

ENVIRONMENTAL REVIEWS AND CASE STUDIES

The National Environmental Policy Act (NEPA) and the Silencing of Native American Worldviews

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Upon its enactment, the United States's National Environmental Policy Act (NEPA) established a national policy for promoting the protection and enhancement of the human environment. NEPA sets forth procedural requirements for federal agencies to prepare Environmental Impact Statements (EISs) for any major federal actions that may impact the environment. At the core of these environmental documents is the dominant Western worldview of scientific materialism. In many instances, NEPA's sole reliance on a Western scientific materialist evaluation of environmental impacts fails to consider and incorporate Native American perspectives of, values about, and relationships with the environment. For example, many Native American Tribes perceive the environment through an animistic ontological lens that embodies a sense of stewardship, manifest through a spiritual, umbilical connectedness to the natural world. Thus, Native American perceptions of the environment often clash with the dominant Western culture's scientific perspectives, especially as they relate to determining environmental impacts. This conflict of cultural worldviews intensifies when compliance with other federal laws is coupled with the NEPA process. This article examines the effects of employing solely a Western scientific perspective in assessing environmental impacts on indigenous communities through the NEPA process and how this can have the unintended consequence of promoting the perpetuation of colonialist attitudes toward Native peoples. It will also discuss how taking into consideration Native American

worldviews can offer more affirmative and inclusive environmental practices associated with the NEPA process.

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Much development within the United States is subject to federal environmental review because of some federal involvement (land, funding, permitting, licensing, etc.). The National Environmental Policy Act (NEPA) is the primary environmental legislation – whose regulations require federal agencies to prepare Environmental Assessments (EAs) or Environmental Impact Statements (EISs) – for federal action(s) that may affect the environment. Under NEPA, environmental impact assessments (EIAs) are normally grounded in the dominant Western Euro-American worldview of scientific materialism. Scientific materialism perceives the natural world as composed of matter and energy; it follows that science's role is to understand how that matter is organized into physical and biological (plant and animal) entities that comprise ecosystems, identifying the forces that govern interaction among such variables and predicting (with a certain degree of reliability) the effects (both positive and negative) of a proposed federal action on the environment. We assert that, in most NEPA cases, uncritical reliance on scientific materialism fails to consider and incorporate Native American perspectives, beliefs, and values, particularly including Native peoples' relationships to the environment. We contend that there are other ways to understand the environment and how it can be affected. Notable among these, and demanding of respect in the US, are the traditional perspectives of Indian Tribes and other Native Americans, such as Alaska Natives and Native Hawaiians. Based on our collective experience, these perspectives get short shrift in NEPA analyses.

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This article examines the consequences of uncritically employing only a Western scientific perspective in NEPA analyses, both as regards the quality of the analyses themselves and on the perpetuation of a colonialist mindset that devalues and disadvantages Native peoples. Several contemporary examples involving the Zuni and Acoma people are presented to demonstrate our assertion. We also argue that this clash of cultural perspectives and associated values intensifies when compliance with other federal laws [e.g., the National Historic Preservation Act (NHPA) and the Endangered Species Act (ESA)] is coupled with the NEPA process. The article concludes with a discussion of how taking into consideration Native American worldviews can improve NEPA practice, by giving depth and breadth to impact analyses and also by more respectfully, affirmatively, and inclusively addressing the concerns of Native peoples.

Science and the Environment in the 1960s and Beyond

Like other US environmental laws, NEPA is a product of the 1950s and '60s. In those days, federal projects were planned and developed based on narrow calculations of costs and benefits, which gave little or no consideration to how the project would affect the environment. NEPA was designed to change that by bringing environmental impacts into the planning equation.

The '50s and '60s were also an era of what might be called triumphal science. Science and technology had won World War II, they had brought us the wonders and terrors of nuclear energy, and they were taking us to the Moon and beyond. Scientific and technological advances had also dramatically improved many, many Americans' quality of life. There was a certain sense that science could do anything and solve any problem.

It was a scientist – US Fish and Wildlife Service zoologist Rachel Carson – who, with her pivotal 1962 book *Silent Spring* (Carson, 1962), kick-started the environmental movement that led to a number of legislative changes, among them the enactment of NEPA. Carson was a skilled writer, and her book is both an evocative tribute to nature's wonders and a clear-eyed scientist's recitation of what humankind was doing to nature through the unregulated use of pesticides and other toxic media. One message that *Silent Spring* and the environmental movement brought to the US Congress was that science needed to be applied to federal decision making. If biological research and research in other fields were allowed to inform and influence decision

making, environmental degradation could be brought under control, and the spring – even far into the future – would not be silent.

Thus, NEPA is very much a science-grounded, science-promoting law. Consider the very first “authorization and direction” that Congress put forward in Section 102(2)(A) of the act:

[A]ll agencies of the Federal Government shall –

(A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment...

Yes, there is reference to the “environmental design arts,” but it is the sciences, natural and social, that get top billing. The emphasis on science is, perhaps, even clearer in the next clause:

[A]ll agencies of the Federal Government shall –

(B) identify and develop methods and procedures ... which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations...

One can read this as emphasizing the importance and relevance of amenities and values that are “unquantified” and, hence, not readily addressed in the cost-benefit analyses that were popular at the time. However, the word “presently” conveys the clear impression that such variables should be quantified as part of the scientific analysis called for by the third, action-forcing authorization and direction:

[A]ll agencies of the Federal Government shall –

(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on –

(i) the environmental impact of the proposed action...

The EIS – the core, driving procedural requirement of NEPA – is clearly intended to be an application of science to the problems of understanding and controlling the environmental impacts of government actions. Accordingly, putatively expert professional scientists routinely undertake NEPA analyses, including the preparation of EISs, EAs, and similar documents. Specifically, biologists,

hydrologists, geologists, and air quality specialists largely devise and carry out NEPA-based studies, along with experts in such “environmental design arts” as foresters, landscape architects, and planners. The particularly human aspects of the environment have been and continue to be largely the domains of social scientists – anthropologists, sociologists, and archaeologists. This pattern was established in the earliest days of NEPA’s implementation and remains dominant today.

Evolving Perspectives in the 1970s Through 1990s

Outside the world of NEPA, however, thinking about the environment and public policy have evolved to embrace a broader range of values and beliefs – broader, that is, than the impression that the expert application of science can, inevitably, solve any problem. Through the 1970s, ‘80s, and ‘90s, it was increasingly recognized that not every important variable could be usefully quantified. It was not just that variables were not presently quantified, as NEPA’s drafters had noted; they could not and should not be quantified. In academic circles, post-positivist thinking in the 1980s began to emphasize the need for qualitative analysis and to recognize that there could be multiple “truths” grounded in multiple, culturally influenced, understandings of reality. This sort of perspective had gained some dominance in the social sciences by the late 1990s, growing alongside the triumphs of science represented by the Mars landers, the Hubble Telescope, and the mapping of the human genome. In the late 20th century, the general public (beyond academia) became, if not disillusioned with science, at least intrigued by the idea that science did not have all the answers. With expanding scholarly and public appreciation for the vagaries of quantum physics, even quite a few “hard” scientists have acknowledged a certain indeterminate softness in their constructions of reality.

The world of NEPA remained rather rigorously positivist through the ‘80s, ‘90s, and beyond, dedicated to finding truth through science. Certain aspects of NEPA practice, however, perforce began to open up to other-than-scientific perspectives. Ironically, perhaps, the very public interest in environmental problems encouraged by *Silent Spring* increasingly motivated citizens to question whether professional scientists – particularly those employed by government and industry – were really the best guardians of the environment and to insist on taking active roles in the identification and resolution of impacts. By 2000, planning and public policy expert Frank Fischer could suggest that

environmental problem solving “would be better served if the technically oriented, top-down expert-client relationship were replaced by a more professionally modest but politically appropriate understanding of the expert as ‘specialized citizen’” (Fischer, 2000, p. 46).

Prominent among the citizens who have demanded more determinative roles in implementing NEPA and other environmental laws have been people who hold citizenship both in the US and in the country’s 500-plus Indian tribal “nations within a nation.” From the 1980s onward, Indian Tribal governments and individuals have increasingly engaged in administrative actions and litigation under NEPA, the NHPA, and a range of related legal authorities seeking protection of valued aspects of their environment. While their perspectives are often informed by science, as Euro-Americans traditionally understand the term, they are also informed, and powerfully motivated, by their own science, embedded in their own cultures, traditions, and ways of life. In many cases, however, Native American traditional perspectives on and relationships to the environment are devalued and delegitimized, because they do not conform to, and often conflict with, the quantifiable, scientific materialism employed by federal agencies.

Native American Perspectives on the Natural Environment

At the heart of this conflict are disparate philosophies concerning the relationship between humans and the environment. The scientific materialist perspective of humanity’s relationship to the environment is grounded in 2,000 years or more of Judeo-Christian philosophy. In the Judeo-Christian philosophical tradition, humans are perceived as having been granted “dominion” over all plants, animals, and the natural world, which are all to be utilized for their benefit (Ansuetz, 2013, pp. 13–33). The Judeo-Christian perspective is antithetical to one common Native American view that humans are subservient to and part of the natural environment. In this perspective, humankind’s role is one of stewardship and working to maintain rapport with nature. To illustrate this point, Zuni and Acoma perceptions of their relationship with nature are provided herein, followed by instances in which these relationships were considered in the NEPA process.

Zuni Perspective

The Zuni people live in northwestern New Mexico, on lands that they have inhabited for more than 2,000 years.

The Pueblo of Zuni is located within an area that the Zuni refer to as *I'diwan'a* or the Middle Place of all oceans of the world and the middle of the heavens of the universe. The village is located in precisely the same location it has been for over three centuries and within a few yards of a spot occupied by the Zuni people for at least three centuries prior to that.

The Zuni people have deep historic and contemporary understanding/knowledge of, an affinity with, and empathy for the environment (the landscape) in which they live. They believe in the conservation of the landscape from the point of view of caring for one's relative rather than from a scientific perspective of conserving or managing natural resources, and they have many generations of experience in providing that care. The Zuni have a deep reverence for the landscape around them (Hart, 1995).

Hart (1995, p. 8), explaining the Zuni attitude toward the landscape, states that the "Zuni often use a metaphor to try getting across to non-Zunis how they feel about and are attached to the landscape. Zunis will say, 'The land is our church, our cathedral. It's like a sacred building.'" In this pervasive folk metaphor, a mesa may be an altar and a spring, a sacred alcove. Although the entire landscape is sacred, certain portions are especially so: a butte, a mesa, a mud pond, a ruin, a sacred trail. The Zunis want, above all, to have outsiders (including, specifically, federal agencies) understand their depth of feeling for the landscape and their respect for the environment – the same kind of respect that they have for their friends and families. The Zunis' relationship with the environment permeates not only their religious use of the land but also their utilitarian and political use. Every kind of activity that the Zuni people carry out is associated, in some fashion, with a religious pursuit and use. The Zuni religion is "a seven-day, twenty-four-hour-a-day" religion.

Edmund J. Ladd, a Zuni and an anthropologist, described the Zuni perspective of their landscape as follows:

[they] view their landscape as a single complete whole. All parts are equally important. Metaphorically this includes 'the four oceans, the moss covered mountains, the lakes that surround the lands... the total landscape is their religious universe. This concept and the relationship of the Zuni people to their environment permeate their religious life and use of the land. It is important to maintain equilibrium with nature in all its parts. (Ladd, 1980)

Thus, the Zunis believe that they have a special stewardship relationship with the land; Zunis do not own the land, they belong to the land and are part of the land. They are

dependent upon it and the landscape is dependent upon them (Pandey, 1980, p. 2). Throughout the hundreds of years that the Zuni have maintained their relationship with the land, they have inherited and developed an encyclopedic knowledge of their landscape and the many different resources contained therein. No one Zuni person could possibly recite all that there is to know about agriculture, mineral collection, plant collection, grazing, and religious use of the landscape. But it is through the many and varied clans, religious societies, kiva groups, and priesthoods that Zuni people remember and transmit different pieces of knowledge about their landscape. In this way, traditional knowledge about the landscape is retained throughout the tribe, resulting in long-term management of a vast amount of knowledge about animals, plants, minerals, springs, and waterways (Hart, 1995).

The Zuni people have utilized and continue to utilize all of the land within the province of Zuni for the practical and spiritual preservation of the people. As a result of this long association with and an extensive knowledge of the landscape, the Zuni maintain a sense of stewardship toward the environment that is strengthened by a spiritual connection and responsibility to animals, plants, and other aspects of the environment. For the Zuni, the ability to collect and use plants, animals, minerals, water, and places on the landscape (mountains, buttes, mesas) involves recognition that these material resources and places are also sentient beings, possessing a spiritual essence, who respond, positively or negatively, if they are treated appropriately or inappropriately.

Acoma Perspective

The relationship between the Acoma and their environment is recounted through their oral history. The Acoma people believe that two sisters, *Nautisiti* and *Iatik'u*, were created in the worlds below and emerged into the present world at a place to the north called *Shipap'u*. The earth being new and in raw form, both were given baskets of seeds, from which all life, the plants, animals, elements, and the environment would be created. They were taught by *Tsitchtinak'u* (Thought Woman) about everything that was created, including the cyclical relationship and interdependence between plants, animals, and humans. Thus, the Acoma people, as the children of *Iatik'u*, carried that knowledge and the responsibility as caretakers forward throughout their journeys to their arrival at present-day *Haak'u*.

The literal translation of *Haak'u* is "to prepare." The Acoma people were told to seek out a place that was "prepared" for them, a place that would contain all they would need to

sustain them and their descendants, including land, water, animals, and plant life. They found it in what is now called Acoma Valley, a sandstone mesa top rising 300 feet above the valley floor. The old village of Acoma Pueblo is approximately 73 miles east of Zuni Pueblo. It is bordered by ancestral lands to the west, including the El Malpais National Monument and Conservation Area, and to the east by the Laguna Pueblo Reservation. Acoma Pueblo's northern and southern borders contain two of the four sacred mountains, *Kaweshtima* (Mount Taylor) and *D'autyuma* (Sawtooth Mountain), respectively. Archaeologically, the existence of the old village can be dated to 1100 AD, although the Acoma people know (through their migration history) that many clans lived in settlements throughout the Acoma Valley prior to settling atop the mesa.

The relationship between the Acoma people and their environment is reflected throughout Acoma life. An Acoma child is set upon his or her path as a "caretaker" the moment the child is given a name and identified as a member of the mother's clan and as *washti* (child) of the father's clan. The clan system of the Acoma people was created during the time of emergence by *Iatik'u*. Every first female child was given a clan. The clans created were to be reflective of the plant, animals, and environment essential to the people's existence. The clans were as follows: Sun, Sky, Water, Antelope, Bear, Red Corn, Yellow Corn, Oak, Squash/Pumpkin, Roadrunner, Eagle, Turkey, *Isth'e* (plant), Badger, Fire, Deer, Blue Corn, White Corn, and Parrot. This group of clans, including their respective roles and responsibilities within the Pueblo religious world, ensure that every member is part of maintaining balance within the Acoma universe. There is no better example of maintaining this balance than in the ongoing relationship between the Acoma people and *Kaweshtima* (Mount Taylor).

Mount Taylor's significance as both a physical property and an Acoma cultural landscape dates back to the beginning of time itself. *Kaweshtima*, the mountain of the North, was created by the two sisters as the first of four mountains representing the cardinal directions. The mountain as a whole consisted not only of its rocky slopes and peaks, but also the mesas and canyons surrounding it. In the act of creating and giving life to the mountain, populating it with plants and animals, *Iatik'u* also gave life to the seasons and the deities that govern them. *Kaweshtima* became home to the deity *Shak'ak'a*, the spirit of winter, who observes the people and their activity. The cultural and spiritual relationship between the Acoma and *Kaweshtima* is solidified when *Iatik'u* instructs the people that, in order to receive the blessings of the deities and spirits she has

brought to life, they must maintain their physical and spiritual stewardship through prayer and other sacred obligations. The blessings or gifts of resources, including snow, rain, or fog, are the physical affirmation that the Acoma people are fulfilling their responsibilities. The outflow of these blessings is the annual spring run-off necessary for the survival of plants, animals, and the Acoma people themselves, all created equal from the Acoma perspective and each having a role in the survival of the other.

This inter-connectedness between humans and the environment (knowing one's place and role in the Acoma world) allows for a certain intimacy. This, paired with the collective responsibility to pass on traditional knowledge, ensures that each generation understands both the complex science of how things have evolved and live, and, more importantly, the sacred knowledge of how these resources should be maintained to balance of the Acoma universe. For example, elders often followed the activity of certain insects to gauge changes in weather, their intensity, and the duration of weather events. This knowledge, combined with knowledge of lunar movements, set forth the specific times for when large timber from pine trees could be harvested or when pitch could be gathered and bark planks could be cut. Harvesting during these specified times ensured that resource gathering did not impact wildlife, insects, or birds. In instances where a limited use of a tree was required, harvesting during these set times ensured the future survival of the tree, thereby keeping the Acoma from upsetting the balance of the natural world and maintaining a good spiritual balance with the spirits and deities governing the mountain. In every instance, there are continual offerings for what is harvested, gathered, or hunted on the mountain, with additional prayers that sustain a continual renewal of those resources. The Acoma people were taught an early lesson on resource management, harvesting only what was needed for survival and practicing methods that encouraged the propagation of all species.

In summary, the natural knowledge of the Acoma and Zuni people is, in its own right, a science. That is, it is knowledge of the environment based upon empirical observations that have been accumulated and tested over centuries, through the implementation of subsistence activities. It is also based in respect for all living things, a core value practiced by both the Acoma and Zuni people. In an August 2002 editorial appearing in *Indian Country Today*, the author writes, "Much of what is called 'primitive' about indigenous peoples' ways of organizing human activity on this Earth was quite useful, practical and pragmatic; it followed general principles that are increasingly ignored today by

much of human enterprise.” (*Indian Country Today*, 2002). In *Native Science: Natural Laws of Interdependence* (Cajete, 2000), Santa Clara Pueblo member and professor Greg Cajete explains the scientific basis of Native American epistemological systems. He identifies these systems as the “Tenets of Native Philosophy”:

1. All human knowledge is related to the creation of the world and the emergence of humans; therefore, human knowledge is based on human cosmology.
2. Dynamic multidimensional harmony is a perpetual state of the universe.
3. Humanity has an important role in the perpetuation of the natural processes of the world.
4. There is significance to each natural place because each place reflects the whole order of nature.
5. There are stages of initiation to knowledge.
6. Every “thing” is animate.

At the base of all these tenets is the fact that Native science includes a spiritual orientation. It is this spiritual orientation embedded within natural knowledge that is ignored and devalued as a result of a NEPA process based solely in scientific materialism.

Traditional Environmental Perspectives and NEPA

In recent years, academic and legal writers on the subject have shown increased appreciation for the relevance of Native American world views to practice under laws like NEPA, particularly in the context of environmental justice (Grijalva, 2011; Harper and Harris, 2011). However, their welcome discussions of tribal environmental issues tend to focus on what happens in “Indian Country” – generally construed to mean land and resources associated with Indian reservations, administered by tribal governments, or held in trust by the US government (Grijalva, 2008; Harris and Harper, 2011; Ranco and Suagee, 2007; Suagee, 1991, 2002) – and on human health issues related to tribal populations (O’Neill, 2000; Ranco et al., 2011). Despite unfortunate language in the NEPA regulations¹ suggesting that Tribes need be involved in considering only on-reservation impacts, Tribal environmental concerns in fact extend far beyond reservation boundaries and trust lands and to a much wider range of variables than the health and physical welfare of Tribal populations. Tribal connections with and feelings of responsibility toward the environment are grounded in their historical associations with the entire continent and are informed by the widespread Tribal belief in the interconnectedness of all living things, often broadly

construed to include what Euro-American science sees as non-living environmental features like mountains and lakes. These connections and concerns drive Tribes into interactions with federal agencies under NEPA on such issues as the mechanical removal and killing of trout in the Grand Canyon (controlled by the Bureau of Reclamation and the National Park Service) and the mining of uranium on Mount Taylor (controlled by the National Forest Service), case examples that are discussed below. Such interactions reveal the extent to which Tribal views and values are still given short shrift in NEPA analyses.

During the NEPA process of preparing an EA regarding a proposed program of mechanical removal (electro-fishing and subsequent killing) of thousands (20,000/year) of rainbow trout (*Oncorhynchus mykiss*) and brown trout (*Salmo trutta*) from the Colorado River within Grand Canyon, the Bureau of Reclamation consulted with five Tribes (Hualapai, Hopi, Navajo, Southern Paiute Consortium, and the Zuni). The mechanical removal event was proposed as a response to a fear that the population of the endangered humpback chub (*Gila cypha*) was dramatically declining as a result of predation and competition from non-native rainbow and brown trout. The focus of the mechanical removal activities was at the confluence of the Little Colorado River with the Colorado River in the Grand Canyon.

To the Bureau of Reclamation and their scientists, the proposal doubtless made sense in strictly scientific materialistic terms, but, to the Zuni, it was anathema. First, in Zuni belief, the taking of life is not something that is done casually; there must be a good reason, and no convincing reason, other than a scientific hunch, had been given for the trout removal by the federal agency. Moreover, the Zunis maintain a perceived familial relationship with all aquatic life, and the mechanical removal was, therefore, viewed as killing Zuni children. Second, the location selected for the removal – the confluence of the Colorado and Little Colorado Rivers – is considered by the Zuni people to be a very sacred place, and the killing of trout there would desecrate this place.

For two years, the Bureau of Reclamation and the Pueblo of Zuni conferred on the Zuni objection to the planned mechanical removal activities. At various times, the US Fish and Wildlife Service, the Grand Canyon National Park Service, and the Office of the Assistant Secretary for Water and Science were involved in the consultation with the Zuni. Regardless of which federal agencies were present, all of the consultation meetings involved a continued emphasis

by the Bureau of Reclamation and other federal agency representatives that (1) the mechanical removal was legally required to maintain compliance with the conditions established by the US Fish and Wildlife Service in its Biological Opinion under the ESA, and (2) recent scientific research (Yard, Coggins, and Baxter, 2009) supported the conclusion that rainbow and brown trout were preying on young humpback chub. The Zuni objected to the federal agency's position because (1) implementing mechanical removal was a discretionary action for the Bureau of Reclamation, as detailed in the Biological Opinion, and not mandatory, as the agencies claimed, and (2) the referenced scientific study was an analysis of mechanically removed trout stomach contents, of which a very small percentage contained identifiable humpback chub remains. The study merely demonstrated that rainbow trout are piscivorous and failed to provide any convincing link between trout predation of young humpback chub and the viability of the extant humpback chub population. The Zuni also expressed concern with the circumstantial manner in which the Bureau of Reclamation used scientific data in the EA to link trout predation and competition to humpback chub population viability. The Zuni contended that the scientific modeling of trout predation on humpback chub, based on a study of trout stomach contents, supposed a projected quantified impact to humpback chub from trout predation (based primarily on estimated trout numbers) that was not demonstrated and was debatable, because it was preliminary and had not been subjected to rigorous scientific review.

Despite the Zuni objections, the Bureau of Reclamation maintained that the preliminary scientific findings were sufficient evidence for an EA to justify the implementation of 10 years of mechanical removal of brown and rainbow trout. With its uncritical reliance on science to provide the only answer to a perceived ecosystem problem, even to the detriment of Zuni traditional cultural values, the Bureau of Reclamation imposed a cultural bias in favor of Western scientific materialism on the Zuni, thereby further subjecting the Zuni people to the ongoing detrimental effects of colonialism. This NEPA process did not equitably weigh or consider Zuni traditional perspectives in its environmental analysis; rather, it favored hegemonic scientism over Zuni traditional perspectives as the only valid form of understanding the Grand Canyon's ecosystem. This effectively devalued and delegitimized the Zuni's perspective of their relationship with and responsibility to this important ecosystem.

A second example involves Mount Taylor and an EIS process associated with a proposed uranium mine on lands managed by the National Forest Service. The Pueblos of

Acoma and Zuni are currently involved in this EIS process, through consultation with the National Forest Service. As presented above, Mount Taylor is considered a traditionally important place by the Pueblo of Acoma and is integral to the way the Acoma people perceive their relationship with and responsibility to the natural environment.

The Zuni people share a similar view of Mount Taylor. To the Zuni people, Mount Taylor is a living, sacred being. The Zuni people do not make the same distinctions concerning "living" and "non-living" entities that many Anglo-Americans make. The mountain slopes, the rocks, the minerals and pigments, the plants and animals, and the water within and on the mountain are all alive. Like any other living being, Mount Taylor can be harmed when it is cut, gouged, or in any way mistreated.

In part, Zunis perceive Mount Taylor as a living being because it is an active volcano, but also because it is a snow-capped mountain that nourishes all of the plants and wildlife during spring runoff. The minerals and subsurface substances of the mountain, the Zuni people believe, are the "meat" of the mountain, and contained within that meat is the mountain's heart. Water is considered to be the "blood" of the mountain. Any disturbance to the meat or the blood of Mount Taylor has the potential to disturb its heart, which may anger the mountain. If the mountain gets angry, it might erupt. Thus, the Zuni view Mount Taylor as a living entity, similar to a living human being, and the relationship between the Zuni people and Mount Taylor is similar to an individual's relationship with a family member.

The Acoma and Zuni perspectives of Mount Taylor as a sacred place have been shared with the National Forest Service. In fact, traditional cultural property studies of the proposed uranium mine project area have been completed by both the Pueblo of Acoma and the Pueblo of Zuni and submitted to an environmental consulting company that is compiling the EIS document for the National Forest Service. Of paramount concern is that the environmental consulting company has little familiarity with or understanding of Southwestern Native American cultures; especially Acoma and Zuni.

Additionally, the National Forest Service has initiated scientific studies (e.g., modeling of water resources and archaeological testing) without meaningful consideration of the views of the Acoma and Zuni people. The reality for the Acoma and Zuni people within this current NEPA process is that the scientific materialist perspective will prevail as the dominant analytical tool applied by the environmental consultant in generating the EIS, thereby relegating the

Acoma and Zuni perspectives on the Mount Taylor ecosystem to second-class status, at best. Similar to other EIS documents, the Acoma and Zuni people anticipate that their concerns will be consigned to and compartmentalized within the cultural resources section of the EIS, next to archaeological sites and historic properties. The Acoma and Zuni traditional values and concerns regarding natural resources such as water, plants, animals, and the physical environment addressed in the EIS will most likely not be given consideration. This overall effect is compounded by the fact that the Acoma and Zuni people will discover how the National Forest Service considered the Acoma/Zuni traditional values and concerns within the NEPA process only after the agency issues the public draft of the EIS. At this point, the National Forest Service will be heavily invested in its preferred alternative decision, and experience suggests that it will simply find ways to explain away any Tribal objections.

The NEPA process associated with the proposed uranium mine on Mount Taylor is not unique to the Acoma or Zuni people. Quite the contrary, it is all too familiar. For the Acoma and Zuni, the majority of consultation requests from federal agencies associated with a NEPA process represent having to contend with yet another assault on their cultural landscapes and their unique relationships with those landscapes. While the effects of the development of a single uranium mine on Mount Taylor may not appear to be significant, the Acoma and Zuni consider it to be an insult to their traditional lifeways. With the increasing value of uranium, both the Acoma and the Zuni can anticipate having to contend with proposals for multiple uranium mines in the near future. One insult is bad enough, but the effects of multiple insults to the lifeways and cultures of the Acoma and Zuni may have a damaging effect on either or both. Consideration of the long-term and cumulative impacts that result from the incremental erosion of Native American cultures caused by such insults is seriously lacking from any current NEPA analysis. The cumulative effects that result from these insults should be part of the environmental justice analysis contained within the NEPA process.

21st Century Retrenchment

After some promising developments in the 1980s and '90s, the early 21st century has, in our view, seen a sort of retrenchment among practitioners of NEPA and the agencies that sponsor their work. In case after case, as illustrated by the two examples discussed above, the perspectives of Tribes have been and continue to be, effectively, ignored by federal agencies preparing EISs and EAs, or considered only when such

perspectives have been vetted by cultural anthropologists or archaeologists and recast in social-scientific or narrow regulatory terms. Meanwhile, "Tribal consultation," though explicitly insisted upon by the President in orders to the agencies² and in his approval of the 2010 United Nations Declaration on the Rights of Indigenous Peoples, has been widely interpreted by the agencies to involve merely sending form letters or conducting general-purpose information-sharing meetings. Regularly, Native American perspectives are given little substantive attention in NEPA analyses.

The EIA process under NEPA has become a business, conducted by for-profit consulting firms and funded by project proponents. The consulting firms that do EIAs tend to be run by scientist-entrepreneurs deeply invested in maintaining the status quo. The federal agencies that require and oversee the conduct of EIAs are similarly invested. There is little interest in or openness to alternative approaches to characterizing the environment and addressing impacts on it.

As a result, Native American traditional views, if not totally ignored in EIAs, are categorized as having to do only with vaguely defined "cultural resources" and made the responsibility of non-native archaeologists, historians, and cultural anthropologists. Considering such views is often done only in the context of ethnographic studies purportedly done to mitigate the impacts of agency decisions and regulated projects. All Tribal issues are relegated to consideration under Section 106 of the NHPA, where they must be made to relate to the "contributing elements" of "historic properties," as defined by non-Native social scientists. In part – and doubtless without explicit understanding by those responsible for such relegation – this reflects the premise, embodied in some international environmental and cultural standards, that culture itself is a "good" (i.e., a commodity), rather than an activity carried out by people and to whose practice people have rights (Holder, 2008).

The NEPA EIA system, in short, is stacked against valuing and creatively addressing the perspectives of Indian tribes. Tribes are not understood to be parts of, and deeply knowledgeable about, the ecosystems that NEPA is designed to protect. Instead, Tribes are understood to be only concerned about the "goods" thought to represent culture – such as "archaeological sites" – leaving impacts on fish, wildlife, and plants to be considered by biologists, impacts on water to be addressed by hydrologists, and impacts on ecosystems to be managed by ecologists. When Tribes try to carve out their own niches – using such bureaucratic concepts as "sacred sites," "cultural landscapes," and "traditional cultural properties" – they find that they have

only made more work for the anthropologists and archaeologists, while they themselves become the objects of social scientific study.

Tribes are not alone in being shut out of the EIA process. Despite the hopeful writings of scholars like Fischer (2000) at the turn of the century, in the last dozen years, EIA has become virtually impervious to effective public participation. EIA is done by scientists to allow bureaucrats to complete checklists, “clearing” projects for fast-track construction. The interests of human beings and of the environment itself are being lost in the shuffle. When cultural aspects of the environment are considered, as Holder (2008) has discussed, they tend to be treated as things – “goods” – to be held and accessed, not as foci of activities to which human beings (and other life-forms) have rights.

The Need for Reform

There is nothing wrong with science or the scientific method, but the perspectives of professional scientists are not the only meaningful perspectives on the environment. Indigenous people have thousands upon thousands of years of experience with the land and deep emotional connections with the environment. In terms of really understanding the environment and the stressors placed on it by modern human activities, NEPA analysis would benefit from a more thoughtful, mindful engagement with Indian tribes and other indigenous peoples. Indigenous insights should routinely be sought as ways of informing EIAs. Indigenous science reach different conclusions from Western science, and both are legitimate in their own right.

NEPA analysts should stop relegating Tribal concerns to the “cultural resources” sections of their descriptions of the affected environment. They should stop equating “cultural resources” with archaeological sites and ascribing all cultural resource expertise to archaeologists, historians, and anthropologists. Rather, they should start systematically involving Native Americans in every aspect of EIA, not just in “Indian country” but everywhere, and not as trainees in the various sciences, but as colleagues, who make their own contributions to the analysis and resolution of impacts.

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Notes

- 1 40 CFR §§ 1502.16(c), 1503.1(a)(ii), 1506.6(b)(2), 1508.5.
- 2 E.g., Executive Memorandum of November 5, 2009 (<http://www.whitehouse.gov/the-press-office/memorandum-tibal-consultation-signed-president>) and Executive Order 13647 of June 26, 2013 (<http://www.gpo.gov/fdsys/pkg/DCPD-201300461/pdf/DCPD-201300461.pdf>).

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