

Cabo Orange National Park - Brazil

1. Name address of the compiler of this form:

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Parque Nacional do Cabo Orange

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2. Date this sheet was completed/updated:

October 2012

3. Country:

Brazil

4. Name of the Ramsar site:

Cabo Orange National Park (Parque Nacional do Cabo Orange).

5. Designation of new Ramsar site or update of existing site:

Designation of a new Ramsar site ;

6. For RIS updates only, changes to the site since its designation or earlier update:

7. Map of site:

a) A map of the site, with clearly delineated boundaries, is included as:

ii) an electronic format ;

iii) a GIS file providing geo-referenced site boundary vectors and attribute tables .

b) Describe briefly the type of boundary delineation applied:

The Ramsar Site's boundary is the same of the Cabo Orange National Park as defined by the Federal Decree n° 84.913, July,15,1980.

8. Geographical coordinates (latitude/longitude, in degrees and minutes):

Centre coordinate: 3°38'58.84"N 51°11'24.07"W

The polygonal configuration of the Park area is an elongated figure, towards a north-south direction. The site is located between parallels: 4 ° 32'15" N and 2 ° 48'03" N, and longitudes: 51 ° 34'30" W and 50 ° 51'20" W

9. General location:

The Cabo Orange National Park is located in the extreme north of Brazil, in the state of Amapá, and lies on the border with French Guiana. It covers the Municipalities of Calçoene (14.7%), which has 9,000 inhabitants, and Oiapoque (9.8%), which has 20,509 inhabitants, where the administrative headquarters are located. The Park is 400km away from the state capital, Macapa, the largest city in Amapá with 398,204 inhabitants (IBGE, 2010). It has a range of about 200km in length entering the sea at 10km (5.4 nautical miles), and 100% of the coastal area of Oiapoque's Municipality and 76% of the coastal area of Calçoene's Municipality are inside the park (Annex 1 and 2).

10. Elevation:

0 to 70 meters above sea level

11. Area:

It has 657,327.77 hectares.

12. General overview of the site:

The site is a "National Park", which is part of the Integral Protection Protected Areas group. This group encompasses the more restrictive categories of use for a protected area, since they are allowed, according to the Protected Areas National System (SNUC), just to “carry out scientific research and to develop environmental education, interpretation, recreation and ecotourism activities (Art.11 of Federal Law No. 9985 of July 18, 2000), although those activities only occur in limited areas of the park.

The main and most representative wetland in the park is the lowland fields. They are unique environments in the Amazon region due to their geological and biological formation and occur only in the north part of the Amazon River. The management team of the Park encourages scientific research in this environment that has hindered accessibility.

Other ecosystems are also protected, including wetlands such as mangroves, permanent lakes, flood plain "varzea" forests and river sources, as well as upland forests and amazon dry savannah. All these ecosystems form a mosaic of interrelated environments, acting as a huge wildlife nursery that protects a large and unique environment. Additionally, it should be stressed that the park is recognized as an Important Bird Areas (IBA) by BirdLife International NGO (De Luca et al., 2009), as well as a Priority Area for Biodiversity Conservation (MMA, 2008).

The Park region has the largest rainfall index in Brazil, with an annual rainfall average of 3,000 mm in the north region and coastal area, and 2.500mm in the west. It has well-marked periods of drought (August to November) and rain (July to December) which strongly influence the hydrological dynamics of the region.

The region has a tidal range of around 4.50 meters between high and low tide, implying a strong influence of saline waters, in the waters inside the park, creating highly dynamic environments. The coast is influenced by currents and sediment loads coming from the Amazon River and

other rivers in the North Atlantic Basin. There are also regions where there are interspersed retreats with prograded shoreline.

The park provides important environmental services by maintaining fish stocks in the region. The Statistical Bulletin of Fisheries and Aquaculture, produced by the Fisheries and Aquaculture Ministry - MPA and by the Statistics and Geography Brazilian Institute - IBGE in 2010, showed that bottom gillnet fisheries in the Brazilian Northern Region are concentrated in this area. That shows that the Park's marine area where fishing is prohibited, presents itself as an important breeding area for fish, especially in river estuaries and mangrove areas that run along the coast of this protected area. It must be pointed out that fisheries management in that region affects not only the fishing industry in the state of Amapá, but also in the state of Pará, since most of the fish sold in the city of Belem comes from this area. Fisheries stocks of the coast of Pará are greatly reduced (MPA; IBGE, 2010).

13. Ramsar Criteria:

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9

14. Justification for the application of each Criterion listed in 13 above:

Criterion 1 – The periodically flooded grasslands in the Ramsar Site are unique in the Amazon region due to their extent, conservation status and their clear phytophysiognomic distinction from other lands in the Amazon, especially if the biogeographic region in which they are located is considered. Other similar areas in the state of Amapá are in different stages of land use and degradation, and few are protected like the flooded grasslands in the Cabo Orange National Park. It must be added that there is no other protected area that covers such a large extent of flooded grasslands. In addition, the Coastal portion of the Park is under the influence of the sea, which in some areas results in a strong relationship between the periodically flooded lands and the sea, where fresh water from the fields combines with salt water. This process generates new temporary environments with particular ecosystem dynamics.

Criterion 2 - The Park shelters threatened specimens of mammals, birds and reptiles. Among the mammals, six species are on the Red List of Threatened Species IUCN (IUCN, 2012), they are: the critically endangered *Chiropotes satanas* (Black Bearded Saki); the near threatened *Leopardus wiedii* (Margay); the vulnerable *Priodontes maximus* (Giant Armadillo); the endangered *Pteronura brasiliensis* (Brazilian Giant Otter); the vulnerable *Trichechus inunguis* (Amazonian Manatee) and the vulnerable *Trichechus manatus* (American Manatee).

Among birds, 358 species have been recorded in the Park, distributed in 69 families. That number may be even higher because some of the park environments were not sufficiently sampled (Souza, E, Ross, A e Araujo, H. 2008). Researchers indicate that endangered species occur and reproduce in the park. These include the *Thalasseus maximus* (Royal Tern), considered vulnerable to extinction (IUCN, 2012), and the *Sporophila maximiliani* (Great -billed Seed-Finch), considered critically endangered (IUCN, 2012). Both species are also on the Brazilian list of threatened species (MMA, 2003, 2004 and 2005). Additionally, the *Morphnus guianensis* (Crested Eagle), the *Harpia harpyja* (Harpy Eagle), the *Contopus cooperi* (Olive-sided Flycatcher) and the *Neothraupis fasciata* (White-banded Tanager), all considered near threatened by IUCN's Red List of Threatened Species (IUCN, 2012) are also be present. Among the reptiles: *Melanosuchus niger* (Black Caiman) and *Podocnemis unifilis* (Yellow-spotted River Turtle) occur in the Park, these two reptile species are present in IUCN's Red List of Threatened Species with low risk and vulnerable status respectively (IUCN, 2012).

Criterion 8 - The Brazilian north coast, notably the Amapá State, is recognized for its richness in demersal fish resources. It is well-known that fish stocks in coastal waters depend on the mangrove food sources, especially during their early life stages, which is why the mangrove is considered as the "sea nursery." In this sense, in what relates to traditional fishing, research estimates that 2/3 of fish and shellfish of economic value reproduce, feed or protect themselves within this ecosystem, thus ensuring the fish stock (Camargo and Isaac, 2003), with *Panaeus subtilis*, *Panaeus schmitti*, *Xiphopenaeus kroyeri*, *Arius parkeri*, *Arius proopse*, *Arius sp.*, *Cynoscion acoupa*, *Carcharbinus sp.*, *Centropomus sp.*, occurring in the Park area (ICMBIO/ARPA, 2010).

15. Biogeography

a) biogeographic region:

According to Udvardy (1975), the site is located in the Neotropical biogeographic region, in the Biogeographic Province of Guyana.

b) biogeographic regionalisation scheme (include reference citation):

The Cabo Orange National Park is located in a "Freshwater ecoregion: Amazon Estuary & Coastal drainages," according to Abell (2008), in a "Terrestrial ecoregion: Marajó Lowland," according to Olson (2001), and in an ocean and coastal region "Amazonia " according to Spalding et al. (2007).

16. Physical features of the site:

Geology: The geology of the park area is directly related to the recent Quaternary (Holocene) geological evolution, which led to the formation of an extensive coastal plain, formed on the margins of Archean and tertiary terrains. The region is under a strong dynamic processes, influenced by the meteorological seasonal processes (periods of flood and drought) as well as by the tidal estuarine, marine and lacustrine processes, where fluvial and tidal currents - hydrodynamic processes prevail throughout this plain geological formation process (Annex 3).

Geomorphology: The Park is in the Atlantic Sector of the Coastal Plain of the State of Amapá, on the north coast of Brazil. The Coastal Plain, according to Schaller et al. (1971), is embedded in the sedimentary basin of the Amazon River mouth, represented by the Platform of Amapá. The geomorphological units are directly linked to the dynamic processes related to Coastal Plains, Fluvio-marine Plains (Cunani river mouth); Fluvio-Estuarine Plains (Cassiporé and Uaçá rivers mouth); River Plains and Cheniers Plains (on the coast) (Annex 4).

Soils: The soils of the Site have very specific characteristics due to their association with low areas (flooded plains, grasslands and mangroves). They are under the direct influence of daily and seasonal flooding driven by tides and high regional rainfall. The soil types are: Petric concretionary dystrophic Plinthosols (FFcd); Eutrophic Gley Soils (Lth); Saline-sodic Gley Soils (Gzn) and Indiscriminate Mangrove Soil (Sm) (Annex 5).

Hydrography: The Park is under direct or indirect influence of seven rivers and their watersheds. These are:

- The Cassiporé River: its basin covers an area of 579,600ha and it is 210km long. The Park is 109km far from its source and the river flows through 101 km of its interior.
- The Cunani River. Its basin covers an area of 181,000ha and it is 97km long. The Park is 59km far from its source and the river runs through 38 km of the Park (Straight to the river mouth at the southern boundary of the Park).

- The Oiapoque River. Its basin covers an area of 2.500,000ha and forms the border between French Guiana and Brazil at the north part of the Park. Its Brazilian part has 1.253.000ha and it is 340km long.
- The Uaçá River. It drains an area of 435,400ha and is 160km long. The river emerges from the Uaçá Indigenous Territory and runs from west to east for 14km. Then it crosses the BR156 highway, keeping the same direction for 25km. When it is near the Park, the river flows from south to north for more 131km until it reaches its mouth.
- The Calçoene River. It has a drainage area of 360,000ha and has an extension of 122km. The river emerges near the town of Lourenço and runs from west to east towards the Atlantic Ocean, at the southern part of the Park.
- The Igarapé Grande Crique River basin has an area of 31,200ha and is 41km in length (35km of which are inside the Park). The Park is located 6km away from the river source, and it is cut by the river in a west to east direction in its southern part.
- Finally, there is the affluent of Igarapé Marrecal River. Its characteristics are largely related to oceans dynamics, and its mouth has changed in the past 10 years due the fact that it is located in a marine erosion zone of the Park (Annex 6).

Climate: The area has humid tropical and super-humid climates, with an average annual temperature ranging from 26 °C to 28 °C and precipitation exceeding 3,000 mm per year. From 1975 to 2006, Calçoene Municipality showed a fairly high precipitation regime with an annual average of 4238.3 mm, which makes Calçoene the municipality with the highest precipitation in Brazil. In 2000 the precipitation reached the highest amount recorded so far (6902.9 mm) and in 1994 the lowest, with 1433.9 mm. On average, the rainy season extends from December to July and during this period the precipitation is above 300mm. Precipitation can reach 665.1 and 687.8 mm during April and May, respectively. On the other hand, the drought season extends from August to November, and during this season the precipitation is below 100mm. September and October are the driest months with precipitation ranging from 40.6 to 39.4 mm, respectively. December and July are considered months of transition, since they precede the arrival of the rainy and drought seasons. Rainfall is also high in Oiapoque Municipality, where in 2006 it reached 3031mm.. According to the criterion of Köppen (1936) the climate is Af—Tropical rainforest climate and Am—Tropical monsoon climate.

Water Quality: An analysis of surface water quality was done at various points in the Park. The points included the Uaçá River, at the coast of the State of Amapá, where sampling points (Annex 7 and 8) were chosen from Cape Orange (Oiapoque river mouth) to the mouth of the river Calçoene. Other sampling points were chosen to investigate the surface waters of the rivers Cova da Onça and Marrecal Igarapés. Changes in water quality caused by human activities were not observed in these sample points (Fernades, 2006)

Origin: The aquatic environments of the park are of natural origin. Direct or Indirect artificial anthropogenic influences in these environments were not recorded.

Surface ocean currents: The North Brazilian Coastal Current (NBC), also known as "the Guyana Current," is part of the ocean currents macro system. The NBC is a subdivision of the "South Equatorial" current that crosses the Atlantic from East to West and it splits in two currents when it reaches the Brazilian coast, at the State of Rio Grande do Norte. One of the two currents, "the Brazil Current," flows south along the Brazilian south coast to the mouth of the La Plata River. The second current, "the Guyana Current" flows north along the northern coast of Brazil and the coast of Guyana. Before reaching the coast of the Park, this current passes through the mouth of the Amazon River, which pours a colossal amount of sediment into the sea. This is the largest punctual source of fresh water for oceans. All that is poured into the

Atlantic Ocean and flows northward to the Caribbean coast forming the great "Fluvio-Marine Deposit", which is the coastline of Amapá State where the Park is located (Masson, 2001).

Oceanic coastlines: Near the region of cape Casiporé and cape Orange, in the coastal area of the Park, areas of mudflat accretion are formed. In cape Orange, the mudflat accretion acquires a slight bend to the northwest. North of the mouth of river Cunani region, on the south coast of the park, the drainage that flows into the Atlantic Ocean forms low gradient sandy beaches (Torres, 2006). This region is composed by progradational sediment type, where the coastline grows farther out into the sea. At the same time, the region south of Cape Cassiporé is under significant erosion processes, where there is an expansion of the sea area towards the land (Faria Jr. et al. 1990). Allison (1993) identified a retreat of the coastline between 0.5 meters and 1 meter per year at Cape Cassiporé.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, and climate (including climate type).

Such characteristics are included in those described in the previous item (Item 16)

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Most lowland fields (*várzeas*) are supplied by drainage basins near to the Cassiporé, Uaçá and Cunani rivers, and some are supplied by local river basins located almost entirely within the park, such as rivers Igarapé Marrecal and Igarapé Grande (Annex 5). The great variation of rainfall throughout the year strongly influences these lowland fields. In these areas, dense vegetation near the shoreline dams the water, forming large flooded areas, very rich in fish, and consequently with big populations of birds, alligators, otters and with a great variety of arboreal fauna. During dry seasons, these lowland fields dry up almost completely.

The entire coastline of Amapá State is located in the equatorial margin (0° - 4° N). It is characterized as a highly dynamic environment, due to the combination of factors that interact and produce unique oceanographic features, especially by the action of the northeast trade winds, tidal cycles, waves, NBC (North Brazil Current) and the ITCZ (Intertropical Convergence Zone).

The waters' salinity remain stable throughout the year at 20 ‰ (20 parts per thousand), while the normal oceans' salinity is 35 ‰. This favors the high productivity of demersal species of economic value.

The winds are important modeling agents of coastal plains, since they act directly on the propagation of waves hitting the shoreline, causing intense water movement and transporting inner shelf sediments towards the coast (Nittrouer et al, 1996). The ITCZ, where the park is located, is the region where the trade winds from the two hemispheres converge. That zone is usually associated with the high sea water temperature, high atmospheric humidity, the presence of high clouds and high precipitation (Baptista Neto et al , 2004).

The coastline is influenced by currents and by the sediment load stemming from the Amazon River and other rivers in the North Atlantic Basin. Additionally, there are setbacks interspersed with progradated shorelines in that region.

There are two types of lakes in the Park: lakes associated to the evolution of the coastal plain, in other words, lakes formed during the aggradation of the plain, with Maruani Lake as its main representative and internal lakes, represented by lakes Tralhoto, Igarapé Grande and Laguinho. These are located at the interface of the coastal high plain (mainland) and the coastal lowland plain. These lakes have their genesis associated to the Cheniers plain formation process in the coastal plain, which interrupted the course of some drainage generating lakes that are embedded in ancient river valleys.

19. Wetland Types

a) presence:

Circle or underline the applicable codes for the wetland types of the Ramsar “Classification System for Wetland Type” present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

Marine/coastal: A • B • C • D • E • F • G • H • I • J • K • Zk(a)

Inland: L • M • N • O • P • Q • R • Sp • Ss • Tp • Ts • U •
Va •

Vt • W • Xf • Xp • Y • Zg • Zk(b)

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

P (246,093ha); **I** (64,966ha); **Xf** (40,203ha) e **O** (4,103ha).

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

Ecosystems description (Annex 9):

a. Mangrove: Significant areas of mangroves are located on the coast of the state of Amapá (177,525 ha), 20,500 ha of which are located inside the Park. The State presents the ideal conditions for mangrove formation, such as large amount of suspended sediment, high temperatures, large tidal ranges and saline or brackish water.

These Ecosystems are extremely sensitive to environmental changes and play important ecological functions related to oceans, seas and estuaries, as well as to the biological chain, to primary production and to the protection against coastal erosion and storms.

Mangroves also stand out among the most productive systems for their richness in organic matter. They act as a biological filter, with flora strategically adapted to the adversity of the environment.

b. Periodically flooded plains: Flooded plains occur in Holocene terraces along the estuarine and coastal zone of the State of Amapá. That vegetation is influenced by the impulses of flooding, mainly by pluvial waters during the rainy season, from January to May. From September to November, due to drought, and consequently a decrease in rainfall and water levels, there is a decrease in the creeks' flow, what allows the entry of saline waters. The seasonality in these plains is characterized by the predominance of brackish or saline environments indicator species, such as *Eleocharis Mutatá*, *Sesuvium portulacastrum*, *Acrosticum aureum* and *Rabdadenia biflora*.

c. Permanently flooded plains: In the lower areas of the grasslands, formed by depressions, there are permanent lakes such as Lake Maruani that constantly accumulates in its bed a large amount of organic matter from the decomposition of aquatic weeds. Species present in this area are species from the genres *Eleocharis*, *Polygonum*, *Echinodorus*, *Eichornea*, *Ludwigia*, among others.

d. Floodplain forests: Floodplain forests from the major rivers of the Park (Cassiporé, Uaçá and Cunani), are riparian ecosystems associated with white water rivers. These rivers have large freshwater and sediment inputs, resulting from the daily flood cycle which has semi-diurnal tides. Due to flooding, a large amount of sedimentary material is carried to these areas on a daily basis resulting in the high fertility of these floodplain forests.

e. Coastal area: The Park's coastal area is a unique, protected ecosystem in the Amazon. The coastal area is associated with mangroves, which provide a nursery habitat for species of economic value and of biological and scientific importance. The coastal area is a strip of ten kilometers (10 km) wide by two hundred kilometers (200km) long (see Annex 3). Commercial fish species reproduce and grow in the Park area. When they reach maturity they return to the sea where they are exposed to commercial exploitation (these species include Yellow Hake *Cynoscion acoupa*, Corvina, *Cynoscion virescens* and Hake, *Plagioscion spp*).

21. Noteworthy flora:

19 species of plants, distributed in 16 families, were identified in the Park (including the *Rhizophoraceae*, *Cyperaceae* and *Amaranthaceae* families with two species each). The areas covered with mangroves are mainly located in Orange and Cassiporé Capes. In Orange Cape, mangroves exhibit a ladder-shaped zonation, with a small strip of woodlands, with open and straight edges, where individuals of *Avicennia germinanse* and *Laguncularia racemosa* are present.

Other plant species found in the Park are, *Inter alia*, *Rhizophora mangle*, *Avicenniae Rhizophoracom*, *Crenea marítima*, *Fimbristulis spadicea*, *Sesuvium portulacastrum*, *Rabdadenia biflora* (ICMBIO/ARPA, 2010).

A botanical inventory conducted during the elaboration of the Management Plan (ICMBIO/ARPA, 2010) stresses that rare or endangered species are likely to be found in the Park, and that more research need to be done to confirm the existence of these species.

22. Noteworthy fauna:

a. Mammals: Nine orders, 24 families and 54 species were recorded in the Park, among these, 6 are on the IUCN Red List of Threatened Species (IUCN, 2012), they are: *Chiropotes satanas* (Black Bearded Saki, critically endangered); *Leopardus wiedii* (Margay, near threatened); *Priodontes maximus* (Giant Armadillo, vulnerable); *Pteronura brasiliensis* (Brazilian Giant Otter, endangered); *Trichechus inunguis* (Amazonian Manatee, vulnerable) and *Trichechus manatus* (American Manatee, vulnerable).

In addition to these species, the Brazilian Ministry of the Environment, responsible for the evaluation of the status of biodiversity conservation (MMA, 2008), regularly publishes the Brazilian list of threatened species that in general differs from the IUCN list of mammals. The Brazilian list has these additional species, *Leopardus pardalis* (Ocelot) and *Panthera onca* (Jaguar), which were recorded in the Park (Melo, 2005).

b. Birds: Some bird species under potential threat may occur in the Park, but the preliminary inventories did not record them, such as the *Thalasseus maximus* (Royal Tern), considered vulnerable to extinction, and *Sporophila maximiliani* (Great-billed Seed -Finch), considered critically endangered according to the Brazilian list of threatened species (MMA, 2003, 2004 and 2005).

Moreover, there the *Morphnus guianensis* (Crested Eagle), the *Harpia harpyja* (Harpy Eagle), the *Contopus cooperi* (Olive-sided Flycatcher) and *Neothraupis fasciata* (White-banded Tanager) are all present in the Site and are all considered near threatened by the IUCN list of endangered species (IUCN, 2012).. The species *Pyrrhura picta* (Painted Parakeet) and *Phoenicopterus ruber* (Greater Flamingo), are also present in the park, and their distribution is restricted to the State of Amapá (Souza, E, Ross, A e Araujo, H. 2008).

Besides these species, the presence of *Buteogallus aequinoctialis* (Rufous Crab-Hawk) and the probable occurrence of *Hemitriccus minimus* (Zimmer's Tody-Tyrant) in the Park allowed the park to be recognized as an Important Bird Area (IBA) by BirdLife International (De Luca, 2009) (Roos, 2006).

c. Reptiles: A research on reproductive ecology and habitat use of *Melanosuchus niger* (Black Caiman) and *Podocnemis unifilis* (Yellow-spotted River Turtle) has been undertaken in the Park. Both species are in the IUCN red list under the conservation dependent and vulnerable categories respectively (IUCN, 2012). This research, aims to generate important information for their conservation.

d. Invasive Species: The occurrence of a few invasive species are reported: *Macrobrachium rosenbergii* (exotic shrimp), *Bubulcus ibis* (Cattle Egret) and *Bubalus bubalis* (buffalo).

23. Social and cultural values:

a) Describe if the site has any general social and/or cultural values e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values:

In 1997, the North Coast of Brazil accounted for 20% of marine and estuarine fisheries production in Brazil (Paiva, 1997). The Park and its surroundings are one of the most intensively fished areas in that region, according to the Statistical Bulletin of Fisheries and Aquaculture, produced by the Ministry of Fisheries and Aquaculture - MPA and the Brazilian Institute of Geography and Statistics – IBGE (IBGE, 2010), as well as according to monitoring records from the National Program for Satellite Tracking of Fishing Vessels - PREPS, managed by the Brazilian Navy and MPA, which monitors all fishing vessels over 15 meters length. In this context, since the Park acts as a natural nursery, its existence is vital to the maintenance of the regional fishing stocks and to maintaining a sustainable fishing activity.

Similarly, the communities surrounding the Park benefit from the environmental services provided by the protected area. The map on Annex 8 shows that much of the western limit of

the park is bordered by the Uaçá Indigenous Territory, populated by four indigenous groups (Galibi-Maworno, Galibi-Kalina, Palikur and Karipuna). The Park also shares boundaries with the Agroextrativist Settlement Project of Vila Velha do Cassiporé, which has two villages located near the park, the Vila Velha do Cassiporé and Vila do Primeiro do Cassiporé. Finally there is the Cunani village, which is located inside the southern portion of the Park, and was recognized as a Quilombo territory -Brazilian Maroon settlement (see Annex 10).

Since the Park's animals and fish can freely move within these areas, the park plays a significant role in maintaining the quantity and quality of water, as well as in maintaining the animals and fish stocks, which are used to feed these communities. Moreover, the communities surrounding the Park also benefit from the water and vegetation existing there, which are used for the purpose of food and housing, as well as for tools and household objects production.

The Atlantic Coast of the State of Amapá, which includes the Park, has important archaeological sites that can help to clarify how the pre-Columbian human occupation in the Amazon region occurred. The oldest evidence found in the region dates back at least 6,000 years. However, the denser and meaningful occupation in this coastal region started 2,000 years ago by groups that archaeologists identify as belonging to the Cunani Culture (in homage to the site inside the Park where this kind of pottery was found). Besides elaborated ceramics with human and animal forms, "Cunani" groups also built great megalithic sites (stone circle sites), dug funerary pits in natural soil, and inhabited caves, in which complex funerary rituals were performed.

These archaeological sites may offer a better understanding in what relates to the history of human occupation and its relationship with the biodiversity found today in the Amazon rainforest. Additionally, the presence in the Park of such impressive sites, with its stone structures and funerary urns, could offer to the local communities an alternative for income generation, if it is done in a sustainable way, in the form of archaeological tourism.

b) No

24. Land tenure/ownership:

a) within the Ramsar site:

The Park is a Protected Area under the national legislation and it is part of the National Protected Areas System. Since the Park is also composed by land and marine ocean waters, which are public domain lands, The Secretary of the Union's Patrimony (SPU) is in charge of its use and occupation. A Land Use Survey of the existing properties in the park area towards future expropriation and resettlement of their owners identified 48 occupants inside the Park area (Carvalho; Miranda, 2007).

b) in the surrounding area:

In the surrounding area of the Park there are Agroextrativist Settlements, such as Vila do Primeiro de Cassiporé, Vila Velha de Cassiporé and Vila Carnot, on the west, whose owners have possession rights to their lands.

South of the Park, there is a Quilombo territory -Brazilian Maroon settlement, the community of Vila Cunani (see Annex 10), and on the west of the Park, there are the Juminã, Uaçá and Galibi Indigenous Territories (see Annex 11). Both indigenous and Quilombo communities have possession rights to their lands.

25. Current land (including water) use:

a) within the Ramsar site:

Albeit against the law, there are still people living inside the park. Most of the unlawful presence is in the village of Tapereba, a riverside community of fishermen on the left bank of the mouth of the Cassiporé River, with about ten (10) persons, and also in the Cunani village, south of the park, with about thirty (30) persons. These communities live off low impact subsistence agriculture, livestock, vegetable gathering (extractivism) and fishing.

Additionally, the residents of Vila Velha do Cassiporé still perform vegetable gathering (extractivism), fishing and low impact agriculture for subsistence inside the Park (both locations and their area of influence on the Park have been evaluated and can be seen on the map in Annex 10).

There still are small farmers living on the river Cassiporé. They are still waiting to receive a compensation for all the improvements made inside the park, before it was created. Once they are paid by the Government, they will have to leave the Park. In such farms, besides the aforementioned activities, there is extensive breeding of buffaloes, pigs and cattle, mainly in areas of lowland fields.

In Lake Maruani (permanently flooded plains), indigenous populations hunt and fish for subsistence. The marketing of fish and /or animals hunted by indigenous people in this area is prohibited. It must be stressed that there is an overlap area between the Indigenous Territory, the Park and this lake, which is under regularization (Annex 10).

b) in the surroundings/catchment:

The activities mentioned in the previous item (25.a.) also occur in the surrounding area of the Park, especially in areas near agroextractivist settlements and indigenous territories.

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

a) within the Ramsar site:

Inside the Park, there still are areas under expropriation proceeding, many of them are used for the management of pastoral exotic animals, and their owners cultivated exotic grass to feed the animals.

During the elaboration of the Management Plan of the Park, the occurrence of *Macrobrachium rosenbergii* was observed (De Man, 1879). This is an exotic shrimp species that apparently has invaded streams and is possibly replacing native species. Their impacts on native wildlife, as well as strategies for its management are still unknown.

Forest fires are one of the most serious threats to the park; the forest fire season is between the months of September and January, during the low rainfall period, when the vegetation's susceptibility to fire is increased. Annex 9 shows fire hotspots and therefore the areas, which constitute a greater fire risk to the Park. Such hotspots are mainly related to agricultural and pastoral management activities that occur within and around the Park.

According to the traditional communities, two species of turtles, Tracajá (*Podocnemis unifilis*) and Turtle-of-amazon (*Podocnemis expansa*), are widely exploited in Cassiporé river, inside the park, and in Oiapoque river, north of the Park. There are reports of trade of turtle meat and eggs in

the city of Oiapoque. The administration of the Park runs a program for the protection and recovery of turtle populations within and around the Park.

Hunting is a common activity in most Amazonian communities and in the Park region it is no different. In some cases hunting is a typical subsistence activity, ie. It has the sole purpose of meeting the daily protein requirement for human consumption. This kind of activity is mainly observed in housing units with a high degree of isolation and with difficulty of access to industrial products.

However, albeit hunting is a cultural practice related to a community's demand for bushmeat, the practice has undergone some changes and for a portion of residents it became a means to supplement income, which characterizes the activity as illegal trade. According to national legislation, this kind of trade, however, is also extended to the live animals' illegal trade, where the wildlife is sold as pets for a few local families or interested buyers.

Equally important is the role played by the marine area protected by the park, which allows fish procreation and increases the fish population density in the region, in river estuaries and mangrove areas that run along the coast of the Park. Currently, illegal fishing in this area puts great pressure on the Park. It increases notably in periods when there is a lack of surveillance. Such fishing is conducted by vessels from different regions, mainly from Oiapoque, Calçoene and Bailique municipalities from Amapá State, and also from coastal municipalities of Pará State. One of the main reasons that explain this practice is the decline of fish stocks in coastal Pará State, thus, it is evident that the protection of the Park plays a crucial role in the restoration of sea and freshwater fish stocks for the region.

b) in the surrounding area:

In the surrounding area of the Park, fishing is widely practiced by large vessels from other parts of the country. The park has a great potential for fish production and this attracts fishing vessels to its limits. The Park administration plans to implement a buffer zone around this area to control fishing activities. The buffer zone implementation is expected to balance the overfishing and to keep it at a stable level.

27. Conservation measures taken:

a) The Cabo Orange National Park was created by Decree-Law No. 84913 of 15 July 1980 and, according to the National Protected Area System (Federal Law No. 9985 of July 18, 2000), The site is a "National Park", which is part of the Integral Protection Protected Areas group and it has as its primary objective the preservation of natural ecosystems of great ecological significance and scenic beauty.

The Integral Protection Protected Areas group encompasses the more restrictive categories of use for a protected area, since they are allowed, according to the Protected Areas National System (SNUC), just to "carry out scientific research and to develop environmental education, interpretation, recreation and ecotourism activities. (Art.11 of Federal Law No. 9985 of July 18, 2000), although those activities only occur in limited areas of the park.

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ; Ib ; II ; III ; IV ; V ; VI

c) The park's management plan was officially approved by the Chico Mendes Biodiversity Conservation Institute- ICMBio - agency in charge of the Brazilian Protected areas - on January 17, 2011 (Ordinance ICMBio paragraph 6, of the same date), and its implementation is in process.

d) The park and its management have been integrated to two international cooperation programs/projects which are undertaken with French Guiana:

1 - Turtle Imbricata Project - Tortue Imbriquee- Cabo Orange National Park Community-Based Tourism experimentation Project.

The "Turtle Imbricata" Project aims to test a sea touring route that links Roura/French Guyana with the Cape Orange National Park/ Brazil. The project develops the aforementioned route in a community-based tourism model (solidarity tourism). It is believed that the presence of tourists in the Park inhibits illicit activities, which contributes to environmental conservation and to improved income of surrounding communities. The route will be tested during a time, where speedboats from a French Guyana tourism company will lead French groups from Roura (Guyana) into the Park. A boat from the Park will support the tour in Brazilian waters. The groups will visit the mouth of the river Oiapoque, the Taperebá region, the community of Vila Velha do Cassiporé and the Cunani "Quilombo" community. The project execution will be carried out by a mixed team composed of representatives from the riverside communities, the Park staff, and from a French tour company. The activities will be supported by Brazilian and French partner institutions, *inter alia* The University of Brasilia – UnB and the Brazilian Service to Support Micro and Small Enterprises – SEBRAE. A board of experts from different fields will evaluate the final results of the Project.

2 - Integrated Monitoring Program of the Marine-Estuarine Border Area of Brazil and French Guiana.

The objective of this program is to monitor the marine-estuarine border area of Brazil and French Guiana. The program integrates a cooperative effort between the French Bureau of Maritime Affairs (Affaires Maritimes), the French National Navy, the French Maritime Police (Gendarmerie Maritime), the Regional Office of the Brazilian Institute of Environment and Renewable Natural Resources - IBAMA, the Brazilian Federal Police and the Amapá State Military Police Special Operations Battalion. The program aims to provide a constant communication channel between the vessels of the aforementioned institutions, providing coordination during approach procedures and for surveillance activities. Three joint operations have been carried out between 2008 and 2010.

A legal instrument between the parties is planned to formalize the cooperation. This document will include the following actions:

- 1- The implementation of a permanent communication channel with Guyana on the following themes: fishing vessels information, violence use (guns) in vessels; smuggling activities made by Brazilians vessels in Guyana; fishing regulations; periods of great fishing effort; fishing general rules in Guyana and Brazil, document requirements for fishing vessels; list of registered boats from the Oiapoque fisheries colony and list of registered boats in French Guiana.
2. Coordination of Joint operations in Oiapoque River and estuarine zone.
3. Meeting of the parties/partners.
4. Commitment to facilitate the entrance of partners in both countries.

3 - Turtles of Oiapoque and Calçoene River Project

The project is a result of the concern of local residents with the reduction on the stocks of Tracajás turtle (*Podocnemis unifilis*) and turtles-from-amazon (*Podocnemis expansa*) in the rivers of the Oiapoque municipality. The local residents demanded to the environment defense agencies of the municipality that a plan to protect and recover populations of these animals should be implemented. According to the locals, the number of turtles observed in the rivers of the municipality suffered a significant reduction throughout the years. Since there is intense turtle hunting in the rivers of the state of Amapá, the locals are worried about the extinction of these turtle species in the rivers of the region.

With that in mind, the Park administration is implementing a project in the protected area and its surroundings, together with the local communities. The project involves collecting turtle eggs in rivers to be artificially incubated. The hatchlings are kept for three months, and then they are released in the same place where they were collected. Vila Velha do Cassiporé, a community bordering the park, was the first to join the project, in 2008, followed by the Vila do Primeiro de Cassiporé, also in 2008. Lastly, the Quilombo community of Vila of Cunani, located within the park, joined the project in 2010, as a request from the community.

The main goal of the project is to promote restocking and recovery of the turtles' natural populations in the Park and in its surroundings, as well as to integrate the local communities into the park's natural resources management processes through environmental education, species management and community-based tourism.

4 – Others

Activities of environmental education are developed with the local communities.

Fighting and fire prevention are conducted in the park and surround areas by the staff of ICMBio and IBAMA. In addition, 21 firefighters are hired between August and January yearly since this is the critical period of fires (Annex 12).

Fishing, hunting and illegal trade of wild animals are supervised inside the boundaries of the site and in the buffer zone by ICMBio and IBAMA.

28. Conservation measures proposed but not yet implemented:

There is a proposal to create a Marine Extractive Reserve (or an Environmental Protection Area (APA) in the marine area surrounding the Park's buffer zone. When approved, these areas will provide local traditional fishermen from the Oiapoque and Calçoene municipalities region, direct and exclusive access to fish resources. If such protected areas are not created, another alternative could be the implementation of Fisheries regional planning; which would organize fishing activities around the Park. That planning must be approved by an agreement between the Ministry of Fisheries and Aquaculture – MPA and the Oiapoque and Calçoene municipalities Fishermen's Colony. Both proposals aim to reduce pressure on fisheries resources that are protected by the park.

The Park's administration is drafting an agreement with the people who still live inside the Park and that still use its natural resources. The agreement, known as Term of Commitment (TC), will subsidize the park staff on their surveillance activities and with the control of the activities performed by the local communities, in order to conciliate the use of natural resources by the local communities and the protection of the Park. Another Term of Commitment is also under

negotiation with the traditional communities who live in the surroundings of the park, particularly those living in the Cassiporé River area. This Term will also subsidize a more effective control on the use of natural resources from the Park.

29. Current scientific research activities and facilities:

The park has an office in the urban area of Oiapoque Municipality, and two Field Bases which support scientific research activities. The office (03 ° 50'29 "N / 51 ° 49'55" W) offers Internet access via satellite link and an easy access to the Oiapoque River, besides that, since the office is located in the urban area, it disposes of its facilities, *inter alia* access to hotels, restaurants, car rental and transport companies.

One of the field bases is located in the Village of Tapereba (03 ° 40'16 "N / 51 ° 12'12" O), and the access to it is only possible by the Cassiporé River or by sea. This base provides housing for up to fifteen (15) persons with bed and/or hammock, internet access by satellite link, solar energy supply and freshwater from rains, easy access to the sea, to the Maruani lake and its permanently flooded plains as well as to the Vila Velha do Cassiporé, downstream.

The second Field Base is located at the Cunani village (02 ° 51'19 "N/51 ° 07'41" O). The access to it is made by unpaved road (fifty kilometers far from Calçoene municipality) or by the Cunani River. This base also has solar energy supply, accommodation for 10 (ten) persons, and access to the sea and to the upland Forest area of the Park.

The park administration prepared a list of scientific research, considered as priority for the management of the Park (see Annex 10). Apart from the aforementioned park facilities, the Park offers transport vessels for researchers, such as the Manatte boat, which can transport up to eight (8) persons, as well as cars, pick-up, and other boats.

In what relates to the Scientific research activities in the Park, there are:

- The Jaguars (*Panthera onca*) Population Monitoring Project: density of jaguars, diet and offset by forest and lowland fields.
- The Alligator Açú (*Melanosuchus niger*) Population Monitoring project: reproduction, diet and density on the Maruani lake.
- Tracajá and Turtle-of-the-amazon (respectively *Podocnemis unifilis* and *Podocnemis expansa*) Population Restoration Project. The Project is conducted in Cassiporé and Cunani river.
- Community-based tourism Project – Imbricata Turtle.
- Assessment on heavy metals in fish in Cassiporé river– Master degree dissertation project.
- Migratory birds Monitoring along the coast (CNAA methodology).

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

Environmental education activities are supported in local schools and in surrounding communities, especially in the subjects of Water Day and Turtles from Oiapoque and Cassiporé River. Furthermore, guided visits in Park for the Local communities are available.

In Oiapoque municipality, the Park administration along with the Amapá Federal University (UNIFAP) and the Tumucumaque Mountains National Park administration are organizing the Pedagogy Course on Environmental Issues Projects. This course aims to improve teacher's abilities to propose interdisciplinary projects on environmental issues, and to raise awareness on environmental problems among the local community of the Oiapoque Municipality. With that,

the park administration intends to use the Protected Area as a reference center for environmental education.

Moreover, since the park is surrounded by Indigenous Lands (managed by the National Foundation for Indigenous People – FUNAI); by Agroextrativist Settlement Projects (managed by the National Institute for Colonization and Agrarian Reform – INCRA) and by State Production Forest (managed by the Amapá State Forestry Institute – IEF), there is a strong environment for cooperation in many agendas, such as environmental education, sustainable activities actions, and surveillance activities.

31. Current recreation and tourism:

The park is not yet ready for major tourism activities. There is only one research project on community-based tourism, which is undertaken in cooperation with French Guiana (Imbricata Turtle Project, see Item 27.d).

It is believed that the community-based tourism is the most suitable type of tourism for the Park. The Park administration has been undertaking a strategy to involve the Cassiporé of Vila Velha Agroextrativist settlement project community to act, in a first step, as pro-active actors in tourism and recreation activities. Additionally, the strategy will provide autonomy, for the community in what relates to the exploitation of touring activities in the future, at the same time that it generates income and social participation.

32. Jurisdiction:

The park is entirely inserted into the Guyana-Brazil Frontier Strip, in the state of Amapá, under Federal Government jurisdiction (Chico Mendes Institute for Biodiversity Conservation - ICMBio).

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33. Management authority:

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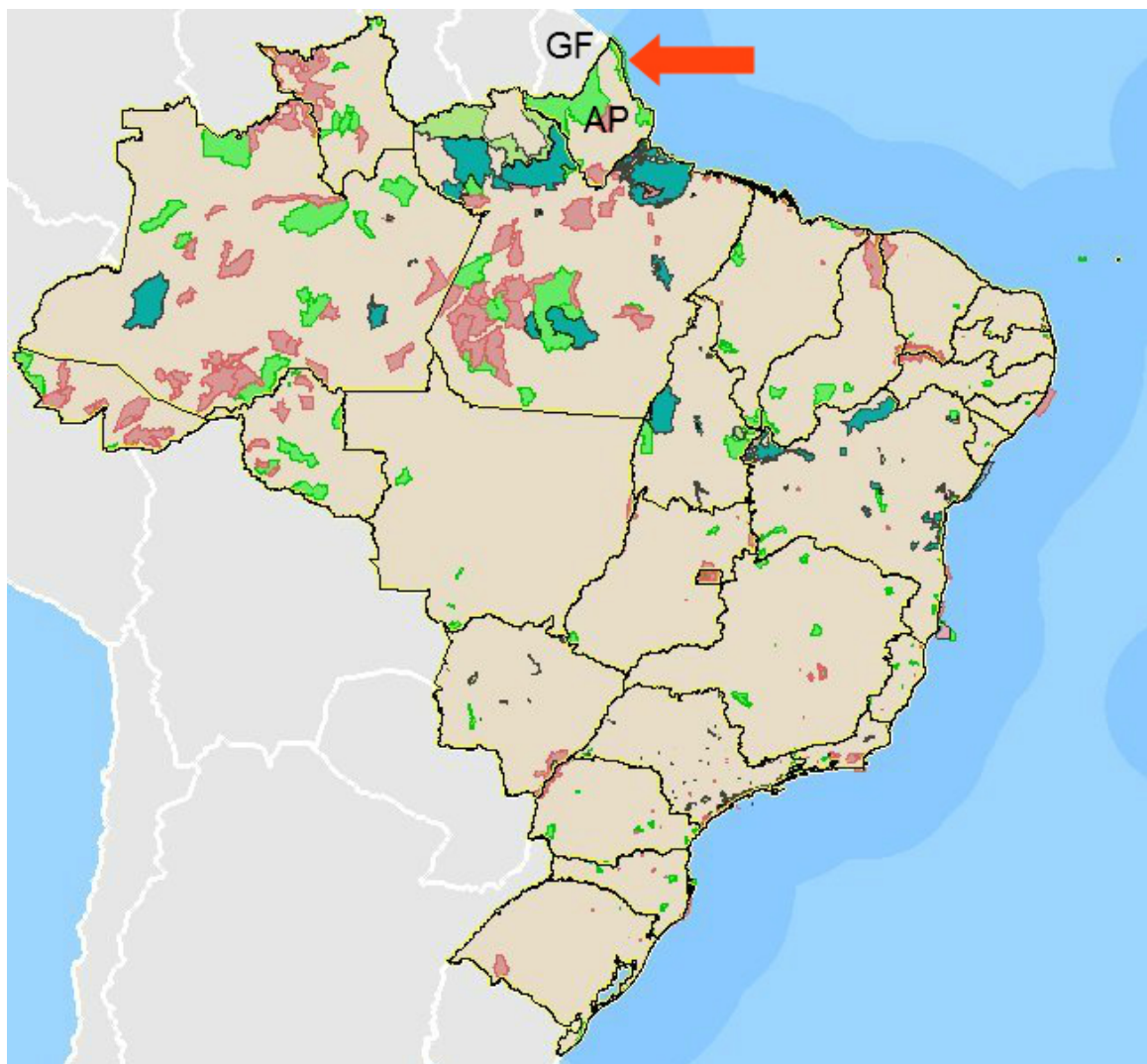
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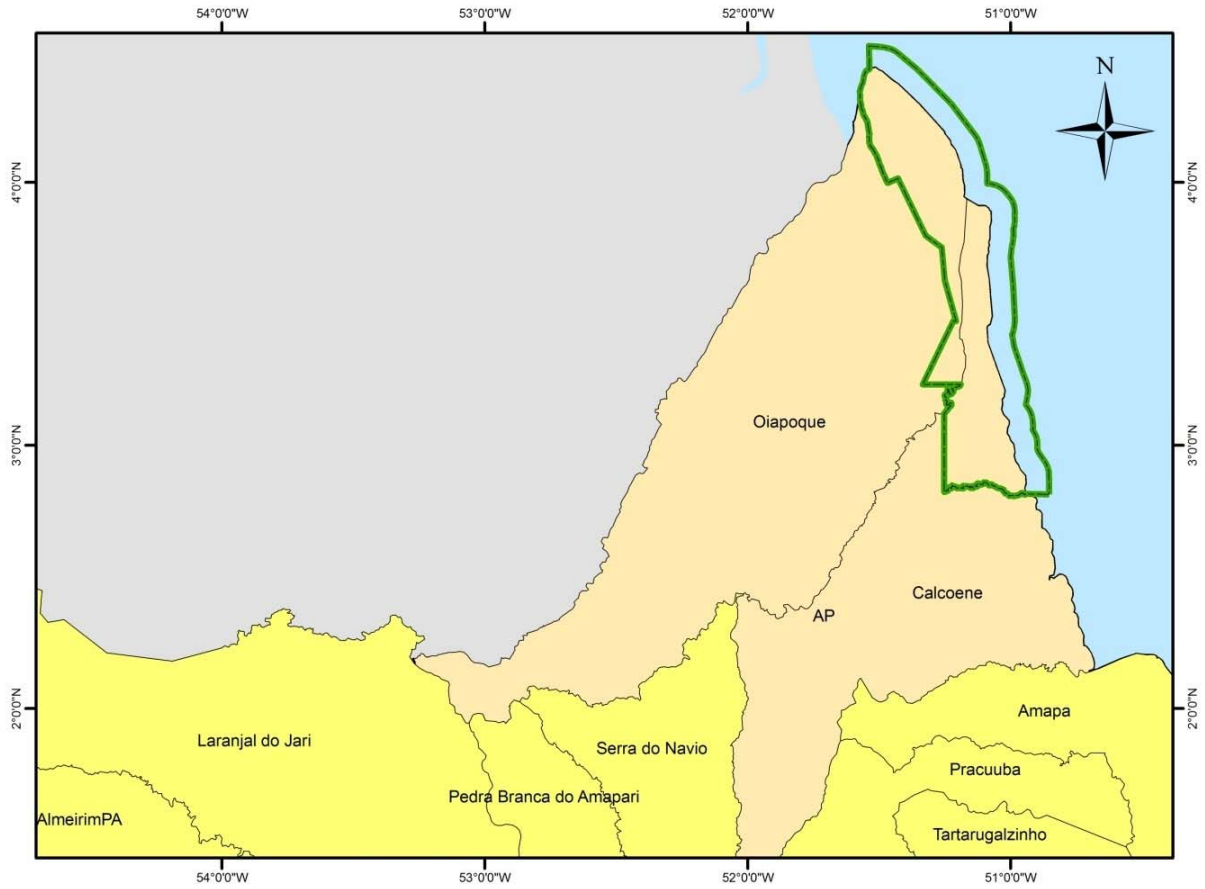
ANNEX

ANNEX 1 - Map of Brazil showing the Federal Protected Area (the arrow indicates the location of the National Park of Cabo Orange, green, in extreme north of Amapá - AP border with Guiana – GF)



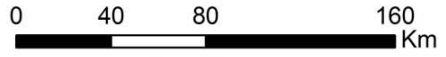
ANNEX 2 - Map of the Ramsar Site Cabo Orange

Ramsar Site Cabo Orange National Park

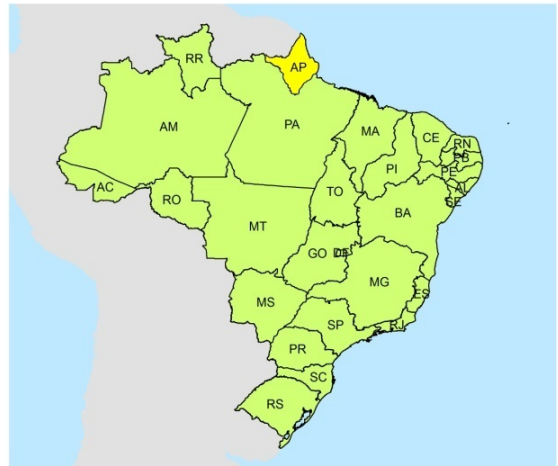
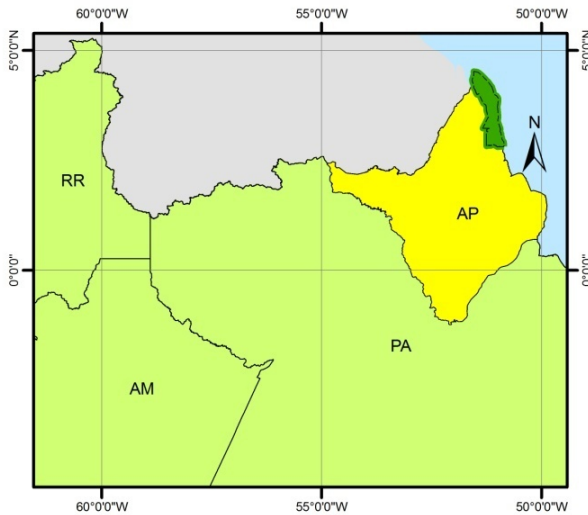


Legend

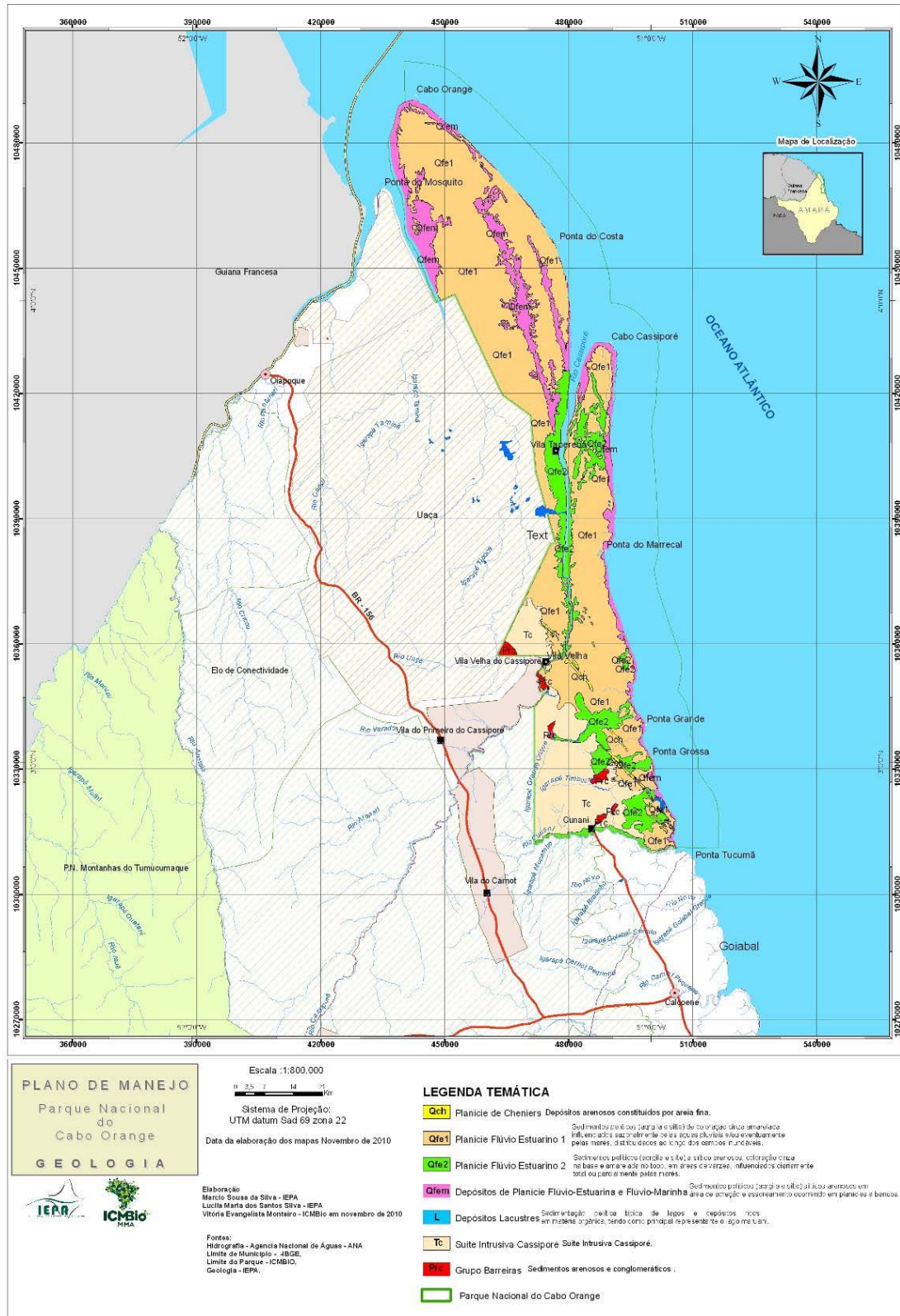
- Ramsar Site Limit
- Amapa - AP
- Park Municipalities
- Brazil



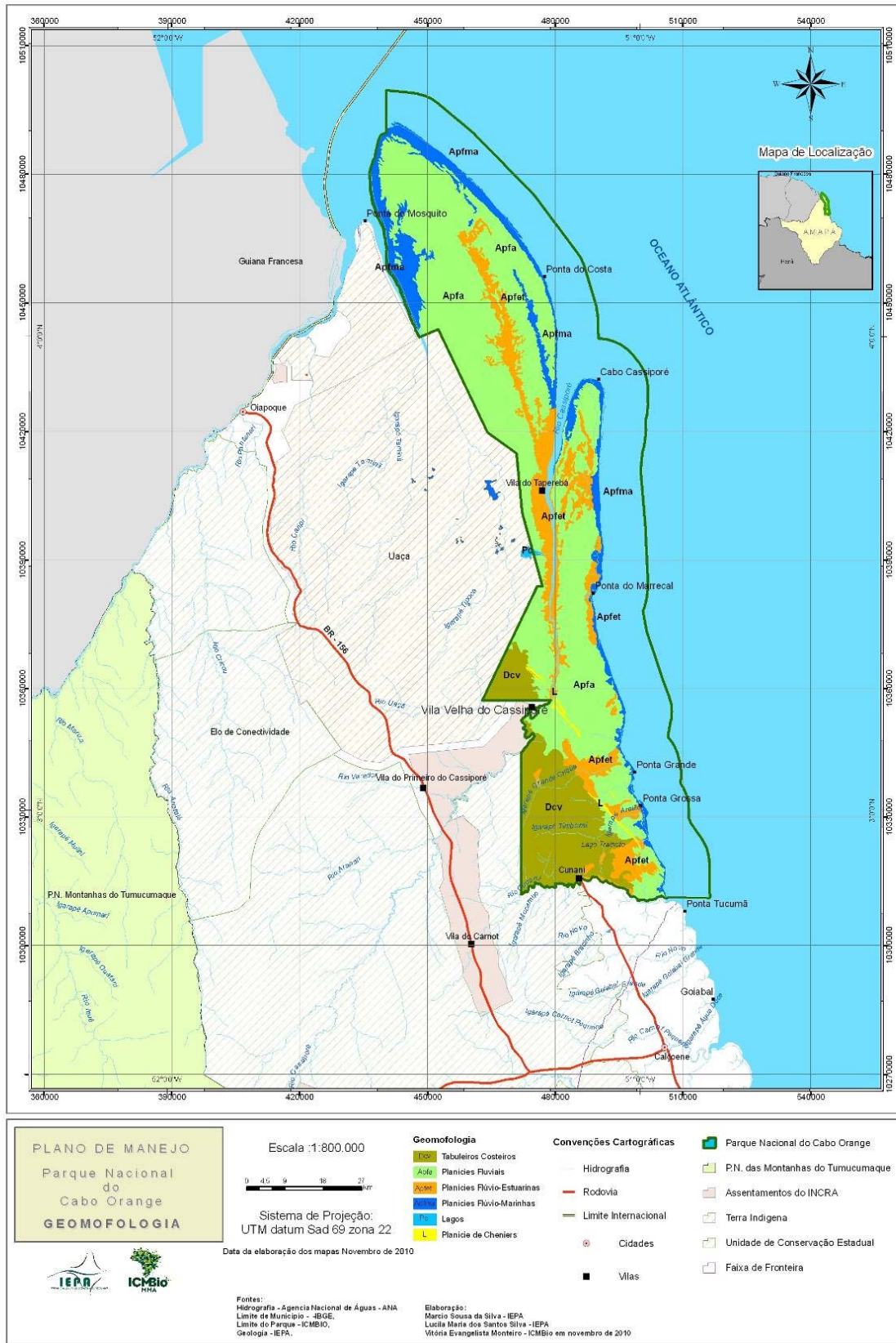
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 Datum: SIRGAS 2000



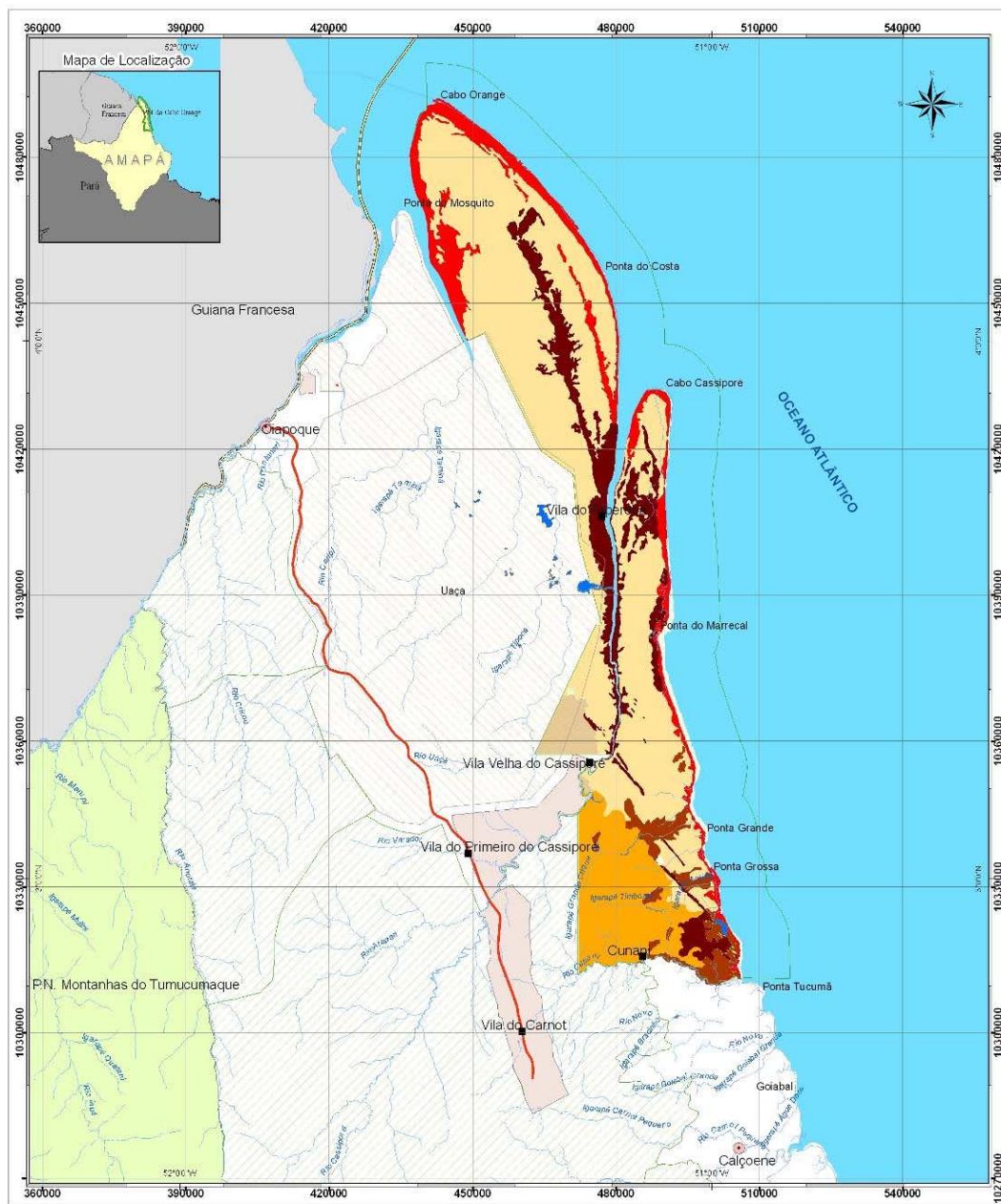
ANNEX 3 - Geology Map of the National Park of Cabo Orange



ANNEX 4 - Geomorphology map of the National Park of Cabo Orange



ANNEX 5 - Soil Map of the National Park of Cabo Orange



PLANO DE MANEJO
Parque Nacional
do
Cabo Orange
MAPA DE SOLO



Elaboração
Marcos Sousa da Silva - IEPA
Lucia Maria dos Santos Silva - IEPA
Vitória Evangelista Monteiro - ICMBio em novembro de 2010
Fontes:
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Limite do Município - IBGE
Limite do Parque - ICMBIO
Geologia - IEPA.

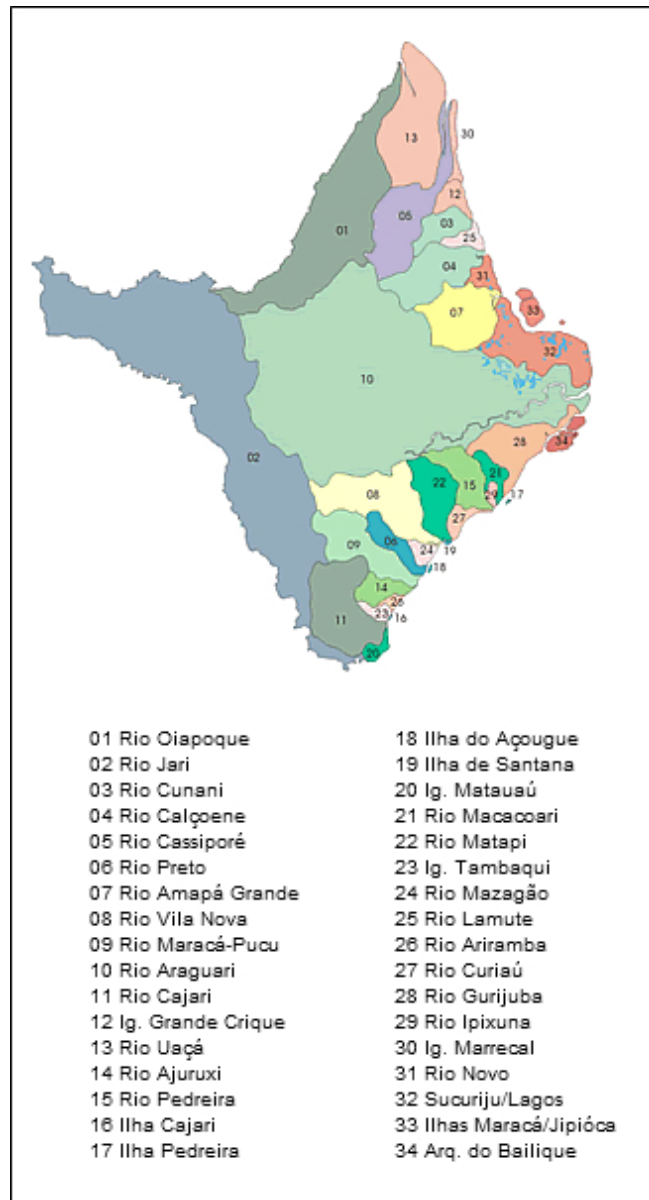
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Escala : 1:800.000
Sistema de Projeção:
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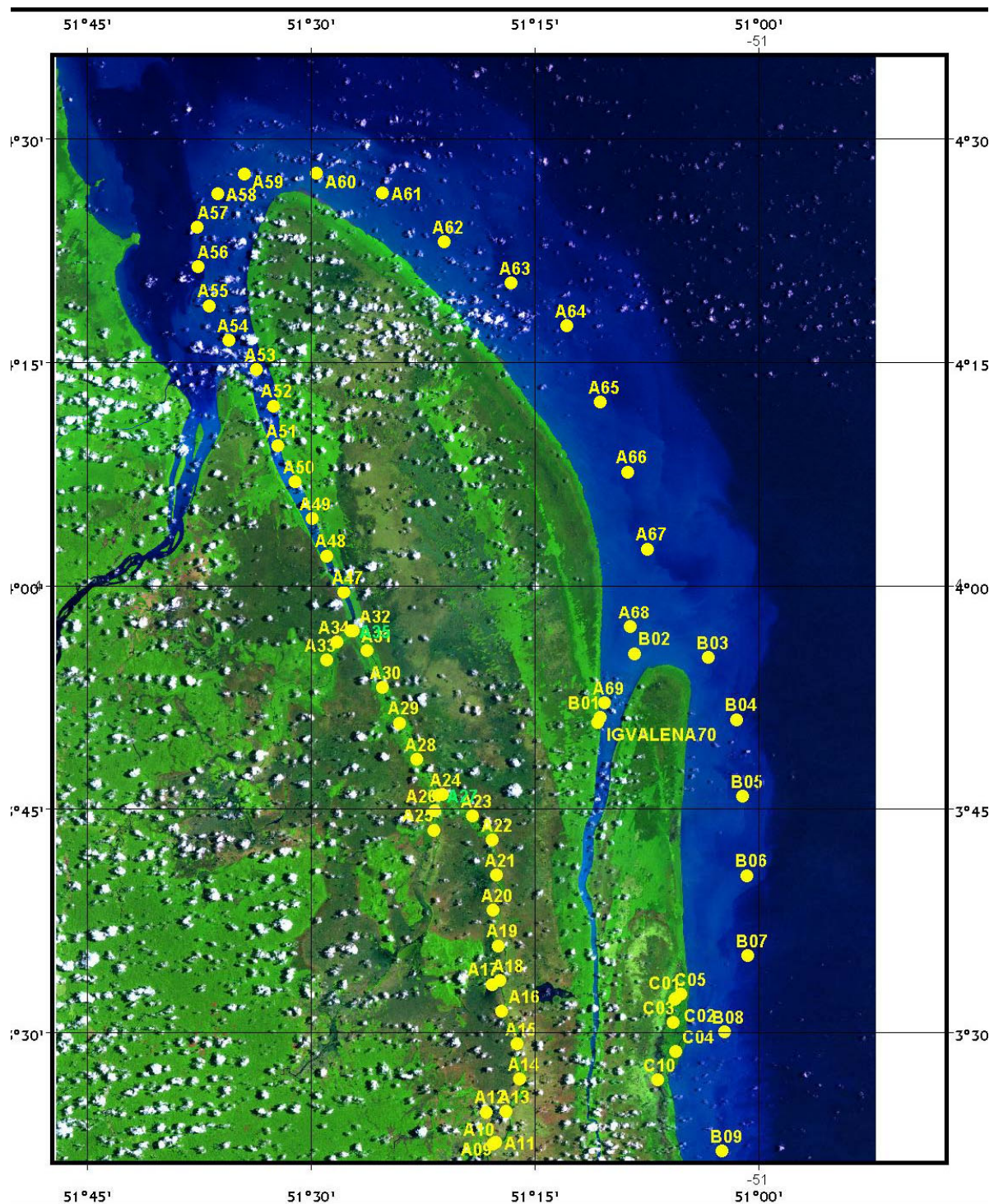
LEGENDA TEMÁTICA

- LS** Latossolo Textura muito argilosa
- Sp** Solos Indiscriminados de Manguezais Associados às áreas de mangues, formados sobre argilas e siltes da planície Flúvio-Marinha.
- HLd** Latente Hidromórfica Distrófica Textura indiscriminada, moderadamente ou imperfeitamente drenados, de estrutura predominantemente em blocos subangulares e de baixa fertilidade natural.
- Lth** Solos Gleí Eutróficos Textura indiscriminada, moderadamente ou imperfeitamente drenados, de estrutura predominantemente em blocos subangulares e de baixa fertilidade natural.
- GPe1** Gleí Pouco Húmido Eutrófico A1 Textura muito argilosa, fase floresta equatorial subperenifólia hidrófila de varzea e manguezal.
- HGPe2** Gleí Pouco Húmido Eutrófico A2 Textura argilosa, fase campo equatorial hidrófila de varzea

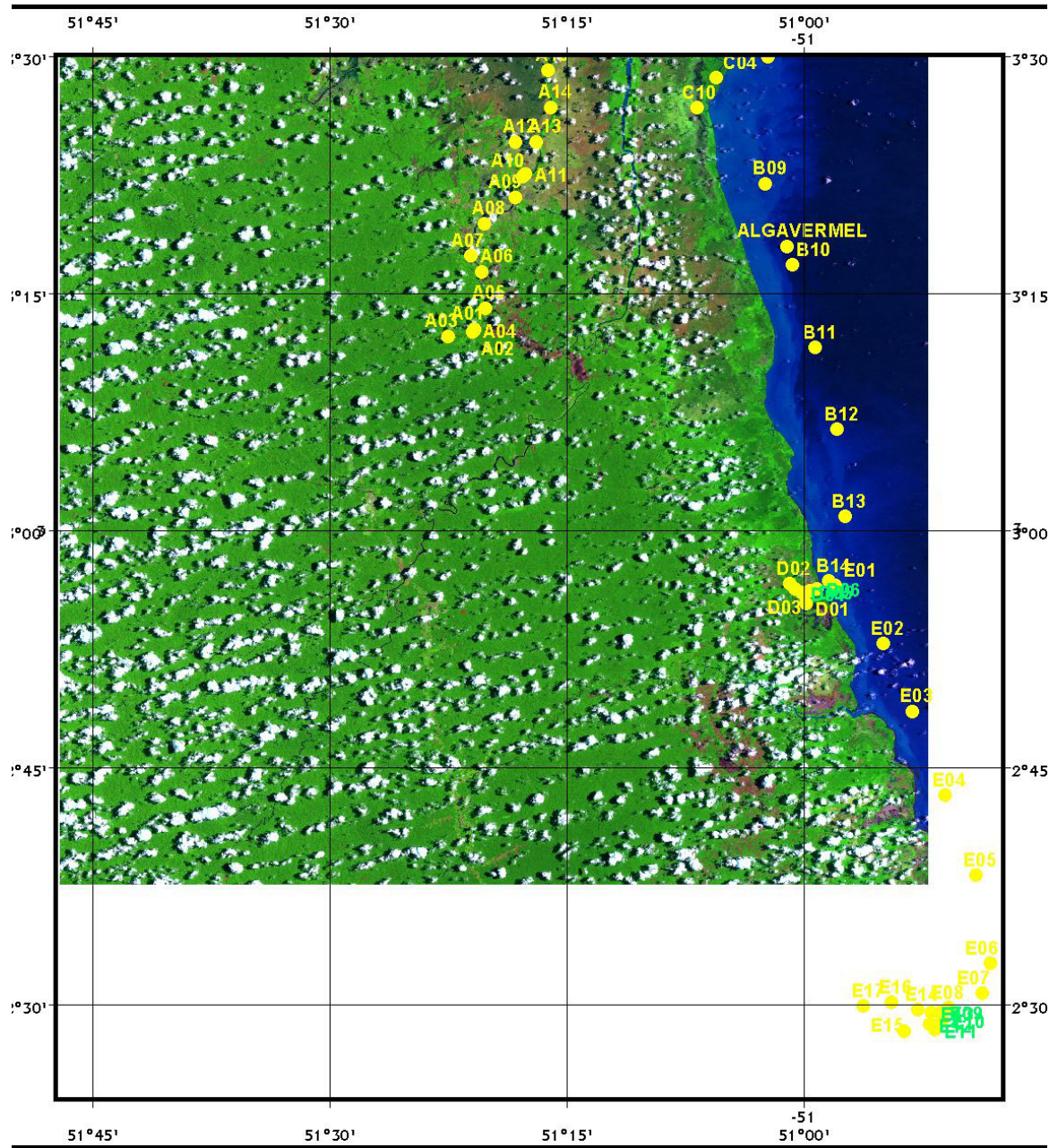
ANNEX 6 – Hydrological Map of the State of Amapá (numbers 01, 03, 04, 05, 12, 13 and 30 integrate Cabo Orange National Park)



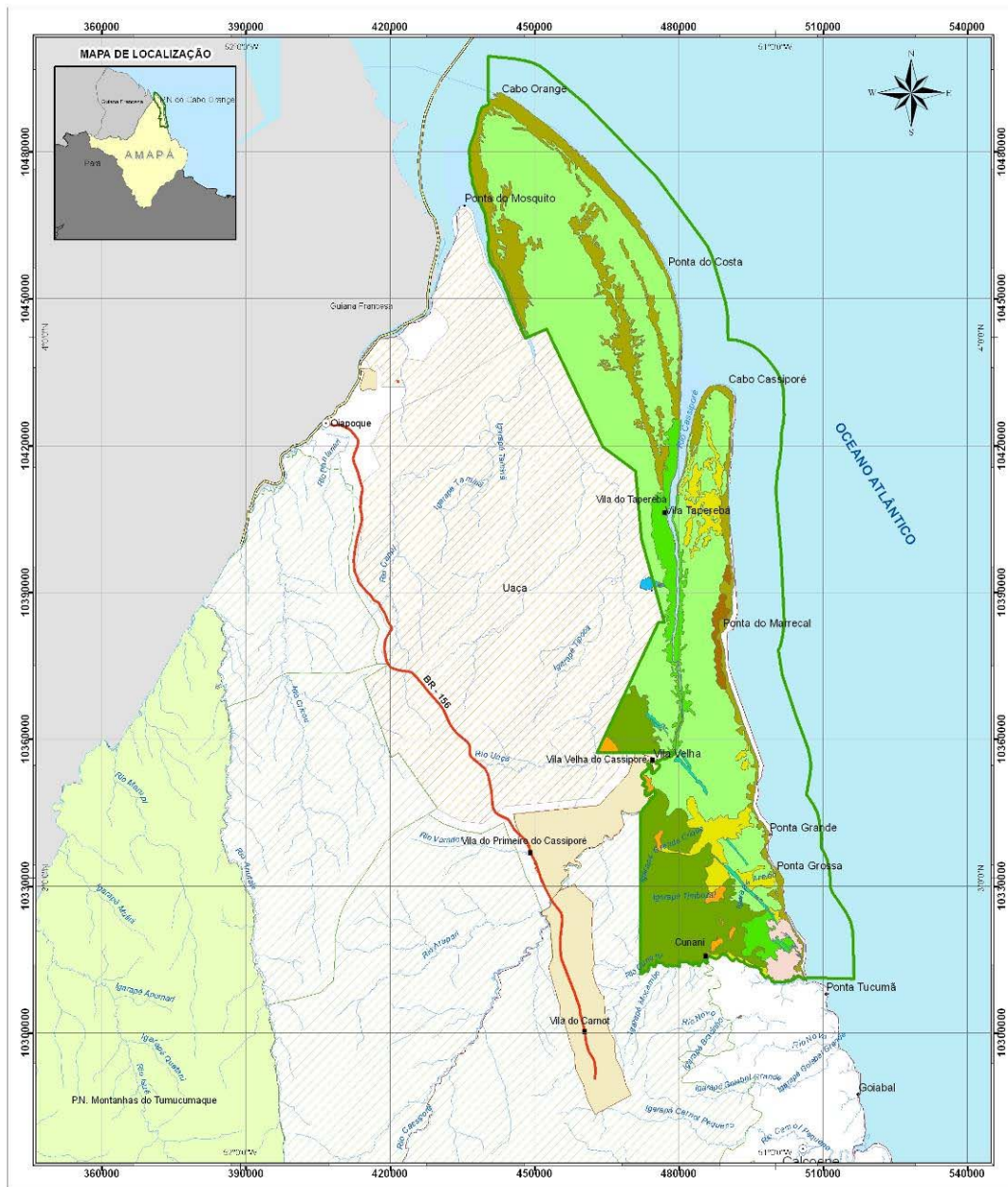
ANNEX 7 – Water sampling points derived from the Project: Superficial Water Quality
Characterization of Cabo Orange National Park (Fernandes, 2006)



ANNEX 8 – Water sampling points derived from the Project: Superficial Water Quality
Characterization of Cabo Orange National Park (Fernandes, 2006)



ANNEX 9 - Vegetation Map of the National Park of Cabo Orange



PLANO DE MANEJO
Parque Nacional
do
Cabo Orange
VEGETAÇÃO

Fontes:
Hidrografia - Agência Nacional de Águas - ANA
Limite do Município - IBGE,
Limite do Parque - ICMBIO,
Geologia - IEPA.

Elaboração:
Marcio Sousa da Silva - IEPA
Lucilia Maria dos Santos Silva - IEPA
Vitória Evangelista Monteiro - ICMBio em novembro de 2010

Mapa de Localização

Escala: 1:800.000

Sistema de Projeção: UTM datum Sad 69 zona 22

Data de elaboração dos mapas Novembro de 2010

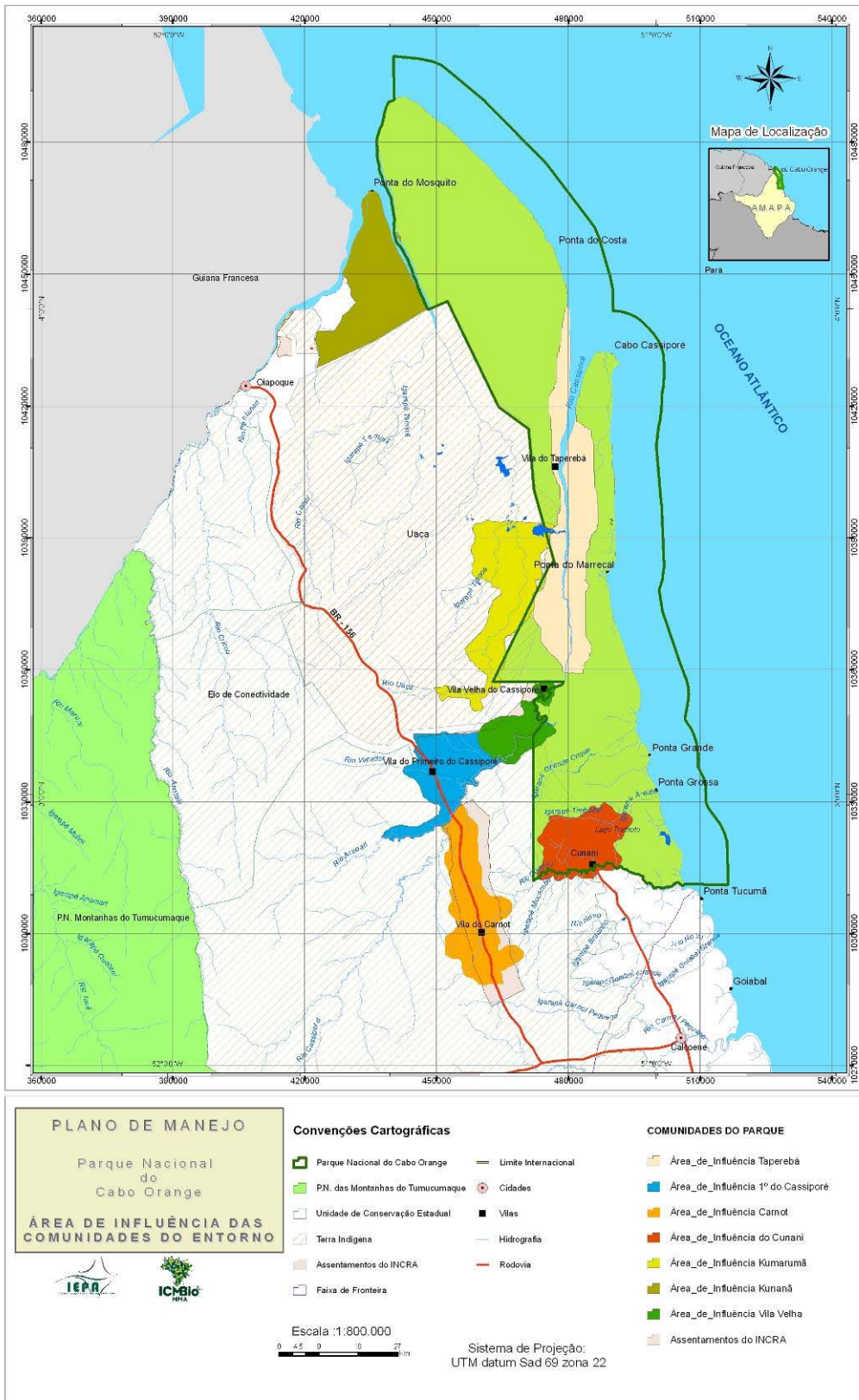
Convenções Cartográficas

- Limite do Parque Nacional
- Limite do PN das Montanhas do Tumucumaque
- Unidade de Conservação Estadual
- Assentamentos do INCRA
- Terra Indígena
- BR_156
- Limite Internacional
- Hidrografia

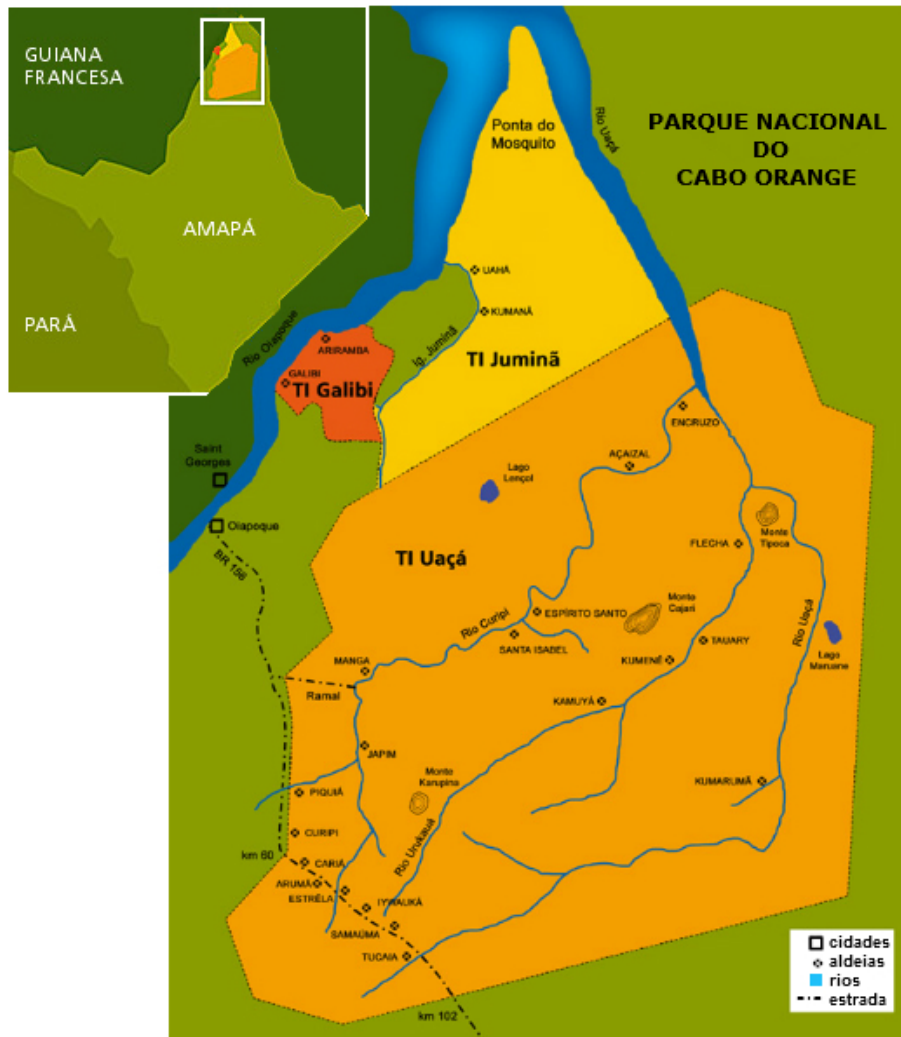
LEGENDA TEMÁTICA

- F1 Floresta Ombrófila Aberta 65.875,3 ha
- FV1 Floresta de Várzea e Mangue 40.203,2 ha
- FV2 Floresta de Várzea 23.267,5
- MG Manguezal - 64.966 ha
- CH Campo Herbáceo periodicamente inundado 246.093 ha
- CI Campos Herbáceos permanentemente Inundáveis 4.103 ha
- CH+A Campo Herbáceo Periodicamente Inundado Alterado 8.425 ha
- R Restinga 2.654,4 ha
- C Cerrado 3.578,5 ha

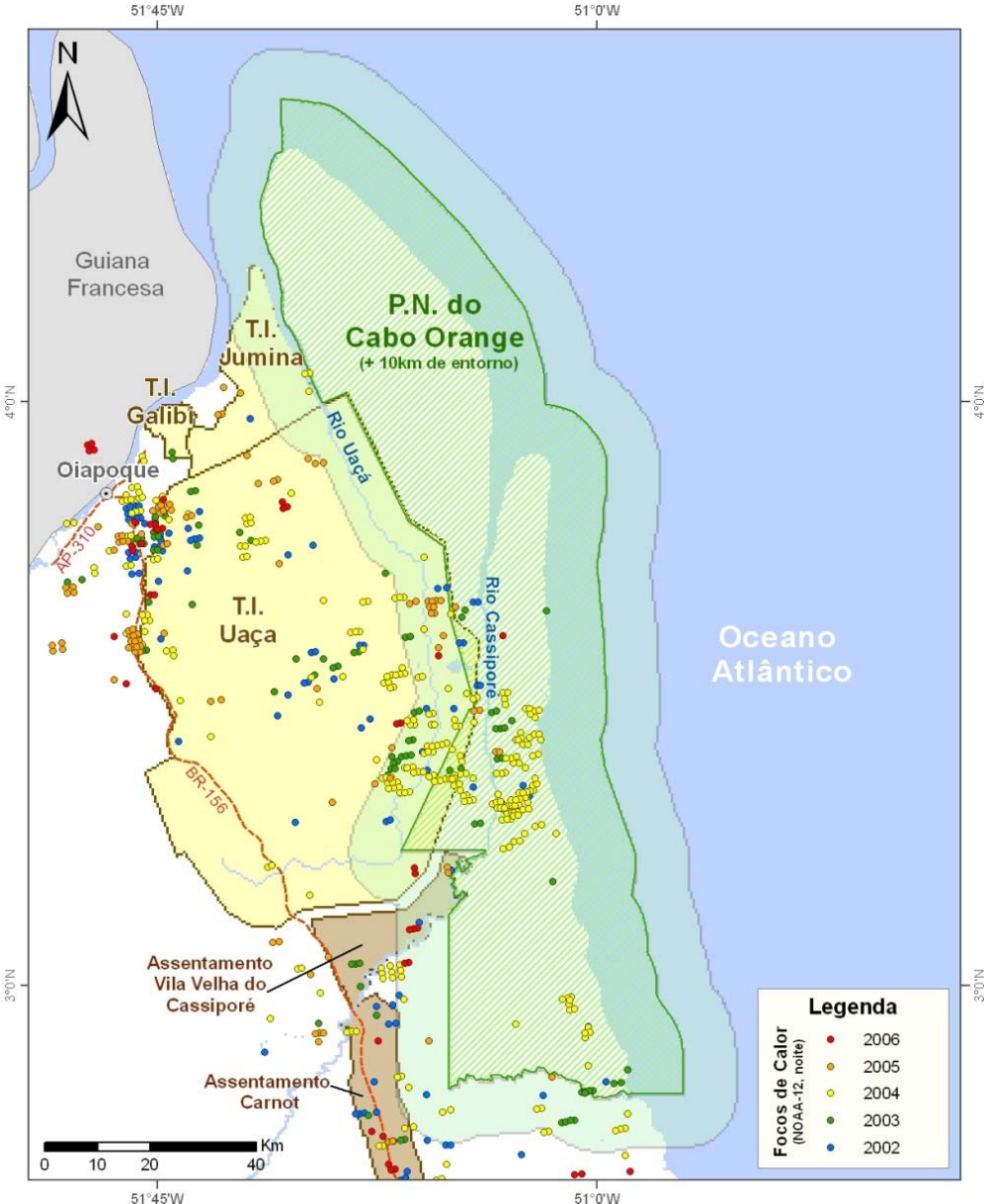
ANNEX 10 - Communities areas of influence around the Park



ANNEX 11 - Indigenous People Territories surrounding the National Park of Cabo Orange



ANNEX 12 – Fire Hotspots Map exhibiting the areas with higher risk of fires.



ANEXO 13 – Priorities research List for Cabo Orange National Park Administration

N°	Researches
1	Fishing Resource Survey/ ichthyofauna (marine and inland) Research.
2	River water quality (heavy metals presence) surveys and monitoring in the Park area and in its surroundings.
3	Economic Viability of Community-Based Tourism Projetscs
4	Turtles research: Population study in the rivers; sexing of hatchlings from translocated eggs; research on chelonians management.
5	Migratory birds Populational research.
6	Biology and reproduction of Flamingos (<i>Phoenicopterus ruber</i>)
7	Biology and reproduction of aquatic mammals population: sirenians, cetaceans.
8	Research on herpetofauna.
9	Assessments on subsistence, amateur and commercial hunting activities.
10	Buffalo degraded areas recovering research.
11	Archaeological research on sites in the park: Vila Velha, Cunani, Cape and coastal area of Cabo Orange.
12	Ethnological Research.
13	Small, medium and large terrestrial mammals ecology research
14	Chiropter (bat) Communities Research.
15	Large carnivores populations genetic variability Surveys.
16	Assessment on the impact of predation on carcinofauna in mangrove environment.
17	Class Insecta and Aracnida Survey.