

Recategorization of Conservation Units in Brazil: A systematic literature review

Recategorização de Unidades de Conservação no Brasil: Uma revisão sistemática de literatura

Recategorización de Áreas Protegidas en Brasil: Una revisión sistemática de la literatura

Received: 07/12/2022 | Reviewed: 07/26/2022 | Accept: 07/28/2022 | Published: 08/06/2022

Kadja Monaysa Mendonça de Paula

ORCID: <https://orcid.org/0000-0002-8635-8040>

Federal Institute of Alagoas, Brazil

E-mail: kay_mmp@hotmail.com

Renato de Mei Romero

ORCID: <https://orcid.org/0000-0001-6196-6122>

Federal Institute of Alagoas, Brazil

E-mail: renato.romero@ifal.edu.br

Joabe Gomes de Melo

ORCID: <https://orcid.org/0000-0002-4695-9976>

Federal Institute of Alagoas, Brazil

E-mail: joabe.gomes@ifal.edu.br

Alexandre Schiavetti

ORCID: <https://orcid.org/0000-0001-6196-6122>

State University of Santa Cruz, Brazil

E-mail: aleschi@uesc.br

Abstract

The Brazilian National System of Conservation Units (SNUC) has a wide spectrum of conservationist strategies, so that often the choice of a protected area typology is not adequate to the proposed conservation objectives. The recategorization of a Conservation Unit (CU) is a legal and widely used procedure to resolve conflicts of interest that exist even before the SNUC implementation. This research carried out a Systematic Literature Review (SLR) with the objective of identifying the methods applied in recategorizations and factors that led to the occurrence of this phenomenon in Brazilian CUs. Three bibliographic databases (Research gate, PubMed and Repositório UFSC) were searched, in addition to Google Scholar, obtaining total number of 1,068 articles. The results indicate increase in the number of publications on the theme in the last three years, and that there are twenty methods used in CU recategorization processes in Brazil. A variation of instruments used for recategorization was also identified, and it was found that in most cases, more than one instrument is used, with the implementation of a decree or law being the most used. Several factors are also responsible for recategorization, being territorial conflicts and their overlapping on traditional communities the most relevant.

Keywords: Protected areas; Reclassification; Instruments; Factors.

Resumo

O Sistema Nacional de Unidades de Conservação brasileiro (SNUC) possui amplo espectro de estratégias conservacionistas, de forma que muitas vezes a escolha de uma tipologia de área protegida não se adequa aos objetivos de conservação propostos. A recategorização de uma Unidade de Conservação (UC) é um procedimento legal e amplamente utilizado para solucionar conflitos de interesses existentes até mesmo antes da implementação do SNUC. Esta pesquisa realizou uma Revisão Sistemática de Literatura (RSL) com o objetivo de identificar os métodos aplicados nas recategorizações e os fatores que levaram a ocorrência desse fenômeno nas UC brasileiras. Foram consultadas três bases bibliográficas de busca (Researchgate, Pubmed e Repositório UFSC) além do Google Scholar, obtendo um número total de 1.068 trabalhos. Os resultados indicam um aumento no número de publicações referentes a temática nos anos de 2017 e 2019 e uma diminuição em 2020. E que existem vinte métodos utilizados nos processos de recategorização de UC no Brasil. Foi identificado também uma variação dos instrumentos utilizados para recategorização, e verificado que na maioria dos casos são utilizados mais de um instrumento, sendo a implementação de decreto ou lei os mais utilizados. Diversos também são os fatores responsáveis pelas recategorizações, sendo o principal os conflitos territoriais e suas sobreposições com comunidades tradicionais.

Palavras-chave: Áreas protegidas; Reenquadramento; Instrumentos; Fatores.

Resumen

El Sistema Nacional de Unidades de Conservación de Brasil (SNUC) tiene un amplio espectro de estrategias de conservación, por lo que la elección de una tipología de área protegida a menudo no se adapta a los objetivos de conservación propuestos. La recategorización de una Unidad de Conservación (UC) es un procedimiento legal y ampliamente utilizado para resolver los conflictos de interés existentes incluso antes de la implementación del SNUC.

Esta investigación realizó una Revisión Sistemática de la Literatura (RSL) con el objetivo de identificar los métodos aplicados en las recategorizaciones y los factores que llevaron a la ocurrencia de este fenómeno en las UC brasileñas. Se consultaron tres bases de datos de búsqueda bibliográfica (Researchgate, Pubmed y UFSC Repository) además de Google Scholar, obteniendo un total de 1.068 trabajos. Los resultados indican un aumento en el número de publicaciones sobre el tema en los años 2017 y 2019 y una disminución en 2020. Y que hay veinte métodos utilizados en los procesos de recategorización de la UC en Brasil. También se identificó una variación de los instrumentos utilizados para la recategorización, y se verificó que en la mayoría de los casos se utiliza más de un instrumento, siendo la implementación de un decreto o ley el más utilizado. También hay varios factores responsables de las recategorizaciones, siendo el principal los conflictos territoriales y sus superposiciones con las comunidades tradicionales.

Palabras clave: Áreas protegidas; Reencuadre; Instrumentos; Factores.

1. Introduction

The concept of the term Conservation Unit - CU, is well defined by the law that establishes the National System of Conservation Units - SNUC (Federal Law 9.985/2000), which has been widely used and redefined by some authors (Santilli, 2005; Pereira & Scardua, 2008; Figueiredo, 2014) and by the Biological Biodiversity Convention (BRASIL, 1998), without losing its main purpose, according to the specificity of its use. It is originally described as “territorial space and its environmental resources, including jurisdictional waters, with relevant natural characteristics, legally established by the Public Power, with conservation objectives and defined limits, under a special administration regime, to which adequate guarantees of protection are applied” (Brazil, 2000).

In article 55 of the SNUC law, it is foreseen that CUs created based on previous legal frameworks and that do not fall within the categories provided for in this law, should be recategorized with the aim of defining their reclassification, always obeying the function for which they were created. In addition, there are CUs that, even being classified within the SNUC, present other factors that motivate their recategorization, such as, for example, those that overlap other legally protected areas and that have use or vocation that is different from the objectives of their category.

This recategorization, in accordance with Federal Decree No. 4.340/02, which regulates the SNUC law in its article 40, should be proposed by the CU management and carried out by means of a normative act similar to its creation, that is, if the CU was created by law, only by law must it be recategorized. In view of this panorama, management bodies have the possibility to: 1) recategorize: transformation of a CU typology into another with objectives and functions equivalent to their vocation; 2) incorporate: insertion of the CU into an existing one; and 3) extinguish: extinction of a CU. For situations 1 and 2, there is the possibility of decreasing or increasing its size with a new design. Internationally, this process is known as PADD, which means Protected Areas Downsizing, Downgrading and Degazetting (Scalco & Gontijo, 2019).

This possibility to recategorize, incorporate and extinguish a CU exists because “the State may have created CUs before the SNUC law without preliminary technical studies and that may be irregularly categorized” (Barbosa, 2013 & Gurgel Junior, 2014). Also, according to the authors, “it is possible, in legal terms, to change the category of a Conservation Unit to another one that is more adequate to its biological and cultural reality” (Barbosa, 2013; Gurgel Júnior, 2014). That is, adjustments regarding CU recategorization processes are there to safeguard their respective vocations.

It is necessary to demystify the idea that in conservation units that have already been decreed, their category is inflexible (Barbosa, 2013). It is not claimed that all CUs must undergo a category change process, but that this possibility exists and should be considered when necessary (Zamadei et al., 2019). Recategorization as the “act or effect of re-categorizing”, that is, it is the necessary act to legally classify a CU (Houaiss et al., 2001), and another definition used is “recategorizing is to change the category of a CU while maintaining its area and protection status” (Bernard et al., 2014).

The protection status of a CU is related to its specific characteristics, and for SNUC, status is divided into two groups, Full Protection, which has the resources as the object of protection and Sustainable Use, which has the use as the protection

object, except for Private Reserves. These categories, in turn, are the types of CU that correspond to a certain purpose and vocation for protection; for SNUC, there are five categories for full protection (Ecological Station; Biological Reserve; National Park; Natural Monument and Wildlife Refuge) and seven for sustainable use (Environmental Protection Area; Area of Relevant Ecological Interest; National Forest; Extractive Reserve; Fauna Reserve; Sustainable Development Reserve and Private Natural Heritage Reserve).

According to the SNUC designation, changes in status necessarily imply change in category, but changes in category do not necessarily imply change in status (Bernard et al., 2014). This means that, along with the need to recategorize CUs, especially those not provided for in the national, state, or municipal conservation system, care must be taken to maintain the area's protection status and care must also be taken to meet the demands that generated the need for recategorization.

In this sense, this article presents a Systematic Literature Review – SLR with the analysis of cause and effect that influence the CU recategorization process in Brazil. The results of the analysis were guided by the following research question: According to the scientific community, which factors were the most determinant and which instruments were most used in CU recategorization processes in Brazil?

2. Methodology

The SLR is a type of research that follows specific protocols and that seeks to understand and give some logic to a large documentary corpus (Galvão & Ricarte, 2019).

Also, according to the authors, it must present the bibliographic databases that were consulted, the search strategies used in each database, the selection process of scientific articles, the inclusion and exclusion criteria as well as the process of analysis of included articles.

The protocol of this systematic literature review is available for access and consultation at the link below: https://drive.google.com/drive/u/6/folders/13HmvLJzgh4qXQPCdMj_mTucgJTJEZSY.

Planning

This SLR aims to identify the methods applied in the CU recategorization process in Brazil after the establishment of the National System of Conservation Units. In this planning item, research questions, search databases, selection criteria and a string of characters to specify the information that should be returned from the search base, called strings.

Research questions

The systematic literature review is scientific research composed of its own objectives, research problems, methodology, results and conclusion, not being just a mere introduction of a larger research, as may be the case of a convenience literature review.

Research questions are the basis of an SLR, as it indicates what is being sought and guides the entire research (Souza & Cunha, 2019). Thus, two questions were prepared for this SLR, described below:

Q1: Which are the methods and instruments applied in the CU recategorization process in Brazil after the establishment of the National System of Conservation Units?

Q2: Which factors led to the CU recategorization process in Brazil after the establishment of the National System of Conservation Units?

Research databases

Research databases are the search sources used to collect information that answer the research questions, and the selection of these databases must be performed by seeking those related to the proposed study area (Souza & Cunha, 2019).

The first database used was Google Scholar, as it is a more comprehensive source and provides guidance for possible choice of other databases, according to the search result. Three other databases were used, due to the relevance of articles found in this first search, namely: Researchgate, PubMed and Repositório UFSC.

Selection criteria

A systematic review requires, in addition to a clear question, the establishment of criteria for the inclusion and exclusion of articles, which should be defined based on the question that guides the review (Sampaio & Mancini, 2007) & Mancini, 2006).

The criteria used of this SLR were proposed to include documents with essential information that satisfactorily answer the research question, bringing elements that allow for good discussion, and excluding documents that could add noise to the discussion. Table 1 presents the selection criteria used in this research.

Table 1: Selection criteria (inclusion and exclusion).

ID	Inclusion Criteria (IC)	ID	Exclusion Criteria (EC)
CI 1	Contains the procedures for CU recategorization	CE 1	Addresses faunal and floristic aspects
CI 2	Presents the methods and instruments used in recategorization procedures	CE 2	Referring to other countries
CI 3	Addresses SNUC	CE 3	Based on management plans
CI 4	Published between 2000 and 2020	CE 4	Different article format

Source: Research data.

In addition, to assess the quality of articles, after checking using inclusion and exclusion criteria, a critical analysis of each article was carried out, observing the following aspects: 1) coherence, if information is consistent with what has been proposed and therefore has relevance to the research; 2) textual quality, if it was possible to understand the study proposal and the information relevant to the research; and 3) methodological quality, if there was transparency in the report, which allows for good interpretation and valid application of information in the research.

Search strings

These are the terms, keywords and logical operators used in the search for articles, with operators: “OR”, which means that any of the terms must be inserted in the search; and “AND”, which means that the previous term must be inserted only if accompanied by the following term (Souza & Cunha, 2019).

For each research database, it may be necessary to use a different string, even when dealing with the same research question, as it is the necessary calibration that enables an effective search. Table 2 presents the strings identified by the research question and applied to each database.

Table 2: Search strings.

Question	Database	String
Q1	Google Scholar and Repositório UFSC	(“unidade de conservação” OR “área protegida”) AND (método OR metodologia) AND “recategorização” and (“conservation unit” OR “protected area”) AND (method OR methodology) AND “re categorization”
Q2	Google Scholar and Repositório UFSC	(“unidade de conservação” OR “área protegida”) AND (fator OR causa) AND “recategorização” and (“conservation unit” OR “protected area”) AND (factor OR cause) AND “re categorization”
Q1 and Q2	ResearchGate	((“unidade de conservação” OR “área protegida”) AND “recategorização” and ((“conservation unit” OR “protected area”) AND “re categorization”
Q1 and Q2	PubMed	((rebaixamento) AND (redução) OR (PADDD)) AND (“protected area” OR “in situ conservation”) e ((downgrade) AND (downsizing) OR (PADDD)) AND (“protected area” OR “in situ conservation”)

Source: Research data.

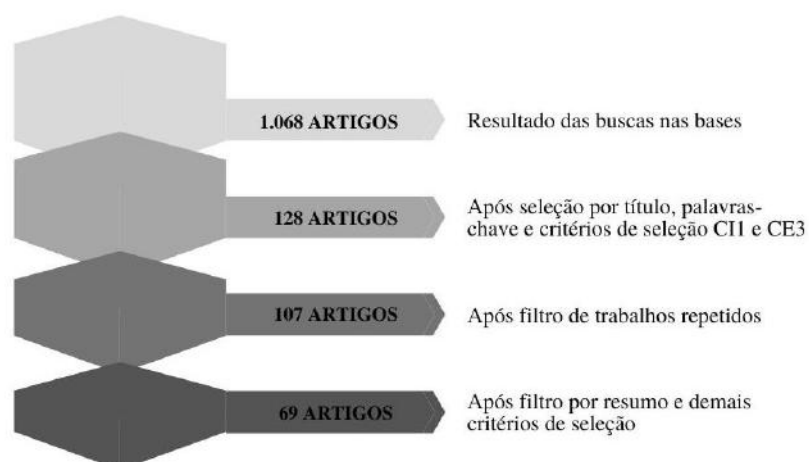
3. Results and Discussion

The search in databases generated response of 1,068 works, including articles, dissertations and other documents. To carry out the selection, two steps were necessary, the first being carried out by title, keywords and the selection criteria CII and CE3, which led to response of 128 works.

After the first filtering, the 128 works obtained were organized in a spreadsheet, containing their main information, and from there, it was possible to identify repetitions found in different databases, and at the end of the spreadsheet organization, 107 works remained.

In the second stage, articles were selected by abstract and the other selection criteria, obtaining 69 articles as result. The following flowchart demonstrates the decrease in the number of articles through the filtering procedure (Figure 1).

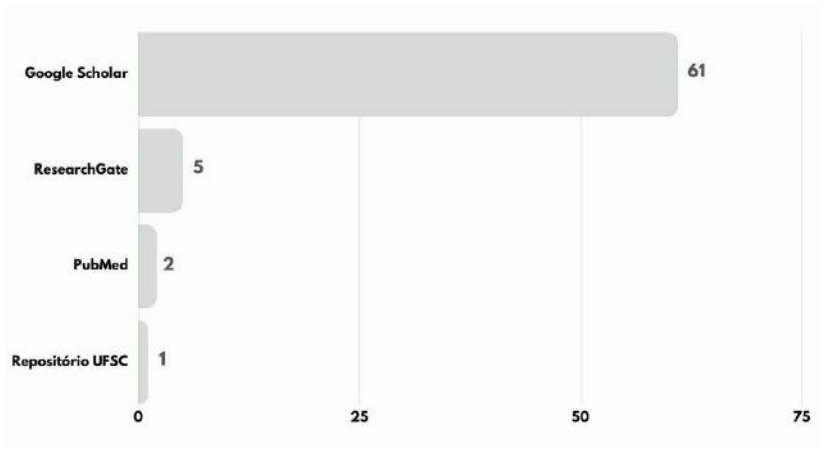
Figure 1: Decrease in the number of articles after filtering.



Source: Research data.

Figure 2 shows the amount of works for each research database, with Google Scholar being the one that returned the most results with 61 articles, followed by ResearchGate with 05 articles, PubMed with 02 articles and Repositório UFSC with 01 article.

Figure 2: Number of works for each research.

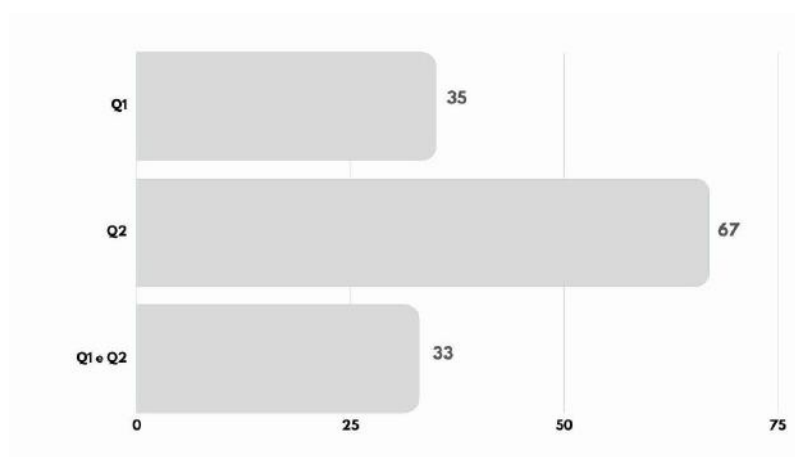


Source: Research data.

In Figure 3, it is possible to observe the number of articles obtained as response to each research question. For Q1, 35 works were obtained and for Q2, 67 works were obtained. It is noteworthy that most articles obtained as response to Q1 also responded to Q2 and were considered as the sum of the return that answered the two questions (Q1 and Q2).

In addition, in the ResearchGate and PubMed databases, only one string in Portuguese and English was used to search the two questions, which was due to the fact that it was necessary to use a broader string to find relevant responses.

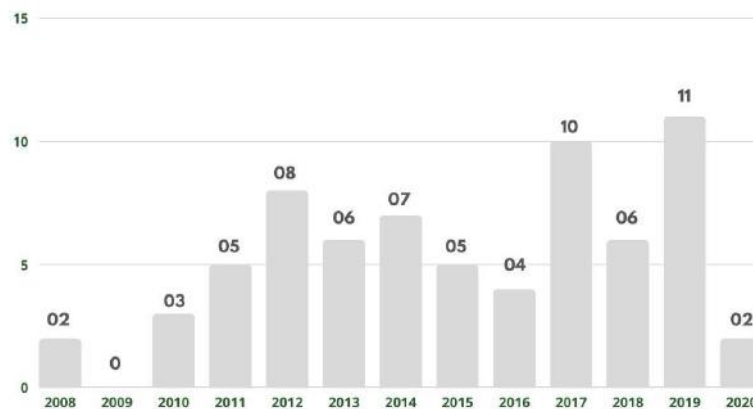
Figure 3: Number of articles to each research question.



Source: Research data.

Figure 4 shows the number of articles according to year of publication. There is a wide distribution between years 2008 and 2020, except of the year 2009, which obtained no results. Most articles found and used in the research were published in the years 2019 and 2017. Another factor that can be observed is that, although the range from 2000 to 2020 was used in the search, selected articles were published from 2008 to 2020.

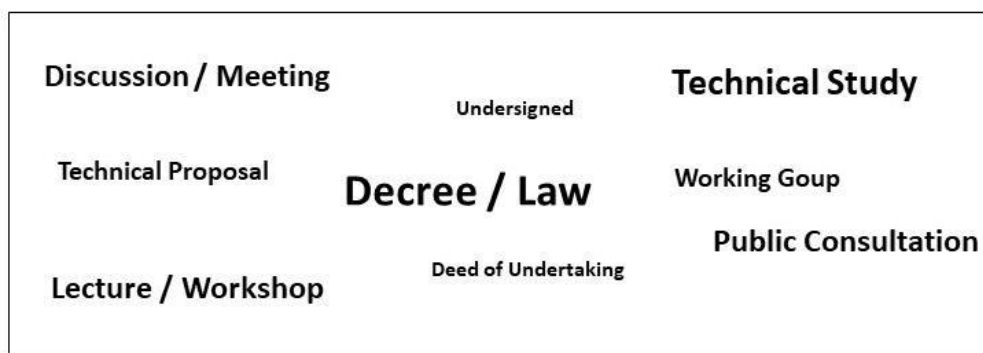
Figure 4: Number of articles according to year of publication.



Source: Research data.

This SLR addressed two guiding questions (Q1 and Q2). Q1 sought to identify the methods, methodologies or instruments used in the recategorization processes of existing Conservation Units in Brazil. Figure 5 shows a cloud of words with results obtained by reading the selected works, where the greater the source of words, the greater the number of mentions in works.

Figure 5: Cloud of words: CU recategorization instruments recategorization in Brazil.



Source: Research data.

Table 3 shows the methods and respective instruments used and described by each author. Twenty different methods were identified, obtained from the individual use or the combination of different instruments, from the use of a public hearing, for example, the use of Working Group + Technical proposal + Meetings + Public consultation + Legal processes + Decree.

Table 3: CU recategorization methods in Brazil.

Method	Instrument	Description	Author	Reason
I	Technical study	Conduction of technical studies to support recategorization	Griffo & Silva, 2013	RESEC for ESEC
II	Proposal for recategorization	Elaboration of a proposal	Scalco & Gontijo, 2017	CU flexibilization and full protection
			Banzato, 2014	ESEC for PARK
			Rocha, 2017	PARK for RESEX
III	Socioeconomic and land survey	Acquisition of socioeconomic and land data	Sbroglia & Beltrame, 2012	PARK for MONA +APA
IV	Law / Decree / Provisional Measure / Bill	Determination of recategorization through legal act	Bim et al., 2017	PARK for MOSAIC
			Molinaro & Leal, 2018	Reduction of limits and partial transformation from FLONA to APA
			Schaimann & Rebolgar, 2017	PARK for MONA
			Bernard et al., 2014	Readjustment, reduction and reclassification
			Policarpo, 2019	PARK for MOSAIC of APAs
			Bona, 2014	REBIO for PARK
V	Meetings	Meetings and discussion with the local population	Cunha, 2008	PARK for MONA or RVS
VI	Study + Bill	Preparation of a study to support the construction of the legal act	Zamadei et al., 2019	REBIO for PARK + APA
			Oliveira, 2018	Fusion of PARK + ESEC + RDS and MOSAIC creation
			Domingues, 2010	APA for full protection CU
			Caldas, 2015	RESEC for RVS
VII	Meetings + Studies	Meetings with the local population and elaboration of a study to support the recategorization process	Silva, 2015	PARK for RDS
VIII	Working Group + Amendment to the decree	Commission of representatives from different sectors of society, such as public, private and teaching entities and modification of the legal act	Lacerda et al., 2017	RVS for APA
IX	Proposal for recategorization + Law	Preparation of proposal and subsequent legal act	Cunha, 2012	Reduction of limits of PARK for RDS
			Narezi, 2018	ESEC for MOSAIC and EE for RDS (partially)
X	Proposal for recategorization + Public Consultation	Presentation of proposal for the population	Castro et al., 2015	ESEC for direct use CU

XI	Technical study + Public consultation + Bill	Preparation of studies, presentation to the population and construction of a legal act	Lopes, 2019	APA for PARK
			Zechner, 2020	Redelimitation
XII	Working Group + Meetings + Bill	Commission for discussion with the community and elaboration of legal act	Spamer, 2017	PARK for MONA
			Prudencio, 2012	PARK in Sustainable use CU
XIII	Working Group + Study + Meetings + Bill	Commission for the preparation of studies and discussions with communities for the construction of the legal act	Duarte, 2012	PARK for Sustainable use CU
			Barbosa, 2013	PARK for MONA
XIV	Working Group + Study + Meetings + Public Hearing	Commission for discussion with the community and elaboration of thematic studies and subsequent presentation to the population	Reis, 2018	PARK for RDS
XV	Technical Group + Technical Note + Meetings + Term of Commitment	Commission for discussion with the community and preparation of a technical document and subsequent signing of commitment term	Fonseca, 2015	Flexibilization of full protection CU
XVI	Meetings + Local population profile form + Public consultation + Recategorization proposal	Carrying out a diagnosis with the participation of the local population to prepare a proposal	Jacaúna, 2018	APA for RDS (partially)
			Ferreira, 2011	ESEC for MOSAIC
XVII	Undersigned + Technical data + Working group + Meetings + Lectures and workshops	Local population initiative, data presentation and discussions in meetings	Sá et al., 2017	Ecological Sanctuary for SNUC typology
XVIII	Meetings + Term of Commitment + Working Group + Studies + Bill	Participation of the population and technicians, elaboration of studies and subsequent construction of the legal act	Ferreira, 2014	REBIO for RDS
XIX	Working group + Technical proposal + Meetings + Public consultation + Legal processes + Decree	Preparation of proposal, presentation to the population and subsequent bureaucratic procedure	Borges et al., 2019	Change of limits and categories
XX	Meetings + Working Group + Interview + Report + Workshop + Recategorization proposal	Meetings and participatory discussion with the local population, elaboration of report and proposal	Ferreira, 2010	REBIO for RDS

Legend: RESEC: Ecological Reserve; ESEC: Ecological Station; APA: Environmental Protection Area; RDS: Sustainable Development Reserve; PARK: National/State/Municipal Park; RESEX: Extractive Reserve; MONA: Natural Monument; FLONA: National Forest; REBIO: Biological Reserve; RVS: Wildlife Refuge. Source: Research data.

It is possible to observe that, according to works analyzed in this study, there is a diversification of methods used for CU recategorization in Brazil. In addition, there is a variation of instruments that compose these methods, used individually and in combination, as described in table 3.

Analyzing the methods adopted for CU recategorizations in Brazil, it is possible to observe that the use of the instrument decree and laws (Borges et al., 2019; Bim et al., 2017; Molinaro & Leal, 2018; Ferreira, 2014; Schaimann & Rebolar, 2017; Lopes, 2019; Bernard et al., 2014; Policarpo, 2019; Bona, 2014; Zechner, 2020; Zamadei et al., 2019; Oliveira,

2018; Domingues, 2010; Caldas, 2015; Lacerda et al., 2017; Duarte, 2012; Barbosa, 2013; Spamer, 2017; Prudencio, 2018; Cunha, 2012; Narezi, 2012) stands out in this process.

Moreover, another instrument that was notoriously used was the technical study (Griffo & Silva, 2013; Jacaúna, 2018; Ferreira, 2011; Sbroglia & Beltrame, 2012; Sá et al., 2017; Ferreira, 2014; Lopes 2019; Zechner, 2020; Zamadei et al., 2019; Oliveira, 2018; Domingues, 2010; Caldas, 2015; Oliveira, 2015; Duarte, 2012; Barbosa, 2013; Reis, 2018) also stand out in this process.

For the National System of Conservation Units - SNUC (Federal Law 9.985/2000), the basic protocol for creating a CU is the sum of technical study + public consultation + bill, being a protocol analogous to the recategorization process, (Figueiredo, 2014. In this sense, three studies corroborated the author, indicating the sum of technical study + public consultation + bill as a method for recategorization (Lopes, 2019; Zechner, 2020; Borges et al., 2019).

Regarding Q2, the review searched for factors that cause the CU recategorization process in Brazil, whether they are factors that generate conflicts, considered negative, or factors that are related to the improvement of the CU protection status, considered to be positive. Table 4 presents a list of the fourteen factors mentioned in the selected studies, thirteen of which are negative and only one positive.

Table 4: Factors responsible for the CU recategorization process in Brazil.

Factors	Number of studies
Traditional human occupation	24
Non-traditional human occupation	15
Non-compliance with SNUC and Legal conflicts	11
Political / economic interference	9
Tourism	8
Land conflicts	8
Power generation / transmission	8
Use restrictions	8
Overlapping of protected areas	7
Real estate speculation	5
Agriculture and livestock	2
Mining activity	2
Public use incompatibility	1
Conservation	1
Change of toponyms	1
Management issues	1

Source: Research data.

Given the above, it is possible to observe that the main highlight is the traditional human occupation (Spamer, 2017; Scalco & Gontijo, 2019; Jacaúna, 2018; Scalco & Gontijo, 2017; Sá et al., 2017; Reis, 2018; Castro et al., 2015; Bim et al., 2017; Fonseca, 2015; Oliveira, 2018; Horovitz, 2016; Bursztyn et al., 2008; Ferreira, 2011; Ferreira, 2014; Sinay et al., 2019) et al., 2019; Ferreira et al., 2013; Maia, 2011; Martins, 2017; Oliveira, 2018; Silva, 2012; Lima & Silva, 2020; Zamadei et al., 2019; Hartung & Moura, 2011), and it is noteworthy that the studies that highlighted this factor are inserted in the scenario of indigenous lands, 'quilombolas' and 'caíçaras', located mainly in the Amazon region and on the Brazilian coast.

Another point worth mentioning refers to the use restriction factor (Santos & Marques, 2019; Scalco & Gontijo, 2017; Santos et al., 2016; Molinaro & Leal, 2018; Maia, 2011; Souza & Milanez, 2019; Marques et al., 2016; Rocha, 2017), which impose restrictions on the resident population, especially when it comes to full protection CUs, such as parks.

In addition to these two factors mentioned above, non-compliance with SNUC and legal conflicts (Griffo & (A. L. F. da Silva, 2012), 2013; Sá et al., 2017; Bursztyn et al., 2008; Paula et al., 2010; Schaimann & Rebollar, 2017; Bernard et al., 2014; Caldas, 2015; Federal et al., 2016; Pereira et al., 2011; Zechner, 2020; Silva, 2012) should also be highlighted, as there are numerous CUs that were created prior to the national system and that, after its implementation, are no longer recognized in the National Register of Protected Areas (CNUC).

Contrary to factors that bring a problem to be solved, the conservation factor was identified (Bernard et al., 2014), related to recategorization with the purpose of increasing the degree of protection of a certain CU, which can occur both with the increase in its geographic area as well as with the modification of its conservation status from sustainable use to full protection.

The conservation factor is the main responsible for gains related to recategorizations, since the PADDD process, in addition to the objective of recategorizing protected areas, also aims at degazetting and downsizing. When the purpose of the factor that justified the recategorization is conservation, this means that there was no loss of geographic area or significance of its protection.

4. Conclusion

Over the twenty years after the SNUC creation, there were several recategorization processes in different CU categories, with responsible factors and different methods, in many cases presenting quite simplistic protocols, but which, in a general analysis, behaved in a very complementary way, as can be seen in the results of this SLR.

To understand the CU recategorization process in Brazil, it is also essential to explore the factors responsible for this need, since there are several factors for this occurrence, in order to seek the methods used in this recategorization process.

Some patterns regarding to the instruments used in these recategorization processes can be observed, for example, one pattern identified was that there are methods with and without popular participation. Likewise, despite the diversification of factors, it was also possible to observe patterns regarding territorial conflicts over land use.

The reading the selected articles allowed finding answers to the two proposed questions. For Q1, the methods applied vary according to the instruments used, including updating a decree or law, carrying out technical studies, technical proposal, public consultation, creating a working group, discussing and meeting with interested actors, holding lectures and workshops, undersigned and signing of the commitment term. In many studies, these instruments were used in a grouped manner, that is, more than one instrument per recategorization process.

For Q2, the factors responsible for the recategorization process vary between traditional human occupation, use restrictions, non-compliance with SNUC, political / economic interference, non-traditional human occupation, tourism, overlapping of protected areas, land conflicts, agriculture and livestock, power generation / transmission, real estate speculation, public use incompatibility, alteration of toponyms and conservation.

It was observed that these factors behave as conflicts, mainly in situations that involve the incidence of occupation by traditional populations, often mentioned in studies, which is due to the fact that there is an overlapping of a CU area with 'quilombola', indigenous and 'caçara' territory. Also, in relation to conflicts, these mostly occur due to the incompatibility of the real local situation, CU vocation and category to which it belongs.

The analysis of the conflicting factor correlation - need for recategorization - method used, is necessary so that both the public power and the population actively participate in this process, which should be carried out to resolve conflicts, promoting recategorization according to the CU vocation.

This SLR pointed out the conflict with traditional communities as the main factor responsible for CU recategorization processes in Brazil, which is justified by the fact that the federation, states and municipalities create full protection CU, or that do not admit human occupations within their limits and does not carry out the necessary expropriation of the land.

In addition, many recategorizations have taken place and are taking place in an arbitrary manner, without carrying out an acceptable procedural rite, which guarantees the maintenance of the protection status of areas and the solution of existing problems.

To follow these procedures, there are initiatives aimed at disseminating data about these recategorizations in the world and specifically in Brazil. As an example, we can mention the PADDD TRACKER and PADDD TRACKER – BRASIL, platforms designed to track and publicize the events of recategorization, reduction and extinction of CUs, prepared by WWF with the support of the International Conservation.

In future works, we advise new research focused in analyze how these recategorization processes took place in each CU to understand the impacts of the decisions made and their effects, in order to identify the most effective set of instruments that should be applied to recategorize CUs in Brazil.

References

- Banzato, B. de M. (2014). *Análise da efetividade das Unidades de Conservação Marinhas de Proteção Integral do Estado de São Paulo* [Universidade de São Paulo]. <https://doi.org/10.11606/D.90.2014.tde-15092014-140740>.
- Barbosa, C. S. (2013). *Recategorização de unidades de conservação: O discurso de uma nova territorialidade e participação social no contexto do Parque Nacional dos Pontões Capixabas - ES* [Universidade Federal de Minas Gerais]. https://repositorio.ufmg.br/bitstream/1843/MPBB-95CNPJ/1/disserta_o_final_cl_udia_barbosa_4.pdf.
- Bernard, E., Penna, L. A. O., & Araújo, E. (2014). Downgrading, downsizing, degazettement, and reclassification of protected areas in Brazil. *Conservation Biology*, 28(4), 939–950. <https://doi.org/10.1111/cobi.12298>.
- Bim, O. J. B., Assis, J. C. de, Campolim, M. B., & Furlan, S. A. (2017). De parque a mosaico: ecologia de paisagem no processo de recategorização do parque estadual Jacupiranga (SP). *Confins*, 32, 1–14. <https://doi.org/10.4000/confins.12216>.
- Bona, R. M. de. (2014). *O Projeto de Lei n. 4.198/12 e o princípio da proibição do retrocesso ambiental: Uma análise crítica acerca do projeto de recategorização da Reserva Biológica Marinha do Arvoredo* [Universidade Federal de Santa Catarina]. https://repositorio.ufsc.br/bitstream/handle/123456789/127464/Trabalho_de_Conclusão_de_Curso_-_Roberto_Marcon_De_Bona.pdf?sequence=1&isAllowed=y.
- Borges, S., Souza, F., Moreira, M., & Camargo, Y. (2019). Alterar limites e categorias de áreas protegidas é necessariamente ruim? Um estudo de caso em duas unidades de conservação estaduais da Amazônia brasileira. *Novos Cadernos NAEA*, 22(2), 117–141. <https://doi.org/10.5801/ncn.v22i2.3954>
- Bursztyn, I., Lima, R. P. de, Catramby, T., Botelho, E., & Spampinato, E. (2008). De quem se protege o paraíso? Um estudo de caso sobre o desenvolvimento do turismo e conflitos na comunidade da Paraia do Sono - Paraty (RJ). *IV Encontro Nacional Da ANPPAS*, 1–16. https://www.academia.edu/1040804/IV_Encontro_Nacional_da_Anppas_4_5_e_6_de_junho_de_2008_Brasilia_DF_Brasil_.
- Caldas, P. M. da S. (2015). *Gestão participativa nas unidades de conservação: o caso do refugio de vida silvestre Mata do Engenho Uchoa, Pernambuco, Brasil* [Instituto Federal de Educação, Ciência e Tecnologia de Pernambuco]. https://repositorio.ifpe.edu.br/xmlui/bitstream/handle/123456789/86/Gestao_participativa_nas_unidades_de_conservacao_-_o_caso_do_refugio_de_vida_silvestre_Mata_do_Engenho_Uchoa%2C_Pernambuco%2C_Brasil.pdf?sequence=1&isAllowed=y.
- Castro, R. R. De, Almeida, M. W. B. De, & Rezende, R. (2015). Caminhos fechados: coerção aos meios de vida como forma de expulsão dos caiçaras da Jureia. *Direitos Territoriais de Povos e Comunidades Tradicionais Em Situação de Conflitos Socioambientais*, January, 545–567. https://www.researchgate.net/publication/283268116_Caminhos_fechados_coercao_aos_meios_de_vida_como_forma_de_expulsao_dos_caicaras_da_Jureia.
- Cunha, E. F. da. (2012). *Conflitos Fundiários No Parque Estadual Do Rio Negro Setor Sul* [Instituto Nacional de Pesquisas na Amazônia - INPA]. https://repositorio.inpa.gov.br/bitstream/1/12890/1/tese_inpa.pdf.
- Cunha, J. R. (2008). *Problemas e expectativas do morador do Parque Municipal da Lagoa do Peri: Subsídios a uma ação de educação ambiental como suporte à gestão participativa* [Universidade Federal de Santa Catarina]. <https://repositorio.ufsc.br/xmlui/bitstream/handle/123456789/124369/79.pdf?sequence=1&isAllowed=y>.
- Decreto n° 2.519, de 16 de março de 1998. (1998), Promulga a Convenção Sobre Diversidade Biológica, assinada no Rio de Janeiro, em 05 de junho de 1992.

http://www.planalto.gov.br/ccivil_03/decreto/d2519.htm.

Domingues, R. (2010). Projeto de recategorização da Área de Proteção Ambiental de Maricá - Rj. [Centro Universitário de Barra Mansa]. In *Centro Universitário de Barra Mansa*. http://arquivos.proderj.rj.gov.br/inea_imagens/downloads/pesquisas/APA_Marica/Domingues_2010.pdf.

Duarte, M. G. (2012). *Conflitos fundiários e meio ambiente: estudo de caso do Mosaico de Unidades de Conservação do Jacupiranga Vale do Ribeira - SP* [Universidade de São Paulo]. https://www.teses.usp.br/teses/disponiveis/8/8136/tde-22022013-111853/publico/2012_MaraGazzoliDuarte_VCorr.pdf.

Federal, U., Rio, D. O., Bacharelado, M. D. E., & Horovitz, G. (2016). *a Pesca Artesanal Em Paraty: Conflitos E Desafios* [Universidade Federal do Rio de Janeiro]. <https://pantheon.ufrj.br/bitstream/11422/1287/4/GHorovitz.pdf>.

Ferreira, H. C. H. (2010). *A dinâmica da participação na construção de territórios sociais e do patrimônio ambiental da Ilha Grande-RJ* [Universidade Federal Rural do Rio de Janeiro]. https://institucional.ufrjr.br/portallcpda/files/2018/08/2010.tese_Helena_Catao.pdf.

Ferreira, H. C. H. (2014). Turismo comunitário, tradicionalidade e reserva de desenvolvimento sustentável na defesa do território nativo: Aventureiro-Ilha Grande/RJ. *Revista Brasileira de Pesquisa Em Turismo*, 8(2), 361–379. <https://doi.org/10.7784/rbtur.v8i2.689>.

Ferreira, L. E. de C. (2011). *Que os parques possam ser a nossa casa - a luta pela recategorização da Estação Ecológica da Juréia-Itatins* [Universidade de São Paulo]. https://teses.usp.br/teses/disponiveis/91/91131/tde-02012012-151345/publico/Leo_Eduardo_C_Ferreira_versao_revisada.pdf.

Figueiredo, M. F. de. (2014). A proteção constitucional dos espaços protegidos, a recategorização de unidades de conservação da natureza e o Projeto de Lei nº 4.198 de 2012. In A. H. Benjamin & J. R. M. Leite (Eds.), *Congresso Brasileiro de Direito Ambiental* (pp. 1–9). Instituto O Direito por um Planeta Verde. https://www.academia.edu/7264169/A_PROTEÇÃO_CONSTITUCIONAL_DOS_ESPAÇOS_PROTEGIDOS_A_RECATEGORIZAÇÃO_DE_UNIDADES_DE_CONSERVAÇÃO_DA_NATUREZA_E_O_PROJETO_DE_LEI_No_4.198_DE_2012.

Fonseca, A. C. da. (2015). *Unidades de conservação e comunidades remanescentes de quilombo no Alto Trombetas: A busca de soluções para conflitos territoriais* [Instituto Nacional de Pesquisas na Amazônia - INPA]. https://repositorio.inpa.gov.br/bitstream/1/12896/1/tese_inpa.pdf.

Galvão, M. C. B., & Ricarte, I. L. M. (2019). Revisão Sistemática da Literatura: Conceituação, Produção e Publicação. *Logeion: Filosofia Da Informação*, 6(1), 57–73. <https://doi.org/10.21728/logeion.2019v6n1.p57-73>.

Griffo, C. L., & Silva, A. G. (2013). As Unidades de Conservação do município de Vitória no novo contexto do Sistema Nacional de Unidades de Conservação. *Natureza Online*, 11(2), 54–67. http://www.naturezaonline.com.br/natureza/conteudo/pdf/01_griffo&silva_054067.pdf.

Gurgel Júnior, F. J. (2014). Aspectos legais da recategorização de uma unidade de conservação – o caso do Parque Natural Municipal Fazenda Santa Cecília do Ingá (Volta Redonda/RJ). *Cadernos UniFOA*, 9(24), 49–56. <https://doi.org/10.47385/cadunifoa.v9.n24.166>.

Hartung, O., & Moura, C. (2011). Uso público na Estação Ecológica de Juréia-Itatins: Um contra-senso legal e um impasse social. *VII Congresso Internacional Sobre Áreas Protegidas de La VIII Convención Internacional Sobre Medio Ambiente y Desarrollo, July*, 330–337. https://www.researchgate.net/publication/318276593_Uso_publico_na_Estacao_Ecologica_de_Jureia-Itatins_um_contra-senso_legal_e_um_impasse_social.

Houaiss, A., Villar, M. de S., & Franco, F. M. de M. (2001). *Dicionário Houaiss da língua portuguesa*. Instituto Antônio Houaiss de Lexicografia.

Jacaúna, T. (2018). Difusão horizontal e vertical da política ambiental na Amazônia. *Novos Cadernos NAEA*, 21(2), 233–256. <https://doi.org/10.5801/ncn.v21i1.4904>.

Lacerda, A. C., Albuquerque, J. V. de, & Galvino, J. (2017). Área legalmente protegida sob conflito: o caso da Reserva de Vida Silvestre Tatu-Bola, Estado de Pernambuco, Brasil. *Revista Brasileira de Gestão Ambiental e Sustentabilidade*, 4(7), 191–202. <https://doi.org/10.21438/rbgas.040719>.

Lei nº 9.985, de 12 de janeiro de 2000. (2000). Regulamenta o art. 225, § 1o, incisos I, II, III e VII da Constituição Federal, institui o Sistema Nacional de Unidades de Conservação da Natureza e dá outras providências. http://www.planalto.gov.br/ccivil_03/leis/19985.htm.

Lopes, V. de M. (2019). Estudo de caso: Área de Proteção Ambiental da Água Escondida e a sua recategorização em parque Natural Municipal. *Escola de Magistratura Do Estado Do Rio de Janeiro*, 11(1), 1872–1887. https://www.emerj.tjrj.jus.br/paginas/trabalhos_conclusao/1semestre2019/tomos/tomoII/versao_digital/928/.

Maia, P. M. C. (2011). Ladeira Sacopã, 250: Um parque, um quilombo, um conflito socioambiental na lagoa. *Revista de Direitos e Garantias Fundamentais*, 10, 251–274. <https://doi.org/10.18759/rdgf.v0i10.131>.

Marques, A. A. B. de, Schneider, M., & Peres, C. A. (2016). Human population and socioeconomic modulators of conservation performance in 788 Amazonian and Atlantic Forest reserves. *PeerJ*, 4, 1–28. <https://doi.org/10.7717/peerj.2206>.

Martins, H. M. (2017). *Nós temos nosso direito que é o certo: Significados das lutas por reconhecimento entre comunidades do Vale do Ribeira, São Paulo* [Universidade de São Paulo]. https://www.teses.usp.br/teses/disponiveis/8/8134/tde-08052017-100442/publico/2017_HomeroMoroMartins_VCorr.pdf.

Molinari, C. A., & Leal, A. A. F. (2018). O caso da floresta nacional do Jamanxim: Uma análise jurídica da Medida Provisória 756/2016 e do projeto de Lei de Conversão nº 4/2017. *Revista de Direito Econômico e Socioambiental*, 9(1), 245–268. <https://doi.org/10.7213/rev.dir.econ.soc.v9i1.16535>.

Narezi, G. (2018). A agroecologia como estratégia de gestão de Unidades de Conservação de uso sustentável no Vale do Ribeira, Estado de São Paulo, Brasil. *Redes*, 23(1), 69–91. <https://doi.org/10.17058/redes.v23i1.9324>.

Oliveira, K. R. A. (2018). *Frente agrícola e natureza: Visões e conflitos no Parque Nacional das nascentes do rio Parnaíba* [Universidade de Brasília]. https://node2.123dok.com/dt02pdf/123dok_es/001/837/1837774.pdf.pdf?X-Amz-Content-Sha256=UNSIGNED-PAYLOAD&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=aa5vJ7sqx6H8Hq4u%2F20220728%2F%2F%2Faws4_request&X-Amz-Date=20220728T003851Z&X-Amz-SignedHeaders=host&X-Amz-Expires=600&X-Amz-Signature=bef0d4d3ac3e8a83f359008bf528b2c6839d19de2ad4085ccc68d8c0fd2eb8c.

- Paula, G. C. R. de, Antunes, A., & Arzolla, F. A. R. D. P. (2010). Ocorrência e conservação da anta Tapirus terrestres (Linnaeus, 1758) na Reserva Florestal do Morro Grande, SP, Brasil. *Revista Do Instituto Florestal*, 22(1), 51–60. https://www.researchgate.net/publication/305046427_Ocorrencia_e_conservacao_da_anta_Tapirus_terrestres_Linnaeus_1758_na_Reserva_Florestal_do_Morro_Grande_SP_Brasil_Occurrence_and_conservation_of_Tapirus_terrestres_Linnaeus_1758_in_Morro_Grande_Forestry.
- Pereira, P. F., & Scardua, F. P. (2008). Espaços territoriais especialmente protegidos: conceito e implicações jurídicas. *Ambiente & Sociedade*, 11(1), 81–97. <https://doi.org/10.1590/s1414-753x2008000100007>.
- Policarpo, M. A. (2019). *As inovações procuram a saída: Perspectivas para a promoção da cogestão adaptativa para o desenvolvimento territorial sustentável na zona costeira de Santa Catarina* [Universidade Federal de Santa Catarina]. <https://repositorio.ufsc.br/bitstream/handle/123456789/206372/PSOP0664-T.pdf?sequence=-1&isAllowed=y>.
- Prudencio, J. M. (2012). *Etnoconservação de recursos hídricos na zona costeira catarinense: Mapeamento participativo de transformações da paisagem na Bacia do Rio da Madre, municípios de Palhoça e Paulo Lopes, no período de 1950 a 2010* [Universidade Federal de Santa Catarina]. <https://nmdsc.paginas.ufsc.br/files/2011/04/TCC-Jaqueline-Maria-Prudencio.pdf>.
- Reis, A. A. V. dos. (2018). *Sentidos e significados (significações) atribuídos pelos povos à saúde e o processo de implantação do Parque Nacional das Sempre-vivas: “Sofrimento é você não ter liberdade”* [Universidade Federal dos Vales do Jequitinhonha e Mucuri]. http://acervo.ufvjm.edu.br/jspui/bitstream/1/1767/1/aremita_aparecida_vieira_reis.pdf.
- Rocha, J. da. (2017). *Modos de vida, sistemas alimentares e transformações: Os caiçaras de Barbados, Paraná, Brasil* [Universidade Federal de Santa Catarina]. <https://repositorio.ufsc.br/bitstream/handle/123456789/185586/PNTR0206-D.pdf?sequence=1&isAllowed=y>.
- Sá, M. P. G. e, Neiman, Z., & Bondioli, A. C. V. (2017). O Santuário Ecológico de Ilhabela como área marinha protegida a ser incorporada ao SNUC: Panorama atual e próximos passos. *Desenvolvimento e Meio Ambiente*, 41, 158–173. <https://doi.org/10.5380/dma.v41i0.49117>.
- Sampaio, R. F., & Mancini, M. C. (2007). Estudos de revisão sistemática: Um guia para síntese criteriosa da evidência científica. *Revista Brasileira de Fisioterapia*, 11(1), 83–89. <https://www.scielo.br/j/rbfis/a/79nG9Vk3syHhnSgY7VsB6jG/?format=pdf&lang=pt>.
- Santilli, J. (2005). *Socioambientalismo e novos direitos: Proteção jurídica à diversidade biológica e cultural* (R. F. Borges (ed.); 1st ed.). Peirópolis.
- Santos, D. J. dos, Gomes, M., Fonseca, S., Costa, F., & Timbó, M. A. (2016). Inventário preliminar do Patrimônio Espeleológico do Parque Nacional das Sempre Vivas. *Cademo de Geografia*, 26(46), 486–506. <https://doi.org/10.5752/p.2318-2962.2016v26n46p486>.
- Santos, W. B. dos, & Marques, D. (2019). Conflito socioambiental na APA de Macaé de Cima: O problema de medidas preservacionistas guiando as ações de uma UC de uso sustentável. V *Seminário Nacional População, Espaço e Ambiente*, V, 1–11. <http://www.abep.org.br/publicacoes/index.php/anais/article/view/3612/3462#>.
- Sbroglia, R. M., & Beltrame, Â. D. V. (2012). O zoneamento, conflitos e recategorização do parque municipal da lagoa do Peri, Florianópolis/SC. *Boletim de Geografia*, 30(1), 5–18. <https://doi.org/10.4025/bolgeogr.v30i1.11542>.
- Scalco, R. F., & Gontijo, B. M. (2017). Possibilidades de desafetação e recategorização em unidades de conservação de proteção integral: As uc’s da Porção Central do Mosaico do Espinhaço (Minas Gerais/Brasil). *Revista Da Anpege*, 13(22), 247–276. <https://doi.org/10.5418/ra2017.1322.0010>.
- Scalco, R. F., & Gontijo, B. M. (2019). A relação das comunidades quilombolas com a natureza: Uma análise dos casos de territórios quilombolas sobrepostos a unidades de conservação de proteção integral em Minas Gerais. V *Seminário Nacional População, Espaço e Ambiente*, V, 1–9. <http://www.abep.org.br/publicacoes/index.php/anais/article/view/3610/3460>.
- Schaimann, D., & Rebollar, P. B. M. (2017). Turismo rural como estratégia de desenvolvimento sustentável na comunidade do Sertão do Peri, Florianópolis - Santa Catarina. *Repositório UFCS*, 1–25. <https://repositorio.ufsc.br/bitstream/handle/123456789/174381/TCC - DANUBIA SCHAIMANN.pdf?sequence=1>.
- Silva, A. L. F. da. (2012). *Onde os direitos ambientais sobrepõem direitos humanos na mata Atlântica brasileira: Estudo a respeito da diversidade cultural em comunidades tradicionais sobrepostas por Unidades de Conservação no Vale do Ribeira, SP* [Universidade de São Paulo]. https://teses.usp.br/teses/disponiveis/91/91131/tde-15032013-110423/publico/Andre_Luiz_Ferreira_da_Silva.pdf.
- Silva, G. de O. B. (2015). De parque a reserva: ilha morro do amaral, Joinville/sc. In R. S. Portanova, A. O. Leite, & M. F. de Figueiredo (Eds.), *Congresso de Direito Ambiental das Áreas Protegidas* (Issue January, pp. 190–203). Ixtlan. https://www.researchgate.net/publication/348418229_DE_PARQUE_A_RESERVA_ILHA_MORRO_DO_AMARAL_JOINVILLESC.
- Silva, J. A. (2012). *Turismo e organização do espaço no Polo Costa dos Coqueirais* [Universidade Federal de Sergipe]. <https://ri.ufs.br/handle/riufs/5497>.
- Sinay, L., de Sinay, M. C. F., Carter, R. W., & Passos, F. V. de A. (2019). Povos tradicionais, áreas protegidas e turismo: Um estudo de caso brasileiro de 15 anos de mudança cultural. *Ambiente e Sociedade*, 22. <https://doi.org/10.1590/1809-4422asoc0070r4vu19L1AO>.
- Souza, L. R. C. de, & Milanez, B. (2019, March). Comunidades e unidades de conservação: Conflitos socioambientais de segunda ordem no entorno do Parque Nacional do Caparaó. *Revista Caminhos de Geografia*, 20(69), 403–420. <https://doi.org/http://dx.doi.org/10.14393/RCG206941421>.
- Spamer, H. (2017). *Monumento Natural dos Pontões Capixabas: Identidade Pomerana na luta por direitos e território* [Universidade de Brasília]. https://repositorio.unb.br/bitstream/10482/31076/1/2017_HelmarSpamer.pdf.
- Zamadei, T., Heimann, J. D. P., & Pires, P. D. T. D. L. (2019). Recategorization of conservation units: Case study nascentes da serra do Cachimbo biological reserve - PA state, Brazil. *Ciencia Florestal*, 29(4), 1796–1808. <https://doi.org/10.5902/1980509831421>.
- Zechner, Y. E. (2020). *Estudo da recategorização de unidades de conservação municipais na ilha de Santa Catarina* [Universidade Federal de Santa Catarina]. <https://repositorio.ufsc.br/bitstream/handle/123456789/204591/TCC.pdf?sequence=1&isAllowed=y>.