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Whose 'Nature' is it in? The Navajo Generating Station and the Politics of Nature, Space and Colonialism in Northern Arizona

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**Whose 'Nature' is it in?
The Navajo Generating Station and the Politics of Nature, Space and Colonialism in
Northern Arizona**

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Abstract

Page, Arizona is home to the Navajo Generating Station, a coal-fired power plant that provides the power for the Central Arizona Project (CAP) and other consumers of electricity in the Southwest. Though the plant is not owned by the Navajo (Diné) tribe, the Navajo “subsidize” the plant with reservation coal, water, and labor, externalizing the costs of the generating station’s production processes onto Navajo lands and bodies. This thesis attempts to trace the historical-geographic genesis of the plant, situating it within broader contexts of power dynamics in Northern Arizona that govern the spatialities of the coal industry via the production of nature, the construction of wilderness, and the colonization of the Diné. According to one Diné activist, the coal industry has made the Diné economically dependent on their own cultural destruction (Rowe 2013). I point to the role of United States Federal policy and resource management sectors such as the Bureau of Reclamation and the National Park Service in the creation of this condition of resource dependency, the siting of the NGS on Navajo lands just a few miles outside of Page, and ultimately the internal colonization of the Diné. How did Page, Arizona (writ-large) come to be the site of the state’s largest and dirtiest coal-fired plant, the Navajo Generating Station, and what does this illustrate about the relationship between nature, space, and colonialism?

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Chapter 1

National Natures over Native Spaces: “America’s holiest shrines” and its “sacrifice zones”

Between the Rio Grande and Colorado River of the American Southwest lies the largest—and perhaps driest—stretch of Native American Reservation lands in the United States. At points the land is so flat and uninterrupted that you can travel many miles without noticing any change in the landscape; you can feel—speeding along Interstate 40 at sixty miles an hour, or watching the sparse vegetation blur with the livestock fences from the tracks of the transcontinental railroad—as though you are not moving at all. On the high desert plain of the Colorado Plateau, a land of very little rain, the Hopi and Navajo (Diné) Nations cover nearly 80,000 square kilometres, bordering western New Mexico, southern Utah and the northeastern rim of the Grand Canyon. The Colorado River, originating in present-day Rocky Mountain National Park north of Denver and flowing west, spans a 1,440-mile trail through the Southwest, joining the Green River just south of Moab, Utah and traveling south through Arizona, bordering Nevada and California and finally reaching a northern delta at the Sea of Cortés in Mexico (Dickey 2011, 9). This river is the lifeline of the Southwest—including Arizona, New Mexico, Southern Utah and Colorado, Nevada and California—where the war over water has created a political atmosphere and a material reality that ignores the demands of the region’s Native peoples.

The movement of water, electrical power, coal, people, and trucked goods across the wide spaces of the Southwest requires massive infrastructure: dams, power plants, canals, roads, train tracks, and power lines. The distances that must be overcome are

remarkable, and transportation infrastructure consumes enormous amounts of energy, time and money. Having grown up in New Mexico, I have childhood memories of family visits to Phoenix and road trips to the Grand Canyon, during which we drove for seemingly endless amounts of time on hot black asphalt and dirt roads across the desert. More recently, in January of 2014, I took the train home from California to New Mexico. The railroad crosses northern Arizona just south of the Navajo and Hopi reservation borders, pulling into Gallup, New Mexico on its way to Albuquerque. After passing through Flagstaff at five o'clock in the morning, I sat in the observation car and watched the sun rise outside Winslow, Arizona. This time, I saw the landscape anew. The hazy orange sky rested on the red rim of the earth, punctured by the sharp edges of distant mesas.

From the window of the observation car, what some have characterized as an ecocide,¹ due to the massive effects of coal and uranium mining taking place on the Navajo and Hopi reservations, was not immediately evident. The haze of pollution in the morning sky amplified the orange color of the sunrise, and the vast, dark plains and jagged volcanic intrusions felt more 'wild' and unknown to me than any crowded national park.

Next door, this same haze settles over the Grand Canyon. It originates from a coal-fired power plant in Page, Arizona. Located on Navajo land twelve miles to the northeast of the Grand Canyon National Park border, the plant (Navajo Generating Station, or NGS) burns 8 million tons of coal each year to produce 2,250 megawatts of electricity. Extra-high voltage power lines carry this electricity to a variety of users in the

¹ Grinde, D.A. and Johansen, B.E. (1995). *Ecocide of Native America: Environmental Destruction of Indian Lands and Peoples*. Santa Fe: Clear Light Publishers.

Southwest, including the Central Arizona Project, a canal that carries water from the Colorado River to Tucson and Phoenix. But the plant produces much more than electricity: each year its smokestacks emit 34,000 tons of nitrogen oxides into the Four Corners sky, plus more than 500 pounds of mercury and more than 15 million tons of carbon dioxide (Friederici 2015). It also requires massive inputs of water, in a region where struggles over this precious resource have long shaped the landscape.

But while the scale and severity of human and environmental degradation the NGS produces is striking, what is remarkable about the plant is its location. The NGS, established following the Grand Canyon Dam controversy of 1944 to 1968 during a coal mining boom on the Navajo reservation, lies in a border zone. It is located at the edge of the Navajo Nation next to several large United States national wilderness areas, such as Grand Canyon National Park and Glen Canyon National Recreation Area, in the small tourist town of Page. Page is a zone of overlapping spaces—an “American,” “developed” one next to an “underdeveloped” Native one and preserved, “pristine” ones as well; it is a border zone where two different socially constructed “natures” collide.

As a recent article in the National Parks Conservation Association magazine illustrates, the coal-fired power plant is quite literally “generating controversy” (Rowe 2013). I am specifically interested in how the NGS came to Page and what its relationship is to the place it sits in and to those around it (specifically the Grand Canyon and the Navajo Nation). Thus, how did Page, Arizona (writ-large) come to be the site of the state’s largest and dirtiest coal-fired plant, the Navajo Generating Station?

Processes of colonialism have produced and shaped the landscape of northern Arizona on the Colorado Plateau, within which the NGS is embedded. Focusing

specifically on the NGS allows me to extrapolate a broader understanding of how the politics of nature, space and colonialism are intertwined. Therefore my broader question is: What can the establishment of the NGS illustrate about the relationship between nature, space, and colonialism? I attempt to reconceptualize each of these ideas in order to arrive at more liberatory understandings of them.

The National Park system and the Reservation system, both of which have facilitated the dispossession of Native peoples through removal, relocation and genocidal violence, are colonial policies which have helped to construct wilderness spaces as “pristine natures” which must be carefully managed and kept, and Native reservations as spaces where “nature” should be commodified and exploited. In the case of the Navajo Nation, this has resulted in the material and symbolic sacrifice of Navajo bodies, lands, water and air through processes of commodification, exploitation and pollution. Dinétah (Navajoland) is therefore a colonized space, an internal colony of the United States.

While other scholars have written on the Grand Canyon Dam controversy (Sonia Dickey, Byron Pearson), natural resource development on Native American lands (Churchill 2002; Grinde and Johansen 1995; Hooks and Smith 2004; Ishiyama 2003; Miller 2012 and many others), and the production and construction of nature (Neil Smith, William Cronon, and Erik Swyngedow are some that have influenced my thinking on this), I uncover the ways in which these phenomenon have co-created both the town of Page and the Navajo Generating Station. According to Smith, the production of nature refers to processes of conversion, transformation and metabolisation of “first nature” into an altered “second nature” (1984). Cronon, on the other hand, does not use the language of “production,” but “construction” to refer to the social processes which have created

and consecrated “wild, pristine nature” as something untouched and uninhabited by humans when in fact the notion of wilderness is *socially constructed* (Cronon 1996).

There are several key conceptual commitments which help to lay the groundwork for further reconceptualizations and engage with critical theories in geography of nature, space and colonialism. With scholars like Erik Swyngedow, William Cronon, Mark David Spence, I argue that the nature/society binary is a false and constructed divide: nature and society are in fact deeply intertwined. I use Swyngedow’s term “socationature” to connote that social processes and ecological or natural processes do not operate separately; these processes intricately transform “pre-existing configurations” in the world that are themselves inherently natural *and* social to produce socationature (1999, 445). Wilderness, contrary to what most environmentalists would argue, “is not a pristine sanctuary where the last remnant of an untouched, endangered, but still transcendent nature” can be experienced, but rather a product of civilization, purified by the removal of American Indians and perpetuated by the myth of the frontier² (Cronon 1996, 7).

Page, the Grand Canyon and the Navajo Nation are each incarnations of socationature transformed by the same social and ecological processes in different ways. These processes are both temporal and spatial, continuing to (re)produce place over time. I conceptualize ‘place’ in Doreen Massey’s “progressive sense,” in that places are processual, unbounded, and full of “internal differences and conflicts”: they do not have single, unique identities (1991, 67). Instead of thinking of the NGS, Page, the Grand

² As Cronon (1996) states, “[t]he movement to set aside national parks and wilderness areas followed hard on the heels of the final Indian wars, in which the prior human inhabitants of these areas were rounded up and moved onto reservations. The myth of the wilderness as ‘virgin,’ uninhabited land had always been especially cruel when seen from the perspective of the Indians who had once called that land home. Now they were forced to move elsewhere, with the result that tourists could safely enjoy the illusion that they were seeing their nation in its pristine, original state, in the new morning of God’s own creation... The removal of Indians to create an ‘uninhabited wilderness’—uninhabited as never before in the human history of the place—reminds us just how constructed the American wilderness really is” (15-16).

Canyon and the Navajo Nation as areas with boundaries, I think of them as “articulated moments in networks of [socio]natural relations and understandings” (Massey 1991, 67). Furthermore, these networks of relations implicate expressions of power. For example, the process of “time-space compression”³ affects different social groups and individuals differently (Massey 1991). This is what Massey calls “power-geometry”: she argues that different social groups and individuals are located in distinct ways to mobility, the flow of capital, and power relations more broadly (ibid). Thus, power-geometry positions the highly mobile Grand Canyon tourist differently than it positions the Diné sheepherder or Navajo Generating Station employee with respect to mobility and flows of capital.

As opposed to the environmentalist/wilderness tourist—a highly mobile American citizen—the Diné are a relatively immobile people, constrained by processes of colonization (both historical and contemporary). As a group that has been historically subordinated in its own homeland within the boundaries of a larger state dominated by a different people, the Navajo Nation is an “internal colony” (Chávez 2011). The theory of internal colonization seeks to explain the broader relationships of ethnic inequality across history and geography by suggesting that the subordinate status of internally colonized peoples usually results from the combination of military conquest followed by political, economic, cultural, and complete social and even psychological subordination (Chávez 2011).

The status of the Navajo Nation as an internal colony, and thus a space of sacrifice, helps further explain the siting of the Navajo Generating Station on Diné lands

³ In geography, the idea of “time-space compression” describes a new phase of what Karl Marx observed as the “annihilation of space by time,” in the sense that modernization has collapsed both space and time by disrupting horizons, spatial barriers, and so forth with the “speed-up” of travel and communication. See Harvey (1989) and Massey (1991).

just outside Page as both an act of environmental racism and internal colonization. That communities of low-income people of color (and some whites) are disproportionately exposed to toxic chemicals, heavy industry and pollution has been widely observed in the environmental racism and environmental justice discourses (e.g. Churchill 2002; Grinde and Johansen 1995; Ishiyama 2003; Kuletz 1998; Lerner 2010; Pulido 2000; Ray 2009). In the case of Native American tribes whose tribal councils often act in favor of resource development, however, this phenomenon can be framed as an issue of tribal sovereignty: Native American tribes should be able to make the decision to house a coal-fired power plant or a toxic waste disposal site, if they want to, especially since “poverty-stricken” tribes such as the Navajo desperately need to create economic opportunities for their people. Furthermore, some argue that environmentalist racism discourses, which seek to provide structural explanations for disproportionate exposure, effectively reduce Native American agency by insinuating that tribes have no choice in the matter of their own socio-natural destruction, and that the decision to house is ultimately an expression of sovereignty (Ishiyama 2003). However, when it comes to this rhetoric it is important to distinguish between an indigenous nation’s tribal council and the people of the reservation, who have diverse opinions about their Tribal Council’s natural resource decisions that remain largely unheard through the overwhelming din of development.

While there are diverse attitudes within the Navajo Nation towards the NGS, since it is a (growing) source of revenue for the tribe⁴ (but also a source of social, medical and environmental ills on the reservation), and these attitudes are both important and

⁴ A new lease between the plant’s operators and the Navajo Nation signed in 2013 will increase the annual payments to the tribe from \$600,000 per year to \$42 million a year (Friederici 2015).

informative, my analysis of the siting of the plant attempts to understand the spatial, socionatural processes which have created a landscape embedded with inequality.

I seek to understand how the spatial, historical colonial processes that have created the conditions of the Navajo Nation's economic dependency on extractive industries and their resulting environmental impact as well as the need for employment render "indigenous peoples as economic hostages" (Smith 2007, 3).

The conceptual frameworks outlined above regarding socionature, space, and colonialism contribute key insights to the establishment of the Navajo Generating Station in Page and its relationship to the socionatural, political and economic landscape of the Southwest. The Navajo Generating Station's proximity to federally-designated wilderness areas—"America's holiest shrines"—and Native American reservations presents an opportunity for insight into the different ways in which various actors produce and consume "nature." To some, such as the National Parks Service and American conservationists, "nature" is a pristine, unpeopled wilderness that should be carefully managed and protected, reserved for tourism. But next door, just across the park border, lies a different kind of "nature"—a reservation nature—which can be commodified, polluted, and sacrificed in order to modernize landscapes such as Phoenix and Tucson. As Oglala Sioux spiritual leader Black Elk notes, a "dual 'island' system of nature preserves and Indian reservations" has been created in the United States, where "wilderness preservation goes hand in hand with native dispossession" (Spence 1999, 3). This dispossession and the legacy of (ongoing) colonization of Native America has rendered tribes such as the Navajo, who are nominally sovereign, as internal colonies within the United States (Chávez 2011). As a colonized people, the Diné endure the

effects of massive coal and uranium mining without benefiting from the power and modern amenities they make possible in other places. The exploitation of nature on the reservation renders it a “national sacrifice zone” (Churchill 2002; Hooks & Smith 2004; Kuletz 1998; Lerner 2010; Ishiyama 2003).

In the next chapter, I explain the role of the Grand Canyon Dam controversy in the establishment of the NGS. The controversy, which took place over the proposal to construct two hydroelectric dams in the Grand Canyon, is at its core a controversy over water. Water is one form of ‘socationature’¹ which is both a necessity for the wellbeing of people, the development of urban spaces and agriculture as well as a threat to “pristine” places when dams threaten to flood “postcard landscapes” such as the Grand Canyon and Glen Canyon. The Grand Canyon dams were supposed to provide the power needed to construct the Central Arizona Project, a canal which would carry water from the Colorado River to Phoenix and Tucson. Opposition to the dams resulted in the establishment of the Navajo Generation Station as the alternative source of power for the canal. However, I illuminate how the effort to save the Grand Canyon (and California’s water supply), contributed to the sacrifice of Navajo land, air, water and people.

Chapter three continues this discussion by turning to Page, where the generating station is located. Page is a border zone, a place of multiple identities and formations, where spaces of pristine, national “nature” intersect with spaces of Native, or indigenous “nature.” Among other factors, Page’s history as a construction town for the Glen Canyon dam in the 1950s and 60s made it an ideal location for the Navajo Generating Station. While the NGS draws on the resources of Page and the Navajo Reservation, it also provides them with employment and revenue (“development”). While benefiting

from these resources, the plant also threatens the “pristine” quality of nearby wilderness areas.

Finally, I move slightly east to focus on the Navajo Reservation, where an internally colonized people struggle to navigate a landscape of genocide, dispossession, drought, and pollution. Federal policies have time and again exploited Navajo resources, channelling Navajo assets for power and profit. The history of the Diné is important here in revealing how the bounding of the Navajo, and relatedly, the bounding of nature, have created spaces of sacrifice.

Reconfiguring our notions of nature and wilderness uncovers why an environmentalism which seeks to preserve a constructed, aesthetic nature turns a blind eye as the ecocide of Native America continues, while failing to see wilderness tourism for what it is—the consumption of nature for the enjoyment of the civilized tourist. I start by excavating, in a historical and political sense, the details of the Grand Canyon Dam controversy and the subsequent establishment of the Navajo Generating Station.

Chapter 2

Watering the West: (Re)Telling the History of a (Nearly) Damned Nation

On a warm January morning, my dad and I drive up U.S. Highway 89 on the way to Page, Arizona. Though it is the middle of winter, the windows of my dad's 1983 Volvo station wagon are cracked to let in the late morning air. Along the highway I notice a decrepit-looking water tank which reads "Water is life" in colourful spray paint. The tagged tank pops against the sandstone mesas, light blue sky and EHV (extra high voltage) power lines in the background. We are about a half hour's drive from Page, and these power lines are transmitting electricity generated at the NGS.

The Navajo Generating Station, in the process of transforming water, coal, and labor into electrical power, also transforms Navajo landscapes and bodies. Jihan Gearon, executive director of the Black Mesa Water Coalition (an organization dedicated to issues of water depletion, natural resource exploitation and health promotion within Navajo and Hopi communities), points out that the Navajo "subsidize" the cities of Phoenix, Scottsdale, Tucson, Casa Grande by giving away their water, their coal, and their livelihoods to NGS (Rowe 2013). Although the Navajo do not own the Navajo Generating Station (it is jointly owned by the United States Bureau of Reclamation, Salt River Project, Los Angeles Department of Water and Power, Arizona Public Service Company, Nevada Energy, and Tucson Electrical Power), Navajo assets fuel the plant. "We give so many things for free to the NGS," says Gearon, such as the land where the plant sits (Rowe 2013).

It sits on the Navajo reservation because we gave them a free land lease. The electricity lines that run across the Navajo nation, the train tracks that carry the coal, we've given them all of those right of ways for basically nothing. And that's

why, you know, the cities of Phoenix, the cities of Scottsdale, the city of Tucson, the city of Casa Grande, is able to have very cheap electricity and very cheap water. They pay almost nothing for the water. And that's because we're subsidizing it up here on our end. (Gearon quoted in Rowe 2013)

In order to understand how the Navajo become entrenched in this relationship with the Navajo Generating Station, I turn to the plant's genesis and unique history, which differs from other coal plants on the reservation. It is critically tied to the history of water reclamation in the American West. The NGS provides 90 percent of the power for the Central Arizona Project, used to pump water across 336 miles of canal up to Phoenix and Tucson. The CAP was originally slated to get its power from two hydroelectric dams in the Grand Canyon, but when the dams proved to be too problematic, CAP proponents turned to Navajo coal to provide the power they needed. For the purposes of this chapter, I am interested in the role of water in creating the NGS. How has water—and the discourses that give it meaning—given way, both materially and discursively, to the NGS? When the proposed Bridge and Marble Canyon dams threatened to flood sections of the Grand Canyon, water was constructed as threat to the “pristine” nature of the Grand Canyon—but water is also a commodity and a necessity for the development of urban spaces and agriculture. In other words, “water is life.” In various contexts and settings, water holds different meaning and value. Throughout the chapter I develop the historical context for water reclamation projects like the CAP in the West, the politicized story about water which underlies the Grand Canyon Dam controversy and the role of the Hualapai and Navajo Nations, and the establishment of the NGS with the passage of the CAP legislation (The Colorado River Basin Project Act of 1968), as an ‘alternative’ to the Grand Canyon dams.

First of all, the demand for water in burgeoning urban parts of Arizona and for agricultural use led to the demand for a Central Arizona Project, which (as I have mentioned) is causally linked to the NGS. Without the infrastructure to tap, dam and channel rivers or pump groundwater from aquifers, cities, agriculture, and other industries would not be able to exist in the region. The Colorado River is a major water source for many southwestern states (even California, which isn't part of its watershed basin). Dozens of hydroelectric dams and hundreds of miles of canals collect and divert water into southern California, Nevada and southern Arizona. I argue that as agriculture and urbanization spread across the arid American West, the development of infrastructure and engineering projects to water farms and cities facilitated the production of the Southwest water landscape, or “waterscape.”⁵

The notion of the waterscape is important because it facilitates thinking about the ways in which political-ecological processes and practices surrounding water shape the landscape. These processes and practices constitute the socionatural transformations that historically and geographically produce the landscape; water and the waterscape are critical elements of the landscape. The process commonly referred to as modernization, for all its obscurity, “contradictions and tensions,” plays a role in the transformation of the landscape (Swyngedouw 1999, 445). The engineering of infrastructure to allow for transportation and distribution of water—and relatedly, power—produces a landscape in which flows and interconnections between places and people follow networks of “privilege and exclusion, of participation and marginality” (Swyngedouw 1999, 446).

⁵ Swyngedouw (1999) examines the production of the Spanish “waterscape” in the early 20th century, arguing that the modernization of Spain through hydrological engineering was both a political and geographic project engaged in the production of socionature. A similar process occurs in the American Southwest.

In defining avenues of flow and in claiming, quantifying and distributing water—in other words, in commodifying it—these social spaces of privilege and exclusion emerge. The commodification of water makes it possible to transport it across great distances in order to water farms and cities, and thus transform the landscape. While landscape transformation is a collective and diffuse project, there are specific actors at play that we can identify as sources of socionatural transformation. The Bureau of Reclamation is the primary producer of water as a commodity in the West and the muscle behind hydrological engineering projects along the Rio Colorado. Politicians, environmental groups, and tribal governments play important roles as well. Each of these actors—though I have by no means identified all—have had a hand in the establishment of the Navajo Generating Station. The NGS is involved in the transformation of the landscape for reasons I have already touched on. The NGS, because it is so closely tied to water through its position as the power source for the CAP canal and the consumer of a large portion of the Navajo Nation’s Colorado River water apportionment, has a unique role in both the coal and water industries. I refer to water as an industry because although water reclamation in the American West professes to benefit the public and facilitate modernization for all, water is treated as a commodity and becomes entangled in the process of the production of nature. Water is not only a source of livelihood but a source of profit—a commodity.

The early 20th century marked the dawn of water reclamation in the West. Reclamation, generally defined as the process of rendering marginally productive land resources more valuable to a broader set of users (Schroeder 1997, 487), involves the implementation of specific programs which facilitate this “re-claiming.” The U.S. Bureau

of Reclamation, as an agency within the Department of the Interior specifically dedicated to managing water in the West, “proclaims its dedication to ‘protecting the environment’ as well as to delivering water and power” (Pisani 2003, 392). Yet as the largest wholesale water supplier and the second largest producer of hydroelectric power in the United States,⁶ the agency is primarily involved in the production (the commodification), not the protection, of the environment.

Hydrologic infrastructure is a key tool in the production process. Following the end of the Civil War in the United States and the depression of the 1890s, at a time when the cultural psyche of America was focused on westward expansion and growth, federal reclamation facilitated the construction of over 100 dams, and more than 1,300 of miles of canals, ditches and tunnels (Pisani 2003). This reflected the desires of, among others, Western explorer and river-runner John Wesley Powell who dreamt of an “irrigated agrarian culture in the arid West,” where homesteaders, farmers and water infrastructure would help to vitalize the desert (Loeffler and Loeffler 2012:11). In the U.S. West, where land was plentiful and cheap, agriculture would help fuel a rapidly expanding and prosperous country—but the land was dry, and irrigation would be necessary to work the land.

Powell, while interested in promoting agriculture and access to water for irrigation in the West, foresaw the environmental problems that would arise with the allocation and transportation of water from western rivers outside of their watershed basins, causing rapid depletion of aquifers and rivers. He thus advocated for a system of local governances, or what he called “commonwealths” in the West that would only

⁶ United States Bureau of Reclamation (usbr.gov).

control the water within their watershed county, and only for uses within their designated watershed area (Loeffler and Loeffler 2012). Though Powell presented his plan before the Select Committee on Irrigation of the U.S. House of Representatives in 1890, Congress never approved it (Loeffler and Loeffler 2012). Instead, Reclamation's unbridled irrigation and water storage projects began to stop up and divert rivers in the Southwest, carrying large quantities of water across great distances via canals and aqueducts without concern for the ecological consequences.

Since the early 1900s, as settlement boomed in the Southwest, Arizona had been thirsting for infrastructure projects that would help water their fields and growing population centers. The first of such projects, the Salt River Project, sought to control the unpredictable flow of the Salt River near Phoenix and continued to expand over many decades to create an intricate system of dams, canals, and power generating stations. The project at first included the construction of the Roosevelt Dam at the confluence of Tonto Creek and the Salt River, creating Theodore Roosevelt Lake, and three other dams and reservoirs on the Salt River. By the time the last of these dams was completed in 1930, the project had already expanded to the smaller Verde River, where four more dams were constructed. However, in the middle of the 20th century, Arizona water interests sought to tap into the much larger flow of the Colorado River, which cuts across the northwestern portion of the state, hundreds of miles from central Arizona. The state of Arizona thus devised plans for a Central Arizona Project to carry water from the Colorado down into the south-central portion of the state, allowing Arizona to make use of their legally designated allocation from the Colorado River.

Arizona senator Carl Hayden first proposed plans for a Central Arizona Project in the 1940s, but California's large congressional delegation blocked the bill in the House in 1950 and 1951. While there was a powerful interest within Arizona for a Central Arizona Project, California presented a strong opposition because of the implications of the project for its own usage of the Colorado (Pearson 1998, 2000, 2002). Arizona and California had long fought over their respective allocations from the Colorado—California had always received the lion's share of the river, even though most of the state lies outside its watershed basin. California's congressmen objected to the CAP because further storage and diversion of water from upstream of reservoirs that collect water for California's aqueducts (as far north on the Colorado as Lake Mead) would reduce the flow of the river into those reservoirs, competing with its water supply from the Colorado River (Pearson 1998, 8).

Until Secretary of the Interior Stewart Udall came into office in 1960, California politicians had successfully stifled the plans for the CAP, but ultimately were unable to stop the project—only the dams which would power it. For over half a century before the CAP legislation passed, California and Arizona had been embroiled in legal battles over the allocation of the Colorado River. This began in 1922, when Arizona refused to ratify the Colorado River Compact, a piece of legislation drawn under the leadership of secretary of commerce Herbert Hoover in Santa Fe, NM between the Colorado River basin states (Arizona, California, Colorado, Nevada, New Mexico, Utah and Mexico) (Gelt 1997).⁷ The compact split the river into upper and lower basins, allocating 7.5 million acre-feet (maf) to each basin for the basin-states to share (7.5 maf for Colorado,

⁷ See appendix for a copy of the Colorado River Compact of 1922 (usbr.gov).

Utah and New Mexico collectively and 7.5 maf for Nevada, Arizona and California collectively). But the compact did not specify the amounts that each individual state would receive, which soon became a problem. Arizona, seeking to limit California's allocation and thus protect its own, took California to the Supreme Court in 1931. The case, *Arizona v. California*, has been relitigated many times since then⁸. In the 1940s, Arizona began to develop plans for a Central Arizona Project. But until Arizona could secure a specified allocation from the Colorado and make sure that California's consumption would be capped, plans for the CAP could not go forward. Plans were formalized in 1960s with the 1963 ruling of *Arizona v. California*, in which the court decided that of the 7.5 maf purportedly belonging to the Colorado River's lower basin states, California would receive 4.4 maf per year, Arizona would receive 2.8 maf, and Nevada 300,000 af per year; Arizona and California would divide any 'surplus' flow evenly⁹.

Following the 1963 Supreme Court ruling, Senator Hayden and new Interior Secretary Udall tried to push the CAP legislation through Congress by including it in a more extensive water reclamation plan that included benefits for California (Pearson 2000, 2002). With his Pacific Southwest Water Plan Udall hoped to "secure California's support with the promise of water importation from the Colombia River," and then shepherd the CAP through congress along with it (Pearson 2000: 304). But the Pacific Southwest Water Plan, which also included the high Bridge and Marble Canyon dams, would have not only reduced the flow of the river where it borders California, but would

⁸ *Arizona v. California* has been litigated in 1934, 1936, 1963, 1979, 1983, 1984 and 2000. I cite only the 1963 case because it is the most relevant to the conditions which urged Arizona to push for a Central Arizona Project.

⁹ *Arizona v. California*, 373 US 546, (1963). <http://www.lexisnexis.com.libproxy.vassar.edu/hottopics/lnacademic/?verb=sr&csi=4300> (accessed March 19, 2015); Pearson 2002.

also have flooded many miles of Grand Canyon National Park as well as Hualapai, Havasupai and Navajo lands and sacred sites.

Not surprisingly, environmentalists were up in arms at the suggestion of inundating the Grand Canyon, a treasured piece of American wilderness, viewed by many as the “foremost national treasure” (Keller and Turek 1998, 131). The loss of Glen Canyon and Rainbow Bridge National Monument in the late 1950s led environmentalists to intensify their fight against the proposed dams in the Grand Canyon (Morehouse 1996, 91; see also Pearson 2000, 305 and Dickey 2012). The Sierra Club spearheaded environmentalist efforts to stop the dams, launching a massive publicity campaign against the Bridge and Marble Canyon dams in the mid 1960s. David Brower and other Sierra Club leaders created the “Grand Canyon Battle Ads,” in which they pointed the finger at Stewart Udall and the Department of the Interior, hoping to influence their constituencies and scare them into backing off from Grand Canyon dams (sierraclub.org). Full-page ads against the construction of the dams, now memorialized in the Sierra Club’s vault, appeared in national newspapers including *The New York Times*. One such ad protested, “Should we also flood the Sistine Chapel so tourists can get nearer the ceiling?” (Sierra Club 1966).¹⁰

Proponents of the dam anticipated this resistance, and strategized in order to deal with the response. As early as 1944 the Bureau of Reclamation had recommended adjusting the western boundary of Grand Canyon National park so that the Bridge Canyon Dam would lie entirely outside park lands (Morehouse 1996). The park’s superintendent Bryant found the boundary suggested by the Bureau in 1944

¹⁰ See appendix for a copy of the 1966 ad.

“unsatisfactory,” but agreed that “there would have to be some adjustment of the boundary to keep the reservoir that would be created by the dam out of the park” (Bryant 1944 in Morehouse 1996, 90). This speaks to the “longstanding” inclination of the Park Service to adjust boundaries, often giving up territory whenever the “integrity” of the national parks is threatened (Morehouse 1996: 90). But as Sierra Club leader Bestor Robinson asked cheekily in a letter to Frederick Law Olmstead (an American landscape architect famous for his parks), “Did Nature in her great wisdom terminate the superlative portion of the Grand Canyon at the exact spot selected by twentieth-century engineers for a hydro-electric powerhouse?” (Robinson 1950). Rather than pushing back the park’s boundaries to keep the dam out, the Club thought it was “necessary to find a defensible western boundary line above which no reservoir would be permitted,” and then impose a moratorium on the construction of dams in the Grand Canyon (Morehouse 1996: 90).

While the dam proposals faced strong opposition from environmentalists who wanted to protect the Grand Canyon from being flooded by the dams, there were a multitude of interests and claims tied into the proposed dams that historical narratives of the Grand Canyon dam controversy tend to glaze over, representing it as a polarized issue between environmental conservationists such as the Sierra Club and water developers. Both the Hualapai Nation and Navajo Nations played important roles in the outcome, in which the dams were deleted from the CAP legislation before Congress passed it in 1968 and a lease was signed between the Navajo Nation, the Bureau of Reclamation and the other future owners of the Navajo Generating Station.

The proposed site of the Bridge Canyon Dam, on the western end of the Hualapai Reservation, would have caused most of the canyon within the boundaries of the

Hualapai Nation to flood and would have backed water across the border into Grand Canyon National Monument (Pearson 2002). Furthermore, the proposed Marble Canyon Dam site would flood forty-six miles of Diné Bikéyah (the Navajo reservation) north of the Grand Canyon National Park (Dickey 2012:71). Given such threats to the reservations, the Bureau of Reclamation and the Department of the Interior feared that environmentalists would “ally themselves with Native Americans against the plan” for the CAP (Pearson 2000, 305). Assistant Secretary of the Interior John Carver believed that “putting the aesthetic and conservation factors aside,” the project “risked defeat if environmentalists and American Indians united against the dams” (Pearson 2000, 305). According to Pearson, “Arizona officials embarked hurriedly upon a program of damage control” (2000, 306). At a time of heightened awareness of civil rights issues, the rise of Red Power and the American Indian Movement, and the fact that dams would affect several tribes with ancestral homelands in the Grand Canyon region, “[b]oth environmentalists and CAP proponents tried to gain the support of the Hualapai and Navajo Nations in an attempt to manipulate rising public concerns about civil rights and race relations to their advantage during this pivotal environmental debate” (Pearson 2000, 299).¹¹

¹¹ For a more nuanced understanding of the relationships between environmentalists and Native American groups, see Keller and Turek (1998). These authors provide further details on the attitudes of Hualapai, Havasupai, Navajo, Hopi and other tribes towards the NPS, the Sierra Club, Friends of the Earth and other conservation organizations. For example, Havasupai spokesperson Lee Marshall criticized John McComb, 1970s regional director for the Sierra Club, along with other environmentalists with organizations like Friends of the Earth, as wealthy, selfish, and “ignorant of nature” (Keller and Turek 1998, 179). According to Marshall, McComb was “just a city man like all the rest thinking about taking these lands so he can come up once or twice a year and have some recreation. Recreation! We are talking about survival while they talk about recreation. Where does the greed of these people stop?” (Keller and Turek 1998, 180). On the other hand, native grassroots organizations such as Save the Confluence, a Navajo group, speak outwardly against development projects like the proposed Grand Canyon Escalade.

The Hualapai were initially opposed to the Bridge Canyon dam, which would have flooded miles of the canyon they had lived in for thousands of years. Though a small tribe, with only about 1,300 tribal members, the Hualapai's reservation covers about one million acres along the Colorado and in the Grand Canyon (hualapai-nsn.gov). However, the constitution the Hualapai had adopted in accordance with the Indian Reorganization Act of 1934 granted the tribe sovereign rights over its territory, placing them in a strong position to either reject Arizona's proposal for the Bridge Canyon dam or demand compensation (Pearson 2000). After a year of negotiations with the Bureau of Reclamation and the Department of the Interior, the Hualapai Nation took the route of compensation. The Tribal Council signed a contract with Arizona that would grant the Nation annual payments between \$550,000 and \$650,000 for the life of the dam, estimated 40 to 50 years; the Hualapai would also receive \$16 million for the construction of the dam (ibid).

The CAP task force planned to use the support they had garnered from the Hualapai to battle environmentalists. Political manoeuvres and the promise of economic stimulation persuaded the Hualapai Tribal Council to support, even publicly advocate for, a federally financed Bridge Canyon Dam. CAP proponents wanted to publicize this support and paint environmentalists as anti-Indian. The CAP task force decided to send an "avalanche" of letters from not only the Hualapai Chairman but also other Arizona and Colorado tribes to Congress, President Johnson, Secretary Udall, and twelve thousand "Indian friends," including a personalized letter to David Brower of the Sierra Club (to be released to the press), emphasizing that the dam would "enable them to cast off their bonds of poverty" (Alexander in Pearson 2000:311). However, it was Central Arizona

Project Association President Rich Johnson who wrote and composed the letters; Hualapai Chief George Rocha was merely asked to contribute his signature, along with “some Hualapai Tribal Council letterhead” (ibid). Additionally, Hualapai Chief Rocha testified before Congress that the Bridge Canyon dam proposed in H.R. 4671, the original CAP legislation, “constituted his people’s only hope for economic salvation and stressed that without it they would continue to live in poverty” (Pearson 2000: 309).

But the dam would have also flooded miles of tribal grazing and hunting lands, and I would go so far as to suggest that not all members of the tribe would have been happy with this outcome, despite the Tribal Council’s stance in favor of the project. However I have not conducted any interviews which would allow me to test this claim and cannot speak to individual or group attitudes regarding the proposed dam.

The Navajo Nation, however, passed a resolution against the dam-powered CAP project as a whole due to the fact that the Navajo Nation, unlike the Hualapai, would not receive any compensation for a structure at Marble Canyon (Dickey 2012, 78-79). Because the dam was to be built on a site that the federal government did not recognize as belonging to the Navajo reservation, the Navajo Nation’s efforts to get compensation for the dam failed. The “legal muddle” over the Marble Canyon site led the Bureau of Reclamation to refuse to compensate the Diné, and ultimately the Federal Power Commission awarded Arizona a license to build the dam at Marble Canyon despite the Navajo Tribal Council’s claims to the site (ibid).¹² Thus, the Navajo would not receive

¹² Arizona, in the years after its admission to the Union in 1912, had been allowed to reserve power sites along the Colorado for future utilization, and Marble Canyon was one of those sites. But in 1930, “Congress transferred parts of the Tusayan National Forest, including the dam site, to the Navajo tribe, while preserving ‘all valid rights and claims of individuals initiated prior to approval of the Act’” (Pearson 2000, 301-302). Congress enlarged the Navajo reservation in 1934, but preserved Arizona's power site withdrawals and nullified the provisions of the Federal Power Act that would have given the Navajo Nation

any revenue from the dam while forty-six miles of Diné Bikéyah (the Navajo reservation) would be flooded (Dickey 2012, 71). Furthermore, the Bureau of Reclamation had initiated site preparations (for both dams) even before they obtained the licenses, without permission from the Navajo or Hualapai tribes (Pearson 2000). In what Pearson deems “an amazing display of hubris,” the Bureau resumed these preparations in the 1960s when Hayden and Udall had revived plans for the CAP (2000, 304).

Without the hope of any financial benefit for the dam, the Navajo Tribal Council passed resolution CAU-97-66 on August 3rd, 1966 condemning the dams and “citing the ‘ruthless character’ of CAP lobbyists” (Dickey 2012, 79). The resolution also stated the Council’s plan to “exploit the ‘huge deposits of coal’ buried in the Four Corners on Black Mesa,” which had been developing while the controversy over the dams raged (ibid). Quoted in a *Gallup Independent* article from August 4, 1966, councilmember Annie Dodge Wauneka states that the Council had “concluded agreements with Peabody Coal Co. and Utah Construction Co. for burning Navajo coal,” and that “hydropower cannot possibly compete with cheaper thermo-electric plants stoked with Reservation coal” (Dickey 2012, 80).

Thus, all of these factors—opposition from California congressmen, the Sierra Club and the Navajo Tribal Council—contributed to the passage of a “bare-bones” CAP, minus the dams, in September of 1968 when President Lyndon Johnson signed the Colorado River Basin Project Act of 1968 into law¹³ (Pearson 1998, 8). The legislation for the CAP authorized the construction of the canal itself, which would divert water

a claim against the state. Consequently, Arizona stood in a strong legal position to claim the site in 1960 because Congress had granted it the right to utilize this reach of the Colorado River for hydroelectric projects, and maintained it even though it was surrounded by Navajo lands (Pearson 2000: 301-302).

¹³ See appendix for a copy of the Colorado River Basin Project Act of 1968.

from Lake Havasu (an already established reservoir closer to the termination of the Colorado River). In place of the Grand Canyon dams, the Department of the Interior signed on to the contract for the Navajo Generating Station to provide the power for the CAP. When the council approved the Navajo Generating Station lease in May of 1969, the NTC had already entered into agreements with Peabody Coal Company to lease land on Black Mesa. Contracting the Navajo Generating Station to provide the power for the CAP was therefore a way for the Navajo Nation to secure revenue from the CAP that they had not been able to secure via the Marble Canyon dam.

Thus the history of the NGS is important in understanding the actual siting of the plant as well as its relationship to water today. My purpose in detailing the controversy has been to show the ways in which political-ecological processes (including political, social and economic factors), as performed by a variety of actors (including the Bureau of Reclamation, Congress, the Hualapai and Navajo Tribal Councils, the Sierra Club and private water interests) transform landscapes. The NGS was born out of struggles over water, and it continues to reinforce spatial networks of consumption and distribution which favor the development of cities over Navajo lands. In fact these networks facilitate the sacrifice of Navajo lands and bodies in order to provide water and electricity to Arizona's cities.

When the Navajo Tribal Council signed the lease that established NGS, it agreed to sign away over half of its own apportionment from the Colorado River for the plant. As a result, 34,000 acre-feet (of a 50,000 af apportionment) are set aside each year for use in coal transportation, ash disposal and for cooling the NGS's three tower units (Indenture of Lease: Navajo Units 1, 2 and 3 1969, 40; Navajo Tribal Council Resolution

CD-108-63). And as the N aquifer under Black Mesa is increasingly depleted, the need for local water infrastructure on the Navajo and Hopi reservations becomes more dire. While access to potable water supplies on the reservations suffers, Phoenix's manicured lawns flourish. These two phenomena are both inextricably entwined, linked by steel-supported electrical lines, concrete and the flow of water and energy across the largest and possibly the driest (Lamoureux 2012) stretch of Native American lands in the United States. Power relationships are embedded in the very landscape: in the flow of the rivers across the plateaus and through deep canyons, in the dried-up Mexican delta, in urban neighborhoods and the banks of creeks where radioactive waste seeps deep into the strata downstream of the dumping sites, even in the hazy air of the four corners region where nitrous oxides and particulate matter contaminate bodies and scenic vistas.

I have explored the history of the NGS, and now I turn to its geography. While the Grand Canyon Dam controversy can illuminate *how* the NGS came to be, it is also important to understand its location. At the edge of the Navajo reservation, just outside Page, Arizona—a town known to its international visitors as an outdoor adventure town on the outskirts of Lake Powell—and a mere twelve miles from the Grand Canyon, the NGS lies in a border zone. Environmental justice studies seek to understand the siting of power plants and other industrial hazards in light of social theory which takes into account the spatialized and intersectional nature of race- and class-based discrimination, in both its discrete and structural forms. With all this in mind, I turn to Page, Arizona to explore its history and its relationship to the NGS.

Chapter 3

Tracing Power Line-ages in Page: Choosing a Location for the Navajo Generating Station

In 1958, Paul Jones, a former chairman of the Navajo Tribal Council, traded a “barren, sandy, desolate mesa” next to the Colorado River on the Navajo reservation (once called Manson Mesa for one of the Diné families that used it as grazing land) with the United States Bureau of Reclamation, in exchange for ancestral land on McCracken Mesa in Utah (Ward, Keisling, and the Powell Museum 2014). This land became the town of Page, where the Bureau built a hydroelectric dam in Glen Canyon next to the newly acquired lands. Workers came by the thousands to construct the dam, which was completed in 1963 and currently holds steadfast Lake Powell, the second largest man-made lake in the United States¹⁴ (Ward, Keisling, and the Power Museum 2014: 7). In the early 1970s, the NGS came to Page, and it is now home to *two* major Bureau of Reclamation projects. Both of these controversial projects are central figures of the landscape of Page. The three smokestacks of the Navajo Generating Station protrude 775 feet out of the red dirt desert, towering higher than any building in the American Southwest (Friederici 2015). The plume generated by these units rises even higher into the sky, making it even more conspicuous; on a clear, relatively still day, the plume coming from the NGS is easily visible from dozens of miles away.

¹⁴ Lake Mead, at Hoover Dam, on the border between Arizona and Nevada, is the largest.



Figure 1: Navajo Generating Station, Page Arizona 2015. Photo taken by author.

The central research question of this thesis explores how Page, Arizona came to be the site of one of the country's largest and dirtiest coal-fired plants. In the previous chapter, I established that the NGS came about as an alternative power source for the CAP, but in this chapter I examine Page, specifically in order to understand the factors that influenced the actual siting of the plant. NGS is technically located on Navajo Nation lands 5 miles outside of Page, but as the nearest town, Page plays an integral role in supporting the generating station. Furthermore, Page and the NGS occupy a zone of overlapping and intersecting spaces between several national wilderness/recreation areas and the Navajo Nation, which is significant because the siting of industrial facilities takes on particular implications when it comes to border regions. Thus, how was Page constructed as the "ideal" location for the NGS?

In conducting my research, I searched through correspondences, Navajo Tribal Council minutes and resolutions, land leases, Department of the Interior statements, newspaper articles, but came across very few clues about the decision-making process

which facilitated the siting of the NGS in Page. Given the lack of discrete information available as to why the NGS is located in Page (as opposed to somewhere else on the Navajo Reservation), I am forced to do a broader analysis of power plant siting in order to make inferences about this particular case.

In general, however, there are a few key constraints that influence the establishment of a power plant: access to a steady supply of coal, large quantities of water, and sufficient labor. Page satisfies each of these constraints. It is a small worker town with an established infrastructure and a need for jobs, located only about 90 miles from Black Mesa's Kayenta Mine site, where Peabody Western Coal Company leases lands from the Navajo Nation to strip-mine coal. It is just a few miles from the shores of Lake Powell, the flooded canyon reservoir created by Glen Canyon dam, which provides a source of water for the plant's cooling towers.¹⁵ An NGS-produced pamphlet cites the advantages of its location outside Page, "including access to competitively priced coal, an adequate supply of water from Lake Powell, and nearby established communities with an established work force" (NGS 2007, 4). Ultimately, the plant cannot function without access to these three things, all of which are necessary for the plant to be profitable.

Very likely, it would take an entire cohort of economic development specialists and planners to flesh out the details of a profitable plant location. Alternatively, perhaps the location of the plant is somewhat arbitrary, as long as access to the necessary resources can be guaranteed. But I have one other piece of information that I believe to be highly relevant to the siting of the plant: the fact that Page is a border region, a place of intersection between the "core" and the "periphery;" between the "global South" and

¹⁵ The Upper Colorado River Basin Compact allocates 50,000 acre-feet of water annually to Arizona, but since the only portion of Arizona within the Upper Colorado River Basin is Navajo Reservation land, this 50,000 af is interpreted as belonging to the Navajo.

the “global North;” Page is an American, “developed” space bordering the Navajo Nation—an “undeveloped” Native reservation. It is a global interface.

Other scholars have written extensively on why border regions matter when thinking about the siting of hazardous industries and facilities (Clapp 2001; Frey 2003; Johnstone 1995). These authors suggest that global networks for trade and investment facilitate the (re)location of hazards from richer to poorer countries, in part to avoid regulatory restrictions on production processes (Clapp 2001; Frey 2003). But what about hazards located within “richer” countries such as the United States? Recent theorizations in the field of political ecology of the “Third World within” seek to better understand this process (Schroeder et al. 2006). These theories have reconceptualized how global capital investment shapes space according to either structuralist arguments—which assert that the same forces that produce the “Third World as such are responsible for creating peripheries, backwaters, wastelands, remote areas, etc. *within* advanced capitalist nations as well”—or alternatively, by completely rejecting the First World/Third World binary altogether (Schroeder et al. 2006, 166). This second approach, which draws on post-structuralism, “‘re-reads’ the First World for heterogeneity and diversity” arguing that spaces we have “always assumed to be purely capitalist always carry within them elements that we now commonly associate with the Third World” (ibid). In imagining Page and the edge it shares with Navajo Reservation within the framework of these theories, we see that it is a space which interfaces between “core” and “periphery”; “First World” and “Third World.” Thus while there are many reasons why the NGS was established in Page which are both “practical” and geographical, they are deeply related

to larger spatial processes which are involved in the export of hazardous industries to “undeveloped” countries and border regions.

What is the work that is done in thinking of Page as a border zone, a space that is simultaneously part of the “core” and the “periphery?” Does this factor in to the siting of the NGS in Page? Despite the political boundaries delineating Page, the Navajo Nation, and the nearby wilderness areas, these spaces are very much overlapping. Geographer Doreen Massey suggests that in thinking about place we must acknowledge their multiple identities and the ways in which they defy coherent identities as well as enclosure or definition within boundaries (1991). She challenges the idea that sense of place is constructed through an “inward-looking” history that looks for internalized origins of a place’s character, imagining them instead as “articulated moments in networks of social relations and understandings” (Massey 1991, 66). So, applying this to Page, the town becomes not just a purely “American” space but also a Native one.

The significance of this in terms of the Navajo Generating Station is that the siting of the largest and dirtiest coal-fired power plant in the state of Arizona next to Page does not make sense when holding the view of Page as a predominantly white, “core”-type space which lies twelve miles from the border of Grand Canyon National Park, next to Lake Powell and Glen Canyon National Recreation Area. These are tourist sites, and Page is a tourist town. With a population of approximately 7,326, over 57 percent are Anglo, 34 percent are Native American, and less than 7 percent are Latino/a or Hispano/a (United States Census Bureau 2010). But this is not Page’s only identity: only it is intimately linked to the Navajo Nation, both today as border zone and historically as a part of the Navajo reservation itself.

It is important to keep in mind how recently the lands that are now Page once belonged to the Navajo. Only about sixty years ago, Manson Yazzie, Diné, and approximately seven other Diné families, used the land to graze sheep (Powell Museum 2007; Ward, Keisling and the Powell Museum Archives 2014). As power over the space shifted from a handful of Navajo families into the hands of the Bureau of Reclamation, the landscape changed quickly and dramatically. Families living on the lands that were transferred were relocated to other reservation lands, in many cases without prior consultation (Ward, Keisling and the Powell Museum Archives 2014). The Glen Canyon Dam and the NGS have transformed Page from a ‘sandy, desolate mesa’ into an Anglicised ‘frontier town,’ wedged between the reservation and the Grand Canyon (ibid).

In the late 1950s, with the beginning of the construction of Glen Canyon Dam, thousands of workers flowed to what soon became Page in order to work on the dam. As arrays of trailers began to populate the mesa, the Bureau built access roads and developed infrastructure in the town in order to support the new population. For the Diné previously occupying the mesa, nomadic lifestyles disappeared in the area. Carol Manson, daughter-in-law of Manson Yazzie, lived in the area before the land was handed over and describes the nomadic life she and her family had before the settlement in the following quote:

We used to move around a lot at that time with our sheep. We never stay in the same place...because there was no spring, we always had to haul water and we depend a lot on the rain...We did have a Hogan, right east of where the highway ends now, we used to have a hogan there, and then, closer to Coppermine also. But, at that time, when you built a Hogan, and the next person that comes along, you can share that Hogan with another family because you never lock the Hogan...You just leave it open for the next family to move in and that’s the way it used to be...There’s been a lot of change. (Powell Museum 2007: 6-7)

The building of Glen Canyon dam initiated changes in everyday life for those Diné families affected by the land trade. Before the establishment of Page, Manson and other Diné who used the mesa hauled water and wood for themselves and there was no electricity, no refrigerator or freezer (ibid). Now, says Manson, “so many things have changed and it makes us lazy.” She is grateful, she says, that she was able to get a job in the burgeoning town, like many other Navajos living near Page. Starting in 1963, she worked at the hospital as a nurses’ assistant, which allowed her to stay close to her family; otherwise she “would have had to go somewhere else to find work” (Manson in Powell Museum 2007: 8). Many Navajos found employment with Merrit-Chapman and Scott Corporation, the company contracted to build the dam.

In the first years of the construction process, Page was no more than a trailer town. The Bureau of Reclamation soon built “transit houses”—pre-fabricated houses similar to double-wide trailers but meant to be set on a foundation—for the workers and officials (Urban in Powell Museum 2007: 14). By 1957, the Glen Canyon Dam construction camp had expanded into a bustling town (Ward, Keisling and the Powell Museum Archives 2014: 53). Thus, construction of the dam created an “instant federal city” at Page (Durrenberger 1972: 234).

Page’s remote setting made many things difficult for its new residents, however, such as emergency medical transportation and the cost of supplies (ibid). Merrit-Chapman and Scott Corporation paid the workers very little—not enough to cover the high costs associated with life in Page, which was (and still is) far from any other population centers, and many workers had to leave. In 1959, workers went on strike

against Merritt-Chapman and Scott Corporation demanding higher wages. Those who remained celebrated the end of the strike six months later on Christmas Eve of 1959.

Page's population peaked in 1962, at the height of dam construction, with approximately 6,100 residents. Five years later, following the completion of the dam and the subsequent lack of jobs, the population fell to only 1,250. But as Lake Powell became a popular recreation spot, tourism began to grow. Then when the NGS came to Page in the 1970s, another population boom took place. Situating the power plant just outside Page grew the town substantially. Though its population has fluctuated since then, it is now above what it was at the height of dam construction, at about 7,326 (United States Census Bureau 2010). The NGS likes to publicize the number of Navajo employees it has, and that it privileges Navajo applicants in its hiring process. According to the Salt River Project, the corporation that manages the NGS, the plant employs a total of 520 workers, 70 percent of whom are Navajo (2007). The NGS draws Navajos from all over the reservation to work and live in Page.

When the plant was brought to Page, it's operators promised to provide electricity, running water and other 'modern comforts' to nearby Navajo reservation residents (Friederici 2015). As Betty Thompson recalls, representatives from both the Navajo Nation and the Salt River Project came to her mother's door, imploring her to sign away some of her lands:

Give up just some of your land, and we will provide you and your family with a better life, they said. Electricity, running water. Financial stability. Maybe better houses for you and your children, and jobs at the plant. (Rowe 2013)

In 2014, nine months after her mother's passing and 44 years after the construction of NGS, did Betty Thompson see the electric line to her mother's house

completed (ibid). And yet hundreds of miles of EHV power lines carry power in the opposite direction from the NGS to the far-off cities of central and southern Arizona, and to Lake Havasu, where the CAP taps into the Rio Colorado. Cities, which “have emerged as centers for the production, exchange, and consumption of their environments as commodities,” rely on networks of these commodities and the channels which connect them to the resources they need to survive (Lefebvre 1991, 1996, 2003 and Robbins, Polderman and Birkenholtz 2001 in Heynen 2006, 4). In other words, they consume the resources of marginalized, often distant communities such as the Navajo Nation by engineering long lines of power lines and concrete canals that connect them (but also distance them) from the sources of water and power that they so heavily depend on. These channels and networks work to externalize the environmental and social costs of production to “marginal” lands such as the Navajo Nation.

The Navajo Generating Station sustains itself by consuming Navajo water, Navajo coal, Navajo labor, and it benefits from the simultaneously core and peripheral spaces overlapping in Page, at the border of the reservation. While I cannot fully explain the situation of the NGS outside Page, I have done my best to analyze it using a broader understanding of the spatial relationships and constellations of power involved in the situation of industrial facilities. What’s more, the processes which have played a role in constructing the NGS are more than skin-deep. In the next chapter I will discuss how the bounding of the Navajo has influenced the siting of the generating station, which is a story of Navajo dispossession (both historically, via removal from a “pristine” nature and today, via relocation from homes and residences across the reservation). The effects of the coal industry run deep on the reservation. As Jihan Gearon of the Black Mesa Water

Coalition explains in an interview, in addition to the continued lack of electricity and running water on the reservation,

there's the whole issue of relocation where people were forcibly moved off of their traditional homelands to make way for mining, which has caused all kinds of problems...our whole economy is totally stagnant because of the coal industry. It's like our one-trip pony. And that has made us economically dependent on our own cultural destruction. (Rowe 2013)

The NGS is a social, political/economic project, and it is thus embedded in the landscape of Page and nested in the overlapping territories of the Navajo Nation and the Grand Canyon region. It is part of the lived material landscape of Page, in its multiplicities and interrelations. While historical-geographical processes have led to the construction of Page as the “ideal” location for the NGS, the relationship between Page and the Navajo Generating Station is dialectical; Page and the NGS both do work on each other and are produced through each other.

Chapter 4

Colonization of the internal variety:

Taming Nature and the Navajo through territorial bounding

Native people didn't like fences put up at the rim on the east side and so they tore them down. I come from a culture where there are no fences, no windows, no gates, no closed-in yards. (Alice Talakte, park ranger at Grand Canyon National Park, in Burnham 2000, 284)

As Alice Talakte, who grew up south of Page on the Navajo Reservation, explains, the Navajo have a sense of boundaries, but not fenced ones. The western edge of the Navajo reservation borders the Grand Canyon, which also borders the Havasupasi and Hualapai nations to the west: 85 percent, or 230 miles, of the Grand Canyon's southern and eastern borders face Native American tribes whose land-holdings are nearly twelve times the size of the park (Keller and Turek 1998, 132). While federal restrictions prohibit natural resource development in the National Park, it is surrounded by lands harmed by ongoing strip mining, and polluted with radioactive ash from coal plants, nitrogen oxides, carbon dioxide and monoxide, mercury and other toxins. The Grand Canyon represents a nature that, for environmentalists, should be protected for "its own sake, for its beauty and pristine qualities, for wildlife habitat, or for recreation" (Taylor 1988). On the other hand, the Navajo reservation represents a different kind of nature: one to be consumed, produced, commodified. In this chapter I examine how these two different "natures" have been constructed and produced, combining the concept of socationature with the insights about territoriality and space brought up in the previous chapter. How did the bounding of the Navajo, and, relatedly, the bounding of nature, facilitate the siting of the NGS?

A history of dispossession connects the bounding of nature to the bounding of the Navajo. The creation of parks and wilderness areas in the United States goes hand in hand with the dispossession of Native people. Nature is “a central site of a particularly potent and exclusionary idea of U.S. nationalism—from the work of Frederick Jackson Turner to the creation of the national parks (Kosek 2006, 227). The purification of a “pristine nature” connotes the ideological separation of the social and the natural. This division is both productive, in the sense that it produces and maintains spaces as either one or the other (i.e. the urban as social and the wild as natural), and destructive, in the sense that separating the social from the natural facilitates the destruction of some spaces at the expense of the preservation of others. Thus, consecrated parks and wilderness areas “are, in essence, monuments to the ideological separation between nature and society,” and thus the dispossession of Native peoples (Kosek 2006, 157).

The ideological divide, however, must be deconstructed. The social and the natural are inextricably intertwined, and one cannot transform or modify one without also affecting the other (Swyngedouw 1999). Swyngedouw’s concept of “socionature” engages with the entanglement of the social and the natural and the power dynamics expressed in the making of socionatural landscapes. With this in mind, my project in this chapter is to illuminate the linkages between the bounding of Nature and the bounding of the Navajo, the mutually constituted, dialectical relationship between Navajo dispossession and the construction of wilderness, and therefore the intimate connection between the Navajo Generating Station and Navajo bodies.

Federal policies around nature and the Navajo has created the reservation as a national sacrifice zone, the function of which is to concentrate the burden of

environmental destruction on non-white, particularly Native American, populations and territory. As the creation of wilderness and National Parks has facilitated the whitening of these spaces and, since many National Parks border Native American lands and contain ancestral native lands, the racial contrast between spaces of wilderness in America and native spaces is stark. When it comes to racism against Native groups, the segregation of space through federal policy (namely, the establishment of reservations) combines with complex processes of environmental exploitation to constitute a conscious and malicious form of racism.

Much of the experience of Native Americans today is defined by life on reservations, a reality which began with the establishment of the reservation system in the mid 1800s. While the rich and extensive pre-reservation history of Native Americans also continues to define contemporary Native American culture and identity and is owed a much more in-depth exploration than I give here, my focus is on the formative federal violence, legislation and attitude in the mid-19th century which created the reservation system, further stripping Native Americans across the continental United States of their ancestral homelands. The Removal Act of 1830 required that tribes east of the Mississippi consent to sell their lands and move westward. This resulted in the “Trail of Tears,”¹⁶ in which those tribes that refused to go voluntarily were rounded up by the U.S. military and marched west (Miller 2012, 41). Many thousands died along these marches (ibid). While the Removal Act contributed to the ethnic cleansing of Native Americans, the Indian Appropriations Act, which encompasses a series of acts passed between 1851 and 1889, authorized the creation of the first reservations, purportedly to protect Native

¹⁶ The Trail of Tears is used specifically in reference to the forced removal of the Cherokee people, but this experience is not unique to the Cherokee (see Hooks and Smith 2004).

Americans in the West from the encroachment of white settlers and to “make peace.”¹⁷ But in effect this policy allowed the federal government to force tribes onto small and remote pieces of land (Miller 2012, 41). Thus, federal policies such as Indian Removal and the Reservation System facilitated the ethnic cleansing, relocation, dispossession and bounding of Native peoples. The effects of this process of colonization persist today.

The experience of colonization, while it affects every Native American tribe in the continental United States, is different for each tribe. The Navajo, a tribe of over 200,000 members today, were dispossessed and exiled by the United States in 1864 (Keller and Turek 1998, 186). With the Louisiana Purchase and the terms imposed on Mexico at the end of the Mexican-American war, the U.S. Federal Government claimed ownership of virtually all the land west of the Mississippi by via the Treaty of Guadalupe Hidalgo by 1848 (Hooks and Smith 2004). Violence and warfare between Mexicans, Navajos, and the U.S. government characterized the decade before the Civil War. The U.S. Army asserted control over these lands through a series of Indian Wars in which it forced western tribes onto reservation lands of the federal government’s choosing (Hooks and Smith 2004, 563). In one such “Indian War” designed to eliminate the Diné people, “The Kit Carson Campaign,” the U.S. Army attempted to establish control over what is now part of northeastern Arizona and western New Mexico (including the current Navajo and Hopi Nations) for ranching and mining (Churchill 2002, 135). This war reached a peak in 1864 when the U.S. government forcibly removed the Diné to the Bosque Redondo, a small reservation in New Mexico.

¹⁷ Hooks and Smith (2004).

During the Long Walk to Bosque Redondo, the Army forced approximately 8,000 Navajos to walk 200 miles to a small camp in eastern New Mexico where between a quarter to a half of the Diné died of disease, exposure and starvation in just two years¹⁸ (Morehouse 1996; Churchill 2002; also see Roberts 1997). The Diné spent four years in the Bosque Redondo, after which the United States federal government “relented and entered into a treaty with the Diné” in order to avoid a scandal¹⁹ (Churchill 2002, 136). The Treaty of 1868 designated a 3.5 million-acre reservation for the Diné in the northeastern corner of Arizona and crossing over into northwestern New Mexico.²⁰ The reservation, now over twenty-five thousand square miles—larger than Massachusetts, Rhode Island, New Hampshire, and Connecticut combined—covers much of the land the Diné have inhabited since they migrated into the Four Corners area five centuries ago (Keller and Turek 1998, 186). According to Morehouse,

This was the first instance in which Indian lands in the greater Grand Canyon were given new identity and substance through the drawing of boundaries. It was also the first instance in which the federal government set aside lands in the greater Grand Canyon region for political purposes, in this case, to protect them (by putting them in trust status) for the Navajo. (1996, 21)

But as Churchill, Miller and others have clearly demonstrated, the federal government’s intent in putting aside lands for reservations was not to “protect” them for tribes such as the Navajo, but rather to isolate Native Americans onto specified lands so that European settlers could continue to establish occupancy across the continent without coming into

¹⁸ The number that died at the Bosque Redondo is unclear. Morehouse (1996) notes that 2,000 Diné perished in the camp, a quarter of the total number, but provides no citation for this number. Churchill (2002, 135) however, citing Trafzer (1982), Thompson (1982) and Roessel (1973), states that over half—more than 4,000 Diné—perished in just the first two years at the camp.

¹⁹ According to Churchill (2002, 136), the government risked scandal with respect to the Bosque Redondo camp because it had recently executed Confederate Army officers for “comparable atrocities” against U.S. troops at prison Camps such as Andersonville.

²⁰ See appendix for a copy of the Treaty of 1868 (scanned from the Raymond Nakai Collection, Cline Library Special Collections, Northern Arizona University).

conflict with Natives. In the Navajo case, it is the tribe's own initiative and assertiveness in the negotiation process which allowed them to obtain a sizeable land base for the Navajo reservation (Keller and Turek 1998). This accomplishment can only be seen as one which the Diné achieved *despite* the federal government, not because of it.

According to Keller and Turek (1998), in 1923 the Navajo became one of the first tribes to “organize a government capable of expanding its land base and economy while resisting pressures from the United States;”²¹ some smaller tribes view the Navajo as the “Second Coming of the White Man” because of this initiative and assertiveness (186).

Though far from giving “new identity and substance” to the Navajo “through the drawing of boundaries,” the creation of the Navajo reservation was indeed a political achievement for the federal government in some ways (quoted in Morehouse, above).

According to Churchill, the federal agenda for reservation lands has always been clear:

the “ironically” barren, residual Native American land base in the United States and Canada are rich in natural resources—yet Native economies do not reflect the wealth of their lands because by keeping these natural resource assets pooled in reserved areas under “trust authority” the federal government is able to “channel” them at very low rates to “preferred corporations, using a ‘tribal’ administrative apparatus” (Churchill 2002, 239-40). In other words, its agenda for the reservation lands is nothing short of exploitation. Churchill further corroborates this argument by referring to Native American exploitation as a process of internal colonialism, which is worth quoting at length here:

²¹ It should be noted, however, that this tribal government, the Council of Elders, was disassembled about a decade later by the federal government and replaced with a system of representatives of United States choosing (Churchill 2002).

[The] boon [of channelling native assets] to the U.S. and Canadian economies has been enhanced by the governments' utilization of a self-proclaimed "plenary" power over Indians and Indian land to relax or dispense with environmental protection standards and job safety regulations, further lowering extraction and production costs while allowing certain of the more odious forms of production and waste disposal associated with advanced industrial technologies to be conveniently located—out of sight and mind of the mainstream public—in areas occupied primarily by native people [cites Kelly 1979 and Ruffing 1980]. In substance, we have been consigned to a status of "expendability" by federal, state and corporate economic planners in both Canada and the United States [cites Coates and Powell 1989]. From the perspective of North America's social, political and economic élites, the advantages of maintaining discrete Indian territories under trust control thus greatly outweigh any potential benefit accruing from from final absorption of these residual areas [cites Garrity 1980]. The history of conquest, militarily or otherwise, which has always marked the U.S./Canadian relationship to Native North America, has correspondingly transformed itself into a process of colonization, albeit of an "internal" variety peculiar to highly evolved settler states... (2002, 240)

Essentially, by maintaining reservations, the United States (and as Churchill argues, Canada as well) has successfully created lands where it can export industrial production without having to deal with environmental or labor standards—which it has done in many other countries, most notably China—where it can perform much of the 'dirty work' of modernization without suffering much consequence. Thus as I have brought up in previous chapters, reservations—and I speak specifically of the Navajo Nation—have become America's "national sacrifice zones."

For the Diné, reservationization in 1868 did return them to much of their previous homeland, but it also permitted their continued colonization through physical/territorial bounding. Up until the Long Walk the U.S. Army had been attempting to eliminate the Diné people as what the military perceived as a threat to ranching and mining concerns, burning Diné orchards and targeting their sheep herds in an effort to starve them into submission (Churchill 2002). While the Treaty of 1868 between the United States and the Navajo tribe states that "From this day forward all war between the parties to this

agreement shall forever cease,” that both the Government of the United States and the Indians “desire peace, and they now pledge their honor to keep it,” neither the treaty or any other formal agreement with the Navajos prevented the U.S. government and its commercial cohorts from exploiting Navajo lands—or bodies.

After the establishment of the reservation in 1868, it was discovered that much of the reservation lands were usable for grazing, and so the government consequently “adjusted” the boundaries westward into Arizona so that the eastern portion could be used for ranching and grazing (Churchill 2002). However, another people inhabited the area of Arizona that the boundaries were adjusted to include: the Hopi. Churchill explains that at first, there was no “particular problem” with this in many ways (2002, 136). The Diné, who lived dispersed across the land and based their economy on sheep herding, largely coexisted with the Hopi agriculturalists (ibid). But in 1882, when President Chester A. Arthur sought to provide Indian agent J.H. Fleming with a jurisdictional basis for helping Mormon missionaries kidnap Hopi children in order “to educate them,” carved out a portion of the lands reserved for the Diné for a Hopi reservation (Churchill 2002, 136).

The Hopi and Diné maintained this coexistence for a generation, but beginning in the 1920s it became clear that the remote, seemingly economically useless reservation lands were rich in mineral deposits. When the Standard Oil Company wanted to negotiate mineral leases with the Diné, and the Diné Council of Elders were unanimously opposed, Standard lobbied and federal authorities replaced the Council of Elders with a “Grand Council” made up of men educated off-reservation of U.S. choosing (Churchill 2002).

The new council then signed leases for mineral extraction, kick-starting the mining operations and igniting a Navajo-Hopi land dispute (ibid).

This dispute continues to affect the realities of Navajos and Hopis. As an article published in *The Arizona Republic* on February 9, 2015 states that the federal government's efforts to have the Navajo and Hopi share land “failed miserably, leading to one of the largest single relocation efforts in U.S. history” (“Lawmakers seek to wrap up costly Navajo-Hopi relocation program”). Thousands of Navajos and dozens of Hopis have since been transplanted into new homes. While the Navajo-Hopi dispute is generally framed as going back centuries and as an ethnic conflict, it can instead be traced to have origins in corporate and government plans to develop mineral extraction on Black Mesa (Lacerenza 1988). In the mid-1950s, when Arizona looked to Black Mesa’s coal reserves to solve its growing energy needs, a coalition of twenty-one utility companies implemented a plan to develop the area, which culminated in the 1974 Navajo-Hopi Land Settlement Act, under which the Bureau of Indian Affairs relocated 10-15,000 Navajos and dozens of Hopis (ibid). According to Lacerenza, “The idea that this relocation was caused by a land dispute between the Navajo and Hopi people is a distortion of reality, a diversion created by business interests in order to gain access to the land and its energy sources”²² (1988). While according to both Hopi and Paiute interpretations the Hopi were the first occupants of the area, then the Spanish, followed by the Diné, and then the white people, the Navajo and Hopi lived in relative coexistence until the creation of reservations (Keller and Turek 1998). The two tribes have occupied the same territory for centuries, as “Navajos tended to be more nomadic shepherders and Hopis mostly resided

²² Lacerenza’s article provides the background information for the 1974 Act, which covers the 1868 Treaty, the creation of Tribal Councils, the establishment of the Hopi Reservation and the Navajo-Hopi Joint Use Area, big business interests, land disputes and mineral rights, resettlement and relocation.

on three mesas towering above the surrounding desert” (The Arizona Republic 2015). But the Diné became a more settled people as they assimilated elements of Pueblo, Spanish, and American cultures such as “weaving, horses, sheep, horticulture, representative government, liquor, pickup trucks...” (Keller and Turek 1998). This brings me to yet another aspect of colonization that resulted from the bounding of the Diné: sedentarization.

The sedentarization of nomadic peoples is a critical tactic of the state in asserting its power over a territory (Grinde and Johnsen 1995; Scott 1998). In an attempt to sedentarize the nomadic Navajo and thus bound and control them, the government issued the Navajo 34,000 sheep and goats when the treaty was signed (“the idea was to make the Navajos self-sufficient shepherders and thus pacify them”) (Grinde and Johansen 1995, 112). American policy has historically been (and continues to be) biased firstly “in favor of the white rather than the red race” and secondly, in favor of the sedentary Pueblo populations versus the more mobile Navajos (Grinde and Johansen 1995, 110). Political theorist James Scott sees the efforts at sedentarization of peoples as the state’s attempt to make society legible (the better to tax, conscript, and prevent rebellion), and “legibility as a central problem in statecraft” (Scott 1998, 2). These efforts, instead of incorporating the Navajo into the United States citizenry, have imposed conditions on Navajo sovereignty which, while attempting to make Diné society legible, have also effectively *produced* “Third World” conditions on the reservation, a phenomenon of internal colonization which political ecologists like Schroder et al. (2006) are beginning to recognize.

In effect, the process of bounding the Diné allowed the federal government and its corporate ‘cronies’ to maintain control over the reservation lands and use them for natural

resource extraction. The resource wealth of the Navajo and Hopi tribes are therefore not reflected in their economies, but instead contributes to the development of American cities such as Phoenix and Tucson. Because native territory disproportionately bears the burden of environmental destruction, the original source of the destruction becomes dissociated and externalized (“out of sight out of mind”). Thus, it is the improvement of the standard of living for a few that is responsible for the impoverishment of the many. However, because of the entangled nature of the social and the natural, that which destroys the natural also destroys the social.

The environmental racism literature puts forth that disproportionate exposure of minority groups to pollution is largely due to the spatialization of race: the ways in which white privilege acts as an unconscious, spatial process of organization to locate environmental hazards (the product of capitalist expansion) in proximity to minority groups (Pulido 2000). But Native Americans have a unique situation from other minority groups because direct, violent force dictated the location of reservations (Hooks and Smith 2004, 562). Hooks and Smith (2004) introduce the concept of the “treadmill of destruction,” which implies that the by-products of capitalist expansion via consumption of natural resources and deposition of toxic waste has not only an unconscious, systematic racial dimension but also an intentional and coercive one.

The confinement of Native Americans to reservations was a method of controlling and subduing Native peoples, and constituted a major change in the landscape as many thousands of people were relocated to restricted, barren lands. In addition to several Native American reservations, the landscape of the Grand Canyon region contains national monuments, forests, wilderness areas and parks—all technically federal lands.

Thus, power-infused territorial processes created on the one hand spaces of national nature, of sublime wilderness, and on the other spaces of national sacrifice. These spaces are both highly racialized; “nature” in federally protected reserves such as the Grand Canyon are produced as white or Anglo spaces, while the reservations are produced as Native spaces. Racialized visitation patterns to national parks are a testament to this: as of 1999, 91% of park visitors, on average, were white (Littlejohn, National Park Service, personal communication 1998 and Floyd 1999 in Erikson, Johnson and Kivel 2009, 529). The bordering of both nature and Native America actively produce this racial polarization, and the national park has come to facilitate the tokenization and consumption of several Native cultures in the Grand Canyon region.

But because of the abstract and somewhat arbitrary nature of political borders, it is important to acknowledge the interlinked and processual, constructed nature of these seemingly separate territories (between Page, the Navajo Reservation, and wilderness areas such as the Grand Canyon). In other words, territoriality is a social, political, economic, cultural *process*, and “territorial configurations are not simply cultural artifacts, but political achievements” (Delaney 2005, 12). Barbara Morehouse, in her book *A Place Called Grand Canyon*, examines the greater Grand Canyon region as a “mosaic of spaces that represent different kinds of knowledge, different values, different goals,” in which territorial boundaries are dynamic and changing (1996, 3). And while she conveys that the boundaries between the five Native American reservations, Grand Canyon National Park and other lands managed by federal land management agencies and the states of Arizona and Utah are reflective of power relationships in the region, she bases her analysis on the assumption that society’s organization of geographical space

and the use of boundaries to delineate the edges or limits to those spaces is an ancient and fundamental process of human existence (Morehouse 1996, 6). Morehouse places her faith in the nation-state system of territorial bounding and argues that, in the context of “our contemporary national (and global) political and economic systems,” the nation-state system is the “best one available,” despite its “failure to permanently resolve disputes over territory and resources” (2012, 7). But this “ancient and fundamental process of human existence,” has a specific historical origin and lineage: namely, colonialism.

The reservationization of the Navajo is a case in point. The process of territorial bounding of the Diné has *produced* much more violence than it has ameliorated. Reservationization, rather than ‘freeing’ the Diné or paving the path to self-determination, has internally colonized the tribe. Over hundreds and thousands of years before Euro-American contact, Native Americans and their tribal governments had developed sustainable economic and property rights regimes, but today Native Americans and Native American communities are “mired in poverty and do not possess functioning economies” (Miller 2012, 3). Miller states that the “obvious” reason that tribal governments and communities have gone from being “relatively prosperous” and controlling most of the land and assets of the continental United States to today being impoverished is that “this was the express intention of Euro-American colonists and political leaders” (Miller 2012, 25).

Today, the maintenance of poverty on Native American reservations is cloaked by more diffuse forms of power. Dependency theory, which focuses on relations between

countries in the global South and North,²³ speaks to the mechanism through which the impoverishment of Native peoples has occurred. A theory originating in Latin America, it seeks to explain the economic situation of modern-day indigenous peoples, suggesting that resources flow from states in the “periphery” to those in the “core,” accumulating wealth and capital in the latter at the expense of the former (Miller 2012, 27). Critiques of this theory focus on the universal assumptions it makes about the relationship between capitalism and Native American culture, and the high level of abstraction it operates within where individual actors are subsumed by the workings of larger structures, making Native Americans appear as “pawns” to outside forces and stripping Native American people of their agency (Miller 2012, 29). But rather than focusing on how agency is lost within the rigid and dominating frameworks of oppressive structures, it is a small conceptual leap to instead focus on the ways in which Native bodies and communities are constantly navigating, negotiating, and resisting these deeply-rooted structures at the everyday level.

On the Navajo reservation, “nature” is a resource, something to be commodified, exploited. Next door, at the Grand Canyon “nature” is something entirely different—something sublime, to be revered, protected, seen and visited. The Grand Canyon and the Navajo Reservation represent different forms of nature, alternate incarnations of socionature. Both landscapes are constructed, shaped and consumed, albeit in very different ways. But “[t]ry to reduce, limit, pollute, alter, or transform the Grand Canyon, and environmentalists from California to Maine react as the nation did after Pearl Harbor” (Keller and Turek 1998, 131). On the reservation, however, natural resource

²³ As Schroeder, Martin and Albert (2006) point out, countries of the global South, or the “Third World,” are not always peripheral, geographically outside of “First World” countries of the global North, but are also found within the spatial heart of capitalism.

industries are embedded within the socionatural landscape, with the Navajo Generating Station (one of seven coal plants in Dinétah), the Black Mesa coal mines and eleven other industries as the mechanisms of degradation which are currently carrying out the destruction of Native America (Smith 2007). They provide amenities to faraway places like Phoenix, Tucson and parts of Nevada and California at the expense of the Navajo people living with the industries themselves at the everyday level. Through the creation of national sacrifice areas, advanced industrial technologies (the NGS, for example) continue to siphon the wealth and resources of Native America, moving the wealth elsewhere and concentrating the burden of industry on those who it continues to exploit.

Chapter 5

Towards a Politics of Nature, Difference, and a More Equitable Energy Future

In the last decade the NGS has been on the Environmental Protection Agency's radar. On July 28th, 2014 the EPA released a statement regarding the "final action" it is taking to clean up the NGS: the action implements the regional haze rule BART (Best Available Retrofit Technology), under the Clean Air Act, which requires that the operator of the NGS take steps to reduce nitrogen oxide emissions by either closing down one of its three units or by curtailing its electricity generation by a similar amount by 2019, and to meet a NO_x emission limit that is achievable with the installation of selective catalytic reduction (SCR) on two units in 2030 (U.S. EPA 2014). According to the EPA, the nitrogen oxides are currently impacting the visibility at 11 national parks and wilderness areas (which are "mandatory Class I Federal areas") (U.S. EPA 2014)²⁴. In the statement, the EPA references visibility as crucial to healthy tourism and the economic vitality of the states as well as local and tribal communities in the West (U.S. EPA 2014).

While the haze issue has received much attention from environmental groups, cleaning up and eventually, closing down the Navajo Generating Station remains a very complex issue. Hada Asidi, an independent organization of Navajo grassroots and former Navajo Nation leaders, released a statement in 2012 in the Navajo Times with respect to calls from the Grand Canyon Trust and Sierra Club to close down the NGS (Bluehouse et al. 2012). Hada Asidi stresses that while cleaner energy is a necessity of the future, many things need to be in place before the plant can close down: the Navajo economy and Navajo livelihoods are wrapped up in this facility. While it pollutes the air with toxic

²⁴ See map showing the Class I Areas near FCPP (Four Corners Power Plant) and NGS modelled for Regional Haze Rule BART, Figure 7, in Appendix A.

chemicals, and the extraction of coal from Black Mesa causes many environmental and social problems for the Navajo, the industry and the plant employ many Navajos and financially sustains a significant portion of the Navajo government. According to Hana Asidi, “if NGS were to shut down then Peabody shuts down. Then the Navajo Nation government will partially close. Some or most of the chapters will be affected as well. So it won't be just NGS that will shut down, there will be a major domino effect” (Bluehouse et al. 2012). Thus, in order to take action on the NGS, alternative energy sources must first be thoroughly planned and budgeted and personnel must be trained (ibid).

While the Navajo Generating Station and other coal plants on the reservation release toxic air pollutants, contributing to health issues, ozone and fine particle pollution, guzzle water in a desert region where community and individual access to water is already severely challenged, and depend on continued mining operations which have displaced thousands of Navajos and have severe environmental consequences, the NGS also helps finance the Navajo Tribal Council and employ many Navajo people living in Page. Thus, the relationship between the NGS and the Navajo Nation is complex and interdependent. Though many Diné citizens and non-Diné environmentalists wish to clean up the plant or eliminate it altogether, it is important to understand the social (including the historic, political and economic) factors which developed the Reservation's coal industry, helping to create the NGS.

I have traced some of the historical-geographical origins of the coal industry on the Navajo Nation, and specifically of the structure of the Navajo Generating Station through various material, natural, and spatially-embedded linkages, starting with water. The politics of water that dictate Arizonan's behaviors around water and understandings

of water have facilitated the creation of the NGS (as an alternative to the Grand Canyon Dams), and maintain the NGS as a source of electrical power for further infrastructural systems (the CAP) that conduct and divert water across the landscape of Arizona. The networks of distribution, flows and power which the NGS connects between power lines, water canals, cities, coal mines, man-made lakes, and so forth are embedded within relationships of power and difference, and function as a system to remove resources from the Navajo and deliver them to urban dwellers across the desert.

The material meanings and manifestations of the Navajo Generating Station in the landscape of Page, the Navajo Nation, and the Grand Canyon deserve much deeper attention than I could give them in this thesis. But through beginning to trace the power plant's linkages to water, Manson Mesa (what Page was before it became Page), the surrounding skies into which it emits highly mobile particulates and toxins, to a collective memory of dispossession and violent control over ancestral bodies, contemporary bodies, and perhaps future Navajo bodies, I have suggested that the plant plays a much more complex role in the environment of Northern Arizona than American wilderness preservationist rhetoric can portray, and that the scope of the current environmentalist discourse (the National Parks Service and the Sierra Club versions of it, at least) is deeply lacking.

I have brought up the need to interrogate how we think about 'nature' as separate from society. To expand on this: there is a need to place ourselves (as human subjects) back *within* nature—to complicate and re-entangle this relationship. This means understanding animate and inanimate environments—landscapes, bodies, water in its infinite flows and formations, soils, biota—as subjects taking part in a collective

performance of agency and also seeing our human selves as subjected, and as participants in this “collective performance” that *is* nature (Sundberg 2010, 332). Furthermore, in this reimagined nature in which “boundaries between subjects and objects are broken...the past and sometimes the future occupy the present” (Kosek 2006, 259). By implicating ourselves, and our histories (both known histories and unknown, omitted histories) within the lived material landscape, we can arrive at politicised, historicized, material geography from which we can approach nature and environmentalism. This means paying close attention to the politics of difference and the social reproduction of difference, which are thoroughly embedded and located in the landscape, from the perspective of a politics of nature. An environmentalism that focuses on conservation and the preservation of pristine, unpopulated wildernesses is wildly insufficient because it does not address the fundamental problem of the current environmental struggle: the ideological separation between what constitutes “nature” and what constitutes “society.”

I came to this project in an attempt to better understand why for some, certain spaces are valued (as “nature”) over others, and to investigate the disconnect between the discourse of conservation (which is dominated by the white upper class) and the everyday actions of those who practice/produce this discourse. This is evidenced by the different ways in which we consume and produce “nature” and conceive of spaces such as the Grand Canyon and the Navajo Nation as separate and distinct forms of nature that serve different capitalist functions. Turner argues that wilderness tourism, an “aesthetic campaign to preserve the wild,” or pristine nature, “has done as much harm as good” (1991, 336). Wilderness tourism is invested in preserving a de-peopled nature created via the violent removal and dispossession of Native peoples—and by continuing to ignore

this history of dispossession, the colonial violence only deepens. Furthermore, the notion that wilderness exists in opposition to society, as places of refuge from society to which we may always return, serves to justify the exploitation of the spaces we live in, allowing us to “give ourselves permission to evade responsibility for the lives we actually lead” (Cronon, 26). In many ways, this thesis (and those individuals and authors who have provided me with intellectual and emotional guidance on how to tackle the messy, tangled-up and maddening contradictions of the world) have set me on my path to becoming a “recovering environmentalist” (Kosek 2006, 180). It has opened the door into a more critical political ecology which has the potential to, to borrow from Kosek, “cultivate an awareness” of highly politicized, nationalized and racialized natures, “draw out the hidden labors and constitutive silences implicit in the making of wilderness,” and reconceptualize nature (181).

Struggles over water and nature in the Southwest, the Grand Canyon Dam controversy, the construction of the spatialities of Page, and the bounding of the Navajo (and relatedly, the bounding of nature) all contributed to the siting of the NGS just outside Page on the Navajo Reservation. By examining structures of power intersecting at the Navajo Generating Station and the ways in which they are contested and reproduced in space, we can begin to understand the relationship between nature, space and coloniality. In the same way that structures of racism organize space and bestow power in ways that privileges whiteness, colonialism organizes space in a way that privileges some forms of socionature over others. As Light Carruyo points out, there exists a “messy reality of a wealth of competing logics and practices, dynamically constituted and in dialogue with structural forces” within hierarchies of power over space and nature

(Carruyo 2008, 107). This is evident in the many attitudes towards the NGS. Some see it as an economic asset for the Navajo Nation, some as an economic liability, some as an environmental catastrophe—either a threat to the Grand Canyon, a pristine natural space, or a threat to the health and livelihoods of the Diné people and the socionatural communities it affects.

While I allude to these diverse attitudes, my discussion lacks a real exploration of these attitudes, positions, stories and voices. Relying heavily on the literature, as I have done, as well as legislative documents and leases, does little to tell the story from a people's perspective. A wealth of knowledge stands to be gained from interviews and from a more in-depth study of Navajo grassroots environmental and humanitarian organizations. Many of these organizations, such as Forgotten People, Save the Confluence, the Black Mesa Water Coalition, Diné CARE, the Just Transition Coalition and the collective Diné Water Rights Committee are working towards a healthier, more independent Navajo nation and a more equitable energy future. These are the voices that challenge the ideological separation between nature and society and assert the agency Navajo land and livelihoods on an everyday basis. There is a need to turn a critical eye to nationalistic environmental groups such as the Sierra Club, state agencies like the Department of the Interior and the Bureau of Reclamation, and to look to the individuals and organizations who deal with the everyday reality of colonial policies to guide action and activism (those who are *not* on the receiving end of economic, cultural/racial, or political power).

This does not have to start on the Navajo reservation. In fact, those areas of the so-called “core” are the areas which need to do the most work to expose the tensions held

within everyday actions (in things as mundane as mowing the lawn or driving to work). How are such daily practices—and this includes activities in “nature”—political; what are their material histories, their lineages? As Robbins (2012, 133) so eloquently articulates, “It is not enough to worry about what we do, or even why we do it, but rather how we are alienated from the sources of our own intimate fears.”

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Appendix A: Maps and Figures

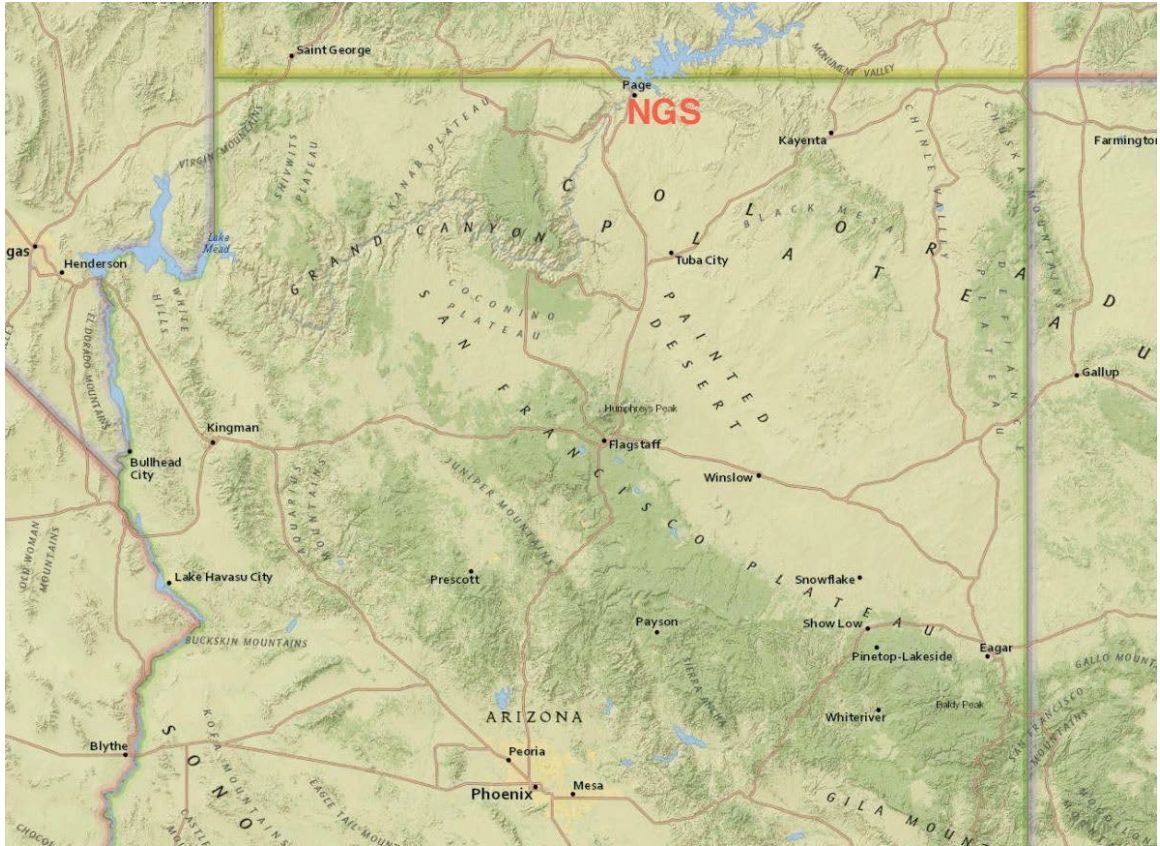


Figure 2: Map of Northern Arizona (National Geographic)

SHOULD WE ALSO FLOOD THE SISTINE CHAPEL SO TOURISTS CAN GET NEARER THE CEILING?

EARTH began four billion years ago and Man two million. The Age of Technology, on the other hand, is hardly a hundred years old, and on our time chart we have been generous to give it even the little line we have.

It seems to us hasty, therefore, during this blip of time, for Man to think of directing his fascinating new tools toward altering irrevocably the forces which made him. Nonetheless, in these few brief years among four billion, wilderness has all but disappeared. And now these:

- 1) There are proposals before Congress to "improve" Grand Canyon. Two dams would back up artificial lakes into 148 miles of canyon gorge. This would benefit tourists in power boats, it is argued, who would enjoy viewing the canyon wall more closely. (See headline). Submerged underneath the tourists would be part of the most revealing single page of earth's history. The lakes would be as deep as 600 feet (deeper for example, than all but a handful of New York buildings are high) but in a century, silting would have replaced the water with that much mud, wall to wall.

There is no part of the wild Colorado River, the Grand Canyon's sculptor, that would not be maimed.

Tourist recreation, as a reason for the dams, is in fact an afterthought. The Bureau of Reclamation, which has backed them, has called the dams "cash registers." It expects the dams would make money by sale of commercial power.

They will not provide anyone with water.

- 2) In Northern California, four lumber companies have nearly completed logging the private virgin redwood forests, an operation which to give you an idea of its size, has taken fifty years.

Where nature's tallest living things have stood silently since the age of the dinosaurs, much further cutting could make creation of a redwood national park absurd.

The companies have said tourists want only enough roadside trees for the snapping of photos. They offered to spare trees for this purpose, and not much more. The result would remind you of the places on your face you missed while you were shaving.

- 3) And up the Hudson, there are plans for a power complex—a plant, transmission lines, and a reservoir near and on Storm King Mountain—effectively destroying one of the last wild and high and beautiful spots near New York City.
- 4) A proposal to flood a region in Alaska as large as Lake Erie would eliminate at once the breeding grounds of more wildlife than conservationists have preserved in history.



- 5) In San Francisco, real estate interests have for years been filling a bay that made the city famous, putting tract houses over the fill; and now there's a new idea—still more fill, enough for an air cargo terminal as big as Manhattan.

There exists today a mentality which can conceive such destruction, giving commerce as ample reason. For 74 years, the Sierra Club (now with 46,000 members) has opposed that mentality. But now, when even Grand Canyon is endangered, we are at a critical moment in time.

This generation will decide if something untrammelled and free remains, as testimony we had love for those who follow.

We have been taking ads, therefore, asking people to write their Congressmen and Senators; Secretary of the Interior Stewart Udall; The President; and to send us funds to continue the battle. Thousands have written, but meanwhile, Grand Canyon legislation still stands a chance of passage. More letters are needed and much more money, to help fight the notion that Man no longer needs nature.*

David Brower, Executive Director
Sierra Club
Mills Tower, San Francisco

Please send me more details on how I may help.

Here is a donation of \$_____ to continue your effort to keep the public informed.

Send me "Time and the River Flowing," famous four color book which tells the complete story of Grand Canyon, and why T. Roosevelt said, "leave it as it is." (\$25.00)

Send me "The Last Redwoods" which tells the complete story of the opportunity as well as the destruction in the redwoods. (\$17.50)

I would like to be a member of the Sierra Club. Enclosed is \$14.00 for entrance and first year's dues.

Name _____

Address _____

City _____ State _____ Zip _____

*The previous ads, urging that readers exercise a constitutional right of petition, to save Grand Canyon, produced an unprecedented reaction by the Internal Revenue Service threatening our tax deductible status. IRS says the ads may be a "substantial" effort to "influence legislation." Undefined, these terms leave organizations like ours at the mercy of administrative whim. (The question has not been raised with any organizations that favor Grand Canyon dams.) So we cannot now promise that contributions you send us are deductible—pending results of what may be a long legal battle.

The Sierra Club, founded in 1892 by John Muir, is nonprofit, supported by people who, like Thoreau, believe "In wildness is the preservation of the world." The club's program is nationwide, includes wilderness trips, books and films—as well as such efforts as this to protect the remnant of wilderness in the Americas. There are now twenty chapters, branch offices in New York (Biltmore Hotel), Washington (Dupont Circle Building), Los Angeles (Auditorium Building), Albuquerque, Seattle, and main office in San Francisco.

Figure 3: Grand Canyon Battle Ad 1966 (Sierra Club Vault, accessible online at valut.sierraclub.org)

NAVAJO GENERATING STATION: ARIZONA'S DIRTIEST COAL PLANT

The 2,250-megawatt Navajo Generating Station, near Page, Arizona, is the largest and dirtiest coal plant in the state. People who live nearby are surrounded by pollution blown from the stacks, which can trigger asthma attacks and contribute to other breathing problems.

Clean Air Task Force estimates that pollution from Navajo Generating Station contributes to 16 premature deaths, 25 heart attacks, 300 asthma attacks, and 15 asthma emergency room visits each year, with total annual health costs of over \$127 million.

The Navajo Generating Station is less than 12 miles from Grand Canyon National Park. When the wind blows toward the canyon, the coal plant becomes a major source of industrial haze in the park. When the wind blows other directions, Navajo's emissions pollute ten protected parks and wilderness areas throughout the Southwest, including Mesa Verde and Canyonlands national parks.

The Navajo coal plant is also the largest single source of climate-disrupting pollution in Arizona, and the eighth largest single source in the United States. To avoid contributing further to public health problems, as well as to mitigate hotter temperatures and drought in the Southwest (which are exacerbated by climate disruption), the Navajo Generating Station must be cleaned up now and

"WE KNOW THE EARTH IS WARMING. WE KNOW PEOPLE ARE CAUSING IT. ARIZONA IS GROUND ZERO FOR CLIMATE CHANGE."

Jonathan Overpeck, PhD,
Nobel Prize-winning climate scientist and co-director,
Institute of the Environment, University of Arizona



Tribal residents near the Navajo Generating Station — including Sally Young (in wheelchair) and her family — suffer from health problems like asthma attacks that are attributed to the coal plant. One family member holds a picture of her daughter, who has spina bifida and has to live with assisted care in Phoenix.

ultimately, replaced by clean energy such as solar and wind power.

The federal Clean Air Act requires that coal plants be cleaned up to protect human health. Accordingly, the Navajo coal plant's pollution must be controlled. In the 1990s, the plant's owners added pollution-control equipment to reduce sulfur dioxide by at least 90 percent. Additional controls are now needed for nitrogen oxide (NOx), soot, and airborne toxics such as mercury to reduce haze and protect people from respiratory illnesses, asthma attacks, and neurological damage.

Pollution cleanup is affordable, and the people of Arizona, the Navajo Nation, and the rest of the

Figure 4: Navajo Generating Station: Arizona's Dirtiest Coal Plant (Sierra Club)



Figure 5: Page, Arizona during dam construction (Powell Museum 2015)

Colorado River Compact, 1922

The States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, having resolved to enter into a compact under the Act of the Congress of the United States of America approved August 19, 1921 (42 Statutes at Large, page 171), and the Acts of the Legislatures of the said States, have through their Governors appointed as their Commissioners:

W.S. Norviel for the State of Arizona,
W.F. McClure for the State of California,
Delph E. Carpenter for the State of Colorado,
J.G. Scrugham for the State of Nevada,
Stephen B. Davis, Jr., for the State of New Mexico,
R.E. Caldwell for the State of Utah,
Frank C. Emerson for the State of Wyoming,

who, after negotiations participated in by Herbert Hoover appointed by The President as the representative of the United States of America, have agreed upon the following articles:

ARTICLE I

The major purposes of this compact are to provide for the equitable division and apportionment of the use of the waters of the Colorado River System; to establish the relative importance of different beneficial uses of water, to promote interstate comity; to remove causes of present and future controversies; and to secure the expeditious agricultural and industrial development of the Colorado River Basin, the storage of its waters, and the protection of life and property from floods. To these ends the Colorado River Basin is divided into two Basins, and an apportionment of the use of part of the water of the Colorado River System is made to each of them with the provision that further equitable apportionments may be made.

ARTICLE II

As used in this compact-

(a) The term "Colorado River System" means that portion of the Colorado River and its tributaries within the United States of America.

(b) the term "Colorado River Basin" means all of the drainage area of the Colorado River System and all other territory within the United States of America to which the waters of the Colorado River System shall be beneficially applied.

(c) The term "States of the Upper Division" means the States of Colorado, New Mexico, Utah, and Wyoming.

(d) The term "States of the Lower Division" means the States of Arizona, California, and Nevada.

(e) The term "Lee Ferry" means a point in the main stream of the Colorado River one mile below the mouth of the Paria River.

(f) The term "Upper Basin" means those parts of the States of Arizona, Colorado, New Mexico, Utah, and Wyoming within and from which waters naturally drain into the Colorado River System above Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the System above Lee Ferry.

(g) The term "Lower Basin" means those parts of the States of Arizona, California, Nevada, New Mexico, and Utah within and from which waters naturally drain into the Colorado River System below Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the System below Lee Ferry.

(h) The term "domestic use" shall include the use of water for household, stock, municipal, mining, milling, industrial, and other like purposes, but shall exclude the generation of electrical power.

Figure 6 Colorado River Compact 1922 (usbr.gov)

1 of 1 DOCUMENT

ARIZONA v. CALIFORNIA ET AL.

No. 8, Original

SUPREME COURT OF THE UNITED STATES

376 U.S. 340; 84 S. Ct. 755; 11 L. Ed. 2d 757; 1963 U.S. LEXIS 2417

March 9, 1964, Decree entered

June 3, 1963, Decided

SUBSEQUENT HISTORY: Amended by Arizona v. California, 383 U.S. 268, 86 S. Ct. 924, 15 L. Ed. 2d 743, 1966 U.S. LEXIS 2995 (1966)

Amended by, Opinions combined at Ariz. v. Cal., 2006 U.S. LEXIS 2703 (U.S., Mar. 27, 2006)

PRIOR HISTORY: Arizona v. California, 373 U.S. 546, 83 S. Ct. 1468, 10 L. Ed. 2d 542, 1963 U.S. LEXIS 2418 (1963)

DISPOSITION: Decree carrying into effect this Court's opinion of June 3, 1963, 373 U.S. 546.

CORE TERMS: mainstream, consumptive, acre-feet, decree, quantity, river, diversion, irrigation, satisfaction, reservation, annual, perfected, lands reserved, underground, tributaries, stream, user, acre, dams, diversion of water, water sources, delivery, establishment, apportioned, exceeding, diverted, treaty, forest, uses of water, separately

JUDGES: Black, Douglas, Clark, Harlan, Brennan, Stewart, White, Goldberg; Warren took no part in the consideration or decision of this case.

OPINION

[*340] [***757] [**755] IT IS ORDERED, ADJUDGED AND DECREED THAT

I. For purposes of this decree:

(A) "Consumptive use" means diversions from the stream less such return flow thereto as is available for consumptive use in the United States or in satisfaction of the Mexican Treaty obligation;

(B) "Mainstream" means the mainstream of the Colorado River downstream from Lee Ferry within the United States, including the reservoirs thereon;

(C) Consumptive use from the mainstream within a State shall include all consumptive uses of water of the mainstream, including water drawn from the mainstream by underground pumping, and including, but not limited to, consumptive uses made by persons, by agencies of that State, and by the United States for the benefit of Indian reservations and other federal establishments within the State;

(D) "Regulatory structures controlled by the United States" refers to Hoover Dam, Davis Dam, Parker Dam, Headgate Rock Dam, Palo Verde Dam, Imperial Dam, Laguna Dam and all other dams and works on the mainstream now or hereafter controlled or operated by the United States which regulate the flow of water in the mainstream or the diversion

Figure 7: Arizona v. California, 373 US 546, (1963)