

ABSTRACT

Title of Dissertation: ACKNOWLEDGING SURVIVAL:
POLITICAL RECOGNITION AND
INDIGENOUS CLIMATE ADAPTATION IN
THE UNITED STATES

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Indigenous peoples in the United States are already disproportionately experiencing the impacts of climate change. Closely related to tribal efforts to manage climate effects are historical endeavors to assert indigenous sovereignty and govern tribal lands, but deficiencies in the process used by the U.S. government to acknowledge tribal sovereignty have left hundreds of indigenous communities unrecognized and especially vulnerable to climate harm. My dissertation aims to determine whether a tribe's recognition status affects its capacity for climate adaptation. To make this determination, I utilize a case study methodology wherein I analyze the circumstances of one non-federally recognized tribe, the Burt Lake Band of Ottawa and Chippewa Indians, in three critical areas related to adaptation and tribal recognition —

access to key species and cultural resources, utilization of federal funding opportunities, and participation in climate decision-making.

Tribal access to resources is often predicated by historical treaty rights, so I applied a theme identification technique to extrapolate important strategies on easing barriers to resource access and regulatory authority. I then used the themes to compare the likelihood of the Burt Lake Band and nearby federally recognized tribes to maintain connections to key species in the future. I next employed a comparative statutory analysis methodology to differentiate eligibility for non-federally recognized tribes accessing federal funding. I also assessed tribal climate adaptation plans and interviewed tribal climate plan managers on the barriers to successful implementation of adaptation actions. Finally, I developed criteria from a review of global literature on the inclusion of indigenous peoples in adaptation projects to assess participatory opportunities for the Burt Lake Band in state and regional climate governance. My findings show that the Band's lack of federal recognition inhibits its adaptive capacity to access key cultural resources, federal funding, and climate governance opportunities. However, I also conclude that state and local perceptions of tribal identity could have a greater influence on the adaptation of non-federally recognized tribes, so I recommend that a more inclusive federal recognition system be implemented to avoid the unequal development of indigenous adaptive capacity based on disparate approaches to indigenous affairs by state and local jurisdictions.

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Table of Contents

Acknowledgments	ii
Table of Contents	iii
List of Tables	v
List of Figures	vi
Chapter 1. Introduction.....	1
Chapter 2. Literature Review: Climate Change, Political Acknowledgment, and Indigenous Peoples.....	17
A. Indigenous Experiences with Climate Change.....	17
1. <i>The Concepts that Contribute to Climate Adaptation Planning and Response</i>	18
2. <i>Framing Historical Environmental Problems for Indigenous Peoples in the United States</i>	21
3. <i>Climate Change Impacts on Indigenous Peoples</i>	25
B. Tribal Sovereignty and Federal Recognition	35
1. <i>“Who is Indigenous?” and Why Does Recognition Matter?</i>	35
2. <i>The History of Recognition Policy</i>	39
3. <i>Pathways to Recognition</i>	45
4. <i>State Recognition of Tribes</i>	49
C. The Intersection of Indigenous Recognition and Climate Change	54
Chapter 3. Research Design.....	68
A. Introduction.....	69
B. Study Question	71
C. Sub-questions	72
D. Unit of Analysis	75
E. Rival Explanations.....	77
F. Data Sources and Collection.....	79
Chapter 4. Environmental Shocks and Socio-cultural Fragmentation in Northern Michigan: The History of the Burt Lake Band.....	90
A. Introduction.....	90
B. Shock 1: The Fur Trade	93
C. Shock 2: Timber and Tourism	97
D. Shock 3: The Collapse of the Great Lakes Fisheries	101
E. Shock 4: Climate Change	103
Chapter 5. Access to Cultural Resources.....	108
A. Background	109
1. <i>Winners and Losers</i>	110
2. <i>Indigenous Response to Resource Upheaval</i>	113
3. <i>Species Changes in Northern Michigan</i>	115
B. Comparing Resource Access in the Obtawaing.....	118
1. <i>Data and Methods</i>	119
2. <i>Results and Discussion</i>	124
C. Are Treaty Rights Even Necessary? The Case of the Nulhegan Band.....	128
1. <i>Data</i>	131
2. <i>Comparing Across Recognition Status and Geographies</i>	134

3. Conclusion.....	137
Chapter 6. Access to Federal Opportunities.....	150
A. Background	151
B. Program Eligibility.....	155
1. <i>Data and Methods</i>	156
2. <i>Results and Discussion</i>	160
C. Implementing Tribal Climate Adaptation Plans	165
1. <i>Data and Methods</i>	166
2. <i>Results and Discussion</i>	171
D. Funding Priorities for the Burt Lake Band	178
Chapter 7. Access to Governance Channels	193
A. Background	193
1. <i>Climate Governance and Decision-Making</i>	195
2. <i>Indigenous Experiences in American Climate Governance</i>	197
B. Indigenous Inclusion in Climate Decision-Making around the Globe ...	207
1. <i>Data and Methods</i>	208
2. <i>Results and Discussion</i>	213
C. Climate Governance in Northern Michigan	217
1. <i>Opportunities for Participation</i>	217
2. <i>The Burt Lake Band's Involvement in Climate Governance</i>	220
Chapter 8. Charting a Climate Resilient Path with Federal Indian Policy.....	237
A. Acknowledging Adaptive Capacity	239
B. A New Era in Indigenous Climate Resilience	245
C. Conclusion.....	249
Appendix A. Burt Lake Band Council Questionnaire.....	254
Appendix B. Nulhegan Band Tribal Official Interview Script	262
Appendix C. Interview Script for Federal Tribe Climate Managers.....	265

List of Tables

Table 1: Federal Recognition Criteria (25 C.F.R. §83.11)	59
Table 2: Thematic Identification in the Consent Decrees	139
Table 3: Comparing Resource Access across N. Michigan Tribes	140
Table 4: Nulhegan Band Resource Agreements.....	141
Table 5: Comparing Resource Access across Tribes	142
Table 6: Federal Program Eligibility for Non-Federal Tribes.....	183
Table 7: Non-Federal Eligibility for Programs Listed in the University of Oregon Tribal Climate Funding Database	184
Table 8: Implementation Criteria.....	185
Table 9: Criteria Distribution in Tribal Climate Adaptation Plans	186
Table 10: Typology Frequency in Tribal Climate Adaptation Plans	187
Table 11: Search Queries and Results.....	228
Table 12: ILK Inclusion Criteria	229

List of Figures

Figure 1. Recognition Status of U.S. Indigenous Communities.....	86
Figure 2: Peer-Reviewed Publications for TEK and Climate Change, 2000- 2020	226
Figure 3: Regional Origins of Articles Assessed	226
Figure 4: Assessment Articles by Year of Publication.....	227
Figure 5: Criteria Discussed in the Assessment Articles	227
Figure 6: ILK Social Network Map	228

Chapter 1. Introduction

“And it is certainly true that the environment can become so hostile that a tribe will cease to exist” – Nicholas Peroff

The Obtawaing Biosphere Region (OBR) is a proposed UNESCO site encompassing more than 15,000 km² in Northern Michigan (UMBS, 2019). The region includes roaring rivers, some of the best fisheries in North America, dozens of tree species, and an incredible diversity of animals, such as moose, beavers, black bears, mink, and porcupines. In the local Anishinaabe language, Obtawaing means “the halfway or meeting point” and provides an important clue to the significance of the region. Northern Michigan is at the confluence of three Great Lakes — Huron, Michigan, and Superior. It is at this meeting point that generations of Anishinaabe, colonial and American settlers and traders, and, more recently, tourists, coalesced in cultural, economic, and social exchange (Friday, 2010). Within the past few centuries, the Obtawaing experienced a series of economic booms through trade in furs, fish, timber, and tourism that shaped the modern Northern Michigan landscape and culture.

The original reserve in the region comprised a much smaller area of around 40 km² at the University of Michigan’s Biological Station (UMBS or “Biostation”). Dedicated by the UNESCO Man and the Biosphere program in 1979, the UMBS reserve sought to represent the local ecology and conservation of Northern Michigan while also understanding how historical “land exploitation impacts the natural environment” (UMBS, 2019). However, the cultural and ecological story of the Obtawaing cannot be told simply through the lens of a small institutional research outpost on Douglas Lake. Instead, it requires

contributions from the numerous groups that work to steward the region's landscapes and natural resources. The newly proposed Obtawaing Biosphere Region includes partnerships with two universities, multiple federal agencies, half a dozen local conservation groups, and five indigenous communities — the Burt Lake Band of Ottawa and Chippewa Indians, the Little Traverse Bay Bands of Odawa Indians, the Sault Ste. Marie Tribe of Chippewa Indians, the Bay Mills Indian Community, and the Little River Band of Ottawa Indians.

Involvement by local indigenous populations is key to meeting the goals of the Obtawaing and part of the collective's mission to "ensuring injustices made in the past do not destroy the [...] rich culture and biological/botanical knowledge of the region" (UMBS, 2019). The proposal further notes that the landscape was shaped through cooperative land management between local and indigenous communities over generations with practices such as controlled burns and tree girdling. The Obtawaing is a great example of regional actors coming together for environmental management.

At the heart of the Obtawaing is a chain of lakes and rivers connecting Lake Michigan and Lake Huron called the inland water route. Now a popular tourist destination for boaters, the inland water route once served as an important transportation and trade passage for indigenous peoples throughout the Upper Midwest (Friday, 2010). The route would later be tamed with a series of canals to ease the export of the plentiful white pine stands to growing manufacturing centers like Chicago.

One pine tree, in particular, stood for generations along the route as a reference point for indigenous peoples traveling along the Great Lakes. Little Traverse Bay lies at the western terminus of the route and has been home to Odawa communities for centuries. For generations, a lone white pine tree sat on a bluff overlooking the Bay and its outlet into Lake Michigan. For the Odawa, the pine was called “Wau-go-naw-ki-sa,” or “crooked tree” in English (Wright, 1996). When the French first began trading furs in the area, they referred to the nearby village using the French translation, “L’arbre Croche.” The Odawa liked to tell a story about how the tree earned its distinctive shape. Nanabozho,¹ a Herculean figure often playing the role of a trickster in Anishinabek stories, was said to have been floating in his canoe along the Bay one lazy afternoon. He struck his head on one of the mighty pine’s branches. Nanabozho became very angry and punched the tree, giving it a distinct bend (Wright, 1996). Wau-go-naw-ki-sa stood as a guidepost for the inland water route and meeting place for Odawa and indigenous travelers for generations.

Jumping ahead to 2016, the Inter-tribal Council of Michigan (ITCMI), a non-profit organized in 1968 to promote the common welfare of indigenous peoples in Michigan, released a climate adaptation plan and vulnerability assessment. The assessment found that white pines are moderately vulnerable to the effects of climate change and could see significant changes in their range, size, and resilience in the coming years (ITCMI, 2016). Other common varieties

¹ The spelling of his name is sometimes recorded as “Na-na-bo-jo,” such as in John C. Wright’s timeless book of Northern Michigan indigenous stories referenced herein.

of trees, such as paper birch and sugar maples, were deemed extremely vulnerable to the effects of climate change and under serious threat.

Climate variability is not a new phenomenon in Northern Michigan. Archaeological records show that indigenous peoples first began to make settlements in the region as the glaciers receded at the end of the last major ice age around 12,000 years ago (Cleland, 1992). Indigenous groups have enjoyed a landscape in Michigan similar to its current form for the past 5,000-8,000 years. The adaptation of corn varieties to the shorter growing seasons in Michigan occurred over the last thousand years and allowed for more permanent settlement in the region (Cleland, 1992). However, the recent rate of change in the landscape due to anthropogenic climate forces is creating volatility in the balance of Northern Michigan ecosystems that are increasingly difficult to manage.

It is said that Nanabozho's brother once challenged the erstwhile protagonist to a footrace across a great distance. Nanabozho won the race handily and brought great joy and contentment to the plants and animals that he passed along the way. Out of anger his brother turned his back to the world and began to beat a large drum. The story ends with Nanabozho's brother angrily drumming and causing extreme weather throughout the otherwise harmonious landscape (Wright, 1996). Since 1980, the average temperature in the region has increased by 1.6°C (Dietz & Bridwell, 2011). Scientists estimate that a Michigan summer in 2100 will feel much like Arkansas or Oklahoma in 2000 (Nadelhoffer et al., 2010). Warmer air temperatures are impacting the lakes. Ice thickness and

coverage in the winter are shrinking, while lake turnover is becoming less predictable. This is causing hypoxic zones deep in the vast lakes of the Obtawaing and making the low oxygen environment increasingly inhospitable to aquatic life (Dietz & Bridwell, 2011). Temperatures are warming so rapidly that the growing season has expanded by two weeks in recent years.

Under a “business as usual” greenhouse gas emissions scenario, the six most abundant tree species in the region — sugar maple, trembling aspen, bigtooth aspen, Northern white cedar, red maple, and paper birch — will likely become much less common or could possibly disappear from Northern Michigan by 2100 (Nadelhoffer et al., 2010). In response, the Little Traverse Bay Bands of Odawa Indians, a federally recognized tribe with roots in L’arbre Croche, have dedicated a portion of their community farm to experimenting with tree varieties typically found much further south (Nature Change, 2018). The tree migration project at the Band’s farm, called Ziibimijwang or “the place where food grows near the river,” is just one way in which indigenous communities in the United States are using traditional knowledge and ingenuity to adapt to the harmful effects of climate change.

Climate effects are causing a complex change to our ecosystems and could significantly alter social dynamics and how humans interact with the environment. Nowhere is this alteration more pronounced than with indigenous peoples around the world. Many indigenous communities are place-based and resource-dependent, so disruption to food web dynamics, ecosystem response, and weather volatility caused by climate change are exacerbating vulnerabilities

in indigenous peoples (Wildcat, 2013). As a group of indigenous scholars and U.S. government experts concluded in the Fourth National Climate Assessment (NCA4) in 2018, indigenous peoples are already disproportionately feeling the impacts of climate change (Jantarassami et al., 2018). The indigenous experience with climate change is marked by struggles to assert sovereignty, government barriers to climate preparedness, and efforts to manage uncertainty. Their status as “domestic dependent nations” means that tribes need federal government authorization to engage in even basic adaptive measures such as exercising pre-existing water rights on drought-stricken reservations (Royster, 2013). Gender roles and cultural identity are becoming strained as traditional practices, like hunting, become more difficult to complete (Bunce et al., 2016). Overall, indigenous peoples are experiencing resource management issues as species important to indigenous culture, food security, and spirituality migrate out of tribal lands due to changing weather patterns and local conditions (Whyte, 2014). In response, indigenous communities are seeking partnerships with neighboring jurisdictions for co-management of species and landscapes to combat species loss, migration, and worsening health outcomes (Chief et al., 2014; Gautam et al., 2013).

There are factors outside science that might also impact how indigenous peoples respond to climate change. For instance, the Lumbee Tribe of North Carolina suffers from many of the same water resource management and species loss issues as tribes in the Obatawaing or the arid Southwest, but the Lumbees must navigate these issues without the full sovereign status of an

indigenous nation (Emanuel, 2018). The lack of recognition of the Lumbee Tribe's sovereignty means that the U.S. government has no obligation to engage with the tribe when federal projects impact Lumbee waterways or culturally important species. NCA4 signaled that a lack of recognition for hundreds of indigenous communities could impact climate response:

“Non-federally recognized tribes, Native Hawaiians, and other Indigenous peoples also have rights to self-determination to protect their traditional knowledges, cultures, and ancestral lands, while developing their economies and providing community services; but they do so without reservation lands, treaty rights, and federal provision of essential services, among other rights, authorities, and capacities to which federally recognized tribes can appeal” (Jantarassami et al., 2018).

Acknowledgment by the federal government of a tribe's right to self-determination is essential to effective Native governance (Fletcher, 2006b). Yet, there are estimated to be more than 400 indigenous communities currently “unrecognized” by the U.S. government.

In general, Indigenous tribes possess an inherent right to self-governance that predates European arrival in the Americas (Fletcher, 2006a).

Acknowledgment, more commonly referred to as “federal recognition,” is an affirmation of indigenous sovereignty and establishes a trust relationship that opens the community to access special federal resources for healthcare, education, land management, and economic development (Fletcher, 2016; Koenig & Stein, 2006; McCulloch & Wilkins, 1995). Tribal sovereignty can be expressed through activities such as participation in diplomacy (Ricci, 2019), cultural expression (Yakama Nation, 2016), or land stewardship (Middleton, 2013).

Historically, recognition was established through treaties between tribes and colonial powers or the United States (Fletcher, 2016). The Ottawa and Chippewa bands of the Obtawaing entered into two treaties with the United States, the Treaty of Washington in 1836 and the Treaty of Detroit in 1855 (Cleland, 1992). One band living in the center of the inland water route, the Chaboiganing (Burt Lake) Band, sent a wise and skillful delegate, Chingassimo (Big Sail) to negotiate with the American government. Chingassimo would serve as a chief negotiator for the bands present at the Treaty of Washington deliberations (White, 1978). Many of the descendants of the Chaboiganing Band still live scattered along the western shore of Burt Lake at the heart of the inland water route. Despite ties to treaty-signing ancestors and a history of interacting with the U.S. government and other jurisdictions as the Chaboiganing/Burt Lake Band, the tribe's sovereignty is not currently recognized by federal authorities.

For the authors of NCA4, lack of recognition was cited as a possible impediment in the race to adapt to climate change. It is a distinction that separates the Burt Lake Band from its federally recognized peers in the Obtawaing like the Little Traverse Bay Bands or the Sault Ste. Marie Tribe of Chippewa Indians. With Northern Michigan as a backdrop, this dissertation seeks to answer the question:

**Does recognition status affect a tribe's capacity
to adapt to climate change?**

The potential impediments to non-federal indigenous communities caused by their lack of recognition are a well-known concern throughout Indian Country. In 2003, indigenous scholar Bruce Miller wrote that unrecognized tribes were at

risk of a new era of “ecocide” wherein environmental degradation could spell doom for indigenous cultures and societies without sovereign status (Miller, 2003). Sea level rise and the intensification of tropical storms and hurricanes in the Gulf of Mexico are already causing non-federal tribes like the Isle de Jean Charles Band of Biloxi-Chitimacha-Choctaw Indians to choose between relocating and possibly fracturing their community or disappearing under the rising tide of climate change (Maldonado et al., 2013). As indigenous legal scholar Rebecca Tsosie (2013) notes,

“There is a continuing tendency in the United States to conflate the political status of federally recognized Indian tribes with that of indigenous peoples. This becomes particularly important in an era of climate change because only federally recognized Indian tribes have jurisdiction to govern their lands and resources.”

At stake are the socio-ecological and cultural fortunes of hundreds of indigenous communities representing thousands of vulnerable, marginalized Americans. Not all scholars are convinced that recognition could be a defining trait in a tribe’s adaptive capacity. Writing about the Lumbee’s predicament last year, Danielle Hiraldo, a senior researcher with the Native Nations Institute, challenged the logic of the NCA4 linking recognition status and climate adaptation by arguing that cultural expression through activities such as hunting and fishing mattered far more to indigenous identities than political acknowledgment (Hiraldo, 2020). To better answer the research question posed in this dissertation, three sub-questions were also developed after a literature review of indigenous experiences with climate change.

The first research sub-question concerns access to culturally important resources: ***Do tribal lands and treaty rights preserve resource access?***

Historical treaties between indigenous communities and the United States often included provisions that maintained tribal access to vital hunting grounds, fishing camps, and spiritual locations. However, treaty rights are only available to tribes that engaged in that form of diplomacy and are typically only reserved for federally recognized tribes (Wilkins & Lomawaima, 2001). As local weather patterns shift and ecosystems adjust to climate change, many of the plant and animal species that sustained indigenous peoples for centuries are migrating. Possessing an extended range from which the community can hunt, fish, and gather these resources may give federally recognized tribes with treaty rights a distinct adaptive advantage. The extent of that possible advantage for federally recognized tribes in Northern Michigan is punctuated by a long, messy battle to engage in traditional fishing practices tied to the American Indian Movement of the Civil Rights Era (Doherty, 1990). The experiences of one non-federal tribe in Vermont, the Nulhegan Band of Coosuk Abenaki Nation, raise important questions about the connection between recognition status and resource access, because the Nulhegan Band have similar access to cultural resources as federally recognized tribes in Michigan but without the historic treaty rights that often predicate enhanced access.

The second research sub-question concerns the availability of federal opportunities for tribes managing climate effects: ***Are the contributions that federal programs can make to non-federal tribes for climate adaptation and***

planning comparable to the contributions being made to federally

recognized tribes? Monetary resources can often dictate successful adaptive capacity (Fankhouser & McDermott, 2014), and there are examples in the United States where federal funding contributed significantly to favorable environmental outcomes for tribes (Gautam et al., 2013). However, federal resources to combat climate effects have been extremely limited for the past few years, and many federally recognized tribes have struggled to get adaptation projects out of climate plans and into action. The inconsistency with which the U.S. government defines, interprets, and includes non-federal tribes in federal program eligibility only adds additional roadblocks to unrecognized community efforts to adapt.

The final research sub-question regards participation in environmental decision-making and asks: ***Does lack of recognition impede effective climate governance for non-federal tribes?*** An important component of recognition is the mandate that federal agencies meaningfully consult with tribes whenever a federal project will potentially impact the tribal community and its resources (E.O. 13175, 2000). There is no such directive to engage with non-federal tribes, and that has led to some unjust results, such as how the tribes of Isle de Jean Charles along the South Louisiana coast have been left out of levee construction and are now being forced to relocate as their island is claimed by rising waters (Maldonado et al., 2013). Long debated questions around indigenous identity and “who is an Indian?” impact the credibility of unrecognized tribes and imperil their input in local environmental governance activities.

Climate change poses a threat to human safety, infrastructure, economic development, and the biota of the world. For unrecognized indigenous communities, it also represents a threat to cultural survival by altering traditional ways of life and culturally significant landscapes in an irreparable manner. The remainder of the dissertation unfolds as follows. Chapter 2 frames the overall research question and sub-questions through a literature review on indigenous experiences with climate change and the history behind how the federal government acknowledges the sovereignty of tribes. Chapter 3 delineates the research design of this dissertation, including the choice of the Burt Lake Band for the case study, community research challenges during the COVID-19 pandemic, a summary of the data collected, and analytic methods used. Chapter 4 provides a short history of the Burt Lake Band and its response to a series of environmental shocks over the past two centuries. Chapter 5 delves into the first research sub-question on resource access and the function treaty rights serve in managing climate-induced species migration and loss. Chapter 6 considers the second research sub-question and details the availability of federal opportunities in tribal climate response and the difficulties non-federal tribes encounter seeking federal grants and program dollars. Chapter 7 answers the final research sub-question on how recognition status impacts credibility in environmental governance scenarios and the consequences when a tribe lacks a seat at the table. Finally, Chapter 8 proposes a new system for recognizing and supporting indigenous communities built around self-identification and political engagement, the cornerstones of international and American indigenous self-determination.

This new system could fix extant issues with the recognition process and improve access to the financial, administrative, and regulatory processes needed for effective adaptation to climate change.

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Chapter 2. Literature Review: Climate Change, Political Acknowledgment, and Indigenous Peoples

Abstract

The link between an indigenous community's political status and how it adapts to climate change is rooted in historical colonialism, global economic development, American diplomatic history, and environmental policy. Indigenous peoples are already disproportionately feeling the effects of climate change, and scholars have mobilized to study the impact climate has on traditional cultural practices, social dynamics, local ecological knowledge, and effective resource management. Closely related to tribal efforts to manage climate effects are historical endeavors to assert indigenous sovereignty and govern tribal lands. Proving identity plays an important role in the political recognition of indigenous peoples and has served as a hurdle for indigenous communities seeking acknowledgment from the U.S. government. With acknowledgment, tribes and the U.S. government form a trust relationship that affords tribes access to certain resources, regulatory authority, and programmatic opportunities that could prove essential to effective climate adaptation, but deficiencies in the federal acknowledgment process have left hundreds of indigenous communities unrecognized and vulnerable to climate harm.

A. Indigenous Experiences with Climate Change

The indigenous response to climate change is tied to concepts in environmental policy, global economic development, and colonialism. As scientists rush to understand how the global environment will evolve in the face of massive accumulations of greenhouse gases in the Earth's atmosphere and

oceans, social dynamics and the human experience are also evolving to meet this change. This alteration is expected to be more pronounced in indigenous communities that particularly cultivate social, spiritual, nutritional, and cultural sustenance from local natural resources. Concepts related to climate adaptation, such as vulnerability, resilience, and adaptive capacity, take on special meaning when placed in the indigenous context. For tribes looking to manage climate harms and steward the land, strategies built around traditional ecological knowledge (TEK), extreme transformation, and climate planning dominate the literature. Together, this body of knowledge frames how indigenous peoples react to the growing unpredictability and intensity of weather patterns that have become the norm with climate change, but the slow progress made in identifying and promoting effective adaptation strategies threatens indigenous capabilities in addressing climate change.

1. The Concepts that Contribute to Climate Adaptation Planning and Response

Communities and nations manage climate through mitigation and adaptation. Mitigation means the reduction or sequestration of existing greenhouse gases (GHG) that contribute to climate change through strategies like carbon sinks, limiting fossil fuel consumption, and adopting renewable energy technologies (IPCC, 2018). Adaptation efforts, such as the activities described in my dissertation, are defined as “the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial outcomes” (IPCC, 2018). Inherent in the discussion around adaptation are the concepts of vulnerability, resilience, and adaptive capacity.

The widespread use of adaptation terms in climate studies have led to a proliferation of definitions and explanations that create some confusion about the roles of resilience, vulnerability, and adaptive capacity in climate adaptation and mitigation. In particular, there is uncertainty in the literature about what separates resilience from adaptation. In one study, laypeople could not distinguish responses to coastal flooding when presented with materials framed as either “resilience” or “adaptation” (Wong-Parodi et al., 2015). Resilience seemed to signal to participants that the problem was perhaps large and unmanageable, with adaptation evoking smaller risks. The study concluded that adaptation language was better used to initiate individual action, while resilience spurred community action. Here, the difference between the two terms relates to the magnitude of the problem faced by the community.

Within the context of climate planning, Meerow and Woodruff (2019) argue that resilience “[connects] climate change to other challenges, such as aging infrastructure and systems inequalities.” They treat resilience as a bridge to expand the reach of climate planning activities wholly separate from adaptation efforts or strategies. Another study by Smit and Wandel (2006) on vulnerability lumped resilience in with adaptive capacity: “Vulnerability of any system (at any scale) is reflective of (or a function of) the exposure and sensitivity of that system to hazardous conditions and the ability or capacity or resilience of the system to cope, adapt, or recover from the effects of those conditions.” Yohe and Tol (2002) express vulnerability as a function of adaptive capacity. In these examples, the authors see adaptive capacity as a mitigating factor to overall

vulnerability, while resilience acts as connective tissue between adaptation preparation and execution. Further blurring the lines between resilience and adaptation, Walker et al. (2004) argue that adaptive capacity is the system's ability to manage resilience. In contrast, tribes have remained clear and consistent in their desire to maintain traditional functions, structures, and cultural activities in the face of climate change (Jantarasami et al., 2018).

Assessing tribal adaptive capacity through existing models can be problematic. Most models for assessing adaptive capacity are political, contested (Eriksen et al., 2016), and developed for Western populations (Paton et al., 2008). In one example, Armitage (2005) showed that communities could not respond to limitations in technical expertise and Western science. This could be remedied through socio-ecological mechanisms that balance use and conservation, decentralize decision-making authority, and guide access and control over common resources. A few characteristics of Armitage's community model include social receptivity and the transfer of knowledge from different sources. More specifically in the indigenous context, Colombi (2012) argues for models that promote "the continuation of an indigenous knowledge system, the establishment of sovereign relations and power, and a tradition of strong leadership that includes a vision for the future and the ability to forge and maintain partnerships." These models point to the possibility of measuring adaptive capacity within the frame of indigenous worldviews and contextualized community needs, but no one model stands out as fully representative of indigenous interests in adaptation.

2. Framing Historical Environmental Problems for Indigenous Peoples in the United States

The current state of the environment and the overarching issues presented by climate change are a direct reflection of the economic values that propelled much of Western Europe and the United States forward during the eras of colonization and industrialization. When many Europeans arrived in America, they saw a vast and untapped wilderness full of opportunity and unmet economic potential. However, as the environmental geographer and historian William Cronon (2011) demonstrates, early colonial impressions of North America overlooked the high degree to which indigenous communities manipulated and transformed the land to increase its productivity. Rather than bend the land to the will of the settler, Cronon writes that indigenous communities chose to enhance certain aspects of the landscape to increase returns of beneficial species, such as by harvesting trees selectively and prescribing burns to attract deer.

In contrast, colonists traditionally viewed the forest as a dangerous and unwelcoming place (Kwiatkowska & Holland, 2010). Brown (2004) notes that the Judeo-Christian liberal tradition that dominated early colonial land practices simply regarded nature as a vehicle for production and advancement in the service of men. Colonial attitudes toward resource exploitation and dominion of the land simultaneously propelled economic development and the overharvesting of many species on the North American continent. Similar to the overhunting of fur-bearing animals in the early colonial era to satisfy European fashion demands, climate change is placing immense pressures on species around the globe. One study estimates that unmitigated climate change could wipe out one-

third of all global species by 2070 (Román-Palacios & Wiens, 2020). As global development continues, climate change is further intensifying pressures on natural resources, and the United Nations Environment Programme (UNEP) is addressing climate change and other environmental harms like pollution and land degradation together to “maximize the benefits and minimize the tradeoffs” of the interconnectedness of nature (UNEP, 2021).

In more recent years, the connection between environmental degradation and economic development has taken a prominent position in the global debate over how to end poverty and raise standards of living and well-being for all nations. Antle and Heidebrink (1995) demonstrated that resource extraction could be exploited as a quick path to income generation for developing nations. With its genesis in the original environmental Kuznets curve (Kuznets, 1955), Antle and Heidebrink (1995) argued for the “environmental transition hypothesis.” They demonstrated that economic growth for low-income communities tended to come at the expense of the local environment. Their hypothesis posits that demand for environmental protection should grow as income grows and communities become less dependent on resource exploitation (Antle & Heidebrink, 1995). To a certain extent, this hypothesis has played out in much of the developed world.

However, richer, developed nations have simply shifted production to lower-income countries with less demand for environmental protections or capacity to advocate for local interests, like industrial fish and agricultural production in South Asia and South America, mineral extraction in Africa, or palm

oil production in the Indonesian rainforest (Zoomers & Van Westen, 2013). Thus, the reality of the environmental transition hypothesis is that developed nations may be maintaining their local environment and lifestyles at the expense of developing nations.

The “resource curse,” a phenomenon where resource abundance rarely translates into wealth generation for marginalized communities, is a stark reminder for indigenous peoples of the divide between the extractive practices of Western governments and developing regions. At the largest industrial site in the world, the Alberta, Canada tar sands, local indigenous populations suffer from polluted waterways, fragmented landscapes, sexual assault, poor air quality, and a lack of investment outside oilfield development (Parlee, 2015). So, even when indigenous peoples are situated in places where they should benefit from development, resources, and the rents those resources produce flow out of the region, leaving the local community with a devastated landscape and few opportunities for advancement.

The application of the environmental transition hypothesis, and the foundation that supports exploitative international development to the detriment of developing nations’ environments, can be less representative when investigating modern indigenous livelihoods. Examples from around the Pacific Rim demonstrate that access to resources, not exploitation, and community cohesion can have a more profound impact on indigenous well-being than income. Depending upon location and cost of living, the World Bank defines “middle class” as any household earning between \$11-\$110 per day, and now

more than 3.2 billion people fit this description (Kharas, 2017). But more than 75% of rural and impoverished communities around the globe are still almost entirely dependent on local biodiversity and resources for their livelihoods (ILO, 2017), and this makes indigenous peoples' place in global development decidedly not global in scope. For example, nearly the entire population of the tiny island nation of Vanuatu is classified as indigenous and falls well below the global middle-class threshold. However, the Pacific archipelago consistently rates as one of the happiest nations in the world (Happy Planet Index, n.d.). An extensive survey of the Vanuatu people found a strong positive correlation between access to forest resources, ocean resources, and cultural practices in the community to high levels of happiness (Malvatumauri National Council of Chiefs, 2012). Similarly, while developing health indicators to measure their well-being, the Swinomish Tribe of Washington state found aspects related to access to important cultural resources like shellfish to be most beneficial, such as community cohesion, knowledge sharing, self-determination, and food security (Donatuto et al., 2014). Indigenous communities are contributing to the growing body of literature questioning the predetermined path through development and income generation as the only way to improve well-being (Sacks et al., 2012). But having such a significant reliance on local resources increases indigenous peoples' vulnerability to threats from climate change such as species migration and the effects of devastating storms increasing in frequency and intensity.

3. Climate Change Impacts on Indigenous Peoples

One of the greatest environmental challenges to emerge from the eras of Industrialization and globalization is the large-scale alteration of weather patterns, storm intensity, and rising temperatures disrupting ecosystems around the globe caused by climate change. Unfortunately, indigenous communities are feeling some of the early problems manifesting with climate change (Jantarasami et al., 2018), and that harm is amplified across Indian Country because of unique resource-based livelihoods and strong cultural connection to the land.

According to the Intergovernmental Panel on Climate Change (IPCC), the world is already experiencing a 1°C rise in global average temperature (IPCC, 2018). In the Arctic region where a large portion of federally recognized indigenous communities reside, warming is taking place at a rate 2-3 times faster than the global average rise. The IPCC further reports dire consequences if global average temperatures hit a threshold of 2°C, including the geographical range for all species would be halved, permafrost would thaw, 99% of the world's coral reefs would die, and the global annual catch of fish would shrink by 3 million tons. Even at current levels, indigenous communities are being displaced by sea level rise in Alaska and Louisiana.

North and South America are home to 7 of the 17 most biodiverse countries in the world, according to the Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services (IPBES, 2018). The organization concludes that indigenous peoples are integral partners in

maintaining biodiversity and mitigating carbon emissions in the Americas. One assessment by the World Bank found that 80% of global biodiversity was housed on indigenous lands, despite those lands comprising only 24% of the world's landmass (Sobrevilla, 2008). Griscom et al. (2017) calculated that by 2030 the global community could meet more than 30% of its climate mitigation goals to limit global average temperature rise to 2°C by protecting biodiverse intact forest lands, areas often found in indigenous territories. IPBES notes that indigenous lands in the Americas could help avoid 8 billion tons of carbon emissions by 2050 by blocking the deforestation of 670,000 square kilometers. However, the IPBES (2018) report warns:

“In the conversion of natural ecosystems to those altered for intensive food production, many of the properties linked to cultural services of indigenous peoples are reduced, and one of the major problems indigenous peoples face is land use change and degradation, which leads to the transformation or loss of traditional knowledge.”

To maintain this biodiversity and carbon storage, IPBES recommends that indigenous groups retain access to these resources and continue their stewardship of the vast forests.

The indigenous experience with climate change in the United States is marked by struggles to assert sovereignty, federal barriers to climate preparedness, and a host of actions to manage uncertainty while evolving gender norms, health outcomes, and economic frontiers frustrate response capabilities. Because of resource-based livelihoods, many indigenous communities are particularly vulnerable to climate risks (Wildcat, 2013). However, tribes have a

long history of managing environmental change. Daniel Wildcat, an indigenous environmental scholar at Haskell Indian Nations University, coined the phrase “indigenuity” to explain the unique outlook and response by many indigenous communities to environmental issues. He posited:

“Can you imagine a world where nature is understood as full of relatives not resources, where inalienable rights are balanced with inalienable responsibilities and where wealth itself is measured not by resource ownership and control, but by the number of good relationships we maintain in the complex and diverse life-systems of this blue green planet?” (Wildcat, 2013).

Concepts like “indigenuity” help define the indigenous experience around unprecedented environmental degradation in the modern era. In Indian Country, climate change has been characterized as “an intensification of environmental change imposed through colonialism” (Whyte, 2017). The legacy of colonialism has manifested in a number of barriers to climate preparedness, such as bureaucratic hurdles to land management, a community health system closely connected to degrading ecological conditions and collapsing food systems, and a cost-benefit federal funding allocation system that inherently disadvantages assistance to sparsely populated rural tribal communities. The unique status of tribal nations in the United States, coupled with their historical treatment through colonialism, has left many indigenous communities ill-equipped to tackle rapid changes to the climate.

Health in Indian Country is being threatened in novel ways due to climate change. As the Arctic thaws and opens up to more commerce, there are growing

concerns about sex trafficking and human security in Alaska Native villages near shipping routes and oil and gas development (Whyte, 2017). Mental health is strained as traditional gender roles are challenged by climate stress. Shrinking sea ice reduces seal hunting activities off the Alaska coast. Sewing sealskin is a traditional pastime for many women in Alaska Native villages, and its decline is harming women's mental health in the community (Bunce et al., 2016). Men are also feeling more stress as their contributions to the home from traditional hunting activities rapidly disappear. Bunce et al. (2016) also find that women who express a strong connection to their culture also feel more prepared to respond to climate change, so cultural norms can make some indigenous peoples more resilient while it exposes vulnerabilities in others.

For the Pyramid Lake Paiute Tribe in Nevada, a massive coordination effort with federal agencies over water management of Pyramid Lake has helped ensure access to traditional foods like the cui-ui fish (Gautam et al., 2013). The Lumbee Tribe in North Carolina faces similar environmental stressors and development pressures on their water resources but must navigate management without the acknowledgment of their sovereign status by the federal government. Emanuel (2018) chronicles this disadvantage:

“The Lumbee Tribe's lack of full federal recognition means that agencies have no statutory requirement to engage formally with the tribal government when making decisions about regulated projects that potentially impact landscapes and waterways of importance to Lumbee people.”

This lack of a collective voice in federal decision-making restricts the tribe's capacity to manage growing drought seasons and intense periods of rainfall throughout the river basin. Emanuel (2018) strikes a more promising tone about the power of cultural renewal in combating climate change later in his article: "Longstanding Lumbee traditions may heighten awareness of environmental degradation and spur stronger actions by the tribe to prepare for and adapt to expected climate change." Less clear in the literature is the degree to which tribes can use cultural renewal and traditional practices in the face of massive institutional and public health barriers to match the devastating effects of climate change.

As tribes come to grips with the need to address the effects of climate change, many are turning toward a greater emphasis on TEK (Bunce et al., 2016). But some tribes have reached the limits for adaptation through TEK (Cochran et al., 2013) and are instead engaging transformational approaches that incorporate greater scope and impact as compared to incremental adaptation practices (Chang et al., 2020) and exploring new resource systems (Chief et al., 2014). Each strategy is a moderated response to the severity and ubiquity of climate effects in the community.

Indigenous communities in general exhibit strong connections to the land and its resources (Emanuel, 2018; Chief et al., 2014; Bunce et al., 2016). TEK is a reflection of generations of observations as the various systems, species, and processes shaped the landscape. Smith and Sharp (2012) provide a

comprehensive definition of TEK: “a cumulative body of knowledge, practice, and belief evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment.” TEK has a heavy reliance on direct evidence (Agrawal, 1995) and is grounded in process, observation, and discussion (Berkes, 2009). It incorporates minor adjustments to existing knowledge foundations to address novel problems. By its very nature, TEK is adaptive, so refinement and incremental change to cultural practices over time as circumstances change are likely.

TEK stands out from Western science in two other distinct ways through its use of time/seasonality and specificity. TEK is often not based on a linear notion of time, but rather a cyclical understanding around seasonal changes (Chisholm-Hatfield et al., 2018). For instance, members of the Salish Kootenai tribe share important phenological knowledge during the first snow in the nearby mountains each winter. Chisholm-Hatfield et al. (2018) explain: “[Indigenous] concepts of time are important not least because they indicate when certain traditional behaviors should begin, for example, hunting, fishing, and gathering.” Seasonality works to connect the experiences of plants, animals, insects, and humans.

But TEK has its limitations and is not immune from complications brought about by colonization and climate change. Tribes are already experiencing

difficulties in accessing natural resources due to the increased variability and frequency of extreme weather events (Jantarsami et al., 2018). This has led to a shift toward coping strategies, such as frontloading hunting in fear that species will be unavailable later in the season because communities have not yet had enough time to develop long-term adaptive strategies (Berkes & Jolly, 2002). Climate change can be viewed as an intensification of environmental change imposed through colonialism (Whyte, 2017). The rapid depopulation of indigenous communities in the early colonial period threatened traditional knowledge and created a disease feedback loop from which some tribes have yet to recover (Reo & Parker, 2013). Complications from colonialism have created holes in TEK for some tribes that could stunt the use of indigenous knowledge in the fight against climate change.

The Arctic is one region feeling massive disturbances from climate change to nearly every facet of life, including TEK systems. Rural Alaska is also the most impoverished region in the United States, with limited job opportunities and high costs for fuel and commercial goods (Cochran et al., 2013). Indigenous Alaskans have a greater need to live off the land and provide for their families through subsistence practices. Melting sea ice is reducing opportunities to hunt seals and whales, while the variability and intensity of weather events make travel to hunting grounds more treacherous and less predictable (AMAP, 2019). Climate change has severely restricted the usefulness of TEK as Alaska morphs

into a new landscape, imperiling financial security and increasing stress in indigenous households.

As the examples in Alaska demonstrate, incremental adaptation developed with TEK may be too weak a response to maintain culturally important practices and livelihoods, demanding a pivot toward more aggressive, transformational adaptation measures. Transformational adaptation differs from incremental adaptation in scope, severity, and timing. According to Lonsdale et al. (2015), transformational adaptation occurs in one of three instances:

1. System-wide changes or changes across more than one system;
2. A focus on the future and long-term change;
3. Direct questioning of the effectiveness of existing systems, social injustices, and power imbalances.

Kates et al. (2012) classify transformational adaptation as adaptations “adopted at a much larger scale or intensity, new to a particular region or resource system, and that transform places and shift locations.” Thus, it is not the particular adaptation activity that influences its categorization as incremental or transformational, but rather the size, scope, and intensity with which it is implemented that makes it transformational.

There are already a few examples of transformational adaptation in Indian Country. The Makah Tribe of western Washington is working to return ecosystem conditions on the reservation to heritage (pre-contact with Europeans) levels, a process of long-term change and immense scale (Chang et al., 2020). For example, the Makah are restoring water quality on the reservation

to a standard at which fish populations can recover and consumption by Makah citizens can return to historical levels. Tribes are engaging in informal agreements and knowledge exchanges with neighboring tribes to gain entrée to new resource systems (Lynn et al., 2013). The tribes of Isle de Jean Charles in coastal Louisiana, as well as Alaska Native villages like Shishmaref and Kivalina, are in the process of relocating their communities to more climate-resilient locations (Ford & Giles, 2015). These are just a few examples of transformational adaptation happening on tribal lands right now.

Despite recent advances in tribal self-sufficiency and self-determination, the federal government still plays an active role in the success or failure of many tribal projects and actions (Gautam et al., 2013). Multiple studies highlight a number of financial and institutional barriers impeding tribes' successful engagement in transformational adaptation. For example, the relocation of Kivalina, AK, due to coastal erosion from sea level rise and an increase in severe weather, began in 1992. It remains incomplete. The U.S. Army Corps of Engineers estimates the expense of relocation for this small village to be \$80-\$200 million, but Congress only authorizes a fraction of that each session (Maldonado et al., 2013). The community remains in limbo as infrastructure fails and businesses refuse to invest in an area clouded by an uncertain future. The Kivalina example demonstrates how poverty and economic stagnation brought

on by federal delays remain a formidable barrier to adaptation in these communities.

Not all barriers to transformational adaptation are financial, and studies are identifying institutional barriers as well. The checkerboard nature of land ownership on many reservations limits the power of tribal governments to regulate the behavior of non-citizens within their borders (Ford & Giles, 2015). Federal water laws currently hand too much power to state courts in determining tribal water rights, often at the expense of measures compatible with adaptation (Royster, 2013). These examples show that there are still many fiscal, legal, and political roadblocks to tribes seeking aggressive and transformational adaptation measures to avoid the worst effects of climate change.

The indigenous response to climate change is a product of America's long history of colonialism, policy preferences for economic growth over environmental protection, and globalized development strategies. Adapting to climate change requires tribes to assess vulnerabilities, build resilient systems, and improve adaptive capacities. The literature on indigenous adaptation points to the need for strategies built on TEK, robust planning, and transformation. Financial and institutional barriers have been shown to stunt the tribal response to looming climate threats (Maldonado et al., 2013; Royster, 2013; Ford & Giles, 2015; Gautam et al., 2013). With some indigenous communities already in the process of relocation, the identification of legal and policy tools to aid tribes in building climate resilience will need to be a priority to avoid the potential

extinction of indigenous cultures during this unprecedented climatological transition.

B. Tribal Sovereignty and Federal Recognition

Nearly two hundred years ago, the U.S. Supreme Court ruled that tribes possess an inherent right to self-govern that preceded the formation of the United States and even Columbus's arrival in 1492 (Fletcher, 2006a). This sovereignty is exercised through actions such as participation in diplomacy (Ricci, 2019), cultural expression (Yakama Nation, 2016), and land stewardship (Middleton, 2013). Historically, tribes acted on their sovereignty by entering into government-to-government relationships with other sovereigns, often manifested through treaties (Fletcher, 2016). The idea behind government-to-government relationships would later be memorialized in what is now referred to as the federal "recognition" or "acknowledgment" of an indigenous community's sovereign status. The scholarly analysis of recognition is built around discussions of indigenous identity, the significance of political acknowledgment, and the modern abdication of the U.S. government's responsibility to support indigenous peoples as evidenced by the rise of state recognition schemes.

1. "Who is Indigenous?" and Why Does Recognition Matter?

Acknowledging an indigenous community's sovereign status is ultimately a commentary on that community's identity. "Indian tribe" is a unique term of art utilized by the U.S. government and is not intended to be inclusive of all indigenous peoples across the nation. For instance, 25 U.S.C. §5131 requires the Secretary of the Interior to regularly publish a list of all Indian tribes

recognized as eligible for special federal programs. The preceding section defines Indian tribe as “any Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of Interior acknowledges to exist as an Indian tribe” (25 U.S.C. §5130(2)). The federal government has been accused of equating indigenous peoples exclusively with federally recognized tribes (Tsosie, 2013). On its FAQ webpage, the Bureau of Indian Affairs (BIA), the federal agency charged with carrying out the government’s trust responsibility to indigenous peoples, answers the question, “Who is an American Indian or Alaska Native?,” with “someone who has blood degree from and is recognized as such by a federally recognized tribe or village” (BIA, n.d.). By associating indigeneity with federal recognition, the U.S. government attempts to act as the “arbiter of Indian identity” (Klopotek, 2011).

When the U.S. government closely associates indigeneity with federal recognition, it ties Native identity to politics and the historical interactions between tribal leaders and government officials. Indigenous legal scholar Matthew Fletcher (2006b) argues that “Indianness” is subjective, “being Indian is political,” and how an indigenous community is perceived by other tribes matters. But despite heavy political considerations linked to identity, there are also many examples of culture playing an important role in representations of “Indianness.” In his book about the Mashpee Tribe’s battle for federal recognition, Jack Campisi (1991) illustrated the power of culture in how society views indigeneity. He described how the judge hearing the tribe’s case banned traditional regalia from the courtroom believing that it might distract and influence the jury’s

decision. McCulloch and Wilkins (1995) would go on to argue that social constructions of Indianness have carried equal weight to political considerations, focusing on romanticized images of Native Americans glorified in old Western movies and the novels of James Fenimore Cooper, as well as how the general public viewed the legitimacy of the indigenous community. Castile (1996) echoed the importance of connecting tribal culture to American history and the overall nation's identity, although such relationships might speed assimilation.

Regardless of whether indigenous identity is rooted in political maneuvering or meeting public expectations of "Indianness," recent scholarship has focused more on the effects of constantly proving identity to other indigenous and non-Indian groups. Brian Klopotek (2011) feared the psychological toll on indigenous communities from regularly validating identity, especially for unrecognized tribes viewed as illegitimate or pretenders by society. In this context, seeking recognition becomes a process that undermines traditional tribal culture, especially as unrecognized communities must contort their practices to meet non-Indian notions of indigenous governance and culture. As an alternative, Hiraldo (2020) encourages indigenous communities to seek validation, not through recognition, but rather via cultural expression with activities like hunting and fishing. In each of these examples, there is a natural push and pull between tradition and evolution, each conforming to American societal norms in a manner palatable to non-Indian neighbors while still maintaining some semblance of indigeneity.

Outside the debate around indigenous identity, research also details the important ways in which tribes often advance through recognition. However, there is a strong disclaimer that comes with depictions of the benefits of recognition. Federal recognition is not a prerequisite to a tribe's inherent sovereignty and right to self-govern (Koenig & Stein, 2006). Recognition only confirms status; it does not grant it and "unlike land, water, and other physical properties of a tribe, cannot be given or taken from a tribe by the federal government or anyone else" (Peroff, 2001). Thus, there is a clear demarcation between a tribe's inherent sovereignty and the benefits conferred to tribes through federal recognition.

The potential benefits afforded the trust relationship between tribes and the U.S. government are numerous. One of the key benefits is funding for tribal government operations, education, healthcare, and other social, cultural, environmental, and economic programs. In 2001, the U.S. Government Accountability Office, a non-partisan Congressional agency charged with investigating and reporting on government efficiency, found direct appropriations to tribes to total around \$4 billion, while tribes were also eligible to apply for another \$4 billion in special programs (GAO, 2001). Other benefits identified include geographical boundaries and jurisdiction (Hirald, 2020), leverage in influencing government action (Katz, 2003), and rights to certain infrastructure improvements and resource harvesting based on historical treaties (Miller, 2004). Geographical boundaries are key to understanding tribal recognition because it is the connection to land that separates indigenous peoples from other minority and

ethnic groups in the United States and paves the way for the special trust relationship enjoyed by federally recognized tribes (Campisi, 1991).

Perhaps the most contentious and well-discussed benefit of federal recognition is economic development through tribal gaming. Petitions for federal recognition exploded in the 1990s as tribes began to explore business opportunities around casinos and gambling. Bruce Miller (2003) referred to gaming as the “new buffalo” and spoke of the fledgling industry’s impact on indigenous economies and livelihoods. However, pushback from non-Indian communities over perceived ills of gambling, and concerns about mafia influence of gaming operations, cast new light on the recognition process and ignited significant resistance to indigenous political acknowledgment. Matthew Fletcher (2016) detailed one battle, where non-Indian communities opposed the recognition of tribes in Connecticut, referring to the federal recognition process as securing a “gambling permit.” Scholars have discussed positive outcomes from gaming as well. Brian Klopotek (2011) chronicled how the Tunica-Biloxi Tribe of Louisiana opened a casino and was able to offer good-paying jobs, allowing tribal members to relocate back to the reservation and reestablish important familial and tribal relationships. With the rise of tribal gaming, scrutiny over indigenous identity has only increased and become more contentious.

2. The History of Recognition Policy

The first complete list of federally recognized tribes did not appear until 1979 (Quinn, 1990). The history of tribal acknowledgment, however, dates back to the colonial era and the treaties negotiated by indigenous communities and

European powers. But the U.S. government stopped making treaties with tribes in 1871, and a policy of assimilation dominated the next sixty years of tribal-federal relations. By the 1930s, the U.S. government finally began attempts to return governing powers back to tribes and properly detail federal trust responsibilities. This led to new bureaucratic efforts to streamline the identification of Native Americans and delineate benefits. Pressures during the Civil Rights era from the American Indian Movement led to strong reassertions of tribal sovereignty and renewed efforts by many indigenous communities to gain or restore federal recognition. The results of a government report on the state of Indian Country ultimately prompted the development of a bureaucratic process to manage recognition petitions that persists today.

The earliest ways that tribes and colonial powers politically interacted were through the negotiation and signing of treaties. A trio of U.S. Supreme Court cases in the early 19th century dubbed the “Marshall Trilogy,” after the Chief Justice at that time, would reorient the relationship between indigenous communities and the fledgling United States from interactions between foreign powers to internal affairs (Pommersheim, 2009). Tribes would assume the mantle of “domestic dependent nations” and function in a unique accord with the United States acting as guardian and the tribe as ward (*Worcester v. Georgia*, 1832). Most importantly, the federal-tribal relationship precluded state interference in tribal affairs and nullified state laws on tribal lands, placing recognized indigenous communities under the exclusive purview of the U.S. government.

All in all, 372 treaties were signed between the U.S. government and indigenous communities in the first ninety-five years of American independence (Quinn, 1990). Congress strengthened its governmental supremacy over Indian relations in the early 19th century by passing a series of trade and intercourse laws that prohibited the private sale of Indian land without the consent of the U.S. government (Campisi, 1991). For nearly a century, treaties were the main method by which the federal government recognized the sovereign authority of indigenous communities.

Even with this new expression of the tribal-federal relationship by the Supreme Court, the U.S. government continued to negotiate treaties with tribal leaders as if they were foreign diplomats. However, issues arose because there were no concrete guidelines triggering when, how, and why treaty negotiations with tribes would take place (Quinn, 1990). This haphazard approach to recognition and interaction forms the basis of many modern analyses of the unique pathways tribes used to initiate recognition. Miller (2004) writes that many indigenous communities were left out of the treaty era, complicating their legacy and relationship to the federal government. Tribes located in isolated pockets out West never had the opportunity to negotiate treaties before the U.S. government officially ended the practice in 1871. And numerous tribes on the east coast had a different problem but the same outcome; McCulloch and Wilkins (1995) note that mid-Atlantic tribes were assumed to be assimilated or extinct, thus negating the need for treaties. Others, like the Mashpee Wampanoag Tribe in Massachusetts, were deemed to no longer be indigenous due to intermarriage

with Americans of African descent (Campisi, 1991). Brian Klopotek (2011) found that Indian status would become harder to ascertain in the late 19th century due to waning indigenous military might, the impacts of removal on Southeastern tribes, and the reduced political clout of many indigenous communities as non-Indians settlements began to dominate the frontier.

Federal Indian policy shifted after the cessation of treaties in 1871. The dominant policy became one of assimilation of indigenous peoples into mainstream American society. Assimilation included actions such as shipping indigenous children to boarding schools to learn English and the basics of Western education (Adams, 1995), the privatization of communal Indian lands by allotment of specific plots to families (Hoxie, 1984), and the outlawing of many indigenous religious and cultural practices (Smoak, 2008). But assimilation proved to be just as ineffective as previous policies meant to improve the standard of living of indigenous peoples and bring them into the fold of American society. As part of President Franklin Roosevelt's New Deal, Congress passed the Indian Reorganization Act (IRA) of 1934; the IRA was intended to reestablish the federal government's trust responsibility to tribes, but first, the U.S. Bureau of Indian Affairs (BIA) would need to ascertain which communities it owed responsibility (Klopotek, 2011). The IRA was the U.S. government's first attempt to fully determine which tribes were federally recognized and what obligations were attached to recognition.

The federal government relied upon treaties, court rulings, executive actions, and Congressional appropriations to decode its trust relationships, but

the BIA also began forming criteria to prove indigenous identity, like tribal census records, testimony about living an “Indian life,” and expert determinations from physical anthropologists. Klopotek (2011) recounts one examination by an anthropologist of 209 Lumbees in 1936. The anthropologist measured and examined the subjects’ hair, teeth, skin, blood, and skull. He ultimately concluded that only 22 qualified as “Indian,” even disqualified siblings of those that met his standards for inclusion. At the same time, Felix Cohen, the Solicitor for the Department of the Interior and architect of the IRA, suggested five avenues for establishing recognition:

1. That the group has had treaty relations with the United States;
2. That the group has been denominated a tribe by an act of Congress or Executive order;
3. That the group has been treated as having collective rights in tribal lands or funds, even though not expressly designated a tribe;
4. That the group has been treated as a tribe or band by other Indian tribes;
5. That the group has exercised political authority over its members, through a tribal council or other governmental forms (Klopotek, 2011).

For much of the first half of the 20th century, the BIA made *ad hoc* decisions about the recognition status of dozens of tribes often ignoring precedent, historical documentation, and equity. Emboldened by efforts for equality by African Americans during the Civil Rights movement, indigenous peoples began to organize and push for greater representation and sovereignty. This momentum coalesced into the American Indian Movement, and the American Indian Policy Reform Commission (AIPRC) was formed in the 1970s to

expose issues within federal Indian policy and propose new trust standards. Eleven task forces were assembled to examine the federal-Indian relationship, including a group for unrecognized and terminated tribes (Klopotek, 2011). The AIPRC issued a report in 1977 finding that there were more than 100,000 indigenous peoples represented by 133 different unrecognized tribes and 29 of which had existing treaties (AIPRC, 1977). The task force further declared that:

“There is no legal basis for withholding general services from Indians [...] There is no legitimate foundation for denying Indian identification to any tribe or community. The BIA has no authority to refuse services to any member of the Indian population.”

The committee ultimately recommended that Congress declare all Indians “included in the federal trust responsibility,” and that the federal government needed a process to recognize indigenous communities that never had the opportunity to engage with the U.S. as sovereigns (AIPRC, 1977). The task force would continue by detailing the harms imposed on unrecognized tribes:

“The results of ‘nonrecognition’ upon Indian communities and individuals have been devastating, and highly similar to the results of termination. The continued erosion of tribal lands, or the complete loss thereof; the deterioration of cohesive, effective tribal governments and social organizations; and the elimination of special Federal services, through the continued denial of such services which Indian communities appear to need desperately” (AIPRC, 1977).

The Commission concluded that “every Indian tribal group which seeks recognition must be recognized” and encouraged the U.S. government to delineate a set of factors that could be used for all petitions for recognition. In response, the BIA set up the Branch of Acknowledgment and Research (BAR), later renamed the Office of Federal Acknowledgment (OFA). The BAR/OFA then

set out to create criteria that would make acknowledgment determinations more objective (Miller, 2004). The OFA criteria are still in use today and are one main pathway for tribes seeking recognition.

3. Pathways to Recognition

While scholarly literature tends to focus on the OFA and a bureaucratic process that has been referred to as “administrative genocide” (Beinart, 1999), there actually exist modern paths to federal recognition through each branch of the federal government. Recognition was originally envisioned to be the purview of Congress via the Commerce Clause of the U.S. Constitution, but over the years Congress did little to stop other branches from making determinations on tribal status (Quinn, 1992). The stories that accompany tribal attempts at recognition from each of these methods add to the narrative around the racism and inconsistency that have plagued federal Indian policy since its inception.

The first pathway to recognition is through the judiciary. Historically, judicial recognition was for a limited legal purpose, such as determining the jurisdiction of a federal court. In other instances, the courts restricted recognition, like when a federal judge ruled on the recognition of the Shinnecock Nation in New York but refused to extend the right to gaming under the Indian Gaming Regulatory Act (Koenig & Stein, 2008). Many tribes have sued the BIA in federal court seeking a judicial ruling in favor of recognition or an order to force the agency to make a determination on the tribe’s status. One case in 1975, the *Joint Council of the Passamaquoddy Tribe v. Morton*, led to the recognition of the Passamaquoddy and Penobscot tribes in Maine as well as an order applying

aboriginal land title to approximately 60% of the state (Campisi, 1991). More recently, the courts have been utilized as a strategy to speed up the BIA recognition process and force the agency to issue final determinations on tribal status (Koenig & Stein, 2008). Federal courts are not always a clear path to recognition, but the judiciary can often provide limited relief to tribes suffering from bureaucratic intransigence or state interference.

The original authority to recognize tribes rests with Congress. This legislative prerogative is housed within the Commerce Clause of the U.S. Constitution, which includes the enumerated power to regulate commerce with Indian tribes (Quinn, 1992). Further, Congress plays a role in treaty ratification; Article 2 of the U.S. Constitution extends the power to make treaties to the President with the “advice and consent” of the Senate (U.S. Const., art. 2 § 2). Congress also exercises its authority over Indian affairs by passing bills recognizing tribes. This method has been referred to as preferable when a tribe holds significant political clout but cannot meet the OFA criteria (Koenig & Stein, 2008). A few tribes in Northern Michigan, like the Little Traverse Bay Bands, were recognized in this manner in the 1990s.

The final pathway is administratively through the Executive branch. Since the creation of an office at the BIA in 1979 to handle recognition petitions, the agency has acknowledged approximately a dozen tribes through its bureaucratic process (Koenig & Stein, 2008). There is even some debate over whether the Department of the Interior can exercise this authority at all, but the Secretary of the Interior made clear their intent to do so for decades without any retaliation

from the courts or Congress (Quinn, 1992). Scholarly literature on the BIA's recognition process tends to focus on the problems and inefficiencies inherent in the mechanism and revile the OFA as an embodiment of everything that is wrong with federal Indian policy and the treatment of indigenous peoples in America. In fact, the person who developed the recognition criteria for the BIA called it a "monster" and lamented that the "standards got to be impossible" (Koenig & Stein, 2008).

The BIA's federal recognition process is codified in 25 C.F.R. Part 83, "Procedures for Federal Acknowledgment of Indian Tribes." *Table 1* provides the most recent recognition criteria found in 25 C.F.R. §83.11. Lorinda Riley (2015) published an overview of how the recognition criteria in Part 83 evolved with each Presidential administration since Jimmy Carter into its current form. Unfortunately, changes to the criteria and guidance on its interpretation intended to clarify and simplify the process have instead muddied the waters for non-federal tribes even more and contributed to a system that can take decades to render a final decision.

More so than engaging in detailed descriptions of each criterion and their importance to the recognition process, scholars have chosen to expose the unclear, inequitable, and often racist undertones inherent in the criteria. The process has historically been described as slow, expensive, and time-consuming (Miller, 2004). Klopotek (2011) noted that tribes can spend on average upwards of \$10 million on their petitions. Much of this expense is due to the hiring of professional historians, anthropologists, genealogists, and other social scientists

needed to research the tribe's history and culture to frame that information into a narrative palatable to BIA staff. A GAO report in 2001 found that more than half of all recognition petitions were ready and waiting more than 5 years for the BIA to begin review (GAO, 2001). The BIA completes about 1-2 petitions per year (Koenig & Stein, 2008). Brian Klopotek calculated that as of 2011, if no new petitions were received, the BIA would resolve all cases at its current pace by the year 2141. The glacial speed at which the OFA addresses petitions is a common impediment to tribal recognition. The GAO (2001) also found that it typically takes around 15 years to render a final decision, despite the fact that it should only take about two. This could be explained in part by the chronic understaffing of the OFA, which only had a handful of employees at the time of the GAO report.

The cultural, political, and social expectations of OFA staff also form a barrier to recognition. Unrecognized tribes often struggle to recreate viable political communities that imitate aspects of modern nation-states or federally recognized tribes (McCulloch & Wilkins, 1995), but the agency also wants petitioning tribes to be culturally and racially unique (Beinart, 1999). The OFA's interest in socio-cultural aspects of the petitioners is another concern voiced by tribes and scholars, with Indian legal expert Matthew Fletcher (2006a) encouraging the agency to ignore ethnographic data and focus exclusively on political relationships.

Concerns exist over how OFA interprets the recognition criteria and the inconsistency in its decisions. The GAO (2001) lamented the lack of guidance issued by OFA regarding how it interprets criteria, but a recent assessment of the

OFA's attempts to issue guidance concluded that the agency's efforts to provide deeper instruction on the criteria only served to confuse petitioners and give OFA more leeway to make subjective, unsubstantiated decisions (Riley, 2015). Part of the inconsistency can be explained by the dual roles played by OFA in the recognition process. OFA serves as both the prosecutor and judge, allowing the Office to establish the pertinent information for each petition and subsequently derive a ruling from those cherry-picked facts (Klopotek, 2011). Unsurprisingly, OFA officials, and their previous iteration in BAR, have received death threats and had canisters of mace tossed through their office windows (Beinart, 1999).

The literature around the federal recognition process at OFA is punctuated with stories of bureaucratic inefficiency and subjective assessment based on outdated stereotypes of indigenous identity. These problems serve as examples of failure in federal Indian policy and complicate the expensive and long-winded quest many tribes undertake to secure acknowledgment of their sovereignty. The problems inherent in tribal recognition have also had another unintended effect by opening the door for states to fill the government-to-government vacuum left by the federal government's procedural failures.

4. State Recognition of Tribes

When the U.S. government fails to adequately address a policy problem, states often move to fill the void left by federal inaction. This is especially true for environmental issues, like more stringent vehicle emissions standards in California (Abate, 2007) or the cap-and-trade emissions market on the East Coast (Chan & Morrow, 2019). State authority is now also infiltrating recognition

policy with indigenous communities. The Reagan Administration kickstarted efforts in the 1980s to scale back the trust relationship to tribes and end federal support of tribal housing, healthcare, economic development, and other services. They succeeded in pressuring Congress to curtail appropriations to the BIA and left both recognized and unrecognized tribes with little federal support (Morris, 1988). The tightening of federal support during this era was referred to as “Termination by Accountants” and paved the way for states to take flexible approaches to Indian affairs that responded to local demands (Koenig & Stein, 2008). The result has been a hodgepodge of state recognition schemes and an incomplete response to federal abdication of its trust responsibility to indigenous peoples.

Federal transfer of power to states in the realm of Indian affairs is not a new phenomenon. Public Law 280, a 1953 Congressional act that transferred federal court jurisdiction over certain criminal and civil matters to state courts set a precedent of federal surrender to state interests over indigenous populations (Campisi, 1991). The U.S. government also tacitly approves of state intervention in Indian affairs by authorizing state-recognized tribes to access many federal programs and grants traditionally restricted to federally recognized tribes (Koenig & Stein, 2008). However, state-tribal relations should not be viewed as sharing a similar government-to-government relationship like the one between federal tribes and the U.S. government. The literature has been slow to explore state-tribal relationships, instead choosing to focus more on the journey state tribes endure to affirm federal recognition (Hiraldo, 2020). Thus, there is a great need

for research like my dissertation that exposes not only how opportunities for state-recognized tribes differ from their federal peers, but also examples of how state-recognized tribes engage in a mixed-recognition political system with federal tribes and other governments.

One major byproduct of the rise of state recognition is the diversity with which states recognize tribes and in how the state defines its relationship with those indigenous communities. There are more than 60 state-recognized tribes scattered over a dozen states (Koenig & Stein, 2008). Pinpointing the exact number of state-recognized tribes can be tricky because states are not always good about publicly disclosing those relationships. For instance, the state of Michigan's webpage for "Michigan Tribal Governments" only lists the 12 federally recognized tribes located in the state and various agreements the State entered into with the federal tribes concerning economic development, transportation, water, fishing, and climate change (Michigan.gov, 2021). A 2016 document published by the Michigan Department of Civil Rights (MDCR) concerning state and federal resources available to Michigan tribes is one of the few publicly available sources that lists "Michigan Historical Tribes" of which the Burt Lake Band is included (MDCR, 2016). Koenig & Stein (2008) argue that states tend to recognize tribes as a method for establishing mutually beneficial political relationships, so approaches will vary based on the political interests of the state.

State political interests often translate into numerous benefits for state-recognized tribes, like self-sufficiency, economic development, state revenue generation, political experience, and assistance with the federal recognition

process (Koenig & Stein, 2006). The State of Maryland Commission on Indian Affairs lists “aiding in the process of obtaining State and/or Federal recognition” as the first bullet point for services provided (MCIA, n.d.). Some state-tribal relationships date back to the colonial era and include state reservations (Koenig & Stein, 2008). The multiplicity of benefits and services offered by states to non-federal tribes is rivaled by the myriad of ways in which states memorialize their relationships with indigenous communities.

Similar to federal recognition, there are many legislative, executive, and judicial pathways by which states recognize tribes. State legislatures, such as Vermont, can simply pass a law memorializing the relationship with tribes (Koenig & Stein, 2008). Sometimes these laws are accompanied by previously determined standards, and other times it is at the discretion of the legislature. For instance, Alabama recognizes tribes through the passage of laws, but the tribe must have at least 500 members living in the state and trace its history back at least 200 years (Koenig & Stein, 2008). Connecticut relies on laws passed by its colonial government, and reaffirmed by the state legislature in the 1970s, to govern its relationship with state tribes. Other legislative methods include simple joint resolutions and other legislative tools, each carrying various levels of benefits and relationship status.

Executive or administrative recognition is also common at the state level. This can occur through gubernatorial proclamation, executive order, or following a process developed by a state agency or commission. Montana recognizes tribes through declaration by the governor, and state tribes are eligible to

participate in the state-tribal economic commission with federal tribes (Koenig & Stein, 2008). Benefits to Montana state tribes also include funding for history projects and state leases on land to build businesses. State courts also retain jurisdiction to recognize tribes, although the limitations and interests of such recognitions vary based on state law and precedent.

Not all federal tribes are supportive of state efforts to recognize indigenous communities. The Cherokee Nation in Oklahoma previously established a “Fraudulent Tribe” task force to identify communities around the United States claiming Cherokee heritage in order to extinguish their efforts at recognition (Allen et al., 2007). The task force later uncovered more than 30 groups with supposed Cherokee heritage seeking federal recognition. It advocated that the federal government provide funds to federally recognized tribes only and abolish the 501(c)(3) status of many non-federal indigenous communities. Scholars have also argued that there are no legal barriers to state tribes forming agreements with states to open gaming facilities, since federal tribal gaming laws only cover activities by federally recognized tribes (Koenig & Stein, 2006). In essence, the federal government cannot limit the rights of tribes that it does not recognize. However, the proliferation of state-recognized tribes, coupled with the confusion those communities can create around indigenous identity and potential competition with federal tribes on gaming, has left non-federal communities in a sticky political situation that can both hamper their efforts at federal recognition and strain local social and political relationships at home. This balancing act

plays out throughout my dissertation as the Burt Lake Band navigates tradition, local politics, identity, and climate change.

C. The Intersection of Indigenous Recognition and Climate Change

Through the literature, climate change and tribal political recognition converge in three important ways. The first intersection explores how legal mechanisms influence climate vulnerability. The second is the socio-economic impacts of climate change on Native communities and how historical gaps in income, education, and healthcare have further exposed Indian Country to harm. And the final intersection explains the value of participatory and collective governance in the adaptation process. Together these themes form the basis through which I will examine the impact of recognition status on climate adaptation in indigenous communities.

The power of legal mechanisms like water rights and regulatory authority is a common intersection with tribal climate adaptation. Royster (2013) explains that many tribes have water rights built into existing treaties with the federal government. As water becomes scarcer in regions like the Southwest, Royster argues that exercising those rights will be an important adaptation strategy. However, he identifies a number of institutional and legal barriers to the deployment of tribal water rights, like state court adjudication of water allocations, antiquated systems of measuring those allocations, and the need for tribes to seek federal Congressional authorization to lease their water allocations. Thus, Royster recognizes limitations on tribal resource rights that could impede adaptation efforts.

Similarly, Ford and Giles (2015) detail 638 different contracts and agreements that permit federal tribes to manage resources on reservation lands, such as agriculture, ranching, and forestry. However, the authors caution that checkerboard ownership of lands on reservations, where non-indigenous persons own private plots within reservations, complicates tribal jurisdiction. Two strategies are put forth to overcome fragmented ownership on reservations. The first encourages tribes to treat climate change as an immediate threat to health and welfare on the reservation, qualifying the tribe to assume regulatory authority over private inholdings under an exception to the U.S. Supreme Court case *Montana v. U.S.* (Ford & Giles, 2015). The second recommendation is for tribes to pursue co-management and concurrent jurisdiction partnerships with nearby land management authorities. The authors argue that concurrent jurisdiction can help tribes reduce administrative burdens and spread financial risks to other parties. The lessons from Royster and Ford and Giles point to the potential power of legal mechanisms in reducing climate vulnerability.

The socio-economic impacts of climate change on indigenous communities are demonstrated by Gautam et al. (2013) in their case study of the Pyramid Lake Paiute Tribe in Nevada. The authors chose to focus on the tribe's vulnerability to climate change, particularly because they are dependent on a large endemic sucker fish, the cui-ui, for cultural subsistence and have limited economic opportunities due to their remote location in western Nevada. Indicators of adaptive capacity for the Pyramid Lake Paiute included economic well-being, education, and diversity of employment opportunities (Gautam et al.,

2013). One conclusion drawn by Gautam et al. (2013) connects federal support to successful tribal adaptation:

“Under the federal ‘trust responsibility,’ the federal government is mandated with fiduciary duty towards federally-recognized Native American tribes. With such duty, the BIA supports several basic infrastructures such as education, health, and roads. Institutional support by several federal agencies (e.g., EPA and FWS) has been crucial to PLPT in its quest for water rights and ecological protection. Thus, tribal capacity to adapt to climate change may hinge largely on federal support.”

They would continue by foreshadowing a potential impediment for unrecognized tribes: “While entitlement and access to resources can greatly determine the ability to adapt, there may be legal or institutional barriers that impede tribal entitlement and access to resources” (Gautam et al., 2013).

Political acknowledgment of a tribe is one possible institutional barrier to accessing the types of federal resources the authors feel are important for tribal adaptation.

The final intersection demonstrates the importance of participating in decision-making around environmental and climate governance. Hiraldo (2020) stressed in her critique of the Lumbee Tribe how it leverages state recognition to participate in intergovernmental decisions that “if you are not at the table, you are on the menu.” Gaining that seat occurred through contesting spatial and social boundaries and by outward expressions of culture, such as engaging in traditional harvesting activities while hunting or fishing. Katz (2003) and Maldonado et al. (2013) both argue that lack of federal recognition harms the opportunity for the tribes of Isle de Jean Charles in South Louisiana to

meaningfully consult with the federal government on a massive levee project.

Katz (2003) wrote:

“Because federal recognition affords special status for government protection, services, and benefits, the island residents, if recognized, would be in a better position to demand inclusion and refute the argument that relocation is the better alternative to costly inclusion in the levee project.”

As a result, the community is now being forced to relocate to a new area inside the levee protection district, and state and federal programs are withdrawing support and investment from the island (Maldonado et al., 2013). Democratic participation and institutions have long been regarded as critical to building consensus on climate response (Fischer, 2017), so determining the limitations imposed on non-federal tribes in climate decision-making is an important area of analysis.

So often, scholarship in the field of unrecognized tribes wants to focus on an individual tribe's journey to federal recognition and the exuberance that tribe feels once decades of court battles, historical documentation, local persecution, and adept political maneuvering are validated. Rarely do these narratives describe the impacts felt by communities that lack recognition, and even if one does, recognition is always touted as medicine to cure the ailment (Hirald, 2020). However, indigenous experiences with climate change, and the complex environmental justice issues surrounding tribal capacities to respond, demonstrate that more scholarship is needed to understand how political mechanisms like recognition fit into indigenous environmental management. My dissertation is the first attempt to study in-depth the influence recognition

potentially holds for successful climate adaptation. As described in the next chapter, this literature review has been instrumental in isolating the major factors – resource access, federal opportunities, and governance channels – relevant to answering a research question about the relationship between recognition and climate change.

Tables and Figures

Table 1. Federal Recognition Criteria (25 C.F.R. §83.11)

1. *Indian entity identification.* The petitioner has been identified as an American Indian entity on a substantially continuous basis since 1900.
2. *Community.* The petitioner comprises a distinct community and demonstrates that it existed as a community from 1900 until the present.
3. *Political influence or authority.* The petitioner has maintained political influence or authority over its members as an autonomous entity from 1900 until the present.
4. *Governing document.* The petitioner must provide:
 - (1) A copy of the entity's present governing document, including its membership criteria, or
 - (2) In the absence of a governing document, a written statement describing in full its membership criteria and current governing procedures.
5. *Descent.* The petitioner's membership consists of individuals who descend from a historical Indian tribe (or from historical Indian tribes that combined and functioned as a single autonomous political entity).
6. *Unique membership.* The petitioner's membership is composed principally of persons who are not members of any federally recognized Indian tribe.
7. *Congressional termination.* Neither the petitioner nor its members are the subject of congressional legislation that has expressly terminated or forbidden the Federal relationship.

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Chapter 3. Research Design

Abstract

Using the case study framework developed by Robert Yin in his 2009 book entitled *Case Study Research*, this chapter lays out the design for my dissertation by presenting the research question, sub-questions, unit of analysis, the logic linking the data to the sub-questions, and the various methods and complications encountered during data collection. First, I chose a case study methodology to focus on “how” and “why” problems that develop from the study of tribal recognition and climate adaptation. Additional research questions are utilized to address aspects of my overall research question and are based on the literature review from Chapter 2 regarding access to cultural resources, federal funding opportunities, and climate governance. I chose “non-federal tribes” as my unit of analysis to capture the experiences of as many unrecognized indigenous communities as possible and provide a basis for the future replication of my research. The choice of the Burt Lake Band of Ottawa and Chippewa Indians as my case subject conforms to the importance of analytical, not statistical, generalization from my class of non-federal tribes. By “indigenizing” common variables studied in adaptive capacity literature, I am able to incorporate rival explanations into my analysis and make the findings more relevant and contextual to the unique issues, institutions, legal frameworks, and lifestyles affecting indigenous peoples. Although the COVID-19 pandemic made access to communities challenging and created public health, economic, and cultural issues everywhere, my multiple-method approach to data collection allowed for

continued interaction with the communities in a safe and respectful manner. Issues I encountered with confidentiality and legal proceedings highlight the delicate balance I faced conducting research with indigenous communities fighting for recognition of their sovereignty.

A. Introduction

My research question on political acknowledgment and climate adaptation, ***“Does recognition status affect a tribe’s capacity to adapt to climate change?”***, contributes to a growing body of literature concerning indigenous experiences with climate change. As demonstrated in Chapter 2, this area of study is still forming, and scholars are engaged in developing theories and best practices to help indigenous communities understand and respond to rapidly changing landscapes. At the same time, non-federal tribes represent a diffuse, diverse body of indigenous communities in the United States that are not well-studied by researchers or government officials. Given the high number of potential variables influencing indigenous climate adaptation, a case study approach offers an opportunity to investigate previously unexplored questions around why and how Native communities adapt.

According to Yin (2009), case studies are appropriate when asking “how” and “why” questions where the researcher has no control over the behavioral events, and the question concerns contemporary events. He notes that case studies are good for capturing the meaningful characteristics of real-life events; my dissertation chronicling a small tribe’s journey to navigate massive ecosystem transformations from climate change without federal acknowledgment of its

sovereignty fits this profile. The goal for case studies is analytic generalization, wherein the findings from a case study can be compared within existing theories, and typically results in the expansion of extant theories. Yin (2009) defines a case study as: “an empirical inquiry that: a) investigates a contemporary phenomenon in depth and within its real-life context, especially when... b) the boundaries between context and phenomenon are not clearly evident.” With case studies, there are often many more variables than data points, multiple sources of data requiring triangulation, and the benefit of previous development of theory to guide data collection and analysis.

In this respect, a case study methodology is a useful approach to address indigenous recognition and climate adaptation. Scholars are still in the process of studying indigenous climate response, identifying relevant variables for analysis, and asking important “how” and “why” questions on adaptation, sovereignty, and cultural resilience. Focusing research on a single tribe allows for a richness and depth of analysis needed to parse nuance from the complexities of climate change and tribal recognition.

This chapter is organized based upon Yin’s (2009) case study framework. The chapter begins with a discussion about my study question, its origins, and its place within the larger body of research on climate justice. Next, I focus on three sub-questions that form the basic parameters around answering my study question. The third section concerns how I chose “non-federal tribe” as the unit of analysis for the case study. A well-defined unit helps establish the boundaries of the group related to the study and aids in choosing similarly situated communities

for the replication of research in the future. Then, I address alternative explanations for adaptive capacity in indigenous communities explaining why the three measures I chose are better suited for analysis. Finally, I discuss data sourcing, with particular attention to collection issues inherent in working with indigenous communities and complications caused by the COVID-19 pandemic.

B. Study Question

Yin's (2009) framework begins with defining a thoughtful study question. My question is: "Does recognition status affect a tribe's capacity to adapt to climate change?" As explained in Chapter 2, my research question is the product of issues mentioned in the most recent National Climate Assessment (Jantarasami et al., 2018) and based on the results of other case studies exploring the socio-economic and political impediments indigenous communities face in addressing climate change (Royster et al., 2013; Gautam et al., 2013; Emanuel et al. 2018). Yin (2010) argues that study questions should be grounded in the literature and not derived from the specific context inherent in the case study. When the study question is based on the literature, it provides two important benefits. First, the case selected is more likely to contribute to analytic generalization on the topic, since that case's selection was likely influenced by its relationship to the factors derived from the literature. Second, study questions disassociated from the specific context of the case improve the chance that conclusions drawn from the study can be exported to other cases within the group that forms the unit of analysis.

My study question originates from a conclusion drawn in the Fourth National Climate Assessment:

“Non-federally recognized tribes, Native Hawaiians, and other Indigenous peoples also have rights to self-determination to protect their traditional knowledges, cultures, and ancestral lands, while developing their economies and providing community services; but they do so without reservation lands, treaty rights, and federal provision of essential services, among other rights, authorities, and capacities to which federally recognized tribes can appeal” (Jantarassami et al., 2018).

From that perspective, I traced literature on indigenous climate experiences and political recognition to three main areas discussed in Part C of this chapter. The study question and sub-questions that support it are not unique to the tribe at the center of my case study, the Burt Lake Band of Ottawa and Chippewa Indians. Instead, the question originates in the literature and contributes to the analytic generalization of my case study, as well as the classification of the Burt Lake Band as representative of issues facing non-federal tribes in adapting to climate change.

C. Sub-questions

Research sub-questions work to direct attention toward relevant factors to be examined within the scope of the study (Yin, 2009). The task of developing sub-questions can be more easily said than done, given that case study inquiries often contain many variables and few data points. Within my dissertation, there are many potential independent variables identified in the literature competing to explain my dependent variable of adaptive capacity, such as location (Paton et al., 2008), income (Fankhauser & McDermott, 2014), education (Kagawa & Selby, 2010), political structure (Biesbroek et al., 2009), and form of

environmental ethics in the community (Adger et al., 2017). For instance, Paton et al. (2008) discussed the importance of location, organization, and responsibility in forming adaptive capacity to tsunamis in coastal Thailand. Fankhauser and McDermott (2014) compared adaptive capacity in low-income and high-income countries using microeconomic concepts like elasticity of demand and supply efficiency to demonstrate why low-income countries are often more vulnerable to climate effects. Adger et al. (2017) showed how political perspectives and ethics influence notions of justice and responsibility in building adaptive capacity. Factors such as income and education often appear in the literature as highly relevant to climate adaptation.

From the literature review in Chapter 2, three factors related to the adaptive capacity of non-federal tribes emerged centering on access to resources, federal opportunities, and governance channels. Those themes led to a series of sub-questions that connect the unique political situation of unrecognized communities with the socio-cultural challenges indigenous peoples experience with climate change:

1. Do tribal lands and treaty rights preserve resource access?
2. Are the contributions that federal programs can make to non-federal tribes for climate adaptation and planning comparable to contributions being made to federally recognized tribes?
3. Does lack of recognition impede effective climate governance?

The first sub-question concerns important cultural resources, like animals harvested for subsistence or plants gathered for medicinal and spiritual purposes, and is grounded in the power of legal mechanisms to ensure access to

those resources. Many useful legal mechanisms related to resource access are found in the treaties indigenous communities signed with the U.S. government in the early years of the fledgling American republic. Royster (2013) argues that exercising water rights embedded in treaties is a critical adaptive strategy for tribes in the arid Southwest. In Northern Michigan, species are already beginning to migrate as temperatures rise and landscapes change (Nadelhoffer et al., 2010). The treaties signed by the tribes of Michigan provide for an expanded range where tribal citizens can hunt and fish outside certain state regulations and possibly increase the likelihood of a successful harvest.

The second sub-question gauges the value of federal grants, programs, and expertise in climate planning and adaptation. Adaptation can be expensive, and large-scale projects may require significant capital, pressuring communities to seek new funding sources or reduce capacities in other areas to cover the shortfall. Central to federal recognition is the trust relationship that provides tribes with support for education, healthcare, food security, the environment, cultural preservation, and economic development (Fletcher, 2016). Much like Fankhauser and McDermott's (2014) comparison of the 'haves' and 'have nots' and the effect funding can have on adaptive capacity, there is an expectation that federally recognized tribes are at an advantage over their non-federal peers due to access and availability of financial resources inherent in the federal government's trust responsibility to federal tribes.

The final sub-question explores the effect of recognition on participation in interjurisdictional climate decision-making. Because of issues with the validity

and credibility of many unrecognized indigenous communities, they are left out of climate deliberations at the local, regional, and national levels. Without recognition, the federal government has no duty to consult with non-federal tribes on projects that could have a disproportionate impact on those communities (Katz, 2003; Maldonado et al., 2013). For those reasons, non-federal tribes can be shut out of regional adaptation planning and leave the community with options that fail to maximize its adaptive capacity. These three sub-questions form the basis of analysis for my research question.

D. Unit of Analysis

Next, Yin (2009) recommends a well-defined unit of analysis or pool from which cases can be chosen. This gives the case study context, narrows the potential field of cases, and adapts to time constraints in research. For my dissertation, the unit of analysis is the non-federal tribe, which is defined as any community in the United States that self-identifies as indigenous and is not currently recognized by the federal government as an “Indian tribe.” As discussed in Chapter 2, “Indian tribe” is a unique term of art created by the U.S. government to denote the 574 federally recognized indigenous tribes (25 U.S.C. §5130(2)). Instead, my research is intended to focus on the more than 400 communities that are either recognized only by state governments or are wholly unrecognized by any federal or state entity. *Figure 1* shows the known distribution of indigenous communities based on recognition status and divided between those with federal recognition, state recognition, and unrecognized tribes. Annually in 25 U.S.C. §5131, the Bureau of Indian Affairs publishes a list of federally recognized tribes,

but it does not maintain a similar listing for non-federal tribes. The most accurate count of non-federal tribes comes from a 2012 Government Accountability Office (GAO) report on the use of federal funds by non-federal tribes (GAO, 2012). The agency estimated the number of non-federal tribes by referencing the list of artists registered under the Indian Arts and Crafts Act, a law that only allows indigenous peoples to market art as “indigenous.” The Act itself does not confine indigenous art to pieces produced by citizens of federally recognized tribes, so members of non-federal tribes are free to register under their tribal affiliation, recognized or not.

My unit of analysis includes the GAO estimation and also incorporates other self-identified indigenous peoples, even if they are not registered to market and sell indigenous art. The putative class of non-federal tribes can be divided into two distinct groups — state-recognized tribes and unrecognized communities. There is potential that this distinction could be as meaningful as the distinction between federal and non-federal. A handful of state-recognized tribes also govern state reservation lands that could factor into my first sub-question, but most state recognition is ceremonial and provides few direct benefits to the communities that possess it (Koenig & Stein, 2008). Many states are careful to characterize state recognition in a way that does not establish a government-to-government relationship or create any state obligations to trust responsibilities (Koenig & Stein, 2008). The distinction between state-recognized and unrecognized tribes is explored more closely in chapters 5, 6, and 7.

In spite of a paucity of information on non-federal tribes that could further help classify the Burt Lake Band, Yin (2010) argues that the point of case studies is not statistical generalization, but rather analytical generalization. In that respect, the Burt Lake Band is representative of the larger group of non-federally recognized tribes. The tribe suffers from all of the deficiencies identified in my sub-question: lack of land controls, limited access to Federal resources, and restricted governance. Aside from a few state-recognized tribes with small reservations, the vast majority of non-federally recognized tribes should present with these same challenges, so the same analytical approach would be appropriate. The Burt Lake Band has all of the factors identified in the literature relevant to analyzing the problem, including resource constraints, credibility concerns, and barriers to government assistance, that are indicative of the class of non-federal tribes. As a point of analytical generalization, the Burt Lake Band should serve as a useful case study for future efforts to approach climate planning with non-federally recognized tribes.

E. Rival Explanations

Central to the examination of case studies and analytic generalization is the investigation of rival explanations (Yin, 2009). The ability to dismiss rival explanations allows for easier transferability of the findings to other cases. In the context of adaptive capacity, rival explanations to recognition status include location (Paton et al., 2008), income (Fankhauser & McDermott, 2014), education (Kagawa & Selby, 2010), political structure (Biesbroek et al., 2009), and form of environmental ethics in the community (Adger et al., 2017). Each of

these variables could be used independently to examine adaptive capacity in indigenous communities. However, the rival explanations presented here are imperfect for analyzing climate adaptation issues in Indian Country.

This imperfection is demonstrated through the example of funding as a key component to climate adaptation. As explained in Chapter 2 with examples from Vanuatu and the Swinomish Indian Tribal Community, indigenous communities are driven by more than just money. These reports point to the influence of factors beyond income in assessing indigenous climate responses. Thus, the common measure for adaptive capacity, funding or income, cannot accurately capture a tribe's capability to manage environmental change. To correct these imperfect variables in research with indigenous communities, scholars are crafting unique, culturally appropriate policy approaches that integrate the community's land ethic, spiritualism, culture, and resource needs. This approach builds on a growing trend across the globe to decentralize how we measure indigenous well-being, values, and capacity. For instance, New Zealand (New Zealand Ministry of Health, 2007) and Canada (National Collaborating Center, 2013) established health surveys that contextualized traditional indicators, such as educational attainment and housing availability, within the strictures of indigenous culture. Whether adaptive capacity follows common Western norms like income, attempts to contextualize those norms in indigenous ways like the Whanau Ora Health Impact Assessment in New Zealand, or is something entirely new like the Vanuatu well-being study, the defining factors I have adopted to address my research question invoke unique indigenous values

and circumstances. These factors should better capture important considerations in how indigenous communities adapt to climate effects.

The first sub-question is based on a common factor in adaptive capacity, location (Paton et al., 2008). However, my sub-question on resource access places location in the context of historical indigenous diplomacy and geographic boundaries with connections to treaty rights. For the second sub-question, income (Fankhauser & McDermott, 2014) is transformed by the federal trust relationship with tribes to include support from government programs, grants, and agency expertise. The third sub-question factors in political structures (Biesbroek et al., 2009) by examining the importance of participation in interjurisdictional climate decision-making. Overall, rather than dismiss rival explanations to adaptive capacity, I follow previous efforts to “indigenize” research and incorporate the rivals within the unique indigenous context of climate response and political recognition.

F. Data Sources and Collection

For problems that have more variables than data points, Yin (2009) recommends the use of multiple sources of data for case study analysis. Multiple sources allow for the triangulation of evidence, a method of cross verification where data from disparate sources are used to confirm findings. For my dissertation, I utilized numerous sources, including personal interviews, questionnaires, document review, and archival research. The unique political and environmental situations faced by indigenous nations in the United States led to a number of adjustments to standard research methods in order to avoid

complicating legal proceedings and working relationships with other governments. The COVID-19 pandemic restricted access to certain data sources, such as in-person interviews, but alternative methods for information collection were developed with the Burt Lake Band and other research subjects to allow the research to proceed.

Case studies are often accompanied by a deep, nuanced investigation of a single problem at close range. Thus, rarely can this examination be fully undertaken with the data from a single source. Triangulation, *sensu* Yin (2009), provides other benefits as well, such as isolating causes that influence results and explaining multiple aspects of an issue (Carvalho & White, 1997). My dissertation involves what is called “methodological triangulation,” where more than one method is used to gather data (Denzin, 1973).

When working with marginalized and vulnerable populations, interviews are the most common method for data collection (Clark, 2017). Interviews allow for a rapport to develop between participants, build trust, and ultimately help interviewees tell their stories. However, early in the interview process, the COVID-19 pandemic swept across the United States, restricting travel and placing indigenous communities at great risk. By June 2020, over half of all COVID-19 cases in the U.S. were in minority communities (Tai et al., 2020). Indigenous communities were hit particularly hard by the disease because of socio-economic factors like high housing density, potable water scarcity, and low health literacy. Native Americans in general also tend to have higher incidences of co-morbidities like heart disease and diabetes that increase the risks of

serious complications from COVID-19 (Van Dorn et al., 2020). For many of the same reasons discussed in my dissertation related to adaptive capacity to climate change, non-federal tribes struggled with the virus more than their federal peers because job losses and housing losses were quicker to develop, and test kits and vaccines were later to arrive (O'Neill, 2021).

The primary source of my original data collection comes from a 28-question survey delivered by mail to members of the Burt Lake Band Tribal Council. I had previously intended to conduct a series of in-person interviews with council members and tribal elders on federal funding and relationships with other tribes, cities, the State of Michigan, and conservation organizations. I had also planned a survey of Band members at a tribal gathering to better assess their harvesting of culturally significant resources within the community. The COVID-19 pandemic created significant safety concerns for a research design based on community participation and in-person interviews. I met via teleconference with the Burt Lake Band Council in October 2020, after pausing data collection for 6 months hoping the pandemic would subside, to discuss and select an alternative method. The Council and I collectively determined to shift data collection to mailed questionnaires and adjust the scope of inquiry to the political dimensions of the problem. Given that access to and interaction with the Tribal Council would be easier to facilitate than with the general membership of the Band during the pandemic, questionnaires were sent to each of the nine council members. Six out of nine council members returned the questionnaires, which included questions on each member's political careers with the Band,

background on the region, major policy issues confronting the community, resource harvesting practices, efforts to secure funding from government programs, interactions with other governments and organizations, and the Council's thoughts on the federal recognition process and the potential benefits of acknowledgment. *Appendix A* provides the full 28-question survey administered to the Burt Lake Band Tribal Council.

The Burt Lake Band is currently embroiled in a long legal battle with the U.S. government over reaffirmation of its political status. This created a tricky wrinkle in how I addressed the Band's status and worded key findings. There are no examples in the literature to help me avoid asking a question or reporting data that might influence the Band's court proceedings. Instead of moderating my approach to asking questions, I chose to make it very clear to participants that they could refuse to answer any question that made them uncomfortable. The Burt Lake Band Tribal Council is composed of a group of highly savvy political officials that have navigated the federal recognition process for decades. Rather than temper my own approach, I left those judgments to the participants.

Aside from the questionnaire with the Burt Lake Band, my dissertation also includes phone and videoconference interviews with climate plan managers from federally recognized tribes (Chapter 6) and a phone interview with an official from another non-federal tribe, the Nulhegan Band of Coosuk Abenaki Nation, regarding resource access (Chapter 5). The names and locations of interview participants were kept confidential. Prior to agreeing to be interviewed, two of the four tribal climate managers expressed concern about reprisal from the federal

government for speaking about climate change. To further mask identity, I anonymized discussion of specific projects so that participants could not be identified based upon local geographic features, such as rivers or mountains; names could immediately identify communities that fear being identified by federal officials. Because of these requests for confidentiality, few direct quotes appear in the dissertation, and transcripts from the questionnaires and interviews are not provided in the appendices.

I learned an important lesson about timing when scheduling interviews. The Burt Lake Band Tribal Council chose questionnaires over phone or video interviews in part because of difficulties accessing reliable internet or phone service during winter months. Rather than ask a Council member to drive icy roads in remote Northern Michigan to find cell service for a phone interview, the Council and I concluded that mailed questionnaires were a safer option. Also, interviews with tribal climate plan managers for Chapter 6 took place in late summer and early fall of 2020. Three managers had to decline the interview due to scheduling constraints caused by fall harvests. Ideally, more time would have allowed me to schedule interviews around seasonal restrictions, but my own research constraints imposed by the COVID-19 pandemic and school schedule limited my opportunities to engage in data collection. Attempts by scholars in the future to build larger databases would benefit from knowledge of local cultural events and careful attention to seasonal limitations when scheduling.

Other methodologies were considered but ultimately rejected. For instance, large-scale quantitative studies of local climate planning documents via

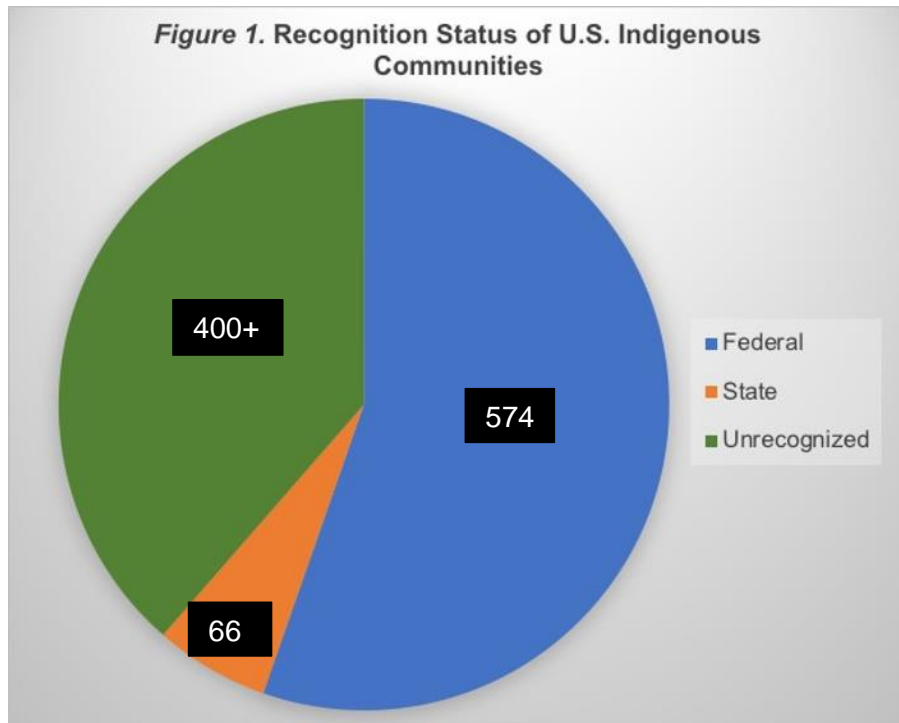
coded text analysis have yielded important takeaways to advance the design and implementation of local climate adaptation responses. Woodruff and Stultz (2016) examined 44 local climate adaptation plans in the United States using 124 different evaluation criteria. Large surveys are also adept at producing massive quantities of data for statistical analysis. And according to Yin (2009), surveys can ask many of the “how” questions indicative of case studies, while also focusing on contemporary events and not requiring control of behavior. Read et al. (1994) famously used open-ended questionnaires to study how laypeople understand global warming, climate effects, and response actions. The survey helped establish a baseline for public knowledge on climate change and paved the way for many contemporary efforts at following public opinion on the issue as a means of informing policy response, such as the Yale Program on Climate Change Communications. Large N quantitative studies have a long history in climate research.

The characteristics of Indian Country make it a poor choice for large dataset statistical analysis. First, indigenous peoples comprise a small percentage of the U.S. population and are often combined with other groups during government data collection. The lack of readily available data on American Indians and Alaska Natives is not a recent phenomenon and spurred the name “Asterisk Nation” to describe the information gap in Native communities (NCAI, 2018). While some demographic information is available through the U.S. Census, non-federal tribes are not a part of those aggregation efforts. Building a database for non-federal tribes was also infeasible. Aside from the difficulty of

locating hundreds of disparate communities to participate, many without formal governing structures, the effort is further exacerbated by the hardship of a nationwide survey of unrecognized tribes and their willingness to share information. Traditional knowledge that could form the basis of statistical analysis is an important cultural resource in Native American communities, and it is not shared lightly (Verbos & Humphries, 2014). It takes time to build up trust and partner on research projects. The survey would likely not garner enough responses to extrapolate useful trends or even establish basic levels of statistical significance. A basic survey method could take years to develop and could net few responses. As such, traditional quantitative methods are unavailable for this research problem, although some, such as text analysis of tribal climate plans in Chapter 6, are used at a qualitative scale throughout the dissertation.

To answer my research question, I am employing a case study approach around the analytically representative community of the Burt Lake Band. Rival explanations for adaptive capacity were not wholly dismissed but rather “indigenized” to account for the unique political and socio-cultural standings of non-federal tribes. Although originally envisioned as a dissertation with expansive participation from the community through in-depth personal interviews, the strain and threat caused by the COVID-19 pandemic forced an alternative approach dictated by safety. The need to keep participants and certain data confidential reflects the tenuous balance faced by indigenous communities where interactions in one area of research can inadvertently impact other policy concerns and relationships.

Tables and Figures



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25 U.S.C. §5130

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Chapter 4. Environmental Shocks and Socio-cultural Fragmentation in Northern Michigan: The History of the Burt Lake Band

Abstract

The modern history of the Burt Lake Band of Ottawa and Chippewa Indians can be told through their response to a series of environmental shocks in Northern Michigan initiated by the rapid non-Native settlement and commercialization of the vast resources in the region. Beginning with the depletion of game by the fur trade, each shock was accompanied by reduced access to key species that historically formed the basis of Band cultural, spiritual, economic, and subsistence life. The Burt Lake Band, along with other Ottawa and Chippewa bands in the region, would eventually negotiate treaties with the U.S. government reducing indigenous influence in Northern Michigan and ceding land for white settlement. With the loss of access to cultural resources precipitated by each subsequent shock, the Burt Lake community would fragment as Band members ventured to Canada or new bustling urban centers throughout the Great Lakes in search of maintaining traditional lifestyles or steady work. Now the Burt Lake Band faces a new environmental shock — climate change — that threatens to displace multiple key species and uproot the Burt Lake community from its historical home permanently.

A. Introduction

The Burt Lake Band of Ottawa and Chippewa Indians is one of several indigenous communities living in the Obtawaing of Northern Michigan. The Band's modern history is driven by a series of environmental shocks to its homelands and the consistent failures of the U.S. government to uphold the

federal trust relationship owed to the indigenous communities of the region (White, 1978). This one-two punch of landscape upheaval and government inaction has left the Band in a constant battle for political and cultural recognition that threatens to fragment the community and leave it exposed and vulnerable to the current environmental shock developing from climate change.

The traditional name for the Burt Lake Band is the “Chaboiganing,” which is an Anishinaabe term that translates to “passing through” in reference to the inland water route (White, 1978). The historic Burt Lake Band village sat on the west thumb of Chaboiganing Lake, later renamed Burt Lake after a government land surveyor that canvassed the region in the mid-19th century. Although the Band would ultimately adjust its own official name to match the new lake designation, its roots are still seen across Northern Michigan, with the Cheboygan River, Cheboygan County, and the city of Cheboygan all bearing a permutation of the Band’s historic namesake. Its position near the middle of the inland water route placed the Burt Lake Band at the center of trade and cultural exchange throughout the Great Lakes region.

The Burt Lake Band was part of a loose confederation of villages with other Ottawa and Chippewa bands encompassing much of the northern Lower Peninsula and eastern Upper Peninsula of present-day Michigan (White, 1978). The Ottawa (also referred to as Odawa) and Chippewa (also referred to as Ojibwe or Ojibway) were part of the Three Fires Confederacy along with the closely related Potawatomi (Clifton et al., 1986). Politically and socially, members from different clans within each of the Three Fires’ groups would intermarry and

form bands as the center of familial, cultural, and social life. Band allegiance typically governed decision-making throughout the Obtawaing.

After the last ice age ended around 10,000 years ago, indigenous peoples moved into Northern Michigan following receding glaciers. At that time, the area was dominated by fir and spruce trees, but as the region became warmer and drier, more hardwoods appeared (Clifton et al., 1986). The acorns and hickory nuts provided a vital food source for early inhabitants of the area and were supplemented by small game. The rocky soils left behind by retreating glaciers and the short growing season meant agriculture would not be feasible for generations (Blackbird, 1887). But there is evidence in the Burt Lake area of agricultural production potentially beginning about 1000 years ago (Albert & Minc, 1987). By the 16th century, most permanent settlements in the region were strung along the Great Lakes shoreline, but the strategic position along the inland water route made seasonal use of the Burt Lake area appealing as well.

Corn adapted to the short growing season and rocky soils of Northern Michigan was commonplace by the 17th century (Cleland, 1992). Corn and fish typically comprised a large portion of indigenous diets in Northern Michigan and life was mostly centered around food access. In the winter, villages would disband into small family hunting parties with each family assigned a hunting territory, often passed down for generations (Doherty, 1990). By late winter or early spring, families would begin to reconnect around the maple syrup harvest. By late spring, the Band villages would reform at locations with abundant fish and space to plant crops. The villages would be the social, political, and cultural

centers of Band life until it was time to decamp for the winter. As noted Michigan historians Clifton et al. (1986) wrote, “survival depended on precise knowledge of the ways of animals, the cycle of the seasons, the properties and uses of plants, and how to turn the resources of the land into useful tools, food, clothing, and shelter.” By the early 17th century, French traders were appearing in the region on a hunt for furs to quench the insatiable thirst of European fashion. This early contact with the fur trade would reconfigure how indigenous peoples in Northern Michigan interacted with the land and usher in a new set of environmental challenges.

B. Shock 1: The Fur Trade

The fur trade of North America kicked off a massive intercontinental exchange of goods, cultures, disease, and religion. With European traders came the threat of smallpox and other foreign diseases for which indigenous peoples lacked immunity. One demographer estimated that as much as ninety percent of the indigenous population of the Americas was erased due to the introduction of diseases by European traders, conquistadors, and colonists (Cook, 1998). Whereas the taking and use of natural resources, such as fur-bearing animals, by indigenous peoples, was historically dictated by need with strict norms on territoriality (Cronon, 2011), Europeans introduced the “rule of capture” and established a new system based on overexploitation (Doherty, 1990). The growth and success of the Great Lakes fur trade was built on the backs of indigenous hunters, and, for a time, provided the Bands of Northern Michigan with clout and leverage over their new European trade partners.

However, the political and military alliances fostered by the early fur trade would ultimately give way to a more transactional model that hastened the depletion of game in the region and reduced the political power of the Bands. By 1668, there was no evidence of large game in nearby Michilimackinac, a historic meeting place and fishing grounds that would become a strategic military outpost and mission for European interests (White, 1991). The fur trade did expose the Bands to useful European goods like guns, tools, clothing, and cooking implements, but this technology came at a socio-ecological cost. Indigenous peoples began to run up high debts on trade goods, encouraging the taking of more furs to cover arrears, and ultimately leading to land sales. As Clifton et al. (1986) wrote: "This policy and course of action were designed to completely transform Ottawa culture as quickly as possible by upsetting the Ottawa's relationship with the environment and by teaching them to live as other Americans did." The result was a transition to an agrarian-based society and a decline in subsistence hunting.

By the 1820s, beaver, otter, and martens were all but wiped out in Northern Michigan, and Indian hunters were now forced to hunt for the less profitable skins of deer and muskrats (Cleland, 1992). But deer also served as an important food source during the long winter months, so scarcity of deer perpetuated more reliance on European trade goods and foodstuffs. Eventually, silk supplanted furs as *haute couture* in Europe, but not before an entire indigenous way of life was stripped of vital cultural resources. With few options

remaining for the Bands, they were forced to turn to the U.S. government for support, and the American government was more than willing to help, for a price.

The first treaty negotiation between the indigenous communities of Northern Michigan and the United States took place in 1836. The U.S. government had promised 2 million acres of Michigan land to veterans of the War of 1812, and the federal government needed title before those settlers could tap into Michigan's vast water and timber resources (Friday, 2006). The U.S. government had repelled British interests from American soil and begun moving toward an ethos of Manifest Destiny over the continent. In contrast, the Bands of Northern Michigan were weakened and vulnerable after the depletion of game began to limit winter subsistence hunting. It is with this backdrop that the parties sat down at the negotiating table for the first time. The result, the 1836 Treaty of Washington, was the largest transfer of Michigan land by indigenous communities in the 19th century, paved the way for statehood one year later (Pittman & Covington, 1992), and comprised nearly forty percent of present-day Michigan (PACUH, 2018). In exchange, the Bands were not required to remove to lands further west as many other Tribes had endured during the Jacksonian era of Indian policy. Instead, the Bands were offered 5-year reservations and rights to hunt and fish on the lands ceded to the United States (White, 1978). Distraught by their dispossession of lands and reduced capacity to subsist, many Burt Lake Band members, including Chingassimo, the Band's representative at the treaty negotiations, moved to Canada, worried they would suffer the same fate that other communities such as the Cherokees already had under the heavy

hand of President Jackson's new policy of removal. Chingassimo's exodus began a trend for the Northern Michigan Bands. When their land tenure and traditional practices became tenuous, the Bands would migrate.

The Northern Michigan Bands and U.S. government would return to the negotiating table again in 1855. In the two decades since the first treaty, federal Indian policy had shifted from removal to assimilation. Therefore, the new intent of the 1855 Treaty of Detroit was to convert the indigenous population into "white Christian farmers" (White, 1978). A leader from the Burt Lake Band, As-sa-gon, was designated as the speaker for all Bands during the negotiation. The treaty called for reservations, something that was ultimately acceptable for the other Bands but against the wishes of the Burt Lake community. Thus, despite advocating for the interests of the Northern Michigan Bands, As-sa-gon refused to sign the 1855 Treaty of Detroit (White, 1978). It would later be signed independently by Burt Lake Band leadership nearly a year after the negotiations concluded.

Unlike the other Bands, the Burt Lake Band was concerned about the impermanence of the reservation created by the 1836 Treaty; the five-year residency period had lapsed more than a decade prior. So, the Band members pooled their annuity payments and communally purchased a section of property comprising their historic village on the western shores of Burt Lake (White, 1978). The Band was then advised by a federal Indian agent to place the property in trust to perpetuate its benefit for members, but the U.S. government refused to serve as trustee. Instead, the Governor of Michigan became the trustee over

“Indian Village” and the surrounding agricultural fields (White, 1978). The political influence of the Northern Michigan Bands had been waning after being absorbed into the global fur trade. But the 1850s also saw indigenous peoples being granted citizenship in Michigan, and in Northern Michigan indigenous populations outnumbered white settlers (Clifton et al., 1986). However, that demographic advantage would soon shift away from the Bands as new industries put new pressures on the landscape.

C. Shock 2: Timber and Tourism

As the fur trade wound down, non-Natives began to flood into Michigan. In 1820, the non-Native population of Michigan territory was 8,765, but by the Treaty of Washington in 1836, it had ballooned to 174,543 (Cleland, 1992). A few short years later, the first dam and lumbermill were built along the Cheboygan River and forever altered the hydrology and purpose of the inland water route (Friday, 2006). The timber industry exploded in Northern Michigan to meet the demands of growing cities like Chicago. This new enterprise continued the extractive practices of the fur trade, employing local indigenous populations to strip their homelands of resources and leave the landscapes barren. As one historian put it, “the economies that grew up around these activities produced social arrangements that inhibited local autonomy and facilitated external control” (Doherty, 1990). The political leverage restored to Native populations with state citizenship and local voting rights was quickly supplanted by non-Native settlement. The denuding of Northern Michigan’s expansive forests by white settlers was referred to as “dispossessing us of our heritage” by Andrew

Blackbird, an indigenous civil rights advocate and Native of Little Traverse Bay (Blackbird, 1887).

The ecological damage from logging left much of Northern Michigan barren and unproductive. Sawdust from the lumbermills polluted waterways like the Cheboygan River, killing off fish and other aquatic life (Doherty, 1990). The region was plagued by brush fires from 1870-1930 as loggers left behind fuelwood and farmers attempted to clear their land for crops. The frequent fires inhibited the regeneration of the forests, turning the once dense and diverse forests into scrubby wastelands (Doherty, 1990). Commercial hunting of birds also grew in popularity at this time as wealthier urban populations looked for chances to escape the pollution and noise of America's new industrial cities along the Great Lakes. In 1878, hunters killed more than 1 billion passenger pigeons near Petoskey on Little Traverse Bay (Doherty, 1990). At the same time, the U.S. government stopped enforcing indigenous treaty hunting and fishing rights in an attempt to further the assimilation of the Bands into American culture (Cleland, 1992).

The combination of federal Indian policy encouraging assimilation and the depletion or destruction of culturally important resources like fish and game left

the Burt Lake Band with few options but to adopt some American agrarian practices. By the 1870s, the Band was practicing animal husbandry and commercial agriculture (White,



Indian Village in the 1890s.
Photo courtesy of the Burt Lake Band Archives.

1978). The community, referred to as Indian Village, housed as many as thirty families and sat on a peninsula called Indian Point that jutted out into the lake. The Band lived on and cultivated about 400 acres of land on Indian Point taken into trust by the Governor of Michigan a few decades earlier.

As logging companies stripped the land of hardwoods and pine to fuel America's rapid industrialization and expansion West, city dwellers began to venture to Northern Michigan to take advantage of its leisure activities like boating and fishing. Tourism caused lakeshore properties to skyrocket in value in the late 19th century, appreciating more than one hundred percent in twenty years (Doherty, 1990). One flyer for Indian Point called it, "one of the most beautiful spots in Northern Michigan's charming lake regions" (Cheboygan County special, 1916). With the tourism boom came pressure to displace Natives from their lakeshore properties.

By the late 19th century, vacation property developers were snatching up shoreline land all along the inland water route as railroads brought tourists to explore Northern Michigan's vast chain of freshwater lakes. Indian Village, held in trust by the Governor of Michigan, was a unique solution to concerns about indigenous permanency in a rapidly changing landscape. But as those in the government and the Band familiar with the original arrangement passed away, the status of the property began to be questioned by local officials and politically connected developers. The county treasurer, a noted land speculator, ordered the taxation of Indian Village property in the 1870s, despite the land being held in trust; since no one person or incorporated entity owned the village, taxes were assessed to "Non-resident" (White, 1978). Over the next few decades, the county treasurer and other speculators would purchase the majority of Indian Village parcels and adjoining properties used for agriculture by the Burt Lake Band. The Band, with some assistance from Andrew Blackbird, inquired about the tax status of Indian Village. With little research undertaken, a deputy state land commissioner ruled that the State of Michigan had no interest in the property, and it was subject to taxation (White, 1978).

One "title shark" named John McGinn obtained title to all but one tract of Indian Village by the turn of the 20th century. On October 15, 1900, McGinn arrived at Indian Village with the sheriff and an intent to eject the Burt Lake Band from their homes (White, 1978). Most of the men were away that day collecting their paychecks for working in the lumber camps. The Band's women, children, and elders were forced from their homes and watched as their entire community

was set on fire. Members were left in the freezing rain that night. Some eventually relocated a few miles away and others made the long trek to the Ottawa communities of Little Traverse Bay. News of the “Burt Lake Burnout” would reach across the Nation and was reported by the Washington Post (PACUH, 2018). The Band contested the tax delinquent sale of their land for years after the Burnout, but the same misinformed interpretation of the



The Historic Burt Lake Band cemetery
Photo by author.

Village’s title status from a deputy state land commissioner led judges and government officials to reject the Band’s arguments. All that remains now of Indian Village is an old cemetery that once sat next to a Catholic church.

D. Shock 3: The Collapse of the Great Lakes Fisheries

Commercial fishing in the vast open waters of Lake Michigan off the northern reaches of the Lower Peninsula began in earnest with the introduction of the steamboat in the 1830s (Clifton et al., 1986). At that time, fish were the main source of food for the Bands, and summer fishing villages served as the central gathering points for indigenous social life. By the late 19th century, fish had become a hot commodity for export to cities around the United States, and more than half of the 2,000 fishermen in the Obtawaing were indigenous

(Doherty, 1990). As fish were being drawn from the Great Lakes at unsustainable rates, the Burt Lake Band continued to press state and federal officials to reaffirm their status and restore their lands. The State of Michigan set aside some swampy public lands to the east near Mullet Lake for the Band, but the community found it unsuitable for homesteading, and the land reverted back to state control once abandoned (White, 1978). A petition to reaffirm the Burt Lake Band's sovereignty under the Indian Reorganization Act of 1934 was rejected due to lack of federal funds (White, 1978). As the timber stores became depleted, employment opportunities were restricted to the fishing boats or the few arts and crafts that could be sold to passing tourists. But like so many other extractive practices in Northern Michigan, the flow of fish would not last forever.

The first signs of trouble in the Great Lakes appeared shortly after the turn of the 20th century. Fishermen began reporting low harvests for lake trout by 1910 (Clifton et al., 1986). A few decades later, alewives and sea lampreys invaded the Obtawaing reducing the lake trout catch from 6 million pounds in 1945 to a minuscule 34 pounds in 1955 (Pittman & Covington, 1992). The collapse of the trout fisheries led to a diaspora of many Northern Michigan Indians to urban areas like Detroit and Chicago in search of work (Clifton et al., 1986). By 1960, more than half of the indigenous peoples of Michigan lived in urban areas (Doherty, 1990). The editor of a popular sport fishing magazine would go on to declare, "traditional Native American culture is dead" (Williams, 1986).

Reports of the untimely death of Michigan indigenous culture were premature. In one of America's greatest ecological restoration stories, the State of Michigan devised a strategy to reduce invasive populations and restock the waters of the Great Lakes. The State distributed a poison to kill the sea lampreys and introduced West Coast varieties of salmon to hunt down and feast on the invasive alewives (Doherty, 1990). The State would pour more than 10 million non-native salmon into the lakes in the 1960s and stock more than 80 million lake trout in Lake Michigan from 1958-1977. The revitalization of the fisheries encouraged new utilization of the resource by sport and indigenous fishermen. By pressing for access to treaty fishing rights, the indigenous populations of Northern Michigan renewed their battle for recognition with the U.S. government and contributed to the recognition of numerous tribes in the Obtawaing, including the Sault Ste Marie Tribe of Chippewa Indians and the Little Traverse Bay Bands of Odawa Indians (Doherty, 1990).

E. Shock 4: Climate Change

As their neighbors secured recognition once again, the Burt Lake Band was embroiled in a long standoff with the Bureau of Indian Affairs (BIA) over the status of its petition for federal recognition. When the Little Traverse Bay Bands was recognized by a Congressional act in 1994, the BIA lobbied against the Burt Lake Band's inclusion in the bill, claiming the agency would rule on the Band's application within 6 months. It took 6 more years before the BIA rendered a decision denying reaffirmation of the Band's recognition (Stupak & Nemeroff, 2019). The Band was eventually listed by the State of Michigan as a "State

Historic Tribe,” and shares this distinction with the Grand River Band of Ottawa Indians, the Mackinaw Bands of Chippewa and Ottawa Indians, and the Wyandot of Anderdon Nation (MDCR, 2016). The Band’s recognition battle continues today, as it has advanced its dispute with the BIA to federal court. A federal judge ruled in 2020 that the agency had failed to provide a rationale for refusing to rehear the Band’s petition (Burt Lake Band v. Bernhardt, 2020). The Band now awaits the BIA’s reconsideration of its amended petition for recognition.

As the Burt Lake Band and BIA prepare for another review period, a new environmental shock is spreading across Northern Michigan and leaving the Bands vulnerable. Climate change is warming the region at a rapid rate, causing local plant and animal species to seek cooler temperatures north into Canada (Dietz & Bidwell, 2011). Lakes are warming sooner and staying warmer for longer each year; scientists are concerned that this will delay lake turnover and starve deeper portions of the lakes of oxygen leading to massive fish kills (Nadelhoffer et al., 2010). With the aid of rising temperatures, white-footed mice have ventured hundreds of kilometers north into territories previously inhospitable and brought Lyme disease to the area (Dietz & Bidwell, 2011). Finally, 6 of the 7 most abundant tree species in the recovering forests of Cheboygan County around Burt Lake, trembling aspen, sugar maple, bigtooth aspen, Northern white cedar, paper birch, and balsam fir, could disappear by 2100 (Nadelhoffer et al., 2010). This new environmental shock once again leaves the indigenous peoples of Northern Michigan vulnerable and threatens long-standing cultural resources like lake trout and sugar maples. The history of the Burt Lake Band is one of the

shocks to the landscape and the politics of responding to environmental harm. However, each previous shock was accompanied by a social and cultural fragmentation of the indigenous communities that had long relied on the land for nourishment and prosperity. Climate change is the new threat, and without support, indigenous peoples could be faced with decisions of whether to chase the migration of those species and jeopardize their place-based identity or swim against the climatological current without guaranteed assistance from the federal government.

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Chapter 5. Access to Cultural Resources

Abstract

The effects of climate change and human development are creating conditions that could cause the extinction of some species while simultaneously allowing for changes that help others flourish. This resource upheaval is leading to climate “winners” and “losers” based upon resource utilization and local conditions. Recognizing the importance that resource access had to indigenous society, many tribes negotiated for usufruct rights in treaties with colonial powers and later the U.S. government to preserve that access. Treaties have taken on a renewed significance in the modern era as tribes have sought to exert these rights to protect local resources and wrestle regulatory control of key species away from state governments. This chapter assesses the impact of treaty rights on resource access in Northern Michigan. A thematic identification study was conducted on historical resource agreements and court rulings to determine what aspects of access are most important to indigenous peoples. From this study, eight criteria were identified to perform a comparative analysis of important characteristics for resource access between federally recognized tribes in Northern Michigan and the Burt Lake Band. A second non-federal tribe, the Nulhegan Band of Coosuk Abenaki Nation of Vermont, was included in the comparison as an example of how non-federal tribes without historical treaties negotiate resource access. The comparison found that while non-federal tribes can negotiate to have some barriers to access eased with amicable state governments and private landholders, treaty rights provide federal tribes with

opportunities for regulatory control and enforcement over key species. Without the protections afforded by those treaty rights, the Burt Lake Band are left vulnerable and with a reduced adaptive capacity as compared to their federally recognized peers in Northern Michigan.

A. Background

The indigenous peoples of Northern Michigan are inextricably linked to the lakes and waterways of the region. Fishing grounds were more than sources of sustenance; they were meeting places for Ottawa and Chippewa societies, and, as such, were to become, and remain, culturally significant. Some communities, like the Burt Lake Band, honor this relationship by taking the name of a local water feature. In general, indigenous societies tend to be place-based and highly dependent on local resources (Wildcat, 2013). As shown in the history of Northern Michigan, this dependence can create significant challenges to indigenous identity, economies, and subsistence in times of scarcity and change.

Climate change in Northern Michigan is anticipated to cause shifts in abundance and range for a number of traditional subsistence and culturally relevant species, as well as to impact water quality in the Great Lakes and inland waterways. Historically, local shortages of important plants and animals led indigenous peoples to migrate to areas with more abundance, such as when parts of the Burt Lake Band moved north into Canada once game were mostly exhausted throughout Northern Michigan in the early 19th century (White, 1978). However, the legacy of the reservation system in the United States has severely constricted the capacity of indigenous peoples to pinpoint areas with greater

resource availability and relocate the community. More recent efforts to assert hunting, fishing, and gathering rights memorialized in past treaties are overcoming some migratory restrictions and creating new opportunities to access resources by extending geographical boundaries, providing more time and methods for harvest, and restoring power to tribes to develop and enforce sound resource management regulations.

This chapter answers the question: “***Do tribal lands and treaty rights preserve resource access?***” It begins by detailing how climate change is helping to usher in abundance for some species and scarcity for others. This has the effect of creating climate “winners” and “losers” depending upon resource needs and access. Next, the chapter introduces the role of tribal treaty rights in shaping the management of the Great Lakes fishery and hunting grounds in Michigan and assesses how key cultural species to the Northern Michigan bands are expected to fare under climate change. Important themes were then identified from resource agreements and court rulings to compare access between federally recognized tribes and the Burt Lake Band. The chapter concludes with the addition of another non-federal tribe, the Nulhegan Band of the Coosuk Abenaki Nation in Vermont, and contrasts its efforts to negotiate access without treaties to the opportunities currently afforded the Burt Lake Band.

1. Winners and Losers

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, an international body dedicated to preserving biodiversity

and promoting sustainable use of ecosystems, warns, if the targets from the Paris Agreement are not met, pressures from climate change and human development could lead to the extinction of more than one million plant and animal species and cause the average abundance of local species to shrink by as much as twenty percent (IPBES, 2019). The inability of some species to migrate into new, acceptable ecosystems is driving local extinction events around the globe (Román-Palacios & Wiens, 2020).

At the same time, scientists are discovering that adaptability through measurements of physiological markers such as thermal tolerances, an estimation of acclimatization to warmer temperatures, helps certain species thrive in changing global conditions. Scientists are now identifying “winners” and “losers” with climate change (Somero, 2010). This discussion even extends to human populations and is spurring debates over whether justice and equity demand that winners compensate losers for their climate misfortune (Mintz-Woo & Leroux, 2021). Indigenous peoples have already begun to feel significant negative effects from climate change (Jantarasami et al., 2018), but Ford (2012) argues that many non-climate factors, such as poverty, land dispossession, and sociocultural transitions, will also factor heavily into successful adaptation. The right to harvest culturally important species embedded in historical treaties has emerged as a primary tool through which tribes ensure future access to vital resources (Lynn et al., 2013). However, treaty rights are limited to a select group of federally recognized tribes that both engaged the U.S. government in diplomatic negotiations over land cessions and had the foresight to include

provisions ensuring perpetual harvest of species significant to the community. Thus, the reliance on treaty rights to preserve resource access could exacerbate climate winners and losers in Indian Country based on recognition and treaty provisions.

Plants and animals provide humans with food, shelter, medicine, and recreation and are the foundation for spirituality and culture. But the rapid modification of ecosystems brought about by human development and climate change has outpaced certain species' ability to adapt and spurred biodiversity loss that threatens international sustainable development targets (UNEP, 2021). But whereas changing temperatures, precipitation, and ideal climates can harm specialized species that depend on a single characteristic of the environs, the new climates can open opportunities for other species to expand their ranges by adapting rapidly to evolving conditions (McMahon et al., 2019).

Unfortunately, not all species can easily shift their range or food sources and remain viable. For example, pollinators are experiencing severe contractions to their geographical ranges and are being forced to flee to higher elevations or move toward the poles, but not all regions benefit from the availability of higher altitudes (Pyke et al., 2016). Species pre-adapted to thrive in warmer climates and changing precipitation patterns may outcompete previously dominant species and supplant the ones upon whose abundance traditional activities may have been based.

2. Indigenous Response to Resource Upheaval

Indigenous communities are highly vulnerable to climate change in part through their dependence on local resources for cultural, economic, and social well-being (Chief et al., 2014). Climate change is disrupting this relationship by stressing the species and ecosystems upon which indigenous peoples subsist. This connection extends to tribal economic development as well, incorporating “competitive behavior, social compatibility and adaptation, and environmental concerns” (Smith, 2000). The indigenous synergy between the environment and the economy can be seen in projects like aquaculture operations in the Pacific Northwest. There, tribes are utilizing raised oyster beds to nurture the development of young shellfish that would otherwise suffer from poor shell formation in the acidifying waters of Puget Sound (Reid et al., 2014). For many indigenous communities, climate effects can also expand beyond ecological and economic impacts into psychological and existential considerations as well (Chisholm Hatfield et al., 2018). Climate change places the ecological, economic, and social health of indigenous communities in jeopardy.

Indigenous communities are pursuing strategies to adapt to climate stress and resource upheaval through historical treaty rights and traditional and cooperative resource management practices with neighboring entities and jurisdictions. But examples from Alaska (Birchall & Bonnett, 2019) and Nevada (Gautam et al., 2013) demonstrate that tribes are still very dependent on the U.S. government to aid in resource access and adaptation. This reliance on federal

support and treaties complicates access for indigenous communities that lack recognition and a trust relationship with the federal government.

The Fourth National Climate Assessment notes that tribes steward 525 endangered species, 13,000 miles of rivers, and 997,000 lakes through the management of trust lands (Jantarasami et al., 2018). Likewise, tribes govern 18 million acres of forestlands across the United States (Chief et al., 2014).

Knowledge systems, such as indigenous traditional ecological knowledge (TEK), typically aid in this relationship by providing distinct species observations, which can prompt valuable insights for resource management (Ignatowski & Rosales, 2013). But the indigenous relationship to the environment is based in part on expected variability from previous generations, and the rapid ecosystem transformation in many tribal communities brought on by climate change is outpacing the viability of TEK. Cornell et al. (2013) caution that TEK may lack the urgent needs, dissipation of resource risks, and vital skills to combat the more immediate effects of climate change. In the hardest-hit regions, climate change may surpass the speed at which indigenous knowledge systems and communities can adapt.

Resource management techniques are widely utilized by federally recognized tribes to combat climate issues. There are 638 contracts or agreements involving indigenous management of water, animals, and forests on reservation lands (Ford & Giles, 2015). Management can also originate from statutory delegations of authority over air, water, and land resources (Tsosie, 2013). Also, by enforcing rights under existing treaties, tribes have increased

their roles in local resource management and have expanded their access to new gathering lands outside reservations and tribal trust lands (Lynn et al., 2013). However, Wilson (2014) found that non-tribal wildlife regulations coupled with climate change were beginning to limit subsistence practices for Alaska Natives when venturing outside tribal and cooperative lands.

Just as tribes press the federal government to uphold its trust obligations, some communities, like Homer, AK, worry about placing too much reliance on federal support (Birchall & Bonnett, 2019). Gautam et al. (2013) caution that the Pyramid Lake Paiute Tribe's dependence on federal agencies to fund infrastructure and defend tribal water rights could hamper adaptive capacity if federal policy shifts away from funding such initiatives. As a way to reduce federal reliance, Peterson et al. (2014) showed how tribes are teaming up with local communities to identify vulnerabilities, and Reid et al. (2014) provided examples of tribes engaging in climate planning activities with other local entities. For the Bands of Northern Michigan, recent resource management experience has been a mixture of treaty rights, local collaboration, and maintenance of traditional harvesting practices.

3. Species Changes in Northern Michigan

Climate effects in the Obtawaing have the potential to severely inhibit subsistence and cultural practices based upon local species. A review of the historical record from firsthand accounts written by indigenous peoples from Northern Michigan, such as John Wright and Andrew Blackbird, and questionnaire responses by the Burt Lake Band Council helped identify culturally

important species. The Burt Lake questionnaire can be found in *Appendix A* and its design is discussed in more detail in Chapter 3. Those species were then evaluated based on a vulnerability assessment conducted by the Inter-tribal Council of Michigan and on published scientific evaluations. High levels of vulnerability exposing many culturally important species in Northern Michigan threaten to place the indigenous communities of the Obtawaing into the category of “climate losers.”

Lake trout and sturgeon are traditional summer food sources for the indigenous peoples of the Obtawaing (Cleland, 1992), and lake trout remain an important commercial resource for federally recognized bands (LTBB, 2016). Recent data from the National Oceanic and Atmospheric Association indicate that surface temperatures on the Great Lakes have risen in the past few years due to thinning ice levels opening the lakes sooner in the spring (NOAA, 2021). One study by Trumpickas et al. (2009) estimates surface water temperatures could rise by as much as 6.7°C by 2100. Rapid warming of the lakes inhibits “turnover” and fosters hypoxic dead zones where oxygen levels become so low that aquatic life cannot survive (Dietz & Bidwell, 2011). These dead zones tend to occur in deeper waters where species like lake trout and sturgeon prefer to reside. The warming waters in the Great Lakes are also extending the feeding season for the invasive sea lampreys, allowing the parasitic fish to once again wreak havoc on lake trout populations (Lipton et al., 2018).

Various species of trees have historically provided the indigenous peoples of Northern Michigan with modes of transportation, food and food storage,

shelter, and tools, to name a few uses. Sugar maples, the sap used to sustain communities recongregating after long winters (Blackbird, 1887), are expected to shift northward away from the region by 2100 (Nadelhoffer et al., 2010). White birch, traditionally a common source for canoes, are seeing renewed use in the Great Lakes (Low, 2015), but are also threatened with local extinction due to climate change (Nadelhoffer et al., 2010). Elms were historically fashioned into cylinders to store and dry out corn in the fall (Blackbird, 1887), but climate change could reduce their numbers by more than 50 percent (Nadelhoffer et al., 2010). The marsh reeds and bull rushes often used for mats in Ottawa and Chippewa homes are listed as moderately vulnerable to climate effects (ITCMI, 2016) and included in a 2009 report by the Little Traverse Bay Bands on culturally significant plants (Pilette, 2009). In fact, the six most abundant tree species in the region — trembling aspen, sugar maple, bigtooth aspen, Northern white cedar, paper birch, and balsam fir — are expected to disappear before the end of the century (Nadelhoffer et al., 2010). The Little Traverse Bay Bands are currently experimenting at their tribal farm with new tree species from the south in an attempt to substitute for some of these important species in the future (Nature Climate Change, 2018).

Some of the other species mentioned by the Burt Lake Band Council in their questionnaire responses, like porcupines, deer, perch, bass, and smelt, have low vulnerability to climate effects according to the ITCMI (2016) assessment. The resilience of these common species could aid the Band in adaptation and help its members avoid the need for substitutes or costly journeys

in search of harvests. Sweetgrass, a plant commonly used by the Band for ceremonial purposes, is more vulnerable to climate effects (ITCMI, 2016).

Many varieties of berries, such as cranberries, huckleberries, blueberries, and strawberries, carry important significance in the indigenous stories of Northern Michigan (Wright, 1996). The ITCMI (2016) categorizes these foodstuffs as moderately to highly vulnerable. In 2012, the Michigan State University Extension Service warned that increases in drought, the unpredictability of late spring frosts, and growing pest problems, all connected to climate change, could impact blueberry harvests in the future (Garcia-Salazar, 2012). The stress placed on these species by climate change poses a serious challenge to the cultural and subsistence practices of the indigenous peoples of Northern Michigan.

B. Comparing Resource Access in the Obtawaing

In order to discern how recognition status impacts indigenous access to resources, I used a theme identification methodology to ascertain the most important and relevant aspects of resource access to tribes in Northern Michigan. Theme identification was applied to the 1836 Treaty of Washington, an agreement that memorialized the hunting and fishing rights for the Northern Michigan bands, a trio of state and federal court cases from the 1970s disputing the applicability of historic treaty fishing rights in the modern Great Lakes fishery, and the 2000 and 2007 consent decrees that form the modern basis for the co-management of hunting, fishing, and gathering resources in the region previously ceded by the 1836 Treaty. The major considerations in these sources provide a

foundation that allows me to compare differences in resource access between federally recognized tribes in the Obtawaing and the Burt Lake Band.

1. Data and Methods

Theme identification is a common qualitative methodology used to help describe, compare, and explain data (Ryan & Bernard, 2003). There are numerous strategies used to discern themes, including the repetition of terms, the identification of familiar terms used in unfamiliar ways, the examination of the context in which a word is used, the transition to new content, and the exploration of similarities and differences between terms (Ryan & Bernard, 2000). The data utilized to perform the theme identification are public documents related to the establishment of the modern resource management framework in Northern Michigan. This framework is delineated through a mediated negotiation every twenty years between federally recognized tribes and the State of Michigan; this periodic negotiation is referred to as the Consent Decree process.

The history of the Consent Decree process is well-established in the literature, and there are numerous books written by legal scholars (Pittman & Covington, 1992), historians (Doherty, 1992), and sport fishing journalists (Williams, 1986) about the origins of the Consent Decrees and the documents and court rulings that gave the decrees life. Each book referenced the origin of the decrees, the 1836 Treaty of Washington, and a trio of court cases in the 1970s and 1980s as the foundation for what are now two separate decrees — the 2000 Consent Decree covering the Great Lakes fisheries and the 2007 Inland Consent Decree overseeing hunting and gathering in the 1836 Ceded Territory.

The three court cases were the People v. Jondreau (1971), the People v. LeBlanc (1976), and the U.S. v. Michigan (1979). The 1836 Treaty, the 2000 and 2007 decrees, and the 3 court cases comprise the data examined for theme identification.

To focus the comparative analysis on the most relevant themes, I utilized an identification strategy based on frequency and response. Frequency, sometimes called repetition, is one of the most common identifiers and attaches significance to themes that appear most often in the data (Ryan & Bernard, 2000). Given the incredibly contentious battle over fishing rights that spurred the negotiation of the Consent Decrees, response identification was also used to establish which themes elicit strong reactions when violated.

The Treaty of Washington (1836) covers about 40% of the territory that would become the State of Michigan one year later (PACUH, 2018). In exchange for title to the lands of the northern Lower Peninsula and eastern Upper Peninsula, the U.S. promised money for education, farm implements, cattle, doctors and medicine, blacksmiths, and other necessities, including 100 barrels of salt and 500 fish barrels each year. Most importantly, the thirteenth article of the treaty states, “The Indians stipulate for the right of hunting on lands ceded, with the other usual privileges of occupancy, until the land is required for settlement” (Treaty of Washington, 1836). By relinquishing title to thousands of acres of land in Northern Michigan, the Bands secured hunting and fishing rights throughout the region — but only until the land was required for settlement.

In the subsequent year after the treaty was signed, the U.S. government gradually removed its support of treaty hunting and fishing and pressed more for assimilation into an agrarian lifestyle (Cleland, 1992). As detailed in Chapter 4, decades of overfishing and the introduction of invasive sea lamprey and alewives helped strip the Great Lakes of its resources, and by the 1950s, the commercial and recreational viability of fishing in Lake Michigan and Lake Superior were exhausted (Doherty, 1990). But the restoration of the Great Lakes fishery in the 1960s, coupled with an indigenous offshoot of the Civil Rights movement, renewed interest in exercising treaty rights and traditional subsistence practices. Fish-ins, where Native fishermen would openly defy state regulations that conflicted with tribal usufruct rights, sprang up all over the Pacific Northwest and Great Lakes (Wilkinson, 2005). In response, sport fishermen would burn Native boats and threaten businesses that bought fish from the tribes. Sport fishing was a multimillion-dollar tourist industry in Michigan by the 1970s, and state politicians would quickly side with sport fishermen against long-standing indigenous treaty rights.

Public and political sentiment in Michigan often sided with non-Native sport fishermen, but the Bands remained steadfast in their exercise of treaty fishing rights. The first case to adjudicate the matter was initiated when William Jondreau, a member of the L'Anse Band (Keweenaw Bay Indian Community), challenged state fishing regulations by organizing a fish-in (Doherty, 1990). His claim was based on an 1854 treaty with the Band, and the Supreme Court of Michigan determined that the tribe's right to fish under the 1854 treaty had not

been extinguished nor could it be limited by state law (*People v. Jondreau*, 1971). *People v. Jondreau* was an important decision because it reestablished the primacy of tribal usufruct rights over state game and fish regulations, but the court ruling was confined to a single treaty with a single tribe. The wider implications of the *Jondreau* decision were unknown to Native and sport fishermen alike.

The Michigan State Supreme Court was again asked to rule on tribal treaty fishing rights in 1976 after A.B. LeBlanc, a member of the Bay Mills Indian Community, was arrested for violating state law by fishing with a gillnet. In ruling in favor of LeBlanc, the Court cited government documents about the historical reliance on fishing for subsistence by the Bay Mills Indian Community and the provisions that reserved hunting and fishing rights for the signatory Bands of the 1836 Treaty of Washington (*People v. LeBlanc*, 1976). The Court also found that no subsequent treaties or actions extinguished those rights. The Court would conclude that the State did have an interest in regulating tribal fishing, but it was limited to “reasonable and necessary conservation measure[s]” (*People v. LeBlanc*, 1976). The case was remanded back to the lower courts to determine if the State’s gillnet prohibition was reasonable, necessary, and non-discriminatory toward Native Americans.

The fight over the Great Lakes fishery hit a fever pitch soon after the decision in *LeBlanc*. A case was filed in federal court by the U.S. government on behalf of 3 federally recognized tribes in the 1836 Ceded Territory to resolve treaty fishing rights. Similar to the Michigan State Supreme Court decision in

LeBlanc, federal district court judge Noel Fox ruled that tribes had a right to fish under the 1836 and 1855 treaties and were not restricted as to time, place, type, or manner of taking (U.S. v. Michigan, 1979). The judge ordered the tribes and the State of Michigan to develop a framework to co-manage the fisheries.

The court opted to enlist the help of a mediator to oversee the co-management of the fishery through alternative dispute resolution. The result of the dispute resolution process was the 1985 Consent Order. In the agreement, the mediator essentially divided the lakes and kept sport and Indian commercial fishing interests far away from each other (Consent Order, 1985). A major goal of the mediation was to secure modest incomes for all tribal fishermen, but Lake Michigan lacked enough fish to support this simple goal. Even if every fish in the lake had been allocated to tribal commercial boats, the landings would not have been enough (Doherty, 1990). The 1985 Consent Order was renegotiated in 2000 and is scheduled to be reviewed every 20 years.

The 2020 Consent Decree has been delayed due to the COVID-19 pandemic, and the parties received an extension until the end of 2020 (Lafond, 2020). The 2000 Consent Decree saw the addition of two more tribes, following the federal recognition in the 1990s of the Little Traverse Bay Bands of Odawa Indians and the Little River Band of Ottawa Indians, bringing the total parties involved to seven (Consent Decree, 2000). The 5 original parties to the decree were the Bay Mills Indian Community, the Grand Traverse Band of Ottawa and Chippewa Indians, the Sault Ste Marie Tribe of Chippewa Indians, the State of Michigan, and the United States (Consent Order, 1985). The formula for the 2000

Consent Decree over the Great Lakes Fishery was later adapted to treaty hunting rights in the 2007 Inland Consent Decree.

The 2000 Consent Decree consists of 25 sections and covers issues such as commercial fishing zones and permits, recreational fishing zones and permits, the division of regulatory authority between the tribes and the State, management of key species like lake trout and salmon, subsistence fishing, harvest methods, information sharing and gathering, and enforcement (Consent Decree, 2000). Of the 25 sections in the 2000 Consent Decree, 8 sections can be eliminated from the theme assessment because they are not relevant to resource management, such as attorneys' fees (Section XXIV), the duration of the agreement (Section XXII), and the definitions of key terms (Section II). The 2007 Inland Consent Decree for hunting and gathering incorporates similar elements throughout 29 sections for the division of regulatory authority, commercial and subsistence harvesting, the methods used for harvest, allocation of rarer species like elk and sturgeon, enforcement, and the exchange of information (Inland Consent Decree, 2007). Seven sections were similarly excluded from the Inland Consent Decree based on irrelevance to the assessment.

2. Results and Discussion

Table 2 lists the sections from each of the Consent Decrees included in the theme identification. When examined, groupings of the sections begin to form; this made categorizing themes straightforward. For example, the sections of the Inland Consent Decree (2007) governing the hunting of certain species,

such as deer (Section XV), wild turkeys (Section XVI), and bears (Section XVII), are all concerned with determining the dates on which hunting is permitted and can sometimes create special seasons for hunting outside state regulations. Other themes that appear frequently include commercial harvesting (4 sections), licensing (8), enforcement (2), regulatory authority (10), reporting requirements (7), funding (2), and harvest boundaries (4).

The cases reinforced a few important themes to supplement the groupings derived from the consent decrees. *Jondreau* (1971) and *LeBlanc* (1976) emphasized the desire of the Bands to regulate subsistence, recreational, and commercial activities on tribal lands and adjacent waters. Central to tribal fishing rights in *LeBlanc* were protecting traditional methods for harvesting resources, such as the use of gillnets to catch fish. Gillnets had long been outlawed by the State of Michigan because the nets had a propensity to indiscriminately scoop up any variety of fish that became trapped in its web (Doherty, 1990). The 2000 Consent Decree addresses the use of gillnets by providing funding to help tribal fishermen transition to other netting practices that better target individual species and significantly reduce bycatch. *U.S. v. Michigan* (1979) turned on questions regarding the time, place, and manner in which fishing took place within the 1836 Ceded Territory. Each of these considerations is incorporated into the 8 themes derived from the Consent Decrees.

The findings from the theme identification study can generally be grouped into two categories. The first category consists of strategies to ease barriers to accessing resources. Examples include free fishing licenses, funding for

infrastructure, such as construction of new fishing docks, and hunting seasons that extend beyond state regulation. The second category includes strategies for asserting control over the management of resources, such as permitting commercial fishing, developing regulations for tribal lands, enforcing those regulations, and monitoring the health of different species. *Table 3* presents a comparison of resource access in Northern Michigan between federally recognized tribes from the 1836 Ceded Territory and the Burt Lake Band.

For each theme, the federally recognized tribes benefit from the easing of barriers and extensive control over the regulation and enforcement of key species. In *Governing the Commons*, her seminal book on managing resources, Nobel Prize laureate political scientist Elinor Ostrom developed a framework for analyzing the effectiveness of common resources management (Ostrom, 1990). She extolled the virtues of actions like information sharing, adjusting rules as ecosystem conditions change, and respecting the autonomy of individual actors to change rules based on guidelines supported by external authorities. The Consent Decrees house each of these characteristics. Each decree includes extensive reporting and monitoring requirements for key species by the tribes and the State of Michigan that are shared with others in the group (Consent Decree, 2000; Inland Consent Decree, 2007). Some tribes, such as the Little Traverse Bay Bands, have even chosen to publicly share this data (Odawa NRD, 2017). The Technical Fisheries Committee established in the 2000 Consent Decree serves as a representative advisory body to help make decisions about the overall health of the fishery. Participation in the Consent Decrees provides

federally recognized tribes not only the opportunity to exert regulatory control over important resources but also to interact with state and federal actors on major resource management decisions. The full effects of participation in climate decision-making are analyzed in detail in Chapter 7.

Tribal co-management of the treaty lands and waters encompasses both the harvesting of species and the regulation of that harvesting. As *U.S. v. Michigan* worked its way through federal court, the Northern Michigan Bands had already begun to pass fishing regulations on their reservations (Doherty, 1990). These natural resource codes form the backbone of the co-management of Northern Michigan's vast land and aquatic resources. For example, the Little Traverse Bay Bands (LTBB) passed a 62-page revised hunting and fishing code in 2016 (LTBB, 2016). Other ceded territories in the Great Lakes developed collectives to help with management and reporting, such as the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) that works with 11 federal tribes in 3 states governed by 3 different treaties.

Individual tribes and organizations like GLIFWC produce a number of reports on harvesting activities and resource and habitat monitoring. The 2016-2017 LTBB Annual Harvest Report calculates that 17% of the tribal population had hunting and fishing licenses that year (Odawa NRD, 2017). 238 deer were harvested in 2016, the highest amount ever reported by the tribe. GLIFWC performs a number of monitoring activities, including advice for consuming mercury-affected fish (Moses, 2020), commercial catch in the Great Lakes

(Mattes, 2020), wild plant gathering (Wrobel, 2017), and the wild rice harvest (David, 2020).

Through theme identification, I identified pertinent issues in the use and regulation of key species in the Ottawa region. The comparative analysis of the 8 resource access categories demonstrates a clear divide between federally recognized tribes in the 1836 Ceded Territory and the Burt Lake Band in how tribal members can derive cultural and economic benefits from subsistence and commercial harvesting activities. Despite being a signatory of the 1836 Treaty of Washington, the Burt Lake Band benefits from none of the agreement's provisions. In this instance, the Band's lack of recognition impairs adaptive capacity as compared to its federally recognized peers.

C. Are Treaty Rights Even Necessary? The Case of the Nulhegan Band

The Burt Lake Band is a rare case in the class of non-federal tribes because it has 2 treaties with the federal government, albeit agreements that the U.S. government refuses to honor absent formal recognition. As explained in Chapter 2, there are hundreds of indigenous communities in the United States that never had the opportunity to engage in treaty-making with the U.S. government. Out West, this was due to the U.S. government ending the use of treaties in 1871 before it established relationships with isolated western tribes (Quinn, 1990). Along the East Coast, the federal government found treaties unnecessary as it assumed most tribes in the region had gone extinct or assimilated into mainstream society (McCulloch & Wilkins, 1995). The Abenaki bands of New England have fought erasure since the Colonial Era (Calloway,

1990). One community in Vermont, the Nulhegan Band of Coosuk Abenaki Nation, is an example of a non-federal tribe with a strong interest in securing resource access for members but without a historical treaty to guide negotiations. This section presents the case of the Nulhegan Band as a juxtaposition to the Burt Lake Band and examines its efforts to negotiate for resource access absent federal recognition and treaty rights.

To examine the case of the Nulhegan Band, a tribal official participated in an hour-long, semi-structured interview about the Band's strategies and success in securing resource access for its members in Vermont. The interview script can be found in *Appendix B*. This interview was supplemented with archival research in the form of state legislation, agreements with public and private entities, and news reports chronicling the parameters of the Band's access. The Nulhegan Band provides a contrasting case to the Burt Lake Band and is arguably more representative of the non-federal tribal class on the issue of resource access.

The Nulhegan Band is part of the Algonquin family of Western Abenaki and historically maintained very diverse subsistence patterns in present-day New England and eastern Canada. The population for all of the Abenaki territory was estimated to be around ten thousand in 1600, but the arrival of Europeans would decimate their populations in the region by as much as 95-percent (Calloway, 1990). Band life revolved around seasonal migration for food by hunting moose and deer, fishing, gathering, and also planting maize and other sister crops. Historian Colin Calloway (1990) wrote,

“While English settlers benefitted from Abenaki knowledge, adopted Abenaki practices in their hunting, fishing, and planting, and utilizing

native herbal remedies, Abenakis had to come to terms with European notions about ownership and utilization of the land.”

Despite a federal law prohibiting the private purchase of land from Native Americans, land speculators formed the Eastman Company and bought 3,000 square miles of Vermont from King Phillip of the Upper Coos in 1796. The sale included a provision that allowed for perpetual hunting and fishing rights to the tribe.

As generations passed, New Englanders assumed the Abenaki bands had gone extinct. This was the prevailing belief, despite the Bands constantly petitioning for land rights in the 19th century. The federal government continually denied Abenaki petitions arguing that Abenaki land rights had been extinguished by old colonial treaties (Calloway, 1990). With fierce resistance from federal officials to acknowledge Abenaki existence, local recognition and relationships surprisingly grew in the 1970s. The governor of Vermont would formally recognize the Abenakis in 1976, but his successor would quickly rescind that acknowledgment (Calloway, 1990). Attempts to restore old hunting grounds were thwarted when the mouth of the Missisquoi River was designated a wildlife refuge, and the Vermont Supreme Court subsequently overturned recognition of Abenaki fishing rights with what it viewed as “the increasing weight of history” (Calloway, 1990). The Abenaki relationship with the State of Vermont and subsistence resources has changed considerably in the past few decades since that state supreme court decision.

The State of Vermont formally acknowledged the Nulhegan Band in 2011 (1 V.S.A. § 854). In outlining its process for recognition, the state legislature is

quick to point out that state recognition should not “be construed to create, extend, or form the basis for any right or claim to land” (1 V.S.A. § 853(h)). The Band has a three-branch government comprised of a council-nominated chief and 2nd chief, an elected council of 5-13 members, and an elders council or council of judges to interpret the Nulhegan constitution (Nulhegan Band, 2021a). It is the responsibility of the chief (Sogomo) to manage the day-to-day operations, security, and services of the Band.

1. Data

To better discern how the Nulhegan Band now approaches issues around resource access in Vermont, I conducted a semi-structured interview with a tribal official for 1 hour on the telephone. *Appendix B* contains the questions covered during the interview. The questions were primarily derived from a combination of background research into the Band’s resource activities and the themes exposed in Section B. Topics included the plant and animal species important to the Band, how it harvests those species, barriers to access, political relationships with state and local jurisdictions, what assistance those jurisdictions contribute to the Band’s resource access, and discussion about different projects instigated by the Band to improve access. The interview was supplemented by publicly available local news reports over the past decade on the projects and agreements with public and private entities that grant access to certain resources for members of the Band. The data gathered from the interview and document review allow for inclusion of the Nulhegan Band in the comparative analysis in the next section.

The archival search was guided by interview responses from the Nulhegan Band official. The official's responses uncovered one bill from the state legislature, 8 partnerships for resource harvesting with public and private entities, and 2 land development agreements. Each of these 11 opportunities was reviewed for instances of the 8 criteria developed through theme identification in Section B. *Table 4* lists and describes each of the opportunities and details which criteria are present.

The Vermont state legislature passed a law in 2020 to extend certain hunting and fishing rights to state-recognized tribes. The bill includes permanent, free combined hunting and fishing licenses for members of state-recognized tribes (10 V.S.A. § 4255(c)(7)). In a statement from the Vermont State Attorney General's office (2020), Nulhegan Chief Don Stevens commented,

"The Governor has publicly stated that he wishes to uplift minority populations, bring more people to Vermont woods, and to boost visitors to Vermont. This bill achieves all of these things while honoring the original stewards of this land."

In the interview with a Nulhegan public official, the interviewee recounted the Band's strategy for securing the legislation as a basic argument of policy. For example, Vermont senior citizens receive free licenses, so there was precedent to extend it to other groups, like indigenous peoples, that might also benefit from reduced barriers to hunting and fishing. The Nulhegan official also noted that legislation was the best tool to secure the rights because the process to rescind those rights is more difficult when enshrined in law.

In 2012, the Vermont Land Trust, an organization dedicated to the protection and stewardship of farms and forests throughout the state, partnered

with the Nulhegan Band to secure a 65-acre parcel of land to serve as a community garden, maple syrup operation, and community meeting place for the Band (Vermont Land Trust, 2012). A coalition was put together with help from the Sierra Club, U.S. Fish and Wildlife Service, and private donations to purchase the land. The maple syrup operation helps fund youth education for the Band, and the land base serves as a center for growing traditional foods and provides for firewood, hunting, and the gathering of medicinal plants. To supplement the Band's 65-acre plot, Nulhegan officials have negotiated 8 different agreements with the state and federal governments, as well as with private and corporate landowners, to gather and harvest certain resources from public and private lands (Nulhegan Band, 2021b). The Nulhegan official said during the interview that the Band was looking to expand their access into new territories through these cooperative access agreements.

Finally, the Nulhegan Band has recruited local landowners to grow traditional Abenaki foods for tribal members through the Abenaki Land Link Project (Bulger, 2020). The landowners grow traditional corn, beans, and squash using heirloom varieties of Abenaki plants stewarded for generations. The Band has also partnered with a local college to preserve those seeds in a seed bank (Goodwin, 2020). The Nulhegan official explained during the interview that traditional foods are important to their culture, and the seeds represent a "chain of custody" that extends all the way to the Creator. The Abenakis helped European colonists survive and adapt in New England, so now the Band is asking local farmers to return the favor. Despite not having any historical treaties

or federal recognition, the Nulhegan Band managed to secure a land base for subsistence and cultural activities, engaged local communities in contributing to the food security of the Band's members, and negotiated reduced barriers and improved access to their traditional territories for hunting, fishing, and gathering.

2. Comparing Across Recognition Status and Geographies

Table 5 compares resource access between federally recognized tribes in the 1836 Ceded Territory, the Burt Lake Band, and the Nulhegan Band. The comparison demonstrates that federally recognized tribes in Northern Michigan have significantly more control over resources and fewer barriers to access than the Burt Lake Band. Further, the efforts of Nulhegan officials have contributed to an easing of barriers to accessing culturally important resources, but the Nulhegan Band lack the control measures available to federally recognized tribes in the 1836 Ceded Territory. The lack of easements and control over resource access available to the Burt Lake Band reduce the community's adaptive capacity and leave it more vulnerable to geographic shifts and local extinctions of key species anticipated with climate change.

The federal tribes and the Nulhegan Band share many of the same opportunities to ease barriers to access important resources, such as receiving free fishing licenses, securing funding to support infrastructure improvements related to resource access, and expanding the geographies where resources can be harvested. However, neither of the non-federal tribes are able to assert control over the resources through regulation, enforcement, and monitoring like federal tribes in Northern Michigan.

Through its own efforts, the Nulhegan Band has ensured access to resources in ways outside the current capacity of the Burt Lake Band. Half of the members of the Burt Lake Band Council that responded to the questionnaire noted that they encountered no issues accessing important resources in the vicinity of Burt Lake and expressed uncertainty as to whether climate change would impact that access in the future. Many of the species listed by Burt Lake officials in their questionnaire responses, like porcupines and deer, are not expected to experience reductions in geographic range or numbers in Northern Michigan with climate change (ITCMI, 2016). The shift away from certain traditional species documented in the historical record, such as lake trout and sugar maples, eases adaptation pressures on the Burt Lake Band for now. The Band's focus on less vulnerable species allows the community to avoid the need for time-consuming actions that expend considerable political capital. This leaves more time and energy for the Band's recognition efforts.

Efforts by the Nulhegan Band to reestablish heirloom plants and agricultural activities with deep historical significance are part of a broader movement to reconnect with indigenous cultures through renewed expressions of traditional practices. Cultural restoration has been shown to aid in healing historical traumas brought about by generations of colonial oppression (Jacob, 2013) and rehabilitate damaged ecosystems (Eckert et al., 2018). With the help of a landscape architecture student from the University of Michigan, the Burt Lake Band is establishing a healing garden at its tribal offices (Roos, 2021). The garden is called *Izhi-Minoging Mashkikiwan*, which translates to "place where

medicine grows well.” The garden includes more than 40 species of plants arranged in a traditional medicine wheel. The project is an example of the Band improving access to important species and cultural revitalization without the need for treaty rights or federal recognition. However, should the Band desire to expand access to more vulnerable or contested species, it would likely need to intercede in the Consent Decree process.

Despite signing the 1836 Treaty of Washington, the Burt Lake Band has never attempted to participate in the consent decree process set up by the federal court in the *U.S. v. Michigan* (1979) and assert the tribe’s treaty rights. When asked in the questionnaire why it would forego the opportunity, Burt Lake officials voiced concern that intervention could sour the Band’s relationship with the State of Michigan and the federally recognized tribes in Northern Michigan. The support of those groups is very important to the Band’s push for federal recognition, so it is avoiding situations that would “rock the boat.” Recently, Emanuel and Wilkins (2020) noted a similar rationale from non-federal tribes in North Carolina seeking federal recognition while simultaneously resisting the permitting of the Atlantic Coast Pipeline. As climate change places more stress on local resources, the Burt Lake Band may need to reassess recognition support vs. exercising treaty rights. Regardless, a lack of treaty rights places non-federal tribes at a disadvantage in securing resource access, but the cases of the Nulhegan Band and Burt Lake Band demonstrate that savvy political maneuvering and a focus on less vulnerable species can help ease some barriers to harvesting.

3. Conclusion

There are many ways in which communities can improve access to and reduce barriers around important resources. The experiences of the Nulhegan Band and the tribes of the 1836 Ceded Territory in Michigan demonstrate how removing obstacles, like offering free hunting and fishing licenses, can improve participation and bring indigenous peoples closer to traditional cultures. The case of the Nulhegan Band shows that treaties do not preclude the use and harvesting of resources, but instead highlight how access remains negotiable, even if treaties are no longer the preferred instrument.

It is too soon to determine if reducing barriers to access will be sufficient for climate adaptation or if indigenous communities also need more regulatory authority to safeguard cultural resources. In discussing the climate, the Nulhegan official noted there were no significant climate effects on resource access for their community yet, and in fact, some aspects of culture could be helped, such as how warming temperatures are extending the traditionally short growing season in Northern Vermont.

The situations concerning the Northern Michigan Bands and the Nulhegan Band suggest that federal recognition, and the rights often reserved in historical treaties, are not necessarily a prerequisite to ensuring modern resource access and climate wins. However, access alone may not protect the resource needs of the community in the face of climate change. Instead, the relationship that a tribe has with neighboring jurisdictions, private interests, and the state may play a crucial role in adapting to challenges with resource scarcity. Although the State of

Michigan lists the Burt Lake Band as a “State Historic Tribe,” the two sovereigns have no real interactions on resource management. Despite being a signatory of the 1836 Treaty of Washington, the Burt Lake Band are excluded from the Consent Decree process and unable to exert the same regulatory authority over important commercial, subsistence, medicinal, and cultural resources as their federally recognized peers. The strong relationship between the Nulhegan Band and the State of Vermont has enabled the Vermont tribe to ease some barriers to resource access, but that relationship has stopped short of transferring regulatory control to the tribe. Managing scarce resources is a perpetual endeavor, and climate change could open new opportunities for indigenous communities and states to share administration.

Future research would benefit from an exploration into more alternatives to treaty rights, such as the partnerships currently being built by the Nulhegan Band with private companies, neighboring farmers, and the State of Vermont. Treaty rights are limited to federally recognized tribes that had the opportunity to negotiate in the small window in which the fledgling U.S. government engaged in the practice. This leaves non-federal tribes without a strong instrument to press for resource access, but it also opens those communities to explore creative opportunities to build political relationships, revitalize cultures, and assert sovereignty. The literature would profit from a deeper understanding of the tools available to non-federal tribes to gain better access to important cultural resources.

Tables and Figures

<u>Table 2. Thematic Identification in the Consent Decrees</u>		
<u>Theme</u>	<u>2000 Consent Decree</u>	<u>2007 Inland Consent Decree</u>
<i>Licensing</i>	IV. Commercial Fishing Zones	X. Restrictions on Hunting and Fishing in Particular Locations
	V. Recreational Fishing IX. Tribal Charter Boat Operations	XI. Gear and Methods of Take XV. Deer Hunting
	XII. Subsistence Fishing	XVI. Wild Turkey Hunting
<i>Infrastructure Funding</i>	XX. Financial and Other Commitments	XXII. Restoration, Reclamation, and Enhancement
<i>Extended/Special Harvest Seasons</i>	V. Recreational Fishing VII. Lake Trout Management	XV. Deer Hunting XVI. Wild Turkey Hunting
	VIII. Management of Other Species	XVII. Species in Need of Allocation
	XII. Subsistence Fishing	XVIII. Migratory Birds XIX. Threatened and Endangered Species under State Law XXV. Wildlife Species for Which the State Does Not Currently Permit Hunting
<i>Extended/Special Harvest Boundaries</i>	VI. Regulation of the Fishery	VII. Land and Waters on which Tribal Members May Exercise Inland Article 13 Rights X. Restrictions on Hunting and Fishing at Particular Locations XX. Use of State Land
<i>Commercial Enterprise</i>	IV. Commercial Fishing Zones XI. Tribal Charter Boat Operations	VIII. Commercial Harvests IX. Sale or Trade of Live Animals
<i>Regulatory Authority</i>	IX. Stocking	IV. Recognition of Treaty Rights
	X. Tribal Trap Net Operations	V. Regulation of Treaty Rights
	XVIII. Executive Council XIX. Dispute Resolution	VI. Definition of the Extent of Inland Article 13 Rights XI. Gear and Method of Take XII. The Use of Specially Regulated Fishing Methods in Inland Lakes and Their Tributaries XIII. Disease Control
<i>Enforcement</i>	XVII. Jurisdiction and Enforcement	XXIV. Law Enforcement
<i>Reporting/Info Sharing</i>	XIII. Technical Fisheries Committee	XIV. Tagging and Reporting Requirements
	XIV. Notice and Consultation	XXI. Assessment Activities
	XV. Information Sharing	XXII. Consultation and Exchange of Information
	XVI. Information Gathering	

Table 3. Comparing Resource Access across N. Michigan Tribes

	Fed. Tribes in 1836 Ceded Territory	Burt Lake Band (MI)
<i>Easing Barriers</i>		
Free licenses	Yes	No
Infrastructure funding	Yes	No
Extended/special harvest seasons	Yes	No
Extended/special harvest boundaries	Yes	No
<i>Asserting Control</i>		
Commercial fishing permitted	Yes	No
Regulatory authority	Yes	No
Enforcement	Yes	No
Reporting requirements	Yes	No

<u>Table 4. Nulhegan Band Resource Agreements</u>											
	1	2	3	4	5	6	7	8	9	10	11
<i>Easing Barriers</i>											
Free licenses	✓										
Infrastructure funding										✓	✓
Extended/special harvest seasons											
Extended/special harvest boundaries		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Asserting Control</i>											
Commercial fishing permitted											
Regulatory authority											
Enforcement											
Reporting requirements											

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Table 5. Comparing Resource Access across Tribes

	Fed. Tribes in 1836 Ceded Terr.	Burt Lake Band (MI)	Nulhegan Band (VT)
<i>Easing Barriers</i>			
Free licenses	Yes	No	Yes
Infrastructure funding	Yes	No	Yes
Extended/special harvest seasons	Yes	No	No
Extended/special harvest boundaries	Yes	No	Yes
<i>Asserting Control</i>			
Commercial fishing permitted	Yes	No	N/A
Regulatory authority	Yes	No	No
Enforcement	Yes	No	No
Reporting requirements	Yes	No	No

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Chapter 6. Access to Federal Opportunities

Abstract

Effective climate adaptation will require a significant investment in resilient infrastructure, ecosystem and atmospheric monitoring, sustainable food systems, and other modifications to social, cultural, and economic life. Through its trust responsibility, the federal government is obligated to support the education, healthcare, environment, and other needs of indigenous peoples. But for indigenous communities not recognized by the U.S. government, eligibility for these programs can be limited or require matching resources, and staff are not often available. This chapter answers the sub-question: Are the contributions that federal programs can make to non-federal tribes for climate adaptation and planning comparable to the contributions being made to federally recognized tribes? Comparative statutory review of current funding opportunities and examination of tribal climate adaptation plans, adjusted for barriers to their implementation, shows the answer to be no. Current federal funding opportunities are reviewed and updated, and 14 extant tribal adaptation plans are reviewed to assess how the language used in federal statutes and tribal climate plans inhibits or encourages access to federal funding opportunities. I conducted semi-structured interviews with 4 climate plan managers at federally recognized tribes to ascertain barriers and successes in adaptation implementation. Unrecognized tribes cope with the same kinds of financial, workforce, and expertise constraints as do their recognized peers but are eligible for far fewer funding opportunities. Nonetheless, if fully enacted and funded, initiatives

announced by the Biden Administration could go some way to improving prospects for tribal climate adaptation generally.

A. Background

Access to financial capital is regularly identified as a chief driver of adaptive capacity (Fankhauser & McDermott, 2014) and can also support other important adaptation elements such as technology, education, information management, and risk spreading (Yohe & Tol, 2002). Studies of local adaptation plans have concluded that funding shortfalls are a major barrier to adaptation implementation and can be exacerbated by staffing constraints and mismatches between the availability of aid and the needs of the community (Bierbaum et al., 2013). Because of these interconnections between funding and other adaptive capacity measures, Fankhauser and McDermott (2014) note that higher-income countries tend to benefit from “spillover effects” through investments in companion institutions and technologies that can be redirected to support adaptation efforts. This can place lower-income countries at a distinct disadvantage in climate adaptation.

The exact price tag for global adaptation is difficult to estimate because of uncertainty as to the full effects of climate change, differing rates of change across regions, and the variation in vulnerability of different communities. The Global Commission on Adaptation, a coalition of 23 countries launched by the 8th Secretary-General of the United Nations, Ban Ki-moon, with the goal of bringing more visibility and support for climate adaptation, estimates that global spending on adaptation in 2015 and 2016 was around \$22 billion each year (GCA, 2019).

The United Nations Environment Programme places future adaptation costs as high as \$500 billion per year by 2050 (UNEP, 2021). In the United States, the Government Accountability Office (GAO) reports that only a small fraction of the \$154 billion expended on climate change by the federal government since 1993 has gone to adaptation (GAO, 2018).

Although climate change was not a concern originally contemplated as tribes and the federal government negotiated 19th-century treaties, tribes argue today that adaptation funding is nonetheless a central component of the U.S. government's trust responsibility to indigenous peoples (Whyte, 2013). However, tribes must contend with a cost-benefit allocation system for federal funding that disadvantages rural, sparsely populated indigenous communities (Whyte, 2017). Often tribes have access to resources that can aid in adaptation, but they lack the funding to adequately develop those resources for use. For instance, Cozetto et al. (2013) described the long battles that tribes in the arid Southwest fought to secure senior water rights through years of litigation only to discover that the federal government would not help pay for the infrastructure needed to get that water to drought-stricken tribal communities. The current system for federal funding can leave indigenous communities without the capital to pursue large-scale infrastructure projects to adapt to the worst effects of climate change.

The authors of the Fourth National Climate Assessment (NCA4) identified more than 800 adaptation actions, such as planning, monitoring, and capacity building, in various stages of implementation by indigenous communities throughout the United States (Jantarasami et al., 2018). But implementation for

many of these actions remains stunted due to lack of funding. Gautam et al. (2013) found that tribes requested \$8.75 million from the federal government for adaptation in 2012 but only received \$200,000. Whyte (2013) points out that tribes are excluded from many of the major climate funding schemes that are restricted to state and federal agencies. This was confirmed by a 2018 GAO report that listed only two federal initiatives dedicated to tribes over a 25-year span totaling less than \$1 million out of more than \$154 billion allocated for climate spending (GAO, 2018).

The extensive climate funding priorities for tribes have at times overwhelmed the federal bureaucracy and inhibited government response. Whyte (2013) wrote that the adaptation needs of tribes “can lead federal agencies to throw their hands in the air due to the lack of funds and personnel and lessen their efforts at honoring the government-to-government relationship.” The cost to relocate the Alaska Native village of Kivalina due to sea level rise is estimated at \$200 million and has been in the process for nearly 30 years (Maldonado et al., 2013). To place the Biloxi-Chitimacha-Choctaw of Isle de Jean Charles in Louisiana behind protective levees, the Army Corps of Engineers would need to spend \$100 million; the agency has instead opted to relocate the community for \$8 million. Few examples exist in the literature delineating how tribes cope with little financial support or bureaucratic assistance with climate adaptation.

This chapter addresses the second sub-question: **Are the contributions that federal programs can make to non-federal tribes for climate adaptation**

and planning comparable to the contributions being made to federally recognized tribes? The Fourth National Climate Assessment (NCA4) concludes that there are few funding opportunities and programs to support the adaptation efforts of non-federal tribes (Jantarasami et al., 2018). In the next section, I catalog and analyze federal program eligibility for non-federal tribes by updating the results of a 2012 GAO study on the usage of federal money by non-federal tribes. I further expand upon that original assessment by identifying additional federal programs related to tribal climate adaptation to the evaluation. I use a comparative statutory analysis method to distinguish different definitions for “Indian tribe” to compare eligibility between categories of non-federal tribes. I find that there are 4 different ways in which the U.S. government defines non-federal tribes to determine eligibility for federal programs, and wholly unrecognized tribes (tribes enjoying neither federal nor state recognition) possess the least eligibility at less than ten percent of available programs. Additional hurdles, such as requirements for matching funds, embedded in some programs could further discourage pursuit of federal funding by non-federal tribes.

Section C includes my evaluation of 14 tribal climate adaptation plans to understand the types of adaptation actions pursued and the likelihood of successful implementation based on assessment criteria derived from previous studies of local adaptation plans. Interviews with tribal climate managers were conducted to ascertain the barriers to plan implementation and strategies to improve tribal climate planning and response in the future. I found that tribal climate plans often lacked the specificity to help tribes quickly respond to federal

opportunities. My interviews with climate plan managers at 4 federally recognized tribes confirmed that funding and staff limitations were significant barriers for federal tribes.

The final section adapts the results of the questionnaires with the Burt Lake Band Council to the findings from sections B and C to analyze how program eligibility, poor allocation, and immediate needs influence decision-making with non-federal tribes. In their questionnaire responses, the Band expressed interest in pursuing federal funding for needs such as cultural preservation, economic development, and healthcare assistance. Much like the interview responses from climate plan managers at federally recognized tribes, the Council raised issues with the time preparing documents, expertise needed to write grants, and the cost of hiring a grant writer as barriers to applying. The Band's recognition status plays a role in restricting eligibility to program funding, but poor availability of climate adaptation funding from the federal government in general places stress on all communities seeking financial assistance. The high barriers to participation, coupled with few funding opportunities, inhibit adaptive capacity for the Burt Lake Band and federal tribes alike.

B. Program Eligibility

Non-federal tribes are eligible for federal funding based on their status as state-recognized tribes or non-profit organizations (GAO, 2012). While there are no dedicated federal programs to help non-federal tribes adapt to climate change, a 2012 report by the Government Accountability Office (GAO) detailed two dozen federal programs available to non-federal tribes for other purposes

(GAO, 2012). I updated the 2012 GAO list by searching the U.S. Code for any changes in the laws and added climate-related opportunities with the help of a climate-specific program database maintained by the University of Oregon. A comparative analysis of statutory definitions of “Indian tribe” was then performed to determine program eligibility of non-federal tribes. Through the comparative statutory analysis, I found that there are extremely limited federal funding options for unrecognized tribes like the Burt Lake Band, and discrepancies in how federal programs determine eligibility add extra barriers and complexity to accessing these programs.

1. Data and Methods

The data for the program eligibility analysis is derived from two sources — a 2012 GAO report on the use of federal resources by non-federal tribes (GAO, 2012) and a climate-specific funding database for tribes maintained by the University of Oregon (Oregon, 2021a). Although the NCA4 authors asserted that “non-federally recognized tribes lack legal status to qualify for funding and economic development support, though some are eligible for state support” (Jantarasami et al., 2018), the 2012 GAO report found that non-federal tribes accessed dozens of federal programs and secured more than \$100 million in government funding during a 5-year period from 2007-2012 (GAO, 2012).

The original list from the 2012 GAO report formed the basis for my analysis of current non-federal tribal eligibility of federal programs. Absent from the GAO’s original assessment were programs related to climate change. The Bureau of Indian Affairs (BIA) maintains a website called the Tribal Resilience

Resource Guide (TRRG) with info on climate change from various federal agencies and links to data, funding opportunities, and agency contacts for assistance (BIA, n.d.). But the BIA has not updated funding opportunities on the TRRG website since 2016, and it instead encourages visitors to utilize a funding database maintained by the University of Oregon's Tribal Climate Change Guide. The University of Oregon's funding database includes federal opportunities closely related to tribal climate mitigation and adaptation. It serves as a supplement to the analysis performed on the original GAO report. Updates to the GAO report and the opportunities included in the eligibility analysis from the University of Oregon database were searched and recorded in March 2021.

The 2012 GAO report identified 24 eligible programs to fund the needs of non-federal tribes. Agencies like the Department of Education were even found to take a very broad definition of "reservation" in order to capture more non-federal tribes (GAO, 2012). Twenty-six non-federal tribes secured federal funding totaling over \$100 million from 2007-2012, with the majority of the funding going to the Lumbee Tribe of North Carolina for public housing assistance. Despite the identification of more than 400 non-federal tribes by the GAO, only 9 non-federal tribes accounted for 95 percent of federal allocations to non-federal tribes during the study period (GAO, 2012). The federal programs that funded non-federal tribes had a wide range of directives, from block grants to build housing, to language preservation classes, and vocational training for community members.

The University of Oregon's Tribal Climate Change Guide is part of the "Pacific Northwest Tribal Climate Change Project," a collaboration between the

University, BIA, U.S. Forest Service, and the Affiliated Tribes of Northwest Indians (Oregon, 2021b). Along with maintaining the funding and other databases relevant to tribal climate activities, the Project also aids tribes with adaptation and mitigation planning, connects tribal officials to management opportunities for off-reservation resources, and provides climate consultations. The funding database has cataloged federal grants and financing programs related to climate change dating back more than a decade (Oregon, 2021a).

To evaluate program availability for non-federal tribes, I applied a comparative statutory analysis method to differentiate statutory definitions of “Indian tribe.” Comparative statutory analysis has a long history in environmental law and is useful in understanding the practical effect that different terminology can have in applying laws (Castrilli, 1998). It is a common legal methodology for assessing multiple laws through a singular context and involves the dissection of laws to understand how changes in wording can impact statutory interpretation. Although indigenous legal scholars have discussed the significance of the term “Indian tribe” as it applies to Native identity (Quinn, 1990), no one has assessed the practical effects of the definition related to program eligibility for non-federal tribes. As the original 2012 GAO report described, federal laws and agencies have expanded upon and interpreted the term to create new categories of non-federal tribes based on qualifiers such as state recognition, the method a state used to recognize the tribe, state reservation lands, and treaty status. The GAO report identified these striations, but I am taking that identification another step by

using comparative statutory analysis to determine the exclusionary effects these definitions can have for the various forms of non-federal tribes.

The program eligibility analysis was conducted in two parts. First, the list of programs available to non-federal tribes indexed by the 2012 GAO report was updated by searching for the statutes in the most recent version of the U.S. Code. Programs that are no longer active or have been transferred or repealed, such as the Rural Business Opportunity Grants previously offered by the U.S. Department of Agriculture, were removed from the list. Three programs were mentioned in footnotes to the 2012 GAO report but left out of the agency's analysis — the Section 8(a) business development program, the Indian Arts and Crafts Act, and the Native American Graves Protection and Repatriation Act. All 3 were included in my analysis.

Definitions for non-federal tribes fell under five categories — state recognition, state recognition with conditions, state reservations, treaty with a state, and incorporated non-federal tribe. Laws such as the Indian Education Formula Grant (20 U.S.C. §7491(3)(A)) simply listed “state recognition” in its definition of Indian tribe. Others, like the Department of Health and Human Services' Low Income and Energy Assistance program, placed conditions on the method a state used to recognize the tribe, such as through an act by the state legislature or gubernatorial proclamation (45 C.F.R. §96.48(b)). State reservation lands are a prerequisite for many elder care programs, such as grants for Community Innovations for Aging in Place (42 U.S.C. §3002(27)). Treaties with states reference agreements made between tribes and former colonial

governments (GAO, 2012) and are a requirement for non-federal tribal governments wishing to participate in the Department of Agriculture's SNAP program (7 U.S.C. §2012(v)). The final category is incorporated non-federal tribes and comprises indigenous communities organized as non-profit entities.

To qualify for inclusion with the University of Oregon funding database, programs must be active in 2021 and related to the planning, implementing, or monitoring of climate change activities or support social, cultural, or economic activities potentially impacted by climate change. My March 2021 inquiry returned 15 active funding opportunities from the Oregon database. One program, the Department of Agriculture's Rural Business Development Grants, was excluded because it appeared in the GAO update. The MET Mini-Grant Program was also removed from the analysis because the program is limited to indigenous peoples of Pacific islands, a group with its own distinct relationship with the U.S. government outside the scope of non-federal tribes. This left 13 opportunities for the climate program comparison. The original GAO study did not include climate-related programs, despite the existence of initiatives like the Department of Commerce's Disaster Relief Opportunity for economic distress from climate-related disasters that were available at that time. The analysis of eligibility standards for these programs paints a more complete picture of federal climate adaptation opportunities for non-federal tribes.

2. Results and Discussion

Table 6 updates the original GAO assessment, and *Table 7* adds climate-related programs from the University of Oregon's tribal climate funding database.

In the updates to the GAO study found in *Table 6*, there are 31 programs spread across 8 agencies and departments. Eleven programs simply require “state recognition” for eligibility. An additional 4 programs place special conditions on the mechanism the state uses to recognize a tribe. Another 11 programs list a “state reservation” as a prerequisite for eligibility, and 2 programs require the existence of a treaty with the state prior to access. Finally, 3 programs are open to “incorporated non-federal tribes.” *Table 6* provides a full breakdown of program eligibility updated from the 2012 GAO report and includes the statute used by each program to determine eligibility.

I found that there can be overlap in these classifications, and non-federal tribes can qualify for programs based on multiple classifications. For instance, the MOWA Band of Choctaw Indians are a state-recognized tribe in Alabama (AIAC, n.d.). Alabama uses legislation to recognize tribes (Koenig & Stein, 2008), so the MOWA qualify for programs that simply require state recognition and also for programs that place conditions on the method used for recognition. The tribe has a state reservation as well. Therefore, the MOWA Choctaw qualify for 26 of the 31 programs in my assessment. Since the State of Michigan has no formal process for recognition, the Burt Lake Band establish eligibility for federal programs as an “incorporated non-federal tribe.” This leaves the Band eligible for only 3 programs from the updated GAO study in *Table 6*.

There are currently 66 state-recognized tribes in 13 states (NCSL, 2021). The majority of opportunities identified for non-federal tribes in the GAO study are restricted to state-recognized communities, but the largest classification for

non-federal tribes is incorporated communities. This means that a small subset of non-federal tribes has greater access to federal programs than the majority of non-federal tribes organized as non-profits. Programs like food stamps, education grants, and elder care all exclude access by incorporated non-federal tribes.

In breaking down the distribution of statutory definitions for non-federal tribes, there are not always logical connections between how federal agencies determine eligibility and the purposes of the programs. For instance, the U.S. Department of Education typically only requires state recognition as a prerequisite to access funding for benefits like education research, professional development for teachers, or formula grants to local educational agencies. However, the American Indian Vocational Rehabilitation Services Program administered by the Department requires state reservation lands for eligibility, despite there being no link between government support for disabled Americans returning to work and the special land status attached to reservations. The GAO study noted that the “treaty with a state” classification is derived from the Census Bureau and connotes non-federal tribes holding historical treaties with one of the 13 original states, in some cases during the colonial period (GAO, 2012). A treaty with a state is necessary for a non-federal tribe to distribute federal food benefits like the Supplemental Nutritional Assistance Program (SNAP), but Congress provides no justification as to why it would limit access for this program to communities with a geographic provenance on the East Coast.

Buzbee (2000) argues that discrepancies in statutory definitions are often the result of dynamic interactions between Congress and other actors. Applying Buzbee's theory, the plethora of definitions for "Indian tribe" could be the result of actions by a select group of non-federal tribes expending political capital to gain access to certain programs deemed important to the community. By finding creative ways to carve out small exceptions for select groups, such as by restricting non-federal tribal access to SNAP based on colonial treaties, members of Congress minimize budgetary impacts to these programs while also gaining political allies. Although politically expedient for a select few non-federal tribes, the practical effect of the half-dozen ways in which federal programs categorize non-federal tribes appear disconnected from the purposes of the programs in general.

Federal funding for non-federal tribes in the area of environmental management and climate change follow similar patterns. *Table 7* details 13 active funding opportunities listed in Oregon's database as of March 2021 that are related to climate change and environmental and resource management (Oregon, 2021). Eleven of the programs from the Oregon climate funding database in *Table 7* were open to federally recognized tribes, while relatively few permitted access to non-federal tribes or non-profits. Two of those funding sources for non-federal tribes were for science research. Whyte (2013) warns that non-federal tribes rarely have the staff availability or expertise to conduct technical assessments like long-term scientific monitoring. Matching funds could also be an issue for non-federal tribes that enjoy few economic development

opportunities (Miller, 2003). For instance, the Recovery Implementation grants awarded by the U.S. Fish and Wildlife Service to aid in the protection of endangered and threatened species do not require cost sharing, but the program prioritizes projects with entities that can financially contribute (Oregon, 2021a). Even when eligible, non-federal tribes could struggle to meet the staffing, expertise, and cost-matching provisions of federal environmental programs.

Funding opportunities for non-federal tribes are extremely limited, especially for unrecognized communities. Of the more than 400 non-federal tribes identified for the GAO (2012) report, only 66 are state-recognized (NCSL, 2021), and less than a half dozen non-federal tribes have state reservations (Koenig and Stein, 2008). Therefore, the vast majority of non-federal tribes would be classified as incorporated non-federal tribes and only qualify for 3 of the 31 programs in my updated 2012 GAO study. As shown in Tables 6 and 7, this category of non-federal tribes has very limited access to federal programs. My comparative statutory analysis uncovered irregular applications of certain eligibility criteria to programs that would not require that status for execution, such as mandating non-federal tribes possess a state reservation to administer food stamp benefits. Access to climate-related programs is similarly restrictive, but the cost-matching and resource-intensive nature of these programs are likely to further limit participation by understaffed non-federal tribes with few avenues to pursue economic development.

C. Implementing Tribal Climate Adaptation Plans

Adaptation planning is part of a larger continuum of activities intended to identify climate risks and threats, develop a response, oversee and manage that response, and utilize feedback to reassess and improve overall climate preparedness (Bierbaum et al, 2013). Given the limited financial resources available for climate adaptation, planning can help communities prioritize projects based on immediate needs and existing funding opportunities. However, the body of literature around indigenous climate response provides few clues as to the barriers, successes, and overall effectiveness of planning and adaptation activities in tribal communities.

Preston et al. (2011) note that evaluation and monitoring of adaptation planning can reduce societal and ecological vulnerability, improve accountability through evidence-based policy, and expand learning opportunities for adaptive management. This section addresses the need expressed in Baker et al. (2012) for a more formal evaluation of climate plan implementation by assessing planning activities and actions within the context of federally recognized tribes in the United States. First, I developed criteria for a detailed review of implementation language and methods in existing tribal climate adaptation plans, such as cost projections, timelines for action, and mainstreaming, a strategy that incorporates climate adaptation actions into other planning activities. Then, I conducted in-depth, semi-structured interviews with 4 tribal climate plan managers to detail missteps and successes in the implementation of the plans,

as well as provide recommendations for improving implementation language in future tribal climate planning efforts.

1. Data and Methods

Data for the text analysis come from publicly available tribal climate adaptation plans. The University of Oregon's Tribal Climate Change Guide and Northern Arizona University's Tribes & Climate Change portal provide clearinghouses for dozens of tribal climate planning documents, including vulnerability assessments, adaptation plans, and impact studies. The plans were developed in conjunction with private consultants, local universities and governments, federal agencies, non-profits, or strictly through the tribal community's own efforts. For the text analysis, adaptation plans were selected. Adaptation plans often provide goals, strategies, and recommendations for action, whereas other planning documents, such as vulnerability assessments, often omit these strategies and are less helpful to an analysis focused on implementation.

In total, 14 tribal adaptation plans were chosen for text analysis out of 27 available in the two databases in June 2020. Thirteen plans were excluded because they lacked readily identifiable goals and recommendations needed for the analysis. The Alaska Native Tribal Health Consortium (ANTHC) partnered with 11 Alaska Native villages in 2012 to produce adaptation plans centered on community health.² However, recommendations were often mixed with general

² For example, Brubaker, M., Chava, P., Berner, J., Black, M., and Warren, J. (2012). Climate Change in Selawik, Alaska. ANTHC Center for Climate and Health. Available at: https://anthc.org/wp-content/uploads/2016/01/CCH_AR_052012_Climate-Change-in-Selawik.pdf.

statements about climate change and were difficult to separate out for analysis. Since my original study, an additional 16 plans have been added to the database, and future research would benefit from the analysis of this new group of plans.

The tribal communities represented in the 14 plans in my study span both coasts and the Great Lakes, 5 time zones, and 10 different states. The plans covered individual tribes, like the Nez Perce or Yakama, and also cooperative efforts from regional associations, such as the Norton Bay Watershed Council and the Intertribal Council of Michigan. The smallest reservation served by these planning documents is the Annette Island Reserve of the Metlakatla Indian Community with a population of only 1,635 people, while the Navajo Nation represents the largest land-based tribe in the United States with a reservation population one hundred times larger than Metlakatla's reserve off the southeast coast of Alaska (U.S. Census Bureau, n.d.). The communities represented in this plan analysis provide a diverse cultural, geographic, and climate-sensitive sample for analysis.

To assess the effectiveness of the implementation language used in tribal climate adaptation plans, I developed 11 criteria based on previous climate planning literature that best capture a strong likelihood of project implementation. This use of plan evaluation methodology for text analysis allows for comparison between documents and improves the identification of strengths and weaknesses between the plans themselves (Woodruff & Stults, 2016). However, plan evaluation can only act as a predictor of implementation and cannot account for

the outside forces influencing climate adaptation. For that, semi-structured interviews took place with four tribal climate plan managers.

Plan evaluation is a text analysis methodology that involves the establishment of assessment criteria, the application of that criteria to each document, and the examination of trends, inconsistencies, and overall results. Because of the small number of adaptation plans selected for review, manual analysis was used instead of relying on computer-assisted text mapping. Manual review of documents for the presence of key assessment criteria are preferable when classifying content for a few hundred documents or less (Kobayashi et al., 2018). The assessment criteria create a framework for comparing planning documents (Dupuis & Biesbroek, 2013). The majority of the evaluation criteria were derived from two seminal analyses of local climate adaptation plans. In 2009, Berke and Goldshalk performed a large-scale meta-analysis of local land use plans to develop basic concepts and criteria to better define plan quality. Their literature review netted dozens of studies evaluating hundreds of local and state plans and produced a list of internal and external characteristics of high-quality plans. The tribal climate plan evaluation includes many of Berke and Glodshalk's characteristics relevant to plan implementation and evaluation, such as action timelines, funding sources, and an individual, department, or organization responsible for implementation.

More recently, Woodruff and Stults (2016) examined 44 local climate adaptation plans in the United States using 124 different evaluation criteria. The Woodruff and Stults plan analysis included 16 criteria around implementation and

monitoring that closely mirrored Berke and Goldshalk's (2009) earlier effort. The 11 tribal climate plan evaluation criteria are summarized in *Table 8* and include characteristics and standards utilized by Berke and Goldshalk (2009), Woodruff and Stults (2016), and corroborated by countless other scholars in the area of plan evaluation. These 11 criteria appeared most frequently in the literature, form a basis for comparison between and among tribal climate adaptation plans, and set a baseline for appraising the efficacy of planning activities.

While the plan evaluation criteria help understand which actions have a greater likelihood of implementation, the criteria do not analyze the various ways in which tribes respond to climate change. Categorizing adaptation actions has been a prominent fixture of climate planning literature for two decades, since Smit et al. (2000) grouped actions into five areas around timing, intent, spatial scope, form, and degree of necessary change. Biagini et al. (2014) took typology development one step further with a review of nearly 100 projects funded through the Global Environment Facility (GEF). The review netted 158 different adaptation activities in 70 countries. These actions were then divided into 10 typologies. For their analysis, the authors found that mostly inexpensive "soft" measures such as capacity building with other jurisdictions, management and planning, and policy reform were common typologies in GEF's adaptation-funding portfolio and are often some of the earliest actions in adaptation planning. Likewise, the adaptation actions identified in the tribal climate plans were categorized and analyzed based on the ten typologies from Biagni et al. (2014).

To gauge the efficacy and success of the implementation of the plans, solicitations for interviews were sent to tribal officials or outside consultants identified as administrators of the 14 selected adaptation plans. Plan authors were cross-referenced with current tribal officials to choose participants. Officials overseeing the implementation of 4 different plans were able to participate within the available timeframe in semi-structured interviews that lasted about 40 minutes each. Due to the sensitive nature of government funding and federal attitudes toward climate change in the Trump administration, participants requested to remain anonymous so that they could speak more freely without fear of reprisal.

Participants were asked about their background in climate and other environmental work with or for the tribe, experiences developing the plan, current implementation efforts, future implementation expectations, and potential plan updates. *Appendix C* provides the script used to interview the 4 tribal climate managers. Each participant also helped write the adaptation plan and was in the process of administering elements of the plan into the tribe's overall climate strategy. The participants had nearly 100 years of combined experience addressing climate and other environmental problems for their respective communities. Collectively, the plan evaluation and interviews provide a snapshot of the struggles and successes around climate planning and action for federally recognized tribes.

2. Results and Discussion

The fourteen plans delineate 556 proposed adaptation actions, strategies, objectives, and goals, with some of the proposed actions in various stages of implementation. The results of the adaptation plan assessment highlight the types of actions relevant to indigenous climate response in the United States but also expose a lack of details on how to implement those actions that dominated the conversation with the interview participants. Including climate actions into other planning documents, a process called mainstreaming, proved popular during the evaluation, but many of the other implementation criteria were used sparingly or confined to a single plan. The interviews contributed valuable insights into how communities translated their plans into actionable efforts at climate adaptation, in spite of formidable barriers posed by understaffing, limited technical expertise, and the COVID-19 pandemic.

All 11 evaluation criteria appeared in at least one plan except for the identification of a party to monitor and evaluate implementation. The most common criteria were mainstreaming (8.5% of total actions), a timeline for implementation (8.5%), and the identification of a party to implement the action (6.1%). *Table 9* shows the distribution of the evaluation criteria. In a few instances, the majority of appearances for a criterion were found in a single plan, such as the comprehensive use of implementation timelines in the Swinomish Climate Change Initiative Climate Adaptation Action Plan (Swinomish Indian Tribal Community, 2010). Also, the Nez Perce sought to incorporate indicators to

measure implementation (Clark & Harris, 2011). While no criterion was universal amongst all plans, mainstreaming did appear in 12 of the 14 plans.

For adaptation typologies, “soft” measures dominated the analysis. The most common typologies, as provided in *Table 10*, were management and planning (27%), policy reforms (20.9%), and information gathering and dissemination (20.1%). Tribes located on the Washington coast — the Swinomish Indian Tribal Community, Lummi Nation, and Puyallup Tribe of Indians — focused mainly on policy reforms, such as efforts by the Lummi Nation to preserve open space to mitigate flood hazards (Kuhlman et al., 2016). Alaska Native communities scored higher for information services through actions like knowledge exchanges between elders and youth on food preservation techniques in Nome (Kettle et al., 2017). Surprisingly, many coastal communities, like Norton Bay, Nome, the Shinnecock Nation, and the Swinomish Indian Tribal Community, did not specifically include any warning or observation systems in their adaptation actions despite voicing concerns about climate impacts such as sea level rise, coastal erosion, species loss, and ocean acidification. Many “hard” measures, which can be expensive and time-consuming to implement, such as warning and observation systems (7.9%), green infrastructure (4.5%), and technological upgrades (3.2%), like the Puyallup’s proposed use of floating nurseries to build resilience into fish hatcheries (Puyallup Tribe of Indians, 2016), appeared less often.

When asked generally about implementation, interview participants wanted to discuss major issues advancing infrastructure projects. They spoke

very little about “soft” measures, even though “soft” strategies were more prevalent in the plans and would be less expensive to implement. This seemed to be a reflection of how tribal governments are prioritizing adaptation responses and focusing more on large-scale infrastructure projects. This emphasis could be a recognition that “soft” measures are insufficient to adequately address climate change or a desire by tribal governments to pursue more visible climate responses for their communities. None of the participants provided any explanation as to why they would concentrate on “hard” strategies over “soft” measures.

The interviews revealed a number of barriers and success strategies in implementing the plans. Funding constraints were the biggest challenges. Many actions were put on hold during the COVID-19 pandemic due to a lack of tribal government resources. Similarly, tribal government staff suffered from time and expertise constraints in implementing adaptation actions. Despite these barriers, participants still claimed implementation victories, especially by mainstreaming climate projects into other efforts, like hazard mitigation after a major storm event. Finally, the participants noted one unexpected benefit of climate planning — it reconnected youth in the community to the land and knowledge of tribal elders. The challenges faced by indigenous communities planning and implementing climate adaptation responses echo studies from non-indigenous communities in the United States (Bierbaum et al., 2013; Woodruff & Stults, 2016) and globally (Araos et al., 2016), especially around the financial and technological barriers to implementation.

The only implementation criterion missing from all plans was the identification of a party to monitor and evaluate individual response actions. In a review of climate actions in the Global South, a collection of developing nations and communities located mainly in the Southern Hemisphere that suffer from some of the same financial, sovereign, and skilled-workforce barriers faced by indigenous communities in the United States, Araos et al. (2016) pointed to a lack of oversight and monitoring contributing to low reporting on adaptation actions. These types of institutional constraints were also cited by Bierbaum et al. (2013) as a significant obstacle to climate plan implementation. Another study found that 74% of respondents mentioned staffing as a concern (Carmin et al., 2012). Implementing complex, long-term climate solutions can be difficult without the personnel necessary to do so.

Limited technical knowledge from existing tribal government staff also bounded implementation efforts. Three of the four interview participants voiced concern that their communities suffered from staffing shortfalls and the technical expertise required to complete essential climate response tasks like the monitoring of local temperature, air quality, water quality, and ecosystem health that are vital to quantifying climate impacts and forming adaptation strategies. Berrang-Ford et al. (2014) note that “technology is likely a causal pathway through which institutional capacity may facilitate adaptation.” The dearth of technology for observation of different climate phenomena and staffing constraints in tribal governments are barriers impeding climate response cited by all four interview participants.

Participants were often the only staff working regularly on climate issues for their respective tribal governments. However, adaptation projects necessitate involvement from staff in other sectors of government, and those personnel often had less familiarity with climate issues. To combat low technical expertise and time availability with tribal staff, one interviewee discussed the creation of a “hub of knowledge.” This hub would act as a clearinghouse for various tribal government departments, outside consultants, local universities, and community organizations to pool resources, energy, and insight into planning, managing, and solving climate risks. Climate hubs within tribal governments might help overcome the lack of detail and unclear language, also referred to as “muddy waters” by Araos et al. (2016), that so often plagues inter-department and inter-organizational responses to climate threats and act like localized versions of the climate action science centers operated by the U.S. Department of the Interior or the climate hubs administered by the U.S. Department of Agriculture. Providing staff with a central repository for climate expertise and resources could help overcome workforce constraints that limit current efforts at implementation.

Limited financial resources were the number one barrier to implementation cited by the interview participants. Budgetary constraints are a common impediment to climate action (Amundsen et al., 2010). In one study, 70% of the literature reviewed pinpointed financial barriers as a major problem addressing climate change (Biesbroek et al., 2013) and another cataloged 88% of U.S. cities suffering from similar budgetary shortages (Carmin et al., 2012). There are a few approaches cited in other studies to overcome budget shortfalls. First,

communities can seek ways to better utilize existing funds. In one example, Burch (2010) found that by reconfiguring path-dependent institutional structures, communities could take advantage of existing resources through the integration of climate needs into existing governing structures. Similarly, Ford and King (2015) recommend that climate projects be a part of the government's baseline funding stream through statutory measures. More recently, Olazabal et al. (2019) warned that "no budget assignment means no resources for implementation and no plan to acquire them." By reimagining local budgets and using statutory requirements to embed climate response, scholars argue that communities can ensure adequate funding for climate projects in the future.

The plan assessment revealed that many tribes used language to describe actions, goals, and recommendations that was light on details useful for facilitating implementation. Kingsborough et al. (2016) explained that this type of ambiguity could be beneficial as it allows for flexibility in how the community responds to climate change. Interview participants were asked about vague vs. specific language in climate planning. Two participants said that there were expectations that more specificity would be added in future updates to the plan. One remarked that the quick turnaround in writing the original plan did not leave the authors with enough time to develop and evaluate all of the elements helpful in making actions "shovel ready." In one instance, the lack of specificity slowed efforts to apply for grants to implement certain climate projects. It could also complicate efforts to monitor and evaluate actions in the process of implementation by providing little guidance on how to measure the action's

impact or establish a reasonable timeframe for its completion. The participants seemed to recognize that specificity in future planning activities would produce dividends when opportunities arose to fund projects, but specificity could contribute toward other aspects of implementation as well, such as the effective monitoring and evaluation of actions.

All interview participants spoke about at least some progress toward the tribe's climate goals. Much of the successful activity came from the mainstreaming of climate priorities into other planning documents, in particular opportunities to utilize the Federal Emergency Management Agency's (FEMA) grant funding for projects that would simultaneously mitigate hazards from natural disasters and foster adaptation to climate change. Unfortunately, the participants noted that FEMA funds a narrow set of projects and could not be relied upon for most adaptation proposals. Regardless, all of the interviewees expected to continue to mainstream climate actions into other future plans, including emergency response and water or natural resource management documents, in order to take advantage of alternative funding sources.

The results of this study highlight how some indigenous communities have produced climate adaptation strategies through careful planning in spite of significant financial, staffing, and information barriers. Mainstreaming climate policies into other planning activities was nearly universal amongst tribes engaged in climate planning and led to many successful implementation outcomes. Through inclusive community engagement and project specificity,

indigenous communities can plan for climate risk, grow knowledge bases, and be prepared when opportunities arise to fund climate adaptation.

D. Funding Priorities for the Burt Lake Band

Adaptive capacity is not restricted to direct actions that shield communities from the more overt harms of climate effects like sea level rise, flooding, drought, or species migration. It also includes dimensions of public health (Hess et al., 2012), economic development (Williamson et al., 2012), education (Wamsler et al., 2012), and environmental management (Plummer & Armitage, 2010). So, while programs, grants, or other government aid may not directly reference climate change, those activities may still help contribute to a tribe's overall climate resilience.

The Burt Lake Band is not currently pursuing any federal funding for the few programs available to them as an incorporated non-federal tribe, and the areas where they need assistance are not directly related to climate adaptation. As detailed in the GAO report, the Band did previously receive around \$467,000 in federal funding from 2007-2012 (GAO, 2012), and members of the Burt Lake Band Council said in questionnaire responses that the money went to language preservation and arts programs. At the moment, Council members are interested in funding a community garden, a medical clinic, elder care, housing, education, job opportunities, arts and language education, and youth programs. There was a consensus among the members of the Council in their questionnaire responses that securing federal recognition would ease barriers to funding these activities.

Fundraising was cited as one of the most important responsibilities for Burt Lake council members. The funds typically go toward the upkeep of the tribal office, expenses associated with their litigation over federal recognition, and to help members of the Band in need. As one council member wrote in their questionnaire, “without [help] from the few tribal members who donate money, we would not be able to pay for heat, utilities, or other essential needs the tribe has.” Member donations constitute a large portion of tribal operating revenues, and the Band has often lost members to the Little Traverse Bay Bands when the Council could not help with healthcare or educational expenses.

Council members also discussed the siren song of casino investors that begin calling once a tribe files for recognition. They said that casino developers would offer to fund the expensive recognition process in exchange for exclusive rights to partner on any future gaming operations developed by the Band. An official with the Nulhegan Band in Vermont recounted a similar story during our interview, and his Band was not even pursuing federal recognition at that time. Thus far, the Burt Lake Band has mostly ignored gaming investors and pursued recognition with their own time, energy, and money.

Beyond gaming, the Burt Lake Council expressed appreciation for the economic development benefits presented with federal status. One Council member pointed out that “it would be possible to create or involve ourselves in business opportunities [with federal recognition],” and another added, “I think federally recognized tribes are able to have land and build businesses on them that help support the tribe.” Despite offers from casino developers, the Band feels

that sustainable economic development will come from support offered by the federal government, not blackjack tables and slot machines.

Because of the difficult funding landscape created by limited federal opportunities for non-federal tribes, other communities are taking an approach similar to that taken by the Burt Lake Band and moving forward on their own terms. The Lumbee Tribe of North Carolina are specifically engaging in climate strategies that do not rely on federal funding because it can be so difficult to obtain (Emanuel, 2018). Similarly, the plan analysis in Section C uncovered that federally recognized tribes proposed many “soft” adaptation measures that could be implemented with less capital outlay. However, all 4 of the tribal climate plan interview participants also noted that staffing constraints were common. Even when tribes find adaptation measures that are cost-effective, other barriers can impede their progress.

Recently, the BIA solicited proposals for “Tribal Climate Resilience Grants and Ocean and Coastal Management Planning Grants” (BIA, 2021). The grants were capped at \$150,000 for events like adaptation planning workshops, \$50,000 for youth engagement, and \$65,000 for capacity building. Absent from this announcement was funding for implementation. The interviews with tribal climate plan administrators demonstrated that some tribes are advancing beyond the initial capacity building, assessment, and planning phases and moving on into implementation and evaluation. However, federal funding continues to ignore this critical next step in the adaptation process and stalls the advancement of climate response for indigenous peoples throughout the country. Across the board,

federal funding for tribal climate activities is severely limited, and arbitrary distinctions between communities in statutory definitions further constrict opportunities for non-federal tribes. As some tribes move forward, staffing, financial, and planning-language barriers impede adaptation overall. These restrictions in federal funding mechanisms place non-federal tribes at a distinct disadvantage, threatening to increase indigenous vulnerability and displace more communities.

Tables and Figures

Table 6. Federal Program Eligibility for Non-Federal Tribes

<u>Program</u>	<u>Dept./Agency</u>	<u>Stat. Def. of Tribe</u>	<u>State Recognition</u>	<u>State Recog. w/ Conditions</u>	<u>State Reservation</u>	<u>Treaty w/ State</u>	<u>Incorp. Non-Fed.</u>
Community Facilities Loan	Agriculture	7 U.S.C. §1926(a)(1)			Y		
Business and Industry Loan	Agriculture	7 U.S.C. §1932(a)			Y		
Rural Business Enterprise Grant	Agriculture	7 U.S.C. §1932(c)			Y		
Food Stamp Program	Agriculture	7 U.S.C. §2012(v)				Y	
Food Distribution Program (SNAP)	Agriculture	7 U.S.C. §2012(v)				Y	
Indian Education Formula Grant	Education	20 U.S.C. §7491(3)(A)	Y				
Special Programs for Ind. Children	Education	20 U.S.C. §7491(3)(A)	Y				
Prof. Dev. for Teachers & Education Prof.	Education	20 U.S.C. §7491(3)(A)	Y				
Nat'l Research Activities	Education	20 U.S.C. §7491(3)(A)	Y				
Capacity Building for Trad. Underserved Populations	Education	29 U.S.C. §705(19)(B)	Y				
Nat'l Inst. On Disability & Rehab. Research	Education	29 U.S.C. §705(19)(B)	Y				
Rehab. Service Admin. Special Demo. Programs	Education	29 U.S.C. §705(19)(B)	Y				
Amer. Ind. Vocational Rehab. Services Program	Education	29 U.S.C. §741(a)			Y		
Weatherization Assistance for Low-Income Persons	Energy	42 U.S.C. §3002(27)			Y		
Indian Arts and Crafts Act	Interior	25 U.S.C. §305(d)	Y				
Social and Economic Development Strategies Program	HHS	42 U.S.C. §2991b(a)			Y		

Preservation and Enhancement of Native American Languages Program	HHS	45 C.F.R. §1336.33(a)(1)(iii)					Y
Improvement of the Capability of Tribal Governing Bodies to Regulate Env't'l Quality	HHS	45 C.F.R. §1336.33(a)(4)(ii)					Y
Mitigation of Env't'l Impacts to Indian Lands Due to Dept. of Defense Activities	HHS	45 C.F.R. §1336.33(a)(3)(ii)					Y
Grants for State and Community Programs on Aging	HHS	42 U.S.C. §3002(27)			Y		
Older Individuals Protection from Violence Projects Grants Program	HHS	42 U.S.C. §3002(27)			Y		
Comm. Innovations for Aging in Place Grant Programs	HHS	42 U.S.C. §3002(27)			Y		
Native American Organization & Elder Justice Program	HHS	42 U.S.C. §3002(27)			Y		
Low-Income Home Energy Assistance	HHS	45 C.F.R. §96.48(b)		Y			
Community Service Block Grants	HHS	42 U.S.C. §9911	Y				
Ind. Housing Block Formula Grants	HUD	25 U.S.C. §4103(13)		Y			
Title VI Loan Guarantee Program	HUD	25 U.S.C. §4103(13)		Y			
Native American Employment and Training	Labor	29 U.S.C. §3221	Y				
Older American Community Service Employ. Program	Labor	42 U.S.C. §3056(b), §3002(27)			Y		
Sec. 8(a) Bus. Dev. Program	SBA	13 C.F.R. §124.103(b)	Y				
Nat. Am. Graves Protection & Repatriation Act	Interior	25 U.S.C. §3001		Y			

**Table 7. Non-Federal Eligibility for Programs Listed in the
University of Oregon Tribal Climate Funding Database**

<u>Program</u>	<u>Dept./Agency</u>	<u>Fed. Recognition</u>	<u>Non-profits</u>	<u>Colleges/ Universities</u>	<u>State Recognition</u>	<u>State Recog. w/ Conditions</u>	<u>State Reservation</u>	<u>Treaty w/ State</u>	<u>Incorp. Non-Fed.</u>
Tribal Clean Air Act	EPA	Y							
Hydrologic Surveys & Request for Partnership	NOAA	Y							Y
2021 Fisheries Res. Monitoring Program	FWS	Y							
Organic Transitions-Integrated Research, Edu., & Ext. Programs	Agriculture		Y						
FY 2022 NW CASC Research Funding	Interior	Y	Y						
AFRI- Foun. & App. Science	Agriculture	Y		Y	Y				
OIE: On-Request Tech. Assist.	Energy	Y							
Local Gov't Reimbursement	EPA	Y							
Long-Term Research in Env't'l Biology	NSF	Y	Y	Y	Y	Y	Y	Y	Y
Multi-Family Housing Loan Guarantees	Agriculture	Y							
Business Stabilization Grant	NCAI	Y			Y				
Planning Prog. & Local Tech. Assist.	EDA	Y							
Recovery Imp. Grants	FWS		Y	Y	Y	Y	Y	Y	Y

Table 8. Implementation Criteria

<u>Criteria</u>	<u>Sources</u>	<u>Examination</u>
<i>Party ID (Action)</i>	Berke & Goldschalk (2009), Eisenack & Stecker (2012), Ford & King (2015), Olazabal et al. (2017), Olazabal et al. (2019), Preston et al. (2011), Tang et al. (2010), Woodruff & Stults (2016)	Identifies who is responsible for implementing an action. Can be a tribal official, government department, community organization, etc.
<i>Party ID (M&E)</i>	Berke & Goldschalk (2009), Woodruff & Stults (2016)	Identifies who is responsible for monitoring and evaluating an action.
<i>Measurable Target</i>	Berke & Goldschalk (2009), Olazabal et al. (2017)	Includes a quantifiable goal.
<i>Measurable Indicator</i>	Berke & Goldschalk (2009), Ford et al. (2015), Lesnikowski et al., Magnan (2016), Olazabal et al. (2017), Preston et al. (2011), Woodruff & Stults (2016)	Includes a quantifiable metric that can be measured, assessed, and monitored over the life of the plan.
<i>Timeline</i>	Berke & Goldschalk (2009), Olazabal et al. (2017), Olazabal et al. (2019), Woodruff & Stults (2016)	Delineates a schedule to measure and evaluate progress toward completion.
<i>Cost</i>	Berke & Goldschalk (2009), Olazabal et al. (2017), Preston et al. (2011), Woodruff & Stults (2016)	Includes an estimate or exact price for implementation of the action.
<i>Funding Source</i>	Amundsen et al. (2010), Berke & Goldschalk (2009), Ford & King (2015), Hughes (2015), Olazabal et al. (2019), Tang et al. (2010), Woodruff & Stults (2016)	Identifies a source for funding its progress and completion.
<i>Mainstreaming</i>	Bierbaum et al. (2013), Ford & Berrang-Ford (2016), Preston et al. (2011), Woodruff & Stults (2016)	The action is written into other planning documents by the community, such as a hazard mitigation plan.
<i>Update Protocol</i>	Berke & Goldschalk (2009)	The plan provides methods to update its contents.
<i>Overall Monitor</i>	Woodruff & Stults (2016)	The plan identifies who is responsible for overall monitoring.
<i>Overall Timeline</i>	Kingsborough et al. (2016), Lobell et al. (2008), Olazabal et al. (2019)	The plan includes a schedule of updates and completion.

Table 9. Criteria Distribution in Tribal Climate Adaptation Plans

	Puyallup	Nez Perce	Yakama	Norton Bay	St. Regis Mohawk	Metlakatla	Lummi	Red Lake	Navajo	Shinnecock	Swinomish	Chippewa Cree	ITCMI	Nome
Party ID (Action)	1	1	1	0	10	10	4	1	3	0	1	0	0	2
Party ID (M & E)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Measurable Target	0	0	0	1	0	0	0	0	0	0	0	1	0	0
Measurable Indicator	0	11	0	0	0	0	0	0	0	0	0	0	0	0
Timeline	0	1	0	0	0	1	0	0	0	0	39	0	0	6
Cost	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Funding Source	2	0	0	1	8	0	2	0	9	0	0	0	0	4
Mainstreaming	2	2	10	1	6	5	7	4	4	1	2	3	0	0
Update Protocol	No	No	No	No	No	No	No	No	No	Yes	Yes	No	No	Yes
Overall Monitor	No	No	No	Yes	No	No	Yes	Yes	No	Yes	No	No	No	Yes
Overall Timeline	No	No	No	Yes	No	No	Yes	No	No	Yes	Yes	No	No	No

Table 10. Typology Frequency in Tribal Climate Adaptation Plans

	Puyallup	Nez Perce	Yakama	Norton Bay	St. Regis Mohawk	Metlakatla	Lummi	Red Lake	Navajo	Shinnecock	Swinomish	Chippewa Cree	ITCMI	Nome
Capacity Building	5	6	11	11	13	1	3	2	8	1	1	10	0	6
Management & Planning	6	3	56	2	17	11	7	8	30	2	7	0	0	1
Practice & Behavior	2	2	18	6	15	14	4	2	36	1	6	5	0	0
Policy Reforms	6	2	9	3	16	12	17	3	26	2	14	1	2	3
Information	4	4	21	14	11	4	7	10	15	1	5	8	1	7
Physical Infrastructure	3	4	5	0	7	3	7	0	32	1	13	4	1	2
Warning & Observation Systems	1	0	7	0	10	5	1	7	11	0	0	1	1	0
Green Infrastructure	4	2	0	0	0	1	2	1	9	2	2	1	1	0
Financing	1	0	4	13	9	0	4	0	2	0	0	0	0	2
Technology	1	0	1	2	1	0	1	0	6	1	1	2	1	1

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Chapter 7. Access to Governance Channels

Abstract

The planning and management of climate adaptation are dynamically affected by politics. Indigenous communities have traditionally been excluded from climate-policy decision-making and have more typically been informed than consulted when environmental projects have been planned. Lack of recognition can reduce tribal opportunities to participate and keep its cultural, historical, and economic concerns exogenous to any official response plan. A review of literature on “nature-based solutions” demonstrates the uphill battle indigenous communities have faced in securing equal consideration for indigenous knowledge and participation in climate decision-making. In Northern Michigan, a focus on reaffirming tribal recognition and on the education, healthcare, and cultural needs of its members has left the Burt Lake Band without the time, energy, and interest to effect climate governance. This reluctance to engage their neighbors on climate issues reduces adaptive capacity, strips the Band of opportunities to promote its needs with powerful regional actors, and leaves the Band without a voice in a policy issue of growing importance.

A. Background

Participation in climate governance and decision-making is the final intersection between indigenous adaptive capacity and political recognition identified by my literature review in Chapter 2. The relationship between governance and recognition has been described as “if you are not at the table, you are on the menu” (Hiraldo, 2020) and stresses the values assigned to

participation in the decision-making process on climate adaptation at the intergovernmental and multiple stakeholder levels. This chapter addresses the sub-question, ***Does lack of recognition impede effective climate governance for non-federal tribes?*** It begins with an overview of the aspects identified in the literature that contribute to good climate governance, such as ethical leadership and integrated institutions. The section details the experiences of non-federal tribes participating in climate decision-making and demonstrates how lack of recognition can create barriers to participation through concerns about credibility and federal consultation policies limited to federally recognized tribes.

Next, I develop criteria from prominent literature on indigenous participation in environmental management to assess indigenous inclusion in climate governance through an adaptation term called “nature-based solutions.” Nature-based solutions (NbS) are approaches that use natural ecosystem processes and local species to adapt to climate change, preserve biodiversity, and enhance human well-being (IUCN, 2016). Lands stewarded by indigenous peoples around the globe hold incredible potential for carbon sequestration (Brondizio & LeTourneau, 2016), biodiversity enhancement (Sobrevilla, 2008), and poverty alleviation (ILO, 2017). NbS represent opportunities for indigenous inclusion in climate decision-making, and my analysis of NbS literature shows inclusion is strongest when indigenous knowledge is accepted by non-indigenous participants and incorporated into decision-making structures.

The chapter concludes with an assessment of the results of the Burt Lake Band questionnaires and the Council's impressions on participatory governance

opportunities in Northern Michigan. A detailed examination of climate governance opportunities in the region was conducted and investigated using the indigenous inclusion criteria developed for the NbS review. Burt Lake Council members responded in the questionnaire that their priorities were on recognition, education, and healthcare, not climate change. Thus, they put less effort into participating in climate activities with other entities and governments in Northern Michigan. I found that many climate opportunities in the region contained some indigenous inclusion criteria, but often lacked comprehensive validation, integration, and protection of indigenous peoples and knowledge important to fair inclusion of indigenous peoples in climate governance. I conclude by showing that lack of recognition excludes the Burt Lake Band from participation in two major governance opportunities, but I recommend that the Band should still pursue participation in other regional climate projects to build relationships with governments and organizations that could support the Band's efforts for recognition and other needs in the future.

1. Climate Governance and Decision-Making

Governance is an important component of effective climate planning (Lesnikowski et al., 2013) and adaptation (Colombi, 2012). Good governance is a critical piece in the management of socio-ecological systems, especially to control access and use of key resources (Ostrom, 2009). Ericksen et al. (2016) explain that “adaptation decisions [...] are embedded in arrangements of authority affecting what decisions are taken” and conclude that the interplay

between actors in the management of climate actions impacts not just the projects pursued but also who ultimately benefits from the actions.

Good governance has been tied to strong, decisive leadership, ethics, and the maintenance of democratic values. Gupta et al. (2010) categorize leadership as a critical dimension of adaptive capacity, and Olazabal et al. (2019) note it enhances the credibility of local climate adaptation policies. Under strong leadership, Armitage (2005) found enhanced opportunities for adaptation and learning. Pachari (2010) and Adger et al. (2017) warn that politics and leadership could exacerbate institutional inadequacies for disadvantaged groups and threaten equitable outcomes in climate responses.

Biesbroek et al. (2009) also focused on institutions in climate governance and cautioned that poor institutional responses could act as a barrier to securing climate goals. Fiorino (1995) similarly warns of fragmentation, which occurs when different actors at different levels of governance all work independently on the same problem. Without horizontal and vertical integration of institutions on common problems, some groups can be left out of decision-making and benefits may not be shared equitably. Other times there are institutional voids where policy problems lack sophisticated mechanisms for action. In each instance, good governance hinges in part on how institutions are included in the decision-making and response process in a way that encourages stakeholder participation, strong leadership, and ethical policy.

2. Indigenous Experiences in American Climate Governance

Tribes were historically treated as foreign powers, and sometimes threats, to colonial expansion, and thus the treaty, a negotiated instrument between sovereigns, was the common mode of interaction for much of the first century of American independence (Quinn, 1990). Native Americans were not given the opportunity to participate in the organizing of the United States government at the Constitutional Convention of 1787. The only mention of indigenous peoples in the Declaration of Independence is about alliances between the British and “merciless Indian savages” (Jefferson et al., 1776). Now tribes are forced to navigate a system of governance in which they have had little to no input historically. Cornell et al. (2013) detected how the historical disconnect from American politics and society experienced by indigenous peoples led to unique approaches to modern policy issues such as resource management, economic development, and social welfare. This disconnect has been found to be even more acute with climate change because the global response has mostly ignored traditional indigenous and ecological knowledge in favor of incorporating governance structures dominated by the principles of Western science (Raymond et al., 2010).

Climate governance is one of the few subjects in which the experiences of non-federal tribes have received scholarly attention. However, the Fourth National Climate Assessment (NCA4) chose to focus its discussion of governance to the regulation of private property in-holdings on reservations and the impact this “checkboard” ownership has on resource management

(Jantarasami et al., 2018). For non-federal tribes, NCA4 restricts discussion of climate governance to a single comment about lacking “authorities” to grow their economies and provide community services. But as I explain in this chapter, climate governance for non-federal tribes extends beyond economic and social welfare development into strengthening alliances to support recognition, protecting cultural resources without formal jurisdiction over the land, and building internal institutions to promote tribal needs and values. Future iterations of the National Climate Assessment would benefit from a more complete picture of non-federal climate governance embedded within existing literature and my findings.

In the United States, there is a long history of unrecognized tribes seeking acknowledgment because it was perceived to provide access to environmental governance. For instance, the Wampanoag Tribe of Massachusetts sought federal recognition in part to force the U.S. government to finish cleaning up a local wildlife refuge littered with unexploded ordinance after the area was used as a military training base (Katz, 2003). Federal tribes are often able to participate in environmental governance due to their assertion of treaty rights, through laws like the National Environmental Policy Act, and federal environmental justice policies (Emanuel & Wilkins, 2020). However, participation is far more complicated for non-federal tribes. Recent examples in Louisiana and North Carolina help frame the barriers encountered by non-federal tribes in joining interjurisdictional decisions on large-scale environmental projects.

The Biloxi-Chitimacha-Choctaw Indians of Isle de Jean Charles on the south coast of Louisiana are one of the first indigenous communities in the United States to grapple with “climate-induced displacement” (Maldonado et al., 2013). The island, home to the community for generations, is rapidly disappearing due to a combination of sea level rise and wetlands degradation from nearby oil and gas development. The U.S. Army Corps of Engineers (Corps) designed a new levee system for South Louisiana to protect the coastal communities from hurricanes and tropical storms that are becoming more common and stronger with climate change. However, Isle de Jean Charles was left out of the levee system, essentially dooming the island to inundation as soon as the next few decades. The Corps has instead proposed to relocate the tribe to a new community inside the levee protection zone (Katz, 2003). The Corps estimated the cost of relocation at \$8 million while extending the levees out to Isle de Jean Charles could cost as much as \$100 million.

For a community so dependent on local resources and culturally tied to the unique life offered on Isle de Jean Charles, the relocation proposal is another injustice in a long line of government failures to adequately promote coastal policies that build resilience, not exacerbate vulnerabilities. Maldonado et al. (2013) describe the tribe’s displacement as a severance of “physical ties and rights [of] indigenous peoples,” as the island has served as a refuge for the community to maintain its way of life after the encroachment generations ago by European settlers. The leaders of the Biloxi-Chitimacha-Choctaw Tribe believe that they would have more bargaining power with the Corps over levee

placement if the tribe was federally recognized (Katz, 2003). The tribe argues that recognition brings special status upon the tribe and bolsters it with leverage to demand inclusion and protection of their homeland. Without acknowledging the tribe, the federal government also refuses to recognize the cultural, spiritual, social, and economic significance of the island and its inhabitants.

To enhance their position, the tribe sought allies in their fight to remain on Isle de Jean Charles. They secured a vote from the local Parish Council to officially recognize the community as Native American and elicited the support of a local state senator. The Tribe lost out on a grant for a community center because the grantor was concerned the island would not exist in the near future. Ultimately, the tribe was not sure if even recognition and support from the Department of the Interior would be enough to save their home, but it would at least provide them with a forum to address their concerns on a sovereign-to-sovereign level.

The Lumbee Tribe is one of eight state-recognized tribes in North Carolina and also the largest non-federal tribe in the United States with a population of more than 50,000. The community is based along a coastal plain, and the waters that pervade Lumbee territory are central to community life. But as Emanuel and Wilkins (2020), two prominent Lumbee scholars, point out, governance systems are rarely designed to give indigenous peoples voices in water management. The Atlantic Coast Pipeline, a 600-mile pipe intended to carry natural gas through North Carolina, was an example of how non-federal tribes are often excluded

from meaningfully contributing to the permitting process for large-scale environmental projects affecting their communities.

Emanuel and Wilkins (2020) establish how non-federal tribes encounter numerous administrative, financial, and justice-based barriers to participation in the permitting of national infrastructure. Since most non-federal tribes lack governing powers over land and resources, they are forced to engage more powerful corporations and government agencies within systems that were not designed for indigenous participation and contributions. In the instance of the Atlantic Coast Pipeline, the permitting parties did not solicit input from any of the several state-recognized North Carolina tribes along the route until very late in the planning process (Emanuel & Wilkins, 2020). Thus, the information gathered to design the pipeline excluded tribal cultural sites and other significant resources, leaving very little time or interest in rerouting the pipeline.

Since the tribes affected by the pipeline are not federally recognized, there is no obligation from the permitting agencies at the U.S. government to consult with the tribal communities and consider disparate impacts to the tribes. Instead, the tribes were relegated to the status of stakeholder like any other private North Carolina citizen. Emanuel and Wilkins (2020) lamented that “stakeholder” does not carry the same weight in discussions with the developers as a sovereign federal tribe. They worried that relegation to stakeholders would devalue centuries-old indigenous knowledge in the decision-making process, placing it on the same level as other comments from less-informed non-tribal state citizens. The authors feared that the reduced status of non-federal tribes in the permitting

process was a tacit dismissal of tribal sovereignty by the State and was reminiscent of state efforts to exclude non-federal tribes from state policies regarding consultation on climate change (Emanuel & Wilkins, 2020).

The pipeline was canceled last summer, owing to expected legal challenges and delays in construction from protestors and environmentalists (Penn, 2020). While this is undoubtedly a favorable outcome for North Carolina tribes and their resources, Emanuel and Wilkins (2020) note that the tribes were in part hesitant to get too involved in the process because of power asymmetries with big corporations. Many of the state-recognized North Carolina tribes are seeking federal recognition, and they feared that aggressive intervention in the pipeline permitting process would jeopardize efforts at federal acknowledgment. Although the Lumbees secured a positive result, the barriers to participation for non-federal tribes in federal permitting and project management remain in place.

Tribal consultation is an executive policy that directs federal agencies to engage in meaningful dialogue with federally recognized tribes anytime federal activities could have an impact on tribal communities and resources. It is intended to be one of the capstones of the government-to-government relationship, but years of agency apathy and inefficiency have resulted in a process that is often untimely and unresponsive to tribal needs. In theory, consultation should open up federal action to indigenous participation. However, in practice, the policy has either overwhelmed tribes without the resources to adequately respond or engaged far too late in the decision-making process to afford tribes any meaningful opportunities to contribute.

While non-federal tribes are mostly relegated to “stakeholder” status by federal agencies, federally recognized tribes benefit from enhanced participation opportunities through a U.S. government policy called tribal consultation. Tribal consultation originates from a 2000 Executive Order by former President Bill Clinton. In Executive Order No. 13175 (2000), agencies were instructed to defer to tribal sovereignty when policies implicated tribal interests. Also included in the order is a directive to all federal agencies to designate an official to lead consultation efforts, manifesting in a summary tribal impact statement submitted to the Office of Management and Budget for review on each proposed regulation. The Order concludes with a disclaimer that it is “not intended to create any right, benefit, or trust responsibility, substantive or procedural, enforceable at law by a party against the United States, its agencies, or any person.” Thus, tribal consultation is relegated to more of a suggested best practice than an edict of the federal trust relationship.

Since that 2000 presidential decree, federal agencies have moved to establish consultation policies and improve indigenous involvement in departmental practices. A joint 2017 report by the Department of the Interior, Department of the Army, and the Department of Justice sought to improve consultation on infrastructure decisions (Dept. of Interior et al., 2017). The Departments explained the need for the report by describing significant inconsistencies in how agencies engage with tribes. The Departments found that federal staff were ill-trained to support and respond to tribal inquiries and needs and tended to initiate consultation too late in the permitting and evaluation

process. They hoped to improve consultation in a way that could bolster the government-to-government relationship and build “trust, respect, and shared responsibility” (Dept. of Interior et al., 2017). The Departments determined that the best way to build that trust was to treat tribes with the same respect shown to all sovereigns. That means that agencies should send decision-makers and high-level officials to engage with tribes, not just staff. It also meant that agencies should maintain a dialogue with tribes even when no project needed input. This would help agencies anticipate how projects might impact the tribes before permitting begins (Dept. of Interior et al., 2017). Finally, agencies should set aside money to assist tribes in the information gathering needed to effectively participate in consultation.

In 2019, the Government Accountability Office (GAO) issued a similar analysis on federal deficiencies in tribal consultation. The GAO, a Congressional non-partisan fact-finder focused on federal government efficiency, surveyed each of the agencies engaged in tribal consultation and learned more about how and why they perform so poorly in consulting with tribes. Excuses proffered by the agencies included inaccurate contact information for tribal officials, resource constraints at the agency level, and difficulty coordinating with multiple agencies on interagency projects (GAO, 2019). Of the 21 agencies surveyed, 18 had systems to help notify tribes of consulting opportunities. Only 5 agency consultation policies required the agency to explain how it considered input from tribes in its decision-making, and only 9 agencies included Alaska Native

Corporations in consultation, even though the Consolidated Appropriations Act of 2004 required it (GAO, 2019).

Along with the survey of federal agencies, the GAO also reviewed comments submitted by 100 federal tribes on consultation. The tribes complained about how poor agencies were at identifying which tribe to consult with on projects and how agencies would often address consultation letters generically to “tribal leader” (GAO, 2019). The agencies would send experts that could not identify important tribal resources. The tribes grew frustrated that agencies would rarely discuss issues like climate change or environmental justice, and the tribes complained that there was no recourse if an agency official did a poor job of consultation. All of these issues led tribes to feel like consultation was more of a “check the box” exercise by the federal government without any real meaning or accountability.

Accountability is a common theme within the literature exploring the real-life application of tribal consultation policies. Bailey (2018) concludes that agencies are afforded too much discretion to decide and define meaningful consultation with tribes. In the case of the controversial Dakota Access Pipeline (DAPL), the author notes that the Army Corps of Engineers only sent one email to a tribal historic preservation officer about the project. The tribe wrote back with significant concerns about damage to archaeological sites and areas where resources are gathered, but repeated attempts to connect with the Corps about these issues were never heard before the review period on the pipeline permit closed. The silence persisted despite letters of support sent to the Corps on

behalf of the tribe by the Department of the Interior, the Environmental Protection Agency, and the Advisory Council on Historic Preservation (Bailey, 2018). In response, the Standing Rock Sioux organized one of the largest and longest protests in American history, costing pipeline investors \$750 million (Eid, 2017). The protest at DAPL signaled that there could be a heavy price to pay for ignoring the concerns of indigenous peoples.

Many federal tribes and Indian law scholars still believe that consultation, despite its flaws, must be a component of the government-to-government relationship that treaties have promised, and statutes should facilitate. But in order for consultation to be meaningful, the federal government must place tribes in a position to contribute and effectuate change. Eid (2017) points out that tribes often expend great resources in gathering information and defending themselves against projects, but rarely do the tribes receive any meaningful direct benefits from the project itself. Indigenous legal scholar Robert Miller (2015) frames this aspect of consultation as part of its “too much and too little” conundrum. Tribes are sometimes inundated with too many requests from agencies seeking consultation at the same time, and the tribes frequently lack the resources to respond thoroughly to all the requests. Agencies do not really need tribal consent to advance projects, so they invest very little in the consultation process. As it currently exists, tribal consultation is ineffective, but the deficiencies of the tribal consultation process are moot for non-federal tribes because the Executive Order is limited to consultation with federally recognized tribes.

B. Indigenous Inclusion in Climate Decision-Making around the Globe

Nature-based solutions (NbS) to climate change are strategies for mitigation and adaptation that rely on natural ecosystem processes to preserve biodiversity and enhance human well-being (IUCN, 2016). NbS link the incredible potential to fight climate change by enhancing global biodiversity and storing carbon with efforts to address the United Nation's Sustainable Development Goals, including ending world poverty (#1) and hunger (#2), building sustainable communities (#11), responding to the impacts of climate change (#13), conserving the oceans (#14), and protecting terrestrial ecosystems (#15) (UN, 2015). Enhanced and protected biodiversity has been shown to contribute to global food security (WEF, 2019), ecosystem stability (Duraiappah et al., 2005), encourage greater productivity in agriculture (Cardinale et al., 2012), and control invasive species (Doherty et al., 2016), to name a few benefits. Climate change now threatens to increase extinction events and contribute to the loss of one-third of all species by 2070 (Román-Palacios & Wiens, 2020).

Biodiverse lands controlled and stewarded by indigenous peoples and local communities (IPLCs) provide carbon sinks, water supply, and food for growing urban centers (Brondizio & LeTourneau, 2016). Sobrevilla (2008) found that indigenous lands comprise 24% of the world's landmass but house 80% of global biodiversity. According to the International Labor Organization (ILO), IPLCs suffer from high levels of poverty, economic dependence on natural resources, vulnerable geography, migration pressures, gender inequality, and lack of recognition (ILO, 2017). IPLC dependence on natural resources puts

them at an even greater risk of the damaging effects of climate change, as the ILO found that 75% of the world's rural and impoverished communities relied almost singularly on services originating from local biodiversity. Given a 2014 World Bank study that found that one-third of the rural poor and 15 percent of the world's extreme poor are indigenous (Hall & Patrinos, 2014), strategies like NbS are becoming more popular because they have the potential to simultaneously address indigenous social problems and global climate issues.

1. Data and Methods

To understand how scientists and other practitioners are integrating IPLCs and indigenous and local knowledge (ILK) into NbS, I analyzed a selected group of peer-reviewed articles on NbS involving IPLCs. The resulting compendium of sources was assessed based on criteria establishing how indigenous peoples participate in environmental and natural resource management. The criteria developed around the major themes of validation, integration, and protection of ILK. In total, 45 peer-reviewed articles were analyzed for their treatment of ILK in the development, execution, and evaluation of NbS projects.

The connection between ILK, sometimes also referred to as traditional ecological knowledge (TEK), and climate change has grown quickly within the literature in the past few decades. *Figure 2* graphs the frequency with which TEK and climate change appear together in the Web of Science database from 2000-2020. In total, the search netted 6,017 articles. There was more than an 8-fold increase in publication on this topic from 2000 (80 articles) to 2020 (650 articles). As the international community pushed for more inclusion of IPLCs and ILK in

climate response (IUCN, 2016), publications on the topic more than doubled between 2013 and 2018. Web of Science classified these articles in fields closely related to NbS, such as Environmental Sciences (731) and Studies (701), plant sciences (602), and biodiversity (243). This simple search illustrates the growing importance of ILK contributions to climate science, policy, and response.

To conduct the main study, two databases, Web of Science and Google Scholar were chosen to capture articles on the inclusion of ILK in NbS. These databases were picked for their popularity, large scope, and ease of use. The searches were performed in September and October 2020. Search terms included combinations of “nature-based solutions” and “indigenous knowledge,” “local knowledge,” and “TEK.” *Table 11* lists the searches executed on each database, as well as which keywords were utilized, total hits, and the final number of relevant hits for each query. In total, 1,230 articles were captured by the search.

Exclusion criteria were applied to the abstracts of the 1,230 articles to filter out extraneous literature. First, the articles were screened to ensure that the communities involved in the study were IPLCs. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) defines IPLCs as:

“Individuals and communities who are, on the one hand, self-identified as indigenous and, on the other hand, are members of local communities that maintain intergenerational connection to place and nature through livelihood, cultural identity and worldviews, institutions, and ecological knowledge” (IPBES, 2019).

The majority of articles removed from consideration were due to the absence in the abstract of IPLCs in the location, description, or execution of the NbS project. The examination was also limited to literature from peer-reviewed journals, which filtered out contributions from books, graduate student theses, and grey literature reports. There is an extensive body of grey literature now on NbS, such as a 2015 European Commission report encouraging the use of NbS for sustainable urbanization (EC, 2015) and the inclusion of NbS in a 2019 Global Commission on Adaptation report as a “basic element for reducing and preventing disaster risks from climate change” (GCA, 2019), but many of these examples focus on policy mechanisms over project descriptions and results. The initial abstract review left 88 articles for consideration. A full examination of these articles led to the exclusion of another 43 articles; three were removed due to being literature reviews, 13 lacked case studies, and the remaining 27 were not published in a peer-reviewed journal. After the application of exclusion criteria, 45 articles survived for analysis.

Despite its growing popularity, NbS is still a recent term in the climate lexicon, and strictly searching for articles that include the term may be excluding some studies that might otherwise qualify as NbS but omit the term in the article. In fact, NbS is an umbrella concept that encompasses other approaches such as ecosystem-based adaptation (EbA), green infrastructure, eco-disaster risk recovery, and natural climate solutions (Seddon et al., 2020). Natural climate solutions can often appear synonymously with NbS in the literature. However, whereas the Google Scholar search for NbS and the knowledge terms netted

1,122 results, similar search parameters replacing NbS with “natural climate solutions” only returned 141 results over the last ten years. Despite their similarities, NbS appears more often in the literature for projects with IPLCs.

Figure 3 breaks down the 45 articles by location. Nearly one-third originate from Asia (14), while Europe (9) and North America (9) also feature. Even with large concentrations of IPLCs, South America (3) and Africa (3) appeared less. *Figure 4* presents the years of publication. Nearly 80% of the articles chosen for assessment were published in 2019 or 2020. Before NbS terminology became mainstream with an International Union for Conservation of Nature (IUCN) resolution in 2016, only a handful of articles even referenced the concept. As investment and interest in NbS and its umbrella concepts grow, its literature should also increase.

History includes many examples of the misappropriation of ILK, such as the biopiracy of traditional medicines in the Amazon by pharmaceutical companies in the 20th century (Swiderska, 2006). I used literature on ILK inclusion to develop 8 criteria on the careful, respectful, and proper use of ILK in environmental projects. The criteria were chosen based on frequency and ease of identification in the literature, as well as relevance to project management. The 8 criteria identified fall into 3 general categories: validation, integration, and protection of indigenous knowledge.

Two other criteria were rejected — risk avoidance (Chief et al., 2015) and mutual learning (Raymond et al., 2010). Risk avoidance deals with how indigenous communities choose to share information with outsiders. Chief et al.

(2015) give the example in the United States of hesitancy by some tribes to share ILK with federal agencies because U.S. laws may require federal agencies to disclose information considered through Freedom of Information Act (FOIA) requests. Since none of the 45 articles assessed documented internal deliberations of the indigenous communities, risk avoidance could not be evaluated. Mutual learning was cited by one article on integrating local and scientific knowledge by Raymond et al. (2010) but was ultimately scrapped due to the absence of a clear definition for the term. *Table 12* provides a list of ILK inclusion criteria for this assessment, a short description for each criterion, and a list of sources elaborating and demonstrating each criterion's importance.

Validation comes from an expansion of knowledge evaluation into ways of knowing outside common scientific methods through processes (Klenk et al., 2017). It is demonstrated through actions such as acceptance, establishing the reliability of knowledge-based on commonality (Raymond et al., 2010), and co-production, generating new knowledge through mutual generation between knowledge systems (Tengö et al., 2014). Integration of ILK is possible throughout the execution of the project, from early decision-making (Makando & Thomas, 2018), implementation (Cornell et al., 2013), and the monitoring and evaluation of the short- and long-term effects and outcomes of the project (Raymond et al., 2010). Finally, ILK systems are susceptible to misappropriation when knowledge is utilized by outside groups in ways that are contrary to the norms developed by indigenous and local communities (Chief et al., 2015). The protection of ILK takes form through the development of key institutions that delineate protocols

for sharing knowledge (Williams & Hardison, 2014), define the roles and responsibilities for all parties involved (Maldonado et al., 2016), and provide a formal interface to mediate disagreements and inconsistencies between knowledge systems and users (Cash et al., 2003). Together, validation, integration, and protection form basic categories for the mindful inclusion of ILK in NbS projects and the criteria utilized to assess the effectiveness of the articles reviewed for this study.

I read each of the 45 NbS articles and searched for the 8 criteria within the project discussions provided by the authors. The basic definitions for each criterion in *Table 12* guided my review of the articles. Some criteria were more readily identified, such as the description of an entity serving as a formal interface between parties involved in the project. Whereas validation criteria could be difficult to ascertain because authors often expressed an interest in acceptance or co-production but failed to lay out a clear plan to accomplish it. For instance, in their assessment of local coral reef protection plans in the French Pacific, Bambridge et al. (2019) noted the value of a hybrid management system for the reefs that blended local traditional and modern practices, but the authors never recommended the implementation of such a system. I determined that an article would need to either demonstrate a criterion in practice or recommend its use for future projects in order to register as included.

2. Results and Discussion

For each inclusion criterion, the most common finding from the assessment was that the authors did not mention or discuss concerns about

validation, integration, or protection of ILK at all. *Figure 5* graphs the treatment of each ILK inclusion criterion in the literature assessment. No discussion of the criterion typically outperformed any discussion at all by a 2-to-1 margin.

Measures around validation and integration scored highest, with decision-making (14), co-production (13), and acceptance (10) appearing most frequently.

Protection measures were discussed in less than 10% of articles, while sharing protocols never appearing once in the literature. Monitoring and evaluation (5) of NbS projects using IPLCs were also rare. This is a known weakness of NbS cited in other literature (Cohen-Shacham et al., 2019).

Despite directions from prominent international organizations like IPBES and IUCN on the importance of including IPLCs in NbS projects, there were examples where the IPLCs were left out during project implementation. Mercer et al. (2012) found that coral reef restoration projects in small island developing states regularly failed to incorporate ILK and focus on the needs of the local community, especially food security. In Sri Lanka, an ecosystem-based adaptation project was led by outside technical experts and ignored local input and knowledge about traditional rain-fed agricultural practices. Knowledge of the rain cycle and how to harvest it was a major source of power for local officials. The local communities presented opposition when the NbS projects attempted to upset that power balance for local leadership and implement a system less dependent on local knowledge (Woroniecki, 2019). Elsewhere in Granada, Spain, a local wetlands project was entirely managed and driven by university personnel, and there was no discussion about the contributions made to

decision-making by local representatives on the oversight board (Salizzoni et al., 2019).

Figure 6 is a social network map of the ILK inclusion criteria and shows how certain criteria tended to appear alongside other criteria. Larger nodes indicate that a criterion appeared more often in the literature, while the lines between nodes represent instances in which multiple criteria occurred in the same article. Thicker lines connote more connections. The biggest connections presented between validation criteria and integration criteria, particularly between acceptance, co-production, and decision-making. This makes some intuitive sense, as practitioners would be more likely to integrate ILK if it has been validated first. The network connections also point to advancements in how scientists accept ILK and partner with indigenous and local knowledge holders to establish new knowledge pathways (co-production) that are most germane and effective to any particular project. This is an important step forward for NbS utilization because validation traditionally poses a significant barrier to integrating ILK into science-based natural resource management (Gratani et al., 2011).

Local resource simulation models were commonly used tools in NbS projects. The modelers would often utilize ILK to tweak model elements to more closely mimic local ecosystem conditions. In modeling the Breton Sound off the coast of Louisiana, scientists prioritized NbS strategies based on local input about ecosystem functions that produced favorable economic outcomes for the community (Baustian et al., 2020). However, these models often ignored other human well-being elements, like cultural or social considerations, to focus on

economic interests and species easily exploited for commercial gains. Another model of rural sections of the Lahn River in Germany relied solely on geospatial and ecological considerations, omitting any attempts at including the needs of the local communities (Albert et al., 2018). Future NbS simulations would benefit from including more social, political, and cultural factors to model impacts on human well-being beyond economics and ecology.

The literature assessment returned few examples of ILK protection. Concerns like fair compensation for the use of ILK were never discussed in the articles. This omission is concerning, given the long history of outsiders profiting from ILK without properly compensating IPLCs. Mackey & Liang (2012) argue that the scientific community's legacy of biopiracy is as big of a biodiversity threat as any other stressor from overexploitation or misuse and must be addressed and resolved through ethical and compensatory standards for ILK usage. The potential for misappropriation and abuse of ILK could discourage participation by IPLCs and could derail important contributions from these marginalized groups to NbS projects.

Overall, the assessment found that authors were more likely to omit discussion of the validation, integration, and protection of ILK in NbS projects than elaborate on the inclusion criteria. When considered, acceptance, co-production, and decision-making were most frequent, with protection criteria rarely appearing in the literature. Not only did validation criteria and ILK inclusion in decision-making occur more often, but those criteria were also discussed together and suggest that practitioners might be more willing to integrate ILK into

projects upon validation. Simulation models are popular in the NbS literature I evaluated, but the assessment uncovered that few modelers explain how human well-being, a critical element to NbS, is melding into the simulations. Whether such omissions degrade social, political, and economic outcomes is not known and should be examined in the future.

C. Climate Governance in Northern Michigan

1. Opportunities for Participation

The management of the resources and waterways of Northern Michigan falls on a collection of tribal, state, local, and federal governments and local conservancies. Oversight of the miles of lakeshores and forests that dominate the region are mostly divided between local planning activities and intergovernmental compacts. The Burt Lake Band Council was asked in the questionnaire about their participation in various climate governance opportunities and interactions with other climate actors in the region. Overall, the Burt Lake Band rates its relations with these other governments and organizations as “friendly” and supportive, but Band officials are unsure if nearby communities can help with the major challenges facing the Band. The Band has been mostly excluded from participation in regional climate efforts and worries that its recognition status impacts the Band’s credibility with other area institutions and drives those exclusions.

One example of how local planning in Northern Michigan is administered through local conservancies is the Cheboygan River Plan, a watershed protection plan led by the Tip of the Mitt Watershed Council for the eastern

terminus of the inland water route (Watershed Council, 2001). The Cheboygan River Plan brought together diverse conservation, governmental, and resource management partners to identify threats to the river and surrounding wetlands. Partners included state agencies such as the Michigan Department of Natural Resources and local resource protection groups like the Little Traverse Conservancy and the Huron Pines Resource Conservation and Development Council, as well as national advocacy organizations like the Nature Conservancy (Watershed Council, 2001). The Plan identified conservation targets, assessed the health of and threats to local biodiversity, and set out a number of strategies to improve conservation capacity.

The Obtawaing Biosphere Region introduced in Chapter 1 is an example of a regional conservation project with strong interests in supporting its partners' efforts in adapting to climate change. The Obtawaing includes partners from local federal and non-federal tribes, conservation associations, the University of Michigan, and federal government agencies (UMBS, 2019). The dual purpose of studying historical local ecological impacts and promoting indigenous cultures provide opportunities for all of the tribal communities in the region to participate and contribute to the OBR. Involvement by local indigenous populations is key to meeting the goals of the Obtawaing and "ensuring injustices made in the past do not destroy the [...] rich culture and biological/botanical knowledge of the region" (UMBS, 2019). The proposal further notes that the landscape was shaped through cooperative land management between local and indigenous

communities over generations, and the OBR hopes to continue this spirit of collective decision-making going forward.

There are a few statewide organizations that cater to tribal issues on resource management. The Inter-Tribal Council of Michigan (ITCMI) is an advocacy organization representing the interests of the twelve federally recognized tribes in Michigan. The collective houses an Environmental Services department that led the creation of a cooperative climate adaptation plan for the members (ITCMI, 2016). The organization also produces a number of forest adaptation pamphlets and a community engagement guide for adaptation planning (Inter-Tribal Forest Understory Project, 2018). The work of ITCMI compliments project efforts by their individual members on climate issues such as species migration (Nature Change, 2018), seed banking, and invasive species control (Sault Ste Marie Tribe, 2021).

Climate and environmental governance in Northern Michigan also take place through compacts, accords, or other agreements between the State of Michigan and federal tribes called consent decrees. The Consent Decrees for fishing and hunting in the 1836 Ceded Territory constitute a negotiated division of resource access and management between federally recognized tribes, the State of Michigan, and the U.S. government (Consent Decree, 2000; Inland Consent Decree, 2007). Further, the State of Michigan signed an accord with the federal tribes of the state to establish a “Tribal-State Climate Change Forum” to meet twice each year to discuss strategies to mitigate global warming (Michigan Intergovernmental Climate Accord, 2009). Unfortunately, these important climate

talks and resource allocation negotiations are only available to federally recognized tribes in Michigan.

An approach conforming to the criteria established from the NbS study for climate governance in Northern Michigan would incorporate a mixture of strategies from these existing local, regional, and state efforts. Validation through co-production could be achieved by adapting the process used by the Ojibwaing to integrate indigenous and scientific knowledge into regional cultural and ecological preservation. The Michigan Tribal-State Climate Change Forum is an example of how to incorporate tribes into decision-making and implementation of climate adaptation actions. The ICTMI acted as a mediating influence for the shared and divergent interests of its members during the creation of the group's climate adaptation plan. While no plan, decree, or proposal contains all of the elements of an inclusive project discussed in Section B, combining the best aspects of each could result in more inclusive opportunities for all of the communities in Northern Michigan impacted by climate change.

2. The Burt Lake Band's Involvement in Climate Governance

In their responses to the questionnaire, the Burt Lake Band Council listed healthcare, education, and recognition issues as most important. Many of the Council members provided short stories about the ecological and climatological changes occurring in Northern Michigan, but none of the Band's officials mentioned climate change as a pressing issue. According to Band officials, the amiable relationships with neighboring jurisdictions, nearby federal tribes, and local conservancies enjoyed by the Burt Lake Band did not translate into

meaningful assistance with the Band's biggest policy challenges. This outlook led to a disinterest in engaging these other groups on regional issues, climate or otherwise.

Experiences from other non-federal tribes demonstrate that the current, less-engaged approach to regional governance and policy-making detailed by the Band could be a missed opportunity. My interview with a Nulhegan Band official in Chapter 5 showed how leveraging friendly relationships with local landowners and governments to negotiate agreements enhanced tribal access to cultural resources on private and public lands. Only a handful of non-federal tribes have reservation lands where the tribe can exert regulatory control over activities taking place in the territory, so creative partnerships like the agreements utilized by the Nulhegan Band represent one way in which non-federal tribes can effectively engage their neighbors in a way that strengthens politically beneficial relationships and supports tribal policy goals.

Indigenous climate scholar Kyle Whyte previously wrote about the concept of "collective continuance" as a strategy to reorient climate response and ensure a more inclusive experience around environmental governance. Collective continuance is "a community's capacity to be adaptive in ways sufficient for the livelihoods of its members to flourish in the future" (Whyte, 2013). The concept is built around relational responsibilities to plants, animals, ecosystems, and neighboring towns or tribes experiencing similar hardships. Central to collective continuance are institutions and the networking and intergovernmental negotiation that support local and regional climate response. For the Burt Lake

Band, the networking and negotiation, through some instruments like the Michigan Climate Accord and the 1836 Ceded Territory consent decrees, are restricted to federally recognized tribes. However, partnerships and usufruct agreements like those negotiated by the Nulhegan Band are available.

Whyte mentions non-federal tribes in his paper and notes that state and unrecognized tribes experience unique resource constraints and institutional obstacles to participation in climate governance (Whyte, 2013). These barriers force non-federal tribes to make imperfect choices because “budgets are low, respect for tribal rights and cultures is lacking, and suitable bureaucratic channels do not exist.” Two-thirds of the respondents from Burt Lake Tribal Council questionnaire felt that recognition status does affect how other communities and organizations view the Band. In our interview, an official with the Nulhegan Band voiced concern that many associate the credibility of a tribe’s identity with federal recognition. The experiences of the Burt Lake Band and Nulhegan Band reinforce Whyte’s assertion that the rights of non-federal tribes are shown less respect by other groups and harms their standing in governing opportunities.

The opportunities available to the Burt Lake Band to participate in climate governance are also restricted by what Whyte (2013) terms as “bureaucratic channels.” The Band is excluded from the Consent decree process, the Tribal-State Climate Change Forum, and the ITCMI’s climate adaptation planning activities due to their lack of recognition. But the Council has made clear in their questionnaire responses, the Band’s primary focus is on federal recognition and

healthcare and education assistance for its members. Thus, the Band chooses to expend its political capital and energies on acknowledgment, foregoing local opportunities to participate in climate planning and resource management. In this respect, lack of recognition increases climate vulnerability for the Burt Lake Band and places significant financial, administrative, and political barriers to action, but the Band accepts this vulnerability to place its energy in other policy ventures.

For the Burt Lake Band, relationships and participation seem to be strongest with initiatives like the Ottawa Biosphere Region and the University of Michigan BioStation, whereas recognition status forms a barrier to inclusion in larger regional and state efforts. A few members of the Burt Lake Council mentioned their interest in growing their relationship with the University. While the officials at Burt Lake did not provide any direct examples, there appeared to be concerns that a lack of federal recognition impacted the community's credibility and standing with certain other entities and might have discouraged attempts to intervene in cooperative projects.

Although currently not the Band's immediate focus, it could benefit from interacting more with neighboring tribes, organizations, and jurisdictions as a strategy for building local and regional political capital. A powerful institutional ally with diverse interests in climate change like the University of Michigan could help open doors for the Band into other climate governance opportunities. In his book on recognition, Miller (2004) pointed out that the Bureau of Indian Affairs exhibited a bias in the federal recognition process for indigenous communities that maintained formal relationships with Euro-American governments. Koenig

and Stein (2008) added in their review of political acknowledgment that state recognition often helps establish mutually beneficial political relationships, and Hiraldo (2020) recently concluded that state recognition could help legitimize indigenous stories and facilitate intergovernmental relationships. None of the Burt Lake council members mentioned how or if the Band's designation as a "Michigan Historic Tribe" influences or enhances its interactions with other communities or the State of Michigan. Pressing the State of Michigan for formal recognition could open opportunities for participation in state climate governance and enhance the Band's case for federal recognition.

Political participation and governance are critical to managing culturally important resources and effectively adapting to climate change. Writing indigenous peoples out of efforts to manage local resources can degrade overall resilience, self-determination, and influence (Turner et al., 2008). Owing to the marginalized position of many indigenous communities in the United States and abroad, large efforts to prepare for and manage the impacts of climate change have traditionally ignored indigenous input or direct outcomes most beneficial to the indigenous peoples that live in affected areas. Nature-based solutions to climate change show promise as a vehicle to promote beneficial biodiversity and enhance human well-being in impoverished and marginalized communities. However, a review of the literature demonstrates that indigenous peoples and TEK are not being properly included in NbS projects, hindering indigenous participation in decision-making. In Northern Michigan, numerous initiatives have been undertaken to ensure the future vitality of the region's waterways, forests,

and communities, but institutional and administrative barriers limit the Burt Lake Band's opportunities to participate.

For the Burt Lake Band, its status as a non-federal tribe restricts opportunities to participate in climate governance in Michigan, but similar to my findings in Chapter 5, it is not the U.S. government causing the exclusion. Instead, it is other actors, such as the State of Michigan engagement with federally recognized tribes on the Consent decrees or the ITCMI's membership restrictions, that preempt participation by the Burt Lake Band. The Band could press for inclusion in these opportunities, but the Council has a clear directive to focus on other policy matters. The results of my NbS article analysis show that indigenous inclusion is not solely a problem for the Burt Lake Band and other non-federal tribes in the United States and extends to the global indigenous population as well.

Tables and Figures

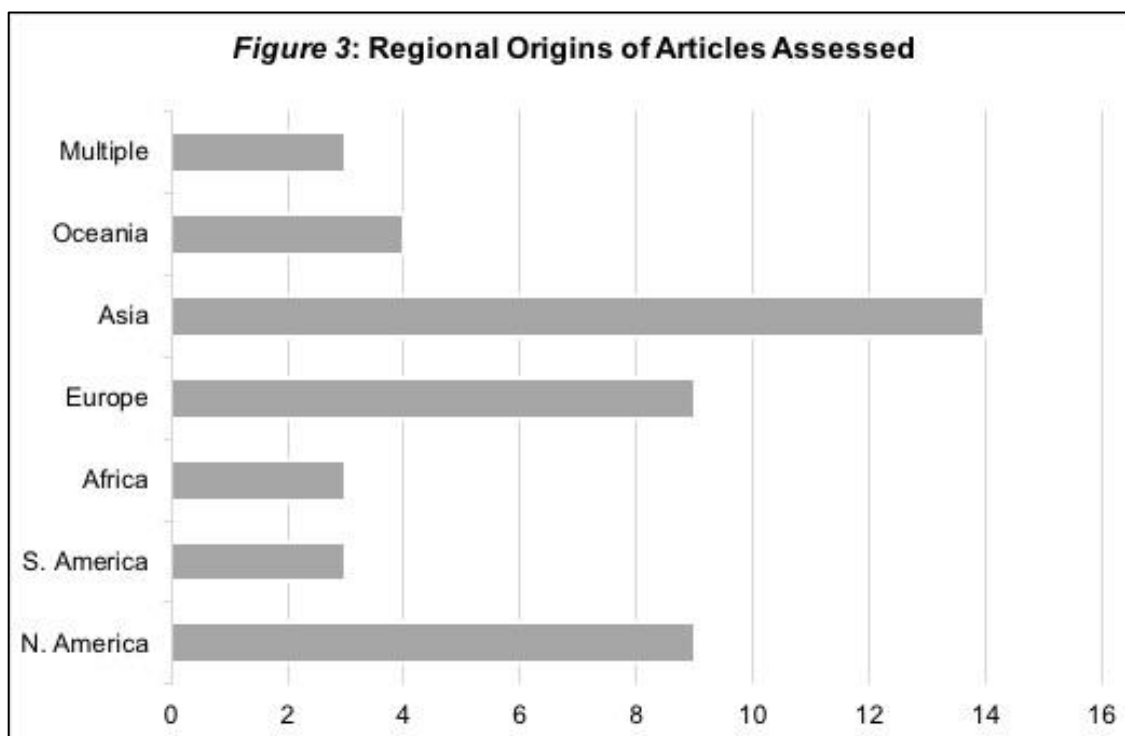
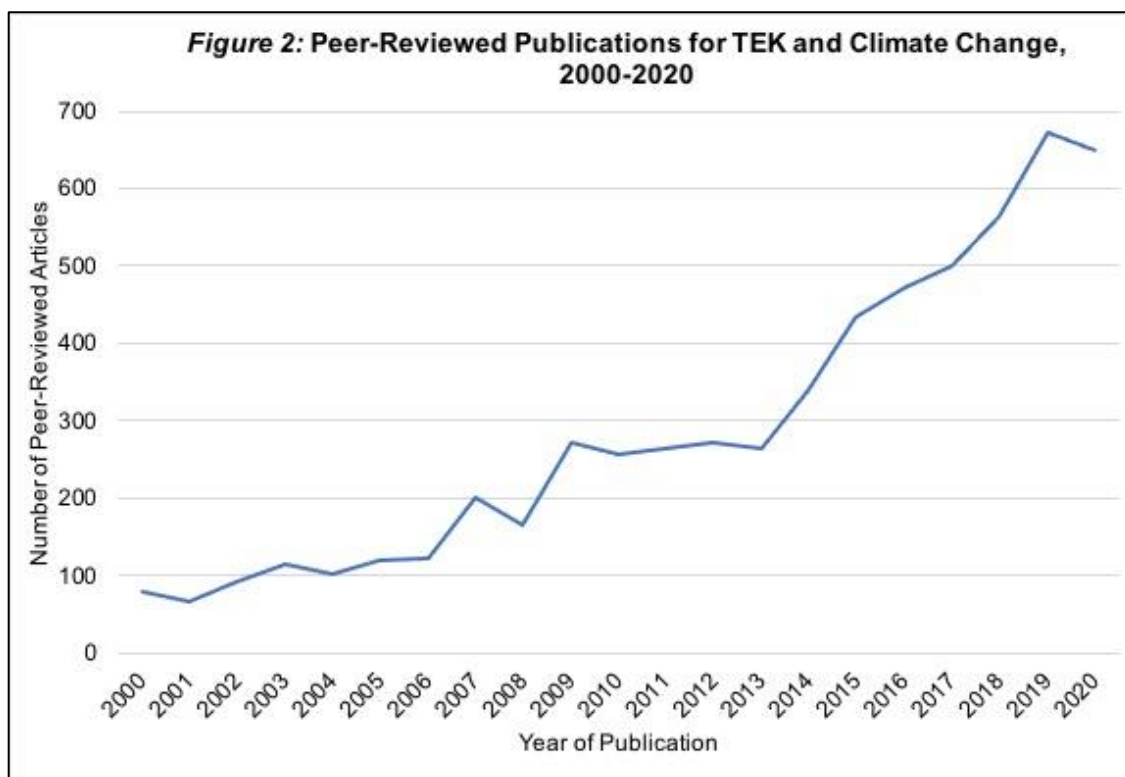


Figure 4: Assessment Articles by Year of Publication

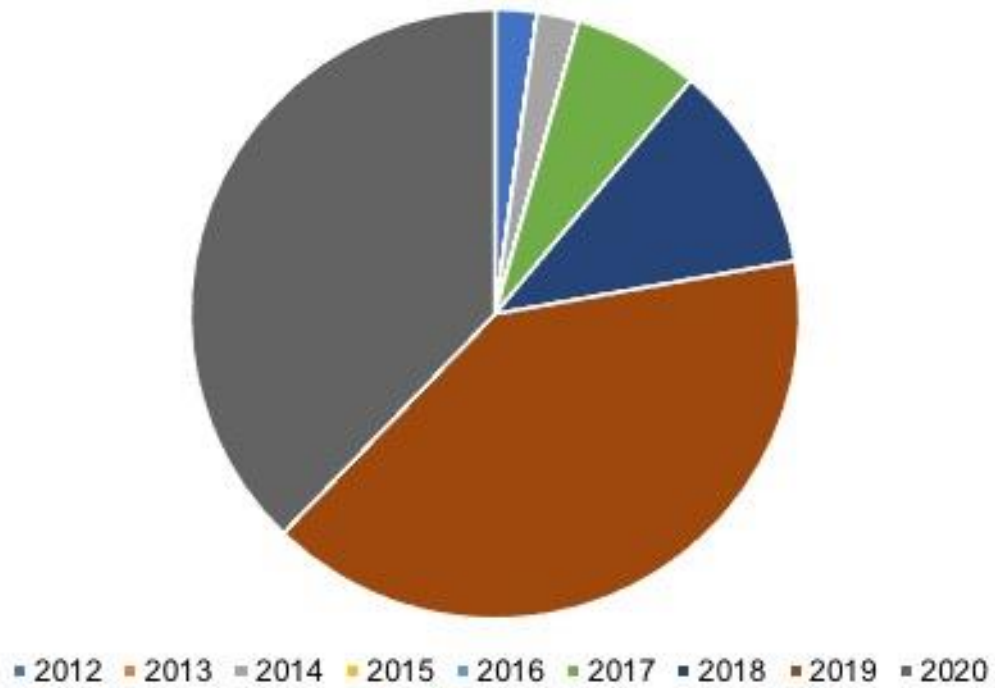
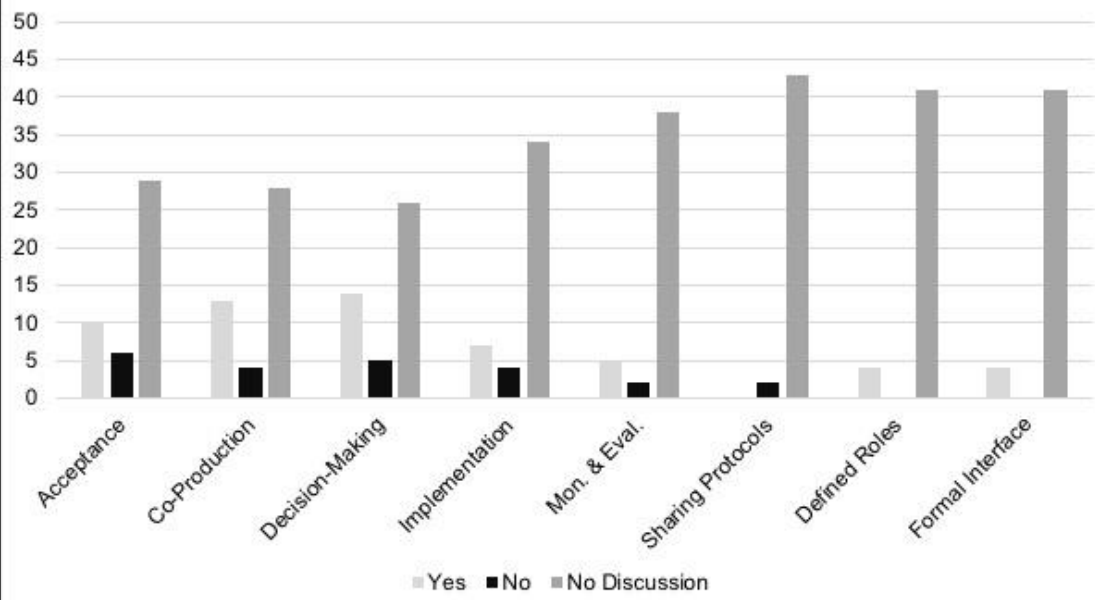
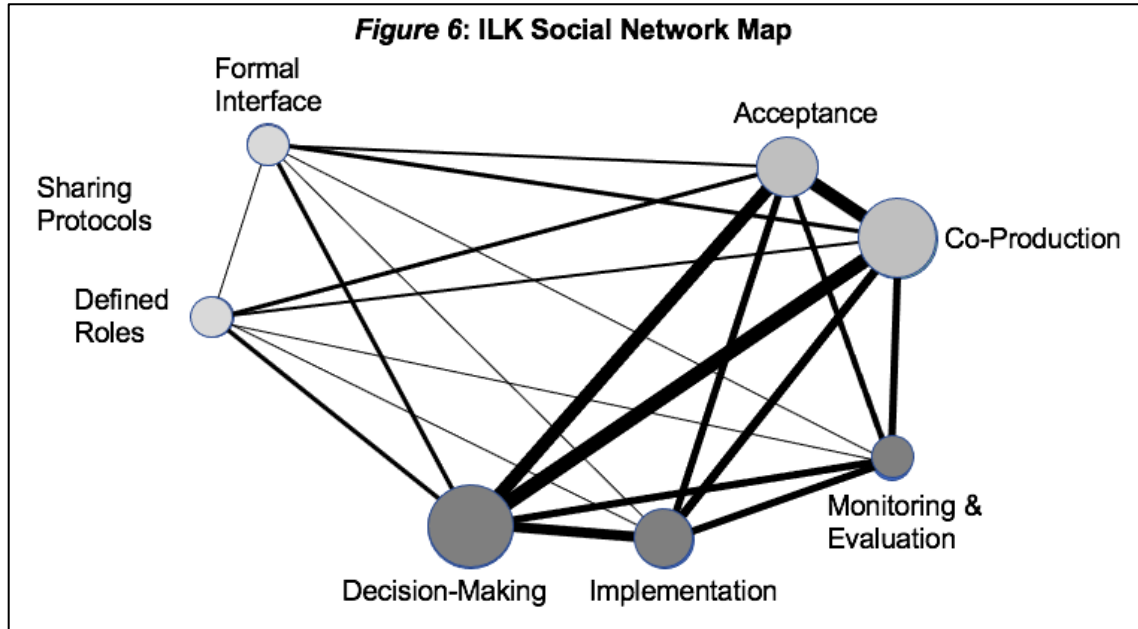


Figure 5: Criteria Discussed in the Assessment Articles





<u>Table 11: Search Queries and Results</u>			
Database	Keywords	Total Results	Relevant Hits
Web of Science	Nature-based solutions + indigenous OR local	108	16
Google Scholar	Indigenous knowledge + nature-based solutions	276	11
Google Scholar	Local knowledge + nature-based solutions	780	16
Google Scholar	TEK + nature-based solutions	66	2
TOTALS		1,230	45

<u>Table 12: ILK Inclusion Criteria</u>		
Criteria	Description	Sources
<u>Validation</u>		
<i>Acceptance</i>	Recognizes the value and contributions of other knowledge systems to the issue	Raymond et al. (2010); Tengö et al. (2014); Cornell et al. (2013); Williams & Hardison (2014); Chang et al. (2020); Klenk et al. (2017); Chisadza et al. (2014)
<i>Co-production</i>	Development of new ways of knowing based on the collaboration and integration of multiple knowledge systems	Nakashima et al. (2012); Tengö et al. (2014); Cornell et al. (2013); Williams & Hardison (2014); Klenk et al. (2017)
<u>Integration</u>		
<i>Decision-Making</i>	ILK considered in the formation of solutions	Makondo & Thomas (2018); Raymond et al. (2010); Tengö et al. (2014); Cash et al. (2003); Vinyeta & Lynn (2013)
<i>Implementation</i>	ILK utilized during the execution of the project	Makondo & Thomas (2018); Raymond et al. (2010); Tengö et al. (2014); Cornell et al. (2013); Vinyeta & Lynn (2013); Klenk et al. (2017); Audefroy & Sanchez (2017)
<i>Monitoring & Evaluation</i>	ILK incorporated into the short- and long-term oversight of the project	Raymond et al. (2010)
<u>Protection</u>		
<i>Sharing Protocols</i>	Guidelines to determine what information will be shared between participants	Chief et al. (2015); Tengö et al. (2014); Cash et al. (2003); Vinyeta & Lynn (2013); Williams & Hardison (2014); Chang et al. (2020)
<i>Defined Roles</i>	Participants are provided with delineated roles and responsibilities throughout the life of the project	Chief et al. (2015); Cornell et al. (2013); Maldonado et al. (2016); Williams & Hardison (2014)
<i>Formal Interface</i>	An entity is designated to mediate between participants from different knowledge systems	Makondo & Thomas (2018); Raymond et al. (2010); Cash et al. (2003)

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Chapter 8. Charting a Climate Resilient Path with Federal Indian Policy

In the case of the Burt Lake Band, lack of federal recognition impairs the tribe's capacity to adapt to climate change. The enhanced access to cultural resources needed by indigenous peoples in Michigan to overcome climate-induced scarcity is highly dependent on treaty rights manifested in mediated consent decrees with the State of Michigan; for now, only federally recognized tribes can participate in this complex regulatory and allocation agreement for key species. Federal funding is similarly restricted, with eligibility often limited to federally recognized tribes or a small sub-set of state-recognized tribes. Finally, the Burt Lake Band's strongest relationships tend to be local and suffer from diminished influence at higher levels where much of climate governance for Michigan and the Great Lakes region takes place. This leaves the Band more vulnerable to the current effects of climate change and provides the community few allies or tools to defend against the anticipated climate shock in the future.

Despite federal recognition playing a prominent role in the climate fortune of the Burt Lake Band, my research suggests that other forces could have a greater role in shaping the Band's climate future. Evidence from chapters 5, 6, and 7 points to relationships outside the tribal-federal dichotomy impacting adaptive capacity more than recognition. In Chapter 5, tribal resource access hinges on sharing regulatory authority and allocation of key species with the State of Michigan. The fact that the tribes involved in the Consent Decree process are federally recognized is not a condition of the court, but rather a condition accepted by the State. Similar to how federal statutes define "Indian

tribe” to regulate eligibility for government programs, the State of Michigan uses recognition as a gatekeeper for tribal interactions on the consent decrees and the Tribal-State Climate Change Forum. In contrast, the Nulhegan Band demonstrates how strong relationships with the state, private companies, and other interest groups can develop and preserve access to key species.

In Chapter 6, access to federal opportunities was in part predicated once again on a tribe’s relationship with its home state. In states where non-federal tribes maintain relationships through state recognition, those tribes benefit from better access to federal programs. This indicates that strong associations outside federal-tribal relations can strongly influence adaptive capacity. Finally, my findings in Chapter 7 show that standards used by state, local, and private entities to confirm indigenous identity and credibility impact tribal participation in climate governance. Therefore, I conclude that it is not federal recognition, per se, that affects a tribe’s adaptive capacity. Instead, it is the standards that other governments and entities use when deciding to engage with federal and non-federal tribes that have greater bearing on climate adaptation. Unfortunately for the Burt Lake Band, eligibility standards to participate in statewide and regional decision-making and the Consent Decree process overseeing resource access are governed by federal recognition status in Michigan. The State of Michigan’s choice not to create and use a state recognition scheme further limits opportunities for the Burt Lake Band by restricting the Band’s eligibility to federal programs made available to state-recognized tribes.

For now, Northern Michigan has not reached an environmental tipping point, unlike parts of Alaska or the Gulf Coast that have precipitated climate-induced displacements of indigenous communities (Maldonado et al., 2013). Instead, the barriers inhibiting the Burt Lake Band's adaptive capacity are political and institutional in nature. The comparison between the Burt Lake Band and the Nulhegan Band emphasizes the greater weight that tribal relationships with entities outside the federal government can have on adaptive capacity. Thus, factors such as state attitudes toward non-federal tribes could signal future climate "winners" and "losers." To avoid these potential disparities in treatment, I recommend changes to federal Indian policy that create a baseline for the climate adaptation and socio-political survival of all indigenous peoples in the United States. However, as demonstrated throughout my dissertation, simple adjustments to the federal recognition process are likely not enough because severe deficiencies exist in nearly every federal Indian policy tool relevant to indigenous adaptive capacity. Therefore, any adjustments to tribal acknowledgment must also be accompanied by significant changes to federal funding mechanisms, enforcement of treaty rights, and improvement in tribal consultation.

A. Acknowledging Adaptive Capacity

The ancestors of Burt Lake and other Northern Michigan bands had the foresight to protect their traditional hunting and fishing grounds by negotiating usufruct rights into their treaties with the U.S. government (Doherty, 1990). But in many circumstances, the regulation and conservation of key species and natural

resources have long been under the purview of the states. In Michigan, the exercise of usufruct rights negotiated centuries ago includes intervening interests of the state government. While tribes are no stranger to working with states on issues of economic development (Tsosie, 1997), law enforcement (Carter & Carter, 2009), and other policy realms, state interference in indigenous subsistence and cultural harvesting practices intercedes into the federal-tribal trust relationship, and in the examples of the Burt Lake Band and the Nulhegan Band in Vermont, can produce very divergent adaptation outcomes based on state preferences in respecting tribal usufruct rights.

Non-federal tribes are not completely shut off from federal funding streams, but unrecognized communities face significant staffing and resource barriers that make applying to the few available programs extremely difficult. There are hundreds of tribes like the Burt Lake Band that are not recognized by either the federal or a state government; these unrecognized communities are also presented with fewer opportunities for federal funding, climate-related or otherwise. Out of the 44 programs evaluated in Chapter 6, only 6 were available to unrecognized tribes, whereas state-recognized tribes could apply for four times as many opportunities. But there is also no guarantee that federal recognition would prove helpful in this respect. There are very few adaptation-driven funding opportunities from the U.S. government, and those programs tend to focus mainly on early stages of adaptation like capacity building, assessment, and planning. For many tribes already experiencing painful effects from climate

change, their needs may be more advanced than the small-dollar grants for workshops or planning sessions current funding opportunities can provide.

Climate change does not respect political boundaries, so interjurisdictional cooperation is occurring at multiple levels of governance in Northern Michigan and elsewhere. Forged through years of interaction, the Burt Lake Band has strong and amicable relationships with its federally recognized peers in Northern Michigan, like the nearby Little Traverse Bay Bands, and many of the local governments and conservation organizations. However, the impacts of climate adaptation activities at the local level thus far are limited, with much of the more robust climate planning and action taking place at the state and interstate level. The Burt Lake Band's lack of recognition often precludes it from eligibility in these higher-level gatherings, such as the 2016 climate adaptation plan produced by the Inter-tribal Council of Michigan for its 12 federally recognized tribal members (ITCMI, 2016). Also, the Band expressed concern that other groups might question their legitimacy and identity without federal recognition, further harming their standing in interjurisdictional climate decision-making. The Band's status constrains its participation in climate governance from local to national levels.

Simply acknowledging each of the more than 400 non-federal tribes will not automatically produce more climate-resilient Native communities. As shown throughout this dissertation, the federal policy tools available for tribal climate adaptation are not sufficient and can even work against the communities those institutions are supposed to support. In Chapter 5, I explained how the Band was excluded from enjoying and enforcing its historical treaty rights for resource

harvesting because the federal government and the State of Michigan only interact with federally recognized tribes on the matter. In Chapter 6, I exposed a major gap between the funding needs for tribes and allocations made by the federal government to support those activities. And in Chapter 7, I demonstrated the weaknesses of tribal consultation policies and how it limits indigenous participation in climate governance and decision-making.

Actions under the new administration of President Joe Biden offer hope for major institutional reform. The recent solicitation by the Bureau of Indian Affairs (BIA) for Tribal Climate Resilience Grants is a step in the right direction, allocating hundreds of thousands of dollars toward tribal climate planning activities (BIA, 2021). However, this solicitation does not address the paucity of funding for implementation highlighted by federal tribes in Chapter 6. Shortly after the BIA grant solicitation, the Biden Administration also announced that it would steer more funding for hazard mitigation to disadvantaged areas (White House, 2021c). Two of the federal tribes interviewed for Chapter 6 noted that mainstreaming climate projects into hazard mitigation plans was one of the few successful ways to fund adaptation activities. Federal funding has traditionally been distributed based on a cost-benefit analysis that discouraged allocation to rural tribal communities (Whyte, 2017), and President Biden's announcement on hazard mitigation funding should contribute to rectifying this historic apportionment injustice. For the fiscal year 2022, the U.S. Department of the Interior has requested an additional \$600 million for tribal programs (Dept. of the Interior, 2021). The agency also asked for \$550 million for climate change

activities in general. Revamping the allocation system and awarding additional funds to tribes for climate change is a step in the right direction to financing tribal climate adaptation.

The uneven adherence to treaty rights by the U.S. government has plagued Indian Country for generations. As the new administration works to fulfill a number of campaign promises to reduce fossil fuel dependency and mitigate harmful climate effects (DNC, 2021), it has struggled to balance environmental initiatives with trust obligations to tribes. For example, as one of his first actions in office, President Biden signed Executive Order 3395 halting new fossil fuel drilling permits on federal and tribal lands. While initially praised by environmentalists, his actions drew the ire of the Ute Tribe of the Uintah and Ouray Reservation that felt the drilling ban violated its treaty rights. One tribe in Northern Michigan even expressed concern that such executive action could spill over into other areas where conservationists might clash with tribal treaty rights, such as commercial fishing in the Great Lakes (Keweenaw Report, 2021). Respect for tribal treaty rights must remain a top concern for the Biden Administration.

As detailed in reports by the U.S. Department of the Interior (Dept. of the Interior, 2017) and the Government Accountability Office (GAO, 2019), the tribal consultation process is often too short to allow for tribes to adequately respond, can overwhelm short-staffed tribal governments with too many requests, can rush through permits before identifying all adverse impacts, and can fail to consider tribal interests in decision-making. Some promising developments

include an order issued by the first Native American Secretary of the Interior, Deb Haaland, that simultaneously reinforces the need for tribal consultation and creates a Climate Task Force (S.O. 3399, 2021). In his first week in office, President Biden similarly issued a memo to the heads of all federal agencies and departments declaring that “fulfilling Federal trust and treaty responsibilities to Tribal Nations, and regular, meaningful, and robust consultation with Tribal Nations [are] cornerstones of Federal Indian Policy” (White House, 2021a). The memo requires that all agencies submit annual reports to the Office of Management and Budget detailing how it fulfills its consultation directive.

President Biden did not stop with a memo. A few months later he reestablished the White House Council on Native American Affairs and identified climate change as one of the Council’s primary interests (White House, 2021b). The Council should address a chief complaint about consultation typically occurring with low-level agency staff; it helps to get tribal officials face time with Cabinet members and senior White House officials. This means that decision-makers for the tribes will convene directly with decision-makers at the federal level. It is a level of participation not often enjoyed by tribal officials and critical to having indigenous voices heard in climate governance.

Another problem with the current iteration of tribal consultation is that it lacks teeth (GAO, 2019). Tribal officials complained that agencies would often treat consultation as a “check the box” exercise because there was no mechanism to enforce accountability. Proposed legislation in the past few sessions of Congress has sought to change that. H.R. 3587 (2021), introduced

by Rep. Raul Grijalva (D- AZ), seeks to codify consultation policy into federal law. While the new text for the bill is not yet available, previous iterations included detailed documentation and reporting requirements, judicial review of decisions under the Administrative Procedures Act, and consultation requirements at two different stages of the process: scoping and final decision (H.R. 2689, 2017). This legislation, along with the numerous orders and memoranda issued by the current Administration, promise hope on improving federal institutions integral to tribal climate adaptation.

B. A New Era in Indigenous Climate Resilience

To effectuate the necessary adaptive capacity to climate change for all indigenous peoples in the United States, I propose a two-stage restructuring of the federal-tribal relationship grounded in indigenous self-determination and a government-to-government relationship that encourages tribal nation-building. No longer should the U.S. government act as an “arbiter of Indian identity” (Klopotek, 2011) but should instead serve as a partner in developing new and resilient tribal institutions that foster vibrant cultural, social, spiritual, economic, and ecological expression. This system would be possible through dissolving the Office of Federal Acknowledgment, so long a vehicle for denying indigenous sovereign rights, and replacing it with what I call the Office of Tribal Sovereignty (OTS).

Entry into the First Stage of the new federal-tribal relationship would be based on the internationally accepted standard of self-identification. The First Stage would include access to all federal programs and grants currently available to federally recognized tribes, but without the confusing and arcane eligibility

standards that rarely match the spirit of the program. Initial entry would also trigger meaningful consultation anytime a federal action impacts tribal communities and resources. Coupled with these important policy considerations, the First-Stage tribes would be supported through the new Office of Tribal Sovereignty, a bureau intended to aid in the development of effective tribal institutions and governments that are ultimately self-sustaining, sovereign, and climate resilient.

First Stage eligibility would be established through self-identification, an international standard that permits indigenous peoples to define their own identity (UNDRIP, 2007). Article 33 of the United Nations Declaration of Rights of Indigenous Peoples (2007) states, “Indigenous peoples have the right to determine their own identity or membership in accordance with their customs and traditions.” Inclusive of this right is the ability to establish membership criteria and institutional structures. The current federal system rejects self-identification and instead relies on an understaffed office with the power to overrule the sovereign expression of entire indigenous communities, denying thousands of indigenous Americans the power to self-identify and pursue self-determination in a culturally appropriate manner.

In its landmark report, the American Indian Policy Review Commission (AIPRC, 1977) recommended a self-identification standard by concluding that “there is no foundation for denying Indian identification to any tribe or community.” Yet, despite acknowledging in a letter to the Burt Lake Band in 1995 that the Band had a historical relationship with the U.S. government and the

current Band was that community's successor (BIA, 1995), a decade later the Office of Federal Acknowledgment would deny recognition to the Band in part because of questions of the identity of some of the Band's members (OFA, 2006). A chief tenet of sovereignty is determining membership (Fowler & Bunck, 1996), and the OFA overrules this authority of the Burt Lake Band and renders the Band something less than a sovereign nation that helped fuel the Great Lakes fur trade, led negotiations for indigenous land cessions that ultimately established the State of Michigan, and skillfully engaged in diplomacy with other tribes, colonial powers, and the fledgling American republic for centuries. If a nation can be denied recognition for exercising its sovereign rights to determine membership and politically organize in ways unconventional to bureaucratic expectations, the recognition mechanism is failing.

Self-determination is also predicated on choice and providing communities the space to make their own decisions about how to engage with other sovereigns. At the moment, the federal recognition scheme is overly costly, time-consuming, and plagued by bureaucratic bias that forces indigenous peoples to conform to a sanitized and romanticized version of Native identity (Klopotek, 2011). Even when recognition is desired and warranted, the OFA is organized in a way to discourage the pursuit of acknowledgment and sovereign rights. This flies in the face of the intent of the AIPRC and international standards in the UNDRIP. A standard of self-identification places the power of choice back into the hand of indigenous communities and removes the financial, temporal, and administrative barriers to pursuing self-determination.

The proposed separation of tribes into stages is not intended to further separate indigenous peoples in a hierarchy but rather group tribes based on institutional advancement and preparedness. Entry into the Second Stage would not occur through subjective examination of identity or historical relationship; instead, it would be based on the development of tribal government institutions and the community's self-determined capacity to assume control over a defined territory such as a reservation or other trust lands. The transition would be spearheaded by the Office of Tribal Sovereignty, a federal entity with the sole responsibility to support indigenous nation-building and the growth of institutional and cultural resilience. Thus, the federal government would shift from "arbiter of Indian identity" to the strongest partner and facilitator of indigenous self-determination. Inherent in the Second Stage is the exercise of historical or newly compacted treaty rights to memorialize access to and co-management of culturally important resources. Participation in the Second Stage also opens up the full range of economic development activities, like gaming, currently available to federally recognized tribes.

The AIPRC report in 1977 found that the U.S. government often rejected its trust relationship with a tribe due to the lack of a land base (AIPRC, 1977). Along with a central political authority and membership criteria, territorial control is regularly associated with sovereign status (Fowler & Bunck, 1996). A Second Stage could ensure that each tribe has territory for unfettered cultural and social expression and the opportunity to participate in the co-management of non-tribal habitats critical to the sustainability of cultural resources. But the mediation over

the Great Lakes fisheries in the 1980s demonstrates that asymmetric power displays between tribes and other governments can leave indigenous peoples at a disadvantage in regional governance structures (Doherty, 1990). Therefore, it would be the responsibility of the OTS to support tribal institutional advancement and help indigenous communities achieve a position where co-management of resources and interjurisdictional governance are more evenly balanced. Inherent in self-determination is the institutional strength to meaningfully engage in any facet of governance and policy important to the community. Through this two-stage system, all indigenous peoples in the United States could express sovereignty, build critical institutions, and access cultural, financial, political, and environmental resources to more effectively adapt to climate change.

C. Conclusion

Even though the Burt Lake Band are a socially and culturally distinct community shaped by their relationship to the Northern Michigan landscape, their experience fighting for the reaffirmation of their recognition status with the U.S. government is hardly unique. Climate change has begun to reshape the Obtawaing's landscape and threaten the Band's long-standing connection to the environment. Federal Indian policy stands in the way of the Burt Lake Band's self-determination and adaptive capacity to climate change. Twenty years ago, a federal circuit judge opined in refusing to overturn the loss of recognition for one tribe that, "Indian nations, like foreign nations, can disappear over time" (Miami Nation v. DOI, 2001). Without restructuring of the government-to-government

trust relationship, hundreds of indigenous communities like the Burt Lake Band could “disappear.”

Cultural survival is a basic human right (Tsosie, 2013). At the same time, sovereignty comes from within a community and is not bestowed by another group. It is time for the U.S. government to step up and empower indigenous peoples to self-determine their own futures and provide them access to resources needed to adapt to the threats of climate change. With federal policy tools geared toward resilient institutions and cooperative governance, the Burt Lake Band and other unrecognized tribes could once again freely express their cultures and become standard-bearers in the global fight against climate change.

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Appendix A. Burt Lake Band Council Questionnaire

Political Background

1. How long have you served on the tribal council? _____

2. Have you held any other leadership positions with the Band?

3. What are the primary responsibilities of the tribal council?

4. Did you serve on the tribal council when the Band was recognized by the State of Michigan?

☐ Yes ☐ No

A. If yes, did state recognition change how the council governed?

B. Did state recognition open up new opportunities to serve the Band?

Community History

5. Did you grow up in the Burt Lake area or spend significant time there?

☐ Yes ☐ No

A. If yes, what types of activities did you do?

B. If yes, what brought the community together (events, activities, etc.)?

6. How has the land, the lake, and the community changed over the years?

A. How have tribal members adjusted with those changes? Is the council able to provide support and resources to members to help cope with the changes?

7. How do you expect the area around the lake to change in the future? Do you think these changes will benefit the Burt Lake Band?

Framing the Issues

8. What are currently some of the biggest challenges/issues facing the Band members?

A. Are these challenges/issues new?

B. How do members deal with these challenges/issues?

9. What are currently some of the biggest challenges/issues facing the council?

Access to Resources

10. Do you regularly hunt or fish (or did you in the past)?

☐ Yes ☐ No

A. If yes, which types of animals and fish?

B. If yes, are these animals and fish easy to find in the Burt Lake area?

11. Do you regularly gather plants for food, medicinal, or spiritual purposes (or did you in the past)?

☐ Yes ☐ No

A. If yes, which ones?

B. Are these plants easy to find in the Burt Lake area?

12. Does the Band have any agreements with landowners, the state of Michigan, organizations like the Little Traverse Conservancy, or neighboring tribes that grant access to these important plants and animals?

13. Has the Band ever participated in the Consent Decree process with the State of Michigan to secure treaty rights for hunting and fishing?

☐ Yes ☐ No ☐ Unsure

A. Is this something the Band would like to be involved with in the future?

B. Do you have any concerns about negotiating an agreement for these rights with the State of Michigan?

14. Has the Band had any past or recent interaction with the Great Lakes Indian Fish and Wildlife Commission (GLIFWC)?

☐ Yes ☐ No ☐ Unsure

A. If yes, what was the reason for the interaction?

B. If no, has the Band ever considered partnering with GLIFWC to improve access to hunting, fishing, and gathering opportunities?

Government Assistance

15. Has the Band ever sought state funding to help with community needs?

☐ Yes ☐ No ☐ Unsure

A. If yes, what types of funding? Was the Band successful in securing the funding?

16. Has the Band ever sought federal funding to help with community needs?

☐ Yes ☐ No ☐ Unsure

A. If yes, what types of funding? Was the Band successful in securing the funding?

17. Has the Band ever sought funding from non-profit or religious organizations to help with community needs?

☐ Yes ☐ No ☐ Unsure

A. If yes, what types of funding? Was the Band successful in securing the funding?

18. Has the Band's recognition status ever impacted its ability to secure funding?

19. What types of programs and services would the Band provide if it had access to greater funding?

Cooperation with Other Governments and Organizations

20. What is the Band's relationship like with nearby towns?

21. What is the Band's relationship like with other nearby entities (i.e., Little Traverse Conservancy, University of Michigan BioStation, etc.)?

22. What is the Band's relationship like with other tribes in Northern Michigan?

23. Does the council seek out partnerships with these groups to help with the needs of the Burt Lake community?

24. Do you feel like these other tribes, organizations, or communities could help the Band with major challenges?

☐ Yes ☐ No

A. Why or why not?

B. Do you think the Band's recognition status plays or could potentially play a role in how other tribes, organizations, and communities view the Band? _____

Looking Ahead to Federal Recognition

25. What benefits do you expect to come from federal recognition?

26. Would federal recognition change how the council governs the Band?

27. Based on your earlier answers about the challenges and issues currently faced by the Band, do you believe that federal recognition will make those challenges easier to address? In what ways?

28. What changes, if any, do you think should be made in how the federal government interacts with tribes it does not currently recognize?

[illegible]

Appendix B. Nulhegan Band Tribal Official Interview Script

Background

1. What position do you hold with the Band?
2. How long have you served in that role?
3. Have you held any other leadership positions with the Band?
4. What are your primary responsibilities?
5. Did you serve as an elected official for the Band when it was recognized by the State of Vermont?
 - A. If yes, did state recognition change how you governed?
 - B. Did state recognition open up new opportunities to serve the Band?

Historical Cultural Connection to Food

6. What foods are traditionally eaten by Band members?
 - A. Are those foods readily available to members now?
 - B. How are those foods secured?
7. For traditional foods that are difficult to access, what are the barriers?
 - A. How long have those barriers been in place?
8. Have members ever adopted substitutes for difficult to access foods?
 - A. If yes, did that have any cultural impacts (i.e.- ceremonies)?
 - B. If yes, did it impact community health?

Relationship with the State of Vermont and other Jurisdictions

9. How does the Band interact with the State?
 - A. Is this done independently or in coordination with other tribes?
10. How often do you interact with State officials?
11. What are the Band's most pressing concerns that require State involvement?

12. How do you plan to grow/improve the Band's relationship with the State in the future?

13. What is the Band's relationship like with nearby towns?

14. What is the Band's relationship like with nearby community organizations?

15. What is the Band's relationship like with other tribes in Vermont/New England/Canada?

16. Does the Band seek out partnerships with these groups to help with the needs of the Nulhegan community?

17. Do you feel like these other tribes, organizations, or communities could help the Band with major challenges?

A. Why or why not?

B. Do you think the Band's recognition status plays or could potentially play a role in how other tribes, organizations, and communities view the Band?

Government Assistance

18. Has the Band ever sought state funding to help with community needs?

A. If yes, what types of funding? Was the Band successful in securing the funding?

19. Has the Band ever sought federal funding to help with community needs?

A. If yes, what types of funding? Was the Band successful in securing the funding?

20. Has the Band ever sought funding from non-profit or religious organizations to help with community needs?

A. If yes, what types of funding? Was the Band successful in securing the funding?

21. Has the Band's recognition status ever impacted its ability to secure funding?

22. What types of programs and services would the Band provide if it had access to greater funding?

Project Overview

23. Please explain the process for securing hunting and fishing rights with the State.

A. Does the Band intend to pursue state legislation in the future as a policy tool?

B. What were the benefits/challenges of using legislation to secure resource rights?

24. How willing was the Federal government to discuss the Band's use of eagle feathers in ceremonies?

A. Do you know of any other non-federal tribes that have this privilege?

B. Have you considered pursuing other rights with the Federal government in this way?

25. Did you encounter any challenges negotiating gathering/harvesting rights with the State, Federal government, or private landholders?

A. Do you have any plans on expanding the geographical range of those rights in the future?

26. What was your pitch in recruiting farmers to participate in the land link project?

A. Are you aware of any other tribes with similar programs?

B. What role do you anticipate VT universities will play in future ag efforts?

27. Is the Band still missing the capacity to perform any cultural activities around the harvesting of food?

A. Any plans on how to fix it?

28. Which of the different policy tools we've discussed do you find to be the most useful/successful?

Appendix C. Interview Script for Federal Tribe Climate Managers

Background

1. What is your current position with the tribe (or organization working closely with the tribe)?
2. Have you held any other positions with the tribe?
3. How long have you worked with or for the tribe?

Plan Development

4. Did you participate in the drafting of the tribe's climate adaptation plan?
 - A. If yes, what role did you play in the plan's development?
 - B. Was development led by members of the tribe or an outside institution (like a local university or non-profit)?

Plan Implementation

5. Is the tribe currently pursuing any of the goals or action items listed in the adaptation plan?

If yes:

- A. How far along is the tribe in completing its climate adaptation goals?
- B. Which tribal government departments are involved in the projects? Are outside institutions or organizations also involved?
- C. How is the tribe funding these projects?
- D. Has the tribe encountered any roadblocks in completing its climate adaptation goals?

If not:

- A. What barriers does the tribe face in implementing the adaptation plan?
- B. Do you expect these barriers to ease up in the future?

C. Has the tribe considered addressing climate planning through other planning documents like hazard mitigation or emergency response?

Plan Maintenance

6. Does the tribal council/government have a committee or group that meets regularly to discuss progress on the adaptation plan?

7. Does the tribe plan on updating the adaptation plan in the future? If yes, is there a person designated to lead the update process?

Reflections

8. Is there anything you would change about the process of creating the adaptation plan? Is there anything that you felt worked well?

9. Anything you would add or remove on an update?

10. Is there anything that you feel other institutions (like the federal government or non-profit organizations, for example) could contribute to either plan development or implementation?

11. Do you think tribes can effectively adapt to climate change without participating in activities like the creation of adaptation plans?

12. Any advice for other tribes considering writing their own climate adaptation plans?