ABSTRACT

Title of Thesis:	INDIGENOUS INVOLVEMENT IN ECOLOGICAL RESTORATION: AN ANALYSIS OF VIRGINIA'S SOVEREIGN NATIONS INVOLVEMENT IN THE CHESAPEAKE BAY PROGRAM
	Nicole Lousie Brooks, Master of Science, 2023
Thesis Directed By:	Associate Professor, L. Jen Shaffer, Anthropology
	Professor, Kenneth A. Rose, Horn Point Lab, UMCES

Indigenous involvement in conservation and restoration practices, specifically those funded by government entities (e.g., EPA, USGS, NOAA), is not well documented in the Mid-Atlantic region of the United States. Increased Indigenous involvement in conservation and restoration projects globally, raises questions regarding this apparent environmental practice gap in the Eastern United States (McAlvay, 2021; Poto, 2021; Turner, 2010). Currently, government-led restoration projects in the Chesapeake Bay, led by the Chesapeake Bay Program, lack a strong Indigenous presence or contribution despite 7 federally-recognized Sovereign Nations in the surrounding watershed. To understand this gap, a literature review was first conducted to provide an initial context for viewing the contemporary Indigenous involvement in Chesapeake Bay restoration. The review was the basis for a detailed analysis of Virginia's Sovereign Nation involvement in the Chesapeake Bay Program that used a series of interviews, participant

observations, and a social network analysis. Interview participants were classified into one of three representative categories: Sovereign Nation, government organization, and non-government organization. Questions about working relationships between organizations were assessed to understand the political-ecological dynamics driving the interactions in the Chesapeake Bay restoration social network, specifically among the representative categories. Results showed a lack of a consistent and intentional relationship between the Sovereign Nations of Virginia and the Chesapeake Bay Program. According to the federal trust relationship, this infers that the lack of a strong Sovereign Nation involvement in the Chesapeake Bay Program may be contributing to a continued state of Environmental Injustice. To begin to address this low-level of involvement, the Chesapeake Bay Program should devote significant effort to building intentional relationships with the Sovereign Nations, including a more formal and official representation within the Chesapeake Bay Program.

INDIGENOUS INVOLVEMENT IN ECOLOGICAL RESTORATION: AN ANALYSIS OF VIRGINIA'S SOVEREIGN NATIONS INVOLVEMENT IN THE CHESAPEAKE BAY PROGRAM

by

Nicole Louise Brooks

Thesis submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Master of Science
2023

Advisory Committee:
Professor L. Jen Shaffer, Chair
Professor Kenneth Rose, Co-Chair
Professor Barnet Pavão-Zuckerman, Committee Member

Foreword

Often it is easier to hold to existing beliefs than to consider an alternative. That was the exact place I found myself in when I first started discussing the research of Nicole. I had grown up in Southeastern Alaska, a unique place in which the Alaska Native's exhibit significant power through regional corporations. This first-hand knowledge of the interactions between Indigenous peoples and governmental organizations gave me an air of confidence that was quickly destroyed. When presented the opportunity to question my own understanding or to dig in, I chose curiosity and it paid off. I spent many days and nights deep in conversations with Nicole, challenging both of our perspectives and understanding. Nicole is passionate about the culture and goals of the First Nations and ecological preservation, specifically in the Chesapeake Bay Watershed. She worked tirelessly to build relationships with key stakeholders in the restoration effort to ensure the accuracy and depth of her research. Those countless hours had a profound effect on her as a person and through her many others. She has strengthened her own relationship with her heritage, while navigating the friction of the nuanced restoration process. Through her research it became clear to me, and hopefully to you as well, that the flow of information was not as simple as I first thought, and more so, it is merely the tip of the iceberg of challenges faced by those engaged in the collaborative restoration effort.

-Kelci Redding
Business Systems Analyst
Mentor to Author

Dedication

I dedicate this research to nəkɑnəsohsak, Peskotomuhkatihkuk, and Pɑnawɑhpskewahki. You have dreamed me into the future, and I will not forget the center of my circle.

Acknowledgements

I would like to express my utmost gratitude to all who have helped and supported me during this process. If you are not named but still provided support in some way, then please know that I am grateful for you as well. I would like to begin by thanking the Sovereign Nations who generously gave their time and energy to share their stories during the interview process. This research focuses on the experiences of the federally-recognized tribes of Virginia, and therefore without the participation of the Chickahominy Indian Tribe, the Chickahominy Indian Tribe – Eastern Division, the Nansemond Indian Nation, and the Rappahannock Indian Tribe, this research would not exist. I would like to continue by thanking the organizations that have either supported me during this process or participated in research proceedings. Those supporting entities are the University of Maryland - College Park and the Garden Clubs of America. Their institutional support provided the opportunity to conduct this research in the first place. Those participating entities are the Chesapeake Bay Program, the Chesapeake Conservancy, the Chesapeake Bay Foundation, the Environmental Protection Agency, and the National Park Service. Their participation during the interview process is one that I value greatly. I would also like to thank my Thesis Committee: Barnet Pavão-Zuckerman, Jen Shaffer, and Kenneth Rose. Your guidance and encouragement throughout this process has been vital to my success, and I genuinely appreciate all that you have done. An individual I would like to thank is Kelci Redding, whom assisted me throughout the writing process and provided feedback in cases of uncertainty. Most of all, Woliwon Kci-Niweskwa (thank you creator) for everything.

v. Table of Contents

vi. List of Tables

vii. List of Figures

viii. List of Abbreviations

APNEP - Albemarle-Pamlico National Estuary Partnership

CBP - Chesapeake Bay Program

CBF - Chesapeake Bay Foundation

DAPL - Dakota Access Pipeline

DEQ - Virginia Department of Environmental Quality

EJ - Environmental Justice

EPA - Environmental Protection Agency

GO - Government Organization

ICC - Intertribal Conservation Council

IEJ - Indigenous Environmental Justice

IPE - Indigenous Political Ecology

ITEK - Indigenous Traditional Ecological Knowledge

NGO - Non-Government Organization

NPS - National Parks Service

SN - Sovereign Nation

STAC - Science and Technical Advisory Committee

RTOC - Regional Tribal Operations Committee of the EPA

TDML - Total Daily Maximum Load

Chapter 1: Introduction

Background

Contemporarily, western society is actively trying to compensate for past and ongoing impacts to the environment and for the continuing disenfranchisement of the Sovereign Nations that have inhabited North America since before colonialism. The Sovereign Nations of the Chesapeake Bay watershed had a sustainable and stable relationship with the Bay and its surrounding ecosystem for thousands of years during the pre-contact period. After 1607, the European colonists and enslaved Africans that settled in this region did not possess the same learned relationship or an understanding of how to maintain a sustainable and resilient exchange with this ecosystem as the resident Sovereign Nations. The colonization of North America was the beginning of escalating negative impacts on the Bay's health and impairment of its ability to provide ecosystem services (Kennedy, 2018; Phillips and McGee, 2016). The decline of Chesapeake Bay Sovereign Nations and their ability to conduct traditional management practices, combined with the increasing development of the watershed by society since the onset of colonization, has resulted in degradation of the Bay's ecological and environmental state.

In 1983, a major initiative was started that recognized and documented the degraded conditions of the Chesapeake Bay, beginning a multi-decadal effort to restore the health of the Bay. The Chesapeake Bay Program (CBP) is a federally-funded program that began with the Environmental Protection Agency, the

Chesapeake Bay Commission, and the Governors of Maryland, Virginia, Pennsylvania, and the District of Columbia as its managing signatories. In 2000, New Jersey, Delaware, and West Virginia were added, expanding the partnership to all states that hold territory in the watershed. The EPA is the major funding body of this partnership, and has the final say in decision-making within this partnership. The goals of the restoration were also expanded in 2014, and additionally amended in 2020, with the Chesapeake Bay Watershed Agreement (Chesapeake Bay Program, 2020). These updated goals maintained the goals of achieving the water quality standards, while also expanding the goals to include a much broader set of biological and ecological states, as well as initiatives on stakeholder engagement, inclusivity, and access. These new and expanded goals provide a direct connection for increased Indigenous involvement in the restoration process.

In this thesis, I investigate the relationship and levels of involvement of Virginia's Sovereign Nation voices in the Bay restoration, specifically with regards to the CBP. Ensuring the inclusion of Sovereign Nations as stakeholders is crucial to the continued improvement of U.S. Government-Indigenous relations and our national relationship with the environment. The oral traditions and experiential teaching styles of the Chesapeake Bay watersheds Sovereign Nations have time-tested knowledge of Bay ecology and sustainable resource use. This canon of oral collection and transmission allows for the continued survival of their traditions and relationship with their ancestral lands. Further, the potential role of Indigenous Traditional Ecological Knowledge in ecosystem management and restoration is increasingly being

recognized and incorporated into planning and evaluation of alternative management actions (Poto, 2021). The direct input of the Sovereign Nations within the CBP has the potential to recenter representation, policies, procedures, and decision-making to achieve Chesapeake Bay Watershed Agreement goals (2020). Sovereign Nations have capability to refine, broaden, and improve the specifications of Chesapeake Bay baseline conditions, and additionally the restoration goals and objectives within the CBP.

The states within the Chesapeake Bay watershed are the ancestral homes of 25 government-recognized Sovereign Nations, including both federally-recognized and state-recognized tribes. Those tribes are represented by 11 state-recognized in Virginia, 3 state-recognized in Maryland, 2 state-recognized in Delaware, and 9 state-recognized in New York. There are 8 Sovereign Nation communities that are state-recognized within the Virginia bounds of the Chesapeake Bay watershed, and 3 state-recognized tribes within the Maryland bounds of the watershed (Virginia Secretary of the Commonwealth, 2022; Maryland Commission on Indian Affairs, 2020). The only state territory in the watershed that holds federally-recognized tribes is in Virginia, in which 6 of 7 are federally-recognized and within the watershed (Bureau of Indian Affairs). Their inclusion in government-led restoration efforts is a form of Indigenous Environmental Justice (IEJ) that can correct past historical, ethical, and legal wrongdoing to the Sovereign Nations of the Bay watershed. Closer interactions have the potential to positively affect the relationship between the Sovereign Nations of the

Chesapeake Bay and the Federal, State, and local governments, NGOs, and other stakeholders.

Ensuring that Sovereign Nation's cultural considerations are a basic part of the decision-making processes can be one way of upholding Indigenous Environmental Justice. Partially due to a series of legal decisions (e.g., Boldt Decision on treaty fishing rights, United States v. Washington, 1974), more progress has been made with Native American involvement in aquatic ecosystem restoration on the West Coast of the US, and I will use their experiences to inform this investigation going forward.

Research Questions

Indigenous involvement in conservation and restoration practices funded by government entities (e.g., EPA, USGS, NOAA) is not well documented in the coastal Mid-Atlantic region of the United States. Increased inclusion of Indigenous people and their Indigenous Traditional Ecological Knowledge in conservation and restoration projects globally raises questions regarding this apparent environmental practice gap in the Eastern United States (McAlvay, 2021; Poto, 2021; Turner, 2010). Currently, restoration projects in the Chesapeake Bay lack a strong Indigenous presence or contribution despite several ancestrally-rooted tribes in the surrounding area that have stewardship rights to their homelands and could additionally provide contextually appropriate ITEK. History documents several Sovereign Nations of Maryland, Virginia, and Delaware (Delmarva) who lived along the Bay's shores and

harvested the lands and waters, developing a locally sustainable and balanced relationship that lasted for thousands of years prior to European colonization (Kennedy, 2018; Ricka, 2016). Their knowledge and practices can provide valuable information to incorporate as government agencies and non-profit organizations, operating through the Chesapeake Bay Program, seek to restore and conserve the Bay through watershed management. Further involvement could also serve as an additional contribution to restoring Indigenous Environmental Justice. Through my thesis research, I seek to understand Indigenous engagement with Chesapeake Bay restoration and the potential for restoring both IEJ and the Bay via collaborative work with Sovereign Nations.

My research is guided by the following 3 questions:

1. ***What is the current relationship between the Chesapeake Bay Program and the Sovereign Nations of Virginia?***
2. ***How do the power dynamics between the CBP and stakeholders affect the involvement of Virgina SNs in the Bay's restoration?***
3. ***What aspects of government-directed environmental projects could be positively affected with more Virginia SN involvement and relationship improvement on the Chesapeake Bay?***

I address these questions using semi-structured interviews with key members of the CBP, other relevant governmental organizations, the Virginia federally-

recognized SNs, and relevant non-government organizations. This is followed by a Social Network Analysis with participating Virginia SNs, the CBP, and other relevant organizations to examine the current nature of their relationship and how this may be shaped by existing power dynamics in greater detail. Additionally, I use participant observation with the Virginia SNs and the CBP to understand how the SNs can have more input in restoration practices if it is not currently sufficient.

Implications

Using the CBP as a case study, this research expands the literature available on the visibility and application of Indigenous involvement in restoration and conservation practices and planning, as well as gives new insights to advancing Indigenous involvement in large-scale coastal restoration. The results will also help to expand the knowledge of how Indigenous involvement can be increased and expanded within the challenge of attempting to restore large-scale, highly productive, and highly complex estuaries. In doing so, this could potentially start restoration and conservation projects on a more informed and sustainable path from their beginning, increasing project efficacy, longevity, and sustainability. It could also help the development of a standard framework on how to approach restoration with the history of the land and its people at the forefront of planning, maintaining the idea of nature and humans being entities in a coupled system that constantly affect one another.

Additionally, this research will shed light on Indigenous-Government relations within the Chesapeake Bay restoration. The process could lead to closer

interactions and contribute to the decolonization and reclaiming of Indigenous environmental management traditions surrounding the Bay, a legal and ancestral right of the Sovereign Nations. This will make Bay restoration efforts more accessible from a grassroots perspective and expand the involvement of stakeholders, which is a stated goal of the CBP. The results can also help adjust the current method of conducting restoration projects to more closely align with the way the Sovereign Nations care for the land, and can inform future restoration as the CBP approaches a milestone assessment of progress in 2025 and beyond.

Chapter 2: Literature Review

Introduction

The inclusion of Indigenous people in the planning, facilitation, and management of ecological restoration projects has slowly grown since the 1980s; however, this progress is not uniform throughout North America. Much of this inclusive work has been focused on the northwestern coast of North America, and more specifically the western United States and throughout Canada (Anderson, 2006; Delevaux et al., 2018; Hunn et al., 2003; Turner et al., 2000). An additional example of inclusive work can also be found on the Penobscot river in Maine (Fox et al., 2022). The purpose of this chapter is to further investigate this gap in knowledge and its causes by examining published material.

Indigenous people have a unique relationship with the lands of North America, and their inconsistent level of visibility and involvement in ecological restoration projects works against the goals of United States government-level policies to engage with that relationship (Lander & Mallory, 2021; Prabhakar & Mallory, 2022; The Domestic Policy Council, 2022). Indigenous people of the United States have lived in a healthy and stable relationship with the environment for more than15,000 years (Chesapeake Bay Program, 2020; Custer, 1986; Kennedy 2018). During this time, these Sovereign Nations developed deep relationships with their ancestral lands, which is expressed in one way via Indigenous Traditional Ecological Knowledge (ITEK). These relationships add valuable perspective and process for

understanding social-ecological relationships from a different spatial and temporal context.

Understanding this, there have been significant efforts to include Indigenous people and their ITEK in ecological restoration on the West Coast of the United States and in Canada (Anderson, 2006; Delevaux et al., 2018; Hunn et al., 2003; Turner, Ignace, and Ignace, 2000). Whether or not these attempts are seen as successful among Sovereign Nations on the West Coast is explored in this review. However, this level of involvement is not universal across the US. In 2010, Executive Order 13508 federally mandated that the Chesapeake Bay be protected and restored, and the Chesapeake Bay Watershed agreement was renewed in 2014 with recent amendments in 2020 (Chesapeake Bay Program, 2020; Loop, 2010). These policies presented another highly visible opportunity for consultation and inclusion of Sovereign Nations in ecological restoration. Additionally, a memorandum from the federal government, published in 2021, describes a commitment to the consultation of Sovereign Nations and inclusion of ITEK in federal decision-making (Council on Environmental Quality, 2021).

As of 2022, my analysis did not indicate any strong presence of Sovereign Nations in the Chesapeake Bay Program. Yet there are contemporary Sovereign Nations that exist within the Chesapeake Bay Watershed who hold a place-based relationship with the region. Two examples of this are the Pamunkey Indian Tribe and the Mattaponi Indian Tribe, both of which hold reservation lands in Virginia. None of

the other state territories residing in the Chesapeake Bay Watershed (New York, Pennsylvania, Maryland, West Virginia, and Delaware) have federally-recognized Sovereign Nations whose territory lies within watershed bounds as of 2022. It is not known whether this lack of visible participation by Indigenous people on the Mid-Atlantic coast of the United States is because of potential political-ecological relationships that are specific to the region.

The goal of this analysis is to identify and summarize synthetic findings and themes within environmental restoration, ITEK, Political Ecology, and Environmental Justice literature. Identifying aspects of restoration efforts that were successful and those that were identified as roadblocks within the current body of literature will provide a foundation for research on the inclusion of Indigenous people in the Mid-Atlantic region, specifically in the government-mandated restoration of the Chesapeake Bay.

Theory and Frameworks

Indigenous Environmental Justice Challenges

To understand the challenges of any current and potential Indigenous involvement in ecological restoration, we must first understand the overall Environmental Justice conditions, and more specifically Indigenous Environmental Justice conditions, being faced by Indigenous people. There is a distinction in the literature between EJ and IEJ. Whereas EJ covers the equitable distribution of environmental impacts and

benefits, IEJ builds on those foundations and extends the discussion into supporting opportunities for Indigenous people to build and maintain relationships with creation in their traditional ways as an additional part of restoring justice. Sovereign Nations are protected by both domestic and international law, and therefore have all the rights and privileges associated with such laws including IEJ (Warner, 2017).

Environmental Justice and, more specifically, Indigenous Environmental Justice provide an important lens through which to analyze Indigenous experiences with government entities (federal, state, and local) and non-government entities (non-profits, local activist groups, academia, private sector) in relation to decision-making surrounding our collective environmental concerns. EJ in the literature is described as the equitable distribution of environmental impacts and benefits no matter the race, gender, or economic class. As it is generally understood, EJ focuses heavily on distributive justice with consideration to procedural justice, recognition justice, and, occasionally, restorative justice (Hernandez et al., 2019; Ishiyama, 2003; Parsons et al., 2021). However, not all these approaches include a cultural component that considers the differences between framing justice in a colonizer context versus framing it in an Indigenous context. This initial high focus on distributive justice has oversimplified the politics surrounding the environmental justice conception of Indigenous people, which relies more on reciprocal justice principles (Hernandez et al., 2019; Parsons et al., 2021; Schlosberg and Carruthers, 2010). High dependence on distributive justice is not enough to correct injustices faced by Indigenous people.

Much of the injustices faced are rooted in a lack of co-production of the policy created surrounding Indigenous people and their rights (Warner, 2017).

Though it may have good intentions, the Environmental Justice framework leaves other invisible injustices unaccounted for in Indigenous experiences. Some examples of these injustices are the devaluing of ITEK, loss of key cultural food sources such as berries and salmon, and loss of forage materials such as traditional basket grasses and medicinal plants (Cuerrier, 2015; Oberholzer et al., 2023; Tsuji, 2021). These invisible injustices have, in the recent past, left a gap in the research for the EJ of Indigenous people despite the increase in overall inquiry on EJ (Proulx et al., 2021; Turner, 2008; Vickery & Hunter, 2016). A contemporary example of a situation of EJ noncompliance is the Dakota Access Pipeline. The manner in which the situation was handled is environmentally unjust, in that it is noncompliant with the trustee relationship between the federal-government and federally-recognized Native American tribes (Warner, 2017). A more tailored version of EJ is necessary for Indigenous communities.

There have been several cases of Indigenous environmental injustice being taken to the federal government of the United States; some cases have tribes working against one another (Backcountry Against Dumps v. U.S. Bureau of Indian Affairs, 2022; California v. Bureau of Land Management, 2020). In other cases, tribes are denied review (Indigenous Peoples of the Coastal Bend v. U.S. Army Corps of Engineers, 2023; White Earth Nation v. Kerry, 2015). It is the responsibility of the

federal government to protect the sovereignty of tribal governments via the trustee relationship established due to the past wrongs done to Indigenous people via colonization. In many EJ cases brought to federal court, they fulfill their trustee role (Backcountry Against Dumps v. U.S. Bureau of Indian Affairs, 2022; California v. U.S. Bureau of Land Management, 2018; Crow Indian Tribe v. United States, 2018; United States v. Washington, 1974). Some cases may even get resolved and dropped before they are assessed for legal review; the Biden administration has done some proactive work on this front (Pascua Yaqui Tribe v. EPA, 2022; Rosebud Sioux Tribe v. U.S. Department of the Interior, 2019). An additional example of a way the federal government can uphold trust and protect sovereignty would be actions to further ensure adequate representation of Sovereign Nations in the federal government's decision-making processes surrounding environmental policy and programs. This would further assist tribes with regaining their IEJ.

Issues That Challenge Indigenous Involvement in Ecological Restoration

So how do we go about creating a space for Indigenous people to experience Environmental Justice from their contextual worldview? When EJ acknowledges tribal sovereignty, Indigenous Environmental Justice is born. At first there were attempts to continue fitting IEJ into the EJ box; one example incorporated Indigenous pillars into EJ studies and created an EJ atlas for Indigenous people (Hernandez et al., 2019). Though this is a worthy first step toward IEJ, it is not true to the context of the Indigenous worldview which varies broadly from community to community. IEJ is distinct from EJ in that, though it holds many similar sentiments, IEJ considers

Indigenous rights and relationships with creation (McGregor, 2018; McGregor, Whitaker, and Sritharan, 2020; Parsons et al., 2021; Schlosberg and Carruthers, 2010).

Many obstacles, however, have stood in the way of establishing and maintaining IEJ. Many of these are related to the dominant social paradigm's perception of justice, leaning mostly on the distributive, procedural, and recognition conceptualizations. Distributive justice in this case has been unhelpful, in that there is a need for the redistribution of power in environmental decision-making. This inequitable distribution of power, which favors colonizer social conceptions, is a manifestation of the failure of the government to recognize the applicability of cultural values, knowledge, and worldviews to environmental decision-making (McGregor et al., 2020; Middleton, 2015; Schlosberg and Carruthers, 2010; Tsuji, 2021). What does this kind of consideration look like for Sovereign Nation communities? It means honoring tribal sovereignty agreements, honoring the trustee relationship between the federal government of the United States and Sovereign Nations, and the implementation of cultural justice (Warner, 2017). If we are to ensure IEJ is accomplished, this will take a significant paradigm shift in the broader EJ community.

A paradigm shift needs to begin with understanding the focus of IEJ, which emphasizes a broad, pluralistic approach that is community-based and capabilities-centered. The EJ community would also have to recognize the requirement for tribal-

specificity when it comes to the IEJ needs of distinct communities (Barnhill-dilling et al., 2019; McGregor et al., 2020; Middleton, 2015; Hernandez et al., 2019; Schlosberg and Carruthers, 2010). Considering tribal specificity is important due to the variable parameters of what sovereignty looks like for each tribe, which is distinct to Indigenous jurisprudence (Middleton, 2015). IEJ also places a high value on intergenerational considerations - how what we do to the environment now will affect our future generations (Parsons et al., 2021). Focusing on community-based and capabilities-centered IEJ, which focuses on Indigenous world-views and values, encourages positive relationships when facilitating Indigenous involvement This contextual shift prevents roadblocks and exclusionary decision-making processes in ecological restoration, and benefits Sovereign Nations.

The federal government of the United States of America holds a trustee relationship with the federally-recognized Indigenous tribes whose ancestral homes resided in the borders of the United States. An important clarification of this relationship is stated that any policy or law in the federal government that affects Indigenous Americans is to be ruled liberally in their favor due to the federal responsibility to protect tribal sovereignty with full efforts (Warner, 2017). Failures in carrying out the responsibilities associated with this relationship have led to an extensive list of Indigenous environmental injustice cases being initiated against the U.S. federal government. Some examples of these are the Backcountry Against Dumps v. U.S. Bureau of Indian Affairs (2022), California v. U.S. Bureau of Land Management (2018), and Crow Indian Tribe v. United States (2018). There are some

instances that have been unsuccessful when it comes to ruling in favor to correct the occurring injustice, such as the three examples cited above as well as the additional examples of Indigenous Peoples of the Coastal Bend v. U.S. Army Corps of Engineers (2023) and White Earth Nation v. Kerry (2015). Understanding contemporary examples of how the federal court system is treating IEJ cases helps to clarify current relationships between the federal government and Indigenous communities.

The Dakota Access Pipeline is a distinct and clear example of breaching the trustee relationship between tribes and the federal government. To be more specific, the silence of the tribal governments to be consulted, when being contacted for consultation, was interpreted as an affirmation for the project to begin as planned on the pipeline (Warner, 2017). In this case, a problematic line of thinking was added to the consultation process, in which the government is under the assumption that all tribes have the internal capacity to make legal decisions and enact their sovereignty at any given time. This is a false belief, in that many are unable to give consent at this time because of their capacity limitations (Warner, 2017). To be concise, there is a "if they want to, they will" mindset, which ignores the challenges of reestablishing tribal governments after colonization: perpetuating Indigenous Environmental Injustice.

The federal government is not the only level that is struggling with establishing and maintaining IEJ. Interestingly, IEJ is a struggle to uphold in state and local governments due to the inconsistency of recognition justice and its

implementation. Procedural justice for Indigenous people at the local level is most often reduced to words on a page: meaning, the policy is there, but the policy is rarely acknowledged and upheld (Ishiyama, 2003; Whyte, 2011). Due to these common occurrences surrounding the upholding of IEJ, restorative justice is being called for in the literature as a solution. Restorative justice, or reconciling past injustices, is needed as a new anchor in the dominant EJ paradigm if the colonial context is going to continue to be used in an effort to support IEJ (Fox et al., 2022; Meyer, 1998). An example of restorative justice could be the appropriate representation of tribes in environmental decision-making processes, from inception to end, of any projects or procedures that directly affect Indigenous livelihoods. This will assist with the redistribution of power so that the continued establishment of IEJ can be given a solid support system in the dominant social landscape.

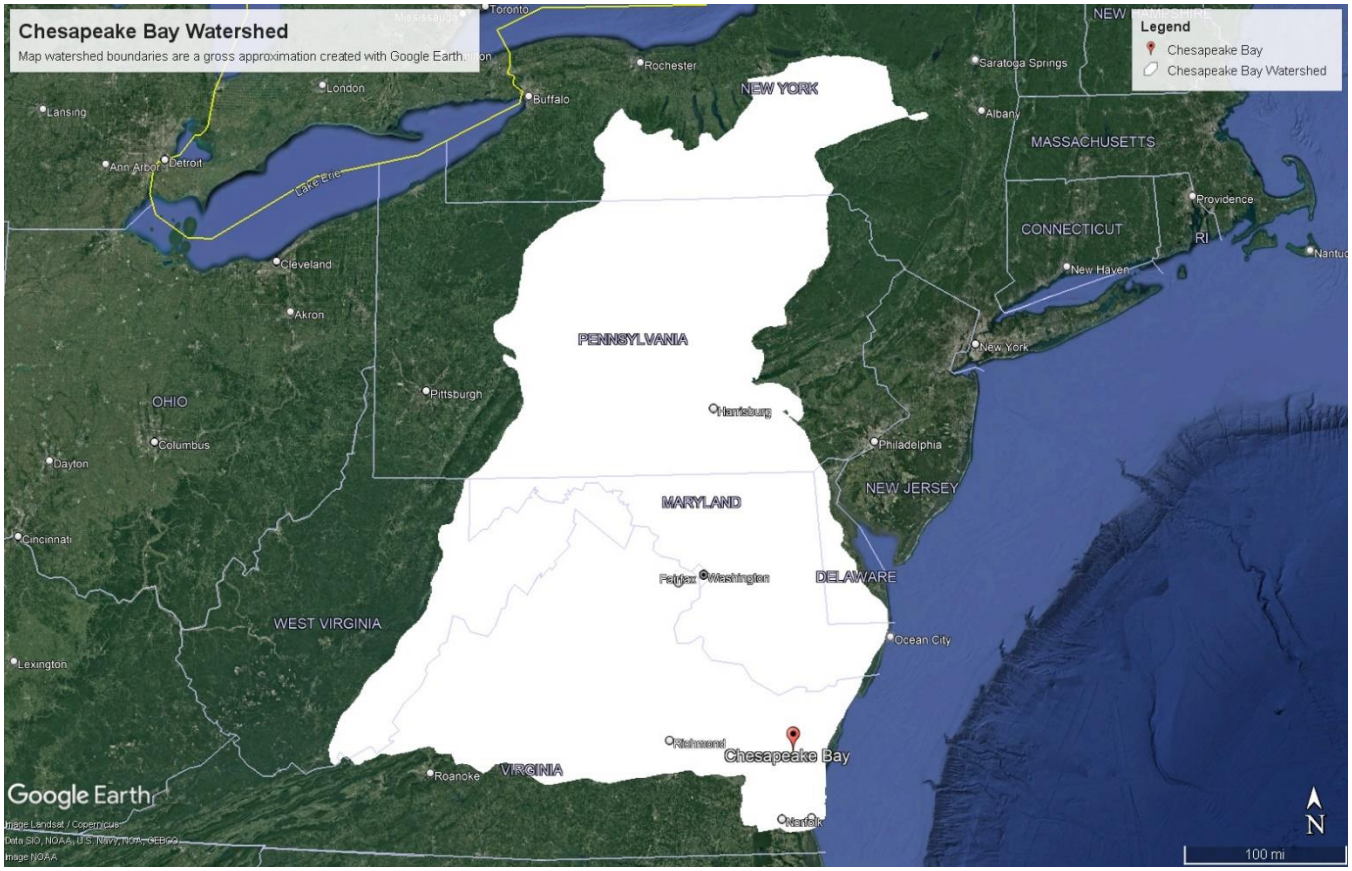
Indigenous involvement in ecological restoration has much work to do in Environmental Justice, and more applicably Indigenous Environmental Justice. It is important to understand the need for an examination of IEJ in ecological restoration, as Indigenous communities play an important role in restoration. Sovereign Nations have had to depend upon ineffective legal mechanisms and a lack of procedural recognition to express their sovereignty rights. The solidified expression of Sovereign Nations governance rights in ecological restoration is an additional example of protecting tribal sovereignty in a legal system that has failed to do so.

Current Regions with Indigenous Involvement and Their Lessons for the Case of the Chesapeake Bay

The inclusion of Indigenous people in ecological restoration in the Mid-Atlantic of North America (including Chesapeake Bay) is a gap in the literature, although the examples that do exist in other parts of the continent hold great lessons that have a degree of generalizability. Presently, ecological restoration with Indigenous participation is concentrated in the Northwestern and Northeastern United States, as well as Southwestern Canada. More specifically, the 6 articles found in the literature review focused on Indigenous collaboration occurring in Washington State, Maine, and British Columbia. One article (Fox et al., 2022) studies the Penobscot River restoration as a part of 3 other case studies. All 6 articles discuss the Puget Sound restoration.

The studies, described in the 6 articles, included discussion of two relevant ecological restoration projects: the Puget Sound restoration and the Penobscot River restoration. These examples provide a solid basis for viewing the challenges and successes of Indigenous involvement in restoration in an ecological setting, as well as provides lessons for the Chesapeake Bay watershed (Figure 1). This map was additionally provided for visual comparison for the 2 other maps provided. One map is of the Puget Sound watershed (Figure 2) and one is of the Penobscot River Valley watershed (Figure 3), and both are to the same scale (2.5 inches = 100 miles) as Figure 1. The Puget Sound restoration and the Penobscot River restoration included Indigenous participation in tributary restoration of their associated estuary.

Figure 1. This map shows the boundaries of the Chesapeake Bay Watershed. The map was created in Google Earth, and was scaled to 2.5 in = 100 mi (bottom right corner).



The Puget Sound restoration (Figure 2) provided 6 articles (Breslow, 2014a; Breslow, 2014b; Christie et al., 2018; Fox et al., 2022; Kennard, 2017; Poe et al., 2016) associated with indigenous involvement in the region. The restoration of the Puget Sound was the most highly referenced ecological restoration in the literature that includes Indigenous people. The Puget Sound overlaps Washington State, United States and Victoria, B.C. Canada, and has current restoration activities that have

Indigenous inclusion throughout the estuary. Participants in these studies were commercial farmers, the general public, Swinomish Indian Tribe members, Qwuloolt Indian Tribe members, Tulalip Tribes, the Lower Elwha Klallam Tribe, government officials from multiple levels, academics, and non-government entities.

The second set of ecological restoration projects to be discussed, the Penobscot River restoration (Figure 3), provided 1 article (Fox et al., 2022) associated with indigenous involvement in the region. This article held 3 case studies, one of which being the Penobscot River restoration; a case study for a successful and collaborative dam removal project led by the Penobscot Indian Nation. Participants of the Penobscot River case study included the Penobscot Indian Nation, hydropower operators, environmentalist non-government organizations, communities, and state and federal agencies. This article focused on collaborative restoration work surrounding tribal-led involvement, benefits of tribal-led involvement, and how Indigenous involvement in restoration changes the already complex political ecology of such projects (Fox et al., 2022). The study authors found that the additional layer of collaboration and tribal project leadership ultimately benefitted of all collaborators and the restoration of the Penobscot River.

The Puget Sound example focused on sense of place among stakeholders, support for tribally led restoration, and changing ecological restoration policy. Also prevalent were the themes of the complexity of the political ecologies surrounding indigenous involvement in ecological restoration, how collaborative restoration could

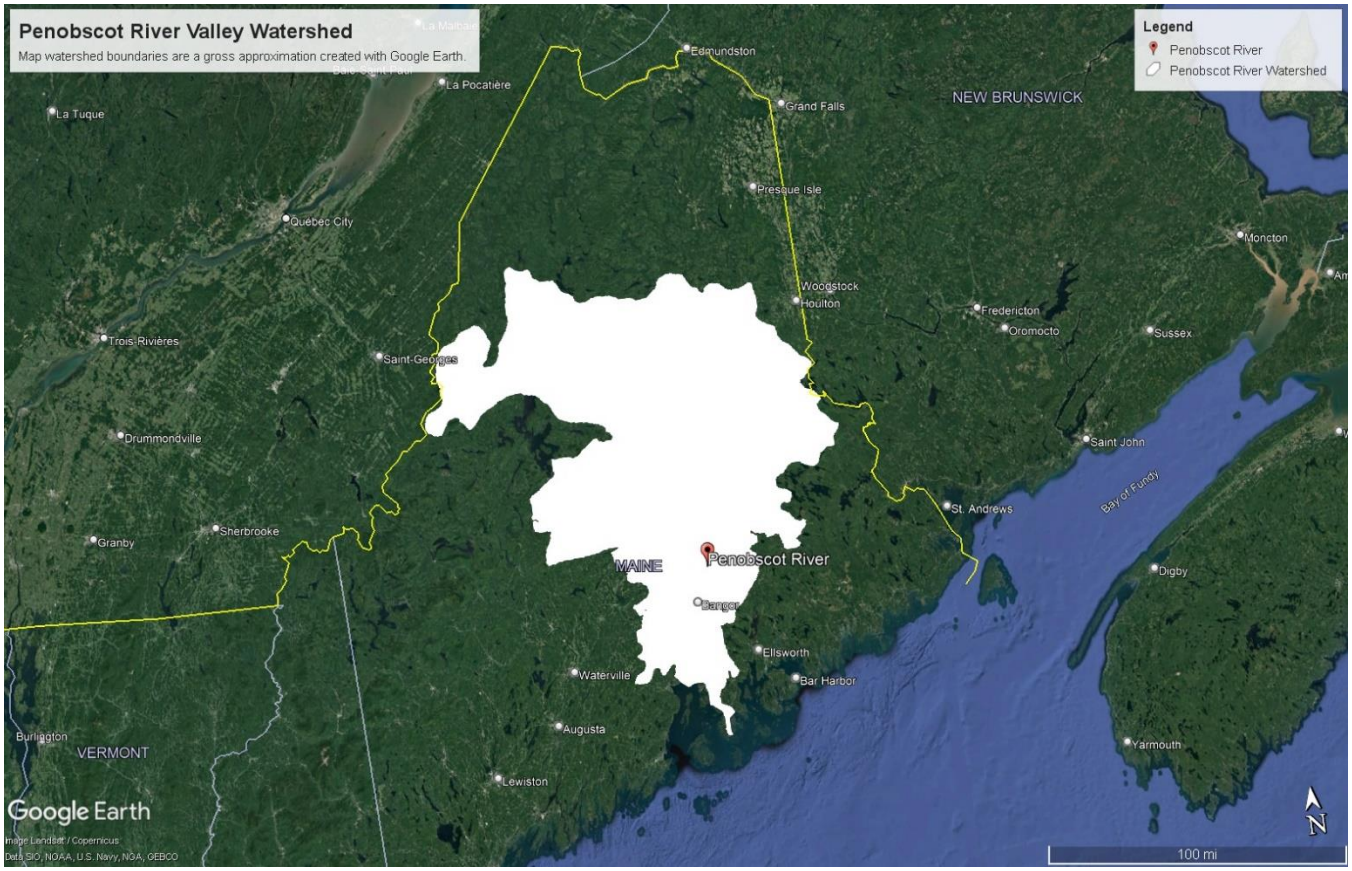
be achieved with indigenous involvement, the importance of considering tribal motivations for indigenous involvement, and the critical role of social trust among stakeholders (Breslow, 2014a; Breslow, 2014b; Christie et al., 2018; Fox et al., 2022; Kennard, 2017; Poe et al., 2016). The main challenges identified were overcoming differences in the participants in their understandings of a sense of place, their sometimes opposing political-ecological perspectives, and the general lack of social trust; these were identified as the main drivers of conflict in the Puget Sound restoration.

Figure 2. This map shows the boundaries of the Puget Sound Watershed. The map was created in Google Earth, and was scaled to 2.5 in = 100 mi (bottom right corner).

The Puget Sound example provides a basis for generalizing their lessons to other large-scale restoration. The inclusion of Indigenous people in the Puget Sound restoration had many lessons to share about the experiences lived surrounding the project. The following 3 points of contention were repeated throughout the literature analyzing the Puget Sound ecological restoration: 1) Conflicting senses-of-place between Indigenous and non-Indigenous people, 2) A general lack of understanding of the political-ecological elements that play into Indigenous involvement in restoration, and 3) a general lack of understanding of the roles humans play in restoration (Breslow, 2014b; Christie et al., 2018; Fox et al., 2022; Kennard, 2017; Poe et al., 2016). These points of contention prevented Indigenous communities from contributing to restoration to their full potential.

Additionally, the Puget Sound example demonstrated three points of contributions made by Indigenous involvement in ecological restoration. These were: 1) Indigenous involvement brings a high level of adaptive management skills to the restoration project, 2) Indigenous involvement means that the ecological restoration will be conducted from an ecocultural stand point, and 3) Indigenous involvement supplies long-term knowledge of placed-based system dynamics. These points of contribution allow Indigenous involvement to shed light on the need for more worldview and ethics-based considerations in restoration.

Figure 3. This map shows the boundaries of the Penobscot River Valley Watershed. The map was created in Google Earth, and was scaled to 2,5 in = 100 mi (bottom right corner).



Lessons from the northeast coast of the United States, namely Maine, remind us of the benefits of river restoration on not only the surrounding environment, but on the upholding of Indigenous Environmental Justice. The Indigenous involvement in this river and ecological restoration, the Penobscot River being a tributary to the Penobscot Bay Estuary, provided its own contention and contribution points that can be generalized to other similar projects. The three contention points are as follows: 1) Tribes have important leverage points they utilize to manipulate political power to shift with Indigenous involvement, 2) Environmental restoration is highly political in

nature with a dynamic that changes with the addition of Indigenous involvement, and 3) Successful environmental partnerships between Sovereign Nations and non-Indigenous entities are uncommon (Fox et al., 2022). These points of contention expose the need to repair relationships between Indigenous communities and non-Indigenous entities, and to understand the value that Indigenous people bring to restoration. They also remind us that those involved in this unsettled time will be uncomfortable during the shift in social dynamics when Indigenous communities are properly involved in restoration, and that there is value in the change itself.

As with the Puget Sound, the dynamics of the Penobscot River restoration illustrated the contributions Indigenous involvement realizes in restoration projects. The restoration showed: 1) Tribes are the center point of Indigenous communities and non-Indigenous entities working together successfully to restore rivers and estuaries, 2) River restoration is a form of restorative environmental justice for Indigenous people, as it brings them back to their ancestral rivers, 3) Tribes bring unexpected resources and expertise to restoration projects from a colonial perspective (Fox et al., 2022).

The contribution points illustrated by the Penobscot River and Puget Sound projects make the argument that Indigenous leadership, knowledge, and repatriation support successful restoration and contribute to restorative environmental justice. These examples demonstrate important considerations with the inclusion of Indigenous communities in ecological restoration. The lack of such examples

illustrates the gap in the literature for restoration in the Mid-Atlantic community. The same examples also show that there is ample opportunity for Indigenous involvement in ecological restoration in the Mid-Atlantic and the Chesapeake Bay.

Current Indigenous Political Ecology in Ecological Restoration

It is beneficial to look at Indigenous involvement through a Political Ecology (PE) lens, but even more beneficial to look at Indigenous involvement through an Indigenous Political Ecology lens. PE is the study of the inherent political aspects of nature: a study of the human–environment relationship. IPE studies the politics of indigenous ways of interacting with creation (Breslow, 2014a; Fox et al., 2022; Middleton, 2015. The natural world holds its own laws from an indigenous perspective, and humanity is to follow those laws to remain in balance with creation. Understanding the differences between PE and IPE is critical to effective Indigenous involvement in ecological restoration.

Establishing an Indigenous Political Ecology for a restoration project can help with transitioning to a higher level of Indigenous involvement; however, there is not a consistent understanding of the political-ecological implications that are a part of ecological restoration in general. Engaging in Indigenous involvement in environmental restoration, and doing so successfully, will require in engaging with IPE and reconciling it with the current Political Ecology that surrounds restoration. There is a distinct difference between PE and IPE; PE focuses mainly on political-economic flows and power (Breslow, 2014a; Middleton, 2015). IPE has much more

specific bounds and diversity of focuses; IPE focuses on property ownership, policy-making, nodes of power, epistemological hierarchies, and decolonial frameworks. These all challenge the colonial logics that often provide the framework for restoration actions (Breslow, 2014a; Fox et al., 2022; Middleton, 2015).

My literature review also provided some basis for developing a site-specific Indigenous Political Ecology framework, within which ecological, political, and economic factors must be considered. Some major elements of such an IPE framework are: coloniality, Indigenous knowledge systems, Indigenous governance, and decolonization (McGregor, 2018; Middleton, 2015). Coloniality is the state in which power dynamics established by colonial social structures are present. Coloniality will speak to the current social paradigm's impacts on Indigenous ways of being. The second element of Indigenous knowledge systems are indigenous ways of knowing and perceiving the world. Indigenous knowledge systems have high reference to Indigenous Traditional Ecological Knowledge and Indigenous jurisprudence in that these knowledge systems reveal much about how Indigenous people have live on these lands in a resilient and sustainable manner. The third element in an Indigenous Political Ecology framework is Indigenous governance, which is the application of the natural laws, values, and justice systems of Indigenous people. Indigenous governance references two major elements: cultural sovereignty and political sovereignty.

A final element in understanding IPE is decolonization. Decolonization is the process of deconstructing harmful colonial social structures. This concept is

important to consider in that in order to effectively involve Indigenous people in restoration, the process of restoration must be decolonized itself (Barnhill-dilling et al., 2019; Hernandez, 2019; Middleton, 2015).

Before initiating restoration project activities, some additional contextual points must be considered when building the envisioned Indigenous Political Ecology framework for a site. Three points that can be generalized from the literature for ecological restoration are a place-based focus, engaging in Indigenous law that is territory specific, and honoring Indigenous jurisprudence (McGregor, 2018; Middleton, 2015). Restoration sites under consideration must be analyzed from a place-based perspective to understand the priorities of the Indigenous community to be worked with. Engaging in Indigenous law is of additional importance in creating an IPE framework, and more specifically engaging with the distinct social policy of that territory (Cantzler et al., 2016; Middleton, 2015). This supports the recognition of tribal sovereignty, as does the honoring of Indigenous jurisprudence. It is honoring recognition in that Indigenous people may engage with and implement their legal system that governs all of creation (Barnhill-dilling et al., 2019; Middleton, 2015; Schlosberg and Carruthers, 2010). Though there is yet a consistent understanding of the Political Ecology that surrounds environmental restoration, there is research emerging to help with this understanding (Breslow, 2014b; Cantzler, 2007; Middleton, 2015; Vickery and Hunter, 2016). Considering the starting places already established, the initial creation of an Indigenous Political Ecology to aid with

Indigenous involvement in ecological restoration can be a helpful step toward shifting the paradigm toward Indigenous involvement.

There are some steps being taken by the Chesapeake Bay Program to initiate connections between the Sovereign Nations and the CBP. These include: (1) Acknowledgement on the CBP website of the Indigenous communities that reside in the Bay watershed and the SNs (Indigenous Peoples of the Chesapeake, 2023) and (2) CBPs membership in the Chesapeake Conservation Partnership (Chesapeake Conservation Partnership, 2023). Many of the lessons about building that involvement from the examples I reviewed could be applied to the Bay's restoration. Based on the description of the responsibilities of the relationship between federally-recognized Sovereign Nations and the federal government of the United States as a trustee of those Nations by Warner in 2017 and the lack of a strong Indigenous involvement in the CBP, whether it be via direct involvement in decision-making and/or consultation, indicates there is the potential for the continued low level of involvement to contribute to environmental injustice (Warner, 2017).

As was stated before, ensuring Indigenous involvement in the CBP's efforts in ecological restoration is successful requires framing projects around the maintenance and restoration of Indigenous Environmental Justice, and similar examples from the literature support the benefits of this framing (Barnhill-Dilling et al., 2019; McGregor et al., 2020; Parsons et al., 2021; Schlosberg and Carruthers, 2010). Additionally, understanding the local Indigenous Political Ecology and its framework in the context

of the restoration location can provide insights into what is important to a Sovereign Nation in reference to ecological restoration efforts, as well as the laws that govern the relationships that make up creation (McGregor, 2018; Middleton, 2015). Conducting these actions and establishing these frameworks must be led by the people they are intended for. For that reason, restoration projects and policy creation in ecological restoration that prioritize Indigenous involvement must ensure these processes are Indigenous-led. Ensuring that the Chesapeake Bay Program is conducting ecological restoration in an environmentally just manner is an additional gap to be explored in the future, and the utilization of the lessons learned from other Indigenous involvement examples can begin to develop our understanding of potential Indigenous involvement in the ecological restoration of the Chesapeake Bay watershed.

Conclusions

According to my literature review, the Mid-Atlantic region of the North America, and more specifically the Chesapeake Bay watershed, lacks evidence of widespread and strong active Indigenous involvement in government-led restoration projects. There are, however, scattered examples and indications of ongoing activities throughout gray literature including the tribal lands reacquired by the Nansemond and Rappahannock in 2022, Cross Swamp and Fones Cliffs respectively (Austin, E., & Ducks Unlimited Inc., 2022; States Department of the Interior, 2022). While evidence in the literature suggested that there are difficulties in implementing Indigenous involvement in ecological restoration, there was also evidence via case studies of the

contributions Indigenous involvement can make to equitable and effective restoration planning and implementation (Fox et al., 2022; Long et al, 2020; Uprety et al., 2012). This analysis of the literature identified and summarized themes within environmental restoration, ITEK, political ecology, and environmental justice as it relates to Indigenous involvement in ecological restoration. Identifying the knowledge gap in the Mid-Atlantic region, and specifically in the Chesapeake Bay watershed, will provide a foundation for research on the inclusion of Indigenous people in the ecological restoration in ongoing and future large-scale ecological restoration efforts.

Several important distinctions must be made when it comes to the treatment of Indigenous communities in the context of ecological restoration. Federally-recognized tribes must be understood as Sovereign Nations with a trustee relationship with the federal government. This means that they have protections under national and international law regarding their sovereignty. To respect this status, the actions of any entities that may affect Indigenous communities must be carried out within the boundaries provided by these protections or the federal government has the responsibility to seek retribution. The traditional ways of living that Indigenous communities are trying to get back to are sustainable and balanced ways of living alongside creation. The more these communities can conduct their traditional life ways, the more successful adaptive management practices (a skill mastered by Indigenous communities) will be.

The involvement of Indigenous communities in ecological restoration must spread further than the examples in B.C. Canada, and Maine and the northwestern US. Though they are few, these examples provide valuable lessons for the advancement of Indigenous involvement in restoration in an ecological setting. Conducting site-specific Indigenous Political Ecology frameworks for each ecological restoration project increases its chances of success. Greater and more ethical involvement of Sovereign Nations in Chesapeake Bay restoration, and other large-scale ecological restoration, must be prioritized.

There are several actions that can be, and are being addressed in some places, from the lessons learned that emerged from this review. The research described in this thesis partially addresses this issue. The Chesapeake Bay Program has the opportunity to provide an example of restorative justice to Indigenous communities throughout the watershed. Some actions that would further the role of Sovereign Nations in Chesapeake Bay and other large-scale restoration efforts are:

1) The environmental restoration community must begin a paradigm shift; reciprocal restoration and Indigenous Environmental Justice must now be the dominant social paradigms focus if we are to engage Indigenous peoples in an intentional and effective way. We must make kin with nature, and we have the language, specifically ITEK, to start asking what nature needs.

2) If not done already, the Chesapeake Bay Program (and other restoration projects) should immediately begin forming meaningful relationships with all federal and state-recognized tribes in their watershed, as well as integrating Indigenous leadership roles permanently into its program, with a Nation-Nation relationship in mind.

Indigenous participation in restoration on the East Coast, and more specifically in the Chesapeake Bay's restoration, is vital to maximizing the positive outcomes of ecological restoration projects; they are an indicator community for the success of the environmental adaptive management approaches used in restoration, and specifically within the Chesapeake Bay Program. When ITEK is introduced by Indigenous groups in the surrounding area, participation in restoration activities can be more effective and accessible to the wider community. This introduction and community involvement allows Indigenous people to interact more freely with their ancestral lands. Additionally, relations between First Nations people and the government are improved, and communication becomes more open with the entities surrounding projects.

Historically and presently, the CBP lacks significant and visible Indigenous people's participation. Determining what barriers keep Indigenous communities from participating in restoration decisions is important for the success of ecological restoration. Many projects on the East Coast could benefit from increased inclusion of minorities, particularly Indigenous people. To support this, a standardized approach to restoration should be drafted to include establishing relationships with Indigenous

Tribes and ensuring procedural justice for all stakeholders. This approach could benefit other federal, state, and local restoration projects, as well as the Chesapeake Bay's restoration. This review and the subsequent chapters provide an important first step in understanding what may be causing this stakeholder gap in the Bay's restoration, as well as identifying the ways in which Indigenous involvement can be better established.

Chapter 3: Data Collection

Positionality Statement

This research has been conducted and written up by a descendent of the Penobscot and Passamaquoddy Tribes of the Wabanaki Confederacy Territories. Due to the researcher's societal position and personal connection to the content being examined, there may be unintentional bias in the interpretation of the results. A distinct effort has been made to maintain a neutral position within the analysis and writing; however, it must be noted that the author identifies with the minority group included in this study. An additional note, the author used the Native Governance Center's *Terminology Style Guide* to assist with this writing to maintain honor and respect for the Indigenous community (2023).

Field Site

The Chesapeake Bay is the largest estuary in the United States. The watershed for the Bay spans the District of Columbia and parts of 6 states: New York, Pennsylvania, West Virginia, Maryland, Delaware, and Virginia. The watershed is home to more than 18 million people (Clune & Capel, 2021). The Bay's ecology plays a vital role in the socio-economic balance of the region, and the steady decline in its water quality has had negative socio-economic impacts throughout the region (Chesapeake Bay Program, 2020). The Chesapeake Bay watershed is also the ancestral home of many Sovereign Nations, including 7 federally-recognized Virginia tribes. There are also

state-recognized tribes, including 11 in Virginia, 3 in Maryland, 2 in Delaware, and 9 in New York.

For my study, I have limited the investigation to the Sovereign Nations within the watershed boundaries of Virginia. These Sovereign Nations have prehistoric, historic, and current use connections to the Bay's resources. The United States Environmental Protection Agency (USEPA) is the lead for the CBP, which was created in the 1980's specifically for the purpose of Bay restoration. The Bay has been in a state of accelerated decline since the 1950's, rooted in the regional settlement of Europeans and enslaved Africans. The Bay receives nitrogen and other nutrients from the watershed that lead to increasingly eutrophic conditions (Kennedy, 2018). Much of this is due to agricultural run-off, one of the area's most vital economies. The result has been a decline in submerged aquatic vegetation, increasing area of main channel hypoxia, loss of wetlands, and declines in oysters and other fisheries species. The cultural draw of the Bay has declined as well, linked to pollutants that keep waters turbid and lower the overall aesthetics of the Bay (Kennedy, 2018).

Much is currently being done to mitigate these impacts on the Bay, and many different groups are tackling the challenge due to the broad geographic area of the watershed (Figure 4). The cornerstone of the CBP's mitigation strategy is a Total Daily Maximum Load (TMDL) plan authorized under the Clean Water Act of 1972 that sets nutrient reduction criteria in areas (subregions) of the Bay and then localized

plans are formulated on how to achieve these (Chesapeake Bay Program, 2023a). In addition to Federal and state agencies, there are also many non-government organizations involved, such as the Chesapeake Bay Foundation and the Chesapeake Conservancy (Chesapeake Bay Program, 2023c; Chesapeake Conservation Partnership, 2023; Doherty & Copping, 2016). Stakeholders are also involved via the Stakeholders' Advisory Committee (Chesapeake Bay Program, 2023d). Examples of this would be encouraging more sustainable farming practices among upstream producers and nutrient monitoring.

Figure 4. Outline of the Chesapeake Bay Watershed as it relates to the states

The area being studied in this research includes only the portions of the watershed within Virginia. The photo was sourced from "Area Map: Center for Chesapeake Communities" (https://www.chesapeakecommunities.org/map.html).

Study Participants

Initial key informants were selected purposively, and any additional study participants were identified through snowball sampling (Tongco, 2007; Valerio et al., 2016). As this is a very specific group of stakeholders with a small population, non-probability collection methods were most appropriate, and saturation occurred with this small number of individuals (Rust et al., 2017). A total of 15 interviews and 1

focus group were conducted: 8 interviews with representatives of government organizations, 3 interviews with representatives of NGOs, and 4 interviews with representatives of Sovereign Nations. Respondent labels and their explanations are available in Table 1. These sampling methods allowed me to identify and sample perspectives from each of my target stakeholder populations, the Sovereign Nations (see Table 2), members of the Chesapeake Bay Program, the Virginia Department of Environmental Quality, the Environmental Protection Agency, the Chesapeake Conservancy, the Chesapeake Bay Foundation, and the National Park Service.

Table 1. Government Organization and Non-Government Organization Target Stakeholders

The status given for each organization describes their decision-making power and/or role in the Chesapeake Bay watershed restoration. Each organization, barring the Chesapeake Conservation Partnership and the Chesapeake Conservancy, was given an abbreviated label for the duration of this thesis.

Label	Name	Status
Chesapeake Conservation Partnership	Chesapeake Conservation Partnership	• Brings together government organizations, non-government organization, and other stakeholders for conversation • Solely for collaboration purposes and is not a decision-making body
EPA	Environmental Protection Agency	Oversees the restoration of the Chesapeake Bay watershed alongside other signatories of the Chesapeake Bay Watershed Agreement
CBP	Chesapeake Bay Program	• Chesapeake Bay watershed restoration program overseen by the EPA and the Chesapeake

		Bay Watershed Agreement signatories • makes decisions about how restoration is conducted throughout the watershed
STAC	Scientific and Technical Advisory Committee	• An advisory committee to the Chesapeake Bay Program • Does not make decisions regarding restoration activities, solely for advising purposes
NPS	National Park Service	One of several federal agencies that support the design and implementation of the CBP
State	Virginia Coastal Zone Management Program	A state government network that administers grants to organizations for restoration work, as well as enforces state CZM laws and policies surrounding coastal environmental management.
Chesapeake Conservancy	Chesapeake Conservancy	A non-government organization that conducts Chesapeake Bay watershed restoration work apart from the CBP
CBF	Chesapeake Bay Foundation	A non-government organization that conducts Chesapeake Bay watershed restoration work apart from the CBP

Although there are many groups involved in the CBP, only a subset of the government and NGOs are represented in my interviews and the focus group. Sovereign Nations were limited to those SNs who reside within the Chesapeake Bay watershed boundaries of Virginia due to their unique status as federally-recognized tribes, which allows them rights and privileges from a legal stand point. Government organization participants were among the initial key informants utilized to identify other potential participants. Representatives for interviews with non-government

organizations were identified via recommendations from Sovereign Nations and government organizations.

Table 2 shows the Virginia tribes that were targeted for study participation. As mentioned previously all are, at a minimum, federally recognized. Federal recognition is noted due to the potential for its effect on Tribal-Government relations. All tribes within the watershed were contacted for an interview except the Monacan Indian Nation which resides outside of the Chesapeake Bay watershed. Four of the 6 eligible SNs, the Chickahominy Indian Tribe, the Chickahominy Indian Tribe – Eastern Division, the Nansemond Indian Nation, and the Rappahannock Tribe, responded to the interview request. The Upper Mattaponi Indian Tribe and Pamunkey Indian Tribe did not respond to the request for an interview.

Table 2. Federally Recognized Tribes of Virginia.

Tribes selected are not exhaustive of what is recognized in Virginia via state recognition. Six of 7 tribes were eligible for my study based on being located within the Chesapeake Bay watershed, and 4 of 6 eligible tribes responded to the request for an interview (the Chickahominy Indian Tribe, the Chickahominy Indian Tribe – Eastern Division, the Nansemond Indian Nation, the Rappahannock Tribe.

State	Tribe
Virginia	Chickahominy Indian Tribe
	Chickahominy Indian Tribe – Eastern Division
	Monacan Indian Nation
	Nansemond Indian Nation
	Pamunkey Indian Tribe
	Rappahannock Tribe

	Upper Mattaponi Indian Tribe

Data Collection

Semi-structured interviews (Harrell and Bradley, 2010; Krosnick & Presser, 2010; Yan et al., 2012) were conducted with both members of the Sovereign Nations of Virginia and representatives of the agencies and NGOs involved in the CBP. The attributes of the participants contacted, and the subset interviewed, is shown below in Table 3. These interviews were used to identify and describe power dynamics as well as collect social network information, including data regarding work connections, equity of workload, equity of resource exchange, power differentials (employment positions relative to one another's authority), relationship perspective (positive to negative, strong to weak), relationship challenges and opportunities, and historical relationship context. The results of these interviews were used to build a social network with notes on the give-and-take relationships between members (Harrell and Bradley, 2010). The representative of the Nansemond Indian Nation was not included in the social network analysis. While this respondent was relevant to the Sovereign Nations interview responses due to previous experience and position, they had changed their position and no longer were connected to the current restoration network.

Table 3. Environmental Actor Categories
Environmental actor categories of participants and their participant counts. Organizations in italics were either contacted but did not respond or declined the request for an interview. The Rappahannock Indian Tribe conducted a focus group due to their desire to be seen as one collective, and as such will be treated as 1 participant when counting SN interview responses. The Nansemond Indian Tribe participant (1) will be considered only in interview responses due to the contemporary relevance of responses to the interview process, however they lack any relevant and contemporary connection to the current restoration network. Chesapeake Bay Program (CBP) volunteers and employees fall under the jurisdiction of the Environmental Protection Agency (EPA), which is why it is not specifically listed as an organization. However, it should be noted that the EPA was contacted specifically outside of their CBP role, and declined the request for an interview. Additionally, United States Geological Survey (USGS) was contacted specifically outside of their representation in the CBP and declined the request for an interview.

Government Organizations (GOs)	**Non-government Organizations (NGOs)**	**Sovereign Nations (SNs)**
Federal • Chesapeake Bay Program (CBP) (5) • National Park Service (NPS) (2) **State** • Coastal Zone Management Program – Department of Environment Quality – Virginia (1) ❖ *Maryland Department of Natural Resources*	• The Chesapeake Conservancy (2) • Chesapeake Bay Foundation (1)	**Virginia Federally-recognized Tribes**: • Nansemond Indian Nation (1, not included in social network analysis) • Rappahannock Indian Tribe (2 participants, counted as 1 participant for interview) • Chickahominy Indian Tribe (1) • Chickahominy Indian Tribe - Eastern Division (CIT-ED) (1) ❖ *Pamunkey Indian Tribe* ❖ *Upper Mattaponi Indian Tribe*

Participant Observation

An initial participant observation was conducted at a Science and Technical Advisory Committee Quarterly Meeting (Lancaster, PA, July 14, 2022) to identify key informants from the Chesapeake Bay Program as preliminary interview participants, as well as get an initial understanding of the relationship between the CBP and Sovereign Nations.

Additional participant observations were conducted at public meetings and events held by Sovereign Nations and at a second STAC quarterly meeting (Woodbridge, VA, June 13, 2023). During these observation visits, I focused my observations and questions on the identification of common themes surrounding restoration practitioners' experiences related to Indigenous involvement in government restoration projects. I made written notes at the STAC meeting. Audio, video, and written records were kept of the sessions with SNs, as permitted by Tribal Council and study participants, and field notes were taken (Baum et al., 2006). Four participant observations were conducted; Two of the observations were the two STAC Quarterly Meetings (Lancaster, PA, July 14, 2022; Woodbridge, VA, June 13, 2023), one was of an Intertribal Conservation Council Meeting (April 13th, 2023), and one was at the Maritime Crafts on the Nansemond event hosted by the Nansemond Indian Nation (Suffolk, VA, July 8th, 2023).

Data Analysis

Prior to analysis, all audio recordings were transcribed using the application Otter.ai, and the transcripts checked and revised for any missing, garbled, or incorrect text (Corrente & Bourgeault, 2022). The qualitative data generated during the focus group and the semi-structured interviews, as well as text from participant observations and field notes, were coded for text analysis (Bernard et al., 2016). The codes I applied to my qualitative data sources highlighted segments of text that related to previously identified concepts (Table 4). Through use of MaxQDA, relevant segments were coded, a summary was made for each segment, and all segments matching a distinct and reoccurring theme were counted as responses. The themes were found by assessing responses for patterns in the ways that people think about and discuss the interaction (Bernard et al., 2016; Quinn, 2005). These patterns provided emergent themes, such as cooperation, capacity building, and stakeholder engagement, that organized responses to my overarching research questions.

In cases of thematic repetition of predicted codes where themes were repeated 2 or more times by two or more participant categories, coded data was converted to a quantitative form to calculate descriptive summary statistics (Bernard et al., 2016). The emergent themes identified did not meet these qualifications. The answer counts for the interviews are shown in Tables 5a-b, 6a-b, 7a-b, 8, 9, and 10, Appendix 1. For this study, I identified the following interactions in the collected texts and flagged them with codes (Table 4).

Table 4. Predicted Codes for Interview Analysis
Sovereign Nation and government organization interactions
Sovereign Nation and non-government organization interactions
government organization and non-government organization interactions
intergovernmental interactions
inter-Sovereign Nation interactions
inter-non-governmental organization interactions

After this initial coding, I again sub-coded these results with "positive,"," "negative,"," or "neutral." Other codes emerged during analysis, but none were referenced significantly and thus were not included in sub-coding of positive, negative, or neutral, nor were they cited.

Data from the focus groups and semi-structured interviews were used to build a model of the closed social network being observed, as well as several conceptual diagrams. From this, a quantitative Social Network Analysis (Hennig et al., 2012; Jamali & Abolhassani, 2006) was conducted using the software Social Network Visualizer. Metrics calculated were network density, Betweenness Centrality, Closeness Centrality, Influence range Centrality, Closeness Centrality, Eigenvector Centrality, Degree Centrality, and Power Centrality. These metrics measure actor control over the network, access to information via connections with other network actors, and activity in the network connecting with other actors (Hennig et al., 2012;

Salpeteur, 2017; Sayles & Baggio, 2017). The network analysis shows information flows and sinks, connection gaps, and information condensation points.

Chapter 4: Data Analysis

Introduction

This study addressed three research questions:

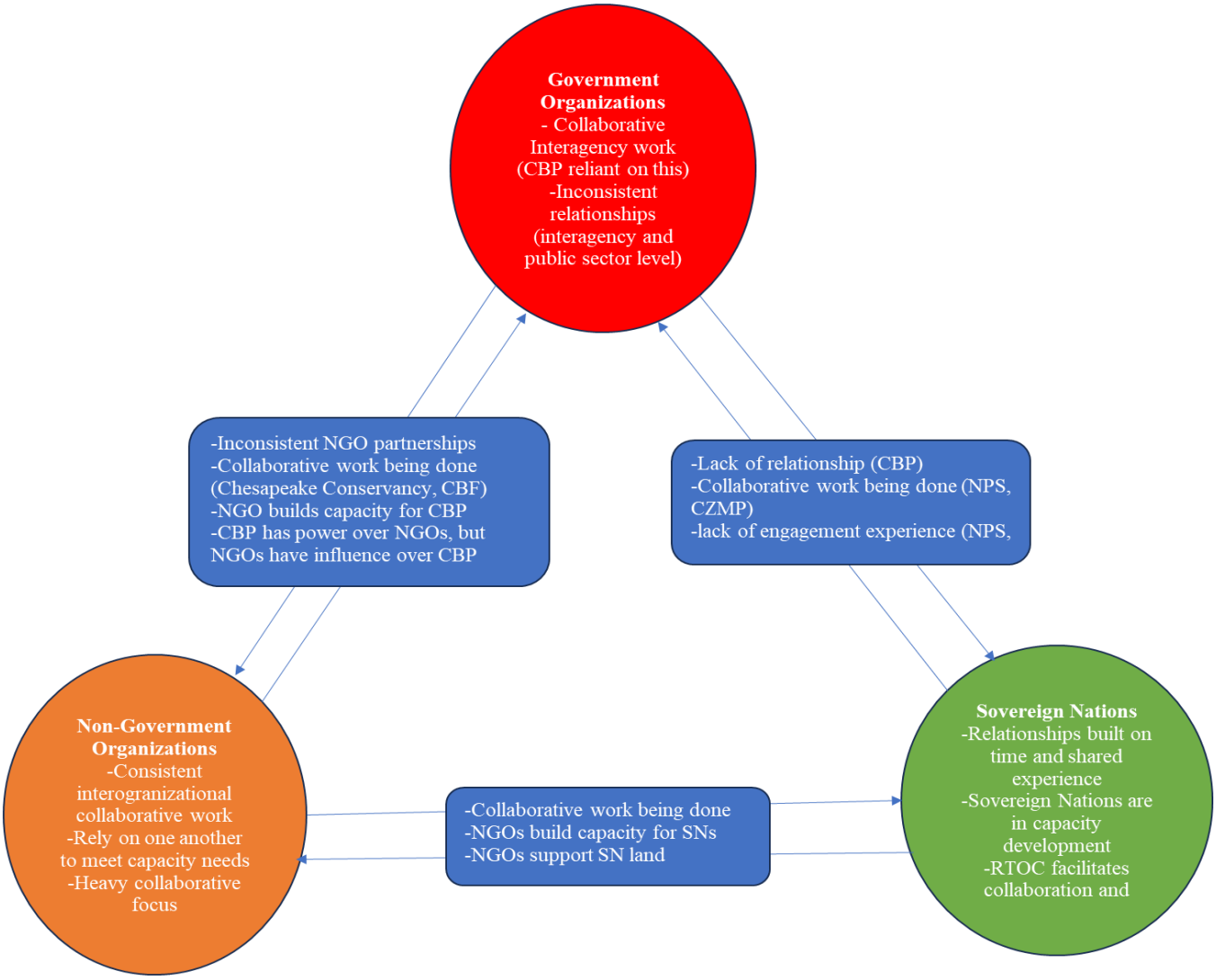
1. ***What is the current relationship between the Chesapeake Bay Program (CBP) and the Sovereign Nations (SNs) of Virginia?***
2. ***How do the power dynamics between the CBP and stakeholders affect the involvement of SNs in the Bay's restoration?***
3. ***What aspects of government-directed environmental projects could be positively affected with more SN involvement and relationship improvement on the Chesapeake Bay?***

In this chapter, I address these questions using results from the analysis of the interviews (Tables 5a-b, 6a-b, 7a-b, 8-10), the focus group interview, the four participant observation events, and the literature review (Chapter 2). Respondents 1-15 of the interviews also took part in visualizing the restoration social network, which was examined from 2 dimensions: power relationships and exchange of materials and information (Figure 6a-b). A summary visualization of the relationships between all categories (Figure 5) is presented in the next section. Below, I address each of the questions separately.

1. What is the current relationship between the CBP and the Sovereign Nations of Virginia?

The interviews and participant observations conducted brought up four major focal points: Sovereign Nation Representation, Collaboration, Engaging Sovereign Nations, and Connections Between the Chesapeake Bay Program and Sovereign Nations. Results for these focal areas show minimal representation in the Chesapeake Bay Program for Sovereign Nations, the lack of a formal established collaborative work between the CBP and SNs, and irregular and limited engagement with SNs by the CBP. This has led to a very weak direct connection between SNs and CBP. Below, I use the results to explore each of these in more detail. The internal and external relationships that are the basis for the overall interaction between the CBP and SNs is summarized in Figure 5.

Figure 5. Internal and external relationships within the Chesapeake Bay Watershed restoration social network
The social groups being analyzed are Government Organizations (red), Non-Government Organizations (orange), and Sovereign Nations (green). Each circle represents a social group, and has a description of its internal relationships. Each blue rectangle describes the external relationships between social groups. The arrows represent the occurrence of the external relationships.



a. Sovereign Nation Representation

Results showed that while Sovereign Nations have representation in general in the federal government, they lack official representation in the Chesapeake Bay Program. The CBP is the leading federal government authority on the ecological restoration of the Chesapeake Bay and its watershed, and controls who does and does not have a voice in decision-making. Eight of 15 respondents reported that, generally, government organizations currently have Sovereign Nation representation. Specifically, three of 4 SN respondents and 4 of 8 GO respondents (7 of 12 when both groups combined) reported that, generally, government organizations currently have Sovereign Nation representation. Examples given were two federal government examples: Secretary of the Interior Deb Haaland, and the Regional Tribal Operations Committee (RTOC). One is an appointed decision-making role on a broad scale, and the other is a working committee with the Environmental Protection Agency. Additionally, 2 of 3 NGO respondents and 2 of 8 GO respondents reported that, generally, Government Organizations lack Sovereign Nation representation. However, one Chesapeake Conservancy NGO respondent reported general representation in GOs and gave, again, the example of Secretary of the Interior, Deb Haaland. The question that generated the responses about SN involvement specifically with the CBP was interpreted by many participants as referring to representation within United States Territories/Governments broadly. However, it was intended to speak on the representation within the Chesapeake Bay region only. When probed specifically, respondents either said that they did not know enough about the relationship or said that there was not a relationship from their perspective.

Respondents specifically reported (4 of 15 total and 2 of 12 GO and SN respondents) that the Chesapeake Bay Program lacks significant Sovereign Nation representation. When questioned further, respondents either expressed they did not have enough information or have not observed official Sovereign Nation representation.

My observation of, and participation as a public guest, in a CBP Science and Technical Advisory Committee Quarterly Meeting (Lancaster, PA, July 14, 2022) provided several verbal affirmations that there was no official Sovereign Nation representation in the CBP. These affirmations came from some multiple attendees. This was further supported by my observation of an additional CBP STAC Quarterly Meeting (Woodbridge, VA, June 13, 2023), where Sovereign Nation (Tribal) representation was repeated as a necessary next step to Sovereign Nation engagement:

> "I would think that the Bay Program would want to see themselves as a... viable partner in a lot of the works that the tribes are undertaking themselves regarding the safeguarding, the management, the conservation, the preservation of their resources that are tied to the Bay. The tribes are just as much invested, dare I say if not more, in the health and resiliency of the Chesapeake Bay and its watershed. And really therefore you know it would be in the interests of the [B]ay program the STAC committee to think about having official tribal representation. That's one way to start building those relationships...

> and incorporating Indigenous perspectives and knowledge and the work that's done with the Bay Program."
>
> - Ashley Spivey, Pamunkey Indian Nation, Kenah Consulting, Workshop Speaker
>
> CBP STAC Quarterly Meeting, June 13, 2023

There is a lack of official Sovereign Nation representation in the CBP, yet such representation is official and visible more broadly in other federal government activities. Only one of the roles represented in the federal government has decision-making authority (Deb Haaland, Secretary of the Interior). The RTOC is a standing committee with the purpose of collaboration and exchange between Sovereign Nations and government officials; however, the RTOC does not have decision-making authority.

b. Collaboration

Collaborative work is being conducted between government entities and the Sovereign Nations; however, the Chesapeake Bay Program appears to not be officially engaged (beyond some ad-hoc projects). Nine of 15 total respondents reported that there is collaborative environmental work going on between SN and government organizations generally. Of that, 4 of 4 SN respondents and 4 of 8 GO respondents (8 of 12 when both groups combined) reported that there is collaborative environmental work going on between Sovereign Nations and government

organizations generally (outside of the CBP). State (Virginia Coastal Zone Management Program) and Federal (National Park Service, National Fish and Wildlife Federation) GOs were given as examples of recent collaborators with SNs. My observation of the Maritime Crafts on the Nansemond event hosted by the Nansemond Indian Nation (Suffolk, VA, July 8th, 2023) provides additional support for this perception. The National Park Service was in attendance, aiding with teaching the history and maritime crafts of the Nansemond.

In contrast to the respondents that reported collaborative environment between SNs and GOs generally, 4 of 4 CBP GO participants did not report this collaborative work was occurring with the CBP. A CBP respondent expressed an opinion about the performance of STAC in reference to stakeholder engagement that was relevant to these statistics:

> "STAC is an interesting body to consider. In light of DEI. I find it frustrating and hypocritical that we espouse the principles of DEI and don't apply them very well within, internally amongst the members of STAC… There's not a lot of awareness or appreciation amongst STAC members for the technical expertise and insights that non academics can bring to the table"
>
> -CBP GO participant 1

I found it noteworthy that 6 of 15 total respondents report that Sovereign Nations and State Government Organizations have inconsistent relationships

throughout the watershed, despite reported collaboration. Of those, 2 of 8 Government Organization respondents and 3 of 4 Sovereign Nation respondents (5 of 12 with both groups combined) reported SN and State Government Organizations have inconsistent relationships throughout the watershed. There was one respondent who did not report this; however, that respondent has a relationship with a state government organization and was a part of the SN category. An additional note, 3 of 8 Government Organization respondents reported that, generally, government organizations were mainly working with federally-recognized tribes, with 4 of 4 SN participants being from federally-recognized Sovereign Nations. This is supported by my observation of the June 13, 2023 CBP STAC Quarterly Meeting where a workshop speaker noted:

> "...when we talk about Virginia, I think... the reason we really talk about them is because they are federally-recognized."
>
> - Lisa Bergstrom, Kenah Consulting, Workshop Speaker CBP STAC Quarterly Meeting, June 13th, 2023

Federal and state government entities are working with federally-recognized Sovereign Nations, but the Chesapeake Bay Program appears to have only minor informal working relationships with the SNs. Additionally,

state-recognized and unrecognized tribes do not seem to be visibly or officially engaged.

c. Engaging Sovereign Nations

Based on interview results, the CBP lacks direct experience in officially engaging with Sovereign Nations. However, the recent federal guidance and the proceedings at the June 13th, 2023 CBP STAC Quarterly Meeting support that the CBP is learning how to engage with Sovereign Nations. Three of 8 GO respondents and 4 of 4 SN respondents (7 of 12 with both groups combined) reported, generally, that government organizations are lacking experience on how to engage Sovereign Nations. During the June 2023 STAC Quarterly, Ashley Spivey gave an example from previous experience:

> "[T]he attempts at relationship building and really trying to put Indigenous people at the center of the planning that is happening with this park [Werowocomoco, Indigenous sacred site] has gone very clumsily. But the park service is starting to understand the value again of an Indigenous... centered and led approach to the planning."
>
> - Ashley Spivey, Pamunkey Indian Nation, Kenah Consulting, Workshop Speaker CBP STAC Quarterly Meeting, June 13, 2023

As indicated by one NPS employee, the government entities involved recognize this lack of experience, and comment on the general lack of context in the CBP:

"What are some of the pitfalls in developing those relationships? And that's, you know, for anyone employed at the Chesapeake Bay Program, watershed restoration is their nine to five Monday to Friday job all in and not diluted by any concerns about setting up a health clinic for their citizens, or an educational program about, you know, native history… it can be difficult... And one needs to be aware of the history of government relations between the United States government and before that the British colonial government, and Native people stretching back to 1600, even events at Werowocomoco as the leaders tried to figure each other out, but also 20th century policy, which sought to erase native identity. And this was very real, to tribal leaders today. Experiences that their parents lived through and their grandparents lived through, that are very front and center for tribal leaders, and, you know, if you have a government or non-government person who's not aware of a deep history of mistreatment and mistrust, then it's easy to step wrong. Or not walk in with the full empathy that you need."

- NPS GO participant 2

Additionally, 2 of 8 GO respondents and 2 of 3 NGO respondents reported that the Chesapeake Bay Program is learning how to engage with Sovereign Nations. This active learning is affirmed by my observation of the June 13th, 2023 CBP STAC Quarterly Meeting, being that they held a roundtable on the Indigenous Knowledge

Federal Guidance (see the guidance in Prabhakar and Mallory, 2022). Generally, government entities are engaging with SNs, however they lack experience in this, and the Chesapeake Bay Program is beginning their exposure to the nuances of how to engage Sovereign Nations.

d. Connections Between the Chesapeake Bay Program and Sovereign Nations

As of this writing, many of the Chesapeake Bay Program employees that participated or were observed during this study lacked detailed knowledge on contemporary Sovereign Nations within the watershed, and reported a lack of SN government representation overall. Seven of 15 total respondents reported that the Chesapeake Bay Program lacks a direct relationship with the Sovereign Nations. Only 1 of 8 GO respondents reported this, whom is National Park Service affiliated.

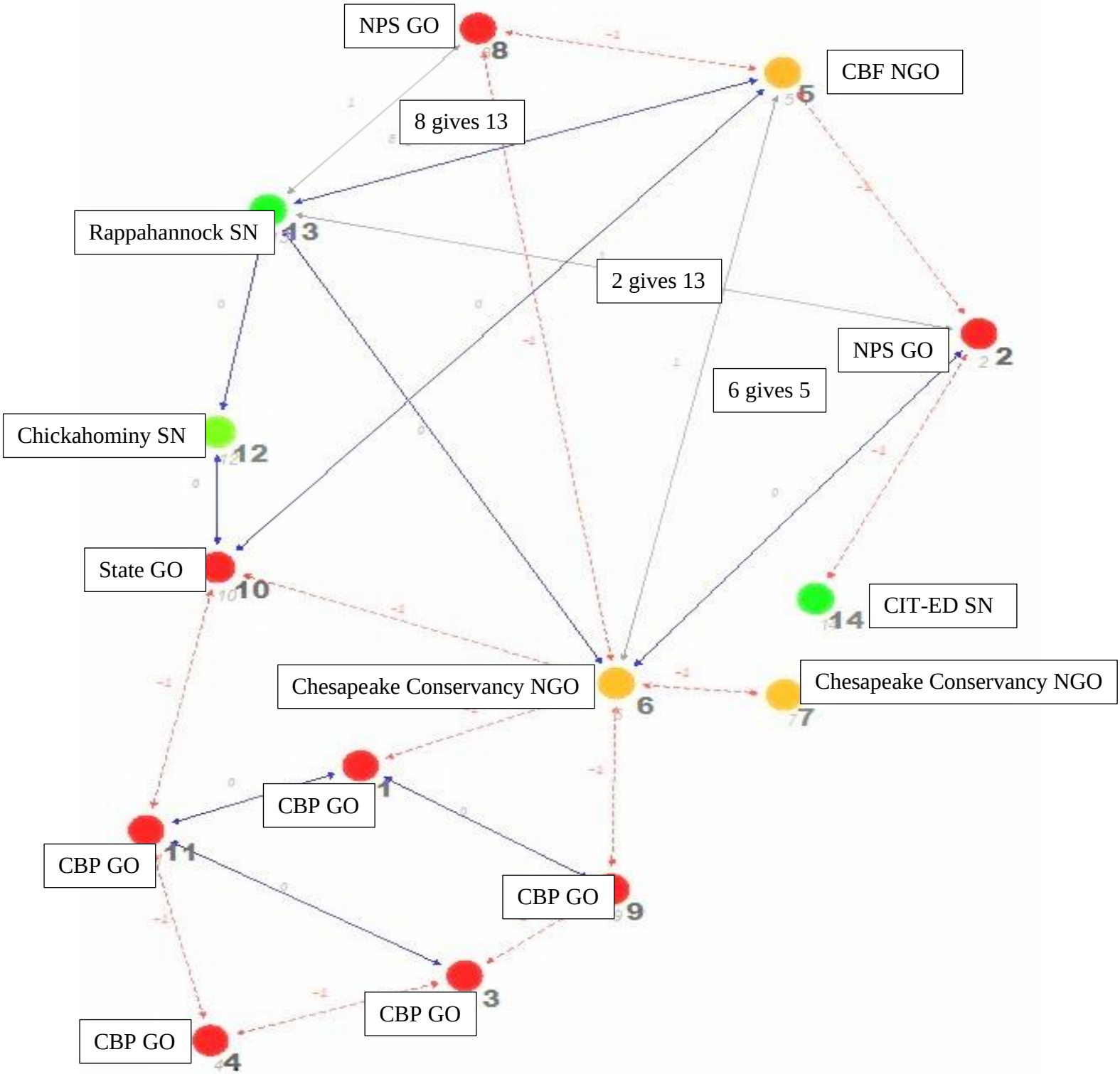
Examples of contact SNs have received are mass emails and an informational presentation about the CBP and its resources. According to the social network map (Figure 6a-b), Sovereign Nation actors and CBP actors have no direct edge connections. If they were directly connected, then an SN participant and a CBP GO participant would have an edge connecting the two nodes, or actors, directly to one another. Those that indirectly connect the CBP to SNs, the gatekeepers, have relationship uncertainty in both their power relationships and exchange relationships. The pattern of the data in the social network map matches that of gatekeeping (with 2 gatekeepers present: Actors 6 and 10) and bottlenecking. The high concentration of resources and information that lies within the CBP is intermittently given to NGOs

due to CBP GO and NGO relationship inconsistency. This may lead to those resources being given to SNs, and offers a potential explanation for the slow down we see in the network and the CBP interacting more with SNs. This network slow down does not, however, affect the SN-NGO relationship and the benefits of this partnership. NGOs and SNs can procure their own resources and information; however, there is a disparity between GOs, NGOs, and SNs in the availability of opportunities to acquire capacity building resources.

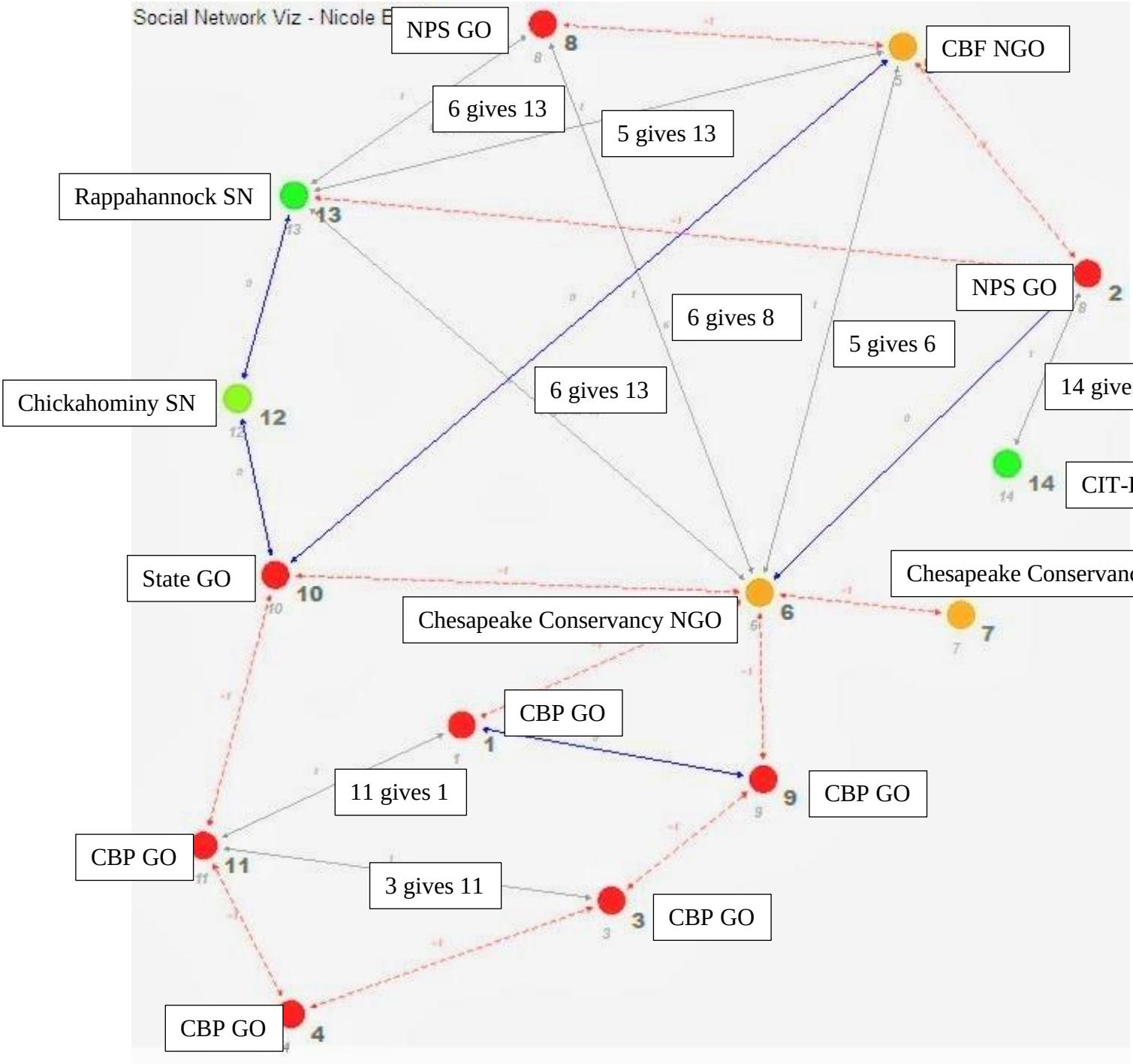
Figure 6a-b. Chesapeake Bay Restoration Closed Social Network

Shown are visualizations of the closed social network being analyzed in the Chesapeake Bay Restoration. There are two conditions being examined within this network: power relationships and the exchange of materials and information. Nodes that are green represent Sovereign Nations (SN), red represents Government Organizations (GO), and orange represents Non-Government Organizations (NGO). Each node is numbered 1-14. Blue edges (0) represent a balanced relationship as agreed upon by connected nodes. Grey edges (1) denote a unidirectional relationship that is agreed upon between connected nodes, and have notation on the directionality of the relationship (i.e., 8 gives 13). Red, dashed-line edges are relationships with disagreement between nodes on the state of the relationship.

a. Power Relationships



a. Exchange of Materials and Information



In explanation of SNs degree of accessibility to the Chesapeake Bay Program, and therefore CBP resources, one Sovereign Nation participant said this about the relationship:

> "Chesapeake Bay Program has never been on my radar really, until, like I said, when you came to me and asked about it, and I start[ed] looking at their website. Which by the way, they need to update because I'm looking at it right now. And they have our name wrong. And they don't even mention that we're federally recognized when they list all the tribes. So, you can put that in your notes to let them know, update their website."
>
> - SN participant 15

Additionally, at the June 13th CBP STAC Quarterly meeting, I observed that Ashley Spivey (Pamunkey Indian Nation, Kenah Consulting, Workshop Speaker) made mention that:

> "... I've talked to tribal leaders about this... [and] they're well aware of the Bay program, the STAC committee... And some of them have straight up said... tribes should be officially represented. And so that's another thing to think about um as a way to kind of start that relationship building is... tribal representation, officially."

The Chesapeake Bay Program does not currently have visible representation or a visible formal relationship with the Sovereign Nations of the watershed; however, other state and federal government organizations (Virginia Coastal Zone

Management Program, National Park Service) are collaborating with Sovereign Nations on ecological restoration and stewardship work.

2. How do the power dynamics between the CBP and stakeholders affect the involvement of Sovereign Nations in the Bay's restoration?

The Chesapeake Bay's restoration network developed a foundation for the current dynamics at play, and this is manifested in the patterns observed in the analysis of the interviews. These patterns were identified by using the interviews and network analysis. They examined the Centrality of Actors, Relationships Between Actors of All Categories (SN, GO, and NGO), Stakeholder Engagement, Relationship Consistency, and Sovereign Nations' Rights and Realities. The results are presented for each of these five patterns. Examination of the stated patterns revealed that there is a strong connection between the current power dynamics and the involvement of Sovereign Nations in the restoration network. External relationships (e.g., SN relations with Non-government Organizations; CBP relations with NGOs) that may affect the overall involvement of Sovereign Nations in the restoration of the Chesapeake Bay were also presented.

a. Centrality of Actors

The actor (Chesapeake Conservancy NGO participant 6) with the most network centrality consistently had the most centrality across the coming metrics (6 of 6 metrics) (Figure 6a-f):

- Betweenness: measures potential control over the network
- Closeness: measures the ability to access information via connections with other network actors
- Influence range closeness: measures the ability to access information via connections with other network actors like Closeness Centrality, but is more sensitive to weakly connected networks
- Eigenvector: measures actor activity in relation to their neighbors
- Degree: measures actor activity only
- Power: measures actor activity in relation to their neighbors, with weighted importance to immediate neighbors

This means that Chesapeake Conservancy NGO participant 6 has the most control over the network, and additionally can easily access information via connections with other network actors. Another quality of participant 6 is that they are significantly active in the network connecting with other actors who are also significantly active. The second most centrality across metrics most often was Chesapeake Conservancy NGO participant 5 (4 of 6 metrics). For Chesapeake Conservancy NGO participant 5, generally the Betweenness and Degree Centrality metrics showed less control over the network and less actor activity than Chesapeake Conservancy NGO participant 6. Additionally, State GO participant 10 (3 of 6 metrics) and SN participant 13 (4 of 6) consistently had the 3rd and fourth most centrality across metrics, respectively. State

GO participant 10 had third most centrality in the closeness, influence range closeness, and power metrics.

Rappahannock SN participant 13 had the fourth most centrality in the closeness, influence range closeness, degree, and power metrics. The Rappahannock Tribe and the Chesapeake Conservancy work very closely with one another, and in a previous comment Rappahannock SN participant 13 revealed that they are on the Executive Board at the Chesapeake Conservancy. This close contact with NGO Participants 5 and 6 through executive board work suggests a possible reason for the centrality of SN Participant 13.

There were 3 actors that consistently fell in the second to least centrality and least centrality positions throughout all 6 metrics (Figure 7a-f). The actors (Chickahominy SN participant 12, CIT-ED SN participant 14, CBP participant 4) with the least power centrality consisted of Sovereign Nations actors and a CBP alter (Figures 7a-f). Interestingly, CBP GO participant 4 stated this in their interview:

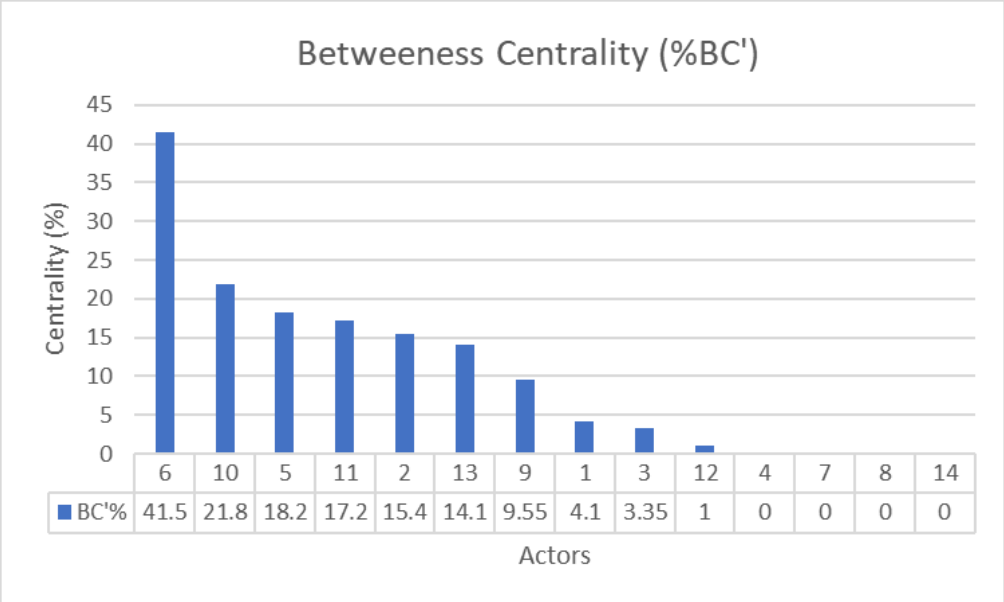
"[F]or the tribes, my ultimate goal is to engage them in the Bay program. But I'm doing that outside of STAC. I mean... but it's hard to… delineate between the two, I mean... if I get something going, then I'll bring it to STAC, you know, as something that could be useful, but prior to that, it's not right. To… bring forward yet so, and but I do have interactions with all of them."

- CBP GO participant 4

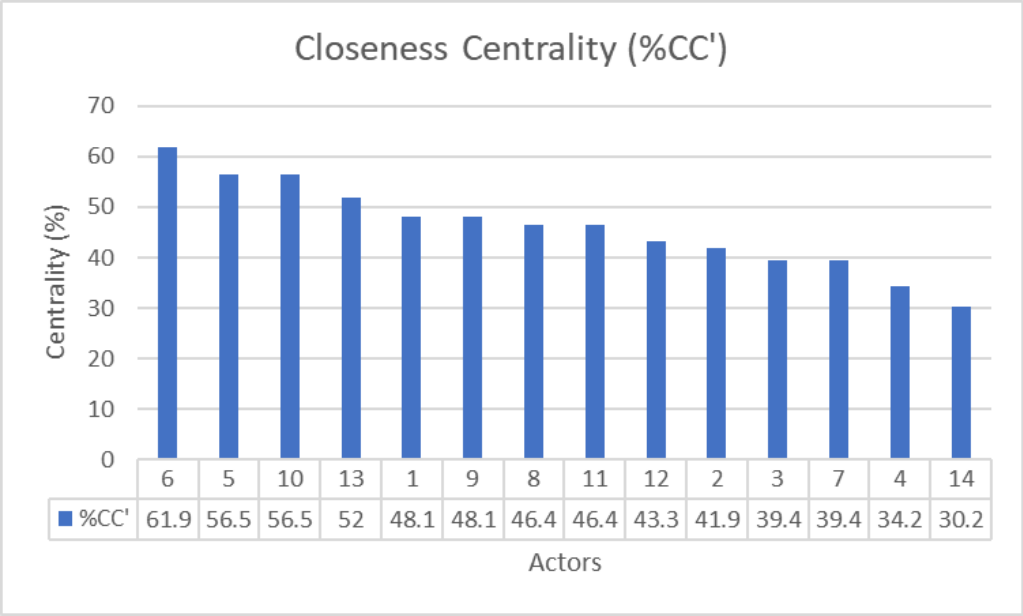
Figure 7a-f. Centrality of the Chesapeake Bay Restoration Network

Centrality is a specific metric of closeness between actors in a network. Each centrality test focuses on a different metric of closeness between actors: different social factors in a network that affect its connectedness. The centrality tests conducted were the Betweenness Centrality, Closeness Centrality, Influence Range Closeness Centrality (IR Closeness Centrality), Eigenvector Closeness Centrality, Degree Centrality, and Power Centrality. The order of actors in each figure is based on their centrality score for the test conducted.

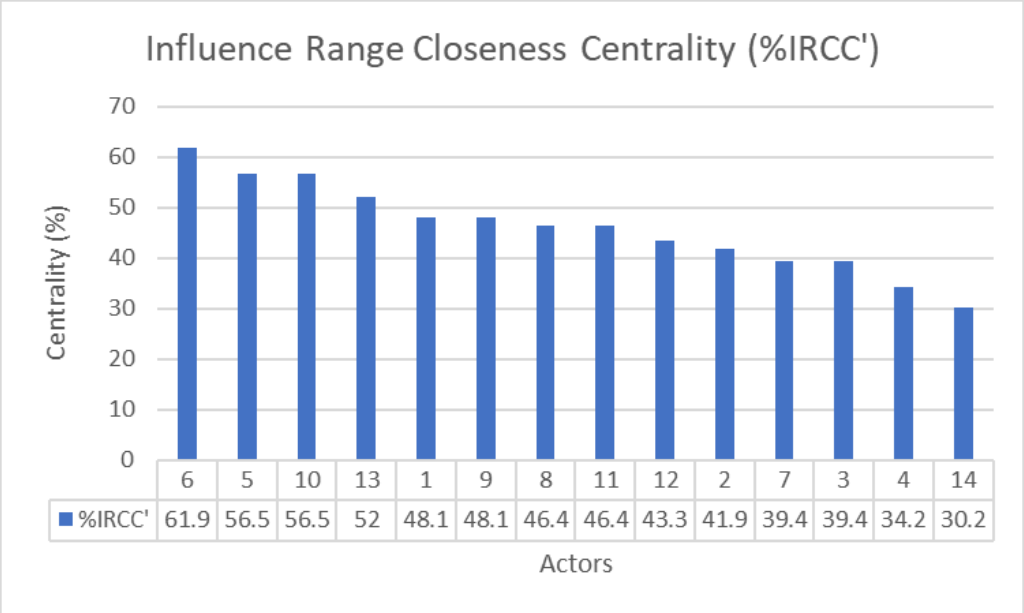
a. *Betweenness Centrality* –



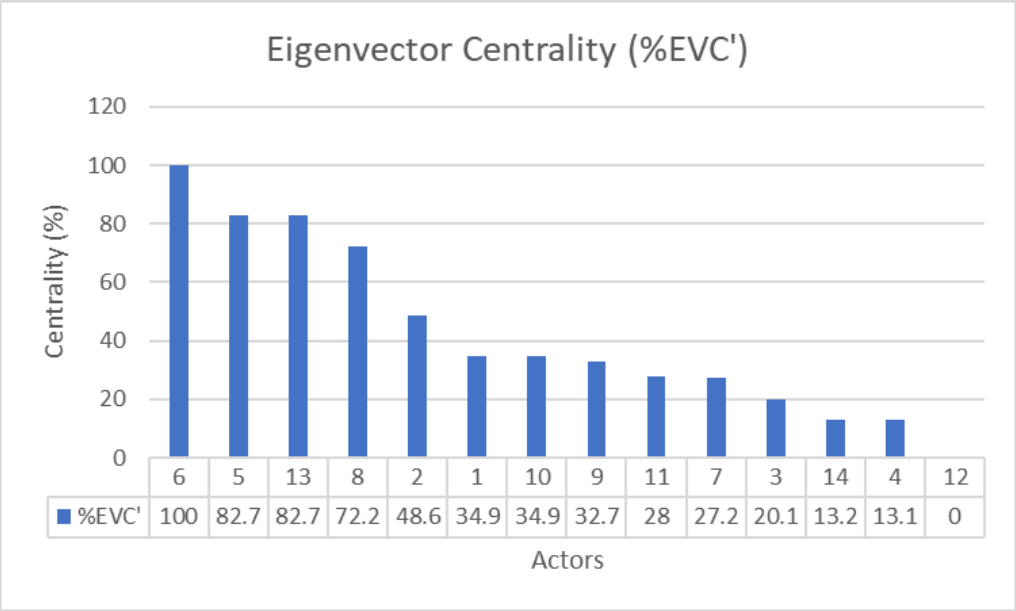
b. *Closeness Centrality* –



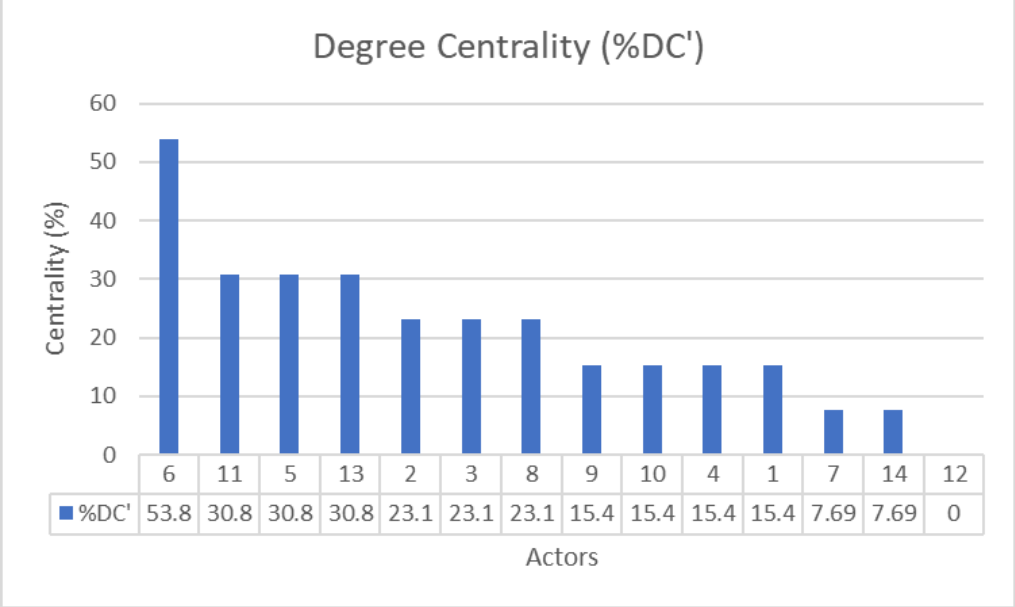
c. *Influence Range Closeness Centrality* –



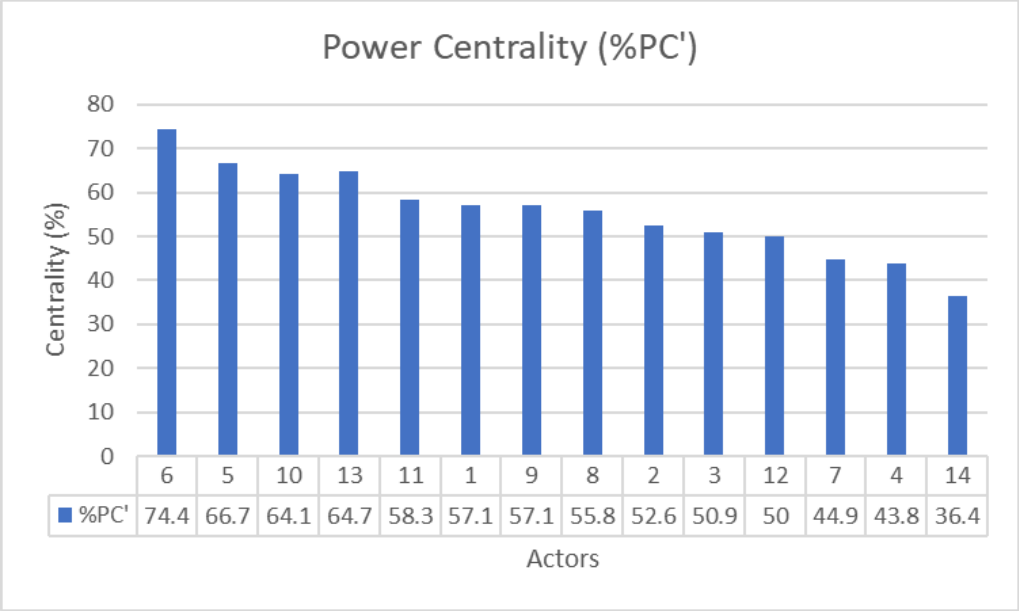
d. *Eigenvector Closeness Centrality* –



e. *Degree Centrality* –



f. *Power Centrality* –



Sovereign Nation participants 12 (2 of 6 metrics; eigenvector and degree) and 14 (4 of 6 metrics; betweenness, closeness, influence range closeness, and power) ordered least and second least centrality among participants throughout the metrics, and similarly with Chesapeake Bay Program Government Organization participant 4 (4 of 6 metrics; closeness, influence range closeness, eigenvector, and power) for second least centrality (Figure 7a-f). These three participants have the least amount of control over the network, and additionally cannot easily access information via connections with other network actors. They are not significantly active in the network either. The only CBP GO participant (4) that has connections to SNs is a participant with significantly low centrality across all metrics. All participants that showed consistent values across metrics, apart from SN participants 12 and 14 (CBP participant 4, Non-Government Organization participant 5, NGO participant 6, State

Government Organization participant 10, and SN participant 13), also did so in 3 metrics consistently (closeness, influence range closeness, and power centralities).

Actors communicated these patterns in their perceptions, and the distinction between SN, NGO, and GO social behavior in the network has become clearer. The CBP's inconsistent partnerships across NGOs (5 of 11 NGO and GO respondents reported) not only block the flow of resources and information between NGOs and the CBP, but also affects SNs: becoming a barrier to their ecological restoration involvement. The density of the network (D = 0.264) supports this reported inconsistency, in that the network is loosely connected and has relatively slow information and resource transmission.

b. Relationships Between Actors of All Categories (SN, GO, and NGO)

Within the social network there were 2 cliques found; Clique 1 being Rappahannock Sovereign Nation participants 13, Chesapeake Conservancy participant 6, and National Park Service Federal Government Organization participant 8; and clique 2 being Rappahannock SN participant 13, Chesapeake Conservancy Non-Government Organization participant 6, and Chesapeake Conservancy NGO participant 5 (Figure 8a-b). A note about these relationships: Rappahannock SN participant 13 stated that they are, "on the board [of directors]. And so I regularly communicate with the CEO, and also the chairman of the board and their staff." Additionally, the Chesapeake Conservancy NGO has 2 actors (participants 5 and 6) that have consistently high levels of centrality. As previously stated, the Chesapeake Conservancy NGO

participant 6 had the highest centrality in 6 of 6 metrics and the Chesapeake

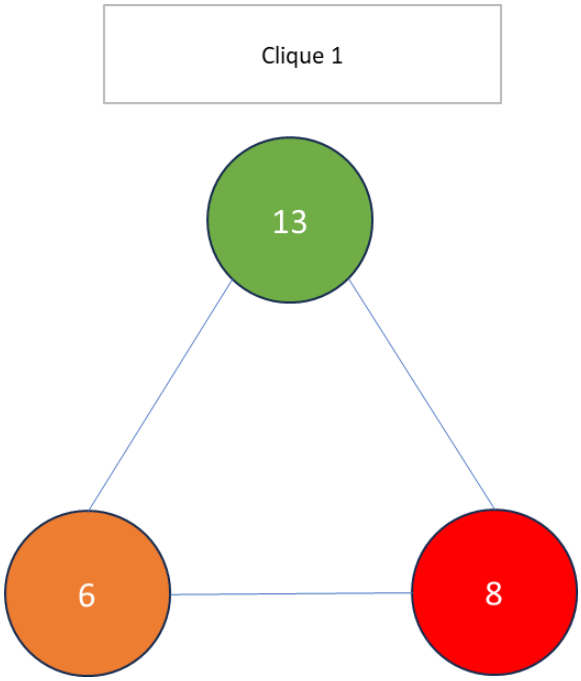
Conservancy NGO participant 5 ego had the second highest centrality in 4 of 6 tests.

This information supports the presence of the cliques described.

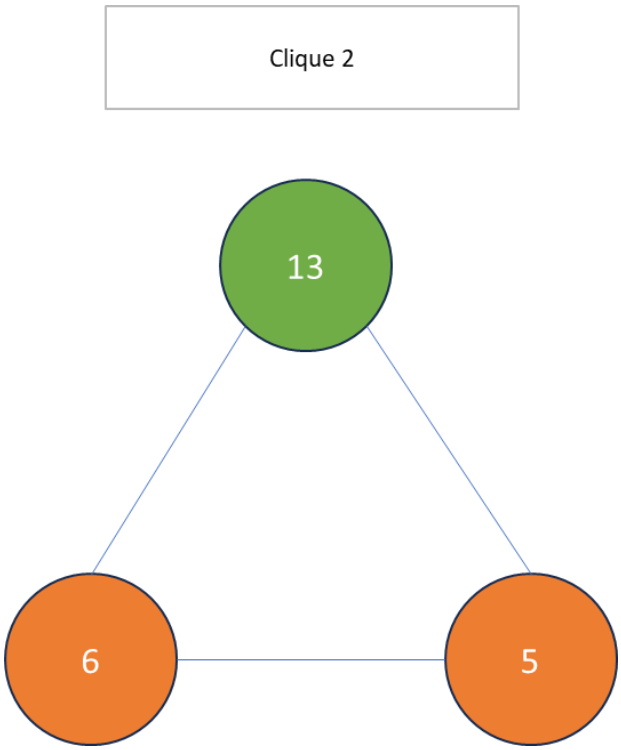
Figures 8a-b. Cliques in the Restoration Social Network

These 2 tri-node networks represent the cliques found within the social network being analyzed. Each clique has 3 members consisting of either nodes 5, 6, 8, and/or 13. These nodes coincide with the same node numbers and color in the social network.

a. Clique 1: Actors 6, 8, and 13



b. Clique 2: Actors 5, 6, and 13



In parallel, 2 of 3 Non-Government Organization respondents and 8 of 8 Government Organization respondents (10 of 11 between both groups) reported there is currently collaborative work being conducted between the Chesapeake Bay Program and NGOs. It is worth noting that the NGO participant that did not report this was Chesapeake Bay Foundation NGO participant 7. It is additionally important to note that the CBF NGO participant actor had one tie to the Chesapeake Conservancy NGO participant 6 actor, which was undefined. In the interviews; however, CBF NGO participant 7 did not describe a connection with the tribes in a

way that was recordable by the social network presented (Figure 6a-b), they did describe their relationship with the Nansemond Indian Nation generally in this excerpt:

> "I think for everything we've done with the tribe, our, our team, our staff, feels like, it's a very gratifying and valuable relationship. And we ask a lot of the tribe…, somebody will say, you know, can you recommend… [a] group [?] and we'll refer out the Nansemond of like, you should talk to [Nansemond tribal member], or [Nansemond tribal member]. Or, … we've done a lot of restoration work and tribal members have been there building reef balls … I just feel like, every time we have an interaction with them… they're coming at it from a really wonderful, grateful, sincere and authentic direction… my first conversation with [name redacted] was ['] we just want to learn, we would just want to be better connected and better involved in the restoration of our waterways, because of our historical connection..., and we just want to tell our story, how can we work together to do that [?'] And so, we were just thrilled to be able to, you know, help facilitate that or help make those connections within the environmental world… [We] feel very grateful and very appreciative that they're willing to work with us, not just as someone who's volunteering their time, but just their spirit and their attitude… and it's just such an important story to tell, and to work with them to tell. And we're

> learning too, as we're working with them about their story and what's happened and what is happening. But it's that relationship… we're all growing because of it."
>
> - CBF NGO participant 7

Support for this reported relationship came via my observation and participation in the June 13th Maritime Crafts School hosted by the Nansemond, during which CBF was a large part of facilitating oyster gardening.

In reference to the relationship between the Chesapeake Bay Program and Non-Government Organizations specifically, 2 of 3 NGO respondents and 6 of 8 Governmental Organization respondents (8 of 11 with both groups combined) reported NGOs to provide part of the capacity for the CBP. The participant that did report this was Chesapeake Bay Foundation NGO participant 7. However, 2 of 11 NGO and GO respondents reported that the CBP provides part of the capacity for NGOs as well. Some additional perceptions clarify that 4 of 11 NGO and GO respondents reported there is NGO representation in the CBP. Additionally, 3 of 8 GO respondents reported that the CBP holds NGO representation.

Representation within a decision-making context is an example of capacity building. Five of 15 total respondents and 4 of 11 Non-Government Organization and Government Organization respondents reported that NGOs have influence over decision-making in the Chesapeake Bay Program. More specifically, 3 of 3 NGO

respondents, 1 of 4 Sovereign Nation respondents, and 1 of 8 GO respondents reported NGOs have influence over decision-making. However, 2 of 3 NGO respondents also reported that the CBP holds power over NGOs, and 3 of 11 NGO and GO respondents reported this. In additional context, 2 of 8 GO respondents reported that the Environmental Protection Agency holds power over the CBP. A description how these relationship qualities manifest is described in the following:

> "[T]he real issue is to understand that the restoration of something as large as the Chesapeake Bay is all about learning while doing and, and not waiting for the perfect solution… you're going to have to understand and the …policy makers are going to have to understand that there's going to be times when things don't work the way they thought it was, it's not a failure. If you're learning while doing, you know, you learn that, okay, this didn't quite work… this factor didn't have the effect, we thought it was, we're gonna look at a different factor, and we're going to do something different. And that's the way you adapt and move forward and… over time, reduce the uncertainty of your actions. And I think that… the problem with that is from the politician's point of view, who are thinking in two- and four- year election cycles… they don't want to see something that… might or might not work, you know, and, but they got to understand that it's all about learning and setting up the process of your actions to allow you to learn from that."

- CBP GO participant 4

Relationships between NGOs and the CBP are complex and inconsistent. However, there is collaborative restoration work being done between the two types of organizations.

c. Stakeholder Engagement

The current way in which the Chesapeake Bay Program engages stakeholders is reported as limiting to the variety of stakeholders able to participate (Chesapeake Bay Program, 2023d). Two of 3 Non-Government Organization respondents and 2 of 8 Government Organization respondents reported that the CBP needs an updated stakeholder engagement framework.

> "[T]here are lots of opportunities for nonprofits or non-government organizations to engage, participate, volunteer, influence the Bay program's operations…. I don't think we've put a lot of effort into focusing on thinking about the diversity of those groups in how we can expand… who are we missing is the question that we have not asked very well…"
>
> - CBP GO participant 1

Three of 8 GO respondents affirmed this viewpoint with the perception that the CBP lacks an effective stakeholder engagement framework. A reported critique of the current framework was made by 2 of 8 GO respondents, holding that the CBP's

volunteer dependent framework works against the program's goals. This is stated specifically here:

> "I do have concerns that that volunteer framework works against ensuring equity and inclusion."
>
> - CBP GO participant 1

In reflection, 5 of 8 Government Organization respondents report that science is a focal point of the Chesapeake Bay Program, which can detract from building stakeholder relationships. One CBP participant described the thought process currently affecting this:

> "[T]hat's the type of thing that I don't think a lot of us recognize, is that a simple day to day life [,] You know? … [H]ow can our science and how can our actors in the Chesapeake Bay, improve [affected stakeholder]'s life? … [S]o he doesn't have to, you know, worry about when he has… [the] time to go to the church…, he knows he has to go to the bathroom now, because he's not going to be able to, you know, later on when the tides come in … and make a septic system, inoperable, you know, so what is it that we can do to help those people? "
>
> - CBP GO participant 4

Additionally, 4 of 11 Non-Government Organization and GO respondents reported NGOs act as an accountability partner to the CBP. More specifically, focusing on the GOs only, 3 of 8 GO respondents reported NGOs acting as an accountability partner to the CBP. The Chesapeake Bay Foundation is one NGO that was given as an accountability partner example. It is worth noting that the CBF NGO participant 7 does not have a direct connection to any of the CBP GO participants (Figure 6a-b).

Chesapeake Bay Program actors connect indirectly with Sovereign Nation actors, due to the fact that the SN actors (SN participants 12, 13, and 14) are only connected to non-CBP Government Organization actors (State and Federal) and Non-Government Organization actors (Figure 6a-b). This pattern is also present in the participant perceptions. All of GO respondents reported that there is collaborative interagency work currently being conducted and 5 of 8 GO respondents reported that the CBP relies on these interagency agreements to meet their capacity needs. Five of 8 GO respondents reported that there are inconsistent interagency and inter-public sector relationships across GOs, alluding to the 2 of 8 GO respondents that reported the CBP has policy scaling difficulties within the public sector. In Figure 6a-b, National Park Service GO participants 2 and 8 do not have any direct connections with the CBP; The National Park Service GO participants 2 and 8 do have direct connections with SN participants 13 and 14 (Figure 6a-b).

As previously stated, 6 of 15 total respondents reported that the Chesapeake Bay Program is inconsistent in its individual partnerships across Non-Government

Organizations. Of this, 5 of 11 NGO and Government Organization respondents combined reported the CBP is inconsistent in its individual partnerships across NGOs and, specifically, 2 of 3 NGO respondents reported this.

> "Chesapeake Conservancy, somehow has garnered or developed credibility with the Bay program in ways that seem inequitable, to what other partners could contribute, but aren't valued for their contributions, right. So Chesapeake Conservancy has done a lot of work to think about how we can better target practices, but they're not the only ones. I don't understand why, they're the ones who get the bandwidth or the attention and other partners who could contribute even more are marginalized."
>
> - CBP GO participant 1

An inconsistent relationship can affect surrounding relationships in indirect ways, demonstrated by the visual representation of the social network. As I had previously mentioned, the high concentration of resources and information that lie within the CBP is intermittently given to NGOs due to inconsistency in the relationships between the CBP GO and NGOs. This may lead to those resources being shared with SNs, but that is not a guarantee. This scenario offers a potential explanation for the slowdown of information and resource transmission we see in the network and the lack of interaction between the CBP and SNs. This network slow down does not, however, affect the SN-NGO relationship and the benefits of this partnership. NGOs

and SNs can procure their own resources and information; however, there is a disparity between GOs, NGOs, and SNs in the availability of opportunities to acquire capacity building resources. Within this context, 2 of 3 NGO respondents reported NGOs rely on one another to meet their capacity needs. This also helps to describe more specifically why 3 of 3 NGO respondents reported that NGOs have consistent and effective inter-organizational collaborations.

> "[I]n terms of [the Chesapeake Conservancy's] capacity to bring policy and engage stakeholders on the ground and actually create… actually put work on the ground who achieve and advance [the Chesapeake Bay Program's] goals. Five stars, I mean, they work closely with [CBF Eastern Shore employee], I think those groups together are just doing some really excellent work, not only just to put practices on the ground, but in a way that they're developing information that can inform watershed restorations outside of their project areas."
>
> -CBP GO participant 1

Additionally, 2 of 3 NGO respondents reported that NGOs consistently collaborate to challenge Bay health threats.

In relation to Sovereign Nations, 4 of 7 Non-Government Organization and SN respondents reported NGO and SN relationships are not consistent across the

SNs. Three of 7 NGO and SN respondents reported NGOs are lacking engagement experience with SNs. More specifically in terms of NGO separate from SN, 2 of 3 NGO respondents and 1 of 4 SN respondents reported that NGOs are lacking engagement experience with SNs. However, 8 of 15 total respondents reported that there is currently collaborative work being conducted between SNs and NGOs. Additionally, 2 of 3 NGO respondents and 4 of 4 SN respondents (6 of 7 between both groups) reported there is currently collaborative work being conducted. Two of 8 Government Organization respondents also reported this. My observation of the Maritime Crafts event hosted by the Nansemond Indian Nation (June 13th, 2023) confirmed reports of collaboration, as the Nansemond River Preservation Alliance and the Chesapeake Bay Foundation were in attendance and helped facilitate the event. Collaborative work being a given example, 3 of 3 Non-Government Organization respondents reported that NGOs are purposefully engaging Sovereign Nations. This engagement is supported in that 6 of 15 total respondents reported that NGOs assist SNs with building capacity for environmental work. Of this, 3 of 4 SN respondents and 3 of 3 NGO respondents (6 of 7 between both groups) reported NGOs assist SNs with building capacity for environmental work.

During the Intertribal Conservation Council meeting I observed (April 13th, 2023), both the Chesapeake Bay Funders Network and the Pew Foundation were there to offer resources and assistance to the SN representatives, which consisted of representatives from all 7 federally-recognized Virginia SNs. Also, the property used for oyster gardening for the Nansemond Indian Nation's Maritime Crafts event (July

8th, 2023) was the property of a member of the NRPA. In addition, 6 of 15 total respondents reported that NGOs support SN land acquisition, a form of capacity building. Of this, 3 of 3 NGO respondents, 3 of 4 SN respondents, and 2 of 8 GO respondents reported NGOs support land acquisition. In terms of the categories being examined, 6 of 7 NGO and SN respondents reported NGOs support SN land acquisition. Chesapeake Conservancy NGO participant 5 speaks on their experience with assisting the Upper Mattaponi in a tribal land acquisition project in the next section.

d. Relationship Consistency

Relationships throughout the network were inconsistent, which can make the streams of influence inefficient. Six of 15 total respondents reported that Sovereign Nations and State Government Organizations have inconsistent relationships throughout the watershed. Of those, 2 of 8 Government Organization respondents and 3 of 4 SN respondents (5 of 12 with both groups combined) reported SNs and State GOs have inconsistent relationships throughout the watershed. Four of 4 SN respondents reported that SNs are currently developing their capacity; however, 2 of 4 SN respondents reported that SNs are currently conducting independent restoration work, despite potential capacity limitations. An experience with assisting in a tribal land acquisition project is described in the following quote:

> "I found from [Upper Mattaponi councilmember] ... we were in the field and we were just talking and he shared… that many of their

> members had moved away over the years for various reasons because of discrimination or lack of job opportunities, lack of housing, and in that part of the world, where they are. And that one of the reasons that they were trying to acquire additional land was to encourage tribal members to come back to Virginia. So I thought that was helpful, enlightening, you know, like, I just didn't know that before. And so I felt like, you know, those kinds of exchanges are certainly valuable."
>
> - Chesapeake Conservancy NGO participant 5

There are several barriers to capacity building and implementing restoration work simultaneously, and two major barriers were reported by the Intertribal Conservation Council (April 13th, 2023). Speaking on their experiences surrounding the Bureau of Indian Affairs more specifically, when collaborating with the Federal Government Organizations, Sovereign Nations are challenged by federal recognition and length of project timelines. In additional context, 4 of 12 GO and SN respondents also reported a general government preference for working with federally-recognized tribes. It was noted at the Scientific and Technical Advisory Committee Chesapeake Bay Program Quarterly Meeting (June 13th, 2023) that:

> "...within Virginia alone you have 11 recognized tribal communities. Seven of them are recognized recently, fairly recently, by the federal government and then there are four that are recognized by the state of

> Virginia... I think it could be applicable in terms of how you would interact with these different communities."
>
> - Ashley Spivey

And a period of time later in the meeting, in reference to working with tribes, it is also mentioned:

> "...[W]hen we talk about Virginia [federally-recognized Sovereign Nations], I think... the reason we really talk about them is because they are federally recognized."
>
> - Lisa Bergstrom

Viewing the relationship in the other direction, 3 of 15 total respondents, including 2 of 12 GO and SN respondents, reported that SNs display a hesitancy about working with GOs. One counterexample is the Maritime Craft event hosted by the Nansemond Indian Nation (July 8th, 2023), where Nikki Bass (EPA, Nansemond Indian Nation councilmember) talked about how the tribes have been reaching out to GOs and NGOs in order to mend the relationship. She mentioned that they were waiting for a display of mutual interest from both GOs and NGOs. However, a remark that was made at the ICC meeting (April 13th, 2023) about a lack of trust in the Bureau of Indian Affairs (BIA) as a supporter affirms the original perception of GOs. The reason given was the length of project timelines. An example given is that

projects often lasted through several of the Sovereign Nation's Chiefdom terms. This comment does not support the original perception of NGOs, however.

e. Sovereign Nations' Rights and Realities

Sovereign Nations are at the same hierarchical level as state governments. However, Ashley Spivey spoke of the lack of required codes and policies that require tribal consultation in Virginia. Additionally, it was mentioned in reference that,

> "I have no doubt saying that the current (Virginia State) Administration is a huge roadblock to why... the legislation that has already been presented... is not considered. And... we have... not had a very communicative relationship with the current Administration from a tribal perspective."

The creation of legislation that requires the consultation of Sovereign Nations is one of the ways a state affirms the relationship and Sovereign Nations hold government power. Additionally, Ashley Spivey mentioned,

> "I have no doubt saying that the current (Virginia State) Administration is a huge roadblock to why... the legislation that has already been presented... is not considered. And... we have... not had a very communicative relationship with the current Administration from a tribal perspective."

And,

> "...one thing I want to bring home is that the tribes in the Chesapeake Bay Region, they are nations. They have their own governing bodies... ... they have a government-to-government relationship if they are federally-recognized with the United States government. That has to be in the back of everybody's body's mind."
>
> - Ashley Spivey

Related to the relationship between Sovereign Nations and Government Organizations, 2 of 4 SN respondents reported that SNs are reaffirming their status as independent nations with the same rights and privileges as states. This serves as a reminder that the trustee relationship and policies that guide the relationships between SNs and the federal government would also require that SNs are engaged and consulted in the Chesapeake Bay Program and its decision-making processes. One part of creating a government-government relationship and building government capacity is having representatives from each government collectively making decisions. This concept was presented at the June 13th, 2023 Science and Technical Advisory Committee CBP Quarterly Meeting:

> "[E]very state that encompasses the Chesapeake Bay Watershed is represented on the committee to my knowledge.... the tribes are

> nations in their own right. And so one way that... STAC and the Bay program can really start thinking about building these relationships and again I would recognize you know doing that through a co-management, co-stewardship kind of perspective is to think about having tribal representation officially represented… The federal government [,] it's replete with acts and processes that require tribal engagement and consultation."
>
> - Ashley Spivey

Related to the relationship between SNs and Federal GOs, 3 of 4 SN respondents reported that the Regional Tribal Operations Committee, a working committee of the EPA, facilitates SNs collaboration and communication. Two of 4 SN respondents reported that federally-recognized SNs have consistent communication and the RTOC was commonly reported as a facilitator of this communication. Within inter-SN relationships, 4 of 4 SN respondents reported that Sovereign Nations have relationships built upon time and shared experiences and 2 of 4 SN respondents reported that SNs share a cultural context. Though the RTOC helps bring tribes face to face, it is the shared experiences of the SNs that are the foundation of their relationships.

This was said in reference to the relationship between SNs:

> "[W]e're happy to help any tribe. We're also… easy to ask, reach out and ask for things that we need. And they're always, you know, ready to help. So I think that's the kind of relationship that we've had with the tribes all these years. And it's one of the strengths of our communities is that… our tribal leaders stand together."
>
> - SN participant 13

In terms of inter-tribal relationships, 2 of 4 Sovereign Nation respondents reported that the intertribal relationship depth is inconsistent among Sovereign Nations. In Figure 6a-b, SN participants 12 and 13 have a direct and balanced tie to one another. However, neither SN participant 12 nor 13 have any direct tie or path to SN participant 14 without undefined relationships between them (Figure 6a-b). A counter example is the relationship between state-recognized SNs and federally-recognized SNs, noted between the Nansemond Indian Nation and the Nottoway Indian Tribe of Virginia. The Nansemond Indian Nation had the Nottoway Tribe in attendance and participating at the Maritime Crafts event (July 8th, 2023). Additionally, SN participant 13 stated this during their interview:

> "I interact more with the Pattawomeck tribe just simply because they are closer to me. And we have a lot of things culturally, and traditionally in common. We had early marriage with them. So our tribe tends to be a little bit closer with them than the other state tribes. But yeah, good relationship."

A noted perception, 2 of 12 Government Organization and Sovereign Nation respondents, 1 of 7 Non-Government Organization and SN respondents, and 1 of 11 NGO and GO respondents reported collaborative work between SNs, NGOs, and GOs is effective. The respondents who reported a low level of collaboration was a Federal GO participant (National Park Service affiliated), an NGO participant (Chesapeake Conservancy affiliated), and an SN participant. An example of three-way (SN, GO, NGO) collaborative work I observed was the activities I participated in at the Maritime Crafts on the Nansemond event hosted by the Nansemond Indian Nation (July 8th, 2023). These activities supported education about the Indigenous people of Virginia, environmental education, reconnection to ancestral lands, and oyster bed restoration. It was noted that the Nansemond Indian Nation, the NPS, the Chesapeake Bay Foundation, and the Nansemond River Preservation Alliance all played a role in facilitating the event.

3. What aspects of government-directed environmental projects could be positively affected with more Sovereign Nation involvement and relationship improvement on the Chesapeake Bay?

The interviews, focus group, and participant observations conducted identified three areas that Sovereign Nation involvement has the potential to improve in the government-led restoration of the Chesapeake Bay. The three areas found in this study are: Capacity Needs, Stakeholder Engagement, and Sovereign Nation Activity

and Collaboration. Results for these categories show the ability of Sovereign Nations to provide capacity for the Chesapeake Bay Program, improve stakeholder engagement strategies, and improve overall Indigenous involvement in their restoration projects.

a. Capacity Needs

The Chesapeake Bay Program relies on capacity support from Non-Government Organizations, as reported by participants. Two of 3 NGO respondents and 6 of 8 Governmental Organization respondents (8 of 11 when groups are combined) reported that NGOs provide part of the capacity for the CBP. As previously quoted:

> "[I]n terms of [the Chesapeake Conservancy's] capacity to bring policy and engage stakeholders on the ground and actually create… actually put work on the ground who achieve and advance [the Chesapeake Bay Program's] goals. Five stars."
>
> -CBP GO participant 1

The way in which the network is interconnected now hinders capacity building between SNs and the CBP. Chesapeake Conservancy NGO participant 6 has a direct tie to SN participant 13, and indirect ties to SN participants 12 and 14. As previously mentioned, Chesapeake Conservancy NGO participant 6 consistently held the most

centrality in the restoration network across all metrics (Figure 7a-f). Notably, the participant between Chesapeake Conservancy NGO participant 6 and SN participant 14, which is NPS federal GO participant 2, has a receiving relationship with participant 14 when referencing resource exchange, and an undefined relationship when referencing power exchange (Figure 6a-b). Three of 8 Government Organization respondents reported that the Chesapeake Bay Program also relies on a volunteer framework to meet capacity needs. Two of 8 Government Organization respondents reported that the Chesapeake Bay Program's volunteer dependent framework works against the program's goals. This was mentioned in a previous quote by CBP GO participant 1 (p.72).

b. Stakeholder Engagement

The stakeholder engagement strategy that the Chesapeake Bay Program implements (Chesapeake Bay Program, 2019) was reported by some respondents as ineffective. This strategy as currently written focuses on engaging with local government leaders. As previously mentioned, 3 of 8 Government Organization respondents reported that the CBP lacks an effective stakeholder engagement framework, and additionally, 2 of 8 Government Organization respondents reported that the CBP needs an updated stakeholder engagement framework.

Two SNs provide an example of their stakeholder engagement practices and opportunities with local government and non-Indigenous community members via the Maritime Crafts event hosted by the Nansemond Indian Nation and the Intertribal

Conservation Council meeting. While at the Maritime Crafts event, I observed the Nansemond councilmembers and general members interacting with their non-Indigenous community members while conducting oyster restoration work. On the truck ride to the oyster gardening site, Nikki Bass also briefly described the federally-based Indian Community Development Block Grant as a grant that any local government can apply for. She further explained that if the local government thought that a Sovereign Nation could do development work in their community better than the local government could, then that money could be directed to a SN to accomplish that work (July 8th, 2023). A conversation at the ICC meeting about the role of tribes in local communities also supports this.

It was additionally noted at the Intertribal Conservation Council meeting that tribes contribute significantly to the local resources and economy of their surrounding community. An example given of local resources is a Native health clinic run by the Chickahominy Indian Tribe. The clinic serves tribal members for free, however it also serves the surrounding community in an affordable way. The general example given of the local economy would be that SNs bring in "money,"," or Government funds, to their localities that would otherwise not be available to the community (April 13th 2023). This type of stakeholder engagement supports the 2 of 8 Government Organization respondents that reported that restoration is most beneficial at the grassroots. Half of Sovereign Nation respondents reported that Indigenous Traditional Ecological Knowledge is important for restoration work.

c. Sovereign Nation Activity and Collaboration

There are barriers to building capacity and conducting ecological restoration projects at the same time. All Sovereign Nation respondents reported that SNs are currently developing their general capacity, and half of these same respondents reported that SNs are currently conducting restoration work independent of the Chesapeake Bay Program as well. The example of Fone's Cliffs, a land acquisition project, was described here:

> "We have been involved with various environmental groups, trying to help save the Cliffs, and recognizing daily all the differences that are taking place in our environment around us. It just seems to be now… at a critical point, … and we have to really do more than just working with conservation agencies. And so now we have to really take on our assigned role as stewards of the land and, and lead that way. So that's what the ICC is doing."
>
> - SN participants 13 and 14

A noteworthy perception, 2 of 12 Government Organization and SN respondents, 1 of 7 Non-Government Organization and SN respondents, and 1 of 11 NGO and GO respondents reported collaborative work between SNs, NGOs, and GOs is effective. One Federal GO participant (National Park Service affiliated), one NGO participant (Chesapeake Conservancy affiliated), and one SN participant also reported this.

Though capacity is reported as lacking, SN participant 12 did have this to say about the operation of tribal governments, generally speaking:

> "I think what makes tribal government successful is that we talk to each other… we may have disagreements. But… it doesn't devolve to the point of, say, Congress, where everything is so partisan, and nobody is willing to give, ... we still have to compromise on issues within our government. And we will do that to achieve our goals… [un]like, now, for instance, what you see in politics on a federal level, and even state levels now. Everything is so partisan, that they… even refuse to engage with each other [,] to have a conversation. And that's something that I know that we do. And I feel confident all tribes still function successfully as governments because we're willing to engage and resolve our disagreements through conversation."
>
> - SN participant 12

This is part of what allows SNs to build capacity and commit to environmental restoration simultaneously.

Results Summary

The results presented answer the three overarching questions that drove this research project:

. ***Question 1: What is the current relationship between the Chesapeake Bay Program and the Sovereign Nations of Virginia?***

. ***Question 2: How do the power dynamics between the CBP and stakeholders affect the involvement of SNs in the Bay's restoration?***

. ***Questions 3: What aspects of government-directed environmental projects could be positively affected with more SN involvement and relationship improvement on the Chesapeake Bay?***

Several trends were revealed that were specific to each question. Sovereign Nation Representation, Collaboration, Engaging Sovereign Nations, and Connections Between the Chesapeake Bay Program and Sovereign Nations were key to answering Question 1. Themes of Actor Centrality, Relationships Between Actors of All Categories (SN, GO, and NGO), Stakeholder Engagement, Relationship Consistency, and Sovereign Nations' Rights and Realities were revealed in response to Question 2. Finally, analysis of interviews showed how information about Capacity Needs, Stakeholder Engagement, and Sovereign Nation Activity and Collaboration was important to answer Question 3. These themes provide detailed information that will allow me and others to draw conclusions about Indigenous involvement in the Chesapeake Bay's restoration.

Chapter 5: Discussion

Introduction

In this chapter, I use the results of the literature review (Chapter 2) and from the survey and focus group (Chapters 3 and 4) to address my three primary research questions. The research questions were:

1. What is the current relationship between the Chesapeake Bay Program and the Sovereign Nations of Virginia?

2. How do the power dynamics between the CBP and stakeholders affect the involvement of SNs in the Bay's restoration?

3. What aspects of government-directed environmental projects could be positively affected with more SN involvement and relationship improvement on the Chesapeake Bay?

The many parallels between the results of the survey and the issues discussed in the broader literature adds to the credibility of the survey results. Thus, the survey results that were specific to Chesapeake Bay, while based on a small sample size, can be used to document the role of the Sovereign Nations in the CBP and to provide the basis for recommendations for furthering Indigenous involvement in ecological restoration. At a high-level, the results also provide an enhanced understanding of the general involvement of contemporary Indigenous communities in government-led restoration projects, and ways to increase their involvement.

It is important to understand the context of the contemporary relationship between Sovereign Nations and Government Organizations, specifically the historical and cultural frames in which the relationship developed. Virginia has a long history of mistreating Indigenous people. The slave trade of Indigenous people, both domestic and foreign, preceded the African American slave trade and occurred throughout the 17th and 18th centuries. The foreign trade of Indigenous people as slaves was highly profitable, which encouraged its continuation. The Indigenous slave trade was made illegal via the Treaty of Necotowance; however, Indigenous enslavement still occurred illegally long after the treaty came into effect (Everett, 2009).

As for the cultural context, the colonial mindset and the Indigenous community mindset are rooted in different logic and value systems. Whereas a colonial worldview roots itself in being separate from nature, the Indigenous worldview roots itself as part of nature, or rather creation. These opposing perspectives can create friction when collaborating on any kind of project, and the complex work of ecological restoration is no exception. Though the end goal may be the same generally speaking, such as a healthier environment and community, the way that end goal looks from each perspective is different. That also includes different ideas on the path to get there. The historical and cultural contexts framing the contemporary Sovereign Nation and Virginia government organization relationship may help clarify some of the reasoning behind the disconnected relationship between Virginia Sovereign Nations and the Chesapeake Bay Program.

The Disconnect Between Sovereign Nations and the Chesapeake Bay Program

The interviews and focus group revealed that there is not a defined or intentional relationship between the Chesapeake Bay Program and Sovereign Nations. This is in contrast to other ecological restoration projects, where the relationships are formalized although may not always be positive (Breslow, 2014b; Poe et al., 2016). As for the CBP specifically, the following was said by two employees:

> "All of the Bay Program's connections with Indigenous tribes in the region fall under our National Park Service partners. Additionally, one of the EPA employees in our office, Lucinda Power, works with the federally recognized tribes in the watershed in coordination with the EPA, but they are all primarily in Virginia." *
>
> - Rachel Felver, Chesapeake Bay Program Communications Director

*Note: This is from an email (02/09/2023) when contacted to request an interview.

Lucinda Power went on to confirm the relationship here:

"I have worked with the federally-recognized tribes in Virginia in the context of the Chesapeake Bay Program partnership."

- Lucinda Power, Implementation and Evaluation Team Leader, U.S. Environmental Protection Agency, Chesapeake Bay Program Office

*Note: This is from an email (02/21/2023) when contacted to request an interview.

Some explanations offered by the participants of this study indicate why the relationship between the Sovereign Nations and the Chesapeake Bay Program appears to be limited. The first is that the CBP has no official representation of SNs embedded in the decision-making process. This is problematic for two reasons: 1) it may be noncompliant with the trustee relationship between the federal government and federally-recognized Sovereign Nations, and 2) it can contribute to Indigenous Environmental Injustice (Warner, 2017).

The current lack of involvement may also be influenced by the general perception that broadly the Chesapeake Bay Program lacks membership and connections to the contemporary Sovereign Nations within the watershed. Knowledge of contemporary Sovereign Nations has been emerging at the CBP management board level, but has yet to be dispersed throughout the CBP widely or be generally known to the Science and Technical Advisory Committee, who could recommend work with SNs. This was indicated when respondents, including members of GOs,

did not know that there were officially-recognized Sovereign Nations in Virginia. As previously stated, the STAC of the CBP had a representative of the Pamunkey tribe come in to explain guidance coming down from the White House on mandated Indigenous involvement in environmental projects that affect the livelihoods and ancestral lands of Sovereign Nations. As Ashely Spivey explained to the people in the room that day, the meeting's location was only a short distance from one of the oldest tribal reservations in the country.

There is more knowledge of Sovereign Nations with members of the Management Board of the Chesapeake Bay Program. However, the knowledge that SNs exist and should be involved in the planning and implementation of Bay restoration remains a side-issue compared to the more implementation-focused activities of the CBP. The visualized restoration network presented in the results showed how that was possible (Figure 6a-b). Those who did know about Sovereign Nations did not have well established connections with those who did have connections to SNs (Figure 6a-b); this is in reference to power and resource exchange. The CBP lacks experience engaging with SNs and does not conduct collaborative work with these governments. The general perception from respondents that there is a lack of interactive experience and project collaboration between the CBP and SNs, compounded by the lack of knowledge surrounding SNs in general, provide several explanations as to the present lack of engagement of SN in the CBP. While not specifically analyzed in the survey, there may be uneven interest from the SNs in being intensively involved in the CBP, which can also partially explain the

low level of involvement. Presently, however, it is the lack of opportunity (real and perceived) that drives the low level of involvement.

A Fractured Chesapeake Bay Watershed Restoration Network

The Chesapeake Bay Program's stakeholder engagement practices have (passively) limited the involvement of contemporary Indigenous communities in the Bay's government-led restoration. Some respondents viewed the framework of stakeholder engagement practices as lacking consideration for differences in participation needs, that then poses a barrier to the Sovereign Nations involvement. Both the CBP and Sovereign Nations depend on NGOs for capacity, and both conduct Chesapeake Bay restoration work with that support. The National Park Service has taken on the role of working with the Sovereign Nations on restoration goals set by the CBP's delegation. As such, the CBP misses the opportunity for a broader and direct connection and engagement with the Sovereign Nations. The CBP and SNs have very aligned goals, with perceptions of implementation likely being the major difference.

CBP stakeholder engagement practices need to be revisited to design strategies that target a wider pool of stakeholders and to account for different participation needs (Showalter, 2021; Webster et al., 2022). Respondents from every organizational category (SN, GO, NGO), and more specifically within the CBP, expressed a reworking of the CBPs stakeholder engagement practices as a necessary change. As described in the results, the volunteer framework that underlies the

engagement practices is acting as a barrier to a variety of stakeholders with valuable experiences to share. SNs are an important group of stakeholders affected by these practices and it would be beneficial for the CBP to re-evaluate their stakeholder engagement to ensure participation of all stakeholders.

The Rappahannock Indian Tribe is experiencing the benefits of collaboration, as the Chesapeake Conservancy holds the highest amount of network influence in the Chesapeake Bay restoration. This social status in the network has allowed the Chesapeake Conservancy to significantly assist the Rappahannock, to paraphrase the focus group. It is not just the Chesapeake Conservancy helping Sovereign Nations with restoration work, as there are smaller NGOs that provide ample support for Sovereign Nations on a local scale, one example being the Friends of the Rappahannock. There were several mentions of the local river-protection-focused groups; a personally-viewed and previously-mentioned example being the Nansemond River Protection Alliance.

While the relationship between the Chesapeake Conservancy and Rappahannock is significant, the stability of the relationship depends on the relationship ties (both power and resource sharing) between the CBP and the Chesapeake Conservancy, which is not guaranteed to continue into the future in its current state. In general, the CBPs relationships with stakeholders was generally reported as inconsistent among the respondents. This lack of assurance of a permanent role makes it more difficult to find organizations that can provide capacity

to the CBP, and in this case, adds uncertainty about the future of an NGO collaboration with a SN (in this case, the Chesapeake Conservancy and the Rappahannock).

Sovereign Nations have a relationship with the National Park Service delegated by the Chesapeake Bay Program, and the goals of the NPS and the SNs may not always align effectively. A series of correspondences with 2 employees from the CBP gives clarity to this relationship:

> "All of the Bay Program's connections with Indigenous tribes in the region fall under our National Park Service partners. Additionally, one of the EPA employees in our office, Lucinda Power, works with the federally recognized tribes in the watershed in coordination with the EPA, but they are all primarily in Virginia."
>
> - Rachel Felver, Chesapeake Bay Program Communications Director

Lucinda Power went on to confirm the relationship here:

> "I have worked with the federally-recognized tribes in Virginia in the context of the Chesapeake [Conservation] partnership."

- Lucinda Power, Implementation and Evaluation Team Leader, U.S. Environmental Protection Agency, Chesapeake Bay Program Office

In contrast, the Chesapeake Bay Program and Sovereign Nations goals seem to align very well; yet, they do not have a direct and formal collaborative relationship with one another. That is also implied in the restoration network visualized in this study (Figure 6a-b), and respondents also perceived most of the government collaboration with SNs within the CBP involved the National Park Service. I affirmed this with my observation at the Nansemond Indian Tribe's event that was previously referenced where I saw NPS employees helping to facilitate the event. The SNs do not hold any representative positions with the NPS in a decision-making capacity, but the NPS does support SNs in their restoration efforts and consult to them on educating the public about contemporary SNs. This focusing of responsibility away from the entire CBP to a member agency contributes to undermining the mechanisms that are meant to protect tribal sovereignty; Virginia Sovereign Nations utilize these mechanisms to exercise power and resource procurement.

The Government-led Chesapeake Bay Program Could Benefit from Sovereign Nation Involvement

Virginia has a contemporary presence of Sovereign Nations whose ancestral lands are located along the tributaries of the Chesapeake Bay and currently live and work in those areas. These areas are, namely, the Rappahannock River, York River, Potomac

River, and James River. In several cases of self-report recorded in this study, Virginia SNs have retained their Indigenous Traditional Environmental Knowledge, and have been implementing it apart from the CBP. A simple example of this is the ITEK that the Pamunkey Indian Tribe is utilizing to encourage ecologically healthier sturgeon populations. Virginia SNs are also conducting collaborative restoration work with government organizations and non-government organizations by their own outreach.

Sovereign Nations have developed effective adaptive management practices with their ancestral lands and can contribute a valuable way of being to restoration practices. Virginia Sovereign Nations maintain traditional connections to their ancestral homelands and know what adaptive management practices work best and what practices to avoid for their ancestral homelands. SNs also know how to change practices as the environment and ecology changes. The Chesapeake Bay Program would benefit from this, as effective adaptive management practices are of high priority to the CBP.

Virginia's Sovereign Nations can be a point of unity in the restoration community. In some other relevant restorations in the United States, Sovereign Nations have been those entities that have brought all other entities together (Fox et al, 2022). That was also found in this study, by mention of several respondents, and by my witness at the previously mentioned event hosted by the Nansemond. Sovereign Nations in Virginia have shown that they can bring together stakeholders

from across categories to conduct restoration work like that of other Sovereign Nations conducting collaborative ecological restoration.

Limitations and Weaknesses of Study

This study was limited temporally (single survey) and spatially (Virginia Sovereign Nations) to enable an in-depth view of the relationship among SNs and the Non-Government Organizations and Chesapeake Bay Program. For practical reasons, while the respondents represented multiple agencies and NGOs, not all the major players were represented. For example, there are additional SNs not included, many Federal and state agencies are part of the CBP, and there is multitude of NGOs involved in Bay restoration. Further, the number of people for each of the SN, NGO, and GO was limited to a few individuals. I include only federally-recognized tribes (found in Virginia only) due to the United States government obligation to act as a trustee on behalf of recognized Sovereign Nations. Thus, the results showed a closed social network with a generally low participant count and limited participant spread. The agreement of the results with the issues identified in the literature review provide some assurance that the study results have a reasonable level of generality.

The time limits placed on this study restricted the quality of relationship building with each tribe before asking for their participation. Also, SNs do not always have the capacity to spare one or more of their study-relevant council members, hindering them from participating during the study period. For a variety of possible reasons, including capacity limitations, only 4 of 6 federally-recognized tribes in

Virginia participated in this study. As capacity conditions improve, more tribes will be able to offer their thoughts on the situation, if the network is ever re-evaluated.

Chapter 6: Conclusions

Indigenous Involvement in the Chesapeake Bay: A Space for Improvement

The results of this thesis provide the basis for recommending steps going forward. I used the results of the literature review (Chapter 2) and the survey and focus group (Chapter 3 and 4) to formulate detailed discussion about possible causes for the limited involvement of Sovereign Nations in the Chesapeake Bay restoration. In this chapter, I summarize two major conclusions that set the stage for offering suggestions going forward.

The first conclusion is that there is currently only minor Indigenous involvement in the Chesapeake Bay Program and little to no involvement in the decision-making and implementation. Nor are there any discernible relationship ties. This lack of involvement can make the CBP vulnerable to not abiding by the federal trustee relationship with federally-recognized tribes and can contribute to Indigenous Environmental Injustice. I recognize, however, that some steps toward upholding justice and honoring the trustee relationship are underway. For example, Ashely Spivey was invited to speak to the Chesapeake Bay Program's Science and Technical Advisory Committee at their quarterly meeting. Examples of possible opportunities for immediate progress towards meaningful Indigenous involvement include representation on the CBP Management Board, the CBP Goal Implementation Teams, and STAC. These departments have ample opportunities for involvement in decision-making and planning, as well as influence over action options presented to the CBP.

The second conclusion relevant to next steps is that the CBP and its strategy for interacting with stakeholders (Chesapeake Bay Program, 2019) has had a noticeable effect on the involvement of Sovereign Nations in the Bay's restoration. The setup of stakeholder engagement practices at the CBP seems to encourage practitioners to adopt a "If they want to, they will" mindset. This is problematic, in that it hinders the participation needs of the Sovereign Nations stakeholders that rely heavily on a healthy Bay. Two studies found that stakeholder engagement strategies in general are in need of change (Showalter, 2021; Webster et al., 2022). The CBP should be held procedurally accountable for its current relationship with the Sovereign Nations.

Opportunities for Future Study

An immediate step is the preparation of a more detailed and watershed-wide analysis of indigenous inclusion opportunities in the Chesapeake Bay watershed. Examination of state-recognized tribes and their relationships to federally-recognized tribes in the case of restoration opportunities, inclusion of more government and non-government entities and employees, and having a specific focus on the dynamics between local governments and Sovereign Nations surrounding restoration opportunities would prove valuable and insightful for comparison and expansion purposes from this study. Further, conducting a focused study concerning state-recognized tribes and their barriers to participation in environmental restoration, as well as barriers to participating in environmental governance such as in Emanuel and Wilkins (2020),

will further support Indigenous Environmental Justice initiatives in the Chesapeake Bay watershed. Future studies could serve as progress markers for the Chesapeake Bay watershed restoration.

Additionally, future research could be expanded to the nearby Albemarle-Pamlico Estuary of North Carolina (also referred to as "the Sound"), where there are 8 state-recognized tribes, two of which reside within the state-recognized boundary of the Albemarle-Pamlico watershed (Figure 9; Emanuel and Wilkins, 2020). These tribes are the Haliwa-Saponi Indian Tribe and the Meherrin Indian Tribe. There is only one federally-recognized tribe in North Carolina, the Eastern Band of Cherokee, and it does not reside within the Sound's watershed (Figure 10; Emanuel and Wilkins, 2020).

The Albemarle-Pamlico National Estuary Partnership, a partnership between the North Carolina government and other government and non-government agencies, has many parallels to the Chesapeake Bay Program. This Partnership was once a program established by the EPA as one of the National Estuary Programs as amended by the Clean Water Act in 1987. Additionally, they have been working with the federal- and state-recognized tribes in the APNEP bounds and generally in the coastal plains areas of North Carolina, as well as parts of Virginia and South Carolina. Those communities residing in North Carolina are identified in Figure 10. The APNEP is doing so to assist tribes in capacity building and access to environmental decision-making, among other foci, however there is no clear evidence that these tribes are formally involved in decision-making processes. Understanding how the Albemarle-

Pamlico Sound watershed restoration is functioning socially, as well as how indigenous people are being involved in that restoration would be a helpful expansion to the literature surrounding Indigenous involvement in estuarine restoration in the Mid-Atlantic region of the United States.

Figure 9. ***Albemarle-Pamlico National Estuary Partnership Watershed Boundary***
The area to be studied in future research includes those outlined in black. The image was sourced from "APNEP Region River Basins Map" (https://apnep.nc.gov/resources/maps).

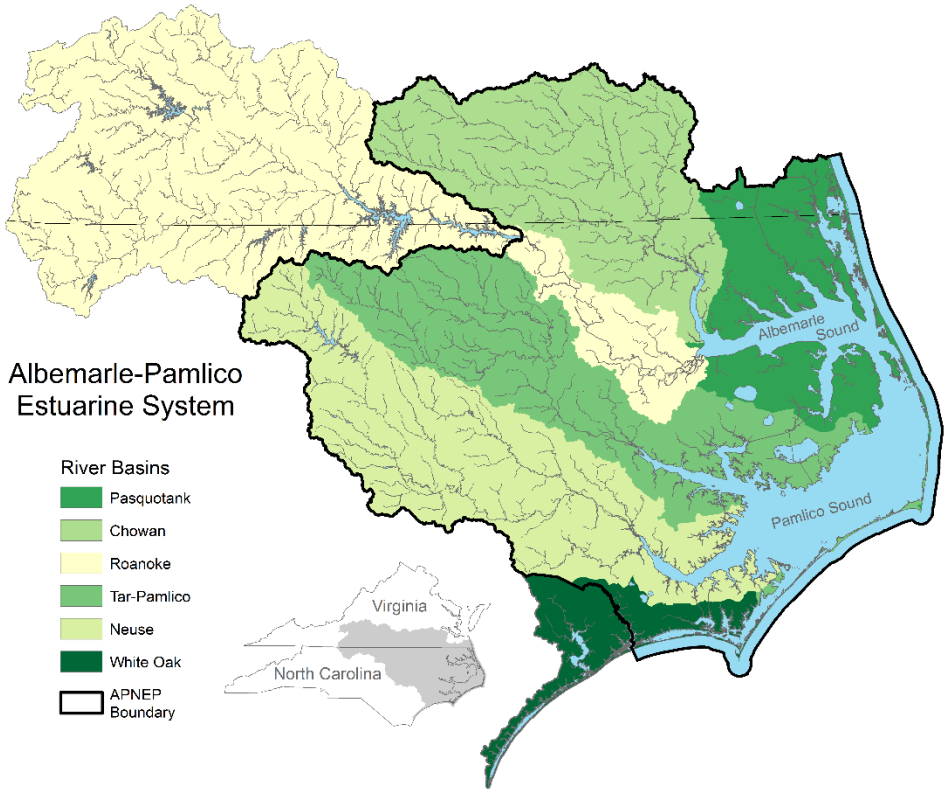


Figure 10. ***Wetlands and Indigenous Communities in Coastal North Carolina***
This map shows the federal- and state-recognized tribes in North Carolina and their relation to the wetlands. Only the Haliwa-Saponi and Meherrin reside within the APNEP watershed boundaries and both are state-recognized. All other tribes are communities within the coastal plains of North Carolina. The image was sourced from "Breaching Barriers: The Fight for Indigenous Participation in Water Governance" (Emanuel and Wilkins, 2020).

Going Forward

The results of this study indicate several ways in which Indigenous involvement in the Chesapeake Bay restoration could benefit the government-directed Chesapeake Bay Program. Foremost, there must be specific recognition, inclusion, and consultation of Sovereign Nations. The federally-recognized SNs currently living on their ancestral lands could coordinate restoration and collaborate with other entities on these lands. The restoration of the land surrounding the tributaries is a major focus

of the SNs of Virginia. They depended on the rivers for their livelihoods, and therefore hold them in high priority. The generalized tributaries recognized by the CBP and that are significant to contemporary SNs are the Potomac (Patawomeck) River, the Rappahannock River, the York River, the James River, and the Lower Eastern Shore (Tangier). Additionally, there are two sections of the Bay where tributaries with Sovereign Nation presence have a direct effect on their health, and these are the Mid and Lower Bay. SNs can both restore Indigenous Environmental justice to these tributaries as well as positively incorporate themselves into the Chesapeake Bay's restoration.

The recent CESR Report (Scientific and Technical Advisory Committee and Chesapeake Bay Program, 2023) issued by the Science and Technical Advisory Committee of the CBP states several findings and policy implications that further emphasize the need for re-evaluation and new thinking at the CBP. This is an opportunity for the formal and meaningful inclusion of contemporary Sovereign Nations. Examples of some of the many potential ways that Sovereign Nations could contribute to the Bay's restoration include land practices to reduce nonpoint source nutrient loadings, sustainable practices related to living resources, and knowledge relevant to adaptive management. Such contributions will also assist with furthering progress on the current goals of the Chesapeake Bay Program, per the Watershed Agreement amended in 2020.

Additionally, some of the evidence in this study supports the ability of Sovereign Nations to unify stakeholders, which would help with following through on the action suggestions made to the Chesapeake Bay Program in the report *Cultivating and Strengthening Partnerships with Underrepresented Stakeholders* (Chesapeake Bay Trust, 2022). Studies show that there is a need to better incorporate stakeholders in to the Chesapeake Bay Program (Showalter, 2021; Webster et al., 2022). Three actions were recommended to the CBP, the first being to explore mechanisms for funding participation. The second and third actions, respectively, focus on community benefits from CBP participation and exploring equitable grantmaking solutions. SNs have access to funds and grants not otherwise accessible due to their special status. Indigenous leadership could improve access and understanding of grants and reveal barriers that contribute to inequitable participation. As for community benefit, Indigenous leadership could also assist in identifying when and how those opportunities manifest. These abilities mean that allowing the decision-making process that creates updated CBP stakeholder engagement strategies to be Sovereign Nation-led would center policies around being more broadly inclusive for all stakeholders. The inclusion of SNs in changing stakeholder engagement strategy and policy can lead to a more inclusive framework that takes differing participation needs of stakeholders into consideration.

Working with Virginia's Sovereign Nations and establishing a collaborative relationship will allow the Chesapeake Bay Program to define goals more effectively and incorporate Indigenous Traditional Ecological Knowledge into design,

implementation strategies, and actions for effective restoration. Establishing and maintaining such a collaborative relationship is a major step towards upholding justice and honoring the trustee relationship.

Appendices

Appendix 1. Participant Response Counts

Tables 5a-b. Shown are tables of the response counts for each discerned theme. 20.83 hours of interview transcripts were processed, coded, summarized, and had themes extracted from their text. To qualify as a theme, total responses in a theme must be greater than or equal to 2. Themes are further refined by changing the type of respondent or make up of respondents. There are a total of 15 respondents: 4 are Sovereign Nation actors, 3 are Non-Government Organization actors, and 8 are Government Organization actors.

5a. Sovereign Nation and Government Organization Perceptions Across Organizational Groups	
Themes with the highest amount of responses among Sovereign Nation Participants (Total respondents: 4)	*Responses*
Government organizations are lacking knowledge on how to engage Sovereign Nations	4
There is collaborative work currently going on with Government Organizations, not including the CBP	4
The Chesapeake Bay program lacks a relationship with the Sovereign Nations	4
Government organizations, not including the CBP, currently have Sovereign Nation representation	3
Sovereign Nation and State Government Organization relationships are inconsistent throughout the watershed	3
Themes with the highest amount of responses among Non-government Organization Participants (Total Respondents: 3)	*Responses*
Government organizations lack Sovereign Nation representation	2
The Chesapeake Bay Program is learning how to engage with Sovereign Nations	2
The Chesapeake Bay Program lacks a relationship with the Sovereign Nations	2

The Chesapeake Bay Program lacks Sovereign Nations representation	2
Themes with the highest amount of responses among Government Organization Participants (Total Respondents: 8)	*Responses*
There is collaborative work currently going on with Government Organizations, not including the CBP	4
Government organizations, not including the CBP, currently have Sovereign Nation representation	4
Government organizations are lacking knowledge on how to engage Sovereign Nations	3
Government organizations are mainly working with federally recognized tribes	3
Government organizations lack Sovereign Nation representation	2
The Chesapeake Bay Program is learning how to engage with Sovereign Nations	2
Sovereign Nation and State Government Organization relationships are inconsistent throughout the watershed	2
Themes with the highest amount of responses from the three Organizational Groups (Total respondents: 15)	*Responses*
There is collaborative work currently going on with Government Organizations, not including the CBP	9
Government organizations are lacking knowledge on how to engage Sovereign Nations	8
Government organizations, not including the CBP, currently have Sovereign Nation representation	8
The Chesapeake Bay Program lacks a relationship with the Sovereign Nations	7
Sovereign Nation and State Government Organization relationships are inconsistent throughout the watershed	6
Government organizations are mainly working with federally recognized tribes	5

The Chesapeake Bay Program lacks Sovereign Nations representation	4
Sovereign Nations' interest in working with Government organizations is hesitant	3

5b. Sovereign Nation and Government Organization Perceptions Within Subject Organizational Groups	
Themes with the highest number of responses from Sovereign Nations and Government Organizations (Total respondents: 12)	*Responses*
There is collaborative work currently going on with Government Organizations, not including the CBP	8
Government organizations are lacking knowledge on how to engage Sovereign Nations	7
Government organizations, not including the CBP, currently have Sovereign Nation representation	7
The Chesapeake Bay Program lacks a relationship with the Sovereign Nations	5
Sovereign Nation and State Government Organization relationships are inconsistent throughout the watershed	5
Government organizations are mainly working with federally recognized tribes	4
Sovereign Nations' interest in working with Government organizations is hesitant	2
The Chesapeake Bay Program lacks Sovereign Nations representation	2
Collaborative work between Sovereign Nations, Non-Government Organizations, and Government Organizations are effective	2
The Chesapeake Bay Program has current Sovereign Nation representation	2

Tables 6a-b. Shown are tables of the response counts for each discerned theme. 20.83 hours of interview transcripts were processed, coded, summarized, and had themes extracted from their text. To qualify as a theme, total responses in a theme must be greater than or equal to 2. Themes are further refined by changing the type of respondent or make up of respondents. There are a total of 15 respondents: 4 are Sovereign Nation actors, 3 are Non-Government Organization actors, and 8 are Government Organization actors.

6a. Sovereign Nation and Non-Government Organization Perceptions Across Organizational Groups	
Themes with the highest number of responses among Sovereign Nation Participants (Total respondents: 4)	*Responses*
There is collaborative work going on with non-government organizations	4
Non-government organizations build capacity for Sovereign Nations	3
Themes with the highest number of responses among Non-government Organization Participants (Total Respondents: 3)	*Responses*
Non-government organizations support Sovereign Nation land acquisition	3
Non-government organizations purposefully engage Sovereign Nations	3
Non-government organizations and Sovereign Nations relationships are not consistent across Sovereign Nations	3
Non-government organizations build capacity for Sovereign Nations	3
There is collaborative work going on with non-government organizations	2
Non-government organizations are lacking engagement experience with Sovereign Nations	2
Themes with the highest number of responses among Government Organization Participants (Total Respondents: 8)	*Responses*
There is collaborative work going on with non-government organizations	2
Non-government organizations support Sovereign Nation land acquisition	2
Themes with the highest number of responses from the three Organizational Groups (Total respondents: 15)	*Responses*

There is collaborative work going on with non-government organizations	8
Non-government organizations support Sovereign Nation land acquisition	6

56. Sovereign Nation and Non-Government Organization Perceptions Within Subject Organizational Groups	
Themes with the highest number of responses from Sovereign Nations and Government Organizations (Total respondents: 8)	*Responses*
There is collaborative work going on with non-government organizations	6
Non-government organizations build capacity for Sovereign Nations	6
Non-government organizations and Sovereign Nations relationships are not consistent across Sovereign Nations	4
Non-government organizations support Sovereign Nation land acquisition	4
Non-government organizations are lacking engagement experience with Sovereign Nations	3
Collaborative work between Sovereign Nations, Non-Government Organizations, and Government Organizations are effective	2

Tables 7a-b. Shown are tables of the response counts for each discerned theme. 20.83 hours of interview transcripts were processed, coded, summarized, and had themes extracted from their text. To qualify as a theme, total responses in a theme must be greater than or equal to 2. Themes are further refined by changing the type of respondent or make up of respondents. There are a total of 15 respondents: 4 are Sovereign Nation actors, 3 are Non-Government Organization actors, and 8 are Government Organization actors.

7a. Government Organization and Non-Government Organization Perceptions Across Organizational Groups	
Themes with the highest number of responses among Sovereign Nation Participants (Total respondents: 4)	*Responses*
No theme had more than one response	-
Themes with the highest number of responses among Non-Government Organization Participants (Total Respondents: 3)	*Responses*
Non-Government Organizations have influence over the Chesapeake Bay Program	3
There is collaborative work going on with the Chesapeake Bay Program and Non-Government Organizations	2
Non-Government Organizations provide capacity for the Chesapeake Bay Program	2
The Chesapeake Bay Program is inconsistent in its individual relationships among Non-Government Organizations	2
The Chesapeake Bay Program has power over Non-Governmental Organizations	2
The Chesapeake Bay Program needs and updated framework for stakeholder engagement	2
Themes with the highest number of responses among Government Organization Participants (Total Respondents: 8)	*Responses*
There is collaborative work going on with the Chesapeake Bay Program and Non-Government Organizations	8
Non-Government Organizations provide capacity for the Chesapeake Bay Program	6

The Chesapeake Bay Program is inconsistent in its individual relationships among Non-Government Organizations	3
Non-Government Organizations challenge the actions of the Chesapeake Bay Program	3
There is Non-Government Organization representation in the Chesapeake Bay Program	3
Themes with the highest number of responses from the three Organizational Groups (Total respondents: 15)	*Responses*
The Chesapeake Bay Program is inconsistent in its individual relationships among Non-Government Organizations	6
Non-Government Organizations have influence over the Chesapeake Bay Program	5

7b. Government Organization and Non-Government Organization Perceptions Within Subject Organizational Groups	
Themes with the highest number of responses from Non-Government Organizations and Government Organizations (Total respondents: 11)	*Responses*
There is collaborative work going on with the Chesapeake Bay Program and Non-Government Organizations	10
Non-Government Organizations provide capacity for the Chesapeake Bay Program	8
The Chesapeake Bay Program is inconsistent in its individual relationships among Non-Government Organizations	5
Non-Government Organizations challenge the actions of the Chesapeake Bay Program	4
There is Non-Government Organization representation in the Chesapeake Bay Program	4
Non-Government Organizations have influence over the Chesapeake Bay Program	4
The Chesapeake Bay Program has power over Non-Governmental Organizations	3

Collaborative work between Sovereign Nations, Non-Government Organizations, and Government Organizations are effective	2
The Chesapeake Bay Program provides capacity to Non-Government Organizations	2

Table 8. Inter-Governmental Relationship Perception Themes

Shown are tables of the response counts for each discerned theme. 20.83XX hours of interview transcripts were processed, coded, summarized, and had themes extracted from their text. To qualify as a theme, total responses in a theme must be greater than or equal to 2. Themes are further refined by changing the type of respondent or make up of respondents. There are a total of 15 respondents: 4 are Sovereign Nation actors, 3 are Non-Government Organization actors, and 8 are Government Organization actors.

Inter-Governmental Relationship Perception Themes	**GO Participants**
Recurring Relationship Theme	*Responses*
Interagency collaborative work is currently being conducted	8
The Chesapeake Bay program relies on interagency agreements to meet capacity needs	5
Science is a focal point of the Chesapeake Bay Program	5
There are inconsistent interagency and inter-public sector relationships across Government Organizations	5
The Chesapeake Bay Program relies on voluntary roles to meet capacity needs	3
The Chesapeake Bay Program lacks effective stakeholder engagement	3
The Chesapeake Bay Program has policy scaling difficulties with the public sector	2
The Chesapeake Bay Program's volunteer dependent framework works against goals	2
The Chesapeake Bay Program needs an updated engagement framework	2
The EPA holds power over the Chesapeake Bay program	2
Restoration most beneficial at the grassroots	2
Total respondents in GO category	**8**

Table 9. Shown are tables of the response counts for each discerned theme. 20.83 hours of interview transcripts were processed, coded, summarized, and had themes extracted from their text. To qualify as a theme, total responses in a theme must be greater than or equal to 2. Themes are further refined by changing the type of respondent or make up of respondents. There are a total of 15 respondents: 4 are Sovereign Nation actors, 3 are Non-Government Organization actors, and 8 are Government Organization actors.

Inter-Sovereign Nation Relationship Perception Themes	**SN Participants**
Recurring Relationship Theme	*Responses*
Sovereign Nations have relationships built upon time and shared experiences	4
Sovereign Nations are currently developing capacity	4
The Regional Tribal Operations Committee facilitates Sovereign Nation collaboration and communication	3
Federally-recognized Sovereign Nations have consistent communication	2
The intertribal relationship depth is inconsistent among Sovereign Nations	2
Sovereign Nations share a cultural context	2
Sovereign Nation Indigenous Knowledge is important for restoration	2
Sovereign Nations are currently conducting independent restoration work	2
Sovereign Nations claim their rights as independent nations	2
Total respondents in Sovereign Nations category	**4**

Table 10. Shown are tables of the response counts for each discerned theme. 20.83 hours of interview transcripts were processed, coded, summarized, and had themes extracted from their text. To qualify as a theme, total responses in a theme must be greater than or equal to 2. Themes are further refined by changing the type of respondent or make up of respondents. There are a total of 15 respondents: 4 are Sovereign Nation actors, 3 are Non-Government Organization actors, and 8 are Government Organization actors.

Inter-Non-Governmental Relationship Perception Themes	**NGO Participants**
Recurring Relationship Theme	*Responses*
Non-Governmental Organizations have consistent inter-organizational collaborative work occurring	3
Non-Governmental Organizations rely on one another for meeting their capacity needs	2
Non-Governmental Organizations consistently collaborate to challenge Bay health threats	2
Total respondents in NGO category	**3**

Supplemental 1. Literature Review Methods

Literature Search and Evaluation

The literature chosen for this review required articles to meet certain inclusion criteria and be listed under specified keywords for identification. Additionally, the article abstracts were screened for relevance and had a holistic assessment to further determine their quality and eligibility (Pautasso, 2013). All articles determined eligible were backward and forward searched to find potential iterations of other fully eligible studies (Xiao & Watson, 2019). To expose the research gaps in the literature

the inclusion criteria consisted of studies and gray literature related to historical ecology, Traditional Ecological Knowledge, Indigenous Knowledge, Sovereign Nations People, estuarine restoration, environmental restoration, environmental justice, ecological restoration, and political ecology. Literature identification was done using keywords and combinations of keywords, such as “Traditional Ecological Knowledge” and “Estuarine Restoration,” to collect relevant knowledge. Inclusion screening was done by reading the abstracts of each selected article or introductions for gray literature pieces for relevance. Each remaining article was assessed for quality and eligibility as a whole to determine confirmed use in this literature review. Additionally, potential iterations of each article's subject matter were searched for using forward and backward searching. The use of these methods allowed for a robust and highly saturated group of articles with which to identify research gaps (Pautasso, 2013).

Inclusion criteria.

Articles considered for examination had to meet initial inclusion criteria. The articles had to have content that includes Indigenous people and their relationship to environmental, ecological, and estuarine restoration, with special regards to stewardship and governance: additionally, the use of Traditional Ecological Knowledge or Indigenous Traditional Ecological Knowledge in conjunction with the aforementioned restoration contexts. These articles are geographically fixed in North America, British Columbia, the northwest United States, the western United States, the southwest United States, and Nova Scotia. The historical ecology of Indigenous

people and the state of environmental justice within Indigenous communities is also included to add additional historical and cultural context. Strictly ethnographic articles on North America's Indigenous cultures and articles that didn't specify Indigenous people as a stakeholder group were excluded. All articles were analyzed in their English translation or their initial English version. Many of the articles included were from environmental science, political ecology, anthropology, historical ecology, and environmental justice literature.

Literature identification.

Google Scholar, Web of Science, and Google were the search engines used to compile initial articles for eligibility screening. These search engines are those that are commonly trusted across disciplines to find relevant topical literature. Articles were identified by titles that displayed topical relevance and were limited to the period of 1984-2022. This period is critical because 1984 was the signing of the first federally mandated restoration project in the eastern United States, and this is where a visible gap in Indigenous participation has been identified. Titles including a combination of the following key phrases were most likely to be identified for screening, as these were input into each search engine: Indigenous knowledge, traditional ecological knowledge, environmental restoration, ecological restoration, estuarine restoration, Indigenous environmental stewardship, Indigenous environmental governance, co-governance, co-stewardship, North America, British Columbia, Northwest United States, Western United States, Southwest United States, Nova Scotia, historical ecology, and environmental justice. As defined for this

review, a key phrase is a word or words and their synonyms that are reasonably related to the topic of the literature review. These key phrases were searched in several different combinations with one another to populate articles with the potential for inclusion. Search results were skimmed for relevant titles on the first and second pages of each inquiry unless a trend in relevance continued past the second page. Articles that passed the initial identification process were immediately screened for inclusion.

Screening for inclusion.

One researcher read the abstracts or introductions of each article to identify studies and gray literature that were relevant to the inclusion of Indigenous people in eastern North America's environmental restoration projects. If the article's abstract or introduction discussed the key phrases identified in the title, included additional key phrases, and had a credible argument, the study was deemed appropriate for further quality and eligibility assessment. There were 95 articles that met this standard, 7 of which were gray literature, and a full text article was obtained for the next assessment stage.

Quality and eligibility assessment.

Full-text articles obtained from inclusion screening were skimmed to identify levels of quality and final eligibility status. This assessment was, again, conducted by one researcher. Studies sourced from peer-reviewed journals, books published by reputable scientific publishers, and gray literature from credible organizations that

require high quality, well cited references met the standards for quality and eligibility within this review. Gray literature is included for cultural and temporal context. Articles were excluded for reasons such as lack of a full text, lack of topical relevance, lack of references, and lack of peer-review. An initial total of 24 articles and 6 gray literature pieces met the given standards to be included in the full text analysis.

Iterations

CitationGecko is a forward and backward search engine that uses seed articles (relevant articles to a specific topic that have been cited by or have cited other papers) to find other relevant articles or iterations of similar work. CitationGecko was used to conduct a forward and backward search of the eligible journal articles and book chapters, or seed papers. This yielded an additional 47 potentially relevant articles. These additional articles passed through the same screening as the seed papers. Of those, 5 were eligible for full text analysis. The total number of articles and gray literature pieces included in this review is 35.

Data Extraction and Analysis

Each article was read at least twice to establish familiarity with the work. Common restoration themes, involvement in coastal/estuarine restoration, involvement in Chesapeake Bay Restoration, IPE, and common IEJ themes were noted throughout the analysis of each publication. Patterns in the data were synthesized to establish

findings and themes in the literature summarizing Indigenous inclusion in environmental restoration within North America.

Bibliography

Albemarle-Pamlico National Estuary Partnership, (2023). Our History. *About APNEP*. https://apnep.nc.gov/about-apnep/our-history

Albemarle-Pamlico National Estuary Partnership, (2023). Maps. *Resources*. https://apnep.nc.gov/resources/maps

Anderson, M. K. (2006). The use of fire by native Americans in California. *Fire in California's Ecosystems*, 417–430. https://doi.org/10.1525/california/9780520246058.003.0017

Backcountry Against Dumps v. U.S. Bureau of Indian Affairs, 21-55869 (2022).

Barnhill-dilling, S. K., Rivers, L., & Delborne, J. A. (2019). Rooted in Recognition: Indigenous Environmental Justice and the Genetically Engineered American Chestnut Tree. *Society & Natural Resources*, 1–19. https://doi.org/10.1080/08941920.2019.1685145

Baum, F., MacDougall, C., & Smith, D. (2006). Participatory action research. *Journal of Epidemiology and Community Health*, 60(10), 854–857. https://doi.org/10.1136/jech.2004.028662

Bernard, H. R., Wutich, A., & Ryan, G. W. (2016). Analyzing qualitative data: Systematic approaches. SAGE publications.

Breslow, S. J. (2014). A Complex Tool for a Complex Problem: Political Ecology in the Service of Ecosystem Recovery. *Coastal Management*, *42*(4), 308–331. https://doi.org/10.1080/08920753.2014.923130

Breslow, S. J. (2014). Tribal science and farmers' resistance: a political ecology of salmon habitat restoration in the American Northwest. *Anthropological Quarterly*, *87*(3), 727–758. https://doi.org/10.1353/anq.2014.0045

California v. U.S. Bureau of Land Management, 17-cv-0718 (2018).

Cantzler, J. M. (2007). Environmental justice and social power rhetoric in the moral battle over whaling. *Sociological Inquiry*, *77*(3), 483–512. https://doi.org/10.1111/j.1475-682X.2007.00201.x

Cantzler, J. M., & Huynh, M. (2016). Native American Environmental Justice as Decolonization. *American Behavioral Scientist*, *60*(2), 203–223. https://doi.org/10.1177/0002764215607578

Chesapeake Bay Program. (2019). *Chesapeake Bay Program Local Engagement Strategy*.

Chesapeake Bay Program. (2020). *Chesapeake Bay Watershed Agreement: as amended, January 24, 2020*.

Chesapeake Bay Program. (2023a). Chesapeake Bay TDML. *Programs and Projects*. https://www.chesapeakebay.net/what/programs/total-maximum-daily-load

Chesapeake Bay Program. (2023b). Indigenous Peoples of the Chesapeake. *History*. https://www.chesapeakebay.net/discover/history/indigenous-peoples-of-the-chesapeake

Chesapeake Bay Program. (2023c). Our Partners. *Who We Are*. https://www.chesapeakebay.net/who/partners

Chesapeake Bay Program. (2023d). Stakeholders' Advisory Committee. *How We're Organized*. https://www.chesapeakebay.net/who/group/stakeholders-advisory-committee

Chesapeake Conservation Partnership. (2023). Our Partners. *About Us*. https://www.chesapeakeconservation.org/portfolio/

Chesapeake Bay Trust, Chesapeake Conservancy, & Chesapeake Bay Program. (2022). *Cultivating and Strengthening Partnerships with Underrepresented Stakeholders*.

Christie, P., Fluharty, D., Kennard, H., Pollnac, R., & Warren, B. (2018). Policy pivot in Puget Sound: Lessons learned from marine protected areas and tribally-led estuarine restoration. *Ocean and Coastal Management*, *163*, 72–81.

Clune, J. W., & Capel, P. D. (2021). *Nitrogen in the Chesapeake Bay watershed— A century of change, 1950–2050*. https://doi.org/10.3133/cir1486

Corrente, M., & Bourgeault, I. (2022). Innovation in transcribing data: meet otter. ai. SAGE Publications, Ltd.

Crow Indian Tribe v. United States, 17-cv-00 (2018).

Cuerrier, A., Turner, N. J., Gomes, T. C., Garibaldi, A., & Downing, A. (2015). Cultural Keystone Places: Conservation and Restoration in Cultural Landscapes.

Journal of Ethnobiology, 35(3), 427–448. https://doi.org/10.2993/0278-0771-35.3.427

Custer, J. F. (1986). Prehistoric Use of the Chesapeake Estuary: A Diachronic Perspective. *Journal of the Washington Academy of Sciences*, *76*(3), 161–172.

Delevaux, J. M. S., Winter, K. B., Jupiter, S. D., Blaich-Vaughan, M., Stamoulis, K. A., Bremer, L. L., Burnett, K., Garrod, P., Troller, J. L., & Ticktin, T. (2018). Linking land and sea through collaborative research to inform contemporary applications of traditional resource management in Hawai'i. *Sustainability (Switzerland)*, 10(9). https://doi.org/10.3390/su10093147

Doherty, J. L., & Copping, S. E. (2016). Chesapeake: A Network of Conservationists Across 64,000 Square Miles. *The George Wright Forum*, *33*(2), 185–198.

Emanuel, R. E., & Wilkins, D. E. (2020). Breaching Barriers: The Fight for Indigenous Participation in Water Governance. *Water*, 12(2113), 1–37.

Fox, C. A., Reo, N. J., Fessell, B., & Dituri, F. (2022). Native American Tribes and Dam Removal: Restoring the Ottaway, Penobscot, and Elwha Rivers. *Water Alternatives*, *15*(1), 31–55.

Harrell, M. C., & Bradley, M. A. (2010). *Data Collection Methods: Semi-Structured Interviews and Focus Groups*. https://apps.dtic.mil/sti/pdfs/ADA512853.pdf

Hernandez, J., Walker, J., Bradley, J. L., & Humphrey, T. J. (2019). Indigenizing Environmental Justice: Case Studies from the Pacific Northwest. *Environmental Justice*, *12*(4), 175–181. https://doi.org/10.1089/env.2019.0005

Hunn, E. S., Johnson, D. R., Russell, P. N., & Thornton, T. F. (2003). Huna Tlingit traditional environmental knowledge, conservation, and the management of a "Wilderness" park. *Current Anthropology*, 44(5 SUPPL.), 79–103. https://doi.org/10.1086/377666

Indigenous Peoples of the Coastal Bend v. U.S. Army Corps of Engineers, 21-cv-0016 (2023).

Ishiyama, N. (2003). Environmental justice and American Indian tribal sovereignty: Case study of a land-use conflict in Skull Valley, Utah. *Antipode*, *35*(1), 119–139. https://doi.org/10.1111/1467-8330.00305

Jamali, M., & Abolhassani, H. (2006). Different Aspects of Social Network Analysis. *International Conference on Web Intelligence*, 1–7. https://doi.org/10.1109/WI.2006.61

Kennard, H. M. (2017). *Understanding Tribal Participation in Collaborative Restoration: An Exploration of the Qwuloolt Estuary Restoration Project*. University of Washington.

Kennedy, V. (2018). *Shifting Baselines in the Chesapeake Bay*. Johns Hopkins University Press. https://doi.org/10.1353/book.62704

Krosnick, J. A., & Presser, S. (2010). Chapter 9 : Question and Questionnaire Design. In *Handbook of Survey Research* (pp. 263–313).

Lander, E., & Mallory, B. (2021). *Indigenous Traditional Ecological Knowledge and Federal Decision Making*. https://www.whitehouse.gov/wp-content/uploads/2021/11/111521-OSTP-CEQ-ITEK-Memo.pdf

Long, J. W., Goode, R. W., & Lake, F. K. (2020). Recentering ecological restoration with tribal perspectives. *Fremontia*, *48*(1), 14–19.

Loop, T., & Jackson, L. P. (2010). Executive Order 13508 Chesapeake Bay Protection and Restoration Section 203 Final Coordinated Implementation Strategy. *Federal Register*, *75*(90), 26226–26227.

McGregor, D. (2018). Indigenous Environmental Justice, Knowledge, and Law. *Kalfou*, *5*(2), 279–296. https://doi.org/10.15367/kf.v5i2.213

McGregor, D., Whitaker, S., & Sritharan, M. (2020). Indigenous environmental justice and sustainability. *Current Opinion in Environmental Sustainability*, *43*, 35–40. https://doi.org/10.1016/j.cosust.2020.01.007

Meyer, J. F. (1998). History Repeats Itself: Restorative Justice in Native Communities. *Journal of Contemporary Criminal Justice*, *14*(1), 42–57.

Middleton, B. R. (2015). Jahát Jatítotódom: toward an indigenous political ecology. In R. L. Bryant (Ed.), *The International Handbook of Political Ecology* (pp. 561–576). Edward Elgar Publishing.

Native Governance Center. (2023). *TERMINOLOGY STYLE GUIDE*. Native Nations 101. https://nativegov.org/resources/terminology-style-guide/

Oberholzer Dent, J. R., Smith, C., Cristina Gonzales, M., & Lincoln-Cook, A. B. (2023). Getting back to that point of balance: indigenous environmental justice and the california indian basketweavers' association. Ecology and Society, 28(1), 1–2. https://doi.org/10.5751/ES-13674-280114

Parsons, M., Fisher, K., & Crease, R. P. (2021). Environmental Justice and Indigenous Environmental Justice. In *Decolonising Blue Spaces in the*

Anthropocene (pp. 39–72). Palgrave Studies in Natural Resource Management. https://doi.org/10.1007/978-3-030-61071-5

Pascua Yaqui Tribe v. EPA, 21-16791 (2022).

Pautasso, M. (2013). Ten Simple Rules for Writing a Literature Review. *PLoS Computational Biology*, *9*(7), 7–10. https://doi.org/10.1371/journal.pcbi.1003149

Phillips, S., & McGee, B. (2016). Ecosystem Service Benefits of a Cleaner Chesapeake Bay. *Coastal Management*, *44*(3), 241–258. https://doi.org/10.1080/08920753.2016.1160205

Poe, M. R., Donatuto, J., & Satterfield, T. (2016). "Sense of Place": Human Wellbeing Considerations for Ecological Restoration in Puget Sound. *Coastal Management*, *44*(5), 409–426. https://doi.org/10.1080/08920753.2016.1208037

Prabhakar, A., & Mallory, B. (2022). *Guidance for Federal Departments and Agencies on Indigenous Knowledge*.

Proulx, M. J., Ross, L., Macdonald, C., Fitzsimmons, S., & Smit, M. (2021). Indigenous Traditional Ecological Knowledge and Ocean Observing: A Review of Successful Partnerships. *Frontiers in Marine Science*, 8(July), 1–17. https://doi.org/10.3389/fmars.2021.703938

Rosebud Sioux Tribe v. U.S. Department of the Interior, 18-36068 (2019).

Rust, N. A., Abrams, A., Challender, D. W. S., Chapron, G., Ghoddousi, A., Glikman, J. A., Gowan, C. H., Hughes, C., Rastogi, A., Said, A., Sutton, A., Taylor, N., Thomas, S., Unnikrishnan, H., Webber, A. D., Wordingham, G., & Hill, C. M. (2017). Quantity Does Not Always Mean Quality: The Importance of Qualitative Social Science in Conservation Research. *Society and Natural Resources*, *30*(10), 1304–1310. https://doi.org/10.1080/08941920.2017.1333661

Salpeteur, M., Calvet-Mir, L., Diaz-Reviriego, I., & Reyes-Garcia, V. (2017). Networking the environment: social network analysis in environmental management and local ecological knowledge studies. *Ecology and Society*, *22*(1). https://doi.org/10.5751/ ES-08790-220141

Sayles, J. S., & Baggio, J. A. (2017). Social – ecological network analysis of scale mismatches in estuary watershed restoration. *PNAS*, E1776–E1785. https://doi.org/10.1073/pnas.1604405114

Schlosberg, D., & Carruthers, D. (2010). Indigenous struggles, environmental justice, and community capabilities. *Global Environmental Politics*, *10*(4), 12–35. https://doi.org/10.1162/GLEP_a_00029

Scientific and Technical Advisory Committee Chesapeake Bay Program. (2023). *Achieving Water Quality Goals in the Chesapeake Bay: A Comprehensive Evaluation of System Response* (Issue May). https://www.chesapeake.org/stac/cesr/

Showalter, A. L. (2021). *Meaningful Engagement: Exploring More Inclusive Local Stakeholder Engagement in the Chesapeake Bay Program*. Virginia Polytechnic Institute and State University.

The Domestic Policy Council. (2022). *The White House Tribal Nations Summit Progress Report*.

Tongco, M. D. C. (2007). Purposive sampling as a tool for informant selection. *Ethnobotany Research and Applications*, *5*, 147–158. https://doi.org/10.17348/era.5.0.147-158

Tsuji, S. R. J. (2021). Indigenous environmental justice and sustainability: What is environmental assimilation? *Sustainability (Switzerland)*, *13*(15). https://doi.org/10.3390/su13158382

Turner, N. J., Gregory, R., Brooks, C., Failing, L., & Satterfield, T. (2008). From invisibility to transparency: Identifying the implications. *Ecology and Society*, 13(2). https://doi.org/10.5751/ES-02405-130207

Turner, N. J., Ignace, M. B., & Ignace, R. (2000). Traditional Ecological Knowledge and Wisdom of Aboriginal Peoples in British Columbia. *Ecological Applications*, 10(5), 1275–1287.

United States v. Washington, 384 F. Sup (1974).

Uprety, Y., Asselin, H., Bergeron, Y., Doyon, F., & Boucher, J. F. (2012). Contribution of traditional knowledge to ecological restoration: Practices and applications. *Ecoscience*, *19*(3), 225–237. https://doi.org/10.2980/19-3-3530

Valerio, M. A., Rodriguez, N., Winkler, P., Lopez, J., Dennison, M., Liang, Y., & Turner, B. J. (2016). Comparing two sampling methods to engage hard-to-reach communities in research priority setting. *BMC Medical Research Methodology*, *16*, 146. https://doi.org/10.1186/s12874-016-0242-z

Vickery, J., & Hunter, L. M. (2016). Native Americans: Where in Environmental Justice Research? HHS Public Access. *Soc Nat Resour*, *29*(1), 36–52. https://doi.org/10.1080/08941920.2015.1045644

Warner, E. A. K. (2017). Environmental Justice: A Necessary Lens to Effectively View Environmental Threats to Indigenous Survival. *Transnational Law & Contemporary Problems*, *26*(2), 343–370.

Webster, S. E., Donovan, E. C., Chudoba, E., Miller, C. D., Paolisso, M., & Dennison, W. C. (2022). Current Research in Environmental Sustainability Identifying and harmonizing the priorities of stakeholders in the Chesapeake Bay environmental monitoring community. *Current Research in Environmental Sustainability*, *4*, 100155. https://doi.org/10.1016/j.crsust.2022.100155

White Earth Nation v. Kerry, 14-cv-0472 (2015).

Whyte, K. P. (2011). The recognition dimensions of environmental justice in Indian country. *Environmental Justice*, *4*(4), 199–205. https://doi.org/10.1089/env.2011.0036

Xiao, Y., & Watson, M. (2019). Guidance on Conducting a Systematic Literature Review. *Journal of Planning Education and Research*, *39*(1), 93–112. https://doi.org/10.1177/0739456X17723971

Yan, T., Kreuter, F., & Tourangeau, R. (2012). Evaluating Survey Questions: A Comparison of Methods. Journal of Official Statistics, 28(4), 503–529.