



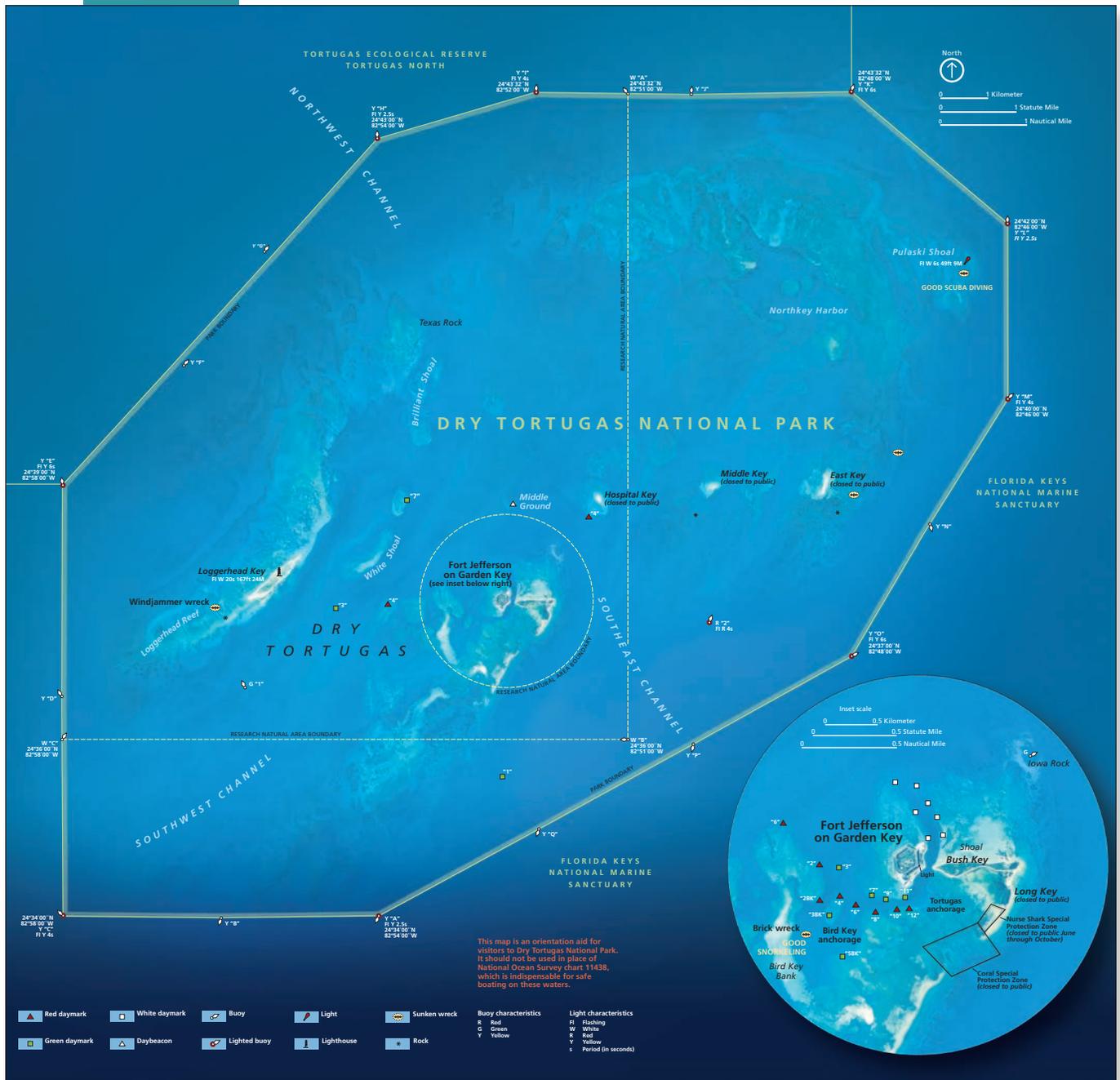
Foundation Document

Dry Tortugas National Park

Florida

March 2017





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Mission of the National Park Service

The National Park Service (NPS) preserves unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations. The National Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

The NPS core values are a framework in which the National Park Service accomplishes its mission. They express the manner in which, both individually and collectively, the National Park Service pursues its mission. The NPS core values are:

- **Shared stewardship:** We share a commitment to resource stewardship with the global preservation community.
- **Excellence:** We strive continually to learn and improve so that we may achieve the highest ideals of public service.
- **Integrity:** We deal honestly and fairly with the public and one another.
- **Tradition:** We are proud of it; we learn from it; we are not bound by it.
- **Respect:** We embrace each other's differences so that we may enrich the well-being of everyone.

The National Park Service is a bureau within the Department of the Interior. While numerous national park system units were created prior to 1916, it was not until August 25, 1916, that President Woodrow Wilson signed the National Park Service Organic Act formally establishing the National Park Service.

The national park system continues to grow and comprises more than 400 park units covering more than 84 million acres in every state, the District of Columbia, American Samoa, Guam, Puerto Rico, and the Virgin Islands. These units include, but are not limited to, national parks, monuments, battlefields, military parks, historical parks, historic sites, lakeshores, seashores, recreation areas, scenic rivers and trails, and the White House. The variety and diversity of park units throughout the nation require a strong commitment to resource stewardship and management to ensure both the protection and enjoyment of these resources for future generations.



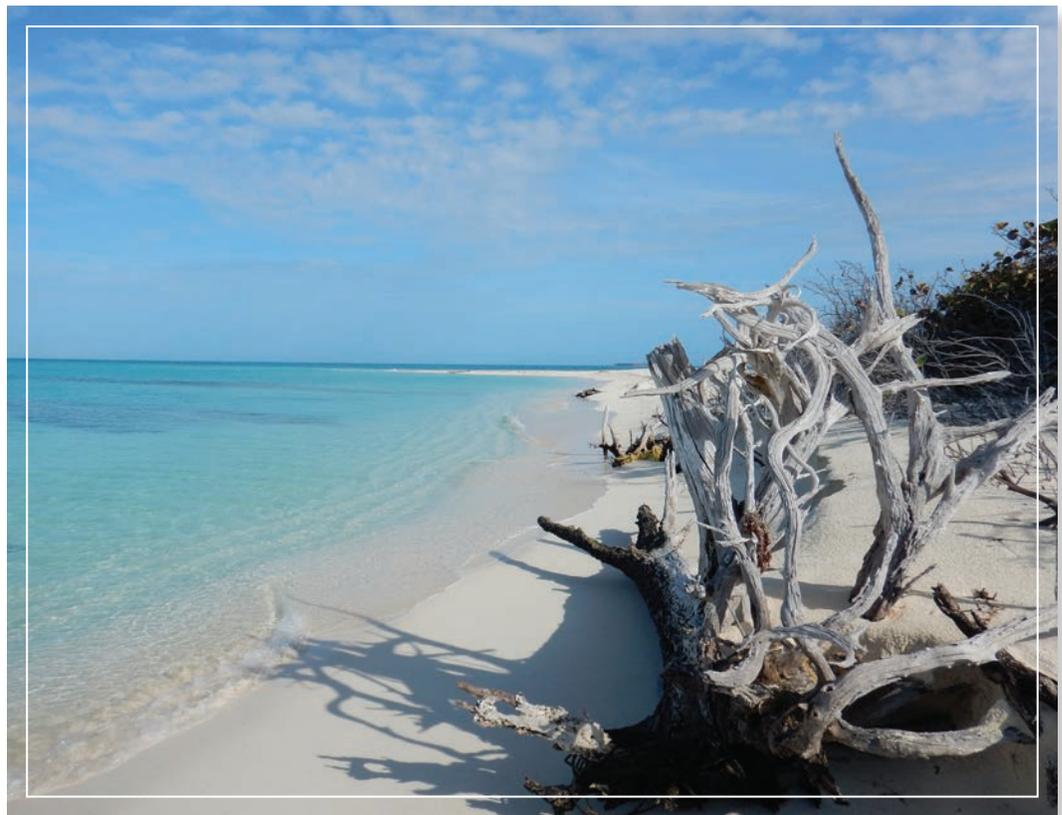
The arrowhead was authorized as the official National Park Service emblem by the Secretary of the Interior on July 20, 1951. The sequoia tree and bison represent vegetation and wildlife, the mountains and water represent scenic and recreational values, and the arrowhead represents historical and archeological values.

Introduction

Every unit of the national park system will have a foundational document to provide basic guidance for planning and management decisions—a foundation for planning and management. The core components of a foundation document include a brief description of the park as well as the park’s purpose, significance, fundamental resources and values, other important resources and values, and interpretive themes. The foundation document also includes special mandates and administrative commitments, an assessment of planning and data needs that identifies planning issues, planning products to be developed, and the associated studies and data required for park planning. Along with the core components, the assessment provides a focus for park planning activities and establishes a baseline from which planning documents are developed.

A primary benefit of developing a foundation document is the opportunity to integrate and coordinate all kinds and levels of planning from a single, shared understanding of what is most important about the park. The process of developing a foundation document begins with gathering and integrating information about the park. Next, this information is refined and focused to determine what the most important attributes of the park are. The process of preparing a foundation document aids park managers, staff, and the public in identifying and clearly stating in one document the essential information that is necessary for park management to consider when determining future planning efforts, outlining key planning issues, and protecting resources and values that are integral to park purpose and identity.

While not included in this document, a park atlas is also part of a foundation project. The atlas is a series of maps compiled from available geographic information system (GIS) data on natural and cultural resources, visitor use patterns, facilities, and other topics. It serves as a GIS-based support tool for planning and park operations. The atlas is published as a (hard copy) paper product and as geospatial data for use in a web mapping environment. The park atlas for Dry Tortugas National Park can be accessed online at: <http://insideparkatlas.nps.gov/>.



Part 1: Core Components

The core components of a foundation document include a brief description of the park, park purpose, significance statements, fundamental resources and values, other important resources and values, and interpretive themes. These components are core because they typically do not change over time. Core components are expected to be used in future planning and management efforts.

Brief Description of the Park

Dry Tortugas National Park is approximately 70 miles west of Key West in the Straits of Florida, and consists of roughly 101 square miles at the westernmost extent of the Florida Keys. The Florida Keys are composed of 1,700 keys, or islands. The park currently encompasses seven keys, including Garden, Loggerhead, Bush, Long, East, Hospital, and Middle Keys, collectively known as the Dry Tortugas. The keys are composed of coral reefs and sand and are surrounded by shoals and open water. Due to the effects from wind, waves, and storms, these islands are constantly changing in shape, size, and elevation. In fact, historically, hurricanes have caused a few of the smaller keys to disappear and reappear due to sandbar movement.

At present, only Garden and Loggerhead Keys possess known elements of human habitation and development. In a global context, the Dry Tortugas are situated at the edge of the main shipping channel between the Gulf of Mexico, the western Caribbean, and the Atlantic Ocean. Thus, these keys were of strategic importance for national defense, and the underwater reefs have posed a serious navigation hazard to passing ships over the centuries, creating a submerged cultural landscape containing numerous shipwrecks and making this area one of the nation's principal ship graveyards.

Under the authority of the Antiquities Act, President Franklin D. Roosevelt designated Fort Jefferson National Monument on January 4, 1935, and assigned management responsibilities to the National Park Service. This national monument included 47,000 acres of keys and water and primarily focused attention on the historic fort on Garden Key. Congress expanded the monument in 1983 and redesignated it as Dry Tortugas National Park on October 26, 1992. Upon redesignation, the unit's purpose broadened to emphasize not only Fort Jefferson and the many shipwrecks and other cultural resources in the park, but also the preservation of the diverse island and marine ecosystems of the Dry Tortugas. Due to its remote location, the park is accessible by commercial ferry boat, seaplane, or private boat. Visitors experience the park through recreational activities such as touring Fort Jefferson, snorkeling, scuba diving, paddle boarding, sea kayaking, camping, bird-watching, boating, and recreational fishing.





Garden Key is the site of Fort Jefferson, one of the most ambitious and expansive 19th century American masonry coastal forts. Originally built to protect shipping access to the Gulf of Mexico, construction began in 1846 but was never completed. Logistical challenges and the Civil War delayed construction. During the Civil War, the fort was used as a military prison, housing Union deserters and four Lincoln assassination conspirators. The fort was never completed due to shifting military technologies and its construction ceased in 1875. Today, Fort Jefferson is the primary destination for people visiting the park and remains an iconic image of the permanent Third System coastal defense era.

Loggerhead Key is the largest of the seven keys and home to the Dry Tortugas Light Station, which was completed in 1858. Standing at over 160 feet in height, the light station provided warnings to sea vessels of the dangerous reefs of the Dry Tortugas and was operated by the U.S. Coast Guard until 2014. Also on Loggerhead Key are the ruins of the first subtropical marine laboratory in the Western Hemisphere—the Carnegie Institution Tortugas Marine Biology Laboratory, which was established in 1904.

The five other keys in the park remain in a relatively natural state and are managed to protect the critical habitat they provide. Hospital and Long Keys possess significant turtle and bird nesting sites and are closed to visitation year-round. Bush Key is closed part of the year during bird nesting season. Middle Key is a sandbar that is awash in the summer but emerges intermittently at other times of the year. East Key is also a significant turtle nesting area and is closed during the nesting/hatching period.

The keys in the park account for less than one-fifth of a square mile of the park's 101 square miles. Dry Tortugas National Park protects a rich biodiversity of coastal and marine life, including seagrass beds, diverse fisheries, and high-quality sea turtle and bird nesting habitat. In addition, the subtropical coral reefs of the Dry Tortugas are some of the most pristine on the continent and possess a full range of Caribbean coral species. The park's designated no-take research natural area protects spawning habitat that supports healthy fish populations and a diversity of other aquatic species that spread to other areas of the Straits of Florida and beyond by swimming or by the flow of currents that disperse larvae to distant areas, resulting in benefits to regional fisheries far beyond the park's boundary. These resources play a vital role in sustaining Florida's coastal ecosystems and fisheries. The research natural area was also established to complement the marine preservation provided by the adjacent Tortugas Ecological Reserve, which is managed by National Marine Sanctuaries, a branch of the National Oceanic and Atmospheric Administration.

Park Purpose

The purpose statement identifies the specific reason(s) for establishment of a particular park. The purpose statement for Dry Tortugas National Park was drafted through a careful analysis of its enabling legislation and the legislative history that influenced its development. The park was first designated as a Fort Jefferson National Monument in 1935, and later established as Dry Tortugas National Park by Congress on October 26, 1992 (see appendix A for enabling legislation and legislative acts). The purpose statement lays the foundation for understanding what is most important about the park.

*DRY TORTUGAS NATIONAL PARK
preserves and protects the unique
subtropical marine ecosystem
and natural, cultural, and scenic
resources of the Dry Tortugas for
the education, inspiration, scientific
understanding, and enjoyment of
present and future generations.*



Park Significance

Significance statements express why a park's resources and values are important enough to merit designation as a unit of the national park system. These statements are linked to the purpose of Dry Tortugas National Park, and are supported by data, research, and consensus. Statements of significance describe the distinctive nature of the park and why an area is important within a global, national, regional, and systemwide context. They focus on the most important resources and values that will assist in park planning and management.

The following significance statements have been identified for Dry Tortugas National Park. (Please note that the sequence of the statements does not reflect the level of significance.)

1. Dry Tortugas National Park protects one of the most pristine and diverse portions of the 170-mile-long Florida Keys Reef Tract, which is the only living coral barrier reef in the continental United States and the third-largest barrier reef system in the world.
2. The marine ecosystems within Dry Tortugas National Park provide rare, high-quality habitats for feeding, spawning, and the recruitment of a diversity of fish and other marine species, which contributes to sustainable fish populations along the rest of Florida and the Atlantic Coast, supporting a multibillion-dollar fishery.
3. Dry Tortugas National Park protects one of the most isolated and least disturbed feeding and nesting habitats for several species of threatened and endangered sea turtles in the United States.
4. Dry Tortugas National Park supports the only significant sooty tern, brown noddy, masked booby, and frigate bird nesting colonies in the continental United States, and serves as a remote shelter for thousands of migratory birds each year.
5. The imposing presence of Fort Jefferson, unrivaled in its 19th century technological innovations and ambitious scale, represents more than 100 years of military history in the Dry Tortugas and illustrates this location's strategic importance and the role of coastal defenses in the protection of the United States.
6. At the nautical crossroads of the Gulf of Mexico, the Atlantic Ocean, and the Caribbean Sea, the Dry Tortugas have a rich maritime heritage that includes one of the greatest concentrations of shipwrecks in North America as well as historic navigational aids such as the Dry Tortugas Light Station on Loggerhead Key and the Garden Key Harbor Light.
7. Dry Tortugas National Park continues a legacy of scientific research and scholarship regarding the relationship between humans and the marine environment, a legacy that began in 1904 with establishment of the Tortugas Marine Biological Laboratory by the Carnegie Institution for Science, and continues today with implementation of the park's research natural area and innovations in historic preservation.
8. The vast expanses of open sea and sky, along with the remote location of Dry Tortugas National Park, offer unique recreational opportunities and visitor experiences in a subtropical marine environment unlike any other in the national park service.

Fundamental Resources and Values

Fundamental resources and values (FRVs) are those features, systems, processes, experiences, stories, scenes, sounds, smells, or other attributes determined to warrant primary consideration during planning and management processes because they are essential to achieving the purpose of the park and maintaining its significance. Fundamental resources and values are closely related to a park's legislative purpose and are more specific than significance statements.

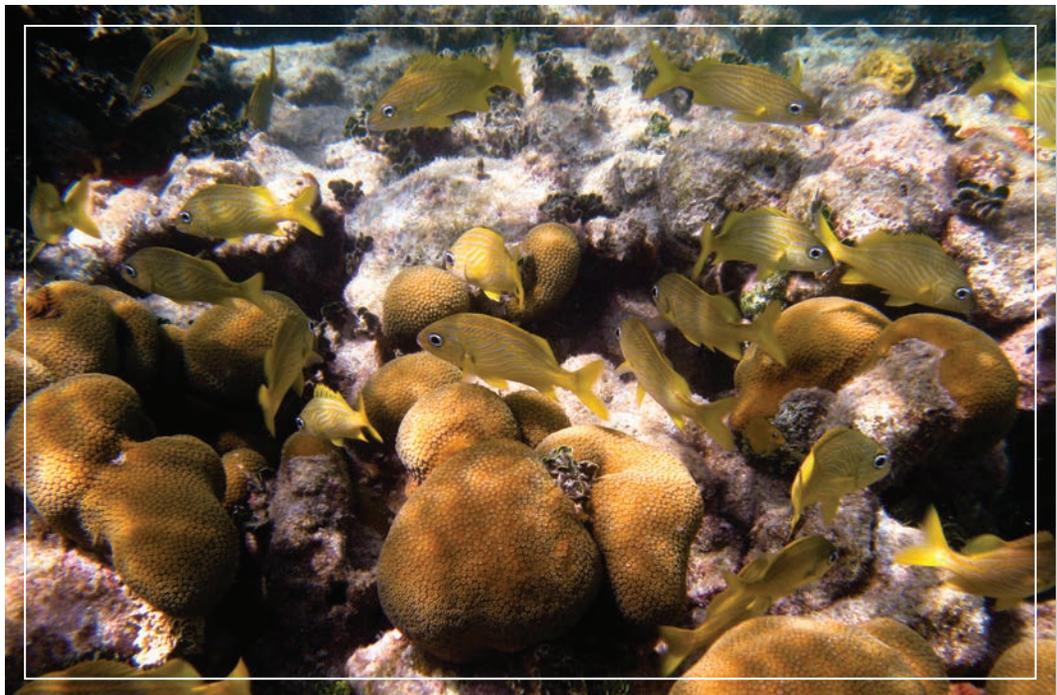
Fundamental resources and values help focus planning and management efforts on what is truly significant about the park. One of the most important responsibilities of NPS managers is to ensure the conservation and public enjoyment of those qualities that are essential (fundamental) to achieving the purpose of the park and maintaining its significance. If fundamental resources and values are allowed to deteriorate, the park purpose and/or significance could be jeopardized.

The following fundamental resources and values have been identified for Dry Tortugas National Park:

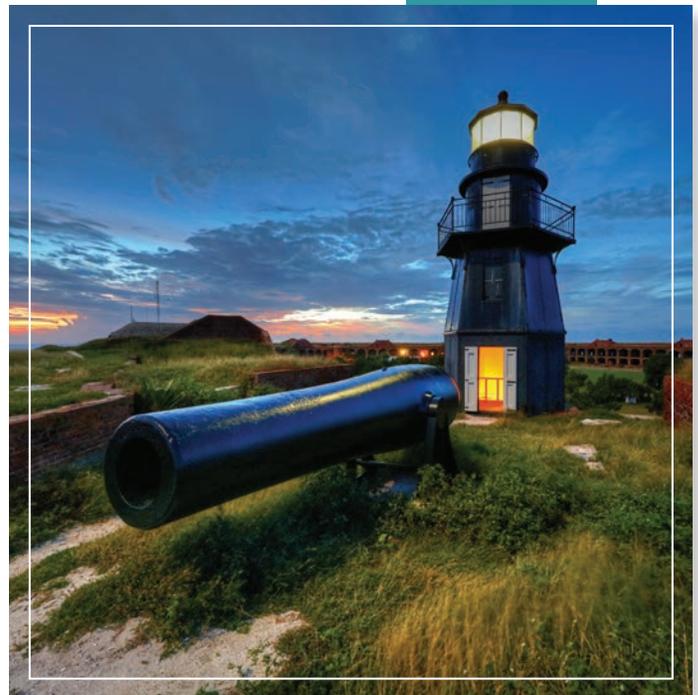
- **Subtropical Marine Ecosystem, including the Coral Reef Community.** With its isolated location 70 miles west of Key West, Florida, the park's subtropical marine ecosystem is largely undisturbed, containing some of the most pristine portions of the Florida Keys Reef Tract. The coral reefs, seagrass meadows, and hard-bottom habitats of Dry Tortugas National Park support a rich variety of marine life. The warm, clear waters of the Dry Tortugas foster ideal conditions for healthy coral reef communities. The park contains some of the most vibrant portions of the Florida Key Reef Tract ecosystem. More than 75 species of hard and soft corals have been identified and are protected by the park. The health, abundance, and diversity of corals provides important habitat for a wide variety of fish and other organisms. Seagrass beds often act as a nursery for young fish and invertebrates by providing food and shelter. Hard-bottom communities, including sponges and sea fans, also play an intrinsic role in the dynamic subtropical marine ecosystem.



- Terrestrial Islands Habitats.** Despite accounting for less than one-fifth of a square mile of the 101-square-mile park, the islands that comprise Dry Tortugas National Park are pivotal to the local wildlife. This terrestrial island habitat consists of seven keys: Loggerhead Key, Garden Key, Bush Key, Long Key, Hospital Key, Middle Key, and East Key. These islands provide a refuge for birds, several species of crabs, and other terrestrial species, as well as nesting habitat for sea turtles. The vegetation found on several keys is essential to the food web, and all keys with vegetation continually undergo management efforts to remove nonnative plant species and restore native species such as sea lavender, sea oats, and bay cedar. Dominated by Fort Jefferson, Garden Key is periodically connected by a land bridge to Bush and Long Keys. During the tern nesting season, Bush Key is closed to the public, and Long Key is closed year-round to protect the nesting colony of magnificent frigate birds. While Hospital and Middle Keys contain little to no vegetation, they serve as important terrestrial habitats for a variety of organisms. The debris washed ashore (wrack) provides important feeding grounds for birds, as well as crabs. The sand itself provides food and shelter for crabs, worms, and other marine life, and the sandy beaches provide resting and nesting sites for various birds. These sand and coral rubble islands are dynamic landscapes that continually change and take new form due to many factors like geology, passing storms, ocean currents, and human activities.
- Fish and Shellfish.** Fish and shellfish species are an essential and prominent part of the marine ecosystems in Dry Tortugas National Park. Fish size and abundance in the park is significantly higher than in the rest of Florida. The park's no-take research natural area also provides a refuge and nursery for numerous fish and shellfish species that support larger marine ecosystems and fisheries. Due to its geographic location and ocean currents, the Dry Tortugas are an important source for the distribution of larval fishes and invertebrate larvae for the east and west coastal areas of Florida. The park's marine environment contains both deep and shallow reef formations, as well as dense seagrass beds. These environments support the juvenile and adult stages of diverse fish species as well as other life cycle stages. More than 300 species of reef fish have been identified and documented in Dry Tortugas National Park, some of the largest and most recognized being the groupers and snappers. Shellfish such as conch, lobster, and shrimp thrive in the park. Pelagic fish like the Spanish and king mackerels, dolphin fish, and sharks are also abundant in the open waters of Dry Tortugas National Park.



- Sea Turtles.** Originally named *Las Tortugas* (Spanish for “the Turtles”), the Dry Tortugas continue to serve as important habitat for numerous species of threatened and endangered sea turtles. As populations continue to diminish worldwide, Dry Tortugas National Park plays a critical role in protecting sea turtle populations. Five different species of sea turtles are found in the waters of south Florida including the loggerhead, green turtle, leatherback, Kemp’s ridley, and hawksbill. The isolated sandy beaches on the islands of the Dry Tortugas make the park the most active sea turtle nesting site in the Florida Keys with loggerhead and green turtles routinely nesting here. The loggerhead turtles nesting in the park represent a genetically distinct subpopulation that does not nest anywhere else. Five of the park’s seven islands (East, Loggerhead, Bush, Garden, and occasionally Middle Key) are surveyed and monitored throughout the nesting season. The subtropical marine ecosystem in the park provides important foraging ground for sea turtles while the park’s sandy beaches provide ideal nesting grounds. Dry Tortugas National Park strives to maintain healthy sea turtle populations.
- Birds.** In 1908, President Theodore Roosevelt’s executive order officially designated areas including Dry Tortugas as part of a national wildlife refuge to protect nesting seabirds from egg collectors. The islands of the Dry Tortugas are the only breeding ground in the continental United States for magnificent frigate birds, sooty terns, masked booby, and brown noddies. These seabirds rely on the isolated protection and unique mixture of terrestrial and marine habitats of the Dry Tortugas to feed, nest, and breed. Bush Key is closed to visitors during the sooty-tern nesting season and Long Key is closed year-round due to the nesting frigate birds. In addition, Dry Tortugas lies along the principal flyway between North and South America, providing a stopover site for migratory birds. Nearly 300 species of birds have been observed passing through the park during spring and fall migrations. These yearly migrations have been drawing bird-watchers to the park for generations. Due to the above avian values, Dry Tortugas has been identified as a Global Important Bird Area by Bird Life International and the National Audubon Society.
- Military History Resources.** Because of its strategic location and military engineering advancements and significance, the Dry Tortugas served as both a defensive position and base of operations for the U.S. Army, and later, the U.S. Navy. A number of resources associated with this military history are found throughout the park and are fundamental to understanding the place of Dry Tortugas in U.S. history, and specifically, continental national defense and foreign policy. Most notable is Fort Jefferson, the focal point for many visitors to the park. Built as part of the Third System of coastal defense to guard the Florida Straits, this six-sided three-tiered masonry fort covers most of Garden Key. Casemates, artillery pieces, powder magazines, a hot shot furnace, and the foundations to both officers’ and soldiers’ barracks are found within the fort’s walls and connect visitors to the military history of the park. Fort Jefferson’s cultural landscape provides the setting and backdrop for these resources. Outside Fort Jefferson, the remnants of two coal refueling docks built to service naval vessels can be seen today. The rich military history of the Dry Tortugas is also understood through the submerged archeological resources, such as shipwrecks, in the protected park boundary. Artifacts and archives managed as part of the park’s museum collection provide another tangible connection to the military legacy of Dry Tortugas National Park.





- Maritime Heritage Resources.** Dry Tortugas National Park sits at an international crossroads for maritime travel and trade between the Atlantic Ocean, Gulf of Mexico, and the Caribbean Sea. Many resources at the park serve as physical connections to the maritime heritage of the Dry Tortugas. Built on Loggerhead Key in 1856–1857, the Dry Tortugas Light Station illustrates the important role of navigational aids in supporting maritime activities. The surrounding buildings and landscape on Loggerhead Key connect visitors to the lives of early lighthouse keepers and their families. At Fort Jefferson, the Harbor Light is another key navigational aid that was used to identify the deep water harbor as a refuge for countless ships over the years. The submerged resources, one of the largest collections of documented shipwrecks in North America, are powerful links to the maritime heritage of the Dry Tortugas. Shipwrecks, such as the *Avanti*, a wrecked 19th century windjammer, are popular destinations for divers and snorkelers alike. The park’s museum collections and archives also provide another resource for understanding and exploring the maritime heritage associated with Dry Tortugas National Park.
- Scientific Research and Education.** The islands, reef ecosystems, and marine environment of the Dry Tortugas have long been recognized as an ideal location for research and scholarship, drawing scientists to the area for generations. The establishment of the 46-square-mile no-take research natural area in 2007 created a living laboratory for studying the resiliency of marine ecosystems and the larger implications of protected areas for marine life on broader environmental stewardship. Scientific research at the Dry Tortugas continues to inform our understanding of various species populations in the state of Florida and beyond, and is essential to effectively manage and protect the diverse species. For example, the long-term tern study that has been ongoing at the park since the 1960s is one of the most significant seabird studies in the world and helps track bird population health and changes to the global environment. To support research projects in the park, the motor vessel *Fort Jefferson* was commissioned in 2003 as a park research and supply ship. The preservation of Fort Jefferson and other cultural objects therein has resulted in innovations and new scholarship in the treatment of metals and masonry structures in a harsh marine environment. Lessons learned at the park have informed the stewardship of other coastal fortifications. Significant archeological research on shipwrecks has also occurred in the park, and a great potential for additional shipwreck research continues. Lastly, Dry Tortugas National Park also continues to be an agency leader in the study and real world application of sea level rise and climate change data. To achieve these research values, the park partners with other federal agencies such as the National Oceanic and Atmospheric Administration, the U.S. Geological Survey, and the Florida Fish and Wildlife Conservation Commission, and collaborates with universities and other institutes of higher learning to collect data in the park. Scientific research and resource stewardship are fundamental reasons for establishment of the park.

- **Sensory Experiences of the Dry Tortugas.** The sensory values of the remote marine environment at Dry Tortugas National Park provide an unparalleled immersive experience for visitors to the park. The vast expanses of ocean waters and unobstructed views of the horizon foster a sense of place and appreciation for the seascape of the Dry Tortugas. The sensory experience of being at Fort Jefferson or on Loggerhead Key surrounded by the ocean, gives park visitors insights into what life at the fort might have been like for the inhabitants. The sounds of the wind, seabirds, and beating ocean waves all contribute to the park's dynamic soundscape. The smell of the sea salt in the air is another contributing factor to the marine setting of Dry Tortugas National Park. When the sun sets, the park offers a spectacular expanse of starry night skies. The sensory experiences of the marine environment and seascape are fundamental to understanding and appreciating Dry Tortugas National Park.
- **Recreational Opportunities.** Due to its remote location on the outermost Florida Keys, Dry Tortugas National Park offers outstanding recreational opportunities in a historic and marine environment. The clear waters and sandy beaches on Garden and Loggerhead Keys provide opportunities for swimming, picnicking, paddle boarding, and sea kayaking. Overnight, primitive camping opportunities are provided on Garden Key, including 10 tent sites (first-come, first-served), a group campsite (via reservation), and several overflow sites. The numerous coral reefs and shipwrecks found in the park are popular diving and snorkeling destinations for visitors. Outside the protected no-take research natural area, sport fishing is considered some of the best in the nation. The park provides unique opportunities to view seabirds and it is a popular location for bird-watching, particularly during the migration and nesting seasons. Also, exploring Fort Jefferson and its casemates and layers of history is a primary activity for many visitors arriving on the ferry and seaplane services. The marine setting of the Dry Tortugas serves as a backdrop for a wide variety of visitor experiences and opportunities.



Other Important Resources and Values

Dry Tortugas National Park contains other resources and values that are not fundamental to the purpose of the park and may be unrelated to its significance, but are important to consider in planning processes. These are referred to as “other important resources and values” (OIRV). These resources and values have been selected because they are important in the operation and management of the park and warrant special consideration in park planning.

The following other important resources and values have been identified for Dry Tortugas National Park:

- **Monuments.** Dry Tortugas National Park contains four monuments that provide insights into the events and individuals associated with the Dry Tortugas. At Fort Jefferson, a large monument to Dr. (Brevet Major) Joseph Sim Smith can be found in the fort’s parade ground. Erected around 1870, this monument commemorates Dr. Smith’s service during the yellow fever epidemic that took his life. Also, a bronze plaque recognizes the distinguished services of Lincoln assassination conspirator Dr. Samuel Mudd during the yellow fever epidemic. On Loggerhead Key, a concrete monument to the U.S. Coast Guard is prominently located on the path leading to the lighthouse. Also on Loggerhead Key, the Alfred Mayor monument honors the founder of the Carnegie Institution Tortugas Marine Biological Laboratory. These monuments not only provide a touchstone to historic events but give insights into those who chose to recognize them.
- **Museum Collections.** The museum collections of Dry Tortugas National Park represent the diversity of natural and cultural resources at the park, while supporting both scholarly understanding and interpretation. More than 390,000 objects are currently accessioned into the park’s museum collections ranging from delicate sea shells to Rodman Cannons. Many of the objects and archives illustrate human occupation in the Dry Tortugas and include material culture excavated during archeological investigations and research. The museum collections also include natural resources—many specimens were collected in the Dry Tortugas. Some of these objects are on display in the park’s visitor contact station inside Fort Jefferson, while the majority of museum collections are stored at the NPS South Florida Collections Management Center in Everglades National Park and archeological resources are kept at the NPS Southeast Archeological Center in Tallahassee, Florida.
- **Carnegie Institution Tortugas Marine Biological Laboratory.** The construction and presence of the Carnegie Institution’s Marine Biological Laboratory at Loggerhead Key from 1904–1939 created some of the most notable accomplishments of early 20th century marine biological research on coral reefs, mangroves, and jelly fish. Additionally, the first underwater black and white and color photographs were taken at the Dry Tortugas. Currently, some ruins of the laboratory remain on Loggerhead Key. The establishment of this laboratory in this extreme outpost and the body of science it produced are a testament to the significance and uniqueness of the natural resources of the Dry Tortugas that are still heavily researched and protected today to further the study of marine sciences and the promotion of conservation.

Interpretive Themes

Interpretive themes are often described as the key stories or concepts that visitors should understand after visiting a park—they define the most important ideas or concepts communicated to visitors about a park unit. Themes are derived from, and should reflect, park purpose, significance, resources, and values. The set of interpretive themes is complete when it provides the structure necessary for park staff to develop opportunities for visitors to explore and relate to all park significance statements and fundamental and other important resources and values.

Interpretive themes are an organizational tool that reveal and clarify meaning, concepts, contexts, and values represented by park resources. Sound themes are accurate and reflect current scholarship and science. They encourage exploration of the context in which events or natural processes occurred and the effects of those events and processes. Interpretive themes go beyond a mere description of the event or process to foster multiple opportunities to experience and consider the park and its resources. These themes help explain why a park story is relevant to people who may otherwise be unaware of connections they have to an event, time, or place associated with the park.

The following interpretive themes have been identified for Dry Tortugas National Park:

- **Overarching Theme.**
 - Because of its landforms, location, currents, and weather, Dry Tortugas National Park is a confluence of natural and human influences integral to each other.
- **Natural History Themes.**
 - The Dry Tortugas lie at the convergence of ocean currents resulting in an area teeming with diverse and abundant marine life.
 - The isolated location of the Dry Tortugas offers a vital terrestrial habitat that provides refuge for nesting and migrating wildlife species.
 - The Dry Tortugas are a dynamic ecosystem influenced by local, regional, and global processes.
- **Cultural History Themes.**
 - Despite its apparent remote location, human activities at the Dry Tortugas resulted from international rivalries, evolving national defense concerns, and ambitious endeavors.
 - Due to its strategic location and the risks of navigating the Florida Straits, the Dry Tortugas became a focal point for human successes and failures.
 - The voices of Dry Tortugas, reflecting a wide range of individuals and cultures, tell a story of survival, adaptation, motivation, struggle, interaction, and achievement.
- **Experiences Theme.**
 - The combination of near pristine natural resources and nationally significant cultural resources in a remote subtropical marine environment affords visitors the unique opportunities to unplug, disconnect, and enjoy the solitude, dark skies, and the superlative seascapes and skiescapes of the Dry Tortugas.

Part 2: Dynamic Components

The dynamic components of a foundation document include special mandates and administrative commitments and an assessment of planning and data needs. These components are dynamic because they will change over time. New special mandates can be established and new administrative commitments made. As conditions and trends of fundamental and other important resources and values change over time, the analysis of planning and data needs will need to be revisited and revised, along with key issues. Therefore, this part of the foundation document will be updated accordingly.

Special Mandates and Administrative Commitments

Many management decisions for a park unit are directed or influenced by special mandates and administrative commitments with other federal agencies, state and local governments, utility companies, partnering organizations, and other entities. Special mandates are requirements specific to a park that must be fulfilled. Mandates can be expressed in enabling legislation, in separate legislation following the establishment of the park, or through a judicial process. They may expand on park purpose or introduce elements unrelated to the purpose of the park. Administrative commitments are, in general, agreements that have been reached through formal, documented processes, often through memorandums of agreement. Examples include easements, rights-of-way, arrangements for emergency service responses, etc. Special mandates and administrative commitments can support, in many cases, a network of partnerships that help fulfill the objectives of the park and facilitate working relationships with other organizations. They are an essential component of managing and planning for Dry Tortugas National Park.

Special Mandates

- **Management Agreement for Certain Submerged Lands.** Signed in 2005, this management agreement between the state of Florida and the Department of the Interior (National Park Service) establishes jurisdictional roles and management responsibilities for submerged lands and resources within Dry Tortugas National Park. The agreement is signed by the Secretary of the Interior, the Florida governor, and other state of Florida officials. The agreement can only be terminated through mutual agreement of all signatories. A full copy of this agreement is contained in appendix B.

Administrative Commitments

For information about the existing administrative commitments for Dry Tortugas National Park, please see appendix C.

Assessment of Planning and Data Needs

Once the core components of part 1 of the foundation document have been identified, it is important to gather and evaluate existing information about the park's fundamental and other important resources and values, and develop a full assessment of the park's planning and data needs. The assessment of planning and data needs section presents planning issues, the planning projects that will address these issues, and the associated information requirements for planning, such as resource inventories and data collection, including GIS data.

There are three sections in the assessment of planning and data needs:

1. analysis of fundamental and other important resources and values
2. identification of key issues and associated planning and data needs
3. identification of planning and data needs (including spatial mapping activities or GIS maps)

The analysis of fundamental and other important resources and values and identification of key issues leads up to and supports the identification of planning and data collection needs.

Analysis of Fundamental Resources and Values

The fundamental resource or value analysis table includes current conditions, potential threats and opportunities, planning and data needs, and selected laws and NPS policies related to management of the identified resource or value.

Fundamental Resource or Value	Subtropical Marine Ecosystem, including the Coral Reef Community
<p>Related Significance Statements</p>	<ul style="list-style-type: none"> • Dry Tortugas National Park protects one of the most pristine and diverse portions of the 170-mile-long Florida Keys Reef Tract, which is the only living coral barrier reef in the continental United States and the third-largest barrier reef system in the world. • The marine ecosystems within Dry Tortugas National Park provide rare, high-quality habitats for feeding, spawning, and the recruitment of a diversity of fish and other marine species, which contributes to sustainable fish populations along the rest of Florida and the Atlantic Coast, supporting a multibillion-dollar fishery. • Dry Tortugas National Park protects one of the most isolated and least disturbed feeding and nesting habitats for several species of threatened and endangered sea turtles in the United States. • Dry Tortugas National Park supports the only significant sooty tern, brown noddy, masked booby, and frigate bird nesting colonies in the continental United States, and serves as a remote shelter for thousands of migratory birds each year. • Dry Tortugas National Park continues a legacy of scientific research and scholarship regarding the relationship between humans and the marine environment, a legacy that began in 1904 with establishment of the Tortugas Marine Biological Laboratory by the Carnegie Institution for Science, and continues today with implementation of the park's research natural area and innovations in historic preservation.
<p>Current Conditions and Trends</p>	<p>Conditions</p> <ul style="list-style-type: none"> • Due to the 46-square-mile no-take research natural area, the park's aquatic ecosystem is generally in a healthy condition and is notably higher quality than aquatic ecosystems associated with all other Florida keys and the larger barrier reef. However, it is not pristine due to multiple anthropogenic effects that continue to impact the ecosystem's health and resiliency. <p>Trends</p> <ul style="list-style-type: none"> • The condition of the aquatic ecosystem has been relatively stable since 2008. However, it had been deteriorating since the mid-1970s. • In the past 28 years, extremely warm sea surface temperatures (86°F–90°F [30°C–32°C]) have resulted in bleaching events followed by disease outbreaks that contributed to a decline in coral cover in the Florida Keys, and the same may have occurred in the Tortugas region. • The increased mean ocean temperatures over the last half century have been well recorded.

Fundamental Resource or Value	Subtropical Marine Ecosystem, including the Coral Reef Community
Threats and Opportunities	<p>Threats</p> <ul style="list-style-type: none"> • In recent years, the park is witnessing increases in the acidification of seawater and deterioration of water quality, which is impacting overall ecosystem health and resiliency. • The park is also seeing increasingly warmer ocean temperatures, which also impact overall ecosystem health and resiliency. • Incidences of coral bleaching and other diseases are impacting coral health, which in turn affects the entire subtropical aquatic ecosystem. • The associated effects of climate change (e.g., water temperature, diminished biodiversity, ocean acidification) have all been documented at the Dry Tortugas. • Marine debris and trash deteriorates the quality and health of the subtropical aquatic ecosystem. • Incidents of poaching aquatic species occur in the park. • Coral reefs may be damaged from anchoring or concentrating visitor use with mooring buoys. Ongoing monitoring is needed to determine if and when mooring buoys should be moved in order to disperse visitor impacts. • Although natural weather events such as hurricanes have always been a part of the ecosystem, increasing storm intensity and frequency is a challenge of overall ecosystem health and resiliency. <p>Opportunities</p> <ul style="list-style-type: none"> • Continue and expand coordinated ecological research efforts with outside agencies and educational institutions to improve productivity of research information and understanding. • Provide interpretive programming and educate the public on the importance of the synergistic relationship of healthy fish populations and healthy coral reefs. Expand public education efforts on coral reef destruction and how to prevent it or minimize it. • Increase the marketing and sales of plant and animal identification books in local and regional stores. • Explore coral restoration planning efforts with Federal Lands Recreation Enhancement Act funds and other sources. • Use Dry Tortugas National Park as a baseline or reference point for assessing ecological health of other subtropical aquatic ecosystems such as Biscayne National Park. • Increase enforcement presence and patrolling in the park to ensure the effectiveness of the research natural area. • Expand water quality monitoring programs to better understand the effects of climate change on overall water quality in relation to ecosystem health. • Continue to collaborate and work with the National Oceanic and Atmospheric Administration on the management of the Florida Keys National Marine Sanctuary including the associated Tortugas Marine Reserve and the operation of the interagency Eco-Discovery Center in Key West.
Data and/or GIS Needs	<ul style="list-style-type: none"> • Natural resource condition assessment. • Research and data management strategy. • Scholarly research to support the five-year research natural area report. • Survey reefs after bleaching events. • Water quality monitoring.

Fundamental Resource or Value	Subtropical Marine Ecosystem, including the Coral Reef Community
<p>Planning Needs</p>	<ul style="list-style-type: none"> • Communications plan. • Coral restoration plan. • Resource stewardship strategy. • Visitor use management plan. • Water resources management plan. • Climate change vulnerability and needs assessment (for all subtropical marine resources, including coral reefs).
<p>Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance</p>	<p>Laws, Executive Orders, and Regulations That Apply to the FRV</p> <ul style="list-style-type: none"> • Clean Water Act • Endangered Species Act, as amended • Lacey Act, as amended • National Environmental Policy Act • National Invasive Species Act • Executive Order 11990, "Protection of Wetlands," which requires all federal agencies to "minimize the destruction, loss or degradation of wetlands, and preserve and enhance the natural and beneficial values of wetlands" • Executive Order 12088, "Federal Compliance with Pollution Control Standards" • Executive Order 13089, "Coral Reef Protection," which provides guidance for preserving and protecting the biodiversity, health, heritage, and social and economic value of the U.S. coral reef ecosystems and the marine environment • Executive Order 13158, "Marine Protected Areas," which provides guidance that strengthens the management, protection, and conservation of existing marine protected areas and established new and expanded existing marine protected areas • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director's Orders)</p> <ul style="list-style-type: none"> • NPS Management Policies 2006 (§1.6) "Cooperative Conservation Beyond Park Boundaries" • NPS Management Policies 2006 (§4.1) "General Management Concepts" • NPS Management Policies 2006 (§4.3.1) "Research Natural Areas" • NPS Management Policies 2006 (§4.4.1) "General Principles for Managing Biological Resources" • NPS Management Policies 2006 (§4.7.2) "Weather and Climate" • NPS Natural Resource Management Reference Manual 77 • Director's Policy Memorandum 12-02, "Applying National Park Service Management Policies in the Context of Climate Change"



Fundamental Resource or Value	Terrestrial Islands Habitats
Related Significance Statements	<ul style="list-style-type: none"> • Dry Tortugas National Park protects one of the most pristine and diverse portions of the 170-mile-long Florida Keys Reef Tract, which is the only living coral barrier reef in the continental United States and the third-largest barrier reef system in the world. • Dry Tortugas National Park protects one of the most isolated and least disturbed feeding and nesting habitats for several species of threatened and endangered sea turtles in the United States. • Dry Tortugas National Park supports the only significant sooty tern, brown noddy, masked booby, and frigate bird nesting colonies in the continental United States, and serves as a remote shelter for thousands of migratory birds each year. • Dry Tortugas National Park continues a legacy of scientific research and scholarship regarding the relationship between humans and the marine environment, a legacy that began in 1904 with establishment of the Tortugas Marine Biological Laboratory by the Carnegie Institution for Science, and continues today with implementation of the park’s research natural area and innovations in historic preservation.
Current Conditions and Trends	<p>Conditions</p> <ul style="list-style-type: none"> • Condition of native plant communities on all undeveloped areas is favorable. • Plant community condition is always changing due to island geomorphology. <p>Trends</p> <ul style="list-style-type: none"> • Invasive plant control efforts continue to be successful. • Since the removal of Australian pines, native vegetation on Loggerhead Key is recovering and natural succession of plant community is occurring.
Threats and Opportunities	<p>Threats</p> <ul style="list-style-type: none"> • Oil spills have the potential to significantly impact overall terrestrial island habitat. • Coastal shoreline erosion results in a loss of terrestrial island habitat. • Invasive plants disrupt and displace natural habitat for many terrestrial species. • Trash and marine debris washing up onshore impacts habitat quality. • Climate change effects, including: increasing loss of shoreline from erosion, inundation of upland areas from sea level rise (if storm-generated elevation increases do not outpace rising sea levels), sea level rise accelerating change beyond the ability of species to adapt, increases in hurricane frequency and intensity, etc.). <p>Opportunities</p> <ul style="list-style-type: none"> • Expand educational and interpretive programming about the park as a showcase example of unique island habitat. • Partner with the U.S. Geological Survey for continuous monitoring of island geomorphology. • Continue and increase rubbish and debris removal efforts to attain pristine beach conditions wherever possible. • Continue to study the impacts of climate change and increasing severe storm events on island morphology and shoreline erosion.
Data and/or GIS Needs	<ul style="list-style-type: none"> • Natural resource condition assessment. • Visitation data at Loggerhead Key. • Monitoring the condition of revegetation on Loggerhead Key. • Study sensitivity of corals to ocean acidification, temperature change, and sea level rise. • Long-term monitoring of island shorelines and GPS elevations.

Fundamental Resource or Value	Terrestrial Islands Habitats
<p>Planning Needs</p>	<ul style="list-style-type: none"> • Resource stewardship strategy. • Beach/shoreline assessment for Garden Key. • Climate change vulnerability and needs assessment.
<p>Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance</p>	<p>Laws, Executive Orders, and Regulations That Apply to the FRV</p> <ul style="list-style-type: none"> • Clean Water Act • Clean Air Act • Endangered Species Act, as amended • Federal Noxious Weed Act, as amended • Lacey Act, as amended • Migratory Bird Treaty Act • National Environmental Policy Act • National Invasive Species Act • Executive Order 12088, “Federal Compliance with Pollution Control Standards” • Executive Order 13112, “Invasive Species” • Executive Order 13158, “Marine Protected Areas,” provides guidance that strengthens the management, protection, and conservation of existing marine protected areas and established new and expanded existing marine protected areas • Secretarial Order 3289, “Addressing the Impacts of Climate Change on America’s Water, Land, and Other Natural and Cultural Resources” <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director’s Orders)</p> <ul style="list-style-type: none"> • NPS <i>Management Policies 2006</i> (§1.6) “Cooperative Conservation Beyond Park Boundaries” • NPS <i>Management Policies 2006</i> (§4.1) “General Management Concepts” • NPS <i>Management Policies 2006</i> (§4.3.1) “Research Natural Areas” • NPS <i>Management Policies 2006</i> (§4.4.1) “General Principles for Managing Biological Resources” • NPS <i>Management Policies 2006</i> (§4.6.1) “Protection of Surface Waters and Groundwaters” • NPS <i>Management Policies 2006</i> (§4.7.2) “Weather and Climate” • NPS <i>Management Policies 2006</i> (§4.7) “Air Resource Management” • NPS <i>Management Policies 2006</i> (§4.9) “Soundscape Management” • NPS <i>Management Policies 2006</i> (§4.10) “Lightscape Management” • Director’s Order 47: <i>Soundscape Preservation and Noise Management</i> • NPS <i>Natural Resource Management Reference Manual 77</i> • Director’s Policy Memorandum 12-02, “Applying National Park Service Management Policies in the Context of Climate Change”





Fundamental Resource or Value	Fish and Shellfish
<p>Related Significance Statements</p>	<ul style="list-style-type: none"> • Dry Tortugas National Park protects one of the most pristine and diverse portions of the 170-mile-long Florida Keys Reef Tract, which is the only living coral barrier reef in the continental United States and the third-largest barrier reef system in the world. • The marine ecosystems within Dry Tortugas National Park provide rare, high-quality habitats for feeding, spawning, and the recruitment of a diversity of fish and other marine species, which contributes to sustainable fish populations along the rest of Florida and the Atlantic Coast, supporting a multibillion-dollar fishery. • Dry Tortugas National Park continues a legacy of scientific research and scholarship regarding the relationship between humans and the marine environment, a legacy that began in 1904 with establishment of the Tortugas Marine Biological Laboratory by the Carnegie Institution for Science, and continues today with implementation of the park's research natural area and innovations in historic preservation.
<p>Current Conditions and Trends</p>	<p>Conditions</p> <ul style="list-style-type: none"> • Healthy and diverse populations of fish and shellfish are present and have been documented in the park. • Lionfish, a venomous and invasive predatory fish native to the Indo-Pacific waters, have established themselves throughout the Caribbean and the coastal waters of the southeastern United States, and were first observed at the park in 2009. <p>Trends</p> <ul style="list-style-type: none"> • Fish population health of target species like the snapper-grouper complex appears to be stable or improving over the past 15 years, probably due to the research natural area. • The lobster population appears to be decreasing in abundance. • Funding sources for sustaining world-class population fish assessment efforts are on the decline.

Fundamental Resource or Value	Fish and Shellfish
<p>Threats and Opportunities</p>	<p>Threats</p> <ul style="list-style-type: none"> • Success in fish population recovery may lead to relaxed fishery regulations. • Reduced budgetary resources to support and justify the research natural area could lead to the area’s loss, as it needs state concurrence every five years. • Climate change impacts on aquatic habitat and water quality. Change in the timing and movement of the 26-degree isotherm that results from climate change is also causing a lack of synchronicity in pelagic fish species and predator/prey relationships. Ocean acidification may cause dissolution of coral reefs, especially affecting early life-phases of coral. • Poaching / illegal fishing continues to threaten fish and shellfish populations in the park. • Trash from park visitors such as discarded fishing line or plastic bags are harmful to fish populations. • Marine debris (e.g., plastics and micro-plastics on the reef) is harmful to fish populations. • Potential increases in visitor use. • Recreational and commercial fishing, including overfishing of migrating fish outside park boundaries. • Invasive, nonnative species such as the lionfish. • Given the remote location of the park and open waters under park protection, resource management and law enforcement of park regulations, including fisheries protection and poaching enforcement, are a logistical challenge. • Oil spills are an ongoing threat to fish and shellfish populations. <p>Opportunities</p> <ul style="list-style-type: none"> • Continue to maintain and use the excellent survey design for evaluating the dynamics of fish populations in the park and monitoring the impacts of management actions. • Maintain and enhance excellent interagency coordination to facilitate fish population monitoring. • Advance research to lead to a biosphere reserve designation. • Establish cooperative law enforcement and mutual aid agreements with partnering agencies to maximize resource protection (e.g., with the National Oceanic and Atmospheric Administration and the Florida Fish and Wildlife Conservation Commission). • Expand and sustain resource monitoring and research coordination and cooperation with several applicable agencies and institutions (National Marine Fisheries Service [NOAA Fisheries], Florida Fish and Wildlife Conservation Commission, University of Miami, etc.). • Build an allied relationship with the Peninsular Florida Landscape Conservation Cooperative, Caribbean Landscape Conservation Cooperative, and Gulf Fisheries Council so the park has a unified front and multiple voices in support of the research natural area. • Maximize use of technological options to monitor area waters and keys (e.g., radar, vessel ID system, drones, etc.). • Better articulate the economic value of the fishery to the region. • Expand implementation of lobster monitoring protocol.
<p>Data and/or GIS Needs</p>	<ul style="list-style-type: none"> • Economic impact analysis of the research natural area. • Fish and shellfish population monitoring and/or mapping. • Lobster surveys and modeling. • Research and data management strategy. • Scholarly research to support the five-year research natural area report.

Fundamental Resource or Value	Fish and Shellfish
<p>Planning Needs</p>	<ul style="list-style-type: none"> • Complete five-year report and new science plan for the research natural area. • Fisheries management plan. • Resource stewardship strategy.
<p>Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance</p>	<p>Laws, Executive Orders, and Regulations That Apply to the FRV</p> <ul style="list-style-type: none"> • Clean Water Act • Endangered Species Act, as amended • Lacey Act, as amended • National Environmental Policy Act • National Invasive Species Act • Executive Order 13089, "Coral Reef Protection," which provides guidance for preserving and protecting the biodiversity, health, heritage, and social and economic value of the U.S. coral reef ecosystems and the marine environment • Executive Order 13158, "Marine Protected Areas," which provides guidance that strengthens the management, protection, and conservation of existing marine protected areas and established new and expanded existing marine protected areas • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director's Orders)</p> <ul style="list-style-type: none"> • NPS Management Policies 2006 (§1.6) "Cooperative Conservation Beyond Park Boundaries" • NPS Management Policies 2006 (§4.1) "General Management Concepts" • NPS Management Policies 2006 (§4.3.1) "Research Natural Areas" • NPS Management Policies 2006 (§4.4.1) "General Principles for Managing Biological Resources" • NPS Management Policies 2006 (§4.7.2) "Weather and Climate" • NPS Natural Resource Management Reference Manual 77 • Director's Policy Memorandum 12-02, "Applying National Park Service Management Policies in the Context of Climate Change"



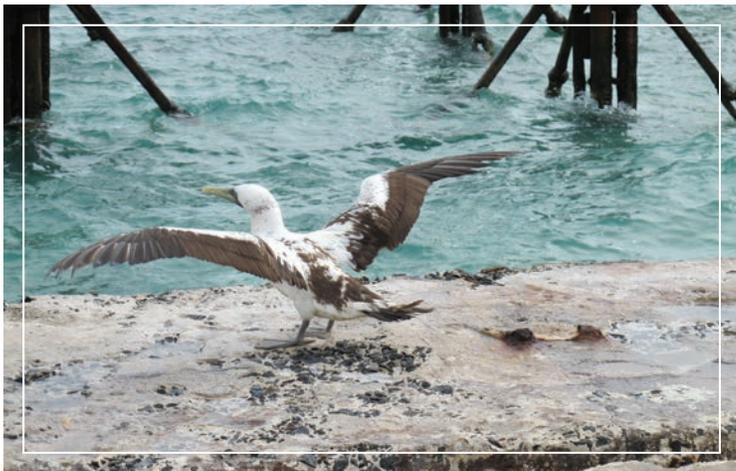
<p>Fundamental Resource or Value</p>	<p>Sea Turtles</p>
<p>Related Significance Statements</p>	<ul style="list-style-type: none"> • Dry Tortugas National Park protects one of the most pristine and diverse portions of the 170-mile-long Florida Keys Reef Tract, which is the only living coral barrier reef in the continental United States and the third-largest barrier reef system in the world. • Dry Tortugas National Park protects one of the most isolated and least disturbed feeding and nesting habitats for several species of threatened and endangered sea turtles in the United States. • Dry Tortugas National Park continues a legacy of scientific research and scholarship regarding the relationship between humans and the marine environment, a legacy that began in 1904 with establishment of the Tortugas Marine Biological Laboratory by the Carnegie Institution for Science, and continues today with implementation of the park's research natural area and innovations in historic preservation.
<p>Current Conditions and Trends</p>	<p>Conditions</p> <ul style="list-style-type: none"> • With exception of the loggerhead turtles, other species populations appear to be good and improving locally. • East Key has the highest sea turtle nesting density. • Nesting loggerhead turtles and nesting and residential green turtles appear to be subspecies that are unique to the Dry Tortugas. • Relative to sea turtle populations in other regions, these populations have extremely few cases of Fibropapillomatosis disease. <p>Trends</p> <ul style="list-style-type: none"> • The nesting numbers of green turtles are increasing in the park. • The nesting numbers of loggerhead turtles are fluctuating in the park.
<p>Threats and Opportunities</p>	<p>Threats</p> <ul style="list-style-type: none"> • Sea level rise and shoreline erosion resulting from climate change reduces and degrades areas of turtle nesting habitat. • Pollution from outside the park (marine debris, plastics and micro-plastics, beach trash, oil, etc.) has a significant impact on sea turtle populations and health. • Cold water events can stun sea turtles. • Red tides, black tides, etc., impact sea turtle populations and health. • Overfishing (commercial and recreational) reduces sea turtle food sources. • Mortality from trawling and commercial fishing bycatch, often due to improperly used turtle exclusion devices, continues. Habitat destruction from commercial fishing bottom nets also occurs. • Consumption of turtle eggs and adult turtles in other locations/regions occurs. • Temperature increases due to climate change are affecting sex ratios in sea turtle populations. <p>Opportunities</p> <ul style="list-style-type: none"> • Promote Dry Tortugas National Park as a national example (via media) as a unique, high-density nesting and resident sea turtle population. Promoting the park's name and its associated turtle population could increase awareness of and public interest in the role of the park in marine resource protection, which could also lead to additional support from other agencies and nonprofit organizations. • Explore "Sponsor a Turtle" program as a way to raise awareness. • Work with other agencies and institutions (e.g., NOAA Fisheries, Duke University, U.S. Geological Survey) to track turtle migrations at a broad, regional scale and identify the park's role in this bigger picture. • Improve public awareness of sea turtles, turtle habitat, and turtle migrations by sharing information on turtle tracking in the park (species, migration data, etc.) with visitor information outlets (media, park website, etc.). • Develop additional programs and seek ways to increase volunteer opportunities to support sea turtle monitoring and data collection.

Fundamental Resource or Value	Sea Turtles
Data and/or GIS Needs	<ul style="list-style-type: none"> • Long-term monitoring of island shorelines and GPS elevations. • Sea turtle research and expand nesting data collection.
Planning Needs	<ul style="list-style-type: none"> • Sea turtle management plan. • Resource stewardship strategy.
Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance	<p>Laws, Executive Orders, and Regulations That Apply to the FRV</p> <ul style="list-style-type: none"> • Clean Water Act • Endangered Species Act, as amended • National Environmental Policy Act • Executive Order 12088, "Federal Compliance with Pollution Control Standards" • Executive Order 13089, "Coral Reef Protection," provides guidance for preserving and protecting the biodiversity, health, heritage, and social and economic value of the U.S. coral reef ecosystems and the marine environment • Executive Order 13158, "Marine Protected Areas," provides guidance that strengthens the management, protection, and conservation of existing marine protected areas and established new and expanded existing marine protected areas • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director's Orders)</p> <ul style="list-style-type: none"> • NPS <i>Management Policies 2006</i> (§1.6) "Cooperative Conservation Beyond Park Boundaries" • NPS <i>Management Policies 2006</i> (§4.1) "General Management Concepts" • NPS <i>Management Policies 2006</i> (§4.3.1) "Research Natural Areas" • NPS <i>Management Policies 2006</i> (§4.4.1) "General Principles for Managing Biological Resources" • NPS <i>Natural Resource Management Reference Manual 77</i> • Director's Policy Memorandum 12-02, "Applying National Park Service Management Policies in the Context of Climate Change"



Fundamental Resource or Value	Birds
<p>Related Significance Statements</p>	<ul style="list-style-type: none"> • Dry Tortugas National Park supports the only significant sooty tern, brown noddy, masked booby, and frigate bird nesting colonies in the continental United States, and serves as a remote shelter for thousands of migratory birds each year. • Dry Tortugas National Park continues a legacy of scientific research and scholarship regarding the relationship between humans and the marine environment, a legacy that began in 1904 with establishment of the Tortugas Marine Biological Laboratory by the Carnegie Institution for Science, and continues today with implementation of the park's research natural area and innovations in historic preservation.
<p>Current Conditions and Trends</p>	<p>Conditions</p> <ul style="list-style-type: none"> • Recent hurricanes have adversely affected nesting colonies in the park, particularly the northernmost nesting colonies. • The park is a popular destination for bird-watchers from around the world during the migratory bird seasons. <p>Trends</p> <ul style="list-style-type: none"> • Bird nesting periods in the park are getting earlier in season for some bird species. • Bird habitat in the park is generally decreasing and/or degrading (but the trend is variable from species to species).
<p>Threats and Opportunities</p>	<p>Threats</p> <ul style="list-style-type: none"> • Effects from climate change continue to impact bird populations and habitat. Island bird habitat areas are decreasing due to sea level rise. Also, the intensity and frequency of hurricanes increase the potential threat to bird colony decimation from year to year. • Regardless of climate change effects on hurricane intensity and frequency, hurricanes are a natural threat each year, and given the isolated, unique nesting colonies at the park, the colonies are vulnerable to decimation from hurricanes. • There are limited resources for supporting ongoing bird population studies and counts in the park. The last analysis of migratory bird species was conducted in 2008. • Global changes in fish populations are affecting food sources for pelagic birds. • The potential of oil spills is an ongoing threat to island bird colonies. <p>Opportunities</p> <ul style="list-style-type: none"> • Long-term seabird population studies should continue to provide better understanding of overall bird population health and provide insight into global ecological conditions and patterns. • Through interpretive programming, work to promote and increase participation of on-site birding (park visitors), particularly during migration seasons, to help increase the identification and monitoring of bird activity. • Pursue alternative funding sources and grants for bird monitoring and studies by continuing to build working relations with the National Audubon Society and other organizations dedicated to bird stewardship. These partnerships could provide additional resources to the park in the study of bird populations. • Actively promote unique birding opportunities to visitors, both nationally and internationally, to generate more interest and thus increase bird identification assistance and volunteer opportunities at the park. • Once bird data are collected, increase efforts to analyze data and report on results to maximize the value of the monitoring data for decision making. • Modify sooty tern and brown noddy count methodology to account for the "new" second colony (also see data needs below). • Consider alternatives for supporting Bridled and Roseate Tern nesting.

Fundamental Resource or Value	Birds
Data and/or GIS Needs	<ul style="list-style-type: none"> • Collect population counts for masked boobies. • Expand collection and analysis of bird data. • Modify sooty tern and brown noddy count methodology to account for the “new” second colony.
Planning Needs	<ul style="list-style-type: none"> • Avian resources management plan. • Resource stewardship strategy.
Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance	<p>Laws, Executive Orders, and Regulations That Apply to the FRV</p> <ul style="list-style-type: none"> • Clean Air Act • Clean Water Act • Endangered Species Act, as amended • Lacey Act, as amended • Migratory Bird Treaty Act • National Environmental Policy Act • Executive Order 12088, “Federal Compliance with Pollution Control Standards” • Secretarial Order 3289, “Addressing the Impacts of Climate Change on America’s Water, Land, and Other Natural and Cultural Resources” <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director’s Orders)</p> <ul style="list-style-type: none"> • NPS Management Policies 2006 (§1.6) “Cooperative Conservation Beyond Park Boundaries” • NPS Management Policies 2006 (§4.1) “General Management Concepts” • NPS Management Policies 2006 (§4.3.1) “Research Natural Areas” • NPS Management Policies 2006 (§4.4.1) “General Principles for Managing Biological Resources” • NPS Management Policies 2006 (§4.7.2) “Weather and Climate” • NPS Management Policies 2006 (§4.7) “Air Resource Management” • NPS Management Policies 2006 (§4.9) “Soundscape Management” • NPS Management Policies 2006 (§4.10) “Lightscape Management” • Director’s Order 47: <i>Soundscape Preservation and Noise Management</i> • NPS Natural Resource Management Reference Manual 77 • Director’s Policy Memorandum 12-02, “Applying National Park Service Management Policies in the Context of Climate Change”





Fundamental Resource or Value	Military History Resources
<p>Related Significance Statements</p>	<ul style="list-style-type: none"> • The imposing presence of Fort Jefferson, unrivaled in its 19th century technological innovations and ambitious scale, represents more than 100 years of military history in the Dry Tortugas and illustrates this location’s strategic importance and the role of coastal defenses in the protection of the United States. • Dry Tortugas National Park continues a legacy of scientific research and scholarship regarding the relationship between humans and the marine environment, a legacy that began in 1904 with establishment of the Tortugas Marine Biological Laboratory by the Carnegie Institution for Science, and continues today with implementation of the park’s research natural area and innovations in historic preservation.
<p>Current Conditions and Trends</p>	<p>Conditions</p> <ul style="list-style-type: none"> • Overall, the general physical condition of military history resources ranges from fair to poor. • The condition of the exterior walls of Fort Jefferson has been significantly improved via extensive stabilization and restoration efforts. Continued cyclic maintenance is needed to maintain and sustain these preservation efforts. • The park has very limited staging area and space for maintenance operations and hosting contractor work, particularly in and around Fort Jefferson (e.g., masonry crews). • The park has limited on-site housing for park staff, contractors, construction teams, and visiting researchers. • The fort’s existing visitor information signage and interpretive panels are dated and aging due to the marine environment. <p>Trends</p> <ul style="list-style-type: none"> • Due to the harsh marine environment and salt air, the general physical condition of military history resources is on the decline, with an ongoing decrease in integrity. • Some elements of the historic resources have been improved; for example, the ongoing masonry restoration work of Fort Jefferson has significantly improved the exterior condition of the fort. However, the park is not keeping up with resource preservation and protection needs for all of the historic military resources. • Park staff continues to implement the ongoing stabilization and restoration of Fort Jefferson’s exterior walls and is near completion of this multiyear project. • The park is seeking alternative funding sources outside of the National Park Service (grants/donations) to facilitate resource preservation.

Fundamental Resource or Value	Military History Resources
Threats and Opportunities	<p>Threats</p> <ul style="list-style-type: none"> • The effects of climate change, most notably sea level rise and stronger tropical storms, are a serious threat to Fort Jefferson and other military history resources in the park. Related to this, recent trends in risk management thinking on “letting go” of some cultural resources due to inevitable climate change effects could also threaten Fort Jefferson’s future. • The limited facilities and costly logistics of preservation efforts in such a remote location increase the challenges of meeting cyclic and deferred maintenance needs. • While recent stabilization efforts have sustained the structural integrity of Fort Jefferson for the near-term, ongoing degradation of Fort Jefferson’s structural integrity could threaten its long-term sustainability. • Due to hurricane season, there is a limited window in which major construction and restoration projects can be done within the park and on Fort Jefferson. • The lack of on-site housing to accommodate NPS staff, contractors, and work teams is a challenge. <p>Opportunities</p> <ul style="list-style-type: none"> • Given the uniqueness of Fort Jefferson and other military history resources, there are great opportunities for further restoration and stabilization, research, visitor education, and interpretation. • Engaging with universities in the region could foster relationships that address research and preservation/restoration needs. The park can build partnerships and educational opportunities for university field schools on archeology and historic preservation programs. • Exploring options to increase fees and concession monies could help support cultural resource preservation and restoration efforts. • Engaging special interest groups associated with military history could help support education, research, and possibly preservation and restoration needs. This could also include efforts to increase donation funding from such interest groups. • Park facilities within Fort Jefferson are in need of long-range, comprehensive planning and reorganization, and there is the potential for more efficient use of administrative space and improved cultural resources management.
Data and/or GIS Needs	<ul style="list-style-type: none"> • Administrative history. • Comprehensive ethnographic overview and assessment. • Cultural landscape inventory of submerged resources. • Cultural resource stewardship assessment. • Fort Jefferson engineering assessment (need to complete). • Fort Jefferson historic structure report (update). • Comprehensive National Register of Historic Places nomination update for the entire park. • Research and data management strategy. • Special history study of military history. • Submerged resource inventory/evaluation (need to complete). • Comprehensive ethnographic overview and assessment.
Planning Needs	<ul style="list-style-type: none"> • Beach/shoreline assessment for Garden Key. • Climate change vulnerability and needs assessment. • Comprehensive interpretive plan. • Comprehensive sign plan. • Facilities management plan. • Resource stewardship strategy.

Fundamental Resource or Value	Military History Resources
<p>Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance</p>	<p>Laws, Executive Orders, and Regulations That Apply to the FRV</p> <ul style="list-style-type: none"> • Antiquities Act • Archeological and Historic Preservation Act • Archaeological Resources Protection Act • Historic Sites Act • Museum Properties Management Act, as amended • National Historic Preservation Act, as amended • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Curation of Federally-Owned and Administered Archaeological Collections" (36 CFR 79) • "Protection of Historic Properties" (36 CFR 800) • "Underwater Cultural Heritage Law Study" outlining law associated with submerged cultural heritage (prepared by the Department of the Interior – Bureau of Ocean Energy Management, 2014) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director's Orders)</p> <ul style="list-style-type: none"> • <i>NPS Management Policies 2006</i> (chapter 5) "Cultural Resource Management" • <i>NPS Museum Handbook</i>, parts I, II, and III • <i>NPS Integrated Pest Management Manual</i> • <i>NPS Damage Assessment and Restoration Handbook</i> • <i>NPS Guidelines for the Treatment of Cultural Landscapes</i> • <i>The Secretary of the Interior's Standards for the Treatment of Historic Properties</i> • <i>The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation</i> • Director's Order 14: <i>Resource Damage Assessment and Restoration</i> • Director's Order 24: <i>NPS Museum Collections Management</i> • Director's Order 28: <i>Cultural Resource Management</i> • Director's Order 28A: <i>Archeology</i> • Director's Order 80: <i>Real Property Asset Management</i> • Director's Policy Memorandum 12-02, "Applying National Park Service Management Policies in the Context of Climate Change"





Fundamental Resource or Value	Maritime Heritage Resources
<p>Related Significance Statements</p>	<ul style="list-style-type: none"> • At the nautical crossroads of the Gulf of Mexico, the Atlantic Ocean, and the Caribbean Sea, the Dry Tortugas have a rich maritime heritage that includes one of the greatest concentrations of shipwrecks in North America as well as historic navigational aids such as the Dry Tortugas Light Station on Loggerhead Key and the Garden Key Harbor Light. • Dry Tortugas National Park continues a legacy of scientific research and scholarship regarding the relationship between humans and the marine environment, a legacy that began in 1904 with establishment of the Tortugas Marine Biological Laboratory by the Carnegie Institution for Science, and continues today with implementation of the park’s research natural area and innovations in historic preservation. • The vast expanses of open sea and sky, along with the remote location of Dry Tortugas National Park, offer unique recreational opportunities and visitor experiences in a subtropical marine environment unlike any other in the national park service.
<p>Current Conditions and Trends</p>	<p>Conditions</p> <ul style="list-style-type: none"> • In general, maritime heritage resources in the park are aging with gradual degradation of condition and integrity. • Over the years, shipwreck sites have been degraded by looting. • Lighthouse structures in the park are in fair to poor condition. • There has been limited research as well as limited assessments of submerged maritime resources within the park boundary. • Submerged maritime heritage resources are not directly experienced by visitors due to incomplete inventories, assessments, and lack of sufficient park staffing/patrol capacity to protect against looting and damage. <p>Trends</p> <ul style="list-style-type: none"> • Due to the harsh marine environment, lighthouses are deteriorating rapidly. • Public interest in maritime heritage and its associated resources is increasing. • Increased intensity and frequency of hurricanes from climate change has the potential to significantly reduce data collection potential of shipwrecks through archeological site disturbance.

Fundamental Resource or Value	Maritime Heritage Resources
<p>Threats and Opportunities</p>	<p>Threats</p> <ul style="list-style-type: none"> • Looting shipwreck sites and related resources continues. The enforcement and protection of submerged maritime resources is challenging and difficult, requiring park rangers to routinely patrol park waters. • Public knowledge and new technologies increase access to shipwreck site locations perpetuating looting and damage. • Recreational use impacts and damages maritime heritage and submerged sites. • The effects of climate change on historic submerged and shoreline resources, particularly increased frequency and intensity of storm events. Related to this, trends in risk management planning to consider “letting go” of some cultural resources (such as shipwrecks and lighthouses) due to inevitable climate change effects could also threaten these resources in the future. • There is an inherent challenge and cost of preserving maritime resource sites in place, given ongoing threats from people, storms, and hurricanes. • Shoreline erosion at Loggerhead Key has a significant effect on the light station’s associated structures. • Lack of advance planning to direct what to do with newly discovered shipwreck sites and associated artifacts. • Lack of long-range resource management (including protection) and interpretive plans to consider providing more designated dive sites at submerged resource locations to expand the recreational and educational opportunities at the park. <p>Opportunities</p> <ul style="list-style-type: none"> • New research has the potential to reveal new information on maritime heritage in the park, supporting interpretive programming and telling a more complex maritime history of the Dry Tortugas and surrounding region. • Seek innovative ways to improve enforcement to protect the maritime resources and submerged sites, including multiagency law enforcement partnership assistance and remote sensing for violations not witnessed by law enforcement officers. • Seek research partnerships with other agencies and educational institutions that could expand the knowledge base of maritime heritage and the park’s submerged resources and sites. • Expand interpretive and educational programming on the human threats (e.g., looting, resource damage) to the park’s maritime heritage resources. • Engage with gateway communities on the mainland to expand awareness of maritime heritage resources and the importance of their protection. • Engage special interest groups and nonprofit organizations associated with maritime heritage to leverage outreach, awareness, and funding related to maritime heritage management, preservation treatment, and stewardship in Florida. • Complete proactive planning and develop response strategies to direct park staff in what to do when a newly discovered shipwreck site and associated artifacts are found.
<p>Data and/or GIS Needs</p>	<ul style="list-style-type: none"> • Comprehensive ethnographic overview and assessment. • Cultural landscape inventory for Loggerhead Key. • Cultural landscape inventory of submerged resources. • Cultural resource stewardship assessment. • Monitoring the condition of revegetation on Loggerhead Key. • Research and data management strategy. • Special history study of maritime heritage. • Submerged resource inventory / evaluation (need to complete).

Fundamental Resource or Value	Maritime Heritage Resources
<p>Planning Needs</p>	<ul style="list-style-type: none"> • Comprehensive interpretive plan. • Cultural landscape report for Loggerhead Key. • Cultural landscape report for submerged resources. • Resource stewardship strategy. • Climate change vulnerability and needs assessment.
<p>Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance</p>	<p>Laws, Executive Orders, and Regulations That Apply to the FRV</p> <ul style="list-style-type: none"> • Antiquities Act • Archeological and Historic Preservation Act • Archaeological Resources Protection Act • Historic Sites Act • National Historic Preservation Act, as amended • Museum Properties Management Act, as amended • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Curation of Federally-Owned and Administered Archaeological Collections" (36 CFR 79) • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director's Orders)</p> <ul style="list-style-type: none"> • NPS <i>Management Policies 2006</i> (chapter 5) "Cultural Resource Management" • NPS <i>Museum Handbook</i>, parts I, II, and III • NPS <i>Integrated Pest Management Manual</i> • NPS <i>Damage Assessment and Restoration Handbook</i> • NPS <i>Guidelines for the Treatment of Cultural Landscapes</i> • <i>The Secretary of the Interior's Standards for the Treatment of Historic Properties</i> • <i>The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation</i> • Director's Order 14: <i>Resource Damage Assessment and Restoration</i> • Director's Order 24: <i>NPS Museum Collections Management</i> • Director's Order 28: <i>Cultural Resource Management</i> • Director's Order 28A: <i>Archeology</i> • Director's Order 80: <i>Real Property Asset Management</i> • Director's Policy Memorandum 12-02, "Applying National Park Service Management Policies in the Context of Climate Change"



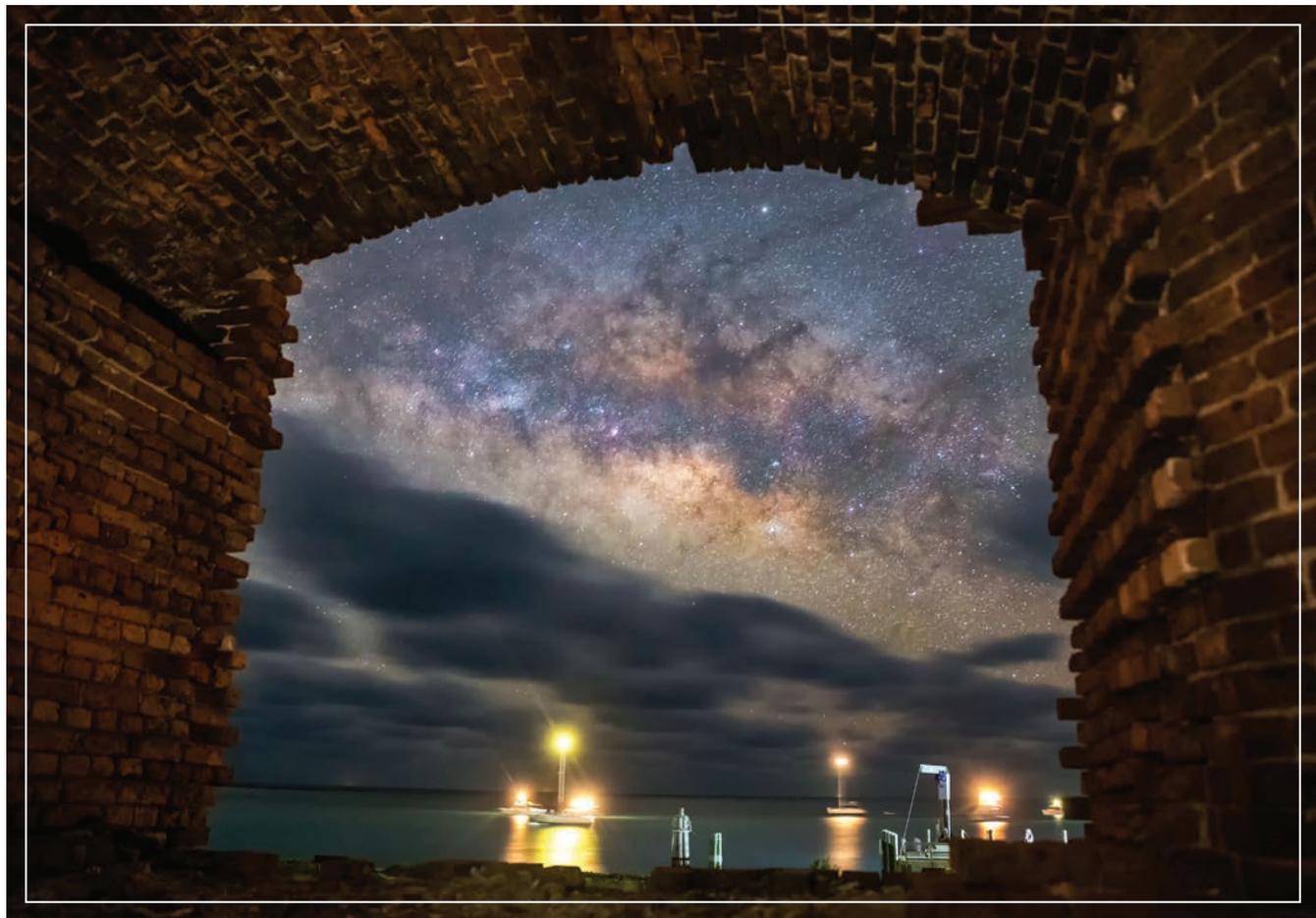


Fundamental Resource or Value	Scientific Research and Education
<p>Related Significance Statements</p>	<ul style="list-style-type: none"> • Dry Tortugas National Park continues a legacy of scientific research and scholarship regarding the relationship between humans and the marine environment, a legacy that began in 1904 with establishment of the Tortugas Marine Biological Laboratory by the Carnegie Institution for Science, and continues today with implementation of the park’s research natural area and innovations in historic preservation.
<p>Current Conditions and Trends</p>	<p>Conditions</p> <ul style="list-style-type: none"> • Research at the Dry Tortugas is primarily focused on natural resources. • The park has limited acceptable research space and facilities (e.g., laboratory) and lacks utilities and infrastructure (e.g., internet, phone lines) for hosting researchers, universities, historic preservationists, or other related scholarly activities. • The unique marine environment and dynamic natural diversity of the Dry Tortugas provides unparalleled opportunities for scientific research. • Current research has a good perspective but could use improved articulation of research vision and coordination. • Some scholarly research on shipwrecks within the park has been conducted. <p>Trends</p> <ul style="list-style-type: none"> • National trends in limited financial support for scholarly research make the regularity and integrity of research efforts less consistent. • Increased interest and requests for research projects in the park. • Historic preservation and cultural resource scientific research is developing. Fort Jefferson is becoming a living laboratory for preservation of masonry structures in a marine environment.
<p>Threats and Opportunities</p>	<p>Threats</p> <ul style="list-style-type: none"> • Declining research budgets at many institutions and organizations are threatening the consistency and integrity of research efforts. • The difficulty of communicating with outside agencies and organizations impairs scientific research collaboration. • Lack of research facilities and amenities in the park threatens to limit the extent and potential of research conducted. • Increased intensity and frequency of hurricanes from climate change has the potential to significantly reduce data collection potential of shipwrecks through archeological site disturbance.

Fundamental Resource or Value	Scientific Research and Education
Threats and Opportunities	<p>Opportunities</p> <ul style="list-style-type: none"> • Use Fort Jefferson more often for scientific research and preservation field schools. • Given the location and history of the park, capitalize on the great potential for archeology and climate change research. • Partner with other parks to study the effects of coral health on shoreline erosion. • Expand partnerships for natural and cultural resource research. • With scientific research included in the park’s enabling legislation and the unique nature of the natural and cultural resources found here, park managers could seize the unique opportunity to establish a larger research program, with small labs, researcher housing, historic preservation field schools, etc. • Demonstrate to outside agencies and political decision makers in the region how ecosystem research can facilitate and strengthen management decision making and risk analysis. • Engage the public and promote the importance of scientific research at the park through interpretive programming to create a better understanding and appreciation for these efforts. Having public support is essential to the future of science in the park and may lead to additional funding and collaborative opportunities with other organizations. • The long-term tern study that has been ongoing since the 1960s is one of the most significant seabird studies in the world. The information gathered and analyzed via this ongoing study could be used to track changes to the global ecological conditions in addition to providing information on bird population status and trends. • Continue to collaborate and work with the National Oceanic and Atmospheric Administration on the management of the Florida Keys National Marine Sanctuary including the associated Tortugas Marine Reserves and the operation of the interagency Eco-Discovery Center in Key West. • Develop historic preservation field schools. • Expand outreach to enhance public understanding that the Research Natural Area and the Tortugas Ecological Reserve will help to ensure the success of both marine and terrestrial systems while offering outstanding opportunities for scientific research and public education.
Data and/or GIS Needs	<ul style="list-style-type: none"> • Research and data management strategy. • Scholarly research to support the five-year research natural area report. • Research and analysis of historic materials and installation of baseline monitoring for cultural resources.
Planning Needs	<ul style="list-style-type: none"> • Communications plan. • Complete five-year report and new science plan for the research natural area. • Comprehensive interpretive plan.
Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance	<p>Laws, Executive Orders, and Regulations That Apply to the FRV</p> <ul style="list-style-type: none"> • Secretarial Order 3289, “Addressing the Impacts of Climate Change on America’s Water, Land, and Other Natural and Cultural Resources” <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director’s Orders)</p> <ul style="list-style-type: none"> • NPS Management Policies 2006 (§1.6) “Cooperative Conservation Beyond Park Boundaries” • NPS Management Policies 2006 (§4.1.4) “Partnerships” • NPS Management Policies 2006 (§4.2.1) “Inventory, Monitoring, and Research Studies” • NPS Management Policies 2006 (§4.7.2) “Weather and Climate” • NPS Management Policies 2006 (§7.1) “Interpretive and Educational Programs” • Director’s Order 6: <i>Interpretation and Education</i> • Director’s Order 32: <i>Cooperating Associations</i>

Fundamental Resource or Value	Sensory Experiences of the Dry Tortugas
Related Significance Statements	<ul style="list-style-type: none"> The vast expanses of open sea and sky, along with the remote location of Dry Tortugas National Park, offer unique recreational opportunities and visitor experiences in a subtropical marine environment unlike any other in the national park service.
Current Conditions and Trends	<p>Conditions</p> <ul style="list-style-type: none"> Due to the park’s remote location, high-quality, uninterrupted scenic viewsheds exist throughout the park. Baseline soundscape and night skies data have been documented for the park. Park operations infrastructure and personal property at park housing units are in the viewshed of Fort Jefferson (e.g., radio antenna, power lines, etc.). <p>Trends</p> <ul style="list-style-type: none"> The park’s administrative footprint and associated park development continue to increase, further impacting the viewsheds.
Threats and Opportunities	<p>Threats</p> <ul style="list-style-type: none"> Periodic seaplane engine noise can impact soundscapes. If park staff leave lights on at night or leave personal items on park housing porches, it can negatively impact sensory experience of the park. Military aircraft and other overhead flights, including associated sonic booms, may impact soundscapes. Cluttered administrative areas take space from visitor use areas and may impact visitor experience. Bright lights from commercial and recreational sea vessels have an impact on night skies in the park. Rubbish and debris wash up on beaches throughout the park. <p>Opportunities</p> <ul style="list-style-type: none"> Park rules should be enforced to protect sensory experiences (e.g., evening hours and noise pollution at the campsites). The park could pursue alternative energy sources for electricity generation to reduce noise pollution and other impacts from the current generator system. Expanding beach cleanup efforts (i.e., beach rubbish and debris). Improving relationships and communication with the Department of Defense could help the park reduce noise impacts from overflights and other military operations near the park. Enhance marketing of the park’s unique sensory resources to increase public awareness and appreciation of the experiential opportunities at the park (i.e., dark night skies, natural seascape scenery, and natural soundscape). Apply more visual impact mitigation strategies for all existing and future park infrastructure developments (e.g., hidden power lines, downlighting, etc.). Pursue International Dark Sky Sanctuary status.
Data and/or GIS Needs	<ul style="list-style-type: none"> Continued collection of condition data on night skies and soundscapes. Visual resource inventory. Collect comprehensive visitor use data.
Planning Needs	<ul style="list-style-type: none"> Comprehensive sign plan. Housing management plan addendum. Visitor use management plan.

<p>Fundamental Resource or Value</p>	<p>Sensory Experiences of the Dry Tortugas</p>
<p>Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance</p>	<p>Laws, Executive Orders, and Regulations That Apply to the FRV</p> <ul style="list-style-type: none"> • Clean Air Act • Clean Water Act • National Environmental Policy Act • National Park Service Concessions Management Improvement Act • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • Executive Order 12088, "Federal Compliance with Pollution Control Standards" • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director's Orders)</p> <ul style="list-style-type: none"> • NPS Management Policies 2006 (§4.1) "General Management Concepts" • NPS Management Policies 2006 (§4.1.4) "Partnerships" • NPS Management Policies 2006 (§4.6.1) "Protection of Surface Waters and Groundwaters" • NPS Management Policies 2006 (§4.7.2) "Weather and Climate" • NPS Management Policies 2006 (§4.7) "Air Resource Management" • NPS Management Policies 2006 (§4.9) "Soundscape Management" • NPS Management Policies 2006 (§4.10) "Lightscape Management" • Director's Order 47: <i>Soundscape Preservation and Noise Management</i>



Fundamental Resource or Value	Recreational Opportunities
<p>Related Significance Statements</p>	<ul style="list-style-type: none"> The vast expanses of open sea and sky, along with the remote location of Dry Tortugas National Park, offer unique recreational opportunities and visitor experiences in a subtropical marine environment unlike any other in the national park service.
<p>Current Conditions and Trends</p>	<p>Conditions</p> <ul style="list-style-type: none"> Due to the Dry Tortugas remote location, visitor access to the park is limited. Access to the park is often seen as expensive. There are limited data on overall recreational use (private boaters) at the park. Because most visitors access the park through concessioners (ferry or sea plane), the park has some control over capacity at Garden and Loggerhead Keys. The park's general management plan set visitation/capacity numbers to ensure resource protection, but also recognized the need for more formal visitor experience resource protection planning efforts. <p>Trends</p> <ul style="list-style-type: none"> Year-round visitation to the park is increasing and is becoming less seasonal.
<p>Threats and Opportunities</p>	<p>Threats</p> <ul style="list-style-type: none"> International boaters could potentially access the park and gain entry to the United States without going through immigration. This could potentially become a Homeland Security issue and needs to be properly monitored. New forms of recreation, such as kite boarding, may be incompatible uses in certain areas of the park. Kite boarding could impact roosting colonies of sea birds. Because of the cost and challenges of accessing the Dry Tortugas, there is a financial barrier for some people and a public perception that the park is only for those who can afford it. Beach trash and marine debris impact visitor experience on the beaches. <p>Opportunities</p> <ul style="list-style-type: none"> The park could market to other gateway communities, such as Marco Island or Flamingo, to improve access and options for visitors to the Dry Tortugas. Provide web-based virtual tours of the park (3-D imagery) that could engage diverse audiences who may not be able to travel to the park. Change in commercial use agreement policy may allow cost recovery for improved park management and resource protection. There are additional opportunities to explore other concessions in the park. Researching the economic value generated by park fisheries to tourism, the fishing industry, hotels, etc., could build public support for the park. This information needs to be made available to public decision makers.
<p>Data and/or GIS Needs</p>	<ul style="list-style-type: none"> Visitation data at Loggerhead Key. Collect comprehensive visitor use data. Comprehensive ethnographic overview and assessment. Economic impact analysis of the research natural area. Scholarly research to support the five-year research natural area report.
<p>Planning Needs</p>	<ul style="list-style-type: none"> Commercial services plan. Comprehensive sign plan. Comprehensive interpretive plan. Visitor use management plan.

Fundamental Resource or Value	Recreational Opportunities
<p>Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance</p>	<p>Laws, Executive Orders, and Regulations That Apply to the FRV</p> <ul style="list-style-type: none"> • Americans with Disabilities Act • Architectural Barriers Act • Architectural Barriers Act Accessibility Standards • National Park Service Concessions Management Improvement Act • Rehabilitation Act • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" <p>NPS Policy-level Guidance (NPS <i>Management Policies 2006</i> and Director's Orders)</p> <ul style="list-style-type: none"> • NPS <i>Management Policies 2006</i> (chapter 7) "Interpretation and Education" • NPS <i>Management Policies 2006</i> (chapter 8) "Use of the Parks" • NPS <i>Management Policies 2006</i> (chapter 9) "Park Facilities" • NPS <i>Management Policies 2006</i> (chapter 10) "Commercial Visitor Services" • Director's Order 6: <i>Interpretation and Education</i> • Director's Order 42: <i>Accessibility for Visitors with Disabilities in National Park Service Programs and Services</i> • NPS <i>Transportation Planning Guidebook</i>



Analysis of Other Important Resources and Values

Other Important Resource or Value	Monuments
<p>Current Conditions and Trends</p>	<p>Conditions</p> <ul style="list-style-type: none"> • There are four primary monuments at Dry Tortugas (two on Garden Key and two on Loggerhead Key). • Monument condition ranges from good to poor. However, none are part of any cyclic or preventive maintenance program. • The monuments have been determined not eligible for listing in the National Register of Historic Places. • Along with the more recognized monuments and memorials, there is also a grave marker for a U.S. Coast Guard dog on Loggerhead Key. <p>Trends</p> <ul style="list-style-type: none"> • Due to the marine environment, these monuments continue to deteriorate and require cyclical maintenance and cleaning.
<p>Threats and Opportunities</p>	<p>Threats</p> <ul style="list-style-type: none"> • Weathering and saltwater corrosiveness are two of the largest threats to the monuments at Dry Tortugas. • Vegetation growth and encroachment are obstructing the views of the monuments and impacting their structural integrity. <p>Opportunities</p> <ul style="list-style-type: none"> • Interpretation and visitor programming could be expanded to include these monuments and tell their stories in the larger context of the park and its history. • The monuments could be fully documented and recorded so the park has a record of these features. • A site bulletin or brochure could be created that focuses on the monuments and the stories of the associated people and events. • Monuments could be used for preservation training exercises on the treatment of those materials.
<p>Data and/or GIS Needs</p>	<ul style="list-style-type: none"> • Administrative history. • Further research to provide information on the driving forces or people behind the monuments and their construction/installation.
<p>Planning Needs</p>	<ul style="list-style-type: none"> • Comprehensive interpretive plan.
<p>Laws, Executive Orders, and Regulations That Apply to the OIRV, and NPS Policy-level Guidance</p>	<p>Laws, Executive Orders, and Regulations That Apply to the OIRV</p> <ul style="list-style-type: none"> • National Historic Preservation Act, as amended • Archeological and Historic Preservation Act • Clean Air Act • “Protection of Historic Properties” (36 CFR 800) • Executive Order 11593, “Protection and Enhancement of the Cultural Environment” • Secretarial Order 3289, “Addressing the Impacts of Climate Change on America’s Water, Land, and Other Natural and Cultural Resources” <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director’s Orders)</p> <ul style="list-style-type: none"> • NPS Management Policies 2006 (chapter 5) “Cultural Resource Management” • NPS Management Policies 2006 (chapter 7) “Interpretation and Education” • Director’s Order 28: <i>Cultural Resource Management</i> • Director’s Order 6: <i>Interpretation and Education</i> • Director’s Order 64: <i>Commemorative Works and Plaques</i> • <i>The Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation</i>

Other Important Resource or Value	Museum Collections
<p>Current Conditions and Trends</p>	<p>Conditions</p> <ul style="list-style-type: none"> • Currently, the museum collections are stored off-site and consolidated with other NPS South Florida parks museum collections. Limited access. Collected archeological resources are housed at the NPS Southeast Archeological Center in Tallahassee, Florida. • The museum collections include a diverse range of objects, from natural resource specimens, artifacts excavated during archeological investigations, and archival records and print materials. <p>Trends</p> <ul style="list-style-type: none"> • The museum collections continue to grow as the park continues to receive an increasing volume of artifacts from donation.
<p>Threats and Opportunities</p>	<p>Threats</p> <ul style="list-style-type: none"> • The current scope of collections is not known or fully understood by park staff at Dry Tortugas. • The current state of the collections and the number of artifacts is not fully understood by park staff at Dry Tortugas. • Due to logistical challenges and distance, access to the museum collections is limited and impacts how the park staff can use and manage this resource. <p>Opportunities</p> <ul style="list-style-type: none"> • The scope of collections statement has been provided to all park staff and is available in digital format for access when needed. Opportunities exist for education and staff training when scope is incomprehensible. • Increasing awareness of museum collections through interpretive programming, on-site exhibits, and presentations to park visitors would promote better understanding and appreciation of this resource.
<p>Data and/or GIS Needs</p>	<ul style="list-style-type: none"> • Cultural resource stewardship assessment. • Scope of collections statement (update).
<p>Planning Needs</p>	<ul style="list-style-type: none"> • Comprehensive interpretive plan.
<p>Laws, Executive Orders, and Regulations That Apply to the OIRV, and NPS Policy-level Guidance</p>	<p>Laws, Executive Orders, and Regulations That Apply to the OIRV</p> <ul style="list-style-type: none"> • Freedom of Information Act, as amended • Museum Properties Management Act, as amended • “Preservation, Arrangement, Duplication, Exhibition of Records” (44 USC 2109) • “Research Specimens” (36 CFR 2.5) • “Curation of Federally-Owned and Administered Archaeological Collections” (36 CFR 79) • “Preservation of American Antiquities” (43 CFR 3) <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director’s Orders)</p> <ul style="list-style-type: none"> • NPS Management Policies 2006 (chapter 5) “Cultural Resource Management” • Director’s Order 19: <i>Records Management</i> • Director’s Order 24: <i>NPS Museum Collections Management</i> • Director’s Order 28: <i>Cultural Resource Management</i> • Director’s Order 44: <i>Personal Property Management</i> • NPS Museum Handbook, parts I, II, and III

Other Important Resource or Value	Carnegie Institution Tortugas Marine Biological Laboratory
<p>Current Conditions and Trends</p>	<p>Conditions</p> <ul style="list-style-type: none"> • The site and remains of the laboratory are not well understood or documented. • The remaining masonry walls are rapidly deteriorating. • The archeological data collection potential is high on Loggerhead Key from the Dry Tortugas Light Station and Carnegie periods. • In-depth tangible resources exist in the volumes of science that were produced at the laboratory. <p>Trends</p> <ul style="list-style-type: none"> • The site is currently overgrown with vegetation and as time passes less and less of it remains for study and documentation.
<p>Threats and Opportunities</p>	<p>Threats</p> <ul style="list-style-type: none"> • Shoreline erosion on Loggerhead Key continues to significantly impact what is left of this site. • In the past, the laboratory has not been an overall priority for park managers and did not receive a lot of attention or funding for study or documentation. <p>Opportunities</p> <ul style="list-style-type: none"> • The park could seek partnerships (Carnegie Foundation) for participation in site documentation and possible restoration and interpretation. • The park could interpret the story and legacy of the laboratory in the context of its diverse cultural and natural resources. This historic context would support ongoing research and the role of Dry Tortugas in marine biology and scientific research. • Digital interpretation, combining historic documentation with cutting edge digital technology, could bring back the laboratory “virtually” for interpretation, education, and site comprehension.
<p>Data and/or GIS Needs</p>	<ul style="list-style-type: none"> • Comprehensive National Register of Historic Places nomination update for the entire park. • Cultural landscape inventory for Loggerhead Key. • Archeological survey and investigation of Loggerhead Key. • Additional research and documentation of the Carnegie Institution Tortugas Marine Biological Laboratory at Loggerhead Key.
<p>Planning Needs</p>	<ul style="list-style-type: none"> • Comprehensive interpretive plan. • Cultural landscape report for Loggerhead Key.

Other Important Resource or Value	Carnegie Institution Tortugas Marine Biological Laboratory
<p>Laws, Executive Orders, and Regulations That Apply to the OIRV, and NPS Policy-level Guidance</p>	<p>Laws, Executive Orders, and Regulations That Apply to the OIRV</p> <ul style="list-style-type: none"> • Archeological and Historic Preservation Act • Archaeological Resources Protection Act • National Historic Preservation Act, as amended • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Curation of Federally-Owned and Administered Archaeological Collections" (36 CFR 79) • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director's Orders)</p> <ul style="list-style-type: none"> • NPS Management Policies 2006 (chapter 5) "Cultural Resource Management" • Director's Order 14: <i>Resource Damage Assessment and Restoration</i> • Director's Order 28: <i>Cultural Resource Management</i> • Director's Order 28A: <i>Archeology</i> • NPS Museum Handbook, parts I, II, and III • NPS Damage Assessment and Restoration Handbook • NPS Guidelines for the Treatment of Cultural Landscapes • <i>The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation</i>



Identification of Key Issues and Associated Planning and Data Needs

This section considers key issues to be addressed in planning and management and therefore takes a broader view over the primary focus of part 1. A key issue focuses on a question that is important for a park. Key issues often raise questions regarding park purpose and significance and fundamental and other important resources and values. For example, a key issue may pertain to the potential for a fundamental or other important resource or value in a park to be detrimentally affected by discretionary management decisions. A key issue may also address crucial questions that are not directly related to purpose and significance, but which still affect them indirectly. Usually, a key issue is one that a future planning effort or data collection needs to address and requires a decision by NPS managers.

The following are key issues for Dry Tortugas National Park and the associated planning and data needs to address them:

- **Sustainability of Facilities and Infrastructure on Garden Key.** Currently, historic Fort Jefferson on Garden Key serves as the site for administrative and maintenance functions as well as housing for park staff, contractors, and outside researchers at Dry Tortugas National Park. Due to space limitations, this administrative area sits in the southwestern section of Fort Jefferson and includes staff housing, accommodations for outside researchers and contractors, maintenance shops, and storage areas. Housing is in historic fort casemates, historic buildings, and a modern structure. To support these facilities, a cistern and diesel generators are used to provide needed utilities. This infrastructure requires ongoing maintenance and cyclical repair to keep these systems operational in a corrosive marine environment. The remote location of the park (roughly 70 miles from Key West) increases both the challenges and costs of maintaining these facilities and existing infrastructure because supplies and materials must be brought to the park by boat.

The park staff recognizes that a new course of action is needed to address long-term sustainability of facilities while supporting administrative and maintenance needs for Dry Tortugas National Park. The park's long-range interpretive plan already calls for moving administrative facilities out of the significant cultural spaces adjacent to the Sally Port. At a more comprehensive level, cost-effective solutions to meet sustainability goals should consider: developing strategies to effectively house staff, contractors, and outside researchers; exploring the efficient use of existing areas in the park for offices, storage, and meeting spaces; limiting the impacts on the historic integrity of Fort Jefferson and its parade ground; limiting impacts on the cultural landscape and resources and values associated with visitor sensory experiences; and addressing the long-term implications of climate change on existing and proposed facilities and infrastructure on Garden Key. A comprehensive facilities management plan was identified as the highest priority need for the park and would provide guidance on the functional use of space and make recommendations about the appropriate size and configuration of facilities and infrastructure in Fort Jefferson. An integrated park improvement plan was also identified to organize as well as optimize existing park Project Management Information System (PMIS) projects as well as the prioritization of line-item construction projects.



- Maintaining and Building Advocacy for the Research Natural Area.** Developed through the general management planning process for Dry Tortugas National Park and recognized through the creation of a science plan with the Florida Fish and Wildlife Conservation Commission, the research natural area is an innovative approach to the broader stewardship of not only ecosystems in the park but the entire marine ecology of the State of Florida and beyond. As a designated area that protects marine species from fishing activities and serves as a refuge for both spawning and recovery, the research natural area promotes sustainable and healthy fish populations that are the backbone of the larger multibillion-dollar fishing industry in the State of Florida. But as a designated area, scientific research, law enforcement, education, and community outreach are all essential to its long-term success and support. To maintain its designation as a research natural area, ongoing scientific research, data collection, and documentation of its effectiveness are needed. The science plan developed collaboratively with the Florida Fish and Wildlife Conservation Commission requires that a scientific report be submitted every five years outlining the research natural area’s impacts and effects on larger fish and marine species populations. Collecting data and developing this report are essential to the continued designation of the research natural area and maintaining support from the State of Florida. Without scholarly research and scientific evidence that supports the effectiveness of the research natural area, this designation could be rescinded.
- Access and Visitation.** Because of its remote location, access to Dry Tortugas National Park is challenging, both physically and financially. Currently, two commercial services (ferry service and seaplane service) provide visitors with access to Garden Key and Fort Jefferson. Both of these commercial services operate out of Key West, Florida, which in itself can be a challenge to get to. Visitors may also access the park by private boat or charter. The costs of these services may be prohibitive for many families, limiting who has access to the park. Although the challenges of access may be impacting visitor experiences, limited access has been an effective tool in managing visitor capacity and overall impacts on resources in the park. Still, to build broader advocacy for Dry Tortugas, addressing issues of access and exploring ways to connect the park to a larger audience is essential to its future.

To fully understand the issues of access and visitation to Dry Tortugas National Park, the park’s general management plan requires development of a visitor use management plan. Through the foundation planning process, this was identified as a high priority need. This visitor use management plan would make recommendations for addressing issues of capacity and access while balancing overall impacts to visitor experiences and resource protection. Also, the park has fielded concession inquiries from other businesses in outlying gateway communities such as Miami and Homestead. Exploring the feasibility of other potential commercial services in easier-to-access locations may provide more options for visitors and improve connectivity to the park. A commercial services plan would assess both existing and potential commercial services while making recommendations on the appropriate and sustainable levels of services that could be offered.



- **Climate Change.** Climate change, sea level rise, ocean acidification, and extreme weather events pose increasing challenges for coastal NPS park units agencywide. Because of its location in the Straits of Florida, Dry Tortugas National Park and Fort Jefferson in particular have become symbols of the importance of resource stewardship in the face of climate change. Climate change is not only a significant threat to the park's cultural resources but to the diverse natural ecosystems that it protects. Unfortunately, there are many misperceptions about the vulnerability of the Dry Tortugas to climate change. It is essential that management decisions about the future of the park and its many resources be informed by scholarly climate research and by appropriate data specific to the park. A climate change vulnerability assessment would help provide these data and would assist in identifying what the next important steps are for a climate change needs assessment. A climate change needs assessment would provide guidance for future climate change research and development of strategies to address this issue. Education and outreach, both internally in the National Park Service and externally with the general public, are essential to informing individuals about the potential effects of climate change on park resources. A communications plan focused on the role of climate change at Dry Tortugas was identified as a high priority need to address misperceptions and ensure that accurate science-based information influences the future of the park.
- **Immigration and Law Enforcement.** Sitting at the confluence of international shipping channels between the Atlantic Ocean, Gulf of Mexico, and Caribbean Sea, Dry Tortugas National Park has faced issues related to illegal immigration and homeland security. Although the islands of the Dry Tortugas are remote and are not an official point of entry into the United States, they are still considered U.S. soil and are a destination for many seeking to enter the United States from Cuba and various countries in Central America. Ensuring that the protected Dry Tortugas harbor is a safe haven for many private recreational boaters on the open ocean, while patrolling park waters for illegal activities like smuggling is a significant challenge for law enforcement. The park identified the need to develop a more formal immigration response plan to outline strategies for working with other enforcement agencies.

Planning and Data Needs

To maintain connection to the core elements of the foundation and the importance of these core foundation elements, the planning and data needs listed here are directly related to protecting fundamental resources and values, park significance, and park purpose, as well as addressing key issues. To successfully undertake a planning effort, information from sources such as inventories, studies, research activities, and analyses may be required to provide adequate knowledge of park resources and visitor information. Such information sources have been identified as data needs. Geospatial mapping tasks and products are included in data needs.

Items considered of the utmost importance were identified as high priority, and other items identified, but not rising to the level of high priority, were listed as either medium- or low-priority needs. These priorities inform park management efforts to secure funding and support for planning projects.

Planning Needs – Where A Decision-Making Process Is Needed			
Related to an FRV, OIRV, or Key Issue?	Planning Needs	Priority (H, M, L)	Notes
FRV	Communications plan	H	A communications plan would provide guidance in coordinating and sharing information related to scientific research and scholarship at the Dry Tortugas. The communications plan would address key issues at the park such as misconceptions about climate change at the Dry Tortugas. The communications plan would also outline outreach strategies for ensuring that ongoing marine research and innovations in the management of coastal cultural resources are used to inform decision makers.
FRV, Key Issue	Complete five-year report and new science plan for research natural area	H	A status report on the success of the marine research zone is required per the management agreement with the State of Florida. This report and proving the effectiveness of the marine research zone is essential to maintain this area as a protected area within the park. This status report must be completed every five years. The new science plan will establish new or restate existing performance measures to ensure ongoing monitoring of research natural area efficacy.
FRV, Key Issue	Facilities management plan	H	A facilities management plan would provide guidance and direction for the administrative facilities and infrastructure on Garden Key and make recommendations for the appropriate level of facilities (staff housing, storage areas, and administrative/work space) needed on the island. It would consider the benefits of making additional cultural resources available for visitor interpretation by relocating administrative facilities to nonpublic areas. This plan could also address fiscal as well as sustainability challenges facing the park.
FRV	Resource stewardship strategy	H	This plan would identify the current status and related conditions of both natural and cultural resources at the park. Based on these conditions, stewardship strategies would be developed to provide guidance for these priority resources. The development of the resource stewardship strategy would also influence other resource-specific planning and data collection objectives at Dry Tortugas.
FRV, Key Issue	Visitor use management plan	H	Identified in the general management plan as a critical need for the park, the visitor use management plan would manage visitor use by aligning visitor opportunities and experiences with the park's purpose and providing direction for protecting fundamental resources and values while addressing capacity and visitor impacts. Proactively planning for visitor use would support more responsive management that would maximize the ability of the National Park Service to encourage access, connect visitors to key visitor experiences, and manage visitor use.
FRV	Comprehensive sign plan	H	A comprehensive sign plan would provide guidance for wayfinding signage and interpretive wayside signage throughout the park and in particular Fort Jefferson. These signs would provide important visitor safety and directional information, inform visitors about the history and significance of resources in the park, and strengthen NPS identity and presence throughout the entire park.

Planning Needs – Where A Decision-Making Process Is Needed			
Related to an FRV, OIRV, or Key Issue?	Planning Needs	Priority (H, M, L)	Notes
FRV, Key Issue	Climate change vulnerability and needs assessment	H	Climate change presents significant risks and challenges to park resources, infrastructure, and visitor experience. This sequential set of assessments would first assess vulnerability of park natural and cultural resources and assets to climate change (from effects such as temperature rise, increasing storm frequency/intensity, sea level rise, and ocean acidification). Subsequently, the climate change needs assessment would translate climate change data and knowledge generated from the vulnerability assessment into action strategies and responses for the park to implement.
FRV, Key Issue	Commercial services plan	M	This plan would describe in detail the types and levels of activities and services that could be provided and how they can be best managed by the National Park Service in the most effective and efficient manner. In recent years, there has been increasing interest in providing additional services at Dry Tortugas, but this may impact park capacity issues. The visitor use management plan would influence the development of a commercial services plan for the park.
FRV, OIRV	Comprehensive interpretive plan	M	A comprehensive interpretive plan would include updating the park's existing long-range interpretive plan (2003) and would also include an annual implementation plan and interpretive database. This plan would form the overall vision and basis for decision making relating to interpretive programming at the park. This comprehensive planning effort would also take into account the Eco-Discovery Center, an interagency visitor center in Key West, Florida.
FRV	Coral restoration plan	M	A long-term coral restoration plan is needed to help the park maintain overall coral and marine ecosystem health. Given the challenges of coral bleaching and projected climate change scenarios, planning for coral reef restoration is important.
FRV, OIRV	Cultural landscape report for Loggerhead Key	M	A cultural landscape report would build on data from the cultural landscape inventory and would provide treatment recommendations for the Loggerhead Key cultural landscape. In light of the rapidly changing shorelines and climate change projections for increased storm intensity and frequency, this report would help minimize the loss of Loggerhead Key's important characteristics, features, and materials (which generally have been more threatened or lost more rapidly than other areas). Analysis of the landscape would provide an understanding of past features and conditions in order to inform future management decisions about the landscape.
FRV	Fisheries management plan	M	Based on recommendations from the resource stewardship strategy process and the research natural area report, a fisheries management plan would provide guidance for sustainable fish populations in the park. Because fishing is among the many forms of water-based recreation sought by a significant number of park visitors, a fishery management plan should be developed to help inform management decisions around this activity.

Planning Needs – Where A Decision-Making Process Is Needed			
Related to an FRV, OIRV, or Key Issue?	Planning Needs	Priority (H, M, L)	Notes
Key Issue	Integrated park improvement plan	M	An integrated park improvement plan would provide a strategic planning framework for organizing as well as optimizing existing park PMIS projects as well as the prioritization of line-item construction projects.
FRV	Avian resources management plan	M	Based on recommendations from the resource stewardship strategy process, an avian resources management plan would provide guidance and set objectives for the protection of critical habitat and nesting locations within the park for migratory birds and sea birds. The roseate tern is a key species that this plan would address.
FRV	Sea turtle management plan	M	Based on recommendations from the resource stewardship strategy process, a sea turtle management plan would provide guidance and set objectives for the protection of critical sea turtle habitat and nesting locations in the park.
FRV	Beach/shoreline assessment for Garden Key	L	The beach/shoreline assessment would focus on Garden Key, providing analysis data on resource conditions that would help inform potential management strategies to achieve sustainable beaches and shorelines.
FRV	Cultural landscape report for submerged resources	L	A cultural landscape report would build on data from the cultural landscape inventory and would provide innovative recommendations for dealing with submerged cultural landscapes. It would help minimize loss of their important characteristics, features, and materials. Analysis of submerged resources on a landscape scale would inform future management decisions about these resources.
FRV	Housing management plan addendum	L	An addendum to the housing management plan would build off of recommendations from the facilities management plan to address the appropriate level of staff housing on Garden Key.
Key Issue	Immigration response plan	L	Because of the park’s unique geographic location, there is a need to develop a formal response plan to address immigration. In the past, Cuban refugees have landed on the Dry Tortugas and this requires coordination with U.S. Customs and Border Protection. This response plan would formalize procedures for dealing with immigration related issues.
FRV	Water resources management plan	L	A water resources management plan would serve as a guide for long-term monitoring of water resources in the natural environment of the park, and provide management direction for the water resources within the natural environment.



Data Needs – Where Information Is Needed Before Decisions Can Be Made

Related to an FRV or OIRV?	Data and GIS Needs	Priority (H, M, L)	Notes, Including Which Planning Need This Data Need Relates To
FRV	Comprehensive ethnographic overview and assessment	H	A comprehensive ethnographic overview and assessment would provide baseline data and documentation of ethnographic resources at Dry Tortugas National Park. This effort would explore both military and maritime history as well as subsistence fishing in the Dry Tortugas.
FRV	Economic impact analysis of the research natural area	H	A formal economic impact analysis of the impacts of the research natural area on the coastal fisheries industry as well as sport fishing industry would provide valuable data in understanding its effectiveness and benefits to the entire State of Florida.
FRV	Fort Jefferson historic structure report (update)	H	An update to the Fort Jefferson historic structure report is needed to provide historic information and present treatment alternatives for long-term stewardship, maintenance, and sustainability of the cultural resources on Garden Key, specifically Fort Jefferson and its associated buildings and structures. This report would assist park managers in making informed decisions related to the scale, density, and type of operational/administrative facilities including housing and their effects on the integrity of the cultural landscape, the historic resources, and the scenic and sensory experiences of visiting Dry Tortugas National Park.
FRV	Long-term monitoring of island shorelines and GPS elevations	H	Long-term monitoring of island shorelines would provide needed data to better understand sea level rise as well as shoreline dynamics and annual island geomorphology changes. Updated satellite imagery on the shape and size of islands could be used as well as other techniques like LiDAR scanning of islands and key areas of study such as turtle habitat.

Data Needs – Where Information Is Needed Before Decisions Can Be Made			
Related to an FRV or OIRV?	Data and GIS Needs	Priority (H, M, L)	Notes, Including Which Planning Need This Data Need Relates To
FRV	Research and data management strategy	H	Due to its unique location, Dry Tortugas has been a focal point for scientific research for both natural and cultural resources for many years. GIS mapping data, and how these are gathered, shared, and used, is an important factor in the development of this strategy. The park atlas may also be a valuable tool in this process. This effort would include coordinating research efforts within the bureau, as well as other federal, state, and local agencies. Also, nonprofit organizations, universities, and institutes of higher learning all play an important role in data collection and research, and need to be part of this larger management strategy. All of these external agencies and organizations could be key contributors to a centralized park GIS database that could help inform NPS management of the park.
FRV	Scholarly research to support the five-year research natural area report and new science plan	H	Per agreements with the State of Florida, Dry Tortugas National Park must provide a five-year report on the effectiveness of the designated research natural area on supporting regional marine life populations. The new science plan would establish new or restate existing performance measures to ensure ongoing monitoring of research natural area efficacy. In order to inform and develop this report and science plan, data and research on the research natural area must be conducted on a regular basis.
FRV	Water quality monitoring	H	Water quality is essential to overall species diversity and the health of reefs at Dry Tortugas National Park. Park staff recognizes the need to track trends in water temperatures, acidification, and water clarity for species health in the face of climate change.
FRV	Collect comprehensive visitor use data	H	An understanding of visitor uses, visitation numbers, and associated trends is essential to park management decision making, visitor experience, and resource protection. The park's general management plan also calls for monitoring impacts on resources from visitor use, including effects on coral reefs from anchoring or concentrated visitor use at mooring buoys. These data would also be integral to the development of a visitor use management plan (as identified as a high priority planning need).
OIRV	Archeological survey and investigation of Loggerhead Key	H	An archeological survey and investigation would be likely to reveal valuable information about early American science as well as maritime heritage in the Dry Tortugas. It would also provide baseline documentation and evaluate the condition of archeological resources on Loggerhead Key.
FRV	Fort Jefferson engineering assessment (need to complete)	H	An engineering assessment may be done in conjunction with the historic structure report for Fort Jefferson and would be a valuable tool in understanding the structural stability of the fort in relation to current and potential future uses as well as the potential impacts of climate change.

Data Needs – Where Information Is Needed Before Decisions Can Be Made			
Related to an FRV or OIRV?	Data and GIS Needs	Priority (H, M, L)	Notes, Including Which Planning Need This Data Need Relates To
FRV	Expand the collection and analysis of bird data	M	Expanding the ongoing monitoring and collection of data of bird populations at the park is essential to understanding and protecting bird species. Bird counts, tagging birds, and monitoring the arrival and departure of migratory birds are key strategies in this data collection process. This information must also be analyzed and reports developed to inform management decisions at the park.
FRV, OIRV	Cultural resource stewardship assessment	M	Similar to a state of the park report but focused primarily on cultural resources, a cultural resource stewardship assessment would provide baseline data on the current condition of all cultural resources at the park. These data would be used to develop a resource stewardship strategy for Dry Tortugas National Park.
FRV	Natural resource condition assessment	M	Similar to a state of the park report but focused primarily on natural resources, a natural resource condition assessment would provide baseline data on the current condition of all natural resources at the park. These data would be used to develop a resource stewardship strategy for Dry Tortugas National Park.
FRV	Lobster surveys and modeling	M	A lobster survey would provide baseline data on overall species health and populations in the park. These data could then be used to model population projections and monitor lobster populations in the future.
FRV	Submerged resource inventory/evaluation (need to complete)	M	Completing a comprehensive inventory of submerged resources at the park is needed to establish baseline documentation of these resources and would include locating and mapping them. These data would support and inform the possible development of both cultural landscape inventories and cultural landscape reports for submerged resources at Dry Tortugas National Park.
FRV	Visitation data at Loggerhead Key	M	Baseline visitor information and recording the number of visitors to Loggerhead Key is needed to understand how the island is used by the public and who is accessing it. This information would inform management decisions related to carrying capacity and visitor use at Loggerhead Key.
FRV, OIRV	Cultural landscape inventory for Loggerhead Key	M	This inventory would provide a physical history, site maps, analysis, evaluation of integrity, and a condition assessment for Loggerhead Key. The information developed for the cultural landscape inventory would be used in planning, compliance, preservation, and interpretation and would be the first step in developing a full cultural landscape report for Loggerhead Key.
FRV	Fish and shellfish population monitoring and/or mapping	M	Population data and associated mapping would inform fisheries and other aquatic resource management planning in addition to management activities associated with a resource stewardship strategy (a high priority planning need).

Data Needs – Where Information Is Needed Before Decisions Can Be Made			
Related to an FRV or OIRV?	Data and GIS Needs	Priority (H, M, L)	Notes, Including Which Planning Need This Data Need Relates To
FRV	Modify sooty tern and brown noddy count methodology to account for the “new” second colony	M	Modification to count methodology would discern data on new colony, which would inform bird management planning and management activities associated with a resource stewardship strategy (a high-priority planning need).
FRV, OIRV	Comprehensive National Register of Historic Places nomination update for the entire park	M	A National Register of Historic Places nomination was completed for Fort Jefferson in 1970. Since then, additional research has improved understanding of the entire park and its many cultural resources, so this nomination needs updating to reflect the current understanding of the national significance of park resources. This update needs to include the Carnegie Institution Tortugas Marine Biological Laboratory, archeological resources, and submerged cultural resources throughout the park.
FRV	Sea turtle research and expand nesting data collection	L	Additional research and data are needed to inform the management of sea turtle populations in the park. In order to better understand these populations and their use of habitat within the park, additional satellite tags to follow sea turtle movements/migration could be used. Expanding the collection of nesting data for all islands within the park is also an important part of this research.
OIRV	Additional research and documentation of the Carnegie Institution Tortugas Marine Biological Laboratory at Loggerhead Key	L	The park recognized the need to conduct additional research into the history and site of the Carnegie Institution Tortugas Marine Biological Laboratory. This would include an archival search as well as documentation of the physical remains of the laboratory on Loggerhead Key.
FRV, OIRV	Administrative history	L	An administrative history for Dry Tortugas National Park would document and record the historic development and management of the park. This information would be a valuable resource for park managers in understanding past management decisions related to the park and its resources.
FRV	Cultural landscape inventory of submerged resources	L	This cultural landscape inventory would tier off the completed submerged resource inventory by providing a physical history, site maps, analysis, evaluation of integrity, and a condition assessment at a landscape scale of submerged resources. The information developed for the cultural landscape inventory would be used in planning, compliance, preservation, and interpretation and would be the first step in developing a full cultural landscape report for submerged resources.
FRV	Monitoring the condition of revegetation on Loggerhead Key	L	Following the removal of Australian pine on Loggerhead Key, additional condition monitoring is needed to assess the effectiveness of invasive removal and revegetation of the island with native plant species. These data would inform if similar efforts should be undertaken on other keys.
OIRV	Scope of collections statement (update)	L	The scope of collections statement for Dry Tortugas National Park needs to be reviewed and updated to ensure that the museum collections support the purpose of the park. Given limitation of storage, it is important that the scope of collections statement manages the appropriate development of the park’s overall museum collections.

Data Needs – Where Information Is Needed Before Decisions Can Be Made			
Related to an FRV or OIRV?	Data and GIS Needs	Priority (H, M, L)	Notes, Including Which Planning Need This Data Need Relates To
FRV	Special history study of maritime heritage	L	A special history study would provide scholarly research and a comprehensive reference tool about the maritime history associated with the Dry Tortugas. This study would be a valuable guide for the future management and interpretation of maritime heritage resources at the park.
FRV	Special history study of military history	L	A special history study would provide scholarly research and a comprehensive reference tool about the military occupation and use of the Dry Tortugas. This study would be a valuable guide for the future management and interpretation of military related resources.
OIRV	Special history study or research on four monuments in the park	L	Further research on these monuments would provide information on the driving forces or people behind the monuments and their construction and installation, which could enhance visitor experience, education, and interpretation opportunities.
FRV	Study sensitivity of corals to ocean acidification, temperature change, and sea level rise	L	Given the broad impacts of projected climate change on sea-level rise, ocean acidification, and temperature, studying the impacts of these factors on corals in the park is needed. Coral reefs also protect terrestrial habitat and understanding this impact would inform understanding of wave energy on shoreline erosion. These data are essential to making informed decisions about the management of these reefs in the future.
FRV	Survey reefs after bleaching events	L	Surveying and collecting data about the impacts of bleaching events on coral reefs is needed to determine overall mortality rates on coral populations in the park.
FRV	Visual resource inventory	L	A visual resource inventory would document and provide baseline information on the current condition of park viewsheds, allowing future monitoring over time and continued or improved preservation of significant or primary viewsheds.
FRV	Continued collection of condition data on night skies and soundscapes	L	Continued data collection on night skies and soundscape condition would provide a means to evaluate the condition of the visitors' sensory experiences in the park, and thus would inform a visitor use management plan (a high-priority planning need).
FRV	Collect population counts for masked boobies	L	Population data would inform bird management planning and management activities associated with a resource stewardship strategy (a high-priority planning need).
FRV	Research and analysis of historic materials and installation of baseline monitoring for cultural resources	L	Given the corrosive marine environment of the Dry Tortugas, conducting research and analysis of historic materials and collecting baseline monitoring data would provide valuable information for future historic preservation and treatment of cultural resources in the park.

Part 3: Contributors

Dry Tortugas National Park / Everglades National Park

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Appendixes

Appendix A: Enabling Legislation and Legislative Acts for Dry Tortugas National Park

3430

PROCLAMATIONS, 1934, 1935.

FORT JEFFERSON NATIONAL MONUMENT—FLORIDA

January 4, 1935.

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

A PROCLAMATION

Fort Jefferson National Monument, Fla. Preamble.

WHEREAS it appears that the public interest would be promoted by revoking Executive Order No. 779, of April 6, 1908, creating the Dry Tortugas Keys Reservation; and by revoking (1) the Executive order of September 17, 1845, creating the Dry Tortugas Military Reservation, insofar as it relates to the Dry Tortugas group of islands, and (2) Executive Order No. 1613, of September 23, 1912, insofar as it closes the harbor of Tortugas, Florida, to navigation, and (3) Executive Order No. 5281, of February 17, 1930, insofar as it forbids air navigation over the said harbor; and by including the Dry Tortugas group of islands within a national monument for the preservation of Fort Jefferson and the historic and educational interest contained in such area:

Revoking designated Executive orders relating to the Dry Tortugas group of islands.

NOW, THEREFORE, I, FRANKLIN D. ROOSEVELT, President of the United States of America, do hereby revoke the aforesaid Executive Order No. 779, of April 6, 1908; and I do hereby revoke (1) the aforesaid Executive order of September 17, 1845, insofar as it relates to the Dry Tortugas group of islands, and (2) Executive Order No. 1613, of February 23, 1912, insofar as it closes the harbor of Tortugas, Florida, to navigation, and (3) Executive Order No. 5281, of February 17, 1930, insofar as it forbids air navigation over said harbor.

National monument set apart. Vol. 34, p. 225. U. S. C., p. 651.

And under and by virtue of the authority vested in me by section 2 of the act of June 8, 1906 (34 Stat. 225; U. S. C., title 16, sec. 431), I do proclaim that, subject to all existing rights and to the existing reservation for lighthouse purposes affecting a portion thereof, the area indicated on the diagram hereto attached and forming a part hereof is hereby reserved from all forms of appropriation under the public-land laws and set apart as the Fort Jefferson National Monument.

Warning is hereby expressly given to all unauthorized persons not to appropriate, injure, destroy, deface, or remove any feature of this monument and not to locate or settle upon any of the lands reserved by this proclamation.

Reserved from settlement.

The Director of the National Park Service, under the direction of the Secretary of the Interior, shall have the supervision, management, and control of this monument as provided in the act of Congress entitled "An Act to establish a National Park Service, and for other purposes", approved August 25, 1916 (ch. 408, 39 Stat. 535; U. S. C., title 16, secs. 1 and 2), and acts additional thereto or amendatory thereof.

Supervision.

Vol. 39, p. 535. U. S. C., p. 691.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the United States to be affixed.

DONE at the city of Washington this fourth of January, in the year of our Lord nineteen hundred and thirty-five, and of [SEAL] the Independence of the United States of America the one hundred and fifty-ninth.

FRANKLIN D. ROOSEVELT

By the President:
CORDELL HULL
Secretary of State.

[No. 2112]

TITLE II—DRY TORTUGAS NATIONAL PARK

Florida.

SEC. 201. ESTABLISHMENT OF DRY TORTUGAS NATIONAL PARK.

16 USC 410xx.

(a) **IN GENERAL.**—In order to preserve and protect for the education, inspiration, and enjoyment of present and future generations nationally significant natural, historic, scenic, marine, and scientific values in South Florida, there is hereby established the Dry Tortugas National Park (hereinafter in this title referred to as the “park”).

(b) **AREA INCLUDED.**—The park shall consist of the lands, waters, and interests therein generally depicted on the map entitled

106 STAT. 3440

PUBLIC LAW 102-525—OCT. 26, 1992

“Boundary Map, Fort Jefferson National Monument”, numbered 364-90,001, and dated April 1980 (which is the map referenced by section 201 of Public Law 96-287). The map shall be on file and available for public inspection in the offices of the National Park Service, Department of the Interior.

16 USC 431 note.

(c) **ABOLITION OF MONUMENT.**—The Fort Jefferson National Monument is hereby abolished.

16 USC 410xx-1.

SEC. 202. ADMINISTRATION.

(a) **IN GENERAL.**—The Secretary shall administer the park in accordance with this title and with the provisions of law generally applicable to units of the national park system, including the Act entitled “An Act to establish a National Park Service, and for other purposes”, approved August 25, 1916 (39 Stat. 535; 16 U.S.C. 1, 2, 3, and 4).

(b) **MANAGEMENT PURPOSES.**—The park shall be managed for the following purposes, among others:

(1) To protect and interpret a pristine subtropical marine ecosystem, including an intact coral reef community.

(2) To protect populations of fish and wildlife, including (but not limited to) loggerhead and green sea turtles, sooty terns, frigate birds, and numerous migratory bird species.

(3) To protect the pristine natural environment of the Dry Tortugas group of islands.

(4) To protect, stabilize, restore, and interpret Fort Jefferson, an outstanding example of nineteenth century masonry fortification.

(5) To preserve and protect submerged cultural resources.

(6) In a manner consistent with paragraphs (1) through (5), to provide opportunities for scientific research.

16 USC 410xx-2.

SEC. 203. LAND ACQUISITION AND TRANSFER OF PROPERTY.

(a) **IN GENERAL.**—Within the boundaries of the park the Secretary may acquire lands and interests in land by donation or exchange. For the purposes of acquiring property by exchange with the State of Florida, the Secretary may, notwithstanding any other provision of law, exchange those Federal lands which were deleted from the park by the boundary modifications enacted by section 201 of the Act of June 28, 1980 (Public Law 96-287), and which are directly adjacent to lands owned by the State of Florida outside of the park, for lands owned by the State of Florida within the park boundary.

(b) **UNITED STATES COAST GUARD LANDS.**—When all or any substantial portion of lands under the administration of the United States Coast Guard located within the park boundaries, including Loggerhead Key, have been determined by the United States Coast Guard to be excess to its needs, such lands shall be transferred directly to the jurisdiction of the Secretary for the purposes of this title. The United States Coast Guard may reserve the right in such transfer to maintain and utilize the existing lighthouse on Loggerhead Key in a manner consistent with the purposes of the United States Coast Guard and the purposes of this title.

(c) **ADMINISTRATIVE SITE.**—The Secretary is authorized to lease or to acquire, by purchase, donation, or exchange, and to operate incidental administrative and support facilities in Key West, Florida, for park administration and to further the purposes of this title.

SEC. 204. AUTHORIZATION OF APPROPRIATIONS.

There are hereby authorized to be appropriated such sums as may be necessary to carry out the purposes of this title. Any funds available for the purposes of the monument shall be available for the purposes of the park, and authorizations of funds for the monument shall be available for the park.

Appendix B: Submerged Lands Management Agreement with the State of Florida

Management Agreement for Certain Submerged Lands in Monroe County, Florida, located within Dry Tortugas National Park

WHEREAS, the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (the "Board of Trustees") claims title to certain sovereignty submerged lands ("submerged lands") in Monroe County, Florida that are located within Dry Tortugas National Park (the "Park"); and

WHEREAS, the Board of Trustees of the Internal Improvement Trust Fund may authorize the management of submerged lands by virtue of Chapter 253.03, Florida Statutes; and

WHEREAS, in 1845 the United States reserved the islands, keys and banks comprising the group of islands known as the Dry Tortugas for military purposes which were in 1935 established by Executive Order as Fort Jefferson National Monument; and

WHEREAS, the United States also claims title to the submerged lands; and

WHEREAS, the Congress in 1992 established the Park, consisting generally of the lands, waters and interests therein that were formerly located within the boundary of Fort Jefferson National Monument, for the purposes of preserving and protecting a pristine subtropical marine ecosystem, including an intact coral reef community; populations of fish and wildlife; the pristine natural environment of the Dry Tortugas group of islands; Fort Jefferson; and submerged cultural resources; and

WHEREAS, the Congress directed and authorized the National Park Service (the "Service") to manage the Park by virtue of 16 U.S.C. §1 *et seq.*, for public purposes consistent with applicable laws and regulations governing the management of units of the National Park System and to provide for the preservation, protection, education, inspiration, and enjoyment of the park for present and future generations; and

WHEREAS, the Service has issued, after extensive public involvement and collaboration with State and Federal agencies, a management plan for the Park that protects important coral reef habitat and other resources within the Park and provides for improved visitor experiences; and

WHEREAS, the Board of Trustees and United States reserve all claims either may have to title to the submerged lands; and

WHEREAS, the Board of Trustees and the Service (collectively known as the "Parties") mutually agree that the submerged lands shall be managed in a manner to ensure the protection and preservation of the significant natural and cultural resources located therein;

NOW, THEREFORE, THE PARTIES jointly enter into this agreement whereby the Service will: (i) issue special regulations to implement the management plan for the Park that will provide for the proper use, management, governance, and protection of persons, property, and natural and cultural resources within the Park to fulfill its statutory purposes and to provide for the enjoyment of its resources so as to leave them unimpaired for the enjoyment of future generations; and (ii) manage the submerged lands, described in Exhibit "A" attached hereto and made a part hereof, for so long as the Park remains an authorized unit of the National Park System on the following terms and conditions:

1. **MANAGEMENT OF THE SUBMERGED LANDS:** The Service will manage the submerged lands consistent with federal law, regulation and policies, including the final General Management Plan Amendment/Final Environmental Impact Statement (hereinafter "General Management Plan"), attached as Exhibit B, and applicable implementing regulations including special regulations pursuant to 36 CFR Part I et seq., governing the management of lands within the National Park System so that the submerged lands will be preserved and protected unimpaired for present and future generations. To the extent the Service wishes to update, revise, or amend Exhibit B, the Service will invite the appropriate state agencies to participate as cooperating agencies for the purposes of National Environmental Policy Act. In preparing special regulations pursuant to 36 CFR Part I et seq., or any updates thereto, to implement Exhibit B, the Service will consult with and obtain the written concurrence from the Board of Trustees on that portion of the regulations pertaining to the management of submerged lands. The Service shall submit for review to the Florida Fish and Wildlife Conservation Commission any proposed special regulations or amendments thereto. Nothing in this Agreement shall be construed to affect, expand, or diminish the authority of the Florida Fish and Wildlife Conservation Commission in the exercise of its jurisdiction under Article IV, Section 9 of the Florida Constitution with respect to marine fish.
2. **MANAGEMENT PLAN STATUS REPORT:** At least every five years, the Service shall submit a report on the status, activities, and conditions of the sovereignty submerged lands within the Park to the Board of Trustees.
3. **PROPERTY RIGHTS:** ~~This Agreement does not convey any title interest to the area described in Exhibit A attached hereto and does not serve as an admission by either Party in matters relating to the title of the submerged lands.~~
4. **OIL & GAS LEASING PROHIBITION:** All leasing, exploration or development of mineral resources, including oil and gas or other petroleum products, shall be prohibited in the submerged lands that are the subject of this agreement.

5. TERM: This Agreement shall commence upon the date of the last signatory hereto and shall remain in effect for so long as the submerged lands are used for the purposes of a national park.
6. TERMINATION: This Agreement may be terminated only: (i) by the Parties upon mutual written agreement between the Secretary of the Interior and the Board of Trustees, or their respective designees; (ii) by the Board of Trustees upon thirty days notice to the Secretary of the Interior if the submerged lands are no longer located within an authorized unit of the National Park System; or (iii) in writing upon thirty days notice by the Board of Trustees, or the Secretary of the Interior, if the regulations, or any updates thereto, described in paragraph 1 of this agreement do not have the concurrence of the Board of Trustees.
7. COMPATIBLE USES: If the Parties wish to engage in activities that are not provided for in the General Management Plan, or in other applicable federal laws, regulations, or policies, that affect the submerged lands, the Parties shall consult with each other in the activities to ensure that such activities are conducted in accordance with applicable law.
8. SUBMERGED CULTURAL RESOURCES: The Park is at the cross roads for shipping in and out of the Gulf of Mexico and has a long history of ship casualties. This has placed within the submerged lands nationally and internationally recognized maritime objects of antiquity and cultural resources. The Parties agree that the submerged cultural resources on the subject lands comprise a valuable state, national and international heritage and both share responsibilities to maintain, protect and preserve these resources. The Parties shall collaborate with each other on the protection and preservation of submerged cultural resources located within the submerged lands consistent with applicable law. Any cultural resources removed from the submerged lands of the Park will be for purposes of research or for purposes of preservation and protection. They will be collected under joint agreement and remain in joint possession of the Parties, accessioned, conserved and curated to National Historic Preservation Act and Service standards at an accredited, mutually acceptable museum/curatorial location. Both parties shall be required to concur in the issuance of any permits to third parties for exploration or removal of submerged cultural resources.
9. VESSEL GROUNDINGS: The Service will be primarily responsible for pursuing civil claims for damages to submerged natural resources under applicable within the area covered by this Agreement. The Board of Trustees reserves the right to pursue civil claims for damages to submerged natural resources under applicable law within the area covered by this Agreement. Any sums recovered by the Parties will be used to

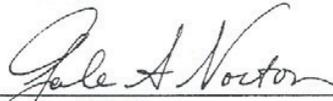
restore the injured resources or to improve the management of the submerged resources in the area covered by this Agreement.

10. **RESEARCH:** The Parties shall work together to implement a research and monitoring program for the marine ecosystem, both within the area designated by the Service as a “research natural area” as well as in other areas of the Park. The Parties will use the results of this research in efforts to protect and interpret the pristine subtropical marine ecosystem and populations of fish and wildlife. The Parties will use their best efforts to coordinate this research with other similar efforts underway in the adjacent Florida Keys National Marine Sanctuary.
11. **NON-DISCRIMINATION:** The Parties shall not discriminate against any individual because of that individual’s race, color, religion, sex, national origin, age, handicap, or marital status with respect to any activity occurring within the area attached as Exhibit A.
12. **APPLICABILITY OF STATE AND FEDERAL LAW:** Except as provided herein, nothing in this Agreement is intended to modify or preclude the Parties from exercising any authority they may have under applicable State and/or Federal law
13. **INDEMNIFICATION:** The Service shall investigate all claims of every nature and in accordance with, and to the extent permitted by, applicable law shall indemnify, defend and save and hold harmless the Board of Trustees from all claims, actions, lawsuits and demands arising out of this agreement which do not arise out of or result from the negligent acts or omissions of the State.
14. **DISPUTE RESOLUTION:** The Parties shall work collaboratively to resolve any identified dispute at the lowest organizational level. If the dispute is not resolved within a reasonable time frame, the Parties agree to elevate the dispute to the next organizational level for resolution. Ultimate resolution of disputes related to this Agreement shall reside with the Secretary of the Interior and the Board of Trustees or their respective designees. This provision does not apply to disputes concerning title to submerged lands.

THE BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA did approve this management agreement on the 9th day of August, 2005.

AUTHORIZING SIGNATURES:

For the Service:


Secretary Gale Norton
Department of the Interior

For the Board of Trustees:

(SEAL)
BOARD OF TRUSTEES OF THE
INTERNAL IMPROVEMENT
TRUST FUND OF THE STATE
OF FLORIDA


JEB BUSH
GOVERNOR


CHARLIE CRIST
ATTORNEY GENERAL

APPROVED AS TO FORM AND
LEGALITY


TOM GALLAGHER
CHIEF FINANCIAL OFFICER

By: 
DEP. Attorney


CHARLES H. BRONSON
COMMISSIONER OF AGRICULTURE

As and Constituting the BOARD
OF TRUSTEES OF THE INTERNAL
IMPROVEMENT TRUST FUND OF THE
STATE OF FLORIDA

Appendix C: Inventory of Administrative Commitments

Name	Agreement Type	Start Date – Expiration Date	Stakeholders	Purpose
Submerged lands agreement	Memorandum of understanding	Perpetual Agreement	State of Florida	Outlines jurisdictional roles and responsibilities for submerged lands and resources within the park boundary. NPS Agreement #G5299-13-002
Science plan for researching natural area	Memorandum of understanding	January 2007– January 2018	Florida Fish and Wildlife Conservation Commission (FWC)	The plan outlines the research and reporting strategies for the effectiveness for the designated research natural area. The park must report these findings to the FWC on a five-year cycle. Requires the writing of a report.
Scientific research and data collection on coral reefs in Dry Tortugas National Park	Cooperative Ecosystem Studies Unit cooperative agreement	October 2013 – October 2020	University of Miami	This agreement outlines the scientific research and monitoring of coral reef systems in the park by the University of Miami. <ol style="list-style-type: none"> Determine the status and trends of Dry Tortugas National Park coral reef fish communities. Fisheries assessment of Dry Tortugas coral reef game fishes, especially groupers and snappers. Evaluate the conservation efficacy of the Dry Tortugas Research Natural Area as a no fishing marine reserve.
Park internship program	Cooperative Ecosystem Studies Unit cooperative agreement	May 2011 – December 2016	University of Miami	Assist park natural resources staff, implement a lionfish removal study, and continue a long-term sea turtle monitoring program to help determine the nesting patterns of sea turtles on Loggerhead Key.
The Nature Conservancy – coral restoration projects in the park	Cooperative Ecosystem Studies Unit cooperative agreement	October 1, 2008 – September 30, 2019	The Nature Conservancy	There has been a substantial decrease in stony corals over the last 30-plus years, especially the Endangered Species Act-listed, major reef forming, and once very common <i>Acropora</i> species. There were 478 hectares of staghorn coral (<i>Acropora cervicornis</i>)-dominated reefs in the park in 1976 (55% of park coral reefs). However, in 2008 there was less than one hectare of staghorn reefs, a >99% loss. Furthermore, <i>Acropora</i> live cover is <7% on these existing reefs. The goal of this project is to help recover <i>Acropora cervicornis</i> and restore staghorn coral-dominated reefs in the park. Future plans include adding other Endangered Species Act-listed coral species to the nursery and outplanting sites.

Name	Agreement Type	Start Date – Expiration Date	Stakeholders	Purpose
Long-term research and monitoring of seagrass beds in the Dry Tortugas –Florida International University	Cooperative Ecosystem Studies Unit cooperative agreement	-	Seagrass Ecosystems Research Lab – Florida International University (FIU)	This project evaluates the long term ecological status and trends of seagrass community types in Dry Tortugas National Park. This information is essential for effective stewardship of park seagrass communities, and achieving park ecosystem stewardship goals. FIU monitors 18 seagrass sites in Dry Tortugas National Park that were established during the summer of 2010.
Florida Fish and Wildlife Research Institute – corals research	Cooperative Ecosystem Studies Unit cooperative agreement	-	Florida Fish and Wildlife Research Institute	<p>The goals of this project are to:</p> <ol style="list-style-type: none"> 1. Assess the long term ecological status and trends of Dry Tortugas coral reef benthic communities. 2. Evaluate the effects on corals of SCUBA and snorkeling use at Dry Tortugas Research Natural Area designated (mooring buoy) dive sites. [RNA Science Plan Topic 4, Essential Activity 1 in NPS and FWC 2007] 3. Assess the conservation efficacy of the Dry Tortugas Coral Special Protection Zone.
Ongoing water quality monitoring in the Dry Tortugas	Interagency agreement with Ilsa Kuffner, Ph.D.	-	U.S. Geological Survey	The U.S. Geological Survey plans to deploy autonomous oceanographic analytical instrumentation (known as the Ocean Carbon System) for measurement of high resolution chemical parameters including dissolved oxygen, pH, and pCO ₂ of seawater, and physical parameters including salinity, temperature, and photosynthetically active radiation on a coral reef habitat in Dry Tortugas National Park.
Management and staff of the Eco-Discovery Center, Key West, Florida	Memorandum of understanding	Expired	National Oceanic and Atmospheric Administration	The National Park Service works with and co-manages the Eco-Discovery Center in Key West, Florida. The National Park Service provides staffing and interpretive expertise to engage with visitors at this location.
Ferry concession	Concession contract	-	Yankee Freedom – Dry Tortugas Ferry	Formal contract for operation of the commercial ferry service to Garden Key.
Seaplane concession	Concession contract	-	Key West Seaplanes	Formal contract for operation of the commercial seaplane service to Garden Key.
Commercial use authorizations in the park	Commercial use authorizations	-	Multiple partners	The park maintains numerous commercial use authorizations with private charter companies that outfit recreational opportunities for visitors.

Name	Agreement Type	Start Date – Expiration Date	Stakeholders	Purpose
Stabilization of Fort Jefferson – state historic preservation office agreement	Memorandum of agreement	-	Florida Division of Historical Resources	Agreement related to the overall treatment and stabilization strategy for the long-term preservation of Fort Jefferson.
South Florida Collections Management Center	Charter	-	Interagency	Charter outlines the way the five parks' collections (EVER, DRTO, BISC, BICY, DESO) are managed.
South Florida Caribbean Network Monitoring	Charter	-	Interagency	Charter outlines the role of the network in monitoring coral reef health within the park.
Interagency immigration response	Interagency agreement	-	U.S. Customs and Border Protection	Agreement that outlines roles and responsibilities related to immigrants arriving in the Dry Tortugas. Primarily related to immigrants from Cuba.
Memorandum of understanding for navigational aids in the park	Private aid to navigation permit	Expired	U.S. Coast Guard	Agreement related to the maintenance and operation of navigational aids.
Research projects and diving conducted on the motor vessel <i>Spree</i>	Contract	-	Motor vessel <i>Spree</i>	This is a contract with a privately run research vessel and diving outfitter in the park.
Management of park bookstore	Cooperative agreement	-	Eastern National	Agreement related to staffing and maintaining the park's bookstore.
Florida Parks Association	Cooperative agreement and contract	-	Florida Parks Association	Outlines roles and responsibilities with the park's official friends group.
South Florida National Parks Trust	Friends group agreement	-	South Florida National Parks Trust	This friends group agreement outlines the relationship as well as roles and responsibilities between the South Florida National Parks Trust and the park.
Permit for the use of fuel – underground storage tanks on Garden Key	Permit	-	Florida Department of Environmental Protection	This permit allows for the use and management of an underground fuel storage tank on Garden Key.
Artist in Residence Program	Memorandum of understanding	December 8, 2014 – December 31, 2017	NPS Arts Foundation	This memorandum of understanding establishes an artist in residence program with the park.

Appendix D: Past and Ongoing Park Planning and Data Collection Efforts

Name	Date
<i>Master Plan</i>	1961
<i>Historic Structures Report part 1 – Fort Jefferson</i>	1965
<i>Historic Structures Report part 2 – Fort Jefferson</i>	1970
<i>National Register of Historic Places Nomination</i>	1970
<i>Shipwreck Study</i>	1971
<i>General Management Plan – Development Concept Plan</i>	1983
<i>Historic Structures Report</i>	1983
<i>Interpretive Prospectus</i>	1984
<i>Submerged Cultural Resource Assessment</i>	1993
<i>Sea Turtle Nesting Report</i>	1994
<i>Visitor Study</i>	1996
<i>Annotated Bibliography</i>	1997
<i>Strategic Plan</i>	1997
<i>General Management Plan and Supplemental Compendium</i>	2000
<i>Baseline Multispecies Coral Reef Fish – Stock Assessment</i>	2001
<i>General Management Plan Amendment</i>	2002
<i>Visitor Use Study Report</i>	2002
<i>Fort Jefferson Stabilization Project</i>	2003
<i>Long-Range Interpretive Plan</i>	2003
<i>Scope of Collections Statement</i>	2004
<i>Historic Preservation Report – Rehabilitation for the Hot Shot Furnace at Fort Jefferson</i>	2004
<i>Coastal Vulnerability Assessment</i>	2005
<i>Superintendent’s Compendium</i>	2006
<i>Historic Structures Report – Amendment</i>	2006
<i>Fort Jefferson Landscape Cultural Landscape Inventory</i>	2007
<i>Inventory of Pelagic Fishes</i>	2007
<i>Historic Preservation Report – Exterior Preservation Plan – Engineering Officers Quarters</i>	2007
<i>Research Natural Area Science Plan</i>	2007

Name	Date
<i>Historic Preservation Report – Preservation of Fort Jefferson Phase II</i>	2009
<i>Historic Structures Report – Dry Tortugas Light Station – Oil House</i>	2009
<i>Fort Jefferson Report on Hurricane Shelters</i>	2009
<i>Research Natural Area Science Plan</i>	2010
<i>Historic Preservation Report – Preservation of Fort Jefferson – Year Two</i>	2010
<i>Historic Structures Report – Dry Tortugas Light Station – Ancillary Structures</i>	2010
<i>Historic Structures Report – Dry Tortugas Light Station – Keeper’s Residence</i>	2010
<i>Implementing the Research Natural Area Science Plan - 3 Year Report</i>	2010
<i>Historic Preservation Report – Preservation of Fort Jefferson – Year Three</i>	2011
<i>Cultural Landscape Report – Garden Key</i>	2011
<i>Assessment of Natural Resource Conditions</i>	2012
<i>Historic Preservation Report – Preservation of Fort Jefferson – Year Four</i>	2012
<i>Structural Analysis Report – Front 3</i>	2012
<i>Implementing the Research Natural Area Science Plan - 5 Year Report</i>	2012
<i>Dry Tortugas Light Station Boathouse – Evaluating the Impacts of Tropical Storm Sandy and Development of Treatment Alternatives</i>	2014
<i>Historic Preservation Report – Record of Treatment Emergency Shoring and Stabilization – Front 3</i>	2014
<i>Geological Resources Inventory</i>	2014
<i>Research Natural Area Science Plan</i>	2015
<i>Superintendent’s Compendium</i>	2017





**Southeast Region Foundation Document Recommendation
Dry Tortugas National Park**

February 2017

This Foundation Document has been prepared as a collaborative effort between park and regional staff and is recommended for approval by the Southeast Regional Director.



RECOMMENDED
Pedro M. Ramos, Superintendent, Dry Tortugas National Park



Date



APPROVED
Stan Austin, Regional Director, Southeast Region



Date



As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historic places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

DRTO 364/135378
March 2017

Foundation Document • Dry Tortugas National Park

