IUCN Conservation Outlook Assessment 2014 **(archived)**
Finalised on 29 October 2014

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Darién National Park

SITE INFORMATION

Country:
Panama
Inscribed in: 1981
Criteria:
(vii) (ix) (x)

Site description:
Forming a bridge between the two continents of the New World, Darien National Park contains an exceptional variety of habitats – sandy beaches, rocky coasts, mangroves, swamps, and lowland and upland tropical forests containing remarkable wildlife. Two Indian tribes live in the park. © UNESCO

SUMMARY

2014 Conservation Outlook

Significant concern

Given the high level of threat from unsustainable natural resource use by local communities, and increases in the human population, both within and around the Park, and the inadequate human, financial, and physical resources available for management, the outlook for the conservation of the outstanding universal values of the Property are of significant concern.

Current state and trend of VALUES

High Concern
Trend: Deteriorating

Unsustainable natural resource exploitation activities and increasing human populations, both within and around the Park, are impacting the scenic beauty of the Park by fragmenting natural landscape patterns; and impeding the Park's function as (a) biological bridge between North and South America, (b) buffer against climate change, (c) protector of evolutionary processes at the landscape scale, and (d) conservator of watersheds critical to ecosystem function and the development needs of Darien Region. These stresses contribute to the degradation of natural ecosystems and biodiversity, threaten key species, and accentuate stresses from climate change. Trends are negative and accelerating.

Overall THREATS

High Threat

Unsustainable use of natural resources by local communities, which are increasing by about 5% a year from in-migration, increasing coca cultivation, the rapid expansion of the agricultural frontier outside the Park, and the ever-present threat of completion of the Inter-American Highway through the Park, as well as the electricity lines connection with Colombia pose major threats to the

protection and conservation of the Park’s values.

Overall PROTECTION and MANAGEMENT

Some Concern

While considerable progress has been made in protection and management of the Park, much remains to be done especially with respect to achieving sustainable use of resources by local communities, undertaking the monitoring and research necessary to guide management, and in obtaining the human and financial resources needed to implement the Park’s management Plan. Insufficient staff, physical, and financial resources make it impossible for the Park Administration to attend threats generated outside the Park on a systematic basis.

FULL ASSESSMENT

Description of values

Values

World Heritage values

- **Scenic beauty of natural landscape patterns and geomorphologic features**
  Criterion:(vii)

  Darien National Park is one of the most diverse regions in Central America, has a wide variety of landscapes, from coastal plains and low coasts to hills and high mountain zones, associated with tropical forests, wetlands, mangroves and rivers as Tuira, Chucunaque, Jaque, Sambú and Balsas as part of a highly productive water system. The landscape of this region was influenced by fluctuations in the sea level related to climate changes and glaciations during the Pleistocene period. The main ridges and hills of the park have a volcanic origin and can still be seen the tuffs and lavas that show their convulsive past (SoOUV, 2013).

- **Biological bridge between North and South America**
  Criterion:(ix)

  Biogeographically speaking, the location at the southernmost end of the geologically young land bridge connecting South America and Central America is a rare and scientifically fascinating setting. Darien National Park is within the area of first contact and interchange between two major, previously isolated landmasses, which is reflected in its biodiversity. The property is within the Southern limit of Mesoamerican elements of flora and fauna while also being influenced by elements of South American rainforests, a link between Central and South America all the way to the Amazon. The

property contains the most extensive lowland tropical forest on the Pacific coast of Central America, permitting the conservation and continuation of ecological and evolutionary processes at a large scale. The uninterrupted altitudinal transition of different forest types from the coastal lowlands to the mountains allows the migration, of many species, an increasingly rare large-scale setting and interaction between different ecosystems which contributes to resilience in the face of anticipated climate change (SoOUV, 2013).

► Diversity of flora and fauna

Criterion:(x)

Its strategic geographic location makes it a place of transit and encounter between the fauna of North America and South America. The site is large enough for the continuation of evolutionary processes and survival of endangered species., facilitating that several important species of mammals and birds that need large spaces to suit their habitat requirements, can live in the National Park, between these species we have the jaguar or tiger (Panthera onca), Baird’s tapir (Tapirus bairdii), collared peccary (Tayassu peccary), puma (Puma concolor), the harpy eagle (Harpia harpyja) and others, many of which are endangered. The Forest of the Park has been characterized as one of the most diverse forests in all Tropical America present in seven life zones, being the evergreen ombrophilous tropical forest of lowland which contains the largest territory in the Park. There are more than 40 endemic flora in the area, like the monkey ladder (Bauhinia spp.) and green caskfruit (Doliocarpus olivaceus). The endemic species of invertebrates and vertebrates are abundant. There are 7 mammal found only here, like the Darien pocket gopher (Orthogeomys dariensis) and Panama slender opossum (Marmosops invictus) (SoOUV, 2013).

Other important biodiversity values

► Other international values

It lies within a Conservation International designated Conservation Hotspot, a WWF Global 200 Marine Eco-region, a WWF/IUCN Centre of Plant Diversity and in two of the world’s Endemic Bird Areas. It is also a UNESCO Biosphere

Reserve.

Assessment information

Threats

Current Threats

High Threat

The unsustainable use of natural resources by local communities, which are increasing by about 5% a year from in-migration, increasing coca cultivation, and the rapid expansion of the agricultural frontier outside the Park, pose major threats to the ecosystems, species, and hydrological resources of the Park.

▶ **Temperature changes**

High Threat
Inside site
Outside site

Climate change has already negatively impacted the region increasing the frequency and severity of extreme weather events.(36COM.Los Katios.SPreport.; Jet Propulsion Laboratory, 2011)

▶ **Logging/ Wood Harvesting, Fishing / Harvesting Aquatic Resources, Livestock Farming / Grazing, Subsistence hunting**

Very High Threat
Inside site
Outside site

Ever-expanding cattle ranching slash and burn agriculture, logging, fishing, and hunting in areas surrounding the Park have an indirect effect on ecosystems and species within the Park, especially with respect to increasing biological isolation. (ANAM, 2007)

▶

Logging/ Wood Harvesting, Fishing / Harvesting Aquatic Resources, Livestock Farming / Grazing, Subsistence hunting

High Threat

33 native and non-native communities living within the Park carry out slash and burn agriculture, logging, hunting, and grazing activities. Communities surrounding the Park enter into the Park to hunt, fish, and log forests. While a few projects are being undertaken to develop sustainable approaches to these activities, most are uncontrolled. Continued in-migration to the Park (increasing the local population by about 5% annually), incursions of heavily armed groups from Colombia, and improved roads in the buffer zone, intensify the magnitude of the problems. Increasing coca cultivation near the Colombian border is dragging the area into conflicts surrounding drug trafficking. (WDPA, 2011; Vergara, 2009; ANAM, 2007; Trab Nielsen, 2006)

Potential Threats

High Threat

The ever-present threat of completion of the Inter-American Highway through the Park continues to pose a major threat to the Park’s integrity. The electricity lines connection with Colombia, if it includes a terrestrial route, would have a significant impact on the whole Panamanian Choco-Darien ecoregion.

► Roads/ Railroads

High Threat
Inside site
Outside site

Completion of the last segment of the Inter-American Highway through the Park has been proposed for the last 20 years. Until now, concerns regarding the barrier effect of the Park on drug trafficking and tropical diseases have outweighed development pressures, but there is always the possibility that new political alignments and pressures will favor highway construction. (WDPA, 2011, ANAM, 2007)

► Utility / Service Lines

High Threat

Inside site
Outside site

The electrical lines which would provide a connection with Colombia could affect the site directly or indirectly depending on the route. However, the route has not been defined yet (IUCN Consultation, 2014).

Protection and management

Assessing Protection and Management

► Tourism and interpretation

Mostly Effective

A low level of ecotourism, especially bird watching, is provided by private tour operators. The Panamanian NGO, ANCON, was given a concession to establish an ecotourism base at Santa Cruz de Cana Field Station, which historically was the site of a goldmine, and now has a small landing strip. However, the concession has not yet been renewed. There was only infrequent contact between the operator and the Park administration (UNEP-WCMC, 2011; ANAM, 2007; Doggett, 2005). Development of sustainable tourism initiatives is mainly hindered by the perception of security problems in the Darien region.

► Relationships with local people

Mostly Effective

The Park Management Committee, community outreach projects, and environmental education all serve to develop sound working relationships with local people. However, current mechanisms are inadequate to provide full access to decision-making regarding management of the Park (WDPA, 2011; ANAM, 2007; ANAM y UICN, 2006)

► Legal framework and enforcement

Mostly Effective

The Park was established by Executive Decree in 1980 and also has legal recognition at the international level as a World Heritage Site and Biosphere

Reserve. Though regulations exist for control of activities inappropriate for a National Park, there are major impediments to effective enforcement. (ANAM, 2007)

► Integration into regional and national planning systems

Highly Effective

The area is well integrated in regional (Provincial Land Use Plan) and national planning systems (National Protected Area Strategy), especially because the Park serves as a barrier to drug trafficking, illegal migration, and diseases from South America. (WDPA Data Sheets, 2011; Vergara, 2009; ANAM, 2007; Trab Nielsen, 2006)

► Management system

Some Concern

Management is guided by a management plan that was updated in 2009, and by Annual Operations Plans. However, research is inadequate to guide management decision with respect to critical ecosystems, species, and cultural values. The Park has an administrative office in El Real de Santa María and four ranger stations. The Park has developed and signposted more than 100 km of trails between the 4 ranger stations. The rangers are provided with training and basic equipment for protection and the enforcement of regulations. There are monthly visits to the most critical areas to evaluate the effects of settlers, hunters and others. Threats from drug traffickers, guerillas, and paramilitaries from Colombia sometimes make it difficult for Park staff to do their jobs (WDPA Data Sheets, 2011; Vergara, 2009; ANAM, 2009; Trab Nielsen, 2006).

► Management effectiveness

Some Concern

Human, physical, and financial resources are insufficient to implement the management plan for the Park. An evaluation of management effectiveness carried out in 2007 provided a score of 45 out of 84 possible points, or 53% (ANAM, 2007).

► Implementation of Committee decisions and recommendations

Data Deficient

Not applicable

► Boundaries

Some Concern

The irregular shape of the Park, with a perimeter of 711 km. and several peninsulas, is not conducive to effective management. Boundary demarcation is on-going. Even though there are still many areas without demarcation, local communities have a general idea of where the boundaries are. Part of the Darien National Park boundary borders the much smaller Los Katios National Park in Colombia. (WDPA Data Sheets, 2011; Vergara, 2009; ANAM, 2007)

► Sustainable finance

Some Concern

The Darien Conservation Trust Fund was established in 2004 through a debt-for-nature swap with the U.S. that will total US$10.9 m. by 2016. As of 2009, the fund covered around half of annual expenses. The remaining half is contributed by the Government of Panama (roughly ¼) and by FIDECO (roughly ¼), a national environmental fund established through a donation of the U.S. Government, TNC and the GoP. Support to conservation has also come from The Nature Conservancy, the U.S. Agency for International Development, Oro Verde, the World Wildlife Fund-U.S. and World Wildlife Fund-U.K. Aid . Still, the level of finance is inadequate for the magnitude of the threats facing the Park. (WDPA Data Sheet, 2011; Vergara, 2009; ANAM, 2007; Trab Nielsen, 2006).

► Staff training and development

Some Concern

Capacity building for the staff of 30 (as of 2009) is carried out on a regular basis and is one of the programs funded by the Darien Conservation Fund. However, staff turnover is high and capacity building is always an on-going need (Vergara, 2009; ANAM, 2007).

► Sustainable use

Serious Concern

Overall, the uncontrolled use of natural resources by native communities and colonists is the major challenge for Park management. Programs, financed by the Darien Conservation Fund, are being developed to work with local communities to achieve sustainable use of local resources. However, In 2009, only 6 of the 33 communities in the Park were benefitting from the program. (Vergara, 2009; ANAM, 2007)

► Education and interpretation programs

Some Concern

Though an environmental education program is in place, it is not well planned and is sporadic. An environmental education centre at El Real has been developed in cooperation with Park personnel. The aim is for environmental education to be developed for every community in or next to the Park, especially about malaria and foot-and-mouth disease; there are weekly radio programs and work with student groups and volunteers. (WDPA Data Sheet, 2011; Vergara, 2009; ANAM, 2007)

► Monitoring

Serious Concern

A monitoring system has been developed for the Park, but is not used systematically to guide management decisions. Avifauna is monitored at the Cana Field Station (Vergara, 2009; ANAM. 2007)

► Research

Some Concern

The Park is of great scientific interest for both natural and social sciences owing to the variety of its natural ecosystems and ethnic groups. The Santa Cruz de Cana Field Station also serves as a research center and is an important site for bird monitoring. There is potential to expand broad ecological research, but current levels of information on critical habitats, species, and cultural values is insufficient for management decision; research results are not immediately available in the Park, but ANCON maintains a research data base in Panama City. (UNEP-WCMC, 2011; ANAM, 2007; Doggett, 2004).

Overall assessment of protection and management

Some Concern

While considerable progress has been made in protection and management of the Park, much remains to be done especially with respect to achieving sustainable use of resources by local communities, undertaking the monitoring and research necessary to guide management, and in obtaining the human and financial resources needed to implement the Park's management Plan. Insufficient staff, physical, and financial resources make it impossible for the Park Administration to attend threats generated outside the Park on a systematic basis.

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

Some Concern

Insufficient staff, physical, and financial resources make it impossible for the Park Administration to attend threats generated outside the Park on a systematic basis.

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ Scenic beauty of natural landscape patterns and geomorphologic features

High Concern
Trend:Deteriorating

While the geomorphological characteristics of the Park are not threatened, the scenic beauty related to natural landscape patterns is being increasingly fragmented by human activities. (UNEP-WCMC, 2011; ANAM, 2007)

► Biological bridge between North and South America

Critical
Trend:Deteriorating

The function of the Park as a biological bridge between North and South America, buffer against climate change, protector of evolutionary processes at the landscape scale, and conservator of watersheds critical to ecosystem function and the development needs of Darien Province are being threatened by unsustainable natural resource exploitation activities and increasing human populations, both within and around the Park, and the trend is negative. (UNEP-WCMC, 2011; Vergara, 2009; ANAM 2007; Trab Nielsen, 2006)

► Diversity of flora and fauna

High Concern
Trend:Deteriorating

Unsustainable natural resource exploitation by communities and increasing human populations in and around the Park are leading to the degradation of natural ecosystems and biodiversity, threatening key species, and accentuating stresses caused by climate change.
Trend is towards increasing impacts on conservation. (UNEP-WCMC, 2011; Vergara, 2009; ANAM 2007; Trab Nielsen, 2006)

Other important biodiversity values

► Other international values

It lies within a Conservation International designated Conservation Hotspot, a WWF Global 200 Marine Eco-region, a WWF/IUCN Centre of Plant Diversity and in two of the world’s Endemic Bird Areas. It is also a UNESCO Biosphere Reserve.

Summary of the Values

► Assessment of the current state and trend of World Heritage values

High Concern

Trend: Deteriorating

Unsustainable natural resource exploitation activities and increasing human populations, both within and around the Park, are impacting the scenic beauty of the Park by fragmenting natural landscape patterns; and impeding the Park's function as (a) biological bridge between North and South America, (b) buffer against climate change, (c) protector of evolutionary processes at the landscape scale, and (d) conservator of watersheds critical to ecosystem function and the development needs of Darien Region. These stresses contribute to the degradation of natural ecosystems and biodiversity, threaten key species, and accentuate stresses from climate change. Trends are negative and accelerating.

▶ **Assessment of the current state and trend of other important biodiversity values**

High Concern

Trend: Deteriorating

Threats to scenic beauty, ecological and biological processes, and biodiversity and endangered species by unsustainable natural resource exploitation and increasing human populations apply equally to the values associated with other international designations (Conservation International Hotspot, WWF Global 200 Marine Eco-region, WWF/IUCN Centre of Plant Diversity, two Endemic Bird Areas, and UNESCO Biosphere Reserve), and the trend is negative

Additional information

Key conservation issues

▶ **Unsustainable natural resource use**

Local

Communities living within the Park carry out slash and burn agriculture, logging, hunting, fishing, and grazing activities. Communities surrounding the Park enter into the Park to hunt, fish, and log forests. While a few projects are being undertaken to develop sustainable approaches to these activities, most

are uncontrolled. Continued in-migration to the Park (increasing the local population by about 5% annually), incursions of heavily armed groups from Colombia, and improved roads in the buffer zone, intensify the magnitude of the problems. Increasing coca cultivation near the Colombian border is dragging the area into conflicts surrounding drug trafficking. (WDPA, 2011; Vergara, 2009; ANAM, 2007; Trab Nielsen, 2006)

▶ **Resource use in the buffer zone**

Local

Ever-expanding slash and burn agriculture, logging, fishing and hunting in areas surrounding the Park have an indirect effect on ecosystems and species within the Park, especially with respect to increasing biological isolation. (ANAM. 2007)

▶ **Major highway construction**

National

Completion of the last segment of the Inter-American Highway through the Park has been proposed for the last 20 years. Until now, concerns regarding the barrier effect of the Park on drug trafficking and tropical diseases have outweighed development pressures, but there is always the possibility that new political alignments and pressures will favor highway construction. (WDPA, 2011, ANAM, 2007)

Benefits

Understanding Benefits

▶ **Outdoor recreation and tourism**

Though ecotourism is insipient, it has the potential for considerable increase.

▶ **Is the protected area valued for its nature conservation?**

Forming a bridge between the two continents of the New World, Darien National Park protects and conserves an exceptional variety of habitats – sandy beaches, rocky coasts, mangroves, swamps, and lowland and upland tropical forests containing extraordinary biological diversity and many

endangered and threatened species..

- **Fishing areas and conservation of fish stocks, Livestock grazing areas**

  The Park provides subsistence livelihoods for communities within and around the Park.

- **Access to drinking water**

  The Park protects 1/3 of the watersheds in Darien Province.

- **Carbon sequestration**

  The extensive tropical forests of the Park retain large amounts of carbon and stabilize climate.

- **Importance for research**

  Though little research has been carried out in the Park, it is of great scientific interest for both natural and social sciences owing to the variety of its natural ecosystems, its strategic position between North and South America, and the variety of ethnic groups living there.

Summary of benefits

The principal benefit of the Park is the conservation of an extraordinary array of tropical biological diversity, but it also generates a number of secondary benefits such as the provision of subsistence livelihoods for local communities, the protection of significant watersheds for the Province of Darien, the maintenance of climate stability, knowledge generation, and ecotourism.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	Fundación Natura		Community Action Plan for the Management of Natural Resources of Darien National Park, with a focus on the communities of the Garachiné and Pirre Sectors adjacent to the Rancho Frio Guard Station.

REFERENCES

№	References
1	36COM.LosKatios.SPreport
2	ANAM y UICN. 2006. Estado de la Gestión Compartida de Areas Protegidas en Panamá.
3	ANAM, 2007. Plan para la Operativización del Plan de Manejo del Parque Nacional Darién – Panamá. Autoridad Nacional del Ambiente, Fundación de Parques Nacionales y Medio Ambiente, Fundación Natura, Fondo Darién.
4	Biota Panama. 2007. Lista de Mamiferos Amenazados del Parque Nacional Darien, Panama. http://biota.wordpress.com/2007/07/28/mamiferos-amenazados-…
5	Dogget, Scott. 2005. In Pnanma’s Jungle, New Roads Pit Eco-tourism.against Logging. Seattle Times. 18.03.05.
6	Trab Nielsen, Sara. 2006. The Spillover Effect of the Colombian Conflict; Ecological Damage in the Darien Gap. ICE Case Studies, No. 198.
7	UNEP-WCMC Data Sheet, 2011
8	Vergara, Desireé. 2009. Logros Alcanzados a través de Funcionamiento del Fondo para la Conservación del Parque Nacional Darién. Autoridad Nacional del Ambiente, Dirección de Áreas Protegidas y Vida Silvestre, Panamá.