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The Economics of Dam Building: Nez Perce Tribe and Global-Scale Development

Benedict J. Colombi

Dam building in North America is nothing new. For example, the damming of the rivers of the American Southwest transformed flood-water farming communities of great antiquity, and dams along the Missouri River contributed to reductions in Native homelands and the relocation of thousands of people and their families. The construction of the Kinzua Dam on the Allegheny River flooded ten thousand acres of reservation land and removed six hundred Seneca people from their homes. The damming of rivers throughout Northeast North America, from the colonial period to the twentieth century, led to significant reductions in salmon and impacted a centuries-old way of life.¹

In *King of Fish: The Thousand-Year Run of Salmon*, David Montgomery weaves together the decline of salmon as a “story of changing landscapes.” Montgomery acknowledges that “the low human population density and high salmon abundance (as in the Pacific Northwest, the ratio of salmon to people was about 1,000 to 1) leads most researchers to conclude that Native American salmon fishing had positive impacts on the resource as a whole. Clearly, it was sustainable to the degree that both salmon and salmon-eating people populated the region for millennia.”²

In the Pacific Northwest’s largest watershed, the Columbia basin, migrating salmon renewed indigenous peoples with as many as ten to sixteen million salmon entering the river each year.³ During annual migrations, returning

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salmon brought nutrients and energy from the ocean to upstream communities, nourishing diverse groups of Sahaptin-, Salishan-, and Chinookan-speaking peoples.⁴

In 1805, on the banks of the Columbia River, Lewis and Clark observed that the rivers of the Northwest were “boiling and whirling in every direction,” thereby witnessing the river’s undammed abundance. They also recognized the energy of places like Celilo Falls on the Columbia River and the great salmon runs of the Northwest. The environmental historian Richard White describes the Columbia River as an organic machine, “an energy system which, although modified by human interventions, maintains its natural, its ‘unmade’ qualities.”⁵ What White’s descriptions tell us more broadly is that dam building is part of the larger pattern of events that have played out over and over again on most of the world’s great rivers.

Prior to dams, the Klamath River supported the third-largest run of salmon on the West Coast, next to the Columbia and the Fraser Rivers. The dams, which were built during the mid-twentieth century, have caused great harm to the Hupa, Karuk, Klamath, Modoc, and Yurok tribes and continue to be a source of change and uncertainty.⁶ In British Columbia, dams built during the 1950s and 1960s have impacted First Nation communities—entire villages were moved, graveyards were displaced and destroyed, and there were subsequent years of economic hardship.⁷ More recently, government officials approved a plan to build a large-scale hydrodevelopment project on Canada’s Peace River in 2009. Council of Treaty 8 chiefs responded in opposition, stating that the dam, in combination with existing mining, forestry, and oil and gas projects, would cause significant and abrupt change.⁸

This article, therefore, considers the economics of dam building and global-scale development in the Nez Perce watersheds of the Snake and the Columbia Rivers (fig. 1). First, I link the expansion of global capitalism to the rise of industrial agricultural and dam building on Nez Perce lands. Dam building has contributed to the growth of the global economy in dramatic ways. Yet dam building is responsible for significant costs to Nez Perce life, which is tied to salmon. Second, I examine powerful global forces, including the role of China as an emerging economy with ties to Nez Perce land and natural resources. One purpose in doing so is to make a call for new and innovative scholarship in the American Indian and indigenous studies literature that “unbonds” local realities and shows the connectedness of dam building and other development projects from a global-scale approach.

Rivers are often dammed in order to provide manageable waterways for the shipment of goods, and China is one country that relies on the services that dams provide in the Nez Perce watersheds of the Snake and the Columbia Rivers. The idea of transforming rivers in order to concentrate wealth and

Clearwater River, Lower Snake River, and Hells Canyon Subbasins

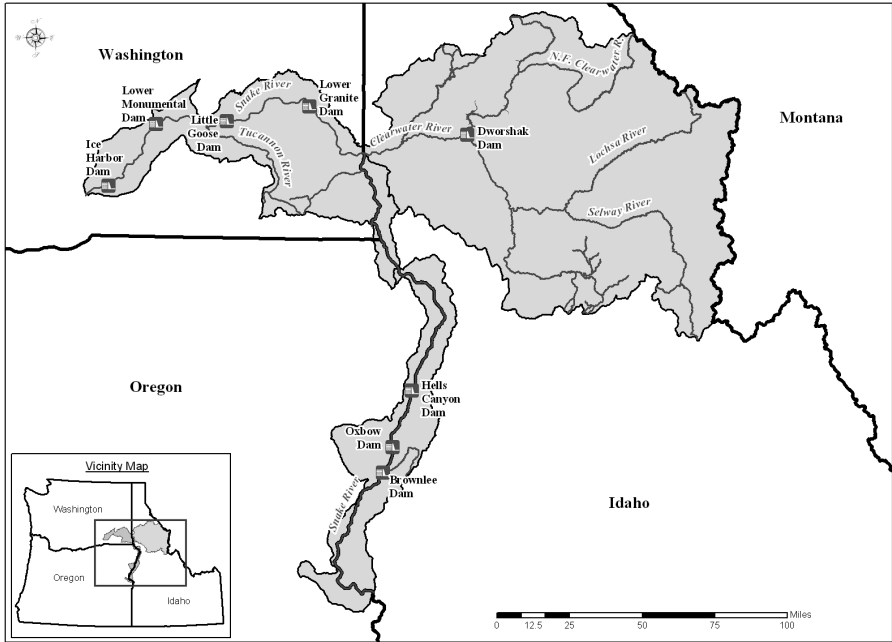


FIGURE 1. A total of eight dams in the Nez Perce watersheds of the lower Snake River subbasin. Map by J. Cronce, Nez Perce Tribe Land Services Program, 2005.

power runs counter to the idea of dams serving primarily as “public works projects for a public good.” Instead, dams in the Nez Perce homeland encourage the growth and the expansion of global markets. The movement of grain to global markets, however, is nothing new. Farmers cultivated wheat on Nez Perce lands as early as 1869, shipping the grain to Oregon’s Portland harbor by using steam-powered river barges along the Snake and Columbia waterways. Once there, ocean vessels brought the wheat to Liverpool, England, to feed legions of working-class poor.⁹

Anthropologist Eric R. Wolf, in his book *Europe and the People without History*, asserts that “the world of humankind constitutes a manifold, a totality of interconnected processes, and inquiries that disassemble this totality into bits and then fail to reassemble it falsify reality.” Wolf rightfully states that “if connections [are] everywhere, why do we persist in turning dynamic, interconnected phenomena into static, disconnected things?”¹⁰ Culture is therefore a dynamic process, involving endless reactions to changing environments and economic conditions.

This article includes an examination of Nez Perce knowledge systems and attachments to salmon and water in Nez Perce culture and life. I discuss Nez

Perce engagements in the watersheds of the Snake and the Columbia Rivers and show how Nez Perce people have shaped the history of the region and, in turn, how nature shapes Nez Perce culture and identity. Nez Perce foundations have always included a dynamic relationship among water, salmon, labor, ceremony, and place. Therefore, to know the Nez Perce is to understand a particular river system and the people who have changed it.

SALMON AND WATER AS FOUNDATIONS OF NEZ PERCE CULTURE

Nez Perce (*niimiipuu*) engagements with salmon and water can be traced to more than 400-plus human generations and 2,500 salmon generations.¹¹ Without salmon, the Nez Perce say, the river and their culture may die. From a material standpoint, salmon carry sources of carbon, nitrogen, phosphorus, and other nutrients that they bring with them from spending time in the ocean, feeding in the protein-rich waters of the northern Pacific. Salmon are also considered a keystone species: meaning that more than 140 organisms, including bears, insects, birds, and trees, are dependent on salmon for sustenance and perhaps for their own survival.¹²

Nez Perce culture and environment is built on a cultural keystone complex of water, land, salmon, game, and roots.¹³ These are the ideological and material foundations from which the Nez Perce fashion their distinct culture and society. Nez Perce interactions in the Snake and the Columbia Rivers are a matrix of labor, ceremony, and place told in terms of salmon (*léwliks*) and water (*kúus*).¹⁴

Nez Perce stories and the history of kin relations are also tied to salmon and water. Nez Perce identity is nested in the places that salmon live, places that salmon are caught, and sources of water emanating from cold springs, rivers, and lakes. The Nez Perce identify family, band, and tribe and their relations to land, water, and salmon. Social cohesion and basic values are enhanced and governed by these aforementioned relations.

The Nez Perce continually use fish and water for daily life and ceremony, and each, in combination, are necessary for the fulfillment of individual and community life. For the Nez Perce, these events include births; funerals; testimonial “giveaways” for the first anniversary marking an individual’s death; weddings; “name-giving” ceremonies; first salmon, first kill, and first roots ceremonies marking adulthood; and powwows and other celebrations, including dinners conducted to share and give thanks to the joy of life. The dinners, which are ritual “feasts” and nonritual meals, ideally include items unavailable for purchase in supermarkets, including *kúus*, chinook salmon (*nac’óox*), meat (elk, deer, moose, and bison) (*núukt*), roots (*qáaws*), and huckleberries (*cemíitx*). The Creator considers the procurement of these traditional foods as

a gift (*pínitini*) because these living beings gave up their lives so that the Nez Perce can continue to prosper.

The Nez Perce prefer salmon, in first place chinook, then sockeye, and lastly silver. Nez Perce also use other fish species, including eels (*hésu'*), sturgeon (*qíilex*), and steelhead trout (*héyey*); all anadromous fish; and other Native fish including cutthroat (*waw'álam*) and bull (*is'lam*) trout, northern pikeminnows, suckers, and chiselmouths. Nonnative fish species such as carp, walleye, and bass are rarely if ever used and are regarded as either culturally insignificant or unimportant. Store-bought fish is unacceptable. Chinook salmon from hatcheries is acceptable but not preferred. Fish other than chinook salmon is generally disliked.

Kúus, just like fish, has an ideological and material importance to Nez Perce cosmology and everyday survival. From an ideological perspective, water is home to powerful spirits, and materially, water is used for medicine and healing purposes. According to Nez Perce cosmology, eddies and confluences of free-flowing rivers and waterfalls are thought of as the homes of spirits. Similar to how the Nez Perce regard fish, not all water sources are considered the same or equal in importance and preference. Springs possess the purest, strongest, and most spiritually powerful water, and this water is used in the ritual sweathouse and poured on hot rocks. Cold, flowing water from high mountain streams is less preferred than spring water but is considered to be better than water that runs at lower elevations, with less velocity, and at higher temperatures.

Kúus and *léwliks* are essential to everything that is Nez Perce and are found in streams and rivers of great cultural importance. Basic values and beliefs in water and salmon are evident as moral instruction in Nez Perce traditional stories, such as “Coyote Breaks the Fish Dam at Celilo,” “The Maiden and the Salmon,” “How Salmon Got over the Falls,” and “Coyote and Salmon.”¹⁵ These stories illuminate the creation of the world and the beings that inhabit it and include places in the Columbia and Snake river system, from Celilo Falls on the mid-Columbia to the tributaries of the Snake River, containing the Palouse, the Tucannon, the Clearwater, the Grande Ronde, the Salmon, the Weiser, and the Payette Rivers in the Snake River basin. Except for above the lower falls on the Palouse River, all of these rivers and streams supported annual returns of salmon, and all of the subbasins, including the Palouse River, flourished with abundant springs, cold running water, waterfalls, and deep holes and eddies.

NEZ PERCE BEFORE GLOBAL CAPITALISM

Nez Perce society is rooted in a small-scale, highly egalitarian, and democratic society that was successfully living in the region when Lewis and Clark

arrived in 1805. The Nez Perce organized their society primarily to support and reproduce their households while safeguarding the environment. During the earliest times, Nez Perce subsistence required constant mobility and a broad utilization of subsistence resources.¹⁶ Population densities were low and organized into small-scale bands, which were linguistically organized and interspersed throughout the region by correlating watersheds or subbasins.

Undoubtedly, salmon returns at the end of the Ice Age were an unpredictable and unreliable food source. The environment then was one of retreating glaciers and massive flooding. Physical evidence indicates fluctuating and silty river conditions beginning about fourteen thousand years ago, and for the next five thousand years the climatic regime was one of extremes. Summers were characteristically warm and dry, and winters were unusually cold. About six thousand years ago, the Northwest climate cooled, offering an optimal environment for larger fish runs. Roughly two thousand years ago, the Nez Perce responded to a more stable environment and developed a variety of food-collecting strategies centered on the harvesting of salmon.

Several theories offer explanations as to how salmon became a primary food source. Many scholars argue that in order to utilize salmon, indigenous societies must have developed economies that invested in efficient fishing technologies and highly developed social organizations. This system was centered on the harvesting, procurement, and trading of salmon species. As a result, the Nez Perce developed a complex fishing technology to harvest species of chinook, coho, chum, and sockeye salmon; cutthroat, lake, Dolly Varden, and steelhead trout; and different varieties of whitefish, sturgeon, suckers, and lampreys. Estimates for precontact Nez Perce fish consumption range from five hundred to seven hundred pounds per adult, per year.¹⁷

Ultimately the Nez Perce use of fish resources is a matter of subsistence intensification, the building of extensive kinship networks, and the formulation of an expansive trade and commerce network.¹⁸ Coupled with the addition of the horse about AD 1700, the Nez Perce became a powerful tribal society in the interior Northwest, or Columbia Plateau. For example, the Nez Perce was the largest tribal society on the Columbia Plateau with population estimates of nearly six thousand by the late eighteenth century.¹⁹ Early Nez Perce society exemplified the smallest band-level condition, but late precontact Nez Perce practices centered on a complex and democratic system of communal housing, food storage, village life, named and ranked positions of leadership associated with the redistribution of resources, large raiding conglomerates, and encampments of more than one thousand people comprised of various aboriginal groups linking the Nez Perce symbolically and economically with other tribal societies entities on the plateau.

POSTCONTACT NEZ PERCE AND THE OPENING OF GLOBAL MARKETS

In 1805, Lewis and Clark and the Nez Perce met in the upper reaches the Clearwater River. This encounter signaled the early beginnings of Nez Perce interactions with global capitalism. It also led to the incorporation of nonstate people and spaces into a system governed not only by a larger nation-state but also mediated by a rapidly expanding global market. It is not surprising that, by 1813, the Nez Perce were actively trading furs with the North West Company on the upper Columbia River, resulting in considerable change to Nez Perce social and economic life. Fur-trading companies encouraged Nez Perce men to marry additional wives and become “chiefs.” Institutional shifts increased the pace regarding how pelts could be trapped, processed, and bought from Nez Perce producers and sold for greater profit to non-Nez Perce consumers. The fur industry depleted vast populations of beaver and other fur-bearing animals, and by the mid-1840s, there were few beaver remaining in region. The fur trade brought relative prosperity to a minority of Nez Perce, but in reality it was indirectly responsible for an unprecedented loss of Nez Perce people. Epidemics brought in by non-Nez Perce trappers ravaged various bands of Nez Perce, and by 1841, population estimates dwindled to two thousand.²⁰

The missionaries found relatively eager converts among the ailing Nez Perce. Throughout the nineteenth century, many Nez Perce died as a result of disease. Missionaries provided food and medical care to sickly Nez Perce Indians and, in turn, successfully converted large portions of the Nez Perce to Christianity. By the 1830s, Henry Harmon Spalding and Asa Bowen Smith had established successfully operating Presbyterian missions along the confluence of Lapwai Creek and the Clearwater River, and further upstream on the Clearwater River in Kamiah. The Christian missions strongly prohibited religious converts from engaging in any forms of Nez Perce culture or religion:

The following customs were proscribed by missionaries: polygyny; gambling; shamanism; tutelary spirit seeking; warfare; stealing; most ceremonials with their attendant drumming, dancing, singing, and costumes, especially the cults, which were regarded as devil inspired; and sex outside monogamous marriage. In their place the missionaries taught the tenets of Protestant theology, Christian marriage, attendance during religious instruction and on holy days, adoption of horticulture, sedentary living, literacy, and Bible reading.²¹

Non-Christian bands of Nez Perce resisted religious conversion and continued to practice ancient lifeways. However, the conversion of Christianity was part of a larger process of dominance and control and part of a larger external process of religious conversion and state-sponsored capitalism.

In addition to religious conversion, pressures to acquire Nez Perce land prompted the US government to respond with policies of removal and treaty agreements during the 1850s. The Treaty of 1855 established legal ties between the United States and the Nez Perce and dramatically reduced Nez Perce control over their homeland. The Nez Perce retained a smaller portion of homeland as reservation land and secured rights to hunt and fish on and off the reservation at all “usual and accustomed places.”²² Many Nez Perce were cognizant of the dilemma they faced: non-Indians would continue to settle Indian homelands, and due to the impending reality, the Nez Perce ceded large portions of their traditional homeland to reserve that their people remain a sovereign, independent, and autonomous nation. Article 3 of the 1855 treaty states,

The right of taking fish in all the streams where running through or bordering said reservation is further secured to said Indians; as also the right of taking fish at all usual and accustomed places in common with citizens of the Territory; and of erecting temporary buildings for curing, together with the privilege of hunting, gathering roots and berries, and pasturing their horses and cattle upon open and unclaimed land.²³

Subsequently, Idaho became a territory in 1863 and US officials renegotiated the 1855 treaty. The treaty was ratified in 1863, and Nez Perce land was substantially reduced from five million acres to roughly eight hundred thousand acres. In addition to a reduction of Nez Perce land, the worsening conditions of factionalism produced a schism within Nez Perce society.²⁴ Pro-Christian tribal members were pitted against non-Christian traditional factions. Acculturated forces decisively split the Nez Perce into antagonistic and polemic entities.

Hostilities continued to escalate, and by 1877 the Nez Perce War emerged as a weapon to “root-out” all nontreaty, nonacculturated factions of Nez Perce resistance. Battles were fought at Whitebird near the Salmon River and across the Bitterroot Mountains in the Big Hole Valley. US military policy was to kill all Indians—including women and children. This strategy appalled Nez Perce warriors because traditional warfare strategy never involved the direct taking of civilian lives.²⁵ Chief Joseph realized that his people could fight no more and surrendered forty miles from the Canadian border at the Bear Paw Battlefield in northern Montana. The survivors of Joseph’s band were eventually detained in Oklahoma, and further lives were lost due to the extreme heat of a foreign climate.²⁶ It was not until 1885 that Chief Joseph and his people were permitted to return to the Nez Perce homeland and reservation.

With most Nez Perce now confined to federal oversight and reservation life, the US government found a highly effective strategy to reduce communally

owned Indian land. Designed by federal policy makers, the Dawes Severalty Act of 1887 allotted each head of an Indian household 160 acres, individuals older than eighteen years of age were allotted eighty acres, and those under eighteen, who were mostly orphans, forty acres. The Dawes Act, or “allotment,” was a carefully crafted policy aimed at dividing and destroying communally owned land and traditional tribal relations. It also was designed to control spatially and assert Euro-American authority over Indian land and people.²⁷ This facilitated the replacement of Native land division and patterns of movement with ones that supported capital-intensive enterprise, privatization, and individual ownership.

During this period, Nez Perce populations were at an all-time low, thus large portions of collectively held Nez Perce property became available to non-Nez Perce individuals for purchase. Before 1800, the Nez Perce controlled nearly twenty-eight million acres of traditional homeland. However, after allotment, the Nez Perce received a monetary sum of \$1,626,222 in exchange for roughly half a million acres of unallotted land, or nearly 75 percent of the reservation. Moreover, of the reservation land, the Nez Perce were left with a staggering 204,587 acres or 27.4 percent of the land base within the reservation after allotment.²⁸ By 1975, Indian-owned land on the Nez Perce Reservation was down to a meager eighty thousand acres. More important, the Dawes Act also signaled the acceleration of a fixed-grain, agricultural economy.

DEVELOPMENT OF INDUSTRIAL AGRICULTURE AND DAM BUILDING

Christian converts were the first Nez Perce to engage in a small-scale, agrarian economy. Spalding’s “ambitious and sometimes cruel driving of the Nez Perce to secure his own ‘civilized’ ends” had successfully turned Christianized Nez Perce into Euro-American agriculturalists.²⁹ The new work ethos of domestication and sedentary living fueled the production of Nez Perce garden vegetables, eggs, cattle, and horses. Gardens were located along the fertile bottoms of the Clearwater, the Salmon, and the Snake Rivers. The domesticated food products were not only consumed at various missions but also were sold to settlers, mostly miners, who began trespassing in large numbers through the Nez Perce Reservation after the Treaty of 1855. With the barter and sale of tribally produced agrarian products, the Nez Perce became quite astute at acquiring specific articles of the capitalist economy (for example, alcohol, guns, and tobacco). Where Lewiston, Idaho, is located today, the Nez Perce managed several garden plots, domesticated animal pastures, and feed lots. Moreover, the Nez Perce exacted tolls along all major migratory routes leading to illegal

gold mines and non-Nez Perce settlements. Natural crossings of fallen logs were destroyed and replaced with Nez Perce-controlled toll bridges.³⁰

By the late nineteenth century, Nez Perce social conditions worsened and “this region, once abundant with wild game, fish, berries and roots, had been transformed into a settled territory, dotted with white town sites and farmsteads.”³¹ Most farms cultivated several varieties of fixed grains, including wheat, without irrigation. The Nez Perce began to emulate the agricultural techniques employed by the white farmers. Farming technologies of the late nineteenth century included the widespread use of large draft horses and the McCormick Harvester to plow the ground and harvest the grain. The Nez Perce were highly successful in using these animals to increase the productivity of their food crops yielded through small-scale farming. Furthermore, the energy inputs for farming at this level were relatively self-sufficient. The Nez Perce produced grain to feed their horses, and farm machinery was relatively simple. In essence, small farms were not only energy efficient but generated sufficient income and supported local communities for the maximum number of people.

The ability of non-Nez Perce farmers to gain access to markets and capital led to the disenfranchisement of Nez Perce farmers. Archie M. Phinney, a Nez Perce scholar writing on post-Dawes Act policies during the 1930s, suggests, “the efforts of the government to induce the Indians to participate in the industrial life of white men failed.”³² Thus non-Nez Perce agriculturalists acquired greater concentrations of land and capital and, in turn, were afforded the technologies and capital-inputs that improved the profitability of their farms.

Even so, many Nez Perce resisted the dominant ideologies of individualism and the salvation of labor in a capitalist system. Most Nez Perce remained fixated on collective group participation and traditional community life. The Nez Perce, who saw little value in working allotted lands through farming, transformed their individual allotments into a cash-generating system of market sales and leasing.

The Bureau of Indian Affairs handled all individual Indian and tribally owned trust lands by leasing agricultural properties to non-Nez Perce farmers. This situation provided the Nez Perce with short-lived economic gains and, in many cases, represented the only source of income for many individual Nez Perce. The money allowed some to purchase consumer goods and participate in global capitalism. Items for purchase included non-Native food commodities and manufactured goods. Phinney empathically states in his 1937 essay “Numipu among the White Settlers” that “the Numipu [Nez Perce] had become ‘agency’ Indians.”³³

The Dawes Act proved to be a complete failure on three levels. First, the federal government could not transcend traditional Native values of group

collectivity and community. Also, many Nez Perce were not enticed by concepts of individualism and the effort of making land more profitable through capital-intensive, fixed-grain agriculture. Second, the leasing of individual trust lands and the eventual sale of land converted to fee-simple title enabled the Nez Perce to relinquish remaining reservation lands and become a new class of land-poor Indians.³⁴ Third, the rapid development of commercial agriculture delivered great harm to the Native environment. Phinney reflected on the relationship of environmental degradation and the Dawes Act by stating:

White Men exploited the territory with a vengeance. Pasturelands were overgrazed, forests were clear-cut by lumber companies with no thought of reforestation, agricultural lands were wastefully farmed out, particularly Indian lands, for the leaseholder had no interest in maintaining the fertility of, or building up, the soil of lands that were his only temporarily. Lack of fertilization and proper summer fallowing soon decreased the productivity of farmlands and resulted in the decrease rental value of Indian lands. On the other hand, the cycles of depression of a capitalistic economy brought hard times for the white farmers. This meant that in some years the Indians received irregular and diminished payments of lease money or they could not rent their lands at all.³⁵

The Dawes Act essentially stripped the Nez Perce of large-scale landownership and prohibited many Nez Perce from competing in a twentieth-century agricultural economy. For example, by 1937 Nez Perce Indian-owned land was down to a mere 70,600 acres from the roughly eight hundred thousand acres reserved in the 1863 treaty.³⁶ By the advent of World War II this demographic situation intensified, leaving many Nez Perce “land-poor” while non-Nez Perce farmers operating on Nez Perce traditional lands grew increasingly “land-rich.”

DAM BUILDING AND GLOBAL CAPITALISM

The social and economic consequences of World War II produced the rise of industrial agriculture and large dams on the Nez Perce Reservation and off-reservation lands. The incentive to transform the region from a system of small-scale farms to large-scale agribusinesses was a combined effort predicated on economic growth and national defense. The key technological changes after 1940 included the replacement of self-sufficient farm-inputs of human labor and horses with fossil fuel-powered machinery and agricultural chemicals. Factory farming produced higher yields and tremendous surpluses. For example, lands under cultivation on the Nez Perce Reservation experienced a tripling of wheat-per-acre yields from 1910 to 1987.³⁷ Farmland intensification

destroyed more than two-thirds of the remaining small-scale farms and replaced them with fewer and more powerful large-scale farms.

Many Nez Perce suffered from the social and economic disparities produced during the postwar modernization process. By the mid-twentieth century, the Nez Perce faced an overwhelming presence of non-Nez Perce owning and controlling the majority of reservation land—a twentieth-century, post-Dawes Act phenomena. Moreover, poor white farmers and many Nez Perce lacked the financial ability to compete with the capital-intensive requirements of factory farming. Large-scale agricultural production required the use of fossil fuels and mechanized equipment. Combined with the increasing use of chemical-based fertilizers, farming became an economic impossibility for most Nez Perce and non-Nez Perce small-scale farmers. For example, the use of chemical fertilizers and fossil fuels were nonexistent on Nez Perce lands in 1910; however, by 1940 they comprised 31 percent of total farm inputs.³⁸

World War II also generated new demands for national defense and hydroelectricity. Before the war, the lower Snake River remained dam-free and railroads provided farmers with their primary mode of transporting grain to national and international markets. However, after the war, regional and global economic pressures to increase the shipment of grain by river barge prompted the US Army Corps of Engineers to build additional dams along the lowest reaches of the Snake River.

The Walla Walla District in southeast Washington would erect and manage dams on the lower Snake River, thus enabling growth in two sectors: commercial shipping and large-scale farming. Moreover, agricultural elites expanded profits by transporting agriculture commodities by river barge versus rail car or highway transport. In short, dams on the lower Snake River allowed the concentration of wealth and power, expanded national and global markets, created numerous violations of Nez Perce sovereignty, and negatively impacted remaining salmon populations.

After World War II, proponents argued that building more dams would stimulate the regional economy. They also pleaded that dams were in the interest of national defense. Thus an aggressive campaign was launched and prodam parties argued that the dams on the lower Snake River would supply Hanford with needed hydroelectric energy. In 1955, after a long-winded political battle, Congress appropriated the funds to begin constructing Ice Harbor Dam on the lower Snake River. By November 1961, the US Army Corps of Engineers began filling in the dam's pool, and by December of the same year, Ice Harbor generated its first source of hydroelectric energy.

The next two dams built on the lower Snake River were Lower Monumental and Little Goose. Located thirty miles upstream from Ice Harbor, Lower Monumental began to produce hydropower in 1969. Shortly thereafter, the

Walla Walla District of the Army Corps of Engineers allocated nearly \$72 million to a private construction company to build Little Goose Dam. The 2,600-foot-long concrete structure caused enough backwater to flood over Little Goose Island, thereby giving the dam its name. Lower Monumental and Little Goose dams were built within two years of each other, and the fourth and final dam, Lower Granite, would take an additional five years to complete.

Lower Granite Dam was constructed during a time of heightened American Indian sovereignty and national environmental consciousness. Protesters increasingly questioned the long-term viability of dams and remained concerned about the impact of dams on the salmon of the Columbia and the Snake Rivers. Nez Perce tribal leaders and concerned biologists pointed to the harmful effects of dams on salmon. Nevertheless, opposition to dam building could not prevent Lower Granite Dam from being completed. In 1975, Lower Granite generated its first source of hydropower and enabled Lewiston to become the first inland seaport in the Pacific Northwest. Nez Perce tribal leaders pointed out that the dams violated the sovereign status of the salmon treaty tribes on the Columbia River, negating salmon as an explicit reserved right.

It is not surprising that by 1975 the Nez Perce and other Columbia basin tribes began pushing for the removal of all four dams on the lower Snake River. Since time immemorial tribal communities had revered salmon and healthy watersheds as a paramount symbol of their cultural and religious identity and general welfare. This relationship is built upon three main elements: salmon as food, as an item of trade, and as a necessary component of religious expression.

Regarding the 1855 treaty, the Nez Perce retained the “right of taking fish” at all usual and accustomed fishing sites. A century later, the US Supreme Court (*Washington v. Washington State Commercial Passenger Fishing Vessel Ass’n.*, 443 U.S. 658 [1979]) ruled that the original treaties entitled Northwest tribes to one-half the total harvest of salmon in the Columbia basin and approved the use of modern fishing equipment: “Without this technology, the rulings recognizing treaty fishing rights would have been hollow victories: in these times of intensified fishing pressure and dwindling runs of fish due to dams and other developments in the watersheds, modern gear is a necessity if the tribes are to obtain the amount of fish to which they are entitled under court-ordered apportionment.”³⁹ Ultimately, current Nez Perce policies are based on the belief that restoring salmon to harvestable levels is the preferred solution to federal treaty obligations.

As recent as May 2010, the Nez Perce tribe, the state of Oregon, and a coalition of conservation and fishing groups contend that the federal strategy of assuring the continuation of the hydrosystem jeopardizes the survival of salmon and steelhead under the Endangered Species Act. A recent article

states, "In legal briefs filed Oct. 29 they [Nez Perce and Spokane tribes] ask U.S. District Court Judge James A. Redden to declare the 2008 BiOp and the 2010 supplemental BiOp illegal and require federal agencies to go back to the drawing board."⁴⁰ A biological opinion (BiOp) is issued under the Endangered Species Act, with the primary goal being to ensure that any federal action is not likely to reduce the survival and recovery of the listed species. The filings are the latest challenge to a plan by the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service to protect listed salmon and steelhead while maintaining dams in the federal Columbia River power system.

During the 1990s, Columbia basin tribes refused on religious grounds to estimate an appropriate monetary amount, but repatriation dollar value may be between \$6 and \$12 billion. The Institute for Fisheries Resources study *The Cost of Doing Nothing* used widely accepted economic methods of calculating a net asset value of \$13 billion for Columbia basin salmon.⁴¹ In addition to these repatriation figures, cultural loss considers several proposals to repatriate off-reservation Nez Perce land, like those located in Oregon's Willowa Valley, home to Chief Joseph's band. In 2009, Vera Sonneck, who directs the Cultural Resource Program for the Nez Perce tribe, viewed the Willowa Valley as "almost heaven, the place where her Nez Perce ancestors came to hunt, fish and seek visions."⁴²

In combination with land, Snake River salmon account for half of the total salmon migrating in the Columbia basin, thus a net asset value for salmon has been valued at \$6.5 billion. The Columbia basin tribal claim could also include the value of lost land. By the late 1800s, Northwest Indian tribes ceded more than six million acres of communally managed land to the United States. The Institute for Fisheries Resources attached a value of \$2,000 per acre and estimates the value of tribal land cessations to be an additional \$12 billion.⁴³ In short, if harvestable fish stocks are not restored, the federal government and its taxpayers could be responsible to compensate the tribes for roughly \$23 billion.

The Nez Perce are establishing several legal precedents in their fight for healthy watersheds and returning salmon. Daniel McCool, a political scientist, states in *Native Waters: Contemporary Indian Water Settlements and the Second Treaty Era* that the Nez Perce and the federal government have "spent \$10 million preparing their water case for trial and will spend an additional \$2 million per year in the years ahead."⁴⁴ The two major legal battles facing the Nez Perce tribe today are securing adequate flows of water in the Snake River basin and maintaining salmon as a reserved right in the context of a fiduciary trust relationship between the Nez Perce tribe and the federal government. Nez Perce elder Levi Holt comments on the importance of water, "The tribes have always treated water as a medicine because it nourishes the life of the

earth, flushing poisons out of humans, other creatures, and the land. We know that to be productive, water must be kept clean. When water is kept cold and clean, it takes care of the salmon."⁴⁵ In summary, the Nez Perce support free-flowing rivers, because without a healthy habitat for anadromous fish, salmon fail to reproduce and survive on their own.

At present, the Nez Perce continue to push back the collapse of salmon in the Columbia basin. Prior to Euro-American settlement, ten to sixteen million adult salmon entered the river each year. Of those, roughly eight to ten million were adult chinook salmon. During the early summer, large runs of eighty-pound chinook salmon, appropriately named "June Hogs" by early settlers, would enter the Snake River each year. For countless generations the Nez Perce fished for these giant salmon, but now the June Hogs are extinct. Fishery biologists failed to acquire hatchery stocks prior to the June Hogs total disappearance from the Columbia and Snake river basins. In 1993, remaining chinook salmon counts were at an all-time historical low. Only 450,000 fish returned to the Columbia River basin and, during that same year, roughly 250,000 or half of the total run of chinook salmon were harvested.⁴⁶

As a result, large sums of money are invested to restore salmon throughout the Pacific Northwest. On the Columbia River, this type of policy has resulted in skyrocketing costs with few tangible results. A retired Army Corps of Engineers fishery biologist stated that roughly \$8 to \$10 billion has already been spent to improve fish passages on the lower Snake River.⁴⁷ A fish screen was put in at McNary Dam to facilitate smolts returning to the Pacific Ocean. This improvement cost the federal government and US taxpayers roughly \$18 million.

The examination of the costs and benefits of dams in the Columbia basin, and more specifically the four dams on the lower Snake River, is critical. At closer inspection, evidence of large-scale agribusinesses and related industries suggests that a minority of elite individuals and the institutions that they direct benefit disproportionately from the dams. The nonelite majority (that is, citizens) pays enormous costs for the perceived benefits derived from dam development (for example, recreation and jobs). To be sure, large-scale agribusinesses, hydroindustries, and global institutions in support derive exponential sources of social power that in turn are deciding the fate of salmon and dependent communities in the Nez Perce watersheds of the Snake and the Columbia Rivers.

Columbia basin dams allow the river-barge industry to ship agricultural commodities (for example, wheat, barley, and lentils) in larger quantities and at greater subsidized rates than by highway or railroad transportation. According to an agricultural economist at Washington State University, 92 percent of the total amount of grain produced in the Palouse region is exported and



FIGURE 2. "SAVE OUR DAMS" banner on the side of a barn located on the Palouse Prairie of eastern Washington. Photo by author, 2003.

consumed globally.⁴⁸ With the dams breached, the cost of shipping grain by railroad and highway increased by 8 to 10 percent per bushel. Unless the federal government subsidizes these costs, farmers operating on and off the Nez Perce Reservation will pay additional costs to ship agricultural products out of the region. Powerful agricultural individuals and the institutions they direct have transformed small-scale, regional farming by purchasing or leasing most farmland. Large-scale farmers, who profit enormously from the construction of the lower Snake River dams, have organized opposition with the "Save Our Dams" campaign (fig. 2).

In addition to the agricultural elite, Bonneville Power Administration (BPA) and the Northwest Power and Conservation Council (NWPCC) have vested interests in maintaining the Columbia basin dams. The Columbia and Snake river system produces more hydroelectricity than any other river system in the United States. During the 1930s, Roosevelt's New Deal administrators struggled over whether the US Army Corps of Engineers, the Bureau of Reclamation, or an independent agency would be the sole marketers of energy produced from Columbia basin hydroelectric dams—they eventually settled on the BPA. Since the late 1930s, the BPA has marketed all electricity produced

by federal dams in the Pacific Northwest. The BPA's apparent monopoly of the market includes the four lower Snake River dams. The institutional power or reach of the BPA overlaps entire river basins, including local, state, and federal land-managing agencies.

In 1979, congressional leaders of the Northwest persuaded Congress to pass the Northwest Power Act. This act gave the BPA full authority to "protect, mitigate, and enhance fish resources affected by hydroelectric projects."⁴⁹ In turn, the act also required the BPA to guarantee an adequate flow of efficient and economically priced power to the Pacific Northwest. During the 1980s, the BPA formulated the NWPCC in order to mitigate conflicts stemming from the Northwest Power Act. Economic, political, and academic elites from Montana, Idaho, Washington, and Oregon brought a multiregional agenda to the decision-making process. This management approach eventually centered on contemporary arguments of dams versus fish because agribusinesses, powerful global companies, and regional industries worked with scientists and scholars on watershed-related policy issues. The reality facing much of the current decision making is the emphasis on growing a global, capital society through the subsidized production of cheap hydroelectricity and the shipment of locally produced agricultural commodities to global, transnational markets.

DAM BUILDING AND THE CONCENTRATION OF POWER

The eight dams in the lower Snake River are an ideal development project with which to view how growth in the global economy interconnects at the four sources of social power: ideological, economic, military, and political.⁵⁰ The crucial point is that growth is an elite-directed global process that concentrates social power while generating enormous costs to people (that is, the Nez Perce) and the environment.⁵¹

For example, growth ideology transforms and shapes how people know and form ideas, and, in the context of large dams, growth centers on the worldview to dominate and control nature. In August 2003, appearing at Ice Harbor Dam on the lower Snake River, President George W. Bush stated his position on large dams:

I said, look, we are concerned about the fish. We're also concerned about the citizens of Washington State who depend upon the dams for electricity, and the water to water their land so we can have the crops necessary to eat in America. But the economy of this part of the world has relied upon the steady supply of hydropower. And we've got an energy problem in America. We don't need to be breaching any dams that are producing electricity. And we won't.⁵²

This statement shows how social power in large dams monopolizes meaning and ideology and perpetuates pro-growth policies.

Equally important is how multinational actors or elites use dams in the Nez Perce homeland to concentrate economic power in four domains (hydroelectric energy, agribusiness, timber industries, and river navigation and shipping). Hydropower is generated from all eight dams and became a reality after World War II. Furthermore, dryland farming is the primary mode of production for industrial agriculture on Nez Perce land. Washington's wheat production ranks fifth in the nation and third in the state in total production value. More than 90 percent of the total wheat produced on the Nez Perce Reservation and in the Inland Northwest is globally exported to consumers in East Asia (that is, China). Commercial river barges and multinational shipping corporations transport grain produced on Nez Perce lands downstream and across the Pacific Ocean, respectively.

Remaining surpluses of wheat are traded domestically. However, not one Nez Perce earns a living through farming. Historical patterns of social, political, and economic structures contribute to the rise and subsequent decline of Nez Perce farming and are explained in "Dammed in Region Six: The Nez Perce Tribe, Agricultural Development, and the Inequality of Scale."⁵³ Thus in 2010, all of the wheat grown on the Nez Perce Reservation was cultivated by non-Nez Perce, who either own or lease farmland within the Nez Perce Reservation.⁵⁴ Consequently, the two largest agricultural producers on the Nez Perce Reservation collectively farm nearly thirty thousand acres of reservation land.

Timber industries in the Pacific Northwest are economically concentrated, elite-directed, and global in scale. The Potlatch Corporation is a publicly traded forest-products company with more than 1.5 million acres of privately managed forestlands and nearly \$1.2 billion in net annual sales in 2007. The board of directors for the Potlatch Corporation has interlocking directories with global insurance and banking companies, such as SAFECO, Wells Fargo, and Columbia Banking System, and with Weyerhaeuser and Fort Howard, which are multinational timber and paper-producing companies.⁵⁵

In addition, transportation by river barge links inland commodities to the global economy. Barge shipments originating from the lower Snake River account for one-third of the total cargo volume barged and nearly two-thirds of the total grain carried on the Columbia and Snake river corridor. Growth projections estimate that deliveries to lower Columbia River ports will increase from 4.2 million tons in 1997 to 6.3 million in 2020. It is not surprising that the global transportation and trade industry resists dam removal and benefits from the violation of Nez Perce sovereign rights on the lower Snake River.

Tidewater Barge Lines transports grain and petroleum products along the 465-mile lower Snake River corridor and is a privately held company. After 1990, Tidewater Barge became a subsidiary of the Cornerstone Capital Partners investment firm, which is headquartered in New York City. Annual revenues in 2009 for Tidewater Barge exceeded \$76 million, and Tidewater Barge ships roughly 85 percent of the total grain products, 100 percent of the total petroleum products, and 50 percent of the total container transports on the Columbia and the Snake Rivers.⁵⁶

Columbia Grain International, a subsidiary of the Japan-based, Fortune 500 Marubeni Corporation, stores and exports Pacific Northwest grain to East Asian consumers. Columbia Grain controls 30 percent of all grain grown in the Northwest.⁵⁷ Columbia Grain has alliances with large-scale agribusinesses, including Archer Daniels Midland and General Mills. In 2009, Marubeni's annual revenue exceeded \$41 billion, with its primary objective being to import food and natural resources from global localities to Asian markets.

Hanjin Shipping, a Korean company, transports grain to East Asia. The company earned \$12.8 billion in net revenues in 2009 and had assets that included 150 ocean vessels, shipping operations in 80 major ports in 35 countries, and 230 office locations in 53 countries. Hanjin Shipping defines itself as the "world's premier logistics company" and holds a monopoly of global marine transport.⁵⁸ Furthermore, it has management offices located in three large metropolitan centers: Vancouver, British Columbia, Seattle, Washington, and Portland.

In terms of military power, the US Army Corps of Engineers has tremendous influence and control on the lower Snake River. The US Army Corps of Engineers gains power from a budget that draws from the US Department of Army and the US Department of Defense, with annual budgets in 2009 that exceed \$640 billion. The US Army Corps of Engineers has the ability to achieve its own institutional goals even when others might object.

Political power and dam management is a combination of elected officials and overlapping federal agencies, including the BPA, the US Army Corps of Engineers, and the US Bureau of Reclamation, among others. The BPA generates revenues from all federal dams in the Columbia basin and markets 40 percent of all electricity consumed in the region. Other agencies with concentrated political power include the NOAA and the NWPCC.

In 2008, the Bush administration and the BPA reached an agreement with the Columbia basin tribes. Those signing the agreement include the Colville Confederated Tribes, Confederated Tribes of the Umatilla Reservation, Confederated Tribes of the Warm Springs Reservation, Shoshone-Bannock Tribes, and Yakama Nation. The agreement committed federal agencies to spend \$900 million in ratepayer monies for stream restoration, hatchery

improvements, and additional spillway weirs and screens in order to protect fish on some dams located in the Columbia basin. In return, the agreement states that tribes would end lawsuits against federal agencies over the management of dams and would agree not to file additional lawsuits for ten years. The Nez Perce tribe declined to sign the agreement, with leaders saying that “they want to keep their options open to press for breaching the four lower Snake river dams.”⁵⁹

China as the New Consumer

So what about China? For much of the twentieth century, China, like poor agrarian nations around the world, experienced devastating grain shortages before a period of modernization beginning at the end of the twentieth century. China solved its national grain shortages by increasing grain production from 90 million tons in 1950 to a staggering 392 million tons in 1998. China’s grain production peaked in 1998 and began to decline by as much as 70 million tons in 2003. The 70-million-ton reduction, for example, is equal to Canada’s total grain harvest during the same year. Nearly 90 percent of the declines are related to a reduction in China’s grain-producing area. The process of desertification is spreading in China by nearly 1,400 square miles per year, and other growth-related processes, such as the depletion of aquifers, industrialization, residential development, and increases in the human consumption of meat, are negatively impacting China’s ability to produce enough domestic grain to meet national demands.⁶⁰

Between 1978 and 2002, per capita consumption of meat in China rose roughly 400 percent.⁶¹ In 2003, meat consumption in China reached nearly seventy-one million tons—this is as much as twice the amount of meat consumed in the United States during the same year.⁶² Prior to China’s rapid economic growth at the end of the twentieth century—a process that has enabled many middle- and upper-class urban Chinese to afford greater intakes of meat—most of China was chronically starved of animal protein. As a result, China has rapidly industrialized its production systems with feedlots and fixed-grain commodities, such as wheat, imported from the Inland Northwest (for example, the Nez Perce Reservation and adjacent arable lands in Idaho) and beyond.⁶³

During 2003 and 2004, China purchased eight million tons of wheat from the United States, Australia, and Canada. US wheat is produced largely in two regions: the Midwest and Pacific Northwest. In the interior Pacific Northwest, agribusinesses cultivate wheat with techniques of dryland agriculture, including farmland located on several large American Indian reservations (for example, the Colville Confederated Tribes, Coeur d’Alene tribe, Nez Perce

tribe, Confederated Tribes of the Umatilla Reservation, Confederated Tribes of the Warm Springs Reservation, and Yakama Nation). Once the wheat leaves the Inland Northwest along the lower Snake River, several ocean vessels per day are loaded with wheat at shipping terminals located in Portland—with nearly all of the wheat now aimed at China. The trans-Pacific shipment will likely link the two global economies for some time. In 2004, the *Seattle Post-Intelligencer* reported that, “Already this year, China has accepted 1.8 million metric tons of U.S. wheat—nearly 17 times as much as all of last year. And about 60 percent of it was funneled through Columbia and lower Snake river ports. For the first time in 30 years, China has entered the Pacific Northwest wheat market on a dramatic scale.”⁶⁴

During 2011, more recent discussions have brought together governors from Montana and Washington to discuss shipping Montana coal to China along the Snake and the Columbia Rivers. Of note, Nez Perce tribal leaders and opposition groups were left out of the discussions, and the proposed project would deliver nearly six million tons of Montana coal by river barge, which would then be shipped to China.⁶⁵

By February 2011, trucks began hauling large-scale oil-production equipment to Montana from Lewiston. Lewiston is known as Idaho’s only seaport and is located along the Snake River, roughly ten miles west of the Nez Perce Reservation. The equipment came to Lewiston by river barge, making the 465-mile journey upstream from the Pacific Ocean by a series of dams and navigation locks along the Columbia and the Snake Rivers. Once the trucks travel to Montana, they are expected to move the equipment north to the Tar Sands of Alberta and Saskatchewan, Canada. Moreover, significant renovations of the dams in 2010 have led to greater barge traffic. According to Dave Doeringsfeld, manager of the Port of Lewiston, “activity fosters activity” and “the opportunity to meet future United States energy needs will benefit from the Columbia-Snake river system.”⁶⁶

CONCLUSION

The economics of dam building demonstrate that global policies of growth in dams have worked to increase the social power of elites and the institutions they direct at the expense of the Nez Perce watersheds and culture that are tied to salmon. Notions of economic growth are incorporated in the “technological optimist worldview” that growth benefits everyone, progress can solve any future challenges, and the market is a good guiding principle.⁶⁷ The overarching but misleading perception that growth generally improves human well-being and opportunity has sustained continued growth in the

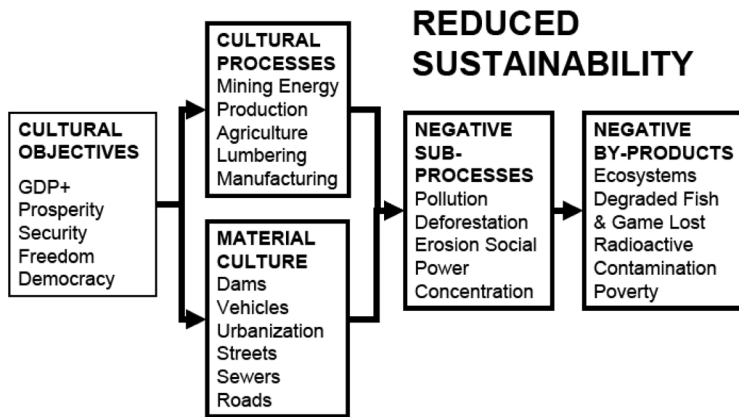


FIGURE 3. Impacts of economic growth and global-scale development on people and the environment of the Nez Perce homeland. Graphic design adapted from J. Bodley, 2005.

present global economy. On the contrary, growth in the context of dams and global-scale development concentrates wealth and decision-making power while producing enormous costs.

In retrospect, this article examined the extent to which large dams and the expansion of the global capitalism presents overwhelming challenges in the forms of industrial agriculture and dam building. It also shows how Nez Perce interactions in the Snake and the Columbia Rivers have shaped the natural history of the region and how nature has shaped Nez Perce culture and society.

In the Nez Perce homeland, the social costs of dam building widen the gap among powerful agribusinesses, global corporations, and federal agencies, on the one hand, and sovereign tribes and support organizations, on the other. The impacts on people and the environment are driven by the cultural objectives of growth and vested in the dominant paradigms of gross national product, prosperity, security, freedom, and democracy (fig. 3).

Cultural objectives have produced measurable social and environmental costs associated with mining, agriculture, timber extraction, manufacturing, and energy production while increasing the scale of roads, surpluses in grain, urbanization, and most notably, large dams. Negative subprocesses in pollution, deforestation, erosion, and the concentration of social power generate negative by-products in ecosystem degradation, radioactivity, poverty, and the extinction of Pacific salmon. This matrix ultimately reduces the sustainability of salmon-based ecosystems and the people who depend on them.

Sustainability refers to the ability of any human society to acquire the energy and materials needed for cross-generational maintenance and reproduction of the society and the culture. Continued patterns of global capitalism are

likely to challenge the social and environmental sustainability of the Nez Perce homeland. State, federal, and multinational actors and the institutions they direct resist the decommissioning of dams and the production of alternative forms of society, economy, and energy.

In conclusion, Nez Perce tribal society seems more effective at distributing social power in ways that serve the interests of most households. This alternative model argues for placing limits on growth and devising more equitable measures to regulate social power. A revised living-standard concept addresses the breakdown of the aggrandizement of power, and development becomes a human-rights issue and an access and distribution problem rather than a system perpetuated exclusively by economic growth.

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