Natural Resource Based Campaigns: The Coalition to Protect Bristol Bay from Pebble Mine

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Abstract

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Public policies are created through an intricate network of advocacy coalitions and policy brokers within public and private networks who seek to change or enhance current policy. The focus of this thesis research is a rarely used authority of the Environmental Protection Agency granted under the Clean Water Act Section 404(c) to prohibit or restrict dredge and fill activity in the Bristol Bay watershed in the Southwest region of Alaska based on anticipated impacts of large-scale mining activity. Those who fish in Bristol Bay, whether for subsistence, recreational or commercial purposes want to prohibit or restrict large-scale mining activity like the proposed Pebble Mine in the region. If built, Pebble Mine would be one of the world's largest open-pit mines with mineral values estimated to exceed $500 billion at the estimated building cost of $6 billion, not to mention the cost of environmental impacts to the Bristol Bay ecosystem. Some who write about development and its environmental impact seem to advocate for collaborative

subsystems to promote policy learning and change, however, the Pebble Mine conflict – having a clear winner and loser – reflects how adversarial subsystems interact.

Mark Smith's (2009) environmental flow policy analysis of advocacy coalitions is a useful framework to use to understand the Save Bristol Bay coalition formation and strategy. The coalition used science for intra-coalition cooperation and for policy advocacy. Through the coalition's efforts, protecting Bristol Bay moved beyond the public agenda and reached the formal agenda for policy decision-makers. In this thesis research I provide a brief background of the issue, identifying the stakeholders, providing background on the Bristol Bay watershed ecosystem and the selection of policy strategy used by the Save Bristol Bay coalition. This study evaluates the Save Bristol Bay coalition using Smith's (2009) framework for successful coalition collaboration to better reflect natural-resource conflicts when coalitions disagree and are not able to find common ground. The results of the analysis conclude that under adversarial policy subsystems, the Save Bristol Bay coalition uses uncertainty founded in science to educate and motivate the public through precipitating events, while macropolitical actors use the conflict as a wedge issue to gain public support. Raising uncertainty to macropolitical actors is essential to move the policy from the public agenda to the formal agenda and ultimately produce the desired policy outcome by the Save Bristol Bay coalition.

(KEY TERMS: water policy, environmental flow, advocacy coalition, Bristol Bay, Pebble Mine, Environmental Protection Agency, natural resource campaigns)

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Chapter 1 -- INTRODUCTION

Public policies are created through an intricate network of advocacy coalitions and policy brokers within public and private networks who seek to change or enhance current policy. The focus of this thesis research is a rarely used authority of the Environmental Protection Agency granted under the Clean Water Act Section 404(c) to prohibit or restrict dredge and fill activity in the Bristol Bay watershed in the Southwest region of Alaska based on anticipated impacts of large-scale mining activity. Those who rely on fish in Bristol Bay, whether for subsistence, recreational or commercial purposes want to prohibit or restrict large-scale mining activity like the proposed Pebble Mine in the region. If built, Pebble Mine would be one of the world's largest open-pit mines with mineral values estimated to exceed $500 billion at the estimated building cost of $6 billion. Some who write about development and its environmental impact seem to advocate for collaborative subsystems to promote policy learning and change, however, the Pebble Mine conflict – having a clear winner and loser – reflects how adversarial subsystems interact.

The Save Bristol Bay coalition is a coordinated campaign between four principal members list here. Trout Unlimited leads the Save Bristol Bay coalition. The coalition is a subset of all opponents to Pebble Mine and is the main coordinating coalition on the campaign to protect Bristol Bay from Pebble Mine. The Save Bristol Bay coalition serves as a good test of Mark Smith's (2009) environmental flow framework because the coalition seeks to restrict or deny dredge and fill activity that threatens estuarine ecosystems (environmental flows) that provide clean water and salmon rearing grounds used for human well-being and livelihoods. Not only

does the Save Bristol Bay coalition inform the policy process on protecting environmental flows, but it also serves as a case study to future natural resource protection campaigns, including those with central human and environmental justice elements as well. By safeguarding the estuarine flows of the Bristol Bay watershed, important natural resources are protected such as salmon, wildlife and fresh water, and human uses of those resources – subsistence, cultural and economic - are protected as well.

Focus:

The focus of this paper is on a rarely used authority of the Environmental Protection Agency granted under the Clean Water Act Section 404 to prohibit or restrict dredge and fill activity. Though a 404(c) has been used 13 times under the Clean Water Act, a 404(c) to veto or restrict a proposed use before a user has filed for the 404 permit from the Army Corp of Engineers is an unusual use of public policy (U.S. EPA, 2010). This paper builds upon Smith's (2009) framework for environmental flow policy providing a conceptual framework to make changes to, or enact public policy; and in the Save Bristol Bay case, set a precedent in how public policy is utilized. Environmental flows are the water reserved or allocated to sustain freshwater and estuarine ecosystem and the human livelihoods and well being that depend on these ecosystems (The Brisbane Declaration, 2007).

An equal focus on the Pebble Partnership is not feasible and not within the focus of the research. The Pebble Partnership represents private interests with proprietary information that is difficult to write about from an outsiders view, but worthy of further study. The overall competing

campaigns between those wishing to protect Bristol Bay from mining, and those wanting to develop Pebble Mine will be referred to the Conflict.

Policy process analysts can find commonalities among many campaigns and compare them to widely-used frameworks like the Advocacy Coalition Framework. This represents how coalition leaders must adapt to their unique situation. This study seeks to help readers better understand how an extraordinarily diverse coalition of stakeholders and actors formed, coordinated and took action to protect wild salmon, and commercial, recreational and subsistence uses of wild salmon, against the largest mining companies in the world.

This paper is organized into four sections. First, it develops frameworks for the analysis, which are based on Paul Sabatier's Advocacy Coalition Framework (ACF) (1988) and Mark Smith's (2009) work with environmental flow disputes. Second, the paper provides factual and procedural background of the Conflict, identifying the stakeholders, about the Bristol Bay watershed ecosystem and what policy is being developed by the Save Bristol Bay coalition. The third section uses Smith's (2009) environmental flow framework and tests it on the Save Bristol Bay coalition. The thesis concludes with comparing and contrasting the Save Bristol Bay coalition to the characteristics found by Smith (2009) to be important. It concludes with a finding that under adversarial policy subsystems, joint-policy learning is not always feasible. At the time of this research, the final preferred policy outcome by the Save Bristol Bay coalition is still pending and further analysis will be necessary to fully understand the coalition's possible strengths and weaknesses. However, much has been gained by the Save Bristol Bay coalition in determining its effectiveness at obtaining EPAs 404(c) key decision that the Pebble Mine poses

adverse habitat impacts to the watershed and threatens the Bristol Bay ecosystems.

Chapter 2 -- METHODS - FRAMEWORK FOR ANALYSIS

Here I outline the systematic approach I use to examine and evaluate the Save Bristol Bay formation and strategy development. I analyze Paul Sabatier's Advocacy Coalition Framework (1988) that seeks to better understand coordinated efforts of individuals to achieve a policy goal. Coalitions are defined by policy subsystems and using this framework, I determine which policy subsystem defines the Save Bristol Bay coalition. This information is then used to test Mark Smith's environmental flow framework (2009) and how science is used within the Save Bristol Bay coalition. I aim to better understand how opposing coalitions agree and do not agree with science, and the subsequent actions taken by the Save Bristol Bay coalition to accomplish its policy goal.

The Advocacy Coalition:

The Advocacy Coalition Framework (ACF), originally developed by Paul Sabatier in the 1980's, has proven to be one of the most prominent approaches to objectively understanding a coalition's role within the policy process. The ACF describes coordinated efforts of "like-minded individuals and groups who work together and in parallel, in both formal and informal ways, to pursue a common goal as a primary means for understanding interactions between competing public policy agendas," (Sabatier, 1988; Sabatier and Jenkins-Smith, 1999; Sabatier and Weible, 2007; Weible *et al.,* 2009; Smith, 2009).

The framework assumes that policy subsystems are composed of different advocacy coalitions, which are a coordinated effort by a variety of people who share a common belief on political goals (Sabatier, 1993). These coalitions consist of a loosely associated group of individuals, sometimes forming concrete coalitions, who vary on the centrality of an issue and member resources, but engage with each other and formal and informal actors to achieve their goals (Sabatier, 1993). Coalitions are divided into policy subsystems, which are semiautonomous networks of policy participants that focus on a particular policy issue, usually within a geographic boundary (Sabatier, 1988). Smith argues that collaborative subsystems promote policy learning and change; however, the Conflict – having a clear set of winners and a defined loser – reflects how adversarial subsystems interact (Smith, 2009).

Since its inception, the ACF has formally been applied to at least 80 coalition-driven advocacy efforts spanning 20 years. A review of the framework shows that the ACF is helpful in understanding coalition work and results across various geographic areas with varying threats and policy process theories (Weible *et al*., 2009). A core set of assumptions is needed to apply the ACF:

> (i) a central role of scientific and technical information in policy process; (ii) a time perspective of 10 years or more to understand policy change; (iii) policy subsystems as the primary unit of analysis; (iv) a broad set of subsystem actors that not only include more than the traditional Executive, Legislative and Judicial branches of government, but also officials from all levels of government, consultants, scientists, and member of the media; and (v) a perspective that policies and programs are best thought of as translations of beliefs (Weible *et al*., 2009, Sabatier & Jenkins-Smith, 1999).

Policy oriented learning uses expert information and occurs within and between coalitions as they seek to promote change and can lead to changes in policy positions between coalitions (Sabatier *et al.,* 2007). Expert-based information can promote learning and Smith (2009) summarizes the use of science within the ACF's hypothesis that "problems involving natural resources are more conducive to policy-oriented learning because many of the critical variables are questions of an analytical nature, where all parties can agree on empirical evidence and therefore inform their specific policy goals" (Sabatier *et al.,* 1999). This conclusion is consistent with how contemporary natural resource management sees a strong increase in collaborative subsystem arrangements (Smith, 2009).

But what happens when coalitions do not use the rational, ideal approach to problem solving by using the evidence on which to base policy decisions? (Weible, 2008).

Sabatier introduces three policy subsystems: unitary, collaborative and adversarial. A unitary policy subsystem includes a single, dominant coalition advocating for policy that is similar to a policy monopoly (Weible, 2008). A collaborative policy subsystem includes intermediate conflict where policy-oriented learning allows opposing coalitions to cooperate. Finally, adversarial policy subsystems are characterized by high conflict among competitive coalitions (Weible, 2008, Sabatier *et al.,* 1988).

Water Flow Coalitions:

Mark Smith (2009) uses the ACF and analyzes common ground between environmental flow

advocacy coalitions and explains how expert-based information and science help change policies through informed groups of interested parties using the information to educate and call a need for action to the public and decision makers (Smith, 2009). Environmental flow advocacy coalitions are coordinated efforts of like-minded individuals who seek protections of important water resources. Smith (2009) focuses on six pertinent case studies dealing with environmental flow policy and concludes with a presentation of similarities and differences of those case studies as a tool to helping readers understand and apply lessons from those case studies. He concludes "in almost all cases the engagement between advocacy coalitions with different and often opposing views in reframing the issues to provide a common approach or solution upon which the competing coalitions can agree," (Smith, 2009). Again, reframing an issue so coalitions can agree is ideal for collaborative subsystem arrangements. And ideally, natural resource issues and water flow rights would be solved based on expert-based information and science. But more often than not, politics drive decisions, not just science (Weible, 2008).

The collaborative policy system seems like the most preferred by Smith (2009), but with natural resource-based conflicts, not always the most realistic. In fact, Weible (2008) writes "scientific claims and the type of adversarial analysis seems to have become the norm in natural resource policymaking and management." The Conflict is defined within an adversarial policy subsystem and uses science and expert-based information in adversarial ways. It asks, "Is a collaborative approach the most realistic, as Smith advocates?" Or, do researchers need to better understand the realities of adversarial analysis as Weible concludes, and which tools advance a coalition's desired outcome in adversarial policy subsystems (Weible, 2008)?

Smith's (2009) environmental policy decision-making framework describes the coordinated efforts between advocacy coalitions and how environmental flow issues reach the formal agendas. Smith discusses the role of science in policy-oriented learning, and how dialogue and cooperation among individuals and groups at different interests lead to policy change. However, this framework can only be applied to subsystem interactions in an ideal setting, where good science informs coalitions who can agree on its findings. The framework is not adequate for adversarial campaigns when expert-information does not promote policy-oriented learning between opposing coalitions. And as Weible writes, adversarial systems are prominent in the policy process (Weible, 2008). Therefore, realities of adversarial subsystems provide the tools for understanding the Save Bristol Bay coalition and how it uses science.

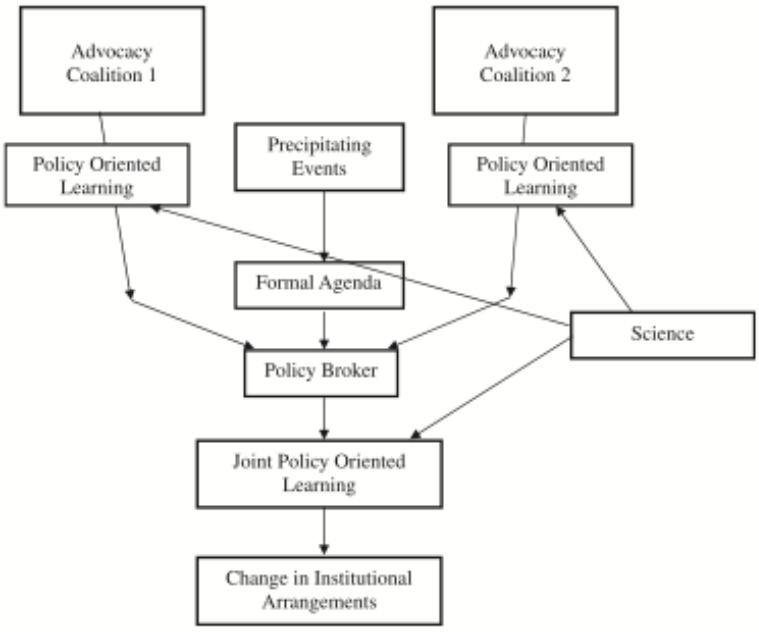

FIGURE 1: Smith's Environmental Flow Coalition Framework.
Competing advocacy coalitions develop their own position through policy-oriented learning primarily within their coalition. A precipitating event provides the opportunity to move the issue onto the formal agenda of decision makers. The competing advocacy coalitions are often brought together by a policy broker resulting in joint policy-oriented learning. Particularly for environmental issues, science and scientific consensus plays an important role informing the policy-oriented learning process (Smith, 2009).

Once coalitions form through learning and science, a series of four elements (precipitating events, agenda setting [public and formal], policy brokers and joint learning) advance policy change. A **precipitating event** is an event that occurs outside the realm of particular policy issue "that is sudden; relatively uncommon; can be reasonably defined as harmful or revealing the possibility of potentially greater future harms; has harms that are concentrated in a particular geographical area or community of interest; and that is known to policy makers and the public simultaneously," (Birkland, 1998). The **public agenda** are issues that cause widespread public awareness and attention that are perceived by the public to require policy action from government (Cobb *et al.,* 1976, Smith, 2009). The **formal agenda** consists of those issues that will receive serious attention from decision makers (Cobb *et al.,* 1976, Smith, 2009). A **policy broker**, or policy entrepreneur, is a public figure who helps introduce, translate and implement new ideas through the policy process (Roberts et al., 1991). The ACF hypothesizes that problems involving natural resources are more conducive to policy-oriented learning because many of the critical variables are questions of an analytical nature. **Joint policy learning** happens when all parties can agree on this empirical evidence. Ultimately, joint policy learning produces **policy change** in institutional arrangements, (Sabatier and Jenkins-Smith, 1999, Smith, 2009).

So far, I've given a brief introduction about Bristol Bay and the Pebble Mine issue along with two interacting elements, the Advocacy Coalition Framework and environmental flow coalitions, which examine the role of a coalition and how it advances its issues. Now, let's assess how the Save Bristol Bay coalition was built. This research will test the elements within Smith's (2009) framework against the Save Bristol Bay coalition and identify gaps how adversarial subsystems

advance their agendas and change institutional arrangements. In the process we'll take a deeper look into the mining interests hoping to build Pebble Mine and their strategy.

Chapter 3 -- BRISTOL BAY AND THE PEBBLE MINE ISSUE

Bristol Bay, located in the southwest region of Alaska, roughly 190 miles from Alaska's largest city Anchorage, is a sparsely populated region that stretches from the rugged snow-capped peaks of the Alaska Range to the frigid waters of the Bering Sea. The topography is relatively flat tundra surrounded by lakes, rivers and wetlands. The Bay itself stretches 250 miles long and 180 miles wide and its mouth, which is about one and a half times the size of Lake Superior, the largest of the five Great Lakes. Its population was 4,337 in 2010.

Native communities from 31 villages dot the region, all relying on salmon for culture and subsistence use. In addition to subsistence purposes, the salmon returns to Bristol Bay support the millennia-old subsistence culture of Native Alaskans. It supports as well a 130-year-old sustainable commercial fishery that now supplies almost half the world's supply of sockeye salmon (Knapp *et al*., 2012). At the headwaters of Bristol Bay's mighty rivers, including the Nushagak, Wood, Kvichak, Naknek, Egegik, Togiak and Ugashik, lays a prolific sport fishing industry. It draws anglers from around the world and is considered by many the nirvana for sport fishing because of the astounding returns of the prized Chinook salmon along with arctic char, grayling and rainbow trout reaching over 30 inches. For all of these factors, Bristol Bay is considered a "national treasure" with broad acknowledgement of the amazing resources the region provides (Salazar, 2009). After statehood in 1959, which allowed the State to claim lands

for resource development, the State selected land in the Bristol Bay region because, among many factors, the fishery resource adds enormous subsistence and economic importance to the people of Alaska. Beyond the fishery resources, however, are mineral resources in the Bristol Bay region.

Mineral Development and Pebble Mine

In the last 80 years or so, there has also been an increasing understanding of the geology of the region. While the State of Alaska selected land in large part due to the fishery resources, it also opened the land for mineral selection as a potential way to bring money into state funds. The fisheries were an obvious resource to the State; however, it had little understanding of the nature and size of the mineral resources hidden beneath the ground in the area.

The State put generally protective measures on Bristol Bay's salmon resource in its Bristol Bay Area Plan (BBAP) in 1984. The BBAP concluded to, "close to new mineral entry those streams where highest conflict between the salmon fishery and mining would occur," (BBAP, 1984). At nearly the same time, Teck Cominco, the successor company to Cominco Alaska Exploration, began mineral investigations in the Bristol Bay watershed in 1986. The company purchased the mineral claims from the State of Alaska in the area now known as the Pebble deposit north of Lake Iliamna. Located in Bristol Bay's watershed, Lake Iliamna is the largest lake in Alaska, and is the eighth largest lake in the United States and feeds the Kvichak River. Other than first drilling in 1988 and areal surveys, Teck Cominco did little with the deposit after 1992. In 2001, a Canadian junior mining company named Northern Dynasty Minerals Ltd. raised enough funds

to option the mineral claims from Teck Cominco (Northern Dynasty, 2014).

Northern Dynasty began its extensive exploration program of the Pebble deposit in 2002 and expanded the known ore resources from 1,000 million tons to 4,100 million tons by 2005. In 2005, Northern Dynasty discovered the Pebble East deposit (Northern Dynasty, 2007). By 2007, Northern Dynasty received significant financial backing from two prominent international mining companies, Mitsubishi Corporation and Rio Tinto. That same year, Northern Dynasty partnered with one of the largest mining companies in the world, Anglo American, to form a 50:50 joint partnership aimed to advance through the regulatory and permitting process of the Pebble deposit by creating the Pebble Limited Partnership (Northern Dynasty, 2007). Anglo American entered the agreement by making a staged cash investment of US$1.425 billion (Northern Dynasty, 2007). By virtue of their respective ownerships in Northern Dynasty, Mitsubishi and Rio Tinto became strategic partners and investors in the Pebble Limited Partnership. Originally, the Pebble Partnership sought to complete a prefeasibility study by late 2008, a feasibility study by 2011 and commencement of commercial production by 2015 (Northern Dynasty, 2007). As of June 2014, the Pebble Partnership has yet to submit even a prefeasibility study.

While Northern Dynasty fundraised and explored the Pebble deposit, local awareness grew of the threats to Bristol Bay's ecosystem caused by building Pebble Mine. Disparate and individualized state efforts attempted to outlaw large-scale mining in the Pebble area including a 2008 ballot measure called the "Alaska Clean Water Initiative." This initiative was voted down in the statewide primary election and then-Governor Sarah Palin faced harsh criticism by

involving state government to help vote the initiative down (Powell *et al*., 2008). Under the Palin Administration, the New York Times explains that "days before the vote, the Alaska Public Offices Commission found the Natural Resources Department's Web site had improperly featured material about the referendum that favored the mining industry," (Powell *et al*., 2008).

It is not surprising the Palin Administration aided in the initiative's defeat, because as the price of copper more than doubled from 2009 to 2010, so did the value of Pebble Mine. By 2010, mineral and economic studies indicated that the total mineral resources at the Pebble deposit including gold, copper and molybdenum were valued at over $300 billion, and using 2012 mineral prices reports indicate the value closer to $500 billion (Pebble Partnership Ltd., 2012). An increasing realization that state-focused efforts were not going to provide relief from the growing threat of Pebble Mine and that federal solutions may be best way to combat the concurrent and direct pressure of the mining companies. Core Bristol Bay leaders began to coalesce around the mine's probability of contaminating waters within the Bristol Bay ecosystem. Moreover, the state's collusion and the half trillion dollar value of Pebble Mine underscored the looming 'winner and loser' scenario between those who depend on salmon for commercial, subsistence and recreational purposes and those wanting to reap the rewards of building one of the largest mines in the world. The battle for Bristol Bay reached critical heights and the Save Bristol Bay coalition took shape (Powell *et al*., 2008).

For nearly decade, serial broken promises from the Pebble Partnership to file for permits and trigger the federal permitting scheme increased anxiety, confusion and frustration in the communities (Murkowski, 2013). In a news release, U.S. Senator Lisa Murkowski, R-Alaska

wrote about these concerns and how "Alaskans need some certainty and clarity over how the Pebble Partnership intends to proceed," (Murkowski, 2013). The company failed to even file its prefeasibility study by 2014, nearly six years after it promised to do so when the Pebble Limited Partnership formed. More than ever before, regional stakeholders like commercial fishermen, hunters, anglers, Native Alaskans, environmental groups and Native corporations collaborated to find a federal solution to stop Pebble Mine.

The continued uncertainty – economic, culture, social, scientific - caused by Pebble Mine raised the impetus to request a rarely used authority of the U.S. Environmental Protection Agency (EPA). Of the 67 permits the Pebble Partnership needs to acquire to advance Pebble Mine through the permitting process, 66 are state level permits and one is federal. The Pebble Partnership received advanced water right permits from the State for mineral exploration (ADNR, 2006). Since statehood, the State of Alaska has never denied a mining permit (ADNR. 2008).

The federal permit needed is a 404 dredge and fill permit. Under the Clean Water Act, the EPA has the authority to step in front of the Army Corps of Engineers and veto or restrict a 404 permit for dredge and fill discharge if it, "is having or will have an 'unacceptable adverse effect' on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas," (33 U.S.C. § 1344). Since its inception, the EPA has only issued a restrictive or 404(c) veto thirteen times and only once preemptively before a mining permit has been filed. This is the situation for Pebble Mine. In 2010, six federally recognized tribes (which later grew to nine tribes) petitioned the United States EPA to initiate the 404(c) review process for dredge and fill permits that the Pebble Partnership needs to obtain to begin

mining construction (Southwest Alaska Tribes, 2010). Similarly, other groups like commercial fishermen, sport fishermen, Bristol Bay Native Corporation and environmentalists weighed in requesting the EPA for a 404(c) decision.

Stakeholders voiced concern that large-scale mining would affect, among many important environmental factors, salmon rearing and spawning grounds that jeopardize their subsistence, sport and commercial fishing activities (Southwest Alaska Tribes, 2010). A 404(c) veto or restriction acts like a silver bullet, severely hampering the ability for Pebble Mine to be permitted and constructed. The uncertainty caused by Pebble Mine could be stopped through a growing coordination among Bristol Bay leader groups and a formal coalition requesting a 404(c) action. The coalition's policy brokers who are discussed later led these coordinated efforts.

After the petitions were filed, the EPA agreed to conduct a watershed assessment of Bristol Bay to assess potential impacts on the water quality if a mine like Pebble were to be developed. The first assessment was released in April 2012 and issued concerns that large-scale open-pit mining activity like that of the proposed Pebble Mine would cause adverse habitat impacts on the salmon systems (EPA 910-R-12-004d, 2012). The second draft watershed assessment was released in May 2013 and included public input and peer review from the first draft and it issued similar conclusions (EPA 910-R-12-004Ba-c, 2013). Decision-makers on Capitol Hill and federal agencies like the EPA were bombarded by public outcry and support for a Clean Water Act 404(c) action as over one million public comments were filed between the two Bristol Bay Watershed Assessments (Demer, 2014b).

By early 2014 all three partners (Mitsubishi, Anglo American and Rio Tinto) had abandoned their stakes in either the Pebble Partnership or Northern Dynasty. After its final watershed assessment was released in January 2014, the EPA began its process of issuing a 404(c) by filing its intent in February 2014, and allowed the State of Alaska and Pebble Partnership to respond in 90 days with any new evidence that Pebble Mine will not cause adverse habitat impacts on the Nushagak and Kvichak watersheds (EPA, 2014).

Chapter 4 -- ADVOCACY COALITIONS AND SAVE BRISTOL BAY

Expert-Based Information and Belief Convergence:

Within the Save Bristol Bay coalition's principal members, key policy entrepreneurs "provide leadership and in the bearing the transaction costs in coordinating activities," to move the desired outcome from the public to the formal agendas (Weible, 2008). These principal members' coordinated efforts were integral to advance the Save Bristol Bay coalition's intent to seek EPA's 404(c) action. I have identified key principal members, also defined as policy entrepreneurs.

The collaborative nature of these principal members in the Save Bristol Bay coalition is unique given their core values and interests. The four principal member organizations are: Trout Unlimited (TU, sportfishermen), Bristol Bay Regional Seafood Development Association (BBRSDA, commercial fishermen), Bristol Bay Native Corporation (BBNC, native corporation), and Natural Resources Defense Council (NRDC, environmentalists). These four organizations

are oftentimes at odds with each other over environmental impacts of fishing, whether it is the recreational sector arguing with the commercial fishing industry on the number of salmon caught before they reach the rivers, or subsistence uses of the fishery resources versus commercial and recreational fishermen.

The primary driver for these organizations to unite is the interest in protecting Bristol Bay's fishery resources versus competing mining interests. These are the two competing coalitions. Opponents of the mine argue that the mine will disrupt their subsistence, commercial and recreational lifestyles that depend on a world-class fishery, supported by untouched and pristine ecosystems upstream. Mining advocates, however, believe that mining will not affect the salmon's habitat and there will be "no net loss" of salmon habitat (Pebble Partnership, 2012).

In 2009, Interior Secretary Ken Salazar visited Alaska to hold meetings and listen to testimony about mineral development in the Bristol Bay region. This was a pivotal chapter in the formation of the Save Bristol Bay coalition because leaders could focus their message to a key federal decision-maker and begin to coalesce around the issue and policy goal (Juneau Empire, 2009). The principal members converged through exchange of expert-based information into the Save Bristol Bay coalition. In essence, the collaborative nature of the Save Bristol Bay coalition is independent of the adversarial subsystem between it, and the Pebble Partnership coalition. Thus, if it is the case as argued above (Smith, 2009) that natural resource-based conflicts are gravitating towards collaborative policy management, principal members should strive to find common ground and follow science if they need to engage collaboratively in an adversarial policy subsystem.

I previously stated how an equal focus on the Pebble Partnership is not feasible and not within the focus of the research. The Pebble Partnership represents private interests with proprietary information that is difficult to write about from an outsiders view, but worthy of further study.

Analysis:

Now, I will use the Save Bristol Bay coalition as a vehicle to compare and contrast Smith's (2009) application of science in advocacy coalitions and the five key steps in the policy decision-making framework (precipitating events, formal agenda, policy brokers, joint learning and policy change) to illustrate the similarities and differences between the Save Bristol Bay coalition and the theory.

Because learning between two coalitions will most likely occur when conflict is at intermediate levels (Sabatier, 1993), and the Conflict escalated beyond intermediate levels, expert-based information is used within the Save Bristol Bay coalition to coalesce principal members of the coalition around a desired policy outcome. The expert-based information described below helps inform the Bristol Bay stakeholders about the risks from large-scale mining. This produces intra-coalition learning within the Save Bristol Bay coalition, and it acts similar to an independent collaborative policy subsystem as described in Sabatier's (1988) ACF. The Pebble Partnership also uses science for its desired goal. The Pebble Partnership had its own use of science but was criticized by its own reviewers as being limited, selective and ignoring important impacts (Andrew, 2012).

The Conflict and central issue whether to allow large-scale mining activity in the Pebble Mine deposit of Bristol Bay is defined as an adversarial policy subsystem. The pro and anti-Pebble Mine coalitions have no belief convergence and science is used almost as a political weapon against each opposing coalition (Weible, 2008).

One half of the Conflict is the pro-mining coalition, or the Pebble Partnership. The Pebble Partnership commissioned the Wardrop Company to complete a detailed scientific assessment of three mining scenarios at the Pebble deposit. This report concludes, "the mineral development project described in this Preliminary Assessment is considered to be economically viable, technically feasible and permittable under existing regulatory standards in Alaska and the United States," (Wardrop, 2011). Furthermore, the Pebble Partnership writes

> "any resource development project in Alaska will have to go through a thorough and complex permitting process. This process incorporates specific requirements to ensure that each project addresses potential impacts to wetlands resources… through this process, the co-existence of important development projects and protection of valuable ecosystem services can be obtained," (Pebble Partnership, 2012).

There are myriad scientific documents that demonstrate the Pebble Partnership's commitment to mitigate ecosystem degradation. In short, the Pebble Partnership has its own science to rely on, but the science used by the Save Bristol Bay coalition disagreed. Collaboration between the two coalitions did not occur and expert-based information created an adversarial policy subsystem between the Pebble Partnership and Save Bristol Bay coalitions.

Science is useful for coalitions to cooperate amongst themselves and is useful for the Save Bristol Bay coalition for intra-coalition cooperation. Because members are joined by a common threat, even though core values greatly differ, the Save Bristol Bay coalition relies on science to inform the coalition of the risks and uncertainties associated with mining impacts and allow for intra-coalition cooperation despite varying core values.

When did intra-coalition learning begin between the principal members to coalesce and form the Save Bristol Bay coalition? This is a difficult question to answer specifically, but scientists began documenting the effects of large-scale copper mining in the Bristol Bay ecosystem in 2007. After surveying fish populations in the Nushagak and Kvichak river drainages and studying the effects of copper on freshwater food chains and salmon, scientists determined negative consequences will occur from copper mining at the Pebble deposit onto Bristol Bay's salmon (Woody, 2008; Woody, 2007). Perhaps the most compelling scientific document was released in 2011, which concludes that "existing [Pebble Mine] plans could not be permitted because of impacts to salmon habitat, likely toxicity to aquatic life, and the likely need to treat in perpetuity seepage and runoff from mine-related dredged and/or fill material," (Riley and Yokum, 2010). This report, produced by former EPA Region 10 NEPA compliance coordinator William M. Riley and former National Wetlands Expert for the EPA Thomas G. Yocom, outlines unacceptable environmental impacts from mine scenarios detailed within the Wardrop (2011) report explained above.

The Save Bristol Bay coalition uses science to find common ground to work cooperatively together in a collaborative policy subsystem. The principal members, use the Riley and Yokom

(2011) report for expert-based information to promote intra-coalition learning. Consistent with use of science within the ACF, the Riley and Yokom (2011) report helps the Save Bristol Bay coalition "agree on empirical evidence and therefore inform their specific policy goals" (Smith, 2009, Sabatier et al., 1999). The coalition principal members defined the desired policy outcome of a 404(c) determination under the Clean Water Act by the Environmental Protection Agency through the use of the Riley and Yokom (2011) report.

Precipitating Events

Precipitating events are sudden changes to the *status quo* and precipitating events provide advocacy coalitions with the opportunity to move issues from the public agenda to the formal agenda. Five precipitating events allowed the issuance of a 404(c) to reach the formal agenda with the EPA.

1. Pebble Mine preliminary permits filed in 2006 by Northern Dynasty Minerals. It submits 11 preliminary permit applications to Alaska Department of Natural Resources to build large earthen-fill dams (Alaska Department of Natural Resources, 2006).
2. In 2010, the principal members request EPA 404(c) action in Bristol Bay (Southwest Alaska Tribes, 2006)
3. Draft Bristol Bay Watershed Assessments (BBWA), March 2012 & May 2013 – EPA scientific reports detailing significant adverse habitat impacts will occur if a mine the size of Pebble were to be built at the headwaters of the Nushagak and Kvichak rivers (EPA 40 CFR 231.2e, 2012; EPA 910-R-12-004d, 2013).
4. Anglo American withdrawal from Pebble Partnership, September 2013 - Mining conglomerate and 50% partner in the Pebble Partnership walks away from $580 million in investment of Pebble Mine to focus on portfolio projects that provide "less risk", leaving junior mining company Northern Dynasty the sole owner of the Pebble Partnership (Northern Dynasty, 2013).
5. U.S. Senator Mark Begich opposes Pebble Mine, January 2014 – Democrat Senator concludes after science is finalized in Bristol Bay Watershed Assessment that Pebble

> Mine is the "wrong mine, wrong place, too big," (Demer, 2014a). The Senator uses Pebble Mine as a political wedge issue during the year of his reelection.

Agenda Setting:

Moving an issue from the public agenda to the formal agenda is a key element if an issue moves forward. The Save Bristol Bay coalition's policy brokers used the precipitating events and agenda setting to call into question the existing legal framework under which water rights are managed. The two draft BBWA compiled all scientific information available to assess the impacts large-scale mining would have on Bristol Bay's ecosystems. A series of public comment periods produced a monumental engagement nationally and well over 1,000,000 public comments were filed with the EPA between the two drafts (Demer, 2014a). After the release of the first draft BBWA, a series of public hearings was held in Seattle, Anchorage, Dillingham and other Bristol Bay villages. Testimony was fierce, and The Bristol Bay Times cited that "Hundreds packed an auditorium… few minced words and even fewer presented a moderate stance, with opponents of the mine urging the EPA to move forward swiftly to stop the mine," (Restino, 2012).

Paid media (media purchased), earned media (media gained because it is newsworthy) and social media all played critical roles in engaging the public. The Save Bristol Bay coalition bought advertisements in the local Alaskan newspapers, and capitalized on the unique story to garner national media attention from PBS' Frontline and BBC HardTalk. Also, the coalition used social media to engage the public; a critical component in its grassroot's tactics.

Only a few months after the second draft BBWA was released, Anglo American announced it was backing out of its 50% stake in the Pebble Partnership and walked away from a self reported $580 in investments to the project (Northern Dynasty, 2014). Hundreds of articles worldwide covered this story amidst the controversy that Pebble Mine had already created in the years prior. But Anglo's withdrawal signaled to the mining community that the project was risky, and perhaps the EPA did in fact, have the authority and scientific backing to halt the project through a 404(c) veto. Policy brokers capitalized on these events to advance the Pebble Mine issue from the public agenda to the formal agenda.

Policy Brokers:

Policy brokers emerge as people in a position to resolve or minimize difference between coalitions. These brokers coordinate the majority of the coalition activities and are directly connected to nearly all of the coalition members (Weible, 2008). In our Save Bristol Bay example, two key policy brokers emerged from the four principal members previously outlined. These brokers more or less resolved the Conflict through a win-lose scenario, a key element of an adversarial subsystem. As will be demonstrated, these policy brokers did little to minimize the difference between coalitions, but rather, advance the Save Bristol Bay coalition's public agenda to the formal agenda ahead of the Pebble Partnership.

The strategic effort was led by two Trout Unlimited leaders, broker #1 and broker #2. These policy brokers used the precipitating events described above to move a 404(c) onto the formal agenda. By 2014, nearly 60% of Alaskans and 80% of Bristol Bay residents opposed the

construction of Pebble Mine (Bristol Bay United, 2014). The most effective tool the brokers employed was the desire to restore certainty. This follows Weible's (2008) argument that through science, communicating uncertainty raises the fear in the public through precipitating events. This is not the only tool used by the Save Bristol Bay coalition and the policy brokers, but it certainly is well documented both in literature and practice. Below are four examples taken from the four principal members' public comments who advocate for more certainty to reduce risk and for the EPA to follow the science:

> From Robert Waldrop, Executive Director, Bristol Bay Regional Seafood Development Association: "Fishermen will begin factoring in the mine as they consider whether to make new investments. As the prospect of a mine becomes more real, major uncertainty will be created throughout the fishery, from production through consumption," (Waldrop, 2012).
>
> From Tim Bristol, Alaska Director, Trout Unlimited: "We strongly urge EPA to initiate a 404c process to determine appropriate protective measures and to provide all parties with certainty about the type and scale of permissible development. Indeed, it is the Agency's responsibility to do so," (Bristol, 2013).
>
> From Joe Chythlook, President, Bristol Bay Native Corporation: "We call on the EPA to act now to provide the communities and businesses in Bristol Bay the economic certainty they have been lacking for nearly a decade," (Bristol Bay Native Corporation, 2014).
>
> From Joel Reynolds, Western Director, Natural Resources Defense Council: "The science is sound, EPA's legal authority is clear, and the people of Bristol Bay have demanded protection. It's time to say no to Pebble Mine," (Reynolds, 2014).

The Native Corporation, commercial and sport fishermen echo uncertainty. Following the Save Bristol Bay coalition, NRDC advocates the EPA to make a 404(c) determination through science. Highlighted within the need to restore certainty is what a problem a looming Pebble Mine causes to the business environment in Bristol Bay. Not only are the voices consistent to follow science, but also use a strong jobs and economic argument as rational for the risks caused

by uncertainty. Over 14,000 jobs and a $1.5 billion in economic impact are pumped into the nation's economy annually through Bristol Bay's commercial and sport fisheries (Knapp *et al*., 2013). Conversely, Pebble Mine could provide 16,000 full-time jobs in the mine's 25-75 year lifetime, and add a resounding $3.7 to $3.9 billion in gross domestic product (Pebble Partnership, 2013).

Many other user groups commented about the need to restore certainty. Food Marketing Institute (FMI), the leading national trade organization of the food retail industry for companies like Wegmans, Kroger and Target commented in a letter the need to ensure access to salmon that is responsibly sourced. It highlights that "a number of our members have made extraordinary commitments to sustainable seafood sourcing and are rapidly transitioning their supply chains to verifiably and responsibly-sourced product. However, this process is only possible to the extent that the fisheries we depend on - like Bristol Bay - are maintained and protected," (FMI, 2012)

The Save Bristol Bay coalition's policy brokers used science as the foundation to organize and unite the principal members. The scientific underpinnings of the coalition followed by precipitating events provided the impetus for macropolitical actors like Senator Mark Begich to move these issues onto the formal agenda of the U.S. Environmental Protection Agency. In fact, the need to restore certainty caused by the uncertainty of Pebble Mine's impacts was echoed by the key macropoliitlcal actor in the Conflict. Senator Begich consistently said that he would make a decision based on science. Following Precipitating Event #5 after the final BBWA was released, Senator Begich concluded that, "Residents of Bristol Bay need certainty about how to plan their future and deserve not to have this issue hanging over them forever," (Begich, 2014).

The Save Bristol Bay coalition used a variety of tools to receive widespread public attention, but highlighting the uncertainty caused by Pebble Mine was the catalyst to produce change in institutional arrangements, rather than joint policy learning.

Joint Policy Learning:

The Save Bristol Bay coalition agrees on science that shows adverse impacts on ecosystems from mining, but also agrees to disagree with Pebble Partnership's science showing minimal impacts. Many key elements from Smith's (2009) framework can be applied to the Conflict, when considering the author's framework for ideal, collaborative natural resource-based conflict. Yet, the Conflict operates as an adversarial policy subsystem and joint policy learning does not occur between the Save Bristol Bay coalition and the Pebble Partnership. Under adversarial policy subsystems, the Advocacy Coalition Framework predicts expert-based information becomes a valuable resource to mobilize allies and argue with opponents and that policy-oriented learning occurs within one coalition rather than between coalitions (Sabatier, 1987, Weible, 2008).

The Save Bristol Bay coalition uses science for intra-coalition coordination, but also uses science to communicate uncertainty and raise the anxiety, frustration and confusion in the public through precipitating events, while macropolitcal actors use the Conflict as a wedge issue to gain public support. These macropolitical actors are essential to move the policy from the public agenda to the formal agenda and ultimately produce the desired policy outcome by the Save Bristol Bay coalition (Weible, 2008).

Chapter 5 -- OUTCOME AND CONCLUSION

The Save Bristol Bay coalition successfully linked the uncertainties caused by Pebble Mine to the potential degradation and subsequent consequences to Bristol Bay's ecosystem. By linking the uncertainties into risk, the probabilities linking actions to consequences are known (Weible, 2008). Furthermore, through this distinction, the Save Bristol Bay coalition demonstrated a united voice linking the desired 404(c) action by the EPA to eliminate the uncertainties and risk caused by the Pebble Partnership.

Through analysis of the Save Bristol Bay coalition, we better understand Smith's (2009) framework for successful coalition collaboration to better reflect natural-resource conflicts when coalitions disagree and are not able to find common ground. Instead of joint-policy learning, the Save Bristol Bay coalition highlights effective tools to gain the desired campaign outcome. The Save Bristol Bay coalition contains a unique set of stakeholders within a natural resource-based conflict and future coalitions are encouraged to use this research to better understand adversarial systems within natural resource-based conflicts.

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Appendix - Author Conflict of Interest

In 2011 I joined the campaign to protect Bristol Bay, located in remote Southwest Alaska, as a grassroots organizer for commercial fishermen. My upbringing as a fisherman reaches back to my first memories bundled up in my dad's heavy down jacket, curled up outside on the fly bridge of our commercial fishing boat at the ripe age of three. I never went to summer soccer camp. We fished along the Alaska Peninsula, and now, I am the captain of my own boat in Bristol Bay. Since I was 22, my business and livelihood rely on one of nature's most awe-inspiring phenomenon: an average of thirty million sockeye salmon returning back to the rivers from which they hatched four years earlier, only to spawn and die, but whose fertilized eggs hatch the next Spring. Almost half of the world's supply of sockeye salmon comes from the Bristol Bay region in southwest Alaska. Cultures, businesses, recreational activities and ecosystems depend on the salmon returning and vice versa salmon depend on a healthy ecosystem – a coupled socio-ecological system.

For three years, I've worked with the coalition to stop the proposed Pebble Mine. The job brought me to Washington, D.C. where I work to stop the mine. I am not against mining, per se, but I am against this mine. It is the wrong mine, in the wrong place. This research represents my Masters in Marine Affairs thesis from the School of Marine and Environmental Affairs, University of Washington and is written in simultaneously with the dynamics and events of the campaign. I began the research after the Environmental Protection Agency's (EPA) first draft Bristol Bay Watershed Assessment was released in May 2012. Subsequently, another draft Watershed Assessment was released. At this point Pebble Limited Partnership's 50% owner, mining conglomerate Anglo American Ltd., pulled out of the Pebble Mine project and walked away from over a self-declared $542 million invested into the project. research continued after the EPA's final Bristol Bay Watershed Assessment was released and its unprecedented use under the Clean Water Act section 404(c) to restrict dredge and fill activity at the Pebble Mine deposit. This essentially puts high restrictions on the one federal permit the Pebble Mine needed to move forward and stopped Pebble from being developed. I concluded this thesis in parallel with final assessment and 404(c) ruling.

What I am trying to say is that there is no way to get around the conflict of interest in this paper. In a David versus Goliath fight, I am one of many Davids. But this perspective brings a unique opportunity to understand the inner-workings of the campaign and one coalition's deep dynamics. I hope to provide a introspective look at what causes conflict, how stakeholders and members coordinate to form a coalition, and how a coalition of unlikely allies defeats the world's largest mining companies in one of the most monumental natural resource-based conflicts this century.

My main point is to better understand the way that campaigns function, and to understand Pebble in the context of natural resource conflict.