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UNESCO Region: LATIN AMERICA AND THE CARIBBEANS

SITE NAME: Desembarco del Granma National Park

DATE OF INSCRIPTION: 4th December 1999

STATE PARTY: CUBA

CRITERIA: N (i)(iii)

DECISION OF THE WORLD HERITAGE COMMITTEE:

Excerpt from the Report of the 23rd Session of the World Heritage Committee

The uplifted marine terraces of the Desembarco del Granma National Park and associated ongoing development of karst topography and features, represent a globally significant example of geomorphologic and physiographic features and ongoing geological processes. The area includes spectacular stair-step terraces and cliffs and the ecosystems that have evolved on them, as well as some of the most pristine and impressive coastal cliffs bordering the Western Atlantic between the Canadian Maritimes and southern South America.

The Committee decided to inscribe the site under natural criteria (i) and (iii). It also commended the Government of Cuba for the efforts to conserve this site. The Committee suggested that the State Party submit a request to the World Heritage Fund for technical assistance to produce a tourism management plan as an integral element of the overall management plan for this site.

BRIEF DESCRIPTIONS

With its uplifted marine terraces and associated ongoing development of karst topography and features, Desembarco del Granma National Park represents a globally significant example of geomorphologic and physiographic features and ongoing geological processes. The area, in and around Cabo Cruz in southwestern Cuba, includes spectacular terraces and cliffs, as well as some of the most pristine and impressive coastal cliffs bordering the western Atlantic.

1.b State, Province or Region: Desembarco del Granma National Park, SW corner of the the Republic of Cuba

1.d Exact location: 19° 49' N, 77° 18' W

Lista del Patrimonio Mundial

**SISTEMA DE TERRAZAS MARINAS
DE CABO CRUZ Y MAISI**

**Parque Nacional
Desembarco del Granma Reserva
Ecológica Maisí Elemento Natural
Destacado Caleta**

Republica de Cuba

1998



World Heritage Centre
Documentation Unit

LIST OF WORLD HERITAGE

SYSTEM OF MARINE TERRACES OF CABO CRUZ AND MAISI

**DESEMBARCO DEL GRANMA
NATIONAL PARK/ MAISI
ECOLOGICAL RESERVE/ CALETA
OUTSTANDING NATURAL ELEMENT**

**Republic of Cuba
1998**

1. IDENTIFICATION OF THE GOOD

a) **Country:** Republic of Cuba

b) **Provinces:** Granma and Guantánamo

c) **Name:** These territories have historically been known as “Marine Terraces of Cabo Cruz and Maisí”. During the process of converting these territories to protected areas, they came to be known as Desembarco del Granma National Park, Punta Negra – Punta Quemados Ecological Reserve, and Caleta Outstanding Natural Element. However, during a recent review of the origin of Cuban toponyms, it was not considered pertinent to use the name Punta Quemados as a representative of the eastern border of Cuba, so this protected area was renamed Maisí Ecological Reserve.

d) **Accurate location in a map and geographic coordinates:**

Desembarco del Granma National Park:

X: 77 ° 18 ' - 77 ° 44 '

Y: 19 ° 49 ' - 19 ° 57 '

Maisí Ecological Reserve

X: 74 ° 08 ' - 74 ° 18 '

Y: 20 ° 04 ' - 20 ° 14 '

Caleta Outstanding Natural Element:

X: 74 ° 14 ' - 74 ° 25 '

Y: 20 ° 04 ' - 20 ° 08 '

e) **Maps:**

See Annexes 1, 2, and 3

f) **Extension**

Desembarco del Granma National Park:

Terrestrial area: 26 180 ha

Marine area: 6 396 ha

Buffer zone: 9 287 ha

Maisí Ecological Reserve:

Terrestrial area: 6 298 ha

Marine area: 2 168 ha
 Buffer zone: *****

Caleta Outstanding Natural Element:

Terrestrial area: 7 034 ha
 Buffer zone: *****

***** Linked buffer zone (Caleta O.N.E. and Maisí E.R.): 8 506 ha

2. JUSTIFICATION OF THE REGISTRATION

a) Declaration of values

These areas located in the pseudopericlinal of the mountainous massifs of western Cuba, in the interaction zone between the plates of the Caribbean and North America, are the largest and best preserved world exponents of the systems of marine terraces (both above sea level and submarine) on calcareous rocks. The most relevant characteristics of these areas are the following:

- I. They are utmost world exponents of the systems of marine terraces on calcareous rocks due to their height, number of terraces and conservation status.
- II. They are relevant world examples of relieves resulting from the combination of tectonic and glacioeustatic movements.
- III. They are splendid examples of relief forms from a given geological period (Plio - Pleistocene) in the evolution of the earth, of an evolutionary style as well as a region that, like the Caribbean, is one of the most complex zones in our planet from the geological viewpoint.
- IV. They shelter exceptionally well-preserved, spectacular systems of terraces, relief forms, deposits, etc. The terrace levels may be up to 460 m high above sea level and reach up to 24 levels underwater, some of these levels are 100 m high.
- V. There is a development of submarine terraces, at least 3 levels of submarine terraces being up to 180 m deep.
- VI. They are one of the best sites in the world to study and understand both global climate changes during long periods of time and the influence of the morphostructural differentiation of insular territories, as these systems are morphochronological indicators of their evolution.
- VII. They have one of the few active faults in the world, where basic parameters of the evolution of these structures have been determined.
- VIII. There is a development of relief accidents (cliffs, karstic holes, dolines, cavern systems, caves, river canyons, etc.) that are relevant because of their magnitude, and among which the terrace bluffs and Hoyo de Morlotte — impressive karstic hole 77 m deep and 55 m of diameter— stand out.
- IX. There are 5 Cuban geological formations, two of them (Cabo Cruz and Maya), which are described as located in these territories, are most developed here.
- X. There is high conservation of ecosystems, even in the elements of the biota, which are mostly natural, without any anthropic influence.

- XI. Four out of the 6 species of painted snails (*Polymita picta*, *P. brocheri*, *P. venusta*, and *P. versicolor*) — an endemic genus of terrestrial mollusks considered one of the most beautiful colored genera in the world — live here, one of them (*P. brocheri*) can be found only in a section of these terrace systems.
- XII. There is a primitive reptile that belongs to an endemic monotypic, local genus and is extinction-threatened: the Cuban night lizard (*Crycosaura tipica*).
- XIII. There are many national and local endemics of flora and fauna as well as extinction-threatened species, the most outstanding ones are the four species of painted snails, the Cuban Night Lizard (*Crycosaura tipica*), the Blue-Headed Quail Dove (*Starnoenas cyanocephala*), the Manatee (*Trichechus manatus manatus*), the Parrot (*Amazona leucocephala*), *Ligus vittatus*, *Phyllonycteus poeyi*, *Anolis guafe*, *Chamaeleolis sp. Nova*, *Sphaerodactylus armatus*, *S. celicara*, *Eleutherodactylus bresslerae*, *Roystonea maisiana*, *R. violacea*, *Melocactus acunae*, *M. jauquensis*, *Catalpa brevipes*, *Pilea carnosae*, *Tabebuia leonis*, *Acacia seifriziana*, *Harpalice maisiana*, etc.
- XIV. There is much development of coral formations (mainly deep front reefs and coral crests) and fauna (both pelagic and on the sea shelf) in clear waters. It is remarkable the presence of 4 species of marine chelonians (*Caretta caretta*, *Chelonia mydas*, *Lepidochelis olivacea*, and *Eretmochelis imbricata*) and the colonies of queen conch (*Strombus gigas*).
- XV. They are one of the main centers of flora endemism in Cuba.
- XVI. They are a center of endemism and diversification for some fauna groups (mollusks).
- XVII. There is much extension and development of xerophytic plants that reach their highest splendor in these systems.
- XVIII. Two Cuban plant formations (the coastal semidesert thorny shrub and the complex of terrace vegetation) have been defined for these areas that are practically the only places where these plants live or develop best.
- XIX. There are close biogeographic relationships with other Caribbean islands, particularly Hispaniola and Jamaica.
- XX. There are spectacular and striking landscapes both above sea level and underwater.
- XXI. There are works of the aboriginal architecture (ceremonial squares) considered the largest and best preserved ones in the indigenous architecture of the West Indies.
- XXII. One of the few Cuban populations having strong genetic and spiritual links with the autochthonous population lives here.
- XXIII. There are other outstanding archeological values belonging to the Caribbean agrarian, pottery making culture (Taina), to the pre-agrarian, pre-pottery making culture (dozens of archeological sites, petroglyphs, pictographs, etc.), and to the Spanish colonial period (systems of lighthouses).
- XXIV. Relevant historical events of the Cuban revolution took place here.

b) Comparative analysis as to the conservation status of similar goods

The systems of terraces of Cabo Cruz and Maisí are in a very good conservation status. All their relief features are practically undisturbed, they have been affected only in some scattered points due to cuts made to build roads or quarries. Likewise, the ecosystems developed on these terraces are almost completely natural except Caleta Outstanding

Natural Element, where the livestock activity has produced some affectations to the plant coverage in the surface of some terraces.

When comparing these terrace systems to others in Haiti, northwestern Africa, New Guinea, Bermudas, Mexico, Bonaire, and other places of the Caribbean and the European Mediterranean, we can state that the terrace systems located in Cabo Cruz and Maisí excel the aforementioned sites in altitude, terrace levels, complexity, conservation status (of the relief and the biota), and biodiversity endemism.

c) Authenticity / Integrity

The natural areas of these ecosystems are practically not troubled by exotic species, not only because of the naturalness of the areas but also because the extreme conditions of the relief, the weather and the biota prevent not only exotic species accessibility but also the use of the areas by man or other species. In the area of Caleta there are anthropic grasslands and sheep are raised, this has disturbed the integrity of the biota in this site. Other places (populated sites and crops) influenced by sinantropic or domestic species are very scarce. Feral species such as the dog (*Canis familiaris*), the cat (*Felis catus*) and the pig (*Sus scophra*) are not abundant in natural areas. On the other hand, relief conditions prevent these species from having access to many places that remain pristine regarding the composition of their fauna and flora communities. Species such as the small Indian mongoose (*Herpestes auropunctata*), one of the most harmful predators introduced in the West Indies and other regions of the world, have invaded practically none of these natural areas, so these species do not constitute a threat to the integrity of the fauna communities living here.

d) Criteria underlying the registration proposal (and justification of the registration according to these criteria)

Natural heritage:

- Geological evolution: These areas are both world representatives of the systems of marine terraces on calcareous rocks and relevant examples of relieves formed by the combination of tectonic and glacioeustatic movements of a geological period (Plio-Pleistocene) in the evolution of the earth and an evolutionary style (platform style).
- Natural habitats and biodiversity: High naturalness degree in most of these ecosystems as well as high levels of biodiversity and endemism. These areas are important centers of flora endemism. They are the habitat of 4 of the 6 species of painted snails (*Polymita picta*, *P. brocheri*, *P. venusta* and *P. versicolor*), an endemic genus of terrestrial mollusks considered the most beautiful colored genus in the world. Many other local, national, and extinction-threatened endemic species live here too.
- Outstanding natural phenomena and beauty: There are up to 27 levels of terraces ranging from -180 m to 460 m with vertical cliffs up to 100 m high, karstic holes, holes, river canyons, dolines, cavern systems, caves, etc. Also there are spectacular landscapes both above sea level and submarine.
- Ecological processes: These areas constitute one of the best places in the world to study and understand global climate changes in long periods of time, the influence of the

morphostructural differentiation of insular territories, and the evolution of species and their exchange among islands.

Cultural heritage:

- Aboriginal culture: There are remarkable archeological values belonging to the Caribbean agrarian, pottery making culture (Taina) an pre-agrarian, pre-pottery making culture (ceremonial squares, dozens of archeological sites, petroglyphs, pictographs, etc.). There is a local population with strong genetic and spiritual links with our aboriginal population.
- Works: Lighthouses of Cabo Cruz and Maisí, well-preserved works from the XIX Century that are examples of these construction systems.
- Facts: Most relevant facts related to the Cuban Revolution took place here.

3. DESCRIPTION

a) Description of the good

Few Cuban places arouse so much curiosity and imagination in geographers, geologists, naturalists or visitors as the system of terraces of Cabo Cruz and Maisí. Their form, resembling gigantic stepping stones, is one of the most singular landscapes that can be met by the human eye.

The systems of marine terraces of Cabo Cruz and Maisí, utmost representatives of the Cuban systems of marine terraces, have very similar characteristics concerning tectonic facies that correspond to very similar sedimentation environments. The current weather and, in general, the paleoclimatic evolution of these areas are very analogous. The terraces in both regions (Cabo Cruz and Maisí) have a typical echelon formation that is very similar; however, this formation is somewhat different in its tectonic style: a system of faulty, elevated blocks at different heights in Cabo Cruz, and an echelon-shaped system of blocks decreasing from south to north with an inclination towards the north northeast in Maisí; both originated respectively in the western and eastern pseudopericlines of Sierra Maestra and Nipe – Sagua – Baracoa massif due to the left side displacement among the plates of the Caribbean and North America.

When the quality, the amplitude, the relation between terraces and geological formations, and other elements of the spectrums of the marine terraces of these territories are compared, it is easy to see the dissimilarity and the inverse character of the emergent territory, which reached its highest degree in the area of Maisí during the Pliocene and the Lower Pleistocene and in the zone of Cabo Cruz during the Upper Pleistocene. The highest degree of emergent territory took place in Maisí as the intensity of ascents during the Quaternary was higher in the area of Cabo Cruz, so a lesser amount of levels was formed in Cabo Cruz though the amplitude among the levels is higher there.

There are from 7-8 regional levels of terraces (above sea level) defined for these systems, these terraces may have up to 20 levels in 6 mesoblocks and 29 microblocks; they reach a top height of 360 m in Cabo Cruz, and 24 levels in 5 mesoblocks in Maisí — where they

are up to 460 m high and 4 km wide. Regarding the submarine part, there are 3 regional levels (-9 m, -18 m, and -180 m) defined, and there should be more local levels, this has not been studied yet.

The highest altitudes and amount of levels occur in the zones of Punta Escalereta (Cabo Cruz) and Caleta (Maisí), the latter one being the section where terraces reach their utmost splendor.

These terraces rise on the organic-detrital limestones and the massive coral rocks of the formations of Cabo Cruz (from Medium Miocene to Upper Miocene), Maya (Plio-Pleistocene), and Jaimanitas (Pleistocene or Upper Pleistocene), the ones located in Maisí have fensters with outcropping marbles and metamorphic limestone and dolomites from the Chafarina formation from the Lower Jurassic – Cretaceous. Likewise, in Caleta Outstanding Natural Element there is a well-preserved portion of the area of contact of limestone with the serpentines of the ophiolitic complex.

The development of karstic and tectonic-karstic forms of the relief in these terraces is very considerable, remarkable examples of this are the systems of flooded dolines in Punta Escalereta; Hoyo de Morlotte (according to some, it is a Blue Hole above sea level that is 77 m deep and has 55 m of diameter); the canyons of Caleta, Jauco, Caletica, Maya, Río Seco, and Boca del Toro rivers, the former one is the largest in the country with 320 m of slope; the basins at Fustete, Patana and dozens of others that are less extensive.

The conservation status of these systems (cliffs, tidal niches, fossil dunes, rocky dunes, fossil reefs, karstic forms, etc.) is significant. Due to the hardness of rocks and the dry weather, relief forms are perfectly well preserved, they are affected by human activity in only some scarce patches. The ecosystems developed here are very well preserved too because of the inaccessibility of these areas and the poor development of soils in their surfaces, with the exception of some small settled sites (Cabo Cruz, Patana Arriba, La Jagüita, Jauco) and several zones of Caleta Outstanding Natural Element where grasslands developed to raise sheep have affected a portion of the surface of several terraces.

The weather in these territories is dry, rainwater fluctuates from 300 to 1 200 mm, which makes these areas rank with the driest ones in Cuba. Likewise, the average temperature is 26 ° C, it may reach a maximal average of 28 ° C, which stands as one of the highest temperature averages in the country.

Flora and fauna in these territories are nationally important as these territories are karstic plains forming terraces on karren, with a xerophyllous climate, and these extreme conditions have allowed for a differentiated evolution as well as the speciation and the irradiation of these species.

Of the 8 plant formations existing here, the coastal semidesert thorny shrub, present only in the area of Maisí, and the recently defined complex of vegetation on terraces deserve special attention; they, together with the coastal xeromorphic shrub, shelter the highest number of endemic species.

According to still incomplete data, 512 flora species appear in these areas, with 60% of endemism, more than 50 of them are local. The aforementioned facts make these areas rank with the most important centers of flora endemism in the country, they are surpassed only by the mountainous massifs of eastern Cuba and constitute the most important centers concerning xerophytic ecosystems and ecosystems of coastal plains in Cuba.

As to fauna, there are 13 mammals (23% of endemism), 110 birds (22.7% of endemism), 44 reptiles (90.9% of endemism), and 7 amphibians (85.7% of endemism). There are no reliable figures concerning invertebrates though they are estimated as important, the populations of mollusks and butterflies stand out among invertebrates.

Due to their local endemism level or threat degree, 4 out of the 6 species of painted snails (*Polymita picta*, *P. brochery*, *P. venusta* and *P. versicolor*) stand out among the most important species in these systems, these 4 species have in Maisí one of their most important speciation centers; *P. brochery* (3 subspecies) is a local endemic to Maisí Ecological Reserve, *P. picta* (3 out of the 5 subspecies) and *P. versicolor* are distributed almost along all of Maisí, the subspecies *P. p. iolimbata* is local to Maisí and *P. venusta* (typical form) appears in Desembarco del Granma. The populations of *P. picta*, the species with most varied colors within this genus, are remarkable.

Another very important species is the Cuban night lizard, *Crycosaura tipica*, an endemic monotypic genus that is extinction-threatened and belongs to the Xantusidae family, whose closest relatives (genus *Klauberina*) live in the Channel Islands in southern California. This species is local endemic to Desembarco del Granma.

Other important species are: *Ligus vittatus*, a beautiful mollusk that is local endemic to one of the terraces in Desembarco del Granma; the Tropic bird (*Phaeton lepturus*), a sea bird that nests only in Cuba in some places of Desembarco del Granma National Park; the Blue-Headed Quail Dove (*Starnoenas cyanocephala*), a Cuban monotypic endemic genus that is extinction-threatened and has very good populations here; the Manatee (*Trichechus manatus manatus*), an extinction-threatened sea mammal that lives in Desembarco del Granma; the Parrot (*Amazona leucocephala*), which lives in Desembarco del Granma too; the 4 species of marine chelonians reported for Cuba (*Caretta caretta*, *Chelonia mydas*, *Lepidochelis olivacea*, and *Eretmochelis imbricata*); 2 species (*Roystonea maisiana*, and *R. violacea*) out of the 4 species of Royal Palm (Cuban national tree) that are not the *Roystonea regia*, they are local endemic to Maisí; 2 species of Melocactus (*Melocactus acunae*, *M. jauquensis*), extremely beautiful local endemics; *Dendrocereus nudiflorus*, a gigantic cactus whose specimens in these areas rank with the biggest ones in Cuba, with estimated ages higher than 500 years; etc.

Patana Cave holds the Cuban record for a hot cave, it is occupied by the species *Phyllonycteus poeyi*, a Cuban endemic bat of hot caves.

In the underwater part of these terrace systems we can find deep, remarkable, diverse front reefs that are well preserved in underwater cliffs of the insular slope, many pelagic and sea-shelf fish populations, the reef crest of Cabo Cruz, and the populations of queen conch (*Strombus gigas*) of this National Park. As the sea is very deep near the coast, there are

currents of very clear water that allow the underwater life to develop well and make these suitable-for-diving sites rank with the best ones in the world (Punta Francés, Bonaire, etc.).

Regarding historical-cultural values, these areas shelter many values. In these territories there is much evidence of the aboriginal settlement of agrarian, pottery making groups and pre-agrarian, pre-pottery making groups, which is evident in many archeological sites. Particular attention should be given to first-magnitude sites at national level such as the archeological site of El Guate, located in Desembarco del Granma National Park. This site has a group of ceremonial and funerary caves as well as an extensive room site where there are 7 idols from which the Water Idol stands out — perhaps it is a representation of the Antillean deity Atabeira. Another site deserving special mention is Patana Cave in Maisí Ecological Reserve; there are 9 idols within this cave that is famous also for its largest idol, which was sculpted and removed from the cave by the American archeologist Harrington. Around this cave there are 28 archeological manifestations and 2 idols more.

Within Maisí Ecological Reserve and its buffer zone are the remarkable ceremonial squares (soil-made fences) of Pueblo Viejo and Laguna de Limones, which are the largest and best preserved sites of their kind in the West Indies; they are true architectural works of the Antillean agrarian, pottery making culture.

In brief, there are several dozens of archeological sites (rooms, ceremonial and funerary sites) located in these territories.

The people of the settlements of Patana Arriba and Patana Abajo as well as some other inhabitants of the area of Maisí still keep many genetic features, myths and beliefs inherited from the original settlers of this territory, one of the features they keep is their high appraisal of the cultural heritage surrounding them.

From the Spanish colonial period there remain two well-preserved lighthouses from the close of the last century: “Vargas” lighthouse (Cabo Cruz) and “Maisí” lighthouse, which are still used. These two lighthouses were built in these areas due to the character of “points” or “capes” of both territories, which are near the Cuban southern and eastern geographic borders.

Regarding more recent history, we can mention the fact that on December 2, 1956, the 82 members of Granma yacht landed in the area of Las Coloradas in order to restart the last stage of our armed struggle. Likewise, the revolutionary fighters spent the first three days of their stay in Cuba in Desembarco del Granma National Park, and it was in this region that they had their first battle in Alegría de Pío. As a result of this action, several revolutionary fighters were captured and assassinated in different places within and outside the Park.

b) History and development

Different sections covering most of these territories have been proposed as protected areas (Cabo Cruz, Las Puercas, Quemados, Punta Negra, Ovando, Caleta, Jauco) at least since 1973. In 1986, given the conservation status of the whole system of marine terraces of

Cabo Cruz and the forests surrounding it, this area was proposed, approved, and started to be managed as the first Cuban National Park, with specialized staff and resources. In 1991, the most preserved sections (approximately the first three levels of terraces) of the system of terraces in Maisí were approved as Punta Negra – Punta Quemados (Maisí) Ecological Reserve, but no specialized local unit was created to take care of it, and this situation is the same nowadays.

During the process of making the ongoing Plan for the Protected Area System, it has been considered the fact of unifying the proposals of Caleta and Jauco under the name of Caleta Outstanding Natural Element as the utmost representative of the development of Cuban terrace systems.

c) Type and date of the recent available documents about the good

All the recent, basic information on these areas has been gathered in databases at the National Center of Protected Areas, where there are also other documents such as the Management Plan for Desembarco del Granma National Park, which has been in place since 1986.

d) Current conservation status

The conservation status of the ecosystems located in the systems of marine terraces is significant. Concerning Desembarco del Granma National Park, almost the whole terrace system is in a completely natural status, though there is some local disturbance in Cabo Cruz (village, quarries and crops), Boca del Toro, and La Jagüita (crops). In the semideciduous evergreen forests north of the highest levels of terraces, logging activities took place between 1940-1980, so a portion of these forests is not natural as it takes a long time for these forests to recover. This is evident mostly in the dasometric characteristics of the species existing here. Likewise, we can still find here the old system of roads and forest cross paths as well as small agricultural farms that are also in the process of recovery.

As to the case of the terrace system in Maisí, the portion included in the homonymous Ecological Reserve is in a significantly good conservation status since it is composed of almost pristine ecosystems. There are some local affectations in Patana Arriba and Patana Abajo (village, crops and sheep raising) and between Laguna de Limones and Maisí (crops and sheep raising). Likewise, an old road goes through the first level of terraces up to Ovando River. A different situation can be found in the system existing in Caleta Outstanding Natural Element, where the local people settled here (Jauco) keep extensive cattle and sheep raising, thus converting some sections of the terrace surface to grasslands or shrubs.

e) Policies and programs relating to assessing and promoting the good

These three areas are protected areas of national significance and have been prioritized in the National Environmental Strategy and the National Strategies for Biodiversity, Protected Areas and Environmental Education, while the different actions stated in these ruling documents have been taken here.

4. MANAGEMENT

a) Right of ownership

The Cuban State, represented by the Ministry of Science, Technology and Environment (CITMA), located at the National Capitol, Havana City, Cuba.

b) Juridical status

Desembarco del Granma National Park: Regulations 171/86, 372/91, and 454/96 of the Ministry of Agriculture, by means of which this area was transferred to the National Enterprise for Flora and Fauna Protection as a National Park.

Maisí Ecological Reserve: Regulation 372/91, by means of which this area was transferred to the National Enterprise for Flora and Fauna Protection as an Ecological Reserve. In 1996, given the changes resulting from the central reorganization of the Cuban State and Guantánamo Province, CITMA took over the responsibility on this area and the other areas in the aforementioned province.

Caleta Outstanding Natural Element: It is supported only by a provincial regulation through which several areas in Guantánamo Province have been declared protected areas and by the ruling role of CITMA in taking care of Cuban protected areas.

c) Protection measures and ways to use them

The aforementioned legal bodies together with the Law on Environment, the Decree-Law on Forest Heritage and Wild Fauna (136/93), and the Regulation for the Realization and Approval of Environmental Impact Assessments and the State's Environmental Inspection (168/95) provide the legal framework to protect the zone.

Concerning Desembarco del Granma National Park, there is a protection structure consisting of a main administration center (Belic), 4 secondary centers (Cabo Cruz, La Jagüita, Alegría de Pío, and Pilon) and a boat for marine patrolling. In this area there are reconstruction plans for ecosystems, protection, education, research, environmental interpretation, and public use.

Regarding Maisí, there is not yet a local staff to attend the areas, but the staff at the Protected Area Unit of Guantánamo Province together with the environment specialist from Maisí municipality take care of guaranteeing that no management is carried out that may affect the status of the resources existing in these areas.

d) Body in charge of management

The Ministry of Sciences, Technology and Environment (CITMA).
The Ministry of Agriculture (MINAG).

e) Scales at which management is made and address of the responsible contact person

National:

CITMA, Minister of Science, Technology and Environment; Dr. Rosa Elena Simeón Negrín

CITMA, Deputy Minister of Science, Technology and Environment; Ricardo Sánchez Sosa

CITMA, President of the Environment Agency; Fabio Fajardo Moros

CITMA, National Center of Protected Areas; Director, Lic. Antonio Perera Puga.

Ministry of Culture, National Council for Cultural Heritage; Lic. Marta Arjona Pérez

MINAG, National Enterprise for Flora and Fauna Protection. Director, Eng. Tito Jorge Montes de Oca. Desembarco del Granma National Park

Provincial:

CITMA, Delegate, Lic. José Rodríguez Oruña

CITMA, Director of the Protected Area Unit in Guantánamo and of Alejandro de Humboldt National Park; Lic. Rael Acebal Suárez

MINAG, Director of Desembarco del Granma National Park, Lic. Gabriel Brull Puebla.

Responsible contact person:

Antonio Perera Puga, Director CNAP, Calle 41 A # 4114, Playa, Ciudad de la Habana, Cuba.

Fax: 240798. E-mail: cnapt@cidea.unepnet.inf.cu

f) Plans adopted in relation to the good

Regarding Desembarco del Granma National Park, there is a management plan established since 1986. Management in this area is aimed at the territory conservation, public use, and ecosystem reconstruction in those places where ecosystems are not natural.

As to Maisí Ecological Reserve, management is aimed at preserving these ecosystems and allowing public use there as prescribed for this management category (Category II, IUCN). In the case of Caleta Outstanding Natural Element, management is aimed at reconstructing ecosystems in order to unify this territory and the previous one in the future, thus creating a National Park representing the system of terraces on Maisí.

g) Resources and financing levels

Desembarco del Granma National Park has national financing amounting to approximately 600 000 pesos a year and has received international support of 60 000 USD from WWF Canada for the last 4 years, this has allowed to assemble the basic infrastructure. However, resources are not enough to undertake all the tasks this area demands.

There are neither resources nor direct financing for the systems of terraces in Maisí.

h) Strong and weak points regarding conservation and management techniques

The technical staff of the Park has been partially trained through national courses on planning and management of protected areas. The staff's experience and work capacity are fairly good. The weakest point in both systems is lack of resources, means and equipment to perform work.

i) Arrangement and statistics per visitor

Without taking into account the local staff and that from nearby regions, just a few visitors (national and foreign) go to Desembarco del Granma National Park each year (no more than 1 000 a year). In order to attend them, the Park has two interpretive trails, one of them (El Guafe) being the first one made in Cuba. The staff of this area is very well prepared to attend visitors.

Regarding Maisí, there is no flow of visitors.

j) Management plan for the good, and exposition of the objectives

Concerning Desembarco del Granma and Maisí, management is carried out according to their management categories — which are similar in this case. Management for these regions comes from the general types set up for these management categories in Cuba:

- a) Preserving biodiversity and ecological stability as well as the factors influencing the regulation of the environment;
- b) Preserving representative examples of physical-geographical regions, biotic communities, genetic resources, and species in their natural status; allowing their natural evolution; and guaranteeing conservation of biological diversity;
- c) Promoting respect for the ecological, geomorphologic, cultural or aesthetic attributes that have justified the designation;
- d) Meeting the needs of autochthonous populations, including the rational use of natural resources, and guaranteeing that this does not affect the management objects adversely;
- e) Providing opportunities for recreation and tourism in a natural environment, and conjugating all this with public education in the sense of interpreting nature and history for their knowledge, appraisal, and enjoyment;
- f) Protecting and putting the cultural, historical and archeological values at public disposal and for research purposes as elements of the nation's cultural heritage;
- g) Protecting, managing, and fostering natural and scenery resources for spiritual, scientific, educational, recreational and tourist purposes in order to guarantee the

preservation of these values at such a level that allows to keep the area in its natural status.

k) Number of people employed

Desembarco del Granma National Park:

Professionals:	16
Technicians:	32
Workers:	134
Service workers:	12

5. FACTORS AFFECTING THE GOOD

a) Pressures arising from development

With the exception of the local settlers' needs to obtain basic products from their environment in order to survive, there is no other pressure on these areas.

b) Disturbances related to the environment

These disturbances are minimal as these areas are natural and scarcely populated. There are small focuses of domestic organic pollution due to the human presence in the populated spots.

c) Natural disasters and previous planning

Hurricanes and sea floods are the most potential dangers to this region, this fact has been anticipated in evacuation and rescue plans. Fires and earthquakes are scarce and their magnitude is low.

d) Disturbances related to the flow of visitors and tourism

There is no disturbance because the flow of visitors is very little or even null.

e) Number of inhabitants within the Park and the buffer zone

In the case of Desembarco del Granma National Park, the population within the area is composed of about 900 people who are concentrated mostly in the fishing village of Cabo Cruz. There are around 8 000 people living in the buffer zone.

In Maisí Ecological Reserve, there are about 150 people, most of them live in the settlements of Patana Arriba and Patana Abajo. In Caleta Outstanding Natural Element, there are around 100 people, most of them living in Jauco. The population in the buffer zone is estimated in about 6 000 people.

6. DOCUMENTATION

a) Photos, slides, films and videos

Photos and slides are attached.

d) Bibliography

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e) Address where inventories, files and archives are kept

Centro Nacional de Areas Protegidas (CNAP). Calle 41 A # 4114, Playa, Ciudad de la Habana. Cuba.

Fax: 240798 E-mail: cnapt@cidea.unepnet.inf.cu

7. SIGNATURE IN THE NAME OF THE PARTY STATE

LIST OF ANNEXES

1. Location of the areas.
2. System of Marine Terraces of Cabo Cruz. Desembarco del Granma National Park.
3. System of Marine Terraces of Maisí. Maisí Ecological Reserve and Caleta Outstanding Natural Element.
4. Photos.

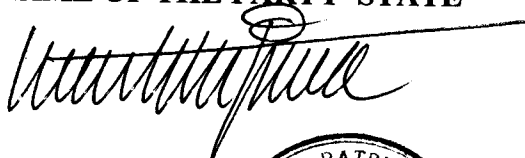
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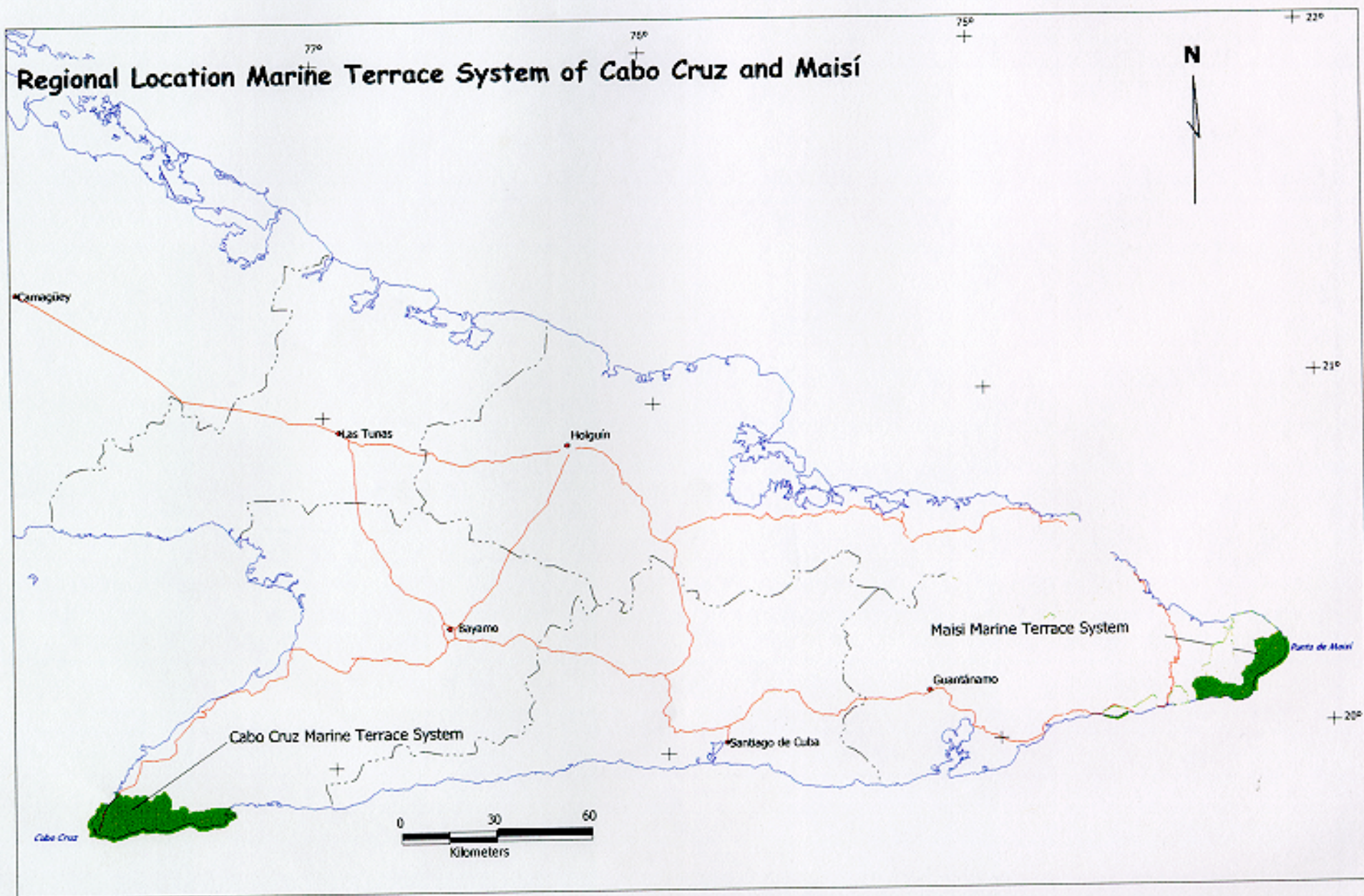
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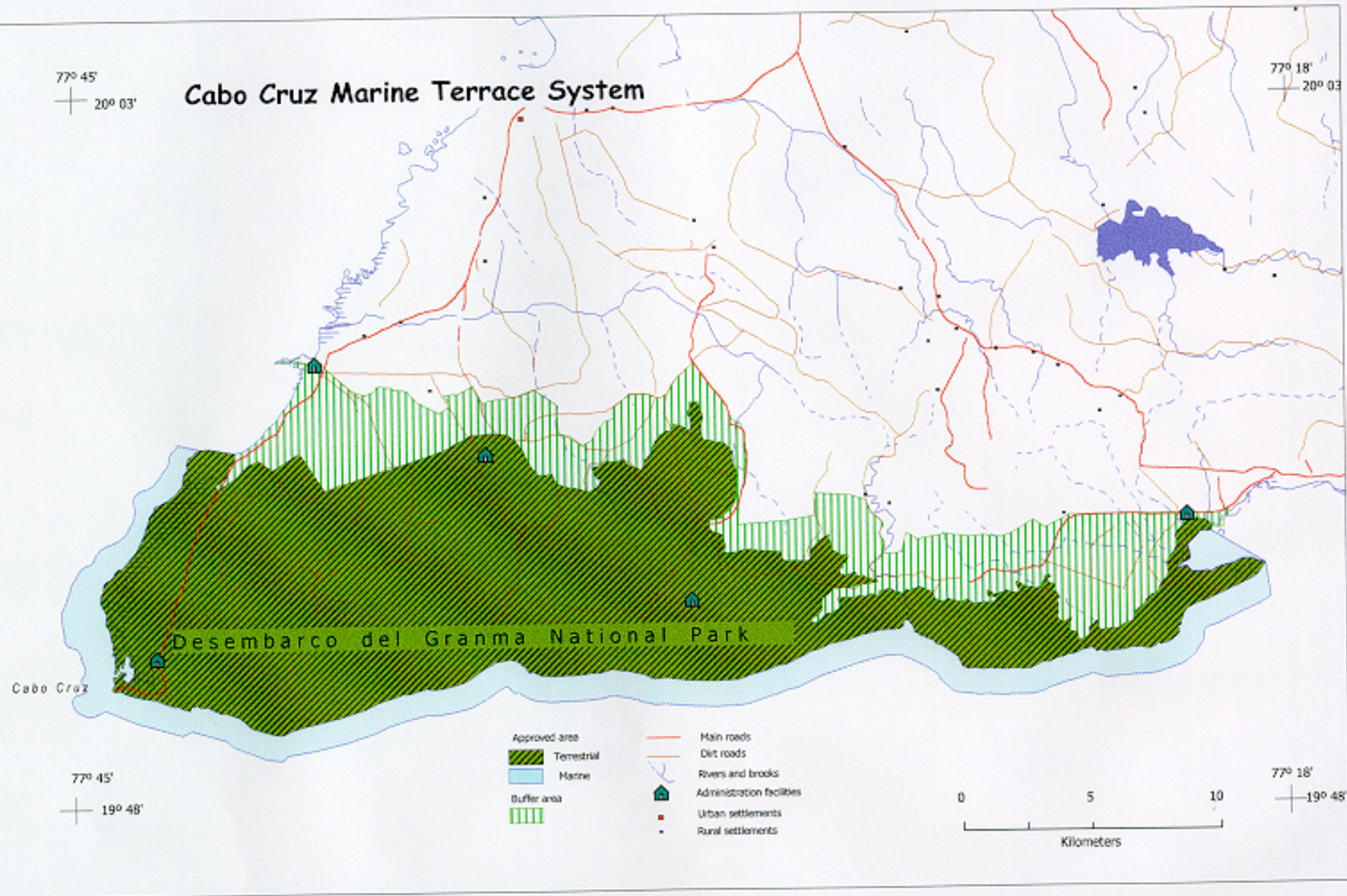


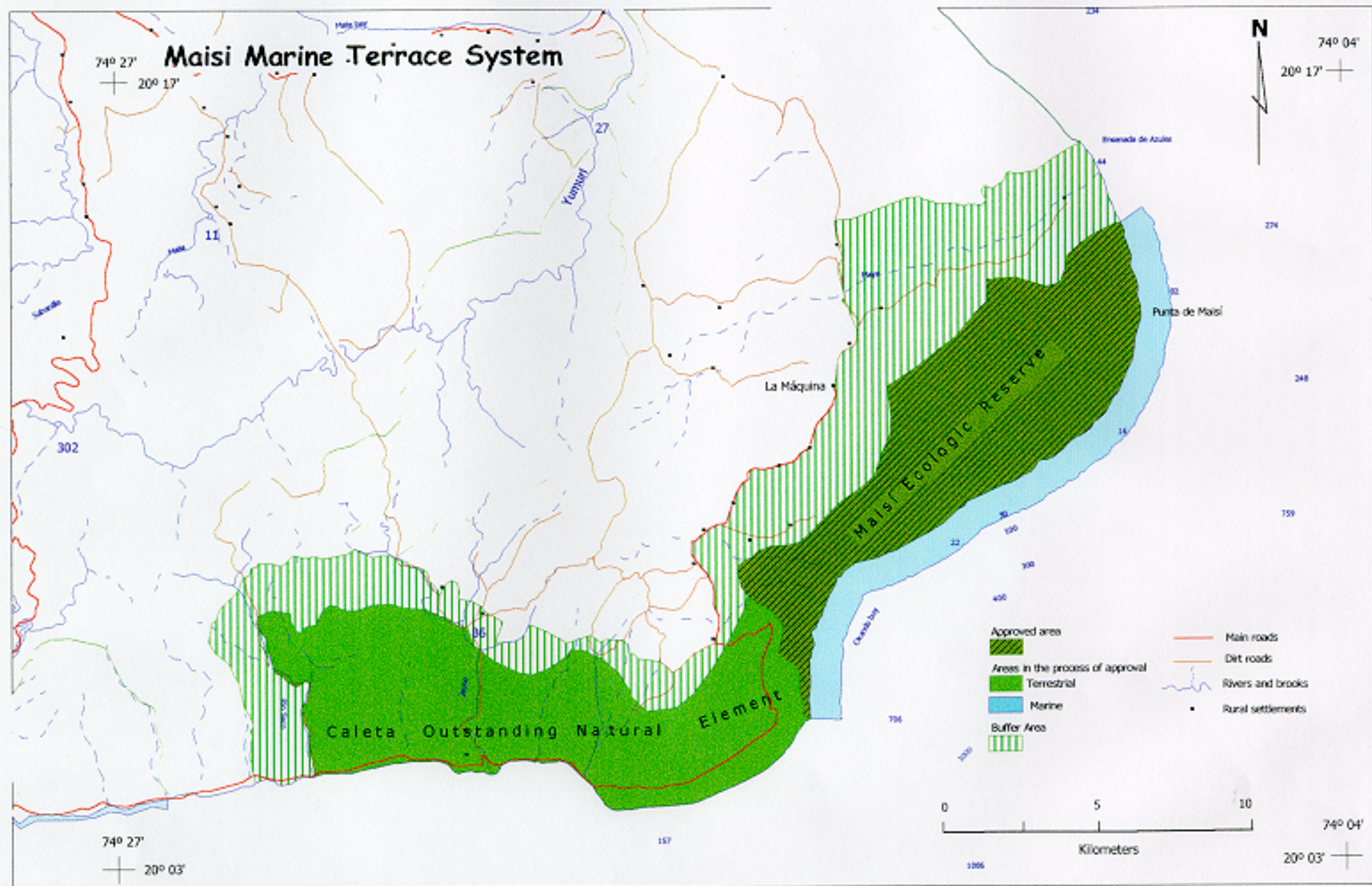

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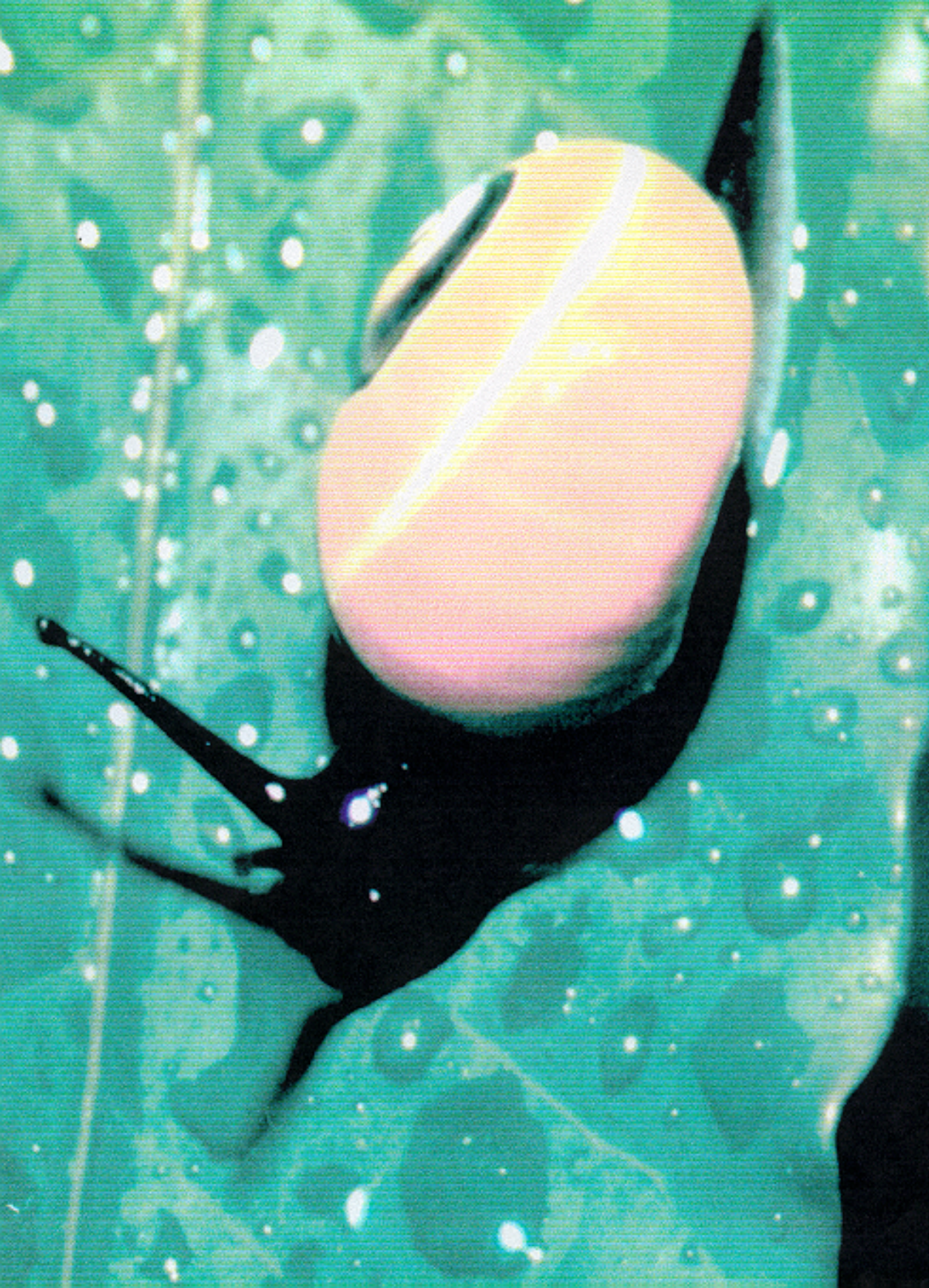
Cabo Cruz Marine Terrace System













WORLD HERITAGE NOMINATION - IUCN TECHNICAL EVALUATION

SYSTEM OF MARINE TERRACES OF CABO CRUZ (CUBA)

1. DOCUMENTATION

- i) **IUCN/WCMC Datasheet** (6 references).
- ii) **Additional Literature Consulted:** Anon. 1998. **Proyecto Decreto Ley de Areas Protegidas (Cuba)**; Centro Nacional de Areas Protegidas/Agencia de Medio Ambiente, Ministerio de Ciencia, Tecnologia y Medio Ambiente. 1999. **Plan de manejo-Reserva Ecologica Maisi/Elemento Natural Destacado Caleta, Cuba**. Havana: Agencia de Medio Ambiente, CITMA; Gaceta Oficial de la Republica de Cuba. 1997. Ley No. 81 del Medio Ambiente. July 11, 1997; Ministerio de Agricultura de Cuba. 1986. **Parque Nacional Desembarco del Granma. Plan de Manejo**. La Habana; Thorsell, J. & T. Sigaty. 1997. **A global overview of forest protected areas on the World Heritage List**. IUCN; Thorsell, J., R. Ferster-Levy & T. Sigaty. 1997. **A global overview of wetland and marine protected areas on the World Heritage List**. IUCN.
- iii) **Consultations:** 7 external reviewers; Senior officials of the National Council for Cultural Patrimony; the National Protected Area Centre, Ministry of Science, Technology, and Environment (CITMA); and officials of the NPAC/CITMA Central Office. Provincial level officials and field staff.
- iv) **Field Visit:** February 1999. Jim Barborak.

2. SUMMARY OF NATURAL VALUES

Following the recommendation from the Bureau the new nomination only covers the area of Desembarco del Granma National Park (DGNP) that comprises 41,863ha of terrestrial and marine areas on the south-western corner of the Republic of Cuba. The nominated area is made up of 26,180ha of terrestrial area, 6,396ha of marine area, and 9,287ha of terrestrial buffer zone.

DGNP is located within the western part of the mountainous massifs of Sierra Maestra and comprises a series of elevated limestone marine terraces extending from 360m above sea level to 180m below. The nominated area lies within a tectonically active zone between the Caribbean and North American plates. The nominated area is considered representative of semi-arid ecosystems with annual precipitation of between 700 and 1,200mm. The annual average temperature is 26° C.

According to still incomplete data 500 flora species have been recorded within the area with 60% endemism from which 12 species are only to be found within this area. The nominated area is considered one of the most important centres of floral endemism within Cuba. Fauna records include 13 mammals (23% endemism), 110 birds (23% endemism), 44 reptiles (90.9% endemism), and seven amphibians (87.5% endemism).

The area of Cabo Cruz, within the Desembarco del Granma National Park (DGNP), is also characterised by a system of coral formations in very clear water including deep front reefs and coral crests. Associated fauna includes four species of marine chelonians and colonies of queen conch.

DGNP contains physical features, the system of elevated ancient reef terraces and associated biological formations, are of outstanding scientific and conservation value and which contain unique ecosystems and globally significant levels of endemism. Specific features in this area include:

- ◆ globally significant uplifted marine terraces that range from a depth of 180m to 360m above sea level. The terraces which were formed by tectonic uplift, global climate change and sea level fluctuations are well conserved;
- ◆ globally significant levels of endemism, particularly in groups like reptiles and amphibians;
- ◆ outstanding pristine scenic vistas from land and sea with cliffs up to 100m high;
- ◆ unique xerophytic coastal ecosystems on uplifted marine terraces;
- ◆ deep front reefs and coral crests in extremely clear waters on old submarine terraces;
- ◆ karst features including caves, canyons, and sinkholes (up to 77m deep);
- ◆ sizeable areas of intact tropical island forest with considerable altitudinal diversity stretching from altitudes of a few hundred meters to sea level;
- ◆ a number of important archaeological sites; and
- ◆ interesting contemporary cultural values as it includes the nationally important site of Fidel Castro's "desembarco" in 1956 where he and a group of 82 revolutionaries landed after sailing from Mexico. At the site there is a replica of his boat (the Granma, which gives the park its name).

3. COMPARISON WITH OTHER AREAS

At present there is only one natural heritage property from the insular Caribbean listed on the World Heritage List: the Morne Trois Pitons National Park in Dominica. That site (6,857ha), while possessing important volcanic features not shared by DGNP, is smaller, with much lower total species diversity or total numbers or percent of endemic species. While Morne Trois Pitons has higher peaks at 1,200m, the altitudinal diversity of DGNP, which stretches from coastal waters to a few hundred meters, is similar. Morne Trois Pitons is extremely wet (rainfall over 7,000mm per year), whilst DGNP contains semi-arid ecosystems plus offshore coral reefs found on ancient marine terraces. The reef-derived karst at DGNP is totally distinct from the volcanic rocks at Morne Trois Pitons. For these reasons, DGNP compares favourably on biological terms with the only natural World Heritage Site in the insular Caribbean, and with other potential World Heritage Sites that might be nominated for their terrestrial biodiversity from anywhere in that same region.

The site compares favourably in terms of total diversity or endemism with the recently inscribed (1997) Cocos Island World Heritage Site in Costa Rica, and with the Galapagos Islands, which although located in the Pacific Ocean, are the only other comparable World Heritage Sites in tropical America located on islands. Both Cocos and Galapagos have outstanding marine resources and evolutionary, ecological and geologic features that make them unique and globally significant; however, neither has the levels of biodiversity or endemism of DGNP. The reefs of DGNP are much smaller and less diverse than those of the Belize Barrier Reef and Sian Kaan World Heritage Sites in Belize and Mexico. However, the marine component of the DGNP is not the major focus of this nomination, and the unique aspect of the DGNP reefs, like its terrestrial ecosystems, is that they are growing on a system of ancient reef terraces.

The caves are not comparable in size or known dimensions to those of World Heritage Sites like Mammoth Cave or Carlsbad Caverns in the United States. However, the karst phenomena found in the park are important based on their associated flora and fauna, their archaeological importance, and also for the diversity of karst phenomena, including giant sinks, cliffs, dolines, canyons and caves.

In summary, the DGNP is considered to possess globally significant examples of limestone marine terraces and high levels of endemic flora and fauna.

4. INTEGRITY

4.1. Boundaries

DGNP contains most key and interrelated natural elements present in the region, including the coral reef of Cabo Cruz, sea grass beds and mangroves near Pilon, and the western part of the Park, and old sub-marine terraces up to 30m deep. DGNP has sufficient size, altitudinal and climatic diversity and ecological elements necessary for the long-term conservation of the park's terrestrial ecosystems and in-shore marine ecosystems and their biological diversity, including endemic and migratory species. The current legislative framework for the park is adequate and include marine ecosystems within the regulations on boundaries of the National Park.

4.2 Management Plan

DGNP has an old master plan, under implementation since 1986, and an updated management plan was recently finalised (1997) that provides a good level of detail for management activities. However, it might require strengthening in the area of internal zoning, marine and coastal limits, financial strategies, and planning for public use in the face of probable increases in coastal tourism to the park.

4.3. Staffing and Budget

DGNP has a well-trained and motivated staff, one of the largest of any protected area in the greater Caribbean (nearly 200 staff members, including 16 professionals). The park's operational budget is of 600,000 Cuban pesos/year plus 60,000 USD of international support from WWF-Canada. The location nearby of major existing and planned tourism development sites increases potential for at least modest levels of self-financing through visitor fees.

4.4. Invasive Species

Exotic species, while less of a problem than in other smaller islands, are nevertheless present and new introductions could have unknown consequences for native flora and fauna. Several aggressive introduced thorny trees make natural regeneration of forest cover difficult without induced reforestation; for this reason the park has an active nursery and reforestation program.

4.5. Visitation

Tourism, while currently extremely limited, has potential for significant growth at Pilon as new hotel rooms at nearby beaches are built, posing special challenges to the park staff, who up to now have not had to deal with significant visitor management issues.

4.6. Human Use

Ongoing environmental education and outreach programs with the limited local rural population in the area appear to be succeeding. There appears to be little pressure from landowners or cooperatives ringing the park to encroach on forested areas and the surrounding agroforestry systems are among the

most environmentally benign land uses in the tropics. Rural population density is low and growth rates are minimal. While logging took place some decades ago in more accessible parts of the park, it has been eliminated since the park was established. The Management Plan made a provision to allow traditional fisheries by local people near the Boca del Toro canyon mouth and in Cabo Cruz. This may have some impact on coastal and reef ecosystems but this is undetermined at present. Also effluent from nearby towns could threaten the reefs, but this impact is undetermined at present.

5. ADDITIONAL COMMENTS

The Bureau at its twenty-third session (July '99, Paris) noted that the Desembarco del Granma National Park meets natural criteria (i) and (ii). The Bureau however decided to refer the nomination back to the State Party seeking their concurrence to the adjusted boundaries, including the need for a marine extension, and inviting the State Party to update the relevant information and detailed maps focusing on the Desembarco del Granma National Park. Following this recommendation of the Bureau, the State Party submitted a new nomination document containing the additional information requested. This information adequately addresses the concerns of IUCN.

6. APPLICATION OF WORLD HERITAGE NATURAL CRITERIA

Criterion (i): Earth's history and geological features

The uplifted marine terraces of DGNP, and the ongoing development of karst topography and features on them, represent a globally significant example of geomorphologic and physiographic features and ongoing geological processes. IUCN considers that DGNP meets criterion (i).

Criterion (ii): Ecological processes

While the park is an important regional example of the evolution and development of species and ecosystems on recently uplifted marine terraces and resultant karst, it is not considered to have the universal or truly exceptional value to meet criterion (ii).

Criterion (iii): Superlative natural phenomena, scenic beauty

DGNP contains superlative natural phenomena and areas of exceptional natural beauty and aesthetic importance. These include the spectacular stair-step terraces and cliffs and the ecosystems that have evolved on them, which even to the untrained eye are visually extremely attractive. They also include what are perhaps some of the most pristine and impressive coastal cliffs bordering the Western Atlantic between the Canadian Maritimes and southern South America. IUCN considers that DGNP meets criterion (iii).

Criterion (iv): Biodiversity and threatened species

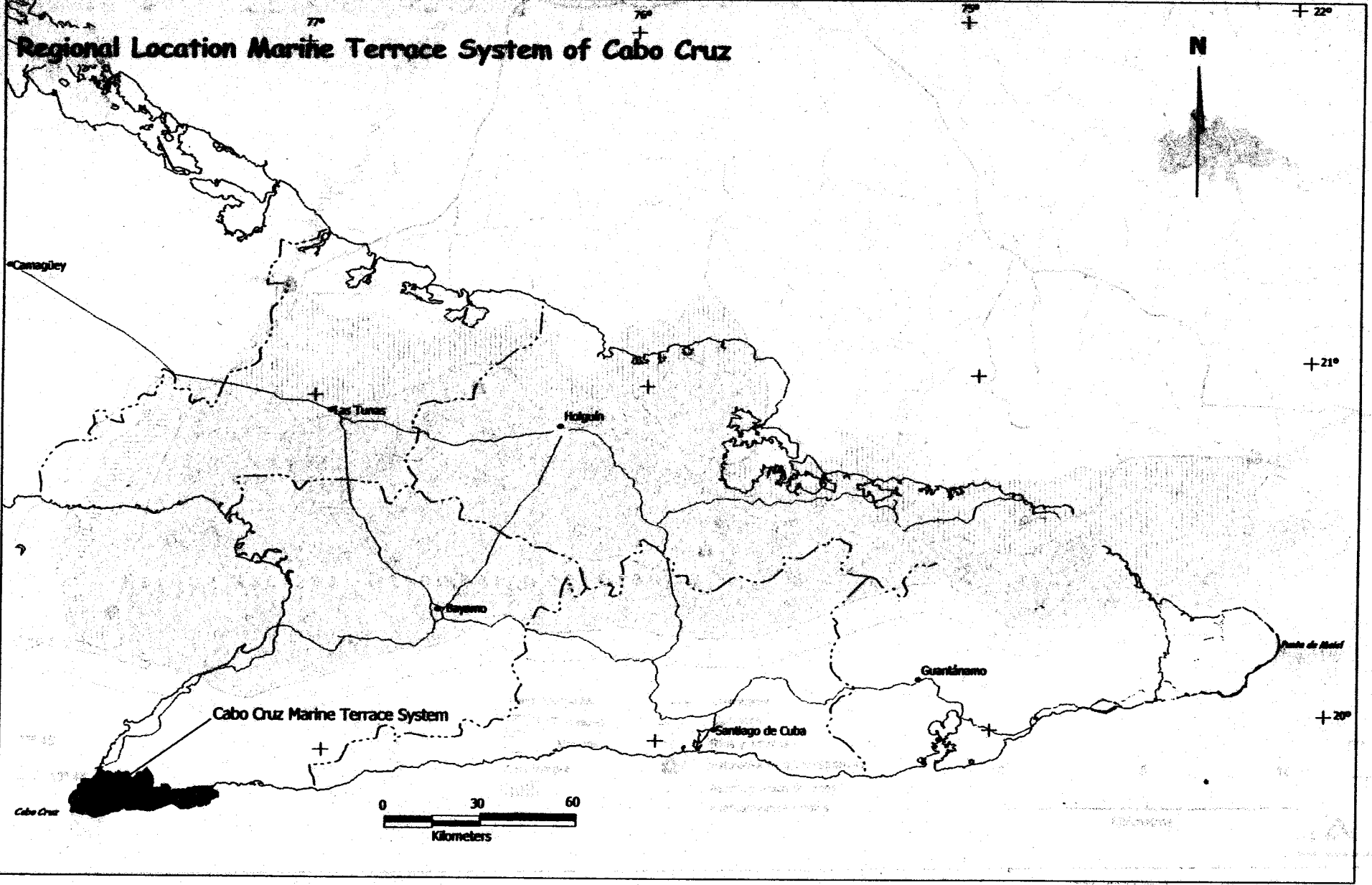
DGNP contains important natural habitats for in-situ conservation, including many threatened and endemic species, which are of regional importance. However, it is not considered to attain the global importance necessary to meet criterion (iv).

7. RECOMMENDATION

That the Bureau recommend to the Committee that the System of Marine Terraces of Cabo Cruz be **inscribed** on the World Heritage list under criteria (i) and (iii). For reasons of consistency with national legislation of Cuba, the Bureau may wish to recommend to the Committee inscription of the site under the name of Desembarco del Granma National Park. The Bureau may wish to commend the government of Cuba for the efforts to conserve this site in difficult economic times. The Bureau may

also wish to recommend to the State Party to submit a request to the World Heritage Fund for technical assistance to produce a tourism management plan as an integral element of the overall management plan.

Map 1. Location of Nominated Site



Map 1. Location of Nominated Site

77° 45'
+ 20° 03'

Sistema de Terrazas Marinas de Cabo Cruz

77° 18'
+ 20° 03'



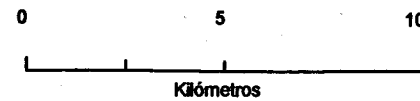
Cabo Cruz

Parque Nacional Desembarco del Granma

77° 45'
+ 19° 48'

- Areas aprobadas
- Terrestres
 - Marinas
- Area tampón

- Carreteras
- Caminos
- Ríos y arroyos
- Instalaciones administrativas
- Asentamientos urbanos
- Asentamientos rurales



77° 18'
+ 19° 48'



Centro Nacional de Areas Protegidas, 1989

Map 2. Nominated Site

CANDIDATURE AU PATRIMOINE MONDIAL - ÉVALUATION TECHNIQUE UICN
SYSTÈME DE TERRASSES MARINES DU CAP CRUZ (CUBA)

1. DOCUMENTATION

- i) **Fiches techniques UICN/WCMC:** 6 références
- ii) **Littérature consultée:** Anon. 1998. **Proyecto Decreto Ley de Areas Protegidas (Cuba)**; Centro Nacional de Areas Protegidas/Agencia de Medio Ambiente, Ministerio de Ciencia, Tecnologia y Medio Ambiente. 1999. Havana: Agencia de Medio Ambiente, CITMA; Gaceta Oficial de la Republica de Cuba. 1997. Ley No. 81 del Medio Ambiente. July 11, 1997; Ministerio de Agricultura de Cuba. 1986. **Parque Nacional Desembarco del Granma. Plan de Manejo.** La Habana; Thorsell, J. & T. Sigaty. 1997. **A global overview of forest protected areas on the World Heritage List.** IUCN; Thorsell, J., R. Ferster-Levy & T. Sigaty. 1997. **A global overview of wetland and marine protected areas on the World Heritage List.** IUCN.
- iii) **Consultations:** 7 évaluateurs indépendants, personnel d'encadrement du Conseil national du patrimoine culturel; Centre national des aires protégées, ministère de la Science, de la Technologie et de l'Environnement (CITMA) et responsables du Bureau central CNAP/CITMA. Responsables au niveau provincial et personnel de terrain.
- iv) **Visite du site:** février 1999, Jim Barborak.

2. RÉSUMÉ DES CARACTÉRISTIQUES NATURELLES

Sur recommandation du Bureau, le nouveau site proposé pour inscription sur la Liste du patrimoine mondial ne contient plus que le Parc national Desembarco del Granma (PNDG) qui couvre 41 863 ha terrestres et marins à l'extrémité sud-ouest de la République de Cuba. Le site proposé se compose de 26 180 ha terrestres et 6396 ha marins ainsi que d'une zone tampon terrestre de 9287 ha.

Le PNDG est situé dans la partie occidentale des massifs montagneux de la Sierra Maestra et comprend une série de terrasses marines calcaires relevées qui s'étagent de 180 mètres au-dessous du niveau de la mer jusqu'à 360 mètres au-dessus. Le site proposé se trouve dans une zone tectonique active, entre la plaque des Antilles et la plaque de l'Amérique du Nord. La région est jugée représentative des écosystèmes semi-arides avec des précipitations annuelles de 700 à 1200 mm. La température annuelle moyenne est de 26 °C.

Selon des données encore incomplètes, 500 espèces de la flore ont été décrites dans la région qui se caractérise par 60% d'endémisme, avec 12 espèces exclusivement présentes dans le site proposé qui est considéré comme un des centres d'endémisme floristique les plus importants

de Cuba. Les listes de la faune mentionnent 13 mammifères (23% d'endémisme), 110 oiseaux (23% d'endémisme), 44 reptiles (90,9% d'endémisme) et sept amphibiens (87,5% d'endémisme).

La région du Cap Cruz, qui se trouve dans le Parc national de Desembarco del Granma (PNDG) se caractérise également par des formations coralliennes dans des eaux très limpides, avec des fronts récifaux abrupts et des crêtes coralliennes. La faune associée comprend quatre espèces de chéloniens marins et des colonies de strombes géants.

Le PNDG a des caractéristiques physiques, un système de terrasses récifales anciennes et relevées et les formations biologiques associées, qui ont une valeur exceptionnelle pour la science et la conservation et qui contiennent des écosystèmes uniques ainsi que des taux d'endémisme significatifs à l'échelle mondiale. Les caractéristiques particulières de cette région sont notamment:

- ◆ des terrasses marines relevées d'importance mondiale qui s'étagent d'une profondeur de 180 mètres à 360 mètres au-dessus du niveau de la mer; les terrasses, qui ont été formées sous l'influence du relèvement tectonique, des changements climatiques mondiaux et des fluctuations du niveau de la mer, sont bien conservées;
- ◆ des taux d'endémisme importants au niveau mondial, notamment pour des groupes tels que les reptiles et les amphibiens;
- ◆ des points de vue panoramiques exceptionnels, depuis la terre ou la mer, avec des falaises s'élevant jusqu'à 100 mètres de hauteur;
- ◆ des écosystèmes côtiers xérophytiques uniques, sur des terrasses marines relevées;
- ◆ des fronts récifaux abrupts et des crêtes coralliennes dans des eaux extrêmement limpides sur d'anciennes terrasses sous-marines;
- ◆ des caractéristiques karstiques, notamment des grottes, des canyons et des puits (atteignant 77 mètres de profondeur);
- ◆ de grandes étendues de forêts insulaires tropicales vierges présentant une diversité altitudinale considérable, de quelques centaines de mètres jusqu'au niveau de la mer;
- ◆ un grand nombre de sites archéologiques; et
- ◆ un intérêt culturel contemporain car le site fut, en 1956, le théâtre du «desembarco» (débarquement) de Fidel Castro à la tête d'un groupe de 87 révolutionnaires partis du Mexique à la voile. On peut y voir une réplique de son bateau, la Granma, qui a donné son nom au parc.

3. COMPARAISON AVEC D'AUTRES AIRES PROTÉGÉES

Il n'existe, actuellement, qu'un seul bien naturel antillais inscrit sur la Liste du patrimoine mondial: le Parc national du Morne Trois Pitons, en Dominique. Ce site (6857 ha), tout en possédant d'importantes caractéristiques volcaniques que n'a pas le PNDG, est plus petit et sa diversité spécifique totale, le nombre total d'espèces et le pourcentage d'espèces endémiques

sont nettement inférieurs. Morne Trois Pitons possède des sommets plus élevés, culminant à 1200 mètres, mais la diversité altitudinale du PNDG qui s'étend des eaux côtières à quelques centaines de mètres d'altitude est comparable. Morne Trois Pitons est extrêmement humide (plus de 7000 millimètres de pluie par an), tandis que le PNDG contient des écosystèmes semi-arides et des récifs coralliens côtiers qui se sont édifiés sur des terrasses marines anciennes. Le karst provenant du récif, dans le PNDG, est totalement différent des roches volcaniques du Morne Trois Pitons. Pour toutes ces raisons, la comparaison avec le seul autre bien naturel du patrimoine mondial des Antilles et d'autres sites de la région qui pourraient être candidats au patrimoine mondial pour leur biodiversité terrestre est favorable au PNDG du point de vue biologique.

Du point de vue de la diversité totale ou de l'endémisme, la comparaison avec les Biens du patrimoine mondial de l'île Cocos (au Costa Rica, inscrit en 1997) et des îles Galápagos – même s'ils sont situés dans l'océan Pacifique, ils sont les seuls autres biens du patrimoine mondial insulaires comparables, en Amérique tropicale – est une fois encore favorable au PNDG. L'île Cocos et les Galápagos ont des ressources marines et des caractéristiques relatives à l'évolution, écologiques et géologiques exceptionnelles qui les rendent uniques et leur donnent leur importance mondiale; cependant, aucun des deux biens ne présente le niveau de biodiversité ou d'endémisme du PNDG. Les récifs du PNDG sont beaucoup plus petits et moins divers que ceux des Biens du patrimoine mondial du Réseau de réserves du récif de la barrière du Belize et de Sian Kaan au Mexique. Toutefois, l'élément marin du PNDG n'est pas la raison principale justifiant la proposition d'inscription du PNDG. La caractéristique propre aux récifs du PNDG et à ses écosystèmes terrestres, c'est qu'ils se sont érigés sur un système de terrasses récifales anciennes.

Les grottes ne sont comparables, ni en taille ni en dimension avérée, à celles des Biens du patrimoine mondial de Mammoth Cave ou des grottes de Carlsbad aux États-Unis. Toutefois, les phénomènes karstiques du PNDG sont importants en raison de la flore et de la faune qui y sont associés, de leur intérêt archéologique et de leur diversité: puits géants, falaises, dolines, canyons et grottes.

En résumé, il est considéré que le PNDG présente des exemples d'importance mondiale de terrasses marines calcaires et d'une flore et d'une faune hautement endémiques.

4. INTÉGRITÉ

4.1. Limites

Le PNDG contient la plupart des éléments naturels clés et interdépendants présents dans la région, notamment le récif corallien du Cap Cruz, les herbiers marins et mangroves proches de Pilon et dans la partie occidentale du parc et les anciennes terrasses sous-marines jusqu'à 30 m de profondeur. Le PNDG est de taille suffisante et possède une diversité climatique et altitudinale ainsi que les éléments écologiques nécessaires pour la conservation à long terme des écosystèmes terrestres et des écosystèmes marins et côtiers du Parc et de leur diversité biologique, y compris les espèces endémiques et migratrices. Le cadre législatif actuel du Parc est suffisant et son règlement sur les limites du parc national comprend les écosystèmes marins.

4.2. Plan de gestion

Le PNDG possède un plan magistral ancien en application depuis 1986 et un plan de gestion récemment été mis à jour (1997) qui décrit les activités de gestion de manière détaillée. Il serait bon, toutefois, de le renforcer en matière de zonage interne, de limites marines et côtières, de stratégies financières et de planification de l'utilisation par le public en prévision d'une augmentation probable du tourisme côtier dans le Parc.

4.3. Personnel et budget

Le PNDG possède un personnel bien formé et motivé, un des plus nombreux de toutes les aires protégées des grandes Antilles (près de 200 personnes, y compris 16 professionnels). Le budget de roulement annuel du parc est de 600 000 pesos cubains auxquels viennent s'ajouter 60 000 USD fournis sous forme d'aide internationale par le WWF-Canada. Le potentiel d'autofinancement, même modeste, par l'intermédiaire de droits d'entrée, est amélioré par les centres touristiques existants ou prévus à proximité.

4.4. Espèces envahissantes

Si les espèces exotiques posent moins de problèmes ici que dans d'autres îles plus petites, il y en a néanmoins et de nouvelles introductions pourraient avoir des conséquences encore insoupçonnées sur la faune et la flore indigènes. Plusieurs arbres épineux agressifs introduits rendent la régénération naturelle des forêts difficiles sans reboisement actif; c'est la raison pour laquelle le Parc possède une pépinière active et un programme de reboisement.

4.5. Visites

Le tourisme, bien qu'étant encore très limité, pourrait augmenter de manière importante à Pilon car on est en train d'y construire de nouveaux hôtels à proximité des plages. Ceci pose un problème particulier au personnel du parc qui, jusqu'à présent, n'a pas eu beaucoup à gérer les visiteurs.

4.6. Utilisation par l'homme

Il semblerait que les programmes d'éducation à l'environnement et d'information menés auprès de la petite population rurale locale donnent de bons résultats. Il semble qu'il y ait peu de pressions d'empiétement sur la forêt de la part des propriétaires terriens ou des coopératives des environs du parc et les systèmes agrosylvicoles du voisinage sont parmi les modes d'occupation des sols les plus compatibles, du point de vue écologique, en région tropicale. La densité de la population rurale est faible et le taux de croissance minime. La forêt des secteurs les plus accessibles du parc était exploitée il y a quelques décennies mais la création du parc a mis fin à l'exploitation. Le plan de gestion prévoit d'autoriser la pêche traditionnelle par les pêcheurs locaux, près du canyon de Boca del Toro au Cap Cruz. Les impacts qui pourraient en résulter sur les écosystèmes récifaux et côtiers restent indéterminés pour l'instant. Les effluents provenant de villes voisines pourraient aussi menacer les récifs mais ces impacts restent indéterminés pour l'instant.

5. AUTRES COMMENTAIRES

Le Bureau, à sa vingt-troisième session ordinaire (Paris, juillet 1999) a noté que le Parc national Desembarco del Granma satisfait aux critères naturels (i) et (ii). Le Bureau a toutefois décidé de renvoyer la proposition à l'État partie pour demander son agrément à

l'ajustement des limites, du point de vue notamment de la nécessité de procéder à une extension marine, et pour l'inviter à mettre à jour l'information pertinente et les cartes détaillées en se concentrant sur le Parc national Desembarco del Granma. Suite à cette recommandation du Bureau, l'État partie a soumis un nouveau document de proposition contenant l'information complémentaire requise. Cette information répond de manière satisfaisante aux préoccupations de l'UICN.

6. CHAMP D'APPLICATION DES CRITÈRES NATURELS DU PATRIMOINE MONDIAL

Critère (i): histoire de la terre et processus géologiques

Les terrasses marines relevées du PNDG et l'évolution de la topographie et des caractéristiques karstiques sur les terrasses représentent un exemple d'importance mondiale de caractéristiques géomorphologiques et physiographiques et de processus géologiques en cours. L'UICN considère que le PNDG satisfait au critère (i).

Critère (ii): processus écologiques et biologiques en cours

Le parc est un important exemple régional de l'évolution d'espèces et d'écosystèmes sur des terrasses marines récemment relevées et le karst qui en résulte mais il n'est pas considéré qu'il soit de valeur universelle ou réellement exceptionnelle et ne satisfait donc pas au critère (ii).

Critère (iii): phénomènes naturels exceptionnels, beauté naturelle exceptionnelle

Le PNDG contient des phénomènes naturels exceptionnels et des régions de beauté naturelle et d'importance esthétique exceptionnelles. Parmi celles-ci on peut citer les terrasses spectaculaires et les falaises ainsi que les écosystèmes qui ont évolué dessus et qui, même pour le profane, sont extrêmement attrayants. Il comprend aussi ce que l'on peut peut-être considérer comme certaines des falaises côtières les plus impressionnantes et les plus intactes bordant l'Atlantique occidental entre les Maritimes au Canada et le sud de l'Amérique du Sud. L'UICN considère que le PNDG satisfait au critère (iii).

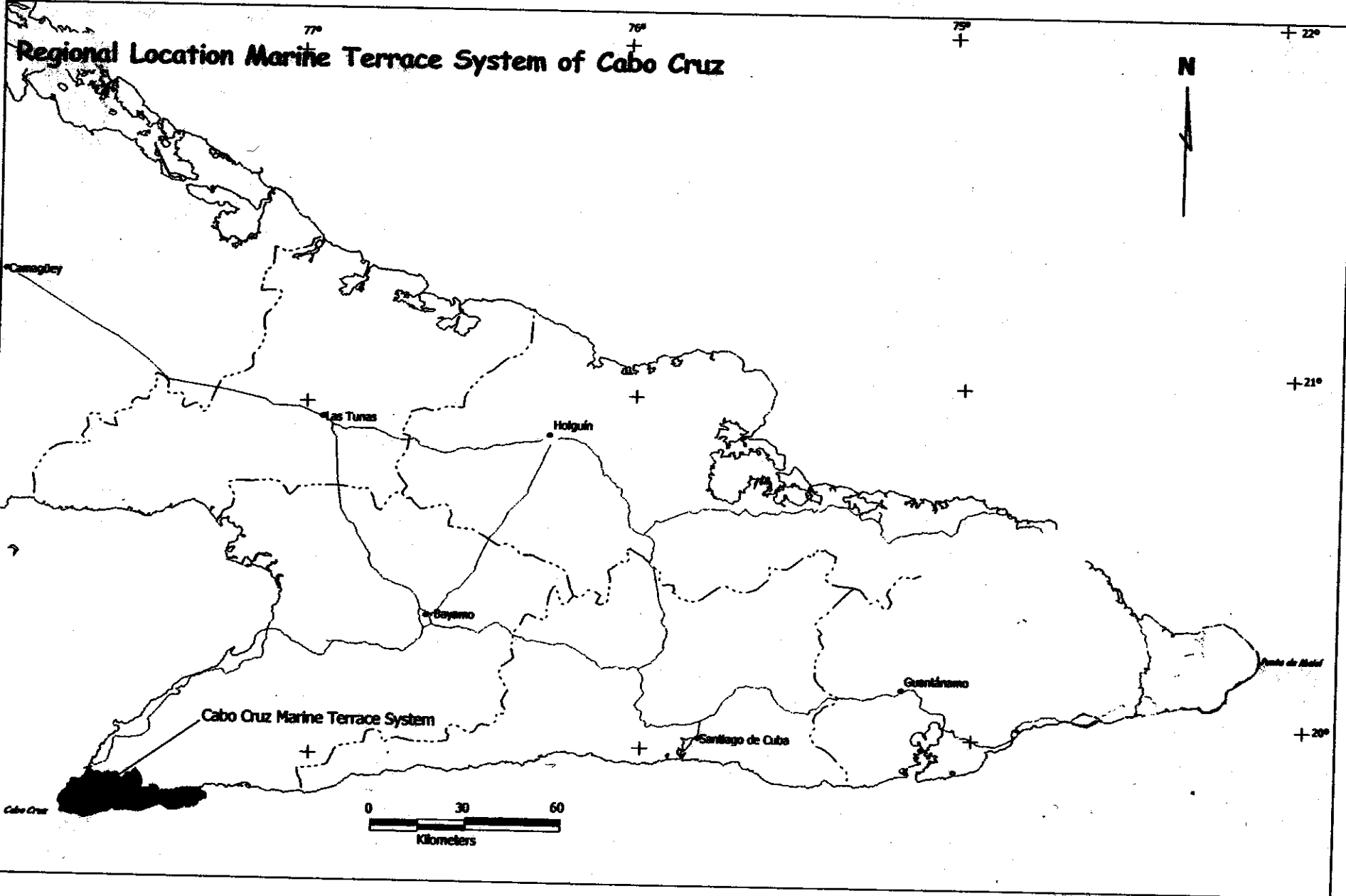
Critère (iv): biodiversité et espèces menacées

Le PNDG contient des habitats naturels importants pour la conservation *in situ*, notamment pour de nombreuses espèces endémiques et menacées d'importance régionale. L'UICN ne considère pourtant pas qu'il y ait là l'importance mondiale nécessaire pour satisfaire au critère (iv).

7. RECOMMANDATION

Que le Bureau recommande que le Comité **inscrive** le Système de terrasses marines du Cap Cruz sur la Liste du patrimoine mondial sur la base des critères naturels (i) et (iii). Par souci de cohérence avec la législation nationale de Cuba, le Bureau pourrait recommander au Comité d'inscrire le site sous le nom de Parc national Desembarco del Granma. Le Bureau souhaitera peut-être féliciter le gouvernement de Cuba qui s'efforce d'assurer la conservation de ce site malgré la situation économique difficile. Le Bureau pourrait enfin, s'il le souhaite, recommander à l'État partie de présenter une demande d'assistance technique au Fonds du

patrimoine mondial en vue de préparer un plan de gestion du tourisme comme élément intégral du plan de gestion général.

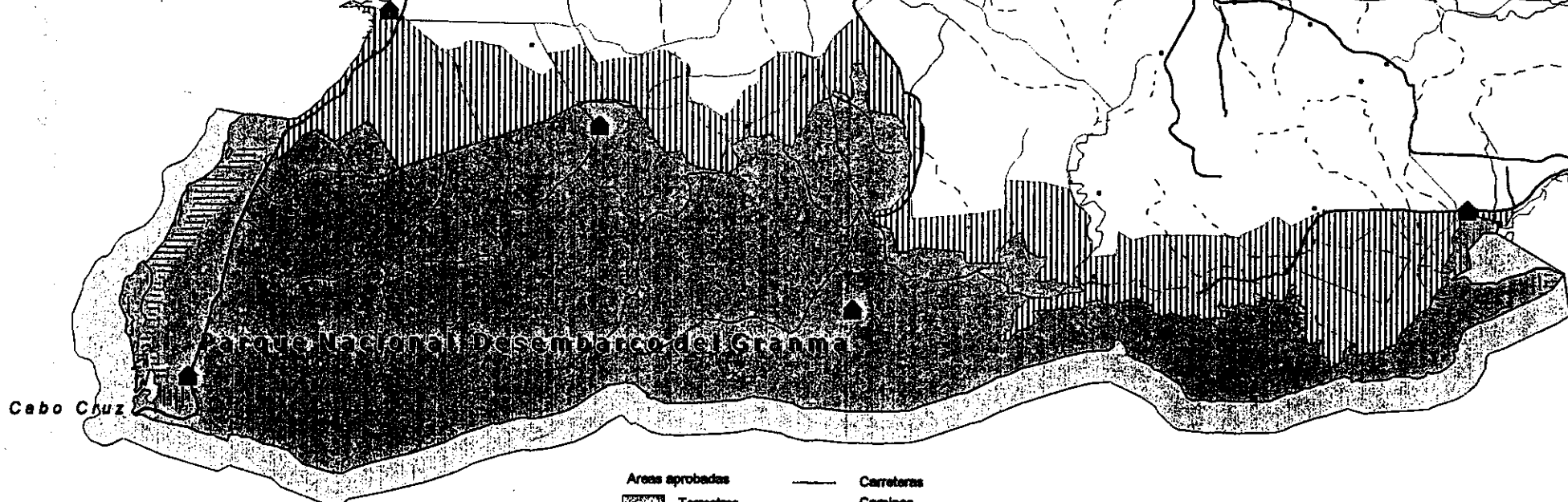


Map 1. Location of Nominated Site

77° 45'
+ 20° 03'

Sistema de Terrezas Marinas de Cabo Cruz

77° 18'
+ 20° 03'

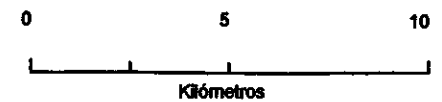


Cabo Cruz

Parque Nacional Desembarco del Granma

77° 45'
+ 19° 48'

- | | | |
|------------------------|-------|-------------------------------|
| Áreas aprobadas | — | Carreteras |
| Terrestres | - - - | Caminos |
| Marinas | ~ ~ ~ | Ríos y arroyos |
| Área tampón | | Instalaciones administrativas |
| | ■ | Asentamientos urbanos |
| | • | Asentamientos rurales |



77° 18'
+ 19° 48'



Map 2. Nominated Site