

WHISKEY'S for DRINKIN', WATER'S for FIGHTIN'
Science, Politics, and Dam Deconstruction in the Klamath Basin



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Abstract

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Current federal environmental issues are typically addressed using environmental legislation like the National Environmental Policy Act (NEPA). In this paper I claim that the NEPA framework does not adequately take into account the nuances and interdisciplinary of environmental dilemmas and therefore is incapable of providing solutions to environmental problems. I contend that the NEPA process is based on classic understandings of nature and society, facts and values, and science and politics as necessarily separate, and that this perception needs to be altered. Disavowing these binaries will enable current solution making frameworks to relinquish a heavy reliance on empirical and fact-based disinterested discourses and incorporate interested discourses more rigorously into the policymaking process. Using a theoretical framework from Bruno Latour to re-imagine the NEPA process, I argue that political ecology theory can play an active role in policy debate and that the possibility of innovation exists even in entrenched and complex federal systems.

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Lists of Acronyms and Figures

Acronyms

AIP	Agreement in Principal
BOR	Bureau of Reclamation
CWA	Clean Water Act
DOI	Department of the Interior
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FWS	Fish and Wildlife Service
KBRA	Klamath Basin Restoration Agreement
KHSA	Klamath Hydroelectric Settlement Agreement
KSD	Klamath Settlement Decision
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
ROD	Record of Decision
SOI	Secretary of the Interior
UKBA	Upper Klamath Basin Agreement
USGS	United States Geological Survey

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A Faltering Mechanism: An Introduction

In 2012 Dennis Lynch, a veteran hydrologist with the U.S. Geological Survey, responding to allegations of scientific misconduct regarding the Klamath River dam removal assessment for the Secretary of the Interior, wrote in a northern California newspaper, “As a senior scientist on this project, I am committed to bringing accurate, objective, fact-based scientific findings forward for the secretary's decision.” The choice to move forward with the removal of the dams, he said, “is too important to leave any stone unturned.”¹ Like other federal scientists, Lynch holds his work to high standards and understands how important the integrity of his team’s investigation is. While Lynch is a scientist and does not purport to dabble in the world of policy, his team’s research will inform the Secretary’s federal environmental policy decision about whether or not to approve the deconstruction of four dams on the Klamath River.

The report that Lynch and his team produced for the Secretary of the Interior represents an integral part of the federal environmental solution making system. I believe that this system is not capable of effectively addressing environmental issues. In this paper I argue that the federally accepted relationship between science, nature, and politics is precarious. The perception that science is removed from and uninfluenced by politics reinforces the nature/culture binary and estranges practitioners in the fields of science and politics. This conception has further led to the adoption of professional scientific standards that idealize objectivity and do not accurately account for the role that politics plays in shaping the way science is practiced and used.

I assert that the methodologies used to address environmental issues focus on the premise of disinterested discourses, like the hard sciences, and neglect the parts of problems that do not have fact-based solutions. The separation of science and politics leaves the politicians who make the final decisions cut off from the practice of producing scientific facts. The federal science agencies entrusted with developing these solutions have organizational goals focused exclusively on providing sanitized factual information and are therefore, in their current state, unequipped to make value judgments that such solutions require. Politicians are then required to judge the options laid out by scientists

¹ Lynch, Dennis. “Dennis Lynch: Klamath Science Process Is Solid.” *REDD*. Accessed February 17, 2015.

without sufficient integration of the processes or knowledge of the mechanisms those scientists went through to define that information.

I propose that Bruno Latour's framework for a new bicameral system could be a way to address these issues and re-envision the way in which environmental problems are solved. Latour's system can alleviate the problems above by providing two spaces with different but complementary functions: the upper and lower houses. The upper house will host a multitude of actors with various and changing roles and act as a place for stakeholders to more equitably and openly air their opinions. The lower house will act as a mechanism to sort through and prioritize the ideas of the upper house. This process will occur and reoccur enabling environmental solutions to evolve as new grievances are discovered and articulated and desires change. I will then apply the new bicameral system to the controversy in the Klamath Basin to imagine how this new bicameral system could be put into practice and illustrate the practical role that theory from the field of political ecology can play.

I explore these claims by recounting the presently unfolding story of the Klamath River dam removal debate. I will discuss the history of water rights disputes in the region and the ongoing deliberation over whether four hydroelectric dams on the Klamath river should be decommissioned and deconstructed. Situating my work in this complicated and long-running historical dispute will help me to illustrate how the understanding of the relationship between science, nature, and policy in federal science agencies and the federal government can act as a barrier to political debate.² This debate will also act as a current and relevant framework on which to superimpose Latour's experimental bicameral system in order to rethink the manner in which environmental disputes are handled and propose an alternative way of organizing solution-making efforts.

Throughout this paper my use of first person is meant to differentiate between the information I have gathered about the unfolding story in the Klamath Basin, the fields of political ecology and philosophy and my own account of these elements. First person helps me to differentiate between when I am speaking from my personal point of view and when I am recounting widely accepted facts. Note that while I use first person

² For more on how I came to this topic see the Appendix "My Origin Story"

periodically for distinction and clarification, I also express my personal views in the third person.

The Klamath Basin Water Rights Controversy

The present controversy in the Klamath Basin is an example of the application of contemporary federal environmental problem solving techniques, specifically the National Environmental Policy Act (NEPA). Debate in the Klamath region stems from a history of water rights allocation disputes in the area. Dilemmas in the Klamath have roots dating back to the 19th century, when the federal government established and subsequently ignored water rights agreements with native Klamath tribes.³ Droughts throughout the 1900s and early 2000s have left the wells, irrigation canals, and reservoirs of many people in the Basin dry and the region hurting economically.⁴ In 2005, PacifiCorp's decision to participate in negotiations that could lead to the removal of four of its own hydroelectric dams along the Klamath River initiated the current debate. In the following sections, I will recount the story of the Klamath Basin controversy and highlight the reasons that the imbroglio in the Basin lends itself to analysis.

United States Environmental Law and Policy

Environmental law plays a key role in giving citizens the ability to hold companies and federal agencies to higher environmental standards. Given the amount of time that law has been practiced, and that environmental issues have plagued societies, it may come as a surprise that the field of environmental law was developed less than fifty years ago.⁵ Before environmental laws and statutes were on the books, plaintiffs who had environmentally relevant grievances had to file suits under the common law of nuisance. If plaintiffs won, defendants were required to stop their harmful actions, but nothing more. This method led to short-term remedies to cases brought before judges, but did not help to address more entrenched environmental issues.⁶

³ Stern, Charles V., Cynthia Brougher, Harlod F. Upton, and Betsy A. Cody. *Klamath Basin Settlement Agreements*, May 16, 2014.

⁴ Powers, Kyna, Pamela Baldwin, Eugene H. Buck, and Betsy A. Cody. *Klamath River Basin Issues and Activities: An Overview*. CRS Report for Congress, September 22, 2005.

⁵ Binder, Denis. *Perspectives on 40 Years of Environmental Law*. SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, September 2, 2011.

⁶ *Ibid.*

Environmental atrocities of the late sixties, such as the Santa Barbara oil spill and the spontaneous fire that erupted on the Cuyahoga River, exposed the need for a better systemic approach to solve the steadily rising number of environmental disputes.⁷ As environmental agencies and legislation began emerging, citizens and governing bodies had to wrestle with questions like “how clean is clean; how safe is safe; how to handle risk; and whom to hold responsible.”⁸ At the same time this social environmental revolution was occurring, the world of policymakers and science advisors was undergoing a transformation. Starting in the mid-sixties, scientists were being called on to provide insights into more than just military technology and national security, as they had during the Second World War. Policymakers now sought advice from scientists with regard to public health, transportation, consumer safety, and more frequently, environmental issues.⁹

The introduction of new environmental legislation in the 1970s like the National Environmental Policy Act (NEPA), Clean Water Act (CWA), and Endangered Species Act (ESA) required collaboration between scientists and policymakers in order to develop systems that accurately assessed and addressed complex interconnected dilemmas. At the conception of these and most other environmental statutes, policymakers relied heavily on scientific research to establish guiding principles for legislation. The CWA, for example, relies on federal science agencies to establish water quality standards and monitor quality throughout the country. Without scientists performing research about which concentrations of certain toxins are harmful to humans, policymakers would not be able to identify sensible criteria for pollution standards.

Collaboration between scientists and policymakers typically results in the identification of specific standards and procedures to be followed as exemplified in NEPA, the CWA, and the ESA. These statutes are designed to address issues that have a focus on science-based solutions. In the Klamath Basin, for example, the issue of dam deconstruction has been boiled down to a question of whether the removal of the four dams will be the best way to achieve volitional fish passage for species listed as

⁷ Binder, 2011.

⁸ Ibid.

⁹ Douglas, Heather. “Border Skirmishes Between Science and Policy.” In *Science, Values, and Objectivity*, 220–44. University of Pittsburgh Press, 2004.

threatened under the ESA.¹⁰ Laws can be viewed as living entities that change and grow with time, and environmental law is still in its infancy. But the cases that provide precedent for changes in the practice of environmental solution making do not address fundamental understandings about the relationship between science and politics. Therefore, change will only come slowly and incrementally.¹¹

Environmental Management and Science Agencies

The United States has a plethora of agencies that manage different aspects of the Federal Government. For example, the Environmental Protection Agency is the agency that implements legislation like NEPA, the CWA, and the ESA. Of the fifteen executive departments at the federal level, the Department of the Interior (DOI) oversees agencies that, among other things, address issues relating to Federal trust and Indian Tribe responsibilities, endangered species, and environmental conservation efforts.¹² Included in the nine agencies that operate under the DOI are the Bureau of Reclamation (BOR), the Fish and Wildlife Service (FWS), and the United States Geological Survey (USGS). While they all function under the same umbrella of the DOI, the duties, goals, and operation styles of these agencies vary.

The key differences between the BOR, FWS, and the USGS is the identification of the BOR and FWS as “management agencies” and the USGS as a “science and technology agency.”¹³ Management agencies hold land use regulation and resource administration responsibilities, make policy recommendations, and have experience dealing with hot debates over policy decisions. Science and technology agencies have no regulatory or resource management responsibilities; rather they have “a reputation of conducting objective, thorough, and peer reviewed scientific investigations.”¹⁴ For these reasons, the ways that management and science agencies deal with matters of objectivity differ.

¹⁰ More on this in *The National Environmental Policy Act*

¹¹ More on this in *Science, Nature and Politics*

¹² “USA.gov.” Government. *Department of the Interior*, February 15, 2015.

¹³ Ibid.

¹⁴ Lynch, Dennis, Liz Vasquez, and Chauncey Anderson. Questions for Dennis Lynch, Liz Vasquez, and Chauncey Anderson. Interview by Kelsey Kahn. Email, December 8, 2014.

Bureau of Reclamation & Fish and Wildlife Service

Established in 1902, the BOR is a federal land management agency that oversees federal water-related projects including irrigation and power generation. The stated mission of the BOR is to “manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.”¹⁵ Officially founded in 1966, the FWS oversees 88.9 million acres of federally owned land. The primary mission of the service is to conserve plants and animals, but the FWS permits other uses for land as long as they are compatible with species’ requirements.¹⁶ The goal of the FWS is to “[work] with others to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.”¹⁷ As made clear by their mission statements, both agencies are in the business of taking concrete actions to achieve their agency goals.

Scientific integrity plays an integral role in the research and decisions released by the BOR and FWS. Under the Information Quality Act, Federal agencies are required to publish guidelines that enable their employees to meet standards of quality, objectivity, utility, and integrity of information.¹⁸ ¹⁹ The BOR identifies the trustworthiness of its information as the most important aspect of its scientific integrity policy.²⁰ The information quality and ethics guidelines for both the BOR and FWS are broad and far reaching with general standards about topics like uncertainty in scientific activities, maintenance of scientific professionalism, and use of scientific information.²¹

U.S. Geological Survey

Unlike the BOR and FWS, the USGS is a science and technology agency that focuses on the production of scientific information instead of management and policy. Their mission statement makes their detachment from the policy process clear; “The USGS serves the Nation by providing reliable scientific information to describe and

¹⁵ “Mission/Vision.” U.S. Bureau of Reclamation. Government Page. *Reclamation: Managing Water in the West*, 2015.

¹⁶ Gorte, Ross W., Carol Hardy Vincent, Laura A. Hanson, and Marc R. Rosenblum. *Federal Land Ownership: Overview and Data*. Congressional Research Service, February 8, 2012.

¹⁷ “U.S. Fish and Wildlife Service.” Government Page. *U.S. Fish & Wildlife Service: Conserving the Nature of America*, 2015.

¹⁸ Ibid.

¹⁹ “U.S. Geological Survey.” Government Page. *USGS: Science for a Changing World*, 2015.

²⁰ “Reclamation Manual: Policy, Scientific Integrity,” March 6, 2012.

²¹ Ibid.

understand the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life.”²² The main aim of the Survey is to gather and distribute scientific information, not manage land or make policy.

As a science and technology agency, the USGS has high standards for the work that they produce and a rigorous peer review process that attempts to ensure the objectivity of their research.²³ Compared to the guidelines of the BOR and FWS, USGS documents about fundamental science practices are more detailed and list specific steps that researchers must follow to meet the strict information quality guidelines.²⁴ Whether or not it is preferred or achievable, at the Survey, employees see objectivity as a practical goal and believe that being disconnected from policy and management allows them to better reach that goal. While management agencies make recommendations about administrative practices and policy in their official capacities, USGS scientists cannot.²⁵

Finding out about the classification of the BOR and FWS as management agencies and the USGS as a science and technology agency was an interesting, but not shocking, revelation. I was curious about the different ways that the organizations dealt with scientific integrity. In so far as the BOR and FWS are supposed to consider economics, and the American public in its decisions, it becomes impossible for those agencies to achieve the same sort of objectivity that the USGS might strive for, since they are considering external societal influences in their work. The USGS claims that its main goal is to provide objective information, and they believe their peer review process plays a very important role in their organization. When I found out what a significant role they played in the review process for the decision as to whether or not to remove four of the Klamath dams, I became fascinated by their claims to be uninvolved with policy decisions.²⁶

²² “U.S. Geological Survey”, 2015

²³ Ibid.

²⁴ Ibid.

²⁵ Lynch, 2014

²⁶ More on this in *The National Environmental Policy Act*

The History of Water Controversy in the Klamath Basin

Beginning in southwest Oregon and flowing 262 miles into Northern California, the Klamath River plays a crucial role in the economy, ecology, and culture of the area it flows through. The Klamath Basin is divided into two regions, the Upper and Lower Basins. The Basins are roughly delineated by the Oregon-California Cascade Range; the Iron Gate Dam marks an un-official border (Fig. 1).²⁷ While the regions neighbor each other, their geography, size, and primary land uses differ. The Upper Basin is considered “upper” in terms of elevation and headwaters. The Upper Basin is flat, more arid, has hot dry summers, and receives its water from snowpack accumulated in the winters, which along with irrigation infrastructure, make it suitable for agricultural production and livestock grazing.²⁸ The lush Lower Basin, while still agriculturally profitable, constitutes less than half of the value of agriculture production in the Upper Basin.²⁹ The Lower Basin provides habitat for fish species while the upland forest supplies habitat for terrestrial species on land managed by the U.S. Forest Service and Tribes native to the upper and lower river regions.

Starting in the mid 19th century, cheap land and dreams of the American agrarian ideal brought an influx of settlers to the Klamath Basin. A treaty signed between the Klamath tribes, which reside in the Upper Basin above Klamath Lake, and the federal government in 1864 guaranteed fishing rights for Tribes in their already established historic fishing grounds. More settlers meant more farmland, and in 1905 the BOR authorized the development of the basin in order to provide electricity and water to over 200,00 acres of arid farmland in Southern Oregon and Northern California.³⁰ Construction of the Klamath River Hydroelectric Project began in 1913 with the building of the Copco 1 and 2. This development happened despite the clear impacts that the dams were going to have on the fishing rights of Tribes along the upper and lower river. Not until a 1983 court case were the rights of the Tribes officially recognized. At that point,

²⁷ Powers et. al., 2005

²⁸ Ibid.

²⁹ Ibid.

³⁰ Blumm, Michael, and Andrew Erickson. 2012. “Dam Removal in the Pacific Northwest” (July 6).

however, the damage had been done; the dams that comprise the project had already been operating for decades.³¹

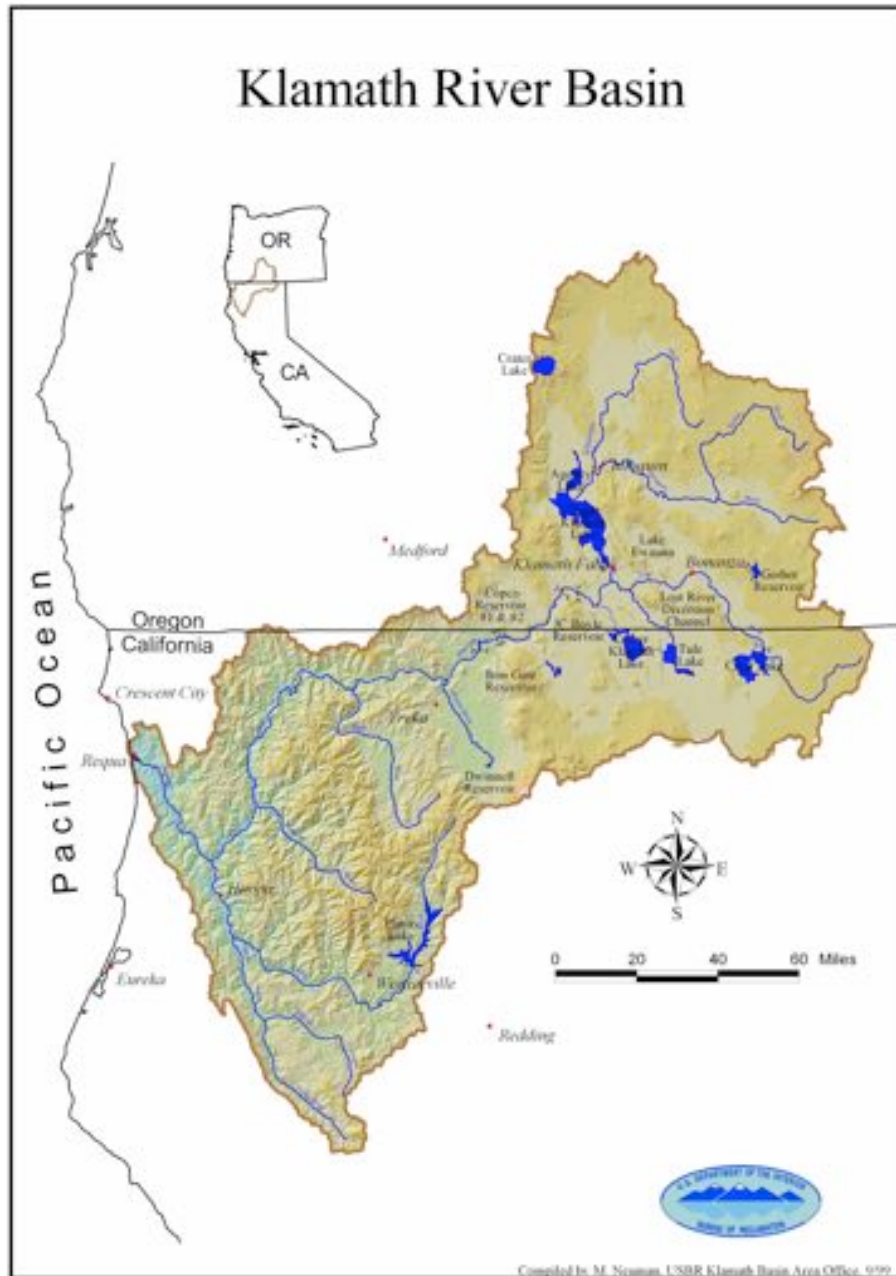


Figure 1. The Klamath River Basin crosses the Oregon-California boarder. This map shows four of the seven hydroelectric dams that comprise the Klamath River Hydroelectric Project. These four dams, The John C. Boyle, the Iron Gate, and Copco 1 and 2, are the center of the removal controversy in the Basin.³²

³¹ Blumm et. al., 2012

³² Map courtesy of the Bureau of Reclamation, http://www.usbr.gov/mp/kbao/maps/1_basin.jpg

In recent years, the Klamath Basin has become the center of a controversy surrounding water rights, use, and allocation. The western United States follows the prior appropriation doctrine: the first person to divert water from a source and put it to use claims senior water rights.³³ The system of prior appropriation not only de-incentivizes re-allocation of water rights, but promotes inefficient use of water. If water rights holders go a year without using all of the water they have claimed, their allocation is lessened. If a water rights holder wants to re-establish their water rights because they are not using all of their allocated water, they will sometimes lose their seniority and be more susceptible to being shut off during droughts. Historically this has led to conflict when water was scarce and landowners with junior water rights were cut off, while senior owners were able to continue using water even if their usage was wasteful or inefficient.³⁴

Issues involving water rights and allocation came to a head during the 2001 “Water Crisis” in the Klamath Basin. In 1988 the National Marine Fisheries Service (NMFS) listed the Lost River and shortnose suckers as threatened under the ESA. Subsequently in 1997, the NMFS listed coho salmon as threatened.³⁵ All three of these species have habitats in the Upper Klamath Basin above Keno Reservoir. Research by the NMFS found that the monthly water releases from the BOR’s Klamath Irrigation Project were negatively affecting the recovery of the species because availability of water in Klamath Lake is considered a critical management tool for the fish. Due to these findings, in April of 2001, a significant drought year in the region, the BOR chose to severely limit the amount of water released for irrigation from Upper Klamath Lake in order to provide more in-stream flow and in-lake water for the threatened species. Irrigators who relied on the water from the lake were devastated and the surrounding economy lost millions of dollars.³⁶ In 2002, under the supervision of Vice President Dick Cheney, Interior Secretary Gale Norton illegally provided full water resources to the irrigators that had been cut off the year before. In September of 2002 the largest fish die-off ever recorded occurred in the region. Biologists from FWS attribute the death of over 33,000 mostly

³³ “Water Rights in Oregon: An Introduction to Oregon Water Law.” Oregon Water Resources Department, November 2013.

³⁴ Powers et. al, 2005

³⁵ Ibid.

³⁶ Ibid.

Chinook salmon to epizootic disease, which was caused by above average salmon abundance, low in-stream flow, and warm water temperatures.³⁷

The history of water rights issues in the Basin illustrates discord beginning in the 19th century. At the time of the establishment of prior appropriation as the law for water rights, the law explicitly benefited groups in power (new settlers) and to the detriment of underrepresented minorities (native Tribes). As time progressed, the ESA, a key piece of environmental solution making legislation, played a crucial role in the shifting of power from irrigators to federal agencies charged with conservation. Described by some as the most aggressive environmental legislation on the books and by others as a barking poodle, the ESA is an unwieldy law that has the potential to be a great advantage to conservationists while inflicting massive damage to irrigators and other water users. Its power comes from its ability to remove any threats to listed species' chance of survival, meaning it can halt development, require land alternation, and prevent "takes" of endangered species by any means necessary on private and public land. Even with all of the power that it holds, the ESA alone, just like other environmental statutes, is not a sufficient remedy to environmental issues since it only gives rise to more adjudication between stakeholders. While the ESA may seem beneficial to those parties that have been left out of the annals of history, playing a trump card like the ESA is no way to reach a solution that takes into account interests in conservation as well as the economic success of the Basin.

A Flourishing Debate

The 2001 Water Crisis illustrated how essential the services provided by natural and manmade reservoirs are to the economy of the basin. Therefore, it should come as no surprise that any proposal to remove reservoirs would be met with fierce opposition. The most recent debate in the Klamath Basin surrounds the removal of four hydroelectric dams, and consequently reservoirs, along the Klamath River (Fig. 2). The dams up for removal are part of the Klamath River Hydroelectric Project and are owned and operated by PacifiCorp Energy, a joint investor-owned utility that operates in nine states in the Western United States. While the dams and reservoirs do not provide flood control or water for irrigation, they produce cheap and clean hydroelectric power for the region.

³⁷ Powers et. al, 2005



Figure 2. The four hydroelectric dams being considered for removal (clockwise starting in the upper right-hand corner) the John C. Boyle, the Iron Gate, and the Copco 1 and 2.³⁸

Events like the water Crisis of 2001 and illegal diversion of water led to the 2002 salmon die-off which crippled Tribes and the fishing industries of Northern California and Oregon. While dams' effects on water quality and volitional fish passage was not a direct cause of the die off, the in-stream temperatures were in the lethal range as a result of lowered streamflows. This effect could possibly be attributed to the dam, as dams are known to raise fall temperatures.³⁹ Licenses for four of the seven dams that make up the Klamath River Hydroelectric project, issued by the Federal Energy Regulatory Commission, expired three years after the Water Crisis of 2001. The campaign led by environmentalists, the Klamath tribes, and fishing industry to remove the dams was already well under way.⁴⁰

³⁸ Images courtesy of Oregon Live http://media.oregonlive.com/environment_impact/photo/klamathdam-9jpg-ff49983fdd232b35.jpg, <http://media.portland.indymedia.org/images/2007/03/356578.jpg>, http://images.nationalgeographic.com/wpf/media-live/photos/000/371/cache/klamath-river-dams-could-be-removed-freshwater_37188_990x742.jpg, http://blog.oregonlive.com/news_impact/2008/11/jcboyle.JPG

³⁹ Lynch, Dennis D., and John C. Risley. *Klamath River Basin Hydrologic Conditions Prior to the September 2002 Die-Off of Salmon and Steelhead*. Portland, OR: U.S. Department of the Interior, U.S. Geological Survey, 2003.

⁴⁰ Blum et. al., 2012

Since the Klamath River is home to listed species, stringent requirements under ESA and section 401 of CWA would have required PacifiCorp to make costly retrofits to the four dams. Additionally, PacifiCorp recognized that dam removal would be cheaper for their ratepayers and agreed to consent to their removal if the costs were offset by rate increases to Oregon customers and state funding from California.⁴¹ These retrofits and decreased costs were a key reason that PacifiCorp chose to agree to follow through with the Agreement in Principle (AIP) and potentially remove the dams. The AIP said that the signers agreed to take out the dams if (1) the risk was considered acceptable, (2) it could be done for the specified cost, and (3) the NEPA process supported it. Thus began an extensive negotiation between PacifiCorp and key stakeholders in the Basin.

Concerned Parties

The main factions in the debate over whether the dams should be removed and the basin restored included those who want the dams to be removed with monetary support from the federal government, those who want PacifiCorp to incur the total cost of the dam removals, and those who do not want the dams to be removed at all. Of the three camps, native Tribes, Wildlife Refuges, fishermen, and some environmental organizations are largely proponents of federally aided dam deconstruction and Basin renewal. This has been extremely controversial since deconstruction costs of \$450 million are tied to one billion federal dollars earmarked for economic and ecological restoration of the Basin.⁴² Wildlife refuges also have the potential to be adversely impacted in the short term, but could end up with more predictable and consistent water supplies if the Act were to pass.⁴³ Some environmentalists want to hold PacifiCorp accountable for the taking out the dams, as their decisions from over a century ago led to the current state of affairs. For this reason, they argue that PacifiCorp should be required to cover all dam deconstruction and restoration costs relevant to the dam removal and its effects in the reservoir reaches downstream.

⁴¹ Powers et. al, 2005

⁴² Blum et. al., 2012

⁴³ Connor, Michael L. *Statement of Michael L. Connor, Commissioner Bureau of Reclamation U.S. Department of the Interior Before the Energy and Natural Resources Committee U.S. Senate on Water Resource Issues in the Klamath River Basin*, June 20, 2013.

Opponents of dam removal include property owners with investments tied up in land along the reservoirs and river, along with groups that support renewable energy generation. Farmers and ranchers with senior water rights who do not want to lose their access to cheap power and are unhappy with federal involvement in the region make up the largest part of the opposition. Even though they are on opposing sides of the fight, both pro-dam and pro-removal constituents believe if the Klamath dam deconstructions proceed, the success of the removal campaign will encourage other groups to pursue more large removals across the country.^{44 45}

Environmental debates are often characterized by a seemingly clear opposition between two sides: the big bad corporations and the environmentally-minded underdogs. These sides are usually vehemently opposed to each other and a no holds barred fight (often in a courtroom) decides which party gets to claim victory. The debate in the Klamath Basin over the removal of four hydroelectric dams is different in a number of respects. Mainly, the big bad company (PacifiCorp) and the historically underrepresented and ignored parties (Tribes native to the Klamath basin and conservation groups) are on the same side.

Both factions want the dams to come out for different reasons. PacifiCorp does not want to pay for the costly retrofits required to bring the four dams up to the standards of the CWA and ESA, while the Tribes and conservationists are fighting to remove the dams to allow for rejuvenation of the salmon populations that have crucial habitats in the Klamath River. This unlikely alliance is opposed by farmers and cattle ranchers (the epitome of the American ideal)⁴⁶ who are concerned about loss of affordable power and federal involvement in the region. These relationships are fascinating in their own right but my interests lie with the pro-dam deconstruction side. PacifiCorp has the unlikely advantage of having the underdogs on their side, which may mean less in terms of money but a lot in Congress, and in terms of public support. The decision is still unmade but the

⁴⁴ Board, The Oregonian Editorial. "Can Congress Help the Klamath Basin Restore Itself? It Must: Editorial." *OregonLive.com*, November 22, 2014.

⁴⁵ Connor, 2013

⁴⁶ I can see the advertisements for the match now: "With Earl 'big oil and gas' Jones backing PacifiCorp and Edgar 'big ag' Jefferson backing the farmers, it's anyone's game!"

tying of the hydroelectric agreement to the basin restoration agreement will likely make a big difference in the outcome.⁴⁷

Coming to Terms

On February of 2010, over forty key parties signed the Klamath Settlement Decision (KSD). While not all parties that participated in negotiations signed the agreement, most parties were appeased by the KSD that resulted from over 80 meetings of concerned stakeholders.⁴⁸ The final KSD comprises three separate agreements. The Klamath Basin Recovery Agreement (KBRA) and the Klamath Hydroelectric Settlement Agreement (KHSA) were signed in 2010, and the Upper Klamath Basin Agreement (UKBA) was added in 2014.

The Klamath Basin Recovery Agreement

The KBRA is the product of years of negotiations between stakeholders in the Klamath Basin. The stated goal's of the KBRA are to:

- 1) Restore and sustain natural fish production and provide for full participation in ocean and river harvest opportunities of fish species throughout the Klamath Basin
- 2) Establish reliable water and power supplies, which sustain agricultural uses, communities, and National Wildlife Refuges
- 3) Contribute to the public welfare and the sustainability of all Klamath Basin communities.

Klamath Basin Restoration Agreement 2010⁴⁹

The guidelines of the KBRA to rebuild fisheries in the Klamath Basin concentrate on the reintroduction of threatened and endangered species in the Klamath River and the monitoring of the status of these reintroduced species. To accomplish this goal, the KBRA sets limits to water allocations for irrigators and wildlife reserves and requires monitoring of the water quality in the area.^{50 51}

The restoration agreement also includes a drought plan that will more closely manage water use in order to maintain enough water to supply agricultural irrigators,

⁴⁷ more on this in *Coming to Terms*

⁴⁸ Connor, 2013

⁴⁹ "Klamath Basin Restoration Agreement for the Sustainability of Public and Trust Resources and Affected Communities." 2010.

⁵⁰ "Summary of the Klamath Basin Settlement Agreements." 2010. Klamath Basin Coordinating Council.

⁵¹ Stern et. al., 2014

National Wildlife Refuges, and fisheries in the case of drought.⁵² Additionally, efforts will be made to determine the impact that climate change will have on future water availability for the Basin.⁵³ The power program in the KBRA promises affordable electricity for irrigators in the Klamath Irrigation project in the area through access to federal power and a long-term plan to put renewable energy projects in place. To ensure adequate water supply to communities outside of the KBRA, the Restoration Agreement establishes a limit to the amount of water that can be portioned off for use in the restoration process.⁵⁴ Three of the four Klamath tribes whose senior water rights were officially acknowledged in 2013 agreed to forego litigation in exchange for economic aid and federal action to restore fisheries. Funding for the project is estimated about \$250 million over 15 years for new appropriations and \$505 million over the first 10 to implement the agreement.⁵⁵

[The Klamath Hydroelectric Settlement Agreement](#)

The KHSA is a roadmap to complete “one of the largest, most complex dam removals in history.”⁵⁶ The main purpose of the KHSA is to lay out a process for the completion of environmental reviews and studies about the removal of four of the hydroelectric dams that comprise the Klamath River Hydroelectric Project (the J. C. Boyle, the Iron Gate, and the Copco 1 and 2). The agreement stipulates PacifiCorp ratepayers in California and Oregon will contribute \$200 million to the removal and a California Water Bond will pay for the remaining \$250 million.⁵⁷ The KHSA provides protections for PacifiCorp in the case that deconstruction costs exceed the projected \$450 million, though it still remains unclear what entity will cover these expenses.⁵⁸

[The Upper Basin Water Sharing Agreement](#)

After the signing of the KBRA and the KHSA, members of the Oregon congressional delegation formed a task force to address issues that they believe were not covered in the aforementioned agreements. Off project irrigators were concerned that

⁵² Stern et. al., 2014

⁵³ “Summary of the Klamath Basin Settlement Agreements.” 2010. Klamath Basin Coordinating Council.

⁵⁴ Ibid.

⁵⁵ Stern et. al., 2014

⁵⁶ Ibid.

⁵⁷ Ibid.

⁵⁸ Connor, 2013

they would be harmed by decreased water allocation and higher power costs, and would not receive the benefits of low cost power that the KBRA provided for on-project irrigators. The Upper Klamath Basin Agreement (UKBA) was drafted to address these issues and finalized in April of 2014. Similar to the actions of Tribes in the case of the KBRA, senior water rights holders agreed to hold back any water rights challenges.⁵⁹

Even though they seem to make sense as a package, the Act proposed for Congressional approval was not initially intended to be made up of the KBRA, the KHSA, and the UKBA. These separate agreements (then two, now three) were combined at the behest of the team that completed the environmental impact statement. This had to do partly with how diverse the provisions in the agreements were. The KBRA goals include restoration of fish populations and habitat, establishment of reliable water and power supplies, and general contributions to the communities of the Basin. While the KBRA promises a lot, the agreement is still relatively undeveloped compared to the KHSA. The main purpose of the KHSA is to lay out a process for the completion of environmental reviews and studies about the removal of the four hydroelectric dams. Finally, UKBA addresses issues of parties who felt as though they were not spoken for sufficiently throughout the process.

The National Environmental Policy Act

The provisions outlined by KSD include federal land transfers, management of National Wildlife Refuges, tribal trust responsibilities, and federal funding for the KBRA among other terms. Therefore, the agreements require congressional authorization to move forward.⁶⁰ This process calls for compliance with the National Environmental Policy Act (NEPA) (Fig. 3).

⁵⁹ Stern et. al., 2014

⁶⁰ Ibid.

1	scoping	discuss existing laws, available information and divide tasks among agencies
2	notice	notify public of process and invite participation
3	draft EIS	compose based on agency expertise and issues raised by the public (Purpose and Need statement defined)
4	comment	affected individuals provide feedback via written and public statements
5	final EIS and proposed action	recommendation for what action to take, public is not able to comment but they may protest directly to the EPA or the lead agency
6	re-evaluation	occurs if there are unforeseen changes or if a large amount of time passes before implementation
7	supplemental EIS	compose if new environmental impacts emerge
8	record of decision	official report of decision, public cannot comment but can sue
9	take action	action is carried out

Key Term
EIS - Environmental Impact Statement

Figure 3. The nine general steps to complete the NEPA process. There are often several iterations of the Environmental Impact Statement (EIS) before the final decision is made. The NEPA process in the Klamath Basin has only completed step five. The action is waiting for congressional approval before it can move on to step six.⁶¹

In the NEPA process, the agency sponsoring the action in question (in the Klamath’s case, the Department of the Interior) is required to choose an agency to head the proceedings. The agency or agencies that are going to supervise the process are called

⁶¹ Council on Environmental Quality. “A Citizen’s Guide to the NEPA: Having Your Voice Heard.” Executive Office of the President, December 2007.

lead agencies. Lead agencies choose cooperating agencies, other federal, state, local and tribal agencies, which help through out the process. In most cases, management agencies (as opposed to science and technology agencies) occupy the lead role, although science agencies are often asked to play a role in compiling data and doing research for the Environmental Impact Statement (EIS). In early 2009, the Office of the Secretary of the Interior (SOI) identified two management agencies, the California Department of Fish and Game and the Bureau of Reclamation (BOR), as lead agencies for Klamath Secretarial Determination EIS process. In the fall of 2009, the Office of SOI identified a science and technology agency, the United States Geological Survey (USGS), as the body to oversee the studies and scientific analysis that establishes the foundation for the EIS.⁶² Together over the next four years, the three agencies along with the National Marine Fisheries Service, United States Wildlife Service, the Bureau of Land Management and coordination with States, Tribes and others worked to produce a final EIS and overview report.⁶³

NEPA has two general stages; the EIS is supposed to focus on science and empirical data and the Record of Decision (ROD) is intended to then bring in societal considerations and other value-based factors. There are nine general steps needed to assess a federal action under NEPA. First, all parties must go through a scoping process where agencies start to gather general information about the action and divide up tasks (*step 1*). Under NEPA, any major Federal action that is expected to significantly affect “the quality of the human environment” must submit an EIS that details adverse affects of the action, alternatives to the proposed action, projected short and long-term effects of the action, and commitments of resources that the action will require.⁶⁴ To assess whether or not taking action is the best way to reach a specified goal, the goal must first be identified. This goal is called the “Purpose and Need” statement and dictates what the focus of the EIS will be.⁶⁵ The public is then informed that the agencies are composing an EIS and told how they can participate through the procedure (*step 2*). Next, the agencies will compose a draft EIS that is open for comment from the public. After incorporating

⁶² Lynch, 2014

⁶³ “Klamathrestoration.gov.” Government Page. 2013. <http://klamathrestoration.gov>.

⁶⁴ National Environmental Policy Act, Pub L No 91-190, 83 Stat 853 (1970), codified at 42 USC § 4332(2)(C) (1982).

⁶⁵ Ibid.

comments from the draft, the lead agencies will compose a final EIS that is no longer open to public comment (*steps 3, 4 and 5*). In the case of unforeseen changes occurring after the final EIS is produced or a large amount of time passes between the time that an agency releases an EIS and the action is supposed to be undertaken, lead agencies will re-evaluate and release a supplemental EIS (*steps 6 and 7*).

If Congress passes the legislation, the action will then have to be authorized by head of the lead agency, in this case the SOI with concurrence by the Secretaries of Agriculture and Commerce and the states of Oregon and California. The SOI will then compose a ROD that details how the decision was made to either move forward with the original action or choose an alternative that was offered during the EIS process (*step 8*). Finally, the action will be carried out (*step 9*). While the process is purely procedural and agencies can continue with projects even if they are not officially identified as the environmentally preferred alternative, NEPA provides an outlet for agencies to research and consider alternative actions, and standardizes agency transparency for the sake of the public.

The goal of the EIS was to assess whether the removal of four of the dams along the Klamath would best meet the Purpose and Need. The report states:

The need for the Proposed Action is to advance restoration of the salmonid fisheries in the Klamath Basin consistent with the KHSA and the connected KBRA. The purpose is to achieve a free flowing river condition and full volitional fish passage as well as other goals expressed in the KHSA and KBRA. By the terms of the KHSA, the Secretary will determine whether the Proposed Action is appropriate and should proceed. In making this determination, the Secretary will consider whether removal of the Four Facilities will advance the restoration of the salmonid fisheries of the Klamath Basin, and is in the public interest, which includes but is not limited to consideration of potential impacts on affected local communities and Tribes.

(Final EIS, 2013)⁶⁶

After outlining and reviewing multiple alternatives, the final report concluded that removing the four dams is the best way to achieve goals identified as the Purpose and Need for the proposed action.⁶⁷

⁶⁶ U.S. Fish and Wildlife Service, U.S. Bureau of Land Management, and U.S. Geological Survey. *Environmental Impact Statement for the Klamath Hydroelectric Settlement Agreement*. Environmental Impact Statement. U.S. Department of the Interior, April 4, 2013.

Even after the recommendation by the agencies involved, it is still unclear whether the removal of the four Klamath dams will occur by the projected year of 2020. Congress must first authorize the Klamath Agreements, and therefore the SOI, to make a determination on whether or not the dam removal is in the public interest.⁶⁸ In 2011, Senator Jeff Merkley (D-Or) introduced a bill to Congress to approve the KSD but it was not put on the legislative calendar.⁶⁹ In May of 2014 Senator Ron Wyden (D-Or), former Chairman of the Senate Energy Committee and current Chairman of the Senate Finance Committee, introduced the Klamath Basin Water Recovery and Economic Restoration Act of 2014 to Congress.⁷⁰ It was placed on the Senate legislative calendar on December 10, 2014 but has not yet been voted on.⁷¹ Since the Act was not voted on during the 113th Congress, the Republican-controlled 114th Congress will have to act soon to meet a 2020 timeline for dam removal.⁷²

The NEPA proceedings are the step in the dam removal process that I puzzled over the longest. What first struck me was that this was no ordinary NEPA procedure. Actions that fall under the purview of NEPA are usually assumed to have potentially detrimental environmental impacts: building a new coal fire power plant, tearing down a forest to build a military base, constructing a dam, etc. But this case had one key difference; the proposed action was intended to have a positive environmental impact. The likelihood of the team of scientists performing an EIS that favored the environmentally adverse action (leaving dams up) over the environmentally positive action (taking the dams down) was slim at best. The Purpose and Need statement reflects this by focusing the EIS on volitional fish passage, a goal that could not be reached as economically efficiently if the dams were left up.

Next, the NEPA process was designed to ensure that federal actions were transparent and could be judged gainfully by the public. The EIS that was released in April of 2013 achieves the goal of assessing whether or not the proposed federal action

⁶⁷ U.S. Fish and Wildlife et. al., 2013

⁶⁸ "Interior Department Releases Final Environmental Analysis on Klamath River Dam Removal," April 4, 2013.

⁶⁹ Blumm et. al. 2012

⁷⁰ "Biography | Senator Ron Wyden." Accessed February 9, 2015.

⁷¹ Wyden, Ron. *S.2379 - 113th Congress (2013-2014): Klamath Basin Water Recovery and Economic Restoration Act of 2014*, 2014. <https://www.congress.gov/bill/113th-congress/senate-bill/2379>.

⁷² The Oregonian Editorial Board, 2014

best meets the identified Purpose and Need. It does not, however, explain the process by which that Purpose and Need was conceived, a key piece of information that should be accessible to the public since the Purpose and Need Statement is the main guide for the investigation.

Finally, Dennis Lynch, a scientist from the USGS, a self-identified science agency with little to no experience making policy recommendations, was in charge of producing an EIS, a document whose express job was to provide a recommendation to the Secretary of the Interior. While a USGS scientist had the responsibility of heading the EIS team, experts from the BOR, DOI and National Oceanic and Atmospheric Association were in charge of developing and defining the Purpose and Need statement, which defined the entire direction and scope of the investigation and essentially decided what the outcome of the EIS would be. The official Purpose and Need statement of the Klamath Facilities Removal Environmental Impact Statement/Environmental Impact Report is to achieve volitional fish passage for salmonid species and advance the restoration of salmonid fisheries. The statement goes on to mention “potential impacts on affected local communities and Tribes” and says that it will also take into consideration goals outlined in the KBRA, but I believe it does not do so sufficiently. The Purpose and Need statement focuses the debate about dam removal squarely on the KHSA, or what will happen when the dams come out, but does not give enough time or consideration to the sociological, economic, political, and more minute environmental effects of dam removal in the Basin. Of course, the EIS is not designed to do those things—herein lies the problem. While it is true that the EIS is only part of the NEPA process, and the ROD is meant to integrate non-empirical aspects of the decision, it keeps science and politics separate which I believe is detrimental to the identification of a sufficient solution.

[Instant Replay](#)

At this point it is important to provide a recap and ensure the clarity of the main points of the Klamath Basin controversy before moving forward. Figure 4 gives an overview of the proceedings in the Basin up to 2015 and possible outcomes in the future. While the NEPA process is only partially completed (Fig. 3), there are already some flaws with the proceedings. First, the legislation that is in place to address environmental issues is not designed to incorporate the societal nuances of such complicated

disagreements. While the process of coming to the Klamath Settlement Decision was a great step in the right direction as far as a new approach to environmental solution-making, the NEPA process efficiently disassembled the important work of incorporating viewpoints outside of experts in the field that the Settlement Agreements had accomplished. Second, the federal agencies whose jobs are to provide solutions to environmental dilemmas are too focused on sticking to their agency goals (like objectivity) to judge whether or not they are relevant and helpful expectations to hold themselves to. Third, the Basin is home to a history of complicated power relations that are not adequately recognized in the NEPA process. Finally, the settlement agreements focus on a multitude of different issues in the Basin but, under NEPA, the EIS shifts emphasis primarily toward the volitional passage of salmonid species as a metric by which to come to a recommendation.

These four problems are what I will aim to address by applying Latour's new Constitution to the NEPA process in the Klamath Basin.⁷³

⁷³ More on this in "The New Constitution in the Klamath Basin" and "Imagining a New History"

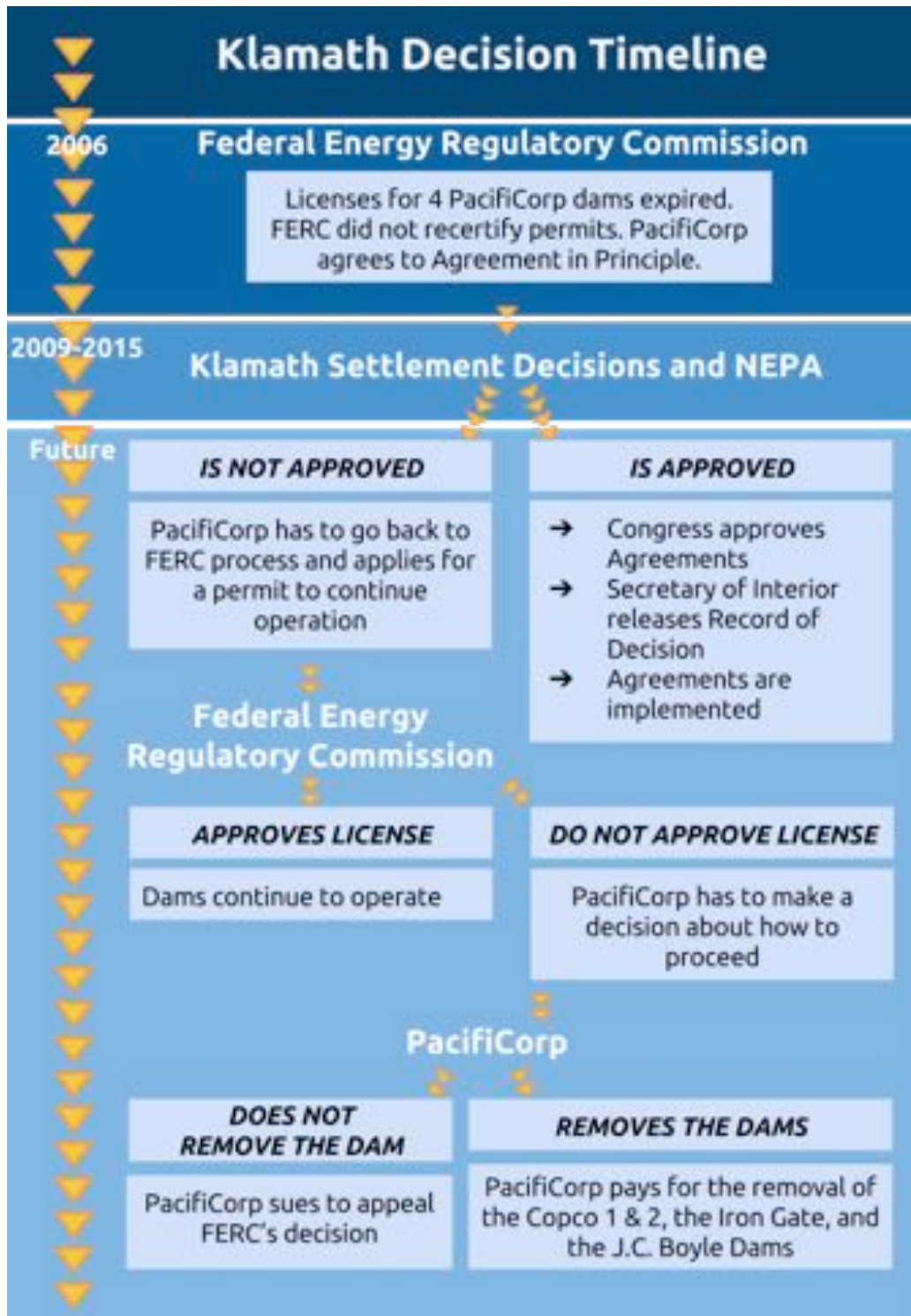


Figure 4. Timeline of the Klamath Decisions. The Klamath process is currently in the Klamath Settlement Decisions step. Steps one through five of the NEPA process (Fig. 3) have been completed but Congress has not yet approved the Settlement Agreements.

Objectivity as an Interesting Fiction

The above account of the dam removal controversy in the Klamath Basin acts as a structure on which to superimpose the following discussion of objectivity in the philosophical sense, as well as how it relates to disinterested and interested disciplines. This discussion of objectivity is not intended to argue that science requires objectivity or that objectivity is an unattainable ideal. Instead, it asserts that when the scientific methodologies used to create policies are considered to be ‘objective’ and ‘value-free’, as in the case of the EIS report to the Secretary of the Interior, science can be used to silence political concerns.

Philosophy

The study of scientific objectivity has a well-established philosophical history. Topics on scientific objectivity range from the discussion of objectivity as freedom from scientists’ personal biases, objectivity as faithfulness to facts, and objectivity as a conduit to a value free ideal.⁷⁴ Some scholars in the field are critical of scientists’ aspirations of objectivity and challenge the idea that objectivity is in fact something worth striving for and achieving.

In *Science, Policy, and the Value-Free Ideal*, Heather Douglas does not discount the importance of scientific research and makes it clear that “In general, we have no better way of producing knowledge about the natural world than doing science.”⁷⁵ Instead, Douglas critiques the desire by so many to completely eradicate values from science. Bruno Latour makes a complimentary argument; it should be acknowledged that values inevitably play a role in the production of facts, but the conceptual understanding of the relatedness of science and politics has led to an unhealthy development of the role of sciences in policy.⁷⁶ Rather than trying to deny that values creep into research or that personal biases are completely avoidable, Peter Machamer and Gereon Wolters believe that scientists, policymakers, and citizens should “elucidate the value presuppositions.

⁷⁴ Reiss, Julian, and Jan Sprenger. “Scientific Objectivity.” Edited by Edward N. Zalta. *The Stanford Encyclopedia of Philosophy*, 2014.

⁷⁵ Douglas, Heather. *Science, Policy, and the Value-Free Ideal*. 1st Edition edition. (Pittsburgh, Pa: University of Pittsburgh Press, 2009), 1.

⁷⁶ Latour, Bruno. *Politics of Nature: How to Bring the Sciences into Democracy*. Translated by Catherine Porter. (Cambridge, Mass: Harvard University Press), 2004.

And, more importantly, be ready to critically assess them.”⁷⁷ This way, science’s relationship with politics and use in policy will be an open dialogue instead of an unattainable and un-ideal goal.

Disinterested Disciplines

As a professor in the department of fisheries and wildlife at Oregon State University, Robert T. Lackey is familiar with the role that science plays in the realm of policy. “When performed appropriately and without a policy bias,” he believes that “science has much to offer society, decision makers, and individual citizens.”⁷⁸ Scientists and non-scientists alike believe that to perform science ‘appropriately,’ scientists must remain objective by following the procedures agreed upon by the members of their field to provide accurate data and not letting their own values guide their work.

The system currently in place to address federal environmental issues relies heavily on scientists to produce objective facts that policymakers can then interpret and transform into value-based political decisions. In this system, science is believed to be a ‘disinterested’ discourse, meaning the truths that practitioners produce are considered truths regardless of the social context.⁷⁹ While USGS scientists may give examples of various outcomes that would follow from different policy choices, they cannot suggest one alternative over another. Their only role is to provide information about which option can best reach a certain objective (i.e. Choice A, not choice B, will best achieve the goals of C). Objectivity, as a goal, is intended to keep research from being influenced by personal feelings or opinions. While it could be said theoretically that disinterested discourses exist, in reality, they are influenced by outside forces despite the claim that they are not. They are in fact political. Discourses that are assumed to be disinterested, like the fields of hard science, are geared towards objectivity and value-free work, both believed by some to be fundamentally unattainable ideals.

The term ‘objective’ is thrown in front of terms like proof and procedure all the time. Even without a clear understanding of what all of those terms mean, there is a

⁷⁷ Machamer, Peter, and Gereon Wolters, eds. *Science Values and Objectivity*. 1 edition. (University of Pittsburgh Press, 2004).

⁷⁸ Lackey, Robert T. “Is Science Biased Towards Natural?” *Northwest Science* 83, no. 3 (2009): 291–93.

⁷⁹ Jasanoff, Sheila S. “Contested Boundaries in Policy-Relevant Science.” *Social Studies of Science* 17, no. 2 (May 1, 1987): 195–230. 196.

general belief that objectivity, whatever it is, is something to strive for.⁸⁰ In federal environmental science, objectivity is even mandated. Under the 2001 Consolidated Appropriations Act, the Information Quality Act requires federal agencies to issue guidelines “ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by [Federal agencies].”⁸¹

On Being a Scientist is the foremost guide for students entering the professional science field. The handbook covers topics like “Responsible Conduct of Research” and “The Treatment of Data”. While the word “objectivity” only shows up a few times in the manual’s 83 pages, its appearance paints a clear picture of how the science world understands the concept. In “The Researcher in Society” the authors explain that even though scientists should strive towards objectivity, they “also have the right to express their convictions and work for social change.”⁸² The handbook explains that an individual’s values can compromise their scientific integrity. However, the author remarks, “it is clear that all values cannot – and should not – be separated from science.” After all, the authors point out that “the desire to do good work is a human value.”⁸³ While the guide makes it clear that the authors understand that values will creep into scientific work, it presupposes that facts can exist without values and does not acknowledge the explicit and subsurface influence that politics has on science. The term objectivity is used relatively loosely without any clear definition to connote “good work” but there is never a discussion about whether objectivity is an attainable or worthwhile goal.

The social character of science occupies a key role in scientists’ struggle towards objectivity. Individual practitioners are dependent on each other for the conditions under which they practice, the education they receive, and the proliferation of their work.⁸⁴ In her 1987 article, Sheila Jasanoff contends that the peer review process, an inherently social method used by scientists to enforce objectivity and judge their work, is “devised

⁸⁰ Daston, Lorraine J., and Peter Galison. *Objectivity*. New York; (Cambridge, Mass.: Zone Books, 2010). 597.

⁸¹ Consolidated Appropriations Act, Pub L No 106-554, (2000), § 515 (2001).

⁸² *On Being a Scientist: A Guide to Responsible Conduct in Research*. 3rd ed. (The National Academic Press, 2009). 67.

⁸³ *On Being a Scientist*, 69, 2009

⁸⁴ Longino, Helen E. *Science as Social Knowledge: Values and Objectivity in Scientific Inquiry*. Vol. 25. 2. Princeton University Press, 1990.

by scientists to validate each other's discoveries, [and] reinforces the position of science as an autonomous social institution requiring no external control."⁸⁵ Without the outside members of society accepting their findings, the epistemic community of scientists would have no real credibility. Therefore, it is necessary to convince the public that scientific work holds to certain ideals and has concrete and widespread procedures that produce dependable results. Using the term objectivity is a way to legitimize truth claims and instill public belief in this private system of science production whether or not objectivity is achievable or scientific methods are actually objective.

Interested Disciplines

Many believe politics to be an 'interested' discourse in which political representatives deal only with morality and values and speak from a position that has specific interests, with their speech acts defending those interests. Interested discourses like politics and policymaking are perceived to be fundamentally focused on people's values and making decisions based off of those values. These are determinations that scientists are "not sanctioned" to make because science is considered by many to focus solely on facts. Using the term objectivity in politics is somewhat counterintuitive since the field is fundamentally about voicing an opinion and having specific aims to advance a certain point of view. Yet the concept of objectivity plays a crucial role in the realm of policy and has wriggled its way into political debate. There is a longstanding view that practicing "evidence-based policy making" should be the *modus operandi* for policymakers. Proponents of "evidence-based policy" support the use of rigorous objective research in public policy debates. The aim of this practice is to enhance the "reliability of advice concerning the efficiency and effectiveness of policy settings and possible alternatives".⁸⁶ Practitioners of "evidence-based policy" understand that successful policy results from the integration of values and objective research and therefore focus on issues of problem framing and communication of scientific research to decision makers.

The inclusion of scientific research in environmental policy decisions is not widely disputed. However, the conventions towards value-free and objective science do not enable scientific analysis to show what goals should be pursued, only how to

⁸⁵ Jasanoff, 196, 1987

⁸⁶ Head, Brian. *Evidenced Based Policy*. University of Queensland, 2010.

administer policies.⁸⁷ If used to identify goals, science and objectivity can obscure political motives and negate political debate. If political leaders can point to scientific research that supports their opinions, their values will appear justified. Historically, science has been misappropriated to advance political platforms like the physical and mental inferiority of certain races or genders.⁸⁸ In addition to the misuse of scientific research, science can be used to anesthetize political debate. By granting objectivity authority in politics, political debate has arrived at a place where political interests cannot be expressed honestly. Speech that announces itself as value-free is given more respect than speech that tries to promote a certain viewpoint.⁸⁹

Political Ecology and Post Politics

The following sections will discuss how relying too much on science and objectivity in politics can nullify political debate and lead to what Bruno Latour calls “frauds.” Political ecology is the field of study that best addresses concepts that have arisen in this analysis of the Klamath Basin controversy including changes in social/environmental systems and relations of power. The following will provide a brief summary of the way in which political ecologists consider these ideas and will raise the question of whether or not the field can take a more active role in the realm of policymaking. Post politics also plays an important role in the Klamath Basin proceedings.

Political Ecology

The study of political ecology is not easily defined; even the field’s founding academics have trouble pinning it down. The true tell of the confusion associated with political ecology, though, is its Wikipedia page. An orange and gray box at the top of the page alerts readers, “This article needs attention from an expert in geography, anthropology or ecology.”⁹⁰ Even at the lightning-fast pace at which the internet moves and the brazen attitudes in which its users post, this unresolved warning, time stamped

⁸⁷ Weber, Max. “Science as a Vocation.” In *From Max Weber: Essays in Sociology*, translated by H.H. Gerth and C. Wright Mills, 129–56. Oxford University Press, 1946.

⁸⁸ Harding, Sandra. “After the Neutrality Ideal: Science, Politics, and ‘Strong Objectivity.’” *Social Research*, 1992.

⁸⁹ More on this in *Post Politics*

⁹⁰ “Political Ecology.” Encyclopedia. *Wikipedia*, August 17, 2014.

May of 2013, makes it clear that no geographer, anthropologist or ecologist who has visited the page feels that they are quite up to the task of providing their expert opinion.

Political ecology is a field that combines disciplines of environmental sociology, environmental anthropology, environmental economics, political science of the environment, and geography.⁹¹ Overtaking its predecessor of cultural ecology, the field of political ecology has come under scrutiny by scholars who practice within the discipline as well as individuals outside of it.⁹² Compared to cultural ecology and systems theory, which focused on adaptation and homeostasis, political ecology at its inception “emphasized the role of political economy as a force of maladaptation and instability.”⁹³ The field emphasized primarily biophysical aspects of particular environments, but around the 1990s the focus shifted more heavily to politics over ecology.

In *A Critical Introduction to Political Ecology*, Paul Robbins aims to elucidate “the way that politics are inevitably ecological and that ecology is inherently political.”⁹⁴ He generally defines the study of political ecology as the “empirical research-based explorations to explain linkages in the condition and change of social/environmental systems, with explicit consideration of relations of power.”⁹⁵ Robbins suggests that the field would benefit from moving away from the conceptualization of connections between entities as chains, posing a more interconnected relationship that mirrors more of a network. The book goes on to highlight the four theses of political ecology. These include degradation and marginalization, environmental conflict, conservation and control, and environmental identity and social movement.⁹⁶ Each of these theses’ relevance is tied to the distribution of power within the system.

Even after developing stronger ties to politics, political ecology is still seen as not expressly useful for creating policy by some bureaucrats, policymakers, and even scholars practicing in the field. While not everyone holds this view, there are few

⁹¹ Blaikie, Piers. “A Review of Political Ecology : Issues, Epistemology and Analytical Narratives.” *Zeitschrift Fur Wirtschaftsgeographie* 43, no. 3–4 (1999): 131–47.

⁹² Walker, Peter A. “Political Ecology: Where Is the Policy?” *Progress in Human Geography* 30, no. 3 (2006): 282–395.

⁹³ Walker, Peter A. “Political Ecology: Where Is the Ecology?” *Progress in Human Geography* 29, no. 1 (2005): 74.

⁹⁴ Robbins, Paul. *Political Ecology: A Critical Introduction*. 1 edition. (Malden, MA: Blackwell Publishing, 2004). Xvi.

⁹⁵ Robbins, 12, 2004

⁹⁶ Robbins, 2004

examples of practitioners of political ecology engaging with specialists outside of their own field.⁹⁷ Peter Walker attributes part of this public relations problem to the disparate nature of political ecology and the lack of any specific audience for the wide variety of work produced in the discipline. “Critique by itself,” he states, “is not engagement... Whether political ecologists recognize it or not, a failure to fully and energetically engage in policy at a time when society and the planet urgently need their perspectives is a political act with profound implications.”⁹⁸ The categorization of research itself as a political act is becoming an increasingly difficult classification to defend so the question remains, is there a way for political ecology to have a meaningful and identifiable impact on the systems it critiques?

Science, Nature, and Politics

Political ecologists like Walker and Robbins represent the more structuralist and Marxist view of the field.⁹⁹ Their views reflect a greater suspicion of power and the capitalist mode of production. This is just one perspective on political ecology. Bruno Latour comes at political ecology from a different angle. In his analysis, Latour presents more of a post-structuralist view. While he still critiques the distribution of power, Latour’s argument in his 2004 work *Politics of Nature* focuses more on distinctions between science, nature, and politics. In his book Latour argues that the current understanding of politics as counter to nature is only detrimental to the field of political ecology. To understand nature and politics as separate entities is to overlook how politics has shaped science, and how science has in turn shaped nature. Piers Blaikie defines one aspect of political ecology as “an examination of different states of nature, their change through time and their contested representations under conditions of unequal power,”¹⁰⁰ but those states of nature, Latour argues, only “become knowable through the intermediary of the sciences.”¹⁰¹ Science production, or the means to produce what are colloquially called “facts”, is inherently politicized since facts only exist under the pretense of institutions that prescribe them to be facts.

⁹⁷ Walker, Peter A. “Political Ecology: Where Is the Policy?” *Progress in Human Geography* 30, no. 3 (2006): 282–395.

⁹⁸ Walker, 392, 2006

⁹⁹ Robbins, 2004

¹⁰⁰ Blaikie, 133, 1999

¹⁰¹ Latour, 4, 2004

Latour refers to this definition of facts as Science (pronounced “Capital-S Science”), or the politicization of practicing the sciences.¹⁰² This fragmented view of science, nature, and politics leads to what Latour calls a trap of (political) epistemology. (Political) epistemology is the “[distortion] of theories of knowledge in order to rationalize politics.”¹⁰³ Using Science to rationalize politics, he believes, leads parties to “[engage] in politics in a way that is protected from all politics,”¹⁰⁴ or take part in “post-politics”.

Post-Politics

Thinkers like Slavoj Žižek and Erik Swyngedouw see post-politics as the practice of taking the political debate out of politics.¹⁰⁵ Post-politics has become commonplace in Western politics, especially in Europe and the United States: a trend toward postured debate rather than productive dialogue. Žižek says that the indication of this infiltration is “the growth of managerial approach to government: government is reconceived as a managerial function, deprived of its proper political dimension.”¹⁰⁶ The colloquial term “politically correct” is a common example of post-politics in the social realm. A statement that is considered politically correct removes the language that could incite any debate or conflict. It is effectively the practice of negating political disputes at the cost of true political debate.

The problem that results from a warped understanding of science, nature, and politics and the rise of post-politics in political debate is the misappropriation of methodologies to address environmental issues. The conception of science and politics as being on opposite sides of a barrier is inaccurate and ignores all of the work (Science) that goes into producing those facts. It paints the production of facts as politics-free when it is actually a politically influenced practice. By accepting the premise of a world of science untouched by politics, politicians are barred from “the very multiplicity of states of the world that [make] it possible to form an opinion and to make judgments about ...

¹⁰² Latour, 2004

¹⁰³ Latour, 241, 2004

¹⁰⁴ Latour, 2004

¹⁰⁵ Swyngedouw, Erik. “Impossible Sustainability and the Post-Political Condition.” In *Making Strategies in Spatial Planning*, edited by Maria Cerreta, Grazia Concilio, and Valeria Monno, 185–205. Urban and Landscape Perspectives 9.

¹⁰⁶ Žižek, S. (2002). *Revolution at the gate: Žižek on Lenin, the 1917 writings*. London: Verso.

what is and what ought to be.”¹⁰⁷ Latour believes that the separation of science and politics can lead to two types of frauds. The first is the overt use of values to discount facts and the second is the use of facts to falsely discount all but one plan of action.¹⁰⁸ Since the method of addressing environmental issues sees science and politics as necessarily separate, whatever solution results will submit to one or both of these frauds.

Proceedings in the Klamath Basin debate over dam removal succumbed to the second of these two Latourian frauds. The decision to remove the four dams in the Basin was never really up for public discussion, seeing as once the Settlement Agreements were reached, the NEPA process took over. It was less of a show of good faith and more of a show of good business sense that PacifiCorp worked with stakeholders in the basin to reach the Klamath Settlement Decision about how the removals would progress. Although there was room for public comment on the EIS, the final decision by the SOI can only be challenged in court.

Because the EIS was headed by a USGS scientist and had a scientifically based methodology, the Purpose and Need statement had to be addressable through empirical research. The Purpose and Need statement for the EIS used the goal of reintroducing threatened species to identify the removal of the four dams as the best plan of action. Here, the second fraud appears; identifying species reintroduction at the main goal points to dam removal as the most biologically and economically feasible action. The EIS process precluded the answer to the dam removal question from focusing on value-laden issues by design because those who carry out the EIS are scientists and are not ‘supposed’ to deal with values. Consequently, the EIS focus was skewed towards the dam removal aspect of the KSD and not on what will happen to the people who live in the Basin post-removal. While it is true that the EIS is only part of the NEPA process, and the ROD is meant to integrate non-empirical aspects of the decision, this process keeps science and facts and politics and values separate which I believe is detrimental to identifying an effective solution. In Latour’s words, “If we concede too much to facts, the human element in its entirety tilts into objectivity, becomes a countable and calculable

¹⁰⁷ Latour, 98, 2004

¹⁰⁸ Latour, 100, 2004

thing.”¹⁰⁹ Scientific analysis alone cannot uncover which goals should be pursued. The explicit inclusion of values and morals is necessary for the understanding of how to move forward in such complicated debates.

Latour's Bicameral System

Introduced in the previous section, Peter Walker's question as to whether or not political ecology is capable of providing a meaningful and helpful addition to policymaking discussions remains unclear. The rest of this paper will act as an exploration of whether it is possible for a critique of the environmental solution making system to be practically useful in the realm of policymaking. The following sections will re-envision the proceedings of the Klamath Basin controversy using the new bicameral framework proposed by Bruno Latour in his 2004 book *Politics of Nature* as a methodology, and assess the efficacy of Latour's system in the Klamath.

The system Latour proposes in *Politics of Nature* is meant to take a critical look at when different types of power (or different roles of expertise) should be used. It is not intended to try and eliminate the power that groups possess, but instead proposes that the reader recognize these intricate power dynamics to better understand and work to make power relations more advantageous for all parties. Latour explains his perception of the current system of environmental solution-making, explains his argument behind the need for a new structure, and gives an overview of what he believes this new structure should look like. He lays out his normative view of the current understanding between the relationship of science and politics. He points to flaws in this perception and argues that the division of science and politics, facts and values, and disinterested and interested discourses are acting as deterrents to the system as a whole. As Latour does in much of his writing, he then proposes a solution to the problem he has just identified. In this case, he believes that instead of perpetuating divisions and binaries, all of the actors in the system should be able to take on the attributes of multiple actors and no longer be pigeonholed into speaking only on matters of their specific expertise.

¹⁰⁹ Latour, 4, 2004

The Current Constitution (Old Bicameralism)

Latour believes the current system of understanding the world is comprised of two houses. These two houses are the house of nature and the house of society (Fig. 5). The house of nature is made up of an assembly of things. The house of society is made up of an assembly of humans. Latour calls this a double split.



Figure 5. The current (old) Constitution. Latour believes the current constitution is made of two houses: house of nature (where facts reside) and house of society (where values reside), and they are kept separate. In the case of the Klamath, house of nature is science (disinterested) and house of society is politics (interested).

The understanding of nature and politics as being necessarily separate keeps these two houses separate. The ramification of this separation is the distinction of facts (in the house of nature) and values (in the house of society) as detached as well. Latour has a problem with this division. To use the word fact, he believes, is to erase all of the inherently political work that has gone into producing that fact. For example, the facts put out by the USGS are only considered to be so because of the wide-held acceptance of USGS scientists as an expert group. Without all of the time and effort put in by the federal government to define the USGS as a fact-producing agency, their work would likely not hold the weight of being distinguished as facts. Furthermore, to segregate these two ideas is to segregate the scientists who are meant to deal only with fact and the politicians that are meant to deal only with values. For either group to form opinions and

make judgments, Latour says they must be able to access both facts and values whether or not they are considered by each group to be distinct.¹¹⁰

In the old bicameral system, actors have roles and are expected to mind the distinctions that those roles set.¹¹¹ In addition, the method of proposing ideas and weeding them out is rigged. The beginning of the process is where stakeholders with proper representation get the chance to voice their opinions and desires. After this period, those in power will negotiate over which suggestions are practicable and produce a final say on the matter whether it be a law, legislation, or other type of agreement. Once this process is complete, revision is discouraged and difficult.

Latour's description of the current state of affairs fits in with the history of proceedings in the Klamath Basin, specifically the NEPA process. Scientists and politicians represent Latour's two houses: the fact-based work that scientists are doing for the EIS is meant to inform the decisions by policymakers who are supposed to consider values, but the two sides are not intended to interact extensively and are required to only speak from their prescribed expertise. Non-experts supposedly already had their chance to speak during the more open creation of the Settlement Agreements and whatever determination the politicians (the house of society) eventually make is then carried out with little to no ability for outside parties to suggest changes or refute their decision.

The New Constitution (New Bicameralism)

With the new Constitution, Latour makes an attempt to remedy all of the problems associated with the old one: strict distinctions between politics and nature, stringent roles for actors, and few chances for reassessment and recourse (Fig. 5). My explanation of Latour's system is simplified for the purpose of clarity.

In the current constitution, all of the actors are assigned roles with specific tasks. This new bicameral system requires that each of the four identified roles (scientists, politicians, economists, and moralists) take part in the processes of both houses. The skills of these roles are diverse. Scientists provide the means to "shift viewpoints constantly" by holding to a set of steps to assess any situation.¹¹² Politicians contribute a

¹¹⁰ Latour, 96-99, 2004

¹¹¹ For example, scientists deal with 'facts', politicians with 'values'.

¹¹² Latour, 138, 2004

certain comfort with conflict. Economists have the ability to distil, internalize, and externalize information.¹¹³ Moralists add a sense of uncertainty; the best moralists introduce confusion, not clarity into the equation. Instead of viewing each actor as having a specified role, the four roles should be compared more to attributes that actors can adopt. One actor may adopt different attributes though out the process and therefore the various skills of each actor will be recognized and utilized. These actors can be both humans and nonhumans and make up what Latour refers to as “the collective.”¹¹⁴

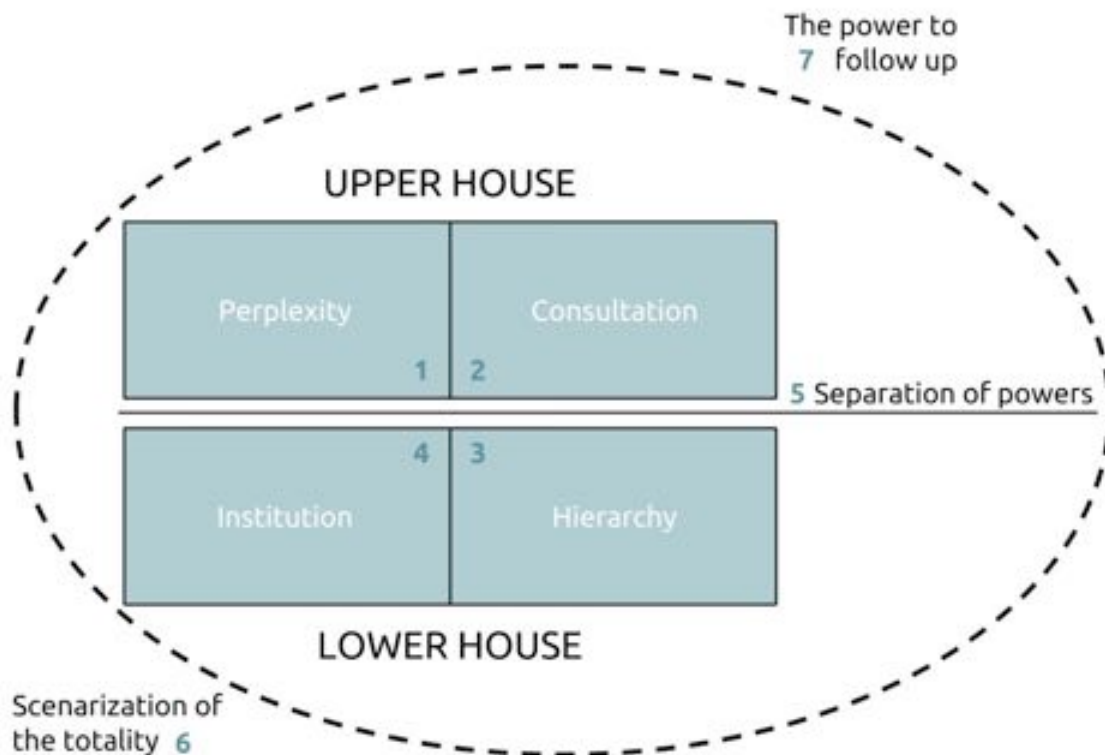


Figure 6. The six functions of the new Constitution and the power to follow up. The collective uses its skills to complete these functions and reach a consensus on which goals to undertake as a group.¹¹⁵

To use the new bicameralism framework, the collective employs its diverse set of skills to complete the six functions of the new Constitution and the power to follow up (Fig. 6). The first two steps work together to make up the upper house that focuses on

¹¹³ Latour, 150, 2004

¹¹⁴ Latour, 238, 2004

¹¹⁵ Latour, 143, 2004

“taking into account” or the absorptive part of the process. Step one is *perplexity*. Perplexity is based in fact and is the act of acknowledging and taking in all of the complexities and connections that make up external reality. Next comes *consultation*, a value-based action that is meant to consider the relevance of all of the traits of the external reality. The third and fourth combine to create the lower house and are meant to be more productive and “rank in order”. Step three is called *hierarchy*, a value-based action that is meant to arrange propositions from the upper house and choose what issues the collective should focus on. The fourth step, referred to as *institution*, is focused on facts and is meant to bring some sort of closure to the process.¹¹⁶

Steps five and six apply more generally to the entire process and are labeled by Latour as *separation of power* and *scenarization of the whole* respectively. Separation of power is the necessity to keep the roles upper and lower houses distinct from each other. This way the actions can be completed fully without fear of them influencing each other too heavily. It also keeps the process ready to be used in the future. Scenarization of a whole is less of a step to take and more of a step that naturally occurs. It represents how the collective can be inward looking and forget, in a way, that certain things have been excluded throughout the process of creating a reality.

Finally, the new bicameral framework is more of a continuous process instead of a means to an end. The last step in the system is the *power to follow through*. After the lower house has ranked all of the ideas from the upper house, their product will eventually be sent back to the upper house to be completed again. This constant reassessment enables the product of the system to evolve as the members of the collective and their desires change.

¹¹⁶ Latour, 108-118, 2004

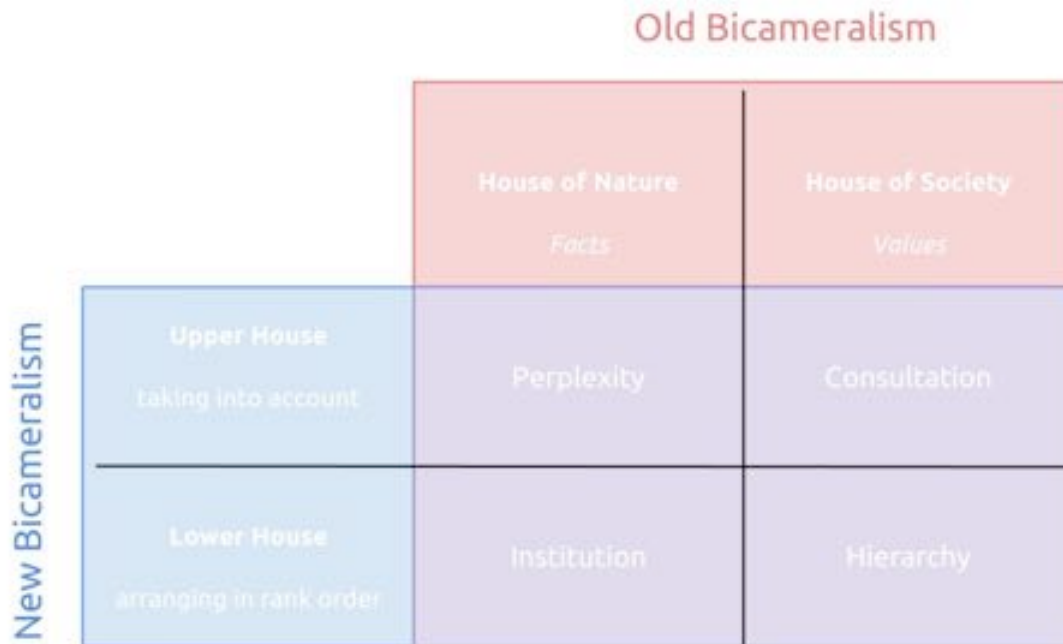


Figure 7. Old bicameralism compared to new bicameralism. Old bicameralism separates values and facts into the house of nature and the house of society. New bicameralism has skills of the collective that deal with both facts and values in both houses: the upper house – perplexity (fact) and consultation (value) and the lower house – hierarchy (value) and institution (fact).¹¹⁷

Latour's new Constitution still holds to the bicameral system but makes an effort to combine facts and values instead of intentionally keeping them separate. Latour does this by redefining the house of nature and the house of society as the upper and lower houses (Fig. 7). The upper house is where all of the actors, or "the collective," can air their grievances and propose solutions. Latour refers to this action as the "power to take into account," generally for the purpose of seeing who and what should be included in the constructed reality (Fig. 8). For that reason, the upper house is intended to be more cacophonous than orderly as the collective group tries to answer the question "How many are we?"¹¹⁸ The lower house is where all of the ideas of the upper house are assessed and organized. Ideas that resonate are kept while others are left behind. Latour gives this house the "power to arrange in rank order" with a goal of answering the question "Can we live together?"¹¹⁹ An outside evaluator does not perform this action; it is left to the

¹¹⁷ Latour, 115, 2004

¹¹⁸ Latour, 181, 2004

¹¹⁹ Latour, 181, 2004.

actors who proposed all of the ideas in the first place. This enables all of the actors who are involved in the actions of upper house to take part in the critique of others ideas as well as their own in the lower house.

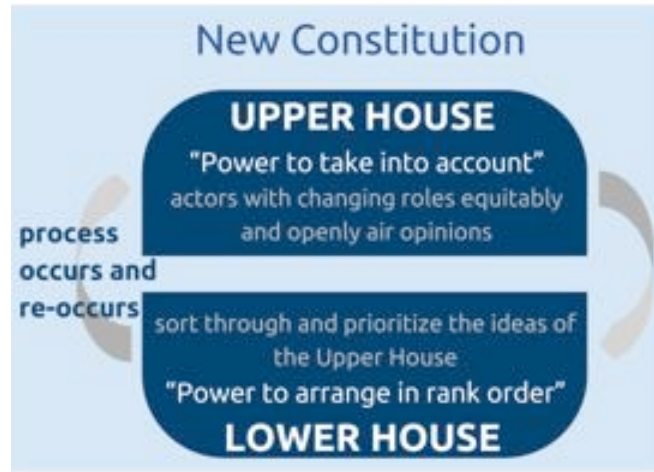


Figure 8. The New Constitution. The collective is made up of actors that are no longer confined by their expertise, they are capable of contributing opinions from multiple different viewpoints to the upper house. The lower house is then a space to sort through these ideas and prioritize which goals the collective should seek to achieve. The process is continuous and allows for the evolution of ideas and opinions from the collective.

The New Constitution in the Klamath Basin

Latour's framework is not descriptive but prescriptive; it does not purport to be anything more than an idea of how things should or could be. However, my analysis of the proceedings in the Klamath Basin, with Latour's new Constitution in mind, has resulted in a surprising discovery: the nine steps of the NEPA process (Fig. 3) can be transformed to fit into the framework of Latour's new Constitution. Although the NEPA process does not fit perfectly into Latour's system, some key similarities between the steps of NEPA and the new Constitution give hope to the prospect of formulating an alternative way to address environmental issues. In addition, the successful comparison of Latour's system and the current system in the Klamath Basin illustrates the contribution that political ecology theory can make to policy decisions and environmental solution making methodologies.

The Role of Scientists in the New NEPA Process

Latour defines four types of actors in the new Constitution: scientists, politicians, moralists, and economists. For this thought experiment I will follow a scientist through Latour's six steps and the power to follow through using the Klamath controversy as a point of connection between the current and new NEPA processes (refer back to Figure 3 and "The New Constitution (New Bicameralism)" for clarification on the NEPA steps and Latour's framework). The main point of Latour's process is to flip the old Constitution on its side, so where previously facts and values have been kept separate, they now both reside in each house (Fig. 7). This endorses all actors, including scientists, to make fact-based and value-based judgments.

Steps one and two in Latour's framework focus on "taking into account." First comes *perplexity*. Perplexity occurs in the process because of the discovery of information that was previously unknown.¹²⁰ It is a fact-based step that is descriptive of accepted reality. In the case of the Klamath, the action that led to perplexity was the listing of Lost River and short nose suckers and coho salmon as threatened under the ESA. The listing of these three species provided new information and led to instability in the Basin. Drawing from the NEPA process, "scoping" fits best into the step of perplexity. In this step, scientists bring in new information, discuss existing information, and go over what research is necessary to be fully acquainted with the issue and prepare to compose an EIS.

In conjunction with perplexity is *consultation*, the prescriptive value-based step that focuses on the production of voices. Here scientists' skill is having the expertise to know what voices should be listened to, and how. Their backgrounds in thoughtful critique and empirical-based research make them the best evaluators for technical claims to truth and expert judges about which claims to consider over others.¹²¹ The NEPA steps of "notice" and "comment" fit within consultation. During these steps, scientists are transparent. They primarily provide the public with information about the methods they are undertaking to produce the EIS. Scientists are also responsible for constructing suitable tests and reliable witnesses for the EIS by inviting participation from certain

¹²⁰ Latour, 162, 2004

¹²¹ Ibid.

stakeholders. Unlike their current objective role in notice and comment, scientists make value judgments as to which stakeholders should be listened to and how. In the Klamath, this could mean seeking the opinions of certain representatives from all of the tribes in the region, various groups of ranchers and farmers, environmental groups, conservation groups, free-river advocates, PacifiCorp and dam operators, and other citizens in the Basin.

Steps three and four focus on “putting in rank order.” Third, *hierarchy* is value-based and poses the question of how to rank issues by level of importance and what dilemmas should be foregrounded in order to address epistemological uncertainty. Scientists bring to hierarchy the ability to discover innovations to allow compromise.¹²² The various “iterations of the EIS” and the definition of the Purpose and Need statement fit into this step. This involves identifying the main goal of the assessment, sorting through possible proposed actions, and assessing how to reach a compromise

Institution is the fourth step. It is fact-based and brings closure to the process. Here scientists contribute their ability to definitively distinguish what is to be accepted as truth or what is the most legitimate claim to reality. The “Record of Decision” is the NEPA step that comes closest to institution, but currently it does not include scientists directly, only the EIS that they have produced. In this re-imagination of the NEPA process, scientists play a more hands on role in the final decision and production of the ROD.

Although step four has just definitively identified an accepted reality, step five, *separation of powers*, is intended to keep the process open and ready if it needs to be used again. Step six, *scenarization of a whole*, then codifies the final decision and is the implementation of the recommended action. But, the process does not end there. The last step, *the power to follow through*, occurs when new information surfaces and leads right back into step one. In the NEPA process, this step would replace the closure that comes with a ROD. Instead of litigation being the only option for change, the process can reoccur. For example, if the consensus reached in the Klamath does not meet the needs of the parties that live there, it will be completely reassessed, not just amended.

¹²² Latour, 162, 2004.

Imagining a New History

Let us revisit the reasons that this new Constitution was necessary and see if it made any progress in addressing these issues.

First, *the legislation that is in place to address environmental issues is not designed to incorporate the nuances of such complicated disagreements.*

Legislation like the CWA and the ESA is designed to address issues that deal concretely with scientific fact. While this legislation is arguably the best way to address environmental issues at this point in time, it is not able to account for the social and economic factors that make up a significant amount of many conflicts. Latour's framework remedies this problem indirectly by turning a procedure that typically valorizes science and scientific expertise into a process that promotes the use of facts and values in the actions of actors that are usually confined to either facts or values.

Unbinding the voices of these various actors will allow for a more nuanced approach to environmental issues by giving all stakeholders the ability to speak out and have their grievances be kept in mind through out the entire process. In Latour's words, his process moves away from glorifying 'Science' (politicization of the sciences) and toward doing the practical work of 'the sciences'. Additionally, the new Constitution removes the finality associated with laws and gives actors the ability to continue to contribute and alter decisions, which Latour calls *the power to follow up*.

Second, *the federal agencies whose job it is to speak to environmental dilemmas are too bureaucratized (focused on sticking to their agency goals) to judge whether or not they are reasonable and helpful expectations to hold themselves to.*

Currently, science agencies deal with fact, management agencies dabble in the realm of values but are primarily focused on information, and politicians champion of values and morals. Divvying up certain powers or responsibilities to certain groups hinders those groups' abilities to fully comprehend and assess an issue. Latour's framework requires that agency goals and jobs be redefined to reflect the introduction of new multitudes and types of actors. Instead of solely filling the niche of a scientist, politician, economist, or moralist, individual actors can switch between the roles. There will be no need to try and achieve what scientists define as objectivity, only the necessity to ask whether or not it does exist and if it is necessary to achieve in this particular

solution finding process. Since actors will wear many different hats, all of the agencies mentioned up to this point will have completely different goals and configurations. In order to figure out what types of goals agencies (or the collective) should prioritize, the collective will have to undergo what Latour calls ‘collective experimentation’ or a continual process of collecting and ruling out ideas.

Third, the Basin is home to a history of complicated power relations that are not adequately recognized in the NEPA process.

In the past, tribes native to the Klamath region have been manipulated and neglected in regards to water rights. Prior appropriation was dreamed up by those in power as a way to claim ownership over a previously public resource and explicit treaties between Klamath tribes and the federal government took decades to be officially recognized. The actions of Vice President Cheney that led to the fish die off of 2002 have illustrated that professional opinions of scientists have been pushed aside and coercive federal officials have gone over the heads of federal management agencies to benefit themselves and their supporters. In addition to these examples, much larger and smaller power dynamics exist in the Basin and play daily a role in shaping the lives of its occupants. While Latour’s system is not necessarily a way to even the playing field, it is more importantly a way to identify what power relations have been misrecognized or ignored and bring those to light. In Latour’s view, only a civilization that takes these power dynamics into account will be capable of working towards a ‘common good,’ one that brings together morals and truths instead of separating them.

Fourth, the settlement agreements focus on a multitude of different issues in the Basin, but the NEPA process largely ignores them and instead uses the volitional passage of salmonid species as a key metric by which to make a decision.

The crux of the issue with environmental problem solving is the use of procedures like NEPA to address complex, multi-layered, interdisciplinary, and transdisciplinary problems. A prerequisite to using NEPA is the definition of a Purpose and Need that must be relatively limited in complexity and scope in order for the process to provide a useful recommendation. In the case of the Klamath, the NEPA process is focused on achieving volitional fish passage for salmonid species, so a significant portion of the analyses and therefore the final recommendation, are focused on these species. Not only does this not

allocate enough time or money to other social, economic, or political considerations, but it also ignores other environmental factors, including different threatened and endangered species. Latour's framework addresses this issue in a few ways. First, it moves away from a system based on the separation of interested and disinterested disciplines, thus disposing of facts and values binary. Doing this removes the separation between the EIS (science and facts) and the ROD (politics and values) so that all issues in the Basin can be given equal time and consideration from all actors. Next, it eliminates the necessity to focus on 'Science' as the commander of the outcome in the Basin by creating an open space (the upper and lower houses) to address issues that incorporate information and opinions from a multitude of actors (the collective). Finally, the framework is constructed in way to continually reassess itself and the solutions it produces (the power to follow up) so that decisions are never written in stone and can change as the actors that make up the collective change.

The theoretical application of Latour's new Constitution in the Klamath Basin does a good job of addressing each of the four issues I identified. However, this does not mean that Latour's bicameral system is necessarily the only methodology that should be used to address environmental issues. While they were broad, the four problems that Latour's system solved did not necessarily encompass all of the problems associated with the NEPA process and the current methodology employed to address environmental disputes. If Latour's system were actually going to be applied in the Basin, it would require a huge unrealistic restructuring of the federal government.

Even if the new Constitution is not going to be ratified anytime soon, this exercise did produce two important findings. First, it turns out that actors from within the system are already making efforts to improve the way in which they address environmental issues. The negotiations for the Klamath Settlement Decision are not required in the NEPA procedure but ended up adding the crucial voices of stakeholders in the Basin to the discussion in a way that was much more open to all groups than the traditional NEPA notice and comment period. In addition, scientists involved with NEPA, like Dennis Lynch, were not satisfied with the specificity of the EIS. Realizing that the EIS was not all-encompassing, scientists produced the *Klamath Dam Removal Overview Report for the Secretary of the Interior: An Assessment of Science and Technical Information* to try to

incorporate more information into the Secretary's decision.¹²³ Although it focused strictly on providing information, not value judgments, the *Overview Report* illustrates that individuals notice the downfalls of the current system and are making efforts to provide new and innovative solutions.

Second, thinking through the implementation of Latour's system in the Klamath controversy helped to show that it is possible to apply political ecology theory to better inform policy actions and decisions. While praxis has been previously thought of as impractical, this exercise helped to highlight the work that is already being done from within the environmental solution making system to improve the methodology and therefore identify answers that more wholly address seemingly intractable environmental issues.

The Future of the Klamath Basin

The current future of the Klamath Basin is hazy. Congress is facing a decision: whether or not to grant the Secretary of the Interior the authority to approve of the Klamath Settlement Decisions (KSD). There have been some speculations about the future of the KSD (Fig. 4). Some are saying that it's dead in the water. For the KSD to be passed, the Department of the Interior, Department of Commerce, and Department of Agriculture have to approve the project as well as the states of California and Oregon and, to top it all off, because money is involved, Congress gets to vote. If any one of these parties does not vote aye, the KSD is history. But the problems in the Basin still persist; PacifiCorp will not have licenses for the four dams that are proposed for removal, but they will still be operating.

The likelihood of the KSD being implemented by its original 2020 deadline is miniscule. The possibility of the Federal Energy Commission approving PacifiCorp's license if the KSD is not passed is even lower because the four dams will not meet Oregon or California's Clean Water Act requirements and meeting the stipulations outlined by ESA will be very expensive. That leaves PacifiCorp in the interesting position of choosing to either litigate or pay for the dam removal itself. It would conceivably cost more for PacifiCorp to remove the dams than to litigate, which means

¹²³ *Klamath Dam Removal Overview Report for the Secretary of the Interior: An Assessment of Science and Technical Information*, October 2012.

that it will likely just take longer to decide the fate of those who live in the Klamath Basin. To say that only time will tell the fate of the Basin only misrecognized the immense political, social, economic, and environmental powers at play, but for now, the entire process has certainly turned into a waiting game.

The Problem With Identifying Environmental Solutions

Throughout this paper I have contended that there needs to be a change in the perception of the relationship between science, nature, and politics. The classic understandings of nature and society, values and facts, and science and politics as necessarily separate need to be disavowed. This will enable current solution making frameworks to relinquish a heavy reliance on empirical and fact-based disinterested discourses and incorporate interested discourses more rigorously into the policymaking process. Instead of excommunicating morals and values, political debate will have to move away from post politics and reintegrate conflict and politics back into the discussion. Finally, this paper has provided an answer to Peter Walker's question as to whether or not political ecology can play a role in policy debate. While it is difficult to do, political ecology has too much to offer to go unapplied in such complex situations. Although it is just a first attempt, the application of Latour's framework on a real and current environmental issue provided proof that exercises like these can be useful and provide surprising outcomes.

The belief in the existence of a separation between science and politics and the necessity to maintain that boundary is a tool. Whether or not this tool is used consciously, people and institutions in power can employ it to perpetuate the illusion to themselves and outsiders that their power is limited in ways that it is actually not. The preservation of this understanding of science and politics is therefore a key obstacle to the critical assessment and resolution of environmental problems. In essence, federal agencies are stepping on their own toes by not altering the NEPA process even though they see flaws and have the power to do so. In debates over actions with unclear environmental consequences, like the removal of the dams on the Klamath River, parties in power can wittingly or unknowingly use scientific research to conceal their political motives. This creates a political atmosphere lacking in public respect for political debate with less

emphasis on solving the diverse issues of numerous interest groups. The concerns of these parties cannot be spoken to directly but instead must be addressed through a procedure that was intended to center around science and not politics. To adequately address environmental issues, the NEPA process needs to be reshaped and reexamined.

While Latour's new Constitution may not be the final answer, it acts as an important line in the long story of bettering systems of environmental problem solving. Latour's suggestion for a new Constitution leaves much to the imagination. The specifics of a concerted effort to adopt his framework still remain fuzzy, but his message rings clear: to address environmental issues, there has to be an understanding of the politics inherent in discussions of science and nature and plenty of room for disagreement and reconciliation. While adopting Latour's entire new bicameral system all at once seems to be an unreachable and even undesirable goal, this exercise has brought to light some of the ways in which the current environmental solution system is lacking. There is little flexibility in the way that experts are defined, even less in the way that they are treated, and there is insufficient room for dialogue and "following up" in the process of environmental solution making. However, hope abounds. With actors from within the system acknowledging its flaws, there is movement towards a different framework for solving environmental problems. The size and shape of this new system is still quite unclear and it is unsure if change is feasible, but the possibility for innovation is there.

[This is Just the Beginning: A Conclusion](#)

At the end of my research I found myself realizing that this is just the beginning. When I submit this paper, the NEPA process in the Klamath Basin will only be half completed. The KSD will only be on Congress' legislative calendar. Latour's new Constitution will only be one possible framework to model a new NEPA process off of. But, instead of viewing these "only"s as shortcomings, they should be looked at as places to grow. The problems are clearly articulated, now it is time for the solutions. Now, more than ever, is the time to recognize all of our doubts and fears but continue to push forward. Yes, this is an idealistic and romantic approach to such complicated issues, but in times as trying and mixed up as these, optimism can be radical, and more importantly, necessary.

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Appendix

My Origin Story

I first became interested in the Klamath Basin because of a new opportunity offered by Lewis & Clark to receive funding for an interdisciplinary independent study. The scholarship required applicants to design and carry out a project that drew from several different disciplines. Having been schooled in “the interdisciplinary” I proposed a project and was awarded the scholarship. My project dealt with the decision by private and federal entities to remove hydroelectric dams in the Pacific Northwest and my research naturally led me to the Klamath Basin. My initial research question drew on topics that I had wrestled with, and still wrestle with, since my environmental club days in middle and high school: can an individual have a meaningful and substantive pro-environmental impact? My final paper addressed the influence that federal, state, and local governments, and non-governmental stakeholders have on the decision to retire hydroelectric dams, a topic that I explore more deeply and with a different lens in this paper.¹²⁴

With dam deconstruction in the back of my mind, I enrolled in Climate Change Law at Lewis & Clark Law School. While the class did not deal directly with the topic of dam deconstruction, it helped me to understand the systems of governing, law, and policy and how those different entities work to address environmental issues. I found that the systems in play were not sufficiently addressing the environmental problems they were faced with because they were not designed to. Though the law is adaptable and changes with the different types of cases that it addresses, in regards to environmental issues, the bounds of the law are too rigid. I felt that there were important factors not being considered and opinions that either remained unvoiced or unheard.

After Climate Change Law my next step was at the U.S. Geological Survey (USGS). I interned at the Oregon Water Science Center for seven months and during that time I jumped headfirst into developing my thesis topic. Spending time with the men and women at the USGS gave me a chance to talk to employees one on one about their

¹²⁴ Kahn, Kelsey. “Deconstructing Hydroelectric Power: Debates over Hydroelectric Dam Removal in the Pacific Northwest.” 2013

work.¹²⁵ I got the sense that USGS employees are proud of their work for a few reasons. First, they believe that because they are a science agency and not a management agency¹²⁶ the information that they collect is more objective. They do not have to deal with agenda setting or policy writing; they can focus on facts and providing information. Second, because of their supposed apolitical status, some employees see the information that USGS puts out as the gold standard as far as scientific data. They claim this because they believe that their data collection techniques are tried and true and followed closely throughout the Survey, and their research is extensively scrutinized by peer review.

The interactions I had with the scientists and support staff at the USGS combined with my prior experiences led me to seriously question the current procedures for addressing environmental issues. Hearing someone say that their work is objective immediately rings a bell as does hearing a different person say that their work is better because they do not have to deal with politics. An introduction to Bruno Latour's 2004 book *Politics of Nature* was then the impetus to compose all of my thoughts about the matter into a concrete argument. To me, Latour's new bicameral system takes a stab at addressing the problems I have seen with the current framework in place to address environmental issues. His analysis is more nuanced and particular than my own which is why I will use his work and my own observations to try and paint a picture of what the Klamath Basin negotiations could look like if they subscribed to his view.

¹²⁵ I do not intend to say that the few employees I spoke to represent the entire Survey. These conversations were informal and off the record and I will not be drawing any hard and fast conclusions from them but I do make some observations about the general attitude at the USGS.

¹²⁶ I will speak more about this in *Environmental Management and Science Agencies*