IUCN Conservation Outlook Assessment 2017 **(archived)**
Finalised on 08 November 2017

Please note: this is an archived Conservation Outlook Assessment for Everglades National Park. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Everglades National Park

SITE INFORMATION

Country:
United States of America (USA)
Inscribed in: 1979
Criteria:
(viii) (ix) (x)

Site description:
This site at the southern tip of Florida has been called 'a river of grass flowing imperceptibly from the hinterland into the sea'. The exceptional variety of its water habitats has made it a sanctuary for a large number of birds and reptiles, as well as for threatened species such as the manatee. © UNESCO

SUMMARY

2017 Conservation Outlook

Critical

Unless more restoration projects are enacted outside the site (e.g., Decompartmentalisation, Tamiami Trail Next Steps, water storage and treatment south of Lake Okeechobee, etc.) that deliver more clean water to the site as correctly-timed sheetflow and the expected benefits of these projects are not compromised, the essential qualities and habitat of the site will continue to be lost. Measures to control exotic plant and animal species will continue to be an ongoing management issue. Combined, these threats will lead to further reductions in populations of wading birds, which are key indicators of the health of the ecosystem, perhaps along with other threatened and endangered species within the site.

Current state and trend of VALUES

Critical
Trend: Deteriorating

Major issues with water quantity, quality, distribution and timing, invasive species and climate change are creating over-riding impacts to the system, and the continued deteriorating trend of so many values put the park’s World Heritage values in a critical situation.

Overall THREATS

Very High Threat

Current threats related to reduced water flows, water pollution and shifting habitat are affecting the health of the site and the amount and quality of habitat. Some of these losses cannot be restored, as habitat features have taken decades to centuries to develop. Potential threats to the site, including hurricanes, climate change and ocean acidification, constitute a high threat overall and are potentially being realised already. Current threats with a critical rating combined

with potential threats that are of high concern result in a critical rating for overall threats.

Overall PROTECTION and MANAGEMENT

Some Concern

The park faces major difficulties in addressing the many threats originating outside the site, such as reduced water flow and water pollution and sea level rise. The Everglades ecosystem is highly compartmentalised with varying jurisdiction and management strategies for each compartment. Regional management of water quality and quantity (controlled by the State and to some extent the Federal government) is not focused on the park, which is the World Heritage site. The park is at the downstream end of the ecosystem, and decisions made regarding management at the top have not always been compatible with protecting the health of the bottom end.

FULL ASSESSMENT

Description of values

Values

World Heritage values

▶ **Large, flat, low-lying landscape**
Criterion:(viii)

The Everglades is a vast, nearly flat, seabed that was submerged at the end of the last Ice Age supporting a vast continuum of shallow marine, estuarine, freshwater and terrestrial landscapes (seagrass, mangrove, wetland and terrestrial vegetation) (World Heritage Committee, 2006).

▶ **One of the most active areas of modern carbonate sedimentation**
Criterion:(viii)

The limestone substrate of the site is one of the most active areas of modern carbonate sedimentation (ENP, 2015).

▶ **Diverse array of habitats**
Criterion:(ix)

The Everglades contains vast subtropical wetlands and coastal/marine ecosystems including freshwater marshes, tropical hardwood hammocks, pine rocklands, extensive mangrove forests, saltwater marshes and seagrass ecosystems important to commercial and recreational fisheries. Such a mixture of subtropical and temperate wildlife species is found nowhere else in the United States (World Heritage Committee, 2006).

► Oligotrophic ecosystem

Criterion:(ix)

Extremely low nutrient, P-limited throughout much of the park and N-limited at marine end-member—giving rise to plant and algal species that form the basis of the food web and are very sensitive to changes in water quality.

► Biodiversity sustained through trophic interactions

Criterion:(ix)

Complex biological processes range from basic algal associations through progressively higher species and ultimately to primary predators such as the alligator, crocodile and Florida panther; the food chain is superbly evident and unbroken (ENP, 2015). A periphyton-based food web supports a diverse assemblage of fish and invertebrates in addition to a suite of large predators including panther, alligator, crocodile, etc. and a large wading bird community.

► A uniquely diverse combination of species from different biogeographic realms

Criterion:(ix)

The diversity of habitats described above supports a uniquely diverse combination of species from different biogeographic realms (Carolinian, Louisianan and West Indian) and lies at the nexus of two major migratory bird routes: the Atlantic and Mississippi flyways (World Heritage Committee, 2006).

► Threatened, endangered and endemic species

Criterion:(x)

The site provides habitat for approx. 20 threatened or endangered species including the Florida panther, green sea turtle, American crocodile, small-toothed sawfish, wood stork, West Indian manatee, snail kite, and Cape Sable seaside sparrow (World Heritage Committee, 2006). Everglades National Park provides habitat for many rare and regionally endemic species of plants and animals including: numerous orchid species, tree snails, pine rockland herb and shrub species, Schaus swallowtail butterfly and Everglades mink (Lodge,

2010).

▶ **Essential wading bird habitat**
Criterion:(x)

The exceptional variety of its water habitats has made it a sanctuary for a large number of birds. It provides important foraging and breeding habitat for more than 400 species of birds and is a major corridor for migration (World Heritage Committee, 2006). It is the most significant breeding ground for wading birds in North America including: roseate spoonbill, great egret, snowy egret, great blue heron (and white morph), reddish egret, wood stork, little blue heron, and tricolored heron.

Assessment information

Threats

Current Threats
Very High Threat

Current threats related to reduced water flows, water pollution and shifting habitat are affecting the health of the site and the amount and quality of habitat. Some of these losses cannot be restored, as habitat features have taken decades to centuries to develop.

▶ **Fire/ Fire Suppression**
High Threat
Inside site, widespread(15-50%)

Due to proximity to large urban/suburban population centres, fire suppression has likely altered the natural community assemblage. However, fire intensity has also increased due to the site being much drier than historically due to water management for flood control and water supply. This has led to habitat change and loss of organic soils over large areas, as well as loss of significant archaeological sites (State Party of the United States of

America, 2017; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

► Housing/ Urban Areas

High Threat
Outside site

Urbanisation has reduced the greater Everglades footprint, impacting water supply and water quality, and affecting the way water is managed in the ecosystem (State Party of the United States of America, 2017; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010), including the lower 20% of this vast system that forms the Everglades National Park World Heritage site. Urbanisation can be a source of invasive species and light and noise pollution.

► Roads/ Railroads

Low Threat
Inside site, localised(<5%)
Outside site

The main road that runs through the park has been sufficiently culverted and bridged so as to not affect flow of water or exchange of biota. Tamiami Trail remains a threat, but 1.6 km (one mile) of road has been replaced by a bridge that is now under construction to restore broad sheetflow into the World Heritage site (State Party of the United States of America, 2017; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010), with an expected completion date in 2019. Florida panthers are frequent road kill victims.

► Habitat Shifting/ Alteration

Very High Threat
Inside site, widespread(15-50%)
Outside site

Sea levels have been rising in the region causing shifts in plant communities, peat collapse, changes in wading bird feeding locations and salt intrusion into formerly freshwater locations.

► Agricultural effluents

High Threat

Inside site, scattered(5-15%)
Outside site

Agricultural sources of nutrient pollution and other contaminants are the biggest concern regarding water quality problems (State Party of the United States of America, 2017; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010). Over 23,000 ha (57,000 acres; National Academies of Sciences, Engineering, and Medicine, 2016) of constructed stormwater treatment areas are now in place and beginning to improve water quality emanating from agricultural sources.

► Dams/ Water Management or Use

Very High Threat
Inside site, throughout(>50%)
Outside site

The Central & South Florida Project and subsequent flood control features have altered the flow of water through the ecosystem, including the inflows to the property—resulting in loss of landscape pattern and changes in habitat (State Party of the United States of America, 2017; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010). A number of projects are underway via the Comprehensive Everglades Restoration Project (CERP), a long-term, USD 10.5 billion +effort to remedy this high threat (State Party of the United States of America, 2017).

► Invasive Non-Native/ Alien Species

Very High Threat
Inside site, throughout(>50%)
Outside site

Invasive species include Burmese python (Dorcas et al., 2012), Brazilian pepper, Old World climbing fern (Lygodium microphyllum), melaleuca, birds (e.g., starling), non-native apple snails, Cuban tree frog, Argentine black and white tegu and several fish species. This is an ongoing problem that cannot be erased, only managed. Whilst lionfish have invaded reef habitats outside the park, they appear not to have spread to the property (State Party of the United States of America, 2017). Invasive and alien species threaten habitat quality throughout the Everglades (State Party of the United States of America, 2017, ENP, 2015; McVoy et al., 2011; Davis & Ogden, 1994; Lodge,

2010).

► Hyper-Abundant Species

High Threat
Inside site, localised(<5%)
Outside site

Loading of phosphorous is abating due to stormwater treatment areas but continues to result in the expansion of cattail in the water conservation areas north of the site. Within the World Heritage site, some expansion is occurring along Taylor Slough (State Party of the United States of America, 2017; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

► Water Pollution

High Threat
Inside site, localised(<5%)
Outside site

Water pollution threats exist but, aside from agricultural runoff and airborne mercury, are localised (State Party of the United States of America, 2017; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

► Flight Paths

Low Threat
Inside site, scattered(5-15%)

The site lies near a major airport (Miami International Airport) and immediately adjacent to smaller regional airports which contribute to noise pollution at times (McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

► Tourism/ visitors/ recreation

Low Threat
Inside site, localised(<5%)
Outside site

Isolated to relatively small areas of the site, there is still visible impact by visitors and tourism in the site. This is most often evident as airboat trails (in the freshwater marsh) or propeller scars (in the shallow marine areas) (State Party of the United States of America, 2017; McVoy et al., 2011; Davis &

Ogden, 1994; Lodge, 2010).

► Air Pollution

Low Threat
Inside site, throughout(>50%)
Outside site

High input and other airborne contaminants are a concern because of the large footprint of the area, but reductions in emissions have been achieved (McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

► Utility / Service Lines, Housing/ Urban Areas

High Threat
Inside site, throughout(>50%)
Outside site

Increasing light levels are altering circadian rhythms in organisms, and can alter nocturnal migratory/movement cues, attract prey and predators, and interfere with nocturnal behaviour (Longcore & Rich, 2004).

Potential Threats

High Threat

Potential threats, including climate change with predicted decreasing rainfall, increased hurricane frequency, and ocean acidification, constitute a high threat overall and are perhaps being realised already.

► Ocean acidification

High Threat
Inside site, widespread(15-50%)
Outside site

As a potential threat, ocean acidification is very high as it will affect biogeochemical processes related to carbonate precipitation, particularly along the southwestern boundary between Florida Bay and the Gulf of Mexico (McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

► Fishing / Harvesting Aquatic Resources

Low Threat
Inside site, scattered(5-15%)

Outside site

Limited to Florida Bay, intense fishing pressure has led to declines of some species in some areas. However, other species such as lobster, sponges and stone crabs are protected. Commercial fishing is no longer allowed within the site (McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

► Storms/Flooding

High Threat
Inside site, throughout(>50%)
Outside site

Changes in hurricane intensity and frequency beyond what the ecosystem has co-evolved with will lead to significant threats to values (State Party of the United States of America, 2017; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

► Utility / Service Lines

Low Threat
Inside site, localised(<5%)

A plan for an electrical easement along the north-east section of the site will create viewshed and potential hydrological impacts. The plan has been finalised. No other issues exist (McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

► Droughts

High Threat
Inside site, throughout(>50%)
Outside site

Climate change projections predict reduced annual rainfall and perhaps more intense and frequent droughts, which will contribute to further threats related to lack of water (State Party of the United States of America, 2017; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

► Oil/ Gas exploration/development

Data Deficient
Outside site

At present there is no hydraulic fracturing (‘fracking’) or other form of oil and

gas developments inside the property. However, in 2013, a company operating in the vicinity of the property used an ‘acidisation process’, which involved the injection of 700,000 gallons of acidic water into the ground. This was stopped and the company fined by the Florida Department of Environmental Protection. The State Party has nevertheless reported a continued interest by the oil and gas industry (State Party of the United States of America, 2017).

Protection and management

Assessing Protection and Management

► Relationships with local people

Serious Concern

Increasing local demand for water supply and flood control benefits are reducing the expected ecological benefits from restoration projects. Also, some stakeholder groups such as the hunting community and bass fishers want to protect their recreational interests in the Everglades. In some instances these interests conflict with the goals of restoration that involve filling-in of canals used by bass fishermen and re-hydration of lands that are currently traversed by hunters on foot (McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

► Legal framework

Some Concern

The greater Everglades ecosystem is highly compartmentalised with varying jurisdiction and management strategies for each compartment. Water in the Water Conservation Areas is managed by the State (South Florida Water Management District) and wildlife resources are managed by the Florida Fish & Wildlife Conservation Commission. Endangered species are managed at the State and Federal levels and enforcement of the Endangered Species Act is viewed by some as an impediment to restoration of the greater ecosystem. Some areas that used to be wet historically are kept dry for management of wildlife that were not abundant in those areas in the pre-impact state. At the receiving end of this watershed system, Everglades National Park World

Heritage site is managed by the National Park Service but inflows are managed by the State. Water quality across the ecosystem is the responsibility of the State and standards to protect the Everglades are currently only partly being met. There are also tribal interests involved at many levels (State Party of the United States of America, 2017; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

► Enforcement

Mostly Effective

Enforcement within the Everglades National Park/World Heritage site is strong; upstream of the park enforcement varies, sometimes with results that conflict with strong resource protection downstream in the World Heritage site.

► Integration into regional and national planning systems

Mostly Effective

Integrative planning is effective; however, implementation has not achieved the same level of success.

► Management system

Some Concern

Regional management of water quality and quantity (controlled by the State and to some extent the Federal government) is not focused on the park, which is the World Heritage site. The park is at the downstream end of the greater Everglades ecosystem, and decisions made regarding management at the top have not always been compatible with protecting the health of the bottom end (State Party of the United States of America, 2017; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

► Management effectiveness

Some Concern

Regional management does not allow for effective protection of World Heritage values. The park staff are not able to protect their resource sufficiently because many of the decisions affecting the resource (e.g., water quality, water quantity) are out of their control (State Party of the United

States of America, 2017; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

▶ Implementation of Committee decisions and recommendations

Some Concern

For reasons described above, only partial success has been seen in the implementation of Committee decisions and recommendations.

▶ Boundaries

Mostly Effective

Boundaries of the National Park are well established and guidelines for protection within boundaries are understood. This aspect is highly effective. However, the watershed boundaries extend well beyond (i.e. upstream) the boundaries of the World Heritage site, which exacerbates water quantity and quality problems (State Party of the United States of America, 2017; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

▶ Sustainable finance

Mostly Effective

Instability in year-to-year financing makes restoration planning and implementation difficult.

▶ Staff training and development

Highly Effective

High degree of mandatory training.

▶ Sustainable use

Highly Effective

Within the boundaries, most of the site has Federal Wilderness-protected status with a very low developed footprint. Fishing guide businesses generally support sustainable use of the coastal/marine areas. Use outside of boundaries is not sustainable, thereby contributing to impacts within the site (McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

► Education and interpretation programs

Highly Effective

Efforts at conveying natural aspects and values – and the threats thereto – are unparalleled. However, more focus should be given to the cultural history of the site.

► Tourism and visitation management

Mostly Effective

Private concessions provide inconsistent quality of interpretation relative to park staff. Fishing guide businesses, while small in numbers, have a large economic impact and provide quality interpretation of resources.

► Monitoring

Some Concern

Continued monitoring will be essential in tracking changes due to climate change, sea level rise and ecosystem restoration. Some key parameters are being monitored by agencies other than the National Park Service; therefore, consistency and priorities for funding are a concern (State Party of the United States of America, 2017; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010). Budgets for this activity have been declining.

► Research

Some Concern

Research has been and will continue to be vital to managing the World Heritage values of the site. Everglades National Park’s South Florida Research Center has 70 scientists and technicians that monitor and initiate research. Much fundamental research is largely supported by agencies other than the National Park Service; therefore, consistency and priorities for funding are a concern (State Party of the United States of America, 2017; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010). Budgets for this activity have been declining.

Overall assessment of protection and management

Some Concern

The park faces major difficulties in addressing the many threats originating outside the site, such as reduced water flow and water pollution and sea level rise. The Everglades ecosystem is highly compartmentalised with varying jurisdiction and management strategies for each compartment. Regional management of water quality and quantity (controlled by the State and to some extent the Federal government) is not focused on the park, which is the World Heritage site. The park is at the downstream end of the ecosystem, and decisions made regarding management at the top have not always been compatible with protecting the health of the bottom end.

▶ Assessment of the effectiveness of protection and management in addressing threats outside the site

Serious Concern

The park faces major difficulties in addressing the many threats originating outside the site, such as reduced water flow, water, noise and light pollution (ENP, 2016; National Academies of Sciences, Engineering and Medicine, 2016) and sea level rise.

▶ Best practice examples

Coordination of monitoring and research, staff training and education and visitor interpretation. The park’s South Florida Resource Center provides research, monitoring and synthesis and integration of old and new information supporting park operations and the USD 10.5 billion Everglades restoration effort.

State and trend of values

Assessing the current state and trend of values

World Heritage values

► Large, flat, low-lying landscape

High Concern
Trend:Deteriorating

Changes in soil elevation that affect the flow of water, the patterning of the landscape and concentration of wading bird prey (State Party of the United States of America, 2017; ENP, 2015; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

► One of the most active areas of modern carbonate sedimentation

Data Deficient
Trend:Data Deficient

Sea-level rise, reduced freshwater flow and changes in ocean alkalinity will alter the location of active peat accumulation and carbonate precipitation in the coastal Everglades or threaten carbonate precipitation over longer periods of time (State Party of the United States of America, , 2017; ENP, 2015; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

► Diverse array of habitats

Critical
Trend:Deteriorating

The diversity of habitats is being threatened by loss of ridge and slough patterning, loss of tree islands and invasive/exotic plants and animals (State Party of the United States of America, 2017; ENP, 2015; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

► Oligotrophic ecosystem

Critical
Trend:Deteriorating

With the addition of phosphorus from agricultural and urban runoff, the northern Everglades has become gradually enriched, making the ecosystem less oligotrophic. Further, with reduced flows to the southern and coastal Everglades, we have seen a gradual loss of oligotrophy with relatively more enriched waters infiltrating from the Gulf of Mexico. Changes in water depth from sea-level rise and water management and increased nutrient loading can affect patterns of production, biomass allocation and the ultimate

accumulation of organic matter in Everglades' soils and sediments (State Party of the United States of America, 2017; ENP, 2015; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

► Biodiversity sustained through trophic interactions

High Concern
Trend:Stable

The periphyton-based food web of the Everglades is threatened by nutrient (mainly phosphorus) loading (State Party of the United States of America, 2017; ENP, 2015; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010). However, over 23,000 ha (57,000 acres; National Academies of Sciences, Engineering and Medicine, 2016) of stormwater treatment areas are beginning to meet water quality goals for phosphorus removal and periphyton protection.

► A uniquely diverse combination of species from different biogeographic realms

High Concern
Trend:Deteriorating

Loss of habitat will affect species diversity. A few species in particular are at risk due to decreased habitat quality (e.g. Everglades snail kite).

► Threatened, endangered and endemic species

High Concern
Trend:Deteriorating

20 Federally listed faunal species and several species of insects and plants are at-risk of being lost from the ecosystem. Endemic species may be at risk of going extinct (State Party of the United States of America, 2017; ENP, 2015; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010). Invasive species' impacts are a critical factor.

► Essential wading bird habitat

High Concern
Trend:Deteriorating

The Everglades is still an essential wading bird habitat in south Florida. However, continued impacts from water management and loss of habitat

may lead to mass defection and abandonment of habitat in favour of other areas (e.g. roseate spoonbills in Florida Bay) (ENP, 2015; McVoy et al., 2011; Davis & Ogden, 1994; Lodge, 2010).

Summary of the Values

► **Assessment of the current state and trend of World Heritage values**
Critical
Trend: Deteriorating

Major issues with water quantity, quality, distribution and timing, invasive species and climate change are creating over-riding impacts to the system, and the continued deteriorating trend of so many values put the park's World Heritage values in a critical situation.

Additional information

Benefits

Understanding Benefits

► **Water provision (importance for water quantity and quality)**

The site provides essential freshwater storage and aquifer recharge services for the greater South Florida urban, commercial and agricultural communities. Despite these threats, the system maintains its ability to recharge regional aquifers used for municipal water supplies.

Urban development and consequent increasing water demands continue in spite of projected declines in rainfall due to climate change.

► **Coastal protection**

The mangrove coastal expanse, several miles wide in places, provides critical

buffering against storm surge and wind for inland communities.

Increases in catastrophic hurricane frequency may decrease resiliency of native plant communities by invasive species; mangroves are already advancing inland with reduced freshwater flows into the park and rising sea levels.

► Outdoor recreation and tourism

Nearly 1 million visitors pass through the entrance stations of the site each year (this does not include the visitors using the site's marine resources). These visitors have a significant economic impact on the surrounding communities of Florida City, Homestead, Miami, the Florida Keys and Everglades City. During the spring months, a high percentage of visitors to the site are international.

While the new General Management Plan (2015) enhances visitor access and opportunities, the gradual decline of fauna and flora to systemic impacts will affect the visitor experience.

► Carbon sequestration

With ongoing restoration of water flows to the site there is significant opportunity to sequester carbon by accretion of peat soils in freshwater marshes, tree islands and mangrove swamps.

The Comprehensive Everglades Restoration Plan (CERP; USD 10.5 billion +) funding and implementation are critical to recover system functions and must continue. Early CERP projects are providing improvements to water quality, timing, distribution and quantity.

► Fishing areas and conservation of fish stocks

Florida Bay and the mangrove coast support the economically important recreational fishery (red drum, sea trout and others). In addition, the mangrove ecosystem provides critical spawning ground for important commercial species and the aquatic food chain.

Science-based management/monitoring must underpin management decisions to protect this important resource from intense recreational fishing pressures.

▶ **Direct employment, Tourism-related income**

Tourism generated USD 146.6 million in economic benefits locally, providing 2,408 jobs.

Summary of benefits

The natural resources protected by Everglades National Park provide key ecosystem services to the regional human population. These services include water storage and recharge of the aquifer, buffering against the impacts of tropical storms and hurricanes, as well as economic benefits associated with tourism, including recreational fishing and the commercial fishing industry. In 2011, Everglades National Park-related tourism generated USD 146.8 million in economic benefit locally, providing 2,408 jobs (NPS, 2014). Benefits to the wider, world community include those associated with the protection and preservation of unique habitats and species, as well as climate modification benefits from carbon sequestration within the mangrove forests and sea grasses of Florida Bay.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects

1	National Park Service (NPS)	GENERAL MANAGEMENT PLAN (GMP): The Everglades National Park General Management Plan was completed in 2015. New elements include pilot boating zones within the park (called pole and troll zones); and intensive work to re-establish freshwater flow through infrastructure barriers on NPS lands (culvert projects on Old Ingraham Hwy and Research Road). In addition, the GMP contemplates adaptation of park infrastructure and resource management in the face of climate change.
2	NPS and the South Florida National Parks Trust	FLORIDA BAY: SEAGRASS RESTORATION PROJECTS. Work to restore areas of seagrass habitat damaged by boaters. This work is ongoing; the intent of zoning through the GMP is to reduce the pressure on seagrass habitat and allow substantial restoration of this resource.
3	US Army Corps of Engineers, US National Park Service	MODIFIED WATER DELIVERIES TO EVERGLADES NATIONAL PARK PROJECT AND THE TAMIAMI TRAIL NEXT STEPS PROJECT – Restoration of water flows to the northeastern portion of ENP that was cut-off from natural marsh flow in the 1960s.
4	South Florida Water Management District, US National Park Service	EVERGLADES CONSTRUCTION PROJECT AND THE RESTORATION STRATEGIES PROJECT – Construction/expansion of man-made wetlands (stormwater treatment areas) and shallow reservoirs (flow equalisation basins) to reduce nutrient loadings and improve water flows into the Everglades.
5	US Army Corps of Engineers, US National Park Service	CANAL-111 SOUTH DADE AND THE C-111 SPREADER CANAL PROJECTS – Restoration of marsh water depths in the Taylor Slough region of ENP through the construction of water detention areas.
6	US Army Corps of Engineers South Florida Water Management District	CENTRAL EVERGLADES PLANNING PROJECT – Long-term planning to restore more natural water flows from Lake Okeechobee into the central and southern Everglades, as part of the USD 10.5 billion + Restoration Plan (CERP).
7	NPS Everglades National Park and NPS Southeast Regional Office	EXOTIC PLANT MANAGEMENT: work to remove exotic plant species from Everglades National Park lands, throughout all habitats. Funding principally from NPS. Additional work is ongoing with outside funding (see below).
8	NPS Everglades National Park, in conjunction with the U.S. Army Corps of Engineers as the permitting entity	HOLE IN THE DONUT PROJECT: in-lieu-fee programme oriented toward restoration of approximately 6,000 acres of abandoned agricultural land within Everglades National Park. Funding from the in-lieu-fee programme, which works in a manner similar to a ‘mitigation bank’.

9	Carol Mitchell, carol_mitchell@nps.gov http://www.nps.gov/ever/naturescience/hidprogram.htm	EXOTIC ANIMAL MANAGEMENT: work to understand and eventually control/manage the impact of exotic animal species on Everglades National Park resources. Additional work is needed (see below).
10	NPS. Work completed from 2008 – 2011 plugged 2 major canals, using seed money from the USFWS Coastal Program, and major funding from the American Recovery and Reinvestment Act; work to monitor the ecological effects is ongoing.	CAPE SABLE CANALS DAM RESTORATION PROJECT: Work to plug man-made canals and ditches in the Cape Sable region of Everglades National Park. This work is oriented toward reducing the negative impact of the canals, toward restoring a more natural hydrology and salinity regime in the area, and toward restoring habitats for American crocodile. Additional work is needed for which planning/environmental compliance documentation was completed in March 2015 (see below).

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years
1	NPS	CAPE SABLE CANALS DAM RESTORATION PROJECT: Work to plug remaining canals (the Raulerson Canal, East Side Creek, and House and Slagle's ditches) is in the implementation phase. Additional external funding will be required to implement the larger Raulerson Canal projects.	
2	NPS	EXOTIC ANIMAL MANAGEMENT: In spite of extremely good interagency coordination, exotic animal management in Everglades National Park is proving to be challenging. Funding has been project-based from Everglades National Park sources; additional funding is needed. Greater use of the Lacey Act is needed to stem import and release of exotic pets. Innovative approaches and application of new technologies will be necessary to protect native Everglades' species of mammals and birds. Significantly increased funding must be applied to exotic animal control. This is a critical, daunting challenge to the protection of the native fauna for which the park was established.	

№	Site need title	Brief description of potential site needs	Support needed for following years
3	NPS Everglades National Park and NPS Southeast Regional Office	EXOTIC PLANT MANAGEMENT: work to remove exotic plant species from Everglades National Park lands, throughout all habitats. Additional funding is needed to reduce the infestation of exotic plants in Everglades National Park habitats to acceptable levels, and to maintain park habitats in perpetuity. Continued internal and external funding is necessary for this highly successful programme that confronts a critical challenge to the protection of ENP.	

REFERENCES

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