
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

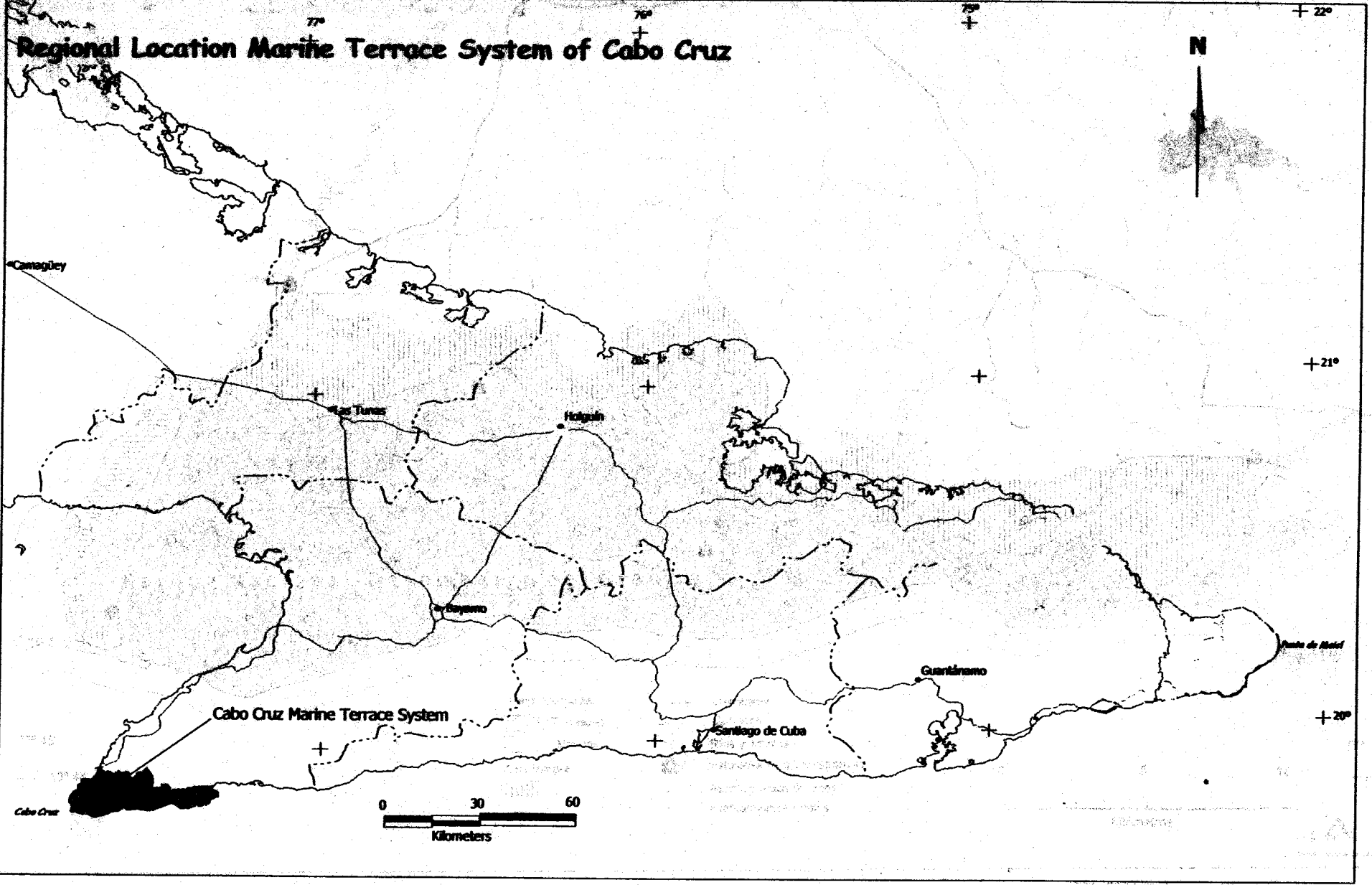
DGNP contains important natural habitats for in-situ conservation, including many threatened and endemic species, which are of regional importance. However, it is not considered to attain the global importance necessary to meet criterion (iv).

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

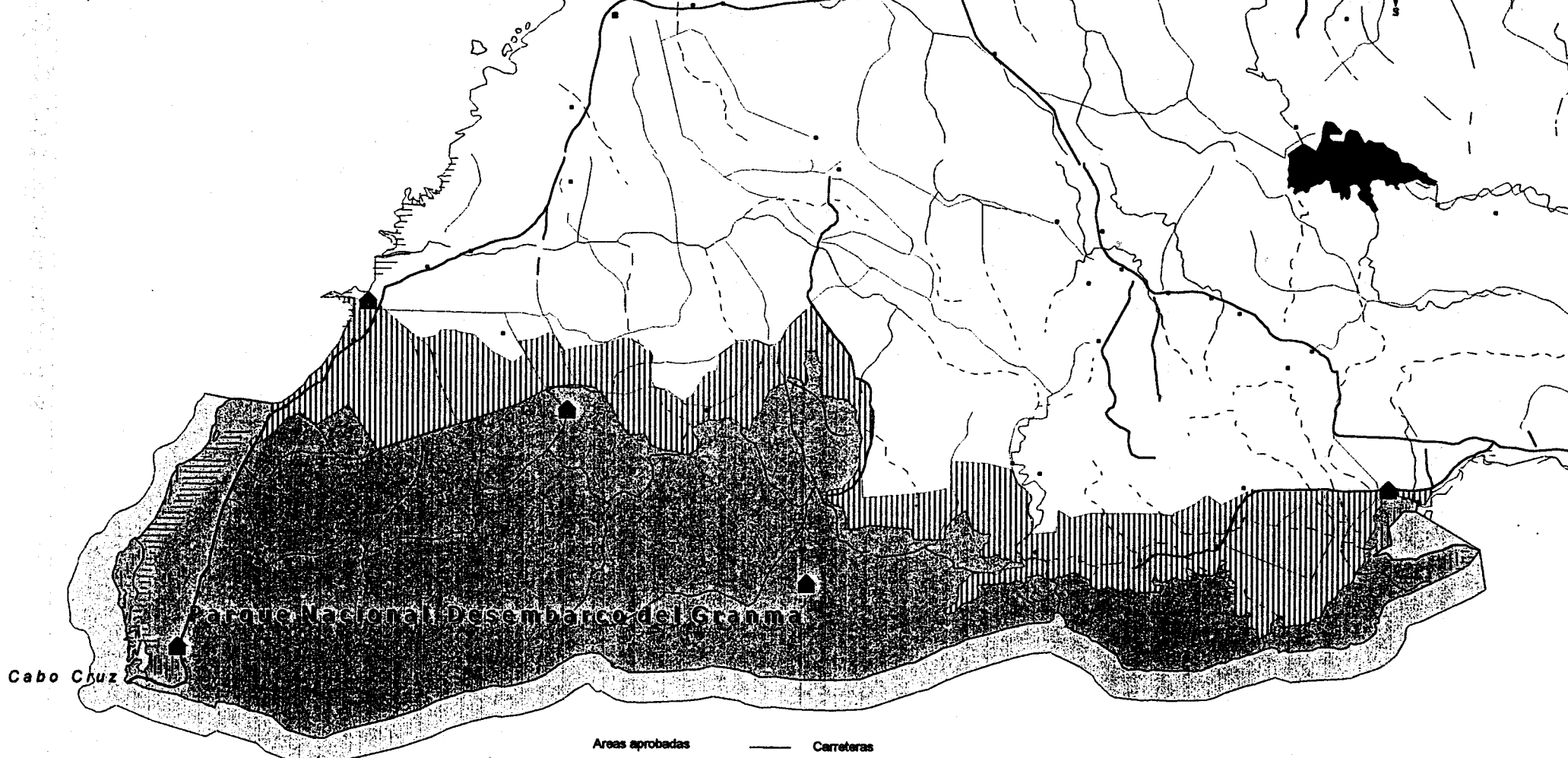


Map 1. Location of Nominated Site

77° 45'
+ 20° 03'

Sistema de Terrazas Marinas de Cabo Cruz

77° 18'
+ 20° 03'



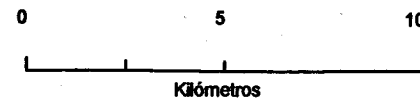
Cabo Cruz

Parque Nacional Desembarco del Granma

77° 45'
+ 19° 48'

- Áreas aprobadas
- Terrestres
 - Marinas
- Área tampón

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



77° 18'
+ 19° 48'

Map 2. Nominated Site