



Park Profile – Brazil Superagüi National Park

Date of most recent on-site evaluation: November 2002

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Location: Paraná State, Southern region of Brazil

Year created: 1989

Area: 33,988 hectares

Ecoregion: *Serra do Mar Coastal Forests* (NT0160) and *Ilha Grande Mangroves* (NT1415)

Habitat: Terrestrial habitats: Restingas: arboreal, shrubby-arboreal, herbaceous (all of them may be classified as “early formations with marine influence”);

Atlantic sub-montane forest; Lowland forests; and

Caxetas: “early formations with fluvial influence” dominated by the tree species *Tabebuia cassinoides*.

Aquatic habitats: Estuaries.

Inter-tidal habitats: Mangroves.



Summary

Description

Superagüi National Park is located on the northern shore of Paraná State in southern Brazil. Superagüi is part of the largest continuous stretch of intact Atlantic Rainforest. Superagüi National Park is a core area of the *Atlantic Forest Southeast Reserves World Heritage Site* and is one of the most important protected areas within this Brazilian hotspot.

Biodiversity

It is thought that the park shelters rich flora and fauna, but further studies are needed. Two regionally endemic species rely on this conservation unit for protection. First, the black-faced lion tamarin (*Leontopithecus caissara*) is found within Superagüi. It is the rarest primate of the Americas. The black-faced lion tamarin is endangered; it is estimated that there are 300 individuals in the park’s region. The second endemic species found within the park is the red-tailed amazon parrot (*Amazona brasiliensis*). An additional eight species are considered threatened or endangered to some degree according to either Brazil’s red list of endangered species or the red list maintained by the World Conservation Union (IUCN).

Threats

ParksWatch considers Superagüi National Park to be **vulnerable** and there is a high risk that the protected area will fail to protect and maintain its biodiversity and its natural ecological processes in the medium-term future. Monitoring is needed. The most significant threats include lack of a well-assembled team, lack of a management plan, lack of implementation, unauthorized human presence, and the lack of secure land rights for the conservation unit.



DESCRIPTION

Physical Description

Superagüi National Park is located on the northern coast of Paraná State, in southern Brazil, and is part of Iguape-Cananéia-Paranaguá estuary complex. The park is totally contained in Guaraqueçaba municipality, Paraná State. However, Paranaguá and Cananéia municipalities are also adjacent to the park. The park limits are within the latitudes 25°12'23"S and 25°29'19"S and longitudes 48°01'24" W and 48°20'36" W.

The park is a total of 33,988 hectares and is made up of two islands (Superagüi Island makes up 41% of the park and Peças Island makes up 27%), the continental portion (19%), and the aquatic estuary environment and smaller islands like Pinheiro and Pinheirinho (the remaining 13%). Peças Island's topography is completely flat. Superagüi Island presents three elevations: Morro do Superagüi, Morro das Pacas, and Morro do Canudal, although the elevation differences are not significant. There is higher elevation on the continental portion; Bico Torto is the highest point at 575 m above sea level. Superagüi Island was originally a peninsula but became an island after a canal was built. The canal, Varadouro Canal, now separates the continent from the island.

It was originally constructed to facilitate the boat trips between the towns of Cananéia and Paranaguá, to promote commerce (Vivekananda, 2001).

The climate classification of the region, according to Köppen, is Cfa or humid subtropical. The summer is hot; the highest temperatures occur in January (26.1° C is the monthly average); the coldest month is July (16.3° C is the average). Frosts are an uncommon occurrence. The annual precipitation is approximately 2,500 mm (IPARDES, 1990); there is no clearly defined dry season.

The park shelters estuarine environments, mangroves, caxetais, lowland forests, sub-montane forests, and arboreal, herbaceous and shrubby restingas. In addition, there is approximately 35 km of beautiful, pristine beaches with little or no human presence.



Estuary



Mangroves



Lowland forest



Submontane forest

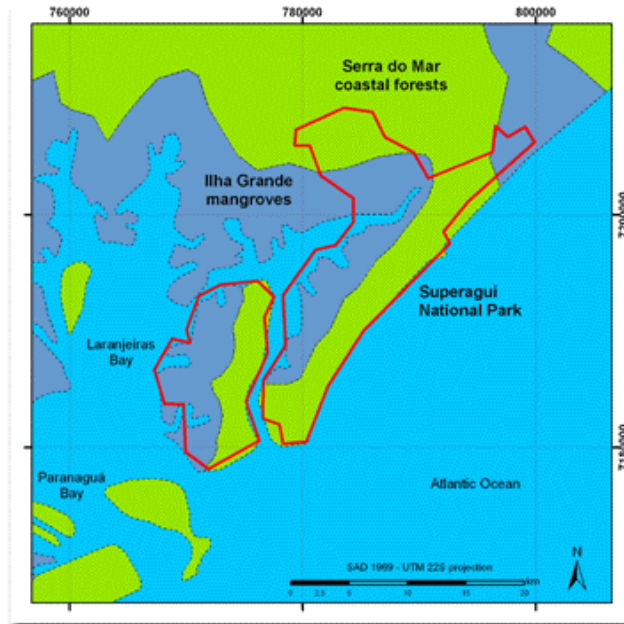


Restinga



Beaches

According to Dinerstein *et al.* (1995), 49% of Superagüi National Park is located in Serra do Mar Coastal Forest Ecoregion, and 41% is classified as Ilha Grande Mangrove Ecoregion. The remaining 10% is made up of the aquatic estuarine environments.



Map showing the two ecoregions of the park, Serra do Mar coastal forests and Ilha Grande mangroves. Map produced by Gustavo Gatti

Biodiversity

Superagüi lacks comprehensive biological studies. Nonetheless, it is estimated that hundreds of species inhabit the park. The park’s environmental conditions lend itself to such rich biodiversity. For instance, the restingas vary greatly—from herbaceous vegetation stabilizing the sand dunes to arboreal restingas rich in epiphytes. The rainforest is also composed of different communities along the altitude gradient.

In one of the few studies about the park’s floral communities, Jaster (1995) listed 274 woody species. The author verified that the farther away from the sea, the greater the increase of the floristic diversity.

An ethno-botanic study of the region of Superagüi National Park identified 386 species that were somehow used by the populations of the region of the park (Lima *et al.* 1998). However, cultivated species, including both exotic and local flora, were part of that list.

Beside the importance of protecting these natural communities, there are also two species greatly benefiting from the existence of Superagüi National Park: the black-faced lion tamarin (*Leontopithecus caissara*) and the red-tailed amazon parrot (*Amazona brasiliensis*).

The black-faced lion tamarin is considered by some researchers the rarest and most threatened primate of South America since its total population is about 300 individuals. This species is endemic and has a very restricted range, most of which is found within Superagüi National Park.

Likewise, the red-tailed amazon parrot is endemic to the region. Its total natural population is estimated at 3,000 individuals. The red-tailed amazon uses the area of the park to feed, reproduce, and roost.

In 1997, the park was enlarged to include the continental areas, where the presence of the black-faced tamarin was detected, and to include the islands of Pinheiro and Pinheirinho, which are two of the main resting grounds for the red-tailed amazon parrot.

According to the studies carried out within the park, a few species have been identified as threatened to some degree by the Brazilian red list of threatened fauna species (MMA *et al.*, 2003) and by the *IUCN Red List of Threatened Species* (IUCN, 2002). The following table provides a summary of the species found on one or both of the lists.

Species	Taxa	Common names	Brazilian Red List (MMA <i>et al.</i> , 2003)	IUCN Red List (IUCN, 2002)
<i>Amazona brasiliensis</i> L.	Aves, Psittaciformes, Psittacidae	red-tailed amazon parrot (E); amazona colirroja (S); papagaio-chauá, papagaio-da-cara-roxa (P)	Vulnerable	Endangered A2bcd
<i>Leontopithecus caissara</i> Lorini & Persson	Mammalia, Primates, Callitrichidae	black-faced lion tamarin (E); mico-leão-da-cara-preta (P)	Critically endangered	Critically endangered B1 +2abcde, C2a, D
<i>Panthera onca</i> L.	Mammalia, Carnivora, Felidae	jaguar (E); onça-pintada (P)	Vulnerable	Near Threatened
<i>Pontoporia blainvillei</i> Gervais & d'Orbigny	Mammalia, Cetacea, Pontoporidae	La plata dolphin, toninha, cachimbo, boto-amarelo, franciscana (P)	Threatened	Data deficient
<i>Puma concolor</i> L.	Mammalia, Carnívora, Felidae	cougar, mountain lion (E); leon americano (S); suçuarana, onça-parda (P)	Vulnerable	Near Threatened

<i>Calycorectes australis</i> Legr.	Magnoliopsida, Myrtales, Myrtaceae	guamirim (P)	-----	Endangered B1 +2acde
<i>Manilkara subsericea</i> (Mart.) Dubard	Magnoliopsida, Ebenales, Sapotaceae	maçaranduba (P)	-----	Lower risk cd
<i>Ocotea odorifera</i> (Nees) Mez	Magnoliopsida, Laurales, Lauraceae	canela-sassafrás, sassafrás (P)	-----	Vulnerable A1cd
<i>Pouteria beaurepairei</i> (Glaziou & Raunkaier) Baehni	Magnoliopsida, Ebenales, Sapotaceae	guapeva (P)	-----	Lower risk cd
<i>Trichilia casaretti</i> C. DC.	Magnoliopsida, Sapindales, Meliaceae		-----	Vulnerable A1ac

Brazil's Atlantic Forest is world-famous for its bird diversity and around 600 species have been recorded in the general area of the park. Other mammal species in the park include jaguarundis (*Herpailurus yagouaroundi*), crab-eating foxes (*Cerdocyon thous*), and crab-eating raccoons (*Procyon cancrivorus*). Armadillos (*Dasypus novemcinctus*) and opossums (*Didelphis marsupialis*) are very abundant. River neotropical otters (*Lontra longicaudis*) are present in freshwater rivers of the southern part of Superagüi Island.

Management

Superagüi National Park was created in 1989 through Federal Decree 97.688/89.

Because it is a Federal Conservation Unit, the responsibility for the administration of Superagüi National Park is the Brazilian Institute of the Environment and Natural Renewable Resources (IBAMA).

Even though the original management team was supposed to have six staff positions, in actuality there are only two dedicated positions for Superagüi National Park. An environmental analyst, though having recently passed an IBAMA test, ended up accepting another position elsewhere and the position remains open. Three other staff members were reassigned to perform other tasks within IBAMA and are no longer strictly dedicated to the park. Superagüi's staff, therefore includes one forest engineer, who is responsible for this conservation unit, and an operational assistant, who is responsible for driving the boat, maintaining IBAMA facilities, operating the radio, and other tasks as needed. The park's administration does have the support of other IBAMA's employees for specific tasks such as inspection or boat transportation to the park.

The park still lacks a management plan and does not have any zoning. The administration is therefore based on the National System of Conservation Units Law and on the decree regulating all Brazilian national parks. Other laws, such as the Brazilian Forest Law and the Environmental Crimes Law, are also relevant to regulate activities in and around the park.

According to the National System of Conservation Units Law (SNUC), the park's fundamental goal is "the preservation of the natural ecosystems of great ecological importance and scenic

beauty, allowing the scientific research and the development of educational and environmental interpretation activities, through recreation in contact with nature and ecological tourism.” This means that only indirect natural resource uses are permitted.

The park’s infrastructure includes two houses that serve as field bases. One is located in the community of Vila da Barra do Superagüi locality, just outside of the park, and another is located on Pinheirinho Island. These houses serve as base for researchers and other IBAMA employees that do not directly work in the park; for example, IBAMA employees who patrol fishing activities in the entire region, etc. The house at Pinheirinho Island is not used very often. There is another house on Peças Island that is on loan to the park by the State Electricity Company, COPEL. Administrative activities are conducted at Guaraqueçaba’s Environmental Protection Area headquarters office, based in the municipality of Guaraqueçaba, and the State office of IBAMA, in Curitiba. Superagüi staff spends most of their time at these offices where infrastructure is better. To help with transportation, there are two cars and two fully-equipped boats, a bigger one and a smaller, aluminum one.



Vila da Barra do Superagüi



Park building at Pinheirinho Island



Park office at Ilha das Peças



Guaraqueçaba’s Environmental Protection Area headquarters

*One of IBAMA's
two boats for use
in Superagüi
National Park*



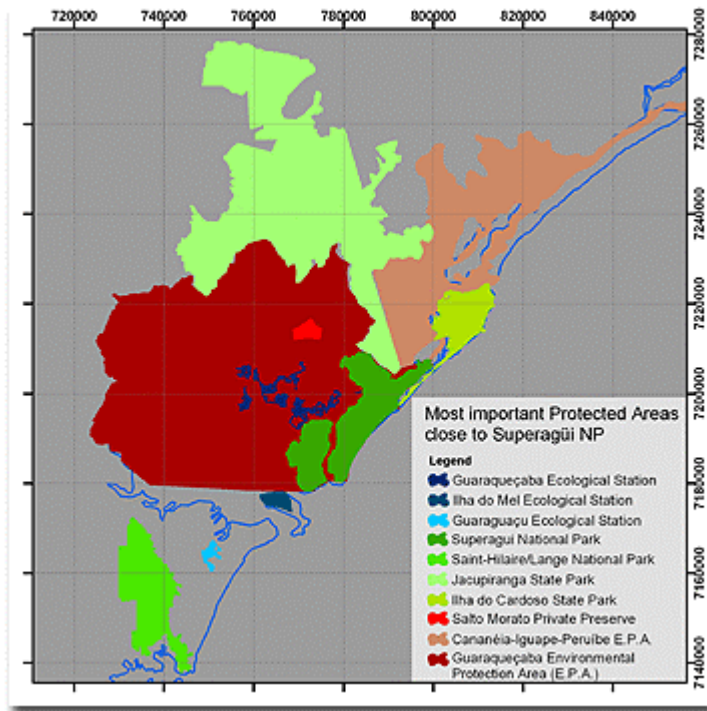
The park's yearly budget varies greatly; last year the budget was approximately US\$ 45,000. This amount did not include expenses related to staff, such as salary or benefits. In addition to funds provided by IBAMA, resources from the Parks in Peril Program (TNC/USAID), Brazil's Ministry of Science and Technology's Pilot Program for Protection of the Brazilian Rainforests/PPG-7, and Pro-Ecotur, among others, complement the budget.

According to the federal law regulating Brazilian conservation units, natural resource extraction from the protected areas is forbidden. Yet, Superagüi does not have a team dedicated to monitoring or vigilance of illegal extraction activities. The park's administration does continuously regulate and control human occupation in the immediate outskirts so that people do not get the opportunity to settle inside of the park.

The Consultative Board is being formed and, soon, this management support is going to be operational, aiming to strengthen and help implement and run Superagüi National Park. The Consultative Board is made up of people identified by IBAMA. The goal of the board is to support the park on everything it needs, from political support to direct intervention on behalf of the conservation unit. In theory, park stakeholders, including leaders of local communities, representatives of private and public institutions, among others, form the group.

Due to the importance of the Atlantic Rainforest in this region, several other conservation units surround Superagüi National Park. These conservation units also aim to protect remnant Atlantic Rainforest.

The seven most relevant conservation units surrounding the park have different management categories and complement one another to coalesce into an overall conservation effort. In order to promote an increase in the overall management efficiency in the region, a taskforce concerning this “mosaic of conservation units” is being formed. The taskforce will address issues such as resource optimization, boundaries, overlapping of the different conservation units, and other common issues.



Map of most important protected areas close to Superagüi National Park, Gustavo Gatti

Human Influence

Guaraqueçaba was one of the first places colonized by the Europeans in Brazil; by the early 16th century, the colonization process was already underway. The first record of significant anthropogenic influence in the region of Superagüi Island date from the mid 19th century, when the island was occupied by a Swiss colony. At that time, large expanses of the forest were deforested for both agricultural development and for timber. The island was abandoned by the end of the 19th century and at that time forest regeneration began.

Another important historic moment for the park was in 1953 when Canal do Varadouro (Varadouro Canal) was completed. From that moment on, Superagüi peninsula became an island, in order to ease the navigation between Paranaguá and Cananéia. This created a physical barrier inhibiting movement for several species, which changed the evolutionary processes of such populations forever.

Nowadays, the human population (approximately 8.4 thousand people in Guaraqueçaba) that lives in the region of Superagüi National Park is essentially extractive, depending on the natural resources. Most of them live off of fishing – mainly shrimp. Depending on the time of the year, crabbing is another major income earner for those specialized in this activity.

Even though the largest human settlements are found outside of the park, on its immediate outskirts, about seven of settlements (with approximately 200 inhabitants) are within the limits of the park. Most of these settlements existed before the park was declared, but nonetheless

represents a situation that needs resolution. One of the settlements is the result of illegal occupation of an area inside the park by a group of *guarani* indians from Uruguay.

Although the main activities are concentrated in aquatic environments (oceanic and estuarine) the extraction of forest resources also occurs. Lima *et al.* (1998) identified more than 16 different classes of uses for the 386 species of plants cited in the area of the park. This study highlighted medicinal uses as important. Heart-of-palm (*Euterpe edulis*) is widely extracted throughout the region as well as in its entire natural range area. Heart-of-palm, or palmito as it is known in Brazil, is mostly commercialized, although some subsistence consumption occurs. It is important to note that there is both legal and illegal trade in palmito. Yet, much of the “legal” trade is actually illegal because of the lack of appropriate controls and regulations. This is important issue deserves attention because palmito extraction is widespread and therefore economically important, yet palmito is part of the diet for many species in the region, making it a key species for the biome’s overall ecological functioning.

Timber species such as the *guanandi* (*Calophyllum brasiliensis*) are selectively extracted mostly for building canoes, the main transportation means in the region.



The caixeta (*Tabebuia cassinoides*) was also severely exploited in the past due to the properties of its wood, which make it the second best wood in the world for pencil making. Currently, however, its exploitation has been significantly reduced; law banned its extraction many years ago because there were no technical criteria for managing the species.

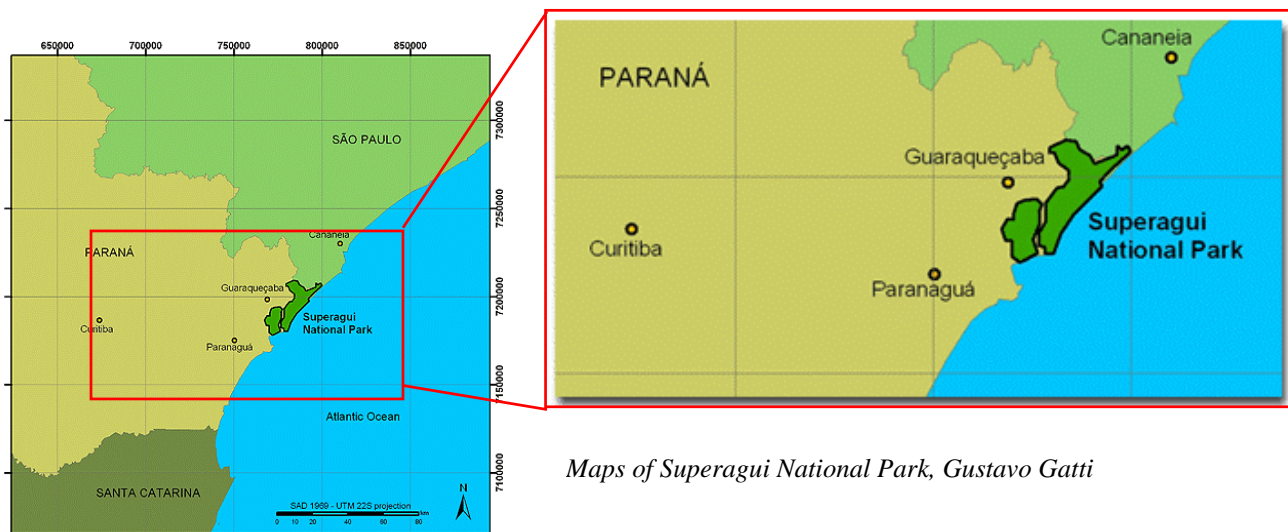
The illegal capture of fauna for sale in the wildlife trade along with hunting (either for commerce or consumption), is also widespread throughout the whole region.

The park is a tourist destination because the scenery is beautiful and because the Guaraqueçaba region has a reputation for environmental conservation. Tourism in Superagüi National Park is rather low (approximately 900/year), but prone to increase once the park is able to accommodate tourism and as additional infrastructure both within and outside of the park is built.

The park is not formally open to the public yet because it still lacks a management plan and has not promulgated any regulations regarding public use; nevertheless, visitor access is permitted in two areas: 1) the 38 km of Praia Deserta on the east side of Superagüi Island, and 2) a small trail called Trilha da Lagoa also on Superagüi Island (this trail begins at Barra do Superagüi village and ends at the location known as “mangue-seco”). Visitors do access other parts of the park, but technically, they are not supposed to do so. The continental part, which is accessible by boat, is not frequently visited except by a few researchers who use this area for studies. Nieffer (2002) analyzed the visitor’s profile and noticed that the tourist’s expressed interest in environmental and social matters and were concerned about the area’s conservation, in contrast with visitors to a neighbor island, Ilha do Mel (not part of Superagüi NP) who did not feel the same.

Access to the park

From Curitiba, the State capital, park access is not direct. First, it is necessary to take highway route BR 277 to either of the towns Paranaguá or Pontal do Sul, both located in Pontal do Paraná municipality. From Paranaguá, it is possible to take a scheduled boat to the communities of Vila das Peças (every day) or as far as Barra do Superagüi (weekends and holidays). Both communities are on the outskirts of the park. From Pontal do Sul or Ilha do Mel Island, it is necessary to charter a boat to gain access to the park.



Maps of Superagui National Park, Gustavo Gatti

Another option is to travel from Curitiba to Guaraqueçaba city (190 km). From Guaraqueçaba there is also a daily boat to Vila das Peças or to Barra do Superagüi (weekends and holidays). Likewise, from the other places, it is possible to rent a boat to access any of the park’s nearby communities.

A third route is from the city of Cananéia or Ilha do Cardoso, both in São Paulo State. This route provides easy access to the community of Barra do Arapira but it is rarely traveled. It also provides access to the Canal do Varadouro, which then leads to other locations. Few boats go into the open sea to sail around the island, but most use the canal. Thus, the continental portion and the islands are accessed through sea and estuaries.

Conservation and Research

One of the goals of a national park is to allow scientific research. Research conducted in Superagüi National Park includes:

- Jaster's master and doctoral studies concerning composition and structure of floral communities in Superagüi, emphasizing the variation along a transect perpendicular to the shoreline (Jaster, 1995);
- The ethno-botanic inventory conducted by technicians of Instituto de Estudos Ambientais Mater Natura (Mater Natura Environmental Studies Institute), emphasizing human populations within the region of the park (Lima *et al.*, 1998);
- Society for Wildlife Research and Environmental Education (SPVS) and the Institute for Ecological Research (IPÊ) have conducted studies on the biology, ecology, population dynamics, and conservation of the red-tailed amazon parrot (*Amazona brasiliensis*) throughout the whole coast of Paraná State, including Superagüi National Park (Carrillo *et al.*, 2002; IPÊ, unpublished);
- Leite's studies of the ecology of great predators in 3 protected areas of Paraná's Atlantic rainforest, one of which being Superagüi National Park (Leite *et al.*, in press). The same author studied competition between local people and predators and found that pumas and local hunters compete for the same prey species;
- Niefer's doctoral thesis, who analyzed and compared the visitor's profile of Superagüi Island and Ilha do Mel Island (Niefer, 2002);
- Charvet and collaborators have conducted studies on the Brazilian sharpnose shark *Rhizoprionodon lalandei* (Carcharhinidae);
- Several studies led by IPÊ about population structure, biology and conservation of the black-faced lion tamarin (*Leontopithecus caissara*), one of the most important species of the park (Prado, 1999);
- Rosas' doctoral studies concerning the biology of two sea mammals of the park, river dolphins (*Sotalia guianensis*) and La Plata dolphin (*Pontoporia blainvillei*), as well as the interactions of such species with the fishing activity within the region (Rosas, 2000);
- There have also been studies concerning birds of the park (by Mikich and Vianna, separately), but these reports are not readily available.

Apart from the studies mentioned above, a few regional conservation projects have been proposed and some of them carried out. In this sense, the following can be cited:

- The 'integrated conservation plan for Guaraqueçaba region' proposed by SPVS in 1992, which proposed several actions aiming to decrease anthropogenic impacts in the environment (SPVS, 1992);

- SPVS also carried out, with the support of WWF and IBAMA, work enabling the community of Barra do Superagüi to help the tourists that visit the park, creating community economic development alternatives that are compatible with the conservation unit (SPVS, unpublished);
- Czajkowski doctoral thesis, which analyzed alternative scenarios to the environmental planning of the park, using, among other techniques, the thematic cartography as planning basis (Czajkowski, unpublished);
- Vivekananda Master's study, which looked into the relationships between man and nature, pointing out the conflicts of human actions and the objectives of the park's conservation (Vivekananda, 2001).

Threats

The threats to Superagüi National Park can be divided into two general categories: threats arising from administrative deficiencies and threats arising from human influence.

Current Threats

Insufficient staff

Lack of staff automatically translates into inadequate protection for the conservation unit. It is absurd to expect that a two-person team would be able to sufficiently implement programs, manage, and protect 34,000 hectares spanning diverse habitats of special conservation needs. The conservation unit does not have a single park ranger. For any kind of inspection or monitoring activity, it is necessary to count on the participation of other IBAMA employees whose responsibilities are not necessarily related to protected areas, such as IBAMA's fisheries regulation staff or IBAMA's forestry staff. Plus, many of existing IBAMA staff do not know or do not employ proper techniques for a routine approach in Conservation Units, which can cause unnecessary constraints and complications depending on the situation. For example, they have tendencies to forcefully tell people to get out of a restricted area or face consequences rather than explain why the area is restricted in the first place and asking them to leave the area using tones that are more cooperative.

Because Superagüi has only two permanent staff (as explained in the management section), most of their time is spent in the administrative offices either at Curitiba (IBAMA's state office) or in Guaraqueçaba (outside of Superagüi, but nearby) and not within the park. The result is lack of IBAMA presence within the area.

Lack of management plan

Without a management plan, which would provide the guidelines for regulating the activities of the park and its buffer zone, it is almost impossible to provide sufficient protection. Even attempts to control human activities cannot be carried out by the park administrators because of

the lack of full legal support, which would be provided by a management plan. Currently, the management plan is not being written. The park's administrators are trying to start the process, but it does not seem to be a priority for decision makers.

Before efficient park protection can be sought, three things must happen. First, the management plan must be created. Second, the management plan must be implemented. Third, the Consultative Council needs to establish its constitution to define roles and responsibilities. Without these actions, the potential for the park to lose credibility is extremely high, since locals will perceive the park management as weak and lacking of capacity to control activities and enforce park regulations.

Human presence near and within the conservation unit

The human presence is in direct conflict with the goals of any full-protection conservation unit. The park's land-titling situation has yet to be resolved. This will require financial resources and political will to be accomplished. It needs to be resolved as quickly as possible in order to avoid potential growth in the settled areas.

In the case of private properties where ownership papers exist but where there is no human presence, no use of the property, and no structures on the property, the land-titling process will be easier and cheaper than the cases in which people are actually residing on the land. There is a relocation process in progress, but no real hope for immediate resolutions, even though there are financial resources allocated for the land-titling process from an environmental compensation payment from construction of a gas line.

These so-called private owners (who own the land but do not actually do anything with it) are anxious to complete the relocation process, while the occupants of the area (the squatters) present great resistance. There are a couple of reasons for their resistance: 1) the residents affection for the place, and 2) the fact that Brazilian legislation provides compensation based on "improvements" such as structures built, fences, etc., but not on the property itself when condemning land. In other words, it is legal to "improve" land but that does not translate into property ownership—no rights to the land are acquired through the act of improving the land. This situation has made the relocation process unpopular for the squatters, who stand to lose a lot.

Unauthorized occupation by an indigenous tribe

A crucial and vital point is the unauthorized presence of a *guarani* indigenous community from Uruguay that deliberately settled an area of the park in 1992.



Today, their presence triggers a disastrous conversion of the rainforest into a cultivation area of exotic species. During visit to the tribe, 11 exotic species were identified and at least four of them have characteristics of being potential plant invaders in the future.



We also verified that clearing land for cultivation and clearing land to denote possession occurs freely. A serious risk of soil erosion is directly related to such practices, since they commonly clear and cultivates steep slopes with exposed soil.



Marking territory



Steep slopes: erosion

Poaching wild animals, including the black-faced lion tamarin and the red-tailed amazon parrot, for local consumption and for commercial sale is a serious threat linked to this unauthorized land occupation. Although currently forbidden by IBAMA, a few groups have visited the indigenous tribe and they have been asked if they would like to purchase wild animals from the tribe.

Pressure for building summer vacation homes

The tourist pressure upon the park and its outskirts, mainly concerning the sale of the local's properties to tourists for the installation of summer vacation homes, is one of the problems that the park administration is trying to resolve.

Some locals have already sold their homes or part of their homes to outsiders, mostly people from Curitiba, even though their own neighbors seem to disapprove. There are two main consequences associated with these types of sales. First, these sales bring about cultural change. Second, typically the locals, also known as *caiçaras*, don't actually leave the area once they sell their homes or huts. Therefore, the physical size of the community grows and the locals then look for new homesites. They could turn to Superagui National Park to satisfy their land needs. In fact, they may already have, although we were unable to verify their presence during our visit. A few of the unauthorized constructions have already been suspended and even torn down by judicial order as seen in the above photo.



Lack of tourism regulations and infrastructure

There is no infrastructure to receive or regulate visitors in the park. Tourists who visit the most popular vacation sites, namely the communities of Barra do Superagüi and Vila das Peças, are then able to enter the park without any kind of guidance, control, or information. Except for a few signs, there are no indications that the visitor has entered a protected area under a special management regime.

There are organized tours to see red-tailed amazon parrots at Pinheiro and Pinheirinho islands. During these tours, the animals are frequently disturbed by the excessive number of boats in the area, and the noise created by the people and boats. There have even been instances when the boats blow their load horns, further disturbing the birds.

Because no camping zone has been designated within Superagüi, this activity is currently illegal. Yet, visitors do camp, either on the beach or in fishermen's backyards along the shore, thereby breaking the current regulations. The main consequence of this activity is the accumulation of trash—these visitors do not take away the trash they produce during their visits.

Natural resources extraction

Extracting natural resources from the park could endanger its environmental integrity. The main resources extracted include the guanandi tree, hearts-of-palm, and crab. There is also small-scale plant collecting (mostly orchids and bromeliads), but it is at such a scale that there is no detectable negative impact at this stage.

Inlet fishing with a trap known as a *cerco*, apart putting pressure on the resource itself, also impacts the nearby vegetation, because for the building of each *cerco*, more than 100 small trees are cut.



The mangrove crab (*Ucides cordatus*) is widely and intensely exploited most of all during its breeding time, when it is much more exposed and easy to harvest. Lately, extremely predatory techniques have been employed, bringing about a high death rate of females and young specimens that do not bear market value.

The most important point regarding the various types of resource extractions taking place in Superagüi is that they are all considered to be “direct uses” and therefore are against the National System of Conservation Units Law, which as stated before, only allows non-consumptive resource use and indirect resource use in a national park (Federal Law 9.985/2000).

Future Threats

Growth of outskirts villages / summerhouses

The biggest villages are located outside of the conservation unit. Nevertheless, on its immediate outskirts, at least two communities, Superagüi and Vila das Peças, are prone to develop towards the limits of the park because on the opposite side, they are naturally limited by sea and estuary. In total, there are an estimated seven communities within the park and six on the immediate outskirts. All have the potential to expand.

One of the possible effects, apart from settling areas of the park, is an additional pressure on other natural resources. As an example, the majority of fishermen use canoes made of *guanadi* wood (*Calophyllum brasiliense*), taken from lowland forests, in most instances from areas within the park and adjacent areas. The more fishermen, the more boats will be needed and therefore more deforestation of the lowland forests.

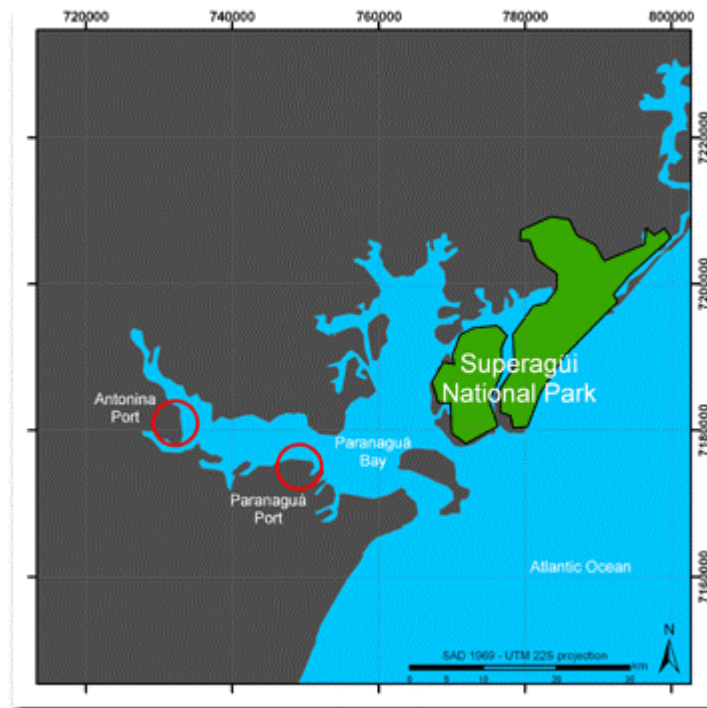
Despite the hard work of the administration to control vacation home construction on the boundaries of the park, in case of a rise in the demand, local property value may increase providing additional incentives for the *caiçaras* to sell their existing homes and move to new lands either closer to the park or within the park.

Indigenous occupation

If the issue of the *guarani* tribe occupation is not solved soon, there will most likely be a population increase, by both family growth and additional migrations into the area by more *guarani* people. That would cause significant harm to the park for their impacts would tend to increase, at least, proportionally to the enlargement of the tribe. New areas are under risk of occupation.

Environmental risks associated with nearby shipping ports

Superagüi National Park is located at the entrance of Paranaguá Bay, which contains the largest commercial port in southern Brazil, and sees heavy cargo traffic. The ships and facilities of the Paranaguá and Antonina Ports pose a constant contamination risk to the park, especially to its estuaries and beaches.



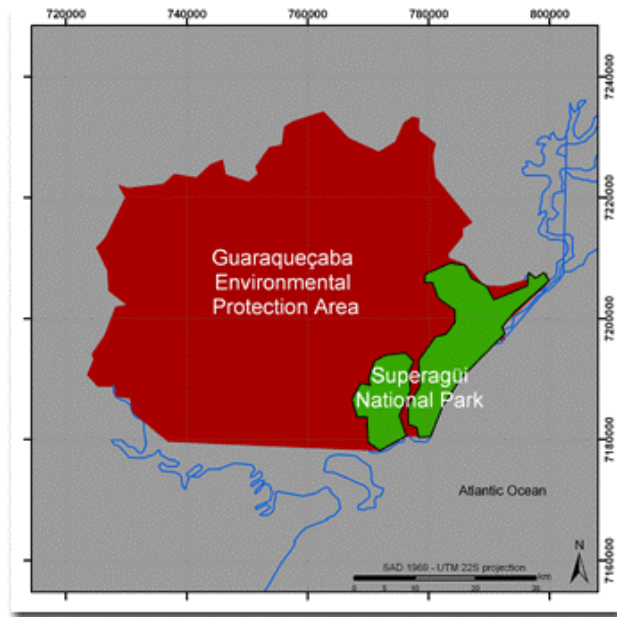
Map showing the location of the Paranaguá and Antonia Ports in relation to the park, Gustavo Gatti

As an example, in October 2001, a ship carrying naphtha¹ in the region of Paranaguá port collided with a rock and one of the tanks spilled almost 5 million liters of the product into Paranaguá Bay. Apparently, the naphtha soon evaporated and did not cause lasting damage. That would not necessarily happen with other kinds of substances.

Non-implementation of the Environmental Protection Area (EPA) of Guaraqueçaba

The Environmental Protection Area of Guaraqueçaba is a sustainable use conservation unit located on the outskirts of Superagüi National Park. Its goal is to regulate human activities, making them more compatible with environmental protection.

The efficiency of the park in assuring the continuity of ecological processes in the long term is also related to the maintenance of a good environmental quality in its future influence and buffer zones. Currently, the EPA of Guaraqueçaba is still not able to grant full protection of such areas since it is has not totally implemented yet. Though not likely, an eventual incomplete implementation of the EPA might jeopardize the existence of relatively well-conserved outskirts, or even increase pressure on the park itself.



Map of the EPA, Gustavo Gatti

Increase of unregulated tourism

If tourist activity increases significantly in the future, without the implementation of the essential infrastructure to control visitation, there is a risk that other existing problems—such as collecting ornamental plants (most of all orchids and bromeliads), pollution due to lack of waste management, and clearing lands for new campgrounds—could increase and threaten the park. The presence of tourists may also encourage the illegal commerce of wild animals and plants. In addition, real estate speculation would also be a direct consequence of such increase.

¹Naphtha is any of various volatile often flammable liquid hydrocarbon mixtures used chiefly as solvents and diluents

RECOMMENDED SOLUTIONS

Insufficient staff

Obviously, it is immediately necessary to structure a team with well-defined functions that assures a minimum acceptable level of protection for the conservation unit. The structure of the team will most likely change once the future management plan is created, but in the meantime, additional staff is necessary.

Lack of management plan

The efforts to begin elaborating the management plan must be started as soon as possible, since it will be the most important document for managing the park. In the case that IBAMA itself is not able to carry out these efforts, partnerships with institutions from the region with expertise in the diverse aspects of nature conservation should be established. Another recommendation is to encourage scientific research. Not only would the acquired data help to reemphasize the park's ecological value, but also additional research would help establish a better scientific basis for its management.

Pressure for building summer-houses / Non-implementation of the Environmental Protection Area (EPA) of Guaraqueçaba / Growth of outskirts villages

The administration of the park should keep working to regulate the land on the park's outskirts, enlarging the productive partnerships with other institutions that have competence in related themes such as *Delegacia do Patrimônio da União* and *Secretaria da Cultura*. In the same sense, IBAMA should foment the execution of a detailed zoning within the Environmental Protection Area of Guaraqueçaba, sustainable use conservation unit located nearby. That would strengthen the legal basis to regulate the use and occupation of the park's outskirts.

Increase of unregulated tourism

The park cannot wait for the management plan to be completed to start regulating visitors. Basic public use regulations must be developed to help guide tourism within the park, such as maximum number of visitors on certain trails, identification of permitted and prohibited areas, and general guidelines for tourists regarding their behavior in a protected area, among others. Likewise, indicative signs should be immediately posted in strategic points with notable tourist traffic, aiming to convey information about the location and existence of the park.

Irregular occupation by the guarani indigenous tribe

Concerning the indigenous irregular occupation, IBAMA should start negotiations with FUNAI – National Indian Foundation – to request the relocation of the tribe to another place, out of the park and out of any other full protection conservation unit. If the negotiations are not successful, prompt measures ought to be carried out for the park to gain legal ownership of the area occupied by the *guarani* tribe. Either IBAMA, through its attorney's office, or civil society organizations should demand judiciary action to uphold the citizen's right to natural heritage protection.

CONCLUSION

Superagüi National Park plays an important role in preserving one of the last remnants of high quality Atlantic Rainforest. It and several nearby conservation units represent a refuge that assures continuity of ecological processes and survival of several species, some of which are endemic to the region.

According to field evaluations, we determined that the park is **vulnerable**. That is, provided current trends continue, there is a great chance that the park will fail to protect its ecosystems in the medium term.

While there are several recommendations, most importantly, Superagüi National Park desperately needs a management plan. The first steps include establishing and assembling the team that will be responsible for writing the plan. The management plan is both a legal and technical tool essential for providing adequate protection to the park. Finances exist to carry out this process and it should be initiated as soon as possible. That accomplished, it will be necessary to begin to effectively implement this conservation unit. The park and its regulations need to be recognized, valued, and respected. The management plan must also identify and acquire all the needed infrastructure/equipment for fulfilling park goals.

IBAMA must take decisive steps to immediately solve the *guarani* tribe's occupation within the park. In this case, the national interest for effective conservation of valuable natural resources should take precedence over special interests that aim to take advantage of indigenous people to try to weaken the Brazilian protected areas system.

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