

String of Turquoise: The Future of Sacred Mountain Peaks in the Southwest United States and Mexico

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Abstract—The Southwest is the birthplace of wilderness policy in the United States, yet the unique ecological environments of its peaks, cordilleras, and ranges that dot the high desert remain only partially protected. Some areas are relatively secure, yet mid-century Federal policy responded to multiple development pressures, from ski basins to roads, that sliced these peaks and their associated high-country environments into zones for different kinds of development. This string of jewels that crosses from the United States into Mexico was once protected by isolation and a variety of limited protected zones. Today, the mountains' precious resources of water, wildlife, forests, and traditional ecological knowledge are being sliced by new uses and impacts that are amplified by global warming. International cooperation and extension of protection to include sacred cultural resources can provide solutions that must be pursued without hesitation.

Introduction

The Southwest is the birthplace of wilderness policy in the United States, yet the unique ecological environments of isolated peaks, cordilleras, and ranges that dot the high desert remain only partially protected. Some areas are relatively secure, yet mid-century federal policy responded to multiple development pressures, from ski basins to roads that sliced these peaks and cordilleras into zones for different kinds of development. Today, threats from heavy motorized recreation, mining, development, and other pressures are heightened by global warming.

These mountains are the key to adaptation and mitigation of the effects of drought and floods—the likely effects of climate change. They are long known by the indigenous cultures as sources of retreat, traditional ecological knowledge, and spiritual well-being.

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Climate change amplifies the effects of a number of threats to these areas. A lack of understanding of the natural connectivity between these areas, now cut in half by a border fence, threatens both cultural knowledge transmission and biodiversity.

To think about mountains is to think about what they are to us at the borderlands, at the centers of being, not at the edges or as boundaries. Then, one realizes that they are the first line of defense against cultural disintegration, and the tipping point of climate change. From an indigenous perspective, think about them not as isolated peaks, but as radiating centers of connectivity to the surrounding lands, wildlife, and people, as the fountains that feed rivers and underground water resources, and as the craggy nests of indigenous knowledge. If we explore what sacred mountains mean in these borderlands, we can get a snapshot of what is elsewhere much the same.

Maps, Mountains and Minding the Sacred

Envisioning a string of turquoise peaks did not emerge from looking at maps, but from consideration of the peaks as resources for traditional ecological knowledge. Maps are prepared for a variety of reasons, but they are usually based on political boundaries, elevation or physiographic regions, lines of administrative authority or the physical characteristics of mountains like high point, accessibility, location, and context or dimensions, wilderness zones, or geological features (Jolyan 2006). Existing maps were too large or too small to focus on the meaning of the peaks and tended to make the peaks look like islands. Mountains themselves are hard to define, and agreement about measuring the key attributes of elevation is not always in place. Attributes are highly variable and attempts to define their dimensions are difficult because ranges are often disarticulate; multiple peaks meld into each other in cordilleras, while rolling foothills and mesas lift the mountain proper to its final height. The relative term of conspicuity attempts to tie these various attributes together:

A mountain, strictly speaking, is a conspicuous elevation of small summit area... An essential and yet indefinite element in the definition of a mountain is the conspicuity... Conspicuity, like height, is a relative matter, and depends upon the personal evaluation or the standard by which it is measured. Mountains should be impressive: they should enter the imaginations of the people who live within their shadows (Prattie 1936).

Attempted definitions tended to isolate peaks, and this led to slicing up the mountains and taking their key role as refugios (refuges)—holding the essence of wildness and traditional ecological knowledge all the way down their slopes—out of context. Under conditions of global warming, their slopes become all the more important for plants and animals readjusting to new conditions. Horizontal administrative classifications protected peaks at higher elevations at a higher standard, but destroyed their connectedness and function in the ecosystem. The very carving up of mountains defies their vertical nature and multiple life zones with crosscutting horizontal regimes of use.

With the help of Paul Olson, I was able to create a metaphoric map that shows this necklace of sacred peaks and cordilleras that swing down into Mexico and hold the great pendant of the Sierra Madre (fig. 1). Google Earth provided the technology and the sacred peaks did the rest. From this type of mapping emerges a visible string of turquoise encircling the border and connecting the Southwest highlands to the Sierra Madre. This emergent string of peaks is no less than the supporting structure for biodiversity for the southwestern United States and northern Mexico. The metaphoric map reveals a system based on connectivity of the movements and activities of water, animals, and people, especially the Tribes whose relationships and resources are split by political borders and mapping categories—Seri, Yaqui, Apache, Tohono O'odham, Raramuri, Huichole, and others. Seen as a connected group, these sacred mountains act as religious portals for indigenous people and connect the paths of people, animals, forests, and water as they flow south to the Sierra Madre Occidentale.

An Indigenous View of Sacred Peaks

From the viewpoint of many indigenous people, mountains take on key functions and peaks mark the territorial axis around which cultures engage with the natural ecosystem. In ancient times, sacred mountains were intimately associated with water. Archeologists associate these sacred mountains, often those above 4,000 feet in elevation, with the cult of water (Garcia and Arturo 1999). Snow packs on the mountains of the Southwest are critical to multiple overlapping ecosystems, biodiversity, and the human water supply. In addition to this critical function, the peaks often mark the cardinal directions that place indigenous people in the center of their cultural and natural cosmos, in the space where human ecology became integrated within the ecosystem over the years. They link people back to creation and migration narratives that carry forward the knowledge from the past, forming prominent points in the visual and cultural landscape. Unlike political boundaries, they connect ecology with responsibility within indigenous religion. As geographical points, they are flexible open points that allow for passage and overlapping ecotones. Knowledge can be organized within a geographical domain (Blake 1999) and the cardinal points situate that ecological knowledge. The peaks highlight points indicating zones of influence and are primary for understanding the natural systems. In the first page of the Popul Vuh, this kind of centering is described:

Great was the description and the account of the time when all in the sky and on the earth was formed, the squaring

of its signs, the measure of its angles, its alignment and the establishment of parallels in the sky and on the earth, the four extremities, the four cardinal points (Castledine, 2009, p. 23).

More recently, Governor John Antonio, Sr. of Laguna Pueblo discussed the broader meaning of peaks as identifying zones of influence that ultimately move an agency-proposed boundary:

Many Laguna elders speak of guardian peaks that surround the mountain. While these guardian peaks do not constitute a boundary per se, their distribution is significant in assessing the boundary of the traditional cultural property delineated by the Cibola National Forest (Antonio 2009).

Another important aspect of the indigenous view is the representation of mountains as spiritual homes and the belief that the mountain itself holds knowledge and life. For that knowledge to be preserved, the mountain must be treated with respect. Mountains as homes of the mountain spirits are sources of knowledge, ceremony, and cultural identity. Traditionally, most groups used mountains for sacred ceremony and restricted uses that impacted their character and functioning as supports for multiple life zones. Ecologically and culturally, they represent spiritual homes through multiple sacred sites and features. Functionally, they are home to the mountain spirits and to a multiplicity of plants and animals, without division of their cultural and natural aspects.

Turquoise by Turquoise Mountain: Mt. Taylor-Tsoodzil

Each mountain range or cordillera in the string of turquoise has a special cultural, historical, and ecological significance. Mt. Taylor, or Tsoodzil in the Dine (Navajo) language is the sacred turquoise mountain and the cardinal point of the south, fastened between sky and earth by a great flint knife decorated with turquoises. To the Acoma, it is the home of The Rainmaker; to the Zuni, it is the "lightning hole." It sits near the turquoise trail that reached across the borderlands, connecting ecosystems and people. The mountain holds extraordinary significance for a number of tribes with its surrounding group of six guardian peaks and mesas.

At over 12,000 feet, Mt. Taylor holds the snowpack, making it a major source of water for the region. Its cordillera hosts abundant game, deer, mountain lions, and eagles that are important culturally and for preserving healthy gene pools. Its natural resources are matched by the enormity of its cultural resources, with key religious sites for numerous tribes. At the same time, various uses like recreation predominate and no logging has occurred since 1946. "But now and certainly in the future, recreation is the dominant use" (Jolyan 2006, p.110). The question remains: what kind of recreation and what will be the impacts?

In Dine narratives, the mountain is the place where the monster was slain by the hero twins, where his blood became the great lava flows. Today, it is regarded by energy developers only as a source of uranium. Dine thought holds direct relevance to nuclear culture through applying the term "nayee"—that which gets in the way of a successful life (Yazzie-Lewis and Zion 2007). In her chapter, Esther Yazzie-Lewis sees this story replayed today with the initiative to



Figure 1—Focus map for String of Turquoise peaks.

reopen the uranium mines surrounding Mt. Taylor. These mines have bad history, creating a boomtown environment where violence and radiation disease spread through the families of the workers, Dine people who were uninformed of the dangers and worked without protective equipment. She names the monster Leetso, or yellow earth, because tradition says that to name an evil is to confront it. Further, she sees a monster that feeds on power and creates other monsters: the energy development industries and the war industries. To counter such a monster of disrespect and greed for power, she recommends the balance of respect and group action (Yazzie-Lewis 2007).

This year, six tribes proposed listing the mountain under the Historic Preservation Act. Their successful efforts took the first step in the battle. At 4 p.m. on June 5, 2009, the announcement went out of the unanimous vote for listing Mt. Taylor as a traditional property under state listing. Tsoodzil got a reprieve. In the paperwork, 316,456 contributing resources including pilgrimage trails, plants, animals, mineral gathering sites, and viewsheds were listed. However, it is to be noted that private property holdings between the patchwork management authorities of the USDA Forest Service, BLM, and the Laguna Tribe were not included in the listing. The tribes gained the right to consult with the state, but a multiplicity of management regimes with decision-making powers subject to development pressures still crosscut the mountain. The listing will not prevent mining or other development, but it will halt expedited mining permits.

The Great Sitting Mountain of the Pinalenos: Mt. Graham (Dzil Nchaa si'an)

Mt. Graham was originally part of the Apache Indian trust lands through treaty. It was removed from the Apache Reservation by an executive order in 1873. Wilderness designation and remoteness left much of the summit undeveloped until the observatory initiative led by the University of Arizona began. Ultimately, they gained congressional support to remove all Federal environmental laws in order to construct a system of observatories and facilities for the study of astronomy. Earlier partners included the Smithsonian, Harvard, and the Max Planck Institute in Germany—all of these institutions backed out when air quality and indigenous religious rights became central concerns. Today, the University and the Vatican continue on in their pursuit.

Building the astronomy structures entailed logging and construction of a road system that would never have passed environmental laws. Because of the installations, the natural fire regime must be disrupted and intensive fire-fighting operations conducted to protect the buildings. Only a special act of Congress permitted the construction projects that threaten the red squirrel, an endangered species, remove old-growth, and violate the religious rights of Tribes, particularly the Apache. The Forest Service administers the area, but is barred from applying environmental laws. At one point, the University of Arizona threatened tribal members with arrest for praying on the mountain without a permit. The project has been identified by the United Nations as an egregious violation of the religious rights of indigenous people. The University continues its work, dogged by delays, protests, and a growing body of evidence that the site is less than top-notch due to visibility concerns.

This sacred mountain is a spiritual home to Apache people. Several nonprofit organizations were created to protest the current use, which violates the sacredness of the mountain as home to the mountain spirits and as a site for religious activities. By ecological parallel, it is the home to diverse species, arguably containing all eight life zones found in North America—if monsoon season is considered—that are violated by the roads and construction.

A Million Lights: The Huachucas, The Chiricauhuas, and The Dragons

These ranges run along the borderlands and contain numerous endemic species including rare reptiles and birds. Cut by a mix of administrations—National Park Service, USDA Forest Service, BLM, state, military, and private holdings—no consistent policy protects their fragile ecology while their connected ecosystems are attenuated by the border.

Dotted with important sacred sites and formations now battered by intensive recreational demands from surrounding urban areas, they remain in grave danger from heavy off-highway vehicle use. Intensive recreational use and proximity to housing developments and urban areas means high fire danger, cell towers, mining, motorized recreation, and disruption of the cultural meaning and use of the mountains. These areas are included in the Apache Highlands Eco-Region described by the Nature Conservancy.

The Sierra Madres: The Greatest Jewel

From the string of turquoise hangs the great pendant of the Sierra Madre Occidentale, a mosaic inlaid with a thousand colors of life. The diverse forest environments range from the subtropical coniferous forest to mixed pine-oak-madrone forest, to the grasslands and desert grasslands of the Chihuahuan Desert foothills, the canyon slopes, the cypress riparian habitat, to the blooming, fruit-laden canyon floors, from sierra dry pines to the dry tropical deciduous forests to the thorn forests and the tropical riparian habitat of the Fuerte River; the total estimate from botanical studies suggests that there are more than 3,500 plant species here. The Sonoran Desert, just to the north, harbors more unique diversity, reflecting the high level of endemism of the Mexican dry forests—the highest of all Neotropical dry forests. A conservation group from the United Kingdom has mapped out 218 endemic bird areas of which 22 are in Mexico (www.canyontravel.com).

Biodiversity is mirrored by cultural diversity. The Raramuri (Tarahumara is a Spanish corruption) maintain a rich spiritual ideology and strong cultural identity connected with the Sierra Madre in some of its roughest regions around the Copper Canyon. Despite its ruggedness, the region supports a fragile ecosystem. The Huichole people remain closely linked to the land through their religious beliefs:

For the Huicholes, the land is the fundamental point of reference for everything from the religious to the productive and the political. In recent times, the land has become the axis around which a territorial organization has been created, which has made it possible to confront eternal forces that stand in the way of their continued existence as a distinct culture (Angeles and Arcos, 1999).

Key to the cultural identity and cosmogony are pilgrimage routes across the Sierra Madre that join the Pacific coast with the Gulf of Mexico. The Huichole Route through the sacred sites to Huiricuta, referred to as “an itinerant Meso-American University, the main axis of a knowledge system based on nature” was submitted to the World Heritage Office as a nomination for the World Heritage List (whc.unesco.org/en/tentativelists/1959) and was promoted again for the World Heritage Convention list in 2004. On the route, deer, clouds, and other elements are identified as “older brothers” or “teachers,” a clear indication of gathering and continuing traditional ecological knowledge. Since 1994, a small non-profit organization in Mexico called Conservacion Humana has been helping the Huichole people conserve some of their sacred sites with assistance from the Hopi Tribe in the United States. Work continues to provide some form of protection for the entire route. Indigenous Tribes, Yaqui, Pima, Apache, and others hold ancient relationships to these mountains.

The Baboquivaris: Tiny Bit of Wilderness and the Water of Life

These mountains wind along the borderlands with mixed administration from the Bureau of Land Management and the Tohono O’odham Tribe. The tip of the unique Baboquivari summit is designated as a wilderness area, the smallest in the system in Arizona with around 2,065 acres. The rest of the mountainous system and its surrounding context as the traditional home of the Tribe is impacted by illegal immigration. The Border Patrol crisscrosses the area in pursuit, the border fence cuts through it, and the Tribe pours millions into law enforcement in an effort to protect its sovereignty, people, cultural sites and natural resources. Tribal members have organized into groups to protest the wall. Their Tribal Chairman Ned Norris, Jr. testified against the wall:

We are older than the boundary with Mexico and had no role in creating the border. But our lands are now cut in half, our sacred sites, salt routes and our families are divided (Norris 2008).

The sacred nature of the peak as the protector of water is echoed by its ecological function as a major source of underground water. It is home to distinctive wildlife and flora. A floristic survey in 2005 identified 16 new species in the Sonora (Van Devender and Reina 2005) in this little-studied area, many of which have traditional uses. Gentry’s Indigo Bush, an endangered species listing, is among them. Many species, including tribal members and jaguars, become entangled in the border fence. The peak was divided in half by Executive Order in 1917, leaving the Tohono O’odham with only the western half, despite their continued religious and cultural use of an area central to their cosmology, the center of the earth, and the dwelling place of the creative force I’itoi.

Better cooperation and support for the Tribe is needed. Consultation for a tribally managed wilderness area and co-management at a higher standard is a realistic alternative that provides for biodiversity and environmental justice. Respecting the religious and cultural sites of the Tohono O’odham will only bring more respect and protection to the mountain.

Sierra Blanca

This peak in southern New Mexico is sacred to the Apache. Access to the summit is limited by the Mescalero Apache Indian Tribe, except by permission. Parts of the mountain fall under the Forest Service’s administration. The Forest Service opened a ski-basin resort permit and the Tribe decided to manage the permit themselves, rather than let a private business do so. In this way, it can be managed with respect to Apache values and beliefs.

This mountain represents the southernmost location of the Arctic Life Zone, and the southernmost point in the United States to have a glacier in the last Ice Age, 12,000 years ago. Its climate and beautiful forested surroundings attract significant tourism. The Tribe removed areas on the mountain from logging and works to reduce fire hazard, the primary threat to these southern, dry forests, with prescribed burning and thinning. The Tribe has pursued a unique co-management type of agreement with the U.S. Forest Service lands through a Stewardship Contract. Nevertheless, global warming presents increased fire hazards, while only limited funds are available to reduce fire hazards.

The San Francisco Peaks

The San Francisco Peaks are sacred for Dine (Navajo), Apache, Hualapai, Yavapai, Hopi, and other Native Nations. These Tribes conduct a number of ceremonies there for healing, balance, passages, and for the worlds’ water and life cycles. The Peaks mark the western cardinal direction for the Dine and are important religious sites for at least 13 Tribes. The privately run Arizona Snowbowl concession and the USDA Forest Service proposed a plan to expand the Snowbowl ski resort and to use recycled sewage to make artificial snow. In recent years, the Snowbowl has reduced its open days due to lack of snow, a condition likely to continue due to global warming and the southern location of the ski area.

Native nations and environmental organizations lost a final round of their legal battle opposing the expansion and the sewage-to-snow scheme in 2009 when the Supreme Court refused to hear their petition for review of a previous pro-development decision that reversed an earlier decision in their favor in the 9th Circuit Court. Since the treated sewage water has endocrine levels that are not determined by testing or regulation, the mounting evidence of impacts to human health and to fish and water quality in streams affecting biodiversity creates a clear and present danger. Environmental groups and university scientists opposed the expansion and a nonprofit organization called “Save the Peaks” was formed, leading to a “Save the Peaks Coalition” with a broad array of partners. In 2009, the Navajo Nation Council passed this resolution:

The Navajo Nation hereby finds that the proposed desecration of Dook’o’osliid (San Francisco Peaks) and the en banc opinion in *Navajo Nation, et al. v. United States Forest Service, et al.*, 535 F.3d 1058 (9th Cir. 2008) constitutes an emergency matter which directly threatens the sovereignty of the Navajo Nation (Navajo Nation Council 2009).

Summary Proposal

The summary of this article is a proposal to counter the current threats and inadequate protection for the cultural, religious uses and sacred nature of this string of turquoise peaks that span the southwest border into Mexico. The current system of extremely limited protections, most of them only for the highest elevations, is wholly inadequate under conditions of modern development and access, and of global warming. It is proposed to establish a string of protected mountains threaded together by non-motorized trail systems, migratory paths, and conservation easements. This is essential to the protection of four major migration routes in the borderlands, because these peaks and their mountainous mesa systems and grasslands are where species on the move from global warming go. They hold the water and the multiple life zones that species need. This wilderness-connected design must be flexible and nonlinear, with clear conservation standards that protect indigenous rights and ecological systems. It is suggested that in many cases, only wilderness policy has the strength, clarity, and flexibility to stretch over such sensitive regions with respect to their sacred and sensitive natures, and to provide an alternative to the border wall. In many cases, tribal management and co-management of extended areas protecting wild values is needed, and interagency and international cooperation required.

The overall conceptual design is no less than a large and significant collaborative international initiative on both sides of the border. It returns the region to an indigenous system by referencing sacred peaks as the key indicators and protectors of the multiple ecosystems, ecotones, and ecological zones of stewardship backed by collaboration. It restores the potential for resource adaptation under conditions of global warming, including migration routes and movements up and down ecological zones. It is essential that areas between and around the sacred peaks be treated with respect, that conservation standards be adopted and that incentives and support be put in place to help those who conduct agriculture in these areas to reduce impacts.

By accepting the important role of supporting indigenous religious and cultural rights, it becomes possible to use the whole suite of cultural and historic preservation laws in tandem with environmental laws and wilderness designation to protect the future of the String of Turquoise. This new direction ends the path of conservation evictions and

conservation refugees. Groups like Defenders of Wildlife and the recent coalition of groups at the 9th World Wilderness Conference (November 2009) understand this. Taking the high road of inclusiveness and intercultural respect means avoiding the loss of native foods, culture, and religious sites. Through the protection of sacred peaks, traditional ecological knowledge and sustainable ways of living on the land are preserved. We can all be inspired by the words of the Governor of the Zuni Tribe:

These mountains are living beings. They were created during the time when the earth was formed, and since then they have provided and maintained life to all living beings (Cooyate 2009, p.2).

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The content of this paper reflects the views of the authors, who are responsible for the facts and accuracy of the information presented herein.
