

State Park of Serra do Mar (SP), local populations and cultural ecosystem services

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State Park of Serra do Mar (SP), local populations, and cultural ecosystem services

Abstract

This study seeks to comprehend the characteristics of the connections/relationships established by the communities of Catuçaba (São Luiz do Paraiting) and Vargem Grande (Natividade da Serra) with the Parque Estadual da Serra do Mar (State Park whose acronym in Portuguese is PESM) – Núcleo Santa Virgínia, in order to more accurately shed light on the perceived contributions provided by said protected area in the health and well-being of its inhabitants. The study, of a qualitative nature, involved a bibliographic survey and documentary research, as well as interviews with the manager of PESM and residents of both communities. The results indicate that many of the interviewees recognize that the park offers various ecosystem services, although none admitted visiting the park, especially in view of protocols involving the need to book their visits, the requirement of a guide present on most of the trails, all of which reinforce the chasm separating the area and the locals, compromising traditional leisure practices of the communities and their perceptions about the benefits of the protected areas for health and well-being.

Keywords: Parks; local communities; health; well-being; cultural ecosystem services.

Parque Estadual da Serra do Mar (SP), populações locais e serviços ecossistêmicos culturais

Resumo

O presente trabalho visa compreender as características das conexões/relações estabelecidas pelas comunidades de Catuçaba (São Luiz do Paraitinga) e Vargem Grande (Natividade da Serra) com o Parque Estadual da Serra do Mar (PESM) – Núcleo Santa Virgínia, com um olhar atento para as percepções sobre as contribuições dessa área protegida para a saúde e bem-estar de seus moradores. A pesquisa, de caráter qualitativo, envolveu levantamento bibliográfico e documental, entrevistas

com gestor do PESM e moradores das duas comunidades. Os resultados indicam que muitos entrevistados reconhecem que o PESM fornece serviços ecossistêmicos diversos, apesar de nenhum deles afirmar possuir o hábito de frequentar o parque, sobretudo em virtude de exigências, como agendamento e presença de monitor em grande parte das trilhas, as quais reforçam o distanciamento em relação ao parque e comprometem práticas tradicionais de lazer das comunidades e suas percepções sobre os benefícios dessa área protegida para a saúde e bem-estar.

Palavras-chave: parques, comunidades locais, saúde, bem-estar, serviços ecossistêmicos culturais.

Parque Estadual Serra do Mar (SP), poblaciones locales y servicios ecossistêmicos culturales

Resumén

El presente trabajo tiene como objetivo comprender las características de las conexiones/relaciones establecidas por las comunidades de Catuçaba (São Luiz do Paraitinga) y Vargem Grande (Natividade da Serra) con el Parque Estadual Serra do Mar (PESM) - Núcleo Santa Virgínia, con una atención especial a las percepciones sobre las contribuciones de esta área protegida a la salud y el bienestar de sus residentes. La investigación cualitativa involucró levantamiento bibliográfico y documental, entrevistas con el gerente del PESM y vecinos de las comunidades. Los resultados indican que muchos entrevistados reconocen que el PESM ofrece diversos servicios ecossistêmicos, a pesar de que ninguno afirma tener el costumbre de frecuentar el parque, en especial por requisitos como la programación previa y la presencia de un monitor en la mayoría de los senderos, que refuerzan la distancia en relación al parque y comprometen las prácticas tradicionales de ocio de las comunidades y sus percepciones sobre los beneficios de esta área protegida para la salud y el bienestar.

Palabras clave: parques, comunidades locales, salud, bienestar, servicios ecossistêmicos culturales.

Introduction

According to Sancho-Pivoto (2019), in the last decades, the relevance of conservation areas (CA), such as parks, for experiences related to tourism, recreation, health, well-being, sports practices, and landscape contemplation had been significantly increasing in Brazil and around the world. Given this scenario of increased visitation and the perspective linked to the local and regional socio-economic development, Raimundo and Sarti (2016) affirm that Public Use programs become central for the scope of CA management plans by gathering a set of guidelines and objectives responsible for promoting leisure and tourism, both within and in the surroundings of these areas. Still according to Raimundo and Sarti (2016), Public Use programs cover a set of cultural ecosystem services, offering areas for leisure, tourism, and environmental education. However, many challenges remain as to the effective use of the whole potential of CA visitations, such as: a) recognizing strategies that promote socio-environmental formation for the visiting public, connected, among others, to environmental interpretation techniques; b) participative design of Public Use programs that involve local communities' interests and leisure aspirations and touristic motivations with the park's environment conservation actions; and c) understanding the type of experience associated with park visitation in terms of meanings and benefits created both for tourists and local inhabitants of the area and its surroundings.

In the context of these challenges, when we draw attention to the theme of meanings and benefits associated to park visitation, the focus of this study, it is possible to recognize a set of initiatives that are being implemented aiming at highlighting the connection and the potential of green areas to improve the health and well-being of the populations of urban centers, as well as those who inhabit the surroundings of conservation areas. At an international level, the International Union for Conservation of Nature (IUCN), for example, has a workgroup called "Health and Well-being", which seeks to support and foment initiatives that promote health and well-being improvements and benefits through the conservation and contact with nature in protected areas. Besides that, the IUCN also organizes seminars on these themes to encourage the debate on the role of nature for human health. One can also highlight the experiences developed in countries such as Australia ("Healthy Parks, Healthy People"; MALLER *et al.*, 2008), Canada (CANADIAN PARKS COUNCIL, 2006), the United States ("Healthy Parks, Healthy People US", NATIONAL PARK SERVICE, 2011), and Spain (EUROPARC-ESPAÑA, 2013), most of which are developed in urban and peri-urban parks. This happens because leisure practices in the contemporary world have transformed parks into an element of greater aesthetic appreciation and landscape valuation, with a set of activities that may be developed in them. Outside urban environments, fully protected conservation areas are even more endowed with this appeal to the provisions of ecosystem services, once they contribute to the conservation of biodiversity and offer, as a principle, areas for nature visitation and spaces for academic research. In the case of sustainable use CAs, the aim is to conciliate the rational, direct or indirect, use of natural attributes by local populations so to support the maintenance of traditional ways of life. All of this has been transforming conservation areas into the main strategies for the provision of ecosystem services for the protection of biodiversity, but also for a public use that advocates the reconnection with nature.

In Brazil, in the last years, the Chico Mendes Institute for Biodiversity Conservation (ICMBio) has been directing efforts to the promotion of debates on the cultural ecosystem services provided by conservation areas, such as sports, recreational, touristic and leisure practices, connection with nature and spirituality, benefits to health and support to the socio-biodiversity product chain. Emphasis on events such as “*Diálogos ICMBio – Saúde, Parques e Reservas/Banho de Floresta*” (ICMBio Dialogues – Health, Parks, and Reserve/Forest Bathing – 2017) and “*I Seminário de Valores da Natureza*” (1st Seminar of Nature Values – 2019) (ICMBio, 2022a). In June 2021, with the support by ICMBio, the Oswaldo Cruz Foundation/FIOCRUZ (Vice-Presidency of Environment, Attention and Promotion of Health [VPAAPS]) and the Brazilian Institute of Ecopsychology (IBE) signed an agreement directed toward research on the effects of the practice of Forest Bathing (*Shinrin-yoku*), which was born in Japan and became central for preventive public health measures for that country’s population. The goal is to investigate the effects of this practice in Brazilian forests across the six different Brazilian biomes: Amazon, *Cerrado*, *Caatinga*, Atlantic Forest, *Pampas*, and *Pantanal* (ICMBio, 2022b).

This theme is also becoming relevant in academic productions, especially at an international level. Generally, studies indicate that parks enable the practice of physical exercises and the contact with natural attributes (KUO, 2010; RYAN *et al.*, 2010; TERRAUBE *et al.*, 2017; TOWNSEND; WEERASURIYA, 2010), promoting psychological, therapeutical, and cognitive benefits (LEE; MAHESWARAN, 2012; PASANEN; TYRV€AINEN; KORPELA, 2014; PUHAKKA *et al.*, 2016) and feelings of relaxations, joy, and well-being (BOWLER *et al.*, 2010; KENIGER *et al.*, 2013; MAZURKIEWICZ; PACELT, 2015; WOLF; WOHLFART, 2014). Parks also contribute to the reduction and/or prevention of illness such as hypertension, diabetes, anxiety, and stress (CLEAVELAND, 2014; LEMIEUX *et al.*, 2012; MACKENZIE, 2012; PRETTY, 2011; PUHAKKA *et al.*, 2016; ROMAGOSA, 2018). According to Puhakka *et al.* (2016), a study conducted in Finland showed that the on-going practice of exercises in contact with nature also promotes emotional well-being benefits (PASANEN; TYRV€AINEN; KORPELA, 2014). This happens because the contact with nature is shown to increase blood oxygen rates and reduce the levels of cortisol, a hormone responsible, among other functions, for daily life stress (FAO, 2020).

More recently, some researchers have placed a broader perspective for the interpretation and analysis of the influences of visitation to parks over social well-being. According to Romagosa (2018),

[...] A growing number of studies have shown a wide range of benefits for people’s health from being in contact with nature, not only physical health and well-being benefits, but also psychological, spiritual, social, and environmental well-being benefits (ROMAGOSA, 2018, p. 26).

There are also studies that are dedicated to assessing to which extent the role of conservation areas, or of a well-conserved environment, contributes to create job and income for the people living in the area where the CA is inserted (YOUNG; MEDEIROS, 2018). These are works that aim to evaluate the economic role of nature, providing cultural ecosystem services and ensuring work opportunities for those whose dedicate themselves to the tourism production chain in these areas.

In the Brazilian case, the studies on parks and green areas, especially those located in urban centers, also recognize that these areas enable the contact with nature and create social environments that allow for gatherings and the practice of physical and leisure activities, with direct repercussions for the visitor's health, such as reduction of sedentarism and daily life stress (ARANA; XAVIER, 2017; LONDE; MENDES, 2016; PEREHOUSKEI; DE ANGELIS, 2012; SOUSA *et al.*, 2015; SZEREMETA; ZANNIN, 2013). Some Brazilian authors also highlight the role of parks for the promotion of urban sustainability, the improvement of environmental quality and prevention of diseases directed to health groups, such as older adults, hypertensive patients, diabetic, the youth, and pregnant women (ARANA; XAVIER, 2017; RAIMUNDO; PACHECO, 2021). Given this representation, some studies draw attention to the need for investing on park conservation actions and on the increased quality of their structures and environmental conditions as a way to encourage their appropriation by the population. Parameters such as comfort, leisure/socialization, accessibility, vegetation, the services provided and maintenance services, among other factors, are commonly adopted by these studies (BUSATO *et al.*, 2015; SANTANA *et al.*, 2016; SILVA, 2017). Some attributes, according to Szeremeta and Zannin (2013), are able to promote the use of the park and physical activities, among them: offering scheduled activities, easy access and close proximity to homes, park's size, the potential of a unpolluted environment, availability of resources and equipment, existence of green or natural areas, and the aesthetic and maintenance. At the same time, studies also indicate factors that compromise the repulse to green areas, such as pollution, presence of garbage, vandalism, distance for residence, feeling unsafe, and inefficient maintenance (ARANA; XAVIER, 2016; LONDE; MENDES, 2016; SANTANA *et al.*, 2016; SZEREMETA; ZANNIN, 2013).

By approaching the investigation field at hand, it is possible to recognize that, generally, most existing studies still draw focus on parks and green areas located in urban centers, favoring aspects related to physical health, prevention of illnesses, sociability, and restoration by means of the contact with nature. Other aspects related to visitor health and well-being, such as cultural, economic, intellectual, and environmental well-being, remains not central to the debates. When conservation areas such as national or state parks are considered, studies on the cultural ecosystem services provided are even more scarce, despite the recognition of these areas' potential for tourism and to increment local economies, as well as for the improvement of the quality of life of the populations inhabiting their surroundings (BUSSOLOTTI; GUIMARÃES; ROBIM, 2008). According to Romanillos *et al.* (2018), Romagosa, Eagles and Lemieux (2015),

and Lemieux *et al.* (2012), there are few studies that prioritize the local communities' perceptions of the benefits of living around parks that are not located in urban areas and their contributions to health and well-being. For Sancho-Pivoto (2019), the term "visitor" is still commonly linked to foreign people, tourists, and excursionists who seek contact experiences with nature.

Historically in Brazil, the processes of creation of parks and other conservation areas were conducted authoritatively, leading to land conflicts that, in some cases, last until today (MEDEIROS, 2003; SANCHO-PIVOTO, 2019). As a result, the surrounding communities end up distancing themselves from parks and quitting their traditional leisure and sociability practices. For many of these communities, the areas transformed into protected areas used to represent places of gathering, leisure, and, thus, of culturally-constructed social practices. It is important to mention that these leisure perspective moves away from the hegemonic notion that interprets it as a social life sphere opposed to work, such as a moment that is free from many obligations or as an occupation of free time (GOMES, 2014). It is fundamental, according to Gomes (2014), to recognize that leisure is a social practice of daily life that needs to be placed in each social time/space and that, due to this, integrates different cultures, articulating elements such as playfulness and cultural expressions. Therefore, leisure integrates the field of human practices, and it can be seen as a maze of meanings and significances that are dialectically shared in individual subjective and objective constructions, in different contexts of cultural, social, and educational practices (GOMES, 2014). In this sense, we highlight the role of protected areas as a contemporary element of reconnection between society and nature, thus being set as a leisure cultural content front (MARCELLINO, 2007), in which conservation areas are used for physical-sportive and social practices, handcraft activities, among others.

Therefore, it is also necessary to recognize that many communities inhabiting around parks used to perform, in these territories, daily social practices of leisure and socio-cultural enjoyment, in which leisure represents one of the threads culturally woven in the human fabric of meanings, symbols, and significations (GOMES, 2014, p. 12). Along with the creation of parks, barriers to their use are imposed, thus compromising traditional territoriality exercises. At the same time, the growing involvement of a share of these populations in the provision of touristic and tourist reception services leads to them having little time available for leisure and recreation moments in these green areas, thus resulting in lesser health and well-being benefits, as affirmed by Sancho-Pivoto, Alves e Dias (2020).

It is thus evident the need for efforts directed to better understand the communities' view on parks and their leisure and visitation habits, both historical and contemporary ones, so to recognize the perceived benefits and existing demands. Initiatives in this direction are key to subside the creation or improvement of use plans that are more in line with the interests of local populations, with direct repercussions on the social (re)appropriation and valuation of these conservation areas as places of social practices that are founding to the ways of life of the communities inhabiting the surroundings of national or state parks.

Inspired by this context, this investigation involved a case study in the neighborhoods of Catuçaba (Municipality of São Luís do Paraitinga) and Vargem Grande (Municipality of Natividade da Serra), located at the Paraíba Valley of the State of São Paulo and in the surroundings (buffer zone) of the State Park of Serra do Mar (PESM) – Santa Virgínia Nucleus. The goal was to understand the characteristics of the connections/relationships established by the communities of Catuçaba (São Luiz do Paraitinga) and Vargem Grande (Natividade da Serra) with the State Park of Serra do Mar (PESM) – Santa Virgínia Nucleus. Specifically, it aimed at understanding the meanings of nature and the perceptions on the contributions of PESH to the health and well-beings of its inhabitants.

Material and Methods

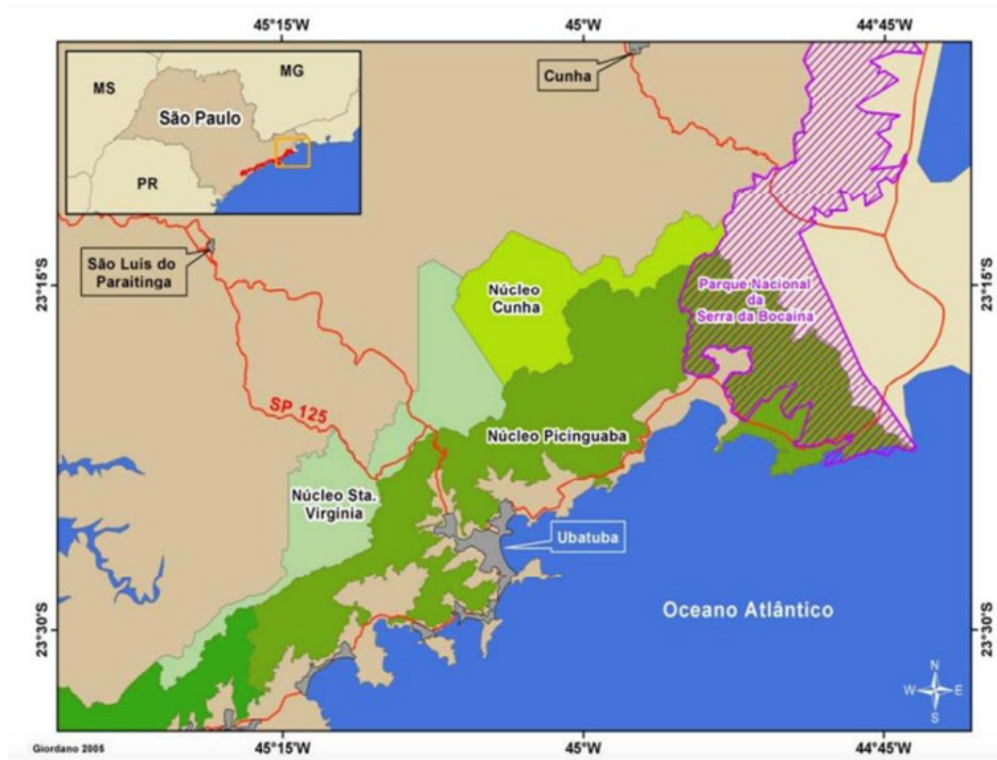
Firstly, a bibliographic survey was conducted in national and international journals on the themes of protected areas, visitation, leisure, health, well-being, and communities inhabiting the surroundings of natural parks (SANCHO-PIVOTO; RAIMUNDO, 2022). After that, an interview with the Manager of the State Park of Serra do Mar – Santa Virgínia Nucleus was conducted via Google Meet, to understand the park's reality in terms of: characteristics of the public use program; reality, advances, and challenges to visitation; relationship with communities of the surroundings of PESH; tensions and conflicts with surrounding populations; developed projects and actions related to the theme of visitor health and well-being.

Lastly, it aimed at recognizing the elements that are most valued by communities, their perceptions on the benefits and problems of living around the PESH, the interests and practices related to visitation, with focus on the inhabitants' perceptions of the park's contributions to health and well-being. During field trips, the interviews were directed by a qualitative investigation focus, based on semi-structured interviews with inhabitants of different age groups of the Vargem Grande and Catuçaba neighborhoods. The sample saturation technique directed the field works, operationally defined as the suspension of new participant inclusion when the obtained data start to present, in the researcher's evaluation, a certain redundancy or repetition, being considered irrelevant to persist on collecting data (FONTANELLA *et al.*, 2008, p. 17). During the conduction of interviews with the inhabitant of Catuçaba and Vargem Grande, there was a moment when it was possible to observe a general consolidated perception on the established research questions and that information was being repeated, so that very few new elements appeared in the answers. Therefore, a total number of 10 interviews was conducted in each neighborhood.

Presenting the study area

The selected study area was the State Park of Serra do Mar (PESM) – Santa Virgínia Nucleus (Figure 1), more specifically the neighborhoods of Catuçaba (Municipality of São Luís do Paraitinga) and Vargem Grande (Municipality of Natividade da Serra), located around (buffer area) the PESH (Figure 2). These neighborhoods were chosen because they are still rural areas in the municipality, which cultivate manifestations connected to nature, such as the belief in *saci*, *mula sem cabeça* (headless mule), and other entities linked to the imagery of the rural world about the natural (and supernatural), and because, in the last few decades, they have gone through transformations related to the incorporation of touristic practices, of park visitation. In this sense, they are set as important communities to assess the park's provision of cultural ecosystem services for these rural communities, but also to society at large.

Figure 1 – Location Map of the Santa Virgínia Nucleus – State Park of Serra do Mar.



Source: São Paulo (1998).

The State Park of Serra do Mar (PESH) was created by the Decree no. 10,251, from August 30th, 1977. Located in the east side of the State of São Paulo, it has a 315,390-hectare area, covering the largest and most preserved haven of Atlantic Forest in the country. The Santa Virgínia Nucleus — PESH was inaugurated in 1989, with the indirect expropriation of the contiguous Farms Nossa Senhora da Ponte Alta and Santa Virgínia. With 17,500 hectares, its area covers five Municipalities: São Luiz do Paraitinga, Natividade da Serra, Cunha, Ubatuba, and Caraguatatuba. The park is part of the Atlantic Forest Biosphere Reserve and protects important forest fragments and many rivers belonging to the Paraíba do Sul river basin, helping to

preserve important springs for the supply of the Paraíba Valley and Rio de Janeiro cities, besides contributing to provide many ecosystem services, such as regulation of air and weather quality, protection of hills, mountainsides, and soils, pollination, tourism, and the ability to provide leisure and well-being to visitors and surrounding inhabitants (SÃO PAULO, 2021). According to Santos (2006), the internal and surrounding areas of this nucleus are rural, with small permanent occupation properties and some sporadic visitation areas. These lands are destined to livestock, reforestation, small crops and subsistence gardens, and to leisure and tourism.

Figure 2 – Location Map of the study area.



Source: São Paulo (2006).

In the specific case of the communities investigated in this study, Catuçaba is a neighborhood of the Municipality of São Luiz do Paraitinga (SP), located in the Paraíba Valley. According to the Brazilian State System for Data Analysis Foundation (SEADE, 2021), São Luiz do Paraitinga has a 10,584-inhabitant population, most of which (60%) lives in the urban area. The municipal GDP is anchored in service provision (80.3%), which includes the services provided by the public administration. According to the Forest Inventory of the State of São Paulo (SÃO PAULO, 2020), the Municipality has 37.2% of its native forest (22,988 ha of the total municipal area, 61,845 ha), mostly covered by the State Park of Serra do Mar – Santa Virgínia Nucleus. With some points of Atlantic Forest remnants, the native vegetation of the region, Catuçaba is characterized as a rural zone, with history of soil degradation due to sugarcane and coffee monoculture. These lands are eroded, poor in nutrients, with high deforestation rates, and predominance of pastures (MELLO, 2009), whose practices date back to the coffee cycle, which was present in the area during the second half of the 19th century.

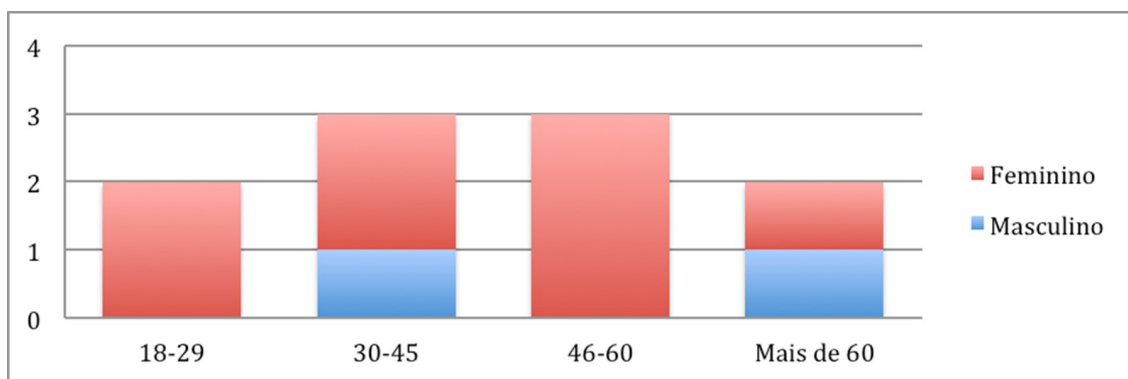
While the Vargem Grande neighborhood is located in the Municipality of Natividade da Serra and has around 6,700 inhabitants and a 42.5% urbanization level (SEADE, 2021). Just as São Luiz do Paraitinga, Natividade da Serra has its municipal GDP focused on service provision (81.2%) and the segments of milk and poultry (production of eggs) are highlighted in the agricultural production. The native vegetation coverage of Natividade da Serra reaches 34,529 ha or 41.5% of the Municipality's total area (83,264 ha), mostly covered by the PESM territory. According to Campos (2010), Vargem Grande has around 250 inhabitant and is located at 72 kilometers from the seat of the Municipality of Natividade da Serra. Most of its residents are old inhabitants of the region, who have preserved the habits that characterize the *caipira* culture, including the habit of work on the land cooperatively and using agricultural implements in a communitary manner. Lazarim (2013) highlights that the region has silviculture and pasture areas, facts that characterize the history of land use and occupation in the Santa Virgínia Nucleus. There are also discontinuous spots of forestry in many succession stages. More recently, it is observed a high occurrence of private properties, mostly dedicated to farming, which are being transformed into leisure ranches.

The perception of Catuçaba and Vargem Grande inhabitants on the contributions of PESM to health and well-being

In the Catuçaba neighborhood, 10 interviews were conducted with residents from different age groups (Chart 1) and different periods regarding how long they had lived in the locality. Four of the interviewees were born and raised in Catuçaba, staying in the neighborhood for their whole lives (residents aging 77, 58, 46, and 26 years old). Three interviewees have been living in the area for around 20 years, and other three had moved recently to Catuçaba (around four years before). Most interviewees have low schooling levels (Chart 2), and the occupational areas cover owners of local businesses (3), pensioner/retired persons (3), housewife (1), employed person (1), and civil servant (2). One of the interviewees affirmed being unemployed. Regarding the family income, all interviewees live with up to two minimum-wages, except for a grocery store owner, who said he had an average income between two and four minimum-wages.

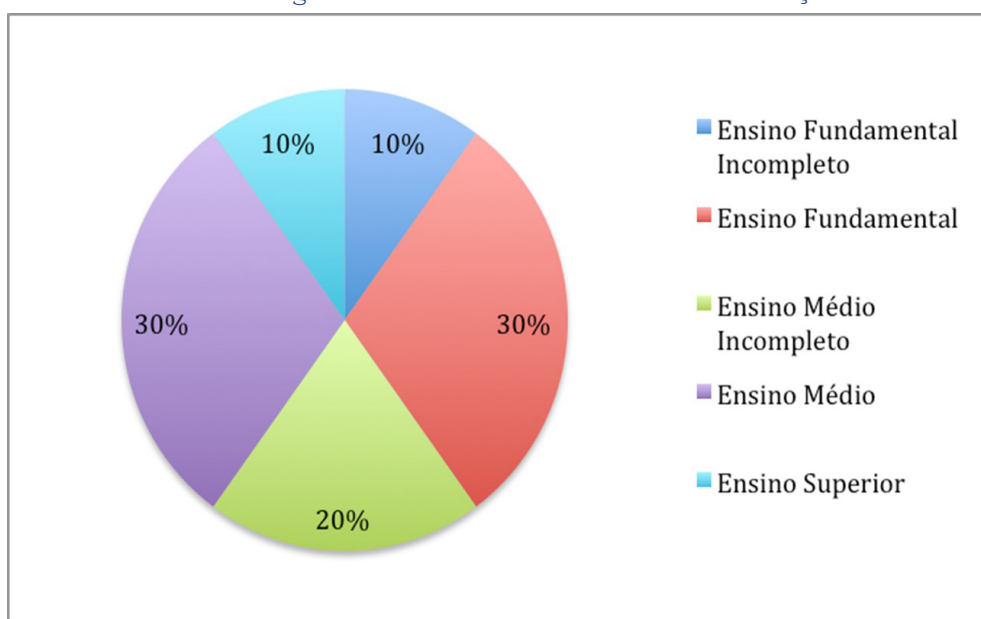
Most Catuçaba residents presented ideas and meanings of nature that express their strong dependence on natural attributes, in a resource perspective focused on the benefits created for society: "nature is everything! I need it, the trees, the water, air... without nature we are nothing, we depend on it to survive" (excerpt of an interview with a resident of the Catuçaba neighborhood). Only two interviewees see in nature a possibility of connecting with what is sacred and with their inner selves, whose close relationship helps to better understand the meanings and significances of our existence.

Chart 1 – Gender and Age Group of the interviewed residents – Catuçaba District.



Source: Designed by the authors.

Chart 2 – Schooling levels of the interviewed residents – Catuçaba District.



Source: Designed by the authors.

While the meanings and significances of PESM for the Catuçaba residents show a relationship of great distancing. They generally recognize the CA's role for the conservation of nature, but do not mention its local and regional importance as a natural and cultural heritage. Only one interviewee, the only who attended higher education, expressed a more critical perspective on PESM, highlighting a contradictory relationship that permeates its existence: the perspective of nature conservation associated with the park interferes directly with the local traditional ways of life, imposing control and standardization over the uses and ways to appropriate its territories, a situation that is very present in other realities of Brazilian parks, already discussed in other studies (BRAGHINI; VILAR, 2019; DE SOUZA; MILANEZ, 2019; FLEURY; ALMEIDA, 2010; SANCHO-PIVOTO; RAIMUNDO, 2022).

The distancing from PESM is confirmed when observing that most of the interviewed residents have never visited the park, including the oldest residents. A 77-year-old man, for example, affirmed that the “park is for the animals” (excerpt of an interview with a Catuçaba resident).

In the case of the four interviewees who had already visited PESM, it was possible to observe that the bonds and sense of closeness to this CA are very fragile, unlike in other areas, such as urban parks, where the distance factor is an element for frequency in visitation. Two of them have visited the park in school field trips when they were children. School visits to PESM, which are responsible for around 60% of the total annual visitors of the conservation area (which received around 7,000 visitors/year), are the main form of visitation for the neighborhood residents, according to the CA's administrator. Still, another interviewee said that, in an opportunity, she had walked with friends to the CA, in an action promoted by the Park's administration, whose goal was to encourage the visitation by surrounding residents. Only one of the interviewees affirmed that, when he was younger, he used to visit the park more often to walk, be in contact with nature, and relax. Despite the current distancing, these four interviewees pointed out many benefits perceived with the visitation to PESM – Santa Virgínia Nucleus: learning about birds, animals, and about the importance of conservation and contact with nature, relaxation, opportunity for learning, socializing, and interacting with friends and family. Cultural interests of leisure, according to Marcellino (2007), are present here, just as in the dimensions of sociability and culture. Other well-being dimensions, such as practicing physical activities, leisure, recreation, combat to illnesses, and being connected to nature, were not mentioned.

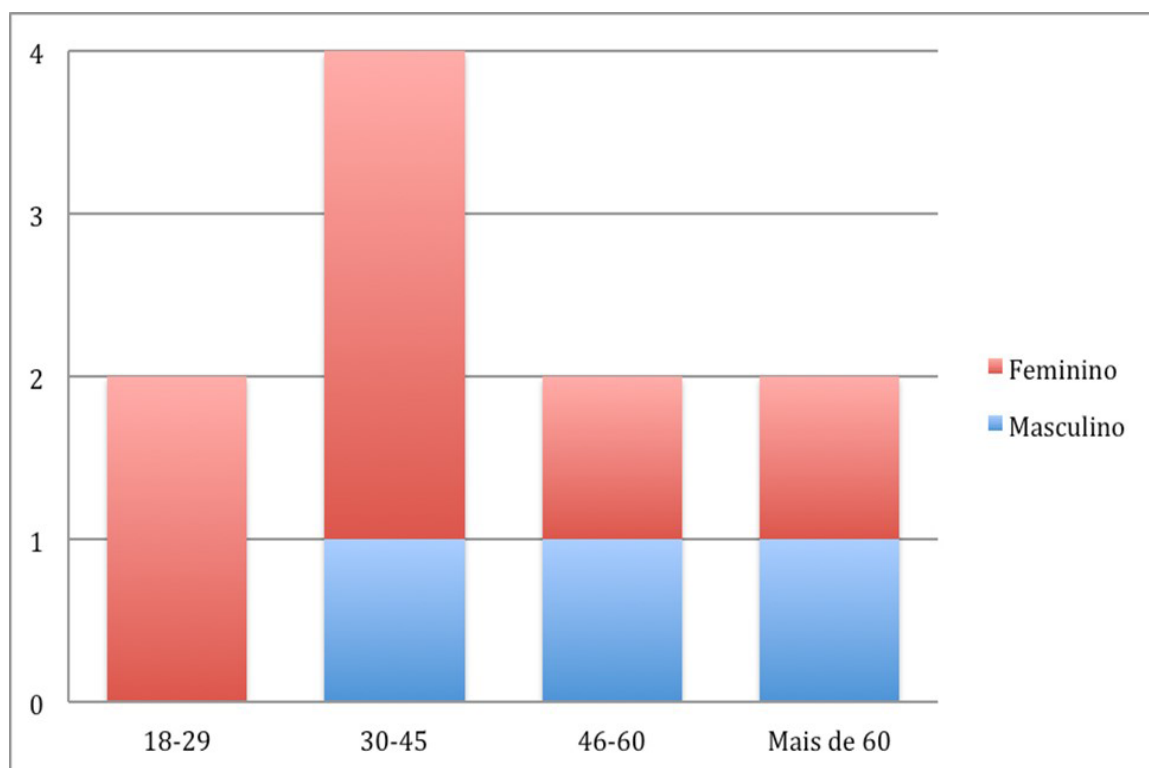
It is important to mention that, currently, none of the interviewed residents has the habit of visiting the CA. One of the reasons is that some residents have farms in the rural areas, with woods, rivers, and waterfalls, which affects their interest in visiting the park once it had landscapes with similar attributes. Another determining aspect is the access to the park and the low availability of means of transportation, since Catuçaba, despite being located just around the PESM, is 21 km far from the park's entrance by the land road or 49 km by paved road. In this sense, transportation represents an aspect that directly affects the visitation habits of the residents in the interviewees' perspective. Overall, for them, tourists are those who mainly visit PESM – Santa Virgínia Nucleus.

Due to this distancing, the residents' knowledge about the park's trails, attraction, and species is very scarce. For some researchers (BAUR; TYNON, 2010; LEMIEUX *et al.*, 2016; MOCK *et al.*, 2016; RAMKISSOON *et al.*, 2018), knowledge about the park represents an element that triggers the feeling of belonging and strengthens bonds with these protected areas. In the same sense, there are few benefits effectively perceived by the residents regarding living around the PESM. Besides the preservation of species of the fauna and flora, they only recognized some ecosystem services provided by the CA, such as water, “clean air”, and tranquility. Most interviewees recognize no problems in living around the park. Only one interviewee highlighted the lack of dialogue between the PESM administration and residents and the interference and control over local ways of life, including the application of environmental fines for local producers.

Lastly, the interviewees expressed the need for more closeness between the administration and local residents, established through meetings with the community and promotion of the existing attractions (pamphlets, banners, newsletters), as an strategy to encourage the visitation on PESM: “the park needs to come closer and get to know the community and its values better, so to be able to create bonds with the surrounding residents” (excerpt of an interview with a Catuçaba resident). Other indicated initiatives were to make transportation options available and to organize events, such as the walks and bicycle rides that are already occasionally by the PESM administration.

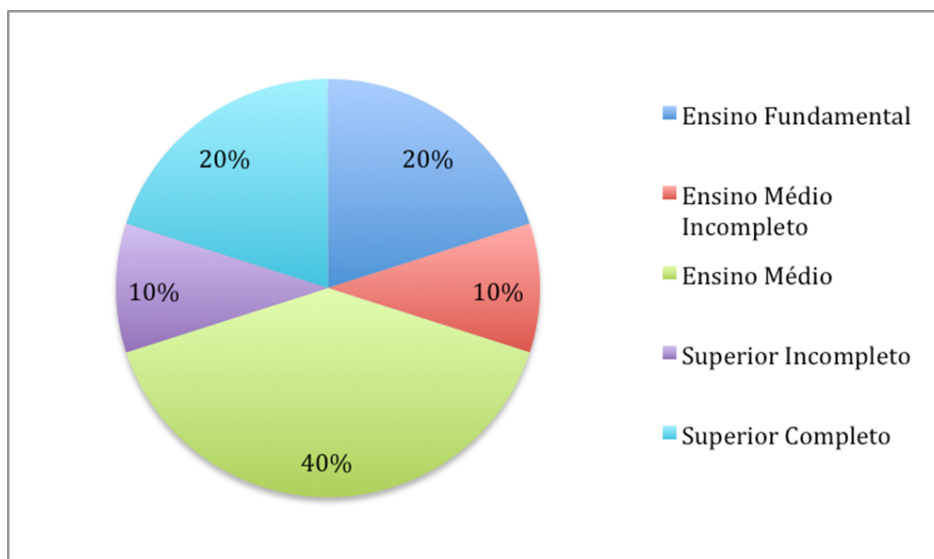
At the Vargem Grande neighborhood, 10 interviews were also conducted with residents belonging to different age groups (Chart 3) and with various residence periods in the locality. Four interviewees were born and raised in the neighborhood (people aging 18, 23, 37, and 67 years old). Four others have lived in Vargem Grande from over 20 years (20, 23, 24, and 40 years old), while two residents have recently moved to the neighborhood. Regarding the schooling levels, it was possible to observed that the residents interviewed in Vargem Grande, unlike in Catuçaba, have higher educational levels (Chart 4) and four of the interviewees have declared having a family income around two to four minimum wages. The other six interviewees have an average income of two minimum wages. Their main occupations are owners of local businesses (6), two of which are also rural producers with lands surrounding PESM, employed (2), and retired persons (2).

Chart 3 – Gender and Age Group of the interviewed residents– Vargem Grande District.



Source: Designed by the authors.

Chart 4 – Schooling levels of the interviewed residents – Vargem Grande District.



Source: Designed by the authors.

Overall, Vargem Grande residents recognize the importance of nature as a provider of diverse ecosystem services, as identified and advocated in the bibliography, in a more accurate and perception when compared to Catuçaba residents. Among the mentioned benefits, we highlight: “Nature has so many meanings... health, well-being; if you need it, you have food, medicine, air, clean water, pleasant weather”. “Well-being, clean environment, no pollution, a good place to live, the birdsongs”. “Tree, water, breathing, clean air... without it, we cannot live” (excerpts of interviews with Vargem Grande residents). It was also possible to recognize, in the speeches of some interviewees, a perspective of more closeness and integration with nature, in an opposite direction than the one mostly showed by Catuçaba residents, who saw nature as something external and distant: “Nature is us! It is everything”. “It is our life”. “Everything is part of it, a complex of elements – people/animals/space” (excerpt of interviews with Vargem Grande residents).

As for the meanings and the representations of PESM – Santa Virgínia Nucleus, it was possible to observe that the land conflicts involving the CA’s process of creation and administration are central to the speeches and very present in the imaginary of the interviewed inhabitants. There were frequent mentions to not receiving the compensations and to use conflicts by local producers: “the way it was created – it was imposed! We did not participate in anything... many people left their land and are still waiting for the compensation”. “The park is a problem, I have a property within it. I am restricted, I cannot do a thing and I’m not compensated for it” (excerpts of interviews with Vargem Grande residents). Not solving these conflicts represents, therefore, a challenge when considering the appropriation and bigger involvement of Vargem Grande residents with the park. And this situation leads to negative impacts on park visitations by the community.

It is important to mention that many residents recognize the CA's importance for environmental preservation and as a tool to raise awareness and educate people on the aspects regarding natural protection: "We are water producers and supply the Paraíba Valley and Rio de Janeiro. It is important to raise awareness" (excerpt of an interview with a Vargem Grande resident). One of the interviewees, a businessman and owner of lands that surround the park, affirmed that there is currently a consciousness about the need for conservation and mentioned the producers' engagement with spring reforestation projects, such as *Conexão Mata Atlântica* (Atlantic Forest Connection)¹. According to him: "many landowners preserve it to keep the springs, water... I have sown over 3,000 seedlings in a piece of land. The ancients used to destroy in order to make pastures... today, we have another vision, more consciousness" (excerpt of an interview with a Vargem Grande resident). For these reasons, the interviewee highlights the importance of having the PESM administration valuing a position of partnership and dialogue with local inhabitants.

Another recurrent aspect in the interviews that expresses the relationship and meanings conferred to PESM is the matter of visitation. Before the creation of the Park, the waterfalls and trails were much used by local residents, being a leisure practice under the socio-cultural perspective, as a human need that involves aspects such as playfulness and cultural expressions (GOMES, 2014), with a significant material and symbolic representation of local ways of life. However, there were many complaints about the current conditions and requisites to visit PESM, which requires previous booking and the hiring of an environmental guide: "It's a lot of red tape to get in... you have to have a guide! I don't have contact with the park. When I wanted to visit it, you had to book the visit" (excerpt of an interview with a Vargem Grande resident). These demands, for the interviewed people, end up being a concrete obstacle for Vargem Grande residents to visit the park daily. It is a barrier to their leisure practices, which only increases the distance between the park and the community.

The residents are eager for tourism to create positive effects over Vargem Grande's economy and represent job and income opportunities for the youth: "PESM could take visitor for the neighborhood... today, the visitors go straight to the park and do not come here. The park does not create income for the village through tourism and it does not include the surrounding residents in the work at PESM. With no perspective for local young people, because of the domain of touristic agencies from *São Luiz do Paraitinga*" (excerpt of an interview with a Vargem Grande resident). It is thus also distant from the bases of community-based tourism, which advocates for the protagonism of communities in visitation activities. In the region, it is a vicious cycle, as neither the park administration nor the better capitalized ecotourism companies involve the community in the processes of planning and decision making. The cycle remains and the community does not earn the benefits of tourism.

The current view of the interviewees at Vargem Grande about PESM is reflected in the relationships of closeness, bonds and level of knowledge about the park, generally classified

¹ This initiative combined efforts by the Federal Government, through the Ministry of Science, Technology, Innovations, and Communications (MCTIC), and by the State governments of Rio de Janeiro, São Paulo, and Minas Gerais.

and “low” or “very low”, especially once they do not have the habit of visiting the conservation area due to the problems in access, as mentioned. Only three interviewees affirmed having more knowledge about the park. Two of them said so because the own lands at the border of the CA and live more closely to the reality of the park and its employees (monitoring actions, patrols, and even environmental fines), and thus end up relating to the park, but in a topophobic manner (TUAN, 2005 [1979]). One of these residents was also an advisor of PESM. Another one, widow to a former CA worker, has lived for many years in the employee houses within the area, and therefore knew its attractions, trails, and involved land dynamics.

Overall, for these interviewees, the benefits of living around PESM are connected to quietness, quality of water, of air, and of the rich biodiversity of the region, and the possibility of getting in contact with nature and admiring it. While for the main problems, besides land conflicts, some residents mentioned having the impression that the road that gives access to Vargem Grande, about 13 km of land road, cannot be paved due to the existence of PESM, a fact that was not confirmed by the area’s administration.

Another aspect observed by the study was the closeness of the residence to the park and the frequency of visitation. For Vargem Grande residents, living around the park and at a relatively short distance from the CA’s entrance (2,5 km of the Natividade da Serra PESM Base) does not necessarily implies on frequent visitation habits. In fact, most of the interviewees affirmed they used to visit the park as children, but that they no longer do so due to the need of previous booking and hiring environmental guides to walk the CA trails, besides the lack of time due to work, in some cases. One of the residents, who has lands within PESM, affirmed having the habit of visiting waterfalls and trails close to her lands, using the traditional paths used by the ancients.

Although most of the interviewed Vargem Grand residents do not currently visit PESM, the study aimed to understand the main reasons that made them visit the park, as well as its perceived benefits. Overall, visits represented an opportunity to walk around and a moment of leisure and distraction with friends and family. The residents would walk the trails toward the waterfalls to have fun, be on contact with nature, to rest, and get to know the attractions present in the CA. A resident praised the health benefits provided by the contact with nature: “I love nature. It is supernatural. Water is beneficial for us, it is medicine, the plants, the woods, clean air” (excerpt of an interview with a Vargem Grande resident). Among visitation benefits, a spotlight was given to the recognition of contributions to physical, emotional, social, and recreation well-being: “Having fun, leisure, contact with nature, well-being”. “Waterfall baths get us fresh, revigorated”. “Peace, tranquility... I felt good, it was fun, I carry it with me for the rest of my life... walking through rocks, trees, water... a variety of trees”. “I used to walk a lot, the air of the woods is good for us, to see the fauna, the animals... the contact with nature” (excerpt of interviews with Vargem Grande residents).

Lastly, the study investigated issues related to the PESM administration’s initiatives to attract and encourage park visitation by Vargem Grande residents. A relevant data is that no one mentioned any action or project in that direction undertaken by PESM, unlike in Catuçaba. But, for the interviewees, more closeness to listen to the residents’ views and ideas and the creation

of partnerships with the CA administration are desired aspects which are often mentioned by Vargem Grande speeches. These partnerships could be established, according to some interviewees, with the Local neighborhood association so to attract and take residents to know the park and its importance for nature conservation. Among the mentioned actions, we highlight better promotion of attractions and working hours (informative banners at the Association), more flexible booking, being free of charge, and the organization of periodic tours/expeditions for the community, since there is a consensus that the access is too restricted.

Final remarks

The study with residents of the surroundings of PESM – Santa Virgínia Nucleus has shown that, overall, they recognize that the park provides many ecosystem services, despite a clear distancing in relation to this conservation area once none of the interviewees affirmed having the habit of visiting the park. In the case of Vargem Grande residents, it was possible to recognize further bonds with the land that was turned into a conservation area, but the current public use norms restrict their access and reinforce the distance, which compromises the traditional territoriality expressions, especially leisure and sociability practices, and the quality of life itself with regard to the health and well-being benefits that are effectively created by PESM to local residents. It is possible to observe that PESM visitations are mostly made up by tourists, with a risk that inequalities in contact and access to nature may lead to processes of elitism and “green gentrification”, according to Frumkin *et al.* (2017), thus emphasizing social inequalities, poverty situations, and gaps in the levels of quality of life.

It seems clear, in this scenario, the need for debates with the PESM administration about which strategies to adopt in order to get closer again to the park’s surrounding populations and encourage their visitation and better appropriation of the cultural and natural heritage of this conservation area. Knowing the residents’ demands via a stronger presence of the PESM administration on local representation spheres, fomenting the population’s frequent visits, and inventing on environmental and educational projects for children and young people were recurrent aspects in the speeches of the interviewed residents. In the case of children, partnerships between the park’s administration and municipal schools of Vargem Grande and Catuçaba could contribute, for example, to encourage the feeling of belonging to the park, by highlighting its history and importance for the area and the regional context with regard to the multiple ecosystem services provided to society. At the same time, more closeness to surrounding communities may present a possibility to foment tourism beyond the park’s borders, driving local economy and creating job opportunities, especially for young people, who could work as touristic guides and conductors.

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