



Research

What is sacred in sacred natural sites? A literature review from a conservation lens

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ABSTRACT. Sacred natural sites (SNS) are valuable biocultural hotspots and important areas for nature conservation. They are attracting a growing attention in academic, management, and political fora. The relevance and implications of the sacred nature of these sites for the multiple actors involved in their management is widely acknowledged. However, the complexities and ambiguities surrounding the notion of "the sacred" have not been researched in depth. Because few previous scholarly works have specifically examined a topic that has profound implications for conservation as well as for the communities inhabiting these sites, we aim to fill in the gap by unraveling the conceptualizations and assumptions of "the sacred" in academic, peer reviewed SNS publications. Through a systematic review of the literature performed from a conservation lens, our findings unveil that: (1) Conservationists and protected areas managers have paid much more attention to SNS than social scientists and religious studies scholars; (2) The sacredness motif tends to be predominantly associated with taboos, bans, and regulations of community-managed resources; (3) The sacred is a highly complex concept often used in a binary, dichotomous way, as opposed to the profane and wild related; (4) An instrumental view of the sacred can limit the potential to include other intangible values in management and exclude relevant stakeholders; and (5) The insights from cultural anthropology, political ecology, and religious studies unveil the power dynamics and hidden assumptions that often go unnoticed in the literature. These perspectives should be included in the management of SNS and in policymaking.

Key Words: *Indigenous and community conserved areas; landscape management; nature conservation; protected areas; sacred natural sites; taboo; traditional ecological knowledge*

INTRODUCTION

Since the turn of the 21st century, there has been a renewed interest in sacred landscapes and sacred natural sites (SNS) from conservationists, cultural anthropologists, and protected area (PAs) managers as social institutions that have effectively preserved nature and culture. International organizations such as United Nations Educational, Scientific, and Cultural Organization (UNESCO, Ramakrishnan 1996), World Wildlife Fund (WWF; Jeanrenaud 2001, Dudley et al. 2005), and International Union for Conservation of Nature (IUCN; Mallarach and Papayannis 2007, Dudley 2008, Wild and McLeod 2008, Papayannis and Mallarach 2010, Verschuuren et al. 2010) have acknowledged that SNS not only are rich repositories of biocultural diversity and constitute an important shadow conservation network but may even offer better protection than "secular," scientifically managed PAs.

Sacred national sites are natural features, or large areas of land, or water, having special spiritual significance to peoples and communities (Dudley 2008). Over the last two decades, many of these sites are also being recognized as "Indigenous peoples and local communities conserved areas" (abbreviated to ICCAs) preserved through what the 10th Conference of the parties to the Convention on Biological Diversity (CBD 2010) termed "other effective area-based conservation measures" (OECMs). Networks of SNS are found in every continent, vary greatly in size, are usually managed by "Indigenous peoples and local communities" (IPLCs), and the CBD (1992, 2010) acknowledges their importance. In addition, the recognition of spiritual-natural entities as legal persons is taking place in some jurisdictions, making sacred rivers or mountains (and even Mother Earth) legal entities (see a review of cases in Studley and Bleisch 2018). However, the need for greater research, conservation, and

development of supplementary guidelines on ICCAs and OECMs still needs to be made explicit in many countries (Jonas et al. 2017).

In relation to SNS, the focus of research has been placed mainly on the protective effects of the cultural and spiritual values of the community in nature, largely overlooking the multiple and complex meanings the notion of the sacred conveys. In the most widely quoted research papers, "the sacred" is often depicted as a vague concept related to restrictive taboos and prohibitions (Colding and Folke 2001). The many different meanings, approaches, and functions that sacredness plays in society seem to be under researched in the SNS literature. The holy and the sacred are poorly conceptualized because the SNS term was coined and disseminated by conservationists rather than by religious scholars. However, when approaching the natural world as a social-ecological reality rooted in local cultures, the variety of meanings underpinning sacredness has profound implications for conservation, inasmuch that the notion is key for understanding human-nature relationships and corresponding relational values and cultural practices (Chan et al. 2016, Anderson et al. 2022).

It is important to acknowledge that over the past 70 years, the notions of "the holy" and "the sacred" have served as relevant terms in social sciences and humanistic fields of study ranging from anthropology, archaeology, and tourism studies to sociology, psychology, and terrorism research (Stausberg 2017). However, natural scientists' interest in this concept has been very limited. Nevertheless, SNS are both biological and cultural repositories in which spiritual beliefs and religious practices have supported conservation (Dudley et al. 2009), thus opening a potentially productive space for inquiry into the role of sacredness

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in preserving cultures, places, landscapes, and ecosystems. It should be noted that the sacred-profane distinction presupposes a Western religious worldview that does not always make sense in other cultures and spiritual traditions (Keller 2014, Cladis 2019).

Conservationists and PAs managers stand out as a rare exception because of their interest in the relationship between sacred sites and nature conservation. Over the past two decades, an abundant gray literature from conservation practitioners and managers has addressed the wide spectrum of issues related to SNS (Schaaf and Lee 2006, Mallarach and Papayannis 2007, Dudley 2008, Mallarach 2008, Verschuuren et al. 2008, Wild and McLeod 2008, Papayannis and Mallarach 2010, Pungetti et al. 2012, Verschuuren and Furuta 2016, Zogib and Spissinger-Bang 2022). However, even though certain natural places are referred to as “sacred” in the growing academic literature on SNS, there is no comprehensive narrative as to what makes a particular site “sacred,” and what elements articulate its “sacredness.” Even if it is widely used, the meaning of the sacred is not explicitly stated or is an empty signifier that remains undefined. As a well-cited article states: “The full meaning of sacred has challenged thinkers for millennia. Fortunately, we do not have to understand the concept in its entirety to recognize its conservation significance” (Dudley et al. 2009:570). However, given the contested nature of this concept, even within religious traditions, its absence in some cultural contexts, and the multiple possible conceptualizations of sacrality (Paden 2017), the assumptions and meanings made by SNS researchers when dealing with such a significant construct for conservation merit further exploration.

In sum, we argue that bringing together the fields of conservation sciences and religious studies can shed light on this interdisciplinary juncture. To the best of our knowledge, no published systematic literature review exists that specifically analyzes the meaning of sacredness in the SNS scholarly literature. We aim to fill this gap by shedding light on the potential of SNS for conservation and to open avenues for research on this important topic. For this purpose, we performed a systematic review of the literature on SNS that may allow us to specifically respond to the following research questions:

1. What do scholars focus on in SNS research?
2. What notions of “the sacred” emerge in the literature on SNS?
3. What are the implicit assumptions and the overlooked dimensions of the conventional understandings of the “the sacred” in the SNS literature? and,
4. How is “the sacred” conceptualized and used in argumentations regarding conservation?

BACKGROUND

The concept of “the sacred” is hard to define and has a long history; one we do not pretend to cover extensively. We rather aim at offering a general overview of the notion of sacredness so that it helps to frame our study. The works of William James (1842-1910), James George Frazer (1854-1941), Émile Durkheim (1858-1917), Max Weber (1864-1920), and Rudolf Otto (1869-1937) laid the foundations of the modern, Western, religious studies field. Although the five were aware of religion’s

great cultural and historical relevance, they were also aware that religion is a highly complex anthropological, psychological, and sociological phenomenon that must be analyzed from different perspectives.

At the turn of the 21st century, Berger (1999) and Demerath (2000) noted that despite the secularization and general decline of religion in some industrialized societies, “investigating the wider sense of the sacred not only has a rich past but a burgeoning present” (Demerath 2000:2). Moreover, as Davie (2010:160) affirmed a decade later, “there is considerable evidence for resacralization in the modern world,” although “this evidence is subtle, complex, and constantly changing.” However, to fully grasp the contemporary understandings of the sacred, particularly in relation to SNS, we first need to look at the meaning and history of this rich concept.

Sacred is described as something “dedicated or set apart for the service or worship of a deity” or “worthy of religious veneration” (<https://www.merriam-webster.com/dictionary/sacred>). Sacred or holy places, times, persons, and objects, unlike secular ones, inspire fear, awe, or reverence; they deserve respect and devotion. This understanding of sacredness is common among SNS scholars and is indebted to French sociologist Émile Durkheim (Cladis 2019), for whom the distinction between the sacred and the profane was the central characteristic of religion: “A religion is a unified system of beliefs and practices relative to sacred things, that is to say, things set apart and forbidden—beliefs and practices which unite into one single moral community [...] all those who adhere to them” (Durkheim 1965 [1912]:62). Later, religious scholars have built upon this binary, dichotomous understanding of sacredness. For instance, German scholar Rudolf Otto, in his highly influential essay *The Idea of the Holy* [1917], also pointed out that “the category diametrically contrary to ‘the profane’, the category ‘holy’, which is proper to the numen alone but to it in an absolute degree” (Otto 1936 [1917]:53). Similarly, Mircea Eliade, one of the greatest and most influential 20th century historians of religion, affirmed in his work *The Sacred and the Profane* [1957] that “the first possible definition of the sacred is that it is the opposite of the profane” (Eliade 1987 [1957]:10). Furthermore, he argued that “sacred and profane are two modes of being in the world, two existential situations assumed by man in the course of his history” (Eliade 1987:14).

As a result, over the course of the last seven decades, most scholars have assumed the Western, bipolar, dichotomous character of the sacred, often ignoring the diversity of Indigenous spiritualities and categories of sacredness (Liljeblad 2019). This conceptualization not only influenced academia but imposed a sort of epistemological imperialism that had profound implications on how researchers from different disciplines and from different cultures have thereafter approached the complex and diverse ways in which the term “sacred” is socially constructed across contexts and fields. In the conservation field, the concept of “sacredness” as an epistemological construct tends to ignore non-Western, Indigenous worldviews, and concepts. As a result, for conservationists, “the sacredness of nature depends on it being seen as separate from humanity” (Milton 1999:439), in contradiction with the basic ecological principle of interrelatedness, as illustrated by the Rarámuri term of *iwígara*

or “the total interconnectedness and integration of all life” (Salmon 2000:1328). This example shows the importance of Indigenous and local languages in making visible the plurality of understanding of sacredness and spiritual connection to nature among IPLCs.

METHODS

It is acknowledged that modern scholarly development in conservation and environmental management requires the conduct of systematic reviews (Pullin and Stewart 2006). The increasing use of this form of literature analysis has led to different models of search strategies (Boice 2019). Among these models are systematic reviews of argument-based literature, which aim to present state-of-the-art overviews of the concepts and ways of reasoning in relation to a certain topic. This evidence-based approach is important for better decision-making in sustainability research.

We performed the review to better understand the multiple meanings, implicit assumptions, and different uses of “the sacred” in the burgeoning academic SNS literature.

First, our four research questions were distilled into two groups of concepts to organize the literature search. A set of terms were agreed upon by both researchers through an iterative process based on a preliminary analysis of the foundational works and the most cited articles on SNS (Table 1). Group A concepts include commonly used terms that refer to the diversity of sacred places in nature. Group B concepts focus on conservation topics. Each group was then operationally expressed in specific search strings following a format suitable for performing database queries (Table 2).

Table 1. Groups of organizing concepts and associated database search terms.

Group A: Sacred natural sites (SNS) related terms	Group B: Conservation related terms
sacred natural site; natural sacred site; sacred grove; sacred forest; church forest; sacred tree; sacred mountain; holy mountain; sacred cave; sacred landscape; sacred landform; sacred spring; sacred river; sacred lake; sacred fish; sacred commons; holy well	conservation; preservation; preserve; protected; protection; protective; sustainable; sustainability; ecology; ecological; environment; biological; biodiversity; biocultural; biodiverse

Three electronic literature databases were queried, which covered the fields of conservation, environmental sustainability, and religious studies. The three databases were Web of Science (WoS), Atla (Atla), and Index Theologicus (IndTheo). WoS covers all major journals relevant to our SNS topic and guarantees academic quality (Martin-Martin et al. 2018). Atla and IndTheo include religious studies journals, often not included in WoS, that may approach SNS from a religious perspective. All databases were queried using Boolean searches expressed in English. Figure 1 presents the number of results returned using the search terms.

The database search was performed on March 23, 2021, using no filters or data restrictions. Resulting citations of the identified articles were exported and managed in an Excel file. Duplicate

articles were removed. Both authors screened titles and abstracts. Then, once the articles that met the inclusion and exclusion criteria were identified, the full texts of the identified articles were analyzed (Fig. 1).

Table 2. Search strings stratified according to organizing concepts [(A) AND (B)].

Group A: Sacred natural sites (SNS) related terms	Group B: Conservation related terms
sacred natural site* OR natural sacred site* OR sacred grove* OR sacred forest* OR church forest* OR sacred tree* OR sacred mountain* OR holy mountain* OR sacred cave* OR sacred landscape* OR sacred landform* OR sacred spring* OR sacred river* OR sacred lake* OR sacred fish* OR sacred commons* OR holy well*	conserv* OR preserv* OR protect* OR sustain* OR ecol* OR environment* OR bio*

To assess the consistency of our criteria, title and abstract screening were performed independently by both authors. In 92% of the abstracts (590/642), there was agreement about exclusion and inclusion. Later, researchers discussed the doubtful candidate articles (52) together until consensus was reached.

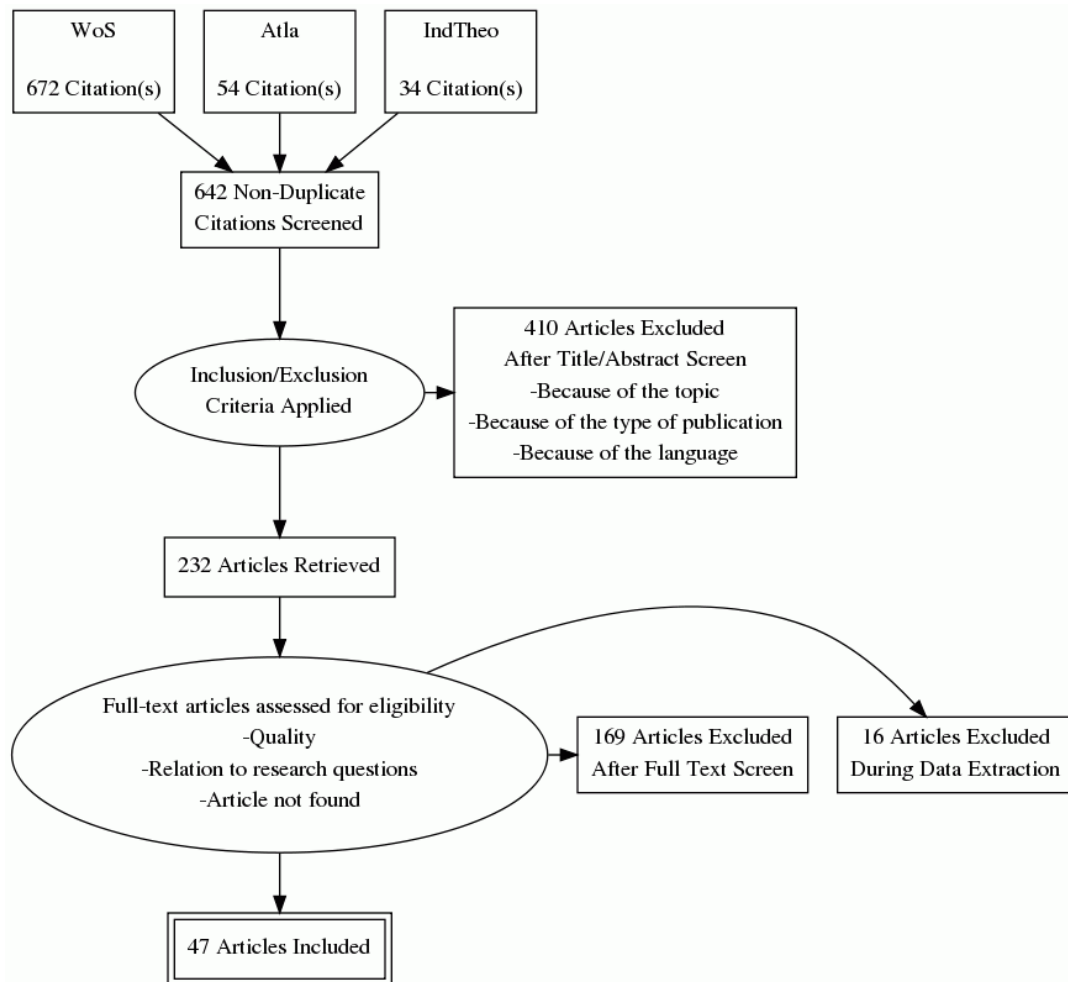
To be included in the review, articles had to meet three inclusion criteria: (1) centrality of SNS related terms (Table 2) to the research object; (2) application to the field of conservation biology, sustainability science, or religious studies; and (3) published in English. Articles published in archaeology, history, and biblical studies journals were excluded as well as all those published before 2000, because the SNS category had not yet been coined.

For extraction and synthesis, we developed a particular way of proceeding. First, with the research questions in mind, selected articles were read and reread by both authors, highlighting the relevant sections and the main arguments presented. Second, we designed a coding structure including the following categories: (1) geographical region; (2) faith tradition; (3) definition of the sacred; (4) opportunities and threats to conservation addressed; (5) dynamics of the sacred through processes of sacralization, desacralization, (re)sacralization, or mutation of religious beliefs; and (6) dimensions of the sacred according to Paden’s (2017) naturalistic typology. Finally, both authors extracted the relevant information identified in each paper following the coding structure and saved it in an Excel file.

RESULTS

The results from the review of the final sample have been thematically organized. First, we contextualized the scope of the articles by describing the religious traditions and geographical areas that dominate the literature as well as the research problems and goals prevailing in research designs. Then, we reported our findings on the variety of meanings and dimensions attributed to the sacred, together with the dynamic perspective of the sacred underlying the research on SNS. The variety of dimensions of the sacred and the changing and fluid nature of SNS are key issues to the goal of nature-culture conservation.

Fig. 1. PRISMA flow chart showing the electronic search, identification, screening, 198 eligibility, and final inclusion for reviewed articles.



Description of studies

The interest in SNS by conservationists and PAs managers has increased exponentially during the last two decades, in line with the growing institutional attention to the spiritual values of natural sites as key for nature conservation. Figure 2 shows the evolution of all papers identified in our search addressing conservation concerns in SNS. The first references to the term SNS appeared in the late 1990s, but the use of the term became mainstream in the early 2000s. Since then, the number of citations in academic journals (Fig. 3) and the volume of scholarly articles directly addressing SNS from a conservation perspective has grown steadily (Fig. 2). In relation to our research question, only three, nine, and eight articles met the inclusion criteria in the 2000-2005, 2006-2010, and 2011-2015 periods, respectively. In the 2016-2020 period, 26 articles were identified.

Regarding the characteristics of the SNS under research in the final sample of articles reviewed (Table 3), the interest in sacred forests and sacred groves prevails and attracts most of the scholarly attention. This preference may be the case not just because of their importance as repositories of biodiversity and other valuable natural resources but also because “forests have

Fig. 2. Evolution of the number of scholarly papers on sacred nature sites (SNS).

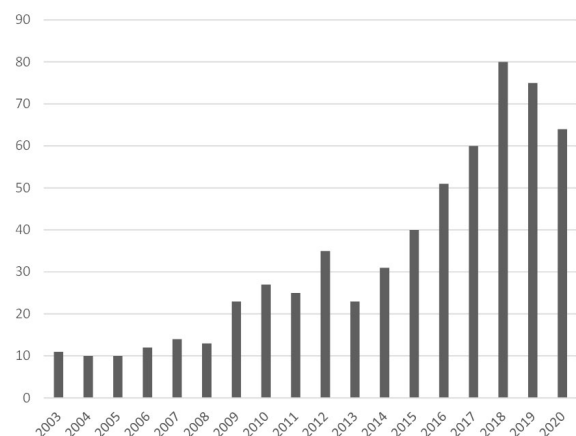


Fig. 3. Evolution of the number of quotes of scholarly articles on sacred nature sites (SNS).

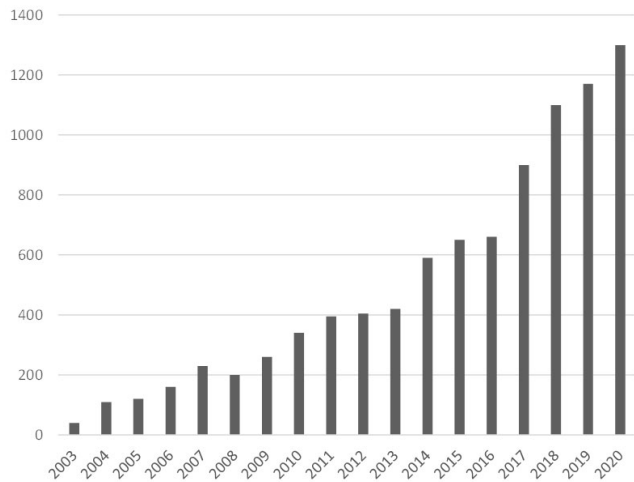


Table 3. Characteristics of reviewed studies on sacred nature sites (SNS).

Type of SNS	Country		
Forests-Groves	19	India	12
Trees	3	China	4
Mountains	5	Nepal	3
Wildlife	3	Ethiopia	3
Landscape	3	Italy	3
Caves	1	Ghana	2
Stones	1	Madagascar	2
Lake/water	1	Other Asian countries	5
		Other African countries	5
		Other European countries	5
		Other American countries	1
Religion		Year of publication	
Hinduism	9	2000–2005	3
Buddhism	6	2005–2010	9
Christianity	6	2010–2015	8
Islam	2	2015–2020	26
Traditional/Animism	12		
Neo(Pagan)	3		

provided an indispensable resource of symbolization in the cultural evolution of humankind” (Harrison 1992:8). The powerful attraction of mountains may also explain their importance for local communities.

As for the geographical location, the review shows that the interest of researchers has predominantly focused on Asian SNS (24 articles). Within the Asian continent, India stands out; a deeply religious country in which Hinduism, Buddhism, and traditional spiritualities all converge in a human-nature relationship intensely mediated by the sacred (Woodhouse et al. 2015, Acharya and Ormsby 2017, Mu et al. 2019, Sehnalova 2019). African countries are also a relevant object of empirical research, as illustrated by the many studies on Ethiopian church forests and other sacred groves across the continent (Byers et al. 2001, Sarfo-Mensah 2009, Fournier 2011, Kent and Orłowska 2018).

European and American SNS have received comparatively less attention than their Asian and African counterparts, although there seems to be a growing interest in former SNS and in the emerging “resacralization” dynamics taking place in natural settings across Europe and the Americas. The dearth of scholarly publications in English in Latin America and parts of Europe and Africa is a preliminary indication that these regions are either under researched, the publications are in other formats (mainly “gray literature”) and languages (French, Spanish, and Portuguese), or the focus of the research has not been on the meanings and implications of “the sacred” in nature conservation.

Main research focuses on SNS

Though indirectly approached by many authors, only a few works directly address the conceptualization of the sacred in SNS and its defining elements as a research goal (Fournier 2011, Frascaroli 2016, Aniah and Yelfaanibe 2018, Niglio 2018a). Given the general aim of our review and the selection criteria of papers interested in conservation, an overall goal is dominant whether implicit or explicitly exploring the relationship between socio-cultural issues related to SNS and their influence in nature conservation. However, the approach to this complex relationship largely varies among studies. The range of topics analyzed includes the examination of beliefs, emotions and attitudes, and practices and behaviors located at the interplay between the local communities and both the natural and the supernatural worlds that characterize SNS.

First, the role of spirituality in nature conservation is widely acknowledged in the literature and is a common starting point for examining people’s beliefs, either grounded on institutional religions, Indigenous worldviews, or in relation to cultural values (Anthwal et al. 2010, Frascaroli 2013, Woodhouse et al. 2015, Bortolamiol et al. 2018, Kent and Orłowska 2018, Uddin 2019).

A second research interest focuses on emotions (such as fear, veneration, attachment, fascination, and respect) experienced by individuals and local communities inhabiting the territory as well as the corresponding attitudes toward conservation that spring from them. In this regard, as Frascaroli (2016:274) posits, SNS are “manifestations of a deep emotional bond between people and nature,” a form of “place attachment” (Mazumdar and Mazumdar 2004). Furthermore, both emotions and attitudes toward nature are driven and shaped by spiritual beliefs in a distinctive way (Dudley et al. 2009, Cottee-Jones and Whittaker 2015). For instance, the different religious understandings of fig trees in India shape diverse attitudes toward their management (Cottee-Jones and Whittaker 2015).

Finally, conservation practices and behaviors based on those spiritual beliefs (often interpreted as natural resource management mechanisms) enacted by IPLCs are a focal point in studies that aim to identify and describe taboos and other customary institutions to preserve SNS (Kent 2010, Negi 2010, Bortolamiol et al. 2018, Fernández-Llamazares et al. 2018, Kent and Orłowska 2018, Shaygozova et al. 2018, Kōiva et al. 2020, Maru et al. 2020, Sinthumule and Mashau 2020). As an illustration, the study by Roba (2019) in Guji Oromo, southern Ethiopia, explores the Gada system, a sociocultural, economic, and political system governing Guji society that includes customary laws, punishments, oral declarations, libations, and supplications with a role in conserving SNS. Interestingly,

Fournier (2011:10) highlighted that “protection by tradition” is a fluid approach, different from the perspective of nature conservation because “it is the observance of prescriptions and prohibitions that is important, not the material result of them on biodiversity.”

Underlying these three approaches to the general research goal of conservation in SNS, two ways of problematizing are prevailing. First, there is a clear interest in the way Indigenous and local knowledge (ILK) relates to environmental conservation. Some authors aim at identifying the wide variety of forms of Indigenous knowledge for SNS conservation, as illustrated by Sinthumule and Mashau’s (2020) study of community attitudes and their traditional practices to protect the holy forest of Thate Vondo in South Africa. Others highlight the concept of SNS as an expression of the holistic view that many traditional societies have of the social-ecological relationships of the places they inhabit. For instance, Anthwal et al. (2010) analyzed the long history of biodiversity conservation in the Uttarakhand Himalaya grounded on the different ethical and spiritual views enshrined in the Hindu community. Analogously, Cladis (2019) described the non-hierarchical but variegated notions of the sacred held by native American and Indigenous communities in contrast to the binary Western notions of the sacred imposed on those communities. Consequently, the recognition and vindication of the value of ILK in conservation policies is often emphasized in the definition of the research questions grounded on a critique of decades of conservation management that disregarded traditional worldviews and cultural-spiritual values that bind local communities to their natural environment (Woodhouse et al. 2015, Aniah and Yelfaanibe 2018, Niglio 2018b, Maru et al. 2020). In this sense, some authors make explicit calls to empower Indigenous communities, to “ensure their participation in the conservation process in a more locale- or community- specific manner” (Talukdar and Gupta 2018:516).

Second, the study of transformation processes undergoing sites also attracts the attention of researchers. The rationale for adopting this focus is twofold: (1) the evolving meaning of the SNS because of political changes, such as the state-planned modernization in China (Sehnalova 2019) or the integration of local policies within globally institutionalized views of conservation in Kenya (Nyamweru 2012); and (2) the interpretation of changing beliefs, as observed in the evolution of narratives in worships or in veneration practices (Shaygozova et al. 2018), sometimes influenced by commercial drivers, such as the transformation of Hindu rituals performed in sacred groves in Kerala studied by Notermans et al. (2016). See Table 4.

Meanings of the sacred

A preliminary reading of the SNS literature seems to reinforce the idea that the practice of exclusion and “apartness” for religious or spiritual purposes is linked to the sacredness of nature. Following Frazer, Durkheim, and Eliade, contemporary SNS scholars often assume that rules and taboos concerning purity and pollution are central to the preservation of these sites and stress the sacred-profane dichotomy early religions scholars posited.

Paradoxically, those who have studied SNS hardly ever define sacredness, and the works that address the notion of “the sacred” or “the holy” as central to the research problem are an exception.

That is the case of Niglio (2018a:1) who, aiming to discuss the meaning of the sacred values of landscape affirms: “The sacred landscape establishes the relationship between man and nature, through an aesthetic in which it is not always possible to find a rational dimension.” Sacredness is often acknowledged as a vague, fluid, and complex notion (Mu et al. 2019). As Ringvee (2015:8) wondered, distinguishing between the sacred and the holy: “Where does sacredness start, and where does it end? In this matter, the subjectivity of the experience of the sacred becomes unpleasantly mixed with legal regulations, which require more physical borders than the ambiguous and subjective experience of the Holy.” However, the conversation about such complexity is usually avoided, as in Dudley et al. (2009) and Ormsby (2012), or diverted, as in Nyamweru (2012) in which the author prefers to term SNS as “natural cultural sites,” arguing that the notion of “culture” better serves to highlight the multiple meanings associated with these enclaves. In sum, the implicit characterizations of the idea of sacredness sets the term into a larger context that needs to be uncovered to grasp the overlapping plurality of understandings at play in the literature.

As a result of the analysis, three interrelated conceptualizations of the sacred stand out. First, sacredness, which is often loosely related to spirituality, is characterized by the presence of divinities, numina, or inhabiting spirits, or as the interface between the natural and the supernatural. In these sites, a contractual relationship (Keller 2014) between the local community and the god(s) or spirits is often established. Studley (2018:368), for instance, referred to “Enspirited Sacred Natural Sites” as places where Tibetan believers “ritually protect SNS [...] on the basis of contractual reciprocity.” The place-bound relational character of SNS also acts as a link among the members of the community, the ancestors, and the supernatural power of divinities inhabiting the site. As Aniah and Yelfaanibe (2018:2496) illustrate in their study of sacred groves and shrines in Bongo District (Ghana), “there is a shared belief among the many people that ancestral spirits and gods influence the affairs of the living.” These locally based conceptualizations often convey an understanding of the sacredness of the site as a “field force,” a “source of life” (Skog 2017), or a “spiritual power spot” (Keller 2014, Rots 2019) that irradiates its sanctity (or life-giving power) toward the surrounding landscape. In this sense, SNS convey strong feelings and emotional bonds between people and nature (Niglio 2018a, Mu et al. 2019), a type of relationship that is “cyclically enacted through ritual” (Frascaroli 2016:272).

A second attribution of meaning closely relates sacredness to taboos that convey fear and obedience and help establish and enforce prohibitions or bans on natural resource use. Taboos are also in relation to ancestor worship in animistic and traditional religions or the “abode of the saints” in monotheistic ones, especially Islam and Christianity. In both cases, they are conceived as socio-cultural mechanisms that preserve or “set apart” features of the landscape. The “apartness” or separation of the sacred site and the fact of being “free from all human interference” (Dudley et al. 2009:571) is often characterized in a binary, dichotomous way, opposed to the human-dominated anthropic landscape. In the conservation and environmental literature, this characterization of SNS often leads to interpreting sacredness as wilderness (Zeng 2018). However, though marginal, a critical approach to this Western, sacred-profane dualistic interpretation is also found in

Table 4. Main research focuses on sacred nature sites (SNS).

Main research focuses and interests	
Role of spiritual beliefs in nature conservation	Colding and Folke 2001, Dudley et al. 2009, Sarfo-Mensah 2009, Cottee-Jones and Whittaker 2015, Aniah and Yelfaanibe 2018, Shephard-Walwyn and Bhagwat 2018, Talukdar and Gupta 2018, Mu et al. 2019, Roba 2019, Kõiva et al. 2020, Maru et al. 2020
Emotions and attitudes toward conservation	Chandrashekara et al. 2002, Dafni 2007, Dudley et al. 2009, Cottee-Jones and Whittaker 2015, Frascaroli 2016, Niglio 2018a, Talukdar and Gupta 2018, Mu et al. 2019, Sinthumule and Mashau 2020
Practices and behaviors (taboos and customary institutions)	Kent 2010, Negi 2010, Bortolamiol et al. 2018, Fernández-Llamazares et al. 2018, Kent and Orłowska 2018, Shaygozova et al. 2018, Kõiva et al. 2020, Maru et al. 2020, Sinthumule and Mashau 2020
Underlying research interests	
Native wisdom and TEK	Byers et al. 2001, Colding and Folke 2001, Negi 2010, Skog 2017, Aniah and Yelfaanibe 2018, Cladis 2019, Roba 2019, Maru et al. 2020, Sinthumule and Mashau 2020
Transformation processes undergoing sites	Sarfo-Mensah 2009, Kent 2010, Nyamweru 2012, Ringvee 2015, Notermans et al. 2016, Enongene and Griffin 2018, Shaygozova et al. 2018, Sehnalova 2019

the literature (Uddin 2019), mainly in studies focusing on non-Western traditions in which all nature is infused with sacred values such as in the understanding of land in Native American worldviews (Keller 2014, Cladis 2019).

Finally, the sacred is often connected to social practices and the presence of a religious community, a congregation, or a spirit medium. For these understandings, it is the worship, rituals, and devotions of the whole community that make the site sacred. In other words, ritual reenacts sacredness. As Sinthumule and Mashau (2020:6) remarked, “the ritual performed helps in maintaining the potency of the sacred forest.” The holiness or sacredness of the site is either declared by a medium establishing a contractual relation between the local community and the spirits/gods of the place “the *spiritus loci*,” or transferred to the landscape by the presence of holy people (Dafni 2007). Sacred natural sites are, however, ambivalent sources of identity and stability for the community: sites that enhance the status of some members (priests, mediums, or chiefs) while excluding whole groups (such as non-residents, women, or lower caste). See Table 5.

Dimensions of the sacred

We used Paden’s (2017) naturalistic framing of the sacred to further clarify and deepen the previous categorization to unravel and depict the multiple dimensions that make up the sacredness of SNS. Following the shift away from Durkheim and Otto’s framing that has accompanied the general study of religion in the past decades, Paden considered religion “a form of status-generating behavior” and argued that the term sacred “needs to be rescued from usage as a vague synonym for religion” (Paden 2017:704-705). According to his interpretation, sacrality is a complex multifaceted concept that involves at least four types of behavior:

1. Making-sacred as dedicating something for secure respect (spiritual presence)
2. Defending sacred order against violation (taboo)
3. Attributing prestige or enhancing status (community identity)
4. Responding to sacred prompts with appropriate behaviors within niche environments (community identity).

The four generic socially mediated behaviors related to the sacred (building, defending, enhancing status, and inhabiting) serve as a hermeneutical lens to interpret and recontextualize important features of SNS found in our review.

Building

Sacredness is built around social constructions of reality and social practices. In relation to SNS, several instruments of sacralization such as myths, legends, symbols, and historical events have been identified. In many cases, the construction of a monastery, a temple, a hermitage, or a little chapel also serve as pointers for the sacredness of the site. Moreover, the sacredness of a SNS may be because of the burial of holy individuals that irradiate their holiness. Sacredness is, thus, created by the establishment of a worshipping community that resides either at the SNS or nearby. In the Central Himalayas, Negi (2012:273) argued that to understand “the phenomenon of dedication of the forests to a deity and the inherent taboos with regard to the resource exploitation and other traditional beliefs and customs being practiced,” a symbolic biocultural approach to SNS is required, including an “emotional interpretation” of the landscape based on both objective (e.g., cultural heritage) and subjective (e.g., imagination) elements (Kraft 2010, Niglio 2018a).

When a site is “dedicated” to a deity, an ancestor, or a saint (or is recognized as the permanent or temporary residence of a spirit, a numen, or a god/goddess) its influence and limits are geographically and ritually demarcated. This demarcation manifests when the site itself is defined as a deity such as the Tibetan Mountains (Sehnalova 2019), or the sacred forests described in the Rig Veda as Aranyani, or mother goddess (Anthwal et al. 2010). Marking a SNS with symbols and retelling the story of the site are common ritual practices that must be repeated and reenacted to preserve its sacredness. As Mantsinen (2020:23) put it, “these traces thus become the enacted sacred.” In Norway, Kraft (2010:57) claimed from the point of view of political ecology that “sacred places constitute a demarcation of particular landscapes as being Sami.” However, because the native Sami do not claim sovereignty over their lands, “sacred places provide an alternative mapping - an appropriation of particular landscapes and thereby a demarcation and visualization of Sápmi.” In sum, making a natural place sacred is sometimes a political act or declaration, a quest for recognition of Indigenous rights.

Table 5. Conceptualizations of the sacred and main themes.

The sacred as	Main themes	References
Spiritual presence	Divinities, numina, or inhabiting spirits	Nyamweru 2012, Notermans et al. 2016, Sehnalova 2019, Sinthumule and Mashau 2020
	Interface between the natural and the supernatural	Kent 2010, Fernández-Llamazares et al. 2018, Osterhoudt 2018, Mu et al. 2019, Roba 2019, Sinthumule and Mashau 2020
	Source of life and energy	Skog 2017, Rots 2019, Sinthumule and Mashau 2020
Taboo	Link between ancestors, divinities, and community	Byers et al. 2001, Colding and Folke 2001, Kent 2010, Fournier 2011, Notermans et al. 2016, Aniah and Yelfaanibe 2018, Fernández-Llamazares et al. 2018, Roba 2019
	Bans on access and resource use	Chandrasekara and Romm 1991, Colding and Folke 2001, Chandrasekara et al. 2002, Dafni 2007, Fomin 2008, Dudley et al. 2009, Anthwal et al. 2010, Kent 2010, Cottee-Jones and Whittaker 2015, Ringvee 2015, Osterhoudt 2018, Shephard-Walwyn and Bhagwat 2018, Talukdar and Gupta 2018, Zeng 2018, Mishchenko 2019, Sehnalova 2019
	Abode of ancestors or saints Apartness	Chandrasekara et al. 2002, Cottee-Jones and Whittaker 2015, Osterhoudt 2018, Zeng 2018 Dudley et al. 2009, Anthwal et al. 2010, Frascaroli 2013, Enongene and Griffin 2018, Niglio 2018a
Community identity	Contractual relation with the divine	Byers et al. 2001, Dafni 2007, Ringvee 2015, Kent and Orlowska 2018, Mishchenko 2019, Sehnalova 2019
	Instrumental role of spirit mediums and religious congregations	Byers et al. 2001, Dafni 2007, Ringvee 2015, Kent and Orlowska 2018, Mishchenko 2019, Sehnalova 2019
	Ritual reenactment	Fournier 2011, Acharya and Ormsby 2017, Zeng 2018

Defending

In most SNS, there is a belief that deities (Chandrasekara et al. 2002, Khumbongmayum et al. 2005, Kraft 2010, Negi 2012), demons (Colding and Folke 2001), supernatural creatures (Sarfo-Mensah 2009), ancestral spirits (Byers et al. 2001), or totemic animals (Notermans et al. 2016, Bortolamiol et al. 2018, Talukdar and Gupta 2018, Uddin 2019) serve as the guards of the site. The fear of punishment or vanishment (Kraft 2010, Negi 2012, Roba 2019) is often associated with taboos that regulate the access and the use of the natural resources (Colding and Folke 2001). In India, Kent (2010:224) explained how “people avoided the groves for fear of upsetting the resident deity by exposing him or her to pollution or tttu.” In sacred groves in Kerala, many inhabitants are afraid of damaging vegetation because the snake gods will bring misfortune as punishment (Notermans et al. 2016). Similarly, in Ethiopia’s Church Forests, the “inviolable zone of ritual purity” (Kent and Orlowska 2018:25, Roba 2019), which constitutes the heart of the SNS has made people refrain from overexploiting the forest. When dealing with SNS, there is no doubt that this is the dimension of the sacred that has attracted the attention of conservation biologists. Taboos, however, as cultural anthropologists have warned, carry positive moral implications not just prohibitions (Osterhoudt 2018). They are complex cultural constructions that need to be handled carefully (Tiedje 2007). Furthermore, even if “sacred sites are the oldest method of habitat protection on the planet” (Anthwal et al. 2010:963) and constitute a priceless “shadow conservation network” (Watson 2016), it should be kept in mind that the protection offered by SNS is a side effect, not the reason why SNS were established. Or, as Kent and Orlowska (2018) have vividly expressed, custodians are not PAs managers but rather “accidental environmentalists.”

Enhancing

Status and group identity are also two of the main community’s motivations for what outsiders, especially conservation biologists and PAs managers, regard as ecological stewardship. A theme that emerges in the literature is that, for local inhabitants, SNS are

primarily a source of status, identity, and pride, a “symbol of the town” (Kraft 2010:56), a place where value exceeds utility. In Ghana, Sarfo-Mensah (2009:49) stressed that “local chiefs and elders derived *tumi* from the landscape; this enhanced respect and fear for them, which they in turn used to protect nature and to ensure social harmony.” Sehnalova (2019:245), for instance, remarked that the ritual pilgrimage to a sacred mountain in Tibet builds and maintains the local identity; it is a way of enhancing the status of the pilgrim, although “the traditional qualitative notion of merit based on physical suffering and duration of a pilgrimage is being replaced by a quantitative reckoning based on number of visits and also the finances spent on offerings.” Worship and ritual around SNS are, thus, deeply intertwined with social practices, group identity, and power dynamics. These are practices that empower some groups although marginalizing others. A sacral spatial hierarchy often correlates with a social hierarchy. This explains why, in many places around the world, foreigners, ethnic minorities, or menstruating and pregnant women (Negi 2012) are not allowed into SNS. In India, for instance, Negi (2010) pointed out that lower caste residents are restricted from entering sacred forests and are, thus, bereft of access to natural resources at large. Or, as Notermans et al. (2016:11) have observed, through ritual, those who can legitimately participate in the liturgies that take place in the groves “gain social and symbolic capital that give both deities and devotees more power.”

Inhabiting

Finally, the literature review shows that SNS are also interactive, participatory environments for residents. The prestige and charisma of the sites are tangible and concrete; the presence of spirits, ancestors, or gods “sacralizes” the site and begs for a response. These are places to be inhabited not just visited. Frascaroli (2016:277), regarding natural shrines in central Italy, highlighted that the natural values and ecological diversity of SNS are not so much the result of human exclusion but rather the contrary: “these sites tend to be more ecologically diverse and valuable because they are used respectfully and in line with certain

customs but used all the same.” In SNS, ritual and worship become the appropriate language to communicate with the sacred, the “link with the invisible” (Fournier 2011:18). There are usually “ritual specialists” (Notermans et al. 2016, Aniah and Yelfaanibe 2018, Roba 2019, Uddin 2019), i.e., priests, shamans, or mediums, who conduct certain sacred practices (i.e., libations, offerings, or sacrifices) in which the community participates. Ritual implies the establishment and reenactment of a contractual relationship (Sarfo-Mensah 2009, Kraft 2010, Woodhouse et al. 2015, Acharya and Ormsby 2017), one that ensures social harmony (Sarfo-Mensah 2009), delimits who belongs to the community and who does not (Negi 2012, Acharya and Ormsby 2017, Kent and Orłowska 2018), and legitimizes the transformation (or even the destruction) of a SNS (Notermans et al. 2016). This finding confirms what Otto (1936[1917]:140) had pointed out long ago: “a numen attached to some locality [...] is a guardian and guarantor of the oath and of honorable dealing, of hospitality, of the sanctity of marriage, and of duties to tribe and clan” (Table 6).

Dynamics of the sacred: desacralization, (re)sacralization, and mutation

When it comes to SNS, three different dynamics are at play in relation to the role of the sacred: desacralization, (re)sacralization, and mutation.

Desacralization

Desacralization is the most widely described dynamic of the sacred in the SNS literature. For many SNS scholars, the erosion of customary institutions and the decline in religious beliefs (Byers et al. 2001, Khumbongmayum et al. 2005, Bhagwat 2009, Sarfo-Mensah 2009, Anthwal et al. 2010, Negi 2010, Fernández-Llamazares et al. 2018, Mu et al. 2019) because of secularization, modernization, and migration are pinpointed as some of the main drivers leading to the abandonment or degradation of SNS. Conservation biologists see with growing dismay and anxiety the decline of religious beliefs, social institutions, and cultural mechanisms that have preserved natural sites over the centuries. Desacralization, however, is not only due to secularization, although it may have been the case in Western Europe and some Asian countries (Rots 2019); it is often driven by a complex mix of factors, depending on the cultural context and the history of the site such as urbanization (Notermans et al. 2016), development (Kent and Orłowska 2018), migration (Sarfo-Mensah 2009), mass tourism (Mu et al. 2019), and politics (Sehnałova 2019). For instance, in China, during the cultural revolution of the 1960s and 1970s, state-sponsored atheism and poverty led to widespread hunting (Woodhouse et al. 2015, Sehnałova 2019) and the destruction of SNS (Zheng 2018). As Sehnałova (2019:216) has pointed out in her analysis of one of the most sacred Buddhist mountains of Tibet, A-myes-rma-chen, its declaration as a National Geopark by the Chinese government was part of a “state-planned modernization and development within the ‘Great Development of the West.’” Paradoxically, becoming a protected area is sometimes interpreted by political ecologists both as a “forced sacralization” (Nyamweru 2012) or a hidden desacralization process (Sehnałova 2019). There is also evidence that increased pilgrimage and mass-tourism often follow the declaration of a protected area becoming a “nature sanctuary” and can potentially degrade both the spiritual and natural values of the site (Mu et al. 2019). Finally, Hinduization, Islamization,

and Christianization have also played a role in the disappearance of taboos and nature-based beliefs, as “modern religions” (Aniah and Yelfaanibe 2018), as well as other subtle forms of religious imperialism, erased or transformed previous animistic beliefs and “idolatrous cults” (Khumbongmayum et al. 2005, Sarfo-Mensah 2009, Nyamweru 2012, Ormsby 2012, Frascaroli 2013, Bortolamiol et al. 2018).

(Re)sacralization

But SNS are not declining everywhere. On the contrary, (re)sacralization is an ongoing, contemporary dynamic taking place in many natural enclaves, led sometimes by unexpected actors such as new religious movements, lay associations, or even the secular state. Sacred sites are being reappropriated by different actors (Studley 2018). Relatively new religions are generating new SNS. For instance, the Shrine of Bahá'u'lláh in Acre and the Shrine of the Báb in Haifa, Israel, could be considered Bahá'í SNS of recent creation. Similarly, in the USA Mormonism has transformed a 150-acres grove into a sacred site (Brown 2018). Thousands of Mormons and Bahá'í pilgrims visit these places every year. And even in a highly secularized country like Estonia an Indigenous neopagan religious association has successfully lobbied “for the protection of sacred landscapes or natural sacred sites” (Ringvee 2015:1). Religious scholar James Chappel (2020) has recently suggested that the logic of sanctuary is an appropriate spatial metaphor for the study of contemporary religion. However, it is also useful for the study of modern PAs. In relation to SNS, it is important to remember that nature sanctuaries were not created in a remote, static, and primordial time. In China, Zeng (2018:174) has noted in her study of sacred groves (or holy hills) that, “after a forest was destroyed, it could be resurrected and re-sacralized through community engagement,” to a great extent because these sites are “very significant for Manlang as an expression of community identity” (p. 184). Sacred natural sites are, thus, constantly created, transformed, and recreated. Alongside or within new PAs, sacred landscapes are being established across the world, even in Western, secularized contexts such as Norway (Kraft 2010), Estonia (Ringvee 2015, Heinapuu 2016), and Finland (Mantsinen 2020). In fact, as Kõiva et al. (2020) have noted, “the sacralization of natural places (and nature as a whole) is among the messages of many humanistic movements, beginning with religious groups and ending with the bearers of the radical and critical idea of the equality of humans and nature” (p. 130).

Finally, the discussion on the impact of tourism on some SNS offers, again, a valuable insight on the dynamics of the sacred in natural settings. This is a complex process in which, as Cohen (1979) argued long ago, religious pilgrimage and secular forms of tourism often intertwine in complex ways. In Nepal, Mu et al. (2019) have recently argued, following Kraft (2010), that “under the influence of tourism development, the boundary of sacred space and secular space has been blurred due to the modern process of dedifferentiation” (Mu et al. 2019:13). Rediscovered or institutionally promoted pilgrimage, an ancient cultural phenomenon, is interpreted by some authors as a (re)sacralization mechanism potentially leading to overcrowding (Byers et al. 2001, Colding and Folke 2001, Anthwal et al. 2010, Enongene and Griffin 2018, Shepherd-Walwyn and Bhagwat 2018, Mu et al. 2019, Sehnałova 2019).

Table 6. Dimensions of the sacred and main themes in relation to sacred nature sites (SNS).

	Main themes	References
Building	Construction of a religious building Burial of a holy figure Establishment of a worshipping community Dedication and demarcation of sites	Dafni 2007, Nyamweru 2012, Frascaroli 2016, Kent and Orłowska 2018, Niglio 2018b, Roba 2019, Uddin 2019
Defending	Presence of ancestral spirits, demons, supernatural creatures, totemic animals Existence of taboos that regulate the access and the use of natural resources Fear of punishment or vanishment	Byers et al. 2001, Colding and Folke 2001, Chandrashekhara et al. 2002, Khumbongmayum et al. 2005, Sarfo-Mensah 2009, Kraft 2010, Negi 2012, Notermans et al. 2016, Bortolamiol et al. 2018, Talukdar and Gupta 2018, Uddin 2019
Enhancing	Source of status, identity, and pride Repositories of community identity Exclusion of foreigners, ethnic minorities, or menstruating and pregnant women	Colding and Folke 2001, Kraft 2010, Negi 2010, Woodhouse et al. 2015, Notermans 2016, Acharya and Ormsby 2017, Kent and Orłowska 2018
Inhabiting	Ritual and worship as appropriate language to communicate with the sacred Establishment and reenactment of a contractual relationship Community participation Guarantee of social harmony	Chandrashekhara et al. 2002, Kraft 2010, Notermans et al. 2016, Acharya and Ormsby 2017, Fernández-Llamazares et al. 2018, Shaygozova et al. 2018, Talukdar and Gupta 2018, Roba 2019

Mutation

The sacredness of SNS is in flux. It is not fixed but rather adapts and evolves constantly. When it comes to nature conservation, several scholars have realized the complex and dynamic character of the sacred. For instance, drawing from ethnographic work in Madagascar, Osterhoudt (2018:13) affirmed that the cultural and religious taboos (Fady) related to natural sites mutate constantly: “Yet in reality, Fady are not followed blindly by all people on all occasions — rather, they are considered within shifting, dynamic intersections of personal, spiritual, social, and political sensibilities.” Likewise, Byers et al. (2001:212-213) found in their study of Zimbabwean sacred groves that “in Shona religion the ‘sacredness’ of a place can be added or removed as needed for effective social and environmental management.” According to Acharya and Ormsby (2017), in Indian sacred groves (devithans) the sacred is also a malleable concept, an element within an adaptive cultural strategy: “Hence, devithans move beyond the trappings of a static ecological idyll and become complex and dynamic sites located at the heart of ‘cross-cutting matrixes of culture, power, and history’” (Acharya and Ormsby 2017:240). Similarly, Notermans (2016:1) realized that, in Kerala, “the destruction of sacred groves has less to do with a loss of faith but more with a change of faith.”

The arrival of theism, specially Hinduism, Christianity, and Islam, has long been interpreted as a threat to the previous animistic beliefs underpinning the taboos and worldviews that had traditionally protected SNS (Khumbongmayum et al. 2005, Sarfo-Mensah 2009, Nyamweru 2012, Notermans et al. 2016, Aniah and Yelfaanibe 2018, Bortolamiol et al. 2018, Maru et al. 2020). For Frascaroli (2013) and Harrison (1992), the destruction of sacred groves started when first, Imperial Rome and, later, Christianity transformed the Mediterranean landscape culturally, politically, and religiously. According to Khumbongmayum et al. (2005:1580), in Manipur, Northeast India, “the advent of Hinduism during the reign of kings also contributed to the erosion of traditional beliefs of the Meiteis. Moreover, the influence of Christianity added a new dimension in religion and culture, which also acted as an important factor in causing the degradation of

sacred groves.” There is also evidence that, in Asian and African countries, the arrival of Islam has led to the decline of animistic beliefs that underpinned SNS (Sarfo-Mensah 2009, Nyamweru 2012, Notermans et al. 2016).

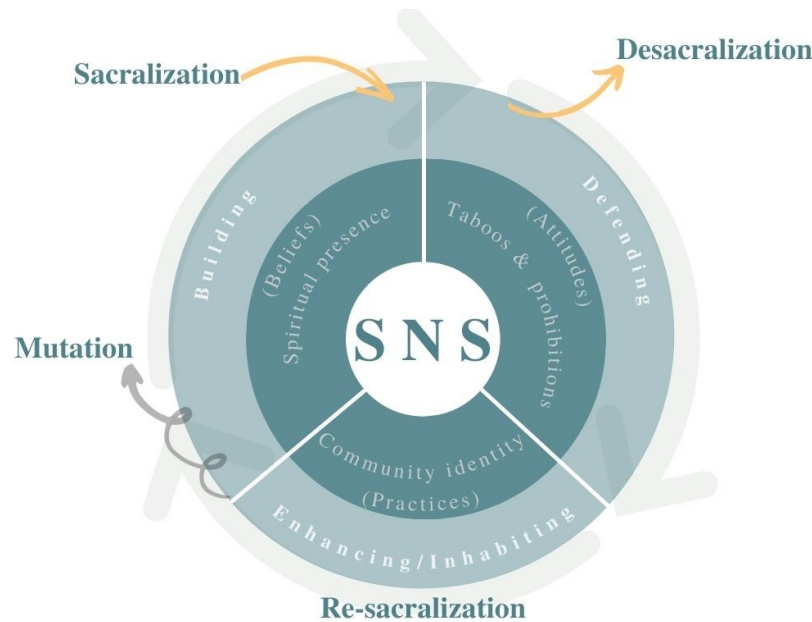
Other scholars, however, argue that taboos are pervasive and often survive disguised under the new (mono)theistic dressing (Byers et al. 2001, Dudley et al. 2009, Ormsby 2012, Frascaroli 2016, Talukdar and Gupta 2017, Shaygozova et al. 2018, Tatay-Nieto and Muñoz-Igualada 2019). For instance, Talukdar and Gupta (2018:515) claimed that “a mutual exchange and enrichment of worldviews can be said to have occurred, with the nature-centric aspects of the worship of animist deities influencing Hindu religious beliefs and rendering them more environmentally benign.” Similarly, Shaygozova et al. (2018:66) affirmed that pilgrimage to SNS in Kazakhstan “combines Islamic elements (Quran recitation, prayers, appeal to the Islam moral values, sacrifice, etc.) and visible pre-Islamic and non-Islamic rites as appeal to ancestors/aruakhs, who guard this sacred place, ‘nodular magic’, animism (worship of water, soil, wind, sun).” Just like in Spain, where Tatay (2021) has argued that many rural, mostly Marian sanctuaries with nature-related names are ancient, pre-Christian SNS.

In sum, a flexible and dynamic understanding of sacredness is required to fully grasp the complexity of SNS because the significance of the sacred varies over time, space, and even from person to person (Notermans et al. 2016, Kent and Orłowska 2018, Rots 2019). It is important to acknowledge this dynamism of the sacred because it can lead to different conservation strategies and relationships among both stakeholders and rights holders in the territory.

DISCUSSION AND CONCLUSION

Our review has explored the multiple meanings attributed to the notion of the sacred for conservation purposes by a growing body of research. The sacred is a contested and ambiguous concept that, nonetheless, is intrinsically linked to the management and preservation of natural sites because of their implicit understanding as places separated or set apart.

Fig. 4. Dynamics of the sacred in sacred nature sites (SNS).



It is remarkable, however, that the conservation literature has largely overlooked the notion of the sacred/holy as an explicit research object. Sacred natural sites related topics have recently been brought into the social-ecological literature and are being used especially in relation to conservation but have not been the subject of reflection by academic disciplines with a long tradition of studying the sacred. The findings of this systematic review show that SNS are conceptualized by scholars as places where the human and the wild, the cultural and the natural, and the immanent and the transcendent meet, reflecting the multidimensional character of the sacred. Across these studies, the elements of the sacred in relation to conservation range from emotions and beliefs to attitudes and behaviors; from invisible cultural and spiritual roots to visible systems of practices; from individual experiences to collective rituals and devotions; and from the informal to the institutional. Sacred natural sites also intersect with a growing debate on the instrumental, intrinsic, and relational value of nature (Anderson 2022). Interestingly, such relational interplay between the social, the natural, and the supernatural is viewed as coevolutionary, entailing a variety of consequences for conservationists, policymakers, and local actors interacting in SNS (Fig. 4).

By inquiring into the kaleidoscopic notion of sacredness as used in the burgeoning body of research on SNS, we respond to the call by conservation social science scholars for a better understanding of human dimensions of environmental issues for a more robust and effective conservation (Bennet et al. 2017). Specifically, our review offers an answer to the growing claim on the need for IPLCs, insights, and practices on conservation (WWF et al. 2021), beyond the reductionistic, instrumental, Western-centric concept of “resource management” (review by Berkes 2017). Several implications and related future research proposals

derive from the findings of our review, all sharing the critique of unquestioned assumptions in the SNS literature, with relevance for conservation and policymaking.

First, despite being considered in the literature mostly as a positive force for environmental conservation, our review shows a more nuanced view of the role played by the sacred in SNS, depicting it as both opportunity and threat to conservation. In fact, as Lynn White (1967) famously argued half a century ago, and several scholars have stressed in our review (Notermans et al. 2016, Osterhoudt 2018, Zeng 2018, Cladis 2019), religious worldviews, rituals, and practices are a double-edged sword that can either protect or destroy nature. Along these lines, Osterhoudt (2018:3) warns that “not all cultural taboos lead to environmental preservation; indeed, some may actively encourage ecologically damaging behaviours,” for example, when the imposition of a taboo on an abundant species ends up encouraging the use of another endangered species (Colding and Folke 2001). Moreover, even when beliefs, taboos, and rituals actively protect a SNS, we should keep in mind that nature conservation is not the main aim of these complex cultural institutions (Fomin 2008, Studley 2018) but rather an unintended result or “accidental environmentalism” (Kent and Orlowska 2018). As Fournier (2011:11) warned: “when a sacred site is said to be strictly protected ‘by tradition’, scholars in ecology should be cautious because villagers’ ideas of protection may be very different from theirs. The notion that wooded shrines are an ‘endogenous’ means for achieving biodiversity conservation must be firmly discarded: protection is definitely only a side-effect of this sort of ‘placing apart’.”

Indeed, the paradoxical character of the sacred is emphasized in the research findings of several authors. Cladis (2019:136), in consonance with White, affirmed that the Western “notion of the sacred has contributed to both environmental protection and

environmental harm.” For Keller (2014:98), “sacred is a Eurocentric term” that must be used carefully in Indigenous contexts. A dichotomous, binary understanding of the sacred may even lead to environmental degradation because it grants legitimacy to the idea of non-sacred places as profane, sacrificial zones. Regarding the place, demarcation of the sacred may lead to an indirect desacralization, because a site declared sacred often makes the surrounding area profane and thus, implicitly unworthy of protection. This dynamic is eloquently discussed by Cladis (2019) in reference to the more nuanced Navajo notion of the sacred, one that extends to all lands, making them worthy of care and respect. Another source of discrimination emerges from the extension of the sacred-profane binary from place to people. Access and use of the SNS natural resources are hierarchically structured, as political ecologists have persuasively argued (Notermans 2016). Power dynamics may grant access to some groups while excluding others defined as outsiders (and thus assimilated with the profane), such as women, laypeople, or ethnic minorities (Negi 2012).

The critique of the sacred-profane binary relates to other poststructuralist efforts to break down binaries, a movement of the unmaking, the rejection of stable structures, and the elimination of distinctions, as in other stratified sociological categories such as gender or race (Risman 2018). Future SNS research might benefit from further adopting post-structural lenses in the attempt to deconstruct the stratified sacred/profane dichotomy through questions on the construction and maintenance of those binaries as well as the exclusions, inclusions, identities, and practices they involve (Frohard-Dourlent et al. 2017).

Second, although the portrayal of taboos as means of conservation is central in the literature, there is also a critique of the reductionist view of taboos as mere instruments for nature protection (Fernández-Llamazares et al. 2018), on what Tiedje (2007) has denounced as the “misappropriation of taboo.” The conservationist view often ignores the complex cultural processes underlying the construction and evolution of taboos and other social institutions, which calls for a further study on their broader historical, political, and cultural context (Osterhoudt 2018). A social and relational understanding of the role of taboos will help overcome the instrumental view although acknowledging its intrinsic value (Anderson et al. 2022). Relatedly, an additional source of simplification arises from the (mis)identification of sacredness and wilderness (Zeng 2018). Such questionable association reinforces the separation of nature and culture while idealizing “the wild” in SNS. Conservation biology, restoration ecology, and invasion biology have been characterized as “Edenic sciences” given their common aim of bringing ecosystems back to an original, primeval state (Bowman et al. 2017). Fletcher et al. (2021:1) have recently criticized the pervasive conservation ideal of protecting a pristine wilderness, free from the role of humans, often “denying Indigenous and local peoples’ agency, access rights, and knowledge in conserving their territories.” Analogously, some SNS scholars tend, like Edenic scientists, to associate the wild, natural state with the sacred. However, as Heinapuu (2016:164) warns, “Sacred Natural Sites should not be presumed to represent pristine nature. Rather, they are products of complex culture-nature interactions,” and as such they should be considered in future research as well as in policymaking.

Third, the findings of our review also highlight the importance of adopting a dynamic and relational understanding of the sacred regarding SNS. These sites are marked by the coevolution of multiple dimensions (natural, cultural, and spiritual), a complex and reversible process that includes desacralization, (re) sacralization, and mutation. Sacredness is not fixed but rather malleable. In fact, new and ancient sacralization dynamics are at play not only at SNS but also in many other natural settings. However, as Manfredo et al. (2016:772) warned in their analysis of social values, “deliberate efforts to orchestrate value shifts for conservation are unlikely to be effective.” Conservation managers may want to induce social change, but they should keep in mind that a mere instrumental approach to the sacred (a central cultural value) will unlikely lead to transformative practices or rapid cultural shifts. The term “sacred,” thus, should not be considered a loose metaphor but rather an analytically relevant and dynamic concept that requires attention because of its impact on contemporary perceptions of nature. Applying the lessons learnt from SNS could open new avenues for conservation management and land-use planning.

Fourth, SNS studies reveal the centrality for conservation of Indigenous cultures, spiritualities, and languages, many of which are vanishing at a fast pace. Indigenous tongues are an important repository of worldviews, ontologies, and epistemologies in relation to biocultural heritage. The acknowledgement of such plurality of perspectives in turn poses a challenge to conservation management inasmuch as it involves interacting realities evolving with diverse views. As Verschuuren (2019) argued, addressing this challenge goes well beyond accepting that the voices of Indigenous people on the sacredness of a site are heard in the SNS discourse. Their worldviews and ontologies should be on equal footing with those dominant in conservation management. In sum, given the historically rooted power asymmetries, Indigenous actors and perspectives should be included in SNS research and policymaking, with “Indigenous actors acting on their own behalf” (Liljeblad 2019:6).

Fifth, colonial and imperial expansionism is a critical aspect of global histories, the effects of which have fundamentally transformed societies, cultures, and their practices. As environmental historians argue, ecological and cultural imperialism share a common ancestry (Crosby 1993), one that has left an imprint in the way many conservationists interpret nature as wilderness (Fletcher et al. 2021). As noted in the SNS literature “the sacred” is often equated with “the wild,” imposing Western, dichotomous conceptions of a pristine nature set apart from humans (Milton 1999). Moreover, religious proselytism is also a form of cultural imperialism that has significantly shaped and transformed many SNS in Africa, Asia, and America. The advent and expansion of theism (mainly Christianity, Hinduism, and Islam) often transformed the animistic beliefs underpinning taboos and worldviews, although many of them adapted, mutated, and survived dressed in new religious clothes (Sarfo-Mensah 2009, Nyamweru 2012). Against this background, building, inhabiting, and defending SNS often become political acts employed by Indigenous peoples and local communities as an alternative to Western approaches to nature conservation.

In sum, a dichotomous, static, oversimplified understanding of the sacred generates subtle forms of discrimination that need to be brought to the fore in nature conservation studies and

landscape management. Declaration of PAs and recognition of SNS should not focus only on restricting access to natural resources. Because taboos and other cultural institutions are easily misunderstood and oversimplified, natural scientists, policymakers, and PAs managers should pay attention to the wisdom and management experience IPLCs can offer to avoid falling into a similar conceptual trap when creating new legal forms of protection, i.e., the declaration of a national park (Studley 2019). Sacred natural sites are highly complex cultural mechanisms, collective identity markers, and dynamic settings in which different logics overlap (Skog 2017, Mishchenko 2019). Their diversity and complexity beg for alternative management strategies that consider the importance of relational values (Chan et al. 2016, Anderson et al. 2022) and include the broadest possible scope of participants, especially IPLCs (WWF et al. 2021). The experience of SNS shows us that conservation strategies go well beyond incorporating prohibitions and establishing boundaries; researchers might also explore ways in which Indigenous rights holders, as well as visitors and other stakeholders, can actively participate and inhabit the territory considering their religious backgrounds and cultural values.

Finally, no study is without limitations. Systematic reviews generally share potential shortcomings in the selection process of the publications that might exclude some pertinent information. In this case, the search strings focused on SNS-related topics identified through an iterative process, but because these terms do not exhaust the whole range of relations between the sacred and nature, we excluded studies focusing on similar issues that use a different vocabulary. Considering Indigenous terms and concepts coded in local and native languages into reviews would deepen and enrich the knowledge of the sacred in SNS. We did not include peer-reviewed publications on archaeology, history, and biblical studies that could certainly enrich the vision and historical role of SNS in conservation. And, our English language inclusion criterion excluded relevant work published in other languages (mainly Chinese, French, German, Portuguese, Russian, and Spanish). The dearth of publications from Latin America, parts of Europe, and French-speaking Africa is partly because of this methodological limitation. Finally, to facilitate the review and limit the sample size, we focused almost exclusively on academic peer-reviewed literature. In relation to SNS, however, there are certainly many high-quality peer-reviewed publications outside of this body of literature. The so-called gray literature (Mahood et al. 2014), however, is difficult to access systematically and should be reviewed in the future.

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Data Availability:

Data sharing is not applicable to this article because no data/code were analyzed in this study.

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