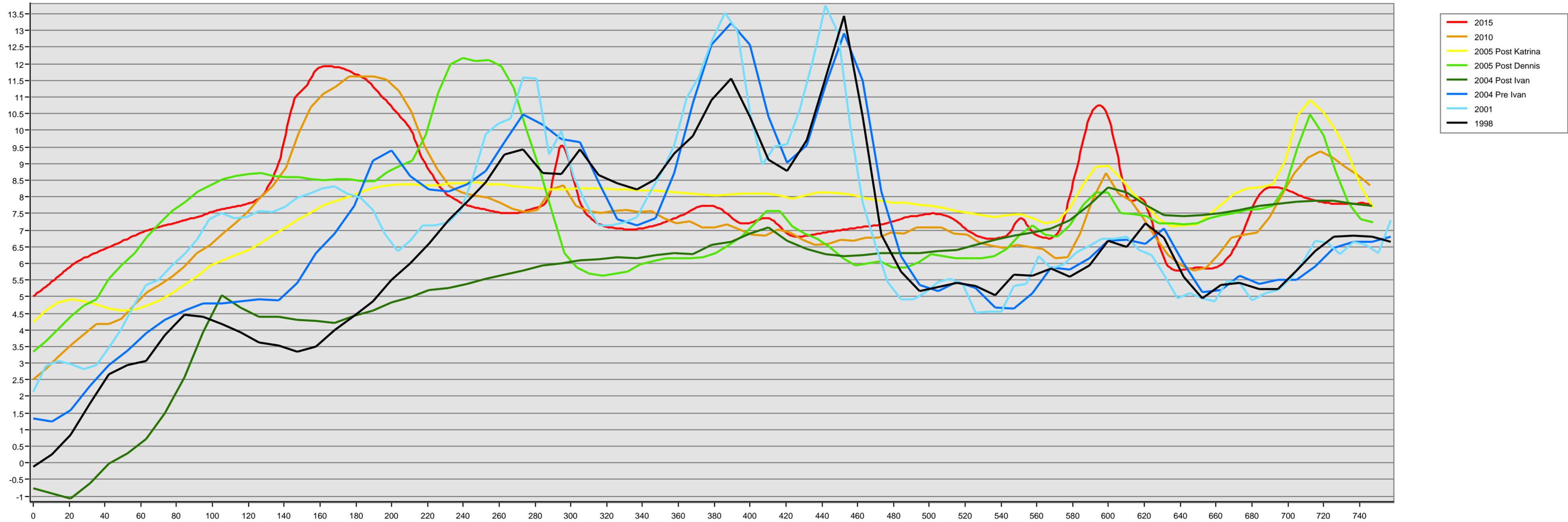
0 900 Feet



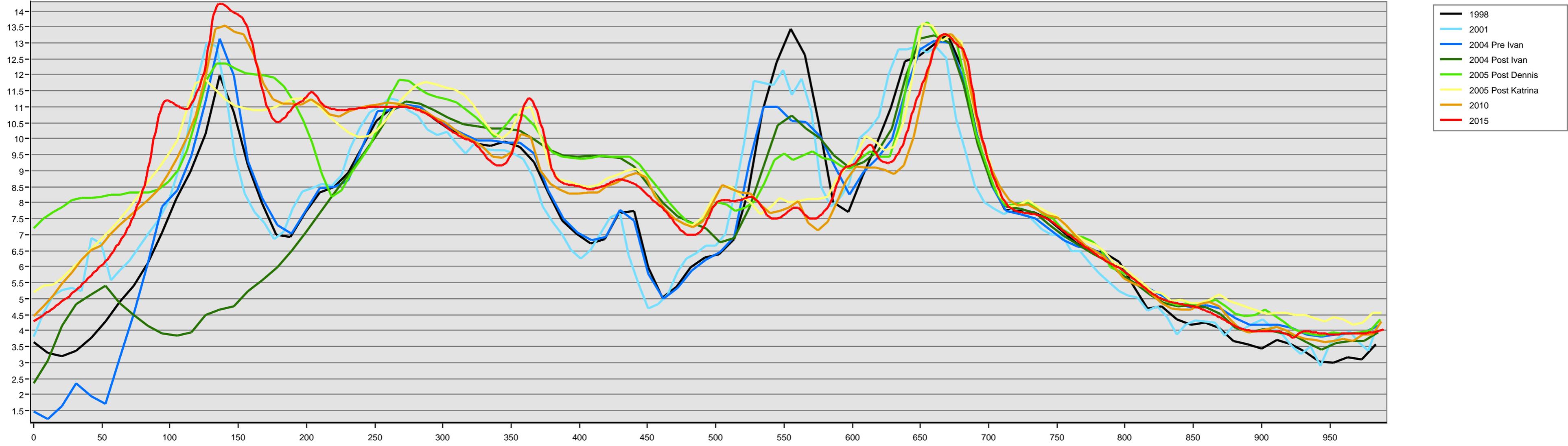
 Biohabitats

April 2015

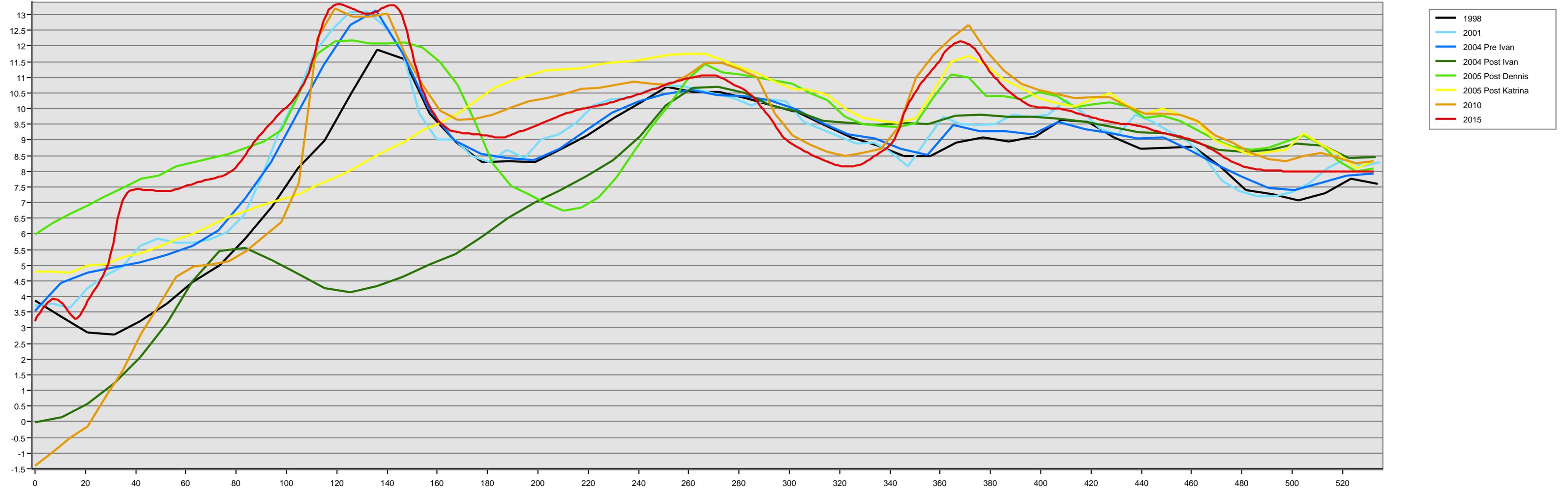
Gulf State Park - Historical Dune Profiles



Gulf State Park - Historical Dune Profiles

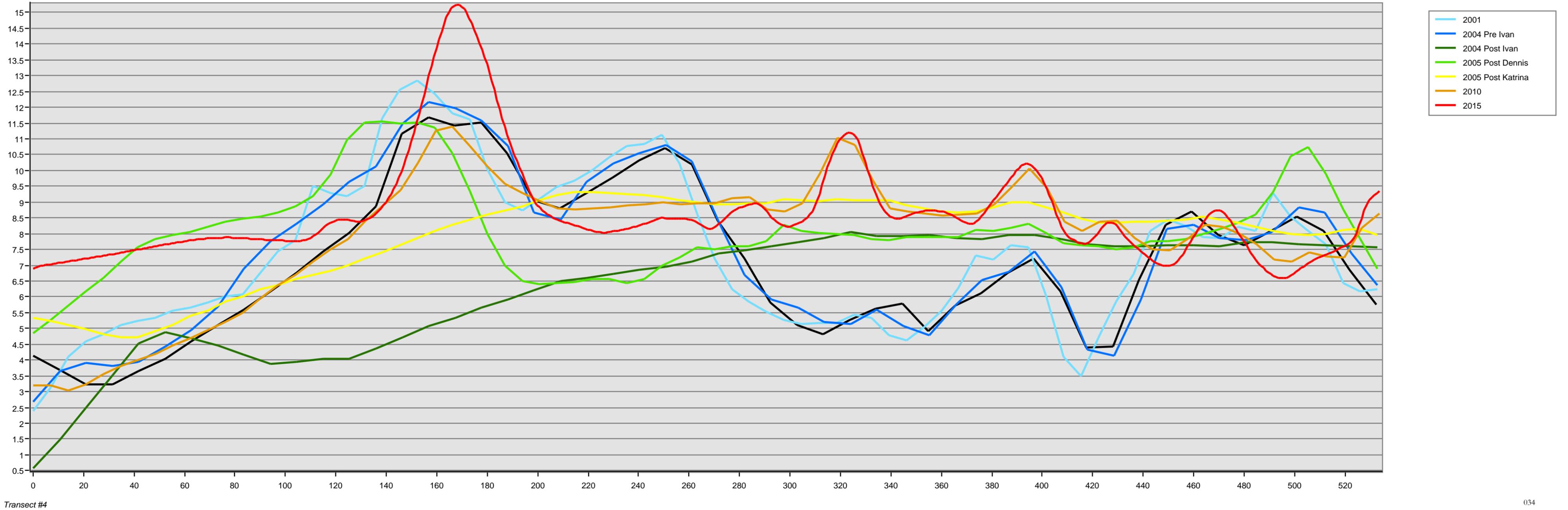


Gulf State Park - Historical Dune Profiles

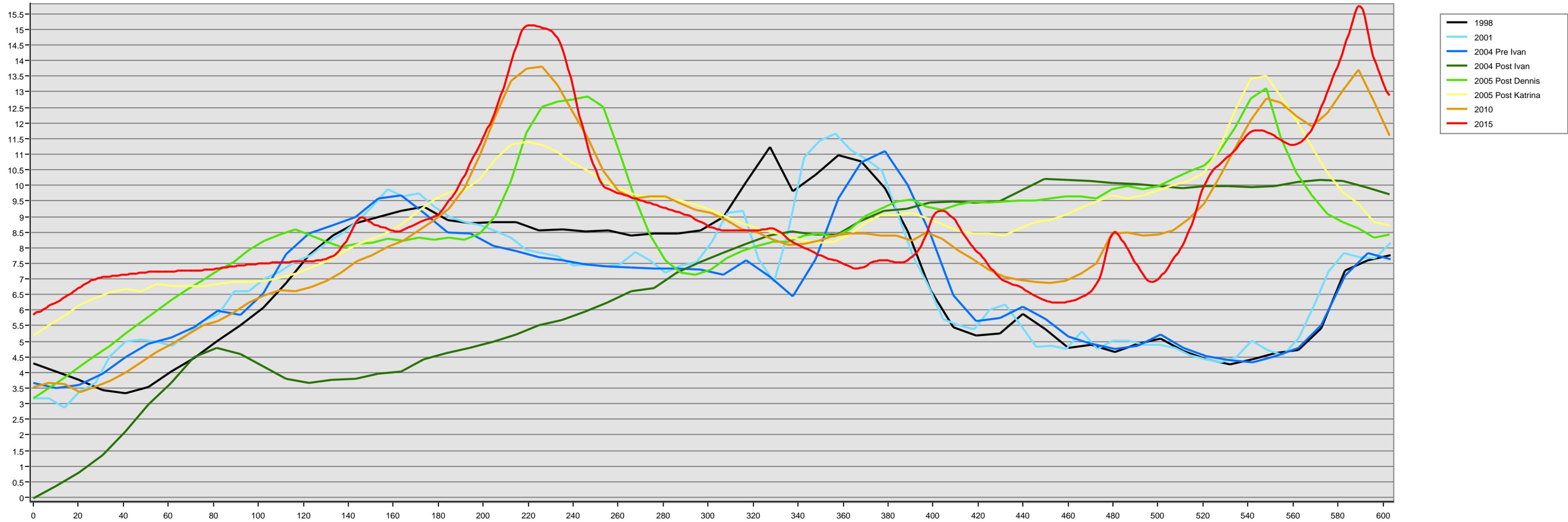


Transect #3

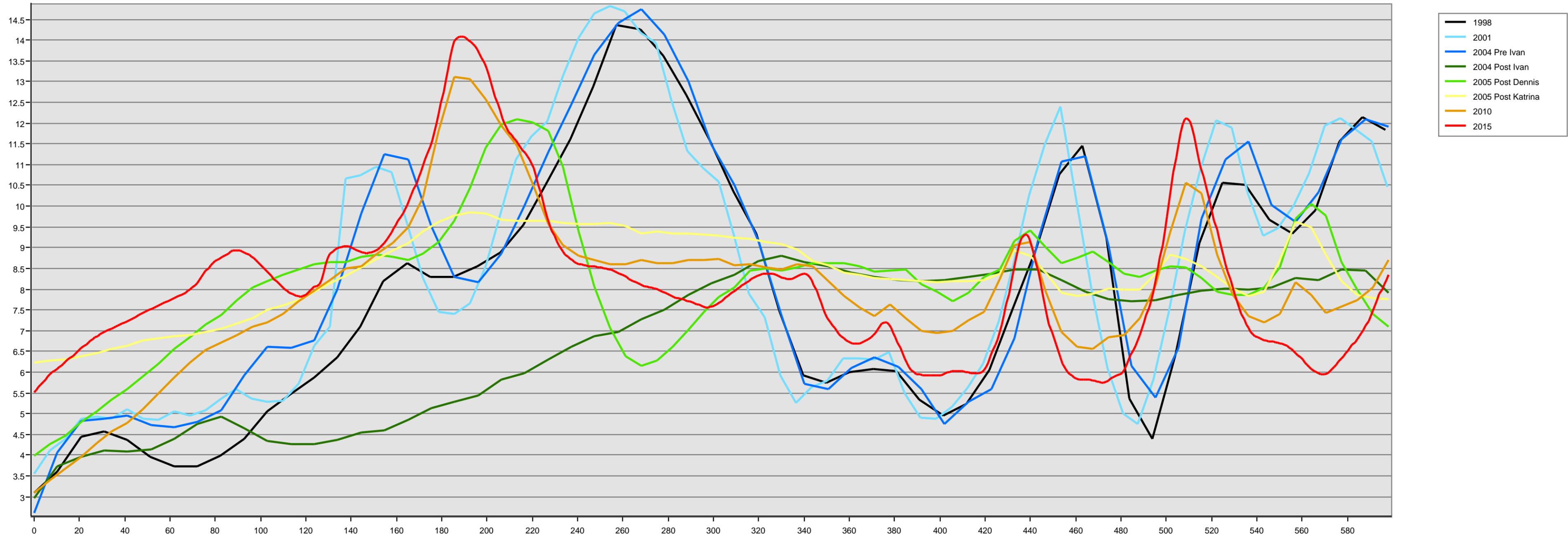
Gulf State Park - Historical Dune Profiles



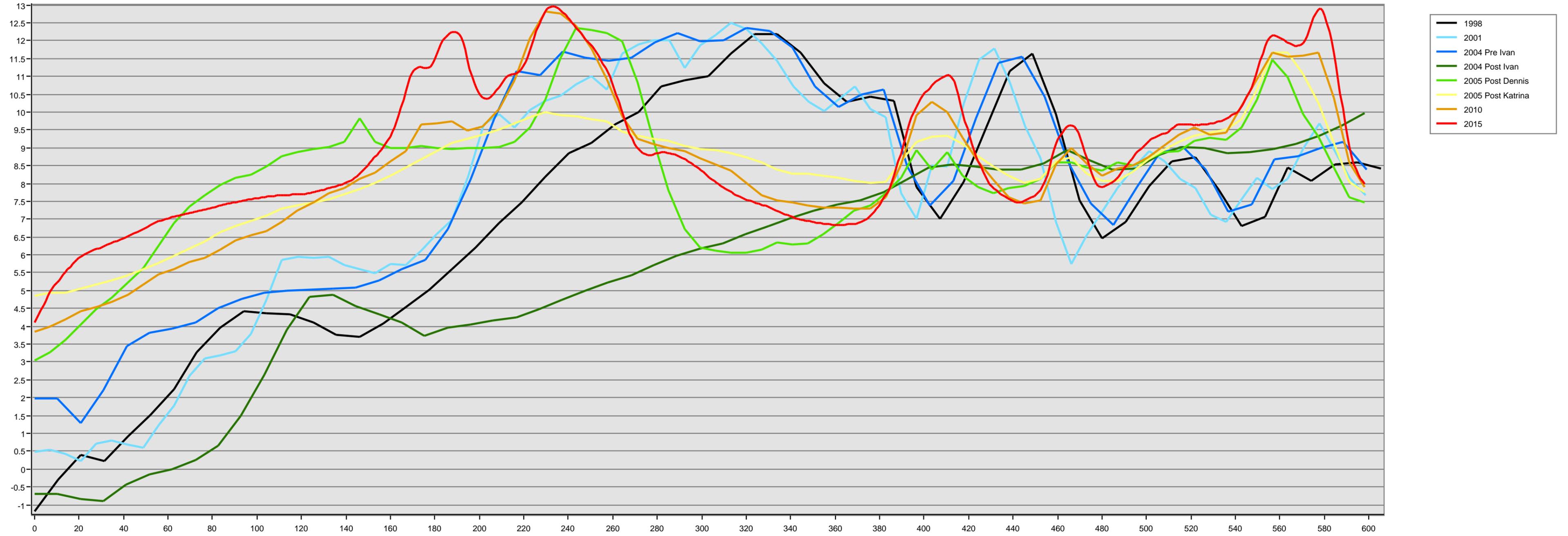
Gulf State Park - Historical Dune Profiles



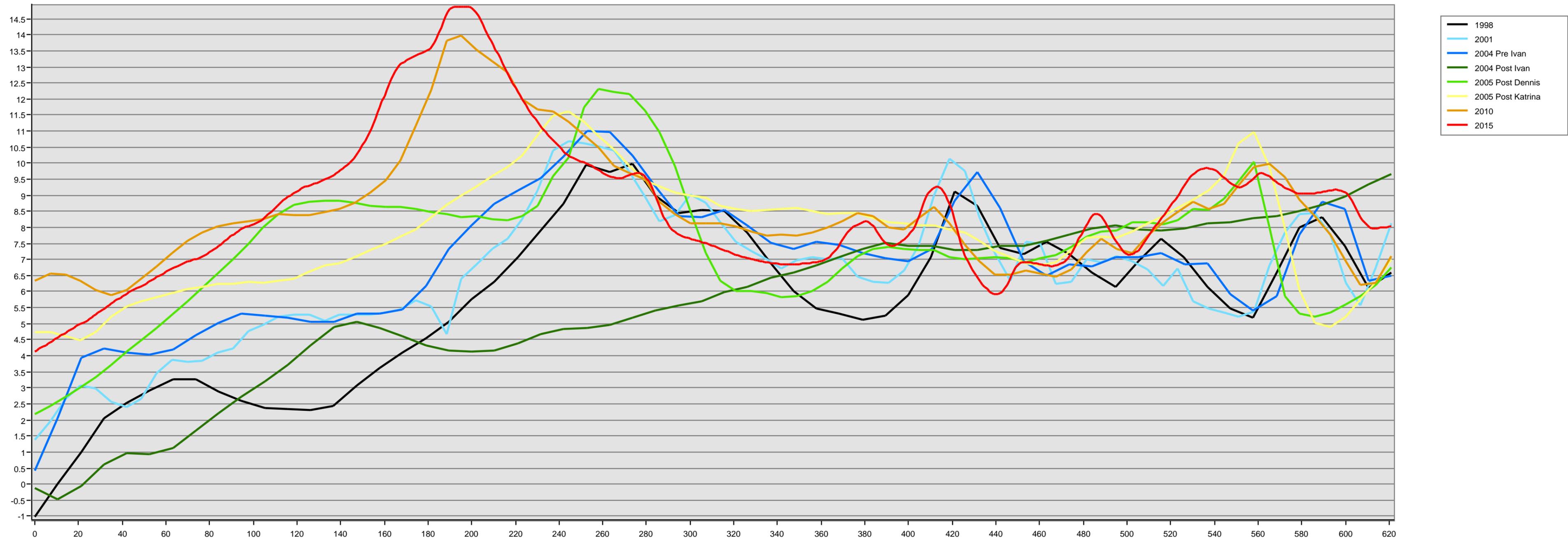
Gulf State Park - Historical Dune Profiles



Gulf State Park - Historical Dune Profiles



Gulf State Park - Historical Dune Profiles



Dune Field Movement Ranges for Eight Select Transect – Gulf State Park

<u>TRANSECT #</u>	<u>DISTANCE RANGE (Feet)</u>
1	273
2	225
3	165
4	247
5	195
6	250
7	225
8	242
AVG.=	227.75

**Appendix D – Table of Primary Dune Migration Rates**

## Gulf State Park - Primary Dune Migration

---

### 1998-2004 Pre Ivan

---

Migration (ft/yr)	1.91
Rise (ft/yr)	0.13

### 2005 Post Dennis - 2015

---

Migration (ft/yr)	3.53
Rise (ft/yr)	0.17

### 1998-2015

---

Migration (ft/yr)	2.72
Rise (ft/yr)	0.15

**Appendix E - Bon Secour Primary and Secondary Dunes**



### Dune Profiles

Bon Secour  
Gulf Shores, AL

### Dune Transects

#### Legend

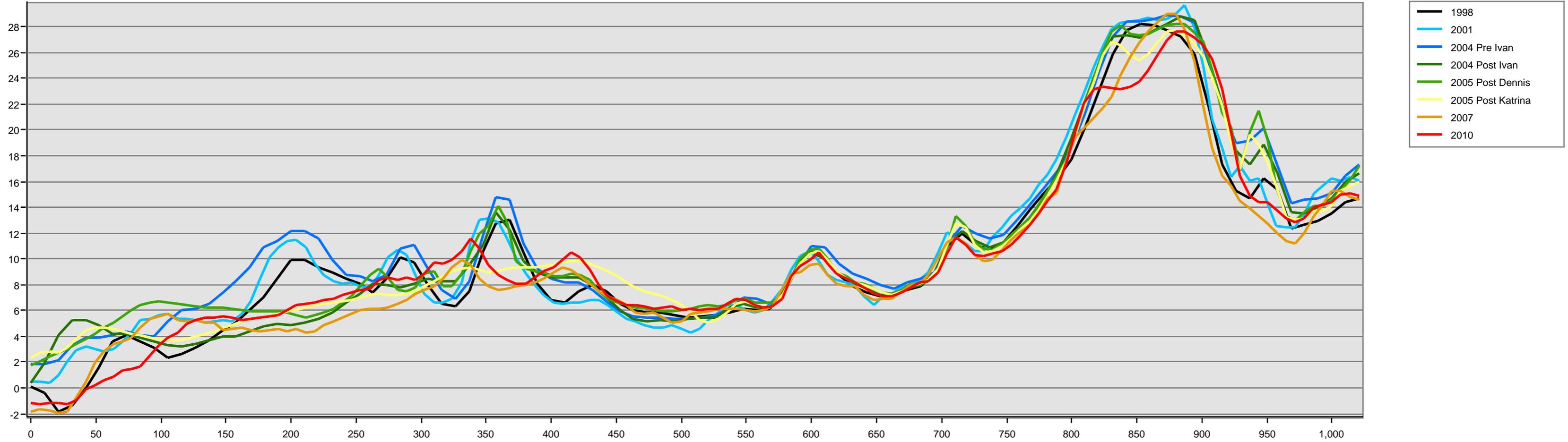
 Bon Secour Transects

0 1,000 Feet



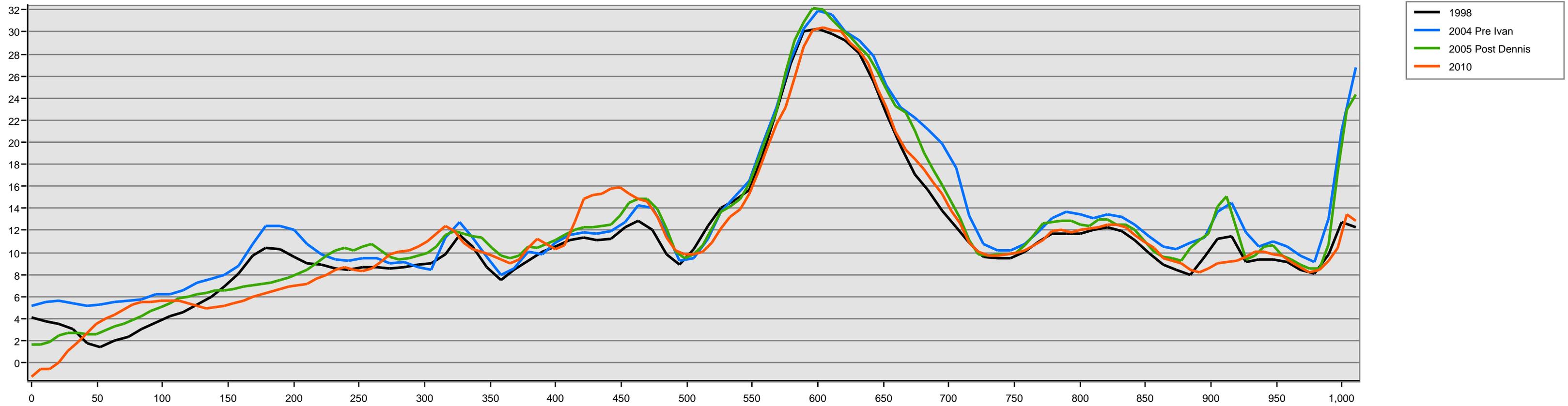
April 2015

Bon Secour - Historical Dune Profiles



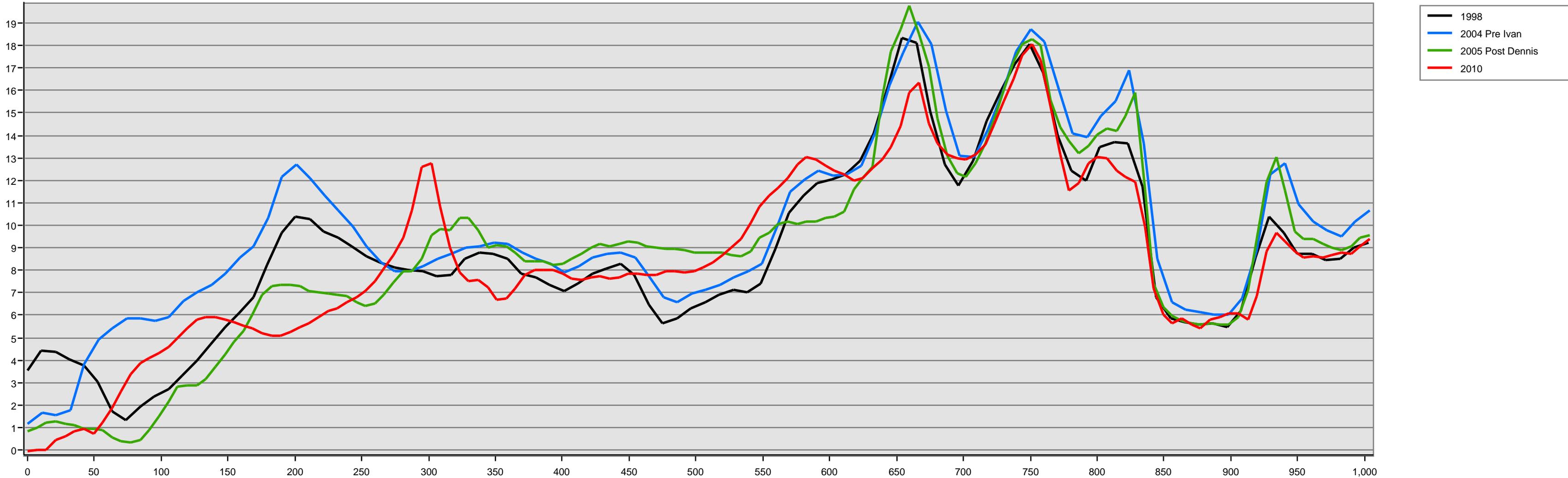
Transect #1

Bon Secour - Historical Dune Profiles



Transect #2

### Bon Secour - Historical Dune Migration



Transect #3

***Appendix F – Dune Setback***





### Map 1

Gulf State Park  
Gulf Shores, AL

### Proposed Dune Setback

#### Legend

Primary Dune

— 2015

— Dune Setback - 225 ft.

0 300 Feet



 Biohabitats

April 2015



## Map 2

Gulf State Park  
Gulf Shores, AL

## Proposed Dune Setback

### Legend

#### Primary Dune

— 2015

— Dune Setback - 225 ft.



April 2015



### Map 3

Gulf State Park  
Gulf Shores, AL

## Proposed Dune Setback

### Legend

#### Primary Dune

— 2015

— Dune Setback - 225 ft.



April 2015

*Appendix G – Projected Sea Level Rise*



## Sea Level Rise

Gulf State Park  
Gulf Shores, AL

## Mean Higher High Water (MHHW)

### Legend

-  SLR - MHHW
-  Disconnected SLR - MHHW

Note: Sea Level Rise Data retrieved from NOAA Digital Coast



March 2015



## Sea Level Rise

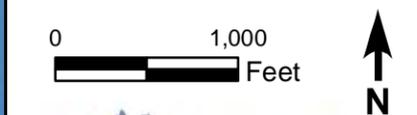
Gulf State Park  
Gulf Shores, AL

## Sea Level Rise 1 Foot

### Legend

-  SLR - 1 Foot Rise
-  Disconnected SLR  
1 Foot Rise

Note: Sea Level Rise Data retrieved  
from NOAA Digital Coast



 Biohabitats

March 2015



## Sea Level Rise

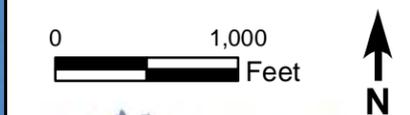
Gulf State Park  
Gulf Shores, AL

## Sea Level Rise 2 Feet

### Legend

-  SLR - 2 Feet
-  Disconnected SLR - 2 Feet

Note: Sea Level Rise Data retrieved from NOAA Digital Coast



 Biohabitats

March 2015

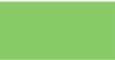


## Sea Level Rise

Gulf State Park  
Gulf Shores, AL

## Sea Level Rise 3 Feet

### Legend

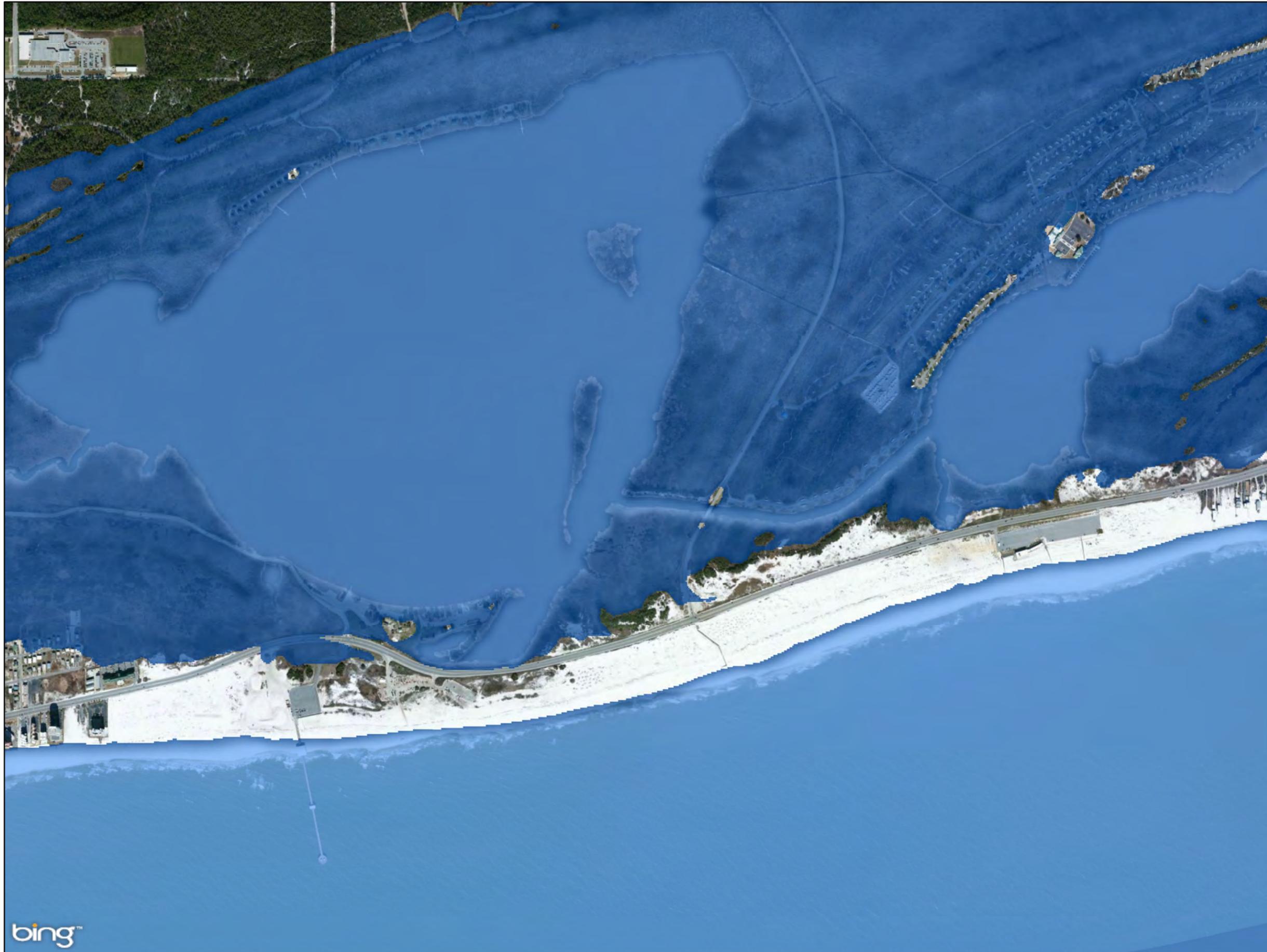
-  SLR - 3 Feet
-  Disconnected SLR - 3 Feet

Note: Sea Level Rise Data retrieved from NOAA Digital Coast



 Biohabitats

March 2015



## Sea Level Rise

Gulf State Park  
Gulf Shores, AL

## Sea Level Rise 4 Feet

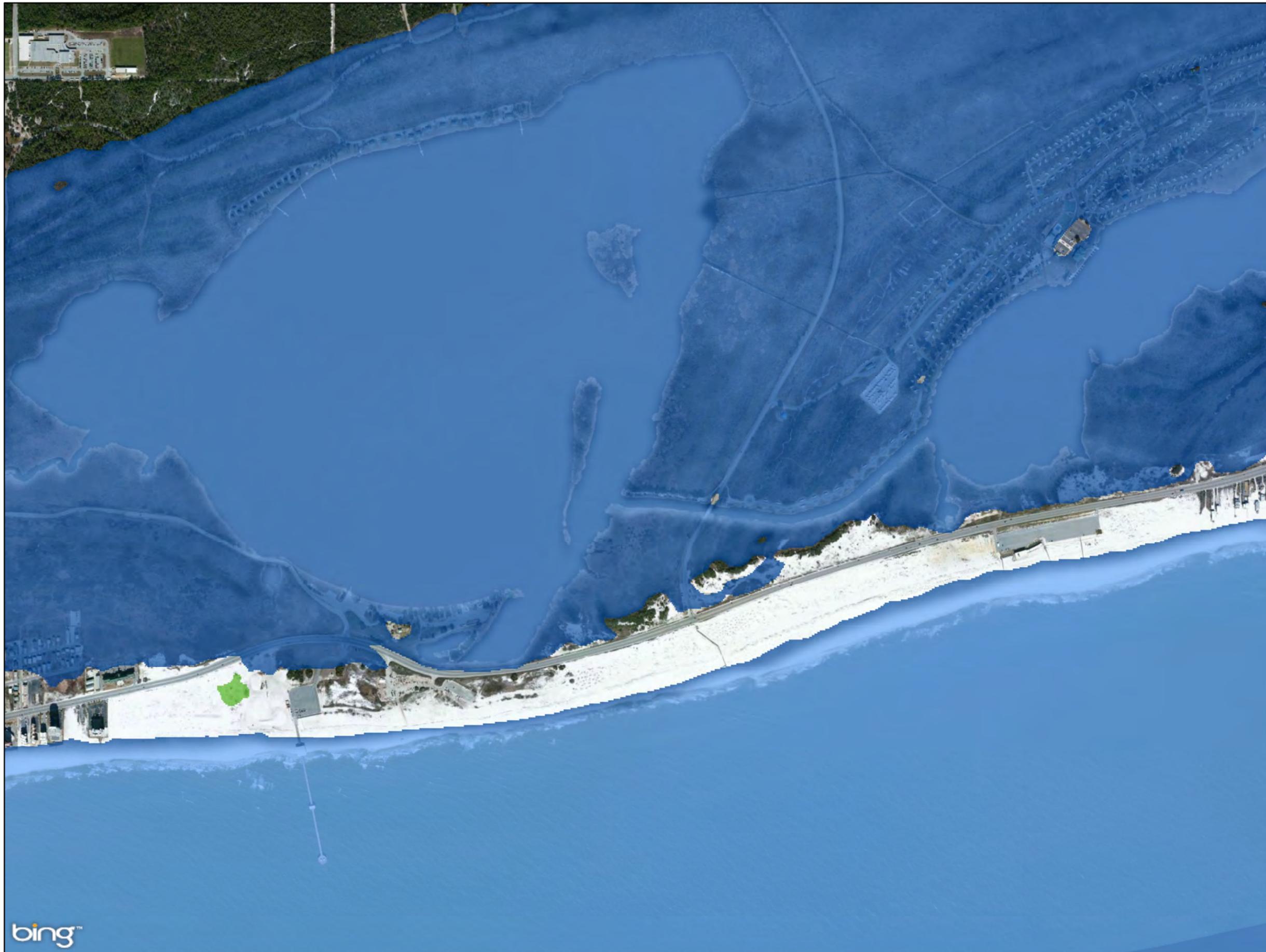
### Legend

-  SLR - 4 Feet
-  Disconnected SLR - 4 Feet

Note: Sea Level Rise Data retrieved from NOAA Digital Coast



March 2015



## Sea Level Rise

Gulf State Park  
Gulf Shores, AL

## Sea Level Rise 5 Feet

### Legend

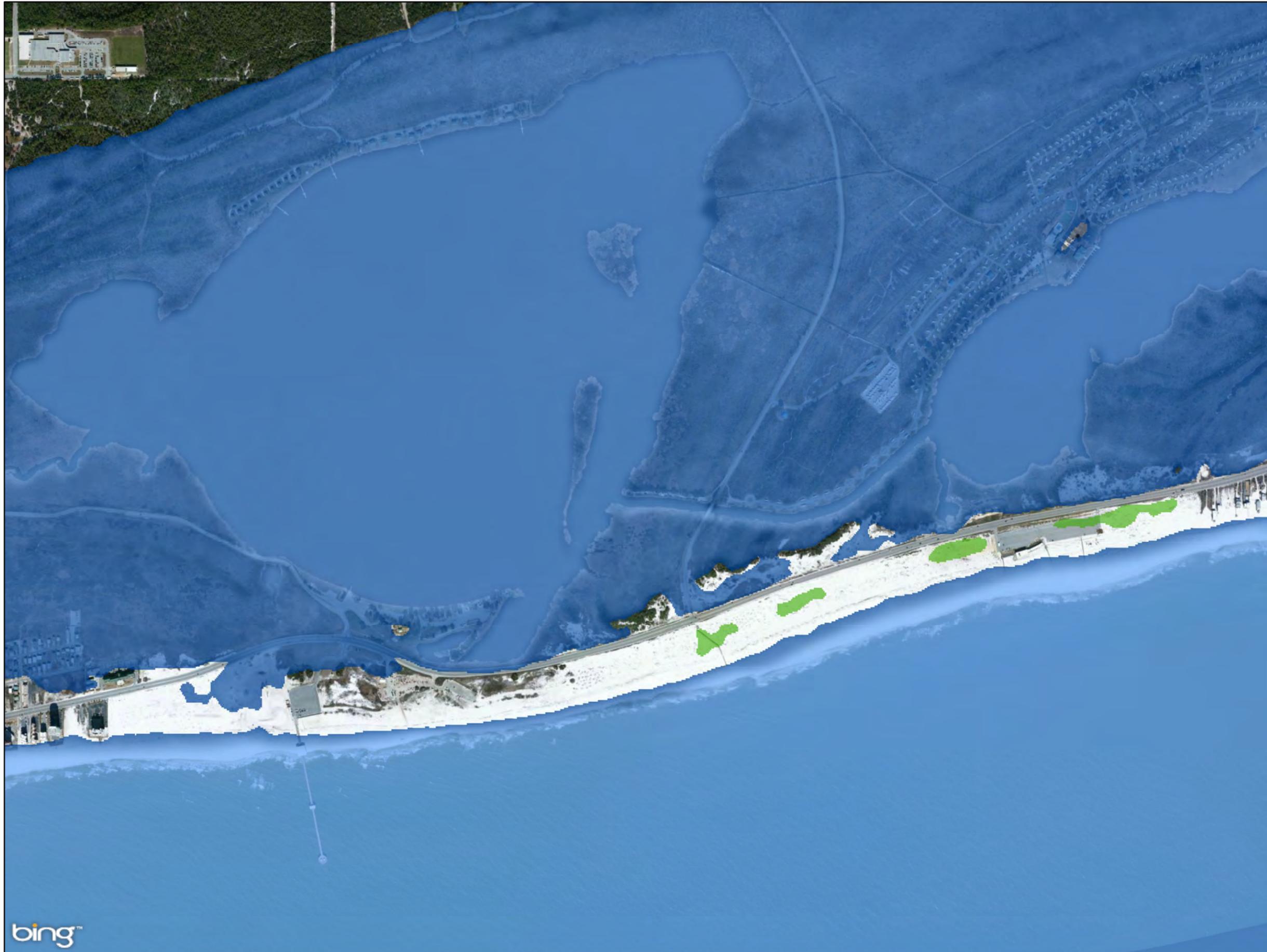
-  SLR - 5 Feet
-  Disconnected SLR - 5 Feet

Note: Sea Level Rise Data retrieved from NOAA Digital Coast



 Biohabitats

March 2015



## Sea Level Rise

Gulf State Park  
Gulf Shores, AL

## Sea Level Rise 6 Feet

### Legend

-  SLR - 6 Feet
-  Disconnected SLR - 6 Feet

Note: Sea Level Rise Data retrieved from NOAA Digital Coast



 Biohabitats

March 2015



APPENDIX B

**SENSITIVE SPECIES  
RECOMMENDATIONS**

# Sensitive Species

## NATURAL HERITAGE AND SPECIES OF CONSERVATION CONCERN

### VASCULAR PLANTS

#### ***Pinus clausa* (Chapman ex Engelmann) *Vasey ex Sargent* —SAND PINE**

- ALNHP State Rank: S2 (Imperiled)
- Habitats: Dry sandy soils of forested dune ridges and xeric scrub
- Relatively common in park. The high State Rank is due to its rare occurrence in Alabama (naturally occurring populations are from coastal areas in Baldwin County only).
- Fine-scale GIS mapping of high quality sand pine dune scrub habitat needed.
- Floristic inventory of associated rare plants
- Develop educational materials, kiosks, and signage that discusses the ecology and natural history of the sand pine scrub community. Incorporate pristine examples into the park's system of trails to allow public access and visitation. Information kiosks occurring within the community type would help give visitors an opportunity to see the habitat and offer educational opportunities.

#### ***Peltandra sagittifolia* (Michaux) *Morong* —WHITE ARROW-ARUM, SPOON-FLOWER**

- ALNHP State Rank: S2 (Imperiled)
- Habitats: Marshes and coastal swales, particularly those with a high sphagnum peat content.
- Specific locations are currently withheld. Contact ALNHP or State Lands Natural Heritage Program for locality info.
- Site-specific surveys should be conducted prior to any filling or clearing of wetlands.
- Botanical inventory surveys across the park for this species and other rare taxa would be beneficial.

#### ***Rhaphidophyllum hystrix* (Pursh) *Endlicher & Drude* —NEEDLE PALM.**

- Habitat: Scattered plants occur in low swamps at base of steep forested slope bordering the south side of the Backcountry Trail.
- Inventory surveys to search for additional populations of this rare species are needed. GIS mapping of the plants' distribution in the park is warranted.

#### ***Canna flaccida* Salisbury —GOLDEN CANNA.**

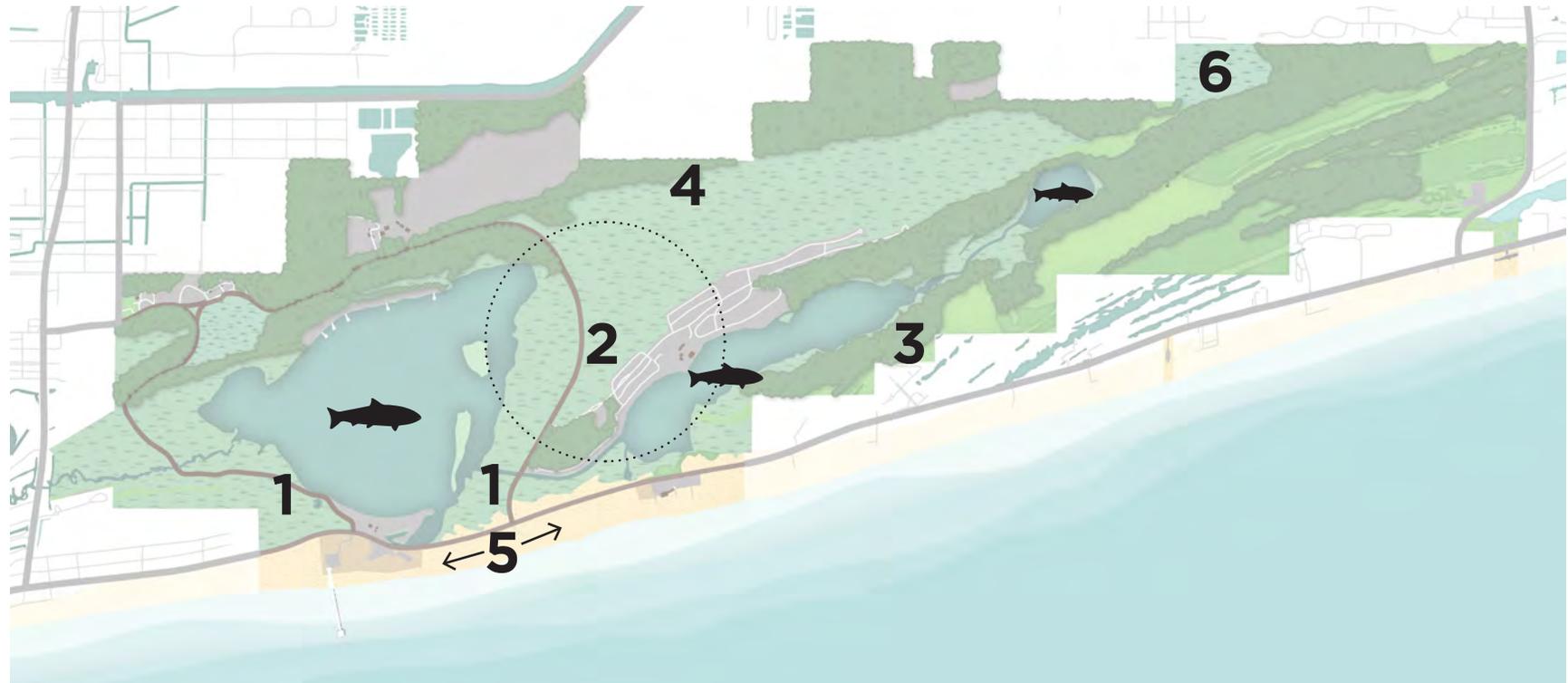
- IMPORTANT SPECIES
- ALNHP State Rank: S1 (Critically Imperiled)
- Habitats: Marshes and coastal swales
- Specific location: Near intersection of CR 2 and SR 182.
- Site-specific surveys should be conducted prior to any activities in wetlands (i.e. filling, clearing, invasive species control).
- Inventory surveys across the park for this species and other rare taxa would be beneficial.

#### ***Lachnocaulon engleri* Ruhland — ENGLER'S BOGBUTTONS.**

- ALNHP State Rank: S1? (Status uncertain, possibly Critically Imperiled)
- Habitats: Seepage wetlands and pine savannahs
- Site-specific surveys should be conducted prior to any activities in wetlands. (i.e. filling, clearing, invasive species control)
- Location unknown. Contact ALNHP or State Lands Natural Heritage Program for locality info.
- Additional surveys would be useful.

# Select Sensitive Species in Gulf State Park

(other locations withheld to protect species, are unavailable, and/or are unknown)



**1.** *Canna flaccida*

**2.** *Hypericum tetrapetalum* (occurs within zone indicated, but exact location not shown)

**3.** *Lechea torreyi*

**4. Maritime/Slope Forest**

- *Quercus arkansana*
- *Rhapidophyllum hystrix*

**5. Beach / Dune System**

- Alabama Beach Mouse Critical Habitat
- Sea Turtle Critical Habitat
- Nesting Least Tern Habitat
- Nesting Snowy Plover Habitat
- *Chrysopsis godfreyi*
- *Polygonum smallianum*

**6. Twin Bridges Trail Bog**

- *Andropogon perangustatus*
- *Helenium vernale*
- *Pinguicula planifolia*

- *Sarracenia leucophylla*

- *Pitcherplant Bog*

- *Sarracenia leucophylla*



**Fish Sensitive Species**

- Golden Topminnow
- Banded Topminnow
- Everglades Pygmy Sunfish



**Gopher Tortoise**

[General locations only; not all occurrences are shown]

**Bulbostylis warei (Torrey) C.B. Clarke  
—WARE'S HAIRSEEDGE.**

- IMPORTANT SPECIES
- ALNHP State Rank: SH (State Historic) based on a single 1949 collection by Roland Harper. Recently discovered in 2002 by Tad Zebryk. The heritage program's state rank should be updated to S1 to reflect the new occurrence.
- Habitats: Occurs in xeric sandy soils of dunes
- Location unknown. Contact the Alabama Herbarium Consortium or State Lands Natural Heritage Program for locality info.
- Additional surveys would be useful.

**Andropogon perangustatus Nash  
—NARROWLEAF BLUESTEM  
[=Andropogon gyrans var.  
stenophyllus]**

- IMPORTANT SPECIES
- ALNHP State Rank: S1 (Critically Imperiled)
- A few plants found by Howard E. Horne on March 23, 2015 at the pitcherplant bog north of the twin bridges trail. Previously known from a single Mobile County record in Alabama (also by HEH)
- Habitats: Pine savannas and Pitcherplant bogs. Known from the savanna north of the Twin Bridges Trail.

- Additional surveys for this species are needed.
- Habitat management required to maintain the pitcherplant community. Perform prescribed burns during the growing season every 2 - 3 years.
- Develop an elevated handicap access boardwalk through the pitcherplant bog to encourage visitation and promote nature study and wildlife viewing.
- Develop educational materials, kiosks, and signage that discusses the ecology and natural history of the wet pine savanna community. Incorporate the Twin Bridge Trail location into the park's system of trails to allow public access and visitation. Information kiosks occurring within the community type would help give visitors an opportunity to see the habitat and offer educational opportunities.

**Uniola paniculata Linnaeus —SEA-OATS**

- Characteristic species of beach dune habitats and important in the stabilization and formation of protective dunes. Also serves as a vital food source for Alabama Beach Mouse (ABM).
- Common in beach dune areas of the park.
- Produce educational material, kiosks, and signage to inform the

public about the importance of sea-oats and the need to protect the plants from collecting. Make information more publicly available and readily accessible.

**Sageretia minutiflora (Michaux)  
C. Mohr —SMALL-FLOWERMOCK  
BUCKTHORN**

- ALNHP State Rank: S1 (Critically Imperiled)
- Habitat: Shell Midden Communities
- Status in Gulf State Park is not known. Occurs offsite in nearby areas on the Fort Morgan peninsula, and the species could possibly occur within the park property. Incidental report of plants in the north parts of the park. Surveys are needed to determine if the species is actually present within the park.

**Quercus arkansana Sargent —  
ARKANSAS OAK**

- ALNHP State Rank: S2 (Imperiled)
- Habitat: Occurs on dry bluffs in a unique type of maritime forest community. This community is very rare in Alabama and may not occur anywhere else in the state.
- Intensive floristic inventory surveys of the site are needed. GIS mapping of its extent and the distribution of rare plants is warranted.

**Stillingia aquatica Chapman —  
CORKWOOD**

- ALNHP State Rank: S1 (Critically Imperiled)
- Habitat: Coastal swales.
- Status in Gulf State Park is not known. Occurs offsite in nearby areas on the Fort Morgan peninsula, and the species could possibly occur within the park property. One known occurrence is apparently just outside the park.
- Surveys are needed to determine if the species is present inside the park.

**Hypericum tenuifolium Pursh —  
ATLANTIC ST. JOHN'S WORT  
[=Hypericum reductum (Svenson) W.P.  
Adams]**

- ALNHP State Rank: S2 (Imperiled)
- Habitat: Pine flatwoods, low coastal swales.
- Status in Gulf State Park is not well known.
- Additional surveys for this species would be useful

**Hypericum tetrapetalum Lamarck —  
FOUR-PETAL ST. JOHN'S WORT**

- IMPORTANT SPECIES
- Previously unrecognized as

occurring in Alabama and excluded from the state's checklist of vascular plants by the Alabama Herbarium Consortium (AHC) due to a lack of a voucher specimen.

- Not yet tracked by the ALNHP. It would be an S1 species.
- A small population (~100+ individuals) occurs in the park. Howard E. Horne (Barry A. Vittor & Associates) knows their location. This is currently the only known population for the entire state!
- Protect plants from landscaping, roadside maintenance, and herbicides.
- Additional surveys for this species are needed across the park.

**Hibiscus coccineus Walter —SCARLET  
HIBISCUS**

- IMPORTANT SPECIES
- ALNHP State Rank: S1 (Critically Imperiled).
- Gulf State Park's occurrence is not yet entered in the ALNHP database (no Baldwin County records shown).
- Habitats: Marshes and coastal swales
- GSP naturalist, Kelly Reetz, discovered the population and knows its location.
- Document and map population.. Protect plants from wetland filling, clearing, or invasive species control.

**Crocanthemum arenicola (Chapman)  
Barnhart —GULF COAST FROSTWEED**

**[=Helianthemum arenicola Chapman]**

- IMPORTANT SPECIES
- ALNHP State Rank: S1 (Critically Imperiled).
- Habitats: Maritime dunes with fairly stable sands; Also occurs on sand pine scrub.
- Status within park boundaries is unclear.
- Surveys for this species are needed.

**Polygonum smallianum T.M. Schuster  
& Reveal —LARGE-LEAF JOINTWEED  
[=Polygonella macrophylla Small]**

- IMPORTANT SPECIES
- ALNHP State Rank: S1 (Critically Imperiled).
- Habitats: Sand pine scrub and dunes
- Status within park boundaries is unclear. ALNHP shows two element occurrences from the park. Plants are known to occur on adjacent City of Orange Beach properties and also on nearby private lands.
- Surveys for this species are needed.

**Lechea torreyi Leggett ex Britton  
var. congesta Hodgdon —SANDHILL  
PINWEED**

- IMPORTANT SPECIES: Only known population in Alabama is from a single location in Gulf Shores State Park
- ALNHP State Rank: Not currently ranked. Should be classified as an S1 taxon.
- Habitats: Sand pine scrub.
- Protect the existing population from development and avoid use of herbicides around plants.
- Status within park boundaries is unclear. Surveys for this species are needed to fully document its occurrence across the park and identify any additional populations.

**Sarracenia leucophylla Rafinesque —  
WHITETOP PITCHER PLANT**

- IMPORTANT SPECIES
- ALNHP State Rank: S3 (Rare to uncommon)
- Habitats: Pine savannas. A sizable population is known from the savanna north of the twin bridges trail. See Figure for location
- Habitat management required to maintain the pitcherplant community. Perform prescribed burns during the growing season

every 2 – 3 years.

- Develop an elevated handicap access boardwalk through the pitcherplant bog to encourage visitation and promote nature study and wildlife viewing.
- Develop educational materials, kiosks, and signage that discusses the ecology and natural history of the wet pine savanna community. Incorporate the Twin Bridge Trail location into the park's system of trails to allow public access and visitation. Information kiosks occurring within the community type would help give visitors an opportunity to see the habitat and offer educational opportunities.

**Gordonia lasianthus (Linnaeus) J. Ellis  
—LOBLOLLY-BAY**

- ALNHP State Rank: S1 (Critically Imperiled)
- Habitats: Acid swamps, shrub-tree bogs, bayheads.
- Listed for Gulf State Park by the State Natural Heritage Program (Not included in ALNHP's database.
- Specific location(s) unknown. Contact State Lands Natural Heritage Program for locality info.
- Fully document the species' occurrence in the park.

**Kalmia hirsuta Walter —HAIRY-WICKY**

- ALNHP State Rank: S2 (Imperiled)
- Habitats: Pine savannas and flatwoods.
- Specific locations not known.
- This species could be included as part of signage identifying unique and rare plants along the park's system of nature trails.

**Pinguicula planifolia Chapman —  
CHAPMAN'S BUTTERWORT**

- IMPORTANT SPECIES
- ALNHP State Rank: S1S2 (Critically Imperiled to Imperiled)
- Habitats: Pine savannas and pitcherplant bogs. A sizable population is known from the pitcherplant bog north of the twin bridges trail. See Figure
- Habitat management required to maintain the pitcherplant community. Perform prescribed burns during the growing season every 2 – 3 years.
- Develop an elevated handicap access boardwalk through the pitcherplant bog to encourage visitation and promote nature study and wildlife viewing.
- Develop educational materials, kiosks, and signage that discusses the ecology and natural history of

the wet pine savanna community. Incorporate the Twin Bridge Trail location into the park's system of trails to allow public access and visitation. Information kiosks occurring within the community type would help give visitors an opportunity to see the habitat and offer educational opportunities.

**Chrysopsis godfreyi Semple —  
GODFREY'S GOLDEN ASTER**

- IMPORTANT SPECIES
- ALNHP State Rank: S1 (Critically Imperiled)
- Only three occurrences known from the state
- Habitat: Sandy soils of beach/dune grasslands, backdune areas, and openings in xeric scrub.
- Map and monitoring existing populations.
- Surveys are needed to assess the plant's status in Gulf State Park.

**Helenium brevifolium (Nuttall)  
Alphonso Wood —SHORT-LEAF  
SNEEZEWEED**

- ALNHP State Rank: S1 (Critically Imperiled). Numerous occurrences documented in the Alabama Plant Atlas and also in BONAP. Current State Rank probably not reflective

of its actual occurrence in the state and it may need to be removed from the tracking list.

- Habitat: Pine savannahs and pitcherplant bogs
- Status in Gulf State Park is not known. It's possible it could exist in the Twin Bridges Trail pitcherplant bog.
- Additional surveys for this species would be useful.

**Helenium vernale Walter —SAVANNAH  
SNEEZEWEED**

- ALNHP State Rank: S1 (Imperiled).
- Habitat: Pine savannahs and pitcherplant bogs.
- Element occurrences from the pitcherplant bog north of the Twin Bridges Trail. See Figure
- Develop educational materials, kiosks, and signage that discusses the ecology and natural history of the wet pine savanna community. Incorporate the Twin Bridge Trail location into the park's system of trails to allow public access and visitation. Information kiosks occurring within the community type would help give visitors an opportunity to see the habitat and offer educational opportunities.
- Additional surveys for this species would be useful.

## ANIMALS

### BIRDS

**Anas fulvigula —MOTTLED DUCK**

- ALNHP State Rank: S3B (State Breeding Population rare to uncommon)
- State Protected in Alabama.
- Habitats: Water bodies with marsh vegetation
- Status in park unknown. The species is currently not regularly encountered on the immediate Baldwin County coast. Low numbers breed in salt marsh areas of adjacent Mobile County.
- Not expected to be found breeding in the park based on historical data.

**Pandion haliaetus —OSPREY**

- Nests within park boundary: Nest locations not presently available. Document spatial location of nests in a GIS.
- Limit disturbances around nests.
- Possibility of nest camera with

remote internet feed to stream video. Would require coordination with the USFWS and would also funding sources.

**Elanoides forticatus —SWALLOW-TAILED KITE**

- ALNHP State Rank: S2 (Imperiled)
- State Protected in Alabama.
- Not known to breed in the park. Expected as a fall and a spring migrant.
- Habitats: Non-resident migrant usually seen overhead in flight.

**Haliaeetus leucocephalus —BALD EAGLE**

- Federally protected under the Bald Eagle and Golden Eagle Protection Act
- Possibility of nest camera with remote internet feed to stream video. Would require coordination with the USFWS and would also need funding sources.
- Possible fatality resulting from collision with the new Zip-line facility.
- Strictly adhere to the Bald Eagle and Golden Eagle Protection Act

**Circus cyaneus —NORTHERN HARRIER**

- ALNHP State Rank: S3N (Non-breeding resident; Rare to uncommon in Alabama)
- State Protected in Alabama.
- Expected non-breeding winter resident in the park; also occurs during fall and spring migration.
- Habitats: foraging birds utilize marshes and open fields.

**Coturnicops novebroacensis —YELLOW RAIL**

- ALNHP State Rank: S2N (Non-breeding resident; Imperiled in Alabama)
- State Protected in Alabama.
- Habitats: Fire-maintained pine savannas and pitcher plant bogs. Salt pans and salt marshes.
- Not yet documented in the park. Possibly over-winters at the Twin Bridges pitcher plant bog
- Surveys for this species are needed

**Rallus crepitans —CLAPPER RAIL**

- ALNHP State Rank: S2 (Imperiled)
- Habitats: Salt marshes.
- Status in the park is unclear due to confusion with very similar King Rail

which typically occurs in freshwater marshes.

- Clarification on the species' status in Lake Shelby would be beneficial.

**Rallus elegans —KING RAIL**

- ALNHP State Rank: S2S3B (State Breeding Population considered imperiled to rare and uncommon)
- Habitats: Freshwater marshes
- The species' status in the park is not well understood due to confusion with very similar Clapper Rail which typically occurs in salt marshes.
- Clarification on the species' status in Lake Shelby would be beneficial, particularly in relation to salinity and habitat changes resulting from hurricane storm surges.
- Surveys are needed to determine if the species breeds in the park.

**Charadrius nivosus —SNOWY PLOVER**

- ALNHP State Rank: S1B (State Breeding Population Critically Imperiled)
- State Protected in Alabama.
- Habitats: Beaches, sparsely vegetated foredunes, mud or sand flats, sandy shores.

- Annual surveys are needed to document areas of Snowy Plover nesting and foraging.
- Limit disturbance during the nesting season
- Nesting areas should be clearly marked and identified.
- Control free-roaming feral cats

**Charadrius wilsonia –WILSON’S PLOVER**

- ALNHP State Rank: S1 (Critically Imperiled)
- State Protected in Alabama.
- Habitats: Beaches, sparsely vegetated foredunes, mud or sand flats, sandy shores. A few breeding pairs occur in adjacent Mobile County. Not known to breed in Baldwin County.
- Status in park unknown. Not currently believed to nest in the park. Likely occurs as a rare to occasional visitor from breeding populations in Mobile County. May have possibly bred historically in the park.
- Surveys are needed to fully assess the status of the species within the park.

**Charadrius melodus –PIPING PLOVER**

- ALNHP State Rank: S1 (Critically Imperiled)
- State Protected in Alabama.
- Wintering population is federally protected as a threatened species under the Endangered Act in Alabama.
- Habitats: Beaches, sparsely vegetated foredunes, mud or sand flats, sandy shores.
- A few individuals are found in winter on the Gulf State Park property on the west side of Perdido Pass (Alabama Point). Status of birds in other areas of Gulf State Park outside this area is unknown.
- Surveys are needed to fully assess the status of the species within the park.

**Scolopax minor –AMERICAN WOODCOCK**

- ALNHP State Rank: S3B, S5N (Alabama Breeding Population; rare to uncommon. The state population is seasonally augmented by migrants and wintering birds from outside the state; S5N)
- Habitats: Wet fields, lawns, and other open areas for breeding displays. Baygall thickets bordering streams,

- Infrequently hunted as a gamebird.
- Expected to occur in the park.

**Sternula antillarum –LEAST TERN**

- ALNHP State Rank: S2B (State Breeding Population Imperiled)
- State Protected in Alabama.
- Habitats: Beach dunes. Colonial nesting in areas frequently possessing shell hash.
- Limit disturbance during the nesting season
- Nesting areas should be clearly marked and identified.
- Control free-roaming feral cats
- Annual surveys are needed to document areas of Least Tern nesting.
- Consider construction of artificial nest platforms at Lake Shelby

**Picoides borealis –RED-COCKADED WOODPECKER**

- Federally protected as an Endangered Species under the ESA.
- ALNHP State Rank: S2 (Imperiled)
- Historically occurred on the park property, now believed to be extirpated.
- Possible reintroduction and the use of artificial cavities could be considered.

**Tyrannus dominicensis —GRAY KINGBIRD**

- ALNHP State Rank: S1B (State Breeding Population Critically Imperiled)
- Habitats: Open areas with scattered trees near the coast. Birds have nested around the vicinity of Lake Shelby
- Gray Kingbird is extremely rare outside of Florida and is of considerable interest to both visiting and local birders who seek to view the species. Knowledge of local breeding birds is important in order to help direct birders to their location. However, frequent visitation and other disturbances could disrupt nesting birds. Options to allow birders to view Gray Kingbirds, but limit disturbance should be explored.
- Control free-roaming feral cats

**Ammodramus henslowii —HENSLOW'S SPARROW**

- ALNHP State Rank: S2N (Non-breeding resident: Critically Imperiled)
- State Protected in Alabama.
- Habitats: Pitcherplant bogs
- Habitat management is required to maintain the pitcherplant community. Perform prescribed

burns during the growing season every 2 – 3 years.

- Protect the pitcher plant bog habitats from development.
- Regular surveys are needed for this species.

**Ammodramus leconteii —LE CONTE'S SPARROW**

- ALNHP State Rank: S3N (Rare to uncommon non-breeding resident)
- State Protected in Alabama.
- Habitats: Wet fields, meadows, clear-cuts and other open areas.
- Status in park is unclear. Likely present in winter and during fall and spring migration, but its secretive habits may it difficult to detect.

**Ammodramus maritimus —SEASIDE SPARROW**

- ALNHP State Rank: S2 (Imperiled)
- State Protected in Alabama.
- Habitats: Salt marshes. Breeding populations occur near Oyster Bay.
- Status in park is unclear. The species is not regularly found in the park boundaries based on Christmas Bird Count surveys, and no individuals were detected in previous marsh bird surveys performed in the park. It likely

occurs infrequently, perhaps breeding at low densities and remaining undetected.

- Surveys are needed to determine the species status in the park, particularly as a potential breeding resident.

**Ammodramus nelsoni —NELSON'S SPARROW**

- ALNHP State Rank: S3N (Rare to uncommon non-breeding resident)
- State Protected in Alabama.
- Habitats: Salt and brackish marshes
- Status in park is unclear. Likely present in winter and during fall and spring migration, but its secretive habits may it difficult to detect.

## REPTILES

### ***Crotalus adamanteus* —EASTERN DIAMONDBACK RATTLESNAKE**

- ALNHP State Rank: S3 (Rare to uncommon in the state)
- Educate visitors to importance of snakes and promote a no-killing policy if encountered.

### ***Gopherus polyphemus* —GOPHER TORTOISE**

- State protected in Baldwin County (populations in Mobile, Washington and Choctaw Counties are federally protected under the ESA). USFWS likely to list the species as Threatened throughout its entire range in the future.
- Surveys and GPS mapping of burrows needed.
- Marking locations with flagging or other visible could help prevent the collapse of burrows from routine park maintenance
- Park maintenance personnel should be alerted to the location of burrows to avoid disturbance such as mowing.
- Monitor health and populations
- Options to allow visitors to safely view gopher tortoises while protecting the park's population should be explored.

## FISH

### ***Elassoma evergladei* —EVERGLADES PYGMY SUNFISH**

- ALNHP State Rank: S3 (Rare to uncommon)
- Occurring in marshes and open water bodies such as Lake Shelby, Middle Lake, and Little Lake.

### ***Fundulus chrysotus* —GOLDEN TOPMINNOW**

- ALNHP State Rank: S3 (Rare to uncommon)
- Occurring in marshes and open water bodies such as Lake Shelby, Middle Lake, and Little Lake.

### ***Fundulus pulvereus* —BAYOU TOPMINNOW**

- ALNHP State Rank: S2 (Imperiled)
- Occurring in open water bodies such as Lake Shelby, Middle Lake, and Little Lake.

### ***Lucania parva* —RAINWATER KILLIFISH**

- ALNHP State Rank: S3 (Rare to uncommon in the state)
- Occurring in open water bodies such as Lake Shelby, Middle Lake, and Little Lake. Coastal swales and marshes.

## MAMMALS

### ***Sylvilagus palustris* —MARSH RABBIT Marsh Rabbit**

- ALNHP State Rank: S3 (Rare to uncommon)
- Habitat: Relatively undisturbed marsh vegetation surrounding water bodies.

### ***Trichechus manatus* —WEST INDIAN MANATEE**

- ALNHP State Rank: S1 (Critically Imperiled)
- Uncommon to rare visitor to surrounding waters of state park

### ***Ursus americanus* —AMERICAN BLACK BEAR**

- ALNHP State Rank: S2 (Imperiled)
- Rare visitor to state park

### ***Peromyscus polionotus ammobates* - ALABAMA BEACH MOUSE**

- Federally Endangered
- Lives in the dunes
- (See Appendix for more details and recommendations about preserving dune habitat)

## NATURAL COMMUNITIES

### Pitcherplant Bog / Pine Savanna

- IMPORTANT COMMUNITY
- High quality example located north of the twin bridges trail.
- Rare Plants
  - Andropogon perangustatus
  - Helenium brevifolium
  - Helenium vernale
  - Pinguicula planifolia
  - Sarracenia leucophylla
- Habitat management
  - Fire required to maintain the community. Perform prescribed burns during the growing season every 2 - 3 years.
  - Invasive species control: monitor for presence of cogongrass
  - Develop an elevated handicap access boardwalk through the pitcherplant bog to encourage visitation and promote nature study and wildlife viewing.
  - Inventory of plant species with focus on rare taxa.

### Maritime Forest

- IMPORTANT COMMUNITY
- High quality examples located along the Twin Bridges Trail

- Habitat management and conservation
  - Limit man-induced disturbances.
  - Allow for natural processes to occur.
  - Prevent conversion of pristine maritime forest areas to non-forest use.
  - Invasive species control: monitor for presence of cogongrass (*Imperata cylindrica*), Chinese privet (*Ligustrum sinense*), Japanese climbing fern (*Lygodium japonicum*), Japanese honeysuckle (*Lonicera japonica*), and Chinese tallowtree (*Triadica sebifera*).
  - Maintain the presence of natural moisture-retaining canopy trees such as live oaks (*Quercus virginiana*) and southern magnolia (*Magnolia grandiflora*). If expansive areas of non-native trees are present, these should be removed in stages to avoid large open areas lacking trees.
  - Limited use of fire as a management tool.
- Fully document maritime forest and ravine/dune ridge habitats within the park boundaries and also adjacent lands owned by the City of Orange Beach near the Back Country Trail Sports Complex

entrance Collaborate with the city of Orange Beach to identify and protect high quality examples.

- Intensive floristic inventory surveys of these habitats are needed. GIS mapping of the communities' extent and the distribution of any rare plants is warranted.

### Beaches and Primary Dunes

- IMPORTANT COMMUNITY
- Alabama Beach Mouse Critical Habitat
- Sea Turtle Critical Habitat
- Important nesting location for Least Tern and Snowy Plovers
- Rare Plants
  - *Polygonum smallianum*
  - *Chrysopsis godfreyi*
- *See the Appendix for a more detailed summary of the dune habitat and management recommendations.*





APPENDIX C  
**BRANDING**  
**USER GUIDE**

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# VISUAL IDENTITY STANDARDS



## **CONTENTS**

LOGO MARK	1
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TYPOGRAPHY	11
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Thank you for taking the time to review this visual identity guide. This guide provides an outline for Gulf State Park's visual identity. The success of the visual identity depends on the consistent application of the brand across all communication tools.

Adhering to the typographic, color, and size guidelines within this book will make the Gulf State Park brand easily identifiable and therefore strengthen its place in the ecotourism community.

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**LOGO MARK**

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# THE LOGO MARK

Gulf State Park attracts a wide variety of visitors looking to explore, discover and play. The logo is a fun and bold representation of the various ecosystems and wildlife that make Gulf State Park unique. The mark explores the transition from waterfront to forest, highlighting the varied experiences available within the park.

Always use the official logo vector or raster files.  
DO NOT recreate the logo.

## LOGO MARK



# SIZE & SPACING

## MINIMUM CLEAR SPACE

The minimum clear space around the logo is 1X.

X=height of typography.



## MINIMUM SIZE



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COLOR

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# LOGO COLORS

The official colors of the logo are:

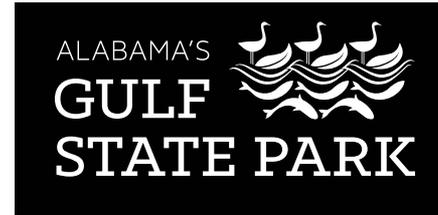
				
Print	C: 0 M: 0 Y: 0 K: 0	C: 0 M: 0 Y: 0 K: 100	C: 75 M: 47 Y: 38 K: 11	C: 66 M: 0 Y: 16 K: 0
Digital	R: 255 G: 255 B: 255	R: 0 G: 0 B: 0	R: 74 G: 112 B: 129	R: 52 G: 193 B: 214
PMS	White	Black	5405	3115

## Color System

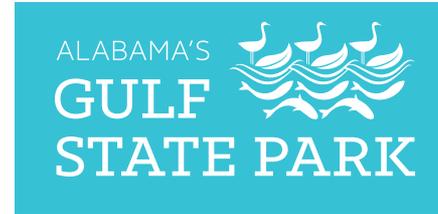


The logo should only appear in these colors or black and white

## Knockout Logo



Logo mark and text in white on black background.



Logo mark and text in white on color background.

## One Color logo



Logo mark and text in black.

# SECONDARY COLORS

This group of colors has been selected to compliment the two logo colors.

DO NOT use these secondary colors in the logo.

					
Print	C: 0 M: 66 Y: 56 K: 0	C: 5 M: 15 Y: 65 K: 0	C: 44 M: 0 Y: 64 K: 0	C: 38 M: 0 Y: 18 K: 0	C: 0 M: 0 Y: 0 K: 100
Digital	R: 243 G: 121 B: 104	R: 243 G: 210 B: 116	R: 150 G: 205 B: 132	R: 155 G: 215 B: 213	R: 0 G: 0 B: 0
PMS	7416	1215	366	318	Black

Shades of these colors can be used.

DO NOT mix colors together to create a gradient.

100%					
75%					
50%					

Example:



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# TYPOGRAPHY

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# LOGO TYPEFACES

The logo is comprised of two typefaces:  
Maven Pro Light and Klinik Slab Medium.

DO NOT substitute these typefaces.



Aa

Maven Pro Light

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz

Aa

Klinik Slab Medium

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz

# SECONDARY TYPEFACES

There are two typefaces to be used in Gulf State Park's written communications, Klinik Slab and Gotham.

Klinik Slab Bold  
30pt type size  
36pt leading  
(30/36) — **HEADER**

Gotham book  
14pt type size  
24pt leading  
(14/24) — Sub Header

Gotham light  
8pt type size  
12pt leading  
(8/12)  
or  
9pt type size  
13pt leading  
(9/13) — Os et, non et voluptatur  
molorepratem facesec atibustiae  
poreMulicultorbis it, temunit re nin  
tu in detriostam facciacit, que nos, C.  
Os erurbis simuro eti, tertem re octa,  
tem ium ut cres firte alatquonclm.

**Aa**

## Klinik Slab Bold

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz

**Aa**

## Klinik Slab Medium

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz

**Aa**

## Gotham Bold

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz

**Aa**

## Gotham Book

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz

**Aa**

## Gotham Light

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz

A large, bold, black letter 'M' logo, centered on the page.

**Maven Pro** is used as a supporting typeface. It should only be used for the word “Alabama’s” in the logo and for the tagline.

Maven

72pt

Maven

60pt

Maven

48pt

Maven

36pt

Maven

30pt

Maven

24pt

Maven

18pt

Maven

14pt

Maven

12pt

Maven

10pt

Maven

9pt



**Klinik slab** should be used for the words “Gulf State Park” in the logo, and for headings in written communications.

Klinik

72pt

Klinik

60pt

Klinik

48pt

Klinik

36pt

Klinik

30pt

Klinik

24pt

Klinik

18pt

Klinik

14pt

Klinik

12pt

Klinik

10pt

Klinik

9pt

A large, bold, black letter 'G' in the Gotham typeface, shown in its full height and width.

**Gotham** should be used for sub-headers and body copy in written communications.

**Gotham** 72pt

**Gotham** 60pt

**Gotham** 48pt

**Gotham** 36pt

**Gotham** 30pt

**Gotham** 24pt

**Gotham** 18pt

**Gotham** 14pt

**Gotham** 12pt

**Gotham** 10pt

**Gotham** 9pt

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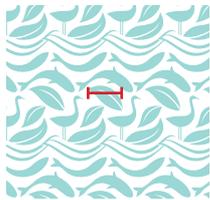
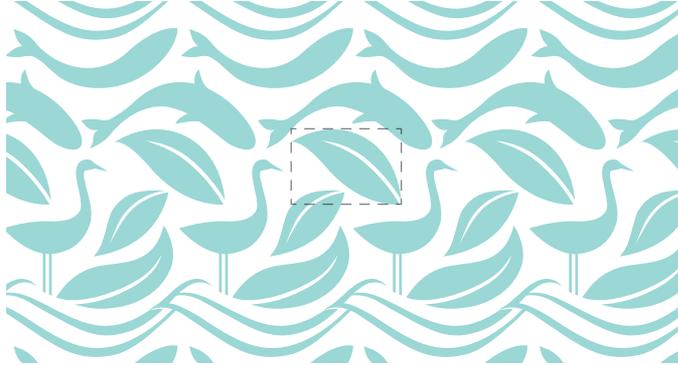
# PATTERN USAGE

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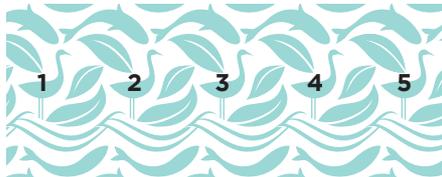
# PATTERN DESIGN

The pattern that is used in the logo design is meant to act as a design element that can be used in a variety of GSP signage, marketing, and promotional materials.

When printing the pattern, use the leaf indicated below as a guide to determine the smallest printable size for the pattern design.

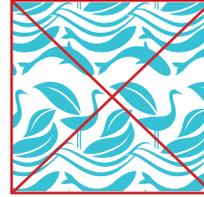


The width of the leaf should not be less than  $\frac{3}{16}$  inch. When scaling the pattern smaller than this size, the thinner lines within the pattern are no longer visible.

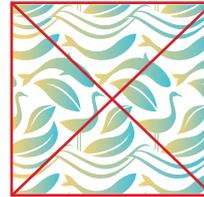


When working with the pattern, the number of birds should never be less than five and should always be an odd number.

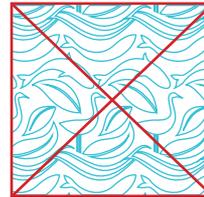
## DON'Ts



Don't space out the shapes within the pattern since they are meant to act as a unit.



Don't use multiple colors or gradients in the pattern. The pattern should only use one solid color from the primary and secondary palettes on pages 8 and 10 of this guide.



Do not outline the pattern design.

## DOs



Do use the pattern in white on a color background.

---

**DON'TS**

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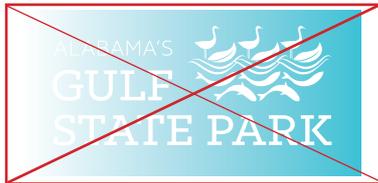
# DON'TS

The logo is central to Gulf State Park's usual identity and should not be altered in any way. Please be careful to avoid any representation of the logo that is not aligned with the final logo. No unofficial logos may be used in place of, or in conjunction with the Gulf State Park logo.

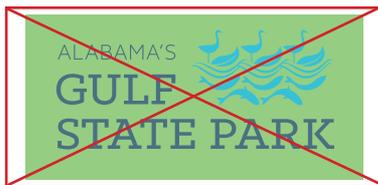
Don't use the logo on images that make the it hard to read.



Don't apply a gradient to the logo



Don't use two color logo over field of color



Don't change the scale of any part of the logo



Don't stretch the logo vertically or horizontally



Don't apply a drop shadow to the logo



Don't add graphic elements to the logo



Don't add department names or typography of any kind to the logo



Don't change the colors of the logo



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20115 State Highway 135 | Gulf Shores, AL 36542  
(251) 948-7275 Office | (251) 948-7726 Fax  
[gulf.statepark@dcnr.alabama.gov](mailto:gulf.statepark@dcnr.alabama.gov)

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