World Heritage Sites

Protected Areas and World Heritage

ALEJANDRO DE HUMBOLDT NATIONAL PARK
CUBA

The site covers one of the most extensive and well-preserved mountain ecosystems in the West Indies. Its complex geology and varied topography create a diversity of ecosystems and species unmatched in the Caribbean, and one of the most biologically diverse tropical island sites on earth. The area stretching from cloud forest to coast has sufficient extent, elevational and climatic range to support the existing diversity both now and in a warmer future. Many of the underlying rocks are toxic to plants to which species have had to adapt resulting in the development of many new species and one of the most important sites in the Western Hemisphere for the conservation of endemic flora. Endemism of vertebrates and invertebrates is also very high.

Threats to the site: the state has granted or confirmed eight mostly peripheral concessions for surface nickel mining, including the biologically valuable area of El Toldo peak, and an eastern concession which could poison the mangroves and marine sector. The two largest concessions cover about 40% of the core World Heritage site.

COUNTRY
Cuba

NAME
Alejandro de Humboldt National Park

NATURAL WORLD HERITAGE SITE
2000: Inscribed on the World Heritage List under Natural Criteria ix and x.

STATEMENT OF OUTSTANDING UNIVERSAL VALUE [pending]
The UNESCO World Heritage Committee issued the following statement at the time of inscription:

Justification for Inscription

Criterion (ix): The size, altitudinal diversity, complex lithologies, and landform diversity of AHNP have resulted in a range of ecosystems and species unmatched in the Insular Caribbean. It was a Miocene-Pleistocene refuge site, particularly in the glacial eras, for the Caribbean biota. The fresh water rivers that flow off the peaks of the park are some of the largest in the insular Caribbean and because of this have high freshwater biological diversity. Because of the serpentine, peridotite, karst and pseudokarst geology of the region, AHNP is an excellent example of ongoing processes in the evolution of species and communities on underlying rocks that pose special challenges to plant survival.

Criterion (x): AHNP contains the most important and significant natural habitats for in-situ conservation of terrestrial biological diversity in the entire insular Caribbean. It contains 16 of 28 plant formations defined for Cuba, the largest island in the Caribbean, which is a unique biogeographic province. It is one of the most important sites for conservation of endemic flora in the entire Western Hemisphere - nearly 70% of the 1,302 spermatophytes already described, of an estimated total of 1,800-2,000, are endemic to the park. AHNP is one of the most biologically diverse terrestrial tropical ecosystems in an island setting anywhere on earth. Endemism rates for vertebrates and invertebrates found in the park are also very high. Many of these are threatened because of their small range. Because of their uniqueness and the fact that they represent unique evolutionary processes, they are of outstanding universal value from the point of view of science and conservation.

INTERNATIONAL DESIGNATION
1987: Cuchillas del Toa designated a Biosphere Reserve under the UNESCO Man and Biosphere Programme (core area: 89,741 ha).

IUCN MANAGEMENT CATEGORY
II National Park

BIOGEOGRAPHICAL PROVINCE
Cuban (8.39.13)

GEOGRAPHICAL LOCATION
The site covers a 50 km length of the Sagua-Baracoa Mountains to the sea in easternmost Cuba, 30 km northeast of Guantanamo, between 20°22' to 20°35'N and 74°38' to 75°10'W.

DATES AND HISTORY OF ESTABLISHMENT
1963: Jaguani and Cupeyal del Norte Natural Reserves were established;

1987: Cuchillas del Toa Biosphere Reserve designated, containing the whole National Park;

1991: Ojito de Agua Wildlife Refuge established;

1996: The three reserves unified as the Alejandro de Humboldt National Park;

2001: The Park gazetted in Guantanamo province but not yet ratified by national legislation.

AREA
69,341 ha: 66,700 ha terrestrial, 2,641 ha marine. There is a buffer zone of 34,330 ha.

LAND TENURE
State-owned. Held and managed by the Ministry of Science, Technology and Environment (CITMA).

ALTITUDE
From 220m below sea level to 1,168m (El Toldo Peak).

PHYSICAL FEATURES
The site in the Sagua-Baracoa range covers one of the most extensive and well-preserved mountain ecosystems in the West Indies, in a landscape which also covers tablelands, coastal plains, bays and coral reefs. Its varied and rugged topography is underlain by a complex geology, the underlying rocks of which has created the most biologically diverse area of any island in the Caribbean, and one of the most diverse on earth. It was formed by the tectonic creation of a sea-shelf on an ancient Oligocene-Pleistocene island-arc structure combined with a transformed oceanic crust (ophiolite) thrust up from the Earth's mantle at the subduction zone. The site is partly composed of magnesium-rich basic and ultra-basic serpentine rocks which have remained exposed for 40 million years, the oldest massif in the Caribbean. It is also rich in increasingly commercially valuable minerals such as nickel.

The coastal plains are the highest most elongated system of planation surfaces in the Caribbean, with large weathering crusts formed during the course of tectonic uplift and changes in sea level related to past climatic fluctuations. Embedded in them is the uncommon pseudo-karst limestone island block containing the great cave of Farallones de Moa. The serpentine, peridotite and pseudokarst geology contribute to the site's great variety of soils and habitats, and by their singular local and undisturbed character, to its endemism. The soils are largely lateritic and acidic except in the karstic area which has many flooded dolines, swallowholes, closed basins and caves. Several clear-water rivers flow from the Park, through pools and over cascades, including the Toa-Jaguani, Duaba, Jiguani, Nibujon, and Moa. The landscape is even more beautiful than the well known nearby Sierra Maestra.

CLIMATE
The Park has a hot subtropical climate year-round. Most rain falls between May and October and it is subject to hurricanes between August and October. Humidity is high, varying between 75% and 95%. The cooler months are January to April when the least rain falls. The maximum temperature is 32°C, the minimum is 15°C.

VEGETATION
The size, geological, altitudinal and topographic diversity of the area have resulted in a range of ecosystems and species unmatched amongst Caribbean islands. The area, exposed for millenia, became a Miocene-Pleistocene refuge for Caribbean biota during the Quaternary glaciations becoming an evolutionary centre which enabled the survival and dispersal of a diversified flora and

fauna. The Park is still a local centre of plant diversity and endemism, and for species which have had to adapt to soils derived from serpentinite and peridotite that are toxic or limiting to plants. The result has been exceptional speciation. Plant endemism in the region is over 70%, the highest in Cuba and one of the highest in the world. There are 1,302 spermatophytes (69% of Cuba's endemic species) and 145 pteridophytes. In total 905 of the area's species are endemic (29% of all the country's endemics) of which 343 grow exclusively in the Park. This is clearly one of the most important sites in the Western Hemisphere for the conservation of endemic flora. Many of these plants which represent unique evolutionary processes are threatened because of their small range, their uniqueness and their outstanding value for science and conservation. In addition, the area is one of the least explored in Cuba and has locations where collections have never been made. The list of the flora is therefore incomplete and the total number of species may be more like 1,800-2,000.

The Park contains one of the most complete of neotropical wet island forests. Its terrestrial vegetation contains 16 of the 28 plant formations of the island, ranging from lowland rainforest between 200m and 400m, submontane rainforest to 600m, montane rainforest above 600m to cloud forest above 1,000m, with associated Cuban pine *Pinus cubensis* forest, mesophyllous evergreen forest, microphyllous evergreen forest, semideciduous forest, river rainforest, xeromorphic thorny shrub on serpentinite (80% endemic species), coastal xerophytic scrub on both sands and rocks, and mangrove forest. The lowland forest has three levels of canopy and can grow to 30m. It is intermixed with cocao and shade coffee plantations which occupy most of the coastal region of the site. The local flora includes five species of carnivorous plants, one being the sole Cuban epiphyte *Pinguicula lignicola*. It also retains two endemic species of the relicts *Podocarpus ekman* and *Dracaena cubensis*. Five species new to science were recently been found in the region, one is a pine, another is a species of *Buxus* previously reported extinct. A list of the flora exists at the National Centre for Protected Areas, Havana.

FAUNA

The Park contains some of the richest fauna and highest endemism in Cuba: 10 species of mammals (30% endemic), 95 birds (21%), 45 reptiles (83.3%), 21 amphibians (95.8%), 59 arachnids and 191 insects (27.7% endemic) are recorded. The area is of importance for several species of particular conservation concern, notably ivory-billed woodpecker *Campephilus principalis* (CR), though this may now be extinct, hook-billed kite *Chondrohierax wilsoni* (CR), an endemic species now reduced to very few individuals, the rare large shrew-like insectivore Cuban solenodon *Solenodon cubanus* (EN), considered a living fossil, Desmarest's hutia *Capromys pilorides*, the largest endemic mammal in the country, and the world's smallest bat Gervais's funnel-eared bat *Natalus lepidus* (2-3 grams).

The region's forests are an important refuge for many resident and migratory birds such as Gundlach's hawk *Accipiter gundlachii* (EN), blueheaded quail-dove *Starnoenas cyanocephala* (EN), Cuban sparrow *Torreornis inexpectata* (EN), grey-headed quail-dove *Geotrygon caniceps* (VU), West Indian whistling dove *Dendorocygna arborea*, Cuban parakeet *Aratinga euops* (VU), Cuban amazon *Amazona leucocephala*, and the world's smallest bird, the bee hummingbird *Mellisuga helenae* (63 mm). Three new species of anolis lizards have been recently collected from the Park, and the world's smallest frog, the nationally endemic 11mm *Eleutherodactylus iberia* (CR) which is restricted to a very few locations, is also found there. The freshwater rivers that flow off its peaks are among the larger of Caribbean island rivers and have high freshwater biological diversity: a freshwater fish *Gambusia punctata,* 9 endemic freshwater shrimps and two endemic molluscs, out of 50. In the marine sector there is a numerous colony of Caribbean manatee *Trichechus manatus* (VU).

CONSERVATION VALUE

The Park is one of the most extensive and well-preserved mountain ecosystems in the West Indies, so far very little impacted by settlement. It contains many endemic and endangered species and the levels of endemism recorded in the flora are amongst the highest of any in the world. Its transect from cloud forest to coast has sufficient area, elevational and climatic range to support the existing diversity in a warmer future. The Park lies within a Conservation International-designated Conservation Hotspot, in WWF Global 200 both Marine and Freshwater Eco-regions, is a UNESCO MAB Biosphere Reserve and a BirdLife-designated Endemic Bird Area.

CULTURAL HERITAGE

The site is in an area which has historically been little used by man. Only one pre-Columbian archaeological site, Aguas Verdes, is known. During the 18th and 19th centuries some peripheral places were used as sheltering sites, by *cimarron,* runaway slaves.

LOCAL HUMAN POPULATION

During the first half of the 20th century, the coastal valleys were farmed for coconut and cacao and during the 1940's and 50's, there was farming along the Toa and Jaguaní riverbanks which was abandoned at the end of the 1950's due to difficulty of access and the poor quality of crops. There was underground mining for minerals near La Melba in the middle of the mountains, and in the 1960's and 70's, there was logging, particularly of pine, in the area of Ojito de Agua which stopped when the area was declared a Wildlife Refuge. Within the Park the largest human settlement is at La Melba, with about 400 inhabitants in 2000; the population of the buffer zone was then estimated to be 4,000 people.

VISITORS AND VISITOR FACILITIES

Almost all visitors to the Park are local people or researchers, although national and international ecotourism is promoted by the government. There are two small visitor centres with guided and self guided interpretative trails. Accommodation and campsites have been prepared and in 2000 Taco Bay and nearby beaches within the site were being heavily developed with hotels.

SCIENTIFIC RESEARCH AND FACILITIES

The Park is named for the great German scientist explorer Alexander von Humboldt, the founder of the sciences of physical geography and meteorology who visited the island in 1800-1 and 1804 and became known as 'the second discoverer of Cuba'. The Park is the least explored area of the island and has locations where collections have never been made. Several scientific research expeditions have targeted the fauna and flora, and species totals are still increasing as new forms are found or classified. Shortly before nomination three new reptile species, two new amphibians, three new crustaceans, 17 new species of arachnids and five plants were discovered. The list of the Park's flora is incomplete and the known total of vascular plants may be less than 70% of what exists.

MANAGEMENT

Effective protection of the National Park is feasible since the whole area is included in a Biosphere Reserve coordinated by the Ministry of Science, Technology and Environment, which has the tenancy of the property and responsibility for managing the Park. An operational plan forms part of the Management Plan for 2009-2013. Activities include prevention of forest fires, restoration of hurricane-damaged habitats, soil conservation, invasive species control, maintenance of tourism infrastructure and environmental education. The Park was one of the first priority areas for the National Environmental Strategy and the National Strategies for Biodiversity, Protected Areas and Environmental Education. The Law on Environment, the Decree-Law on Forest Heritage & Wild Fauna (136/93) and the Regulations for the Realization and Approval of Environmental Impact Assessments and for the State Environmental Inspection (168/95) provide the legal framework to protect the zone. There is a main administration center at Guantánamo, two secondary centers at Piedra La Vela and Baracoa and posts at Taco, Cupeyal del Norte, La Melba and Farallones de Moa. Means and resources to manage this area are insufficient and allow only for general activities for protection, environmental interpretation, environmental education in some communities and basic research.

MANAGEMENT CONSTRAINTS

Historically mining has penetrated the area, the north of which is rich in minerals, especially nickel, now increasingly valuable on the world market. But mining was halted on the establishment of protected areas and the logging tracks and other marks of industry are slowly reverting to forest. The one mine left is a subterranean one at La Melba. However, between 2000 and 2006, the state reactivated the threat by granting or confirming to the Cuban mining company Moa Nickel S.A eight mostly peripheral concessions for surface mining: Pilotos (rights not pursued by a Canadian company), La Farragosa, Las Iberias, Cupeyal, Camariocas Sur, Camariocas Este, Santa Teresita and La Delta. These have not yet been worked but the biologically valuable areas of El Toldo peak and the El Toldo plateau are included, and these probably contain most of the endemism in Cuba and are important centres of global endemism, and the eastern concession of Santa Teresita would send toxic run-off into the mangroves and sea. In fact La Farragosa, in the centre of the Ojito de Agua sector and Las Iberias in the centre of the Jaguani sector cover about 40% of the property, and the preliminary prospecting with heavy machinery would need destructive access roads. The Ministry of the Environment has proposed Environmental Impact Statements to mitigate the effects of these concessions but they remain potentially disastrous to the integrity of the site (IUCN, 2008).

Otherwise, the areas most affected by human activities are agriculture in the coastal valleys of the Santa Maria and Nibujon rivers and near La Melba village and the route of a coastal road which runs between the foothills and the coast. Commercial timber extraction in the pine woods of Ojito de Agua during the 1960's and 1970's was stopped in 1986 with the declaration of the area as a Wildlife Refuge. Hurricanes such as Ike in 2008 are a significant but customary recurring natural threat to the region.

STAFF
In 1999 the Park's staff was 60, comprising 12 professionals, 24 technicians, 18 workers, and 6 service workers.

BUDGET
In 1999 the Park received national financing of 300,000 Cuban pesos a year but was still underfunded. It receives support from WWF-Canada and projects funded by the Global Environment Facility to strengthen field management, prevent forest fires, eradicate exotic species and educate the public on the environment.

LOCAL ADDRESS
Ministerio de Ciencia, Technologia y Medio Ambiente, Agencia de Medio Ambiente, Centro Nacional de Areas Protegidas, Calle 18A, 4114 entre 43 y 47, Playa, CP 11300, Habana, Cuba.

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DATE
April 1999, 10-1999, 11-2001, 7-2009, 5-2011, January 2012.