BAHAMAS NATIONAL TRUST

INAGUA NATIONAL PARK & UNION CREEK RESERE

CLIMATE-SMART MANAGEMENT PLAN 2027-2037

DRAFT FOR REVIEW - MAY 2026

INAGUA NATIONAL PARK

&

UNION CREEK RESERVE

Great Inagua, The Bahamas

Climate-Smart Management Plan

2027-2037

FOR PUBLIC REVIEW & COMMENTS

May 2026

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The Blue Nature Alliance Project

"Enhancing management effectiveness, enforcement and compliance within The Bahamas National Protected Area Network through the use of technology, sustainable financing mechanisms, partnerships and stakeholder engagement"

This Climate-Smart Management Plans also aligns with meeting the obligations of the Bahamas Debt Conversion Project for Marine Conservation

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1.0 Executive Summary

The Climate Smart Management Plan (CSMP) for Inagua National Park (INP) and Union Creek Reserve (UCR) establishes the long-term strategic framework for the protection, restoration, sustainable management and climate resilience of these globally significant protected areas, over a 10-year period, 2027-2037. This plan integrated climate-smart management principles, Ramsar wetland management obligations, ecosystem-based adaptation approaches, adaptive management frameworks, and the latest ecological and stakeholder information available for the parks,

The CSMP was developed through a participatory and science-based planning process involving local government representatives, national agencies, scientific researchers, non-governmental organizations, local stakeholders, community members and residents of Inagua. The planning process incorporated findings and recommendations from the 2025 Rapid Ecological Assessment (REA), existing operational plans, stakeholder consultations, climate-smart management planning workshops, Ramsar obligations, and current national conservation priorities.

Together, Inagua National Park and Union Creek Reserve protect some of the most ecologically significant wetland, marine, and terrestrial ecosystems within The Bahamas and the wider Caribbean region. These protected areas support:

- one of the world's largest breeding colonies of Caribbean Flamingos;
- internationally significant wetlands and saline lakes;
- mangrove ecosystems and tidal creek systems;
- seagrass meadows and marine nursery habitats;
- coral reef and hardbottom habitats;
- migratory and endemic bird species;
- commercially and ecologically important marine species, including Queen Conch and sea turtles; and
- critical ecosystem services that support climate resilience, biodiversity conservation, shoreline stabilization, fisheries productivity, and carbon sequestration.

Inagua National Park also holds international importance as The Bahamas' only designated Ramsar Wetland of International Importance. As such, the Climate-Smart Management Plan incorporates Ramsar "wise use" principles and wetland management approaches aimed at maintaining the ecological character, hydrological integrity, biodiversity values, and ecosystem services of the protected wetlands and associated ecosystems.

The Plan also recognizes the increasing threats associated with climate change, and adopts an adaptive management framework intended to support long-term ecological resilience and management effectiveness under changing environmental conditions.

The Plan further identifies significant operational, staffing, technical, and financial capacity constraints currently affecting effective park management. At present, management capacity for Great Inagua's protected areas remains limited, with only a small number of wardens and support personnel responsible for enforcement, monitoring, maintenance, outreach, invasive species management, and emergency response across extensive and remote protected areas. The CSMP therefore identifies the need to strengthen human resources and institutional capacity through the recruitment and training of additional park wardens, science and monitoring personnel, education and outreach staff, administrative support, and technical specialists in areas such as GIS, drone operations, ecological monitoring, data management, and climate adaptation planning.

The Plan also recognizes the importance of strengthening operational infrastructure, equipment, vessels, communications systems, scientific monitoring technology, and climate-resilient facilities necessary to support effective long-term management and emergency response capabilities. Capacity strengthening priorities identified under the Plan align with recommendations from the Cost Verifications Study and the 2025 Capacity Assessment and Action Plan developed under the Bahamas Debt Conversion Project for Marine Conservation (BDCPMC).

2.0 Introduction

This Climate Smart Management Plan (CSMP) for Inagua National Park (INP) and Union Creek Reserve (UCR) provides the long-term strategic framework for the protection, sustainable management, climate resilience, and wise use of these globally significant protected areas, over a ten-year period (2027-2037). This plan establishes a shared vision, management priorities and adaptive management framework to guide conservation, research, monitoring, visitor management has been developed through stakeholder engagement with local government, government offices, and the residents of Great Inagua. This collaborative effort ensures the protection of the park for the benefit of future generations.

Located on Great Inagua, the southernmost island in The Bahamas, Inagua National Park and Union Creek Reserve protects some of the most ecologically important wetland, marine and terrestrial ecosystems in the wide Caribbean region. Together, these protected areas safeguard

internationally significant habitats that support globally important populations of Caribbean flamingos, migratory and endemic bird species, sea turtles, coral reefs, mangroves, saline lakes, tidal creeks, seagrass beds, and other culturally, ecologically, and economically valuable biodiversity.

This Climate-Smart Management Plan has been developed through a participatory and science-based planning process involving local government, government agencies, scientific researchers, community stakeholders, and the residents of Great Inagua. The planning process also incorporated technical assessments, including the 2025 Rapid Ecological Assessment (REA), stakeholder consultations, climate-smart management planning workshops, and reviews of existing operational and conservation priorities.

The CSMP is intended to serve as a dynamic and adaptive management tool that responds to evolving environmental, social, economic, and climate-related conditions over time. The Plan integrates climate adaptation and resilience principles into all aspects of protected area management and emphasizes ecosystem-based management, adaptive management, wetland conservation, stakeholder participation, and sustainable use approaches.

The CSMP identifies detailed management goals, objectives, zoning frameworks, monitoring requirements, and the actions necessary for effective management of the parks. These actions include:

- Wetland and hydrological management,
- invasive species control and habitat restoration,
- flamingo and sea turtle conservation,
- marine ecosystem monitoring,
- climate adaptation and resilience-building initiatives,
- infrastructure and visitor management improvements,
- enforcement and compliance strengthening,
- research and monitoring programmes,
- environmental education and community engagement,
- communications, education and public awareness initiatives, and
- volunteer-driven programs.

As The Bahamas' only Ramsar Site, Inagua National Park holds international significance under the Ramsar Convention on Wetlands. Accordingly, this Plan incorporates Ramsar "wise use" principles and wetland management considerations to help maintain the ecological character, hydrological integrity, biodiversity values, and ecosystem services of the wetlands and associated habitats protected within the park.

The implementation of this Climate-Smart Management Plan will support:

- the long-term conservation of globally significant biodiversity.
- climate resilience and ecosystem adaptation.
- sustainable livelihoods and community engagement.
- enhanced management effectiveness.
- and the continued protection of one of the Caribbean's most important wetland and protected area systems.

2.1 History of Inagua National Park and Union Creek Reserve

Concerns surrounding the decline of Caribbean flamingo populations throughout the wider Caribbean intensified during the early 1900s. During this period, flamingos were heavily hunted for their meat and plumage, while nesting colonies were frequently disturbed and raided for eggs and squabs. Additional pressures were created through habitat disturbance and the introduction of livestock and invasive animals, specifically wild hogs, which preyed upon flamingo eggs and young birds and degraded sensitive wetland habitats.

Recognizing the urgent need for conservation action, The Bahamas Government and the National Audubon Society established a collaborative working relationship aimed at protecting the remaining flamingo populations on Great Inagua. In 1952, renowned ornithologist and research director of the National Audubon Society, Robert Porter Allen, traveled to Inagua to access the status of the species and support efforts to prevent its extinction.

During his time on Great Inagua, Allen was guided by renowned local hunter and outdoorsman Sam Nixon, to the Upper Lakes region of Inagua, where they observed more than one thousand flamingos engaged in their distinctive courting display. Allen famously referred to this head-turning and exaggerated courtship ritual as the "Flamingo Quadrille". This discovery helped bring international attention to the importance of Great Inagua as a critical flamingo breeding habitat.

As conservation efforts expanded, the Society for the Protection of the Flamingo was established through collaboration between Bahamian and American conservationists. Sam Nixon was appointed as the first flamingo warden on Great Inagua, with Jimmy Nixon later joining as assistant warden. Allen subsequently designed and established a smll field camp on Long Cay, naming it "Camp Vernay", in honor of Arthor Vernay, the first president of the new Society for the Protection of the Flamingo.

In 1959, The Bahamas National Trust (BNT) was created through an Act of Parliament and become the primary organization responsible for national park management and wildlife conservation in The Bahamas. The BNT assumed responsibility for the ongoing flamingo conservation efforts previously led by the Society for the Protection of the Flamingo and formally established the Inagua National Park (INP) in 1965. Today, the park protected more

than 220,000 acres (89,031 ha) of internationally significant wetlands, marine habitats, mangroves, coppice forests, saline lakes, and coastal ecosystems.

Around the same time that flamingo conservation efforts were developing on Great Inagua, growing international concern also emerged regarding the decline of sea turtle populations through the Caribbean region. Dr. Archie Carr of the Center for Sea Turtle Research at the University of Florida initiated pioneering research and conservation programmes focused on sea turtle protection, habitat conservation, and species restoration.

One of the primary research locations selected was at Union Creek, a tidal creek system located within the northern portion of the INP.

As part of this research, 300 turtles were released into Union Creek in 1959 in an effort to restore the area. Dr. G. Charleston Ray then proposed to the BNT's executive committee the idea of the Union Creek Reserve being part of the BNT system of protected areas. Thus, the Union Creek Reserve (UCR) was established in 1965.

2.2 Ramsar Significance of Inagua National Park

Inagua National Park was designated as a Wetland of International Importance under the Ramsar Convention on February 7, 1997, recognizing the global ecological significance of its extensive wetland systems and associated habitats.

Ramsar Site Information

- **Ramsar Site Number:** 892
- **Date of Designation:** February 7, 1997
- **Approximate Ramsar Site Area:** approximately 80,000 hectares
- **Location:** Great Inagua, The Bahamas
- **Managing Authority:** Bahamas National Trust

The Ramsar designation recognizes the exceptional ecological value of the park's saline lakes, tidal flats, mangroves, wetlands, marine habitats, and associated ecosystems, which support one of the largest breeding colonies of Caribbean flamingos in the world, along with numerous migratory, endemic, and threatened species.

The wetlands within Inagua National Park provide critical ecosystem services and functions, including:

- habitat for waterbirds and migratory species;
- nursery grounds for marine life;
- shoreline stabilization and storm protection;
- water storage and hydrological regulation;

- carbon sequestration and climate resilience;
- biodiversity conservation;
- and support for scientific research, education, and eco-tourism opportunities.

As The Bahamas' only designated Ramsar Site, Inagua National Park carries international obligations under the Ramsar Convention to promote the conservation and wise use of wetlands, maintain the ecological character of the site, support monitoring and adaptive management, and encourage stakeholder participation and sustainable management approaches.

This Climate-Smart Management Plan therefore integrates Ramsar principles, wetland management planning approaches, adaptive management frameworks, and climate resilience considerations to support the long-term protection and ecological integrity of the wetlands and associated ecosystems of Inagua National Park.

3.0 Site Descriptions

3.1 Geographic Setting

Inagua National Park and Union Creek Reserve are located on the island of Great Inagua, the southernmost island in The Bahamas, situated near the Windward Passage between Cuba and Haiti. Great Inagua is the third largest island in The Bahamas and is recognized for its extensive wetland systems, marine habitats, saline lakes, and internationally significant biodiversity.

The island lies within the southern Bahamian archipelago and forms part of the broader Caribbean biodiversity hotspot. Great Inagua's geographic location, arid climate, low-lying limestone geology, extensive hypersaline wetlands, and marine connectivity contribute to the development of unique ecological systems that support globally important wildlife populations and ecosystem services.

The island's remoteness and relatively limited development have contributed to the preservation of large intact wetlands and marine ecosystems, supporting one of the largest breeding colonies of Caribbean Flamingos in the world, significant migratory bird populations, marine nursery habitats, and important populations of commercially and ecologically valuable marine species.

Great Inagua also supports important industrial salt production activities operated historically by Morton Salt and its successor ownership groups. The network of roads, ponds, impoundments, and hydrological systems associated with salt production contributes significantly to the physical landscape and ecological dynamics of portions of the island, including habitat conditions important for flamingos and other wetland-dependent species.

(ADD MAP OF GREAT INAGUA)

3.2 Park Boundaries & Size

Inagua National Park occupies the northern portion of Great Inagua and encompasses approximately 220,000 acres (approximately 89,000 hectares) of terrestrial, wetland, coastal, and marine environments. The park includes extensive saline lakes, tidal flats, mangrove wetlands, coastal coppice habitats, shallow marine banks, seagrass meadows, coral reef and hardbottom systems. The park also forms the core of The Bahamas' only designated Ramsar Wetland of International Importance.

(ADD MAP OF INP)

Union Creek Reserve is located along the northwestern coastline of Great Inagua and encompasses approximately 6,150 acres (approximately 2,489 hectares) of shallow tidal creek systems, mangrove wetlands, coastal flats, seagrass habitats, and marine nursery areas. The Reserve is hydrologically and ecologically connected to the broader wetland and marine systems of Inagua National Park.

(ADD MAP OF UCR)

3.3 Physical Features

Inagua National Park

The park remains largely underdeveloped and remote, contributing significantly to its wilderness character and ecological integrity. Access within the park is limited and is primarily facilitated through roads historically established and maintained by Morton Bahamas Ltd, a salt production company that has been operating on Inagua from the late 1930s. There are few established trails and infrastructure within the park, representative of the true untouched and wilderness experience provided.

Historic physical features within the park include the remains of Camp Vernay, the historic flamingo conservation and research camp established by Robert Porter Allen and the Society for the Protection of the Flamingo during early flamingo conservation efforts on Great Inagua. The remains of Camp Vernay represent an important conservation heritage feature associated with the successful restoration of Caribbean flamingo populations in The Bahamas.

More recently, under the Blue Nature Alliance (BNA) project, park identification signs and regulatory signage have been produced and installed at key access park locations within INP. These signs were installed to:

- improve public awareness of park boundaries and protected status
- increase awareness of park rules, regulations, and prohibited activities

- strengthen visitor education and compliance
- support enforcement and resource protection efforts, and
- enhance overall visibility and recognition of the national park.

The installation of regulatory and interpretive signage represents an important step toward strengthening visitor management, conservation awareness, and climate-smart protected area management within the park.

Union Creek Reserve

Historical physical features within UCR include the remains of the former sea turtle research and holding facility established during pioneering Green Sea Turtle conservation and restoration efforts led by researchers associated with the Archie Carr Center for Sea Turtle Research at the University of Florida. These remnants represent an important scientific and conservation heritage feature associated with early marine conservation work in The Bahamas and the wider Caribbean region.

As with INP, recent investments under the BNA project supported the production and installation of park identification, boundary, and regulatory signage to improve public awareness, strengthen compliance with park regulations, and support resource protection and visitor management efforts within the Reserve.

The Reserve remains relatively undeveloped, with limited infrastructure and access points. Access is typically achieved via boat or limited overland routes. The Reserve's remoteness, shallow creek systems, tidal variability, and limited infrastructure continue to influence operational management, monitoring, research access, and visitor use considerations.

Geology and Topography

Great Inagua is characterized by low-lying limestone geology typical of the Bahamian archipelago, with extensive carbonate flats, saline depressions, coastal ridges, and wetland systems shaped by marine and climatic processes over time. The island's geology supports large hypersaline lake systems and tidal wetlands that are fundamental to the ecological character of the park.

Climate

The Bahamas experiences a tropical marine climate predominantly influenced by the Atlantic Southeast Trade Winds during the summer months and cooler North American high-pressure systems in winter. The region observes two distinct weather seasons:

- Wet Season: May – September and
- Dry Season: October – April.

Most rainfall occurs during the warmer summer months. Great Inagua is among the driest islands in The Bahamas, receiving and average of 30 – 40 inches of rainfall annually. These relatively arid conditions contribute to the formation and persistence of the island's hypersaline wetlands and saline lake systems.

Hydrology and Currents

The hydrology of Inagua National Park is strongly influenced by tidal exchange, rainfall variability, evaporation, marine currents, and the connectivity between coastal and inland wetland systems. The park's marine and wetland environments function as an interconnected ecological system linking offshore marine habitats with interior saline wetlands and tidal creeks.

The REA noted that hydrological and tidal connectivity between INP and Union Creek Reserve contributes to relatively consistent water quality conditions across both protected areas, while localized variations in salinity and nutrient concentrations are influenced by tidal flushing, rainfall, sedimentation, and localized nutrient cycling.

3.4 Biological Features

Inagua National Park protects a wide range of ecological significant terrestrial, wetland, coastal and marine ecosystems that contribute to its designation as both a Ramsar Site and an Important Bird Area (IBA), signifying the international importance of the biodiversity and ecological value found within the park. The park is also a recognized renowned for protecting the world's largest breeding colony of Caribbean flamingos and other endemic species such as the Bahamas Parrot, the Inagua Woodstar, the Roseate spoonbills and the Royal tern.

UCR

Union Creek Reserve supports a diverse range of interconnected wetland, mangrove, tidal creek, seagrass, and shallow marine ecosystems that provide important nursery habitat for marine organisms and support globally and regionally significant biodiversity.

The Reserve is ecologically linked to Inagua National Park and forms part of a larger marine and wetland landscape supporting seabirds, sharks, juvenile fish, sea turtles, conch, sea stars, and other ecologically important marine species.

3.4.1 Terrestrial Habitats

INP

The terrestrial vegetation on INP is generally low, scrubby and adapted to extended periods of low precipitation and high salinity conditions. Vegetation within the park can broadly be divided into two categories: wet and dry.

Wet habitat systems include:

- mangrove wetlands
- saline lakes
- sparsely vegetated flatlands and
- tidal wetland systems

Dry habitat systems include:

- rocky shore vegetation,
- dune shrub habitats,
- Dry Broadleaf Evergreen Shrubland/Herbland, and
- Dry Broadleaf Evergreen Formations (DBEF).

The extensive saline lakes and wetlands within the park provide critical breeding, nesting, and feeding habitat for Caribbean flamingos and numerous migratory and resident bird species.

UCR

UCR is dominated by mangrove wetlands, tidal creek systems, mudflats, and sparsely vegetated coastal flats. Mangrove communities within the Reserve are primarily composed of Red Mangrove (Rhizophora mangle) and provide critical habitat for marine nursery species, shoreline stabilization, nutrient cycling, and climate resilience functions.

The wetland systems within the Reserve also support waterbirds, seabirds, and transitional habitat areas between marine and inland wetland environments.

3.4.2 Marine Habitats

Seagrass

INP

The 2025 Rapid Ecological Assessment (REA) documented extensive seagrass habitats throughout the marine environments of INP. Dominant seagrass species recorded included:

- Turtle grass (*Thalassia testudinum*), and
- Manatee grass (*Syrinodium filiforme*)

Associated macroalgae communities included *Batophora sp*., *Halimeda sp*., or *Laurencia sp.*

These seagrass habitats support several commercially and ecologically important invertebrates including:

- Queen Conch (Aliger gigas),
- Sea Cucumbers,
- Long-Spined Sea Urchin (Diadema antillarum), and
- Milk Conch.

UCR

The 2025 REA identified shallow seagrass habitats throughout portions of Union Creek Reserve (UCR), with dominant species including Turtle Grass (Thalassia testudinum) and Manatee Grass (Syringodium filiforme). These habitats support juvenile marine species, invertebrates, and important marine nursery functions.

Portions of UCR were characterized by muddy substrates and brackish conditions associated with reduced tidal flushing and localized hydrological conditions.

Coral Reef Habitats

INP

As part of the 2025 REA, reefs systems within INP were assessed to evaluate coral health and benthic community composition. Survey findings indicate that live coral cover was lower than levels previously documented during the 2011 Global Reef Expedition. Coral diversity was also relatively low, with only a few corals species observed.

Coral species recorded includes:

- Elliptical Star Coral (*Dichocoenia stokesii*),
- Great Star Coral (*Montastraea cavernosa),*
- Mustard Hill Coral (*Porites astreoides*),
- Blushing Star Coral (*Stephanocoenia intersepta),* and
- Lesser Starlet Coral (*Siderastrea radians*).

Despite the relatively low coral cover observed, the presence of the aforementioned species highly susceptible to Stony Coral Tissue Loss Disease (SCTLD) may indicate that portions of the reef system has either not experienced severely disease impact or that new coral recruitment has occurred following previous mortality events.

UCR

Although coral reef habitat within Union Creek Reserve is less extensive than within Inagua National Park, adjacent marine environments support patchy hardbottom habitats, algal communities, and marine species associated with shallow coastal systems.

The ecological importance of these habitats lies primarily in their role as nursery and transitional marine ecosystems supporting juvenile fish, sharks, sea turtles, and other marine organisms.

3.4.3 Wildlife – Species of Concern

West Indian /Caribbean Flamingo

Flamingo populations within Inagua National Park represent one of the largest breeding colonies of Caribbean Flamingos in the world. The wetlands, saline lakes, mudflats, and tidal systems within the park provide critical breeding, feeding, and nesting habitat for the species.

The successful restoration and protection of flamingo populations on Great Inagua represents one of the most significant conservation success stories in The Bahamas and the wider Caribbean region. The species remains both ecologically and culturally important to the island and the nation.

Other Birds

INP and UCR is recognized by BirdLife International as Important Bird Area (IBA) BS039 due to the diversity and abundance of resident and migratory birds species within the protected areas.

Bird species of conservation significance recorded with the parks include:

- Reddish Egret (*Egretta rufescens*),
- Roseate Tern (*Sterna dougallii*),
- Common Tern (*Sterna hirundo*) and
- the Vulnerable West Indian Whistling-duck (*Dendrocygna arborea*) which are globally significant.
- Near Threatened Bahama Parrot (*Amazona leucocephala bahamensis*)
- Vulnerable Bahama Swallow (*Tachycineta cyaneoviridis*).

The island also supports more than 6,000 Bahama Parrots and provides important habitat for migratory shorebirds, seabirds, and waterbirds.

Queen Conch

Queen conch (*Aliger gigas*)is one of the most commercially and ecologically important marine invertebrates recorded within the marine habitats of INP and UCR.

The 2025 REA documented medium to high densities of Queen conch across surveyed marine habitats, with individuals observed at all major life stages including juvenile, subadult and adult conch. Subadult individuals were the most commonly observed life stage during surveys.

The presence of multiple life stages suggests that the marine habitats surrounding INP and UCR continue to function as important nursery, feeding and reproductive habitat for the species.

Long-term monitoring and adaptive management will be required to assess and manage potential impacts associated with climate change, illegal harvesting, habitats degradation, water quality changes, and other anthropogenic stressors affecting conch populations and associated marine ecosystems.

3.5 Values of Inagua National Park and Union Creek Reserve

3.5.1 Ecological Importance

Inagua National Park and Union Creek Reserve collectively protect one of the most ecologically significant wetland and marine landscapes within The Bahamas and the wider Caribbean. The parks support a diverse range of interconnected terrestrial, wetland and coastal key ecosystems that support nationally and internationally important species.

The protected areas contain extensive representations of:

- Mangroves wetlands,
- saltwater wetlands,
- saline lakes,
- tidal creeks,
- shallow marine banks,
- coral reefs and hardbottom systems,
- seagrass meadows,
- coastal coppice forests and
- marine nursey habitats.

These ecosystems collectively support globally important biodiversity, ecological connectivity, hydrological processes, and ecosystem services.

It is a known breeding and nesting area for multiple vulnerable and restricted-range birds, and nursery habitat for several culturally and commercially important species.

Inagua National Park is internationally recognized as:

- The Bahamas' only Ramsar Wetland of International Importance
- A designated Important Bird Area (IBA)
- one of the world's most significant breeding sites for Caribbean Flamingos

The wetlands and saline lakes within the park support one of the largest breeding colonies of Caribbean Flamingos in the world, along with numerous migratory and resident waterbirds, shorebirds, seabirds, and endemic Bahamian species. The parks also provide habitat for species of conservation concern including:

- Bahama Parrot (Amazona leucocephala bahamensis)
- West Indian Whistling Duck (Dendrocygna arborea)
- Bahama Swallow (Tachycineta cyaneoviridis)
- Roseate Tern (Sterna dougallii)
- and other vulnerable or restricted-range species

The marine and wetland ecosystems of INP and UCR also function as important nursery, feeding, breeding, and migratory habitat for commercially and ecologically important marine species including:

- Queen Conch (*Aliger gigas*)
- Sharks
- sea turtles
- reef fish
- sea cucumbers
- juvenile marine organisms

The 2025 Rapid Ecological Assessment (REA) further confirmed the ecological importance of the parks through documentation of:

- healthy seagrass systems
- important marine nursery habitats
- commercially important conch populations
- mangrove connectivity
- functioning wetland and marine ecosystems supporting biodiversity and ecosystem resilience.

The designation of Inagua National Park as a Ramsar Site underscores the global significance of its wetland systems and the importance of protecting and maintaining the ecological character, hydrological integrity, biodiversity values, and ecosystem services associated with these habitats.

3.5.2 Historical and Cultural Importance

Flamingo Restoration Success

INP is home to one of the world's largest breeding colonies of Caribbean flamingos and represents one of the most successful bird conservation stories in the Caribbean region, and forms part of the history of The Bahamas National Trust.

During the early 1900s, flamingo populations throughout the Caribbean declined significantly due to hunting, habitat disturbance, and egg harvesting. In response, conservation partnerships between Bahamian conservationists and the National Audubon Society led to pioneering flamingo protection efforts on Great Inagua.

The work of local conservation wardens, particularly Sammy and Jimmy Nixon, alongside renowned ornithologist Robert Porter Allen, helped prevent the extinction of Caribbean Flamingos in The Bahamas and contributed to the recovery of the species throughout the wider Caribbean region.

This conservation success remains deeply embedded in the identity, heritage, and culture of Great Inagua.. Many residents associate their island pride and international recognition with the successful restoration and protection of the flamingo population and the long-standing stewardship efforts undertaken on the island.

Historic features such as the remains of Camp Vernay further reinforce the park's cultural and conservation significance and serve as reminders of the island's role in global conservation history.

Green Sea Turtle Research

UCR is internationally recognized for its historical contribution to green sea turtle research, conservation and restoration.

As global concerns regarding sea turtles population declines intensified during the mid-1900s, pioneering research initiatives were established within Union Creek in an effort to restore the area, under the leadership of researchers associated with the Archie Carr Center for Sea Turtle Research at the University of Florida.

In 1959, approximately 300 turtles were released into Union Creek as part of efforts to restore sea turtle populations and improve scientific understanding of turtle growth, survival, and nutrition. These early conservation efforts ultimately contributed to the establishment and protection of the Union Creek Reserve.

The Reserve subsequently became an internationally important research location that provided scientists with long-term data on:

- sea turtle growth rates
- habitat use
- nutrition
- behaviour, and
- marine ecosystem dynamics.

The remnants of the historic turtle research facility within the Reserve continue to serve as important cultural and scientific heritage features associated with the early development of marine conservation and protected area management in The Bahamas.

3.5.3 Economic Significance: Tourism and Recreation

Current visitation levels to INP and UCR remain relatively low due to:

- limited domestic and international flight access,
- accessibility challenges
- remoteness,
- limited tourism infrastructure, and
- the absence of a comprehensive sustainable tourism development plan.

Existing tourism activities primarily include:

- bird watching and
- wilderness and eco-tourism experiences inside the parks
- educational visits
- photography.

The Bahamas National Trust, local stakeholders, and community groups on Great Inagua continue to explore opportunities to increase sustainable tourism, employment, entrepreneurship, and community-based economic opportunities associated with protected area management and conservation stewardship.

Future tourism and recreation initiatives within the parks should be carefully planned and managed to ensure that ecological integrity, wetland functions, wildlife habitat, and wilderness character are maintained while supporting sustainable community benefits and long-term climate resilience objectives.

3.6 Benefits of Inagua National Park and Union Creek Reserve

Inagua National Park and Union Creek Reserve provide a wide range of ecological, social, cultural, educational, scientific, and economic benefits at local, national, regional, and international scales.

Key benefits provided by the parks include:

Biodiversity Conservation

- Protection of globally significant wetland, marine, and terrestrial ecosystems
- Conservation of important breeding, nesting, and nursery habitats

- Protection of threatened, endemic, migratory, and commercially important species

Wetland and Marine Ecosystem Services

- Shoreline stabilization and storm protection
- Carbon sequestration and climate regulation
- Water storage and hydrological regulation
- Sediment stabilization and nutrient cycling
- Support for fisheries productivity and marine nursery functions

Climate Resilience

- Support for ecosystem-based climate adaptation
- Natural buffering against storms and sea level rise
- Protection of climate refugia and ecological connectivity
- Enhancement of ecosystem resilience to climate-related stressors

Cultural and Heritage Values

- Preservation of nationally important conservation history
- Protection of flamingo conservation heritage
- Preservation of historic sea turtle research sites
- Support for local identity and community pride

Scientific and Educational Benefits

- Long-term ecological research opportunities
- Climate and wetland monitoring
- Environmental education and awareness
- Opportunities for local and international scientific collaboration

Sustainable Livelihoods and Economic Opportunities

- Eco-tourism and nature tourism potential
- Community-based tourism opportunities
- Employment and entrepreneurship opportunities
- Research and conservation partnerships

National and International Recognition

- Ramsar Site designation
- Important Bird Area designation
- International conservation significance

- Contribution to national biodiversity and climate commitments

The continued protection and effective management of Inagua National Park and Union Creek Reserve are therefore critical not only for biodiversity conservation, but also for sustaining ecosystem services, supporting community resilience, preserving cultural heritage, and advancing national and international conservation and climate resilience objectives.

3.7 Relevant National Policies, Legislation and International Commitments

The management of Inagua National Park and Union Creek Reserve is guided by a combination of national legislation, environmental policies, international conventions, and strategic frameworks that support biodiversity conservation, wetland protection, climate resilience, sustainable development, and protected area management in The Bahamas. These policies and legislative instruments collectively provide the legal and institutional framework for the implementation of this Climate-Smart Management Plan (CSMP)

3.7.1 Policies

The National Environmental Policy

The National Environmental Policy promotes the sustainable use and management of the environment of The Bahamas to meet the needs of present and future generations. Key objectives of this policy include:

- preventing, reducing, and eliminating pollution;
- conserving biological diversity and ecosystem integrity;
- promoting environmental sustainability;
- integrating environmental considerations into national policies, development planning, and decision-making processes;
- and supporting climate resilience and sustainable natural resource management.

This policy supports the climate-smart and ecosystem-based management approaches outlined within this CSMP.

The Bahamas National Invasive Species Strategy (NISS)

The NISS approved in 2003 and revised in 2013, establishes a national framework for the prevention, management, control, and monitoring of invasive alien species throughout The Bahamas. The strategy includes objectives related to:

- identifying priority invasive species for eradication or control;
- strengthening invasive species monitoring;
- increasing public awareness and education;

- building national technical and enforcement capacity;
- and prioritizing protected areas, national parks, wetlands, and sensitive ecosystems for monitoring and management.

The NISS is directly relevant to management actions identified in this CSMP related to invasive hog management and wetland ecosystem protection.

The Bahamas 2020 Declaration

The Government of the Commonwealth of The Bahamas outlines the national commitment to biodiversity conservation, sustainable development, and protected area management. The Declaration recognizes the importance of::

- Ensuring that critical ecosystem services provided by our forests and oceans are kept intact.
- Acting responsibly as stewards of unique biodiversity.
- Ensuring that we act to sustain our livelihoods and the livelihoods of Bahamians in generations to come.
- Ensuring that our children and our children's children enjoy the quality of life and beauty that our islands have provided us.
- Contributing to global targets set out in the Millennium Development Goals, the Johannesburg Plan of Implementation for the World Summit on Sustainable Development, the Mauritius Strategy for Small Island Developing States and the relevant Programs of Work of the Convention on Biological Diversity and related regional and sub-regional initiatives and obligations.

The Declaration further committed The Bahamas to:

- effectively conserve at least 20% of nearshore marine resources;
- strengthen protected area management;
- and support research, education, habitat rehabilitation, and conservation initiatives.

The objectives of this CSMP align closely with these national conservation and sustainability commitments.

National Biodiversity Strategy and Action Plan (NBSAP)

The National Biodiversity Strategy and Action Plan (NBSAP) establishes The Bahamas' national framework for biodiversity conservation and implementation of the Convention on Biological Diversity (CBD). The NBSAP promotes:

- ecosystem conservation

- habitat restoration
- climate resilience
- invasive species management
- sustainable use of biodiversity, and
- integrated protected area management

The management objectives for INP and UCR support several national biodiversity targets identified within the NBSAP.

The Master Plan for the Bahamas National Protected Area System (BNPAS)

The Master Plan for the Bahamas National Protected Area System (BNPAS) provides strategic direction for the expansion, management, financing, and long-term sustainability of protected areas throughout The Bahamas.

The BNPAS Master Plan emphasizes:

- ecosystem representation and connectivity;
- climate resilience;
- management effectiveness;
- stakeholder engagement;
- sustainable financing;
- and the strengthening of governance frameworks for protected areas.

This Climate-Smart Management Plan supports the implementation of the BNPAS by promoting integrated wetland and marine management, biodiversity conservation, restoration, and adaptive management approaches.

National Climate Change Policy and Climate Change Adaptation Framework

The National Climate Change Policy and adaptation initiatives of The Bahamas recognize the vulnerability of small island ecosystems and communities to:

- sea level rise;
- coastal erosion;
- coral bleaching;
- stronger hurricanes;
- changing rainfall patterns;
- and biodiversity loss.

The policy promotes:

- ecosystem-based adaptation;
- nature-based solutions;
- wetland conservation;
- climate-smart planning;

- and resilience-building measures.

The management strategies outlined within this CSMP align with national climate adaptation and resilience priorities.

Bahamas Debt Conversion Project for Marine Conservation (BDCPMC)

The Bahamas Debt Conversion Project for Marine Conservation (BDCPMC) represents a national financing and conservation initiative designed to support marine conservation, climate resilience, biodiversity protection, and sustainable financing for protected areas throughout The Bahamas.

The BDCPMC supports:

- climate-smart management planning;
- marine spatial planning;
- protected area management effectiveness;
- ecosystem restoration;
- sustainable financing;
- climate adaptation; and
- long-term conservation investments.

The objectives of this Climate-Smart Management Plan align closely with the conservation milestones of the BDCPMC, and the plan's implementation of management actions may be supported through BDCPMC funding cycles and associated national conservation financing mechanisms.

3.7.2 International Conventions and Agreements

Ramsar Convention on Wetlands

Ramsar Convention on Wetlands provides the international framework for the conservation and wise use of wetlands and their resources.

Inagua National Park is The Bahamas' only designated Ramsar Wetland of International Importance. As a Ramsar Site, The Bahamas is committed to:

- maintaining the ecological character of the wetland;
- promoting the wise use of wetlands;
- supporting wetland conservation and restoration;
- monitoring ecological changes;
- and integrating wetland conservation into national planning and management frameworks.

The management objectives identified within this CSMP directly support Ramsar obligations related to wetland management, monitoring, restoration, climate resilience, and biodiversity conservation.

Convention on Biological Diversity (CBD)

The Convention on Biological Diversity (CBD) promotes:

- conservation of biological diversity;
- sustainable use of natural resources;
- ecosystem restoration;
- equitable sharing of benefits;
- and climate resilience.

This CSMP supports CBD objectives through:

- habitat protection;
- ecological restoration;
- invasive species management;
- ecosystem monitoring;
- and sustainable protected area management.

Convention on Migratory Species (CMS)

The Convention on Migratory Species supports the conservation of migratory birds and other migratory wildlife species that utilize habitats within INP and UCR, including flamingos, shorebirds, seabirds, and marine species.

Convention on International Trade in Endangered Species (CITES)

The Convention on International Trade in Endangered Species (CITES) regulates international trade in endangered flora and fauna and supports the protection of species occurring within INP and UCR, including:

- Queen Conch;
- sea turtles;
- corals;
- and protected bird species.

3.7.3 Relevant National Legislation

Bahamas National Trust Act, 1959

The Bahamas National Trust Act established Bahamas National Trust as the statutory organization responsible for managing the national park system of The Bahamas.

The Act provides for:

- establishment and management of national parks and protected areas;
- acquisition and protection of lands and marine areas;
- development and enforcement of bylaws;
- conservation of natural and cultural resources;
- and public benefit and stewardship responsibilities.

Bahamas National Trust (Amendment) Acts – 2010, 2019, 2021, and 2023

The various amendments to the Bahamas National Trust Act strengthen the mandate, governance, enforcement authority, and operational responsibilities of the Bahamas National Trust.

Key provisions include:

- expanded authority over marine park management;
- protection against encroachment;
- issuance of written penalty notices;
- strengthening of governance structures;
- and improved enforcement and compliance mechanisms.

Bahamas National Trust (Preservation of National Parks) Bylaws, 2022

The Bahamas National Trust (Preservation of National Parks) Bylaws establish regulations governing activities within national parks and protected areas.

The Bylaws address:

- pollution prevention;
- fishing restrictions;
- wildlife protection;
- vessel operations;
- camping;
- research permitting;
- enforcement powers;
- and protection of park resources and infrastructure.

These Bylaws form an important regulatory framework for the management of INP and UCR.

Environmental Planning and Protection Act, 2019

The Environmental Planning and Protection Act established the Department of Environmental Planning and Protection (DEPP) and provides the framework for:

- environmental oversight;
- environmental impact assessments;
- pollution control;
- environmental monitoring;
- and sustainable development planning.

This legislation is relevant to infrastructure development, restoration activities, environmental assessments, and climate-smart planning within the protected areas.

Fisheries Resources Act, 2020

The Fisheries Resources Act provides the legal framework for:

- conservation and sustainable management of fisheries resources;
- application of ecosystem-based and precautionary management approaches;
- licensing and regulation of fishing activities;
- and prevention of illegal, unreported, and unregulated (IUU) fishing.

The Act is particularly relevant to:

- Queen Conch management;
- marine habitat protection;
- fisheries nursery habitats;
- and sustainable marine resource use within INP and UCR.

Ministry of the Environment Act, 2019

The Ministry of the Environment Act supports:

- environmental governance
- sustainable development
- climate change integration
- pollution regulation, and
- environmental information management within The Bahamas.

Planning and Subdivision Act, 2010

The Planning and Subdivision Act establishes a land-use planning and development control system intended to:

- promote sustainable development
- guide land use and zoning

- protect natural and cultural heritage
- prevent indiscriminate development, and
- maintain environmental quality

The Act is particularly relevant to:

- infrastructure development
- zoning frameworks
- visitor facilities, and
- land-use planning adjacent to INP and UCR

Wild Birds Protection Act, 1952

The Wild Birds Protection Act provides legal protection for wild birds and establishes closed seasons and reserve provisions for the protection of bird species and habitats.

This legislation is highly relevant to the protection and management of:

- Caribbean Flamingos;
- migratory birds;
- nesting seabirds;
- and wetland bird habitats within INP and UCR.

Bahamas Biological Resources and Traditional Knowledge Act, 2021

This Act establishes regulations governing:

- access to genetic resources;
- traditional knowledge;
- research activities;
- and equitable benefit-sharing associated with biodiversity resources.

The legislation supports scientific research governance and biodiversity protection relevant to ecological monitoring and research activities within INP and UCR.

4.0 Conservation Features and Goals

The Master Plan for the Bahamas National Protected Area System (BNPAS) identifies and prioritizes the protection of terrestrial, freshwater, and marine targets that are designed to protect ecosystems and species within an effectively managed protected area network. These are built around an Ecological Gap Analysis and a MARXAN (conservation planning software)

analysis leading to the identification of high priority sites for conservation and protection to meet national targets (Moultrie, 2012).

Conservation features and targets are important to the implementation of the management plan, identifying potential conflicts or threats, and the development of monitoring and evaluation strategies. Conservation features for INP and UCR, listed in Table 1, are based on those outlined in the 2012 Master Plan for The Bahamas National Protected Area System, and the 2014 and 2017 Ecological Gap Analysis. Similarly, the conservation goals detailed in Table 2 are derived from the same sources.

Conservation Features	**Description**
Inland Water	A lake or other body of seasonally fresh to hyper-saline water not bordered by the sea.
Sea Turtle Foraging Habitat	Preferred seagrass habitat where sea turtles are either known or predicted to spend a part of their life cycle foraging.
Medium Density Seagrass	This habitat is dominated by the seagrass Thalassia, also called Turtle Grass, but may contain the tube-like seagrass Syringodium and the thin-bladed seagrass Halodule. Occasionally one also finds small coral colonies within the seagrass. Medium Density Seagrass habitats have medium biomass (medium plant height, medium density) and a medium amount of substratum is visible, when compared to Dense and Sparse Seagrass. This habitat is found in lagoonal environments.
Mangroves	Mangrove trees grow in shallow, brackish waters along coasts and up creeks of Bahamian islands. Their roots provide nursery habitat for many important fish species. Mangroves in and around estuaries also trap sediments that might otherwise flow onto reefs and smother corals to death.
Sand	This habitat includes both clean sand and sand with a sparse algal community. It is found in lagoonal areas and near reefs.
Tidal Creeks	Wetlands situated in channels where water flows both directions due to the tides.
Reef Flat	All geomorphic reef types occurring on the shelf in less than 20m of water.
Bonefish Flats	Map of key bonefish habitat or bonefish flays around The Bahamas representing home ranges, spawning migration routes and juvenile habitats.
Fish Spawning Aggregations	Fish spawning aggregations with a lower and higher degree of validation are that have been published in peer reviewed journals or are generally known by scientists to exist; or are points that have been documented by scientific divers as having spawning fish (respectively). Species included in this file range from unknown to grouper, snapper, muttonfish and bonefish.

Sandy Beach	Unconsolidated shorelines which, depending on wave energy can vary in width and height of the dunes. Shore profiles on beaches begin at the high tide mark and are characterized by distinct zones. Starting from the water, there is a sparsely vegetated pioneer zone, a grassy or shrubby foredune, back dune, and then swale.
Coppice	A dry broad leaf evergreen formation (otherwise known as "coppice") is by far the most diverse terrestrial habitat found in The Bahamas. Different types of coppice can be found throughout The Bahamas due to the variability resulting from differing environmental conditions affecting the vegetation structure and floristic composition. Blackland coppice are located on higher elevations or ridges. The flora of the DBE forests is mainly broadleaved angiosperms, although some areas have scattered pine. The canopy is closed and typically 5-12 meters high. Whiteland coppice occurs at a lower elevation and the canopy is not closed in the woodland, but is characterized as having scattered patches of emergent trees with interspersed shrubs.
Shrub/Scrub	Shrublands are located inland from the beach strand or coastal rock communities. The substrate is a mixture of rocky limestone, sand, or a mixture of the two. Shrubland canopy is 2-4 meters tall. Dwarf shrubland areas are highly influenced by wind and the location of the water table. High winds prune the branch tips and roots are limited by the water table being so close to the surface. Both of these environmental influences do not allow the plants to grow into shrubs and trees.
Important Bird Habitat/Areas	Sites identified by regular birders and ornithologists using an established criteria that regularly hold significant numbers of a globally threatened species, other species of global conservation concern, or hold a significant component of the restricted range species whose breeding distribution can be defined as an Endemic Bird Area (EBA) or Secondary Area (SA). In The Bahamas, endemics are: Bahama Woodstar, Bahama Swallow and Bahama Yellowthroat. Other species of concern: Bahama Mockingbird, West Indian Whistling Duck, Bahamas Parrot, Olive-capped Warbler, West Indian Woodpecker, Kirtland's Warbler, Brown-headed Nuthatch, Audubon's Shearwater and the Piping Plover.
Flamingo Areas	Point location of flamingo areas in The Bahamas.
Seabird Nesting	Known seabird nesting sites in The Bahamas, including the Audubon Shearwater, White-tailed Tropic bird, Brown Pelican, Crested Cormorant, Magnificent Frigate bird, White Ibis, Great Egret, Tri-color Heron, Red Egret, Great Heron, Black Crowned

	Night Heron, Laughing Gull, Royal Tern, Least Tern, Bridled Tern, Sooty Tern, and the Brown Noddy.

Conservation Features	**Goal (%)**
Inland Water	25
Sea Turtle Foraging Habitat	30 – 60
Medium Density Seagrass	20
Mangroves	30 – 60
Sand	20
Tidal Creeks	30 – 60
Reef Flat	25
Bonefish Flats	30 – 60
Fish Spawning Aggregations	>60
Sandy Beach	30 – 60
Coppice	30
Shrub/Scrub	20
Important Bird Habitat/Areas	50
Flamingo Areas	<30
Seabird Nesting	50

For review: Park Statements to be finalized with community stakeholders

5.0 Park Purpose

Inagua National Park

The purpose of Inagua National Park is to:

1. Conserve and maintain internationally significant wetlands, saline lakes, mangrove systems, marine habitats, and biodiversity that support Caribbean Flamingos, migratory birds, endemic species, and ecologically important marine resources.
2. Protect and maintain the ecological character and hydrological integrity of The Bahamas' only Ramsar Wetland of International Importance through climate-smart management and restoration.
3. Maintain and enhance ecosystem services that support climate resilience, shoreline protection, fisheries productivity, carbon sequestration, biodiversity conservation, and ecosystem-based adaptation.
4. Preserve the wilderness character, scenic value, cultural heritage, and conservation legacy of the park, including the historic significance of flamingo conservation efforts on Great Inagua.
5. Serve as a center for scientific research, wetland monitoring, environmental education, climate resilience, public awareness, and community stewardship.
6. Support educational, eco-tourism, and nature-based opportunities that are compatible with the ecological sensitivity and conservation objectives of the park.

Union Creek Reserve

The purpose of Union Creek Reserve is to:

1. Conserve and restore ecologically important tidal creek, mangrove, seagrass, wetland, and marine nursery habitats that support biodiversity, fisheries productivity, and climate resilience.
2. Protect and maintain the ecological integrity and hydrological connectivity of the Reserve's interconnected marine and wetland ecosystems through climate-smart management and restoration initiatives.
3. Support the conservation, monitoring, and sustainable management of marine species and habitats, including areas historically important for Green Sea Turtle research and restoration.
4. Preserve the Reserve's wilderness character, ecological values, and scientific and conservation heritage associated with pioneering marine conservation efforts in The Bahamas.
5. Serve as a site for scientific research, ecological monitoring, restoration, environmental education, and community stewardship focused on marine and wetland conservation.
6. Support sustainable and low-impact recreational, educational, and eco-tourism opportunities that are compatible with the ecological sensitivity and conservation objectives of the Reserve.

6.0 Park Mission

7.0 Park Vision

8.0 Principles

The management of INP and UCR is based on the principles outlined in the Master plan for The Bahamas Protected Area System.

Principle 1: Representativeness
All major terrestrial and marine habitats are represented within the boundaries of INP and UCR system.

Principle 2: Replication
INP and UCR are contain habitats and ecosystems that are represented and replicated at other sites throughout the Bahamas National Protected Areas System. As interconnected protected areas within the broader Inagua system, INP and UCR contribute collectively to the ecological resilience of the national park network, while their spatial separation from other protected areas help safeguard against unexpected environmental disturbances, habitat loss, or the collapse of species populations.

Principle 3: Viability
Declaration of INP and UCR, along with the other protected areas in the network, enables the creation of a system of geographically dispersed sites that are self-sustaining and independent (as far as possible) of what happens in the surrounding areas. This network is ecologically viable with these protected areas achieving viability collectively and avoiding (genetic) isolation.

Principle 4: Precautionary design
INP and UCR were declared using the precautionary approach, i.e., use of the best available information to make decisions rather than delaying action while waiting for more and better information. Where there is uncertainty, the precautionary approach would favor erring on the side of biodiversity protection.

9.0 Management Goals and Objectives

The management goals and objectives established for INP and UCR are intended to guide the long-term climate-smart management, protection, restoration, monitoring, and sustainable use of these nationally and internationally significantly protected areas over the next ten years.

These goals and objectives outlined within this Climate-Smart Management Plan (CSMP) are designed to:

- maintain and enhance the ecological integrity and ecological character of the parks;
- strengthen ecosystem resilience to climate change;
- support adaptive management and evidence-based decision-making;
- promote wetland conservation and restoration;
- support biodiversity protection and habitat connectivity;
- enhance scientific research and monitoring;
- strengthen community stewardship and stakeholder engagement;
- support sustainable livelihoods and low-impact eco-tourism opportunities;
- and ensure the long-term sustainability and effective management of INP and UCR.

The management framework for INP and UCR recognizes the interconnected relationship between wetland, marine, coastal, and terrestrial ecosystems and integrates the principles of climate-smart management, ecosystem-based adaptation, restoration, and Ramsar "wise use" principles into park management and decision-making processes.

In developing the management goals and objectives for INP and UCR, the Bahamas National Trust (BNT) considered:

- the local, national, regional, and international significance of the protected areas;
- scientific findings and recommendations from the 2025 Rapid Ecological Assessment (REA);
- stakeholder and community feedback received during consultations;
- national biodiversity and climate commitments;
- Ramsar obligations; and
- the long-term ecological and socio-economic sustainability of Great Inagua.

Key considerations included:

- the designation of Inagua National Park as The Bahamas' only Ramsar Site and Wetland of International Importance;
- the ecological importance of the parks for Caribbean flamingos, migratory birds, endemic species, marine biodiversity, wetlands, mangroves, seagrass beds, and coral reef systems;
- The historic and ongoing importance of Union Creek Reserve for sea turtle research, restoration, and marine conservation;

- The ecological services provided by wetlands and coastal ecosystems, including climate adaptation, carbon sequestration, flood buffering, shoreline stabilization, fisheries support, and biodiversity conservation;
- The principles of the Ramsar Convention on Wetlands, including the “wise use” of wetlands and the maintenance of ecological character;
- The impacts and projected risks associated with climate change, including sea level rise, drought, storm surge, coral disease, invasive species, and changing hydrological conditions;
- Stakeholder values and interests, including conservation, scientific research, education, eco-tourism, cultural heritage, sustainable livelihoods, and community participation, and
- The need to balance ecological protection with sustainable and responsible public use and access

The primary management goals established for INP and UCR are to:

1. Reduce the impacts of invasive hogs and other invasive species on the ecological character, wetland integrity, and breeding success of Caribbean flamingos within Inagua National Park.
2. Maintain or increase the breeding population and habitat quality of Caribbean flamingos in Inagua National Park relative to the 2024 baseline population.
3. Maintain, restore, and enhance mangrove, wetland, saline lake, seagrass, coral reef, and tidal creek ecological functionality, And resilience while maintaining the ecological character of the Ramsar site.
4. Preserve the wilderness character and associated values of INP and UCR.
5. By 2030, establish sufficient operational, staffing, financial, scientific, technical, and enforcement capacity for effective climate-smart and Ramsar-compliant management of INP and UCR.
6. Expand environmental education, Ramsar awareness, outreach, interpretation, restoration, scientific research, sustainable tourism, and community stewardship opportunities for INP and UCR.

In its management of INP and UCR, the BNT seeks to:

- Develop and implement adaptive management strategies that support the goals, objectives, and long-term vision of the parks
- Base management decisions on the best available scientific information, local ecological knowledge, and monitoring data
- Ensure that environmental resources are managed to benefit surrounding ecosystems and ecological connectivity beyond park boundaries.
- support ecological restoration and habitat rehabilitation where appropriate

- Incorporate stakeholder and community input into park planning, management, restoration and stewardship initiatives.
- promote collaborative partnerships with government agencies, NGOs, research institutions, local communities, and international conservation partners. and
- strengthen sustainable livelihoods, education, awareness, and stewardship opportunities linked to protected area conservation.

Detailed goals, objectives, targets and management actions intended to support implementation of the vision, mission and purpose of INP and UCR are outlined in Table 3.

Table 3: Goals and Objectives for Inagua National Park and Union Creek Reserve.

Goals	**Objectives**
1. By 2037, invasive hog impacts within priority flamingo breeding and Ramsar wetland habitats are reduced by 70% relative to the 2027 baseline, improving flamingo nesting success and wetland ecological integrity in INP.	1.1: By 2029/2032, complete a feasibility assessment and invasive species management strategy for the control and reduction of invasive hog populations within priority flamingo breeding and Ramsar wetland areas. 1.2: Through to 2037, implement and maintain invasive hog control and culling activities within identified priority management zones, with annual targets established based on monitoring data and operational capacity. 1.3: By 2027, establish a long-term invasive species monitoring programme, including aerial reconnaissance, field observations, camera trapping, and habitat impact assessments. 1.4: Through to 2037, monitor and assess the impacts of invasive species on flamingo nesting success, wetland vegetation, hydrology, and ecological character. 1.5: By 2030, strengthen partnerships with government agencies, local stakeholders, Ramsar partners, and technical experts to support invasive species management and wetland management within INP and UCR.
2. Maintain or increase the breeding population and reproductive success of Caribbean flamingos in Inagua relative to the 2024 baseline population.	2.1: By 2028, establish and implement standardized remote aerial flamingo nesting survey protocols utilizing drone and aerial survey technologies. 2.2: Through to 2037, conduct (annual/biennial?) remote aerial flamingo nesting and breeding surveys during breeding periods. 2.3: Through to 2037, monitor breeding phenology, nesting success, chick survival, hydrological conditions and associated climatic events for comparison with historical breeding records. 2.4: By 2029, identify, map and designate critical flamingo breeding, feeding, nesting and wetland refuge habitats to support zoning and Ramsar wetland protection measures.

	2.5: Through to 2037, minimize human disturbance and habitat degradation within critical flamingo breeding and wetland areas through enforcement, access management, and awareness initiatives. 2.6: Through to 2037, engage local community members in flamingo monitoring, bird counts, citizen science programmes, and conservation awareness activities.
3. By 2037, maintain at least 80–90% of the 2027 baseline extent and ecological functionality of mangrove, wetland, saline lake, seagrass, and tidal creek ecosystems, while improving the resilience and ecological condition of coral reef and coastal habitats in accordance with Ramsar and climate-smart management principles.	3.1: By 2028, establish baseline mapping and ecological condition assessments for mangrove, wetland, saline lake, seagrass, coral reef, and tidal creek ecosystems within INP and UCR 3.2: Through to 2037, monitor mangrove extent, shoreline change, wetland connectivity, habitat condition, coral reef condition, and hydrological functionality f every 5 years using GIS, drone imagery, and remote sensing technologies. 3.3: Through to 2037, maintain mangrove habitat extent and composition within no more than a 20% change from the 2027 baseline condition, except where climate adaptation or restoration measures require managed ecological transition. 3.4: Through to 2037, maintain or improve coral reef condition relative to the 2025 REA baseline through coral disease prevention, monitoring, and habitat management interventions. 3.5: Through to 2037, monitor water quality, salinity, turbidity, nutrient levels, sedimentation, and hydrological connectivity across representative wetland and marine monitoring sites within INP and UCR. 3.6: By 2030, identify and prioritize climate-vulnerable wetlands, saline lakes, mangrove systems, seagrass beds, coral reef habitats, and ecological transition zones for targeted management and adaptation interventions. 3.7: Through to 2037, maintain natural tidal exchange and hydrological connectivity between marine, wetland, inland lake, and tidal creek systems to support ecosystem resilience and ecological character. 3.8: Through to 2037, maintain the ecological character of the Ramsar Site in accordance with Ramsar Convention obligations and wetland “wise use” principles. 3.9: Through to 2037, incorporate local ecological knowledge and community observations into wetland monitoring and management decision-making processes. 3.10: By 2030, identify and prioritize degraded mangrove, wetland, tidal creek, seagrass, and coastal habitats for ecological restoration and rehabilitation initiatives. 3.11: Through to 2037, implement habitat restoration activities, including mangrove restoration, shoreline stabilization, tidal creek

	restoration, invasive species removal, and wetland rehabilitation where feasible. 3.12: Through to 2037, monitor and evaluate the effectiveness of wetland and habitat restoration interventions using ecological indicators and adaptive management approaches. 3.13: By 2032, develop restoration protocols and best management practices for wetland, mangrove, and coastal habitat restoration within INP and UCR.
4. Preserve the wilderness character, ecological integrity, cultural heritage significance, wetland values and other park values of INP and UCR.	4.1: Through to 2037, limit the footprint of permanent infrastructure within the parks to designated management and visitor use zones identified within the zoning framework. 4.2: By 2029, develop and implement zoning and visitor management frameworks to minimize impacts on sensitive wetlands, habitats, and wildlife. 4.3: Through to 2037, maintain remote and low-impact visitor experiences consistent with the ecological, Ramsar, and wilderness character of the protected areas. 4.4: By 2030, document, preserve, and interpret cultural and conservation heritage features, including Camp Vernay and the historic Union Creek turtle research facilities. 4.5: Through to 2037, prevent habitat degradation, unauthorized development, dumping, hydrological alteration, or extractive activities within sensitive wetland and conservation areas. 4.6: By 2032, rebuild and maintain low-impact camping and birding infrastructure, including simple observation stations and designated wilderness visitor areas, consistent with community recommendations and ecological sensitivity.
5. By 2032, establish sufficient operational, staffing, financial, scientific, and technical capacity for effective park management of INP and UCR.	5.1: By 2028, complete a staffing, operational, and wetland management gap assessment for INP and UCR aligned with the Cost Verification Study and Climate-Smart Management Plan priorities. 5.2: By 2030, strengthen on-island operational capacity through improved staffing, equipment, vessels, communications systems, wetland monitoring tools, and climate-resilient field infrastructure. 5.3: Through to 2037, increase enforcement, surveillance, and ecological monitoring capacity through the use of SMART monitoring systems, drones, GIS, hydrological monitoring, and interagency collaboration. 5.4: By 2032, secure sustainable financing and long-term funding support for implementation of priority wetland management, restoration, climate adaptation, monitoring, and conservation actions identified within this Plan. 5.5: Through to 2037, strengthen partnerships with Ramsar stakeholders, government agencies, research institutions, NGOs,

	local communities, and international conservation partners to support collaborative management and implementation. 5.6: By 2029, establish a park advisory committee or formalized community co-management mechanism with representation from local stakeholders, including the Inagua Sustainability Council.
6. Expand environmental education, Ramsar awareness, outreach, interpretation research, sustainable tourism, and community stewardship opportunities for INP and UCR.	6.1: By 2028, develop and implement a comprehensive education, outreach, and interpretation strategy focused on wetlands, flamingos, marine ecosystems, Ramsar values, climate resilience, and restoration. 6.2: Through to 2037, increase community engagement and stewardship initiatives through citizen science programmes, volunteer opportunities, habitat restoration activities, school outreach, wetland awareness campaigns, and conservation partnerships. 6.3: By 2030, develop interpretive materials, species brochures, signage, QR-code educational content, and visitor information highlighting the ecological, hydrological, Ramsar, restoration, and cultural significance of the protected areas. 6.4: Through to 2037, support local participation in sustainable eco-tourism, birdwatching, wetland tourism, conservation tourism, habitat restoration, and climate education initiatives. 6.5: Through to 2037, strengthen public awareness of the ecological importance of wetlands, flamingo conservation, habitat restoration, sustainable fisheries, and climate-smart wetland management practices within Great Inagua. 6.6: By 2032, establish INP and UCR as nationally recognized demonstration sites for wetland conservation, Ramsar management, ecological restoration, and climate-smart protected area management within The Bahamas and the wider Caribbean region. 6.7: By 2030, collaborate with the Ministry of Tourism, local tour operators, and community groups to develop sustainable tourism products and guided experiences for INP and UCR, including birding, kayaking, restoration activities, and wilderness tours. 6.8: Through to 2037, strengthen educational engagement within the Inagua All Age School and broader community through special events, species awareness days, field trips, wetland restoration activities, and youth conservation programmes.

9.1 IUCN Protected Area Management Categories

The Bahamas is party to many multilateral environmental agreements including the Convention on Biological Diversity (CBD), which requires regular reporting on protected areas (PAs), as well

as members of like-minded organizations such as the International Union for Conservation of Nature (IUCN). The IUCN is widely recognized as the global authority on the status of the natural world and what measures are needed to maintain it. In 1994, the IUCN developed a protected areas management categories system which allows for the classification of protected areas based on their management objectives. International bodies, including the United Nations (UN), recognize this system as the global standard for defining protected areas. The IUCN recognizes six protected area (PA) categories: Category 1a, Category 1b, Category II, Category III, Category IV, Category V, and Category VI.

The BNT is a member of the IUCN and has adopted the IUCN category system for categorizing PAs following an extensive review exercise. In 2014, the BNT Council approached the IUCN for technical assistance, which led to the collaborative coordination and facilitation of a series of workshops, funded by the BIOPAMA Programme that reviewed the application of the IUCN categories to the national park system of The Bahamas. INP and UCR were subsequently categorized as II: National Park and IV: Habitat/Species Management Area respectively.

Category Ia
Strict Nature Reserve: Category Ia are strictly protected areas set aside to protect biodiversity and possibly geological/geomorphic features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values. Such protected areas can serve as indispensable reference areas for scientific research and monitoring.

Category Ib
Wilderness Area: Category Ib protected areas are usually large unmodified or slightly modified areas, retaining their natural character and influence without permanent or significant human habitation, which are protected and managed to preserve their natural condition.

Category II
National Park: Category II protected areas are large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible, spiritual, scientific, educational, recreational, and visitor opportunities.

Category III
Natural Monument or Feature: Category III protected areas are set aside to protect a specific natural monument, which can be a landform, sea mount, submarine cavern, geological feature such as a cave or even a living feature such as an ancient grove. They are generally quite small, protected areas, and often have high visitor value.

Category IV
Habitat/Species Management Area: Category IV protected areas aim to protect species or

habitats and management reflects this priority. Many Category IV protected areas will need regular, active interventions to address the requirements of species or to maintain habitats, but this is not a requirement of the category.

Category V

Protected Landscape/Seascape: A protected area where the interaction of people and nature over time has produced an area of distinct character with significant, ecological, biological, cultural, and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.

Category VI

Protected area with sustainable use of natural resources: Category VI protected areas conserve ecosystems and habitats together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in a natural condition, where a proportion is under sustainable natural resource management and where low-level non-industrial use of natural resources compatible with nature conservation is seen as one of the main aims of the area.

9.2 Description of Functional Areas and Programs

Table 4 outlines the functional management areas and associated programmes that support implementation of the Climate-Smart Management Plan (CSMP) for Inagua National Park and Union Creek Reserve. These functional areas provide an organized framework for coordinating, implementing, monitoring, evaluating, and adapting management activities over the life of the Plan.

As management priorities, ecological conditions, climate risks, and stakeholder needs evolve, additional programmes and management actions may be incorporated into existing functional areas. This adaptive management structure allows the Bahamas National Trust (BNT) to effectively respond to emerging environmental and operational challenges while maintaining the ecological integrity and ecological character of the protected areas.

Functional Area	Programme	Description
Conservation Management of Species, Habitats and Ecosystems	**Wetland Conservation and Restoration**	Protection, restoration, and long-term management of mangrove wetlands, saline lakes, tidal creeks, seagrass beds, and coastal habitats to maintain the ecological character of the Ramsar Site and improve ecosystem resilience to climate change. Activities may include mangrove restoration, shoreline stabilization, hydrological

		restoration, wetland rehabilitation, invasive species removal, and ecosystem-based adaptation initiatives.
	Climate-Smart Habitat Management	Implementation of climate-smart and adaptive management strategies to strengthen resilience of wetland, marine, and terrestrial ecosystems to sea level rise, storm surge, coral disease, drought, erosion, and changing hydrological conditions.
	Scientific Monitoring and Research	Continued scientific monitoring, ecological assessments, hydrological monitoring, and research to assess the health, ecological integrity, climate resilience, and ecological character of habitats and species within and surrounding INP and UCR. Monitoring programmes may include wetlands, mangroves, seagrass beds, coral reefs, water quality, flamingos, migratory birds, sea turtles, fisheries resources, and climate indicators.
	Species and Habitat Management	Development and implementation of management and restoration programmes for priority species and habitats based on monitoring results, ecological assessments, climate impacts, and identified threats. This includes Caribbean Flamingos, migratory birds, wetlands, mangroves, seagrass systems, marine nursery habitats, and species of conservation concern.
	Invasive Species Management and Biosecurity	Monitoring, prevention, control, and removal of invasive plant and animal species within the parks and adjacent ecosystems, including invasive hog management in flamingo breeding areas and invasive species impacting wetlands and native biodiversity.
		Use of patrols, SMART monitoring systems, drones, GIS, camera systems, and enforcement partnerships to monitor and protect park

Resource Management and Protection	**Surveillance, Enforcement and Compliance**	resources against illegal activities, habitat destruction, poaching, illegal fishing, unauthorized access, and environmental violations.
	Wetland and Marine Resource Protection	Protection and sustainable management of wetlands, marine nursery habitats, fisheries resources, mangroves, seagrass beds, coral reefs, and sensitive ecological areas through regulations, monitoring, restoration, zoning, and compliance measures.
	Zoning and Boundary Management	Development, mapping, and implementation of clearly defined management zones and park boundaries to regulate activities, minimize user conflicts, protect sensitive habitats, guide restoration efforts, and support sustainable use and visitor management.
	Climate Risk and Disaster Preparedness	Development of preparedness and response strategies for hurricanes, storm surge, flooding, coral bleaching, invasive species outbreaks, pollution incidents, and other climate-related or environmental emergencies affecting park ecosystems and infrastructure.
Community Engagement and Stewardship	**Awareness and Education**	Development and implementation of environmental education, Ramsar awareness, climate resilience, and conservation outreach programmes designed to improve local, national, and international understanding, appreciation, and stewardship of INP and UCR.
	Community Stewardship and Citizen Science	Engaging local communities, schools, stakeholders, and volunteers in citizen science, habitat restoration, species monitoring, wetland stewardship, bird counts, cleanups, and conservation initiatives.
		Supporting volunteer programmes, internships, youth conservation initiatives, and educational

	Volunteerism and Youth Engagement	field activities that build local stewardship and strengthen conservation awareness and participation.
	Stakeholder and Community Partnerships	Building and maintaining collaborative relationships with local communities, NGOs, government agencies, fishers, tourism stakeholders, researchers, and international conservation partners to support co-management, stewardship, restoration, and sustainable livelihoods.
Tourism, Recreation and Public Use	**Sustainable Tourism Development**	Development and management of low-impact eco-tourism opportunities including birdwatching, wetland tourism, scientific tourism, kayaking, wildlife viewing, educational tourism, and wilderness experiences consistent with the ecological sensitivity and wilderness character of the parks.
	Visitor Awareness and Interpretation	Design and installation of interpretive signage, species information panels, educational materials, brochures, QR-code learning systems, and visitor information highlighting Ramsar values, wetlands, climate resilience, biodiversity, conservation history, and cultural heritage.
	User Fee and Sustainable Financing Systems	Exploration and development of sustainable financing mechanisms, including visitor fees, permits, eco-tourism services, donations, partnerships, and grant opportunities to support park management and conservation activities.
	Visitor Infrastructure and Access Management	Development, rehabilitation, and maintenance of low-impact climate-resilient visitor infrastructure including boardwalks, birding platforms, observation areas, moorings, signage, trails, pavilions, and visitor support facilities where appropriate.

	Visitor Impact Management	Monitoring and management of visitor activities and tourism impacts on wetlands, wildlife, mangroves, marine habitats, restoration sites, and culturally sensitive areas to ensure ecological sustainability and protection of wilderness values.
	Recreational and Educational Activities	Expansion and management of appropriate recreational, scientific, and educational activities that support visitor experiences, environmental awareness, conservation appreciation, and sustainable public use.
Management and Administration	**General Management and Administration**	Administrative and operational activities associated with effective park management, including procurement, staffing, logistics, reporting, planning, permitting, field operations, and coordination of management activities within INP and UCR.
	Climate-Smart Planning and Adaptive Management	Integration of climate-smart management, Ramsar obligations, ecosystem-based adaptation, restoration planning, and adaptive management approaches into operational planning and implementation.
	Training and Capacity Building	Delivery of training programmes to strengthen staff capacity in wetlands management, enforcement, restoration, climate adaptation, GIS, SMART monitoring, drone operations, visitor management, research support, and emergency response.
	Financial Management and Sustainable Financing	Development and management of financial systems, budgeting, grant administration, donor management, reporting, and sustainable financing strategies to support long-term park operations and implementation of the CSMP.
		Developing and maintaining effective working relationships with government agencies and

	Government Relations	institutions involved in biodiversity conservation, fisheries management, wetland management, climate adaptation, environmental regulation, tourism, and protected area management.
	Partnership Relations	Building and maintaining partnerships with conservation organizations, Ramsar stakeholders, research institutions, universities, NGOs, donor agencies, and community groups that support implementation of the management plan.
	Information Technology and Data Management	Acquisition, maintenance, and technical support for communication systems, ecological databases, GIS platforms, monitoring technologies, drones, SMART systems, and data management infrastructure supporting climate-smart management and decision-making.
Facilities Operations and Infrastructure Management	**Marine Access and Mooring Facilities**	Installation and maintenance of demarcation buoys, moorings, navigational markers, and designated marine access points to support safe navigation and resource protection.
	Buildings, Grounds and Utilities	Construction, rehabilitation, operation, and maintenance of climate-resilient facilities including ranger stations, staff accommodations, visitor facilities, operational bases, utilities, renewable energy systems, and support infrastructure.
	Vehicle, Vessel and Equipment Operations	Acquisition, operation, maintenance, and replacement of patrol vehicles, vessels, trailers, communications equipment, drones, and field equipment necessary for park management, monitoring, enforcement, and emergency response.
	Infrastructure Operations and Maintenance	Development, maintenance, and rehabilitation of boardwalks, observation towers, trails, pavilions, signage, restoration infrastructure, and associated visitor and operational infrastructure

		consistent with ecological sensitivity and climate resilience principles.
	Asset and Facility Resilience	Assessment and strengthening of infrastructure resilience to climate impacts including hurricanes, flooding, corrosion, erosion, storm surge, and sea level rise through climate-smart design and maintenance approaches.

10.0 Opportunities and Constraints

10.1 Opportunities

10.1.1 Natural Resources and Ecosystem Processes

Inagua National Park and Union Creek Reserve contain globally significant wetland, marine, and terrestrial ecosystems that provide important opportunities for biodiversity conservation, ecological restoration, climate adaptation, scientific research, and sustainable development.

These ecosystems provide valuable ecological services including:

- climate regulation and carbon sequestration
- shoreline stabilization and erosion control
- flood buffering and storm protection
- fisheries support
- biodiversity conservation, and
- ecosystem-based climate adaptation opportunities.

The ecological connectivity between wetland, marine, and terrestrial habitats within INP and UCR also presents significant opportunities for:

- wetland restoration
- climate resilience initiatives
- blue carbon conservation
- long-term ecological monitoring, and
- ecosystem-based adaptation projects supported through national and international conservation financing mechanisms, including the Bahamas Debt Conversion Project for Marine Conservation.

10.1.2 Scientific Research, Monitoring, and Education

The ecological significance, remoteness, and relatively intact condition of INP and UCR provide exceptional opportunities for:

- scientific research;
- long-term ecological monitoring;
- climate change studies;
- wetland and hydrological monitoring;
- species research;
- and restoration science.

The parks have historically played an important role in international conservation science, particularly in relation to:

- Caribbean Flamingo conservation
- wetland ecology, and
- Green Sea Turtle research and restoration

There are significant opportunities to strengthen partnerships with:

- universities
- research institutions
- NGOs
- government agencies, and
- international conservation organizations to support research, monitoring, restoration, and adaptive management initiatives.

The parks also provide valuable opportunities for:

- environmental education;
- citizen science;
- youth engagement;
- field-based learning;
- and public awareness programmes focused on wetlands, biodiversity, climate resilience, and conservation stewardship.

10.1.3 Cultural Heritage and Island Pride

INP and UCR hold significant cultural, historical, and conservation heritage value for the people of Great Inagua and The Bahamas.

The successful restoration and protection of the Caribbean Flamingo population on Great Inagua represents one of the most important conservation success stories in the Caribbean region and remains a strong source of local identity and national pride.

Historic features such as:

- Camp Vernay
- The flamingo conservation legacy of Sam Nixon and Robert Porter Allen and
- The historic Union Creek sea turtle research facilities
- provide opportunities for:
    - heritage interpretation
    - conservation storytelling
    - cultural tourism, and
    - educational programming.

The parks also provide opportunities to strengthen community stewardship, celebrate local conservation leadership, and reinforce the connection between healthy ecosystems, sustainable livelihoods, and island identity

10.1.4 Recreational Opportunities and Sustainable Economic Benefits

INP and UCR provide significant opportunities for low-impact and sustainable nature-based tourism and recreation that are compatible with the ecological sensitivity and wilderness character of the protected areas.

Potential recreational and tourism opportunities include:

- birdwatching and flamingo viewing
- wetland tourism
- kayaking and marine exploration
- scientific tourism
- photography
- wildlife viewing
- educational tourism
- guided wilderness experiences, and
- regulated hunting experiences at INP

There are also opportunities to expand:

- locally operated eco-tourism enterprises
- guiding services
- visitor interpretation, and

- sustainable tourism partnerships that support local livelihoods and economic diversification on Great Inagua.

Future tourism initiatives should be carefully planned and managed to ensure:

- protection of sensitive habitats and species
- maintenance of wilderness character
- climate resilience, and
- sustainable visitor-use consistent with Ramsar and climate-smart management principles.

10.1.5 Restoration and Climate Resilience Opportunities

The extensive wetland, mangrove, tidal creek, and marine ecosystems within INP and UCR provide important opportunities for:

- ecological restoration
- wetland rehabilitation
- shoreline stabilization
- mangrove restoration
- invasive species management, and
- ecosystem-based adaptation initiatives.

These restoration and resilience-building opportunities may support:

- improved ecosystem health and biodiversity
- climate adaptation
- enhanced fisheries productivity
- blue carbon conservation, and
- increased resilience to sea level rise and extreme weather events.

The parks may also serve as demonstration sites for climate-smart wetland management and restoration within The Bahamas and the wider Caribbean region.

10.1.6 Sustainable Financing and Management Effectiveness

The national and international significance of INP and UCR presents opportunities to strengthen sustainable financing, management effectiveness, and long-term operational capacity.

Potential opportunities include:

- national conservation financing mechanisms;
- grants and donor funding;

- Ramsar and climate adaptation initiatives;
- research partnerships;
- eco-tourism revenue;
- restoration and blue carbon programmes, and
- funding opportunities available through the Bahamas Debt Conversion Project for Marine Conservation and related conservation initiatives.

Additional opportunities exist to strengthen:

- climate-smart infrastructure
- scientific monitoring capacity
- restoration implementation
- enforcement and surveillance systems, and
- long-term operational sustainability

10.1.7 Stakeholder Partnerships

Stakeholder partnerships remain a critical component of effective climate-smart protected area management and successful implementation of this CSMP.

Throughout the development of this management plan, the BNT has continued to strengthen existing partnerships and foster new collaborative relationships with:

- local communities
- NGOs
- government agencies, particularly the Foresty Unit and the Department of Environmental Planning & Protection
- Morton Salt Ltd.
- Bird Conservation organizations
    - National Audubon Society
    - BirdLife International
    - BirdsCaribbean
    - American Bird Conservancy
- Flamingo & Wetland Conservation Groups
    - IUCN Flamingo Specialist Group
    - Ramsar Convention on Wetlands
    - Wetlands International
- Research institutions and partners
    - Caribbean Waterbird Census

- the Inagua Sustainability Council, a local stewardship group whose purpose is to promote Inagua as an eco-destination, protect its unique ecosystems and create economic opportunities on the island.

10.2 Constraints

10.2.1 Staffing and Human Resource Capacity

At present, the staffing capacity for Inagua National Park and Union Creek Reserve remains significantly limited relative to the size, ecological significance, operational complexity, and international obligations associated with management of these protected areas.

Currently, the BNT employs two full-time park wardens on Great Inagua, who are collectively responsible for park management and operational activities across all protected areas on Great and Little Inagua, including:

- Inagua National Park
- Union Creek Reserve, and
- Little Inagua National Park

The current staffing structure places considerable operational demands on park personnel, whose responsibilities include:

- enforcement and compliance
- marine and terrestrial patrols
- invasive species monitoring and control
- wetland and wildlife monitoring
- maintenance of infrastructure and equipment
- visitor management
- stakeholder engagement
- educational outreach
- support for scientific research
- emergency response, and
- administrative reporting

Given the remoteness, size, and ecological sensitivity of INP and UCR, the existing staffing complement is insufficient to effectively

In September 2016, the BNT through support from the Inter-American Development Bank (IDB), commissioned a Cost Verifications Study to assess the annual operational, staffing, infrastructural and investment requirements for an effectively managed national park system in The Bahamas. This study was updated in 2018 to incorporate the expanded Bahamas National Protected Area System (BNPAS), and again in 2025 through the Capacity Assessment & Action

Plan developed under the Bahamas Debt Conversion Project for Marine Conservation, to reflect operating costs and investment needs for the next five years.

Through this study, it was determined that significant staffing and operational gaps for effective park management of INP and UCR requires additional personnel, including:

- three (3) additional park wardens,
- one (1) office administrator,
- one (1) science officer, and
- one (1) education and outreach officer

10.2.2 Management Resources and Financial Sustainability Constraints

Limited financial, technical, and operational resources remain one of the most significant constraints affecting the effective long-term management of Inagua National Park and Union Creek Reserve.

Insufficient and inconsistent funding limits the capacity of the BNT to effectively protect, manage, monitor, restore, and sustainably operate these nationally and internationally significant protected areas. Financial constraints directly affect the implementation of priority management actions identified within this Climate-Smart Management Plan (CSMP),

Addressing these financial and operational constraints will require sustained and diversified funding sources to support the long-term implementation of the CSMP and improve overall management effectiveness. Potential sustainable financing mechanisms may include:

- national conservation financing mechanisms
- grants and donor funding, including grants from Bahamas Protected Areas Fund (BPAF)
- Bahamas Debt Conversion Project for Marine Conservation (BDCPMC) opportunities
- government subventions and contracts
- corporate partnerships and sponsorships
- memberships and donations
- sustainable tourism and visitor fees
- income from products and services, including merchandise sales, park tours, user fees etc.
- special conservation and emergency response funds
- research partnerships, and
- multi-year programme and infrastructure grants

10.2.3 Infrastructure, Equipment and Operational Constraints

Current operational and financial resources available for management of INP and UCR remain limited to the scale and complexity of management needs identifies within this Climate-Smart Management Plan.

Existing constraints affect the BNT's ability to:

- undertake regular patrols and monitoring
- conduct restoration activities
- maintain infrastructure and equipment
- Support scientific research and ecological assessments
- Implement visitor management programmes, and
- Respond effectively to environmental threats and emergencies.

Additional operational challenges include:

- the remoteness of the protected areas
- high transportation and fuel costs
- limited communication infrastructure
- harsh environmental conditions impacting equipment and infrastructure, and
- limited on-island technical support capacity.

Over the next five to ten years, significant investment will be required to strengthen operational effectiveness and support implementation of the CSMP. Priority investment areas include:

- modernization and outfitting of the existing BNT Inagua Office
- procurement of climate-resilient operational infrastructure
- installation of updated communications and monitoring systems
- acquisition of GIS, SMART and drone technology
- ecological monitoring equipment, and improved data management systems

Additional investment needs include:

- procurement of dedicated patrol and monitoring vessel
- Replacement or acquisition of patrol vehicle(s) and trailer
- maintenance and licensing of vehicles and marine vessels
  renewable energy and utility improvements
- upgrades to staff housing and accommodations, and
- interpretative and regulatory signage

10.2.4 Technical, Scientific and Data Management Constraints

Effective climate-smart management of Inagua National Park and Union Creek Reserve requires reliable scientific data, long-term ecological monitoring, technical expertise, and effective data management systems. However, several technical and scientific constraints currently limit the ability to fully implement monitoring, restoration, adaptive management, and reporting programmes within the protected areas.

Existing limitations include:

- insufficient baseline ecological and hydrological data for certain habitats and species
- limited long-term monitoring datasets
- gaps in climate vulnerability and restoration assessments
- limited GIS and spatial analysis capacity
- inadequate data management and storage systems, and
- limited access to specialized scientific equipment and monitoring technologies

Additional challenges include limited technical capacity and staffing support for:

- wetland and hydrological monitoring
- drone and UAV operations
- GIS mapping and spatial planning
- SMART monitoring systems
- ecological data analysis
- water quality monitoring
- restoration planning and evaluation, and
- climate adaptation assessments

The remote location and logistical complexity of INP and UCR further constrain:

- routine field monitoring
- equipment maintenance
- data collection frequency
- internet and communications reliability, and
- timely reporting and information sharing

Scientific monitoring and research efforts have historically been project-based and dependent on external technical and financial support, which may result in inconsistencies in long-term data collection and monitoring continuity.

There is also a need to strengthen:

- centralized ecological databases and information management systems
- standardized monitoring protocols
- climate and hydrological monitoring programmes
- data sharing and reporting mechanisms, and
- integration of local ecological knowledge into management and decision-making processes

Addressing these constraints will require:

- strengthened partnerships with research institutions and conservation organizations
- increased investment in monitoring technology and scientific equipment
- expanded staff training and technical capacity building
- improved GIS and data management systems, and
- long-term support for standardized ecological and climate monitoring programmes

11.0 Critical Threats

The long-term ecological integrity, ecological character, climate resilience, and management effectiveness of Inagua National Park and Union Creek Reserve are influenced by several existing and emerging threats. These threats have the potential to adversely impact wetland systems, marine habitats, biodiversity, ecosystem services, cultural heritage, and sustainable livelihoods if not adequately managed through coordinated climate-smart management, restoration, monitoring, enforcement, and stakeholder engagement initiatives.

11.1 Invasive Species

Invasive species represent one of the most significant threats to the ecological integrity of INP and UCR, particularly invasive feral hogs within flamingo breeding habitats. Feral hogs are omnivorous and highly opportunistic feeders that uproot vegetation and wetland substrate while foraging and are known to prey on eggs, chicks, reptiles, amphibians and ground-nesting birds.

The impacts of invasive hogs on Caribbean Flamingos are of particular concern as they actively feed on flamingo eggs and young chicks causing substantial setbacks to breeding success as flamingos have a very low reproductive damage, typically only laying one egg per year that is usually not replaced if lost. Feral hogs are also known to trample nesting habitat causing flamingos to abandon their rookeries.

Continued disturbance, habitat degradation and predation may result in:

- Reduced breeding success
- abandonment of nesting sites
- degradation of wetland habitat
- shifts in flamingo breeding behavior, leaving some colonies inactive, and
- long-term declines in ecological resilience.

The prevention, monitoring and management of invasive species therefore remain a high priority for the long-term consercation and climate resilience of INP and UCR.

11.2 Climate Change and Global Warming

Anthropogenic climate change represents one of the greatest long-term threats to small island developing states like The Bahamas, and to the wetland, marine and coastal ecosystems protected within INP and UCR.

The impacts of climate change are already being experienced throughout The Bahamas and are expected to intensity over time. These include:

- increased storm intensity,
- sea level rise,
- coastal erosion,
- elevated air and sea surface temperatures
- coral bleaching and disease
- salt water intrusion
- changing rainfall patterns
- drought
- increased flooding and storm surge impacts, and
- ocean acidification

Projected sea level rise is expected to rise by 15 inches by 2065 (Climate Studies Group Mona & Caribbean Institute for Meteorology and Hydrology. The State of the Caribbean Climate Report, 2020). This is predicted to increase flooding from high tides and storms, increase coastal erosion and salt intrusion impacting aquifers and agricultural lands, cause mangrove and wetlands inundation and loss of feeding, breeding and nesting habitat.

Air temperatures are trending upwards with minimum, maximum and mean temperatures projected to increase (World Bank Group. Bahamas: Trends, variability, and projections. Climate Knowledge Portal). Heat waves are expected to be more frequent, intense and longer lasting. This trend can potentially impact species distribution, the frequency and intensity of dry spells, and impacts on human health related to heat stress.

Sea surface temperatures are expected to exceed 28 degrees celsius year-round by 2050 (Climate Studies Group Mona & Caribbean Institute for Meteorology and Hydrology. The State of the Caribbean Climate Report, 2020). This rise in ocean temperatures will lead to increased bleaching events above the normal, increase in spread of coral diseases, changes in marine biodiversity and/or species distribution, and loss in fisheries productivity.

Storms patterns are projected to reflect an increase in frequency of category 4 and 5 hurricanes (Climate Studies Group Mona & Caribbean Institute for Meteorology and Hydrology. The State of the Caribbean Climate Report, 2020). Projections also indicate an increase in the intensity of storms with increased maximum wind speeds and more rain. This increase can cause beach erosion, flooding, infrastructural damage, loss of lives and livelihoods, disruption of basic services like transport and healthcare, adverse impacts on marine and terrestrial ecology and a decline in tourism.

On average, the northern Caribbean experiences slightly wetter conditions with an expected increase through to mid-century, then shifts to 17% drier annual mean by the end of the century. (Climate Studies Group Mona & Caribbean Institute for Meteorology and Hydrology. The State of the Caribbean Climate Report, 2020). Projections also indicate increases in heavy rainfall events and droughts. These changes can cause water and food insecurity, changes in ecology, changes in hydrodynamics in karst and wetlands, and increase in frequency of dry spells and wildfires.

11.3 Habitat Degradation and Hydrological Alteration

The ecological health and Ramsar ecological character of Inagua National Park and Union Creek Reserve depend heavily on the maintenance of natural hydrological processes, wetland connectivity, and ecosystem functionality.

Potential threats associated with habitat degradation and hydrological alteration include:

- wetland disturbance
- erosion
- sedimentation
- pollution
- unmanaged access
- unauthorized dumping
- poorly planned infrastructure development, and
- alteration of tidal exchange and water flow patterns.

Disturbances to wetland and tidal creek systems may negatively affect:

- flamingo breeding habitat
- mangrove health
- marine nursery habitats
- seagrass ecosystems
- fisheries productivity, and
- water quality.

The long-term protection and restoration of hydrological connectivity and wetland functionality are therefore critical to maintaining ecological resilience, ecosystem services, and Ramsar obligations. These concerns are consistent with findings and recommendations identified within the 2025 Rapid Ecological Assessment, Ramsar wetland management principles, and regional climate vulnerability assessments for Caribbean coastal and wetland ecosystems.

12.0 Potential Issues

In addition to the critical threats identified above, several emerging and long-term issues may influence the future management, sustainability, and resilience of INP and UCR.

Potential issues include:

- inadequate or inconsistent long-term funding;
- staffing and housing limitations for park personnel;
- increasing climate adaptation and restoration costs;
- data and monitoring gaps for wetlands and marine ecosystems;
- limited baseline information for certain species and habitats;
- insufficient enforcement capacity across remote areas;
- balancing tourism development with ecological protection;
- increasing demand for marine resource use;
- hydrological changes associated with climate variability;
- coral disease and marine ecosystem degradation;
- marine pollution and marine debris;
- invasive species expansion; and
- potential conflicts among stakeholder interests and resource users.

Additional concerns may arise from:

- changes in fisheries use patterns;
- external environmental impacts beyond park boundaries;
- and cumulative climate-related impacts affecting wetland and marine ecosystem resilience.

The adaptive management framework established within this Climate-Smart Management Plan is intended to allow the Bahamas National Trust and partners to respond proactively to these evolving threats and issues.

13.0 Zoning

The zoning framework for Inagua National Park and Union Creek Reserve is intended to support climate-smart protected area management by guiding the sustainable use, protection, restoration, and management of sensitive ecosystems and natural resources within the parks.

Zoning provides a spatial management framework that:

- protects ecologically sensitive habitats and species
- reduces user conflicts
- guides visitor access and activities
- supports restoration and climate resilience initiatives
- strengthens enforcement and compliance efforts, and
- helps maintain the ecological character and wilderness values of the protected areas.

The zoning framework was developed using:

- ecological and habitat information
- findings from the Rapid Ecological Assessment (REA)
- Ramsar wetland management principles
- stakeholder and community input
- existing resource use patterns
- climate vulnerability considerations; and
- operational management needs

Detailed zoning maps and associated regulations will be further refined through:

- GIS analysis and spatial planning;
- stakeholder consultation;
- ecological monitoring; and
- future management planning processes.

14.0 Management Plan Implementation

The implementation of this Climate-Smart Management Plan (CSMP) for Inagua National Park and Union Creek Reserve will be guided through a structured implementation framework that links management goals and objectives to specific activities, functional areas, and operational programmes. The framework is intended to support adaptive management, monitoring and evaluation, annual work planning, budgeting, partnership coordination, and reporting under the Bahamas National Trust National Park Monitoring and Reporting System (NPMRS).

Implementation of the Plan will require:

- coordinated interagency collaboration
- stakeholder participation
- sustainable financing
- strengthened staffing and technical capacity, and
- integration of climate-smart and Ramsar wetland management approaches into daily park operations.

The implementation table below identifies priority management activities required to achieve the goals and objectives of this CSMP and aligns them with the operational and functional management framework utilized by the Bahamas National Trust.

Table 6. Management Plan Implementation Framework for INP and UCR

Management Goal	Management Objective	Management Activity	Functional Area	Functional Program
Reduce the impacts of invasive hogs on flamingo breeding success and wetland integrity	Complete invasive species management strategy	Conduct invasive hog feasibility assessment and management planning	Conservation Management of Species, Habitats and Ecosystems	Invasive Species Control
		Map invasive hog distribution and priority management areas	Conservation Management of Species, Habitats and Ecosystems	Scientific Monitoring and Research
	Implement invasive hog management programme	Conduct invasive hog removal and culling activities	Conservation Management of Species, Habitats and Ecosystems	Invasive Species Control
		Utilize camera traps and aerial surveys for monitoring	Conservation Management of Species, Habitats and Ecosystems	Scientific Monitoring and Research
		Strengthen interagency invasive species partnerships	Management and Administration	Partnership Relations
Maintain or increase Caribbean Flamingo breeding populations relative to the 2024 baseline	Implement flamingo monitoring programme	Conduct annual aerial and drone nesting surveys	Conservation Management of Species, Habitats and Ecosystems	Scientific Monitoring and Research

Management Goal	Management Objective	Management Activity	Functional Area	Functional Program
		Monitor breeding phenology and nesting success	Conservation Management of Species, Habitats and Ecosystems	Species and Habitat Management
	Protect critical flamingo habitats	Identify and map breeding and refuge habitats	Resource Management and Protection	Zoning and Boundaries
		Restrict unauthorized access to breeding areas	Resource Management and Protection	Surveillance and Enforcement
	Promote flamingo conservation awareness	Engage community in flamingo counts and citizen science	Community Engagement	Awareness and Education
Maintain wetland, mangrove, saline lake, tidal creek, seagrass, and coral reef ecosystem functionality and resilience	Establish ecosystem monitoring baselines	Conduct habitat mapping and ecological condition assessments	Conservation Management of Species, Habitats and Ecosystems	Scientific Monitoring and Research
		Establish long-term wetland and marine monitoring sites	Conservation Management of Species, Habitats and Ecosystems	Scientific Monitoring and Research
	Maintain hydrological connectivity	Monitor tidal exchange and water quality	Conservation Management of Species, Habitats and Ecosystems	Wetland Management

Management Goal	Management Objective	Management Activity	Functional Area	Functional Program
		Assess shoreline change and erosion trends	Conservation Management of Species, Habitats and Ecosystems	Climate Adaptation and Resilience
	Implement restoration initiatives	Conduct mangrove restoration and shoreline stabilization projects	Conservation Management of Species, Habitats and Ecosystems	Wetland and Habitat Restoration
		Restore degraded tidal creek and wetland systems	Conservation Management of Species, Habitats and Ecosystems	Wetland and Habitat Restoration
	Improve coral reef resilience	Monitor coral reef condition and disease prevalence	Conservation Management of Species, Habitats and Ecosystems	Scientific Monitoring and Research
		Pilot coral restoration and outplanting initiatives where feasible	Conservation Management of Species, Habitats and Ecosystems	Marine Habitat Restoration
Preserve wilderness character, wetland values, and cultural heritage	Implement zoning framework	Develop zoning maps and management prescriptions	Resource Management and Protection	Zoning and Boundaries
		Install zoning, regulatory, and boundary signage	Tourism and Public Use	Infrastructure

Management Goal	Management Objective	Management Activity	Functional Area	Functional Program
	Protect cultural heritage features	Document and interpret Camp Vernay and historic research facilities	Tourism and Public Use	Visitor Awareness and Interpretation
	Maintain low-impact visitor use	Develop visitor management and carrying capacity guidelines	Tourism and Public Use	Impact Management
		Establish low-impact birding and wilderness observation infrastructure	Tourism and Public Use	Infrastructure
Strengthen operational, staffing, scientific, and financial capacity	Increase staffing and operational readiness	Recruit additional wardens and technical staff	Management and Administration	General Management and Administration
		Procure patrol vessels, vehicles, and monitoring equipment	Facilities Operations and Management	Vehicle Operations and Maintenance
	Strengthen technical and scientific capacity	Implement GIS, SMART, and drone monitoring systems	Management and Administration	Information Technology
		Conduct staff training in monitoring, enforcement, and climate adaptation	Management and Administration	Training

Management Goal	Management Objective	Management Activity	Functional Area	Functional Program
	Strengthen sustainable financing	Identify grants and BDCPMC funding opportunities	Management and Administration	Financial Management
		Develop partnership frameworks and collaborative agreements	Management and Administration	Partnership Relations
Expand environmental education, Ramsar awareness, stewardship, and sustainable eco-tourism opportunities	Develop education and interpretation programmes	Prepare interpretive signage, brochures, and QR educational content	Tourism and Public Use	Visitor Awareness and Interpretation
		Conduct school outreach and community awareness programmes	Community Engagement	Awareness and Education
	Promote citizen science and volunteerism	Conduct volunteer restoration and clean-up activities	Community Engagement	Volunteerism
		Support citizen science monitoring initiatives	Community Engagement	Awareness and Education

Management Goal	Management Objective	Management Activity	Functional Area	Functional Program
	Support sustainable eco-tourism	Collaborate with local tour operators and Ministry of Tourism	Management and Administration	Government Relations
		Develop birdwatching, kayaking, and wilderness tourism opportunities	Tourism and Public Use	Activities

15.0 Monitoring & Evaluation

The Monitoring and Evaluation Framework for Inagua National Park and Union Creek Reserve is intended to support adaptive management, measure implementation progress, assess management effectiveness, and evaluate the ecological condition and climate resilience of the protected areas over the life of this Climate-Smart Management Plan (CSMP).

Monitoring results will support:

- evidence-based decision-making;
- Ramsar reporting obligations;
- ecological restoration and wetland management;
- climate adaptation planning;
- biodiversity conservation; and
- long-term management effectiveness assessments.

Monitoring indicators may be refined and expanded over time as additional baseline data, scientific information, stakeholder input, and operational priorities emerge.

Functional Area	**Programme**	**Indicators of Progress**
Conservation Management of Species, Habitats and Ecosystems	Wetland Conservation and Restoration	☐ Invasive species inventory and habitat mapping completed. ☐ Priority wetland and restoration areas identified and mapped. ☐ Mangrove, wetland, tidal creek, and coastal restoration projects implemented. ☐ Number of acres/hectares restored annually. ☐ Mangrove planting and shoreline stabilization activities conducted. ☐ Wetland ecological character maintained in accordance with Ramsar obligations. ☐ Buffer zones established, restored, and maintained.
	Scientific Monitoring and Research	☐ Long-term ecological monitoring programme established.

		☐ Water quality monitoring programme established and implemented. ☐ Flamingo nesting and breeding surveys conducted annually. ☐ Mangrove, seagrass, coral reef, and wetland condition monitored. ☐ Climate and hydrological monitoring conducted. ☐ Drone/UAV monitoring programme implemented. ☐ Resource condition assessments completed. ☐ Restoration success monitored and evaluated. ☐ Visitor carrying capacity assessments conducted. ☐ Environmental impact assessments reviewed and completed where applicable. ☐ Coastal and adjacent development activities monitored and assessed.
	Species and Habitat Management	☐ Critical habitats and sensitive ecosystems identified and prioritized. ☐ Species management and restoration plans developed. ☐ Caribbean Flamingo breeding success monitored annually. ☐ Queen Conch populations monitored. ☐ Waterbird and migratory bird surveys conducted. ☐ Climate resilience and habitat adaptation strategies developed and implemented. ☐ Pollution sources identified and mitigation actions implemented.
	Invasive Species Management and Biosecurity	☐ Invasive hog monitoring programme established. ☐ Invasive hog control activities conducted annually.

		☐ Invasive species impacts on wetlands and flamingo habitat assessed. ☐ Biosecurity and invasive species response protocols developed.
Resource Management and Protection	Surveillance, Enforcement and Compliance	☐ SMART monitoring and reporting system implemented. ☐ UAV/drone surveillance programme operational. ☐ Patrol coverage and frequency increased. ☐ Illegal activities detected, documented, and addressed. ☐ Real-time surveillance and response systems established where feasible. ☐ Enforcement penalties and compliance measures implemented.
	Wetland and Marine Resource Protection	☐ Sensitive wetland and marine habitats monitored regularly. ☐ Marine nursery and fisheries habitats protected. ☐ Water quality maintained within acceptable ecological thresholds. ☐ Ramsar ecological character monitoring conducted. ☐ Restoration and habitat protection measures implemented.
	Zoning and Boundary Management	☐ Zoning framework and regulations developed and approved. ☐ Park boundaries demarcated and maintained. ☐ Boundary and zoning signage installed. ☐ Sensitive habitat zones identified and protected. ☐ Visitor access and use regulations enforced.
Community Engagement and Stewardship	Awareness and Education	☐ Local schools and educational institutions engaged annually.

		☐ Ramsar and wetland awareness programmes implemented. ☐ Community meetings and stakeholder consultations conducted biannually. ☐ Public education and outreach materials developed. ☐ Visitors educated on park regulations, boundaries, and conservation values.
	Community Stewardship and Citizen Science	☐ Citizen science initiatives established. ☐ Community members engaged in species monitoring and restoration activities. ☐ Community cleanup and stewardship events conducted annually. ☐ Volunteer participation increased annually.
	Volunteerism and Youth Engagement	☐ Youth conservation and volunteer programmes established. ☐ Student field visits and educational activities conducted annually. ☐ Internship and volunteer opportunities expanded.
Tourism, Recreation and Public Use	Visitor Awareness and Interpretation	☐ Guided tours and interpretive programmes conducted. ☐ Educational brochures, signage, and digital content developed. ☐ Visitor satisfaction and experience assessments conducted. ☐ Interpretive materials updated to include Ramsar and climate resilience messaging.
	Visitor Infrastructure and Access Management	☐ Visitor infrastructure improvements completed. ☐ Boardwalks, signage, moorings, observation areas, and visitor facilities maintained. ☐ Climate-resilient infrastructure standards incorporated.

		☐ Visitor access areas designated and managed appropriately.
	Visitor Impact Management	☐ Visitor impacts on wetlands and sensitive habitats monitored. ☐ Sustainable tourism practices implemented. ☐ Green infrastructure and low-impact development approaches incorporated.
	Sustainable Tourism Development	☐ Eco-tourism and birding opportunities expanded. ☐ Local tourism partnerships strengthened. ☐ Sustainable tourism products and experiences developed.
Management and Administration	General Management and Administration	☐ Annual operational and work plans developed and implemented. ☐ Staffing capacity increased. ☐ Park management reporting completed annually. ☐ Infrastructure and restoration concept plans developed.
	Climate-Smart Planning and Adaptive Management	☐ Climate adaptation and resilience actions integrated into park management. ☐ Adaptive management reviews conducted periodically. ☐ Ramsar obligations and reporting requirements met. ☐ Restoration priorities reviewed and updated.
	Training and Capacity Building	☐ Enforcement and compliance training conducted. ☐ Wetland management and restoration training provided. ☐ GIS, drone, SMART, and monitoring training completed. ☐ Emergency response and climate preparedness training conducted.

	Financial Management and Sustainable Financing	☐ Financial and business plans developed. ☐ Funding secured for priority management actions. ☐ Revenue-generating opportunities explored and implemented. ☐ Financial reporting and grant management systems strengthened. ☐ Funding proposals submitted under the Bahamas Debt Conversion Project for Marine Conservation. ☐ BDCPMC-supported management, restoration, monitoring, or infrastructure projects implemented. ☐ Management effectiveness indicators aligned with BDCPMC reporting requirements.
	Government and Partnership Relations	☐ Coordination meetings with government agencies and stakeholders conducted. ☐ Partnerships established for research, restoration, and monitoring. ☐ Collaboration with adjacent landholders and communities strengthened. ☐ Joint management and conservation initiatives implemented.
	Information Technology and Data Management	☐ GIS and ecological databases established and maintained. ☐ Monitoring data stored and analyzed regularly. ☐ Communication and surveillance systems upgraded and maintained.
Facilities Operations and Infrastructure Management	Marine Access and Mooring Facilities	☐ Demarcation buoys and moorings installed and maintained. ☐ Marine access points monitored and maintained.
	Buildings, Grounds and Utilities	☐ Climate-resilient facilities developed and maintained.

		☐ Renewable energy and sustainable utility systems incorporated where feasible. ☐ Grounds and operational facilities maintained.
	Vehicle, Vessel and Equipment Operations	☐ Patrol vessels, vehicles, drones, and field equipment operational and maintained. ☐ Equipment replacement and maintenance schedules implemented.
	Infrastructure Operations and Maintenance	☐ Boardwalks, trails, signage, observation areas, and visitor facilities maintained. ☐ Restoration and operational infrastructure monitored and repaired as needed. ☐ Infrastructure resilience to climate impacts assessed periodically.

Detailed monitoring indicators, reporting metrics, and implementation considerations aligned with the Bahamas National Trust National Park Monitoring and Reporting System (NPMRS) are provided in Appendix J.

16.0 References

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Other

Government of The Bahamas. *Bahamas Debt Conversion Project for Marine Conservation Framework and Conservation Commitments.*

17.0 Appendices

Appendix A – Ramsar Information Sheet (RIS)

Appendix B – REA Summary Findings

Appendix C – Species Lists

Appendix D – National Park Bylaws and Park-specific Bylaws for INP and UCR

Appendix E – Public Consultation Summary

Appendix F – Stakeholder List

Appendix G – Maps and GIS Layers

Appendix H – Zoning Tables

Appendix I – Operational Plan Alignment Table

Appendix J – Monitoring Indicators and Reporting Framework

Functional Area	Monitoring Theme	Indicator	Indicator Type
Wetland & Ecosystem Health	Wetland Condition	Extent and condition of saline wetlands and tidal flats	State
	Mangrove Health	Percent cover and condition of mangrove habitats	State
	Hydrological Function	Wetland and tidal creek hydrological connectivity maintained	State
	Water Quality	Salinity, turbidity, dissolved oxygen, nutrient levels	State
	Shoreline Stability	Shoreline erosion/accretion trends	Change
Marine Ecosystems	Seagrass Health	Extent and condition of seagrass habitats	State
	Coral Reef Condition	Coral cover, reef fish biomass, reef condition trends	State
	Marine Nursery Function	Presence and abundance of juvenile marine species	State
Species Conservation	Caribbean Flamingos	Number of active breeding colonies and breeding pairs	State
	Flamingo Productivity	Nest success and fledgling success rates	Outcome
	Flamingo Disturbance	Number of disturbance events recorded at breeding sites	Pressure
	Seabird Populations	Trends in nesting seabird populations	State
	Migratory Birds	Seasonal abundance and diversity of migratory bird species	State

Functional Area	Monitoring Theme	Indicator	Indicator Type
	Queen Conch	Relative abundance and density within monitored areas	State
	Sea Turtles	Observations of turtle nesting and marine turtle presence	State
Climate Change & Resilience	Climate Impacts	Frequency and extent of storm surge, flooding, or drought impacts	Change
	Habitat Resilience	Recovery rates of wetlands and mangroves following storm events	Outcome
	Blue Carbon	Mangrove and wetland carbon storage potential assessed	Response
Invasive Species Management	Invasive Hogs	Number and distribution of invasive hogs recorded	Pressure
	Invasive Species Removal	Number of invasive species control activities conducted annually	Response
	Habitat Recovery	Evidence of habitat recovery following invasive species removal	Outcome
Restoration & Wetland Rehabilitation	Mangrove Restoration	Number of mangrove restoration sites established	Response
	Wetland Rehabilitation	Area of wetland habitat restored or rehabilitated	Response
	Restoration Success	Survival rates of restored vegetation and habitats	Outcome
Enforcement & Compliance	Patrol Effort	Number of land and marine patrols conducted	Response
	Violations	Number and type of infractions recorded	Pressure

Functional Area	Monitoring Theme	Indicator	Indicator Type
	Enforcement Response	Response time to reported incidents	Response
	Boundary Awareness	Number of park boundary and regulatory signs installed and maintained	Response
Tourism & Visitor Use	Visitor Use	Number of visitors annually	State
	Visitor Experience	Visitor satisfaction assessments conducted	Outcome
	Eco-tourism Activities	Number of guided tours and educational activities conducted	Response
Education & Outreach	Community Engagement	Number of outreach and education activities conducted annually	Response
	School Participation	Number of students participating in educational activities	Outcome
	Community Stewardship	Number of volunteer and citizen science activities conducted	Response
Research & Monitoring	Scientific Research	Number of approved research projects conducted annually	Response
	Monitoring Coverage	Number of active monitoring sites established	Response
	Data Management	Monitoring data uploaded into NPMRS and GIS systems annually	Response
Capacity & Operations	Staffing Capacity	Number of staff assigned to INP and UCR	Response
	Training	Number of staff trained in monitoring, GIS, SMART, UAVs, and enforcement	Response

Functional Area	Monitoring Theme	Indicator	Indicator Type
	Operational Readiness	Availability and condition of patrol vessels, vehicles, and monitoring equipment	Response
Sustainable Financing	Funding Access	Amount of funding secured for park operations and conservation	Response
	Revenue Generation	Revenue generated from tourism, permits, partnerships, and grants	Outcome