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***Dra. Sueli Angelo Furlan***

***Sooretama***

In Tupi, it means *“where animals live*”, a name indigenous communities used to describe the region currently known as Atlantic Forest. These communities were very familiar with the fauna and flora of the vast forest that covered large portions of Brazilian coastland. Today, several processes show this interdependence. The Atlantic Forest co-evolved with the animals in a complex process of interactions that involved, for example, pollination of several species of bats, the scattering of seeds by birds and small mammals and the decomposition of organic matter from the litter layer left by organisms in the soil.

Originally, the Atlantic Forest covered approximately 1,315,460 square metres – the equivalent of 130 million hectares – and 17 Brazilian states, reaching the entire coastal region and expanding towards the interior. It was the second largest humid tropical rainforest in the country, and is currently reduced to 8.5% of its original size (Figure 1). Regardless, it still manages to maintain large-scale biodiversity by also being associated with other ecosystems, such as mangroves and *restingas*, or sandbank and reef environments.

***Atlantic Forest: a single name for a complex of ecosystems***

There is no single concept. Some authors consider that the Atlantic Forest is merely the thick forest that occurs along the coast and revegetates, for example, the sloped terrains of Serra do Mar and Paranapiacaba in south-eastern Brazil (RAWITSCHER, 1944; MANTOVANI, 1990; VELOSO & KLEIN, 1961, 1963, among others). Other authors consider that the Atlantic Forest is a vast mosaic of forests distributed across different humidity gradients as part of a set of inter-related ecosystems along a range of coastal morphologies (HUECK, 1972, CÂMARA, 1991, RIZZINI & COIMBRA FILLHO, 1988).

Historically, the Atlantic Forest comprises a complex of inter-related forests in their origin and expansion. Today, it has been strategic for conservation to legally consider this set of different types of related forests as a complex of Atlantic forests.

In this sense, an all-encompassing vision favours the protection of the few fragments of the widespread deforestation of its vegetation types. One of the environmentalists that worked hard for its conservation – Admiral Ibsen de Gusmão Câmara − states,

Whichever arguments are given in favour of one or another of these points of view, one fact is incontestable – during the discovery of Brazil, one practically continuous forest cover, although with very diversified vegetation and floristic types, expanded along the coastline, from Rio Grande do Norte to Rio Grande do Sul, with vast stretches towards the interior, covering almost all the states of Espírito Santo, Rio de Janeiro, São Paulo, Paraná and Santa Catarina, parts of Minas Gerais, Rio Grande do Sul and Mato Grosso do Sul and extensions in Argentina and Paraguay. This immense heterogeneous forest that occupied a surface of over 1,000,000 square kilometres in Brazil alone (around 12 percents of the country´s surface), although currently drastically reduced and fragmented, justifies a common denomination that considers its totality. In this way, in contrast with the name Amazon Rainforest, which is also very heterogeneous and diversified, but with a designation that is generally accepted without objection, it would be reasonable to extend to all current remnants of former vast Atlantic forests the traditional denomination Atlantic Forest, a term that is established in the Federal Constitution, although it has been acknowledged that the designation Atlantic Province would be more appropriate. (CÂMARA, 1996)

There are different levels of organization and groups of forest clusters according to relief, soil, weather variables and latitudes in which these remnants are arranged. Moreover, it should be considered that, for fauna, biogeographical analysis changes and demands another type of “design” of functional units. If, for example, we considered the geographical occurrence of lion tamarins (*Leonthopithecus spp*), we could historically group humid hillside forests and more interiorized semi-deciduous forests. How do we preserve the scattered, fragmented remnants with biodiverse natural histories?

**Biodiversity and Atlantic Forest conservation**

From the standpoint of preserving forest landscapes and other associated ecosystems, it is essential to gather ecological and historical knowledge to form a strategic vision. Important ecological characteristics for the conservation of reminiscent forest typologies are bioclimatic and orographic factors and hydrographical basins. These three key components were associated to the origin of this complex (AB’SABER,1977).

Relief can act as a barrier that causes large rainwater discharges and condensation of the humidity that creates fog that is always found at altitudes above 800 metres in coastal areas, keeping in mind that this altitude is considered optimal for the Atlantic Forest in southern Brazil. In this bioclimatic context, it is important to unveil the dynamics of habitat fragmentation and create better protection designs. It is also important to observe number of habitats, their connections, life zones, size and form of remnant fragments.

This mosaic of fragmented landscapes is dynamic and, despite a dramatic devastation, the Atlantic Forest still houses a significant portion of Brazilian biodiversity with extremely high levels of endemism. Official data state that:

(...) reduced and very fragmented, in the Atlantic Forest there are an estimated 20,000 plant species (around 35% of known species in Brazil), including several endemic and endangered species. In relation to fauna, surveys indicate that the Atlantic Forest harbours 992 bird species, 372 amphibian species, 197 reptile species, 270 mammal species and around 350 fish species. (<http://www.mma.gov.br/biomas/mata-atlantica>).

Furthermore, data on endangered species in these areas. Of the 627 species of fauna included in the endangered species list in Brazil, 104 bird species are from the Atlantic Forest (MACHADO *et al.,* 2008). For this reason, remnant areas of this forest are considered hotspots, that is, important, albeit extremely threatened, ecosystems for the conservation of biodiversity.

**What is being done**

The creation of natural protected areas in Brazil is a public policy that has resulted in significant implications for the conservation of landscapes. There are 187 conservation units (UCs) established by the federal government, 502[[1]](#footnote-1) created by state governments, 17 by municipal governments and another 600 private units. (Figure 1). This number has been steadily growing, but whether this policy is effective or not is yet to be determined. Although it is the key public protection policy, conservation units have not been fully implemented.

In the integral protection modality, territorial disputes with the communities that live inside the UCs and surrounding areas are the most serious problem. Consequently, very few integral protection UCs created so far meet the legal prerequisite that determines they must be created in uninhabited areas on public land. Most UCs were drafted without a planned conservation policy. For many years, there were no studies that provided management or planning guidelines. Social and environmental conflicts became clear with the pressure of social movements. On the other hand, the UCs of sustainable development (APAs, RDS, Resex and others established by Law 9.985/00-SNUC) still lack effective local development plans.

The protection model must be more effective. There has always been a huge difficulty in creating government strategies supported by democratic and ethical principles. The traditional planning vision was always based on ready-made government packages, heritage of the authoritarian culture of our institutions, and many UCs are considered politically unfair by local residents.

1. [↑](#footnote-ref-1)