

## CHAPTER 9

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# Biocultural Sacred Sites in Mexico

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### Introduction

There have been many different approaches and contributions to our intercultural understanding of the inherent sacredness of nature. In attempting to strengthen the rationale for what constitutes a sacred natural site (SNS), Mercedes Otegui-Acha (2007) provided a series of variables that characterize SNS. The variables she considered were (1) the intrinsic capacity of SNS to sustain biodiversity, (2) the quality of SNS to support indigenous and traditional peoples' ways of life (by keeping alive heritage, cultural identity, ethnolinguistic diversity, livelihoods, and traditional ecological knowledge), (3) the support of indigenous and traditional peoples' spirituality provided by SNS, and (4) the policy contexts that enable conservation of SNS.

After a thorough revision, Otegui-Acha (2007) presented a framework for developing an inventory of SNS. To determine their geographical distribution, she first produced a classification of SNS according to four spatial scales: (1) spatially dispersed sacred landscape, (2) spatially definable sacred landscape, (3) sacred natural physiographical features, and (4) sacred floral and faunal species. Together with a team of researchers from PRONATURA (an environmental nongovernmental organization based in Mexico), she ventured to test the methodology and tools, leading to the eventual creation of the National Inventory of Sacred Natural Sites in Mexico in 2010 (Otegui-Acha et al. 2010).

We propose that the framework used by Otegui-Acha (2007) is missing three concepts that are crucial in Mesoamerican cosmo-vision:<sup>1</sup> (1) bioculture, (2) time-space, and (3) energetic activation. These three concepts are so inherent in native peoples' lives that their interlocutors do not feel the need to delineate them in abstract forms. However, in an intercul-

tural arena, where different parties are trying to construct an equitable approach to conservation of these sites, such concepts need to be brought forward. The ideal scenario is that, as practitioners of transdisciplinary research, we can directly and indirectly engage in the native peoples' ways of being (of living and interrelating), allowing us all to forge, in synergic and sensible ways, the safeguarding of culturally relevant places.

## First Concept: Bioculture

Human thought about existence and transcendence does not flow and expand itself regardless of experience in nature, nor by "taking oneself out of the world" to construct a view of the world, as Ingold (2000: 95) states. This axiom is at least true among original (or indigenous) peoples<sup>2</sup> and their descendants. Drawing from constructivism and human geography, we note that any natural element on earth or in the sky that is apprehended by the human heart and mind becomes cultural. Going a step further, collective members from original cultures perceive the world as all living (Lenkersdorf 1999). For instance, Mapuche peoples from Chile and Argentina call "beings" (*che*) all those who interplay as agents or simply as related entities in the cycle of life: rocks, fungi, mosses, and plants and animals of water, land, and sky.

In Maya territory, the Ceiba is not merely and botanically "a tree": it is the holder of one of the corners of the world. It is a being who has the willingness to do the job and who gets tired and lets go of the weight every once in a while. We propose that every element from nature, be it "tangible" or "intangible," "biological," "mineral," "from underground," "earthly," or "heavenly,"<sup>3</sup> is a biocultural element,<sup>4</sup> emphasizing the fact that original peoples engage with the world as a living entity. Ingold's (2000) explanation about relational thinking applies not only for subsistence hunters; among Pueblo Indians, "all my relations" is a common salutation, which reflects their particular way of experiencing their existence.

The kind of culture that relates to the natural world by seeing vital energy flowing through all its beings is a "bioculture." Tangible and intangible aspects of plants, fungi, animals, stones, rocks, water springs, flowing or still waters, mountains, caves, and landscapes, as experienced by original peoples in a life cycle context, become their biocultural heritage. We are emphasizing "their" because it is what they love and value with their eyes, their minds, and their hearts. It is very difficult for nonbiocultures to apprehend what biocultural heritage actually entails.

The term "biocultural heritage" has been used lately by ethnoecologists such as Toledo, Boege, and Bassols (2010) to refer to all that native

peoples have produced, reproduced, and preserved in their territories as a result of the beliefs, knowledge, and practices emerging from their cultures. As used here, the concept emphasizes the idea that culture has developed around biological components and whatever nurtures life: soil, land, wind, and water (Barrera-Bassols 2003).

Toledo (2002) proposes that the diversity of animals and plants (biodiversity), of spoken languages (ethnodiversity), and of regions of domesticated plants and animals (agrodiversity) together represent a biocultural heritage. He stresses the interconnections among those dimensions, since it is in their blending that a complex system merges and evolves. These interconnections result in (1) the geographic overlap between biological and linguistic diversities; (2) the overlapping between native peoples' territories and biologically rich regions; (3) native peoples as the main inhabitants and managers of well-preserved landscapes; and (4) the certification of a behavior oriented to the conservative use of landscapes among original peoples derived from their beliefs, knowledge, and practices (Toledo et al. 2001).

When these aspects are taken into account, Mexico is the country with the second highest number of biocultural sites in the world (Toledo 2012). The geographical spots of the main cultures of Mexico are found where biologically diverse habitats exist, and they are known as "biocultural regions" (Toledo 1999, 2007). In effect, we can find different peoples inhabiting a plethora of ecosystems and being so united with their landscape that they are called coast cultures, mountain cultures, jungle cultures, desert cultures, tropical wetland cultures, lake cultures, and highlands cultures. Most sacred places in Mexico are found in biocultural regions. Further below we propose which elements need to converge for a place to be sacred.

The category of "biocultural region" is slowly being used more among scholars. For over a decade, it has become fairly common to read about mindscapes or "langscapes" from Barrera-Bassols (2003) or Maffi (2001), but we still don't read about biocultural regions. This geographical category is quite natural, if seen from an integrated perspective. The superspecialization of sciences and of derived governmental programs has led to serious problems that end up in what we term "ecoethnocides."

Programs promoted by international initiatives, ministries, or other institutions often require experts or consultants to identify either "natural sites" or "cultural sites," and in Mexico the INAH (National Institute of Anthropology and History) has a different agenda from that of the SEMARNAT (Secretariat of Environment and Natural Resources). These independent efforts represent a dichotomy that originated from splitting a single epistemic approach into two separate fields of knowledge, namely, ecology and anthropology. Of deeper concern is the fact that neither of

those fields is able to apprehend the biocultural world. Both can, with their conceptual frameworks, define a site as naturally or culturally important, but that definition does not prevent sites from becoming more and more eroded.

There must be a transdisciplinary approach that includes original people who can share their worldview and help others comprehend the implications of stepping into the new paradigm that is being built by human ecologists like Kassam (2009), ethnoecologists like Toledo and Barrera-Bassols (2008), critical sociologists like Boaventura de Sousa Santos (2010), and new ecologists like Berkes, Colding, and Folke (2003). A paradigm that is built on native conceptions of nature as a living entity is certainly and urgently needed in the minds of those who are ready to help slow down, stop, and reverse the deterioration of biocultural territories.

A biocultural heritage is not merely the happy result of original peoples' ways of life, which nation-states may feel is there for them to proudly display in world statistics or photographs. What has been passed on from original ancestors is a very ancient way of life that sees life flowing through the tangible and intangible, in a biocultural world. That way of life is continually experienced by biocultures. Those material and non-material elements—all of which can be named and contacted through the mind and heart—are biocultural elements that collectively represent a biocultural heritage, one that primarily makes sense to the bioculture that signifies it.

Interpretations of such heritage will always have a margin of error, which interpreters must humbly accept. In this sense, they will have to provide conditions for original people to speak for themselves about what a territory, however large or small, however impressive or apparently insignificant, means to them. They must be given respect and the power to avoid the advancement of any kind of exploitation, extraction, or construction project. At the very least, the principle of free prior informed consent (FPIC) must be applied when projects are being conceived or are underway.

## **Second Concept: Time–Space**

Any particular place is signified by a particular time, and any one time is signified by a specific place. Units of time–space are orderly, set in a single lattice, and this lattice helps contextualize a bioculture. Thus, the place that gives identity to a bioculture is a biocultural site. The term “site” speaks not only of a geographic coordinate but also of a meeting point of time and space.

This chronotopic axiom is absolutely crucial if we are to produce an inventory that is culturally meaningful in Mesoamerica. More importantly, it makes sense to native elders and also to youth who want to recover the ancestral conception of time–space.<sup>5</sup> They need to get involved in the process of understanding ancient astronomic calculations and practices because such calculations led to the erection of buildings or the selection of particular natural mounds or caves. Sites that are annually activated by means of rituals can help maintain the knowledge system of how celestial bodies determine meteorological cycles if there are people who actively study the time–space logic behind those sites.

This knowledge used to be traditionally reproduced, but ever since the arrival of Spanish friars, any means of transmission of this knowledge was severely punished. Today, common people participating in rituals only focus on deities with syncretic meanings, and they are not conscious of the astronomic and calendric implications of the ritual or of its symbolic role as a means to control weather and life cycles. In spite of that tendency, we must highlight that there do exist specialized groups of timekeepers who are knowledgeable in these matters.

From the Preclassic period to the late Postclassic period in Mesoamerica, wherever rituals were carried out, there was a permanent interplay between religious and astronomical motivations; like time and space, science and religion were fused, and together they explained the whole world. A distinct feature of prevailing Mesoamerican societies today is the intertwining of the explicit and the implicit; the tangible and intangible are conjoined in their world conception. But a major disruption occurred over the past centuries, when science and religion were split to explain the world. Even more, it was decreed that science was only possible among Western thinkers, so the rest of human thought was considered “pseudoscience,” and it was stressed that religion was only for those institutions with authority to contact the divine. In this modern context, Mesoamerican calendars became merely ritual or divinatory and were considered almanacs that did not necessarily have to be backed up by a scientific explanation.

However, time–space knowledge and all the methodology around it (including high-precision instruments such as the alignment of bodies on the landscape and the development of acute observational techniques around the movement of celestial bodies) do have astronomic and meteorological implications, not only in Mesoamerica but also in Arid America (as described in what follows) and beyond. Astronomic referents (the Milky Way, the Pleiades, Venus, the Moon, and the Sun) are used as meteorological marking points and must be observed from specific sites.

For instance, Enrique Aguilar<sup>6</sup> reports that the site of Wirikuta—where the Jicuri (peyote, *Lophophora williamsii*) is harvested—is highly signifi-

cant because the ceremonial act of sticking an arrow in the core of a Jicuri flower symbolizes the killing of a deer, which in turn symbolizes killing the drought. So putting an end to the deer peyote on this earthly level puts an end to the dry aspect of the heavens (and by fractal law, to the dry aspect of the sky level). When the peyote is brought back from Wirikuta, the Jicuri Neixa celebration takes place in order to present the blue flag, which represents the rain that has been brought from the East.

Through the various rituals along the pilgrimage route, time–space is placed in order, and only then is everything set in place for the rainy season to commence: the date is 12 to 13 May, twenty days before the solstice on 21 June (Enrique Aguilar 2012, personal communication). What has happened in the heavens or on the cosmic level is that the Milky Way, announced by the Pleiades on the East at dawn, has started to become visible. Over the last few millennia, the thick trail of water drops (the Milky Way as conceived by Hñahñu-Otomí peoples<sup>7</sup>) has helped keep track of the return of the wet season. How much rain will fall in a certain year depends on how blurry the Milky Way and the Pleiades appear. This is just one example of hundreds that sustain the referred to chronotopic couple.

The approach necessarily requires the respectful knowledge and handling of the Mesoamerican chronotopic instrument: the “eighteen twenty-day month plus five days” calendar (i.e., the year calendar), together with the “thirteen-times-twenty-days” cycle (the 260-day cycle). We are only just now able to fully grasp the time–space conception thanks to Patrick’s recent findings (Patrick 2013): in short, the 365-day cycle is always fixed to the yearly Sun cycle because each Mesoamerican day is a complete day. This disputes the thesis stating that the Mesoamerican year is vague, wandering forever around the solar cycle. Moreover, the 260-day moving cycle provides the same name to any particular day all throughout Mesoamerica. This 260-day cycle is one of a kind: a robust lattice conveyed and perpetuated by a singly rooted myriad of cultures that, by providing concerted rituals, helped to keep the lattice in place for at least three millennia.

The fundamental structure of conceived time–space is supported by four trees at each corner and one in the middle. The middle one is physically represented by the hearth, where the eternal fire is lit and relit each year (on 22 March). Each of the four trees symbolizes a position of the Sun both in its daily course—sunrise, midday, sunset, and midnight—and in its yearly course. This yearly cycle produces spatial referents (eastern segment, northern segment, western segment, southern segment<sup>8</sup>) and also helps to identify dates concerning significant moments in the weather and in corn growth. Thus, a multifactor correspondence can be made, whereby:

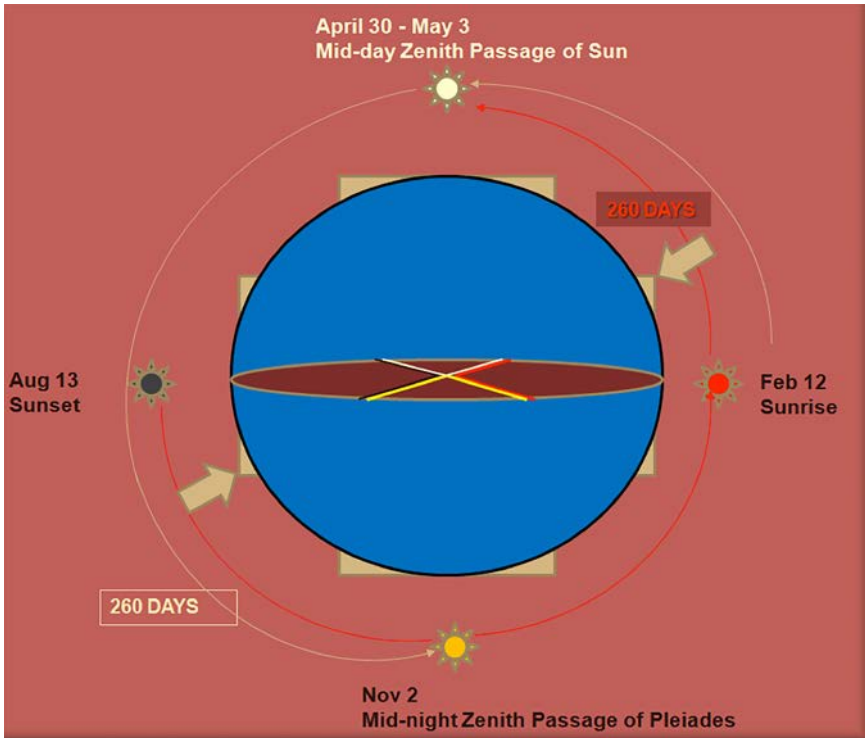
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1. 10 to 12 February is linked to sunrise, to the eastern portion of the landscape, to the blessing of corn seeds (and also to the end and beginning of the Mexica year, a culture focusing on the rising Sun on the East).
2. 30 April to 3 May is linked to midday, to the northern portion of the sky and the land, to the beginning of the rainy season (and to the second zenith passage over the southernmost area of Mesoamerica, which happens 260 days after the first zenith passage, on 13 August).
3. 13 August is linked to sunset, to the western segment of the territory, to the interfestival drought within the rainy season (and to the beginning of the Maya year).
4. 29 October to 2 November is linked to midnight, to the southern segment of the world, to the underworld, to the end of the rainy season (and to the end of the corn plant lifecycle, which ritually began on 12 February).

As demonstrated in Figure 9.1, there are two coupled sets of dates that are 260 days apart. One couple is 10 to 12 February through 29 October to 2 November, and it was originally Pleiades based. It is a cycle evoked in many Central Mexican stelae by means of two calendar glyphs: 1 Rabbit and 2 Reed. They mean that 260 days are counted from day 1 Rabbit of year 1 Rabbit (i.e., from the day acting as the year bearer<sup>9</sup> of the year to be completed, which falls on 10/11 February<sup>10</sup>) until day 1 Rabbit of year 2 Reed, which falls on 28/29 October. This is the interval necessary to view the journey of Pleiades from being directly overhead at sunset to being directly overhead at midnight.

With this observation, astronomers could confirm that the calendric system was perfectly in place because there had been no off course after 52 or 104 years of usage. Several authors have proposed dates for the zenith passage of the Pleiades in contemporary times of Sahagún, that is, the sixteenth century (Bernardino de Sahagún 1979: I.327 r.IV, Apéndice),<sup>11</sup> because they assume that day 2 Reed was anchored to the zenith passage of the Pleiades at that time. However, the coupled set of dates was Pleiades based only during the very first Mexica cyclic anniversary, which required “tying” the century of 104 years between years AD 1090 and 1091,<sup>12</sup> so the tradition of celebrating this coupled set of dates was passed on to their Nahuatl-Mexica descendants until the sixteenth century, even though the Pleiades were not right in the zenith by that time.

The other coupled set, which spans 260 days, is 13 August to 30 April. It is Sun based, since it measures the time elapsed between the Sun’s zenith passage on 13 August and its next zenith passage on 30 April. It is also site based, since it can only be followed easily on sites along latitude 15°N through 15°30’N. But all sorts of sacred buildings were erected in order



**Figure 9.1. Four time–space referents (illustration credit: Geraldine Patrick)**

The figure depicts four times in a day cycle, four dates within a year, four cardinal segments, and four astronomic referents. The midnight zenith passage of Pleiades applies for a span of about five hundred years starting at the end of the first millennium AD. The 260-day spans are explained in the text.

to follow this period farther north, up to almost latitude  $20^{\circ}\text{N}$ , that is, in Teotihuacan.

### Third Concept: Energetic Activation

We have seen up to now that bioculture is ubiquitous; it is linked to a time–space coordinate. Now, if that chronotope is activated with natural energy (mainly in the form of heat or electromagnetic discharge) and/or human energy (mainly as thoughts, words, songs, and music), then biocultural sites acquire a sacred quality<sup>13</sup> and become highly spiritual.

Sacred biocultural sites are considered sites of power and have either a trilogic relation—which means that there is a connection between what is



above, what is below, and what is deep within—or a dual relation—which means that as is above, so below. But this relation is not only spatially conceived; it is also mutually conceived in time. Thus, we find a relation of the diurnal world with the nocturnal world but also in the transition phases (i.e., in the transition from night to day and vice versa and even in the transition from the first half of the night to the second half and also between the diurnal halves).

Regularly, a sacred biocultural site on a mountaintop has a corresponding sacred site in the underworld such as a cave, a cavern, a cliff, or a canyon. But it is also connected to a sacred site at the intermediate level, the point of departure to the highlands and to the depths. When this geostrategic location becomes aligned with a certain astronomic time, powerful energies emanate in order to produce a harmonization and a resilient condition for those interacting with them. In short, sacredness of places is infused in biocultural, astronomical, and energetic dimensions, all interlinked.

Long ago, there was a highly developed consciousness about how the spiral movement of the time–space lattice determined sacredness. A specific time–space event was the very first component identified in a natural site that eventually was conceived as sacred. Even today, many places in Mexico are sacred because enchantments occur on 3 May. They may be places rarely visited or known, either in their pristine condition or with some degree of human transformation, but they qualify as sacred because something peculiar happens over and over in a timely pattern.

The astronomical reason underlying the event was once fully acknowledged among expert native people, but it became eroded throughout the colonial and postcolonial periods. This means that the tradition regarding a pilgrimage to a certain place on a certain date and the ceremony held there may have been passed on through generations, but the astronomical referent has been partially lost. It is common to see that such places are now considered sacred due to some Catholic religious asset, making people even more neglectful of the original reason belying the sacredness.

## **Sacred Biocultural Sites in Mexico**

Sacred biocultural sites in Mexico are the dwelling places of biocultures, and they are usually several thousand years old. Many of these sites are unknown to the rest of society due to various reasons. The main one is that adherents of the Christian religion, imposed by Europeans in the sixteenth century, saw, and still see, these places as sites for worshipping the devil. That is the reason why some places, such as some sacred caves, are called

“devil’s cave.” As a result, many native people do not visit or do not know these places.

Another reason is that these sites are hidden from the public. Some custodians keep those sites secret, so outsiders will not destroy them or commit sacrilege there. The importance of these sites lies in the fact that they are vital to cultural cohesion and natural heritage. They are sacred for different purposes; some sites regenerate life, while others are places to give offerings for human and environmental health.

Most of the biocultural sacred sites in Mexico are unknown, and others are being or have already been destroyed. Here we present some of the most known in every category. Various sites are seen more as natural sacred sites and others more as cultural sacred sites. However, we argue that they are biocultural sacred sites because culture and nature are deeply interconnected in practice. Even sacred mountains are biocultural due to the presence of people who venerate them and carry out rituals in such places.

It is necessary to point out that most biocultural sacred sites in Mexico are found in original peoples’ territories. Community-based conservation by means of *tequio*, *nfoxte*, or *faenas*<sup>14</sup> is a normal activity, since according to native philosophy, socioecosystems are compelled to live in a sustainable way.

Thanks to the long resistance of some peoples, in Mexico we find many types of sacred biocultural sites, from mountains to beaches and from caves to deserts, and others. We can find them on mountaintops and volcanoes, in caves, in water springs, in underground caverns, on pilgrimage routes, at sanctuaries, on rocks, in ceremonial centers, in the milpa itself, in some beaches, and even within the perimeter of a complete community or city.

Among the most representative mountains of Mexico, we find the volcanoes in the Central High Plateau. Iztlacihuatl and Popocatepetl, which are perceived as a female-male duality, are found in the Valley of Mexico. Rituals have been carried out in these volcanoes since time immemorial in order to ask for rain on 3 May. Many legends exist around these volcanoes.

Rituals are carried out in the crater of Xinantecatl, a volcano also known as El Nevado de Toluca; offerings are given to the Lagoon of the Sun and the Lagoon of the Moon. These rituals have been happening since pre-Hispanic times; recent archaeological explorations have provided such evidence (Arturo Montero 2010, personal communication).

Today we know, thanks to mountain archaeological research, that cult devotion to volcanoes and mountains is more important than was believed, since many corroborative findings have been registered on almost every mountaintop (Iwaniszewski 1986). Rituals are still done today (Broda 1991) or are being reproduced by those determined to recover

traditions. Some sacred mountains are considered places where deities are materialized, so pleadings and offerings are directed to the life nurturer, known as Makihmu among Hñahñu-Otomí and Ometéotl among the Mexica.

There are also mountains where pilgrimage and ceremonies are practiced. In the High Central Mexican Plateau, we find El Cerro de la Campana on the eastern side of the Toluca valley. El Cerrito (Little Mountain) in Mexico State was visited to render cult devotion to Xolotl (vespertine Venus). Pilgrimage is still carried out by walking to its summit, where a Catholic temple is found. Offerings and rituals are still done there; Otomí peoples, Mazahua peoples, and mestizo congregates not merely to attend the religious mass but also to offer dances, songs, and sacred objects around the site. The custodians of the tradition say that everything around the site is sacred. This means that no act of disrespect toward plants, animals, rocks, or soil may occur; if this rule is violated by anyone, he or she may acquire some bad illness.

Also, Chalcantzingo Mountain is a sacred mountain in Morelos that has been offered cult status since Preclassic times. Yet another—of hundreds—is the Peña de Bernal, a place that is visited by people of many cultures who believe it contains a particular energy that revitalizes.

In the current cosmo-vision of native peoples, caves in the mountains allude to the underworld, where sustenance for humanity and ecosystems is produced. But since old times, the underworld has been conceived of as a place of fertility, as an obscure and cold place concerning death. These conceptions are still maintained today (Méndez 2009). So the sacred mountain is a referent to duality, to life and death.

The cave is the sacred place where the duality of evil and good converge. To some, it is the entrance into the underworld, and for others it represents goodness; it is the womb that generates life. Caves represent the entrance into other dimensions where extraordinary happenings occur, and they are also the access to wonderlands, cities, and enchanted places. Rituals are carried out on 3 May in sacred caves, where offerings are made to different entities. These offerings are made to thank Mother Earth for the fruits obtained, to ask for the recovery of the sick, or to venerate Xolotl, evening Venus (the one that can go to the underworld and help the Sun rise victoriously). There are also those who use the sacred sites for witchcraft; however, these are less common.

Caves also enable communication with the deceased (Segura 2005). Sacred caves are found in San Pablito, Pahuatlán, Puebla, Chalma, and Joljá, to name just a few of the many that are found in original peoples' territories. We also find caverns, which are places also used by local people to ask for rain, for health, and for abundance and to give thanks for these as well.

Among Mesoamerican peoples, water springs are sacred places for veneration. Nacelagua water spring is located in the Otomí-Matlatzinca mountain range, a sacred site where Mazahua and Otomí peoples arrive to celebrate life by offering flowers, fruits, bread, food, and resin *copal*. Tolanongo thermal waters have been venerated by Hñahñu-Otomí peoples since time immemorial. Local people have a very organized system based on traditional authorities and *nfozte* that enables them to administrate several thousand visits per year, while keeping an ecological and hydrological balance as well as the ceremonial spirit of the place.

Cenotes found in southeast Mexico, on the Yucatan Peninsula, are also sacred places containing water. There is a complex system of celebrations around the regeneration of life, and these take place within a calendar that focuses on events regarding agriculture and hunting.

Some lakes are also sacred, like the Zempoala lakes, between Mexico State and the state of Morelos; the Lake of Pátzcuaro in Michoacan is another example of a sacred place where people take offerings to ask for a good harvest, good fishing, or good hunting.

Even the milpa is a sacred site among Mexican peoples, since many cultures in Mexico still carry out rituals in agreement with the agricultural cycle, where the corn seed is consecrated at the beginning of the seeding season and the harvested corn is blessed at the end of the season (Reyes Montes and Albores Zárate 2010).

On the Mexican coastline, there are sacred sites that are still venerated by peoples who inhabit islands or who travel from places far away; for example, the Wixarika peoples from Jalisco and Nayarit go on pilgrimage to the Pacific coast to give offerings to the deity that gave life. The Seri peoples make rituals on Tiburon Island and also on the coast of Sinaloa and Sonora, which are old sacred sites.

There are valleys that are sacred too, such as Tepoztlan. Many people living there believe that there is a special energetic field, so local visits among barrios are carried out and many climb to the mountaintops—particularly to the Tepozteco—to carry out ceremonies.

Sanctuaries are diverse, but they all have connections with sacred sites relevant to ancestors. Most have become syncretic, such as La Villa in Mexico City. Catholic temples are found where old temples used to be located. Most sacred biocultural places are shared by two or more systems of beliefs. Wherever there has been a systematic syncretism since colonial times, the sacred site has suffered from moderate to profound changes in terms of architecture, structure, decoration, and religious motives. Thus, different cultures and beliefs may converge in the same sacred site.

Among the most relevant sanctuaries are Chalma in Mexico State; La Villa, Mexico City; San Juan de los Lagos in Jalisco; Juquila in Oaxaca; and

Santo Niño de Atocha in Zacatecas, to name just a few. Over a million people visit these places every year as an expression of gratitude that they had promised they would offer earlier in the year, or to offer candlelight in memory of the dead, or to obtain renewed energy, or simply as leisure. These places are visited today by pilgrims who travel by foot, on bike, by bus, on horseback, or in personal vehicles.

Among biocultural sacred sites with an enormous biocultural wealth, we find ceremonial centers, which can be either pre-Hispanic or contemporary. Most archaeological sites are being reconceptualized as ceremonial centers, such as Teotihuacan, Mitla, Monte Alban, Palenque, Chichen-Itza, Paquime, Cañada de la Virgen, and Malinalco, among many others. New ceremonial centers have been built in places where ritual ceremonies were carried out according to a ritual calendar. An example is the Otomí Ceremonial Center in Temoaya, which was built in the 1980s. All these sites are currently under the government's administration. In our view, they should be managed by original peoples.

There are places that have the category of *pueblos mágicos* that in essence have been sacred since very old times; for instance, Malinalco in Mexico State, where the Matlatzinca (of Otomian filiation) and other original peoples used to live. Likewise, there are small communities, such as Pozuelos, from San Juan Chamula, Chiapas, which is considered a mythical place where deities were born; all that surrounds it, like the water springs and the mountains, are considered sacred.

## Discussion

We are proposing a new approach to the identification, categorization, and registration of sacred biocultural sites of original and traditional peoples. Our position is that the term "sacred natural site" is subsumed in the term "sacred biocultural site." Two steps occur for a natural site to become a sacred biocultural site. First, as soon as a natural site is conceptualized by a human being, nature becomes cultural. Wherever there are original peoples, a natural landscape becomes a biocultural landscape.

When a site in the biocultural landscape is conceptualized in spiritual symbolic terms and has been energetically activated (by a thunderbolt, or special chants, or even by the solar or lunar position of a particular date), it becomes a sacred biocultural site. This is hard to put into words by local people; it is also difficult for researchers to grasp. So it is problematic to produce protocols that are based on predefined categories for pinpointing SNS. For a start, by definition, if a site has obtained the local sacred nomination, then it is not just natural but biocultural. Scrutiny is

needed to identify such places, which is made harder if there is no local participation. Also, categories may vary from bioculture to bioculture. Each site will be a sacred biocultural site as understood by each particular bioculture.

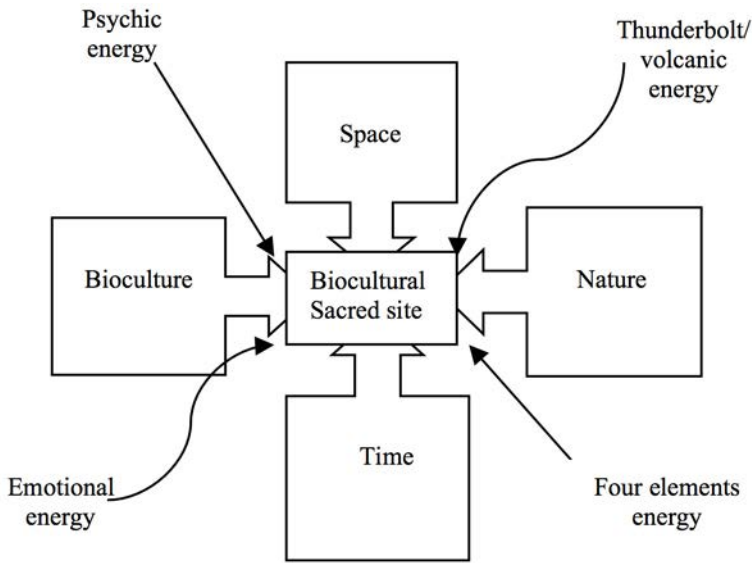
In Mexico, we can assume that a place that is considered “alive” needs to be energetically nourished in times and ways that only some local people know. The point we want to make is that protocols must include local experts and that it is not enough to have those SNS listed in books. Even if they are not, we have to respect that they are in the mindscapes or “heartscapes” of those who are in charge of keeping them imbued with full vitality.

Sacred biocultural sites are places originally signified as valuable in terms of the prevailing time–space philosophy. They eventually became relevant for other reasons that were more easily apprehended by common people, who possess a less complex knowledge permeated by the Catholic religion. In other sites, specific ceremonies or rituals are carried out in coherence with ancestral cosmo-vision and perception of the peoples that are linked to the sites. Such sacred biocultural sites are managed by magic–religious authorities; they motivate peregrinations, prayers, rituals, festivities, cults, and individual or collective sacrifices, providing a sense of identity to the community.

Even though not all places are sacred, all of them have the potential to become so (Petrich 2007). However, there are places that are contaminated or altered to such an extent that it would be almost impossible for them to become sacred. It could happen, though; if they were struck by a thunderbolt, for instance, they could acquire that condition.

Cultural and environmental diversity proposes challenges to environmental sustainability among original peoples in connection with their sacred spaces. A sustainable approach would help a culture and its cosmo-vision to permeate and expand within its territories or zones of concentrated biodiversity where sacred biocultural sites have been preserved.

In the present context, the causes of ecosystem deterioration within original peoples’ territories are poverty and histories of political and economic marginalization. Moreover, neoliberal projects of overexploitation of natural systems (ecosystems, geological systems) including illegal bioprospecting with the concomitant subtraction of traditional knowledge and mining, where the principle of prior informed consent is not respected, are all threatening the most important biocultural territories in Mexico, particularly sacred sites. That this is happening obliges policymakers to implement national public policy focused on the protection of sacred biocultural sites with the active participation of experts from local communities of original peoples.



**Figure 9.2. Confluence of bioculture and nature, time and space, and human and nature energies**

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### Notes

1. “Cosmo-vision” refers to the worldview and symbolic representations of a culture. See Barrera-Bassols and Toledo (2005: 26).
2. “Original peoples” is a term used here to refer to a group of people who share an ancestral culture linked to the land and to the sky in symbolic, knowledge-wise, and practical ways. Similar terms are first nations, tribes, indigenous peoples, and native peoples.
3. Note that we are purposely avoiding the use of terms as thing or object, and we use quotation marks for words because the categories belong to the Western optic.

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4. Karim-Aly Kassam (2009: 61) says, "Culture emerges from a biological basis—it is an aspect of nature." He discusses Luisa Maffi's (2001) idea that the "species and language binary is an error in logical typing," since "biology and culture are not equal types." That binary, he continues, is a parametric model; this is a "critical error because it reveals a separation between culture and nature in the minds of the proponents."
5. We are seeing this interest in communities in Yucatan (around Valladolid), in José María Morelos, Quintana Roo, and in Toluca Valley, Mexico State.
6. Independent researcher, personal communication, 2012.
7. ThaaY Ranchero, Atlixco, Tlaxcala, personal communication, 2012.
8. These portions or segments represent four broad spaces. Two (the eastern and western segments) are drawn by following sunrises and sunsets along the horizon for a whole year. The mirroring spaces between the eastern and western segments become the northern portion and southern portion.
9. Each year of the Mesoamerican calendar is represented by one particular day of the 260-day cycle, which advances together with the cycle of 365 days. In the Otomian and Mexica calendars, this particular day can only be, in four consecutive years: house, rabbit, reed, and flint. A Mexica year is 1 Rabbit because the 364th day of its 365-day cycle is day 1 Rabbit; since the 260-day cycle advances 18,980 positions in order to meet again with the 365-day cycle, we can have a year 1 Rabbit every  $(18,980/365 = 52)$  52 years or its multiples. But any day of the 260-day cycle (for instance, 1 Rabbit) occurs again every 260 days. Hence, if it happens on 10 to 11 February, it will occur again on 28 to 29 October.
10. The slash means transition time between the two Gregorian dates, and it refers to midnight, when day 1 Rabbit commenced.
11. Here follows a free translation of a piece written by Bernardino de Sahagún (1979: I.327 r.IV, Apéndice) in the Códice Florentino: "The biggest count of time that they counted was 104 years, and they called this one century; half of this count, which is 52 years, was called [a] 'bundle' of years. This number of years has been counted since long ago; it is not known when it started, but they knew, by faith, that the world would come to an end at the end of a bundle of years. And they had oracles and prognostics that the movement of the skies would stop, and they took as a signal of the movement the movement of the 'little goats' happening at the night of this celebration, which they called Toxiuhmolopilia; so it happened that the 'little goats' were in the middle of the sky at midnight, with respect to the Mexican horizon. On this night they produced a new fire."
12. The first 104 year bundle ceremony was celebrated between AD 1090 and 1091, according to App. III of the Chimalpahín Codex.
13. "Sacred" is an energetic property, either stable or ephemeral, which is psychologically placed on objects, beings, and places because they are significant for peoples in a collective way and/or because they have obtained natural energetic properties, such as extreme heat or extreme electromagnetism.
14. *Tequio* is the Mexica word for communitarian help; *nfoxté* is the Otomí equivalent; *faena* is the Spanish one.



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