LEGAL REGIME OF THE ATLANTIC RAIN FOREST AND THE RISK TO SURVIVAL IN SITU OF ENDANGERED SPECIES

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Introduction

The Atlantic Rain Forest is composed of remnants of a set of faces and forest formations which encompasses 17 Brazilian states, from Rio Grande do Sul to Piauí (SOS Mata Atlântica Foundation, 2013).

The legal regime of the Atlantic Rain Forest Biome - established by Federal Law No. 11.428, of 22.12.2006 (Brazil, 2006), and its regulation, the Federal Decree No. 6,660, of 21.11.2008 (Brazil, 2008a) - provides the protection of endangered species. However, the practical application of its provisions in such cases is limited due to the need for a correct understanding of the concept of "risk to the survival of species *in situ*."

There is, first, that in processes of environmental licensing or permit removal of vegetation, with the government agency responsible for the scheme of protection for endangered species in cases of human interventions has been an important ally in safeguarding biodiversity of the Atlantic Forest, citing, as examples, instances in which the possible need for implementing such a regime was accused: the case of the application for preliminary permit for construction of the Science and Technology Park of Juiz de Fora - PCTJFR, in the municipality of Juiz de Fora - MG (Minas Gerais, 2011), and cases of application for license installation for Small Hydro Power (SHP): Brejaúba (Minas Gerais, 2008a), Monjolo (Minas Gerais, 2008b) and Sumidouro (Minas Gerais, 2010),

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expected for Rio do Peixe (Peixe river), in the sub-basin of the Rio Santo Antonio, a member of the Rio Doce basin.

On the other hand, the deepening of application of protective legal provision of endangered species has been compromised due to questions about the concept of "risk to the survival of these species *in situ*."

The relevance of this work derives mainly from the fact of the Atlantic Rain Forest is one of the richest ecological regions in terms of biodiversity on the planet today, still harboring major cultural plurality, consisting of indigenous peoples and non-indigenous traditional cultures as the Quilombolas (Maroons). Moreover, a large part of the Brazilian population lives there (Brazil, 2010).

Observe also that the remnants of the Atlantic Rain Forest keep springs and fountains, help regulate the climate, as well as its factors: temperature, humidity, rainfall - in addition to ensuring soil fertility (Prochnow and Schäffer, 2002). Therefore, the need for increasingly effective protection of the Atlantic Rain Forest Biome and mainly those species which are under threat of being extinct by human activities, is unquestionable. Furthermore, society has an ethical responsibility to pursue an increasingly sustainable use of natural resources.

Therefore, this study aims to contribute to the conservation of this biome and its biodiversity, through the correct application of their legal protection regime, seeking primarily to ensure the maintenance of habitats of their endangered species and helping to guard the biodiversity through the understanding of the term "risk to the survival of species *in situ*", adding, in this way, knowledge of Biological Sciences to the legal regime for the protection of the Atlantic Rain Forest in force, and presenting information for the proper application of the relevant legislation in the licensing process environmental and other authorization procedures involving the removal of vegetation.

It is a qualitative research, analytical character, performed by examination of secondary data organization, interpretation and analysis of laws, environmental administrative proceedings, and bibliographies available in electronic books and websites, both in the business of law as the Biological Sciences in the period 2002-2013, with the reference expressions "Atlantic", "*in situ*" and "extinction".

The biological and cultural diversity of the Atlantic Rain Forest

According to a mapping published in 2006 by the Ministry of Environment, the remnants of the Atlantic Rain Forest native vegetation, including all their faces, occupy only 27% of the original area (Brazil, 2010). However, according to the latest survey of SOS Mata Atlântica Foundation and the National Institute for Space Research (INPE), released in June 2013 (SOS Mata Atlântica Foundation and the National Institute for Space Research, 2013), the percentage of well preserved remnants is only 8.5% (previous to the survey, without the state of Piaui, this information was 7.9%). If we consider all areas over 3 acres, this rate reaches 12.5%. These data indicate the critical situation of forest fragmentation in which these remnants are demonstrating the threat to the maintenance of biodiversity (Brazil, 2010).

According to Milaré (2011), the Atlantic Rain Forest is one of the richest biodiversity in the world biomes: 55% of the tree species and 40% of non-tree are endemic, ie., one between each two species occur exclusively in that location. Thus, as 70% of bromeliads, and orchids, and in the case of fauna, 39% of mammals. Even compared to the Amazon Rain Forest, the Atlantic Rain Forest, in proportion to its size, has the highest biological diversity (Brazil, 2010).

The high degree of endemism and the devastation and severe forest fragmentation causes the Atlantic Rain Forest to present the highest number of threatened fauna species. Over 60% of the species on the Official List of the Red Book of Endangered Brazilian Fauna 2008 (Brazil, 2008b) have distribution in this biome. Also, the Official List of Species of the Brazilian Flora Endangered 2008, described by Normative Instruction No. 6 of 23.09.2008, the Ministry of Environment (Brazil, 2008c) shows that of the 472 species listed, 276 (over 50%) are from the Atlantic Rain Forest (Brazil, 2010).

The Atlantic Rain Forest is a global "hotspot", ie, it is considered a priority and urgent area for conservation action due to the concentration of the highest levels of biodiversity and endemism, and very high level threat. The h*otspot* is considered an area with at least 1,500 endemic plant species and has lost more than three quarters of its original vegetation. Currently, there are 34 *hotspots* identified on the planet, and among them is the Brazilian Atlantic Rain forest (Conservation International-Brazil, [between 2005 and 2013]).

About 100,000 Indians live in 120 Indigenous Lands (TI's) located in the Atlantic Rain Forest areas, totaling around 590,000 hectares already demarcated and ratified or in the process of recognition lands. The most numerous indigenous groups are the Guarani and Kaingang, however, there are many others: Karapotó, Krenak, Maxacali, Pataxó, Pataxó Hã-hã-Hãe, Potiguara, Terena, Tingui Botó, Tupinambá, Tupiniquim, Wassu, Xakriabá, Xetá e Xokleng (Brasil, 2010).

The Atlantic Rain Forest also houses in its big cultural diversity, the native population, the Maroons, the planters, the riparian communities caboclo (mestizos) and those descendants of European immigrants who still practice subsistence agriculture with little selling surplus (ibid.).

The National Policy for Sustainable Communities and Traditional Peoples Development - PNPCT was established by Federal Decree No. 6,040, of 07.02.2007, and has as main objective to promote the sustainable development of those peoples and communities (Brazil, 2007).

This promotion is extremely important, both for the maintenance of cultural, biological and for a time, according to Brazil (2010), although there traditional populations show, firstly, deep in relation to the environment living, contributing to environmental conservation through a harmonious relationship with nature; On the other hand, there are those who practice harmful actions to the environment.

Given the importance of traditional communities, it is emphasized that there is, in respect of Indigenous and Maroon lands, express warranties in Articles 231 of the Federal Constitution (FC) 1988, and 68 of the Temporary Constitutional Provisions Act, respectively (Brazil, 1988).

The relevant legislation

With the promulgation of the Constitution in 1988, Brazil established in article 225, caput, that: "Everyone has the fundamental right to an ecologically balanced environment, while the State and society, in cooperation, preserve it for present and future generations "(Brazil, 2010). This article also established in its § 1, VII, incumbent on the Government "to protect the fauna and flora, sealed, according to the law, practices that endanger their ecological function, cause the extinction of species or subject animal cruelty "(Brazil, 1988).

The 1988 Constitution also recognized the environmental importance of the Atlantic Rain Forest, and in the same article 225, § 4, treats it as national asset, which use will be provided by law, subject to conditions that ensure preservation of the environment, including the use of natural resources (Milaré, 2011).

Federal Law No. 9,985 of 18.07.2000 (Brazil, 2000) established the National System of Nature Conservation Units - SNUG, defines the concept of "*in situ*", in article 2, section VII, as "conservation and natural ecosystems and the maintenance and recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties "habitats (emphasis added).

This understanding is shared with Article 2 of the Convention on Biological Diversity - CBD. The Legislative Decree No. 2 of 03.02.1994 (Brazil, 1994) approved the text of the Convention on Biological Diversity, signed at the United Nations Conference on Environment and Development, held in the city of Rio de Janeiro, in the period 5-14 June 1992; and Federal Decree No. 2,519 of 16.03.1998 (Brazil, 1998) promulgated. This Convention, in Article 8, presents, including a set of measures to be taken by the parties, in view of this conservation.

Brazil, considering the commitments undertaken by signing the CBD, adopted the Federal Decree No. 4,339 of 22.08.2002 (Brazil, 2002) which established principles and guidelines for the implementation of the National Biodiversity Policy, and established as one of the components of this Policy, in Article 9, II, biodiversity conservation, encompassing guidelines for the conservation in situ and ex situ[i] of species, particularly those threatened or with economic potential. This component presents, through Article 11, as the first guideline (11.1), the conservation of ecosystems by promoting actions of conservation *in situ* of biodiversity and ecosystems in areas not established as protected areas and as second guideline (11.2), in places defined as protected areas. The third guideline (11.3) of this component exposes specifically on the consolidation of actions *in situ* conservation of species that make up the biodiversity, aiming to reduce genetic erosion, to promote their conservation and sustainable use, particularly of endangered species, as well as the ecological and evolutionary processes associated with them, in addition to maintaining ecosystem services.

Regarding the environmental licensing according to Milaré (2011), it is typical and delegated action of the executive branch and an important tool for environmental management, in that, through him, the Public Administration seeks to exercise the

necessary control on human activities (such as the removal of vegetation) that interfere in environmental conditions, in order to reconcile economic development with the preservation of the ecological balance - with the consequent biodiversity conservation.

The qualification of the environmental licensing as an instrument of the National Environmental Policy is provided in Article 9, IV, Federal Law No. 6938 of 08.31.1981 (Brazil, 1981) which deals with the National Environmental Policy. The constitutional basis for such an instrument contained in Article 225, § 1, V, in which the constituent incumbent upon the Government to control activities "which endanger the life, quality of life and the environment" (Brazil, 1988). Standards of environmental licensing, at the federal level, are governed by Resolutions of the National Environment Council - CONAMA, No. 237, of 19.12.1997 (Brazil, 1997), paragraph 09 of 06.12.1990 (Brazil, 1990a) and No. 10 of 06.12.1990 (Brazil, 1990b).

The "risk to the survival of species in situ"

The first legal provision specifically aimed to regulate the conservation of the Atlantic Rainforest was the Federal Decree No. 99,547 of 1990, which banned any removal of native vegetation. Because it is highly restrictive standard, it was replaced by the Federal Decree No. 750 of 1993, which formally defined the area of Atlantic Rain Forest and disciplined the protection and use of remnants of native vegetation. With the approval of the Federal Law No. 11.428, of 22.12.2006 - the Atlantic Forest Law (in effect) (Brazil, 2010) - a new legal regime, the result of a long process of democratic discussion, was established.

The Federal Law No. 11,428 of 2006 (Brazil, 2006) provides for the conservation, protection, regeneration and use of Atlantic Forest biome and from 21.11.2008, is regulated by Federal Decree No. 6660 of 2008 (Brazil, 2008a).

Articles 2 and 1, respectively, of the said Act and the said Decree, define the following native forest formations and associated ecosystems as part of Biome: Dense Ombrophylous Forest, Mixed Ombrophylous Forest or Araucaria Forest/ Open Ombrophylous Forest; Seasonal semideciduous forest; Deciduous Forest State; altitude camps; areas of pioneer formations, such as mangroves, salt marshes, fields and saline alluvial areas; vegetational refuges; areas of ecological tension; provincials swamps and forest enclaves, represented by disjunctions of Dense Ombrophylous Forest, Open Ombrophylous Forest; Seasonal Semideciduous forest and Seasonal Deciduous Forest; areas of steppe, savannah and savannah-steppe and native vegetation of coastal and oceanic islands.

Title II of the Federal Law No. 11,428, 2006 discusses the general legal regime of the Atlantic Rain Forest biome, and article 11, section I, paragraph "a" states that are vetoed the cutting and removal of the primary growth or in advanced stages and medium regeneration in areas where species of flora and wild fauna threatened with extinction and intervention installment or endanger the survival of these species (Brazil, 2006) occur.

CONAMA Resolution No. 10 of 01.10.1993 - validated by CONAMA Resolution No. 388 of 23.02.2007, for the purposes of Article 4 of the Law 11.428, of 22.12.2006 - establishes the basic parameters for analysis of stages of succession Rain Forest: primary

vegetation (Article 2, Paragraph I); secondary vegetation or regeneration (Article 2, section II). Article 3 defines the stages of regeneration of secondary vegetation: I - Main Stage; II - Middle Stage; III - Advanced Internship (Brazil, 1993).

It is important to note that each of the 17 members states of the Biome, too, has its own CONAMA, which follow the guidelines of CONAMA Resolution No. 10 of 01.10.1993, defining the characteristics of the vegetation according to local peculiarities (Chiodi, 2008).

The Federal Decree No. 6,660 of 2008, Chapter XII, Article 39 deals with the removal of endangered species and, specifically, in its sole paragraph, brings the rules for the above mentioned Atlantic Forest Law. The caput of Article 39 deals with the authorization that may be granted for the cutting or removal on remaining native vegetation, threatened species, provided that preceded the technical opinion of the competent environmental agency attesting to the lack of technical and location alternative and the impacts of cutting or removal shall be adequately mitigated and not exacerbate the risk to the survival of the species *in situ* (Brazil, 2008a).

Pursuant to the sole paragraph of the same mentioned law, the barrier to such authorization occurs when the intervention installment or new development would endanger the survival of *in situ* species of flora or fauna endangered. In Items I and II, are cited two examples of situations seal, respectively, cutting or removal of endangered species, restricted to the area of occurrence of direct intervention coverage, installment or project, cutting or removal of plant population genetic variability exclusive coverage in the area of direct intervention, installment or enterprise (ibid.).

To understand the meaning and scope of the term "risk to survival *in situ*" or in other words, "risk to survival in the wild", it is necessary to evaluate the "vulnerable to extinction" of species threatened existing extinction (s) in the area subject to human activity. According Lomolino and Brown (2006); Pough *et al.* (2008); Primack and Rodrigues (2008), there are categories of species that, by their nature, are especially vulnerable to extinction.

Primack and Rodrigues (2008) classified them as: species with limited area of occurrence; with only one or a few people; with small populations; with little genetic variability; with declining populations; with low population density; requiring major habitats; large species; dispersers that are not effective; seasonal migrants; requiring special niches; which are characteristic of stable environments; forming temporary or permanent aggregations and, eventually, those species which are hunted and consumed by man. The details of each of these categories are below.

Species with limited area of occurrence are found in only one or a few locations within a restricted geographical area and, if such an area is disturbed by man, so they may become extinct (Pough et al, 2008;. Primack and Rodrigues, 2008).

According to Lomolino and Brown (2006) and Purves *et al.* (2005), many historical extinctions occurred when the various human civilizations reached the points of endemism rather primitive, witnessing, for example, the fragility of island communities: when compared to the mainland, a disproportionately high number of extinctions of vertebrates and terrestrial molluscs, registered from 1600 to 1990, occurred on islands, and this trend Islander applied even to plants.

Another example given by Primack and Rodrigues (2008), are the numerous fish species confined to a single room in a lake or river basin that have also disappeared. Thus, there is a high endemism of flora and fauna existing in the Atlantic Rain Forest. Therefore, this category of species especially vulnerable to extinction deserves special attention.

If there`s local extinction of a population, it is used similar reasoning to what applies to the species of a single or few populations, since what is left from these species will be more susceptible to the global extinction of those species with many populations (Primack and Rodrigues, 2008).

Small populations are also more susceptible to local extinction due to their greater vulnerability to the effects of possible demographic and environmental changes and the loss of genetic variability. The adaptation of a species in a given environment processing may be allowed by intraspecific diversity within a population, and therefore, those species with little or no genetic variation tend to extinction when a new disease, a predator or any other change in the environment happen (Ibid.).

Once considered that the size of the populations experiences fluctuations in time, as a result of variations in environmental conditions and activities of their predators and, or parasites, species whose populations are declining rapidly and become very small, will likely become extinct if the cause of this occurrence is not identified and corrected. In general, the smaller the population, the lower the proportion of birth in relation to death and the longer stays with lower numbers, it becomes more vulnerable to extinction (Purves et al., 2005; Brown and Lomolino, 2006; Primack and Rodrigues , 2008).

A species with low population density probably display only small remnant populations in each fragment if its extension is fragmented by human action. In this context, the population size may be too small to reproduce the species, favoring the gradual disappearance (Primack and Rodrigues, 2008). Moreover, according to Purves *et al.* (2005), species with few individuals confined to a small area of distribution may be eliminated by any local disturbances such as fires, floods and diseases.

The species that require larger habitats to feed tend to disappear as part of its area is damaged or fragmented by human activity (Purves *et al*, 2005;. Primack and Rodrigues, 2008). Also, as Primack and Rodrigues (2008), large animals usually need to occupy larger areas, and require more power and be more easily hunted and driven to extinction by human activities than smaller animals.

Similarly, Pough *et al.* (2008) argue that species that have bigger body size have lesser survival potential than those of smaller size. An animal found in the Atlantic Rain Forest and exemplifies both categories above is the jaguar (Panthera onca) who even lies on the Official List of the Red Book of Endangered Fauna Brasileira 2008 (Brazil, 2008b).

Species that are not effective dispersers, ie, they can not cross roads, farms or other environments transformed by humans, are susceptible to extinction. The changes caused by man to the natural *habitat* of the species often preclude the adaptation of living beings, leaving as the only alternative to dispersion, and therefore those species that are not efficient dispersers become more vulnerable to extinction than those that can getting to another habitat. Studies have shown that animals that are unable to fly are the most fragile, as regards migration capability (Primack and Rodrigues, 2008).

Seasonal migrant species depend on two or more habitat types and, if one is damaged, these species are at risk of extinction. Also, if barriers are created between the two habitats by roads, fences or dams, for example, a species may be unable to complete its life cycle, as in the case of fish that migrate between the mouths of rivers and spring (ibid.). Therefore, this category of species faces the problem of deforestation and fragmentation of the Atlantic Forest of exponential way.

There are species that require special niches, and, once the habitat is altered by human activity, it may not be suitable for these species. As an example, we mention the big trees Peroba pink (Aspidosperma polyneuron), typical of the Atlantic Forest, which require vegetation around water for the necessary amount for your metabolism (Primack and Rodrigues, 2008). Pough *et al.* (2008) add that the subjective interactions between elements of the habitat and the need of the species have the potential to determine the survival or extinction of populations of endangered species.

Likewise, there are species that are characteristic of stable environments, ie, they are adapted to locations where low disturbance occurs and when such stability is altered by man, not tolerating the effects of changes. Moreover, the species of stable environments typically begin their reproduction only when they reach old age, generally have a small offspring and therefore often fail to rebuild their populations enough to prevent the extinction caused by the disturbance of the environment (Primack and Rodrigues, 2008). Similarly, Pough et al. (2008) state that species of small tolerance of habitat have less potential for survival than those with wide tolerance.

The species that form permanent or temporary aggregations in definite places are highly vulnerable to human interventions and hence to local extinction. Birds and shoals presenting examples such aggregations are commonly exploited (Brown and Lomolino, 2006; Primack and Rodrigues, 2008). Communities of social animals may become unable to survive when its population density is reduced to a number, since they no longer feed themselves, mate or defend (Pough et al, 2008;. Primack and Rodrigues, 2008).

Hunted or consumed by man animals may have reduced the size of their populations quickly, and may, therefore, in cases of overconsumption, become extinct if their use is not regulated by law or by local custom (Primack and Rodrigues 2008). Similar ideas were observed by Pough *et al.* (2008) state that the species used as food or to serve the market for which there are no legal protections, there is evidence of a higher rate of extinction than those hunted for sport in controlled programs.

An example of this vulnerability to extinction is overexploitation of Brazil Wood (*Caesalpinia echinata*), decimating much of the Atlantic Rain forest. Currently, the Pau-Brazil is threatened with extinction, according to the Official List of Species of the Brazilian Endangered Flora 2008 (Brazil, 2008c).

There are also other characteristics related to lower survival potential that can be analyzed to assess the risk to the *in situ* survival of endangered species, cited by Pough *et al.* (2008): those with a geographical distribution that crosses national borders and includes international waters; intolerant to the presence of humans; with low reproductive rate (long gestation period, small litters, slow maturation) and species evidenced by top predators of the food chain subject to the effects of biological amplification of chemical pollutants.

As finalize Primack and Rodrigues (2008), these characteristics of "vulnerable to extinction" does not occur independently. For example, larger animal species are inclined to have a small population density and wide extension housing. By identifying these categories of vulnerability, it is necessary to provide adequate management determined that suppression of flora by man does not provide *in situ* risk to survival of endangered species.

In time, Findley[ii] (1997) *apud* Silva (2005) clarifies that a rare or endangered species phase is genetically vulnerable as the risk of inbreeding. Thus, maintaining biological diversity means preserving the different populations of the same species and the largest possible number of individuals of these populations. Furthermore, complete Silva (2005) that different species need integrally their habitats to survive the destruction of various natural ecosystems results in the premature termination of a wide variety of organisms, both flora and fauna.

Conclusion

It can be stated that there is, in our legal system, instruments that avoid, or try to minimize the risk to the *in situ* survival of endangered species. Besides its own Law of Atlantic Rain Forest (Brazil, 2006) and Decree Regulator (Brazil, 2008a) that address the issue, the consolidation of protected areas by Law 9985 of 18.07.2000 establishing the SNUG (Brazil, 2000), CBD (Brazil, 1998) and the National biodiversity Policy (Brazil, 2002), by CF-informed 1988 (Brazil, 1988), integrate biodiversity management needs.

For the effective implementation of Article 11, I, "the" Law of the Atlantic Rain Forest (Brazil, 2006), and Article 39 of Regulation (Brazil, 2008a), it appears that the scope of the term "risk to survival *in situ* "is not unique and static, but depends on the evaluation of a comprehensive bio-ecological processes, according to the peculiarities of the type (s) threatened of extinction and in accordance with the area subject to environmental licensing processes or other processes authorization involving the removal of specimens from the Atlantic Rain Forest.

This review is based on analysis of biological data and their possible "vulnerability to extinction," related to the attributes of the area subjected to human activity. In cases where there are species with characteristics that make them especially vulnerable to extinction, one can conclude that such risk entails human intervention to survive *in situ*, endangering the survival of fauna and flora in their natural habitats.

Therefore, it is suggested that environmental impact assessments required in the processes of environmental licensing of abolition of the Atlantic Forest are more qualitative and technically consistent regarding the endangered species, and consider the study of "vulnerable to extinction" addressed by Conservation Biology. As stated by Purves *et al.* (2005), good diagnostics are used to determine the necessary actions to preserve the species.

In fact, because the species is officially listed as endangered, it appears more likely to survive *in situ*, regardless of their characteristics, fit them in the category of "vulnerable to extinction". However, the legal regime of the Atlantic Rain Forest does not address this way, since the seal cutting and removal of native vegetation that is home to endangered

species occurs only in cases where there is risk to survival *in situ*. According to the norm, not all situations in which there is intervention in an area with such species, there is a risk of survival *in situ*.

The relevant legislation *in situ* conservation of biodiversity threatened with extinction features environmentally friendly advances, and therefore towards the Atlantic. However, the anthropogenic pressure continues, the complex and important challenge to reconcile the occupation of all peoples and traditional communities to the conservation of species of wild fauna and flora threatened with extinction also remains, and with it, we question until where, the malleability of the legislature may be met by the resilience of biodiversity in the context of restructuring and recover these areas.

Notes

i According to Article 2 of the CBD, the ex situ conservation would be the conservation of components of biological diversity outside their natural habitats.

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LEGAL REGIME OF THE ATLANTIC RAIN FOREST AND THE RISK TO SURVIVAL IN SITU OF ENDANGERED SPECIES

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Abstract: The legal system of protection of the Atlantic Rain Forest – established by the Federal Law nº 11,428, of 12.22.2006, and by its regulation, the Federal Decree nº 6,600, of 11.21.2008 – foresees the protection of the endangered species. However, the practical application of its legal issues, in these cases, has been limited due to the need of a correct understanding of the concept of "risk to the survival in situ of species". This paper aims to contribute to the biome conservation and of its biodiversity, by the comprehension of the expression in epigraph, which is not static and may have different meanings. Its definition depends on the evaluation of ecological processes in each concrete case, considering the situation of the "vulnerability to the extinction" of each specie threatened. It is a question of qualitative research, of analytic character, carried out by means of exam of secondary facts.

Keywords: Biodiversity; Environmental Law; Environmental License.

Resumo: O regime jurídico de proteção da Mata Atlântica – estabelecido pela Lei Federal nº 11.428, de 22.12.2006, e por seu regulamento, o Decreto Federal nº 6.660, de 21.11.2008 – prevê a proteção das espécies ameaçadas de extinção. Porém, a aplicação prática de seus dispositivos, nestes casos, tem sido limitada devido à necessidade de um correto entendimento do conceito de "risco à sobrevivência in situ de espécies". O presente contribui para a conservação do bioma e de sua biodiversidade, por meio da compreensão da expressão em foco, que não é estática e pode apresentar acepções diversas. Sua definição depende da avaliação de processos ecológicos em cada caso concreto, considerando a situação da "vulnerabilidade à extinção" de cada espécie ameaçada. Trata-se de pesquisa qualitativa, de caráter analítico, realizada por meio de exame de dados secundários.

Palavras-chave: Biodiversidade; Direito Ambiental; Licenciamento Ambiental.

Resumen: El régimen jurídico de proteccion de la Mata Atlântica - establecido por la Ley Federal nº 11428, del 22.12.2006, y su reglamento, el Decreto Federal Nº 6660

del 21.11.2008 - establece la protección de especies en peligro de extinción. Sin embargo, la aplicación práctica de sus disposiciones en estos casos ha sido limitada debido a la necesidad de una correcta comprensión del concepto de "riesgo para la supervivencia de las especies *in situ*." Este estudio tiene como objetivo contribuir a la conservación de la Mata Atlântica y su biodiversidad, a través de la comprensión del término en question, lo cual no es estático y puede presentar varios significados. Su definición depende de la evaluación de los procesos ecológicos en cada caso, teniendo en cuenta la situación de "vulnerabildad a la extinción" de cada especie amenazada. Esta es una investigación cualitativa, de enfoque analítico, realizada através del examen de datos secundarios.

Palabras clave: Biodiversidad, Derecho Ambiental, Licenciamento Ambiental.