1. **Information Sheet on Ramsar Wetlands (RIS) – 2009-2012 version**
2. Available for download from <http://www.ramsar.org/ris/key_ris_index.htm>.

*Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).*

**Notes for compilers:**

*1. The RIS should be completed in accordance with the attached Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands. Compilers are strongly advised to read this guidance before filling in the RIS.*

*2. Further information and guidance in support of Ramsar site designations are provided in the Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance (Ramsar Wise Use Handbook 14, 3rd edition). A 4th edition of the Handbook is in preparation and will be available in 2009.*

*3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.*

**1. Name and address of the compiler of this form:**

For office use only.

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Designation date Site Reference Number

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**2. Date this sheet was completed/updated:**

December 15th, 2013

**3. Country:**

Brazil

**4. Name of the Ramsar site:**

Ilha Grande National Park (Parque Nacional da Ilha Grande)

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

**This RIS is for** (tick one box only)**:**

**a) Designation of a new Ramsar site **; or

**b) Updated information on an existing Ramsar site **

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

**7. Map of site:**

*Refer to Annex III of the Explanatory Note and Guidelines, for detailed guidance on provision of suitable maps, including digital maps.*

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

i) **a hard copy** (required for inclusion of site in the Ramsar List): ;

ii) **an electronic format** (e.g. a JPEG or ArcView image) ;

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

**b) Describe briefly the type of boundary delineation applied:**

The boundaries applied are those of Ilha Grande National Park which follows the right bank of the Paraná River, from the mouth of the Ivaí River up to Airton Senna Bridge in Guaíra municipality.

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

DMS - Latitude: -23º 41' 16''S; Longitude: -53º 59' 47''W

**9. General location:**

The Ilha Grande National Park is located in the Paraná River on the border of the states of Paraná (municipalities of Guaíra, Altônia, São Jorge do Patrocínio, Alto Paraíso and Icaraíma) and Mato Grosso do Sul (municipalities Mundo Novo, Eldorado, Itaquiraí and Naviraí). Moreover, it is near to the Brazil –Paraguay border (approx. 2.5 Km) border. The nearest town is Guaíra (about 30,000 inhab.) where is situated the operational headquarters of the National Park.

**10. Elevation:** (in meters: average and/or maximum & minimum)

Between 220 and 240 m.

**11. Area:** (in hectares)

76.033,12 hectares.

**12. General overview of the site:**

The Ilha Grande National Park is composed of approximately 180 islands, being four the largest ones (Grande, Bandeirantes, Peruzzi and Pavão). In these islands vegetation adapted to flooding predominates, especially in the interior of the larger islands, as well as vegetation with woody aspects in the higher portions of the land, as on the edges of the islands. There is also a mainland portion on the left bank of the Paraná River, consisting of a plain environment subjected to periodic flooding. In both of the larger islands, as on the mainland, natural ponds can be observed (some isolated, without access to the Paraná River) which, besides the scenic beauty, are important breeding and feeding places for several species of fish and other animal groups. Periodically, many shoals are observed along the Parana River, the stretch of the park, are stopping points for migratory birds. In the Park, there are records of several species of endangered wildlife, including the “cervo do pantanal” (*Blastocerus dichotomus*), symbol of the National Park. Because of its environmental characteristics (presence of ponds, meadows and landing areas for migratory species), the Ilha Grande National Park is recognized as a Ramsar Site in Brazil.

**13. Ramsar Criteria:**

*Tick the box under each Criterion applied to the designation of the Ramsar site. See Annex II of the Explanatory Notes and Guidelines for the Criteria and guidelines for their application (adopted by Resolution VII.11). All Criteria which apply should be ticked.*

**1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9**

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

***Criterion 1*:** The Ilha Grande National Park is important for the protection of two types of environments that are now quite rare and degraded in the Mid-South, riparian forests and floodplains, and protects the last stretch of the Paraná River free of dams. The riparian forests are important for the maintenance of biodiversity, acting as habitat and food sources for wildlife. They serve as natural corridors, providing connections among remnants of vegetation, facilitating the movement of animals and exchange genetics. They also filter pollutants, pesticides and sediments. Floodplains act in maintaining of water quality in relation to sediments, nutrients and pollutants carried by rivers, slowing the concentration of these, making the water more appropriate for the fauna. The Paraná River, the main contributor of the La Plata basin is the tenth largest in the world in discharge and fourth in drainage area, and reaches the whole south-central of South America, from the slopes of the Andes to the Coast, near the Atlantic coast (MMA 2004 apud PNIG Management Plan 2008).

To get an idea of ​​the importance of this ecosystem at the regional level, the Paraná River floodplains are the largest continuous area of ​​this type of vegetation throughout the state of Paraná, surpassing its marshes and coastal wetlands.

In addition to the forest and herbaceous and shrubby ecosystems, they are also present in the park, a very limited type of vegetation where there are vertical rock walls along the banks of the Paraná River and its tributaries, called "Rupícula vegetation" or "vegetation of rocks ". This type of vegetation is composed of ferns, orchids, cacti, herbs and small shrubs, which attach the ridges and fractures of rocks and live on the edge. Because they are in hard to reach places, the flora of these sites is still little studied. The most characteristic features of this type of vegetation in the park are the “Paredão das Araras”, “do Bugio”, “do Córrego da Viúva”, rivers Maracaizinho, Pirajuí and Piquiri.

The Ilha Grande National Park encompasses one of the most important areas of Brazil in ecological terms; it protects ecosystems that today are rare and quite degraded in the country and the world. These are the remnants of semideciduous forest and floodplains (Influence of Pioneering Training fluvial-lacustrine), the only conservation area to protect this diverse ecosystem. In addition, the park protects the last stretch of free Paraná River dams in Brazil.

The plain of the Paraná River reaches up to 20km wide, with numerous side channels and ponds. Fluctuations in water levels, although its duration is prolonged by dams, still retain the seasonality and mean amplitude of five meters. This remaining floodplain is critical for the maintenance of local biodiversity (MMA 2004, apud PNIG Management Plan 2008).

The high Paraná River is obstructed downstream by the Itaipu dam and upstream by the Porto Primavera and Jupiá dams, leaving as the only stretch that runs free, the segment between the mouth of the Paranapanema River and the city of Guaíra (MMA 2004, apud PNIG Management Plan 2008). In order to protect this stretch of the Paraná River, the Ilha Grande National Park was created.

***Criterion 2*:** More than 70 species of threatened flora and fauna are present in the Ilha Grande National Park (PNIG Management Plan 2008).

Regarding fish, five species of threatened fish occur in the Park, according to the Red Book of Endangered Brazilian Fauna. See annex 1.1 for a complete list.

There are 49 threatened species of birds, according to the Ilha Grande National Park Management Plan (2008), of which 43 appear in the Paraná list of threatened species; seven species appear in the National List of Threatened Species of the Brazilian Fauna; 13 species are categorized in the IUCN Red List of Threatened Species; two are listed in Appendix I of CITES; three are listed in appendices I and II of the Convention on the Conservation of Migratory Species of Wild Animals (CMS). See annex 1.2 for a complete list of species and categories of threat.

Regarding mammals, there are 14 threatened species that occur in the Park, according to the Ilha Grande National Park Management Plan. Six of them are listed in the Red Book of Threatened Brazilian Fauna; eight in the IUCN Red List of Threatened Species; and five are listed in Appendix I of CITES. See annex 1.3 for a complete list.

There are 10 species of threatened plants according to the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA) list of threatened plants, from them one(*Aspidosperma polyneuron,* peroba-rosa), has been listed as Endangered by the IUCN Red List. See annex 2.1 for the complete list.

In order to make more complete the information gathered, are listed below, the plant species identified in the botanical diagnosis by Hatschbach and Ziller (1996; in SENAGRO, 1996), which makes up the ecological-economic zoning of protected areas inter-city of Ilha Grande, State of Paraná. The authors report the plant species according to the environment they occupy, having been found or just considered likely to be found based on the qualitative assessment of sites (Annex 2. Lists of plant species, table 2.3).

**Criterion 3:** The National Park has 33 endemic birds’ species from which one species’ distribution in Brazil is limited to the National Park and its surrounding area: *Pseudocolopteryx dinellianus*. Sixteen species’ distribution in Mato Grosso is limited to the National Park and its surrounding area and sixteen species’ distribution in Paraná is limited to the National Park and its surrounding area. See Annex 1.6 for the complete list of endemic species.

Plants living in floodplains or wetlands ecosystems in the Paraná River floodplain are adapted to permanent or semi-permanent waterlogging.

The Ilha Grande National Park is in a contact area between the Atlantic Forest biome (in the broad sense), Cerrado, Pantanal and Chaco, which host species characteristic of each of these biomes, such as the howler *Alouatta fusca* and cuíca- four-eyed *Philander frenata*, endemic to the Atlantic Forest; maned wolf *Chrysocyon brachyurus*, the pampas cat *Oncifelis colocolo* and the giant anteater *Myrmecophaga tridactyla*, both open areas of fields and closed; and the marsh deer *Blastocerus dichotomus*, typical of the flood plains of the great rivers of South America, especially the large wetland plain.

***Criterion 7:*** In Ilha Grande National Park were recorded 98 species of fish, distributed in seven orders and 29 families, and Characidae (21 species), Anostomidae (12 species), Pimelodidae (11 species), Loricariidae (8 species) and Cichlid (6 species) the most representative. Target species considered are the larger fish and the ones of commercial interest (*Pseudoplatystoma corruscans; Paulicea luetkeni; Salminus brasiliensis; Rhinelepis aspera; Brycon orbignyanus, and Piaractus mesopotamicus*) that are usually those who perform reproductive migration and successively use environments lowland (floodplain) and the riverbeds during its life cycle. Although the biology of these species is still unknown results by Vazzoler raised et al. (1997) indicate the use of the tributaries of the Paraná River upstream and downstream of the mouth of the Paranapanema River to carry out reproductive activities (Ivinhema, Piquiri, Ivaí, Iguatemi).

Species by category:

• migratory, of widespread occurrence in the region who use the river channel for reproductive displacement, food and / or growth. They are mainly characterized by large fish such as the *Characiformes piracanjuba,* *Brycon orbignyanus*, *Corimbatá Prochilodus lineatus*, *Dourado Salminus maxillosus*, *Pacu Piaractus mesopotamicus*, *Piapara Leporinus elongatus*, *ferreirinha Leporinus octofasciatus*, *solteira Leporellus vittatus*, *campineiro Schizodon nasutus*, and the *Siluriformes pintado* *Pseudoplatystoma corruscans*, *cascudo preto* *Rhinelepis aspera*, *barbado Pirinampus pirinampu* and *mandi Pimelodus sp*.

• the widespread occurrence, usually in the medium (between 20 and 40 cm) and large (> 40 cm) size. It is represented by species with a wide distribution in the basin, attending lotic and / or lentic environments. In the brooks, streams and rapids, the characteristic fish are *lambaris Astyanax, fishes cadela Galeochara, piranhas and pirambebas Serrasalmus, pacu Myloplus, piaus Leporinus, piava Schizodon, canivetes Apareiodon, sagüirus Cyphocharax, sagüiru Steindachnerina insculpta, dourado cachorro Rhaphiodon vulpinus, armado Pterodoras granulosus, armado Rhinodoras d'orbigny, armado Trachydoras paraguayensis, mandis Pimelodus, mandis chorão Pimelodella, bagre Rhamdia, bagre Iheringichthys labrosus, Sorubim Sorubim lima, Sardela Hypophthalmus edentatus, cascudos-chinelo Loricaria, joaninhas Crenicichla, barrigudinho Phalloceros caudimaculatus*. In small streams and channels of low flow, small dams, permanent and temporary ponds are common examples of: *tambiu Astyanax altiparanae, pequiras Bryconamericus, piquis Moenkhausia, pequira Hemigrammus marginatus, pequira Cheirodon, Piau-de-lagoa Leporinus lacustris, piau Schizodon borelli , sagüiru Steindachnerina insculpta, traíra H. malabaricus, jeju Hoplerythrinus unitaeniatus, tuvira Gymnotus carapo, tuvira Eigenmania, tamboatá Hoplosternum littorale, cará Cichlassoma facetum and acará Geophagus brasiliensis*.

• the introduced which occur in these rivers because of the accidental introduction (aquaculture) or intentional ( "stocking" of dams). It is formed by species brought from other basins, also called exotic, are: the curvina *Plagioscion squamosissimus*, tilapia *Tilapia rendall*i, the African catfish *Clarias sp*. and fish Cichla sp.

• the small river systems, with fish assemblages usually formed by small species, which were similar to the fish of the Atlantic Forest Province, which has components of species adapted to life in headwater streams. In this group are included the gender characids Astyanax (“lambaris”), Bryconamericus (“pequiras”) and Characidium (switchblades), and especially representatives of siluriformes, “os cascudos” of Hypostomus genres, Rineloricaria, Loricaria, Loricariichthys, Corydoras and Hypoptopomatinae subfamily, and also catfish Rhamdia of genres, Pimelodella and Trichomycterus.

(PNIG Management Plan 2008).

***Criterion 8*:** In the region of Ilha Grande National Park, the river Paraná has an anastomosing channel, integrated with the floodplain and islands of various sizes. This region has fish communities with many species and complex interrelationships among its members as a result of a large drainage area and large environmental heterogeneity.

In this passage is common the presence of the category of species that migrate, which have widespread occurrence in the region who use the river channel for reproductive displacement, food and / or growth. This fauna is characterized mainly by large fish like *Prochilodus lineatus, Salminus maxillosus, Piaractus mesopotamicus, Leporinus elongatus, Pseudoplatystoma corruscans, Rhinelepis aspera, Pirinampus pirinampu e Pimelodus sp*.

The integrity of the floodplain is critical to maintaining current levels of recruitment of the fish fauna of the basin, especially the large species and of commercial interests.

The larger fish and of commercial interest, which are usually migratory species successively use the floodplain environments and the rails during their life cycle. Thus, the lentic environments, in addition to this role as spawning areas for large numbers of forage species are used by the larger for the development of youth and recuperation (feeding) of the adults in their downward movement after spawning.

Feeding:

Paraná River floodplain - The flooded areas, observed in the floodplain and gallery forest drainage of the Paraná River in the study area, occupy depressions that have permanent communication or not with the rivers.

These temporary ponds have a high fluctuation of limnological factors and their communities, and the water regime of these areas, seasonally flooded, plays a key role in the spawning of some fish and initial development of most species. The availability of food, shelter and physical and chemical conditions afforded by the great diversity of habitats in these areas are favorable to the spread of numerous fish species that depend on the natural fluctuations in the river level (Agostinho et al., 1992). The flooded areas marginal to the river play important roles for the lotic ecosystem, although the importance of the environment and its role within the aquatic ecosystem is little emphasized (Welcomme, 1979).

With regard to fish fauna, species of larger and of commercial interest successively use the floodplain environments and the rails during their life cycle. Thus, the lentic environments, in addition to his role as spawning areas for large numbers of forage species are used by the larger for the development of youth and recovery (power) of the adults in their downward movement after spawning.

In floodplains, the number of species is relatively high, about 170, distributed in living forms, which develop throughout the life cycle in the area, and migratory, using the plain during a part of their life cycle (Agostinho and Zalewski, 1996).

The fluctuation of the water level can influence the flooded areas in different ways, depending on the connection between these two environments. This connection can be temporary or permanent, according to the morphology of the lake, its position and its size. So while small lakes can dry completely, some wetlands may act at certain times of the year as natural channels containing stream or standing water.

These semi lotic environments characterized by low rate of water present small and medium-sized species such as minnows of the genus Astyanax, the “cará” *Cichlassoma Paranaense*, fish-dog *Acestrorhynchus lacustris* and *Oligosarcus paranensis* the sagüirus *Cyphocharax nagelli* and *Steindachnerina insculpta*, the pirambeba *Serrasalmus spilopleura* the mandis of Rhamdia and Iheringichthys genres, and loricariids of Hypostomus genres, Loricaria and Ancistrus (PNIG Management Plan 2008).

Lagoons are of extreme importance for the regional fauna, especially for fish, that use them during part of their life cycles for breeding, feeding and resting, entering through their channels that connect the Paraná River or taking advantage of the flooding period, when the lagoon is isolated from the river (PNIG Management Plan 2008).

**15. Biogeography** (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Context of the Morphoclimatic Domains

The morphoclimatic domains are "*a spatial set of certain order of territorial size of hundreds of thousands of millions of square kilometers in area where there is a coherent scheme of landscape features, soil types, vegetation types and, climate and hydrological conditions*" (AB ' SABER, 1973) . This author has defined six major morphoclimatic areas from the distribution of rainfall and vegetation. Based on this classification, the region where the Ilha Grande National Park is located covers an area of transition between three domains: (1) southern Brazilian Plateaus with Araucaria (southern portion of the park), (2) Tropical Atlantic Domain (northern portion park), and (3) Central Chaco Domain (Chaco- Monte- Patagonia area).

Context of the Biomes

Biome can be defined as the largest geographic region in which groups of plants and animals adapted to the environmental conditions in its area of distribution can be distinguished. Considering the Brazilian biomes, the Ilha Grande National Park is inserted in the Atlantic Forest Biome, specifically in the semi-deciduous forest region, but with the presence of extensive floodplains and wetlands associated with the Paraná River, with predominantly herbaceous vegetation.

Context of the Ecoregions

Ecoregions consist of relatively homogeneous units in relation to biodiversity and biological processes, linking fauna and flora to other elements such as soil, landscape, rainfall, etc (WWF, 1995). In Brazil, 78 ecoregions were defined. Based on this proposal, the Ilha Grande National Park is located in the ecoregion called Upper Parana Atlantic Forest.

**a) biogeographic region:** (1) Plateaus southern Brazilian Araucaria (southern portion of the park) , (2) Domain Tropical Atlantic (northern portion park) , and (3) Domain - Central Chaco (Chaco area - Monte- Patagonia).

**b) biogeographic regionalisation scheme**(include reference citation):

The **Domain of the southern Brazilian Plateaus with Araucárias** constitutes the Atlantic subtropical uplands, covered by an old core, covered with Araucaria (AB'SABER. Op cit.).

The **Atlantic Forest Domain** is symbolically recognized as the field of "seas of hills" Forested developed in azonal position in the tropical Atlantic coast of Brazil. Has attached a chapadões subdomain forested West of São Paulo and northern Parana (AB'SABER, op cit.).

The **Central Chaco Domain** comprises different types of areas such as the South American central plains, with dry forests, endowed with tropical climates sub-humid and rustic semi-arid subtropical, located in Bolivia, Paraguay and Argentina. It also covers areas Domain Hood chaqueños and Central Depression Area South American Chaco, Quebracho Domain and Algarrobo (AB'SABER, 1977) (PNIG Management Plan 2008).

**16. Physical features of the site:**

**Climate**

Koöpen’s classification: Cfa - subtropial humid climate; average temperature in the coldestmonth below 18 ° C and average temperature in the warmest month above 22 ° C; with hot summers, infrequent frosts and trend of concentration of rainfall in the summer months, however no dry season[[1]](#footnote-1).

**Geology**

The Ilha Grande National Park is located, under the geological aspect, on Paleozoic sediments of the Paraná Basin, in the southern portion of the South American continental shelf. The portion of the Paraná Basin located under the park consists of volcanic and volcaniclastic rocks of the Serra Geral Formation (small range) and mainly by desert sediments of the Caiuá formation: these are part of the post- lavas cover sediment that have been accumulated in the depression formed due to the weight of the spills of the Serra Geral Formation.

Deposits of Caiuá Formation, which comprise most of the area, consist of fine, clayey and reddish-gray sandstones, with a parallel lamination, superimposed in layers of up to two meters thick of fine to medium sandstone, with a cross bedding stratification and sigmoidal in the bottom. The grains are sub-round and covered by a film of iron oxide - influenced by the proximity of basalt spills from fine to medium granulometry. These sandstones also exhibit levels of plane-parallel lamination, forming packets with more than two meters thick, which consist of rhythmic layers of fine sandstones intercalated with silty-sandy horizons of reddish-brown coloration. In landscaped terms, the northeast sector, especially where the sandstone walls occur, represents the greatest diversity of terrains with scenic beauties. Similar features, although on a smaller, manifest themselves at various points along the Paraná River becoming potential areas for visitation.

**Geomorphology**

The park consists of a fluvial archipelago, located on the Paraná River, with hundreds of flat islands, which were originated about 8,000 years ago, during a time of high rainfall in the Quaternary period. The surface of the fluvial plain of the Paraná River is the result of the evolution of an anastomosing system that was active before the implementation of the current drainage pattern. The forms originated by anastomosing channels in the past are the marginal dikes, channels, fans of ruptured dikes, and lower parts and flood shoals of the basin.

In the Park, the river bed has an anastomosing pattern, characterized by successive branches and separated by asymmetric islands and sandy bars, wide and shallow channels, rapid transport of sediment and continuous lateral migration. This river system, during the flood, carries large amounts of sediments that are deposited during the dry season. With this, the river water needs open side paths, originating the characteristic geometry of this type of bed.

Inside the islands and the floodplains, lakes of the Paraná River flooding area occur, which generally have elongated shapes, almost parallel or oblique to the general form of the Paraná River. They are former channels of the Paraná River that were closed over the years by the sediment deposited by the river, on one or both ends. Some of the most famous are the Saraiva, Jatobá, dos Padres, São joão, Azul, Encantada, do Sossego, Feia e Xambrê ponds.

**Soils**

In general, the existing soils of the Ilha Grande National Park and its surroundings belong to Organosols, Neosols, Gleysoils, Inceptisols, Ultisols, Oxisols and Alfisols classes. The Organosols predominate within the perimeter of the Ilha Grande National Park and 50% of its total area, considering the simple unity and associations with Gleysoils and Fluvisols. The Fluvisols and Gleissolos significantly occupy the rest of the park, totaling approximately 16% and 3%, respectively.

*Organic Soils*

Considered little evolved soils are made of organic material from the accumulation of plant remains in varying degrees of decomposition, accumulated in places with low drain with high carbon content. In the Park and adjacent areas these soils may appear as single unit or with other. They occur in the lower parts of the floodplain, or in depressions nearby water bodies, under hydrophilic or hygrophilous vegetation, under grassland or floodplain forests. They are quite fragile from an environmental point of view and its vocation is related to the conservation of flora and fauna.

*Entisoils*

These soils are composed of mineral materials or slightly thick organic material with little expression of pedogenic processes, due to the low intensity of these processes that have not yet led to significant modifications of the original material or landscape, which may prevent or limit the evolution of these soils. They have limitations often imposed by their position they occupy in the landscape, in the plain areas, influenced by fluctuations in the groundwater level. There is a great variability of physical, chemical, mineralogical and morphological characteristics, which are inherent to this class of little evolved soils. In this soil class, there is an intense process of erosion in the ravines of the more internal islands, caused by the impact of the ripples caused by natural climatic conditions and the vessels of medium and large sailing in the Paraná River. Generally this unit located on the shores of the islands, is mainly occupied by forests at medium (46%) and initial (20%) stages.

*Gleysoils*

Comprise the lowlands, consisting of mineral material formed from Quaternary sediments, in the lower parts of the landscape and flat basin-shape landscape. The soils in this class are permanently or periodically saturated with water, unless they are artificially drained. They have medium to high fertility, but unsuitable for agricultural use because of its location in the landscape and poor drainage. They are characterized by strong gleying process as a result of reducing moisture regime, which occurs in anaerobic environment, with high deficiency or absence of oxygen, due to waterlogged soil for long periods or throughout the year. The permanently elevated groundwater or when drained, are serious limitations to these soils, as its strong acidity and toxicity of aluminum and sulfuric acid generated in this process. On this soil forests and floodplain fields are developed.

*Cambisoils/Inceptsoils*

Comprise soils consisting of mineral material with incipient B horizon, underlying any kind of surface horizon. Due to the heterogeneity of the original material, of landforms and climatic conditions, their characteristics vary greatly from one location to another. Thus, the class holds from strongly to imperfectly drained soils, from shallow to deep, yellowish to dark-red color, and high to low base saturation and chemical activity of the colloidal fraction. This kind of soil is not very common, occurring only in association with Gleysoils located in the northern portion of the Park. In the region surroundings, this class is 85% occupied by agricultural use.

**Hydrology**

The Paraná River originates from the confluence of the Grande and Parnaíba rivers, approximately 20° S and 51° W and, since its formation, has a width exceeding 1 km and minimum flow of over 1000 m3/s. Its total length, excluding the Parnaíba River, is about 2739 km, of which 619 km are between the mouth of the Parnaíba and Grande rivers and south end of the Ilha Grande National Park, where the “Sete Quedas” (Seven Falls) are submerged. From this point, it becomes the border between Brazil and Paraguay, for approximately 190 km until the mouth of the Iguaçu River, where it becomes the border between Argentina and Paraguay for another 690 km.

The Paraná River has several typical features of a river on plains, namely: soft curves, stable, large bed and numerous islands, shoals and low slope. It is traversed by some basaltic indents, however, running the bed, usually on sandstone and recent deposits. Margins are low with a few gentle hills. The smaller bed that is 3 km wide in Guaira-Paraná and 1.2 km in the narrowest places snakes in a flooded valley that reaches 15 miles wide in some stretches.

The maximum variations in the river level in Guaira are of 3 m, with an average of 2 m. The average slope is around 10-15 cm/km; the minimum depths along the navigation channel in the same period , are of the order of 1.8 m, reaching, in exceptional droughts, on the critical sections in the low Paranapanema and Morumbi, less than 1.0 m.

The Paraná River can be divided into five distinct sections, of which only the passage called "Alto Paraná” is wholly within the Brazilian territory. The Ilha Grande National Park covers the segment of the Paraná River between the mouth of the Ivaí River and the city of Guaira, having an extension of approximately 140 km, which is the last stretch of the Paraná River that has no dams.

In the fluvial system of the Paraná River, the Ilha Grande National Park can be understood as a subsystem, with a predominance of fluvial processes, defined by the integration of the variables: climate, soils, rocks, slope and vegetation cover and that, currently, are the main landscape modeling agents of the region. Although there are controversies about which is the actual configuration of the Paraná River, the multi-channel standard, with branches separated by large islands, has led several authors to classify the Paraná River as anastomosing, and sometimes intertwined.

Along the stretch of the Paraná River, in which the Ilha Grande National Park in located, is where four of its major tributaries flow into: on the right bank, the Amambai and Iguatemi; and on the left bank, the Ivaí and Piquiri. Slightly upstream of the north end of the park, also on the right bank, the Ivinhema river, whose floodplains and swamps, formed in the encounter with the Paraná River are also protected by a state conservation unit: the “Parque Estadual das Várzeas do Rio Ivinhema”. Other smaller rivers are also worth being mentioned. On the right bank of the Paraná River, are the Maracaí, Pirajuí and Morumbi rivers and on the left margin are: Córrego do Veado (stream), Paracaí River and São João. The drainage of the left bank of the Paraná River has a low average density and a sub-rectangular pattern, adapted to tectonic alignments predominantly in the directions SE-NW and SW-NE. In the right bank, more demoted, the drainage shows a pattern markedly anastomosed with vast lowland areas under permanent inundation. The density is low and with a sub-dendritic pattern.

**Temperature**

In Ilha Grande National Park the average is between 23 °C and 24 °C, in a narrow strip along the Paraná River valley, and 22 °C to 23 °C in the highest parts of the region. According to the Agronomic Institute of Paraná, the first quarter is the hottest; the average temperature is between 29 °C and 30 °C, in a narrow strip along the Paraná River valley. The coldest quarter of the year is June, July and August, averaging between 18 °C and 19 °C along the Paraná River and some of its tributaries in the region river valley. The mean maximum temperatures recorded for the region vary between 21 °C and 24 °C in June and 30 °C to 33 °C between December and February. Minimum temperatures vary between 9 ° C and 12 °C in June and July, and 18 °C to 21 °C, from November to March. The annual monthly averages are between 21 °C and 24 °C between December and February, and 15 °C and 18 °C in June and July.

**Precipitation**

The distribution of rainfall in the Ilha Grande National Park is irregular, presents the wettest quarter in December, January and February, with average between 400 and 500 mm. The driest quarter, June, July and August, shows average rainfall between 200 and 225 mm in the upper third of the Park, near the Paracaí River, and between 225 and 250 mm of this portion to the south. At the north end of the park, the average annual rainfall is between 1,200 and 1,400 mm and in the rest of Unit 1400-1600 mm.

**17. Physical features of the catchment area:**

The portion of the Paraná River, which comprises the region surrounding area of the park, the left and right margins of the Parana River have distinct characteristics. Most of the left margin (Paraná) consists of an extensive floodplain between Vila Yara, city of Altonia - PR, to the mouth of the Xavier River, while the right bank (Mato Grosso do Sul), is characterized by an undulating and high landscape, product of the Caiuá Formation outcrop, where the occurrences of large floodplains are limited to mouths and valleys of Amambai, Maracaí and Iguatemi rivers.

In the Park, in recent fluvial deposits from the river bed can be distinguished into two main groups: the bar deposits, which are the forms emerged during periods of low flow; and the bottom deposits, which are permanently submerged. Both are originated by the sediment load transported by the river, being these two deposits extremely important for the biota that inhabits the region, by offering various types of environments and microhabitats.

Temporary plant communities are established in sandy bars, composed of herbs, sub-shrubs and shrub, often precursors to more developed communities, which may or may not result in new environments and islands, which are quickly colonized by wildlife. The sandy beaches that emerge in the middle of the Paraná River are sought by birds as a place of rest, food and reproduction. The bottom bars are represented by dunes, with up to 0.50 m wide, overlapping the larger forms, 600 m wide and over 1.50m in height, offering protected sites and microhabitats for aquatic fauna.

Over the deposits, generally fragmented and preserved by recent levees, there are paleochannel structures, ponds and wetlands, alluvial fans and levees. This distinct geomorphological feature also affects a variation in soils and, consequently, the primitive vegetation cover along the banks.  
The whole Ilha Grande National Park is composed of floodplains of the Paraná River and its islands, that has a flat topography, with higher margins (levees), ranging from a few inches to two or three meters. Along the ancient road that connected Port Figueira to Porto Santo Antônio, in Ilha Grande, the recorded altitude was of 229m above sea level and along the entire length of the park this altitude varies imperceptibly. The "climax" of the Park is the “Paredão das Araras”, on the continental margin of the Paraná River, in Porto Camargo, municipality of Icaraíma. In this place, the average altitude is 240 m (PNIG Management Plan 2008).

**18. Hydrological values:**

The Ilha Grande National Park consists of a fluvial archipelago, located on the Paraná River, with hundreds of flat islands. Any change in land use in the vicinity of the river, may influence erosion and promote changes in the river’s dynamics. In this case, the fluvial dynamic is responsible for the formation of a great variety of biological nuclei structures and specific conditions that together determine the local ecosystem, namely, the existence of areas of active and semi-active channels, ponds and elongated shallows associated with paleochannels and shoals associated with flooded basin beyond the river bars, shapes with varying degrees of mobility arising from the deposition of the transported sand.

Regarding ecosystem services provided by the Ilha Grande National Park, we can mention, among others characteristic of wetlands in general:

The flood pulse, characteristic in floodplains, is responsible for the high productivity of these systems because they provide nutrients and carry debris, thus influencing nutrient cycling. The primary productivity wetlands and other functions are enhanced by flood conditions and wrists or decreased by stagnant conditions (Mitsch and Gosselink, 1993).

Wetlands associated with the flooding of rivers systems are considered "open" because they receive water mainly for surface flows, which promotes intensive exchange of material with adjacent areas (US EPA, 2008).

Esteves (1998) comments that due to the high primary productivity and little decomposition, wetlands are capable of storing carbon in plant biomass without intense decomposition, characterizing well as environments that contribute to the maintenance of atmospheric and climatic conditions. The degradation of wetlands cause, however, the release of CO2 exacerbating climate change on the planet. The wetlands soil is hydromorphic soil dominated anaerobic conditions, with a thin oxide layer on the soil-water interface, resulting in little decomposition of organic matter. Hydrological conditions can alter soil conditions allowing the establishment of vegetation that adapts to changes, particularly for the oxygen content. It is estimated that freshwater wetlands harboring 40% of all world species and 12% of animal species. The combination of shallow, high levels of nutrients and high productivity rates primary features biodiversity wetlands as the basis of various food webs (Mitsch and Gosselink, 1993).

The US Environmental Protection Agency (US EPA) describes the main functions of wetlands:

- Receive, store and release water, either physically through the underground and surface water, as well as biologically, through transpiration by vegetation, contributing to the hydrological cycle, both local and global, keeping water flows when conditions are drier or replenishing groundwater.

- Intercept runoff and dampen the energy of the currents.

- Wetlands reduce downstream flood peaks, preventing flooding and erosion. This protection results in lower financial losses, as well as the protection of human health, safety and well-being. It also improves navigation, since they reduce sedimentation in river channels.

- Remove or retain nutrients or other biodegradable substances, process organic matter and reduce suspended sediment, making the mitigation of environmental problems, such as eutrophication. The retention of nitrogen and phosphorus is one of the most important attributes of wetlands, particularly those receiving pollution from non-point sources or residuary waters. The succession of periodic flooding and drought events is an essential component in the maintenance and evolution of wetlands. Although the organisms are adapted to dry and wet variations, the extreme conditions of these events are stressful for the species (Esteves, 1998). Many cases of endemic species in wetlands occur and, due to the degradation of these environments, there has been a greater decline in the number of such species in Environmental Protection Agency (EPA). Wetlands functions and values[[2]](#footnote-2).

**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*.

**Inland: N • P • Tp**

**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.

**The lagoons of the Paraná River floodplain**

Regarding the lakes formed on the floodplain, these add up to an area of ​​1,230.00 ha and have, in general, elongated shapes sub-parallel or oblique to the general direction of the Paraná River. This configuration is due, mainly, to the isolation of the main paleo river channel clogged and blocked at one or both ends that originated them.

Some of these ponds have channels of communication with the Paraná River, as is the case of Saraiva, Jatoba, the Fathers and São João, while others depend directly on the pulse full so that their water comes into contact with the river.

In environmental terms, the ponds are of utmost importance for the regional fauna, especially the fish, the use it part of the life cycle for foraging and resting. For this group, it is essential that there is communication between the (s) pond (s) used (s) and the Parana River. Even those who have no permanent link with the river are also used, but at a frequency that matches the great floods.

For certain waterfowl these sites are used as shelter and foraging. The same is true for many mammals with close relationship with the water as the marsh deer (*Blastocerus dichotomus*), otter *Otter longicaudis*, capybara *Hydrochoerus hydrochaeris*, tapir South American Tapir, among others.

**20. General ecological features:**

Seasonal semi-deciduous forest (FES): Related to the occurrence of a climate with two distinct seasons: rainy and dry, or when there is a temperature variation. These conditions determine the leaf drop in some types of trees. Between 20% and 50% of the dominant trees lose their leaves in the unfavorable season.

• Alluvial FES: 1) in areas often covered by the waters, allowing the development of some species (e.g. embaúba, ingá); 2) in areas with more efficient drainage; 3) along the high banks of the islands and less subject to flooding (e.g. pau-d'alho , figueira-branca).

• Submontane FES: in areas not subject to flooding (eg. Mata do Bugio) with trees of around 20-25 m in height and shrubs inside. There are remnants of this forest type within the PNIG only in surrounding areas.

Pioneer Formations with fluvial-lacustrine Influence (floodplains, “varjões”):  
• It is the vegetation located in the floodplain of the Paraná River and its major tributaries, common at major islands and mainland floodplains.

• Formed by grasses and shrubs, which are adapted to the effects of floods.

Rupicolous vegetation (of rocks):

• Composed of shrubby plants whose occurrence is restricted to rocky cliffs.

• Little studied due to the difficult access.

Macrophytes:

• Aquatic plants seen mainly in channels along the river. In high concentrations can block the passage of vessels.

• They can be floating or submerged (totally/partially).

• Importance: act in nutrient cycling in the water and food, and wildlife protection.

The Ilha Grande National Park is an important component of ecological corridors, also known as biodiversity corridors or hallways of the Paraná River fauna, particularly to assist in the preservation of species such as the jaguar *Panthera onca*, which need large territories to survive and depends on these protected environments for shelter and finding food. These corridors cross international borders and connect protected areas in Argentina and Paraguay to the Brazilian protected areas.

**21. Noteworthy flora:**

There are 505 species of plants recorded in the Ilha Grande National Park (Conservation Unit Management Plan). Species were categorized in four groups according to rate of conservation interest, criteria defined by the teams that made the diagnosis of the Management Plan.

The first category, species targeted for extraction and illegal trade, includes two species: *Pfaffia glomerata* ("Brazilian ginseng", medical use) and *Polygonumsp*. ("erva-de-bicho", medical use). The second group includes endangered species according to the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA IAP) list of threatened plants (MMA, 2008), includes 10 species of plants (see annex II), of which one (*Aspidosperma polyneuron*) is categorized as Endangered by the IUCN Red List. See annex 2.1 for a list of threatened plant species. The third group refers to unprecedented records of species occurrence for the state of Parana, and has three species: *Desmoncus sp*., *Pontederia parviflora*, and *Mimosa sp*. The fourth category refers to exotic species found in the site and includes 17 species, listed in annex 2.2.

#### Pioneering training with tidal influence lacustrine

#### It is understood by Pioneer Formations plant communities that colonize and inhabit spaces newly created by nature or have unfavorable environmental conditions to most terrestrial plants, like the sandy bars, constantly formed and destroyed along the Paraná River and basin flooding the interior of the islands.

#### The Influence of Pioneer Formations fluvial-lacustrine are the dominant type of vegetation in the National Park and perform ecological functions of great importance to the Paraná river basin and in relation to biodiversity, such as house the marsh deer dichotomus Blastocerus, threatened extinction, and serve as a breeding area and development of migratory fish this river.

**Association of Aquatic Macrophytes (ASMA)**

The macrophytes are defined as plant species visible to the naked eye and with permanent photosynthetic organs for several months or years, totally or partially submerged in fresh or brackish water, or floating (Irgang and Gastal Junior, 1996). They are characterized as important sources of food, they serve as a place of refuge for animal species vertebrates and invertebrates and act in nutrient cycling processes (Esteves, 1998).

In the National Park of Ilha Grande, the Associations of Water macrophytes were observed occurring in areas of influence of Pioneering Training Fulvio Lacustre in internalized ponds at the mouth and on the banks of small streams and the river itself Paraná, finding these cases with lower energy environments (blackwaters). (PNIG Management Plan 2008)

**22. Noteworthy fauna:**

There are 98 species of fish, 20 species of anphibians, 49 species of reptiles, 423 species of birds, and 46 species of mammals recorded in the Park so far. As it was done with plants, there are six groups of species of interest for conservation.

1)Fish: For commercial exploitation: *Pseudoplatystoma corruscans,* “pintado”; *Paulicealuetkeni*, “jaú”; *Salminus brasiliensis*, “dourado”; *Rhinelepisaspera*, “cascudo”; *Brycon orbignianus*, “piracanjuba”; *Piaractus mesopotamicus,* “pacu”. (Information obtained from the Management Plan of the Ilha Grande National Park). Which are usually those who perform reproductive migration and successively use the floodplain environments (floodplain) and the riverbeds during its life cycle (PNIG Management Plan 2008).

There are also five fish species threatened of extinction occurring in the Ilha Grande National Park, according to the Red Book of Endangered Brazilian Fauna(MMA, 2008) (see annex I.1).

2) Reptiles: *Spilotes pullatus*, “caninana”; *Chironius laevicollis*, “cobra-cipó”; *Eunectes sp*., “sucuri”; *Liophis frenatus* and *L. jaegeri*, “cobra-de-listras”; *Helicops sp*., “cobra-d’água”; *Ophiodes fragilis*, “cobra-de-vidro”; *Caiman latirostris*, “jacaré-do-papo-amarelo”; *Phrynops sp*., “cágado”. (Information obtained from the Management Plan of the Ilha Grande National Park).

They may be less threatened in the short and medium term, with regard to their habitats, but on the other hand, are of importance to the State of Paraná, in relation to its mega biodiversity, because they have restricted occurrence in the river basin Paraná, more specifically to its trough (PNIG Management Plan 2008).

3) Birds: Relevance for conservation according to their residence status in the Park (see annex 2.4).

4) Migratory birds: There are 22 migratory species of birds in the Park, see annex 2.5 for a list.

5) Endemic birds: There are 33 endemic species that occur in the Park, with different levels of endemism. For a list of species, see annex 2.6.

6) Exotic birds: There are two recorded exotic species of birds in the Park: *Columba livia* (pombo) and *Passer domesticus* (pardal).

**23. Social and cultural values:**

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

Several archaeological sites are protected by the Ilha Grande National Park, of which currently 70 are registered. These sites tell the story of the indigenous people who lived in this region and its relations with the Spaniards in the first post-discovery century Brazil.

Cultural events in the region

Most of the cultural manifestations found in the region are related to the Paraná River, since the relationship of communities with the river is very strong and constitutes, together with its islands, floodplains and lagoons, a factor of pride for the local population. Cultural events identified in municipalities of the area surrounding the Ilha Grande National Park relate to the typical gastronomy, fishing and regional festivals. No event or cultural activity takes place within the National Park. However the administration of the Park participates indirectly in some events, especially those with educational character.

The cuisine is identified by the foods and drinks that are characteristic or traditional of a region and that are distinguished by their peculiar and/or exotic forms of production, presentation and/or tasting. It is an instrument to value and disseminate the culture and also a feature of attractiveness widely used by localities. Among the municipalities surrounding the Park area, Guaira has a typical dish: the “pintado na telha”. The other municipalities have their own characteristics based on comfort food with the influence of dishes from Minas Gerais, the northeastern Brazil and Paraguay. The latter is observed in the habit of enjoying the barbecue accompanied by cassava and a typical drink: the tereré (type of mate tea prepared with cold water). Rural areas have the characteristic of producing food from what is cultivated in the fields, especially cassava and corn, and coffee toasting for their own consumption.

Sport fishing is manifested especially in the form of festivals and fishing tournaments, fishing events, which are carried out in boats in the Paraná River. They occur in almost all municipalities surrounding the Ilha Grande National Park area and are part of the Brazilian National Sporting Calendar, attracting participants from all over Brazil and neighboring countries. The enforcement involving fishing is the responsibility of IBAMA and IAP (Environmental Institute of Paraná), which, by ordinances, regulations or other instruments, set standards on fishing closure period, among others (e.g. IBAMA Normative Instruction No. 25 /2009 and 26/2009 , IAP Ordinance No. 211/2012).

It is also common in the cities surrounding the area of the Conservation Unit, the realization of traditional festivities related to specific sites or topics: in Guaíra, there is the “Festa das Nações”, the festival "Virgem de Los Milagros Caacupé ", the Transparaná (off road competition) and the “Festa Nacional do Pintado na Telha”; In Querência do Norte, the feasts of Porto Natal and Arroz; in Eldorado, the Expo Eldorado and Watermelon Festival; in Novo Mundo, the “Festa das Nações”.

Handicraft

Has little significance in the Park area, except in Guaíra, where the artisanal production has a local history, involving indigenous and sacred grounds.

Architectural Heritage

In the Ilha Grande National Park region, highlights the neighborhood Vila Velha, in Guaira, with the presence of public and residential buildings constructed in the late nineteenth century.

1. Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box  and describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

**24. Land tenure/ownership:**

(A) within the Ramsar site

Current Private Area 25,104.83 (33.0%)

Current Public Area 50,928.29 (67.0%)

PNIG Total Area 76.033,12 (100.0%)

(B) surrounding area the Ramsar site

The surrounding area of the Park is mainly private property; in the state of Paraná predominate properties of large landowners and in Mato Grosso do Sulpredominate large estates and rural settlements.

**25. Current land (including water) use:**

1. within the Ramsar site:

Inside the Ilha Grande National Park, the land use is based on the zoning defined by the Management Plan, with most of the area for conservation. Other sites are intended for use focused on tourism and maintenance/protection.

1. in the surroundings/catchment:

Between the decades of 1940 1980, the native forest of the region surrounding the Ilha Grande National Park area was devastated to make way for the cultivation of coffee. With the fall of the coffee prices and the loss of soil productivity in the region, crops were replaced by huge pastures. Currently the same process occurs with soybeans, wheat and sugar cane, valued in the international market and for biofuels, which compensates for investments in production technology and inputs to compensate for the soil limitations.

Among the types of crops surrounding the Park, the permanent are less impactful to the soils and rivers, having never fully expose the soil to rain and winds. Among them are fruit trees, coffee and tea of India, predominant in Paraná.

Among the temporary crops in the planted area are corn, soybeans, sugar cane and cassava. While sugar cane is the predominant crop in Mato Grosso do Sul, the rest comprise over half of the planted area in Paraná. In addition to these crops wheat, beans, rice, cotton and peanuts are also produced.

The predominant livestock is cattle, pigs, horses, sheep and poultry, including sericulture and apiculture. The largest concentration of cattle occurs in Mato Grosso do Sul, which has more than 60 % of the herds. Paraná, on the other hand, is a strong producer of poultry, pork, silkworm and beekeeping.

The extraction of sand along the great rivers, especially the Paraná River, in the immediate surroundings of the Ilha Grande National Park, is an important activity in the regional economy, however, a significant proportion of companies acted illegally at the time of creation of the National Park. Thanks to a joint effort between IBAMA and IAP (Environmental Institute of Paraná) most of them were regularized and are monitored by environmental agencies.

The main ports for sand are in the municipalities of Guaíra, Altonia, Icaraíma and Alto Paraíso, in the State of Paraná.

**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:

**Fires**: Alter the availability of resources, destroy protection shelters and kill animals (burned or by smoke intoxication). The fire directly affects the animals, destroying adults, nests, eggs and chicks, and indirectly, even temporarily, suppressing and impoverishing the environments. Moreover, one must consider the high costs to fight it and regional pollution that this causes.

**Beekeeping**: It is estimated that within the Ilha Grande National Park, there are about 10,000 bee boxes, according to the Beekeepers Association of Paraná. The presence of beehives in the park causes the displacement of the native insect fauna; the attack of wild animals and people (one death observed and several injuries of the fire brigades with *Apis mellifera*); swarming and the occupation of important trees for the local wildlife, competition with Africanized bees *Apis mellifera* – with native species, changing the environment for their creation, as well as due to the preferential pollination of certain species, the use of fumigant (to control the hives by smoke), can accidentally cause fires on site. Moreover, the activity has some importance in generating additional income for the locals, and its importance in regional economic context has been growing.

**Trampling of wildlife**: The trampling of animals can be considered a stress of great importance and concentrated on the highway BR-487, bridges Luiz Eduardo Magalhães, where vehicles travel at high speed down the highway without any control and at any time. Usually accidents occur at night when the headlights dims and these animals lose their sense of direction. Bumps were installed in 2011 on the stretch of highway that bisects the Bandeirantes island, located at the northern of the national parkand since then there were no more road kills recorded on site.

**Presence of cattle on the islands and on the plains of the mainland**: It causes soil compaction, which results in changes in the drainage and water regime, causing its impoverishment. They compete for food and space with native wildlife species, particularly herbivores, besides being a form of introducing diseases.

**Drainage of floodplains:** Drains alter any site water regime and, when very large, the change occurs at a regional level. The lowering of the water level in the organic soils, for example, causes subsidence (lowering) of the organic layer, which varies according to its depth, which causes destabilization of trees and changes in the communities that are dependent on saturated soils. The fragility of this environment, as its ecological importance and for the maintenance of biodiversity, led to the publication of a Joint Resolution IBAMA/EMS/IAP Nº 005/2008, which establishes standards for the conservation of wetlands in the state of Paraná, and contemplating, in this way, the Ilha Grande National Park.

**Hunting, capture and predatory fishing:** Large animals such as deer and capybaras, whose population is decreasing substantially, are targets of hunters. Armadillos, “pacas” and birds, in general, do not escape the sight of the "sportsmen" hunters. In the inland ponds used by fish for reproduction and growth, human presence is constant and irresponsible, since young individuals aren’t spared, nor the reproductive period of the species is respected.

**Introduction of Exotic Species**: The activities of "stocking", performed mostly by electric companies were responsible for introducing over twenty species of fish in the Paraná River basin, of which the “curvina” *Plagioscion squamosissimus* and “tucunaré” *Cichla monoculus* are among those who have caused the economic losses to regional fisheries and negative impacts on biodiversity. Besides the fish found in the region, there is presence of two mollusks, the curbícola *Curbicula fluminea* and golden mussel *Limnoperna fortunei*. The introduction of exotic species can cause the reduction or extinction of local populations, due to competition for food, shelter and spread of parasites. The extinction of species or the modification of its composition in ecosystems can cause irreversible losses of genetic resources, potential food supplies and control of diseases and the destabilization of ecosystems.

**Trash:** The activities of fishing and boating along the Paraná River originate junk found in the waters or on the shores of the Ilha Grande National Park islands. The problem of garbage can be seen throughout the Paraná River; however, is concentrated on recreational areas, fishing spots, small ports, vacation homes or permanent residences, and along PR - 082 highway, which cuts the Bandeirantes Island.

**Suppression of riparian forests**: The elimination of riparian forests of Ilha Grande National Park jeopardizes the survival of animal species, terrestrial or aquatic, that depend on the forest environment for shelter and food. Moreover, exposes soil and river banks to erosion, causing sedimentation and formation of large gullies. The loss of archaeological sites in these locations, can be added to this damage

b) in the sorrounding area:

**Ginseng Exploration**: Another economic activity of high negative impact on the Ilha Grande National Park region, and that has reduced since 2001, is the exploitation of Brazilian ginseng *P. glomerata*. It is suspected that there might be a relationship between the collecting of this plant and fires, since the elimination of grasses facilitates the removal of the plant. The extraction of this plant brings environmental damage through burning, represents a threat to endangered species and, at the same time, offers no financial return to the region, since it is illegal. Currently, there are indications that this activity has declined after enforcement actions in the region. (This activity does not occur on the site. "Ceased to exist").

**Contamination of soil and water:** The use of chemicals (herbicides, fertilizers etc.) has as major consequences, the elimination of populations of pollinator insects and changes in the dynamics of natural communities, changes in water quality of rivers and lakes by carrying of chemical substances applied to croplands; interference in the aquatic food chain, genetic mutations and risks to the survival of species within the Ilha Grande National Park. Another source of water pollution is the presence of companies developing potentially polluting activities and that are located upstream of the Park in Mato Grosso do Sul: starch manufacturers, tanneries, meat packing industries in general (problems with coloring) and sugar and alcohol plants, among others.

**Mining:** In the Park region, extraction of sand and clay from the Paraná River flood plain is also an economic activity that causes significant environmental impacts. The extraction of sand from riverbeds is done through suction pumps installed on vessels discharging the material periodically at ports along the river. The extraction of clay is made up digging large pits in lowland areas, which are abandoned when clay explored exhausts.

**27. Conservation measures taken:**

**a)** List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:

The site constitutes a conservation unit of integral protection, classified as 'National Park'. According to the Brazilian System of Conservation Units (SNUC), this category has, as its basic objective, the preservation of natural ecosystems of great ecological significance and scenic beauty, making it possible to conduct scientific researches and the development of environmental education and interpretation activities, recreation in contact with nature and eco-tourism. The Ilha Grande National Park was created in 1997 by Federal Decree w/n°, September 30th,1997, with an area of approximately 76.033,12 hectares.

**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)** Does an officially approved management plan exist; and is it being implemented?:

Yes, approved in 2008.

**d)** Describe any other current management practices:

Public visitation is subject to the rules and restrictions set forth in the Management Plan of the unit and the standards established by the agency responsible for its administration. Scientific research requires prior authorization from the agency responsible for managing the unit and is subject to conditions and restrictions established by it.

**28. Conservation measures proposed but not yet implemented:**

Related to the management and conservation activities of the Ilha Grande National Park contained in its management plan, booklet 4, approximately 2/3 of them have not been implemented. See Annex 3 for a summary table with the conservation measures and level of implementation in the Park.

**29. Current scientific research and facilities:**

In 2016, 16 scientific research activities are in progress inside the National Park, all of them authorized by SISBIO, a governmental system that analyses research requests. These requests involve specially bothanic and fishes.

The Ilha Grande National has two headquarters in Guaíra (operating, protection) and one in Umuarama (administrative). It also has a building in Icaraíma with accommodation for visitors and local staff and a place for lectures and meetings. In addition, it has five vehicles and three boats.

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

The Ilha Grande National Park develops in partnership with public and private institutions, a project of environmental education called "Rio + Limp”, which focuses on cleaning both of the banks of the Archipelago, as well as the riverside residences within the islands. A major objective is to integrate to the project, the various environmental agencies with other public and private sectors, among other volunteers, to spread, and thus increase, the awareness on environmental issues, aiming toward the participation of society in the conservation process.

**31. Current recreation and tourism:**

Little is being done regarding tourism in the Ilha Grande National Park. Logistically, there are only two shipping companies in Guaira that operate in the south of the Park with two vessels with capacity for 70 people each. They offer, informally, a ride up the Paraná River, entering the Saraiva Lagoon (within the Conservation Unit) for contemplation, sailing over a stretch of the river, dock in the Island of São Francisco where there is a poor track with the presence of residents and domestic animals. Then they follow to the Rodrigues Island, where there are houses used by vacationers, water, tables, electricity, to rest and feed the visitors. Afterwards, it returns to Guaíra.

Because of the informality and irregular conditions of occupation of sites visited, it was not possible to organize and officially authorize this tour. Another factor that limits the organization is the regularization of land tenure of the park; most of the islands are composed by lots given by INCRA that need to be compensated, for instance the places where the Management Plan allowed this activity were private property. It means that some appropriate places for public use have yet to be compensated. After great effort of CGFUN and the Park Staff, the regularization advanced, and as a consequence, today it is possible to implement trails for visitation in some areas.

The only track was the one quoted above, there is no entrance fee and no control or monitoring. There are other places visited by vacationers, anglers, groups of students accompanied by improvised guides, who enter the islands of the Park in unauthorized places, with no control of the visitation.

As one of the objectives of the Ilha Grande National Park is the existence of visitation, and the team has been directing efforts with partners to implement the planned trails in the Management Plan and create a local structure with minimum conditions to provide comfort for visitors.

**32. Jurisdiction:**

Ministry of Environment (Ministério do Meio Ambiente), Esplanada dos Ministérios - Bloco B

CEP 70068-900 - Brasília/DF

Chico Mendes Institute for Biodiversity Conservation (Instituto Chico Mendes de Conservação da Biodiversidade). Regional nº 9 Florianópolis

**33. Management authority:**

Romano Pulzatto Neto, Manager of Ilha Grande National Park

Email: [romano.pulzatto-neto@icmbio.gov.br](mailto:romano.pulzatto-neto@icmbio.gov.br), Phone number: (44) 3624-1776

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Please return to: **Ramsar Convention Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**

Telephone**: +41 22 999 0170** • Fax: **+41 22 999 0169** • e-mail: **ramsar@ramsar.org**

**Appendix**

**Annex 1. Lists of animal species.**

**1.1 List of threatened fish species according to the Red Book of Endangered Brazilian Fauna.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Taxon** | **Popular Name** | **Species Situation in Brazil** | **Species Situation in Paraná State** |
| *Brycon orbignyanus* | Piracanjuba | threatened | EN |
| *Myleus tiete* | Pacu-prata | threatened | Without info |
| *Sternarchorhynchus britskii* | Tuvira | threatened | Without info |
| *Gymnogeophagus setequedas* | Cará | threatened | VU |
| *Steindachneridion scriptum* | Surubim | threatened | VU |

**1.2 Threatened bird species that occur in the Park.**

| **Taxon** | **Popular name** | **Habitat** | **Status** | **Ocorr.** | **Threat context** |  | |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | **PNIG** | **RE** | **PR1** | **BR2** | **IUCNRed List** | **CITES** | **CMS appendices** |
| *Crypturellus undulatus* | Jaó | Forest | Resident | X | X | X |  |  |  |  |
| *Rhea americana* | Ema | Campestral | Resident | X | X | X |  | NT |  |  |
| *Pilherodius pileatus* | garça-real | Palustral, aquatic | indet. |  | X | X |  |  |  |  |
| *Botaurus pinnatus* | socó-boi-baio | Palustral, aquatic | Resident | X | X | X |  |  |  |  |
| *Cochlearius cochlearius* | Arapapá | Aquatic, forest | Resident |  | X | X |  |  |  |  |
| *Anhima cornuta* | Anhuma | Aquatic,  palustral | indet. |  | X | X |  |  |  |  |
| *Spizaetus ornatus* | gavito-de-penacho | Forest | [extinto] |  | X | X |  | NT |  |  |
| *Circus buffoni* | gavito-do-mangue | Palustral | Resident | X | X | X |  |  |  |  |
| *Pipile jacutinga* | Jacutinga | Florest | [extinta] |  | X | X | X | EN | X |  |
| *Crax fasciolata* | mutum-de-penacho | Forest | Resident | X | X | X |  | VU |  |  |
| *Heliornis fulica* | Picaparra | Aquatic, forest | indet. |  | X | X |  |  |  |  |
| *Cariama cristata* | Seriema | Campestral | Resident |  |  | X |  |  |  |  |
| *Columbina minuta* | rolinha-de-asa-canela | Campestral | Resident | X |  | X |  |  |  |  |
| *Geotrygon violacea* | juriti-vermelha | Forest | [extinta] |  | X | X |  |  |  |  |
| *Ara chloroptera* | arara-vermelha-grande | Forest | [prov. Extinta] |  | X | X |  |  |  |  |
| *Propyrrhura maracana* | maracant-do-buriti | Forest | [extinta] |  | X | X |  | NT |  |  |
| *Aratinga aurea* | periquito-rei | Forest | Resident | X | X | X |  |  |  |  |
| *Amazona amazonica* | Curica | Forest | [extinta] |  | X | X |  |  |  |  |
| *Amazona vinacea* | Papagaio-de-peito-roxo | Forest | [extinto] |  |  |  | X | EN | X |  |
| *Coccyzus julieni* | Papa-lagarta-de-euler | Forest | indet. |  | X | X |  |  |  |  |
| *Chrysolampis mosquitus* | Beija-flor-vermelho | Forest | indet. | X |  | X |  |  |  |  |
| *Heliomaster longirostris* | Bico-reto-cinzento | Forest | indet. |  | X | X |  |  |  |  |
| *Jacamaralcyon tridactyla* | Cuitelto | Forest | [extinto] |  | X | X |  | VU |  |  |
| *Galbula ruficauda* | Bico-de-agulha-de-rabo-vermelho | Forest | Resident |  | X | X |  |  |  |  |
| *Nonnula rubecula* | Macuru | Forest | [extinta] |  | X | X |  |  |  |  |
| *Pteroglossus aracari* | Araçari-de-bico-branco | Forest | Resident |  | X | X |  |  |  |  |
| *Dryocopus galeatus* | Pica-pau-de-cara-amarela | Forest | [extinto] |  | X | X | X | VU |  |  |
| *Herpsilochmus atricapillus* | Chorozinho-de-chapéu-preto | Forest | [extinto] |  | X | X |  |  |  |  |
| *Synallaxis hypospodia* | Joto-grilo | Palustral | Resident | X | X | X |  |  |  |  |
| *Philydor dimidiatus* | Limpa-folha-do-brejo | Florestal | Resident | X | X | X |  |  |  |  |
| *Hylocryptus rectirostris* | Fura-barreira | Forest | Resident | X | X | X |  |  |  |  |
| *Lepidocolaptes angustirostris* | Arapaçu-do-cerrado | Campestral  Forest | Resident | X | X | X |  |  |  |  |
| *Phyllomyias burmeisteri* | Poiaeiro-do-sul | Campestral | [extinto] |  | X | X |  |  |  |  |
| *Phaeomyias murina* | Bagageiro | Forest | Resident | X | X | X |  |  |  |  |
| *Sublegatus modestus* | Sertanejo | Campestral | indet. | X |  | X |  |  |  |  |
| *Suiriri suiriri* | Suiriri-cinzento | Campestral | indet. | X |  | X |  |  |  |  |
| *Xolmis velatus* | Noivinha-branca | Campestral | Resident |  | X | X |  |  |  |  |
| *Heteroxolmis dominicana* | Noivinha-de-rabo-preto | Campestral, Palustral | indet. |  |  |  |  | VU |  |  |
| *Alectrurus tricolor* | Galito | Campestre, palustral | indet. |  |  |  | X | VU |  | I and II |
| *Antilophia galeata* | Soldadinho | Florestal | Resident | X | X | X |  |  |  |  |
| *Cyanocorax cyanomelas* | Gralha-do-pantanal | Florestal | Resident | X | X | X |  |  |  |  |
| *Sporophila leucoptera* | Chorto | Palustral | Resident | X | X | X |  |  |  |  |
| *Sporophila palustris* | Caboclinho-de-papo-branco | Palustral | Migrate from South |  | X |  | X | EN |  | I and II |
| *Sporophila cinnamomea* | Caboclinho-de-chapéu-cinzento | Palustral | Lagoon | X |  |  | X | VU |  | I and II |
| *Oryzoborus maximiliani* | Bicudo | Forest | Resident | X | X |  | X | VU |  |  |
| *Oryzoborus angolensis* | Curió | palustral | Resident | X | X | X |  |  |  |  |
| *Psarocolius decumanus* | Japu | Forest | Extint |  | X | X |  |  |  |  |
| *Cacicus solitarius* | Iraúna-de-bico-branco | Foreste | Resident | X | ? | X |  |  |  |  |
| *Scaphidura oryzivora* | Iraúna-grande | Forest | Resident |  | X | X |  |  |  |  |

Information obtained fromthe Management Planof theIlha Grande National Park(2008).  
1Source: Parana/EMS(1995). For the Paraná listof threatened species, disregardingthe speciesregistered onlyin Mato Grosso doSul.2 Source: National Listof Threatened Speciesof the Brazilian Faunapublishedby the Ministryof EnvironmentonMay 22, 2003. 3Source: BirdLife International (2000). Cation: PNIG: Ilha GrandeNational Park, RE: Regionsurrounding area; PR: Parana, BR: Brazil; Mus: Museum.

Of the species listed as endangered above, three are listed in the Red Book of Endangered Brazilian Fauna (MMA, 2008).

|  |  |  |  |
| --- | --- | --- | --- |
| Taxon | Popular Name | Brazil status | Paraná Status |
| *Sporophila maximiliani* | Bicudo | Threatened | Nto consta |
| *Sporophila cinnamomea* | Caboclinho-de-chapéu-cinzento | Threatened | EN |
| *Alectrurus tricolor* | Galito | Threatened | EN |

**1.3 Threatened mammal species that occur in the Park.**

|  |  |  |
| --- | --- | --- |
| **Threatened taxons** | **Conservation status** | |
| *Myrmecophaga tridactyla* | | Endangered (IUCN Vulnerable) |
| *Alouatta fusca* | | Vulnerable |
| *Chrysocyon brachyurus* | | Endangered (IUCN Near Threatened) |
| *Lontra longicaudis* | | Vulnerable (Appendix I CITES) |
| *Pteronurabrasiliensis* | | Extinct1 (IUCN Endangered; Appendix I CITES) |
| *Leopardus pardalis* | | Vulnerable (Appendix I CITES) |
| *Oncifelis colocolo* 2 | | (IUCN Near Threatened) |
| *Panthera onca* | | Endangered (IUCN Near Threatened; Appendix I CITES) |
| *Puma concolor* | | Vulnerable |
| *Tapirus terrestris* | | Endangered (IUCN Vulnerable) |
| *Tayassu pecari* | | Vulnerable (IUCN Vulnerable) |
| *Blastocerus dichotomus* | | Endangered (IUCN Vulnerable; Appendix I CITES) |
| *Agouti paca* | | Vulnerable |
| *Sylvilagus brasiliensis* | | Endangered |

(Data from the Ilha Grande National Park Management plan).

1Regarded as extinct by MARGARIDO (1995), recorded in Paraná river and published QUADROS *et al*. (in press); 2 without occurrence records for Paraná state.

**Species of mammals listed in the Red Book of Threatened Brazilian Fauna (MMA, 2008).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Taxon** | **Popular Name** | **Brazil Status** | **Paraná Status** |
| *Myrmecophaga tridactyla* | Tamanduá-bandeira | Threatened | CR |
| *Chrysocyon brachyurus* | Lobo-guará | Threatened | EN |
| *Panthera onca* | Onça-pintada | Threatened | EN |
| *Puma concolor capricornensis* | Onça-parda | Threatened | VU |
| *Pteronura brasiliensis* | ariranha | Threatened | EX |
| *Blastocerus dichotomus* | Cervo-do-pantanal | Threatened | CR |

**1.4 List of bird species relevant for conservation according to their residence status in the Park**

|  |  |  |
| --- | --- | --- |
| **Taxon** | **Popular name** | ***Status*** |
| *Crypturellus undulatus* | Jaó | resident |
| *Rhea americana* | Ema | resident |
| *Pilherodius pileatus* | Garça-real | indet. |
| *Botaurus pinnatus* | socó-boi-baio | resident |
| *Cochlearius cochlearius* | Arapapá | resident |
| *Anhima cornuta* | Anhuma | indet. |
| *Circus buffoni* | gavito-do-mangue | resident |
| *Crax fasciolata* | Mutum-de-penacho | resident |
| *Heliornis fulica* | Picaparra | indet. |
| *Cariama cristata* | Seriema | resident |
| *Columbina minuta* | rolinha-de-asa-canela | resident |
| *Aratinga aurea* | periquito-rei | resident |
| *Coccyzus julieni* | papa-lagarta-de-euler | indet. |
| *Chrysolampis mosquitus* | beija-flor-vermelho | indet. |
| *Heliomaster longirostris* | bico-reto-cinzento | indet. |
| *Galbula ruficauda* | bico-de-agulha-de-rabo-vermelho | resident |
| *Pteroglossus aracari* | araçari-de-bico-branco | resident |
| *Synallaxis hypospodia* | joto-grilo | resident |
| *Philydor dimidiatus* | limpa-folha-do-brejo | resident |
| *Hylocryptus rectirostris* | fura-barreira | resident |
| *Lepidocolaptes angustirostris* | arapaçu-do-cerrado | resident |
| *Phaeomyias murina* | Bagageiro | resident |
| *Sublegatus modestus* | Sertanejo | indet. |
| *Suiriri suiriri* | suiriri-cinzento | indet. |
| *Xolmis velatus* | noivinha-branca | resident |
| *Heteroxolmis dominicana* | noivinha-de-rabo-preto | indet. |
| *Alectrurus tricolor* | Galito | indet. |
| *Antilophia galeata* | Soldadinho | resident |
| *Cyanocorax cyanomelas* | gralha-do-pantanal | resident |
| *Sporophila leucoptera* | Chorto | resident |
| *Oryzoborus maximiliani* | Bicudo | resident |
| *Oryzoborus angolensis* | Curió | resident |
| *Cacicus solitarius* | iraúna-de-bico-branco | resident |
| *Scaphidura oryzivora* | iraúna-grande | resident |

**1.5 List of migratory bird species that occur in the Park**

|  |  |  |
| --- | --- | --- |
| Taxon | Popular name | Status |
| *Pandion haliaetus* | águia-pescadora | migratory |
| *Falco peregrinus* | falcto-peregrino | migratory |
| *Tringa solitaria* | maçarico-solitário | migratory |
| *Tringa flavipes* | maçarico-de-perna-amarela | migratory |
| *Tringa melanoleuca* | maçarico-grande-de-perna-amarela | migratory |
| *Calidris minutilla* | Maçariquinho | migratory |
| *Calidris fuscicollis* | maçarico-de-sobre-branco | migratory |
| *Calidris melanotos* | maçarico-de-colete | migratory |
| *Coccyzus americanus* | papa-lagarta-norte-americano | migratory |
| *Riparia riparia* | Andorinha-do-barranco | migratory |
| *Hirundo rustica* | Andorinha-de-bando | migratory |
| *Hirundo pyrrhonota* | Andorinha-de-dorso-acanelado | migratory |
| *Dolichonyx oryzivorus* | triste-pia | migratory |
| *Podiceps major* | Mergulhto-grande | migratory |
| *Zonibyx modestus* | batuíra-de-peito-tijolo | migratory |
| *Pseudocolopteryx flaviventris* | tricolino-dourado | migratory |
| *Pyrocephalus rubinus* | Verto | migratory |
| *Hymenops perspicillatus* | viuvinha-de-óculos | migratory |
| *Tachycineta meyeni* | Andorinha-chilena | migratory |
| *Mimus triurus* | calandra-de-três-rabos | migratory |
| *Sporophila palustris* | Caboclinho-de-papo-branco | migratory |
| *Sporophila dinnamomea* | Caboclinho-de-chapéu-cinzento | migratory |

**1.6 List of endemic bird species that occur in the Park.**

|  |  |
| --- | --- |
| **Species** | **Popular name** |
| **Species which distribution in Brazil is limited to the National Park and its surrounding area** | |
| *Pseudocolopteryx dinellianus* | tricolino-da-argentina |
| **Species whose distribution in Mato Grosso do Sul is limited to the National Park and its surrounding area** | |
| *Podiceps major* | Mergulhto-grande |
| *Leucopternis polionota* | gavito-pombo-grande |
| *Aramides saracura* | Saracura-do-mato |
| *Eleothreptus anomalus* | Curiango-do-banhado |
| *Cypseloides senex* | Andorinhto-velho-da-cascata |
| *Stephanoxis lalandi* | beija-flor-de-topete |
| *Mackenziaena severa* | Borralhara |
| *Elaenia parvirostris* | Guaracava-de-bico-pequeno |
| *Serpophaga nigricans* | joto-pobre |
| *Todirostrum plumbeiceps* | Ferreirinho-de-cara-canela |
| *Tachycineta meyeni* | Andorinha-chilena |
| *Atticora melanoleuca* | Andorinha-de-coleira |
| *Euphonia chalybea* | cais-cais |
| *Donacospiza albifrons* | tico-tico-do-banhado |
| *Emberizoides ypiranganus* | canário-do-brejo |
| *Agelaius thilius* | Sargento |
| **Species whose distribution in Paraná is limited to the National Park and its surrounding area** | |
| *Vultur gryphus* | condor-dos-andes |
| *Dendrocygna autumnalis* | asa-branca |
| *Calidris minutilla* | Maçariquinho |
| *Amazona amazonica* | Curica |
| *Polytmus guainumbi* | beija-flor-dourado-de-bico-curvo |
| *Heliomaster longirostris* | bico-reto-cinzento |
| *Herpsilochmus atricapillus* | Chorozinho-de-chapéu-preto |
| *Formicivora rufa* | papa-formigas-vermelho |
| *Philydor dimidiatus* | limpa-folha-do-brejo |
| *Todirostrum latirostre* | Ferreirinho-de-cara-parda |
| *Antilophia galeata* | Soldadinho |
| *Neochelidon tibialis* | Calcinha-branca |
| *Basileuterus leucophrys* | pula-pula-de-sobrancelha |
| *Sporophila ruficollis* | Caboclinho-paraguai |
| *Sporophila palustris* | Caboclinho-de-papo-branco |
| *Oryzoborus maximiliani* | Bicudo |

**Annex 2. Lists of plant species.**

**2.1 Official list of endangered plant species according to the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA IAP) list of threatened plants (MMA, 2008)**

|  |  |
| --- | --- |
| **Species** | **Popular name; Extincton cathegory** |
| *Astronium* cf. *graveolens* Jacq. | caju-do-mato; rare species |
| *Xylopiaaromatica* (Lam.) M. C. Dias | Pindaíba; threathened of extinction |
| *Aspidosperma* cf. *polyneuron* M. Arg. | peroba-rosa; rare species |
| *Hymenaea* cf. *courbaril* L. | Jatobá; threathened of extinction |
| *Cyperusgiganteus* Vahl | Tiririca; rare species |
| *Erythroxylum* cf. *anguifugum* Mart. | Marmeleiro-bravo; rare species |
| *Casearia* cf. *gossypiosperma*Briq. | Guaçatunga; rare species |
| *Cupheamelvilla*Lindl. | threathened of extinction |
| *Albiziahassleri*(Chod.) Burk. | angico-branco; rare species |
| *Genipaamericana* L. | Genipapo; threathened of extinction |

**2.2 Exotic plant species found in the site**

|  |  |
| --- | --- |
| ***Species*** | **Popular name** |
| *Eucalyptus sp.* | eucalipto |
| *Grevillea robusta* | grevílea |
| *Impatiens walleriana* | maria-sem-vergonha ou beijinho |
| *Mangifera indica* | mangueira |
| *Melia azedarach* | cinamomo ou santa-bárbara |
| *Morus nigra* | amora-preta |
| *Psidium guajava* | goiaba |
| *Urochloa maxima* | capim-colonito |
| *Urochloa sp.* | braquiária |
| *Citrus sp.* | limto |
| *Citrus sp.* | laranja |
| *Delonyx regia* | flamboyant |
| *Catharanthus roseus* | vinca |
| *Manihot esculenta* | mandioca |
| *Zea mays* | milho |
| *Pinus sp.* | pinus |
| *Leucaena leucocephala* | leucena |

**2.3 - List of plant species any threat level, highlighted by Hatschbach and ZILLER (1996)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Family** | **Cientific name** | **Commom name** | | **Degree of Threat** | | **Environment** | | |
| ACANTHACEAE | *Poikilanthus guilesii* |  | | Rare | | FESS | | |
| ALISMATACEAE | *Echinodorus paniculatus* | Chapéu-de-couro | | Rare | | ASMA | | |
| ANNONACEAE | *Rollinia salicifolia* | Ariticum | | Endangered | | FESA, SVS | | |
| APOCYNACEAE | *Aspidosperma cylindrocarpon* | Peroba-rosa | | Rare | | FESS, FESA, SVS | | |
| ARACEAE | *Philodendron missionum* | Comigo-ninguém-pode | | Endangered | | PA | | |
| BIGNONIACEAE | *Tabebuia heptaphylla* | Ipê-roxo | | Rara | | FESS, FESA, SVS | | |
| BROMELIACEAE | *Tillandsia lorentziana* | Gravatá | | Vulnerable | | PA | | |
| CARICACEAE | *Jacaratia spinosa* | | Jaracatiá | | Rare | | FESS |
| ERYTHROXYLACEAE | *Erythroxylum anguifugum* | | Marmeleiro | | Rare | | FPIFL |
| FABACEAE | *Aeschynomene lenticulata* | |  | | Vulnerable | | FPIFL |
|  | *Dioclea burkartii* | |  | | Endangered | | FESA, SVS |
|  | *Lonchocarpus muehlenbergianus* | | Rabo-de-bugio | | Rare | | FESA, SVS |
|  | *Myrocarpus frondosus* | | Cabreúva | | Rare | | FESS, FESA, SVS |
| MELASTOMATACEAE | *Pterolepis paludosa* | |  | | Endangered | | FPIFL |
| MIMOSACEAE | *Inga fagifolia* | | Ingá | | Rare | | FESA, SVS |
| OCHNACEAE | *Ouratea spectabilis* | |  | | Rare | | FESA |
| RUBIACEAE | *Mandevilla hirsuta* | |  | | Rare | | FESA, SVS |
| RUTACEAE | *Balfourodendron riedellianum* | | Pau-marfim | | Rare | | FESS |

Source: Adapted from Hatschbach and Ziller (1996; in SENAGRO, 1996).

Legend: FESS: Forest Semideciduous Submontane; ASTHMA: Association of Water macrophytes; SVS: Secondary Vegetation System; PA: Paredões Sandstone (rupicolous vegetation); FPIFL: Pioneer Formations Influence of fluvial-lacustrine; FESA: semideciduous forest Alluvial

(PNIG Management Plan 2008)

**Annex 3. List of conservation measures and level of implementation in the Park.**

|  |  |  |  |
| --- | --- | --- | --- |
| **TABLE IV-7 - Activities and sub ​​activities implemented in the Ilha Grande National Park** | **Implemented** | | |
| 1. To establish the minimum staffing structure and required logistics for the performance of actions in the Ilha Grande National Park, followed by the proposed organization chart. | YES | | |
| 1.1 To request creating vacancies for hiring analysts and environmental technicians for the Chico Mendes Institute for Biodiversity Conservation. | YES | | |
| 1.2 Complement the administrative and executive structure of PNIG and compose its workforce as the demand for labor. | YES | | |
| 1.3 Partnership with institutions that meet the specific demands PNIG region and surrounding area of the Park, such as: a) protection and enforcement : Federal Police, forestry and environmental police of the states of Paraná and Mato Grosso do Sul, CORIPA, APA Federal and city of Paraná and Mato Grosso do Sul , b ) prevention and fire fighting : fire Department, municipalities of the surrounding, CORIPA, IAP, environmental or forestry police c) research : universities in the region , d) environmental education : NGOs and OSCIP. | YES | | |
| 2. To hire third parties to perform actions regarding security and maintenance of the property ( security, cleaning , repair , steering vessels ) | No | | |
| 3. To train the staff of the Park. | No | | |
| 3.1. To establish and to implement internal and external training programs along with the human resources staff of the Chico Mendes Institute for Conservation and Biodiversity and experts. | No | | |
| 3.2. To assign technical - scientific cooperation agreements with educational institutions such as University IPAR, FASUL, UEMS and to add new servers in the (undergraduate, postgraduate courses and extracurricular) scholarships offered. | YES | | |
| 3.3 To create database and train servers to ensure its operation, observing the following priorities: protocol for reporting incidents in patrols and surveillance, updated records of improvements within the PNIG: changes in the designation of the lots according to their regularization, use of equipment and software; survey of scientific research, identification of flora and fauna; identify areas susceptible to fire, and especially those in which environmental and management problems are observed, and theregistration of the annual strategies for fighting fires. | YES | | |
| 3.4 To promote internal seminars to present the management plan for the park's team. | No | | |
| 3.5 To perform with the crew semiannual and monthly planning meetings to review the work and the necessary adjustments. | YES | | |
| 3.6 Adequate the scale of work, especially during the weekends, school holidays, traditional festivals and holidays. | YES | | |
| 4 . To hire temporary services for prevention and firefighting annually. | YES | | |
| 5. To perform annual course of fire prevention to interested groups, such as servers of the surrounding prefectures, municipal guards, volunteer firefighters and community members. | YES | | |
| 6 . To establish criteria for hiring employees and contractors according to their professional profiles. | YES | | |
| 7. Establish a program to monitor volunteers and interns. | YES | | |
| 7.1 Ensuring vacancies for paid internship with the Central Administration. | YES | | |
| 7.2 To contact education institutions, whose professional profile of the students is of the interest for the development of the works in the PNIG. | YES | | |
| 7.3 To firm accord with the institution and to analyze the curriculums of the possible trainees and to interview them, directing the proposals to the administration of the Chico Mendes Institute for Biodiversity Conservation, to contract them. | No | | |
| 8. Periodically to provide uniforms for the employees with official standards. | YES | | |
| 9. To forecast and to guarantee resources for the execution of activities related to the creation and implantation of the Consulting board of the Park (transport, feeding, production of graphical material, qualification and training, among others). | YES | | |
| 10. To elaborate the Internal regulation of the Park. | No | | |
| 11. To regularize the land tenure situation of the Park. | YES | | |
| 11.1 To conclude the process of agrarian regularization by compensation of the legal reserve, initiated after the launching of Proclamation 001/2006. | YES | | |
| 11.2 To regularly bring up to date the data base of the properties. | YES | | |
| 11.3 To indemnify the titleholders who had not participated of Proclamation 001/2006 | No | | |
| 11.4 To regularize the agrarian situation of the Park. | No | | |
|  | YES | | |
| 11.5 To elaborate a plan to gradually vacate the lands. | YES | | |
| 12. To establish, physically, the limits of the Park. | No | | |
| 12.1 To make a project of delimitation of the floodplain areas of the PNIG. | No | | |
| 12.2 To implant landmarks in the land. | YES | | |
| 13. To elaborate and to establish a specific project to signal the areas of the Park. | YES | | |
| 13.1 To identify and to contact sponsors or partners for the elaboration and implantation of part or the Project of Signaling. | YES | | |
| 14. To remove, to move of place or to modify the plates of signaling, whenever necessary. | YES | | |
| 14.1 To remove the current signaling plates that are out of the established standard, as well as forbidding the installation of any plate that do not consist of the official signaling system, including the ones of commercial, politics, religious, advertising order and/or others. | YES | | |
| 15 To integrate the PNIG to the computer net of ICMBio. | YES | | |
| 16 To keep the physical installations, the vehicles, the boats and the equipment under the responsibility of the administration of the Park, in good conditions. | YES | | |
| 17 To work with the prefectures the periodic withdrawal of the solid residues of the interior of the Park and its suitable final destination. | YES | | |
| 18. To endow the National Park with the minimum equipment to give the basic support of life, in case of accidents in a general form and in regimen of urgency. | No | | |
| 18.1 To acquire kits of basic life support. | No | | |
| 18.2 To provide courses of emergency attendance to the employees of the Park. | No | | |
| 18.3 To make partnerships with municipal secretariats of health so that the hospitals and other center of health can make available antiophidics and other medicines for the attendance of emergencies in cases. | No | | |
| 18.4 To establish partnerships with hospitals for attendance the emergencies. | No | | |
| 19. Accompany the destination of resources from the ecological ICMS (tax), to require that part of the money is used in PNIG | No | | |
| **Table 8 - IV - Activities and sub activities of the program of external operationalization** | **Implemented** | | |
| 1.To make management next to the municipal city halls of the ZA for the implantation of the Centers of Support for Visitor and Centers for Visitors recommended in the Plan of Tourism and Public Use. | YES | | |
| 2. To carry through partnerships with CORIPA, CIBAX and CIAGRI, aiming at the construction and implementation of floating houses and the purchase of boats that will support the actions of management of the PNIG. | NO | | |
| 3. To contact DAER and the DNIT so that they implant official signaling throughout the highways, in the different cities, that give access to the Park. | YES | | |
| 4. To legalize partnerships for implantation of the management programs. | YES | | |
| 5. To install constructions for control of the indiscriminate traffic of people in the accesses to the Paraná river. | NO | | |
| 5.1 To request to the municipal city halls that the employees train and that they place crews who will work in these places. (Constructions for the control of the indiscriminate traffic of people in the accesses to the river Paraná). | NO | | |
| 5.2 Provide Informative material about the Park, IBAMA, CORIPA, among others. | NO | | |
| **Table IV-9 - Activities and sub - activities of the Protection and Management Program** | **Implemented** | | |
| 1. To improve and to monitor the infrastructure of protection, to implement strategies to combat Fire. | YES | | |
| * 1. To annually elaborate and apply the Operative Plan to Combat Fires, in partnership with the municipal city halls of the surrounding areas, CORIPA, Firemen, among others. | YES | | |
| 1.2 To expand the targeted public for the annual course of the PREVFOGO, including municipal employees of the city halls of surrounding areas, guards, voluntary firemen etc. | YES | | |
| 1.3 To execute daily monitoring of fires, from the six towers of the Park. | YES | | |
| 1.4 To execute the cleaning of ditches, with the suppression of flammable material annually or according to necessity, as foreseen in the Operative Plan. | YES | | |
| 2. To elaborate a specific program of enforcement in the area of the PNIG. | YES | | |
| 3. To carry through actions of enforcement in the PNIG. | YES | | |
| 3.1 To develop and to implant a system to register complaints and occurrences in the Park and its surrounding area | No | | |
| 3.2 To establish legal instruments to operationalize and to legitimize the enforcement actions of the servers of the municipal APA. | No | | |
| 3.3 To establish partnerships with the Environmental Police of the State of the Paraná and the Mato Grosso do Sul. | YES | | |
| 3.4 To elaborate a map with the critical areas, the types of pressures and the main accesses to the Park, in order to visualize and to facilitate the definition of the enforcement activities. | YES | | |
| 3.5 To establish as a routine the daily fulfilling of activities reports. | No | | |
| 3.6 To organize a strategy for the destination of apprehended materials and animals. | No | | |
| 3.7 To establish protocols for the destination of carcasses of dead animals. | YES | | |
| 3.8 To identify the areas of access of lawbreakers, the types of infractions and equipment used for the infractions (traps, weapons etc.). | YES | | |
| 4. To elaborate a project for cattle withdrawal, creation domestic animals in the interior of the Park, as the process of agrarian regularization evolves. | No | | |
| 4.1 To identify the owners, as well as the number of existing animals of each species in the Park and to request its withdrawal in a specified period by means of official communication. | No | | |
| 5. To negotiate with the beekeepers and competent institutions, the gradual withdrawal of the boxes of bees in the interior of the Park. | YES | | |
| 5.1 To promote a seminar about the plan of removal of the beekeeping from the PNIG. | YES | | |
| 5.2 To promote a seminar to sensitize the beekeepers, together with institutions as: Brazilian company of Farming Research/Genetic Resources and Tecnologia (EMBRAPA/CENAGEN), Institute Paranaense de Assistência Technique and Extensão Rural (IAPAR), Trust For Conservation of the Remainder of the River Paraná and Areas of Influência (CORIPA) and associations of beekeepers, to remove the boxes from the National Park. | No | | |
| 6. Elaborate and implant a program of withdrawal of exotic species of the flora from the interior of the Park. | No | | |
| 6.1 To request that researchers analyze the degraded internal areas of the park and elaborate of a project of recovery for these areas. | YES | | |
| 6.2 To initiate the withdrawal of tree species, such as eucaliptos and pinus. | No | | |
| 7. To remove the surrounding barbed wire from the islands. | No | | |
| 7.1 To carry through surveys in the islands, especially in Ilha Grande, Bandeirantes, Peruzzi, Bode Verde, to locate remaining barbed wire and the responsible for its implantation. | No | | |
| 7.2 To plan with the responsible for the installation of the barbed wire, its withdrawal. | No | | |
| **Table IV-10 - Activities and sub activities the Environmental Control Program** | **Implemented** | | |
| 1. To elaborate the specific enforcement program for the Park’s surrounding area, similar to the one in the PNIG. | No | | |
| 1.1 To implant the cited Enforcement Program | No | | |
| 2. To promote a Workshop to present and to discuss the program, as well as to capacitate inspectors of other environmental agencies, that act in the surrounding area of the Park, as: federal and municipal APA's, CORIPA/CIBAX/CIABRI, Green Force/Forest Police of the State of the Mato Grosso do Sul and IAP/IMASUL. | No | | |
| 3. To standardize procedures and reports of enforcement activities on the surrounding area. | No | | |
| 4. To promote a seminar for exchange and dissemination of knowledge concerning the procedures adopted by state and municipal agencies. | No | | |
| 5. To elaborate project for the recovery of degraded areas. | No | | |
| 5.1 To identify, with the operating environmental agencies in the cities surrounding the Park area, the degraded areas and establish protocols and priorities to recover of these areas. | No | | |
| 5.2 To stimulate the creation of nurseries with native vegetation, aiming at the reforestation in necessary areas in the cities surrounding the Park area. | No | | |
| 6. To discuss, with IAP and IMASUL, the criteria for establishment of mining enterprises on the margins of the Paraná River, that should be demanded in licensing processes emitted by the PNIG crew. | YES | | |
| 7. To elaborate legal and technical feasibility studies for the recruitment of the fire brigade, formed by volunteers, similar to the one contracted annually for PNIG, to act in surrounding area. | No | | |
| 7.1 In case of the possibility of forming the brigade, its members must receive uniforms that identifies them, as well as kits for the prevention/combat of fire. | YES | | |
| 8. To stimulate the creation of particular reserves of the natural patrimony (RPPN). | No | | |
| 8.1 To give lectures to the owners of the region to inform them of the advantages and the procedures of creation. | No | | |
| 8.2 To give to technical support for the creation of RPPN. | No | | |
| 9. To promote a *workshop*, counting with the participation of the diverse consortiums of the region (CIBAX-PR, CORIPA-PR, CIABRI-MS), with IAP (PR) and IMASUL (MS) and City halls of the cities of the Damping Zone, aiming to present the proposed Damping Zone and realize the complementation of the norms of this area. | No | | |
| 10. To elaborate a plan of conservation of the floodplains of the Iguatemi and Piquiri rivers. | No | | |
| 10.1 To carry through studies to base the planning. | No | | |
| 10.2 To evaluate the agrarian situation of floodplains. | No | | |
| 11. To foment the environmental protection in the properties situated in the surrounding area. | No | | |
| 11.1 To inspect properties bordering the park to verify if the activities that are being developed (that may or not need licensing) are compatible with the regimen of use of the local land. | No | | |
| 11.2 To stimulate the legalization of the legal reserves and the preservation or recovery of the areas of permanent preservation, mainly in the areas surrounding the PNIG. | No | | |
| 11.3 To establish a schedule to act next to the farm owners who are in irregular situation, aiming their regularization. | No | | |
| 12.  To support hydric resources management programs of the states of the Paraná and Mato Grosso do Sul that have relation with the PNIG. | No | | |
| **Table IV-11 - Activities and sub-activities of the Internal Research and Monitoring Program** | **Implemented** | | |
| 1. To create, to maintain and keep up to date the local database, containing information of all the activities and research results, studies and monitoring action. | No | | |
| 1.1 To acquire and to interpret current orbital images, of adequate resolution for the periods of rain and drought, in order to configure the cartographic base, aiming at the monitoring of the Park and its surrounding area. | No | | |
| 1.2 To identify and contact specialists to confection the maps, giving preference for employees of ICMBio. | YES | | |
| 1.3 To prepare and maintain up to date a monitoring map of the Park. | No | | |
| 1.4 To reproduce and deliver the map for each enforcement station, as well as provide it for the partner institutions in the enforcement of the Park (city halls, CORIPA-PR, CIBAX-PR, CIABRI-MS, environmental police (MS) and Green Force). | No | | |
| 2. To set up a Geographical Information System (GIS) for the National Park and its surrounding area in partnership with the SUPES/PR. | No | | |
| 3. To form a technical-scientific Committee composed by suitable people, of recognized academic and/or practical knowledge, and wide experience, who have tradition in research and diverse studies, to analyze submitted projects of research in the Park. | No | | |
| 4. To request employees, environmental police, researches and technicians in service of the park, to pick up skeletons and carcasses of native animals found dead in the interior and the immediate surrounding area of the unit. | YES | | |
| 4.1 To establish partnerships with institutions that accept the deposit of biological material and to define protocols for the referral of material. | No | | |
| 4.2 To elaborate a standard form to write down the data of the species found. | No | | |
| 4.3 To train the employees in the fulfilling of the form. | No | | |
| 4.4 To direct the found material, properly catalogued, for depositary institutions. | No | | |
| 5.  To contact and to stimulate university, research institutions and ONG for the development of the different researches to be carried out in the National Park and its surrounding area. | YES | | |
| 6.  To stimulate and to support the continuity of studies for the characterization of the faunal diversity of the National Park. | YES | | |
| 7. To stimulate the accomplishment of localization studies and mapping the exotic species of the flora found in the Park to base action of handling. | YES | | |
| 8. To stimulate qualitative-quantitative research of the Chiroptera (bats) occurring in the Park, including the use of different environments by this group as well as its role in the regeneration of the degraded areas. | YES | | |
| 9.  To stimulate accomplishment of research that indicates the areas of life of key species of threatened mammals. | YES | | |
| 10. To stimulate the accomplishment of frugivory and dispersion studies of seeds by terrestrial mammals in the region of the Park. | YES | | |
| 11. To stimulate the accomplishment of the monitoring of the populations of species that suffer pressure from hunting in the region (deer-of-pantanal, paca, capivara, bugio, mutum-de-penacho, jaó, among others). | YES | | |
| 12. To stimulate the accomplishment of ungulates and carnivorous alimentary ecology studies with proven occurrence in the Park, as a form to base strategies for the conservation of the species. | YES | | |
| 13. To stimulate the accomplishment of studies on the movement standards and areas of life of the mammals, in order to contribute for the establishment of strategies and plans of conservation and monitoring of these species, besides supporting future programs of restoration of the landscape. | YES | | |
| 14.  To stimulate the monitoring of felines and “paca” through photographic traps (*camera-trap*) and the resting places of the otter and the “ariranha”. | YES | | |
| 15. To stimulate studies of alimentary ecology of semi-aquatic species (otter, “ariranha”, “capivara”) and riverbank species (“mão-pelada, “cachorro-do-mato”, “morcego-pescador” and “paca”) in the Paraná river and its main tributaries in the stretch of the park. | YES | | |
| 16.  To stimulate studies about the genetic diversity of species present in the Park. | YES | | |
| 17. To stimulate the implementation of population survey and monitoring of species in danger of extinction (“lobo-guará”, “onça-pintada”, “gato-palheiro”, “anta”, “tamanduá-bandeira”). | YES | | |
| 18. Encourage implementation an annual monitoring by air of the populations of the “cervo-do-pantanal” in the park area. | YES | | |
| 19. Encourage implementation of population-based survey of two species of howler monkey that occur in the park and evaluate the hybridity between them. | YES | | |
| 20. Encourage implementation of population study of exotic species introduced in the ponds (eg. peacock bass, piranha) and check the pressure of these species on native species. | YES | | |
| 21. Encourage and support the monitoring of aquatic environments affected by introductions of exotic species in the ponds. | YES | | |
| 22. Encourage implementation a floristic, phyto-sociological and geo-pedological survey of the different vegetation types observed in the park area. | YES | | |
| 23. Encourage studies to identify, map and evaluate inventories of plant species of interest for fauna (plant families Myrtaceae, Lauraceae, Melastomataceae, Piperaceae, Moraceae etc.), especially for birds and mammals. | YES | | |
| 24. Encourage and support the evaluation of basic limnological characteristics and monitor water quality of the lakes within the park and their consequences on semi -aquatic and riparian mammals, fish fauna, avifauna, macroinvertebrates, herpetofauna. | YES | | |
| 25. Encourage further studies on the population dynamics of Bivalve Mollusks. | YES | | |
| 26. Encourage the mapping and monitoring of alien species: “Cubicula” and “mexilhão-dourado”. | YES | | |
| 27. Encourage and support the development of studies that support the development of basic maps (bedrock, unconsolidated cover, soil types, landforms, surface water and underground water depth) and derivatives (slopes, vulnerability, risk geotechnical, geological and others) in appropriate scale needed for planning. | YES | | |
| 28. Encourage the implementation of primary survey of geological, geo-morphological, geotechnical and hydro-geological data of the Park. | YES | | |
| 29. Encourage the implementation of the survey data on issues related to natural regeneration within the Ilha Grande National Park. | YES | | |
| 30. Encourage and support research methods for the eradication and invasion control of alien species in the Ilha Grande National Park. | YES | | |
| 31. Encourage and support the georeferencing of Pfaffia populations, aiming at the development of special protection and monitoring activities. | YES | | |
| 32. Implement a monitoring system in the Ilha Grande National Park . | NO | | |
| 32.1 Establish partnership to develop instruments for monitoring of visitation activities practiced in each existing tourist attraction in the Park. | YES | | |
| **Table IV-12 - Activities and sub-activities of the Program for Research and External Monitoring** | **Implemented** | | |
| 1. Encourage qualitative and quantitative research of Chiroptera (bats) occurring in the region around the park, including the use of different environments for this group, as well as its role in the regeneration of degraded areas. | YES | | |
| 2. Encourage further research to indicate areas where key-species of threatened mammals live. | YES | | |
| 3. Encourage further studies of frugivory and seed dispersal of terrestrial mammals in the park area. | YES | | |
| 4. Encourage the monitoring of populations of species that suffer hunting pressure in the region (ex. “cervo-do-pantanal”, “paca”, “cutia”, “capivara”, “bugio”, “mutum-de-penacho”, “jaó” and others). | YES | | |
| 5. Encourage studies of feeding ecology of carnivore’s ungulates with proven occurrence around the Park, to base strategies for the conservation of the species. | YES | | |
| 6. Encourage studies on the range and movement patterns of mammals, aiming to contribute to the development of strategies and plans for the conservation and monitoring of these species, as well as to support future programs for landscape restoration. | YES | | |
| 7. To stimulate the monitoring of felines and “paca” through photographic traps (*camera-trap*) and the resting places of the otter and the “ariranha”. | YES | | |
| 8. To stimulate studies of alimentary ecology of semi-aquatic species (otter, “ariranha”, “capivara”) and riverbank species (“mão-pelada, “cachorro-do-mato”, “morcego-pescador” and “paca”) in the Paraná river and its main tributaries in the stretch of the park. | YES | | |
| 9.  To stimulate studies about the genetic diversity of species present in the Park. | YES | | |
| 10. To stimulate the implementation of population survey and monitoring of species in danger of extinction (“lobo-guará”, “onça-pintada”, “gato-palheiro”, “anta”, “tamanduá-bandeira”). | YES | | |
| 11. Encourage implementation of population-based survey of two species of howler monkey that occur in the park and evaluate the hybridity between them. | YES | | |
| 12. Encourage implementation of population study of exotic species introduced in the ponds (eg. peacock bass, piranha) and check the pressure of these species on native species. | YES | | |
| 13. Encourage and support the monitoring of aquatic environments affected by introductions of exotic species in the ponds. | YES | | |
| 14. Encourage studies of native fish species for their cultivation. | YES | | |
| 15. Encourage implementation a floristic, phyto-sociological and geo-pedological survey of the different vegetation types observed in the park area. | YES | | |
| 16. Encourage studies to identify, map and evaluate inventories of plant species of interest for fauna (plant families Myrtaceae, Lauraceae, Melastomataceae, Piperaceae, Moraceae etc.), especially for birds and mammals. | YES | | |
| 17. Encourage and support the evaluation and monitoring of the water quality of the Paraná River and its major tributaries in the stretch of the PNIG, and its consequences on semi -aquatic and riparian mammals, fish fauna, avifauna, macroinvertebrates, herpetofauna. | YES | | |
| 18. Encourage further studies on the population dynamics of Bivalve Mollusks. | YES | | |
| 19. Encourage the mapping and monitoring of alien species: “Cubicula” and “mexilhão-dourado”. | YES | | |
| 20. Encourage further study on the impact of sand dredging over the communities of Bivalve Mollusks and Gastropoda. | YES | | |
| 21. Encourage survey data on issues related to natural regeneration in forest areas in the region surrounding the Park. | YES | | |
| 22. Encourage further research on the archaeological sites located around the Park, with detailed survey of each of them and characterizing all the sites. | YES | | |
| 23. Encourage studies in socioeconomic and environmental development regarding human activities surrounding the PNIG and its possible effects or impacts. | YES | | |
| 24. Encourage studies on the influence of the creation of the PNIG on the lives of locals. | YES | | |
| 25. Feed the database of the Ilha Grande National Park, periodically, with information about researches conducted in the region around the park. | No | | |
| **Table IV-13 - Activities and sub-activities of the Environmental Education Programme.** | **Implemented** | | |
| 1. To create and to implement an Educational and Environmental Interpretation Program. | No | | |
| 2. To establish partnerships with the Secretariats of Education and search the support of the regional coordination offices of education of the states of Paraná and Mato Grosso do Sul for the development of the Program. | No | | |
| 3. Structure and implement a "School-Boat for Environmental Education" for guided visits on the ports along the Parana River. | No | | |
| 3.1 Establish partnerships or other mechanisms to implement the School-boat | No | | |
| 3.2 Develop recreational and educational activities to be implemented within the School-boat. | No | | |
| 4. Contact the leaders of state, municipal and private schools, encouraging student participation in activities within the Park. | No | | |
| 4.1 To program guided trips for students and teachers of the school system (primary and secondary) of the 11 municipalities surrounding the Park. | No | | |
| 5. Promote recreational and educational events, like competitions, with technical schools or of higher education, in the municipalities around the Park. | No | | |
| 6. Invite skilled lecturers to participate in events and courses related to nature conservation. | No | | |
| **Table 14-IV- Activities and sub-activities of the Programme of External Environmental Education** | **Implemented** | | |
| 1. Create an Educational Program and of environmental disclosure to guide the questioning and the search for solutions regarding environmental problems in the Park area. | No | | |
| 1.1 Sign agreements and establish partnerships with governmental institutions or NGOs of educational and environmental nature or not, with universities and private companies, to achieve established goals and for the allocation of resources and for technical and scientific information. | YES | | |
| 2. Stimulate in each municipality surrounding the Park, the establishment of Support Groups for Environmental Education, to promote educational activities and environmental and cultural interpretation. | No | | |
| 3. Establish partnerships with CORIPA - PR , CIABRI - MS , CIBAX - PR and the “APA Federal das ilhas e Várzeas do Rio Paraná” for an integrated practice of educational and environmental disclosure in the PNIG, and the federal and municipal “APA's” of the basin. | No | | |
| 4. In the state of Mato Grosso do Sul, develop educational activities integrated with those promoted by the “Parque Estadual das Várzeas do Rio Ivinhema”. | No | | |
| 5. Conduct environmental awareness campaigns in cities, particularly the importance of park and natural areas conserved region; permitted uses in each of them and their limitations, standards and laws; proper uses of fire, among other topics. | No | | |
| 6. To produce informative material (videos, brochures, booklets) about the Park and its importance. | YES | | |
| 7. To create an exposition with information about the Park (physical, biological, archaeological and cultural characteristic). | YES | | |
| 7.1 To contact the City and State educational departments to organize as itinerant exposition and lectures about the Park in the schools of the eleven cities around the Park or that are in its immediate limit (Guaíra, Terra Roxa, São Jorge do Patrocínio, Altônia, Alto Paraíso, Icaraíma, Querência do Norte, no Paraná e Mundo Novo, Eldorado, Itaquiraí e Naviraí, no Mato Grosso do Sul). | No | | |
| 8. To promote the display of information about the Park on the local media, especially in the programs of local radios that have the biggest audience and in the written press of the cities that surround the Park area. | YES | | |
| 8.1 To create *spots* with 30 seconds to 1-minute duration for the local radios, aiming at to disclose the importance of the Park for the region. | No | | |
| 8.2 When events are held in the Park, produce informative notes for local news. | YES | | |
| 8.3 Periodically to produce texts with environmental information to be disclosed in local periodicals. | No | | |
| 9. To use the local, national and international dates and events, as chances to develop themes regarding environmental education in the Ilha Grande National Park. | YES | | |
| 10. In fishing events that occur in the region (Pesca ao Piauçu, em Altônia-PR; Pesca à Piapara, em Alto Paraíso-PR; Pesca ao Pacu, em Icaraíma-PR; Itaquipesca, em Itaquiraí-MS), when possible, provide a foothold for the Ilha Grande National Park. | No | | |
| 11. During festivals in the region (Festa das Nações Festa da “Virgem de los Milagros de Caacupê”, Transparaná, Festa Nacional do Pintado na Telha, em Guaíra-PR; Festa do Porto Natal, Festa do Arroz, em Querência do Norte-PR; Expo Eldorado, Festa da Melancia, em Eldorado-MS; Festa das Nações, em Mundo Novo-MS), when possible, provide a foothold for the Ilha Grande National Park. | YES | | |
| 12. Support the implementation of the Environmental Education transversally in the local schools, stimulating the formation of the questioning and the search for solutions for the environmental problems, besides the understanding of the importance of living in a place that has a protected area. | No | | |
| 12.1 To stimulate the qualification of teachers of the municipal and state education network of the cities surrounding the Park area, on the subjects such as: archaeological, cultural and historical sites, environmental conservation, regional fauna and flora and its importance. | No | | |
| 12.2 To develop partnerships for the elaboration and implementation of courses for the teachers. | No | | |
| 12.3 To apply Environmental Education courses, with minimum duration of 40 hours, for teachers of the education network of the cities surrounding the Ilha Grande National Park area. | No | | |
| 13. To develop “eco-gincanas” (contest) between the cities that will participate of the qualifications. | No | | |
| 13.1 To elaborate and to disclose the regulations for the functioning of the “gincana”. | No | | |
| 13.2 To promote the “gincanas”. | No | | |
| 14. To stimulate, through the media, the participation of students of the formal education, as well as authorities and representatives of the organized civil society, in events with educational activities promoted by the Park. | No | | |
| 15. To stimulate and support the city halls surrounding the Park area, in the adequate management of solid residues, and if possible, in the implantation of Recycling Plants. | YES | | |
| 15.1 Supporting municipalities in the implementation of a system for the proper management of solid waste generated by rural communities around the Park. | YES | | |
| 15.2 To support the realization of educational campaigns, with communities, asking them for their support in the collection and transportation of the solid waste. | YES | | |
| 15.2 Encourage the creation of cooperatives of Scavengers in municipalities around the Ilha Grande National Park. | YES | | |
| 15.3 Perform actions with the municipalities around the Park, seeking the establishment of recycling plants. | No | | |
| 16. Develop an environmental education program with professional fishers of the region. | No | | |
| 16.1 Contact the colonies of fishers (Z13 - Guaíra, Z8 - Mundo Novo e Z16 - Altônia) and organize activities with its members. | No | | |
| 16.2 Develop educational materials (brochures, posters) and lectures directed to fishers and their families. | No | | |
| 17. Empower firefighters and Park inspectors, including those linked to the surrounding Municipalities, to develop informational activities in the communities. | No | | |
| 17.1 To promote internal training courses for firefighters and Park inspectors. | No | | |
| 17.2 Provide information material about the Park and its surroundings (brochure, posters) for firefighters and Park inspectors so they can deliver them to the population, when necessary. | No | | |
| 18. Develop educational and fire prevention activities in the municipalities bordering the Park, alerting communities to the risk of fires. | No | | |
| 18.1 In critical periods, establish routines to guide farmers and fishers on the use of fire, emphasizing the environmental damage that may accrue. | No | | |
| 18.2 Request farmers from the PNIG neighboring floodplain to inform the administration of the conservation unit or other environmental agency that operates in the PNIG, the days that burnings will be held, to focus on the possible fire spread. | No | | |
| 18.3 Promote seminars in the communities, as well as educational campaigns to be aired on local radio, in order to inform about the correct use fire. | No | | |
| 19. Conduct educational activities to employees of the Guaíra, Terra Roxa, São Jorge do Patrocínio, Alto Paraíso, Altônia, Icaraíma, Querência do Norte, Eldorado, Mundo Novo, Itaquiraí e Naviraí municipalities. | No | | |
| 20. Undertake an environmental education campaign directed to local communities, aimed towards reducing the effects of the fragmentation of the vegetation, in and around the Park, and the recovery of the remaining vegetation. | No | | |
| 21. Use the local media to publicize and disseminate the work of the Park (general media, internet, radio, newspaper, billboards etc.). | YES | | |
| 21.1 Develop and implement a visual communication and dissemination project of the Ilha Grande National Park. | No | | |
| **Table 15-IV-Activities and sub-activities of the External Program Integration** | **Implemented** | | |
| 1. Hold public meetings to promote the Ilha Grande National Park management plan to society, as its zoning, its importance for biodiversity conservation, and the boundaries of the buffer zone, when it is established, etc. | No | | |
| 2. Conduct regular meetings with the surrounding communities, addressing specific issues about the Park. | No | | |
| 3. Hold events such as lectures or meetings to disseminate the results of the researches and work carried out in the PNIG and surrounding region, not only passing information to communities and regional media, but also to encourage them to practice actions that generate minimal environmental impact for this conservation unit. | No | | |
| 4. Disclose the laws and other legal instruments relating to the PNIG and region for the local society. | No | | |
| 4.1 Distribute copies of the law creating the PNIG, and the Law of Creation and Regulatory Decree of the National Conservation Units System (SNUC), to local public and private institutions. | No | | |
| 4.2 Disclose the email address to access environmental laws and the SNUC. | No | | |
| 4.3 Point out IBAMA’s responsibility of environmental control in the buffer zone. | No | | |
| 5. Reevaluate the terms of cooperation, agreements and partnerships, already signed by the Park with different institutions until 2007, to update, review or close them. | YES | | |
| 6. Establish new partnerships with institutions that can help manage the PNIG. | YES | | |
| 7. Establish the Advisory Council of the unit to support the Park management. | YES | | |
| 7.1 Promote the training of members of the Advisory Council, especially regarding the management objectives of the unit and its guidelines. | YES | | |
| 7.2 After the formalization of the Council create its guidelines. | YES | | |
| 8. Promote events of disclosure and information, such as lectures, meetings with the municipalities and visits to Park, to sensitize the government leaders, and leaders and members of the community. | No | | |
| **Table IV-16 - Activities and sub-activities of the Program of Development Alternatives** | **Implemented** | | |
| 1. Encourage local governments and educational institutions to develop a socioeconomic and environmental diagnosis with emphasis on the economic vocation of the municipalities, the activities practiced in rural properties and possessions, the profile of residents, the instance of organization of the population etc. | No | | |
| 1.1 Evaluate the economic feasibility of the identified alternatives, comparing them with others of greater economic efficiency and lower environmental cost. | No | | |
| 2. Find partners to promote events to present the diagnosis and discuss on ways to implement new economic activities in the region. | No | | |
| 3. Encourage and prioritize, with the responsible institutions, the proper planning of farms and human settlements surrounding the Park, through meetings to elaborate common agenda of activities. | No | | |
| 4. Sensitize local stakeholders on the need to organize the communities by conducting courses, workshops, trainings and lectures, as well as supporting initiatives of social organization in communities surrounding the PNIG. | No | | |
| 4.1 Establish partnerships with institutions that can assist in the social organization of communities. | No | | |
| 5. Encourage and support the dissemination and development of economic alternatives, and the appropriate management practices, with producers in the region. | No | | |
| 5.1 Establish partnerships with rural extension agencies. | No | | |
| 5.2 Organize lectures on the subject. | No | | |
| 5.3 Display videos and examples from other regions of the country. | No | | |
| 5.4 Encourage the exchange between owners/farmers. | No | | |
| 5.5 Organize workshops for farmers on notions of Integrated Pest Management and Agro-forestry Systems (SAF). | No | | |
| 5.6 Encourage that the economic activities in the properties bordering the Park, are based on organic principles and integrated pest management (MIP). | No | | |
| 5.7 Encourage the development of agro-forestry (SAF). | No | | |
| 5.8 Encourage the planting of perennial or semi-evergreen crops suitable to the local climate with the use of sustainable irrigation techniques, such as dripping. | No | | |
| 6. Sensitize development and extension agencies to insert in their planning ways to encourage organic production on farms around the Park. | No | | |
| 7. Conduct a workshop with local NGO or that develop activities in the region of the PNIG, as well as municipal and state secretariats, in order to present and discuss the subprograms of the Proposal for Tourism and Public Use aimed at developing income alternatives for the region. | No | | |
| 8. Liaise with the Brazilian Service to Support Micro and Small Enterprises (Sebrae) and other institutions, to undertake training and extension courses for the residents of the surrounding region, according to the regions vocation and potential. | YES | | |
| 9. Make contacts with the direction of financial institutions, like “Banco do Brasil” to inform them about the existence of the PNIG and the socioeconomic conditions of the population of this region. | No | | |
| 10. Encourage and support the development and implementation of projects for the installation of small agribusinesses (fruit processing, packaging techniques and selling, etc.), in order to obtain resources or financial credit lines from funding agencies. | No | | |
| 11. Request the municipalities and environmental organizations, or not, the creation of spaces to trade in products and viability of new activities with the introduction of product processing technologies, as does EMATER. | No | | |
| **Quadra17-IV- Activities and sub-activities of the Program of Public Use** | **Implemented** | | |
| 1. Create an Internal Working Group to discuss the Public Use of the Conservation Unit based on the Plan of Tourism and Public Use proposed. | YES | | |
| 1.1 Re-evaluate the feasibility of the proposals contained in the Plan of Tourism and Public Use. | No | | |
| 1.2 Check for existing facilities for public use within the PNIG. | YES | | |
| 1.3 Assess the activities already undertaken in the PNIG and regulate those compatible with the objectives of the Conservation Unit. | No | | |
| 2. Suspend any activities developed for public use by individuals within the PNIG until the completion of evaluation and regulation. | No | | |
| 2.1 Conduct meetings with operators of travel agencies, tour guides, government representatives of environment and tourism, among others to clarify the reason for the measure. | YES | | |
| 3. Apply the public use standards to the compatible activities. | YES | | |
| 4. Conduct a workshop with the eleven municipalities around the Park, to present and discuss the "Plan of Tourism and Public Use" developed by a team of experts in tourism and reviewed by the Working Group of the Ilha Grande National Park. | YES | | |
| 5. Encourage the creation of a cooperative or association among the eleven municipalities, for the integrated implementation of the “Plan of Tourism and Public Use” in the region. | No | | |
| 6. Assist and monitor the implementation of the “Plan of Tourism and Public Use” on the Ilha Grande National Park region. | YES | | |
| 6.1 Encourage and monitor the implementation of Ecotourism subprogram. | No | | |
| 7. Encourage the improvement of basic infrastructure and the deployment of equipment and tourist facilities in the surrounding municipalities, in order to attend different tourists. | YES | | |
| **Table 18 - IV- Activities andsub-activitiesof the Internal StrategicNorthernArea** | **Implemented** | | |
| Highway Segment | 1. To request the DER the fixing of road signs along the highway, indicating the existence of the Ilha Grande National Park according to established standards. | YES | |
| 2. Remove the improvements located on five construction sites, as well as fences and existing apiaries in this segment. | No | |
| 2.1. Execute the program for the protection and management with regard to the gradual withdrawal of the apiaries. | YES | |
| 2.2 Conduct meeting with military police, and request the removal of the Fire Department facilities from the Bandeirantes island. | YES | |
| 3. To encourage research in the area to evaluate the efficiency, or not, of the use of animal passages and the possible minimization of impacts of the road usage on the fauna. | YES | |
| 4. Conduct meeting with DER to set rules for use of the highway to minimize the impact of it on the Bandeirantes island. | YES | |
| 5. Recover degraded areas located in the headwaters of the bridges on the Bandeirantes island, using native species, characteristics of this ecosystem. | YES | |
| 6. Remove the gigantic concrete blocks from the Gêmeas and the Bandeirantes islands and put moorings in accordance with standards prescribed by the Brazilian Navy. | YES | |
| Segment of the Meião Beach | 1. Promote the development of research on the use of the Meião Beach by migratory species. | No | |
| 1.1 Evaluate the possible use of this space for Public Use activities in different periods, in order to ensure the continued use of the site by migratory species. | No | |
| 2. Order, if ecologically viable, the use of the Meião beach for leisure activities. | YES | |
| 2.1 Plan and organize the site’s tourist uses in partnership with the Department of Tourism of Icaraíma, Paraná, so that the recreational activities in this area generate minimal environmental impact. | No | |
| 2.2. Establish and disclose the official opening periods in the summer for tourism. | No | |
| 2.3. Establish the regularization for commercial activities and the provision of services in the Meião Beach according to the legal available mechanisms. | No | |
| 3. Establish partnerships with local municipalities to perform the maintenance services during the summer on the Meião beach. | YES | |
| 3.1 Request the installation or chemical bathrooms and its proper maintenance during the summer on the Meião beach. | YES | |
| 3.2 Request that partners undertake the maintenance services related to garbage collection and conduct it to appropriate destination. | YES | |
| 4. Monitor the activities performed during the most visited periods, using the techniques for data collection, such as interviews, questionnaires and counting the number of visitors. | YES | |
| Segment Ivaí and north of the Bandeirantes island | 1. Remove the improvements situated on nine construction sites, as well as fences and apiaries existing in this segment. | No | |
| 1 .1 promote the gradual withdrawal of the apiaries, as part of the management and protection program. | No | |
| 2. Promote recovery of degraded areas, especially those existing on the Bandeirantes island, replacing invasive exotic species by representatives of local ecosystems. | No | |
| 3. Remove specimens of domestic fauna, like cattle, goats, chickens and the others that exist in the area. | YES | |
| Segment of the “Paredão das Araras” | 1. Conduct research on the seawall and region, noting the geology of the area and the behavior of wildlife, especially the red macaw. | No | |
| 2. To work with the municipality to ensure a minimum level of urbanization in this territorial range, creating standards for occupancy, basic infrastructure and population density. | No | |
| 3. Establish a minimum distance of 20 meters from the “Paredão das Araras” in the lower margins in the Paraná River, to protect this geological formation and the fauna that inhabits it. | No | |
| 3.1 Contact the Port Authority to verify the possibility of signaling buoys and signs with this set distance. | No | |
| 3.2 Monitor the maintenance of a minimum distance of 20 m from the seawall and the circulation of vessels. | No | |
| 4. Implement an environmental education program to sensitize the community and promotes socio-cultural change in relation to nature. | No | |
| 4.1 Conduct outreach campaign about the ecological importance of this area for schools, visitors, fishermen and the local community. | No | |
| 4.2. Establish partnership with the DER/PR and the municipal departments of education for the continuation of the awareness campaign already initiated as a compensatory measure. | YES | |
| 4.3. Sign a Technical Cooperation Term with the City of Icaraíma, aiming at the implementation of a program of environmental education. | No | |
|  | **Table 19-IV- Activities and sub-activities of the Clients Area Internal Strategic Logic** | **Implemented** | |
| Segment “Estrada da Balsa” | 1. Regularize the ownership status of the lots in this segment. | YES | |
| 2. Remove the improvements situated on sixteen construction sites, including the Pindorama village, as well as fences and apiaries existing in this segment. | No | |
| 2.1 Remove apiaries gradually and incessantly, according to the program for the protection and management of the Park. | No | |
| 3. Support a research to determine the degree of dependence of native fauna in relation to exotic fruit species, especially guava and elaborate a plan to eliminate these species according to the survey results. | No | |
| 4. Promote the recovery of degraded areas and replace exotic invasive species, especially eucalyptus, guava, mango, among others, by native species. | No | |
| 5. Establishing a Technical Cooperation Term with the municipal government of Alto Paraíso – PR, for the maintenance of the bed of the old “Estrada da Balsa” (ferry road), through a “plan of use” yet to be detailed, that will permit the movement of people, bicycles and quadricycle at the most (of the PNIG), throughout its length . | No | |
| 6. Detail the plan for public use “Estrada da Balsa”, providing support structures for visitors. | No | |
| 6.1. Implement activities judged as appropriate for public use by the Public Use Plan. | No | |
| 7. Establish partnership with local APA Alto Paraíso, to formalize enforcement activities in this segment. | YES | |
| 8. Remove domestic fauna species existing in this segment. | No | |
| 8.1. Identify the owners and inform them of this removal and the deadlines. | YES | |
| 9. Evaluate the current use of the “Estrada da Balsa” by the local communities, in order to verify the impact of this use on the fauna and flora and the possibility to regulate this practice. | No | |
| 9.1. Register vehicles and people that use the road commonly. | No | |
| 9.2. Monitor the use of the road. | No | |
| “Ponta Norte” Segment | 1. Regularize the ownership status of the lots in this segment. | YES | |
| 2. Remove the improvements located on the two edified sites, as well as fences and apiaries existing in this segment. | No | |
| 2.1 Remove apiaries gradually, as recommended by the program of protection and management. | No | |
| 2.2 Establish a term of commitment with the owners for the complete withdrawal of all apiaries within five years. | YES | |
| 3. Support a research to determine the degree of dependence of native fauna in relation to exotic fruit species, especially guava. | No | |
| 4. Elaborate a plan to eliminate these species according to the survey results. | No | |
| 5. Recover degraded areas by replacing exotic invasive species, especially eucalyptus, guava, mango, among others, by native species. | No | |
| 6. Establish partnership with the local APA Alto Paraíso, to formalize enforcement activities in this segment. | No | |
| 7. Remove domestic fauna species existing in this segment. | No | |
| 7.1 Identify the owners and inform them of this removal and the deadlines. | YES | |
| 8. Periodically perform preventive maintenance of the firebreaks in "Lagoa do Sossego" and "Eucaliptos". | YES | |
| **Table IV-20 - Activities and sub-activities of Saraiva Strategic Area** | **Implemented** | | |
| Saraiva Segment | 1. Implement a system of security and control of visitors entrance in the Saraiva lagoon. | No | |
| 1.1 implement a guard shack at the entrance of the Saraiva lagoon, on the margin of the Paraná River. | No | |
| 1.2. Install a signpost on the floating post, containing information about locations and the type of vessel allowed to circulate in this lagoon. | YES | |
| 2. Adopt one of the methodologies for managing impact of visitation in the lagoon of the Saraiva Segment and apply tools specified by it, identifying the number of visitors and, existing and potential tourist attractions. | YES | |
| 2.1 Continuously monitor the impacts on flora and fauna caused by the movement of vessels in the Saraiva lagoon and people on the trail of the João Costa and São Francisco islands. | No | |
| 3. Study the possibility of implementing wildlife monitoring activities for visitors, by filing factsheets to inform of the sightings, vocalization, presence of nests and other data. | No | |
| 4. Encourage further research on the species populations suffering hunting pressure in the region (ex. “cervo-do-pantanal”, “bugio”, “jacaré-do-papo-amarelo”). | YES | |
| 5. Promote the development of research on the use of the Saraiva lagoon by species of migratory fish for: breeding, foraging and youth development. | YES | |
| 6. Implement protective actions in this segment. | YES | |
| 7. Implement the visitation trail on the Joao Costa island (São Francisco Island). | YES | |
| 7.1 Install educational totems and informational signage along the trail, containing information about the management and protection of local ecosystems and the existence of exotic species. | No | |
| 8. Elaborate a project for the removal of livestock and domestic animals from the São Francisco island and the portion of the Saraiva lagoon corresponding to the firebreak, according to the evolution of the regularization process. | YES | |
| 8.1. Identify the owners, the number of animals of each species, asking for their withdrawal in the deadline specified by the Park administration. | No | |
| 9. Resume the program of gradual withdrawal of bee boxes from the interior of the Park, together with the beekeepers and the competent institutions. | YES | |
| 10. Remove exotic species of flora in the interior of this segment (“goiabeiras”, “amoreiras”, “eucaliptos”, “grevíleas”, “mangueiras”, “braquiária”). | No | |
| 11. Remove the barbed wire fences of the Ilha Grande, especially near the firebreak and property named "Recanto dos Lobos”, after court decision. | No | |
| 14. Make the regular cleaning of the Saraiva lagoon firebreak, especially during periods of increased incidence of fires in the PNIG. | YES | |
| “Ilha das Gaivotas” Segment | 1. Promote research on the use of the Gaivotas Beach by migratory species. | YES | |
| 2. Evaluate the viability of using this space for public use activities and its impacts on the natural resources of the PNIG. | YES | |
| 3. If the use of the Gaivotas beach is ecologically viable, order and regulate the activities of recreation and leisure. | No | |
| 3.1 Develop strategies to use the site in partnership with the Departments of Tourism of Guaira - PR and Novo Mundo - MS, so that recreational activities cause minimum impact on the environment. | No | |
| 3.2 Establish and disclose the official opening periods in the summer. | No | |
| 3.3 Provide for the regulation of commercial activities and provision of services in the Gaivotas Beach, using the legal mechanisms available. | No | |
| 4. Establish partnerships with the municipal governments of Guaira, PR and Novo Mundo – MS, to maintain the services of garbage collection and its proper disposal, during the summer on the Gaivotas beach. | No | |
| 4.1. Request to municipalities the installation of chemical toilets during the summer on the Gaivotas beach. | No | |
| 4.2 Request to municipalities to perform services for solid waste collection and give proper destination to this material. | No | |
| 5. Monitor public use activities undertaken during the period of highest visitation in this segment. | No | |
| **Table IV-21 - Activities and subactivities of Strategy Xambrê Area** | **Implemented** | | |
| 1. Implement the signaling system in the Xambre lagoon. | YES | | |
| 2. Establish partnerships with the municipality of Altõnia - Paraná and local entrepreneurs, to plan and order the use of the Xambre lagoon, to protect both the lagoon and the natural, historical and cultural heritage existing in the Park and its surroundings. | YES | | |
| 2.1 Request the municipality the implementation of a supervision system in this strategic area, under the guidance of Protection Coordination and Management of the Ilha Grande National Park | YES | | |
| 3. Develop an awareness and environmental interpretation program specific for this internal strategic area. | No | | |
| 3.1. Produce and distribute informational material containing safety and use standards for the Xambre lagoon, activities to be practiced, resting and recreational areas. | No | | |
| 3.2. Promote environmental awareness events for landowners nearby the Xambre lagooon. | No | | |
| 5. Continuously monitor the impact caused by public use on the fauna and flora of the Xambre lagoon. | No | | |
| 6. Monitor, next to city hall fo Altonia - PR, the authorizations given for the installation of commercial activities on the margins of the Xambre lagoon. | YES | | |
| 7. Support the development of research of vegetation, birds, mammals, herpetofauna and ichthyofauna in the Xambre lagoon. | YES | | |
| 7.1. Define key species of fish populations and conduct studies of feeding ecology and reproduction. | No | | |
| 7.2. Assess the populations of species of conservational interest and map those with the highest concentration in this strategic area. | No | | |
| 7.3. Identify, map and characterize the existing forest fragments in this strategic area. | No | | |
| 7.4. Study the seasonal variations of the degree of coverage of aquatic macrophytes and their relationship with physicochemical changes of water and climate. | No | | |
| 7.5. Support studies on the relationship between exotic and native species of fish in the Xambre laggon, especially the croaker. | YES | | |
| 8. Promote the development of research on the physico -chemical and biological characteristics of the Xambre lagoon. | YES | | |
| 9. Support landowners bordering the Xambre lagoon in recovering degraded areas, and the maintenance of permanent preservation areas and legal reserves. | YES | | |
| **Table IV-22 -Activities and sub activities of Strategy Logic of Jatoba internal Area** | **Implemented** | | |
| 1. Regularize the ownership status of the lots in this strategic area. | YES | | |
| 2. Immediately remove apiaries located along “Estrada Lagoa do Jatoba”(road) in a range of 1 km. | No | | |
| 2.1 Establish a term sheet with the owners for the complete removal of these apiaries. | YES | | |
| 3. Implement the program for the protection and management for to the gradual withdrawal of other apiaries. | No | | |
| 3.1 Establish a term sheet with the owners for the total withdrawal of all apiaries within three years. | No | | |
| 4. Remove the improvements of the three construction sites, as well as existing fences in this segment. | YES | | |
| 5. Keep Jatoba lagoon firebreak in constant state of operation, especially during the period of highest incidence of fires in the PNIG. | YES | | |
| 6. Supervise the use of the “Estrada Lagoa do Jatoba” (road) constantly and maintain the operating conditions of the equipment used for the transportation of vessels overland. | No | | |
| 6.1 Research the demand for the use of this road, such as number of people, time of entry and exit, the vehicles used. | No | | |
| 6.2 Establish standards for use and movement of people on the “Estrada Lagoa do Jatoba”, including schedules for the allowed circulation. | No | | |
| 6.3. Monitor the use of the road by implementing routine control of entry and stay of outsiders in the PNIG. | No | | |
| 7. Set specific location to moor vessels and study the feasibility of constructing, with the support of the City of Altonia - Paraná, one dock or ramp, to reduce the impacts caused by the removal and placement of boats on the water. | No | | |
| 8. Implement educational and warning signs along the “Estrada Lagoa do Jatoba” on the PNIG. | No | | |
| 8.1. Establish partnership with the municipal government of Altonia for the implementation of the project to put signs in the “Estrada Lagoa do Jatoba”. | No | | |
| 8.2. Mark the Conflicting Use Zone and flag it in visible spots for users. | No | | |
| 9. Detailing the relevant activities for public use in the “Estrada Lagoa do Jatoba”. | No | | |
| 9.1 Implement activities deemed appropriate for public use under the new Tourism Plan. | No | | |
| 10. Establish partnership with the APA of the city of Altônia, to formalize enforcement activities in this segment. | YES | | |
| **Table IV-23 - Activities and sub - activities of Strategic Internal Area** | **Implemented** | | |
| 1. Regularize land tenure in this strategic area. | YES | | |
| 2. Evaluate the tour itinerary in the Paracaí Beach proposed in "Plan of Tourism and Public Use" in order to verify the feasibility of full or partial implementation of the suggested infrastructure. | YES | | |
| 3. Establish a partnership with the Town of São José do Patrocínio, aimed at regulation, implementation and monitoring of the public use activities practiced in the area. | YES | | |
| 3.1. Elaborate architectural design and install the Support Center for visitors in order to provide means for monitoring access to the Ilha Grande National Park, and information of educational and informative nature to users. | YES | | |
| 3.2. Delimit, demarcate and signal the area identified for public use, with approximately 4.5 ha. | No | | |
| 3.3. Install informative signposts within the limits of the area. | YES | | |
| 3.4 Design and implement appropriate infrastructure for the development of environmental awareness activities. | No | | |
| 3.5 Demolish kiosks and barbecue grills and build new structures in more appropriate locations, which are to be identified together with the PNIG. | No | | |
| 3.6 Remove the existing bathroom structures and replace them with chemical toilets. | No | | |
| 3.7 Conduct studies on the feasibility of car access to the beach down the marsh road. | No | | |
| 3.8 Implement appropriate infrastructure for the mooring of boats, according to the standards of the Navy and the Secretary of the Union Heritage. | No | | |
| 3.9 Develop a project to establish a structure to store boats. | No | | |
| 3:10 Implement trash bins at strategic points in the area, to facilitate public access. | YES | | |
| 3:11 Perform supervision of public use activities. | YES | | |
| 3:12 Develop interpretation and environmental awareness activities and implement informational and educational boards. | No | | |
| 3:13 Allocate at least five people to develop activities related to the public reception, interpretation and environmental awareness activities and monitoring impacts. | No | | |
| 4. Continuously monitor the activities and their impacts on natural environments. | No | | |
| 4.1. Identify appropriate methodologies for impact monitoring due to the public use in the area. | No | | |
| 5. Establish partnership with the Fire Department of Umuarama, for the bather’s security, through the implementation of a lifeguard structure on the beach, especially in times of greater visitation. | No | | |
| 5.1. Demarcate the area allowed for bathing. | No | | |
| 6. Promote the development of research in order to verify the impact generated by the public use activities over endangered wildlife species in the area. | YES | | |
| 7. Periodically, carry out biochemical analysis of the water of the Paracaí and Paraná rivers, to know if bathing and drinking the water is safe (CONAMA Resolution No. 274 / 00 and Decree of the Ministry of Health No. 518/04). | No | | |
| **Table IV-24 - Activities and sub - Activities of Strategic External Area Amambai** | **Implemented** | | |
| 1. Request the agencies responsible for the environmental policy of Mato Grosso do Sul to begin the process of creating the wildlife corridor of Amambai. | No | | |
| 1.1. Encourage studies and research in order to determine their degree of conservation and establish biological corridors between PNIG and PEVRI. | YES | | |
| 2. Establish partnership with the municipal government of Naviraí - MS, with IMASUL and the IDATERRA, of Mato Grosso do Sul, along with the federal APA of the “Ilhas e Várzeas do Rio Paraná”, sensitizing the owners to change the form of land use, in accordance with the conservation principles. | YES | | |
| 2.1 Collaborate with environmental agencies of Mato Grosso do Sul in the work of awareness among farmers for recovery of permanent preservation areas and legal reserves. | No | | |
| 2.2. Facilitate and encourage the implementation of an environmental education program in this strategic area, together with IMASUL and IBAMA - MS. | No | | |
| 2.3. Monitor the impact of land use on natural, historical and cultural heritage sites. | No | | |
| 3. Encourage the creation of PRNP in this AEEx, with the assistance of other partners in order to increase connectivity between protected areas. | No | | |
| 4. Prioritize and manage, with the administration of the Federal APA of the “Ilhas e Várzeas do Rio Paraná”, continuous monitoring strategies in this AEEx. | No | | |
| **Table 25-IV- Activities and sub - activities of Strategic External Area Iguatemi** | **Implemented** | | |
| 1. Analyze the situation of land properties containing FESA, in order to support protection strategies for this fragment. | No | | |
| 2. Encourage studies and research in order to determine their degree of conservation to support protection strategies. | No | | |
| 3. Establish partnership with the municipal government of Novo Mundo - MS, with IMASUL and the IDATERRA, Mato Grosso do Sul, along with the Federal APA of the “Ilhas e Várzeas do Rio Paraná”, aiming to work together to match the current usage of land to conservation principles. | No | | |
| 3.1 Collaborate with environmental agencies of Mato Grosso do Sul in the effort to raise awareness of the owners of these lowland areas and FESA, emphasizing the importance of this ecological ecosystem in this AEEx. | No | | |
| 3.2. Collaborate with impact monitoring of the of land use on natural, historical and cultural heritage sites existing in this AEEx. | No | | |
| 4. Encourage the creation of RPPN, with the assistance of other partners in order to increase the degree of protection of the FESA. | No | | |
| 5. Prioritize and manage, with the administration of the Federal APA of the “Ilhas e Várzeas do Rio Paraná”, strategies of continued enforcement in this area. | No | | |
| **Table IV-26 - Activities and sub - activities of Strategic External Area Settlement** | **Implemented** | | |
| 1. Formalize a partnership with IDATERRA , IMASUL , INCRA, leadership of the settlers and municipality of Itaquiraí - MS, along with the Federal APA of the “Ilhas e Várzeas do Rio Paraná”, to initiate actions to raise awareness of the settlers about environmental issues. | No | | |
| 2. Encourage the implementation of socio-economic and environmental studies in this area to support action strategies along with other partners. | No | | |
| 3. Encourage and support feasibility studies regarding alternative income for settlers, based on activities that generate low impact. | No | | |
| 4. Support the development of low environmental impact economic activities, according with the management objectives of the Ilha Grande National Park. | No | | |
| 5. To contact the leaders of settlements and directors of the existing schools in these locations to encourage them to participate in the education and environmental interpretation program of the Ilha Grande National Park. | No | | |
| 6. Support initiatives to recover degraded areas, implement legal reserves and permanent preservation areas in the settlements. | No | | |
| **Table IV-27 - Activities and sub - activities of Strategic External Area Figueira-Camargo** | **Implemented** | | |
| 1. Establish partnerships with universities and non-governmental organizations to develop research priorities for flora and fauna of the forests: Bugio, Figueira and the “Ribeirão do Veado”, among others. | YES | | |
| 2. Make contact with the coordination of Paraná Biodiversity Program to implement activities of this program in the municipalities of Alto Paraíso and Icaraíma, specifically involving Porto Camargo and Porto Figueira. | No | | |
| 3. Request the Regional Office of IAP, in Umuarama, for to prioritize the implementation of SISLEG in the properties of the region. | No | | |
| 4. Articulate with the municipal governments of Icaraíma and Alto Paraíso, to prioritize the implementation of sanitary projects, with funds from the Ecological ICMS (ecological tax). | YES | | |
| 5. Articulate with the municipal governments of Icaraíma and Alto Paraíso, the implementation of a visitor center in the Ilha Grande National Park and in the districts of Porto Camargo and Porto Figueira, with funds the from the Ecological ICMS (ecological tax). | YES | | |
| 6. Request to university researchers the development of archaeological surveys in the potential sites of Porto Camargo and Porto Figueira. | YES | | |
| 7. Promote awareness and training events for landowners of the region in less impacting alternative agricultural production. | No | | |
| **Table IV-28 - Activities and sub - activities of Strategic External Area Foz do Piquiri** | **Implemented** | | |
| 1. Encourage the landowners of the floodplains of the Piquiri river to create RPPN (private reserve of natural heritage) in these areas, aiming its conservation. | No | | |
| 2. Promote research of archaeological sites in Ciudad Real del Guayrá, and other smaller sites. | No | | |
| 2.1 Articulate with IPHAN to issue the license for conducting a research project for this area. | No | | |
| 2.2 Contact for researchers of UFPR to give continuity to archaeological research in this area. | No | | |
| 2.3 Articulate with the municipal government of Terra Roxa to protect existing archaeological sites in the region, preventing their depredations. | No | | |
| 2.4 Contact the Binational Itaipu and Energy Plants in São Paulo, requesting financial support for the development of archaeological research. | YES | | |
| **When 29-IV - Activities and sub - activities of Strategic External Area Porto Vila** | **Implemented** | | |
| 1. Contact the municipal governments of Eldorado - MS, Sanitation Company of Mato Grosso do Sul (SANESUL), Energy Company of Mato Grosso do Sul (ENERSUL), Institute of Environment of Mato Grosso do Sul (IMASUL), requesting the improvement of public services in the Morumbi Village. | No | | |
| 1.1 Request from the city hall of Eldorado - MS a plan for use and occupation of land in the Morumbi Village. | No | | |
| 2. Encourage the promotion of awareness-raising events and training of the owners of the region in less impacting alternative agricultural production. | No | | |
| 3. Establish partnerships with the Federal University of Mato Grosso do Sul (UFMS) and the State university of Mato Grosso do Sul (UEMS) – Novo Mundo campus and nongovernmental organizations, to develop research on the physico-chemical and biological quality of the existing water resources. | No | | |
| 4. Establish partnership with the Institute of Environment of Mato Grosso do Sul, aiming to collaborate in the analysis of the licensing processes regarding mineral extraction and requesting the assessment of impacts of mining activities practiced today. | No | | |
| 4.1. Articulate with the administration of the Federal APA of the “Ilhas e Várzeas do Rio Paraná”, to assist in this action. | YES | | |
| 5. Request from IMASUL to prioritize recovery actions of the permanent preservation areas and legal reserves in strategic areas. | No | | |
| 6. Articulate with the municipal government of Eldorado - MS, to prioritize the implementation of sanitary projects in the Morumbi Village, with funds from the Ecological ICMS. | No | | |
| 7. Contact researchers from universities and request the development of archaeological research of existing sites in the Morumbi Village. | No | | |
| **Table IV-30 - Activities and sub - activities of Strategic External Area Vila Yara** | **Implemented** | | |
| 1. Articulate with the municipal government of Altonia-PR, to prioritize the implementation of sanitary projects in this area. | No | | |
| 2. Contact researchers from universities and request the development of archaeological research of existing sites in Vila Yara or Porto Cerâmico. | YES | | |
| 3. Encourage the promotion of awareness-raising events and training of the owners of the region in less impacting alternative agricultural production. | No | | |
| 3.1 Request to City Hall to promote these events using the funds from the Ecological ICMS | YES | | |
| 4. Support the implementation of associations or cooperatives among pottery workers for the dissemination and practice of alternative income generating activities. | No | | |
| 5. Request from the municipal government of Altônia-PR a elaboration of a plan for use and occupation of the land in Vila Yara. | YES | | |
|  |  | | |
|  | **Total activities** | **Total Implemented** | **Total Do not implemented** |
| TABLE IV-7 | 44 | 29 | 15 |
| TABLE IV-8 | 7 | 3 | 4 |
| TABLE IV-9 | 26 | 14 | 12 |
| TABLE IV-10 | 23 | 2 | 21 |
| TABLE IV-11 | 41 | 30 | 11 |
| 12 TABLE IV | 25 | 24 | 1 |
| TABLE IV-13 | 9 | 0 | 9 |
| TABLE IV-14 | 43 | 12 | 31 |
| TABLE IV-15 | 13 | 5 | 8 |
| TABLE IV-16 | 21 | 1 | 20 |
| TABLE IV-17 | 12 | 7 | 5 |
| TABLE IV-18 | 31 | 14 | 17 |
| TABLE IV-19 | 25 | 7 | 18 |
| TABLE IV-20 | 27 | 11 | 16 |
| TABLE IV-21 | 16 | 8 | 8 |
| TABLE IV-22 | 18 | 5 | 13 |
| TABLE IV-23 | 22 | 8 | 14 |
| 24 TABLE IV | 8 | 2 | 6 |
| TABLE IV-25 | 7 | 0 | 7 |
| TABLE IV-26 | 6 | 0 | 6 |
| TABLE IV-27 | 7 | 4 | 3 |
| TABLE IV-28 | 6 | 1 | 5 |
| TABLE IV-29 | 9 | 1 | 8 |
| TABLE IV-30 | 6 | 3 | 3 |
| **Overall total** | **452** | **191** | **261** |
| **Percentage** | **100%** | **42.25%** | **57.74%** |

1. **Bibliography:**

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   **https://portais.ufg.br/up/68/o/Classifica\_\_\_\_o\_Clim\_\_tica\_Koppen.pdf** [↑](#footnote-ref-1)
2. Document available http://www.epa.gov/watertrain/wetlands/; access on September 23, 2008 [↑](#footnote-ref-2)