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**USING ENGAGED RHETORICAL METHODS TO UNDERSTAND  
AND INFORM COLLABORATIVE DECISION MAKING  
ABOUT DAMS AND RESTORATION IN THE  
PENOBSCOT RIVER WATERSHED**

By

Tyler Quiring

B.S., Southern Adventist University, 2011

M.A., University of Maine, 2015

A DISSERTATION

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Philosophy

(in Communication)

The Graduate School

The University of Maine

May 2020

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By Tyler Quiring

Dissertation Advisor: Dr. Bridie McGreavy

An Abstract of the Dissertation Presented  
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Degree of Doctor of Philosophy  
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May 2020

How do we understand what to do with rivers and dams? How might rhetoric, the ancient study of persuasion, inform and shape this understanding as it relates to river restoration practices? Ecological approaches to rhetoric provide ways for engaging in decision making about dams and river restoration. In this dissertation I present three projects that bring media discourse analysis, reciprocal case study, and cross-cultural digital rhetoric to sites of collaborative decision making about dams and rivers in the Penobscot River watershed (Maine, USA). In this place, the prominent Penobscot River Restoration reconfigured several hydroelectric dams to improve fish passage and hydropower generation. My collaborators and I explore what needs and opportunities remain for further action here and how community-engaged rhetorical ecology can advance decolonization and social-environmental justice.

In the first project, we ask how news media about dams portray river restoration and how these portrayals matter for ongoing collaboration and decision making. We use a rhetorical approach within transdisciplinary media discourse analysis to explore 30 years of newspaper coverage of dam removal, with particular focus on news media about the

Penobscot Restoration. Our results show that news media have widely framed the project as a success based on technical and social outcomes and that this framing limits what we can understand about the complexities of restoration and ongoing needs that remain on this river. In this way, media analysis can reveal opportunities for further collaborative engagement.

In the second project, we build on the first to ask about other histories, futures, and stories that are left out of the dominant Penobscot Restoration success narrative. We advance an ethnographic case study approach where engaging across communities presents opportunities for changing how we do research. Doing research with community partners shifted our study from a retrospective focus to a focus on reciprocation—from looking back on past restoration activity to using research as a way of giving back to those who made the work possible. The results show how building relationships and opening up our research processes to this kind of reordering helps expand understandings of what we can work to restore.

In the third project, we explore where reciprocation can lead when advancing research projects in response to our partners' needs. We ask how digital approaches shape the opportunities for collaboratively composing alternative forms of media documentation for decolonization. In our analysis, we reflect on developing procedural digital ethics to support visual portrayals of Indigenous environmental science as a form of ongoing restoration practice. Our results show how this process relies on relationship building, cross-cultural dialogue, and flexible naming practices that reshape how we can collectively see our histories and work together toward socio-environmental justice.

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# CHAPTER 1

## INTRODUCTION

*The field of the future that opens before us is studded with possibles, but the possible is not the future. What is possible is possibly impossible. The path may prove impassable, the implements break in our hands . . . All the possibilities we see in things may, somewhere, anywhere, at any moment, abruptly become impossible and the things now hovering about us in the present have no future.*

—Alphonso Lingis

### Introduction

The above quote<sup>1</sup> emphasizes the contingency of our futures: out of a universe of possibilities, only some come to pass, while untold multitudes of others fade into obscurity. It is interesting then that much of the work in this dissertation unfolded on a collaborative, transdisciplinary research project named the Future of Dams (FoD). This project was indeed focused on the future, by bringing together scientists from a host of academic disciplines and institutions in Maine, New Hampshire, and Rhode Island for multiple years to help New England communities use science to make decisions about dams.<sup>2</sup> Dams, like the field of possibilities Lingis describes, are currently studded across the New England landscape in the thousands,<sup>3</sup> and deciding their future role relies on

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1. Alphonso Lingis, “Irrevocable Loss,” in *Non-Representational Methodologies: Re-Envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015), 165.

2. New England Sustainability Consortium, “The Future of Dams: Helping New England Communities Use Science to Make Decisions about Dams,” 2018, accessed February 29, 2020, <https://www.newenglandsustainabilityconsortium.org/dams>.

3. Samuel G. Roy et al., “A Multiscale Approach to Balance Trade-offs among Dam Infrastructure, River Restoration, and Cost,” *PNAS* 115, no. 47 (2018): 12069–12074.

sustained and in-depth analysis.<sup>4</sup> The purpose of FoD as a future-oriented scientific enterprise was to support deliberation processes over which possibilities for dams and rivers to carry forward and which to foreclose.

To support its aims, the FoD project involved an array of collaborators and partners with diverse experiences and skills working across a number of watersheds. Among all these locations and potential field sites, one rose to prominence in my work as a research assistant on the FoD project. The Penobscot River Watershed, located within the current political borders of Maine and also the ancestral and current homeland of the Penobscot Nation—a key FoD community partner—is the largest watershed in Maine. It is also the place where a 20-year ecological restoration effort led to improved fish passage on the river while removing two hydroelectric dams, decommissioning one, and upgrading six others.<sup>5</sup> This effort, called the Penobscot River Restoration Project, was one of the first large “basin-scale” approaches to considering impacts across a watershed and thinking in systems to reconfigure what is possible for dams.<sup>6</sup>

In this dissertation, I use engaged rhetorical methods to explore the process and outcomes of restoration in this place. I understand rhetoric as a communication practice and discipline that is at once strategic, substantial, and dynamic.<sup>7</sup> For me, studying rhetoric means experiencing and tracing how things change when they interact. This perspective underscores the purpose of my project as an attempt to understand and inform ongoing collaborative decision making around dams and restoration in the Penobscot River Watershed. In this sense, my methods are engaged because they build from and respond to the needs of my collaborators on the FoD project and in the Penobscot Nation.

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4. Michelle Ho et al., “The Future Role of Dams in the United States of America,” *Water Resources Research* 53 (2017): 982–998.

5. Natural Resources Council of Maine, “Penobscot River Restoration Project,” 2020, accessed February 29, 2020, <https://www.nrcm.org/programs/waters/penobscot-river-restoration-project/>.

6. Jeffrey J. Opperman et al., “The Penobscot River, Maine, USA: A Basin-Scale Approach to Balancing Power Generation and Ecosystem Restoration,” *Ecology and Society* 16, no. 3 (2011): 1–7.

7. Robert L. Scott, “On *Not* Defining ‘Rhetoric’,” *Philosophy & Rhetoric* 6, no. 2 (1973): 81–96.

Throughout the remaining chapters, I stay close to the Penobscot River Restoration case to show how engaged rhetorical methods help us understand and inform decision making and how engagement processes in turn transform our methods. In a rhetorical sense, the core research problem thus becomes how to situate the impacts and value of the methodological decisions we make and how they shape the rhetoricity of restoration practices that we become threaded into.

To address this problem, I advance a multi-sited rhetorical ethnography<sup>8</sup> of dam decision making and river restoration. My community sites include the Future of Dams project and the Penobscot Nation, which were both key collaborators for this work in distinct but intersecting ways. On the Future of Dams, I was a research assistant paid to conduct research to support decision making about dams and rivers. The Penobscot Nation helped establish the exigence for this project and, as a key community partner, supported the work and stood to benefit from the decision making tools we produced. With the Penobscot Nation, I am a non-native foreigner who became interested in contributing to the decolonizing approaches this community has been developing with the University of Maine and others long before I arrived in this watershed in 2013 as a UMaine graduate student. This positionality shaped the work I was able to do with my collaborators and matters for what insights emerge from this dissertation, which brings together multiple interconnected strands of ongoing engagement in this place. In an attempt to emphasize how my work connects with the work of others and relies on diverse collaborators, throughout the core chapters I use “we” voice and return to “I” voice for the conclusion where I reflect on this work.

A theme that emerges across the chapters emphasizes how discursive choices like this—to emphasize multiplicity while establishing compositional consistency—can thus

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8. George E. Marcus, “Ethnography in/of the World System: The Emergence of Multi-Sited Ethnography,” *Annual Review of Anthropology* 24 (1995): 95–117; Candice Rai, *Democracy’s Lot: Rhetoric, Publics, and the Places of Invention* (Tuscaloosa, AL: University of Alabama Press, 2016).

obscure the specific forms that heterogeneity takes. Indeed, the “we” in the core chapters is a complicated and shifting assemblage, composed of myself and several key collaborators as well as others who contributed in various ways to different parts of the research over time. An autoethnography of the layered and intersecting relationships among these collaborators is beyond the scope of my project, yet there are at least three ways I have worked to engage these tensions. The first is in the acknowledgments, where I identify by name the many groups and individuals that contributed to and sustained my work and begin to characterize their involvement. The second is at key points throughout the core chapters where I try to clarify in which directions I understand engagement to be flowing and how certain methodological, collaborative, and ethical research decisions emerged. In some of these places, I refer to myself in the third person (Quiring) to avoid potential confusion between “we” and “I” voice. Thirdly, near the end of the conclusion I reflect on my experiences of participating in decolonizing work to identify which practices seemed to work well for me and my collaborators in this project so that others may be able to gather some threads to weave into their future efforts as well.

Additionally, this dissertation is not the final word on the Penobscot Restoration or on the many collaborative efforts that connect in the following chapters. What follows is my attempt to make sense of diverse and shifting collaborative and discursive practices that shape restoration in this place, an attempt that follows a long history of sense-making efforts and exists alongside many contemporaneous and still-emerging projects by others who are themselves sharing knowledge and insights from this collective work. It is thus my hope that these techniques begin to do justice to my research story and that of my close collaborators, understanding that this project is part of a much longer-term conversation as well. Given this sustained collaborative and geographic focus over time, my ethnographic sites are largely organized conceptually, discursively, and through research praxis. As such, each chapter features a distinct engaged rhetorical method my collaborators and I brought to the ethnographic sites. Each chapter attempts to show how

these methods matter for practicing rhetorical ethnography as a “circumstantial activist”<sup>9</sup> in these sites which means responding to multiple needs for connectivity, adaptability, and reciprocity in research. These are especially important for how rhetoricians can understand and inform decision making and how our practices matter for the knowledge communities who enable our work and who may benefit from it.

In this introduction, I first introduce rhetorical research in ecological terms, which briefly emphasizes a theoretical basis for this work that I further develop in the core chapters, especially in Chapter 3. Then I explore rhetorical ethnography as a methodological framework for situating multiple engaged rhetorical methods. Finally, I offer an overview of the following chapters to help orient readers to the work I share in the rest of the dissertation.

### **Rhetorical Research as an Ecological Practice**

In this dissertation, I take an ecological approach to understanding and informing collaborative decision making about dams and river restoration. In doing so, I both examine discursive evidence of ecological practices and build on ecological approaches to studying rhetoric. In this sense, ecological approaches produced the exigence for the work and also provide ways of moving research to respond to this exigence. The Penobscot Project involved the work of ecological restoration, or changing the system of relationships between diverse entities in a place. However, ecology as a science is not always as distributed or networked as the the systems it studies. For some, “one of the glaring paradoxes of the Age of Ecology was that the public began to follow, even idealize, one small group of scientists in order to fight the ills brought on by science in general.”<sup>10</sup> Efforts like the FoD project that knit together sciences across diverse

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9. Marcus, “Multi-Sited Ethnography.”

10. Donald Worster, *Nature's Economy: A History of Ecological Ideas* (Cambridge: Cambridge University Press, 1977), 359.

disciplines are themselves ecological approaches to collaboration.<sup>11</sup> On such projects, rhetorical ecology can connect with other approaches to help characterize the diversity of complex systems and explore ways of engaging in these systems with care.<sup>12</sup>

Ecological notions remind us of how the world is active, vibrant, and relational, which many Indigenous belief systems take as a starting point.<sup>13</sup> Similar notions are also embedded throughout the history of studying and practicing rhetoric.<sup>14</sup> The Greek “Oikos,” meaning house or environment, serves as the etymological root, placing ecology as those *logics* that emerge from life’s dwelling. This root “not only calls for homemaking and care but evokes our complex cohabitation with and mutual conditioning by nonhumans.”<sup>15</sup> Work in communication, rhetoric, and decolonizing studies emphasizes how these ecological networks of relations compose us, shape what we can do, and provide the basis for crafting ethical forms of engagement as well.<sup>16</sup> Thus, rhetorical ecology is about taking care in expanding the complex set of relational interconnections through which we see communication and rhetoric emerging.

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11. Tyler Quiring et al., *Sustaining Team Science: Dynamic Design Planning as a Collaborative Ecology*, Poster presented at the Science of Team Science Conference, Clearwater, FL, June 2017.

12. Justine Wells et al., “Introduction: Rhetoric’s Ecologies,” in *Tracing Rhetoric and Material Life: Ecological Approaches*, ed. Bridie McGreavy et al. (Cham, Switzerland: Palgrave Macmillan, 2018), 1–36.

13. Warren Cariou, “Sweetgrass Stories: Listening for Animate Land,” *Cambridge Journal of Postcolonial Literary Inquiry* 5, no. 3 (2018): 338–352.

14. Nathan Stormer and Bridie McGreavy, “Thinking Ecologically About Rhetoric’s Ontology: Capacity, Vulnerability, and Resilience,” *Philosophy and Rhetoric* 50, no. 1 (2017): 1–25; Caroline Gottschalk Druschke, “A Trophic Future for Rhetorical Ecologies,” *enculturation*, February 20, 2019,

15. Thomas Rickert, *Ambient Rhetoric: The Attunements of Rhetorical Being* (Pittsburgh, PA: University of Pittsburgh Press, 2013), 215.

16. Anthony Sutton, “Farming, Fieldwork, and Sovereignty: Addressing Colonialist Systems with Participatory Critical Rhetoric,” in *Decolonizing Native American Rhetoric: Communicating Self-Determination*, ed. Casey Ryan Kelly and Jason Edward Black (New York: Peter Lang, 2018), 324–342; Donal Carbaugh, “‘Just Listen’: ‘Listening’ and Landscape Among the Blackfeet,” *Western Journal of Communication* 63, no. 3 (1999): 250–270; Michael Salvador and Tracylee Clarke, “The Weyekin Principle: Toward an Embodied Critical Rhetoric,” *Environmental Communication* 5, no. 3 (2011): 243–260; Joshua P. Ewalt, “(Re)arranging Regional Rhetorics,” in *Tracing Rhetoric and Material Life: Ecological Approaches*, ed. Bridie McGreavy et al. (Cham, Switzerland: Palgrave Macmillan, 2018), 141–166.

Even when considered as a specific academic field, “ecology is the study of the interconnectedness of organisms and their habitats.”<sup>17</sup> When the field intersects with rhetorical inquiry, ecological thinking helps us attend to suasion and change within networks of dynamic interaction.<sup>18</sup> For Caroline Gottschalk Druschke, “the work of rhetorical ecology is not explanatory or translational; it is equivocal: working, through multiple forms of relationality, to put competing worlds—multiple ontologies—into contact and recognizing the excess, the *not only*.”<sup>19</sup> This is crucial to developing rhetorical ecology *methods* alongside theoretical shifts that provide the basis for these methods. Methodologically, putting different worlds into contact lets us notice the multiple voices these worlds speak and how, which is to work ecologically with texts, contexts, and the many worlds they reveal and in turn produce.

This practice of working at the places where differences intersect allows the rhetorician to experience firsthand how rhetoric and ecology are reciprocal forces, and how this reciprocation matters for putting knowledge to work. As I explore further in the following section, the turn to ethnography in rhetorical method requires that we as rhetoricians consider the ways we are immanently present within an expansive meshwork of forces and relationships, and use this awareness to attune to what is rhetorical about this presence.<sup>20</sup> This mode of inquiry thus helps us cultivate an attention to the deep but delicate interconnectedness of active things, an awareness sharpened and focused by the critical impulse to follow how power manifests unevenly in ways that demand conditioned

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17. Diane M. Keeling and Jennifer C. Prairie, “Trophic and Tropic Dynamics: An Ecological Perspective of Tropes,” in *Tracing Rhetoric and Material Life: Ecological Approaches*, ed. Bridie McGreavy et al. (Cham, Switzerland: Palgrave Macmillan, 2018), 46–47.

18. Bridie McGreavy, “Intertidal Poetry: Making our Way Through Change,” in *Tracing Rhetoric and Material Life: Ecological Approaches*, ed. Bridie McGreavy et al. (Cham, Switzerland: Palgrave Macmillan, 2018), 88.

19. Druschke, “A Trophic Future.”

20. George F. McHendry et al., “Rhetorical Critic(ism)’s Body: Affect and Fieldwork on a Plane of Immanence,” *Southern Communication Journal* 79, no. 4 (2014): 293–310; Sutton, “Farming, Fieldwork, and Sovereignty.”

responses.<sup>21</sup> Rhetorical ecology emphasizes a fundamental relationality, while also bringing focus to the order and shape of interconnected systems that reveal needs and possibilities for reorganizing these systems based on the priorities we bring to our encounters as we make sense with the world.

This connects with work in science and technology studies that emphasizes *sympoiesis*, or “making-with,” terminology that describes modes “of noninnocent, risky, committed ‘becoming involved in one another’s lives.’”<sup>22</sup> Returning to care as a guiding principle for ecological thinking, “a relational way of thinking [or] ‘thinking with,’ creates new patterns out of previous multiplicities, intervening by adding layers of meaning rather than merely deconstructing or conforming to ready-made categories.”<sup>23</sup> Itself a relational way of thinking, rhetorical ecology inhabits the places and practices through which ontological differences as matters of existence become interested in changing each other, and what happens as a result.

Importantly, the results of rhetorical methodological decisions matter.<sup>24</sup> The work I share in this dissertation is not just about refining methods and seeing what happens next, but attending to pressing needs and working to calibrate a collective response in ways that may support environmental justice.<sup>25</sup> Ecology is important for these efforts because it means thinking systemically, about shifting systems of relationships that come together or spread in novel ways over time and forms of distance to produce changing

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21. Phaedra C. Pezzullo and Catalina M. de Onís, “Rethinking Rhetorical Field Methods on a Precarious Planet,” *Communication Monographs* 85, no. 1 (2017): 1–20; Tyler Quiring, Bridie McGreavy, and Carter Hathaway, “Affective Encounters with Tidal Livelihoods: Digital Field Rhetorics for Justice and Care,” *Environmental Communication* 14, no. 3 (2020): 416–429.

22. Donna Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Durham, NC: Duke University Press, 2016), 71.

23. María Puig de la Bellacasa, *Matters of Care: Speculative Ethics in More than Human Worlds* (Minneapolis, MN: University of Minnesota Press, 2017), 72.

24. McHendry et al., “Rhetorical Critic(ism)’s Body.”

25. Robert Cox, “Nature’s ‘Crisis Disciplines’: Does Environmental Communication Have an Ethical Duty?,” *Environmental Communication* 1, no. 1 (2007): 5–20; Pezzullo and Onís, “Rethinking Rhetorical Field Methods.”

circumstances and then change along with those circumstances.<sup>26</sup> Some of the examples I work with include using texts like news and visual media to produce insights that serve community partner needs, building collaborative techniques and protocols that support decolonizing efforts, and letting these processes shift not only the methods but also the focus of research. Thus, rhetorical ecology provides more than a method, it gives us a comportment for how to work within existing and unexpected networks of relationships to shift *how* we are willing to do this thing we call research.<sup>27</sup>

In this section, I explored some features of ecological thinking, especially as it relates to rhetoric. Rhetorical ecology is about how differences connect and how we understand and work with these differences to produce knowledge and put this knowledge to work for those who have made the work possible in the first place. We can build on this theoretical perspective using methods that provide ways of structuring individual and collective response through research that seeks to contribute to understanding and informing decision making. Next, I describe rhetorical ethnography as an established methodological framework for using multiple engaged rhetorical methods.

### **Using Rhetorical Ethnography to Connect Multiple Methods**

Here I describe how past examples of rhetorical fieldwork establish a methodological basis for bringing multiple methods to engaged studies of collaboration around dam decision making and river restoration. In particular, I explore rhetorical ethnography as a distinct methodology that supports forms of engaged research that adapt to context- and site-dependent needs for understanding and informing decision making. Like the Penobscot River and Nation, rhetoric is a study and practice with a history millennia in the making. Throughout this history, attention to diverse arrangements of

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26. Anna Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton: Princeton University Press, 2015).

27. Druschke, "A Trophic Future."

rhetors within and in relationship to environments has guided what we understand as rhetorical, as “Different materialities set the field of potential and condition diverse rhetorics’ emergence from the broader environment.”<sup>28</sup>

Methodological developments in recent years have helped deepen rhetoric’s disciplinary focus on environments and the ecologies they hold. Over the last decade, multiple works in the field of rhetoric have developed a distinctly rhetorical approach to ethnography. Much of this work has built from the interdisciplinary basis of rhetorical field methods, which bring together theory and praxis from the traditions of critical rhetoric, performance studies, and ethnography to shift where and how we study rhetoric.<sup>29</sup> Participatory work building on this foundation foregrounds advocacy and activism to access “locally-situated, vernacular rhetorics and seeks to partner with rhetors rather than merely study them.”<sup>30</sup> The approach helps us understand rhetors not merely as those who demonstrate mastery of classical rhetorical form, but as all those who have a role in producing and shaping communicative change. In this tradition, understanding rhetorical acts “is tied to the particulars of individual vernacular communities . . . the lines between rhetor, critic, and audience blur.”<sup>31</sup> We can thus ascribe the role of rhetor to all those who participate in and shape rhetorical invention and production.

Following this expansive sense of rhetorical participation leads us beyond the human as well, and this is a move that ethnographic practice itself extends. As Candice Rai explains in her in-depth study that serves as one of the most extensively-developed examples of this approach, the rhetorical ethnographer’s focus “may exceed human

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28. Stormer and McGreavy, “Thinking Ecologically About Rhetoric,” 19.

29. Michael K. Middleton, Samantha Senda-Cook, and Danielle Endres, “Articulating Rhetorical Field Methods: Challenges and Tensions,” *Western Journal of Communication* 75, no. 4 (2011): 386–406; Aaron Hess, “Critical-Rhetorical Ethnography: Rethinking the Place and Process of Rhetoric,” *Communication Studies* 62, no. 2 (2011): 127–152.

30. Michael K. Middleton et al., eds., *Participatory Critical Rhetoric: Theoretical and Methodological Foundations for Studying Rhetoric In Situ* (Lanham, MD: Lexington Books, 2015), xv.

31. Aaron Hess, “Embodied Judgment: A Call for a Phronetic Orientation in Critical Ethnography,” in *Text + Field: Innovations in Rhetorical Method*, ed. Sara L. McKinnon et al. (University Park, PA: Pennsylvania State University Press, 2016), 92.

motivations and culture, even while these remain central and meaningful. In short, rhetorical field methods can help reveal certain insights about rhetoric in excess of human culture.”<sup>32</sup> Doing so means exploring how rhetorics extend across a variety of situations and living and non-living things and how these together contribute to the ongoing possibilities for change.

Tracing this requires a range of methods to get a sense for the texture of the environments where rhetoric emerges, as well as the practices that contribute to this emergence. Rai uses the phrase “nitty-gritty” to denote detailed attention to methods, which she contrasts with the theoretical contours that comprise a methodology. For Rai,

If rhetorical ethnography is distinguishable from other types of ethnographies, the distinction lies less in nitty-gritty field practices, and more in its theoretical dispositions toward studying rhetorical phenomena and yielding rhetorical knowledge that can only be captured through the sustained presence of the researcher.<sup>33</sup>

Yet careful attention to methods is important for shaping ethnographic practice, as “Fieldwork helps us examine the ways that rhetoric manifests from and circulates consequentially within the dynamic . . . and material conditions of everyday life.”<sup>34</sup> The core chapters in this dissertation provide different methods and discursive sites for this kind of examination.

In this section, I presented rhetorical ethnography as an ecological methodology for studying phenomena like restoration over time, including by using specific methods as various sites, relationships, and rhetorical situations require. In the final section, I

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32. Rai, *Democracy's Lot*, 20.

33. *Ibid.*, 21.

34. *Ibid.*, 15.

overview each remaining chapter in this dissertation to show the different ways this project draws on specific methods and sites through engaged rhetorical methods.

### **Chapter Overview**

In this section, I briefly describe the following chapters to provide an overview of the major questions, approaches, and insights in the remainder of the dissertation. The three main chapters each use a distinct method to support ongoing engagement with restoration in the Penobscot River Watershed through collaborative research. In the second chapter, entitled *Are Dams Set in Stone? Using Discourse Analysis of News Media to Inform Collaborative Research on River Restoration*, we present a collaborative media discourse analysis of news media about dams and river restoration in the Penobscot River Watershed. We ask how newspaper media portrayed the Penobscot Project over the last 30 years and how these portrayals connect with needs and opportunities for further decision making in this place and elsewhere. The results demonstrate that news media widely framed the project as a success based on technical and social outcomes and that this framing limits what we can understand about the complexities of restoration and ongoing needs that remain on this river. In this way, media analysis can reveal opportunities for further collaborative engagement.

In the third chapter, entitled *Retrospection to Reciprocation: An Unsettling Case Study*, we present an ethnographic case study of the Penobscot Restoration. Here, we build on the media discourse analysis to ask about other histories, futures, and stories that are left out of the dominant Penobscot Restoration success narrative. This work explored restoration practice from the perspective of those involved in that practice, and describes how the available perspectives shaped the aims and possibilities of our rhetorical ethnography as we became further enmeshed in the context and relationships at work here, which in turn transformed the possibilities for doing research. Doing research with community partners shifted the study from a retrospective focus to a focus on

reciprocation—from looking back on past restoration activity to using research as a way of giving back to those who made the work possible. The results show how building relationships and opening up our research processes to this kind of reordering helps expand understandings of what we can work to restore.

In the fourth chapter, entitled *It is Made to Write: Engaged Digital Rhetorics for Decolonization*, we present an engaged digital rhetoric project conducted by a team of researchers from the Penobscot Nation’s Department of Natural Resources Water Resources Program and the University of Maine. We explore where reciprocation can lead when advancing research projects in response to the needs of our partners. This chapter is an example of how digital rhetoric can support and inform rhetorical ethnography through cross-cultural engagement, especially when the process of multi-sited ethnography leads rhetoricians and their collaborators to open up questions, aims, and processes to unforeseen possibilities. We ask how digital approaches shape the opportunities for collaboratively composing alternative forms of media documentation for decolonization. The analysis reflects on developing procedural digital ethics to support visual portrayals of Indigenous environmental science as a form of ongoing restoration practice. The results show how this process relies on relationship building, cross-cultural dialogue, and flexible naming practices that reshape how we can collectively see our histories and work toward socio-environmental justice.

Together, these chapters work to expand what is known about the possibilities for rhetoric and restoration through ethnography. In the fifth and final chapter, I reflect on the three main chapters and consider what we can learn by bringing multiple engaged rhetorical methodologies to bear on decision-making processes about complex concerns like dams and river restoration. I explore how media analysis, case study, and digital rhetoric approaches can work in synergy when they are focused on a similar context and set of phenomena and when we consider them as ways of helping structure and contribute to a broader set of collaborative and engaged practices. I describe these approaches as

possible methods linked within a broader rhetorical ethnographic methodological framework. Thinking across projects and methods in this way also illuminates opportunities for future research that builds on the relationships, approaches, and diverse forms of knowledge generation that can coexist in this methodological, theoretical, and collaboratively engaged approach.

## CHAPTER 2

# ARE DAMS SET IN STONE? USING DISCOURSE ANALYSIS OF NEWS MEDIA TO INFORM COLLABORATIVE RESEARCH ON RIVER RESTORATION

### Introduction

We take the title above in part from a news article we discovered in the process of composing and refining the media archive that provides the data for this chapter.<sup>35</sup> The headline for the 1994 piece asked “Are [the] West’s dams set in stone?” The article that accompanied the headline focused on the vision of former United States President Bill Clinton’s Secretary of the Interior Bruce Babbitt, who allegedly wanted to demolish prominent dams on the West Coast. Posing Babbitt as a heroic figure, the article began

Interior Secretary Bruce Babbitt has a dream. He wants to stand in the shadow of a massive dam and push a dynamite plunger . . . Like many past Interior Secretaries, Babbitt wants to transform the Western United States . . . He wants to restore, if in small measure, the ecological balance that existed before Interior’s Bureau of Reclamation began its nearly 100 years of dam-building.

Later the article alludes to how entwined public sentiment and economic concerns might complicate Babbitt’s otherwise victorious work, explaining that

the proposed destruction of the Glines Canyon and Elwha dams is sending waves of worry beyond the Olympic Peninsula . . . If [these] dams can be ripped down in the interests of a few salmon, critics ask, where would it stop? And how many jobs in industries long dependent on the dams would be sacrificed?

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35. Melissa Healy, “Are West’s Dams Set in Stone?: Bruce Babbitt dreams of razing some of them to transform rivers and the Interior Department. But businesses dependent on cheap water and power fear the added expense and predict job losses,” *LA Times*, March 31, 1994.

These brief excerpts begin to demonstrate some of the complexities that emerge as different groups become involved in determining the future of dams. The article depicts a struggle between the interests of a public official challenging a status quo and the communities that oppose this disruption. Community opposition is understandable given the reliance on dams and hydropower for supporting lives and livelihoods in the United States. Dams are part of this country's infrastructural status quo because they have long been and continue to be a major component of national renewable energy and water management strategies.<sup>36</sup> As the nation has become accustomed to this technology, these structures have also been important contributors to nation-building by figuratively helping power notions of progress, expansion, and technical sufficiency in diverse sites and communities.<sup>37</sup> And yet Babbitt's aims also hint at another status quo: the ecological balance of free-moving rivers and fish which preceded the widespread building of dams and that their presence complicates.<sup>38</sup> In the article, this prior status quo foregrounds proposed ecological restoration through dam removal as an alternative vision for the future of dams. Thus, this article brings together disparate values and priorities around the question of for what and whom rivers and dams are good.

This opening case is an example of what we can understand when we expand the possible sites of decision making about dams to include news stories and the broader media discourses they help construct.<sup>39</sup> As we attempt to show in this chapter, there are patterns involved here that extend beyond this single case example and that illuminate entangled technical, social and political dynamics of decision making about dams in other

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36. Ho et al., "Future Role of Dams."

37. Anthony F. Arrigo, *Imaging Hoover Dam: The Making of a Cultural Icon* (Reno, NV: University of Nevada Press, 2014); Wendy Nelson Espeland, *The Struggle for Water: Politics, Rationality, and Identity in the American Southwest* (Chicago, IL: University of Chicago Press, 1998).

38. David D. Hart et al., "Dam Removal: Challenges and Opportunities for Ecological Research and River Restoration," *Bioscience* 52, no. 8 (2002): 669–681.

39. R. Sternberg, "Hydropower: Dimensions of Social and Environmental Coexistence," *Renewable and Sustainable Energy Reviews* 12 (2008): 1588–1621; D. Jørgensen and B. M. Renöfält, "Damned if You Do, Dammed if You Don't: Debates on Dam Removal in the Swedish Media," *Ecology and Society* 18, no. 1 (2012): 1–18; Norman Fairclough, *Media Discourse* (London: Hoddler Arnold, 1995).

places, such as our specific research site that we describe below. Across various geographies and sites, news media about environmental matters of concern can inform collaborative decision making because they “involve a network of ‘nodal points’—sites of concentrated power, and of discursive production and reproduction.”<sup>40</sup> By examining news articles as sites of tension around seemingly incommensurate priorities, we can also understand how public discourse necessarily brings disparate interests into contact and potential reconfiguration.

As Bruno Latour describes,

Each time the solidity of a string of words is tested, we are measuring the attachment of walls, neurons, sentiments, gestures, hearts, minds, and wallets—that is, a heterogenous [sic] multitude of allies, mercenaries, friends, and courtesans.<sup>41</sup>

And yet this measurement or way of making sense out of small-scale discursive objects connects with much larger and patterned processes where “discourses represent the interests of specific groups.”<sup>42</sup> For example, Métis scholar Zoe Todd critiques the academic systems that prioritize Latour’s portrayal of environmental issues as matters of common concern, on the basis that this move blanks out areas of commonality only to populate them with Euro-Western discourses.<sup>43</sup> Thus, the work of doing discourse analysis cannot be separated from the spaces where that analysis takes place, often “spaces where whiteness protects itself when it assumes there are no [People of Color] (and/or Indigenous peoples) to bear witness to its insecurities, hostilities.”<sup>44</sup> Noting how

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40. Paul Yacoumis, “Making Progress? Reproducing Hegemony Through Discourses of ‘Sustainable Development’ in the Australian News Media,” *Environmental Communication*, 2017, 1–14.

41. Bruno Latour, *The Pasteurization of France* (Cambridge, MA: Harvard University Press, 1988), 183.

42. Anders Hansen and David Machin, *Media and Communication Research Methods* (Houndmills, Basingstoke: Palgrave Macmillan, 2013), 199.

43. Zoe Todd, “An Indigenous Feminist Take on the Ontological Turn: ‘Ontology’ is Just Another Word for Colonialism,” *Journal of Historical Sociology* 29, no. 1 (2016): 4–22.

44. *Ibid.*, 12.

reasoning to protect the environment often becomes entangled with unequal allocation of environmental privilege,<sup>45</sup> we maintain that drawing Indigenous perspectives into classically Euro-Western enterprises like discourse analysis is one way of holding these knowledge production practices accountable for what they see and what they say about it. This underscores the materiality of what we are able to understand *as* discourse, how its forms are sites of struggle where issues of power play out, and that research is not a neutral or value-free exercise.<sup>46</sup>

The values that guide this research grow from dynamics of ongoing decision making about dams and river restoration in the Penobscot River Watershed. It is the largest watershed in the State of Maine and an international zone<sup>47</sup> that borders Canada and is the ancestral and current homeland of the Penobscot Nation. It is also the site of a prominent collaborative effort called the Penobscot River Restoration Project (Penobscot Project) that has unfolded here over more than 20 years.<sup>48</sup> The project involved collective decision making to reconfigure several dams on the Penobscot River to prioritize fish passage and hydropower production. The Penobscot Nation was deeply involved in all stages of this project as part of its long-term commitment to this place.<sup>49</sup> Whereas the opening article portrays struggles over decision making as the result of actions by a powerful politician and their constituents who resist, those involved in the Penobscot Project describe this effort as an exemplar of inter-community coalition-building and

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45. Holly E. Schreiber, "Eugenic-Conservationist Discourse in the New Jersey Pine Barrens," *Interdisciplinary Studies in Literature and Environment* 25, no. 3 (2018): 586.

46. Clifford G. Christians, "Neutral Science and the Ethics of Resistance," in *Qualitative Inquiry: Past, Present, and Future: A Critical Reader*, ed. Norman N. Denzin and Michael D. Giardina (London: Routledge, 2015), 69–87.

47. Brawley Benson, "Evaluating Sustainable Decision Making on Water Resources: Comparing Cooperation around the Aral Sea and Penobscot River" (B.S. Honor's Thesis, University of Maine Honors College, 2019).

48. Opperman et al., "Basin-Scale Approach."

49. Butch Phillips, "A River Runs Through Us," 2006, accessed March 8, 2020, [https://www.nrcm.org/wp-content/uploads/2019/02/RiverRunsThroughUs\\_ButchPhillips.pdf](https://www.nrcm.org/wp-content/uploads/2019/02/RiverRunsThroughUs_ButchPhillips.pdf).

collaboration.<sup>50</sup> Thus, there is an opportunity for learning from this case to understand and inform decision making about dams and rivers more broadly, and news media coverage of the Penobscot Project provides one way to make sense of this. News media contribute to a collective record of environmental events that relies on a complex interplay of news sources or subjects, organizational and professional news reporting practices, and layers of additional political, economic, and cultural factors.<sup>51</sup> Thus, news media provide a textual basis for collaborative transdisciplinary and critical rhetorical analyses that seek to make sense of these factors, actors, and practices to inform ongoing decision making.<sup>52</sup>

In this chapter, we advance a critically engaged media discourse analysis<sup>53</sup> that contributes to understanding and supporting long-term collaborative work focused on decision making about dams in the Penobscot River Watershed. As we describe, news media have focused extensively on the Penobscot Project as an example of coalitional and watershed-scale approaches to public participation in decision making about systems of dams. Yet learning more about what made this effort work can possibly inform ongoing decision making in this place and future decision making elsewhere. This interest is shaping collaborations that extend previous efforts in engaged communication research to “integrate media analysis into transdisciplinary research aimed at creating solutions [to] social, environmental, and economic issues.”<sup>54</sup> In response, we seek to better understand how news media made sense of the Penobscot Project over time and how this

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50. Laura Rose Day, “Restoring Native Fisheries to Maine’s Largest Watershed: The Penobscot River Restoration Project,” *Journal of Contemporary Water Research & Education*, no. 134 (2006): 29–33; Opperman et al., “Basin-Scale Approach.”

51. Anabela Carvalho, “Media(ted) Discourse and Society,” *Journalism Studies* 9, no. 2 (2008): 161–177; Christina R. Foust and William O’Shannon Murphy, “Revealing and Reframing Apocalyptic Tragedy in Global Warming Discourse,” *Environmental Communication* 3, no. 2 (2009): 151–167; Anders Hansen, *Environment, Media and Communication* (London: Routledge, 2010).

52. Hollie M. Smith and Laura Lindenfeld, “Integrating Media Studies of Climate Change into Transdisciplinary Research: Which Direction Should We Be Heading?,” *Environmental Communication* 8, no. 2 (2014): 179–196; Caroline G. Druschke and Candice Rai, “Making Worlds with Cyborg Fish,” in *Tracing Rhetoric and Material Life: Ecological Approaches*, ed. Bridie McGreavy et al. (Cham, Switzerland: Palgrave Macmillan, 2018), 197–221.

53. Carvalho, “Media(ted) Discourse and Society”; Hansen and Machin, *Media and Communication*.

54. Smith and Lindenfeld, “Integrating Media Studies,” 180.

sense-making through media portrayal matters for ongoing collaboration and decision making about dams and river restoration with diverse research partners in this region.

Our research questions foreground learning from the Penobscot Project's example to inform the possibilities for ongoing decision making in this place as dams and river restoration come to matter along with news media. Specifically, we ask how news media portray the Penobscot River restoration and how these portrayals connect with decision making about this river and its dams in ways that matter for diverse groups. These questions matter for understanding how dams, river restoration, and news media enjoin each other in taking up and making other things, such as something resembling "public sentiment," or processes of collective decision making, or—through these—the future of life on a continent marked by a history of colonization. To answer these questions, we first review research that describes how dams matter to public life and how news media become part of this process by informing decision making. Then, we overview how our study emerged to situate our methodology in this unique geospatial, political, and engaged context. Finally, in our analysis we describe and discuss themes that draw from this context to demonstrate how working with news media through discourse analysis is further shaping the possibilities for decision making and collaboration in the Penobscot River Watershed. Overall, these components show that media discourse analysis can help make sense of ongoing dynamics that matter for generating knowledge about dams, rivers, and engaged rhetorics as well as for contributing to the development of approaches that use this engagement to inform future political practice.

### **Contextualizing Media Discourse of Dams and Restoration**

The introduction began to identify ways that media discourse matters for decision making about dams, rivers, and other active things with which they interact. Yet studying how discourse matters requires an understanding and appreciation for the complex dynamics that unfold in the relationship between these diverse entities. In this section, we

begin to explore these relationships in three complementary steps to provide a conceptual basis for the methods and insights that follow. The first step involves understanding dams and news media as matters of interest to each other. The second step further develops these relationships by continuing to explore the materiality of discourse with particular attention to the interrelationship of dams, discourse, and decision making. The third and final step situates how media discourse of dams matters for rhetorics that extend across multiple research sites. Together, these steps provide a framework for the methodology we apply in the remainder of the chapter, intending to contribute to developing critical rhetorical methods that seek to make a difference in community-engaged decision making.

### **Dams as a Matter of Interest and Concern in News Media**

In this section, we begin to explore dams and news media as interconnected phenomena. Doing so helps position what can be understood by rhetorically engaging with these matters of interest and concern through media discourse analysis. Renewable energy accounts for nearly 17 percent of the United States' electricity generation, contributing to a broader portfolio dominated by fossil fuels.<sup>55</sup> Hydroelectric dams are one form of renewable energy production, and although hydropower does not account for a majority of this production, dams are widespread across the United States.<sup>56</sup> This widespread use emphasizes the versatility of dams beyond producing electricity: dams provide a broad and nuanced range of benefits, though these are paired with numerous tradeoffs. By producing hydroelectricity, dams present barriers to migratory fish.<sup>57</sup> In holding back rivers to supply water and control floods, dam reservoirs alter river ecologies

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55. U.S. Energy Information Administration, "What is U.S. electricity generation by energy source?," October 25, 2019, accessed February 7, 2020, <https://www.eia.gov/tools/faqs/faq.php?id=427&t=3>.

56. According to F. J. Magilligan et al., "River Restoration by Dam Removal: Enhancing Connectivity at Watershed Scales," *Elementa: Science of the Anthropocene* 4, no. 108 (2016): 1–14, there are approximately 80,000 dams in the U.S.

57. Mary C. Freeman et al., "Ecosystem-level Consequences of Migratory Faunal Depletion Caused by Dams," *American Fisheries Society Symposium* 35 (2003): 255–266.

and habitats<sup>58</sup> and may also emit greenhouse gases.<sup>59</sup> Geographic, temporal, and cultural factors shape other tradeoffs. An example is river recreation and transportation, as dams may enhance or dampen these activities depending on their location and other factors.<sup>60</sup>

Dams also intersect with historical, cultural, and aesthetic senses of place in complex ways. They disrupt ancient ecological arrangements and relationships with place even as they become a customary or integral component of urban infrastructures and industrial histories.<sup>61</sup> These and other tradeoffs emphasize that dams illuminate competing perspectives and preferences over the purposes and uses of rivers. The complexity of these tradeoffs intensifies as dams age and need to be maintained, repaired, upgraded, or removed.<sup>62</sup> For example, older and structurally compromised dams increase the risk of catastrophic flooding during peak water flow periods.<sup>63</sup> For hydroelectric dams, federal relicensing procedures also highlight points of reckoning over the intersection of technical, ecological, and cultural dimensions of dam tradeoffs.<sup>64</sup> In recent years, these dynamics have connected with technical advances in hydroelectricity generation and emphasis on river restoration that contribute to an interest in removing dams.<sup>65</sup>

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58. Arthur R. Cooper et al., “Assessment of Dam Effects on Streams and Fish Assemblages of the Conterminous USA,” *Science of the Total Environment* 586, no. 1 (2017): 879–889.

59. Intergovernmental Panel on Climate Change, *Guidelines for National Greenhouse Gas Inventories, Appendix 3: CH<sub>4</sub> Emissions from Flooded Land: Basis for Future Methodological Development* (2006), accessed February 10, 2020, [https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4\\_Volume4/V4\\_p\\_Ap3\\_WetlandsCH4.pdf](https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4_Volume4/V4_p_Ap3_WetlandsCH4.pdf).

60. Stephen M. Born et al., “Socioeconomic and Institutional Dimensions of Dam Removals: The Wisconsin Experience,” *Environmental Management* 22, no. 3 (1998): 359–370.

61. Anne M. Rademacher, *Reigning the River: Urban Ecologies and Political Transformation in Kathmandu* (Durham, NC: Duke University Press, 2011).

62. Magilligan et al., “Restoration by Dam Removal.”

63. Joseph S. Walder and Jim E. O’Connor, “Methods for Predicting Peak Discharge of Floods Caused by Failure of Natural and Constructed Earthen Dams,” *Water Resources Research* 33, no. 10 (1997): 2337–2348.

64. Magilligan et al., “Restoration by Dam Removal”; Brian C. Chaffin and Hannah Gosnell, “Beyond Mandatory Fishways: Federal Hydropower Relicensing as a Window of Opportunity for Dam Removal and Adaptive Governance of Riverine Landscapes in the United States,” *Water Alternatives* 10, no. 3 (2017): 819–839.

65. M. A. Palmer et al., “Standards for Ecologically Successful River Restoration,” *Journal of Applied Ecology* 42 (2005): 208–217; Opperman et al., “Basin-Scale Approach”; Magilligan et al., “Restoration by Dam Removal.”

Removing dams for pragmatic or restorative purposes further adds to the complexity of navigating these tradeoffs and presents its own set of benefits and risks.<sup>66</sup> For individuals, communities, agencies, and societies connected with decisions about dams, weighing the relative potential impacts of these diverse risks is a substantial undertaking. Within this decision-making context, news articles play an important role as a channel through which people make sense of arguments for or against dams.<sup>67</sup> Thus, it is important to understand how news media present the relationship of rivers, dams, and a host of related entities. Extensive prior research has considered the role of news framing in contributing to public understanding of numerous phenomena such as science,<sup>68</sup> climate change,<sup>69</sup> environmental and water justice movements,<sup>70</sup> and flood management using dams.<sup>71</sup> Framing refers to “the process of culling a few elements of perceived reality and assembling a narrative that highlights connections among them to promote a particular interpretation.”<sup>72</sup> Frames reveal and reify powerful ideologies or systems of beliefs that guide ways of understanding and acting in the world.<sup>73</sup> This emphasizes how frames

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66. Angela T. Bednarek, “Undamming Rivers: A Review of the Ecological Impacts of Dam Removal,” *Environmental Management* 27, no. 6 (2001): 803–814; Hart et al., “Dam Removal.”

67. Jørgensen and Renöfält, “Debates on Dam Removal.”

68. Anabela Carvalho, “Ideological Cultures and Media Discourses on Scientific Knowledge: Re-reading news on Climate Change,” *Public Understanding of Science* 16, no. 2 (2007): 223–243; Matthew C. Nisbet and Chris Mooney, “Framing Science,” *Science* 316, no. 5821 (2007): 1–1.

69. Foust and O’Shannon Murphy, “Revealing and Reframing”; Anabela Carvalho, “Media(ted) Discourses and Climate Change: A Focus on Political Subjectivity and (Dis)engagement,” *WIREs Climate Change* 1 (2010): 172–179; Adam Shehata and David Nicolas Hopmann, “Framing Climate Change: A Study of US and Swedish Press Coverage of Global Warming,” *Journalism Studies* 13, no. 2 (2012): 175–192.

70. Kristen A. Swain, “Moral Development Framing in Environmental Justice News Coverage,” in *Communicating Science: New Agendas in Communication*, ed. LeeAnn Kahlor and Patricia A. Stout (New York: Routledge, 2010), 209–232; Jahnnabi Das, “Framing and Sources: News on Environmental Justice in Bangladesh,” *Pacific Journalism Review* 25, nos. 1 & 2 (2019): 122–138; Ellen Moore, *Journalism, Politics, and the Dakota Access Pipeline: Standing Rock and the Framing of Injustice* (London: Routledge, 2019).

71. Timothy K. F. Fung, Dominique Brossard, and Isabella Ng, “There is Water Everywhere: How News Framing Amplifies the Effect of Ecological Worldviews on Preference for Flooding Protection Policy,” *Mass Communication and Society* 14, no. 5 (2011): 553–577; Jacqui Ewart and Hamish McLean, “Ducking for Cover in the ‘Blame Game’: News Framing of the Findings of Two Reports into the 2010–11 Queensland Floods,” *Disasters* 39, no. 1 (2014): 166–184.

72. R. M. Entman, “Framing Bias: Media in the Distribution of Power,” *Journal of Communication* 57, no. 1 (2007): 164.

73. Foust and O’Shannon Murphy, “Revealing and Reframing.”

constitute macro phenomena visible across discourse, gradually composed over time through the patterned repetition of myriad micro framing practices evident in texts like news articles and that reflect and reconstitute forms of power in the broader discourse.<sup>74</sup> This process involves patterned practices of topic selection and presentation that shape what can be understood about an issue through a news story. For example, the prior perspectives that journalists and readers bring to a news story can impact perceptions of policy issues.<sup>75</sup> These perspectives also shape how audiences weigh the risks and benefits of renewable energy technologies<sup>76</sup> or reflect on and advocate for minimizing environmental risks.<sup>77</sup> Furthermore, framing can inform the balance of political and social power in decision making about water resources<sup>78</sup> and the development of collaborations to collectively manage these resources.<sup>79</sup> Thus, the ways media from across a temporal and geographic range describe dams matter for what and how discourses are being produced in relation to dams, rivers, and restoration.

When news media cover dams, they tend to focus on short-term conditions such as licensing, construction, damage, repair, and removal rather than long-term effects, and emphasize individual hydropower dams over the many other dams that do not produce hydroelectricity.<sup>80</sup> Given the range of broader impacts from dam use and removal and the

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74. Bridie McGreavy, "Resilience as Discourse," *Environmental Communication* 10, no. 1 (2016): 104–121.

75. David Tewksbury et al., "The Interaction of News and Advocate Frames: Manipulating Audience Perceptions of a Local Public Policy Issue," *Journalism & Mass Communication Quarterly* 77, no. 4 (2000): 804–829.

76. Jennie C. Stephens, Gabriel M. Rand, and Leah L. Melnick, "Wind Energy in US Media: A Comparative State-Level Analysis of Critical Climate Change Mitigation Technology," *Environmental Communication* 3, no. 2 (2009): 168–190.

77. Jingrong Tong, "Environmental Risks in Newspaper Coverage: A Framing Analysis of Investigative Reports on Environmental Problems in 10 Chinese Newspapers," *Environmental Communication* 8, no. 3 (2014): 345–367.

78. Jill E. Hopke, "Water Gives Life: Framing an Environmental Justice Movement in the Mainstream and Alternative Salvadoran Press," *Transactions of the American Fisheries Society* 140 (2012): 1255–1268.

79. Art Dewulf et al., "A Framing Approach to Cross-Disciplinary Research Collaboration: Experiences From a Large-Scale Research Project on Adaptive Water Management," *Ecology and Society* 12, no. 2 (2007): 1–14.

80. Sternberg, "Hydropower."

challenge of scientifically drawing general conclusions about related risks,<sup>81</sup> it is understandable that substantial uncertainty may remain in the case of any particular dam. A high degree of uncertainty is a primary motivator for people to seek information,<sup>82</sup> and as news media are a uniquely accessible information source, they form one commonplace for gathering information on what issues communities may care about.<sup>83</sup> Although news media frequency and content are not a direct indication of how a society or community thinks about environmental matters such as rivers, dams, and ecological restoration, the newsworthiness of these and other matters is informed by journalistic and editorial senses of what things a society may tend to see as important.<sup>84</sup> News reporting practices and societal concerns thus inform each other reciprocally, as news producers anticipate what will be salient to a mass audience and the audience provides feedback by choosing to purchase or read media of interest from the news available. Discursive artifacts like newspaper articles thus provide socially-prioritized topics that may be socially salient and provide specific depictions that emphasize certain benefits or risks of dams and dam removal to their readers. This process is iterative and unfolds over time and changing circumstances, meaning that news coverage of environmental issues is a continually-unfolding social construction.<sup>85</sup>

Social construction of environmental issues through news means that newspaper articles are an important site for exploring the social and ecological practices that constitute discourse about dams and restoration because these texts form an expressive record of current events and interests in a society. This meaning-making occurs at multiple scales. For example, readers and those they communicate with in the public

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81. Hart et al., "Dam Removal."

82. S. Dunwoody and R. J. Griffin, "The Role of Channel Beliefs in Risk Information Seeking," in *Effective Risk Communication*, ed. J. Arvai and L. Rivers (London: Routledge, 2014), 220–233.

83. Tom R. Tyler and Fay Lomax Cook, "The Mass Media and Judgments of Risk: Distinguishing Impact on Personal and Societal Level Judgments," *Journal of Personal and Social Psychology* 47 (1984): 693–708.

84. Maxwell E. McCombs and Donald L. Shaw, "The Agenda-setting Function of Mass Media," *Public Opinion Quarterly* 36, no. 2 (1972): 176–187; Carvalho, "Media(ted) Discourses and Climate."

85. Hansen, *Environment, Media and Communication*.

sphere can use interpretations of newspaper articles as conceptual devices for orienting to the world.<sup>86</sup> Furthermore, this process contributes to broader collective understandings of what community and nation are and the patterned interactions that govern life in them.<sup>87</sup> As news media often forms a basis of insights, arguments, and evidence for broader policy and practical decision making, it thus becomes important to understand how they contribute to and shape discourse related to dams, rivers, and restoration praxis. Next, we explore this role more fully to support our understanding of media discourse analysis as a collaborative method to link rhetorics across multiple research sites.

### **Developing Relations of Dams, Discourse, and Decision Making**

The previous section describes dams as a complex technology and news media as a way of making public sense of the relationships dams have with rivers. This section expands on that relational sense-making to explore what possible differences news media might make for decision making about dams. The example we shared in the introduction portrayed decision making as the product of tensions between Bruce Babbitt (a public official) and opposed constituents (the vague category of “critics”) who challenge his plans. Thus, it is worth considering how news media populate a productive but fraught interface between dams and the decisions people make about them. For example, the news article about Babbitt draws on metaphors that creatively position phenomena in relation to social groups and interests. These metaphors include the “waves of worry” caused by Babbitt’s dream, the potential “ripping” down of dams, and the “sacrifice” of stakeholders in industry as a result of these actions. Metaphor is applied liberally here, as with much

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86. Jürgen Habermas, “The Public Sphere: An Encyclopedia Article,” *New German Critique*, no. 3 (1974): 49–55.

87. Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism, Revised Edition* (London: Verso, 2006).

political discourse including news media.<sup>88</sup> Because metaphor can be a “predominant factor of transforming the style of the text from overtly descriptive or narrative to covertly argumentative,”<sup>89</sup> these moments begin to show how “Language is embedded in societal, political, and ideological structures and processes. Meanings are not frozen entities, but are generated and regenerated as they are immersed in the processes and structures constituting them, on the one hand, but also being constituted by them, on the other.”<sup>90</sup>

Metaphor is important for how news media generate and regenerate meanings with dams, rivers, fish, humans, jobs, and the host of other active things to which they matter. Indeed, Nietzsche called truth itself

A movable host of metaphors . . . which have been poetically and rhetorically intensified, transferred, and embellished, and which, after long usage, seem to a people to be fixed, canonical, and binding. Truths are illusions which we have forgotten are illusions; they are metaphors that have become worn out and have been drained of sensuous force, coins which have lost their embossing and are now considered as metal and no longer as coins.”<sup>91</sup>

As this quote demonstrates, there is no escape from metaphor. Nietzsche relied on the metaphor of currency to make a point about what we come to understand as real. The lesson here is that as long as language serves as a tool, using it amounts to employing “weapon *as* word and vice versa. Tool, weapon, word . . . that is the Anthropos.”<sup>92</sup> In response, this section begins to use selective metaphors—including stone-setting and

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88. Christ’l De Landtsheer, “Collecting Political Meaning from the Count of Metaphor,” in *Metaphor and Discourse*, ed. Andreas Musolff and Jörg Zinken (Houndmills, Basingstoke: Palgrave Macmillan, 2009), 59–78.

89. Eliza Kitis and Michalis Milapides, “Read It and Believe It: How Metaphor Constructs Ideology in News Discourse. A Case Study,” *Journal of Pragmatics* 28 (1997): 562.

90. *Ibid.*, 558.

91. Friedrich Nietzsche, “On Truth and Lie in an Extramoral Sense,” in *The Continental Aesthetics Reader*, 2nd ed. Ed. Clive Cazeaux (London: Routledge, 2011), 67–68.

92. Haraway, *Staying with the Trouble*, 39.

knotting—in an attempt to serve “multispecies flourishing on Earth” because “A common livable world must be composed bit by bit, or not at all.”<sup>93</sup>

These metaphors help establish an analytic for making sense of news media as devices that set stones—building our understanding of the world—and that tie knots—connecting and constraining that understanding. This is possible because practices constitute discourse and analyzing that discourse involves searching “for evidence of the practices that give discourse its shape.”<sup>94</sup> This nebulous, ever-elusive mass of wriggling relations emerges in what Robin Wall Kimmerer describes as practices of braiding sweetgrass<sup>95</sup> or what Tim Ingold might call “knots in a tissue of knots.”<sup>96</sup> Braids and knots are ways of naming a somewhat stable image of what happens when differences connect. Differences in connection emphasize how “The world is a knot in motion,”<sup>97</sup> continually outpacing our ability to make sense of it, and always raveling potential into tightly-wrapped strands of possibility.

For example, Kimmerer’s work with personal and collective story weaves news media into narrative vignettes. The style provides a way of re-encountering entwined natural-cultural histories of nature and culture, as politics of species conservation and land conflict warp the perceived distance between our local and global worlds. For Kimmerer, the practice of protecting salamanders from automobiles crossing their migration path meshes with the audible backdrop of overseas war news emanating from a car radio, as

Carrying salamanders to safety also helps us to remember the covenant of reciprocity, the mutual responsibility that we have for each other. As the

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93. Haraway, *Staying with the Trouble*, 40.

94. McGreavy, “Resilience as Discourse,” 107.

95. Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants* (Minneapolis, MN: Milkweed Editions, 2013).

96. Tim Ingold, *Being Alive: Essays on Movement, Knowledge and Description* (London: Routledge, 2011), 70.

97. Donna Haraway, *The Companion Species Manifesto: Dogs, People, and Significant Otherness* (Chicago: Prickly Paradigm Press, 2003), 6.

perpetrators of the war zone on this road, are we not bound to heal the wounds that we inflict? The news makes me feel powerless. I can't stop bombs from falling and I can't stop cars from speeding down this road. It is beyond my power. But I can pick up salamanders. For one night I want to clear my name. What is it that draws us to this lonely hollow? Maybe it is love, the same thing that draws the salamanders from under their logs. Or maybe we walked this road tonight in search of absolution.<sup>98</sup>

This vignette shows what can emerge from “tracing the temporal knot formed when distant history touches present story, since to narrate the past conjures possible futures.”<sup>99</sup> As Kimmerer describes, “our histories are inevitably braided together with our futures,”<sup>100</sup> and this braiding emphasizes the importance of tracing practices that constitute discourse and the things it enables, for what gets made shapes what can then be done. The practices of braiding sweetgrass, assisting salamanders across a road, restoring a river, or seeking to make sense of news media can all be attempts “to show loving care”<sup>101</sup> in the face of injustices. This care can manifest in a range of ways, from personal acts of ecological responsibility to collaboratively composing media analysis with diverse partners across a host of disciplines and communities.<sup>102</sup> This composition itself is a knotting process, which shows that we can stay with the trouble wrought by entwined materialities to attempt to enact the “common livable world”<sup>103</sup> that many seek. Doing so might offer chances for reinventing the legacies of dams and news media in the pursuit of what they may yet become.

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98. Kimmerer, *Braiding Sweetgrass*, 358–359.

99. Jeffrey Jerome Cohen, *Stone: An Ecology of the Inhuman* (Minneapolis, MN: University of Minnesota Press, 2015), 78.

100. Kimmerer, *Braiding Sweetgrass*, 365.

101. *Ibid.*, 204, 263.

102. Smith and Lindenfeld, “Integrating Media Studies.”

103. Haraway, *Staying with the Trouble*, 40.

To revisit the frame offered by the introductory example, asking whether dams are “set in stone” expresses both the possibility and the urgency of determining how the knotted labor of decision making sets the possibilities for future action. Thus, frames as discursive objects provide concrete perspectives we can consider and critique, and this matters for what we can make with engaged rhetorical research that draws on and informs media discourse analysis. Indeed, in efforts to collaboratively trace distributed agencies, news media matter for what dams and river restoration appear to be, as dam removal practices connect with news media “that cultivate a sense of wonder . . . and restoration manager discourse that frames dam removal and fish passage projects in the language of migratory fish benefits understood as efficiency of movement and quantity of fish bodies.”<sup>104</sup> In contexts like this, discourse analysis provides a way of creatively examining public communication “in all of its multifarious aspects with an open-mindedness to entertain multiple possibilities,”<sup>105</sup> like how language organizes a range of knowledges, meanings, and forms of power.<sup>106</sup> Simultaneously, discursive objects like news articles shape how we can understand our world and the possibilities for subsequent action that shape it. This is the importance of the emphasis on discourse analysis as a creative activity: like the discourses it examines, discourse analysis is itself an activity that creates, by working with words-in-worlds as more than representational material things to craft alternative forms of understanding.

In news accounts, the traces of diverse practices come into close proximity where they configure layered agencies that emphasize how “Discourse is not what is said; it is that which constrains and enables what can be said. Discursive practices define what

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104. Caroline Gottschalk Druschke et al., “Centring Fish Agency in Coastal Dam Removal and River Restoration,” *Water Alternatives* 10, no. 3 (2017): 733.

105. L. A. Wood and R. O. Kroger, *Discourse Analysis: Methods for Studying Action in Talk and Text* (Thousand Oaks, CA: SAGE, 2000), 91.

106. Norman Fairclough, *Language and Power* (Essex, UK: Addison Wesley, 1989).

counts as meaningful statements.”<sup>107</sup> A newspaper artifact collects what Cohen, thinking through stone, calls “textual fossils,” which “are temporal knots, embedded within narrative, ready to exert disruptive allure. Like their material counterparts, they preserve, release, and incite life.”<sup>108</sup> In the process, they are not only a form of documentation that offers opportunities to access the past, but also provide specific, preferential visions of it. Even though media layers, their frames, and the metaphoric constructions they involve can seem stable, they require subjective entanglements of history, values, and ethics to make sense, and this entanglement has a complex and nuanced relationship with subject positionality.<sup>109</sup>

This process diffractively contributes to continual discursive emergence. Here, we understand “diffractive” as a way of naming “a commitment to understanding which differences matter, how they matter, and for whom.”<sup>110</sup> Doing so allows us to make sense of complex material entanglements, as “Discursive practices produce, rather than merely describe, the subjects and objects of knowledge practices.”<sup>111</sup> Extending the metaphors of stone-setting and knotting, we can think of news stories, frames, and the logics that guide topical selection as discursive *objects*: the stones and threads that news media work with. Discursive *practices*, then, are the activities that bring these together: the setting and knotting that composes discourses which provide the *frameworks* for what we can and cannot say. Yet crucial to this is Barad’s point that these frameworks themselves make certain discursive objects possible while making others less possible, thereby producing the available materials for composition. For example, Fairclough critiques the journalistic norm of balance,<sup>112</sup> noting how “Reports are rarely even-handed with all the various

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107. Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham, NC: Duke University Press, 2007), 146.

108. Cohen, *Stone*, 102.

109. Carvalho, “Media(ted) Discourses and Climate.”

110. Barad, *Meeting the Universe*, 90.

111. *Ibid.*, 147.

112. Fairclough also notes that this norm emerges in part from news media’s public service obligation, yet that this obligation alone cannot guarantee full impartiality or balance due to “a tension between the pressure

voices represented. Some are given prominence, and some marginalized. Some are used to frame others. Some are legitimized by being taken up in the newsreader's or reporter's voice, others are not."<sup>113</sup> This discursive entanglement highlights the importance of developing rhetorical methods like engaged media discourse analysis, as we need techniques for tracing and sifting through the voices that news media engage to be able to know who and what is constituting public discourse and where the opportunities may be for shifting these practices. In the following section, we consider how interdisciplinary and collaborative research contexts further engage these dynamics through layered and intersecting activities that seek to identify and engage in practices that use media data to discover what can and cannot be said about dams and restoration in the Penobscot River Watershed.

### **Engaging Media Discourse Across Multiple Research Sites**

In the previous sections we describe how dams, news media, and decision making connect and how this contributes to the formation of discourse. Here, we build on this foundation to begin exploring media discourse in the context of the collaborative and engaged practices that shape the analysis we offer below. As the following chapter further describes, this work is an expression of multiple layered and intersecting collaborations that together compose a broader project called the Future of Dams. This project involves dozens of researchers across a range of disciplines including communication and rhetoric, engineering, hydrology, landscape architecture, graphic design, ecology, and economics. The project is also a testament to the additional complexities that arise in the pursuit of

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to increase ratings through opting broadly for more entertainment, and the pressure to provide public service information and education." Fairclough, *Media Discourse*, 44. Furthermore, balance can be its own form of bias when applied to certain environmental issues, such as climate change, as the focus on fairly portraying each "side" of debates that are fundamentally unbalanced amplifies minimal uncertainty and disagreement to the level of equal treatment. Maxwell T. Boykoff and Jules M. Boykoff, "Balance as Bias: Global Warming and the US Prestige Press," *Global Environmental Change* 14, no. 3 (2004): 125–136

113. Fairclough, *Media Discourse*, 81.

sustainability solutions through interdisciplinary and community-engaged research. The National Science Foundation funded this project to support research that contributes tools for addressing technical and social problems related to dams and rivers in New England. As part of this effort, our media discourse analysis explores how news media connect with, inform, and shape decision making about dams. The Future of Dams project, like the Penobscot Project, is another site for noticing how the frictions of collaboration give large-scale efforts their shape.<sup>114</sup> These frictions provide ways of revealing the evidence of practices that constitute discourse on dams and restoration, involving processes that resemble setting stones and tying knots at various times as those involved in these projects seek to construct something useful by connecting across difference.

In this work, interaction, world-building, and collaboration matter for what gets made. The worlds that these engagements build and reveal require taking care with “a manifold range of doings needed to create, hold together, and sustain life and continue its diverseness.”<sup>115</sup> The diverseness of life calls to mind the differences and senses of belonging that have composed various academic and public communities and the manifold practices that make a sustainability science project like the Future of Dams recognizable across multiple discursive and ethnographic sites.<sup>116</sup> The team works across multiple U.S. states and regions, continental boundaries including the Atlantic Ocean, and more fine-scale international boundaries such as those marking the Penobscot Nation’s reservation within the State of Maine. In the centuries since colonial contact, there has been significant legal controversy over the Penobscot Nation’s ancestral territory,<sup>117</sup> with the Nation’s current reservation lands far diminished from the historical extent of this

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114. Anna Lowenhaupt Tsing, *Friction: An Ethnography of Global Connection* (Princeton: Princeton University Press, 2005), 13.

115. de la Bellacasa, *Matters of Care*, 70.

116. Marcus, “Multi-Sited Ethnography.”

117. Maria L. Girouard, “The Original Meaning and Intent of the Maine Indian Land Claims: Penobscot Perspectives” (Master’s Thesis, University of Maine, 2012).

territory.<sup>118</sup> These facts matter for informing the focus of this media discourse analysis and the related research described in later chapters. The rich ontic and cultural complexity in this place contextualizes the ongoing practices of this media discourse analysis, which has gradually become a gathering place for meaning-making within and beyond the Future of Dams project as we have composed, filtered, and analyzed our data.

It is in gathering places like this that media discourse analysis further becomes a critical practice of boundary work<sup>119</sup> that reveals opportunities for linking knowledge and action.<sup>120</sup> Discourse analysis as a critical method encourages close attention to the role of dialogue in linking discourses across knowledge communities such as those connected through the Future of Dams project. Such transdisciplinary dialogue means “using categories and concepts from other theories in one’s own process of theoretical development and elaboration.”<sup>121</sup> Furthermore, folding media analysis into ongoing community engagement activities in this way can open up possibilities for shifting the terms of engagement itself, as

Traditional media studies can be used as a starting point for iterative cycles of refining research questions and engagement with different stakeholders, scientists, and decision-makers. As academics, this engagement pulls us into a more complex and less controlled study environment, asking new questions and trying more fully

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118. Micah A. Pawling, “A ‘Labyrinth of Uncertainties’: Penobscot River Islands, Land Assignments, and Indigenous Women Proprietors in Nineteenth-Century Maine,” *American Indian Quarterly* 42, no. 4 (2018): 454–487.

119. Charlotte P. Lee, “Boundary Negotiating Artifacts: Unbinding the Routine of Boundary Objects and Embracing Chaos in Collaborative Work,” *Computer Supported Cooperative Work* 16 (2007): 307–339; Susan Leigh Star, “This is Not a Boundary Object: Reflections on the Origin of a Concept,” *Science, Technology, & Human Values* 35, no. 5 (2010): 601–617.

120. Lorrae van Kerkhoff and Louis Lebel, “Linking Knowledge and Action for Sustainable Development,” *Annual Review of Environment and Resources* 31 (2006): 445–477.

121. Norman Fairclough, “Critical Discourse Analysis in Transdisciplinary Research,” in *New Agenda in (Critical) Discourse Analysis: Theory, Methodology, and Interdisciplinarity*, ed. Ruth Wodak (Philadelphia, PA: John Benjamins, 2005), 60.

to understand what the impacts are of producing and using different types of knowledge.<sup>122</sup>

On the Future of Dams project, we had an infrastructure that supported extending these forms of engagement.

The Future of Dams project's governance statement<sup>123</sup> prioritized data sharing among project members and subteams to facilitate our interdisciplinary and collaborative research using methods like media discourse analysis. As a result, we developed a large news media database and shared it with Future of Dams collaborators. We and our collaborators used this database in a variety of ways. For example, our media discourse analysis subteam has explored the database to identify which content each article covers, including tracking mentions of entities like dams, rivers, and key stakeholder groups. We also worked with collaborators to support content analyses that helped identify key dam decision criteria and alternatives. Quiring worked with Future of Dams collaborators beyond the media discourse analysis subteam to help design, implement, and interpret these domain-specific content analyses. Both of these connections contributed to designing and implementing participatory decision-making support workshops.<sup>124</sup> Finally, we filtered the database and examined a subset of its articles in depth for the Penobscot-specific analysis we present below.

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122. Smith and Lindenfeld, "Integrating Media Studies," 191.

123. NEST - New England Sustainability Consortium, "The Future of Dams Project: Governance Statement," *New Hampshire EPSCoR*, 2017, accessed March 14, 2020, [https://scholars.unh.edu/nh\\_epscor/1](https://scholars.unh.edu/nh_epscor/1).

124. Kaitlyn Raffier et al., *Using Mixed-Method Media Discourse Content Analysis to Inform MCDA about Dams*, Poster presented at the Maine Sustainability and Water Conference, Augusta, ME, March 2018; Emma Fox et al., "Participatory Multi-Criteria Decision Analysis (MCDA)," *Future of Dams Project Research Briefs*, May 2019, 1–3, accessed January 3, 2020, [https://www.newenglandsustainabilityconsortium.org/sites/newenglandsustainabilityconsortium.org/files/media/fox\\_fod\\_researchbrief\\_mcda.pdf](https://www.newenglandsustainabilityconsortium.org/sites/newenglandsustainabilityconsortium.org/files/media/fox_fod_researchbrief_mcda.pdf); Natallia Diessner Leuchanka and Catherine M. Ashcraft, *People and Conflicts in Dammed New England Landscapes: From a Stakeholder Assessment to a Science-Based Role-Play Simulation*, Paper presented at the American Association of Geographers Annual Meeting, Washington, D.C., April 2019, accessed March 14, 2020, [https://scholars.unh.edu/cgi/viewcontent.cgi?article=1007&context=nh\\_epscor](https://scholars.unh.edu/cgi/viewcontent.cgi?article=1007&context=nh_epscor); Kaitlyn Raffier, Emma Fox, and Sharon Klein, *A Dam Decision Matrix Comparison Between Stakeholders and News Media*, Poster presented at the UMaine Student Research Symposium, Bangor, ME, April 2019.

As a research site, the Future of Dams project shows that working with news media can provide multiple opportunities for collaboratively extending understandings of discursive phenomena. Furthermore, there is something expansive about this approach afforded by circulating news media texts throughout groups in a variety of ways. Indeed, on this project and in its broader network of community partners, news media have helped shape collective understanding of dams, rivers, and river restoration as important phenomena. Informal circulation through emails and mailing lists contributed to a general collective sense of key events and emerging sentiments related to dams. Formal circulation through the processes we describe above shaped the knowledge this project can collaboratively build by linking news media analysis with other data and methods. Thus, over time media discourse analysis has woven itself into collaborative processes of knowledge production, connecting different research perspectives and practices.

In turn, this context and set of activities shapes the possibilities for understanding media through discourse analysis. Approaching media discourse analysis collaboratively on a large interdisciplinary research project matters for the meanings that can get made with this methodology. On the Future of Dams project, media discourse formed a common textual basis for several studies, expanding our team's understanding of what is said about dams and rivers, who contributes to what is said, and where there are opportunities for further research engagement. In expanding our understanding in this way, media discourse analysis also changed what we could *do* together and for our public-interest goals of informing decision making about dams. It did this in a way that allowed for methodological flexibility across different disciplines but by grounding these efforts in a common set of texts, we have a basis for future cross-case comparison as well. Building from this understanding, in the next section we describe our methodology in more detail, including how collaboratively composing both the database of media texts

and our analytical approach itself allowed us to understand how news media portray decision making about dams and rivers in the Penobscot River Watershed.

### **Collaboratively Composing Media Discourse Analysis**

In the previous section, we explained how dams and rivers matter for humans and how news media and collaborative research processes connect with these entities. In this section, we extend this explanation by more specifically describing the methods we used to compose and analyze the media discourse analysis archive that helped news media inform cross-cutting interdisciplinary collaborative and community-engaged approaches on and beyond the Future of Dams project. We followed the three main steps outlined by Hansen and Machin for computer-assisted textual qualitative data analysis, which included collecting text, organizing the text and preparing it for analysis, and analyzing the text we collected and organized.<sup>125</sup> First, we describe our process of data collection and database formation to explain how these processes supported and shaped our subsequent textual analysis. Then, we describe the range of analytical processes we used, including exploratory analyses and thematic qualitative coding.<sup>126</sup> Together, these subsections demonstrate how collaborative media discourse data collection and analysis support developing insights that matter for engagement with key community partners and their future decision making, in specific ways we further detail in our analysis section.

#### **Data Collection**

Our approach to composing the database for this media discourse analysis arose from a history of community engagement and grant funding. In 2016, the National Science Foundation funded the Future of Dams team, which began to operationalize the

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125. Hansen and Machin, *Media and Communication*, 263.

126. M. B. Miles, A. M. Huberman, and J. Saldaña, *Qualitative Data Analysis: A Methods Sourcebook* (Thousand Oaks, CA: SAGE, 2014).

objectives the grant application identified. A key objective focused on developing research infrastructures and techniques to make sense of how knowledge systems<sup>127</sup> contribute to decision making about dams and rivers. One form of collective response, led by Dr. Bridie McGreavy and Dr. Caroline Gottschalk Druschke, involved gathering relevant news texts into a spreadsheet database to share as a team resource for supporting interdisciplinary research.<sup>128</sup> Because of the location of Future of Dams project institutions in New England and team member interests in studying proximate river systems, we focused the database content on articles from regional New England newspapers or articles covering dams and river restoration in New England. This focus allowed our team to form a sense of public discourse in the region while refining our research site selection processes.

To compose the database, we used keyword searches on a predetermined subset of New England regional and U.S. national newspapers from the LexisNexis and Proquest Newsstand academic databases. Because recent scholarship had emphasized the importance of characterizing dam removal needs and practices,<sup>129</sup> our search keywords included “dam removal” and “remove the dam” to retrieve articles that contained either search term. After several rounds of identifying, downloading, and organizing news articles,<sup>130</sup> we copied each article’s content and descriptive information into individual Excel spreadsheet cells. We cleaned these data and removed duplicate records, resulting in a final set of 1480 articles from 53 newspapers. 47 of these are regional newspapers from 4 New England states including Maine, New Hampshire, Massachusetts, and Rhode Island, while 6 are newspapers with a national scope.<sup>131</sup> This database composition

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127. David W. Cash et al., “Knowledge Systems for Sustainable Development,” *PNAS* 100, no. 14 (2003): 8086–8091; Sheila Jasanoff, “Ordering Knowledge, Ordering Society,” in *States of Knowledge: The Co-Production of Science and Social Order*, ed. Sheila Jasanoff (London: Routledge, 2004), 13–45.

128. Smith and Lindenfeld, “Integrating Media Studies”; Fairclough, “Critical Discourse Analysis.”

129. Hart et al., “Dam Removal”; Magilligan et al., “Restoration by Dam Removal”; Druschke et al., “Centring Fish Agency.”

130. Hansen and Machin, *Media and Communication*.

131. *Ibid.*

allowed our team to reference a broadly applicable set of data and also filter it to suit specific research needs, questions, and objectives.<sup>132</sup>

For our searches, we used an event-based sampling strategy with a search timeframe of April 2, 1985 to July 2016.<sup>133</sup> This event-based sampling timeframe allowed us to examine an extended period of public interest in dams and hydropower. We chose the start date based on when the United States Congress began to consider the Electric Consumers Protection Act of 1986.<sup>134</sup> This act was a key piece of hydropower legislation, and required hydroelectric dams to procure licensing from the U.S. Federal Energy Regulatory Commission (FERC). We chose the end date for data collection based on the formal dissolution of the Penobscot River Restoration Trust (PRRT) in July 2016. The PRRT organized to advance the Penobscot Project,<sup>135</sup> which aimed to enhance historical fish habitat connectivity that dams impacted through their presence in the river. When the Project satisfactorily met these goals, the PRRT dissolved while the broader work of restoration continued. This end date was useful for our media discourse analysis because it included articles leading up to and around the time of the completion of the Penobscot River Restoration as a formal collaboration, and also because it marked a key point of transition on the Future of Dams project at a time when many new team members (including Quiring) entered the project and collaborative efforts such as the media discourse analysis gained new researchers. The temporal scope supported our in-depth retrospective analysis on three key decades of news media on decision making about dam removal and river restoration. This allowed us and our collaborators to use pre-existing news data as a source of information to support much of the early and ongoing collaborative activities on the Future of Dams project, and the analysis section and following chapter further describe this process. Our research design thus helped ensure

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132. Fairclough, "Critical Discourse Analysis."

133. Hansen and Machin, *Media and Communication*.

134. Electric Consumers Protection Act of 1986, 16 U.S.C. § 791a.

135. Opperman et al., "Basin-Scale Approach."

that we had data covering both regional and local research sites and decision-making contexts such as New England and the Penobscot River watershed.

Because of these early research design decisions, our database featured a majority of publications based in Maine and the Penobscot River Watershed. For our collaborative analyses, it mattered that reporters, editors, academic database compilers, and Future of Dams researchers had carefully connected each article in the database to specific locations in various ways. This included the journalistic practice of mentioning states and towns in the body and dateline of written copy and our data collection processes where we identified which region each publication serves. Thus, since we compiled the database, these data carried a number of discursive markers of their material contexts, and this matters for the understandings that can be made with these textual artifacts. For example, traces of the spatial context allow analyses to focus on relevant study sites such as the Penobscot River Watershed or the specific dams reconfigured in this place. Having a sense of these spatial markers also helps draw connections between statements and activities that unfold across a range of restoration sites. For the analysis we present below, all of these factors supported our ability to identify and critique specific patterns in discourse. We progressively fine-tuned this process through a number of analytical stages and processes, as we further detail in the next section.

## **Data Analysis**

This section describes our processes for analyzing the media database. This process was also a form of collective response to the real needs of the Future of Dams project and Penobscot Nation partners. It was a collaborative effort, and Quiring led the bulk of this phase. We and our collaborators on the Future of Dams project used a variety of analytical approaches over time, beginning at the point of data collection when team members wrote categorical interpretations to indicate which rivers, dams, and topics each article covered. Other early exploratory analyses included inductive and deductive content

analysis to identify and trace the presence of various key terms, ideas, and entities.<sup>136</sup>

Content analysis was helpful as it let our team form summary understandings of the discourse's form, which supported practical research needs. We discussed these exploratory results with Future of Dams researchers in team dialogues, where we shared initial patterns and brainstormed topics to prioritize in the continuing analysis. These practices provided opportunities for us to weave media discourse analysis into our team's broader interdisciplinary research and helped guide collective decision making about the research design of stakeholder engagement efforts that the following chapters describe.

This is in line with how

Perceptions of the hierarchies of knowledge can permeate transdisciplinary experiences, yet participation within these teams can serve as a moment of rupture for scholars, expanding frameworks and worldviews that inform their science. By using mixed-methods and anchoring our studies in empirical analysis and collaboration with stakeholders, we [can] find common language among scholars from diverse disciplines and argue for the inclusion of media research in larger projects.<sup>137</sup>

This process of exploring the large corpus—which contains more than a million words—allowed Future of Dams sub-teams to design specific analyses that built on the database. In the process, these approaches to collaborative team participation around the media discourse analysis productively disrupted our institutional arrangements and let us reconfigure the ways we could understand what we were learning about across the project.

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136. S. Kracauer, "The Challenge of Qualitative Content Analysis," *Public Opinion Quarterly* 16, no. 4 (1952): 631–642; Steve Stemler, "An Overview of Content Analysis," *Practical Assessment, Research & Evaluation* 7, no. 17 (2001): n.p.; Jessalynn Marie Keller, "News Media Coverage of Climate Change in India 1997-2016: Using Automated Content Analysis to Assess Themes and Topics," *Information, Communication & Society* 15, no. 3 (2012): 429–447.

137. Smith and Lindenfeld, "Integrating Media Studies," 191.

For example, we used text mining tools to identify the terms that appeared most often,<sup>138</sup> allowing our collaborators to quickly form an initial sense of prominent topics in the database and which articles might be most relevant to further analyze in their own research.

One prominent term we identified in the exploratory analyses was the word “Penobscot.” This is not a surprising result given the broader engaged context for the grant project that informed the early research design. Indeed, the Penobscot Project happened within the Future of Dams’ general New England study site, and serves as an exemplar of collaborative decision making about groups of dams. These facts shaped our collaborative research design in the grant proposal stage, including the focus for the media discourse analysis. For example, early decisions prioritized aligning grant objectives with the needs of key community partners such as the Penobscot Nation. The spatial and historical context for the work informed these decisions, including the Penobscot Nation’s role as a leader of the Penobscot River Restoration Project. This is in line with an interest in supporting interdisciplinary collaboration through media discourse analysis<sup>139</sup> and also producing research that could serve the needs of our community partners as well.<sup>140</sup>

In this way, the exploratory analyses confirmed a fidelity of the news data to the Future of Dams project’s aims by demonstrating that newspaper articles collected from publications across a broad region and period of time were relevant to understanding and extending collaborative decision making about dams and restoration in this specific study site. As we describe in the following chapter, these facts mattered for further refining our engaged rhetorical work as multiple phases and styles of media analysis helped support subsequent interviews and cross-cultural group dialogues with community partners as well as other modes of engagement. These activities show how collaborative media

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138. H. F. Hsieh and S. E. Shannon, “Three Approaches to Qualitative Content Analysis,” *Qualitative Health Research* 15, no. 9 (2005): 1277–1288; Hansen and Machin, *Media and Communication*.

139. Smith and Lindenfeld, “Integrating Media Studies”; Fairclough, “Critical Discourse Analysis.”

140. Hess, “Critical-Rhetorical Ethnography”; Middleton et al., *Participatory Critical Rhetoric*.

discourse analysis and community engagement practices worked synergistically. Using media analysis as such a boundary object or set of boundary artifacts thus helps understand and inform the ongoing practices that give shape to discourse about dams and restoration in the Penobscot River Watershed.<sup>141</sup> This is because engaging in negotiation around what these artifacts are and who they are for is a collective process of articulating what river restoration can produce alongside continually developing collaborative, community-engaged research.<sup>142</sup>

This ethos grows from calls in environmental communication and rhetoric scholarship for researchers to orient their work in response to real and ongoing needs, especially in cases where time-sensitive and context-dependent issues, needs for information, and opportunities for decision making arise.<sup>143</sup> Our work on the Future of Dams project had been informed by long-term restoration activity in the Penobscot River Watershed and the Penobscot Nation's significant contribution to forming these efforts. As a result, in our data collection we prioritized news sources that might cover this region, as exemplified by the high number of articles from newspapers or locations in Maine, where the Penobscot River Watershed lies. Further, the initial search terms themselves, while not inherently location specific, emphasized dam removal as a matter of concern. The initial phases of content analysis and text mining also further clarified that Maine has been a

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141. Susan Leigh Star and James R. Griesemer, "Institutional Ecology, 'Translations' and Boundary objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39," *Social Studies of Science* 19, no. 3 (1989): 387-420; Lee, "Boundary Negotiating Artifacts."

142. Star, "Not a Boundary Object"; Joseph L. Polman and Jennifer M. G. Hope, "Science News Stories as Boundary Objects Affecting Engagement with Science," *Journal of Research in Science Teaching* 51, no. 3 (2014): 315-341.

143. Cox, "Nature's 'Crisis Disciplines'"; Jeffrey T. Grabill, "On Being Useful: Rhetoric and the Work of Engagement," in *The Public Work of Rhetoric: Citizen-Scholars and Civic Engagement*, ed. John M. Ackerman and David J. Coogan (Columbia, SC: The University of South Carolina Press, 2010), 193-208; Middleton et al., *Participatory Critical Rhetoric*; Bridie McGreavy et al., "Enhancing Adaptive Capacities in Coastal Communities Through Engaged Communication Research: Insights From a Statewide Study of Shellfish Co-management," *Ocean & Coastal Management* 163 (2018): 240-253; Candice Rai and Caroline Gottschalk Druschke, eds., *Field Rhetoric: Ethnography, Ecology, and Engagement in the Places of Persuasion* (Tuscaloosa, AL: University of Alabama Press, 2018); Sutton, "Farming, Fieldwork, and Sovereignty"; Chad Raphael, "Engaged Communication Scholarship for Environmental Justice: A Research Agenda," *Environmental Communication* 13, no. 8 (2019): 1087-1107.

regional and national leader in dam removal. Maine's leadership in this area began with the 1999 demolition of the Edwards Dam on the Kennebec River in Augusta and the initiation of the Penobscot River Restoration Project that year which itself eventually resulted in the removal or decommissioning of three dams by 2016 when data collection ended. In dialogues with our community partners, especially those in the Penobscot Nation, we heard that exploring media portrayals of the Penobscot Project and Nation in-depth would be of value not only for our engaged research but also for tracing public understanding of restoration outcomes and ongoing needs for responding to environmental injustice in this place.<sup>144</sup> This connects with research in environmental communication that emphasizes the importance of connecting media analyses with news audiences' perspectives and experiences.<sup>145</sup>

For example, our partners in the Penobscot Nation emphasized the need to critically examine how the Penobscot Project story is told—especially considering injustices in how news media portray Indigenous communities—and try to “get the story right” through our media discourse analysis. Trying to get the story right emphasizes a crucial tension in the rhetoricity of doing discourse analysis, a tension that manifests in the interplay between responding to injustice in search of more equitable, just futures and a theoretical commitment to fostering deliberative practices through which “discourse presents itself as an open and dynamic terrain of protean perspectives and nested

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144. Jess McLean, “Water Injustices and Potential Remedies in Indigenous Rural Contexts: A Water Justice Analysis,” *Environmentalist* 27 (2007): 25–38; Darren Ranco, “The Trust Responsibility and Limited Sovereignty: What Can Environmental Justice Groups Learn from Indian Nations?,” *Society and Natural Resources* 21, no. 4 (2008): 354–362; Darren J Ranco et al., “Environmental Justice, American Indians and the Cultural Dilemma: Developing Environmental Management for Tribal Health and Well-being,” *Environmental Justice* 4, no. 4 (2011): 221–230; Hopke, “Water Gives Life”; Stephanie A. Malin and Stacia S. Ryder, “Developing Deeply Intersectional Environmental Justice Scholarship,” *Environmental Sociology* 4, no. 1 (2018): 1–7; Das, “Framing and Sources”; Moore, *Journalism, Politics, and DAPL*; Quiring, McGreavy, and Hathaway, “Affective Encounters.”

145. Ulrika Olausson, “‘We’re the Ones to Blame’: Citizens’ Representations of Climate Change and the Role of the Media,” *Environmental Communication* 5, no. 3 (2011): 281–299.

voices.”<sup>146</sup> Although we prioritize the needs of our key partners, we do not aim to resolve these tensions, and instead approach our media discourse analysis as another opportunity for layering contextually sensitive and community-engaged understanding along with a myriad of discursive practices that have long been running through this context. In this approach, news media provide a common substrate or point of reference where we and our partners can make sense of which discursive objects help construct the story, decide whether it feels right, and determine appropriate next steps in response.

Given the importance of the Penobscot context in shaping the Future of Dams project and what we were hearing from our community partners, in the final stage of our analysis we focused specifically on articles containing the word “Penobscot.” Our choice to do so developed over time in relation to collective interests informed by the Penobscot Project’s early successes, support from the Penobscot Nation in the Future of Dams grant application, and the team’s sustained interest in the Penobscot River Watershed as a key study site. However, Quiring’s doctoral advisory committee helped honor these commitments at the key dissertation prospectus stage by encouraging him to focus the overall dissertation project and especially this chapter on the spatial context he cared most about in this work, the Penobscot River Watershed. In response, we used a post-hoc data filtering process that had the effect—reducing the number of articles to a more focused subset—of adding another conditional term to the original data collection search. The resulting subset of articles all contained three key search phrases: “dam removal,” “remove the dam,” and “Penobscot.”<sup>147</sup> This process reduced the final dataset to 244 articles with more specific relevance to understanding the Penobscot Project. We sorted these articles in order of how many times they mentioned the term “Penobscot”, and used this order as a priority list for the analysis. This meant analysts read articles not in

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146. J. Angermuller, *Poststructuralist Discourse Analysis: Subjectivity in Enunciative Pragmatics* (Basingstoke, Hampshire: Palgrave Macmillan, 2014), 4.

147. The “Penobscot” search phrase was not case-sensitive, but it is capitalized here because it is a proper noun.

chronological order, but in order of likely relevance to addressing the research questions. This process supported critical conversations at the start of the reading process that helped iteratively refine the approach.

Two analysts initially read through the data in batches of 10-30 articles. For these initial batches, each analyst read and coded every article in the batch and then compared perspectives, interpretations, and insights. This process of peer debriefing<sup>148</sup> occurred in between each batch of articles, which informed continual refinements. We used inter-coder reliability techniques,<sup>149</sup> which showed a high degree of agreement after a few batches. Then we divided the remaining articles into larger batches of about 60 articles each and alternately assigned each article to one of the analysts. After coding each batch, the analysts again met for peer debriefing dialogues to reflect on insights emerging in the independent analytical process. Then, before moving on to the next batch, we merged digital notes and highlights from the reading process into a master project file that contained all the batches analyzed. After analyzing the entire subset of articles in this way, we continued using this material for reference in identifying and further developing the themes that the following section describes.

Throughout this process, we paid attention to when and how the news media mentioned the Penobscot River, Penobscot Nation, and Penobscot Restoration. This emphasis on Penobscot as a discursive context allowed us to focus the analysis on how the news media portrayed decision making about dams and rivers and restoration activity in this place, which supported our ability to understand dam reconfiguration and river restoration as interconnected activities. Throughout our in-depth qualitative coding, we traced how articles framed these entities.<sup>150</sup> A focus on framing helped guide our attention

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148. Sharon Spall, "Peer Debriefing in Qualitative Research," *Qualitative Inquiry* 4, no. 2 (1998): 280–292.

149. J. De Wet and Z. Erasmus, "Towards Rigour in Qualitative Analysis," *Qualitative Research Journal* 5, no. 1 (2005): 1–27.

150. Erving Goffman, *Frame Analysis: An Essay on the Organization of Experience* (Cambridge, MA: Harvard University Press, 1974); Dietram A. Scheufele, "Framing as a Theory of Media Effects," *Journal of Communication* 49, no. 1 (1999): 103–122; Nisbet and Mooney, "Framing Science"; Matthew C. Nisbet,

to which issues the news media construed as important as well as *which ways* they were important. Discursive practices construct this sense of importance over time and in all stages of the textual layering, including through the decisions of reporters, and editors, data collectors, sources whose testimony is quoted in the articles, and ourselves as analysts. This layering presents discourse as the product of a richly interconnected and deeply interwoven set of practices that provide crucial material to make sense of how news media about dams and rivers make a difference in public understanding.

Table 2.1. Penobscot Term Counts

Article Key	Penobscot Mentions
1019	31
0984	25
1466	24
0981	23
0980	23
0985	22
1074	22
0916	19
0915	19
0855	18

The top 10 articles in the subset ordered by number of times they mention terms containing “penobscot”

One approach we used to trace this discursive layering involved keeping track of time in a linear chronology. For example, a late stage of the database formation process involved assigning each article a unique record number that corresponded to its publication date. In the process of cleaning the data, removing duplicate records, and refining the database, analysts conditionally sorted the articles in ascending order by

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“Communicating Climate Change: Why Frames Matter for Public Engagement,” *Environment Magazine* 51, no. 2 (2010): 12–23.

publication date, newspaper name, and title, so that older articles appeared earlier in the list. Analysts then applied incremental numbers so each article had a unique key ranging from 1 to 1480. This data sorting and key allocation process allowed analysts locating an article in any subsequent phase of the analysis to immediately form a general sense of the article's chronological context to the dataset's overall timeframe based on the unique key alone. For example, the article about Bruce Babbitt has the key 31, meaning that this piece (with a specific publication date of March 31, 1994) came relatively early in the overall timeframe the dataset covers. Using these keys, Table 2.1 demonstrates the temporal spread of the 10 articles in the data subset that most frequently mention the term "Penobscot." This shows that the Penobscot context appears most often in the last decade of reporting, seen in the relatively high-magnitude article identifier numbers.

Our attention to article publishing dates also supported our ability to trace mentions of key groups and topics important for answering the research questions. This included coding stretches of text that mentioned the Penobscot Nation, PRRT, and Penobscot Project. Keeping track of these mentions was important for understanding how discursive practices connected to patterned portrayals of these key groups and topics. It was not simply a matter of counting and comparing numbers of mentions, but of continually attending to how the news media made use of these mentions. For example, Fairclough notes that "Equity and balance cannot be assessed by merely noting which voices are represented, and, for instance, how much space is given to each; the web of voices is an often subtle ordering and hierarchization of voices."<sup>151</sup> Thus, we made sense of this ordering and hierarchization using multiple techniques, especially dialogue on the broader Future of Dams team, among our analysts, and with community partners such as the Penobscot Nation. We also made note of our emerging impressions as we coded the texts through techniques like writing digital memos, which supported our writing process

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151. Fairclough, *Media Discourse*, 81.

where we returned to the texts, memos, and dialogues to re-layer and synthesize these multiple interpretations.<sup>152</sup> These processes continued throughout the analysis and provided a basis for making sense of how news media about dams and river restoration in the Penobscot came to matter for decision making here and elsewhere. In this section, we described the procedures used to analyze the media database, including initial exploratory content and text mining analyses as well as coding processes for the close reading of the data subset that covered the Penobscot context. In the next section, we present the themes that emerged through this analytical process in ways that might matter for future decision making and action.

### **Themes from Analysis**

Here, we describe what emerged in our close reading analysis of the corpus and how this connects with ongoing dynamics and trends. These dynamics and trends matter for partners working across the multiple research sites, in particular for the Future of Dams team and the Penobscot Nation as key collaborators. The analysis we present here focuses on learning from the Penobscot Project to inform these collaborators' ongoing decision making. This focus allowed us to identify three themes and also guides how we share and discuss these themes. The purpose is to understand how news media portrayed the Penobscot Project, to help support ongoing engaged research and decision making in this place.

Each theme focuses on how news media framed restoration activity and participants in the Penobscot River Watershed. In the first two sections, we focus on how news media framed the Penobscot Project as a success. The first theme we identify is of success as a technical achievement. Here, we explore how the news frame of success emphasizes progress made on key restoration outcomes. These outcomes include

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152. Hansen and Machin, *Media and Communication*.

hydropower production and fish passage, which are normally understood as tradeoffs and news media coverage of the Penobscot Project framed in synergistic terms.

The second theme we identify is of success as a social achievement. Here, we explore how the news frame of success emphasizes progress toward coalition-building between groups that are often at odds in dam decision making processes. This theme connects multiple forms of discourse coalitions.<sup>153</sup> A “discourse coalition refers to a group of actors that, *in a context of an identifiable set of practices*, shares the usage of a particular set of storylines over a particular period of time.”<sup>154</sup> Initially, news media aligned Penobscot Project stakeholders around certain matters of interest. However, as the Project developed, news media constructed a new discourse coalition that matched the PRRT coalition and illuminated the novelty of the Penobscot Project as a boundary-crossing effort.

The third theme we identify relates to the contingency of this success framing, especially as it connects to how news media subsequently frame the extent of restored habitat and the Penobscot Nation’s role in restoration. Whereas the first two themes emphasize news media portrayals of the Penobscot Project as a boundary object that formed connections between opposed entities,<sup>155</sup> the third theme reveals how news media portrayals of fish habitat restoration and community partner leadership limit the ability to understand opportunities for future engagement and decision making in specific terms. Thus, the themes are not only examples of what discourse does in a specific geographic, temporal, social, and political context, but also highlight opportunities for further

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153. Bruno Takahashi and Mark Meisner, “Environmental Discourses and Discourse Coalitions in the Reconfiguration of Peru’s Environmental Governance,” *Environmental Communication* 6, no. 3 (2012): 346–364.

154. Maarten A. Hajer, “Doing Discourse Analysis: Coalitions, Practices, Meaning,” in *Words Matter in Policy and Planning: Discourse Theory and Method in the Social Sciences*, ed. Margo van den Brink and Tamara Metze (Utrecht: Koninklijk Nederlands Aardrijkskundig Genootschap, 2006), **quoted in** Takahashi and Meisner, “Environmental Discourses,” 348, emphasis in original.

155. Star and Griesemer, “Institutional Ecology”; Star, “Not a Boundary Object.”

exploring core tensions in this boundary work,<sup>156</sup> with an emphasis on considerations that matter for ongoing research engagement and collaborative decision making about dams here and elsewhere.

### **Theme 1: The Penobscot Project as a Technical Success**

The first theme is about how news media framed the Penobscot Project as a technical success. In this theme, technical success has to do with achieving primary objectives, especially purchasing and removing or reconfiguring multiple dams on the lower Penobscot River and resulting gains to fish passage. As the project developed and news media continued to describe its results, the coverage also mentioned benefits to hydropower beyond limiting production losses, even emphasizing gains to this key decision criteria. This theme shows that descriptions of technical success emphasized simultaneous progress toward multiple restoration targets, rebutting ideas that fish passage and hydropower are necessarily fundamental tradeoffs and instead suggesting they may be enhanced in tandem. Here, we draw on news media excerpts to show how these portrayals developed over time.

The Penobscot Project from its inception involved a number of diverse actor groups, including human communities and organizations as well as migratory fish.<sup>157</sup> An October 7, 2003 article from Maine's Bangor Daily News previews this, describing a transition from conflict to cooperation at the "unveiling" of the Penobscot Project.<sup>158</sup> Anticipating what could come next, this article quotes a representative of a non-governmental organization (NGO) to describe how "everybody was able to sit down and figure out, 'Here's what we can do with the river to keep the power generation and really go a long way toward restoring fish' . . . The problem exists in a lot of places, but

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156. Lee, "Boundary Negotiating Artifacts"; Polman and Hope, "Science News Stories."

157. Druschke and Rai, "Making Worlds."

158. John Holyoke, "Penobscot Restoration Deal OK'd," *Bangor Daily News*, October 7, 2003.

this is the only place where we've really been able to find a solution that isn't just removing one dam, but is opening up a whole ecosystem." The article also paraphrased the testimony of another NGO representative to describe "the deal as a landmark agreement that, when completed, will result in the largest river restoration project east of the Mississippi." Within the broader success frame, these quotes emphasize the stone-setting feature of media discourse, as news media draw from groups' stated aspirations to begin building anticipation for what is to come, which the success frame's prior existence in the discourse itself enables.

Over the intervening years, media covering the Penobscot Project built on this frame in ways that link back to the Penobscot River Restoration Trust's (PRRT) public relations strategy. For example, an August 21, 2008 PRRT press release stated that

Today, on the banks of the Penobscot River in Old Town, Maine, at 11 a.m., partners in the Penobscot River Restoration Project will announce they are taking a major step forward in this historic effort to restore Atlantic salmon, American shad, river herring, and seven other species of sea-run fish to nearly 1,000 miles of river habitat while ensuring energy generation is maintained on one of the country's most significant river systems. With \$25 million in private and public funds raised to purchase the Veazie, Great Works and Howland dams, the Penobscot River Restoration Trust (Penobscot Trust) has announced it is moving ahead to purchase three dams from PPL Corporation (PPL), completing the initial phase and now shifting fully into the implementation phase of the Project.

Within a week, newspapers from across the region echoed the press release, including the Bangor Daily News, Rhode Island's Providence Journal, and Maine's Lewiston Sun Journal.

Like the press release, the news media that followed it also wove a common thread of restorative progress toward eventually restoring fish species. Other discursive markers that these papers picked up as facts included the \$25 million project funding to date, the

1,000 miles of expected fish habitat to be opened, and the novelty of the collaborative arrangement given the inclusion of hydropower operator PPL in the partnership. Furthermore, the articles emphasized how the project aimed to conserve or increase hydropower generating capacity while restoring fish passage. Additionally, whereas the Providence Journal's brief update avoided commenting on the quality of the collaboration itself,<sup>159</sup> the Bangor Daily News and Sun Journal called the restoration "a milestone cooperative effort"<sup>160</sup> because of its "landmark agreement"<sup>161</sup> despite chronic uncertainty about outcomes given the need for further approvals and funding at the federal level. However, these uncertainties did not prevent articles from including quotations from project participants suggesting that "There's been no organized opposition to this project . . . one of our best messages is the energy message. If we weren't replacing the hydropower, this project would be very vulnerable to not happen."<sup>162</sup>

Many such quotes construct this technical approach to the success frame that the PRRT release offered, and together emphasize the importance of connecting multiple restoration objectives simultaneously. Indeed, this frame emerges largely from Penobscot Project participants quoted within the articles, emphasizing how news sourcing practices shaped the framing of the project. For example, a hydropower company representative quoted in a September 18, 2011 article from Portland, Maine's Press Herald newspaper emphasized how the Project's watershed-scale focus provided stability and flexibility to the negotiations that allowed hydropower interests to navigate the delicate balance of federal regulations and investment. The source stated that "From our standpoint, the

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159. Providence Journal Staff, "A victory for salmon in Maine," *Providence Journal*, August 26, 2008.

160. John Holyoke, "Penobscot project is halfway to \$50M goal," *Bangor Daily News*, August 23, 2008.

161. Sun Journal Editorial Board, "Penobscot agreement is breakthrough," *Lewiston Sun Journal*, August 27, 2008.

162. Holyoke, "Penobscot project is halfway."

agreement provides the best of both worlds—clean and renewable hydro energy and restored runs of fish.”<sup>163</sup>

Media from later years further expanded on the suite of achieved restoration objectives. A November 15, 2013 article from Maine’s *Magic City Morning Star*, authored by one of the NGOs involved in the project, stated that as a result of the first two dam removals in the project, “the lower Penobscot River is running free for the first time in nearly 200 years. The Howland Dam will be decommissioned and bypassed by 2015, one more step on the road to achieving significant ecological, cultural, recreational, and economic benefits throughout New England’s largest watershed.”<sup>164</sup> The eventual decommissioning of the upriver Howland Dam further underscored the successes of the project, as we outline in further detail in the next section.

It matters that news media described the Penobscot Project as a technical success, because the success frame helps inform broader understanding of what the project was and what it achieved. This further illustrates the stone-setting function of discourse, as those who are able to speak for the project get to lay the foundation for future decision making, as the headlines of some of these articles allude to the possibility of the Penobscot Project being an exemplary case that could inform other efforts. There are also implications for the histories not told here that relate to the contingencies of the success frame. For example, while the Penobscot Project led to dam removal, one dam still stands only 9 miles upriver of the lowest dam removed in the project. This complicates the success frame, a point that we return to below. Furthermore, throughout this corpus there is little emphasis on any failures of the Penobscot Project, likely owing to the very real progress made on key restoration outcomes. However, it is also the case that the news

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163. Tom Bell, “Restoring the Penobscot: Maine is getting a chance to prove it’s possible to make clean energy and restore sea-run fish access to rivers,” *Portland Press Herald*, September 18, 2011.

164. Atlantic Salmon Federation, “Conservationist Honored for Restoration of Maine’s Penobscot River,” *Magic City Morning Star*, November 15, 2013.

media in this corpus were eager to describe this project as a precedent-setter, in ways that emphasize the importance of novelty as a news value.

This means there is a discursive momentum to how the project is understood that at least in part precludes opportunities to also learn from its failures or the things it did not get quite right. The more the news media emphasize success—whether prior to or after key objectives are met—the more momentum this frame gains, building on past statements and setting the basis for future ones as well.<sup>165</sup> As the Penobscot Project developed and news media covered it over the years, those advancing the project were able to portray the effort as a success, yet one that was contingent on progress made across multiple restoration objectives. The technical progress included things like measuring the amount of fish habitat opened, numbers of fish returning to the river and increases to hydropower generation. Most notably for this theme, the excerpts provided above emphasize how responding to the contingencies of the Penobscot River’s geographical and rhetorical situation involved bringing together outcomes that are often placed in opposition, in particular fish restoration and hydropower generation. The discourse on these two outcomes shows both what the restoration was about and what factors contributed to its success. Next we describe the second theme, in which another success frame emphasizes social progress on coalition-building and collaboration across groups that are often understood as arranged in conflict.

## **Theme 2: The Penobscot Project as a Social Success**

The first theme showed how news media emphasized the Penobscot Project’s technical success due to progress made toward key river restoration objectives, in

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165. Halloran et al. observe a similar phenomenon in news reporting on anti-Vietnam War activism in the UK, where journalistic decisions about how to frame upcoming events become self-fulfilling prophecies of sorts, a kind of confirmation bias that guides how news media then cover and interpret those events. J. D. Halloran, P. Elliott, and G. Murdock, eds., *Demonstrations and Communication* (Harmondsworth: Penguin, 1970), **cited in** Hansen and Machin, *Media and Communication*, 96.

particular migratory fish passage and hydropower generation. Contingent circumstances enabled this success, including the unique hydrology and geomorphology of this watershed. An July 29, 2014 article in Waterville, Maine’s Morning Sentinel newspaper pointed at these unique circumstances that contributed to the Penobscot Project being “perhaps the best example of expanding hydropower production . . . As part of the agreement, the dam owner was allowed to increase power production at six other dams in the watershed to more than compensate for the decreased production [of the 2 removed dams].”<sup>166</sup> These increases were possible in part because of a side channel of the Penobscot River—commonly called the Stillwater—where two hydroelectric dams remained and were upgraded, with fish able to swim past these dams by following the newly-opened main stem of the river. Another contingent circumstance was the diverse and broad coalition exemplified in excerpts from the previous section and further detailed here. In this section, we describe how news media portrayed the Penosoct Project as a social success that was possible due to progress made in coalition-building that enabled the novel reconfiguration of a system of dams. This theme shows that media also conceptualized success as an outcome of uniting diverse interests in collaboration toward key restoration objectives. Furthermore, this social form of success emerged over time as the news media made sense of this unique collaborative and coalition-building approach.

One of the first appearances of the Project in our media database came in a Bangor Daily News article published on August 12, 1998.<sup>167</sup> The article described a request on the part of the Penobscot Nation and the U.S. Fish and Wildlife Service to ask “FERC to require Bangor Hydro to conduct a dam-removal study as part of the relicensing effort” for its hydroelectric dam in Howland, ME. The article’s headline begins to frame the situation by prioritizing a certain discourse coalition united in support and concern, stating

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166. Kevin Miller, “LePage looks at old for new electricity,” *Morning Sentinel*, July 29, 2014.

167. Mary Lagasse, “Lincoln, Howland Support Dam; Residents fear Piscataquis River Flow Would Drop if Structure is Removed,” *Bangor Daily News*, August 12, 1998.

“Lincoln, Howland support dam. Residents fear Piscataquis River flow would drop if structure is removed.” The Piscataquis (pskèhtək<sup>w</sup>is), a major tributary of the Penobscot River, carries the meaning “little branch river” in the Penobscot language,<sup>168</sup> which matters for later paragraphs in the article that emphasize the Penobscot Nation’s request for further study as an alarming matter for residents of the towns of Howland and Lincoln. Already in this article, tensions around what rivers are for and whether dams are appropriate for this community begin coming into relief, with town officials and residents cited as expressing concern for potential changes to aesthetics, property values, recreational opportunities, wildlife mobility, and expense to the hydropower operator. These anxieties are prominent due to news media’s public-interest function, which poses them in contrast to statements by Penobscot Nation officials that emphasize a baseline interest in exploring relicensing alternatives to better understand opportunities for fish species restoration. The article thus constructs a two-sided conflict out of the indeterminacy of prolonged public decision-making, and in the process aligns certain parties along environmental discourses of contingency, vulnerability, and ecosystem health.

Yet in the eventual coverage of the Howland dam’s fate 18 years later in another Bangor Daily News article from June 14, 2016, “hundreds of [Penobscot] project supporters gathered at the confluence of the Piscataquis and Penobscot rivers to celebrate the official completion of the Penobscot River Restoration Project. The latest milestone: The construction of a fish bypass – the ‘big river’ that was built around the [since decommissioned] Howland Dam.”<sup>169</sup> In the next paragraph, markers of the prior conflict are seemingly missing as the article simply states “The Penobscot River Restoration Project was a joint effort that required the cooperation of the Penobscot Indian Nation,

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168. Penobscot Dictionary, “pskèhtək<sup>w</sup>is,” 2015, accessed February 2, 2020, <https://penobscot-dictionary.appspot.com/entry/6184246368534528/>.

169. John Holyoke, “Hundreds Celebrate Completion of Penobscot Restoration Project,” *Bangor Daily News*, June 14, 2016.

state and federal agencies, a power company and several conservation groups.” The article rhetorically reconstructs this site through mechanical and transportation metaphors that describe the Howland dam site as a “cog” in the broader restoration plan and “a highway bypass” for river-run fish that supports their ecological resurgence. This reconstruction extends the success frame’s emphasis on technical progress by also emphasizing how the success depends on social factors such as inter-community cooperation. In the process, it reveals a shift from conflict to collaboration in how news media framed parties engaging in Penobscot River dam decision making, and this shift matters because understanding changes in the Penobscot Project’s material-discursive conditions shapes the possibilities for learning from the project to inform ongoing decision making and collaboration.

In part, the discursive shift was possible due to prior patterns in descriptions of groups involved in the Penobscot Project. The media not only positioned individuals to speak for their organizations or communities, but at times also represented the perspectives of broader coalitions based around certain environmental interests without clear connections to a source of the opinions given. The early article on Howland above began to demonstrate this by highlighting the interests of an amorphous group of local “residents.” Another key example repeated in later years was media identification of an even more amorphous interest-based community named “environmentalists.” A July 22, 2013 article published in Maine’s Lewiston Sun Journal from the Associated Press wire service opens “Removal of the Veazie Dam on Maine’s Penobscot River began Monday, a move that environmentalists are calling a monumental step toward resurrecting the river’s once-abundant marine life.”<sup>170</sup> In this case and others, it is not immediately clear who is doing the saying, or who is seen to represent environmentalists as a whole. This article included quotes by representatives from the National Oceanic and Atmospheric Administration, the Atlantic Salmon Federation, and the Natural Resources Council of

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170. Associated Press, “Veazie Dam Demolition Begins on Penobscot River,” *Lewiston Sun Journal*, July 22, 2013.

Maine (NRCM). This assemblage of interests, through news media, bears the resemblance of an environmental discourse coalition.<sup>171</sup>

The news media broadly label this discourse coalition backing river restoration through dam removal as “environmentalists” speaking with one voice, which flattens the heterogeneity of the various groups involved in this coalition in favor of presenting a consistent narrative thread. A governmental regulatory agency and nonprofits representing recreational or more broad environmental values each have their own unique interest priorities that uniquely matter for what they say. Furthermore, the Penobscot Nation led the project in numerous ways, yet news media tend to emphasize its cultural and spiritual leadership over other forms of leadership such as through environmental scientific monitoring, and we examine this in more detail in the following section. By flattening these various forms of heterogeneity, news media maintain the discursive momentum derived from portraying the Penobscot Project as a technical success. Yet this flattening is preferentially applied, as in other cases the same group of “environmentalists” does not stand alone but in opposition to other coalitional forces. A June 17, 2016 article from the Bangor Daily News with the headline “Why do [former Maine governor] LePage and environmentalists keep fighting?” poses the NRCM in direct conflict with Maine’s executive branch.<sup>172</sup> In this case, the focus of the story is the conflict itself, with the competing narratives of employment and economic growth versus environmental protection. In the process, the article positions the Penobscot Project as one thread in a longer historical knot of antagonistic engagement between the two coalitions.

The way the news media represent these discourse coalitions demonstrates the knotting function of news discourse, which brings together various groups, whether in cooperation or opposition. A discursive casualty of these narrative choices is the

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171. Takahashi and Meisner, “Environmental Discourses.”

172. Christopher Cousins, “Why do LePage and environmentalists keep fighting?,” *Bangor Daily News*, June 17, 2016.

Penobscot Project's heterogeneity, which involved many groups but likely due to space and organizational constraints the above article merely mentioned how the NRCM "announced just a few days ago that it had completed its multi-year Penobscot River Restoration Project." It matters that the narrative emphasis on environmental conflict may have contributed to this singular conceptualization of project ownership at the key stage of completion, especially since the Penobscot Project for years had appeared as a collaborative effort with significant complexity and nuance. Indeed, throughout the corpus there are many examples of the diverse groups that collectively led restorative efforts. This was evident at least as early as mid 2006 when the headline for an article from Maine's Portland Press Herald described the Penobscot Project as "a model for collaborative negotiations" because of recent increases to hydropower production at a dam on a side channel of the Penobscot River.<sup>173</sup> The article chides the narrow and exclusionary coalitional narratives above, stating that "when creative people seek solutions instead of defending principles, they can accomplish the implausible."

This moment provides one point of evidence for the shift from multiple discourse coalitions engaged in conflict around various environmental interests to a broader coalition united in collaboration toward multiple objectives, further emphasizing a frame of success through social progress. Over the years, a common format began to emerge for crediting the diverse groups that came to form the broader environmental coalition collaborating on the restoration effort. Several PRRT materials, such as the group's website pages and press releases, cited all the groups formally involved in the Penobscot Project. This strategy may have again informed news media covering the effort, which often included boilerplate language such as this paragraph in a November 10, 2008 article from the Bangor Daily News<sup>174</sup> that described how

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173. PPH Editorial Board, "Largest Fish Recovery Project in the East Gets Powered Up; The Penobscot River Project is a Model for Collaborative Negotiations.," *Portland Press Herald*, June 6, 2006.

174. The BDN is one of the papers that most consistently employed this format and also regularly disclosed that one of its publishers had been the co-chairman of the PRRT's capital campaign.

The partner organizations in the river restoration project are American Rivers, Atlantic Salmon Federation, Maine Audubon, Natural Resources Council of Maine, Penobscot Indian Nation, The Nature Conservancy, Trout Unlimited, the U.S. Fish and Wildlife Service, NOAA, the Bureau of Indian Affairs, the National Park Service, the Maine Department of Marine Resources, the Maine Department of Inland Fisheries and Wildlife, the State Planning Office and PPL.<sup>175</sup>

This eventual emphasis on the inter-group coalition composed by the Penobscot Project is in stark contrast to the oppositions emphasized in earlier articles discussing these groups, and the media itself eventually reflected on this shift. An article in the *Bangor Daily News* from October 2003 describes how the Penobscot restoration plan's approval had brought together groups engaged in conflict because at first "No one entirely agreed with the other. And the battles raged on" but "As the plan was unveiled, everyone smiled . . . together, for once."<sup>176</sup> Thus, the story became one of disparate groups working together despite the odds. By the time the project ended, the old discourse coalitions partially—but not completely—gave way to the frame of success through social progress, which emphasized an unlikely but ultimately successful assemblage of groups gathered in collective striving for ecological restoration.

Over time it became apparent that the Penobscot Project was a disruption of the old coalitional pattern: it brought together seemingly disparate groups to advance collective progress on multiple interrelated outcomes. In news media covering the Penobscot Project, there is a tension between the journalistic efficiency of discursively categorizing social actors based on their role and the novelty of the Project as a boundary-crossing effort.<sup>177</sup> The knotting action of news discourse is thus one of

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175. Kevin Miller, "Coalition Takes Steps to Start Penobscot River Dams Removal," *Bangor Daily News*, November 10, 2008.

176. Holyoke, "Penobscot Restoration Deal OK'd."

177. Maarten A. Hajer, "Discourse Coalitions in the Institutionalization of Practice: The Case of Acid Rain in Britain," in *The Argumentative Turn in Policy Analysis and Planning*, ed. Frank Fischer and John Forester

composure: it creatively folds groups into collectives that appear relatively stable. When an innovative social collaboration such as the Penobscot Project emerges, this composure manifests as knots-in-motion, as such uncanny situations partially modify existing social orders while also partially reinstating others, and this whole process is constantly mobile through discursive practices. For example, the common but modifiable format for citing the Penobscot Project's leadership contributes to a relatively expansive sense of collective involvement, yet in ways that reproduces certain divisions and perceptions of member roles. In the next section, we build on these points to present the third and final theme, where we critically emphasize how news media framing of the Penobscot Project's success obscures the contingencies of this success in ways that matter for understanding the extent of fish habitat restored and the role of the Penobscot Nation in the Project.

### **Theme 3: Contingencies of Success**

In the previous themes, our focus was on how news media framed the Penobscot Project as a success. Importantly, this frame emphasizes both technical and social elements of success due to progress made toward key restoration outcomes and connecting environmental interests and coalitions previously seen as opposed. Here, we discuss a third theme that helps further identify how media portrayals matter for shaping understandings of the possibilities for engagement and decision making after successful river restoration activity. In particular, we explore how restoration contingencies complicate the success frame, especially in terms of how news media frame restoration outcomes and community partners. We first explore how news media framed the extent of fish habitat restored as a result of dam removal. Then we build from this to explore how news media framed the Penobscot Nation's role, a key community partner for this study.

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(London: UCL Press, 1993), 43–76; Takahashi and Meisner, “Environmental Discourses”; Lee, “Boundary Negotiating Artifacts”; Star, “Not a Boundary Object.”

Over time, numerous articles framed the Penobscot Project’s restoration of fish habitat in various ways. Not all articles covering the Penobscot Project described the extent of habitat restored, but several did. Table 2.2 shows how many times we noted different ways of describing the restoration’s spatial extent. The articles described the restored habitat extent in these ways at different points in the restoration process. For example, before the project was fully underway, news media described the proposed extent of restored habitat in relatively modest terms, as “500 miles” of river habitat. Articles published in later years after key dam removals tended to describe the restoration extent as much greater, as a thousand miles or thousands of miles.

Table 2.2. Multiple PRRP Spatial Extents

Restoration Extent	# Sources	# References
1,000 miles	48	53
500 miles	10	11
100’s of mi.	6	6
1000’s of mi.	2	2
“Miles”	2	2
300 acres	1	1
“More”	1	1

Different ways of describing the spatial extent of river habitat the Penobscot Project restored, sorted by how many times we noted each

These reporting practices highlight several ways that news discourse is flexible. There is a temporal flexibility due to changing circumstances as a result of progress made on restoration objectives through dam removal. There is also a descriptive flexibility in how the news articles describe this key fact. The PRRT press release quoted in the first analytical theme described the extent as 1,000 miles, a number that subsequent articles reproduced as a matter of fact. Yet the lack of detail supporting this metric allowed for indistinct descriptions ranging from “more” to “thousands of miles” of habitat restored. A final form of discursive flexibility has to do with the contingency of the numbers themselves. As the Portland Press Herald described on October 7, 2007, the plan to

remove the Veazie and Great Works dams “means there will be only one dam—Milford Dam—between the ocean and the Piscataquis River in Howland about 50 miles inland from Penobscot Bay.”<sup>178</sup> Indeed, the Milford dam still stands about 9 miles upriver from the former site of the Veazie Dam. After the Penobscot Project led to removing the Veazie and Great Works dams, these 9 miles of river were fully open to migratory fish. However, access to the miles or acres of habitat further upstream of the remaining Milford Dam depended on a key piece of fish passage machinery.

Several articles in the database describe a fish lift at Milford that hoists Atlantic salmon and river herring to help them pass the dam’s vertical barrier. For example, a June 26, 2015 article in the Bangor Daily News describes how “The water-filled ‘hopper’ holds 5,000 gallons and is automated. On Wednesday, it was set to lift fish every 20 minutes, with crews standing by, ready to react.”<sup>179</sup> This complex piece of machinery allows fish to migrate upstream toward the stream-like passageway around the decommissioned dam in Howland that leads to further miles of free-flowing river before additional dams that still remain. Although the Penobscot Project plan anticipated restoring access to 60% of the historical range for Atlantic Salmon,<sup>180</sup> this critically depends on fish passage at Milford.<sup>181</sup> Thus, the technical success of the Penobscot Project relies on the effectiveness of fish lift machinery and fish passage construction, and the presence of remaining dams mitigates this success.

This technological and discursive entanglement demonstrates the contingency of restorative success and opens up questions about how to determine what has been restored and whether the successes have been worth it. Recent research monitoring fish returning

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178. John Richardson, “Penobscot to lose dams; gain salmon: Two dams that blocked sea-run fish migration on the river for more than 150 years will be removed,” *Portland Press Herald*, October 7, 2007.

179. John Holyoke, “After first-year tinkering, Milford fish lift paying dividends,” *Bangor Daily News*, June 26, 2015.

180. Opperman et al., “Basin-Scale Approach.”

181. Lisa K. Izzo, George A. Maynard, and Joseph Zydlewski, “Upstream Movements of Atlantic Salmon in the Lower Penobscot River, Maine Following Two Dam Removals and Fish Passage Modifications,” *Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science* 8 (2016): 448–461.

upstream shows that these technologies seem to be working, but that the Milford dam still limits fish movement and abundance.<sup>182</sup> As restoration activity continues on the Penobscot River, further attention to how news media frame success and contingency will support those engaging in ongoing collaborations to continue reconfiguring this river system. Because dams on this river are not set in stone per se, news discourse provides opportunities for making sense of what is going well. If the watershed is a common-place,<sup>183</sup> and news media form a conceptual commonplace for making sense of our watersheds as the earlier review describes, then framing the Penobscot Project as a technical success encourages public support for river restoration here and elsewhere. However, this framing also constrains the possibilities for understanding the results of this process, as it matters whether 9 or 1,000 miles of river were opened up to fish and who we see as bearing the responsibility for ensuring these openings continue to remain available.

For example, framing the outcome in terms of a few miles of river habitat opened up for fish highlights dam removal as the key technique for river restoration, while deemphasizing other techniques like dam upgrades that contributed to the Penobscot Project's substantial ecological significance. By contrast, framing the outcome in terms of thousands of miles of river habitat opened up for fish underscores the Project's effectiveness, which provides a strong basis for securing funding to do similar projects

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182. Christopher M. Holbrook, Michael T. Kinnison, and Joseph Zydlewski, "Survival of Migrating Atlantic Salmon Smolts through the Penobscot River, Maine: A Prerestoration Assessment," *Transactions of the American Fisheries Society* 140 (2011): 1255–1268; Tara R. Trinko Lake, Kyle R. Ravana, and Rory Saunders, "Evaluating Changes in Diadromous Species Distributions and Habitat Accessibility Following the Penobscot River Restoration Project," *Marine and Coastal Fisheries* 4, no. 1 (2012): 284–293; Julie L. Nieland, Timothy F. Sheehan, and Rory Saunders, "Assessing Demographic Effects of Dams on Diadromous Fish: A Case Study for Atlantic Salmon in the Penobscot River, Maine," *ICES Journal of Marine Science* 72, no. 8 (2015): 2423–2437; Jonathan M. Watson et al., "Dam Removal and Fish Passage Improvement Influence Fish Assemblages in the Penobscot River, Maine," *Transactions of the American Fisheries Society* 147 (2018): 525–540; Constantin Scherelis, Gayle Barbin Zydlewski, and Damian C. Brady, "Using Hydroacoustics to Relate Fluctuations in Fish Abundance to River Restoration Efforts and Environmental Conditions in the Penobscot River, Maine," *River Research and Applications* 36, no. 2 (2019): 234–246.

183. Caroline Gottschalk Druschke, "The Watershed as Common-Place: Communicating for Conservation at the Watershed Scale," *Environmental Communication* 7, no. 1 (2013): 80–96.

elsewhere while simultaneously deemphasizing the potential need for further restoration to reclaim the rest of the historical habitat. The consequences of these choices matter for our community partners in the Penobscot Nation, in part because emphasizing restoration success may limit focus on the remaining possibilities for further dam removal to restore the full historical extent of river habitat, as news media play a part in socially constructing such matters of importance.<sup>184</sup> A further complication is that multiple factors impact the health of restored fish habitat and population. The Penobscot River faces chronic water pollution issues that have improved but not disappeared in recent years<sup>185</sup> and have prevented the Penobscot Nation from sustenance fishing in these waters.<sup>186</sup> Additionally, recent research anticipates that climate change may severely damage fish populations in North Atlantic rivers.<sup>187</sup> Together, these factors complicate the simplicity of the success frame, as maintaining restoration outcomes is contingent on both local and global forces.

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184. McCombs and Shaw, “Agenda-setting Function”; Carvalho, “Media(ted) Discourses and Climate”; Hansen, *Environment, Media and Communication*.

185. Ranco, “Trust Responsibility and Limited Sovereignty”; Peter H. Santschi et al., “Estimates of Recovery of the Penobscot River and Estuarine System from Mercury Contamination in the late 1960’s,” *Science of the Total Environment*, nos. 596–597 (2017): 351–359; U.S. Environmental Protection Agency, *The Penobscot River and Environmental Contaminants: Assessment of Tribal Exposure Through Sustenance Lifeways: Final RARE Report* (August 2015), accessed March 15, 2020, <https://www.epa.gov/sites/production/files/2015-12/documents/final-rare-report-august-2015.pdf>; John W. Duffield, Christopher J. Neher, and David A. Patterson, “Natural Resource Valuation with a Tribal Perspective: A Case Study of the Penobscot Nation,” *2019* 51, no. 22 (2019): 2377–2389.

186. William H., Jr. Rogers, “Treatment as Tribe, Treatment as State: The Penobscot Indians and the Clean Water Act,” *Alabama Law Review* 55, no. 3 (2004): 815–844; Patrick Marass, “Balancing the Fishes’ Scales: Tribal, State, and Federal Interests in Fishing Rights and Water Quality in Maine,” *Vermont Law Review* 41 (2016): 853–890.

187. C. L. Walsh and C. G. Kilsby, “Implications of Climate Change on Flow Regime Affecting Atlantic Salmon,” *Hydrology and Earth System Sciences* 11, no. 3 (2007): 1127–1143; B. Jonsson and N. Jonsson, “A Review of the Likely Effects of Climate Change on Anadromous Atlantic Salmon *Salmo Salar* and Brown Trout *Salmo trutta*, with Particular Reference to Water Temperature and Flow,” *Journal of Fish Biology* 75 (2009): 2381–2447; J. M. Elliott and J. A. Elliott, “Temperature Requirements of Atlantic Salmon *Salmo Salar*, Brown Trout *Salmo Trutta*, and Arctic Charr *Salvelinus Alpinus*: Predicting the Effects of Climate Change,” *Journal of Fish Biology* 77 (2010): 1793–1817; Faye L. Jackson et al., “A Spatio-Temporal Statistical Model of Maximum Daily River Temperatures to Inform the Management of Scotland’s Atlantic Salmon Rivers Under Climate Change,” *Science of the Total Environment* 631–632 (2018): 1005–1017; L. E. Sundt-Hansen et al., “Modeling Climate Change Effects on Atlantic Salmon: Implications for Mitigation in Regulated Rivers,” *Science of the Total Environment* 631–632 (2018): 1005–1017.

Because the contingencies of restoration success matter for the Penobscot Nation's ability to practice its traditional lifeways, and based on what we were hearing from our Penobscot Nation community partners, we are also drawn to how news media portrayed this key community partner in coverage of the Penobscot Project. These media portrayals matter for understanding whether the Penobscot Nation's needs, values, and expertise are prioritized in public discourse on the Penobscot Project, especially as the Project's outcomes uniquely matter for this key community partner. We now focus on how discursive patterns in the news media further complicate the contingencies of restoration success and reveal further opportunities for nuancing media portrayals of the Penobscot Project and its members. In particular, patterned portrayals of the Penobscot Nation emerge as points of disjuncture that reveal a need to weave engaged rhetorical research more fully into the ongoing process of restoration as a form of collective response.<sup>188</sup> As we mentioned in the previous section, news media covering the Penobscot Project often emphasized the Penobscot Nation's role of cultural and spiritual leadership while simultaneously ignoring this community's unique and substantial scientific contributions.

As we describe in more detail in Chapter 4, many Indigenous groups including the Penobscot Nation participate in comprehensive environmental monitoring of lands, waters, and wildlife in their traditional territories. However, articles about the Penobscot Project consistently portrayed Western academic institutions as the organizations doing real science that in turn informed and traced the success of the restoration effort. For example, a September 2011 article extensively describes scientific monitoring of fish and how it is connected with the Penobscot Project.<sup>189</sup> However, while the article notes the involvement of nonprofit groups in the effort and the PRRT itself as the de facto leading

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188. Caroline Gottschalk Druschke and Bridie McGreavy, "Why Rhetoric Matters for Ecology," *Frontiers in Ecology and the Environment* 14, no. 1 (2016): 46–52; Pezzullo and Onís, "Rethinking Rhetorical Field Methods"; Quiring, McGreavy, and Hathaway, "Affective Encounters."

189. Tom Bell, "River Restoration: Penobscot Plan Might Influence Dams Elsewhere," *Kennebec Journal*, September 18, 2011.

group, it does not mention the Penobscot Nation in any of these capacities. Instead, the article only mentions the Penobscot Nation as previously engaged in conflict with PPL that was ended by the PRRT's agreement to purchase Penobscot River dams and advance the Penobscot Project. These choices contribute to long-term patterns that over time construct a stereotypical image of Indigenous groups as troublemakers. That news media covering the Penobscot Project would eventually offer a narrative emphasizing the harmonious aspects of collaboration on the restoration effort does not fully negate the prior contribution to these trends, especially given cases where the Penobscot Nation may not be fully positioned as a key contributor to these socially desirable outcomes.

These portrayals developed alongside others that, while prioritizing the role of the Penobscot Nation as a partner in the collective restoration effort, also characterized it as a uniquely ecological community.<sup>190</sup> For example, a June 2012 article written in anticipation of the destruction of the Great Works Dam in Bradley, ME, described how “Among the beneficiaries [of the restoration effort] are members of [the] Penobscot Nation, which has a reservation on an island in the middle of the river near the Milford Dam. The historic fish runs long had cultural and nutritional importance for the tribe.”<sup>191</sup> Again, other examples connect superficial portrayals like this with patterned ways of describing who was seen as leading the Penobscot Project. In an article focused on the technical aspects of dam removal efforts supported by scientists working for the state of Maine, the Penobscot Nation was described as “supporting the project because it will improve fisheries on the Penobscot River and because [a tributary's] watershed was part of

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190. This relates to tricky politics of representation, as Ranco notes that ecological *self*-representation is an important Indigenous identity strategy that provides “one of the few avenues for justice, [and] often fails.” Darren J. Ranco, “The Ecological Indian and the Politics of Representation,” in *Native Americans and the Environment: Perspectives on the Ecological Indian*, ed. Michael E. Harkin and David Rich Lewis (Lincoln, NE: University of Nebraska Press, 2007), 33

191. David Abel, “Maine Dam Removal Aims to Rescue Fish Species,” *Boston Globe*, June 11, 2012.

the tribe's traditional hunting and fishing area."<sup>192</sup> The article left it there, and did not describe the Penobscot Nation as a leader of the effort or itself a producer of science.

The purpose of highlighting these patterns is not to erase or de-emphasize the important ways the news media incorporated significant efforts to include and prioritize the Penobscot Nation in descriptions of the Penobscot Project. However, in response to a long and difficult history of Indigenous dispossession and exclusion from state and national decision making,<sup>193</sup> the descriptions shared across the corpus show both limitations of and opportunities for further discursive inclusion in news media covering successful efforts such as the Penobscot Project.<sup>194</sup> Doing so would be to take seriously the stone-setting and knotting of news discourse because "although stone is fully capable of its proverbial indifference, within lithic intimacy confederations also unfold that sustain ontologically mixed assemblages,"<sup>195</sup> and within these assemblages "Alignment in tentacular worlding must be a seriously tangled affair!"<sup>196</sup> What this means for news media covering the Penobscot Project and its collaboration is that the stories that get produced through discursive practices shape the ability for ongoing collaboration and decision making. Since the Penobscot Nation has lived in this place far longer than the other groups involved, maintains its focus on long-term impacts and effects of decision making, and has a central role in guiding environmental collaborations here, it is important to tell stories about dam removal and restoration with sensitivity, nuance, and deference. Doing so helps contribute to practices of tying new knots to expand and deepen

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192. "Workers to Clear Debris Before Dam Removal," *Bangor Daily News*, August 28, 1998.

193. Girouard, "Original Meaning and Intent"; McLean, "Water Injustices and Potential Remedies in Indigenous Rural Contexts: A Water Justice Analysis"; Eve Tuck and K. Wayne Yang, "Decolonization is Not a Metaphor," *Decolonization: Indigeneity, Education & Society* 1, no. 1 (2012): 1–40; Todd, "An Indigenous Feminist Take."

194. Swain, "Moral Development Framing"; Caroline Gottschalk Druschke and Kristen C. Hychka, "Manager Perspectives on Communication and Public Engagement in Ecological Restoration Project Success," *Ecology and Society* 20, no. 1 (2015): 1–58; Das, "Framing and Sources"; Moore, *Journalism, Politics, and DAPL*.

195. Cohen, *Stone*, 159.

196. Haraway, *Staying with the Trouble*, 42.

the discourse over time, instead of constraining it to prior limiting patterns. In the final paragraphs of this analysis, we attempt to offer a critical counterpoint to the ways news media covering the Penobscot Project framed the Penobscot Nation as a key research partner for this study.

In the case of news media covering the Penobscot Project, the Penobscot Nation is understandably recognized as a contributor to the effort due to its long-term involvement since the project's inception. However, the discursive flattening of heterogeneous groups contributes to a simplification of diverse assemblages in ways that potentially limits the possibilities for new engagements or collaborations to adequately draw on the unique abilities of all who might be involved. The Penobscot Nation itself is more than a monolithic entity. In addition to serving multiple roles in the Penobscot Project beyond merely providing an Indigenous presence to demonstrate broad coalitional diversity, this Nation provides a host of services to its many constituents and collaborators. In the case of the river restoration effort, the Penobscot Nation fulfilled roles serving as a leader in negotiation, fund raising, and community liaison efforts, a federal and municipal governmental regulatory agency, an advocate for environmental protection and justice, and a producer of scientific knowledge on the region's lands, waters, and native species. Furthermore, as the second analytical theme began to show, there is internal diversity within any identifiable group, and the discursive narrowing of group portrayals we described here is itself an illusion that serves specific narrative ends while potentially foreclosing others.

The examples here show how the journalistic norm of balance<sup>197</sup> informs news media portrayals of communities as exemplifying certain distinct, stereotypical roles or attributes. These patterns reveal further opportunities for enriching partial connections across supposed community boundaries. Given this chapter's theoretical stance on the

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197. Fairclough, *Media Discourse*; Boykoff and Boykoff, "Balance as Bias."

constitutiveness of discourse,<sup>198</sup> the limitations of these portrayals may help show new ways of informing subsequent collaborations between these and other communities, thus becoming material that inflects the possibilities for further knotting of discursive encounters. If it is possible that the communities portrayed are more heterogeneous than the news media show, and that the oppositions in these data are in part constructions that emerge as a result of discursive practices, then those who produce and interact with news media have a share in the responsibility for the future of dams, rivers, and the communities that depend on them here and elsewhere. For their part, news media have a role to play in the continued emergence of realities coming to matter through ongoing stone-setting that forms the basis for relational knots that interpretive events make and move. In this analysis, we presented themes and discussion points that together show news media covering efforts to reorient ecological assemblages can reconfigure the discourse and in the process provide a basis for potentially expanding options for decision making about dams and rivers.

## **Conclusion**

In this chapter, we used news articles to understand how media portrayed the Penobscot Project and how this matters for ongoing decision making and collaboration. The theoretical framework and methods description detailed the context for this study, emphasizing the multiple research sites and partners that informed our work and may benefit from its results, including the Future of Dams team researchers and the Penobscot Nation. In response to the community engagement between these groups that continued developing alongside this study, in our analysis we focused specifically on how news media framed the Penobscot Project as a technical and social success and how the success frame also obscures critical complexities that matter for ongoing decision making about

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198. Kitis and Milapides, “Read It and Believe.”

dams and river restoration. Framing the project as a success shows what worked well, including using this context's unique hydrological, geological, and collaborative characteristics to work toward multiple restoration objectives including fish passage and hydropower as well as tying together various groups as a new discourse coalition.<sup>199</sup>

The success frame is a powerful discursive device that builds from patterned practices based in the Penobscot Project's very real outcomes. However, the frames also obscure more nuanced tensions and ongoing dynamics that matter for further decision making about dams. The third theme underscores why these tensions and dynamics matter, by revealing the contingencies of success through news media that frame the extent of fish habitat restored and the Penobscot Nation's role in the project. These contingencies that the success frame obscured also highlight opportunities for further research and engagement, and extend the stone-setting and knotting metaphors by showing what the discourse builds and binds and the potential for further discursive construction and expansion. The spatial and technological contingency of restored fish habitat shows the possibility for further restoration as well as the delicacy of maintaining access to restored habitat when multiple dams remain on the river. Ongoing factors complicate maintaining fish habitat and population health, and depend on a single fish passage machine functioning properly. The cultural contingency of discursive flattening and limited portrayals of the Penobscot Nation intersects with the spatial-technical restoration contingency and shows a need for more nuanced approaches to media depiction. It also shows that further drawing on this community's sustained and in-depth scientific knowledge and expertise may extend the possibilities for even more robust and restorative collaborations in the future. By critically examining the success frame, we are thus able to trace how news media matter for ongoing decision making and engagement in this place: They shape what we can know, understand, and do with dams, rivers, and the

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199. Hajer, "Discourse Coalitions"; Takahashi and Meisner, "Environmental Discourses."

diverse coalitions that engage with them, and although there are limits to the expansiveness of news discourse, these limits, when carefully attended to, also can be instructive for ongoing collaboration and restorative praxis.

There still remain tensions in these depictions of success, including around how much river habitat was restored and the ongoing technology and techniques this restored extent depends on. The other tension is how the Penobscot Nation is described in ways that lack nuance and specificity and that avoid emphasizing its important role as a leader in restoration monitoring and environmental science as a form of stewardship. Our analysis has not resolved this tension, but illuminates it to support future decision making about continued collaborative work for ecological reconfiguration. This point guides our approach in the two following chapters, which respond to these tensions by advancing community-engaged rhetoric projects to further understand the social dynamics of the Penobscot Restoration and find other approaches to portraying the Penobscot Nation's scientific leadership.

Overall, the analysis emphasizes both the rigidity and flexibility of news discourse, that is, how it builds understanding through patterned portrayals that relate to material facts as well as how it circulates that understanding in particular ways through alliances, collaborations, and communities to show us what seems to matter in ways that inform the possibilities for subsequent engagement. This study provides a further mode of discursive circulation by drawing media discourse analysis into transdisciplinary research efforts and encouraging further modes of critical boundary work through media discourse analysis. For its part, each time the Future of Dams team returns to this dataset, it enacts media discourse analysis as an emergent rhetorical practice that helps us understand opportunities and constraints for collaborative work and community-based decision making about dams and rivers. This encourages returning attention to matters of relation

in a way that resembles “thinking-through-knotting.”<sup>200</sup> This mode of “a relational way of thinking [or] ‘thinking with,’ creates new patterns out of previous multiplicities, intervening by adding layers of meaning rather than merely deconstructing or conforming to ready-made categories.”<sup>201</sup> Including news media in the rhetorical understandings of the agents at work in our world further expands what we are able to know and how we are able to respond to the contingencies of collaborative success.

The examples shared above attempt to show how journalism, while not a direct representation of the world nor a fundamentally corrupt irresponsible distortion of it, nonetheless plays a part in composing the world and its myriad relationships. It does this through a tangle of inventive modes that can be described as a “discursive re-construction of reality.”<sup>202</sup> The news artifacts we assembled and recomposed in our media discourse analysis provide unique opportunities for understanding the recent history that contextualizes the relations playing out for river restoration activity in the Penobscot River basin. They also provide a basis to take the additional steps of informing and potentially transforming these decisions, a process we further describe in the following chapter. This is one form of response to the broader sensibility in the introduction to form alternative attachments to seemingly stable truths. Furthermore, it underscores how the themes and critical discussion that emerged relate to the broader question of how rhetoric and restoration matter for each other.

Looking forward, the tangled and intersecting work of the Future of Dams and Penobscot Projects suggests that further collaborative interaction and engaged research among diverse groups creates frictions that also lead to new possibilities. As this chapter shows, this work requires processes that resemble stone-setting as well as knotting, and the interplay between the two may show us where the possibilities lie for further action

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200. Tim Ingold, *The Life of Lines* (London: Routledge, 2015), 18, 27.

201. de la Bellacasa, *Matters of Care*, 72.

202. Carvalho, “Media(ted) Discourse and Society,” 164.

and engagement in the wake of collaborative success. In this sense, collaborative engagement can mean intentionally setting stones in ways that allow for knotting practices that produce nets of broader support. The Future of Dams team and its community partners are finding ways of doing this work, and through efforts like media discourse analysis are coming to find that while dams are not “set in stone” so to speak, they *are* set in discourses that at once seem immutable and fragile, monolithic and multiple, and that attending to such matters *matters* for the urgent work of designing and practicing rhetorical methods that themselves seek to help set dam decisions anew.

## CHAPTER 3

### RETROSPECTION TO RECIPROCATION: AN UNSETTLING CASE STUDY

#### Introduction

On June 18, 2016, the Bangor Daily News (BDN)—a newspaper based in Bangor, Maine—reported that “last week, the last piece of a years-long project to return much of the Penobscot River to a free-flowing waterway was completed with the opening of a bypass around the Howland Dam.”<sup>203</sup> As we discussed in the previous chapter, for nearly two decades a range of municipal, state, national, industry, and nonprofit partners worked to negotiate and strategize removing or modifying several dams on the lower stem of the Penobscot River in Maine in an effort to restore habitat for sea-run fish that had long been inaccessible due to hydroelectric dams.

A month and a half later, on August 31, 2016, the Penobscot River Restoration Trust (PRRT) coalition that organized and implemented the project sent a final message to its mailing list.<sup>204</sup> The message was one of success, explaining that “Thanks to countless people within the Penobscot basin, and across Maine and beyond, life on the Penobscot River system is on the rebound!” The message reiterated the June 2016 BDN article’s framing of the Howland Dam bypass as a success, adding that “sea-run fish now have greatly improved access to about 1,000 miles of historic habitat for the first time in many generations.” The message also portrayed the moment as a key turning point:

“Now it’s time for [the executive director of the PRRT] to say farewell. Having reached this milestone, the staff members of the Penobscot River Restoration Trust

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203. The BDN Editorial Board, “Why the Penobscot River’s Revitalization is Just Beginning,” *Bangor Daily News*, June 18, 2016, accessed January 27, 2020, <https://bangordailynews.com/2016/06/18/opinion/editorials/why-the-penobscot-rivers-revitalization-is-just-beginning/>.

204. Laura Rose Day and Don Hudson, “Final PRRT Message,” August 31, 2016, accessed December 23, 2019, <https://www.nrcm.org/wp-content/uploads/2018/11/finalPRRTmessage.pdf>.

are moving on . . . key public and private organizations and the Penobscot Nation will complete remaining project tasks, such as monitoring the fish passage at Howland, for some time to come.”

As we described in the previous chapter, media often describe the broad and deep collaboration featured in these excerpts as a key factor in the Penobscot Restoration’s overall success. Yet what histories and futures surround this turning point? What other stories are entangled here, with what beginnings and endings? When the work of ecological restoration leads to success, what do we do next with these collaborations, and how?

Because dams helped power the European settlement of New England,<sup>205</sup> it is important to recognize that dams remaining on the landscape and waters of this region serve as a constant reminder of the contentious and difficult history that still shapes racial and ecological relations on this continent and these tensions themselves help set a broader exigence for river restoration and dam removal. Engaged and decolonizing approaches to environmental communication and collaborative decision making emphasize responding to such histories with a focus on advancing environmental justice.<sup>206</sup> This kind of incremental, endless striving requires attuning to historical injustices and responding through relational forms of research that support ongoing social and cultural reciprocity.<sup>207</sup> One of the contextual factors that matters in this specific case includes the history of the institution where this study unfolded, the University of Maine (UMaine).

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205. William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill / Wang, 1983).

206. Darrel Enck-Wanzer, “Race, Coloniality, and Geo-Body Politics: *The Garden* as Latin@ Vernacular Discourse,” *Environmental Communication* 5, no. 3 (2011): 363–371; John Koban, “Ecological Restoration or Healing?: Conflicting Ontologies and Missed Opportunities in Public Debates Surrounding Mississippi River Gorge Restoration,” *Environmental Communication*, 2019, 1–15; Quiring, McGreavy, and Hathaway, “Affective Encounters”; Raphael, “Engaged Communication Scholarship.”

207. Rauna Kuokkanen, *Reshaping the University: Responsibility, Indigenous Epistemes, and the Logic of the Gift* (Vancouver: UBC Press, 2007); Linda Tuhiwai Smith, *Decolonizing Methodologies: Research and Indigenous Peoples* (London: Zed Books, 2012).

As we detail in a section below, UMaine’s campus is located on island territory in the Penobscot River Watershed that is part of the Penobscot Nation’s ancestral homeland. This history and placement matters, as does the Penobscot Nation’s pivotal leadership of the Penobscot Project as part of its long-term environmental stewardship in this place.

Building from this historical and spatial context and its own commitment to the responsibilities that grow from an identity as a land and Sea Grant institution, UMaine has taken part in multiple National Science Foundation grant-funded projects that the Senator George J. Mitchell Center for Sustainability Solutions (Mitchell Center) has helped coordinate. Three phases in recent years have increasingly brought a focus to building Maine’s capacity for sustainability research and cross-community engagement.<sup>208</sup> The Sustainability Solutions Initiative was the first and launched the Mitchell Center as well as 20 individual projects focused on enhancing relationships between UMaine and numerous communities, including Wabanaki tribes, to address complex sustainability issues.<sup>209</sup> As a next step in scaling up this infrastructure, the Mitchell Center helped launch the New England Sustainability Consortium (NEST), a collective made up of educational institutions and public stakeholders across Maine and New Hampshire. NEST’s first project focused on linked issues of pollution, vulnerability, resilience, and adaptation in the shellfish harvesting and beach tourism industries in these states.<sup>210</sup> As this project drew to an end, the Mitchell Center continued looking for areas where it could support decision making in collaborations around complex sustainability matters.

This search overlapped with the Penobscot River Restoration Trust’s work, which formed to serve the needs of the Penobscot Nation and collaborating groups on the

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208. David D. Hart et al., “Strengthening the Role of Universities in Addressing Sustainability Challenges: the Mitchell Center for Sustainability Solutions as an Institutional Experiment,” *Ecology and Society* 20, no. 2 (2015): 4.

209. Damon M. Hall, Linda Silka, and Laura Lindenfeld, “Advancing Science and Improving Quality of Place: Linking Knowledge with Action in Maine’s Sustainability Solutions Initiative,” *Maine Policy Review* 21, no. 1 (2012): 22–29; Hart et al., “Strengthening the Role.”

210. Brianne Suldovsky, Bridie McGreavy, and Laura Lindenfeld, “Science Communication and Stakeholder Expertise: Insights from Sustainability Science,” *Environmental Communication* 11, no. 5 (2017): 587–592.

Penobscot Restoration to rework the system of lower Penobscot River hydropower dams to simultaneously support habitat access for migratory fish, tribal cultural and scientific relationships to the river and its resources, and hydroelectric generation capacity across the watershed. During a ground-truthing meeting for the study we describe here, a Penobscot Nation official told us the story of how, at a celebration ceremony to mark a major dam removal for the project, they approached a UMaine faculty member affiliated with the Mitchell Center and suggested that dam removals could be a fitting topic for a future transdisciplinary federal research grant proposal. NEST collaborators did write a proposal, the National Science Foundation funded it, and NEST expanded to include research and art institutions in Rhode Island. All three states—Maine, New Hampshire, and Rhode Island—face multiple challenges owing to thousands of dams within or along their borders, many of which are aging out of usability and require federal relicensing, a major point of collective decision making.<sup>211</sup>

As a result, the grant project at hand—known as the Future of Dams—began to address the complexity of these decisions by linking researchers and community decision makers from across a number of fields and backgrounds. The result was a large transdisciplinary team with the collective goals of studying, characterizing, and informing decision making about dams in multiple specific contexts and generalizing insights across these contexts if and where possible. Given this brief story of collaborative assembly, we consider NEST’s Future of Dams project as a scientific enterprise thoroughly grounded in a broader socio-political context of striving for inter-community collaboration to bring Indigenous and Western ways of knowing together in service of practices for decolonizing sustainability science.<sup>212</sup> Thus, the Future of Dams and Penobscot Restoration projects are ideal settings in which to study restoration and decolonization context and goals, as

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211. Magilligan et al., “Restoration by Dam Removal”; Chaffin and Gosnell, “Beyond Mandatory Fishways.”

212. Bridie McGreavy et al., *Science in Indigenous Territory: Addressing Power and Justice in Sustainability Science from/with/in the Penobscot River*, Presented at the Conference on Communication and the Environment, Vancouver, BC. June 2019.

“assemblages cannot hide from capital and the state; they are sites for watching how political economy works.”<sup>213</sup> As contemporary sites for watching, then, the Future of Dams and Penobscot Project assemblages are instructive for how they seek to connect diverse communities while transforming scientific knowledge production from within and for how they serve as sites of fine-grained collaborative practices needed to keep such efforts vital and accountable.

As we worked to connect our research with decision making about dams in the Penobscot River Watershed, we also prioritized learning from the Penobscot Project to inform decolonizing work on the Future of Dams project. This interest guided us to focus on factors for the Penobscot Project’s success and, in light of this success, whether there may be ongoing needs for environmental stewardship, restoration, and justice in this place. As part of this focus, we identified a research strategy to conduct a retrospective case study<sup>214</sup> that could look back on this exemplar project and learn from it to inform future action as well. Given that both the Future of Dams and Penobscot Restoration projects serve as our research sites, the case study relied on practices constituting a “multi-sited ethnography”<sup>215</sup> that unfolded across these sites differentially as we sought to learn from the Penobscot Restoration’s example.

For its part, the June 2016 BDN article had portrayed restoration here as a *continuing* phenomenon in its title “Why the Penobscot River’s revitalization is just beginning.” Throughout, the article references the ongoing nature of the effort and its effects—for example, “[whitewater] races could be hosted on the Penobscot because of the removal of the dams,” which “can add more money to local economies”—yet did little

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213. Tsing, *Mushroom at the End*, 23.

214. Robert K. Yin, “The Case Study as a Serious Research Strategy,” *Knowledge: Creation, Diffusion, Utilization* 3, no. 1 (1981): 97–114; John Gerring, “What is a Case Study and What is it Good For?,” *The American Political Science Review* 98, no. 2 (2004): 341–354; Michael Gibbert, Winfried Ruigrok, and Barbara Wicki, “What Passes as a Rigorous Case Study?,” *Strategic Management Journal* 29, no. 13 (2008): 1465–1474.

215. Marcus, “Multi-Sited Ethnography.”

to answer the question set up in the title or sidestepped in the forceful conclusion: “The official Penobscot River restoration is now complete. The revitalization of the river is just beginning.” Nonetheless, over time we began to notice this sentiment emerging more fully as additional time elapsed since the official conclusion of the Penobscot Project. For example, as we were presenting a poster featuring exploratory results from our case study,<sup>216</sup> a Project participant questioned our framing of the restoration as having been completed. They explained that, from their perspective, describing the project as finished limited the ability to recognize continuing activities to advance restoration in and of this watershed.

At the same time, the case study focus was becoming part of deepening relationships between the Future of Dams team and the Penobscot Nation and connecting with identified needs regarding ongoing socio-environmental issues related to pollution and access and rights to traditional tribal waters.<sup>217</sup> Over time, as our study progressed, it gradually revealed entanglements between the rhetorics of restoration and research, demonstrating how community-engaged practices can subvert expectations for who and what are the “subjects” of research. It did so by identifying and extending an ethic of restoration, opening new possibilities for reorganizing more-than-human communities around rivers and the material discursive flows they create and reshape as a matter of nourishing diverse forms of life.

In response to the above complexities, we describe how co-producing research and building relationships with community partners reshaped our study’s flow. In the process of engaging with key groups involved in and familiar with this project, the study’s purpose began to shift. What started out as a *retrospective* case study—or “looking back” on what

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216. Tyler Quiring et al., *Recomposing Dam Decision Making: A Reciprocal Case Study of the Penobscot Restoration*, Poster presented at the Maine Sustainability and Water Conference, Augusta, ME. March 2018.

217. Ranco, “Trust Responsibility and Limited Sovereignty”; Santschi et al., “Estimates of Recovery of the Penobscot River and Estuarine System from Mercury Contamination in the late 1960’s”; U.S. Environmental Protection Agency, *Penobscot River Environmental Contaminants*; Duffield, Neher, and Patterson, “Natural Resource Valuation with a Tribal Perspective: A Case Study of the Penobscot Nation.”

had occurred so that we could learn from it—over time became a *reciprocal* case study, or a way of structuring practices of “giving back” to key partners who have helped expand the possibilities for life and action in this watershed.<sup>218</sup> The decision to make this shift emerged in response to several forces and what we had been learning about the importance of reciprocation, relationship-building, and engaging time creatively in decolonizing research. One recognizable decision-making moment occurred while designing a poster about this case study,<sup>219</sup> where Quiring’s requests for feedback from collaborating authors led to suggestions for changing the wording in subtle but significant ways. This shift emphasizes the ecological activeness and relationality of all material things, including the ethical consequences of research. In this study, reciprocation is about extending efforts in engaged rhetorical research to reduce Western research approaches’ privileged distance and directionality that takes from Indigenous community subjects to make generalizable knowledge objects. It is, in Linda Tuhiwai Smith’s terms, a form of collective, intersubjective response to pressing needs for “a theory or approach which helps us to engage with, understand and then act upon history.”<sup>220</sup>

Indigenous thinkers throughout history and across the globe stress the importance of reciprocity, including for decolonizing research.<sup>221</sup> Reciprocity “positions us, first and foremost, as citizens embedded in dynamic legal orders and systems of relations that require us to work constantly and thoughtfully across the myriad systems of thinking,

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218. Kuokkanen, *Reshaping the University*.

219. Quiring et al., *Recomposing Dam Decision Making*.

220. Smith, *Decolonizing Methodologies*, 36.

221. Kuokkanen, *Reshaping the University*; Gail Dana-Sacco, “The Indigenous Researcher as Individual and Collective: Building a Research Practice Ethic within the Context of Indigenous Languages,” *American Indian Quarterly* 34, no. 1 (2010): 61–82; Smith, *Decolonizing Methodologies*; Kimmerer, *Braiding Sweetgrass*; Matthew Wildcat et al., “Learning from the Land: Indigenous Land Based Pedagogy and Decolonization,” *Decolonization: Indigeneity, Education & Society* 3, no. 3 (2014): I–XV; Todd, “An Indigenous Feminist Take”; Kyle Powys Whyte, Joseph P. Brewer II, and Jay T. Johnson, “Weaving Indigenous Science, Protocols and Sustainability Science,” *Sustainability Science* 11, no. 1 (2016): 25–32; Cariou, “Sweetgrass Stories”; Jo-Ann Archibald et al., eds., *Decolonizing Research: Indigenous Storywork as Methodology* (London: Zed Books, 2019); Sara Florence Davidson, “Following the Song of *k’aad ‘aww*: Using Indigenous Storywork Principles to Guide Ethical Practices in Research,” in *Decolonizing Research: Indigenous Storywork as Methodology*, ed. Jo-Ann Archibald et al. (London: Zed Books, 2019), 23–39.

acting, and governance within which we find ourselves enmeshed.”<sup>222</sup> In this chapter, we argue that this work can benefit from theory that prioritizes an ecological understanding of the material traces of history. Recent work in rhetorical ecology emphasizes how “Histories are told in many ways, each version accenting different relationships as they evolve . . . histories are recursive; they bring forth a different past each time they are performed.”<sup>223</sup> Taking an ecological approach to these layered histories means tracing how relationships matter for our understanding of who and how we come to be together. Within this expansive and at times disorienting understanding, in this chapter we claim that engaged rhetorical work has a responsibility to prioritize practices of respect, listening, and sharing in relationship with Indigenous communities to support broader knowledge- and trust-building. These practices enable attempts to further sensitize engaged research to the ontological basis for and epistemological stakes of scholarship in the areas of rhetoric and new materialism.

First, we work through theory that provides a foundation for our approach. This theory includes new materialism as a way to understand the world as an active force in shaping research, restoration ecology as emphasizing an ethic of interconnection for navigating this world, and community-engaged rhetorical and decolonizing studies as a framework for contingent and decisive response. We then describe how our community-engaged ethnographic case study methodology allowed us the flexibility we needed to practice adapting in response to what we were hearing across the knowledge communities with whom we worked. This approach helped cultivate space and time for connecting diverse perspectives about the Penobscot Project anew, which led to unforeseen opportunities for folding this research into longer-term and ongoing decolonizing practices. Then, we explain how contact between communities that are both proximate and distant—understanding that “distance becomes attached to relational

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222. Todd, “An Indigenous Feminist Take,” 19.

223. Keeling and Prairie, “Trophic and Tropic Dynamics,” 42.

elements of transportation and convenience”<sup>224</sup> —reshaped our approach to case study work and reciprocal, iterative praxis. We do so by drawing themes from news stories and interviews focused on the Penobscot Project to identify how community partners’ contextual experiences and interests in our research enriched both the theoretical and practical insights emerging from this case study. Finally, we reflect on how this research that explored ecological restoration in the Penobscot River Watershed weaves theory and practice to support hybrid synthesis and further action in this context.

### Theoretical Groundings

To explore the heterogeneity and multiplicity that inheres in the contexts for our case study, in this section we draw on theories that provide space to engage multiple perspectives including new materialism<sup>225</sup> and ecological approaches to rhetoric.<sup>226</sup> Because of this case’s unique origins that we began to identify in the introduction, we foreground Indigenous ontologies and epistemologies in our use of theory.<sup>227</sup> This is an intentional response to centuries of colonization that have led to knowledge production systems that prioritize Western ways of knowing and thinking.<sup>228</sup> As our work with the press releases and news articles in the previous chapter and introduction above suggests,

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224. Sutton, “Farming, Fieldwork, and Sovereignty,” 331.

225. Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham, NC: Duke University Press, 2010); Diana Coole and Samantha Frost, eds., *New Materialisms: Ontology, Agency, and Politics* (Durham, NC: Duke University Press, 2010); Stacy Alaimo, “Elemental Love in the Anthropocene,” in *Elemental Ecocriticism: Thinking with Earth, Air, Water, and Fire*, ed. Jeffrey Jerome Cohen and Lowell Duckert (Minneapolis, MN: University of Minnesota Press, 2015), 298–309.

226. Jenny Edbauer, “Unframing Models of Public Distribution: From Rhetorical Situation to Rhetorical Ecologies,” *Rhetoric Society Quarterly* 35, no. 4 (2005): 5–24; Druschke and McGreavy, “Why Rhetoric Matters”; Stormer and McGreavy, “Thinking Ecologically About Rhetoric”; Bridie McGreavy et al., eds., *Tracing Rhetoric and Material Life: Ecological Approaches* (Cham, Switzerland: Palgrave Macmillan, 2018); Rai and Druschke, *Field Rhetoric*; Wells et al., “Introduction: Rhetoric’s Ecologies.”

227. Kimmerer, *Braiding Sweetgrass*; Jeff Cornstassel, “Re-Envisioning Resurgence: Indigenous Pathways to Decolonization and Sustainable Self-Determination,” *Decolonization: Indigeneity, Education & Society* 1, no. 1 (2012): 86–101; Wildcat et al., “Learning from the Land.”

228. Smith, *Decolonizing Methodologies*; Thomas D. Hall and James V. Fenelon, *Indigenous Peoples and Globalization: Resistance and Revitalization* (New York: Routledge, 2015); Robin Starr Minthorn and Heather J. Shotton, eds., *Reclaiming Indigenous Research in Higher Education* (New Brunswick, NJ: Rutgers University Press, 2018).

letting go of these priorities can potentially be a collectively enriching process, one that reveals previously unforeseen opportunities for decision making toward novel collaborative futures. As an attempt to thread into long-running decolonizing practices that are reshaping possibilities within and beyond the academy, here we begin to seek ways of placing “Indigenous voices and epistemologies at the center of the research process”<sup>229</sup> by allowing them to unsettle the Western theories that informed our work. Our goal is a theoretical framework that does not just recognize ontological heterogeneity but that attempts to hold space and time for new orderings of that heterogeneity, orderings that might support more collectively livable communities of thought and action.

### **Ecologies of Time and Matter: New Materialist Ontologies**

Here we describe our understanding of time and matter as nonlinear, heterogeneous, interwoven, and embodied phenomena.<sup>230</sup> This understanding matters for our work in ways that reveal how multiple “*ontologies* are brought into being, sustained, or allowed to wither away in common, day-to-day, sociomaterial practices.”<sup>231</sup> In a non-linear fashion, we begin this work with theory by offering a brief vignette that emerged at a late stage of our community engagement process. After conducting several interviews with participants involved in or familiar with the Penobscot Project, we took part in several small-group dialogues with Penobscot Nation and Passamaquoddy Tribe members to enrich our understanding of their unique interests in and needs for engaged rhetorical research. In one of these group dialogues, we noticed expressions of wonder and connection when hearing about the experience of visiting traditional foraging areas

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229. Vanessa W. Simonds and Suzanne Christopher, “Adapting Western Research Methods to Indigenous Ways of Knowing,” *American Journal of Public Health* 103, no. 2 (2013): 2185.

230. Barad, *Meeting the Universe*; Salvador and Clarke, “The Weyekin Principle: Toward an Embodied Critical Rhetoric.”

231. Annemarie Mol, *The Body Multiple: Ontology in Medical Practice* (Durham, NC: Duke University Press, 2002), 6, emphasis in original.

and feeling part of the old knowledge that had accumulated through hundreds of generations of ancestral relationship with the land and plants in that place.

We asked the person who told this story about their preferences for being cited by name, for having their story reconstructed in writing or left to memory, and for balancing sharing and protecting this old knowledge. They suggested working through this by widening the supposed knowledge context beyond themselves as an individual to honor the underlying ethic that the story sought to cultivate in the first place: an ethic of attuning to a broader literal and contextual landscape of relationships that made the story possible through thousands of years of reciprocal give-and-take between life and land.<sup>232</sup> As similarly observed from the historical and geographical context of traditional Rocky Cree territory, “the land tells us the stories.”<sup>233</sup> What we were hearing in the Penobscot Nation group dialogue then was a request to prioritize citing the communities, ancestral lineage, and ecological relationships that nurture and hold these stories. This section is an attempt at folding this priority into theory-building by identifying intersections between Indigenous onto-epistemologies and new materialist theory.

We can begin to identify ontologies—those ideas we adopt as theoretical foundations—by first looking around at what most immediately supports and sustains us and considering the depth of these material experiences. From this exploration, lessons may emerge. As Robin Wall Kimmerer explains,

Plants were here first and have had a long time to figure things out. They live both above and below ground and hold the earth in place. Plants know how to make food from light and water. Not only do they feed themselves, but they make enough to sustain the lives of all the rest of us. Plants are providers for the rest of

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232. As exemplified by the Penobscot Nation’s continued presence in their ancestral territory: Joseph Nicolai, *The Life and Traditions of the Red Man: Edited, Annotated, and with a History of the Penobscot Nation and an Introduction by Annette Kolodny*, ed. Annette Kolodny (Durham, NC: Duke University Press, 2007).

233. Cariou, “Sweetgrass Stories,” 338.

the community and exemplify the virtue of generosity, always offering food. What if Western scientists saw plants as their teachers rather than their subjects? What if they told stories with that lens?<sup>234</sup>

Plants are ancient *and* contemporary teachers that help remind us of the basic fact that materials are always new, constantly transforming and being transformed over time in collaboration with the other things they consume and nourish. Kimmerer continues building theory from plants and their collaborators in ecological, embodied stories of time where

Listening to rain, time disappears. If time is measured by the period between events, alder drip time is different from maple drip. This forest is textured with different kinds of time, as the surface of the pool is dimpled with different kinds of rain.<sup>235</sup>

Different kinds of time imply multiple possible timelines, and an endless expanse of opportunities for understanding and reconfiguring what meanings and worlds we can engage and create. For Kimmerer, the basic unit of such activity is the moment, which she conceptualizes not as a device for compartmentalizing the world into a succession of events but a dissolution of causality into a multitude of deeply layered and meaningful experiences. In this sense, “If there is meaning in the past and the imagined future, it is captured in the moment,”<sup>236</sup> and given this, “Maybe there is no such thing as time; there are only moments, each with its own story.”<sup>237</sup>

Letting time dissolve back into its ecology is a deeply material, ethical practice, and we can locate the openings for this practice in the indeterminacy of intervals where we measure time. We understand what time is by observing how it resonates through

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234. Kimmerer, *Braiding Sweetgrass*, 346-347.

235. *Ibid.*, 299.

236. *Ibid.*, 296.

237. *Ibid.*, 300.

materials.<sup>238</sup> Thus, attempting to measure time is one of the ways we can explore what happens at the interface of Western and Indigenous ways of knowing. As Nowotny offers in her critique of Western time,

The interval of time is the basic element for structuring interhuman relations . . .  
But the interval is never fixed once and for all, it flows with time and remains, like power and status, renegotiable.<sup>239</sup>

What is on offer here is a theoretical choice with ethical significance. We can choose to reject wholesale the notion that time can be measured and as a result lose access to processes of deliberating about *how* we measure and make sense of time that let us explore what difference our epistemologies make. By contrast, we can accept that measuring, keeping, and making time are strategic and contingent social practices that emphasize the rhetorical generativity that comes from attempting to translate across experiences of ontological difference. Taking such a deliberative approach to working the boundaries of incommensurable and heterogeneous ways of knowing is a move toward rhetorical ecology in which multiple bodies have a say in what comes to happen. Our bodies are “mobile, material histories” that reveal different experiences and understandings of matter and time as they come together in “an inventive arrangement.”<sup>240</sup> Thus, if we understand

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238. Methods for systematically measuring and keeping time depend on a range of materials, including the flowing properties of water, the motion of the moon around the Earth and the Earth around the Sun, or the oscillating properties of minerals and elements. The United States’ National Institute of Standards and Technology (NIST) defines one second as 9,192,631,700 microwave oscillations, at which the fluorescence of a group of cesium atoms is maximized (National Institute of Standards and Technology, “NIST-F1 Cesium Fountain Atomic Clock: The Primary Time and Frequency Standard for the United States,” December 3, 2019, accessed January 31, 2020, <https://www.nist.gov/pml/time-and-frequency-division/primary-standard-nist-f1>). This understanding relies on a complex assemblage of laser beams, electromagnetic microwaves, and planetary gravity in pursuit of ever-increasing precision and uncertainty reduction. Yet we will never perfectly understand the interval because, as Barad notes following Bohr, “*observation is only possible on the condition that the effect of the measurement is indeterminable*” (Barad, *Meeting the Universe*, 113, emphasis in original).

239. Helga Nowotny, *Time: The Modern and Postmodern Experience* (Cambridge: Polity Press, 1994), 145.

240. Ewalt, “(Re)arranging Regional Rhetorics,” 154.

time to be recurrent—as in, a *relational occurrence*—who and what we relate to materially transforms what is possible to do with time and as a result what can be done within it.

Yet this relational ecology of materiality and time is mundane,<sup>241</sup> and requires a fundamental vulnerability. Ignoring our relational ecology can happen in a variety of ways, including theorizing our way to self-sufficiency or de-emphasizing how our physical, embodied vulnerability is what ultimately connects us to the world and each other. Such “thinking outside the body” is a practice that can easily recur in the Western project of theorizing vitality *back* into matter<sup>242</sup> using the very knowledge systems that attempted to divorce the two in the first place.<sup>243</sup> By contrast, returning to the body necessarily and crucially situates knowledge *somewhere* in relation to the limitations of our situated knowledge, which “allows us to become answerable for what we learn how to see.”<sup>244</sup> Returning to the body helps us attune to knowledge that grows from material groundings to see how things come to be. This involves becoming acquainted with how bodies experience their situatedness in environments to “acknowledge and dismantle hegemonic knowledge systems that privilege the mind,” which “provides us a different locus of articulation for our theories and experiences.”<sup>245</sup> Yet an ecology of matter suggests that within this situatedness, the rhetorical *composes* multiple bodies within milieux that “occasion the multiplication of rhetoric.”<sup>246</sup> Messages “move” us because they *move* us—encountering stories of foraging with ancestors or listening with a rainforest, for example, meshes the material and temporal experiences of embodiment.

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241. Bridie McGreavy, “Belonging to the World: Rhetorical Fieldwork as Mundane Aesthetic,” in *Field Rhetoric: Ethnography, Ecology, and Engagement in the Places of Persuasion*, ed. Candice Rai and Caroline Gottschalk Druschke (Tuscaloosa, AL: University of Alabama Press, 2018).

242. Bennett, *Vibrant Matter*.

243. Louise Green, “Thinking Outside the Body: New Materialism and the Challenge of the Fetish,” *Cambridge Journal of Postcolonial Literary Inquiry* 5, no. 3 (2018): 304–317.

244. Donna Haraway, “Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective,” *Feminist Studies* 14, no. 3 (1988): 583.

245. Riyad A. Shahjahan, “Being ‘Lazy’ and Slowing Down: Toward Decolonizing Time, our Body, and Pedagogy,” *Educational Philosophy and Theory* 47, no. 5 (2015): 489.

246. Nathan Stormer, “Rhetoric’s Diverse Materiality: Polythetic Ontology and Genealogy,” *Review of Communication* 16, no. 4 (2016): 302.

The challenge for methodologies that grow from new materialist theory, then, becomes “how to approach the intermingling of world and text, substance and narrative, materiality and metaphor.”<sup>247</sup> In response, the politics and ecologies we can find emerging through new materialism emphasize that relationality and interconnection are themselves vital forces: contact creates the possibility for new orderings. It is worthwhile to recognize this limitless vitality not for “getting the world right” but to appreciate how we never will. Indeed, to get the world right would be to render it inert.<sup>248</sup> In other words, heterogeneity is what makes life and communication possible in the first place, opening up the possibility for action and reaction as a function of translating across realms of difference.<sup>249</sup> It is because of heterogeneity that the world can always exceed our wildest imaginings and possibilities, surprise us even as we surprise it, and with us weave a future that “is radically open at every turn.”<sup>250</sup>

In response, our case study of restoration in Penobscot territory offers an opportunity for linking theory-building with practices for situating bodies of human and non-human organisms, land/water bodies, and bodies of thought and discourse as these entwine through efforts to reshape existing ecological arrangements and modes of relation. As a theoretical turn to focus on the active temporality of materials that Indigenous peoples have honored for millennia, new materialism is not something particularly *new* because “The idea of the world around us as inherently vibrant and alive is essentially a starting point for most Indigenous ontologies.”<sup>251</sup> In response, we can find a center space of specificity by avoiding characterizing new materialism as a

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247. Alaimo, “Elemental Love,” 305.

248. Donna Haraway, “The Promises of Monsters: A Regenerative Politics for Inappropriate/d Others,” in *Cultural Studies*, ed. Lawrence Grossberg, Cary Nelson, and Paula A. Treichler (New York: Routledge, 1992), 327.

249. Marisol de la Cadena, *Earth Beings: Ecologies of Practice Across Andean Worlds* (Durham, NC: Duke University Press, 2015).

250. Barad, *Meeting the Universe*, 178.

251. Cariou, “Sweetgrass Stories,” 340.

fundamentally novel mode of thinking and instead emphasizing long-established perspectives that approach novelty itself as an ontological matter. For Kimmerer,

In many indigenous ways of knowing, time is not a river, but a lake in which the past, the present, and the future exist. Creation, then, is an ongoing process . . . Are we not yet transformed by relationship to earth?<sup>252</sup>

If we can answer with a “yes,” we might understand new materialism not as a specific theoretical “upgrade” or disciplinary innovation as much as an emphasis on the perpetual newness of materials.<sup>253</sup> This novelty unfolds in a multiplicity of ways as embodied knowledge practices reduce the conceptual distance between agency and materiality, as matter has always given form to what is possible.<sup>254</sup>

In working ecologically with new materialism, it is crucial to avoid presupposing the human subject as the sole vital agent, as this anthropocentrism would limit the possibilities for understanding the richness of the world without us.<sup>255</sup> By contrast, new materialist ecology takes the vibrant correlation of matter and agency to be endlessly interactive. In this interaction, “responsiveness-through-arrangement results in the generation of new materializations . . . to circulate in natural-cultural ecologies, finding their own arrangements, and inventing and transforming again into differently articulated materials.”<sup>256</sup> There is an ethic of mutual vulnerability here that recalls persistently entangled dynamics of life on a globe marked by centuries of colonization.<sup>257</sup> Taking an ecological approach to such complexities means thinking about “colonialism as a material-discursive phenomenon that highlights the interconnectivity and intersubjectivity

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252. Kimmerer, *Braiding Sweetgrass*, 343.

253. Ingold, *Being Alive*.

254. Alfred J. López, “Contesting the Material Turn; or, The Persistence of Agency,” *Cambridge Journal of Postcolonial Literary Inquiry* 5, no. 3 (2018): 371–386.

255. López, “Contesting the Material Turn”; Ewalt, “(Re)arranging Regional Rhetorics.”

256. Ewalt, “(Re)arranging Regional Rhetorics,” 149.

257. McGreavy, “Intertidal Poetry.”

between humans, more-than-human beings, land communities,” and technologies.<sup>258</sup> In this sense, naming and tracing colonial impacts can guide our attention to how our fundamental interconnectedness takes form in fragile ways, which emphasizes how things become important through their presence. Material things exercise an agency simply by being, and this agency expands as things become matters of concern within technologies, infrastructures, and relationships that intensify interaction.<sup>259</sup> Thus, we can appreciate how a wider field of living and non-living things has always already been taking part in the material (re)production of the world, and that this new materialistic sense of ecology matters for how we understand ecology beyond human terms alone. For a new materialist ecology, starting with the human at the center of the world would organize that world into a hub-and-spokes model of connectedness where everything connects *through us*, a move that simultaneously limits our ability to see the fullness of the other connections at work, especially those that precede or compose us.

Crucially, we can think new materialisms *because* of sustained and innovative Indigenous work that considers more-than-human interconnections. Indeed, “Indigenous figurings of human and inhuman are among the conditions of possibility for those ideas called new materialist.”<sup>260</sup> For foundational Western thinking in contemporary approaches to new materialism, the philosophy’s main thrust has been “to rattle the adamantine chain that has bound materiality to inert substance and that has placed the organic across a chasm from the inorganic.”<sup>261</sup> However, new materialisms that seek to honor and engage long-held Indigenous ways of knowing can understand this “adamantine chain” itself as an

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258. Danielle Endres, “The Most Nuclear-Bombed Place: Ecological Implications of the US Nuclear Testing Program,” in *Tracing Rhetoric and Material Life: Ecological Approaches*, ed. Bridie McGreavy et al. (Cham, Switzerland: Palgrave Macmillan, 2018), 256.

259. Anthony Stagliano, “Toward a Geopolitical Rhetoric: The Transborder Immigrant Tool and Material Tactics,” in *Tracing Rhetoric and Material Life: Ecological Approaches*, ed. Bridie McGreavy et al. (Cham, Switzerland: Palgrave Macmillan, 2018), 289–314.

260. Alison Ravenscroft, “Strange Weather: Indigenous Materialisms, New Materialism, and Colonialism,” *Cambridge Journal of Postcolonial Literary Inquiry* 5, no. 3 (2018): 364.

261. Bennett, *Vibrant Matter*, 57.

invention of Western knowledge systems that supposed a chasm between the organic and inorganic in the first place. To now characterize the unification of materiality and vibrancy as an achievement unique to Western conceptualizations of new materialism would be to once again enact a colonial taking within the realm of the mind. This is because “A refusal to acknowledge the prior presence of and the debt to Indigenous materialisms reiterates the fabricated grounds of colonization: *terra nullius*—a land on which there are no others with prior claim.”<sup>262</sup> We attempt to carry this point forward in the theoretical framework and analysis by connecting engaged rhetorics with decolonizing approaches, including by acknowledging the Penobscot Nation’s claims on the lands where we work and using that acknowledgment to produce cross-cultural research that prioritizes this Nation’s interests as well as that of our other research partners. In this sense, decolonization is not a metaphor but a practice of organizing institutional and social processes that seek to make progress in responding to the conditions of colonization.<sup>263</sup> We seek such forms of decolonization with the understanding that matter is itself discursive, not “a property of things but, like discursive practices, must be understood in more dynamic and productive terms—in terms of intra-activity.”<sup>264</sup> From this understanding, an ethic emerges to participate in the ongoing emergence of cross-cultural knowledge on adaptive and reciprocal terms.

For the purposes of this study, a rhetorical ecology of new materialism allows us to work with the vibrancy of many different forms of matter—and their inherent interconnectedness despite intense heterogeneity—to show us a world that is always in motion, and always movable.<sup>265</sup> In a rhetorical sense, we might then accept that persuasion—the ability to intentionally alter other modes of life—is both a localized capacity and a distributed one, something that itself emerges ecologically through bodies

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262. Ravenscroft, “Strange Weather,” 354-355, emphasis in original.

263. Tuck and Yang, “Decolonization.”

264. Barad, *Meeting the Universe*, 150.

265. Ewalt, “(Re)arranging Regional Rhetorics.”

engaged in complex material relations as we attune to how “everything, being ensouled or in some sense aware in its place in the cosmos, takes part in everything else.”<sup>266</sup> All the world’s constituents we may recognize at any given scalar locus—cosmic, cellular, social, planetary, conceptual, geographic, ecological—generate and negotiate difference through the terms of their existence. Even taxonomies as an attempt to constrain similarities to the realm of *sameness* reveal the failure that inheres in efforts to establish fundamental orders, because “the simultaneously endless and closed, full and tautological world of resemblance now finds itself dissociated . . . [through] the empirical and murmuring resemblance of things, that unreacting similitude that lies beneath thought and furnishes the infinite raw material for divisions and distributions.”<sup>267</sup> As a result, if we desire research projects that might play a role in capacitating alternative forms of political action, we would do well to *engage* difference as a way of re-generating the material and political orderings of the worlds we find ourselves in. This emphasizes an ethic of restoration that is itself ecological, as we describe in the next section.

### **The Ecological Ethics of Restoration**

Here we explore restoration as a set of practices or ecological acts with ethical consequences. The Penobscot Project, as a restorative effort, aimed to reorganize environmental relationships to promote a return to preferred arrangements of life. As such, it engaged at the level of ecology, the complex interconnectedness of systems and species that serve as the basis for material life on Earth. For example, an early study focused on this effort emphasized the ecological importance of free-flowing rivers, the dangers dams pose to the health of this ecology, and efforts being undertaken on the

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266. Thomas Rickert, “Towards Ecosophy in a Participating World: Rhetoric and Cosmology in Heidegger’s Fourfold and Empedocles’ Four Roots,” in *Tracing Rhetoric and Material Life: Ecological Approaches*, ed. Bridie McGreavy et al. (Cham, Switzerland: Palgrave Macmillan, 2018), 69.

267. Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences* (London: Routledge, 1970), 64.

Project to monitor this health over time.<sup>268</sup> Such processes of restoration require making decisions about what ecological arrangements are desirable, including how forms of existence are prioritized or organized within those arrangements.<sup>269</sup>

We understand restoration as a socio-environmental ritual deeply intertwined with ecology as a way of understanding the world, for

Whatever the precise nature or quality of its product, restoration represents a deliberate, intimate participation in the ecology of the community or ecosystem under restoration. It raises a whole series of questions about the system for which the restorationist has to find answers. These include questions about composition and structure . . . and the way systems may change over time.<sup>270</sup>

Ecology, rooted in the Greek *oikos*—referring to house, dwelling place, or family—emphasizes the importance of our relationship to environment as home.

Furthermore, if a rhetorical ecology of new materialism leads us to believe that “things *are* their relations,”<sup>271</sup> then being interconnected with our ecological habitats suggests that we *are* our homes. Thus, restoration is an ecological act in the sense that it is the story of returning to our altered homes again, but different.

In relation to our dwelling places, restoration names a forward-looking nostalgia<sup>272</sup>—the pain of returning home again—the struggle born of desire to once again dwell in a world that worked, a world of equilibrium before rupture. It is a contrasting complement to resilience, for “Differential capacities are made possible in the space of vulnerability because our inherent affectability produces capacities for resilience, for acceptance, and more broadly for subjectivity.”<sup>273</sup> Thus, to the extent that resilience is the capacity to

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268. Opperman et al., “Basin-Scale Approach.”

269. Rebecca Lave, *Fields and Streams: Stream Restoration, Neoliberalism, and the Future of Environmental Science* (Athens, GA: University of Georgia Press, 2012).

270. William R. Jordan III, “Rituals of Restoration,” *The Humanist*, no. November 1 (1993): 24.

271. Ingold, *Being Alive*, 70.

272. Svetlana Boym, *The Future of Nostalgia* (New York: Basic Books, 2001).

273. McGreavy, “Resilience as Discourse,” 115.

change while remaining recognizable, restoration is about using that capacity to bring back our homes and the other material things to which we have become accustomed and on which we tend to rely. There is no need for resilience without disruption from external forces. Similarly, there is no need to restore unless we disapprove of how things have changed, whether through forces like entropy that are beyond our control or the actions we take to solve certain problems, for example by building dams. Whatever the cause of disruption or who is seen as bearing the responsibility of this cause, at the point of restoration, the human grants itself the role of ecological steward and the protector of what should be collectively brought back into being. As a process for rearticulating and reconnecting preferred forms of life then, restoration is how we try to be resilient for others to weave a narrative of consistency in the face of dramatic re-orderings.

We can understand restoration as one kind of ecological narrative because of the myriad moments and materials, each with their own story, that contribute to interconnected and continually transformed life on Earth.<sup>274</sup> When it comes time to make sense of something like the Penobscot Restoration Project through our case study, accepting that restoration's storytellers are as numerous and diverse as the available modes of life and non-life requires us to ask *who* the oikos *belongs* to—or who belongs to *it*<sup>275</sup>—a question that involves “agential cuts” which directly touch the nerve center of environmental and ecological purpose. An agential cut is the attempted resolution of indeterminacy between who or what is acting on or responsible for each other as “relata-within-phenomena emerge through specific intra-actions.”<sup>276</sup> This involves choices, like the choice made by humans in restoration to act on behalf of not only themselves, but the broader ecological assemblage. This emphasizes how “choice [is] the fulcrum of agency . . . as the moment of interpellation that is not ‘free’ of, but in fact

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274. Kimmerer, *Braiding Sweetgrass*.

275. McGreavy, “Belonging to the World.”

276. Barad, *Meeting the Universe*, 140.

intensely informed by, whatever in the physical and mental environments one notices in that moment.”<sup>277</sup> The process of restoration, as an extended series of agential cuts, thus provides an expansive set of layered moments for deciding how we want to be in the world.

Here, interpellation and intra-action describe how choosing to use our agency to make decisions on the behalf of others reconstitutes not only those others but ourselves, as our material embeddedness in the world—our ecological home—means we cannot be unaffected by our efforts to maintain that home. Ecological practices of naming and coming home, then, inscribe an ethic of restoration. Because futurity links ethics and politics, or how one is to live and how we are to act together,<sup>278</sup> restoration folds versions of the past into a particular vision of futurity predicated on preferred arrangements of life and non-life, ostensibly for other species but determined in large part *by humans*.

Restoration thus involves an underlying ethic that informs other work with which it intersects. How far can restorative practice be seen to go? One can notice when a process of restoration does not merely bring a river back to a new version of its former flow of materials and values but goes beyond to revitalize surrounding practices as well. In this sense, restoration returns to us our assumptions about time and in the process asks us what has taken place in the period between what we call the departure and return of a certain ecological arrangement. Approaching restoration as a contextual and contingent ritual or set of rituals—such as “atonement for environmental damage”<sup>279</sup>—requires asking what we understand as the environment we disrupted in the first place. In the case of river restoration in response to dams, the ritual of atonement requires that we attempt to understand what modes of production contribute to the problematic changes identified,

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277. Michelle M. Wright, *Physics of Blackness: Beyond the Middle Passage Epistemology* (Minneapolis, MN: University of Minnesota Press, 2015), 117.

278. Elizabeth Grosz, *The Incorporeal: Ontology, Ethics, and the Limits of Materialism* (New York: Columbia University Press, 2017), 2.

279. Andre F. Clewell and James Aronson, “Motivations for the Restoration of Ecosystems,” *Conservation Biology* 20, no. 2 (2005): 423.

which our interviewees also identified as a key struggle in their restorative praxis as we describe in the analysis. Again, this is intimately tied to understandings of time, in response to what Nowotny calls the

unsolved problems of an insatiable economy of time. After it has proved possible to produce more in less time, it is now a question of doing more . . . The increase in productivity results in an increase in consumption . . . Production presses for destruction, and rituals of destruction can be arranged in diverse ways, performed by the archaic figure of the sacrifice.<sup>280</sup>

If, as Kimmerer suggests, the experience of an environment follows, for example, from the eventfulness of water's relationship to the environments it flows through, then extracting mechanical energy from a river alters the temporality of that ecosystem. In other words, a turbine can turn river time into profit, though not without effects for the broader system that materially capacitates that profit. If time itself is situated, contextual, and relational, then we can recompose an ethic of restoration by scoping the material temporality of a dam through the various time-keeping apparatuses available to us. For local beings, a dam changes the experience of living according to the river's time, homogenizing the relational rhythm that emerges both as a river flows through diverse terrain and as water volumes change season-by-season.<sup>281</sup>

For matters of ecological and cultural resilience such as those connected to the Penobscot Restoration, a restorative ethic can go beyond matters of bringing back the past and carry these further, into matters of establishing balance in relationships articulated in patterned power dynamics that have long marked such communities of practice. When it comes to our case study then, the Penobscot Project is compelling not just for how it contributed to restoration in the Penobscot River watershed but also for how its restorative

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280. Nowotny, *Time: The Experience*, 139.

281. Catherine Schmitt, *The President's Salmon: Restoring the King of Fish and its Home Waters* (Lanham, MD: Rowman & Littlefield, 2015).

ethic shaped our own research practice. Through this engagement, community frictions revealed new opportunities for connecting interests, exploring community relationships, and transforming research as another form of restorative praxis. Friction is a productive phenomenon where

Cultures are continually co-produced in . . . the awkward, unequal, unstable, and creative qualities of interconnection across difference . . . As a metaphorical image, friction reminds us that heterogeneous and unequal encounters can lead to new arrangements of culture and power.<sup>282</sup>

In response, community frictions matter for this work in ways that have provided opportunities for potentially rearranging culture and power in this research context. In this section, we described restoration and ecology as interconnected forces where acts of restoration have ethical consequences for what is ecologically connected or reconfigured. We build on this point below in our overview of community-engaged rhetorical and decolonizing studies to situate community engagement as a critical practice that understands friction at the cross-community level as potentially generative for doing research that responds to identified needs and specific ethical aims.

### **Community and Engagement in Critical Rhetoric and Decolonizing Studies**

Here we extend our earlier point about the ethical implications of advancing research about ecological restoration in a region that serves as the home for this work, the Penobscot River Watershed. As with any place, the ecology of this place is made up of connections among living and non-living things and between communities of these things. For example, as we further explore in the description of methodology below and also in our analysis, the unique geomorphology of the Penobscot River's lower stem, with its islands and braided channels, shapes these communities. The history of colonization and

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282. Tsing, *Friction*, 4-5.

ecological reconfiguration in this place also highlights the need for critical research such as our case study of the Penobscot Restoration to draw on theories that provide expansive ways of understanding community and engagement. There is robust scholarship on community engagement theory and practice in rhetoric<sup>283</sup> and decolonizing studies,<sup>284</sup> and we draw on both of these areas to situate ethically responsive research about the Penobscot Restoration.

Traditional conceptions of rhetorical action include speeches or image events.<sup>285</sup> Yet critical studies in rhetoric also show that communication is a form of engagement that manifests in distributed phenomena, as communities compose themselves through forms of vernacular dialogue and situational knowledge.<sup>286</sup> Critical rhetorics emphasize a commitment to examining “the dimensions of domination and freedom as they are exercised in a relativized world.”<sup>287</sup> In this approach, “What is differentiated for the purposes of critical practice is not a rejection of ethical values, but a reordering of the

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283. John M. Ackerman and David J. Coogan, eds., *The Public Work of Rhetoric: Citizen-Scholars and Civic Engagement* (Columbia, SC: University of South Carolina Press, 2010); Middleton et al., *Participatory Critical Rhetoric*; Jim Ridolfo, *Digital Samaritans: Rhetorical Delivery and Engagement in the Digital Humanities* (Ann Arbor, MI: University of Michigan Press, 2015); McGreavy et al., *Tracing Rhetoric*; Rai and Druschke, *Field Rhetoric*; Sutton, “Farming, Fieldwork, and Sovereignty”; Raphael, “Engaged Communication Scholarship.”

284. Devon Abbott Mihesuah and Angela Cavender Wilson, eds., *Indigenizing the Academy: Transforming Scholarship and Empowering Communities* (Lincoln, NE: University of Nebraska Press, 2004); Kuokkanen, *Reshaping the University*; Anna Harding et al., “Conducting Research with Tribal Communities: Sovereignty, Ethics, and Data-Sharing Issues,” *Environmental Health Perspectives* 120, no. 1 (2012): 6–10; Smith, *Decolonizing Methodologies*; Simonds and Christopher, “Adapting Western Research”; Paul Sillitoe, ed., *Indigenous Studies and Engaged Anthropology: The Collaborative Moment* (Surrey: Ashgate, 2015); Archibald et al., *Decolonizing Research*.

285. McHendry et al., “Rhetorical Critic(ism)’s Body”; John W. Delicath and Kevin Michael Deluca, “Image Events, the Public Sphere, and Argumentative Practice: The Case of Radical Environmental Groups,” *Argumentation* 17 (2003): 315–333.

286. Gerard A. Hauser, “Vernacular Dialogue and the Rhetorality of Public Opinion,” *Communication Monographs* 65 (1998): 83–107; Salvador and Clarke, “The Weyekin Principle: Toward an Embodied Critical Rhetoric”; Samantha Senda-Cook, “Rugged Practices: Embodying Authenticity in Outdoor Recreation,” *Quarterly Journal of Speech* 98, no. 2 (2012): 129–152.

287. Raymie McKerrow, “Critical Rhetoric: Theory and Praxis,” *Communication Monographs* 56, no. 2 (2009): 91.

perspective to one in which transformation (or at minimum, the delineation of the possibilities for transformation) is seen as the ultimate aim.”<sup>288</sup>

Community-engaged and participatory rhetorics take up and operationalize these aims, not in a positivist sense, but through sensitivity to the impacts of practices.<sup>289</sup> For example, we can think of participation with and through rhetorical research as an “immanent activity” in which we can look beyond texts as our sole or primary objects of analysis and analyze participation in research by rhetoricians and other communities as a process of collective meaning-making.<sup>290</sup> In this theoretical and methodological orientation, “Attention to immanence, immanent participation, and immanent politics by participatory critical rhetoricians challenges how critics relate to the specific community they research and the theoretical practices of that community . . . This prompts participatory rhetorical critics to reimagine the political horizon of their rhetorical inquiry.”<sup>291</sup> This approach to community participation positions engagement as a technique of collective deliberation which “requires a willingness on the part of its participants to engage in the murky and contentious process of pursuing mutually transformative programs for change.”<sup>292</sup> Thus, phrases like “community members”—instead of referring specifically to those outside the academy—become meaningful as a way of referencing the social situatedness of all involved in the research process.

Community is a way to notice and name the contours of our relationship to those who seem like us, and a way to identify the boundaries that make us ourselves. Furthermore, imagining communities is in part a matter of style,<sup>293</sup> and the possible styles

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288. McKerrow, “Critical Rhetoric,” 103.

289. Middleton et al., *Participatory Critical Rhetoric*.

290. McHendry et al., “Rhetorical Critic(ism)’s Body.”

291. Middleton et al., *Participatory Critical Rhetoric*, 43.

292. Sarah E. Dempsey, “Critiquing Community Engagement,” *Management Communication Quarterly* 24, no. 3 (2010): 384.

293. Anderson, *Imagined Communities*, 6.

of imagining ourselves in relation to others are numerous, if not infinite. This underscores the richness of articulating and negotiating the terms of what makes our specific communities meaningful assemblages. Work critical of the notion of community is also helpful for nuancing collective practices of engagement within and across various communities. For example, research in fisheries management has shown the limitations of customary conceptions of community as an expression of geography, social structure, or shared norms and interests.<sup>294</sup> Instead, we might think of community as the expression of diverse and shifting sets of practices that are always rhetorical, material, and open to reconfiguration. In response, “community engagement” can name the work of interaction *between* “disparate” communities as we imagine them. It is a practice of intentional connection that attempts to create space and time for novel reconfigurations of what our engagements can be about and for.<sup>295</sup>

For others like Giovanna di Chiro, community is itself ecological, and folds these diverse conceptions together as “community becomes at once the idea, the place, and the relations and practices that generate what [we can] consider more socially just and ecologically sound human/environment configurations.”<sup>296</sup> This deeply connects community with how we understand ideas like history, identity, and survival as our relationships to land reveal different modes of life. For di Chiro, “the place—geographic, cultural, and emotional—where humans and environment converge is embodied in ideas and practices of ‘community.’”<sup>297</sup> This presents community as a unity, whether of sameness or of difference. For the purposes of this study, we especially engage the latter, which “presupposes connection to and interconnectedness with other groups, other species, and the natural environment through everyday experiences with family,

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294. Edward H. Allison and Frank Ellis, “The Livelihoods Approach and Management of Small-Scale Fisheries,” *Marine Policy* 25 (2001): 377–388.

295. Dempsey, “Critiquing Community Engagement.”

296. Giovanna Di Chiro, “Nature as Community,” in *Uncommon Ground: Rethinking the Human Place in Nature*, ed. William Cronon (New York: W. W. Norton & Company, 1996), 310.

297. *Ibid.*, 318.

comradeship, and work . . . Communities and environments are therefore conjoined and must be understood as being mutually constitutive.”<sup>298</sup> In this sense, we can approach engagement as a process of opening up assumptions we have about community social homogeneity and cultural boundedness.

There is thus an ethics to how we engage across connected and mutually constitutive communities and environments, which guides our attention to decolonizing studies that emphasize the importance of theory-practice intersections that can contribute to less hegemonic forms of research with Indigenous groups. Decolonizing research

critically examines the underlying assumptions that inform the research and challenges the widely accepted belief that Western methods and ways of knowing are the only objective, true science. Holding Western beliefs and methods as “the” true science marginalizes Indigenous methods and ways of knowing by denigrating them as folklore or myth.<sup>299</sup>

Decolonizing research does not necessarily denote completely dismantling Western constructs or ways of thinking and acting, but does denote a deep commitment to understanding how colonization has led to and further exploited disparities and inequities, so that we can pursue more just arrangements. Indeed, “A decolonizing research agenda demands not only a revealing of the impact of colonization but a focus on unraveling it.”<sup>300</sup> Unraveling colonization, like rearranging an ecology, is an inventive affair that creates new orderings by protecting, connecting, and intersecting prior conceptions of community

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298. Di Chiro, “Nature as Community,” 318.

299. Simonds and Christopher, “Adapting Western Research,” 2185.

300. Joellee Seed-Pihama, “Naming Our Names and Telling Our Stories,” in *Decolonizing Research: Indigenous Storywork as Methodology*, ed. Jo-Ann Archibald et al. (London: Zed Books, 2019), 112.

divisions. In the next section, we describe our approach to community-engaged case study methodology, an iterative and emergent process with ethical consequences.

### **Iterative Praxis as Methodology**

In the previous section, we sought to outline an ecological and new materialist framework to help attune to vibrancies of difference, heterogeneous but interconnected ontologies, and the need for research practices that emphasize open-endedness and flexibility. Here we present a methodological approach rooted in iterative praxis as a key process orientation to respond to and work within this ecological and new materialist framework. This technique demonstrates how nonlinearity and flexibility may help contribute to knowledges that avoid reconciling difference and instead use difference to capacitate new arrangements. First, we discuss the intentional choices we made in taking an iterative approach to case study research, especially through research design refinements prompted by community engagement. We then describe how we formed our case study data archive and the sense-making practices we used to build insight and understanding in collaboration with this archive. We offer this description and development with the understanding that “the kind of methodology that we practice does not protect us against our mistakes. We need to find a methodology that allows us to be our authentic selves—that is, an extension of who we are as researchers and human beings . . . and conduct ourselves accordingly.”<sup>301</sup> Thus, the processes we describe here offer a story of how this specific research project developed and how in this project we have tried to act in congruence with the work’s stated interests, origins, aims, procedures, and values. Because these processes were contemporaneous and interwoven, we organize them in order of conceptual flow, not in a linear chronology. The research design, archive formation, and analysis all occurred simultaneously throughout the duration of the

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301. Davidson, “Following the Song,” 37–38.

research project, and this order supports a developing understanding of what emerged as a result of our choices.

### **Case Study and Community Refinement**

Because the Penobscot Project was the result of notably broad and diverse participation in environmental decision making, case study methodology allows for tracing who appears to participate and how.<sup>302</sup> As spatial context is a key shaping force for case study work,<sup>303</sup> we chose a geographic context—the Penobscot River watershed—early and stayed with it throughout the duration of our study, and this geography continued to be an important clarifying force. This choice connects with the reasoning for the previous chapter’s focus, including the legacy of the Penobscot Project, the primacy of the Project and the Penobscot Nation in the Future of Dams’ grant application, and the importance of this place as a key study site for the grant-funded team. In keeping with these influences, considering the community contexts for the Penobscot Restoration case continually pointed us back to the importance of lands and waters for shaping the possibilities of research in ways that enable and constrain the possibilities for community access and relationship building.<sup>304</sup>

For example, we were aware at the outset of our study that the University of Maine’s campus where we work and where many members of this academic community also live is located within the same watershed that was the central focus of the Penobscot Project. This fact alone is significant for our case study, as the geographic distance

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302. Inger Lassen et al., “Climate Change Discourses and Citizen Participation: A Case Study of the Discursive Construction of Citizenship in Two Public Events,” *Environmental Communication* 5, no. 4 (2011): 411–427; Deborah Cox Callister, “Land Community Participation: A New ‘Public’ Participation Model,” *Environmental Communication* 7, no. 4 (2013): 435–455.

303. Yin, “The Case Study”; Peta Darke, Graeme Shanks, and Marianne Broadbent, “Successfully Completing Case Study Research: Combining Rigour, Relevance and Pragmatism,” *Information Systems Journal* 8 (1998): 273–289; Gerring, “What is a Case Study”; Gibbert, Ruigrok, and Wicki, “Rigorous Case Study”; Duffield, Neher, and Patterson, “Natural Resource Valuation with a Tribal Perspective: A Case Study of the Penobscot Nation.”

304. Di Chiro, “Nature as Community”; Druschke, “Watershed as Common-Place.”

between field site and (the places where we gather and interpret data) is minimal and at times overlaps.<sup>305</sup> However, although our work unfolds in ancestral Wabanaki homelands, in particular the traditional territory of the Penobscot Nation, this fact does not automatically make these communities “proximate.” Our campus is situated on an island in the Penobscot River, lands that are part of the Penobscot Nation’s ancestral territory. For its part, the Penobscot Nation’s primary reservation is on Indian Island in Old Town, a mere 15-minute drive from the University and located directly adjacent to the Milford dam, a hydroelectric-generating structure that remains in the river to this day. The spatial context for our case study is rife with geopolitical complexity that does not go away simply because this community is conventionally proximate.<sup>306</sup>

In response to such complexities, throughout the duration of the effort we adapted our procedures and questions so we could continually respond to the needs of community partners through critically reflexive practices.<sup>307</sup> One key shift concerned which communities stood to benefit from our knowledge production process. The Future of Dams project itself was a key community partner from the outset of the project. As we originally conceived our case study, a retrospective exploration of the results of the Penobscot Project could enrich our team members’ science and extend the team’s interdisciplinary knowledge using the Penobscot Project as a key case example of novel and innovative large-scale public participation in response to a pressing environmental matter (deciding what to do with dams). As a result, we began our study with questions focused on the Penobscot Project as a formal effort, including how the project proceeded and what key factors contributed to its completion. Quiring formulated these early questions in a research proposal, building on interests we identified with members of the

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305. Middleton, Senda-Cook, and Endres, “Articulating Rhetorical Field Methods”; McHendry et al., “Rhetorical Critic(ism)’s Body”; Middleton et al., *Participatory Critical Rhetoric*; Rai, *Democracy’s Lot*.

306. Stagliano, “Toward a Geopolitical Rhetoric”; Sutton, “Farming, Fieldwork, and Sovereignty.”

307. Simonds and Christopher, “Adapting Western Research”; McHendry et al., “Rhetorical Critic(ism)’s Body.”

Future of Dams project team. As we refined our case study approach through our further grant team engagement—particularly by developing a shared interview protocol we designed to collect data for and address key questions of our academic collaborators—we expanded the questions we were asking about the project to align with the needs of our research team.<sup>308</sup> We also asked questions about the project’s legacy, including the extent to which it was successful and what environmental concerns might persist in its wake.

Using data collection activities designed to serve these needs—in particular stakeholder interviewing—further attuned us to remaining needs.<sup>309</sup> This attunement led us to pursue further connections between the community partners whose interviews provided our case study data and other Future of Dams researchers who sought to use this data to design focused decision-making tools.<sup>310</sup> For example, designing our interview protocol to be consistent with others across the Future of Dams team allowed us to share data with other collaborators performing analyses of diverse stakeholder groups, and our data contributed to understanding the perspectives of stakeholders and groups based in the Penobscot River watershed and who were familiar with the Penobscot Project. One exception for this data sharing became particularly instructive, as we describe in detail in our analysis.

### **Archive Formation, Contents, and Meaning-Making**

Here we describe how we formed our archive, what it consisted of, and how we made sense of it over time. We gathered data through collaborative and community-engaged approaches such as stakeholder interviewing, group dialogue, and media discourse analysis. The stakeholder interviews in particular were a central focus of

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308. Tyler Quiring et al., *Shared Interview Protocol Development for Cross-Disciplinary Collaboration: A Report from the Trenches*, Paper presented at the American Association of Geographers Annual Meeting, Washington, D.C. April 2019.

309. Grabill, “On Being Useful”; Sutton, “Farming, Fieldwork, and Sovereignty.”

310. Fox et al., “Multi-Criteria Decision Analysis”; Leuchanka and Ashcraft, *People and Conflicts*.

sustained and widespread collaboration and community engagement across the Future of Dams project. Our case study activities began at a second stage in this overall process, after collaborators initially piloted an early interview protocol.<sup>311</sup> Guided by an interest in enriching the possibilities for interdisciplinary collaboration and stakeholder engagement across the project, the Future of Dams team created a Stakeholder Engagement Working Group (SEWG) whose primary goal was to design a shared interview protocol that could be used to coordinate the collection of data relevant to the team and facilitate sharing insights and data throughout that team. Quiring, Dr. Bridie McGreavy and Dr. Caroline Gottschalk Druschke were members on this larger group and helped build from the earlier interview protocol<sup>312</sup> to develop the SEWG's broader shared interview protocol.<sup>313</sup> This shared interview protocol also served as a flexible foundation on which team members could iterate to build protocols that were informed by the original but could be customized to particular research interests, contexts, and needs. Overall, Future of Dams project researchers conducted dozens of interviews across New England using various versions of the interview protocol. Of these, we conducted 15 Penobscot Restoration case study interviews over six months from July 2017 to January 2018 in a key second phase of interview protocol refinement and stakeholder engagement.

The interviews served as key data to ground our case study and evidence by contributing to our understanding of how the Penobscot Project had developed, what histories, discourses, community needs, and broader interests it became entangled with, and ongoing related matters of social-environmental concern. To make sense of these key data, we advanced a multi-stage analysis that proceeded in successive layers of increasing depth. The initial layers happened at the moment of data collection, as we developed an approach to rapidly track emergent insights. This approach consisted of structuring our

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311. Druschke et al., "Centring Fish Agency."

312. Ibid.

313. Quiring et al., *Shared Interview Protocol Development*.

interview protocols so we could take relevant notes directly underneath each question heading, which in turn focused our listening and questioning practices and allowed us to begin drawing out themes that related both to the original research interests and our shifts in approach based on what we were hearing. Taking in-depth notes during the interview also provided a backup mode of documentation and data insurance in case we were to run into any issues with our audio recorders. After each interview, we scanned our handwritten notes into our database and typed up the scanned text, organizing main ideas as bullet points underneath each question heading. We drew on case study research in the field of environmental communication<sup>314</sup> to identify this process we call “Rapid Insight Tracking,” which we refined with our collaborators on the Future of Dams project.<sup>315</sup> This approach allowed us to quickly develop insights that informed subsequent interviews and allowed for an iterative approach to making sense of the data as it was being collected. In addition to the handwritten and typed notes that we produced in this process, we also recorded audio from the interviews and used the TranscribeMe! service to prepare verbatim transcripts of the conversations.

These data were key for further grounding the insights we share below, and themselves became a site for addressing the needs of both Future of Dams researchers and our partners in the Penobscot Nation, as we describe in the final theme of the analysis. This process of meaning-making unfolded from when our data collection ended, and continued in our extended community engagement activities with our partners on the Future of Dams project and in the Penobscot Nation. For example, the previous chapter described how we formed and analyzed a million-word journalistic corpus consisting of 1480 news articles covering dam removal and river restoration. For the purposes of this

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314. David N. Bengston et al., “Rapid Issue Tracking: A Method for Taking the Pulse of the Public Discussion of Environmental Policy,” *Environmental Communication* 3, no. 3 (2009): 367–385.

315. Bridie McGreavy et al., *How Do We Decide What to do With Dams? Dynamic Design Planning (DDP) to Shape Collaboration for Sustainability Science*, Presented at the Resilience Conference, Stockholm, Sweden. August 2017.

case study, our overall sense-making was deeply connected to this related study and its broader set of data. However, just as our engagement with community partners helped guide that analysis to focus on a specific sub-set of 244 articles focused on the Penobscot context, this sub-set of data itself informed our case study practices, engagements, and insights. Over time, this connective approach to engaging with our texts and collaborators added layers of meaning to our understanding of restoration in the Penobscot River watershed. This is an analytical process that seeks to “use local memories to interpret the documents beyond their exact content and consider both memories and documents as material objects, connected with the circumstances and actors that produced them.”<sup>316</sup> As we describe in the next section, these activities are ongoing and the writing processes themselves serve as another phase of ongoing, iterative meaning-making where themes continue to emerge.

### **Emergent Themes**

Through our interviewing, follow-up dialogues, and subsequent collaborative engagement with our participants, insights began to emerge. We identified these insights both rapidly (through the ongoing analytical process we identified above) and gradually (as we iteratively wrote about and reported on our research to various audiences). Here we organize these insights into themes that each reflect on what we learned about the Penobscot Restoration and also how this reflection connected with broader dynamics that matter for the ongoing work of decolonization, restoration, and ecological perseverance in this place. In a new materialist fashion, these themes work reciprocally with time by collapsing past, present, and future to show how every present moment contains a re-enfolding of past and future.<sup>317</sup> This “epiphenomenal time denotes the current moment, a moment that is *not* directly borne out of another . . . [it] can certainly correlate with

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316. de la Cadena, *Earth Beings*, 12.

317. Kimmerer, *Braiding Sweetgrass*.

other moments, but one cannot argue that it is always already the effect of a specific, previous moment.”<sup>318</sup> Instead, this analysis explores correlations of moments and ideas to describe what restoration and related efforts have helped produce in this place. The first theme concerns matters of origins and how timelines are political. The stories we tell about collaborative efforts matter, and the timelines these stories map shape what is seen to have been done and by whom. The second theme concerns how restoration works to multiple ends, which can be both complementary and in conflict, and how these ends diverge or re-entangle in the process of attempting to conduct reciprocal research. The final theme concerns ongoing action coming out of this work and how restorative ethics through decolonizing acts can advance reciprocity in research. Together, these themes provide additional layers for understanding what the Penobscot Restoration and Future of Dams projects have become and some of the ways that their engagements of difference have made a difference.

### **Origin Stories and the Politics of Timelines**

Here we explore how the multiplicity and heterogeneity of time in our theoretical framework mattered for tracing collaborative engagement and opportunities for building relationships and reciprocal research in the Penobscot River Watershed. We use excerpts from interviews with Penobscot Restoration participants to highlight how timescales and experiences with time connect with what we see as the possibilities for restoration and change. In particular, we show that situated, individual experiences with restoration over time do not match up cleanly, and that this connects with how restoration is itself a multiplicity with many layers and possibilities for interpretation. Exploring these layers is political, and also shows that the stories we tell about restoration have a part in shaping our sense of what has been achieved and what remains to be done.

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318. Wright, *Physics of Blackness*, 4, emphasis in original.

Tracing the politics of time became a matter of central importance for understanding the Penobscot Project. As we engaged with participants, they articulated different ontologies of time which connected to diverse readings of the Project's function and purpose. For example, we encountered numerous conflicting descriptions of how the Penobscot Project began, and noticed that these descriptions served various interests relative to future decision making in this watershed. As the study progressed, it became clear that there were resonances between what we were learning in our two community sites of study. In certain cases, these resonances initially looked like dissonances. For example, we increasingly noticed that different modes or senses of time unfolded across our two islands. Like other sectors, academic life is modulated by a Western system of time punctuated by deadlines. Some deadlines can be anticipated long in advance, others cannot, and still others are discovered by chance or selected through collaborative processes that themselves take time. The effect can be a diffuse but near-constant sense of urgency that comes to inhabit our bodies and inform patterns of engagement in subtle but significant ways.<sup>319</sup> Furthermore this is felt differently by different bodies, as "Meaningfully appropriating proper time is dependent on the—unequal—initial social position, on the social hierarchies of power and income, in which people find themselves."<sup>320</sup> As we learned through dialogues with partners in the Penobscot Nation, deadlines, particularly those imposed from an outside community instead of emerging on the basis of collective need, tend to highlight potential incompatibilities between modes of time. In the process, and in determining which communities' needs take precedence given limited resources within urgent temporal constraints, an ethic of mattering becomes articulated in time.

Every story needs a beginning, middle, and end, and together these points enact a "cut" of reality that is amendable to certain needs of the storyteller and their audience.

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319. Shahjahan, "Being 'Lazy' and Slowing Down."

320. Nowotny, *Time: The Experience*, 132.

There is an agency at work in the act of telling a story, though it is an agency the storyteller shares with the broader world from which the story emerges in the first place. A version of the restorative origin story that we encountered in many interviews focused on the Penobscot Project itself. This was in part a response to our decision to include a section of questions on our interview protocol—which we designed before the shift from retrospection to reciprocation—that focused on learning from the Penobscot Project as a key case and situated the effort as a finished thing. When we asked participants if they had been involved in the project, we were often met with an origin story detailing how the project began.

In some cases, participants that had been involved in the project characterized the beginning of their involvement as the point at which the project “really” started. For example, in an early interview a participant from one of the primary organizations deeply involved in the project described how:

We really didn't start digging into the Penobscot Project until 2004 when I joined the Science Steering Committee for the Penobscot Project. And while scientists had been meeting about what they wanted to do, there was no plan. So I took it upon myself to corral the group and working on developing a monitoring framework . . . And that framework was used to get the first \$1.2 million.

This origin story characterizes the Penobscot Project as primarily a scientific enterprise. This characterization grows out of the interviewee's situated knowledge and their particular, embedded perspective—enabled by the entanglement between professional role and Project role—about what their work and the broader Project were about. This partial perspective is limited in that it does not characterize the range of other perspectives at work on the project in a nuanced way. However, this limitation reveals a theme that emerged in our work with participants and through related ongoing sense-making processes that still continue.

The excerpt above shows that, for this participant, their involvement on the project *was* an origin point. In this origin point, an assemblage of participants come together through a framework that secured funding, and as a result made possible a host of related restoration activity. The origin story is partial and incomplete, but to dismiss it on this basis would foreclose the opportunity to understand and deliberate over how to measure the Penobscot Restoration's timing and outcomes. By listening to the story and accepting that it is a partial and incomplete origin but an origin nonetheless, we can understand how each participant's contributions together create the possibilities for collective restoration. What we need in pursuing a situated, temporally-emergent new materialist account is this kind of appreciation for how any location and moment provides a "vast and inexhaustible present [where] the whole world rests within itself."<sup>321</sup> Each place and time we may measure as distinct is an expansive opportunity to articulate the whole world anew, and the excerpt above provides some space and time for such an appreciation to emerge.

Because of its partiality, the story above does not fully square with that of other groups or the Trust itself, whose official narrative claims that "The Penobscot Project began in 1999."<sup>322</sup> Members of the Penobscot Nation offered another origin story, explaining to us in interviews, group dialogues, and presentations that there is a broader temporal context worth considering here. This origin story can include multiple points in recent memory, but generally focuses on Penobscot Nation efforts over the past half-century to continually pursue initiatives that improve water quality, honor tribal sovereignty, and prioritize intersectional social-environmental justice in their homeland.

Furthermore, drawing on additional accounts from these same sources encourages cultivating a even more expansive sense of time. When we asked about their life and its connection to the Penobscot River and Project, multiple Penobscot Nation participants

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321. David Abram, *The Spell of the Sensuous: Perception and Language in a More-than-Human World* (New York: Vintage Books, 1996), 202.

322. Natural Resources Council of Maine, "Penobscot River Restoration Project."

shared versions of their creation stories. We have learned in the process of shifting from retrospective to reciprocal case study research that it is important to take care with these stories as a matter of building and maintaining trust in research relationships.<sup>323</sup> At this time we are not reproducing these stories here, but as they shaped our understanding of Penobscot time and history we encourage readers to consider exploring publications where Penobscot Nation members have committed them to writing.<sup>324</sup> For example, “although archaeologists date their presence back ten to eleven thousand years, many Penobscot people simply believe that this is where the creator placed them.”<sup>325</sup> In an interview, one Penobscot Nation citizen explained that this long-term relationship with the water and land in this place cultivates a broader cultural commitment to persevere:

When it comes right down to it, we’ll all stick together no matter what our differences are, no matter what our gripes are. We’ll come together and pull together whatever resources we have to fight whatever fighting. Everything falls at the waistline when something hits the tribe as a whole. [silence] I guess, the mere existence of us being still here. I mean, if our parents can keep going, then I think we keep on for our children and their children. And-so we’re looking at the seventh generation.

Taking these accounts as cues hints at the shifts that are possible by broadening the story further, considering time as deep as thousands or perhaps even billions of years ago and considering at least 150 years of the future. In this sense, for those whose communities have long cared for these lands and waters, the Penobscot Project story is just one thread in a broader texture of action and stewardship. This expansive sense of time highlights a tension with the emphasis in case study research to put an upper and

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323. Smith, *Decolonizing Methodologies*; Davidson, “Following the Song”; Seed-Pihama, “Naming Our Names.”

324. Nicolai, *Life and Traditions*.

325. Sunlight Media Collective, “The Penobscot: Ancestral River, Contested Territory,” September 24, 2015, accessed November 13, 2019, <https://vimeo.com/140310974#t=2m17s>.

lower limit on the time period being studied, and is itself part of the move from retrospection to reciprocation. Working reciprocally with time means weaving back and forth between events and processes, story and narrative, and the various “temporal multiplicities” that mark settler and Indigenous ways of relating through and in time by

engaging with the profound effects of colonialism without understanding such force, struggle, and negotiation as yielding a singular kind of temporal experience that would dictate a shared present with a particular content . . . These various aspects of being and becoming give historical density to the engagement with settler policies and everyday presence.<sup>326</sup>

In this sense, various experiences of time on the Project may arise not merely out of prior experiences, but at least in part from participants’ own grounded experiences on the project itself. In other words, when the project began for each participant, it spawned another world full of complicated relationships and events that interacted and created further heterogeneities, weaving new possibilities for action and change. Together, the experiences of Penobscot Project origin stories recounted in the interviews highlighted how

Time has a history. Hence it doesn’t make sense to construe time as a succession of evenly spaced moments or as an external parameter that tracks the motion of matter in some preexisting space. Intra-actions are temporal not in the sense that the values of particular properties change in time; rather, which property comes to matter is re(con)figured in the very making/marking of time.<sup>327</sup>

If we take seriously time’s historicity as well as the grounded ethics of spatially- and temporally-situated experiences that reconfigure its makeup and measurement, we can

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326. Mark Rifkin, *Beyond Settler Time: Temporal Sovereignty and Indigenous Self-Determination* (Durham, NC: Duke University Press, 2017), 33.

327. Barad, *Meeting the Universe*, 180.

hopefully better understand where this reconfiguration is leading us to identify ways of intentionally responding. Heterogeneity and related temporal differences are the features of a broader ecology of material-discursive relationships that shape multiple ways of understanding what restoration is and what this project became and produced. In the next two sections, we extend these points by considering the multiple ends of restoration and where one of these ends is still leading.

### **The Multiple Ends of Restoration**

If, as the theoretical framework above describes, restoration takes place through partial and preferential efforts to bring back a certain, prior form of ecological assemblage, then it makes sense to ask *which* ends are achieved through specific restorative acts. Here we begin to trace various ends that our participants experienced, envisioned, or otherwise identified, as their familiarity with river lifeways and restoration shaped this work. Furthermore, we attempt to indicate how these restorative ends connect to and prioritize certain matters of concern taken from the broader field of relational forces that has been unfolding in this place and time.

Fundamentally, restoration can be seen as its own end, and this is a common starting point for envisioning the value of collaborating. Some interviewees brought a perspective that portrayed phenomena like inter-group collaboration as instrumental toward getting the work (of restoration) done. For example, one interviewee said “What matters is that the work gets done . . . you just want people to work together to acknowledge that [the Project] should transcend [disagreements]. And let it happen. Letting it happen is sometimes just as good as helping make it happen.” In other cases, this sense of instrumentality applied to restoration itself, as participants described the Project as advancing other interests entwined with the goal of restoration but that were also priorities in their own right. Take, for example, an exchange with an early interviewee who had been involved in the Penobscot Project for years and was familiar with how its

funding successes had made it possible (after some persuading) to advance scientific projects such as ongoing monitoring of ecological changes. For this interviewee,

We had to make pitches way up our leadership chain to get three and a half million dollars invested in the monitoring program. Again, that doesn't come from nowhere, that's a big push to get that amount of funds directed to this issue. Well, that's a lot of salesmanship too, isn't it? . . . Just try to sort of personalize it so the people can see with their own eyes that these are big dams and big changes that are coming. So that's how we used it, basically, to grease the skids for this big monitoring program. And, yeah, we're three and a half million dollars into it now, and we've got— I don't even know how many grad students, I don't even know how many papers. Yeah, I mean, it's a lot.

In this characterization, the Penobscot Project's general success in terms of both funding and outcomes made possible further successes that fit the interviewee's value priorities—in this case the advancement of ecological science as measured by graduate student training and written output. In other words, one of the specific ends of the broader Penobscot Restoration is a scientific end, and this is not necessarily in conflict with other ends,<sup>328</sup> although it *may* be in competition with other ends for internal resources. Furthermore, this passage reveals a very different specific interest prioritization—though similar in scope—when compared with passages that emphasize collaboration or community resilience as a key outcome. For example, one participant described the

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328. The Penobscot Project is often described as simultaneously prioritizing multiple goals that are commonly understood as tradeoffs. For example, one interviewee involved in the project for nearly 20 years described the outcome as a “win-win-win” for improving fish passage, hydropower generation, and key social outcomes like the protection of tribal cultural artifacts despite (or because of) significant revision to the dam-river assemblage in this watershed. As suggested in the above section, such an outcome can be partially attributed to the time taken to structure this widely collective response to changing ecology by drawing out negotiations over a long enough period that all parties with a stake in the ecological reconfiguration could be represented.

project's ability to bring together disparate groups with various interests under a shared vision of restoration.

I think it really improved [the relationship between the Penobscot Nation and other groups] a lot. I think generally speaking everybody had the same vision, but maybe from slightly different angles. One group might be interested in adjusting the fisheries aspect of it. Another group may have [other interests]. So everyone kind of had a different priority, but I think everybody was pretty supportive of our vision.

This recalls the example provided in the introduction of how the case study work itself was fundamentally grounded in inter-group engagement as a result of long-term strategic partnerships between the University and its key collaborating communities. Overall, these excerpts describe what made the Penobscot Project *work*, by describing how it joined with particular ends and extended those interests, and also what about these various ends was seen as worthwhile from particular situated knowledges.

Hydroelectricity production and sea-run migratory fish are key matters of concern that are often balanced against each other in the dam decision-making process.<sup>329</sup> The dominant narrative of the Penobscot Project is about bringing ecology and economics back into balance, a narrative alignment leveraged by elevating the existence of sea-run fish to the center of the Penobscot River watershed's regional ecology. In this dominant, normalized version of the story, fish become the hub through which all other components of the ecology become connected, around which they revolve, and with which the whole begins to make some sense. Furthermore, hydropower is both a hallmark of the various services that dams provide and the most notable threat to sea-run fish. When neoliberal desires and discourses prioritize hydropower above other interests and needs by overemphasizing the importance of preserving and advancing technological, economic,

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329. Freeman et al., "Ecosystem-level Consequences"; Roy et al., "A Multiscale Approach."

and industrial progress, hydropower also becomes a core historical disruption and organizing force for river restoration seeking to bring fish back to their home, which is also our home.

By contrast, an emphasis on restoring fish habitat comes with the possibility of uniting the more-than-human ecology through fish as the key organizing force that invigorates or transforms a variety of ecological elements. These elements range from hydropower (installing or upgrading fish passage at remaining dams on the river) to Indigenous cultural resilience (the continuance of various traditional sustenance and ceremonial practices focused around salmon) to recreation (in part the ability for humans to once again reap the river's ichthyic bounty) to science (through the turn to salient studies based on long-term monitoring of restoration's effects by counting and tracking fish). Importantly for our new materialist ecological approach to rhetoric, there are unique ethical stakes to transforming or invigorating each of these elements, which emphasizes what is tricky about such rich heterogeneity. The Penobscot Project had to serve all of these elements at once to ensure the project's success, further drawing together a densely interconnected set of concerns that relate to each other in complex, contingent, and precarious ways. Yet prioritizing fish to such an extent brings the danger of making a singularity out of the interconnected whole, of reducing the various incommensurate components to their use of fish as a common form of capital. As the previous chapter also shows, blending the emphasis on fish with the emphasis on hydropower tempers this reductive force through a collaborative contamination<sup>330</sup> that once again gives the assemblage room to move.

In this section, we argued that not only do these matters contribute to patterns that mark the representation of various community groups based on which restorative ends they are understood to see as worthwhile, but furthermore that more fully appreciating the

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330. Tsing, *Mushroom at the End*.

ecological integration of these matters *itself* can be a restorative end. In this sense, not only does restoration have to do with the technical connectivity of a community to its traditional places or even the broader interconnectedness “disparate” communities may share, for restoration itself helps us understand how seemingly oppositional elements are forever deeply entwined, inseparable, and fundamentally co-creative of what makes ecology worthwhile in the first place. The example of the Penobscot Project as an eco-social win-win-win shows that what have traditionally been understood to be opposed forces can—at least under favorable conditions—operate synergistically if they are allowed to remain grounded in their unique interests and incentivized to seek mutually beneficial ends. Next, we further extend this point by taking up one additional—and as yet underexplored—restorative end that emerged through the process of this case study approach to show some of the potential impacts of engagement.

### **“It is a Long-Term Conversation”: Folding Restorative Ethics into Institutional Review Processes**

The themes we have presented so far describe insights we iteratively developed throughout the process of conducting our case study. By contrast, the final theme that emerges is a living one: This theme exceeds the study and context that helped us identify its presence and possibility. It is an unfinished theme that is still informing ongoing reciprocal research practices. As part of our standard case study interviewing practice, we specifically asked participants at the end of each interview about potential opportunities for ensuring the research is relevant to them and their work and continuing to build relationships. As one tribal member responded, “it is a long-term conversation [laughter]. Yeah. We work pretty closely with the University in a lot of different areas.” The response emphasizes how a long-term conversation is required to engage the landscape of broad and deep relations that precede our involvement in this place and will continue long after us, and this is itself a form of reciprocity through iterative praxis. As we had heard in

other interviews, in the wake of the trauma felt across this region and around the globe by centuries of colonial conquest, temporary engagements—whether lasting a moment or an entire lifetime—may promote individual restorative acts but do not on their own advance an ethic of restoration as a mode of ecological endurance.

Reconciling the different ontologies of time that emerge in tracing the Penobscot Restoration’s diverse material entanglements cannot be done in an instant, if at all. As a result, working for environmental justice within such complexities requires research that allows itself to become one of many interconnecting threads woven into a much broader, thoroughly historicized fabric of long-term engagement. In this sense, environmental justice concerns fairness in distributing environmental benefits, burdens, protections, and decision making processes as well as reconciliation for past injustices.<sup>331</sup> This last point is particularly relevant for this work, as responding to prior injustices requires deep memory to support long-term and adaptive engagement. The metaphor of fabric serves here because it suggests the potential for unity *through* heterogeneity, the ability for patchwork interventions to hold things together for a time, and also the importance of broader structural integrity for the persistence of the whole. Our interviews with Penobscot Nation representatives helped identify a need to further refine our approach in this place and shift our research approach to be less instrumental and more dialogic. We anticipated that doing so could lead us to a deeper practice of further weaving our research into a broader fabric of engagement by taking additional time to build relationships to continue supporting ongoing knowledge co-production across communities. For us, this became about extending our commitment to iterative praxis and reciprocity. Letting research insights guide subsequent research processes helps us attend to how we are working *with* participants who shape not only what we can know but also *how* we go about the process of coming to know. This helps us stay with the ethic of reciprocity, as research is less

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331. Raphael, “Engaged Communication Scholarship.”

about executing a prior plan and more about finding where the needs remain for iteratively refining our collective knowledge-sharing practices.

One specific opportunity for weaving our case study research into the long-term conversation about relationship building took form on May 10, 2018—after we had already completed our primary case study data collection. On this date, UMaine and the Penobscot Nation signed a joint Memorandum of Understanding (MOU).<sup>332</sup> The purpose of the MOU was to formalize “various informal sets of practices that the Penobscot Nation and the University of Maine have been collaboratively developing for the management of Penobscot Cultural Heritage over the last 10 years.” These included extending practices for managing collections of Penobscot cultural heritage materials and “establishing a new ethical, equitable and collaborative relationship in how research is conducted with the Penobscot Nation and on Penobscot traditional territories.” A key element of this collaborative development that made the “landmark MOU possible . . . through a series of workshops and meetings” was led by Darren Ranco, a Penobscot Nation citizen, Anthropology Professor, Coordinator of Native American Research at UMaine, and close collaborator on this case study.<sup>333</sup> As a result, and to continue practicing reflexivity in our approach to engaged research, we advanced two efforts in response to the MOU. We collaboratively identified the need for these efforts with partners in the Penobscot Nation, and Quiring led the initial implementations we describe here. One grew organically from insights developed through both the media discourse analysis presented in the previous chapter and the case study presented in this chapter, and the following chapter overviews this work in more detail. The other effort grew directly from our engaged case study of the Penobscot Restoration and we describe this effort below. This effort responds to one of

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332. Penobscot Nation and University of Maine System, “Memorandum of Understanding [Signed agreement],” May 10, 2018, accessed November 15, 2019, <https://umaine.edu/nativeamericanprograms/wp-content/uploads/sites/320/2018/05/Penobscot-Nation-UMaine-MOU.pdf>.

333. University of Maine Department of Anthropology, “Darren Ranco Receives NSF Grant for WaYS Program [News update],” May 16, 2019, accessed November 15, 2019, <https://umaine.edu/nativeamericanprograms/wp-content/uploads/sites/320/2018/05/Penobscot-Nation-UMaine-MOU.pdf>.

the major focal points of the MOU, in particular the need for reconfiguring practices and modes of institutional review for research with the Penobscot Nation.

The MOU provides a concise summary of the exigence recognized by decolonizing studies in its explanation that “research on and with [Indigenous] people has not always been conducted ethically or with appropriate consent.” A significant complicating challenge is that informed consent as a Western institutional apparatus for recognizing and protecting rights is itself “simply incongruent with interpretive research not *on* human subjects but *with* other human beings.”<sup>334</sup> In response, the MOU formalizes an inter-institutional desire to move away from research review criteria that do not “give adequate consideration to sovereignty or aboriginal rights.”<sup>335</sup> Our research design was informed by Indigenous voices that provided the impetus for the work in the first place. This was due in part to the Mitchell Center’s and NEST’s prior community engagement efforts that had emphasized a need for creating spaces in our research for Indigenous voices and epistemologies to be heard. In the process of conducting the Penobscot Restoration case study, this long-term sensitization helped us recognize the needs that our partners in the Penobscot Nation were identifying to have their voices and epistemologies further centered in the research. In response, we embarked on a year-long process to craft new procedures for our ongoing engaged research that could be recognizable both to the University of Maine and the Penobscot Nation, and potentially contribute to the institutional research review practice refinements that the MOU began to formalize. This process drew on insights we had been developing with members of the Penobscot Nation and extended them by connecting them to the long-term conversation about cultural resilience the University and the Penobscot Nation were engaging.

We began exploring new directions for enhancing the cultural ethics of our research practice by facilitating cross-cultural dialogues between members of our research

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334. Christians, “Neutral Science,” 76-77, emphasis in original.

335. Harding et al., “Research with Tribal Communities,” 6.

team from the Universities of Maine and New Hampshire as a practical matter of sharing data. This decision emerged from a collective interest in folding Penobscot Nation member perspectives and decolonizing research practices into broader learning on the Future of Dams. While the interview protocol we had developed to coordinate data collection across the Future of Dams project was being used for that purpose (we and our University collaborators were applying the same interview protocol for stakeholder engagement through participant interviews), the related question of data *sharing* highlighted unique complexities for our research partners in the Penobscot Nation.<sup>336</sup> We had been hearing in interviews with Penobscot Nation members and employees that commitments to continued presence and relationship-building are of paramount importance to appropriately contextualize their diverse and complex contributions in a way that is culturally sensitive enough to honor the tribe's sovereignty over its own stories and other forms of knowledge.<sup>337</sup> As a result, we decided to not share data from Penobscot Nation member and employee interviews across our whole team, and instead instituted basic additional protections to ensure that any team members who needed access to these data were equipped with a sufficient understanding of the socio-cultural complexities involved in performing research with these data. To facilitate sharing with our university collaborators who desired access to data and practice a commitment to using our research as a mode of ongoing inter-institutional relationship building, we coordinated a series of cross-cultural dialogue sessions between Future of Dams researchers and Penobscot Nation interviewees focused on naming and understanding multiple parties' key interests and needs relative to using these data. Through this process, our collaborators in the Penobscot Nation agreed to share their interview data with the Future of Dams collaborators who had participated in the cross-cultural dialogues, and as a next step we

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336. Harding et al., "Research with Tribal Communities."

337. Davidson, "Following the Song"; Seed-Pihama, "Naming Our Names."

summarized the results of this process in a set of basic guidelines to facilitate ethical data management and analysis practices, as Appendix D shows.

These guidelines were an interim step between our already-completed data collection and future data collection that we were expecting would continue to grow out of the case study work, cross-cultural dialogues, and UMaine-Penobscot MOU. As a next step, we began crafting a new Institutional Review Board application that could expand on this engaged framework as a starting point for structuring research practices that prioritize centering Indigenous voices and epistemologies, as Appendix F shows. The University of Maine eventually approved our application that listed a range of Future of Dams and Penobscot Nation collaborators as personnel, and we continued connecting it with the Penobscot Nation's own developing research review process. As may be expected, this took time. One of the commitments laid out in the MOU was that the University of Maine would support the Penobscot Nation in developing its own Institutional Review Board that could internally determine which research projects were agreeable to the Nation. Furthermore, the University committed to coordinating with representatives from the tribe on research applications needing review during this transitional period. This is in line with Sutton's observation that "A participatory approach can utilize critical sensibilities to generate useful resources for supporting tribal-university partnerships while also returning power to tribal communities."<sup>338</sup> In practice, the application approved by the University of Maine showed additional opportunities for further refinement as one nexus for inter-community partnerships.

As a collaborator in the Penobscot Nation explained when we told them about UMaine's recent approval of our application, "you need to go through us." This statement emphasized a few things, including the importance of Penobscot Nation self-determination in multiple dimensions when it comes to matters that impact both

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338. Sutton, "Farming, Fieldwork, and Sovereignty," 338.

individual tribal members and this community's broader representation.<sup>339</sup> Indeed, the Penobscot Nation has its own governing body for regulating research performed with its members. The Penobscot Tribal Rights and Resources Protection Board (PTRRPB) is a group of Penobscot Nation officials and elders who oversee an Indigenous research agenda. Connecting our research with PTRRPB became an important opportunity to further refine and extend the approach to institutional oversight by more fully involving a broader range of tribal representatives in the continued development of research review practices building from opportunities identified in part through the Penobscot Project. In response, and building on the dialogic approach outlined above, we advanced additional community dialogues focused on further enriching the existing IRB application through cross-cultural knowledge sharing and identifying techniques for weaving storytelling practices throughout our research processes and ethical frameworks.<sup>340</sup> One result was the story about traditional foraging lands we included at the start of the theoretical framework, and these are themes we are continuing to explore moving forward.

As this process continued, further opportunities emerged for extending the IRB application by weaving other efforts into the framework it had established. These updates involved connecting with two key related efforts. The first emerged from the Future of Dams project itself and involved measures to ensure that data collection with Penobscot Nation representatives in a Multi-Criteria Decision Analysis (MCDA) participatory workshop met the Nation's needs.<sup>341</sup> The second connected with efforts to monitor water isotopes in the Penobscot River as a way to explore historical trends in water flow. The process for folding these efforts in to the existing IRB application was complex and took a substantial amount of time. Although the new version of the application was approved in

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339. Cornthassel, "Re-Envisioning Resurgence"; Larissa Behrendt, "Indigenous Storytelling: Decolonizing Institutions and Assertive Self-Determination: Implications for Legal Practice," in *Decolonizing Research: Indigenous Storywork as Methodology*, ed. Jo-Ann Archibald et al. (London: Zed Books, 2019), 175–186.

340. Archibald et al., *Decolonizing Research*.

341. Fox et al., "Multi-Criteria Decision Analysis."

time for data collection through the MCDA workshop, the timeline may have also limited possibilities for gathering data as part of the water isotopes study due to constraints around the end dates of field work for that effort. Upon reflection about the tradeoffs involved in using the IRB application as a sample to base others on versus a platform to fold related efforts into, we concluded that the progress made was worthwhile but that in the future it could be advisable to lean toward the former option to allow for maximum flexibility. This process and conclusion are themselves examples of working to practice new materialist research ethics from a standpoint of honoring heterogeneity.

It is not possible to fully understand which decision may be the best when faced with multiple possible choices, and for Quiring the decisions this project required became opportunities for developing a personal and collective ethical framework. New materialism and its emphasis on heterogeneity, situated partiality, and the always-unfolding ethics of time reminds us that it is acceptable to start somewhere, try to move toward collectively-identified goals, and iteratively reflect on where one and others end up as part of the process of continually refining rhetorical scholarship and praxis.<sup>342</sup> We have tried to emphasize in key places throughout this chapter how decisions emerged and what ethical outcomes they produced. The process of IRB development, refinement, and self-critical reflection outlined here has sought to draw from the example of the Penobscot Project and extend it, to draw lessons from this grounded engagement in support of grounding further engagements. As a result, the IRB is not “done,” although we share it as an initial example of what can result from research processes that seek to thread into a broader historical fabric of intercolletive engagement. What is left is the continued work of getting along together in troubled times on a precarious planet<sup>343</sup> where dams,

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342. Barad, *Meeting the Universe*; Ackerman and Coogan, *Public Work of Rhetoric*; McHendry et al., “Rhetorical Critic(ism)’s Body”; John M. Ackerman, “Walking in the City: The Arrival of the Rhetorical Subject,” in *Tracing Rhetoric and Material Life: Ecological Approaches*, ed. Bridie McGreavy et al. (Cham, Switzerland: Palgrave Macmillan, 2018), 117–140; Druschke and Rai, “Making Worlds.”

343. Pezzullo and Onís, “Rethinking Rhetorical Field Methods.”

rivers, restoration activity, and research engagement will continue to shape the bodies and histories that entangle in this place through practices and modes of time and that are non-linear, iterative, and reciprocal.

### **Conclusion: Toward Other Rhetorical Ecologies of New Materialism**

In this chapter, we asked about what we can learn about restoration processes by following participatory and decolonizing approaches, and this question led us to unexpected places. Our theoretical framework drew on decolonizing approaches to gather threads from new materialism, rhetorical and restoration ecology, and community-engaged participatory research to situate where we ended up. The Penobscot Restoration case provided a site for not just studying these processes, but letting them move us. Engaging with those who participated in the multi-layered relational ecology that made this project possible moved our research by shifting our focus on retrospection or looking back to reciprocation or giving back. As itself a collaborative enterprise ostensibly organized around the idea of healing an ecological assemblage—and allowing for other priorities to intertwine, the Project has been described as a success. But more than simply a success in terms of narrowly-defined ecological restoration objectives, the Project begins to model what it means to consider a collective return to or honoring of materiality, temporality, and relationality as its own form of success. As an example of collective striving, the Penobscot Project provides a system within which we can explore where restoration can lead cross-cultural collaboration and reciprocal forms of research.

The Penobscot Project is recognizable in part through the kairotic, contingent set of circumstances that together made it possible, which intersect with the Future of Dams project itself as another site for watching. What emerged through this related project that was invigorated by the Penobscot Restoration and in turn invigorated it is a new materialism that allows space for many kinds of engagements. One such engagement involves recognizing the ethical limitations of the systems we currently find ourselves in

and the ethical responsibility to question these limitations. Another engagement involves understanding that such efforts are always partial and incomplete—they do not ever fully get us where we need to be, and they always present a world that is radically open to further reconfiguration with forces that call for attention and priority. We have presented a story of dynamic prioritization, a progressively unfolding effort to continue making sense of a partially-understood whole through contingently-assembling collectives. By allowing an ecological rhetoric analysis to slide through various scales in a set of entangled material and temporal phenomena, we can deepen our understanding of the boundless multiplicity always already at work in the world and continue contributing to its endlessly differential becoming. Doing so provides a method for recognizing the limits of any situated form of knowledge, and also the possibilities for using these limits to uncover the limitless potential that lies in each moment and every relational connection.

## CHAPTER 4

### *IT IS MADE TO WRITE: ENGAGED DIGITAL RHETORICS FOR DECOLONIZATION*

#### Introduction

Here is a beginning by way of a temporary departure from the immediate context of the previous chapters, which may help reorient to this context anew. In September 2018 Linus Torvalds, inventor of the open-source Linux computer operating system that bears his name, announced he was stepping down from his more than 30-year tenure as lead developer.<sup>344</sup> The news moved Linux’s community, which had operated under a “code of conflict,”<sup>345</sup> to institute a new “code of conduct” instead.<sup>346</sup> The response to the new code of conduct was contention, as expressed in a sarcastic tweet by Coraline Ada Ehmke, “who merely wrote the code of conduct which has been adopted by Google, GitHub, Eclipse and now the Linux community, [and] is being personally attacked on Twitter:”<sup>347</sup>

“I am seeing the absolute best of the Linux community coming out in full force right now . . . It’s funny how all their anger is directed at me, when I had nothing to do with Linux adopting the code of conduct I wrote.”<sup>348</sup>

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344. Linus Torvalds, “Linux 4.19-rc4 released, an apology, and a maintainership note,” *Linux Kernel Source Tree*, September 16, 2018, accessed September 20, 2018, <https://lkml.org/lkml/2018/9/16/167>.

345. Greg Kroah-Hartman, “Code of Conflict,” *Linux Kernel Source Tree*, February 27, 2015, accessed February 2, 2020, <https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/commit/Documentation/CodeOfConflict?id=d9bd2b7ad99a418c60397901a0f3c997d030c65e>.

346. Coraline Ada Ehmke, Greg Kroah-Hartman, and Linus Torvalds, “Code of Conduct: Let’s revamp it,” *Linux Kernel Source Tree*, September 16, 2018, accessed February 2, 2020, <https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/commit/Documentation/CodeOfConflict?id=d9bd2b7ad99a418c60397901a0f3c997d030c65e>.

347. Ivan Mehta, “Chaos Follows Linux Dev Community’s New Code of Conduct,” *The Next Web*, September 19, 2018, accessed January 1, 2020, <https://thenextweb.com/developerstories/2018/09/19/linux-code-of-conduct/>.

348. Coraline Ada Ehmke, “[Twitter post],” September 18, 2018, accessed February 2, 2020, <https://twitter.com/CoralineAda/status/1042242208248868864>.

These conflicts come in light of what many in the open-source community have described and discussed at length as Torvalds' brash and antagonistic style of working through technical, professional, and personal differences at the nexus of software development practices. Furthermore, the development of open-source software projects such as Linux and Git—a version control system also created by Torvalds—are classic examples of “the bazaar,” a distributed, unhierarchical paradigm of collaborative development pioneered by these projects and their communities.<sup>349</sup> Given this, it is perhaps not surprising that the headline of the online article quoting Ehmke conceptualized the community response to the code of conduct as “chaos.”<sup>350</sup> Nonetheless, Torvalds soon returned to leading Linux development after some weeks away,<sup>351</sup> and the transition between the codes of conflict and conduct became a footnote in the project's history.

As further context, these events came mere months after Guido van Rossum, the “benevolent dictator for life” of Python, one of the world's top three programming languages, announced he was stepping aside from that open-source project. The reasons Van Rossum cited for his decision included the controversy and spite he saw festering in the everyday practices of open source development as well as more vague personal health issues.<sup>352</sup> Van Rossum's announcement also included a charge to Python's developers—who are themselves entangled with Linux's own development community—to decide “what are you all going to do? Create a democracy? Anarchy? A

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349. Eric S. Raymond, ed., *The Cathedral and the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary* (Sebastopol, CA: O'Reilly, 2001).

350. Mehta, “Chaos Follows New Code.”

351. Stephen J. Vaughan-Nichols, “Linus Torvalds is Back in Charge of Linux: After a Few Weeks off to Reconsider His Role in the Linux Community, Linus Torvalds is Back in the Saddle,” *ZDNet*, October 22, 2018, accessed January 1, 2020, <https://www.zdnet.com/article/linus-torvalds-is-back-in-charge-of-linux/>.

352. Guido van Rossum, “Transfer of power,” *python-committers Mailing List*, July 12, 2018, accessed September 20, 2018, <https://mail.python.org/pipermail/python-committers/2018-July/005664.html>.

dictatorship? A federation?” Van Rossum has since retired from his day job working for cloud storage company Dropbox, which “uses about four million lines of Python code.”<sup>353</sup>

These examples contain a range of tensions, from individual versus collective forms of leadership and governance to the colonial, religious, and orientalist divides suggested by the linguistic choice to call the Linux model a “bazaar.”<sup>354</sup> The experiences and efforts of open source development communities uniquely illuminate these tensions, which matters for a range of activities—such as the research described in this chapter—that rely on some of our most ubiquitous software systems. For Python and especially Linux, it would be hard to overstate the relevance of these technical systems—and, by extension, their attendant governance systems—to contemporary practices of networked interconnection that enable the contours of everyday digital life. Even though the reader may not be familiar with popular Linux-based personal computer operating systems like ChromeOS or Ubuntu, the underlying code powers at least a third of all web servers.<sup>355</sup> Furthermore, this code’s malleability through open source development practices allows Web-first companies to offer services built on some version of the operating system. Anyone who has ever used a smartphone that runs Android, shared or accessed files using a cloud platform such as Dropbox, or even searched for something on Google or Facebook has in the process made use of Linux in some form.

In this chapter, we explore how these and related facts matter for digital rhetoric projects that seek to advance deeply engaged and intersectional socio-environmental

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353. Ryan Daws, “Farewell, Benevolent Dictator: Python Creator Guido van Rossum Retires,” *Developer Tech*, October 31, 2019, accessed January 1, 2020, <https://www.developer-tech.com/news/2019/oct/31/farewell-benevolent-dictator-python-creator-guido-van-rossum-retires/>.

354. The key text describing this model portrays the bazaar in contrast to a “quiet, reverent cathedral-building . . . the Linux community seemed to resemble a great babbling bazaar of differing agendas and approaches.” Raymond, *Cathedral and the Bazaar*, 21. Here, the ways of describing open-source development’s novelty already recall certain myths—such as the Tower of Babel—that rely on imagery depicting some cultures as less rational, restrained, or strategic than those aligned with a Western, Christian, capitalist, and colonial model of social progress.

355. Q-Success, “Usage Statistics of Linux for Websites,” *W3Techs: Web Technology Surveys*, January 11, 2020, accessed January 11, 2020, <https://w3techs.com/technologies/details/os-linux>.

justice research.<sup>356</sup> The above examples show that controversy can touch the nerve center of collaborative digital technicalities because these systems and techniques both promise and threaten to redefine who we are as persons and as a species. Furthermore, in this chapter we present a community-engaged digital rhetoric project that developed in a context—the Penobscot River Watershed—marked by the effects of colonization and that we undertook in response to these effects. Thus, in this context and case, dynamics of digital collaboration and decolonization intersect in ways that matter for how we continue to develop digital rhetoric methods.<sup>357</sup>

The case we offer concerns still-emerging cross-cultural collaborations to develop digital and visual rhetorics that support the efforts of the Penobscot Nation’s Department of Natural Resources in its mission to continue monitoring and caring for the environmental systems that this nation has lived and worked with for thousands of years. The geopolitics of this region’s governance connects to the present dynamics of globalizing social, environmental, and electronic forces, and the key case we present here unfolds at this nexus. Macarena Gómez-Barris describes how capitalism as an extractive orientation “indicates an economic system that engages in thefts, borrowings, and forced removals, violently reorganizing social life as well as the land by thieving resources from Indigenous and Afro-descendant territories.”<sup>358</sup> In response to these broad and far-reaching capitalist extractive dynamics, we use community-engaged digital rhetoric as a boundary-crossing approach<sup>359</sup> for collectively responding to colonialism in specific

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356. Kimberle Crenshaw, “Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics,” *University of Chicago Legal Forum*, 1989, 139–167; Kimberle Crenshaw, “Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of Color,” *Stanford Law Review* 43, no. 6 (1991): 1241–1299; Malin and Ryder, “Deeply Intersectional Scholarship.”

357. Grabill, “On Being Useful.”

358. Macarena Gómez-Barris, *The Extractive Zone: Social Ecologies and Decolonial Perspectives* (Durham, NC: Duke University Press, 2017), xvii.

359. Star and Griesemer, “Institutional Ecology”; Nancy A. Van House, “Epistemic Communities and Online Environmental Data Systems,” in *Environmental Online Communication*, ed. Arno Scharl (London: Springer-Verlag, 2004), 199–208; Lee, “Boundary Negotiating Artifacts”; Star, “Not a Boundary Object”; Polman and Hope, “Science News Stories.”

ways by working to *produce* cultural resources that support the Penobscot Nation’s mission of monitoring and educating about the Penobscot River Watershed as an environment. The work is cross-cultural and involves multiple collaborations, which present unique challenges that also lead to unexpected opportunities.

As we describe in more detail in our analysis, these collaborations involved continual shifts in process and using cross-cultural dialogue to make meaning by sharing knowledge, experiences, stories and language.<sup>360</sup> Our key example is a shift in how we named our engaged digital rhetoric project, which began with the placeholder name of *Potamcam* to describe the representation of rivers through digital photography. Studies in rhetoric, environmental communication, and Indigenous scholarship emphasize that naming and renaming are inherently political practices that can also provide crucial deliberative, affective, and ethical modes of enhancing our awareness of and sensitivity to collective and individual needs.<sup>361</sup> In the community media project, dialogue and collective digital procedure and ethic refinements brought our team to a more culturally appropriate name. The new name emphasized the unique sociomaterial history of this place that informed our efforts and shifts to non-representational modes of collaborative digital media production.<sup>362</sup> Thus, the naming process was relational, and emerged over time as an outcome of developing relationships between team members with intersecting roles including documentarians, language keepers, writers, researchers, relatives, and friends. This relational process led to the name *Awihkikéhtaso*, a Penobscot word that means “it is made to write.”<sup>363</sup> This name matters for the rhetorical potential in

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360. Archibald et al., *Decolonizing Research*.

361. Star Medzerian Vanguri, ed., *Rhetorics of Names and Naming* (New York: Routledge, 2016); Joshua Trey Barnett, “Naming, Mourning, and the Work of Earthly Coexistence,” *Environmental Communication*, 2019, 1–13; Seed-Pihama, “Naming Our Names.”

362. Phillip Vannini, ed., *Non-Representational Methodologies: Re-envisioning Research* (New York: Routledge, 2015).

363. This is a Penobscot word, and also part of other Wabanaki languages like Abenaki. Lisa Brooks outlines how “The root word *awigha-* denotes ‘to draw,’ ‘to write,’ ‘to map’” while “*Awikhigan* is a tool for image making, for writing, for transmitting an image or idea from one mind to another, over waterways, over time.” Lisa Brooks, ed., *The Common Pot: The Recovery of Native Space in the Northeast* (Minneapolis, MN:

considering what it means to write or compose digital collaborations and for responding to the colonial politics of naming. Indeed, “the power to name, or rename, is a kind of symbolic violence and power that superimposes and defines what is seen as normal and legitimate.”<sup>364</sup> For engaged digital rhetorics, Awihkhikéhtaso begins to show how renaming is a political act which helps visualize the histories and unfolding of our collaborations in ways that matter for what we can collectively see.

In the first section, we offer a review of scholarship that attempts to draw together theories on digitality and collaboration to identify a cross-cultural framework for advancing engaged digital rhetorics for decolonization. In the next section, we link this review to the specific cross-cultural collaborative project led by the Penobscot Nation, which builds from the work in the previous two chapters. The case description helps reorient to the broader long-term social project of Penobscot restoration in connection with theories of material rhetoric and embodied collaboration. Finally, in our analysis we apply this theory and context to an internal reading of the key case as an example that attempts to contribute to refining methods for engagement in and through digital rhetoric. The purpose of this exercise is to see what happens when developing engaged and collaborative rhetorical methods brings rhetoricians and other communities into alternative forms of social arrangement, and what difference these arrangements make for the ongoing social and cultural survival of such communities, in particular the Indigenous

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University of Minnesota Press, 2008), xxi–xxii, emphasis in original. The word, as with much of Wabanaki language, emphasizes the relationality of meaning-making processes.

364. Seed-Pihama, “Naming Our Names,” 116.

groups whose territory and knowledge have made the present vitality of digital rhetoric possible.

### **Collaborativity: Collaboration as a Mediated Performance of Collectivity**

In this section, we seek to explore how the conditions of collaboration require particular kinds of rhetorical response. As the introductory examples show, collaboration creates unique challenges for and pressures on the groups it composes, even as it alleviates others. In seeking to define what collaboration is, we may locate it in the domain of media, where it can be described as that which has great “potential to disrupt traditional production-consumption media structures.”<sup>365</sup> More specifically, Löwgren and Reimer define collaborative media from the position of praxis, and argue that such practices

illustrate well what we find to be the most salient trait of digital media: the grassroots and emergent nature of communicative practices, cutting across established media structures of society and its institutions. These practices, and the media infrastructures enabling them, *define* what we choose to call *collaborative media*.<sup>366</sup>

Thus, collaboration and media can function as hybrids, or “quasi-objects that are neither fully social nor fully natural but some mixture thereof.”<sup>367</sup> Coupling these two also suggests that together, collaboration and media can perform constitutive disruption, as the notion of a “medium” provides a realm for collaboration to occur. Indeed, because “barriers . . . cease to be ‘a definite dividing line’ and are immersed in a molecular

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365. Jonas Löwgren and Bo Reimer, *Collaborative Media: Production, Consumption, and Design Interventions* (Cambridge, MA: MIT Press, 2013), 4.

366. *Ibid.*, 10, emphases mine and theirs, respectively.

367. Scot Barnett, “Rhetoric’s Nonmodern Constitution: *Techné*, *Phusis*, and the Production of Hybrids,” in *Thinking with Bruno Latour in Rhetoric and Composition*, ed. Paul Lynch and Nathaniel Rivers (Carbondale, IL: Southern Illinois University Press, 2015), 83.

medium (*milieu*) that dissolves them,”<sup>368</sup> without the notion of a medium as a realm that separates and through which connectivities try to assemble as they resist their separation, communication as a phenomenon remains unrecognizable.

In this sense, collaboration is liminal. Liminality is a concept with roots in anthropology and that other fields engage, including communication and performance studies.<sup>369</sup> Briefly, we understand liminality as an in-betweenness where seemingly distinct things contribute to constituting objects and their boundaries. These interactive forces are performative, that is they are enacted in the relational processes where bodies and things become recognizable. From this stance, “performativity must be understood not as a singular or deliberate ‘act,’ but, rather, as the reiterative and citational practice by which discourse produces the effects that it names.”<sup>370</sup> As sites and sets of performativities, collaborations call collectives into the fullness of their being, with all the necessary and messy perturbations this fullness entails. This collective assembly is not necessarily one imagined by discourses that portray collaboration as a simple process of cooperation that enables groups to work better together. If instead “people assemble not because they are like each other or agree but because they share matters of concern about which they do not agree,”<sup>371</sup> then it becomes important to understand disagreement itself as an antecedent to collaborative work: we work together because our disagreements matter for what gets collectively made.

This troubles traditional notions of collaboration and presents a practical puzzle: as the collective assembles to solve certain problems, this process inevitably raises other and related vexing challenges. Thus, collaboration is itself performative, as it creates,

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368. Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (Minneapolis, MN: University of Minnesota Press, 1987), 214, emphasis in original.

369. Bjørn Thomassen, “The Uses and Meaning of Liminality,” *International Political Anthropology* 2, no. 1 (2009): 5–28; Devika Chawla and Amardo Rodriguez, *Liminal Traces: Storying, Performing, and Embodying Postcoloniality* (Rotterdam, The Netherlands: Sense Publishers, 2011).

370. Judith Butler, *Bodies That Matter: On the Discursive Limits of ‘Sex’* (London: Routledge, 1993), xii.

371. Grabill, “On Being Useful,” 199.

names, and circulates bodies of discourse in and as action that both expands and contracts realms of possibility centered on matters of concern. We call this effect “collaborativity,” which names mediated performances of collectivity that reshape both the collective and its constituents. As Tsing describes, “we are contaminated by our encounters; they change who we are as we make way for others”<sup>372</sup> because “staying alive—for every species—requires livable collaborations. Collaboration means working across difference, which leads to contamination. Without collaborations, we all die.”<sup>373</sup> Working across the differences that bring us together in the first place helps to establish a *techne* or set of doings that can potentially enrich individual and collective knowledge practices in pursuit of problem solving—though this is not always guaranteed to occur. Indeed, in pursuing collaborative digital methods we could explore how the affective qualities of our research spaces and relationships inform our methods.<sup>374</sup> Collaborativity becomes a methodological mode, and a helpful one at that.

In this sense we can see why collaboration is required by the conditions of our existence while also fundamentally irritating as a way of dealing with(in) those conditions. In particular, it shows how “The differences that get disclosed and circulated matter because we remain fundamentally entangled with them.”<sup>375</sup> For its part, collaborativity becomes a way of naming and beginning to recognize the circulatory *techne* of collaborative problem solving. In response, digitality serves to address the functional challenges of collaborative contexts (which include working along or across distance, distributing taskwork, shifting timetables, and other matters), but in the process reveals knots embedded in the musculature of collaborativity. In the next section we describe digital rhetoric as a domain of critical practices that is increasingly taking up

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372. Tsing, *Mushroom at the End*, 27.

373. *Ibid.*, 28.

374. Anna Hickey-Moody, “Affect as Method: Feelings, Aesthetics, and Affective Pedagogy,” in *Deleuze and Research Methodologies*, ed. Rebecca Coleman and Jessica Ringrose (Edinburgh: Edinburgh University Press, 2013), 79–95.

375. Rickert, *Ambient Rhetoric*, 284.

participatory and engaged methodologies to enrich collective processes of assembly, performance, and change. Furthermore, we attempt to show how drawing an emphasis on collaborativity into digital rhetoric subverts dominant conceptions of what counts as “digital” and when, where, and how our collective digital life emerged.

### **Reading Digital Rhetorics for Decolonization**

The introductory examples provided context for locating collaboration in the context of digital technologies. We extended this in the previous section by using the notion of hybridity to make sense of both collaboration and digital media. Building from these examples and definitions, digitality itself emerges as an ideal technical context from which to examine and extend rhetorical theory and praxis, from its ancient connection to bodily metaphor (fingers as digits) to its contemporary discourses of electracy, interconnection, and participatory reworkings. And yet techniques for practicing and theorizing digital rhetoric at times obscure long-running perspectives on the digital and the rhetorical while simultaneously reinscribing problematic cultural divides. For example, theoretical perspectives that emphasize the vibrancy of electrical systems<sup>376</sup> or digital technologies at times draw on Indigenous knowledge systems and spiritualities as a conceptual shortcut to emphasizing the vitality of matter. For example, accounts of experiences with personal electronic devices may suppose that “we become a kind of co-living agent when using a touchscreen device . . . Like the Shaman and his or her drum, the two become alive, reverberating so that another world can come into being.”<sup>377</sup>

Although the imagery of shaman-drum interaction is visually powerful, this visual power impacts the groups whose knowledge practices at times become co-opted as a matter of course in theory-building. This matters in particular on a continent (North

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376. Bennett, *Vibrant Matter*.

377. Sean Morey, *Rhetorical Delivery and Digital Technologies: Networks, Affect, Electracy* (New York: Routledge, 2016), 187.

America) where settler military and capitalist forces produced and continue to drive digital computing forward.<sup>378</sup> These same imperial and capitalistic forces continue to impact ongoing collective striving between Western and Indigenous groups that persist. Thus, if there are ways for us to theorize and work with the vitality of digital systems and their material rhetorics without resorting to cultural taking, what emerges in response may be collectively enriching. The result might instead be a cross-cultural *making*, drawing on the contaminations that unfold in agonistic assembly grounded in both collective disagreement and affectability owing to key matters of concern.

Theorizing digital rhetoric from this perspective can be both critical and hopeful, a productive response to the capitalistic extractive ethos that has become so deeply embedded in digital culture.<sup>379</sup> We may accept

whatever hope capitalism has to offer, but as a next step we argue that capitalism does not even manage to distribute this kind of truncated hope evenly amongst the population. So not only does it withhold joy, but it actually doesn't even give hope to people in an equal manner . . . there is a greater ethic in life, the ethic of joy, which is the basis of a far more radical critique of capitalism.<sup>380</sup>

In the context of cross-cultural and collaborative striving, there are historically-contextual theories of digital media available can honor the materiality of Indigenous knowledge and cultural artifacts and contribute to developing participatory digital rhetorics.

Such theories can build from specific accounts of the unique materiality of non-Western cultural artifacts and knowledge systems. One example is the work of Angela Haas, who

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378. David D. Clark, "The Design Philosophy of the DARPA Internet Protocols," *Computer Communication Review* 25, no. 1 (1995): 102–111.

379. Gómez-Barris, *The Extractive Zone: Social Ecologies and Decolonial Perspectives*.

380. Mary Zournazi, *Hope: New Philosophies for Change* (Annandale NSW: Pluto Press Australia, 2002), 152.

traces a counterstory to Western claims to the origins of hypertext and multimedia by remembering [for example] how American Indian communities have employed wampum belts as hypertextual technologies—as wampum belts have extended human memories of inherited knowledges through interconnected, nonlinear designs and associative storage and retrieval methods—long before the “discovery” of Western hypertext.<sup>381</sup>

Haas describes how the “‘history’ of hypertext is a Western frontier story.”<sup>382</sup> By contrast, for Haas a more appropriately nuanced starting point is with hands and the writing they do, as the Latin *digitalis* can refer to encoding information via the fingers. This perspective can provide a common framework for developing digital rhetorical theory that is at once historically contextual, bodily performative, and open for definition and production by those from a multitude of cultures and their diverse forms of rhetorical practice. For example, if the ways that we convey information through the hands is what capacitates digitality, then the sphere of the digital can include interactions with keyboards and pixel-based screens, diverse forms of writing,<sup>383</sup> basket- and wampum-making, communication through gesture-based forms of language, and a broader milieu of bodily practices that produce knowledges and their attendant artifacts.

Digitization—the effort of hands and electrons that exceeds their immediate materials—matters for rhetoric because it allows us to encounter a vibrant animacy of rhetorical objects and helps locate those objects within an immanent historical and material meshwork that requires a constant accounting for the ethical implications of our—and others’—actions. This is the source of digitality’s strength as well as its contingent precarity. In a rhetorical sense, there is an ethics of entanglement here because

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381. Angela M. Haas, “Wampum as Hypertext: An American Indian Intellectual Tradition of Multimedia Theory and Practice,” *Studies in American Indian Literatures* 19, no. 4 (2007): 77.

382. *Ibid.*, 82.

383. Brooks, *The Common Pot: The Recovery of Native Space in the Northeast*.

“discourse *matters*”<sup>384</sup> in its materiality and because its “practices produce, rather than merely describe, the subjects and objects of knowledge practices.”<sup>385</sup> In this broadly material and embodied conception of digital rhetoric, digitality points to the abstract codes and concrete compartments—bits and bodies, figures and fingers—that serve as the intimate material foundations of digital life. Furthermore, this material embodiment brings with it a proximity to digital effects *and* affects: what the digital does and how it makes feelings out of form. If digital rhetorics are thus fundamentally *material* rhetorics, tracing this materiality encourages us to seek out where the digital dwells—where data live and die, where bits take bites out of global resources.<sup>386</sup> Doing so leads directly to ethics, which can emerge in the relationships that provide meaning for how we dwell in the world and that help us expand what we can do through rhetoric.<sup>387</sup> In the following section, we extend these points by exploring how digital rhetoric is increasingly important in engaged methodologies that work within, across, and for collectives.

### **Engaged Approaches to Digital Rhetoric**

Community-engaged and collaborative rhetorical research informed our work on the case we describe later in this chapter. As we noted in the above section on collaborativity, difference is fundamental to hybridities that coalesce in response to pressing issues or matters of concern. Difference matters because it produces the intersubjective gaps where rhetorical address can flow. We see this in Kenneth Burke’s description of rhetoric as an urgent call for help that induces movement, as “If you are in trouble, and call for help . . . you are using the primary resource of human speech in a thoroughly realistic way.”<sup>388</sup> For Burke, this realism means that everyone has the ability to

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384. Barad, *Meeting the Universe*, 132, emphasis mine.

385. *Ibid.*, 147.

386. Gómez-Barris, *The Extractive Zone: Social Ecologies and Decolonial Perspectives*.

387. Rickert, *Ambient Rhetoric*; Druschke, “A Trophic Future,” 223.

388. Kenneth Burke, *A Rhetoric of Motives* (Berkeley, CA: University of California Press, 1969), 41.

take part in producing material rhetorics simply by being, by having needs, and by making those needs known. In this sense, rhetorics of potential interest are not limited to those that take the form of masterful speeches or great works of writing but instead become a more mundane, ubiquitous material to which individual and collective action respond. Locating and circulating such rhetorics thus helps contextualize rhetorical fieldwork's traditional subjects and objects to potentially reconfigure their arrangement.<sup>389</sup>

A developing tradition in digital rhetoric scholarship and practice prioritizes responding to real and identified collective needs to craft particular forms of response and support broader capacities for collaboratively producing digital rhetorics. For example, Ridolfo<sup>390</sup> tells a story of becoming intimately involved in the Samaritan community's efforts to preserve and digitally archive some of their most sacred texts. Thus, doing digital rhetorical scholarship means using knowledge production *about* collective practices to actively *support* such practices as a matter of collective striving. Indeed,

the public work of rhetoric might be to support the work of others—to help other people write, speak, and make new media and other material objects effectively.

To be able to support the work of others requires ways of researching, acting, and otherwise performing in communities that are carefully considered.<sup>391</sup>

A notion of rhetorical “others” subtly suggests divisions along lines marked by degree of rhetorical expertise. Approaching the purpose of rhetorical study as an attempt to identify and enrich a set of broader collective forces allows for reciprocal give-and-take among groups involved in producing diverse rhetorics.

Indeed, rhetorical theory and praxis are always already interwoven, as the study of rhetoric is impossible and unrecognizable without the canonical practices that (re)compose, order, and circulate discourse, while the practice of rhetoric has historically

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389. Druschke, “A Trophic Future.”

390. Ridolfo, *Digital Samaritans*.

391. Grabill, “On Being Useful,” 193.

depended on the sustained work of knowledge communities. What Ridolfo's case describes is an urgent need based in the complexities of what he calls a *textual diaspora*, which describes how texts move and circulate from their points of origin. For Ridolfo, "Situating texts in diaspora and their digital potential involves thinking about the changing rhetorical goals and the particular objectives of cultural stakeholders."<sup>392</sup> Thus, texts are active as markers of communal experiences and archives become expansive sites of engagement, conflict, and meaning making. Texts and their archives together become "intricate hybrids, . . . constantly mixing and exceeding each other."<sup>393</sup>

What is useful about engaged digital rhetoric projects is that the notion of which communities consist of rhetoricians—or those are "doing" or "making" rhetoric—is broadened, thereby widening the scope of who or what can contribute to the ongoing development of rhetorical theory and praxis. For example, Grabill's work on community-engaged rhetorical methodologies emphasizes how "the study of the rhetorical . . . is the study of particular kinds of associations that are actively created and re-created. The rhetorical is and creates particular kinds of connections."<sup>394</sup> One of the projects that Grabill describes is the formation of a community media center in Lansing, Michigan, work that intends to reveal and contribute to how members of this city use information technology. This constitutive work "requires argument, the establishment of an exigency in 'the community' . . . we had to assemble [the center], and that assembly is a rhetorical practice."<sup>395</sup>

Writing and composition do not dissolve or become irrelevant in such efforts. By contrast, they highlight the locations and processes of collective rhetorical assembly and the potential tensions and related opportunities involved in pursuing solutions. Thus,

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392. Ridolfo, *Digital Samaritans*, 4.

393. Here, de la Cadena, *Earth Beings*, 145 also draws on the work of Achille Mbembe to remind us that any account of an archive must also describe the archive content's materiality and temporality.

394. Grabill, "On Being Useful," 195.

395. *Ibid.*, 199.

composition as a technical practice becomes enmeshed with community-building in important ways, and it can be valuable to adopt “a view of composition as a collaborative activity that engages multiple means of production and that occurs within digital networks that provide broad opportunities for publication and circulation.”<sup>396</sup> In other words, practicing collaborative digital rhetoric means asking, for example, who and what is made to write and *for whom*. Given the expansiveness of discourse-in-material-form, digital rhetoricians require ways of charting these material flows, as well as actively capacitating and reworking them.

Building from the examples above, we can see how in recent years the field of rhetoric has gained a collection of texts that explicate methodologies of visual digitality toward the creation of new methods. Of these, Laurie Gries’ approach<sup>397</sup> may be one of the most methodologically rich, as it theorizes the new materialisms of media ecologies from the creative but grounded realm of her empirical media research. In her words, “in addition to embracing a rhetorical ecological model, we must develop new research methods that can empirically account for the distributed, contingent, and contagious process of visual rhetoric.”<sup>398</sup> Through this work, Gries conceptualizes and operationalizes both new materialism and rhetorical ecology from an active theoretical domain of visual circulation, and she explains how doing so lets us think “ecologically about visual matter from a new materialist perspective [which] is useful . . . as it pushes us to disclose the messy lives of those visual things with which we are intensely interconnected and via which collective life is co-constructed.”<sup>399</sup> Although Gries extensively describes the participatory digital and visual cultures that her iconographic tracking traces, there are

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396. Douglas Eyman, *Digital Rhetoric: Theory, Method, Practice* (Ann Arbor, MI: University of Michigan Press, 2015), 95–96.

397. Laurie E. Gries, *Still Life with Rhetoric: A New Materialist Approach for Visual Rhetorics* (Louisville, CO: University Press of Colorado, 2015).

398. *Ibid.*, 16.

399. *Ibid.*, 58.

opportunities for also drawing the visual or digital rhetorician further into membership within such communities of practice and production.

For example, Gries advocates for initial research stages of “data hoarding” and categorization while holding off interpretive description as long as possible to allow “a researcher [to] resist drawing conclusions before the data-collection phase has been completed and specific transformations and collective activities reveal themselves.”<sup>400</sup> As the case example below describes, these phases can indeed be important for a robust post-hoc analysis of distributed visual rhetorics. In cases of collectively engaged digital rhetorical projects, holding such phases temporally distinct from each other may reinscribe causal notions of rhetorical interpretation as a linear process. Centering the work of archive formation in a single analyst may preclude a broader network of actors from shaping archival design and potential use. Concentrating the act of interpretation as a later research stage undertaken by a single analyst may close off access to the materials and insights this process co-produces with the community who engages in producing texts and who could directly benefit from having these materials circulate more freely.<sup>401</sup> Digital rhetoric might thus not merely characterize but better circulate among such communities of practice, requiring an account of how these communities actively capacitate the possibilities for us to do our work.

One example of such an effort is not distinctly rhetorical in a strict disciplinary sense, but is nonetheless valuable for the case example below. The Karrabing Indigenous Corporation is an Aboriginal Australian art and media collective formed as “an explicit rejection of state forms of land tenure and group recognition”<sup>402</sup> by developing

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400. Gries, *Still Life with Rhetoric*, 100.

401. The key qualifier here is “more,” as we found early in our work on the key case that participants needed to have access to these materials but this created complications for ensuring appropriate ways of protecting these data. Working through these complications became an important cross-cultural learning process.

402. Elizabeth A. Povinelli, *Geontologies: A Requiem to Late Liberalism* (Durham, NC: Duke University Press, 2016), 25.

a constant improvisational relationship to late liberal geontology. It continually probes its forms and forces as it seeks a way of maintaining and enhancing a manner and mode of existing. And it exists as long as members feel oriented and obligated to its projects.<sup>403</sup>

These projects to date have included producing films and geographic information systems-based augmented reality. As the Karrabing Indigenous Corporation describes, its productions strive to show how “the everyday nature of Indigenous struggles to maintain a contemporary relation to each other and their land is constantly punctuated by the state.”<sup>404</sup> This example demonstrates how, as the available means and modes of media persuasion diversify, Indigenous communities remain fully capable of transforming themselves through “diverse and creative hybrid systems that build on traditional ways of knowing, and take advantage of windows of opportunity in a rapidly changing world.”<sup>405</sup>

Using digital media to advance such efforts further nuances existing notions of who does the work of public rhetoric, for whom, and in what assemblies and arrangements.<sup>406</sup> Rhetorical engagement through the digital humanities can refer to the intentional and ongoing work of knowledge communities to produce and sustain culture on their own terms. In this section, we attempted to mark some of the possibilities for engaged digital rhetorics to join with other knowledge practices in collective response to the contemporary and complex dynamics of life impacted by colonization. Digital rhetoric practices and theories increasingly emerge from collective efforts to communicate complex matters of concern and highlight the responsibilities for ethically interpreting and engaging in these matters. To this end, returning to Burke’s supposition, a call for help—or, taking Berkes’ point, a call to become more hybrid—can be precisely the kind

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403. Povinelli, *Geontologies*, 25.

404. Vivian Zihlerl, “Karrabing Film Collective ‘Wutharr: Saltwater Dreams’,” *Vdrome*, June 2016, accessed January 12, 2020, <http://www.vdrome.org/karrabing-film-collective-wutharr-saltwater-dreams>.

405. Fikret Berkes, *Sacred Ecology* (New York: Routledge, 2018), 276, emphasis mine.

406. Grabill, “On Being Useful.”

of material engagement incipient to producing digital rhetorics for collective reconfiguration. The forms of help or hybridity that emerge in response emphasize a distributed ethic of engagement. Next, we present a case where the opportunity for advancing participatory digital rhetoric emerged in response to collective needs identified through a call to become more hybrid. We advanced this project in response to issues we identified in Chapter 2, extended in Chapter 3, and further developed in this case to continue contextualizing the potential role of engaged digital rhetoric in recomposing community connections for decolonization.

### **Complexity Casework: Threads from an Engaged Digital Rhetoric Project**

Here we draw directly from our unfolding community-engaged digital media project that builds from the context of the previous two chapters. This case emerges from community connections built between Future of Dams researchers and members and employees of the Penobscot Nation. This emerging collaboration offers ways of putting scholarship to work differently and in service of contributing to the development of novel connections that might make a difference for decolonizing digital life. When engaging around the media discourse analysis and Penobscot Restoration case study, Future of Dams community partners in the Penobscot Nation described an interest in collaboratively developing an expanded library of visual media materials to document and share the efforts of staff in their water resources program as they monitor the water quality of the Penobscot River. Given the Nation's 10,000-year history here and thus contextualizing these scientific efforts as themselves a form of resilient care for the river in the face of hardship, this invitation opened another avenue for joining rhetorical scholarship with these care practices.

In Chapter 2, we identified discursive patterns around the Penobscot Restoration that emphasized the Penobscot Nation's cultural contributions while de-emphasizing its sustained and comprehensive scientific monitoring. As Penobscot Nation research

partners stressed in the cross-cultural dialogues advanced in the second chapter, these reductive characterizations render less visible the ways they are actively adapting to the conditions of pollution and jeopardized treaty rights by committing substantial resources to scientific monitoring as a way to demonstrate sustained care for this waterway often described in familial terms. These concerns come into sharp focus when considering how the Nation's Department of Natural Resources' (DNR) Water Resources Program produces science that is so rigorous and of such high quality that state and federal environmental bureaus routinely depend on its data to accurately characterize the material conditions of the watershed in a temporally and spatially nuanced way. In response, since Spring 2018 Future of Dams researchers and DNR employees have been working to develop an approach to documenting the department's science through digital media to support broader outreach and engagement activities that may help contribute to a richer and more nuanced public understanding of the Penobscot Nation and its role in conservation science.

This approach has come to involve a team of Future of Dams and University of Maine photographers taking part in routine trips through the Penobscot River Watershed during which DNR employees sample water quality and perform other conservation activities. In particular are the water sampling trips, a cornerstone of the DNR's scientific contributions during which staff collect samples of river water and statistics on its conditions from a range of geo-tagged sites to trace pollution levels and a range of other environmental health criteria over time. Photographers take turns accompanying DNR staff on these trips to document a variety of sites, processes, and staff members involved in this significant effort. In practice, this means waking up at early hours one or more times a week to match the hours worked by DNR staff, riding with them in their vehicles to and along the river, staying with them at the office as they process water samples and prepare for the following days' work, and documenting what occurs through photographs,

body-mounted video cameras,<sup>407</sup> and field notes. Upon returning to the sites where rhetorical analysis and writing typically occurs (i.e. computers in offices, coffee shops, and homes), we processed and cataloged these materials in a growing archive. We kept track of where and when each piece of media was recorded, who appeared in each, what other visual matter could be found in the piece, the formal aesthetic quality of the media, and other variables. Based on the DNR's needs to be able to use these materials to extend their community service and public outreach efforts, we also developed tools for parsing and querying this database so that media materials are easy to find, access, and reuse.

This process involved developing methods for gathering visual media, organizing these media, linking them with environmental science data, collectively managing how to use and distribute the media, and working to collaborate across cultures, institutions, and disciplinary domains throughout. Through this process, some methodological and theoretical threads are coming together as a reflection of these processes and what is emerging when we use digital rhetoric methods as a mode of restorative praxis in Indigenous territory. We called this project by multiple names, including the *Penobscot Media Documentation Project* (PMDP) and the codename *Potamcam* (a portmanteau of the Greek *potamic* meaning “river-based” and the abbreviation *cam* for “camera”). In the introduction we also began to explore how the project's naming fundamentally shifted after the work was already underway. Renaming the effort to “Awihkhikéhtaso” matters for what our collaboration came to mean, so we use this name moving forward and explore its impact in more detail below.

What follows is a deeper look at what emerged from the case of Awihkhikéhtaso to locate what engaged digital practices are contributing in response to pressing needs. We identify three interrelated threads, each building on the previous to show what is emerging and how it might matter for broader engaged digital rhetoric theory and praxis. First, we

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407. Quiring, McGreavy, and Hathaway, “Affective Encounters.”

describe group collaborative processes and collective procedural refinements to explore this engaged digital rhetoric project's emerging ethics. Next we overview how these processes and procedures enabled certain ways of seeing scientific production, its apparatuses, and its products by connecting visual media texts with environmental data. Finally, we describe how naming was important to the project and how the names we used throughout the collaboration and writing led us to a new name that prioritized this work's unique context and visual-compositional qualities. Together, these threads begin to show how decolonizing commitments can inform digital rhetoric and how this matters for ongoing engagement and praxis.

### **Procedural Digital Ethics**

As we described in the previous chapter, there are many possible origin stories when it comes to collaborations such as the Penobscot Restoration, and this is the case for Awihkhikéhtaso as well. The project builds from historical engagements that provide different ways of conceptualizing its beginning and emergence. The common thread is that beginning to visually document the Penobscot Nation's environmental monitoring was identified as a need and possibility because of the Penobscot Nation's and its DNR's substantive contributions to Future of Dams research. We described these contributions in the previous two chapters, and as part of the previous chapter's emphasis on shifting to research practices of reciprocity Awihkhikéhtaso became collectively identified as one way that Future of Dams and University of Maine researchers could give back. These facts mattered for the ways the collaboration unfolded and the procedures that we collectively refined over time. This section describes how this process of refinement contributed to practicing a digital ethic of procedurality. By advancing these efforts, Awihkhikéhtaso illuminates some complexities for how participatory digital rhetoric can feel in practice.

One complexity came soon after our Penobscot Media Documentation group established a basic project proposal and began documenting environmental monitoring

and organizing the resulting media materials. In group meetings reflecting on initial efforts and looking ahead to next steps, important questions emerged such as who this archive would serve, who owned and would be able to use its materials, what tensions and commitments might be important to consider as a result of complex histories of nonindigenous people documenting Indigenous cultures, and others. Given the reciprocal focus of the project (involved members providing for each other), we continued to dialogue about whether this archive was working the ways it needed to, whether changes were required, and more fundamentally if the project should go on. In particular, we identified the interests the project could serve, including those of the Penobscot Nation DNR to publicize its efforts and raise awareness about water quality issues and statuses, those of the DNR's employees to either be publicly visualized as contributors or not, those of the Nation to care for its public image, internal relationships, and socio-cultural resilience, and those of academic partners to connect with and learn from these diverse knowledge practices.

These interests, while simultaneously at work, were not necessarily fully compatible or commensurate. This underscores the emphasis in publicly engaged rhetoric on assembly as a process that reveals difference instead of dissolving it.<sup>408</sup> One example of an instructive tension emerged around the question of image distribution. As a key matter of concern for Awihkikéhtaso was limited and limiting portrayals of the Penobscot Nation's science in the public sphere, the prospect of producing and sharing alternative images was a key collective response that led to our collective assembly. This is not to say that the group began in agreement or fully comfortable about the prospect of image sharing. Some group members demonstrated concern about having their images shared publicly, whether due to personal preference, considering potential impacts to the Nation's public image, or lack of clarity around how the process would protect interests.

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408. Grabill, "On Being Useful."

These concerns stood in partial contrast to the assumed interest of media producers to share their work, have the imagery they produce become distributed to an audience, and potentially be credited in the process.

By the end of our first dialogue session in response to these and other tensions, the group reiterated the project's core values—contributing to the tribe and advancing along decolonial lines—while also articulating helpful practices that could support these goals. These included robust practices of disclosing intention and securing consent from all participants each time they were to be imaged in the field. As part of this process, we used digital writing, including note-taking to catalog the insights of all participants, summaries of the interests at work and their tensions, social and technical procedures we developed in response, and communicating the work's process and results.<sup>409</sup> This process grew to include iteratively developing standardized practices for citing and acknowledging all those who appear in or produced the artifacts in our archive. Furthermore, it illuminated the need to request and track permissions of those producing and appearing in the visual media before those media could be shared publicly. These practices informed our ongoing digital archive design and development, as we describe further in the following section.

Thus, in this case iterative dialogue and digital composition became dual components of a developing procedural ethics. These actively-unfolding systems of governance are a constant expression of preference and performativity at all levels of project creation, interpretation, and implementation, revealing how composition itself is a technical practice of assembly that contributes to community-building in important ways. We saw this in the introductory cases of open-source software development, and as Eyman further explains, we can adopt “a view of composition as a collaborative activity that

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409. Christel Peters, “McGreavy and Collaborators Examine Media’s Coverage of Dam Decision-Making in Maine,” *UMaine Research News*, October 1, 2018, accessed January 13, 2020, <https://umaine.edu/research/2018/10/01/mcgreavy-and-collaborators-examine-medias-coverage-of-dam-decision-making-in-maine/>; Nolan Altvater et al., *Converging Traditional and Western Scientific Methods to Highlight Penobscot Sovereignty*, Poster presented at the UMaine Student Research Symposium, Bangor, ME. April 2019.

engages multiple means of production and that occurs within digital networks that provide broad opportunities for publication and circulation.”<sup>410</sup> Procedural ethics means providing these opportunities and taking care with how we pursue and use them through networked community re-production. In the case of Awihkhikéhtaso, procedural ethics is meaningful for collaborativity.

First, a range of institutional procedures can support collective ethics. Although the narrative and the data management statement for the decolonizing IRB application—in Appendices F and I, respectively—were not a formal part of the team’s procedures, these guidelines informed its underlying values and structure. Furthermore, gradually developing media management and sharing procedures through relationship-building and cross-cultural group dialogue had contributed to ethical scaffolding that informed our interactions and decisions. As Quiring helped lead the decolonizing IRB application and the initial process for the media documentation, his decisions had ethical consequences along with those of a community of collaborators. Thus, ethics may emerge as an outcome or result of institutional procedures, a notion in line with classic Western systems and processes such as Institutional Review. Additionally, ethicality itself can be a procedural emergence. As Awihkhikéhtaso team members noted in a 2019 meeting looking back at how the project had grown and what had been advanced up to that point, the process we had collectively developed for participants to give permission for sharing media pieces was worth trusting. It would be conceivable to perform check ins with the full group each time an opportunity for sharing imagery presented itself, although this would slow efforts and place additional burdens on participants to engage in approval processes multiple times. By contrast, accepting that permissions are voluntary and can be revoked underscores and attempts to honor a more emergent and distributed collective responsibility to care for which representations come to be and how these matter. This

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410. Eyman, *Digital Rhetoric*, 95–96.

sense of procedural ethics had increasingly become a key mode of acknowledging and protecting multiple interests on the project, and in turn enabled new ways of seeing phenomena such as the production and products of science, as the following section describes.

### **Visual Media as a Mode of (Seeing) Data**

Awihkhikéhtaso since its origin was concerned with making the scientific efforts of the Penobscot Nation’s DNR more publicly visible. Our hope was that, by taking photographs of work routinely conducted and cataloging these in a systematic way, we could support and streamline efforts to describe this work to other audiences through a common set of systems and protocols. Here, we describe additional technical elements of the processes and tools we used to advance the visual media storage, organization, and retrieval and practice the procedural ethics we identified above. Specifically, over time these processes and tools revealed that engaged digital rhetorics can provide alternative ways of seeing systems and datasets and that there is something materially and discursively expansive about this. This effort further reveals the hybridities that dwell in interconnective practices that support collective assembly to carry forward restoration and hold colonial modes of recognition to account.<sup>411</sup> For example, we connected cloud-based and local digital systems in response to the iterative process refinement we described above, and this form of technical hybridity allowed us to connect across other registers as well.<sup>412</sup>

Hybridity in this sense is *intimately* intricate, and extends to the core of the actions undertaken through collective assembly to reconfigure what individuals and groups are and can become. In the case of Awihkhikéhtaso, this core was both procedural—as described in the previous section—and technical, resulting from digital system design

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411. Povinelli, *Geontologies*.

412. Druschke, “A Trophic Future.”

decisions that emerged from the project's procedural ethics. Quiring helped lead implementing the digital infrastructure for the project in response to collective needs and goals and made initial process design decisions. For example, Quiring consulted with team members and chose to use tools from Google's suite of cloud-based collaborative tools—in particular Google Drive and Google Sheets—to initially store and organize media materials until we could identify better long-term options. We used Google Drive to store the media artifacts in a folder hierarchy we organized according to areas and dates. The DNR's Water Resources Program samples dozens of sites across the Penobscot River watershed, and due to the number of locations and distance between them, these form discrete "runs" that group sites around key water bodies. For example, one run consists sites around the DNR's headquarters on Indian Island north of Old Town, Maine. We created a Google Drive folder for each run, with a dated subfolder for each time that run was photographed as part of Awihkhikéhtaso. In line with the process commitments we described in the previous section, this hierarchy resided in a project Google Drive folder accessible to team members.

We used Google Sheets to catalog the archive so we could identify and retrieve media materials. We used a master spreadsheet as an archive index, with a tabular format where each piece of media had its own a record in a growing list. After each time we documented a run, we added a series of records to the spreadsheet that corresponded to the number of media artifacts produced. These contained fields specifying the run and date as well as the documenter and sampling site for each record, any project participants it featured, and notes on what else it portrayed and any potential issues with visual quality such as over or underexposure, motion blur or lack of focus, or uncalibrated color balance. Importantly, this is also where we tracked usage permissions for media producers and those depicted. If either party agreed to share a particular artifact, they could note this by placing a checkmark in the record's corresponding cell. In cases where both parties indicated agreement, both cells would have a check and this allowed us to automatically

publish approved images. Noting all these elements in the spreadsheet allowed us to sort and filter media materials in many ways, including based on when and where artifacts were produced, who produced or appeared in them, whether there were quality assurance issues noted, whether there was permission to share, or combinations of the above.

To support these sorting and filtering modes, we created a spreadsheet tab that provided a view on the data. We developed formulas to return customized versions of this view based on user-generated queries. For example, a user could return a view of all photographs taken on a certain date by a specific documenter, which had no project participants depicted and for which all relevant sharing permissions had been granted. This functionality was important as our archive grew in size. A typical trip to document sampling efforts produced between several dozen and hundreds of photographs, based on the length of the run, site diversity and activities, and number of media producers involved. As a result, it quickly became a challenge to find any particular media artifact within this broader dataset. The query system allowed us to more efficiently produce lists of images based on dynamic relevance criteria. To further speed up image retrieval, we hyperlinked each record in the spreadsheet to its artifact's location in cloud storage, allowing us to rapidly review the images before final selection.<sup>413</sup>

Beyond the basic elements of Google Drive storage and Google Sheets cataloging, we used a range of other tools, processes, and data to work with the visual media and link them with the DNR's broader environmental monitoring dataset. For example, we wrote a computer script to automatically resize batches of photographs when we brought them

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413. In retrospect, these functions could be better supported by a full-fledged relational database management system (RDBMS). Ubiquitous, powerful, and well-regarded solutions for this are found in technologies built upon Structured Query Language (SQL), a global standard for data storage, management, and analysis that in fact inspired the Google Sheets query functions used in Awihkikéhtaso. As an initial solution our approach worked well enough for our needs, solved the most pressing data management problems, and provided a basis for us to further iterate and refine the approach. Team members are working to extend the dataset functionality to connect with a robust RDBMS.

back from the field.<sup>414</sup> Resizing the images and providing lower-resolution formats in separate Google Drive folders helped optimize accessing the imagery over the Web while still allowing team members to access full-resolution versions as required. Other scripts handled including hyperlinks to the relevant artifact stored in Google Drive and facilitating efficient data entry by presenting images one by one and collecting user-generated information for each related field.<sup>415</sup> We wrote a final script to insert approved images into an online geospatial tool the DNR uses to allow public audiences to view their environmental data alongside the visual media we collected. This script reviewed records to identify those that had been flagged for publication to the online site and publish flagged artifacts if all required permissions had been provided. This process is still in refinement before we use it in production, but we intend for it to support ongoing Awihkikéhtuso imagery publication processes.

These tools are a further expression of the procedural ethics we identified in the previous section. In particular, they provide mechanisms for enabling visual media to circulate in a broader, socially engaged context. In this sense, there is a certain discursive expansiveness to the matter of what constitutes a “good” photograph. There are different ways of aesthetically judging a photograph that correspond to formal and techno-ethical notions of acceptability. For example, noting visual quality assurance information in our archive allows us to prune any photos that potentially fall below an immediate formal standard we envisioned when we cataloged the data. Our practices of creating and cataloging these data allow visual media to accompany water quality data as they circulate through DNR, University, and external communication and outreach practices. Thus photographs, for example, become another form of environmental data, an additional layer

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414. This was important because there is a disparity between the Internet speeds on the University of Maine’s Orono campus and the other sites where our team worked on the project, and this disparate access to bandwidth was constraining our ability to efficiently view and review photographs in their high resolution format. We archived a version of our script here: <https://github.com/tylerdq/img-batch>

415. We wrote these scripts in the Python and Google Apps Script programming languages.

of information that contextualizes the broader socio-material forces that contribute to how we understand something like a watershed's ecological restoration. Collectively producing visual media to support environmental monitoring science can also offer alternative modes of seeing that scientific practice, what contributes to it, and its potential impacts.

As we collected images, the archive itself became an active site of engagement, friction, and meaning-making.<sup>416</sup> Here, we offer one example of this meaning-making to describe what the archive “did” as one of the active elements involved in Awihkhikéhtaso. As we integrated media data into the community database, certain objects and actants seemed to feature more notably when we reviewed the media. For example, one piece of equipment that typically accompanied the DNR staff was a red and black equipment bag labeled with the brand “Husky.” Because the bag contains most of the key equipment needed to conduct the field work, staff have it next to them in the majority of photographs taken en route to the field, moving from vehicles to monitoring sites, and while conducting sampling work. The bag drew attention both in the field and later in reviewing the compiled media. In debriefs about this trend, we discussed how our interpretations amplified the bag's mundane visual presence.<sup>417</sup>

Over time, we began to joke that “Husky” was so prominent because it sought attention, and this joke relied on a vibrant sense of materiality.<sup>418</sup> For example, personifying or anthropomorphizing Husky in this way relies on its material uniqueness that focused attention: the name “Husky” stitched onto the side of the bag in a large logo; the sharp contrast between its red outer material and the greens, browns, blues, and greys of the settings where group members encountered it; and the ubiquity of its presence in the field. Some attention-getting attributes are decidedly *unhuman* as well, as Husky is always in the same pose, appearing in contrast to the organic elements of the scenes where

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416. Quiring, McGreavy, and Hathaway, “Affective Encounters.”

417. McGreavy, “Belonging to the World.”

418. Bennett, *Vibrant Matter*.

we photographed it while also lending visual consistency to each scene and throughout the database. This visual juxtaposition that draws the eye also subtly suggests a boundary among living versus non-living, natural versus unnatural. In the process, it further emphasizes how collective embodied practices of digital rhetorical assembly necessarily become entangled with a broader range of objects within a visual material ontology.<sup>419</sup> This matters for what gets made and for what we see as the outcomes of collaborativity and who these outcomes serve. In this section, we detailed our approaches to producing, organizing, and making sense of the materials in our visual archive, and initial thoughts about what differences these practices make for what we can see. Importantly, we prioritized building tools that could honor our collective procedural ethics and extend this ethos to ensure our digital collaboration was producing useful material.<sup>420</sup> These practices matter for using dialogic practices to also make sense of what these collaborative efforts were producing. This is itself a conditioned return to the project's core needs and values, as we describe next.

### **Letting the River Lead: Naming as Navigation**

Here we describe how working with the Penobscot River and following its flow contributed to ongoing shifts in collaboratively producing digital rhetorics in this place. In particular, naming became an important form of collective reconstitution in ways that honored both the rootedness of digital rhetoric in composition practice and study as well as the unique territorial and cultural context of the Penobscot River and Nation.<sup>421</sup> As we mentioned above, naming this engaged effort was a tricky matter. Drawing in part on the naming convention for a previous engaged digital media rhetorical project,<sup>422</sup> Quiring

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419. Gries, *Still Life with Rhetoric*.

420. Grabill, "On Being Useful."

421. Vanguri, *Rhetorics of Names*; Barnett, "Naming, Mourning, and Coexistence"; Seed-Pihama, "Naming Our Names."

422. Quiring, McGreavy, and Hathaway, "Affective Encounters."

suggested using *Potamcam* as the initial codename for this effort. Because this name has its roots in a language foreign to this place (Greek), we identified a goal early in the project to work toward a new name. The purpose for doing this was to emphasize both what is unique about the project and the context that produced it. As a placeholder, we identified another temporary name: *the Penobscot Media Documentation Project*. This name came with its own issues, such as being overly generic (Awihkikéhtaso practitioners are not the only group producing media in this place or related to the Penobscot) and lengthy. Furthermore, this alternative name was also written in a language foreign to the place (English), and thus a colonial vestige instead of a way to further materialize of the project's aims. We opted to use these two names as placeholders and continue searching for a new name that could potentially solve some of these issues. As a result, revising the project's naming became a long-term focus for our collaboration and the malleability of naming helped us navigate some of the complex dynamics at work in this context.

Over time and as the case study approach we described in the previous chapter also advanced, we continued to use cross-cultural group learning dialogues to identify and describe what was meaningful about the project. This emerged from a collective desire to find a more permanent name that could also reflect and honor the Penobscot Nation's perspective and language. One form of group dialogue that informed this process included meetings with tribal elders and language keepers to explore a range of topics. These topics included the historical relationship between the river and the Nation and how to honor these lands and waters of the region as well as the stories these materials capacitate. In this process, we dialogued about the possibility of identifying a name for the project, considering our goals of bringing visual and digital composition practices to bear on limitations in patterned representations of the Penobscot Nation's culturally-enriched science. These themes became the subject of continuing subsequent conversations, and eventually we identified a word that served our goals of honoring the Penobscot territory and language, advancing visual rhetoric in response to pressing community needs, and

using writing and digital rhetoric to link and circulate these aims. The result was the word *awihkhikéhtaso*, a word with a root shared across Wabanaki language<sup>423</sup> and which in Penobscot means “it is made to write; it forms a figure or inscription.”<sup>424</sup>

The word emphasizes the visuality of the project’s rhetorical work and links this visuality with the embodied materiality of digital rhetoric as a compositional practice. Furthermore, it does this by drawing directly on Penobscot, an active and verb-based relational language co-developed with a rich material ecology of history, culture, science, and inter-generational information transfer. As a result, *awihkhikéhtaso* became important for understanding digital and visual rhetorics already based in Penobscot culture instead of insisting on theorizing and enacting these forms of engaged scholarship through Western constructs and perspectives alone. Furthermore, this name emphasizes the expansive materiality of composition as a collective rhetorical practice. Being made to write means writing with a purpose and being guided toward that purpose. In doing this inscription, we form figures.

*Awihkhikéhtaso* as a digital rhetoric project was *made to write*, intended to produce new forms of representation and rhetorical arrangement as a matter of further restorative praxis in the Penobscot River Watershed. This emphasizes the productive ethic of an effort like *Awihkhikéhtaso*, as the project was born out of calls for supporting the DNR’s Water Resources Program’s public image in ways that mattered for the Penobscot Nation and the other societies with which it interacts. The case of *Awihkhikéhtaso* reminds us that the figures we formed through digital rhetoric matter, and not merely to rhetoricians, but principally and in materially crucial ways to the communities that capacitate and make the work of engaged digital rhetoric possible.<sup>425</sup> In this sense, being made to write means responding to urgent needs that we may identify rapidly or gradually

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423. Brooks, *The Common Pot: The Recovery of Native Space in the Northeast*.

424. Penobscot Dictionary, “*awihkhikéhtaso*,” 2015, accessed February 2, 2020, <https://penobscot-dictionary.appspot.com/entry/6415212798279680/>.

425. Haas, “Wampum as Hypertext.”

yet that are urgent nonetheless: needs to assemble and compose again, differently, and in relation to matters of concern that bring together groups in and across difference.

### **Conclusion**

Our opening case examples demonstrated frictions that bubbled over in collaborative open-source software development practices. These cases matter in part because they illuminate some of the complexities that emerge in collaborative labor to produce and refine digital systems, and also because the materiality of these specific digital systems continues to shape the flows of interconnected digital life, including the digital assembly of efforts like Awihkhikéhtaso as a form of collective composition. We can think of collaborativity as an embodied, mediated milieu within which collaborations occur. Approaching collaboration and mediation as forces that are by turns both complementary and agonistic emphasizes hybridity, or mixtures of elements that revise each other. This matters for recognizing how Western theories often appropriate Indigenous cultural and knowledge systems, which emphasizes the need to advance image, writing, and software development through practices that seek to connect across realms of difference instead of extracting difference for cultural consumption.<sup>426</sup> In this hybrid form of collective production, building theory and digital systems is grounded in engagements with those communities for whom the work matters the most, and in our case this includes the Future of Dams and in particular the Penobscot Nation's Department of Natural Resources' Water Resources Program. The idea is to support ongoing cross-community contribution in ways that are just and sustainable for all. In response, a reciprocal approach to engagement in and through digital rhetoric emphasizes collective assembly as a process of coming together in difference.<sup>427</sup>

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426. Gómez-Barris, *The Extractive Zone: Social Ecologies and Decolonial Perspectives*.

427. Grabill, "On Being Useful."

Collective assembly is not a dissolution or erasure of difference, but instead becomes a collection of differences as a function of common material investment in a matter of concern—such as the portrayal of Indigenous science—that has become of fundamental importance to participants. In this sense, differences become important not because those assembled around a matter of concern necessarily agree on what the matter fundamentally is or what the response should look like, but because they are differentially accountable to each other owing to their uniquely situated material interests in the matter of concern. We called the project in our extended case example Awihkhikéhtaso. This naming was itself an expansive outcome of collectively engaged rhetorical response. As Brooks relates, “The word *awikhigan* has come to encompass a wide array of texts, and its scope is still expanding. It has proven to be an adaptable instrument.”<sup>428</sup> Using our technical, linguistic, and collaborative instruments, difference created both the need for and possibility of cross-cultural dialogue that allowed us to expand our digital techniques and tools so we could better respond together to the pressures of polluted waters and problematic media portrayals.

Although community-engaged rhetorical work matters for the kind of ongoing commitments that we can make in collaborative digital efforts, it is not the only thing that matters. Histories, relationships, and a range of differential needs and interests also matter for how we can collectively assemble and produce knowledge. Because of this, all those engaged in digital rhetoric projects have the grounds to ask whom the materials that are being generated will serve, and this question can guide developing procedures and structures that in turn balance the disparate but connected interests involved in engaged rhetorical work. These outcomes grow from already-linked histories and material rhetorics and resulting contingent encounters that allow for alternative ways of accounting for the connections in place and that are possible to reorganize. Thus projects such as

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428. Brooks, *The Common Pot: The Recovery of Native Space in the Northeast*, 219.

Awihkhikéhtaso as we have described it are made possible by and composed of differential interdependencies. As one example of what can unfold in response to community-identified need and resulting collective assembly, Awihkhikéhtaso has supported the continued refinement of engaged digital rhetoric theory and praxis. In the process, it demonstrates that being made to write can become a conditioned and revitalizing practice in response to digital rhetorics that may thread into decolonizing efforts that attempt to form alternative cultural figures through collaborative inscription.

## CHAPTER 5

### CONCLUSION

#### Introduction

The Penobscot River shaped the flow of life, culture, industry, knowledge, collaboration, and rhetoric in its watershed for thousands of years. What difference does it make to frame the flow in this way versus one of humans as the sole agents? What does a river help us become, and in what forms of relationship to each other? The chapters in this dissertation are fundamentally indebted to the Penobscot River as a vital and gathering force for engaged rhetorical work. “The river, however,” writes H. W. Herendeen, “is not all things to all people. The ideas and motifs it carries in its current are clearly related, but ultimately they are finite and have a common source and outlet.”<sup>429</sup> Thus, the river provides a common-place<sup>430</sup> where differences come together and heterogeneous communities and forces entangle. Yet if, as poet Wendell Berry writes, “the river is a place passing // through a passing place,”<sup>431</sup> this common-place is fundamentally unstable and constantly in temporal-spatial motion. Rivers show us how to endure, in flux.

This dissertation begins to provide some ways for linking flows of knowledge and action to explore these dynamics. It uses multiple approaches to understand and inform decision making about dams and restoration through engaged rhetorical research. To bring these forward, this conclusion draws together insights to identify linkages across the chapters, reflect on the multiplicity and hybridity of engaged rhetorics, and look ahead to further opportunities for research and decision making. The previous chapters show that

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429. W. H. Herendeen, “The Rhetoric of Rivers: The River and the Pursuit of Knowledge,” *Studies in Philology* 78, no. 2 (1981): 108.

430. Druschke, “Watershed as Common-Place.”

431. Wendell Berry, *This Day: Sabbath Poems Collected and New 1979-2013* (Berkeley, CA: Counterpoint, 2013), Kindle edition, loc. 688–289.

advancing rhetorical ethnography in this place through multiple methods over time relied on contact between various knowledge communities, each with their own needs for and interests in this research. In particular, these communities included the Future of Dams project team and the Penobscot Nation. In producing research for and with these communities, the studies I presented in this dissertation are each exercises in adapting research to real needs as well as the contingencies of engaged and iterative praxis. Together, they show that bringing diverse approaches, forms of knowledge, and methods to a particular geographical and topical context expands what we can learn through engaged rhetorics.

In the next section I explore how rhetorical ethnography can be a way of drawing insights across these different engaged methods. Then, I explore what we get by learning from restoration through this methodology, looking back on how each chapter engaged restoration as a phenomenon and how thinking about these through an overall framework of rhetorical ethnography shows us the symbolic and material generativity of the concept and practice. Then, I identify how further research can build on this work to continue serving diverse communities in this place and other places. This research and its insights are highly context-dependent, yet this context-dependency is a theme broadly applicable to many engaged research contexts. In the last main section, I reflect on my experiences with decolonizing research and outline some of my practices that supported this work and that others seeking to do similar work in the future may wish to adopt. Finally, in the concluding section I offer thoughts toward synthesis by returning to our ecology and identifying how rhetorical research and restoration are ecological practices that help us understand and reconfigure our inherent interconnectedness.

### **Linking Sites and Methods Through Rhetorical Ethnography**

This dissertation used multiple methods to understand and inform decision making across communities of knowledge and praxis that are collaborating to advance restoration

in the Penobscot River Watershed. Furthermore, the previous chapters describe the Future of Dams, the Penobscot Project, the Penobscot Nation, and Awihkikéhtaso as various collaborative sites of study. They are also sites for noticing how the rhetorics of restoration unfold. Given these layered and intersecting situations, contexts, practices, and approaches, how can we draw broader insights to make sense of these rhetorics? The introductory chapter overviewed key foundations and features of rhetorical ethnography to set up the research in the core chapters. In particular, it established that rhetorical ethnography is a critical, performative, in-situ research practice that brings rhetoricians into field sites and relationship with a host of rhetors linked ecologically.<sup>432</sup> Here I extend that framing to explore what emerges when we use rhetorical ethnography as a practice of connecting knowledge and praxis across multiple sites and methods to understand and shape needs for socio-environmental justice.<sup>433</sup> Rhetorical ethnography and decolonizing research emphasizes how our research has ethical stakes.<sup>434</sup> In particular, what happens when we link multiple rhetorical ethnographic methods to engage in and understand our field sites?<sup>435</sup> What rhetorical and epistemological difference does it make to bring together multiple engaged rhetorical methods to understand and inform collaborative decision making about dams and river restoration?

The core chapters in this dissertation show that when rhetoricians keep their focus on a specific geographical and collaborative context but use a flexible set of engaged methods to work across various modes of difference, unforeseen possibilities emerge. Taken together, these distinct studies demonstrate how rhetorical ethnography “not only offers a method that requires the researcher to inhabit the places of rhetorical production,

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432. Hess, “Critical-Rhetorical Ethnography”; Middleton, Senda-Cook, and Endres, “Articulating Rhetorical Field Methods”; McHendry et al., “Rhetorical Critic(ism)’s Body”; Middleton et al., *Participatory Critical Rhetoric*; Rai, *Democracy’s Lot*; McGreavy et al., *Tracing Rhetoric*; Rai and Druschke, *Field Rhetoric*.

433. Pezzullo and Onís, “Rethinking Rhetorical Field Methods”; Malin and Ryder, “Deeply Intersectional Scholarship”; Raphael, “Engaged Communication Scholarship.”

434. Salvador and Clarke, “The Weyekin Principle: Toward an Embodied Critical Rhetoric”; Sutton, “Farming, Fieldwork, and Sovereignty”; Quiring, McGreavy, and Hathaway, “Affective Encounters.”

435. Rai and Druschke, *Field Rhetoric*.

but also provides a genre robust enough to represent the complexity of such places.”<sup>436</sup> Furthermore, these places change as the work of ethnography unfolds, so adapting research methods to these needs is a challenging but valuable practice. The challenge grows from the coordinative complexity of linking knowledges and insights that are themselves in flux as a project develops and finding ways for the research to remain recognizable as it adapts to contextual changes. The value grows from honoring both of these challenges, as “the rhetorical is and creates particular kinds of connections.”<sup>437</sup> The multiple relational connections that structure and shape this research show that bringing multiple methods to understand and inform decision making about dams and rivers can expand and deepen what we can know about and do with our ecological embeddedness.

Rhetorical ethnography and engaged rhetorical methods also encourage us to consider research texts as expansive objects and ecological occurrences. Instead of texts being the “mere” data that rhetoricians organize and process, text here refers to artifacts that are themselves active things, reconfiguring the possibilities for research and relationality. In this approach, text “does not only constitute the recording of speech; rather, the text has become something living, breathing, and operating within unique spaces and received by particular audiences.”<sup>438</sup> The core chapters in this dissertation show that we can take this quite literally. In the chapter on the media discourse analysis, media texts circulated with unique geographic and temporal spaces and various audiences, both in their original production and in the analysis that drew on these texts to situate possibilities for further decision making. In the chapter on the Penobscot Restoration case study, research texts such as interviews revealed the need and opportunity for crafting new approaches to research in this place and with community partners. The framework and analysis in this chapter show that texts are embodied phenomena and that participants’

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436. Rai, *Democracy's Lot*, 41.

437. Grabill, “On Being Useful,” 195.

438. Hess, “Critical-Rhetorical Ethnography,” 130.

unique situated perspectives and stories materially capacitate what is possible through research and relationship. In the chapter on Awihkhikéhtaso and engaged digital rhetoric, texts are also ecological as collaborative procedures, visual images, and naming practices all develop in relationship over time and reconfigure each other. These examples illustrate how ethnographic texts

help us see, study, and, if so inclined, intervene within the places of invention . . . write-ups of rhetoric-in-action can increase our capacities to recognize, trace, and respond to the available means of persuasion present within a fieldsite that are rendered visible by the ethnographic text.<sup>439</sup>

In this way, these chapters together show that in a rhetorical ethnographic approach, texts, bodies, and their relationships operate reciprocally. They push and pull each other and continually layer possible meanings, knowledges, actions, and decisions.

If the sea of texts, bodies, and relationships we encounter in engaged rhetorical work is always in motion, what does coming back to these places of invention through rhetorical ethnography do for what we can collectively learn? In this dissertation, a rhetorical ethnographic approach helped enmesh three related research efforts across multiple field sites to situate and anchor insights. Using media discourse analysis to locate the evidence for a broad set of discursive practices helps attune collaborators to what has been done through and said about restoration, and what tensions emerge as a result of this process in collaborative contexts like the Future of Dams and the Penobscot Restoration projects. With this method, we can see and understand rhetorics through textual artifacts, an experience that provides a common basis for collectively interpreting and critically re-interpreting how we understand dams, restoration, and collaborative decision making. Ethnographic case study research informed by this approach provides opportunities for following and becoming further enmeshed in the contours of collaborations that we can

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439. Rai, *Democracy's Lot*, 20.

glimpse through engaged rhetorical methods. In the case study, University and Indigenous communities were already entangled in productive frictions and so restorative ethics became about drawing on these intermingled relationships to advance and nuance institutional procedures for decolonizing research. Awihkhikéhtaso drew on and extended this work across these two interconnected cultural sites with reciprocal fidelity that helped align university activities in response to tribal needs.<sup>440</sup> As the third chapter shows, being willing to configure research in response to long-running geopolitical complexities allows for productive reciprocation across communities of knowledge and praxis. Crafting engaged digital rhetorics as one form of subsequent collective response further illuminates what we can learn from these engaged practices. Through a willingness to link tools and various forms of cultural inscription, we can come to new understandings about what we are trying to achieve with cross-cultural collaboration and what difference the stories we tell and names we choose make for what we can collectively see about our histories and enmeshed experiences.

In this section, I explored how rhetorical ethnography can be a methodological framework for multiple engaged studies that together provide ways of making sense of rhetoric and action around phenomena such as river restoration. This helps draw out what these studies uniquely show as well as how they are ecologically linked and what they collectively contribute to cross-cultural and community-engaged research. It is also important to consider what we can understand about the rhetorics of restoration when taking a rhetorical ethnographic approach and how, like rivers, restoration operates as an

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440. Sutton, "Farming, Fieldwork, and Sovereignty," 337.

expansive practice and rhetorical phenomenon yet one that draws differences together, as I describe next.

### **Reconsidering the Rhetorics of Restoration**

The chapters in this dissertation each explore the phenomenon of river restoration through unique methods. As I discussed in the previous section, we can use rhetorical ethnography to link these methods across various community sites within a specific geographical context through connective practices that allow us to understand and inform collaborative river restoration praxis. Here, I explore how consistently engaging with restoration as a phenomenon across each core chapter highlights its expansiveness and rhetorical generativity as a guiding force for research. Showing up in this place in multiple ways over several years allows for gradually composing research that aims to be adaptive, engaged, and collaborative. Like rivers and restoration practices, there is something both continual and fluctuating about this work that carries forward ancient patterns into new arrangements.

Over time and through multiple engaged rhetorical ethnographic methods, continuing to show up with the Penobscot River, its discourses, and its peoples opened ways of appreciating multiple bodily and rhetorical modes of thinking, feeling, and moving with water. Media discourse analysis, case study, and digital rhetoric each provide ways of orienting to these vital materials and understanding restoration uniquely. Bringing a critical perspective to news media reveals how restoration operates in discourse and how the possibilities for action are enabled and constrained by an emphasis on ecological reconnection as an outcome to be achieved. Here, technical and social successes simultaneously show the work that remains, and restoration remains as a foundational and ever-elusive target. Taking a reciprocal case study approach shows that accepting restoration as an ever-expansive set of possibilities opens pathways for reconfiguring relationships, including between humans but also in terms of who bears the responsibility

for ecological stewardship and related modes of research. Here, we can understand restoration as a mode of coming back to our needs for reciprocity and practicing a commitment to continually adapting research methods to continue the long-term work of ecological and relational reconnection. Following these reciprocal approaches further by collaboratively composing digital and visual rhetorics presents restoration as a domain of relational and narrative reconfiguration. Here, dialogue and digital tools present, sustain, and reconfigure opportunities for shifting what and how we see. Thus, giving back in turn presents opportunities for looking back on our collaborations again as the results of recent river restoration carry forward the possibilities for who, how, and what we seek to visualize.

By advancing collaborative and engaged understandings of restoration discourse in and about this place, emergent and adaptive methods can help shift the locus of power and capacities for doing research differently. The effects of these shifting powers and capacities change the possibilities for research and relationality, leading to unexpected places and opportunities while altering senses of time and sufficiency in research praxis. Because restoration becomes different things not only to different groups and contexts but also through different methods, bringing multiple approaches to studying restoration can further deepen and broaden what we are able to learn and continue creating with it, a point I extend in the next section.

### **Possibilities for Building on this Research**

The research in this dissertation is one step in a long series of moves and changes that mark the Penobscot River Watershed and the University of Maine. As a distinct project, it draws together a range of styles and techniques to produce an understanding of collaborative efforts to keep the work of restoration moving. In Rai's "nitty-gritty terms, this is a multisite, mixed-method, rhetorical ethnography that engages in interviews, (participant) observation, and rhetorical, archival, visual, new media, and Internet

analysis.”<sup>441</sup> Here, I build from this basis to identify potential opportunities for extending the research in this dissertation using its results to continue the long-term conversation that is still unfolding here. Opportunities for extending this research include continually deepening the connective understanding we can build across these study sites, methods, and rhetorical techniques. This is a process that involves the efforts of all individuals and groups who capacitated, contributed to, advanced, and can further benefit from this work. Moving forward, it matters that we understand research and restoration to be collective and connective practices that allow for diverse articulations and deliberations about how we come to participate through ecological awareness.

Further questions that may extend this work include additional considerations of storymaking, world-building, and ongoing deliberation. With an understanding of the stories we have been hearing and telling about restoration in the Penobscot River Watershed, what other stories can we find and create and how do these connect with the kind of world we seek? What are the opportunities for further cross-cultural and inter-institutional connective practice, and what collaborative infrastructures and relationships does this practice require? What does it take to understand where and who we have been so we can deliberate about where we are going and who we want to be if we arrive there? In this dissertation my collaborators and I used engaged and participatory approaches to media analysis, case study, and digital rhetoric to identify some of these stories, explore ways of building from these stories to continue bridging institutional and cultural practices, and draw these processes further into constructing technical and creative systems for expanding opportunities of portrayal by collaboratively composing visual rhetorics. Additional research could focus on building from these chapters’ outcomes by meshing their process refinements to further expand the possibilities for iterative, reciprocal modes of transdisciplinary and cross-cultural learning.

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441. Rai, *Democracy's Lot*, 26.

What difference would it make to approach media discourse analysis less as a retrospective archival research practice and more as a way of following the development of discourse in real-time as it actively creates and reconfigures the opportunities for decision making? What collaborative infrastructures would it take to support even more participatory media analysis techniques, and what additional tensions would arise in the process? There are examples of research stemming from other National Science Foundation funded projects at the University of Maine that may be instructive. Kevin Duffy and colleagues have used participatory research to understand news meanings from the perspective of the journalists involved in producing the news,<sup>442</sup> and are building from this work to connect with communities around Maine to expand the possibilities for visual understanding about aquaculture resources.

For participatory work, what could we learn by further building ethnography on the foundation of the reciprocal case study's decolonizing research approach? Since the first version of the decolonizing IRB application, we have developed an amendment that expands this approach to include additional research projects. One is connected to Participatory Multi-Criteria Decision Analysis<sup>443</sup> that customizes engagement techniques and group decision making procedures to accommodate the Penobscot Nation's unique interests and needs. The other project involves Dr. Katherine Allen and Shantel Neptune's work to connect community memory of the Penobscot River with tracing chemical markers of historical flow. With the approved amendment, we have begun collecting data using this approach including an updated version of the participant-driven informed consent statement and agreement worksheet in Appendix G. The experience is showing that there are opportunities for streamlining the approach. For example, developing separate applications for each study could be more efficient, as trying to bridge multiple

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442. Kevin P. Duffy, Laura N. Rickard, and Paul Grosswiler, "Routine Influences on Aquaculture News Selection: A Q Method Study with New England Journalists," *Science Communication* 45, no. 5 (2019): 1-31.

443. Fox et al., "Multi-Criteria Decision Analysis."

research questions, methodologies, and participatory approaches takes significant time and adds substantial complexity to the amendment, review, and research management process. We are exploring ways of using our approach as a reference point for future IRB applications that can build on this example to do new things. These experiences again show that understanding decolonizing research policies through the metaphor of fabric can be helpful, as separate research efforts can be distinct threads woven into a broader historical, interdisciplinary, and geographical structure.

Finally, there are many opportunities for building on Awihkhikéhtaso's approach to engaged digital rhetoric. This began as a focused project that emphasized expanding the Penobscot Nation Department of Natural Resources' media archive of its Water Resources Program's staff and scientific monitoring and outreach activities based on two summer documentation seasons. The effort's technical developments established an initial collaborative and digital framework for coordinating this effort, and there are opportunities to make numerous additional refinements to both of these aspects of the work. The project's many scripts and tools can be substantially simplified and more deeply integrated, especially as additional field seasons of data collection could present new opportunities and needs for further refinement. Sustaining the effort is an open-ended possibility as returning and new environmental scientists and documentarians may extend the work already done here or model it in other contexts. This possibility is also a reminder that the story of Awihkhikéhtaso has only begun, and there are many more layers to this collaboration and cultural approach that can yet be written or left to memory.

Overall, just as the Penobscot Restoration continues to shape the possibilities for collaboration, research, and relationships in this place, the work in this dissertation is a starting point for using engaged rhetorical methods to understand and inform collaborative decision making about dams and restoration in the Penobscot River Watershed. As time may carry forward the results of these efforts to inform further engagements, the possibilities for building on this research remain open to those needs that rise to

prominence. This is itself a rhetorical and deliberative act, and cannot be fully foreseen at this time. Building on reciprocal research relies on those who decide to renew the commitment to engage across difference and let this engagement transform what for now remains behind the horizon of possibility. Next, I look to which practices made this research possible and supported a decolonial approach.

### **“Guest Practices” for Decolonizing Research**

In this dissertation, I have not fully engaged the complex rhetorics of hospitality and indebtedness that emerge from long, entangled histories of settler colonialism and the Land Grant program as a result of the Morrill Act that used federal accumulation of Indigenous lands to provide crucial early and ongoing support for institutions like the University of Maine where I have studied these last 7 years.<sup>444</sup> Here, I reflect on my personal experiences of working with diverse collaborators and field sites to identify what I am calling “guest practices” for decolonizing research: key personal guidelines that helped me navigate the complex thicket of relationships, interests, and priorities that came into contact when I strove to research and write this dissertation.<sup>445</sup> Referring to these as “guest practices” emphasizes an ethic of hospitality in decolonizing research. It also reminds me that I dwell on others’ lands, a fact that encourages me to search out and practice ethical ways of engaging in collaborations here. Following Kuokkanen,<sup>446</sup> I understand hospitality as more than a matter of exchange, rather as a responsibility of dominant groups such as higher-education institutions and the settler colonial folk they were established to serve. Each practice below draws on what I learned from a range of

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444. Sharon Stein, “A Colonial History of the Higher Education Present: Rethinking Land-Grant Institutions Through Processes of Accumulation and Relations of Conquest,” *Critical Studies in Education*, 2017, 1–17; Robert Lee and Tristan Ahtone, “Land-grab universities: Expropriated Indigenous land is the foundation of the land-grant university system,” *High Country News*, March 20, 2020, no. 1, accessed April 21, 2020, <https://www.hcn.org/issues/52.4/indigenous-affairs-education-land-grab-universities>.

445. Rai, *Democracy’s Lot*.

446. Kuokkanen, *Reshaping the University*.

data and experiences, but in particular interviews, dialogues, and conversations with those engaged in working toward decolonization in Penobscot Territory. Looking back, I did not always uphold these practices perfectly, but they remained consistent and powerful guideposts in my decision making as I weighed the perspectives, priorities, and opportunities that emerged in this work.

### **Showing Up**

This practice involves physical presence in Indigenous communities.<sup>447</sup> My university collaborators and I heard many times in multiple ways about the importance of “showing up” at Indigenous community talks, ceremonies, and celebrations that were open to the public or we were invited to. I was generally familiar with the importance of presence in community sites from my ethnographic methods training, but the key emphasis here was showing up *when invited*. Not all events are open to non-tribal members, and I took invitations (whether on public flyers or in emails and conversations) as sincere demonstrations of Penobscot Nation members’ good faith and interest in ally-seeking. In a Maine-Wabanaki REACH workshop, related community group discussions, and campus action group meetings I attended during the first half of my doctoral program, I heard non-natives involved in decolonizing work explain that allyship is not a label to be claimed by settler folk, but a way for marginalized groups to identify members of dominant society whom they can trust. In response, I tried to make myself available as a potential ally by attending a range of Penobscot community events over the following years and letting relationships emerge, as I describe in the next section. There were times when I felt unsure about whether my presence was appropriate, and noticed that I had anxieties about being identified as an intruder. I decided to trust my tribal collaborators’ guidance and continue showing up when possible, especially when I was

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447. Sutton, “Farming, Fieldwork, and Sovereignty.”

invited. On occasions when tribal members asked me who I was or what I was doing in the community, I explained that I had been invited and who invited me. I am not aware of the specific effects of these decisions, but for me it was important to follow what I was learning to the best of my current ability and try to be transparent about who I was, what directed my path, and where I believed that path was leading.

### **Prioritizing Relationship-Building**

This practice builds on the previous and extends the point about where my path was leading. My experiences on this project unfolded along at least two distinct but entwined paths simultaneously. One path was academic, temporally delineated by the contours of available graduate funding and my interest in efficiently progressing through a doctoral program. The other path was one of personal growth and development as I continued learning more about the complexities and commitments of being a student, a collaborator, and a friend. My experiences on these paths certainly nourished each other but also sometimes came into sharp relief. I heard numerous times from my tribal collaborators about the comparative importance of building and maintaining relationships with them over pursuing research outputs. This initially felt like somewhat of a paradox, as in many cases my research interests had led me to these relationships in the first place. However, as I continued hearing this message, I took it as an invitation to demonstrate my commitment to connecting in personal ways out of genuine interest in developing authentic friendships that could persist after the research project. This focus on long-term relationships shaped my decision making at key points, encouraging me to listen to what others wanted from my research, try to avoid forcing or expediting connections that were developing slowly or not at all, and anticipate and respond to requests that I show up, keep in contact, adapt approaches, and remain transparent with multiple groups and individuals. In the process, I often felt I was inhabiting multiple modes of time simultaneously, shifting states between practicing urgency and patience as I identified and navigated

various deadlines, identities, and systems of political and personal relationships that were all important for what would emerge. Throughout, keeping the primacy of relationships in my mind and heart helped me understand and work with the forces I was feeling.

### **Trying to Get the Story Right**

This practice showed up in the second chapter, where it became a discursive marker for whose perspectives are prioritized in reporting and storytelling about histories and collaborations. The phrase “getting the story right” can illuminate tensions at the core of rhetorical and decolonizing praxis, as it matters whether we believe rhetoric can be about attempts to fix a story<sup>448</sup> in private and public discourse, even as this becomes the precise focus of decolonizing methodologies.<sup>449</sup> For my personal decision making, a call to “get the story right” was an open invitation to participate in engaged interpretation of how language, relationships, and digital media matter for how we understand the causes, processes, and beneficiaries of restoration and to share what I was learning through my interpretive processes. As a guest practice, “getting the story right” keeps me committed to coming full circle with the earlier practices of showing up and prioritizing relationship-building at later stages of research, which directly enable working intentionally with story.<sup>450</sup> There are three primary ways I worked to get the story of restoration right in my experience with decolonizing research in Penobscot Territory. First, I tried to check in early and often with my collaborators about needs and potential concerns related to the research process I was developing. One example that connects back to the previous guest practice was paying attention when partners mentioned difficult past experiences with academic research that gave them pause when it came to becoming involved in additional projects. I accepted these cautionary tales as knowledge gifts that

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448. Here, I appreciate the flexibility of the word “fix,” which can refer to fastening, settling, repairing, and more.

449. Archibald et al., *Decolonizing Research*.

450. Davidson, “Following the Song”; Seed-Pihama, “Naming Our Names.”

highlighted for me the importance of maintaining relationships and deferring to partners' wishes when they stated them. Second, I worked with my collaborators on the Future of Dams project to share participants' data back with them after interviews so we had a similar reference point for what material was informing my analysis and writing processes. However, as temporal distance from the interview dates accumulated while I continued my research, it became similarly important for me to keep talking with these partners to see how our developing thinking and choices compared, which connects to my final point. Third, and building from the recommendations my collaborators and I outlined in the Future of Dams Decolonizing Data Management Statement in Appendix D, I checked back in with Penobscot Nation members whose voices and perspectives came to the fore in the writing phase to share my work and invite feedback before I published the dissertation. Bringing the conversation full circle at this final stage was meaningful to me in many ways, including because I found that the connections were re-nourishing in times of relative solitude and that they enriched the possible insights and provided an opportunity to reaffirm the value of the underlying relationships.

Together, showing up, prioritizing relationship-building, and working to get the story right constitute some guest practices that supported my ability to engage in decolonizing research in Penobscot territory. There are likely many other guest practices that would also matter for this work and the work of others, but ultimately the specific form any individual's or group's practices take must be rooted in their own personal and collective values. However, I am grateful for the opportunity to learn the guest practices above, as I am eager to continue following them in my future life and work outside the framework of my dissertation research. I am excited to experience how continuing to show up, prioritize relationships, and try to get stories right can be opportunities for personal

and collective growth. In the final section I offer concluding thoughts about situating collaborative and engaged rhetorics in terms of our ecological embeddedness in the world.

### **Conclusion: Returning to Our Ecology**

In a poster I presented a few years ago about the Future of Dams project's internal structure and processes, my collaborators and I suggested that there is something ecological about team science, with researchers coming together and working across disciplines and locations in a constantly shifting set of attachments, relationships, and developing projects.<sup>451</sup> At least one team member disagreed, on the basis that a biological understanding of ecology emphasizes evolutionary winners and losers: those who benefit from conflict between organisms and those who the conflict consumes. This perspective takes collaboration as something different, a process that we cannot equate to the antagonistic features of our basic ecological underpinnings.<sup>452</sup> My continued work and conversations with partners on and beyond this team lead me to understand social processes such as communication and collaboration as forces that blend struggle and harmony as it is both difficult and rewarding to require each other.<sup>453</sup> These are processes we may idealize, experience as challenging, and be transformed by, even as we have a part in shaping them.

Disagreement itself can be both rhetorical and ecological, as when differences come together they show how “changing with circumstances is the stuff of survival . . . [yet] without collaborations, we all die.”<sup>454</sup> This dissertation engages such rhetorical and ecological heterogeneity throughout. An ecological sensibility is fundamental to my work because the differences and disagreements that require our ongoing, careful, focused

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451. Quiring et al., *Sustaining Team Science*.

452. Nathaniel A. Rivers, “Deep Ambivalence and Wild Objects: Toward a Strange Environmental Rhetoric,” *Rhetoric Society Quarterly* 98, no. 2 (2012): 129–152.

453. Haraway, *Staying with the Trouble*.

454. Tsing, *Mushroom at the End*, 27–28.

attention are in part what sustain us and provide us the opportunity to continue changing together.<sup>455</sup> Recent work in rhetoric demonstrates through a multiplicity of approaches that “the shifting, and sometimes conflicting, notions of rhetoric and ecology . . . is an enactment of the stochasticity that drives creative change.”<sup>456</sup> These shifts and conflicts keep both rhetoric and ecology in tandem motion, as who we are and what we say and do are always informing and shaping each other. We are all ecological, in that we exist within a system of dense and shifting connections that compose us and contribute to something larger and longer-lasting. Returning to this ecology through engaged rhetorical methods reminds me that what is yet to come will inevitably grow from what has been.

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455. McGreavy, “Intertidal Poetry.”

456. Wells et al., “Introduction: Rhetoric’s Ecologies,” 4.

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**APPENDIX A**  
**IRB APPROVAL FOR CASE STUDY**

THE  
UNIVERSITY  
OF RHODE ISLAND  
DIVISION OF RESEARCH  
AND ECONOMIC  
DEVELOPMENT

OFFICE OF RESEARCH INTEGRITY  
70 Lower College Road, Suite 2, Kingston, RI 02881 USA  
p: 401.874.4328 f: 401.874.4814 [web.uri.edu/researchecondev/office-of-research-integrity](http://web.uri.edu/researchecondev/office-of-research-integrity)



FWA: 00003132  
IRB: 00000599  
DATE: June 20, 2016

TO: Caroline Druschke, PhD  
FROM: University of Rhode Island IRB

STUDY TITLE: Strengthening the Scientific Basis for Decision Making about Dams  
IRB REFERENCE #: 778925-3  
LOCAL REFERENCE #: HU1516-003  
SUBMISSION TYPE: Continuing Review/Progress Report

ACTION: APPROVED  
EFFECTIVE DATE: June 16, 2016  
EXPIRATION DATE: July 8, 2017  
REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category # 6 & 7

Thank you for your submission of Continuing Review/Progress Report materials for this research study. The University of Rhode Island IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation 45 CFR 46 and 21 CFR 50 & 56.

**Please note that any revision to previously approved materials must be approved by this office prior to initiation.** Please use the appropriate revision forms for this procedure.

All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate **Appendix S - Event Reporting** for this procedure. All FDA and sponsor reporting requirements must be followed.

Please report all NON-COMPLIANCE issues or COMPLAINTS regarding this study to this office. Please note that all research records must be retained for a minimum of five years after the project ends.

**Based on the risks, this project requires Continuing Review by this office by July 8, 2017.** Please use the **CONTINUING REVIEW FORM** for this procedure.

If you have any general questions, please contact us by email at [researchintegrity@etal.uri.edu](mailto:researchintegrity@etal.uri.edu). For study related questions, please contact us via **project mail through IRBNet**. Please include your study title and reference number in all correspondence with this office.

*Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document unless the signature requirement has been waived by the IRB.*

A handwritten signature in blue ink, appearing to read "Matthew Delmonico".

Matthew Delmonico, Ph.D., MPH  
IRB Chair

## APPENDIX B

### INFORMED CONSENT FOR CASE STUDY

THE  
UNIVERSITY  
OF RHODE ISLAND  
COLLEGE OF  
THE ENVIRONMENT  
AND LIFE SCIENCES

Department of Natural Resources Science  
Coastal Institute, 1 Greenhouse Road  
Kingston, RI 02881 USA  
<http://web.uri.edu/nrs/>

#### STRENGTHENING THE SCIENTIFIC BASIS FOR DECISION MAKING ABOUT DAMS

#### CONSENT FORM FOR RESEARCH

You have been asked to participate in a research project described below. The researcher will explain the project to you in detail. You should feel free to ask questions. If you have more questions later, Dr. Todd Guilfoos (401) 874-4398, the person mainly responsible for this study, will discuss them with you. You must be at least 18 years old to participate in this research project.

##### *Description of the project:*

This study examines decision making preferences and processes about dams. We hope to learn about public preferences for ecosystem services from dams, common arguments for and against dams, and how collaborative decision processes impact decisions about dam removal, rehabilitation, and upgrading.

##### *What will be done:*

You have been invited to participate in the following research components (*check one or more*):

\_\_\_ In the **interview and/or stakeholder survey** portion of this study, you will be asked a series of questions about dams, decision making, and collaboration. Interviews are expected to last from 30 to 120 minutes, while surveys will take approximately 20 minutes to complete. Interview participants may be asked for follow-up interviews.

\_\_\_ In the **lab experiment**, you will be presented with a sequence of decisions that provide you an opportunity to make money. Your earnings will be affected by your decisions and the decisions of others. The process should take not more than two hours.

\_\_\_ In the **choice experiment**, you will be asked to complete either an internet-based survey or an in-person workshop. Survey participants will answer a series of questions about valuing ecosystem services related to dams. Workshop participants will be asked to complete complex decision making tasks related to valuation. Surveys will take approximately 20 minutes, while workshops will take not more than two hours.

\_\_\_ In the **role-play simulation/charrette**, you will be asked to provide feedback about several computer models and take on the role of a particular type of stakeholder to work through the tradeoffs related to particular dam decisions. These two workshops are expected to last approximately 6 hours each.

##### *Risks or discomfort:*

It is unlikely that you will incur any risks or will experience any discomfort as a result of participating in this study.

THE  
UNIVERSITY  
OF RHODE ISLAND  
DIVISION OF RESEARCH  
AND ECONOMIC  
DEVELOPMENT

IRB NUMBER: HU1516-003  
IRB APPROVAL DATE: June 23, 2017  
IRB EXPIRATION DATE: July 8, 2018

*Benefits of this study:*

Although there may be no direct benefit to you from participation in this study, the researchers may learn more about how people use science to make decisions about dams and about how collaboration impacts decision making, resulting in better decision making about dams.

*Confidentiality:*

Your part in this study is confidential. None of the information will identify you by name. Your name will not be included in the transcript of interviews, role-plays, or charrettes. Audio recordings will be erased after they are transcribed. Signed consent forms will be kept in the investigator’s locked cabinet, separate from any transcripts. For the experiments, decisions will be linked by a subject number assigned to you by the researcher. This subject number will never be linked to anything which can identify you. Other participants in the experiment will not be able to attribute your decisions to you personally, and they will not know how much you earn. At the end of the experiment, you will have to sign for the amount of your earnings. This form will not contain your subject number, and will not be linked with your decision data.

*Decision to quit at any time:*

The decision to take part in this study is up to you. You do not have to participate. If you decide to take part in the study, you may quit at any time. Whatever you decide will in no way penalize you. If you wish to quit, simply inform the researcher of your decision.

*Rights and complaints:*

If you are not satisfied with the way this study is performed, you may discuss your complaints with Dr. Guilfoos or with staff members at the office of the Vice President of Research and Economic Development (401-874-4328), anonymously, if you choose. In addition, if you have questions about your rights as a research participant, you may contact the office of the Vice President of Research and Economic Development, 70 Lower College Road, Suite 2, University of Rhode Island, Kingston, RI, telephone: 401-874-4328.

You have read this Consent Form. Your questions have been answered. Your signature on this form means that you understand the information and you agree to participate in this study.

\_\_\_\_\_  
Signature of Participant

\_\_\_\_\_  
Signature of Researcher

\_\_\_\_\_  
Typed/printed Name

\_\_\_\_\_  
Typed/printed name

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

***Please sign both consent forms, keeping one for yourself***

\_\_\_ I agree to let the researcher **audio record** the interview. Audio recordings will be held until they are transcribed, at which point they will be destroyed. If you agree, please sign below:

\_\_\_\_\_ Signature

\_\_\_\_\_ Date



IRB NUMBER: HU1516-003  
IRB APPROVAL DATE: June 23, 2017  
IRB EXPIRATION DATE: July 8, 2018



6. [Summarize the options mentioned] How do you identify which of these options are available for a dam?

= 7. What significant constraints are there on your decisions? (*Ex. Laws, regulations, organizational mandates*)

6. How would you characterize the level of influence various groups have had in the decision making process? To what extent was this equal or unequal?

7. Has there been a process of public involvement, and if so, what has this process looked like?

☆ = 8. What were the outcomes in this case? Have there been unforeseen positive or negative consequences?

☆ 9. What are the key ingredients for a successful process? Conversely, what are key complicating factors?

### **III. Types of information and ways of communicating**

- ☆ 10. What types of information do you use in your dam-related work? *Explore: Do you use scientific information? If so, what is the source? Are you satisfied with the available information/data (its quality and/or availability)?*

11. In your experience, in public engagement processes, how has the communication between scientists and the public gone? What has been effective and what hasn't worked well? Is the public able to offer input and feedback?

12. What has been the role of visualizations in the public process? *Explore: Can you describe the visualizations and the sorts of data and input that contributed to them? How did they impact decisions made?*

### **Conclusion/wrap-up**

- ☆ 13. What outcomes from the Future of Dams project would be most useful to you to support your decision making? *Explore: Would you like to receive information about the Future of Dams in the future? [If so] how?*

- ☆ 14. Who else should we talk to?

- ☆ 15. Are there other questions we should be asking people about dams? [If so] what are these questions?

- ☆ 16. Is there anything else you would like to offer this conversation that I didn't ask about?

## APPENDIX D

### FUTURE OF DAMS DECOLONIZING DATA MANAGEMENT STATEMENT

#### Decolonizing Data Management Statement

These data are an expression of developing relationships between members of the Penobscot Nation (the Penawahpskek) and the Future of Dams (FoD) project. These interviews were conducted by Maliyan Binette, Tyler Quiring, and Bridie McGreavy in collaboration with Darren Ranco. Maliyan and Darren are members of the Penawahpskek and have had a central role in building from FoD's process of shared interview protocol development and designing an adapted protocol that draws on decolonizing methodologies to foreground commitments to listening, reciprocity, and making shared sense of stories.

The stories in these interviews have changed us. They have made us want to pursue research that promotes restorative justice and equitable decision making about dams in this watershed. For us, part of this has meant approaching these interviews as more than data alone, acknowledging how the stories that have been generously shared frame, sustain, and change the possibilities for action and care with this river and people.

There are three specific things we ask of FoD team members who work with these interviews:

1. Please ensure that the files are only stored on password-protected computers and that if they are imported into analysis software, the project files themselves are also password-protected.
2. Please refrain from sharing these files with anyone not listed below. To get access for others, please contact Tyler Quiring (tyler.quiring@maine.edu) to discuss possibilities.
3. Check back in with us and members of the Penawahpskek as you write up the results of research that builds from these stories. We can help support this process and also the potential incorporation of Penawahpskek language words and characters in various outputs.

woliwon (thank you)

#### List of Those with Access to this Folder

Tyler Quiring (UMaine)  
Bridie McGreavy (UMaine)  
Darren Ranco (UMaine)  
Emma Fox (UMaine)  
Natasha Leuchanka (UNH)  
Sharon Klein (UMaine)  
Catherine Ashcraft (UNH)

*Access was granted after a self-education and collective negotiation process where those listed read about decolonizing research methodologies, discussed what they learned with each other, and met with interviewees to ask permission to share/access their data.*

APPENDIX E

IRB APPROVAL FOR DECOLONIZING RESEARCH

APPLICATION FOR APPROVAL OF RESEARCH WITH HUMAN SUBJECTS
Protection of Human Subjects Review Board, 400 Corbett Hall

PRINCIPAL INVESTIGATOR: Tyler Quiring EMAIL: tyler.quiring@maine.edu
CO-INVESTIGATORS: Bridie McGreavy (bridie.mcgreavy@maine.edu); Darren Ranco
(darren.ranco@maine.edu); Jan Paul (Jan.Paul@penobscotnation.org); Angie Reed
(angie.reed@penobscotnation.org); John Banks (john.banks@penobscotnation.org); Nolan Altvater
(nolan.altvater@maine.edu); Brawley Benson (brawley.benson@maine.edu); Kaitlyn Raffier
(kaitlyn.raffier@maine.edu); Emma Fox (emma.fox@maine.edu); Natallia Leuchanka (nhe4@wildcats.unh.edu);
Sharon Klein (sharon.klein@maine.edu); Catherine Ashcraft (Catherine.Ashcraft@unh.edu)
FACULTY SPONSOR: Bridie McGreavy EMAIL: bridie.mcgreavy@maine.edu
TITLE OF PROJECT: Community-engaged decolonizing research for collaborative decision making
about dams and river restoration
START DATE: December 5, 2018 1/8/2019 PI DEPARTMENT: Communication & Journalism
FUNDING AGENCY (if any): National Science Foundation

STATUS OF PI: FACULTY/STAFF/GRADUATE/UNDERGRADUATE G (F,S,G,U)

1. If PI is a student, is this research to be performed:

- for an honors thesis/senior thesis/capstone? for a master's thesis?
X for a doctoral dissertation? for a course project?
other (specify)

2. Does this application modify a previously approved project? N (Y/N). If yes, please give assigned
number (if known) of previously approved project:

3. Is an expedited review requested? Y (Y/N).

Submitting the application indicates the principal investigator's agreement to abide by the responsibilities outlined
in Section I.E. of the Policies and Procedures for the Protection of Human Subjects.

Faculty Sponsors are responsible for oversight of research conducted by their students. The Faculty Sponsor
ensures that he/she has read the application and that the conduct of such research will be in accordance with the
University of Maine's Policies and Procedures for the Protection of Human Subjects of Research. REMINDER: if
the principal investigator is an undergraduate student, the Faculty Sponsor MUST submit the IRB application.

Email this cover page and complete application to UMRIC@maine.edu

\*\*\*\*\*

FOR IRB USE ONLY Application # 2018-11-10 Review (F/E): E

ACTION TAKEN:

- X Judged Exempt; category 2 Modifications required? Y Accepted (date) 1/8/2019
Approved as submitted. Date of next review: by Degree of Risk:
Approved pending modifications. Date of next review: by Degree of Risk:
Modifications accepted (date):
Not approved (see attached statement)
Judged not research with human subjects

FINAL APPROVAL TO BEGIN 1/8/2019
Date

01/2017

## APPENDIX F

### IRB NARRATIVE FOR DECOLONIZING RESEARCH

#### 1. Summary

##### *Study Rationale*

For millennia, the Penobscot Nation and Penobscot River have sustained and supported each other. In relatively recent history, laws and dams put in place as part of the settlement of North America by European colonists have led to eroded rights and access to land and water for the Penobscot Nation. However, from 1999 to 2016 significant effort was undertaken by the Penobscot Nation along with several key partners from Maine, United States, and international organizations to change the configuration of dams on the Penobscot River, resulting in dramatic enhancements for inter-community cooperation, river transportation, hydropower production, and fish habitat and migration (Opperman, et al., 2011). In the wake of this history, there is a need to better understand these historical and collaborative conditions to inform and support future decision making about rivers and dams in Maine, the United States, and internationally.

Within the historical and spatial context of the Penobscot Nation's life with their river and its dams, this study uses decolonizing methodology to create research that is recognizable to and useful for the Penobscot Nation. As Simonds and Christopher (2013) describe, "decolonizing research is a process for conducting research with Indigenous communities that places Indigenous voices and epistemologies in the center of the research process. It critically examines the underlying assumptions that inform the research and challenges the widely accepted belief that Western methods and ways of knowing are the only objective, true science. Holding Western beliefs and methods as 'the' true science marginalizes Indigenous methods and ways of knowing by denigrating them as folklore or myth" (p. 2185). Thus, our approach begins collaboratively engaged, with members of the Penobscot Nation co-defining our research goals and processes.

##### *Study Methods*

The specific methods this study will use involve face-to-face semi-structured interviews with each participant at a location of participants' choosing (questions can be found in Appendix C). As decolonizing methodologies emphasize the need to prioritize indigenous participants' choices as co-producers of the research process (Simonds & Christopher, 2013), we will approach interviewing dialogically and let participants determine how much time and how many meetings they need to share their experiences. We will identify these needs throughout our recruitment, informed consent, and interviewing process. Each interview may take 30-90 minutes, while the total time individuals contribute across all interviews will vary with the level of sharing they wish to do. Interviews will be audio recorded if the participant gives permission. Interviews will begin in December 2018 and continue until May 2019, with a goal of completing between 10-20 interviews. Data will be used to understand Penobscot Nation culture and history with the Penobscot River and its dams and to identify needs and possibilities for future decision making here and in other contexts.

#### 2. Personnel

The principal investigator in this research is Tyler Quiring ([tyler.quiring@maine.edu](mailto:tyler.quiring@maine.edu)), a PhD candidate in the Department of Communication & Journalism, College of Liberal Arts & Sciences at UMaine. The principal investigator has received training in conducting semi-structured interviews and has completed IRB training. The principal investigator's human subjects research consists of conducting in-person semi-structured interviews and community-engaged ethnography over five years. Data collection and analysis will be coordinated among the personnel listed, and led by Tyler Quiring. This research is being conducted in conjunction with his dissertation. This project is being advised by Dr.

Bridie McGreavy, who is an assistant professor in the Department of Communication & Journalism, College of Liberal Arts & Sciences at UMaine, and has also completed human subjects training.

This project is being overseen by Dr. Darren Ranco, associate professor in the Department of Anthropology and Coordinator of Native American Research at UMaine, who has extensive experience with community-engaged research and has also completed human subjects training.

Jan Paul, interim air quality director and water resources field and lab technician, Angie Reed, water resources planner, and John Banks, director in the Department of Natural Resources of the Penobscot Nation will serve as research partners and community liaisons. They have not completed human subjects training as their principle role in this research will be connection of other personnel with participants.

Nolan Altwater, a Wabanaki Youth in Science intern and undergraduate student in the College of Education and Human Development, Brawley Benson, an undergraduate student in the Honors College and the College of Liberal Arts & Sciences, and Kaitlyn Raffier, an undergraduate student in the School of Economics, College of Natural Science, Forestry, & Agriculture at UMaine will serve as research assistants. Each has experience performing stakeholder-engaged qualitative research and has completed human subjects training.

Emma Fox, a PhD candidate in the School of Economics, College of Natural Science, Forestry, & Agriculture at UMaine, Natallia Leuchanka, a PhD student in Natural Resources and Earth Systems Science at the University of New Hampshire, Sharon Klein, associate professor in the School of Economics, College of Natural Science, Forestry, & Agriculture at UMaine, and Catherine Ashcraft, assistant professor in the Department of Natural Resources and the Environment at the University of New Hampshire will collaborate on this research. They have extensive experience with human subjects research and have completed human subjects training.

### **3. Participant Recruitment**

The Penobscot Nation consists of 2,398 individuals (Penobscot Culture Website, 2018). Approximately 5-20 citizens will be interviewed. Participants will be identified through a mix of key informant identification and snowball sampling, and this sample size includes key informants as well as the expected extent of snowball sampling. Recruitment scripts can be found in Appendix D. We will work with key gatekeepers in the Penobscot Nation to form relationships with community members and to coordinate scheduling and conducting interviews. Participants will be recruited through in-person conversations. In case of need for participants to be recruited via email, the scripts in Appendix D will be used. All participants will be at least 18 years of age, and we will verify age through our community liaisons before contacting participants.

### **4. Informed Consent**

Informed consent presents a number of unique complexities for our community-engaged study context. As Christians (2015) explains, standard “informed consent . . . is simply incongruent with interpretive research not *on* human subjects but *with* other human beings” (pp. 76-77, emphasis added), and Ranco (2006) asks that the research community “return to Native communities the political and discursive control over their stories” (p. 72). Because the standard model of informed consent does not match the requirements of research for indigenous communities, we will use a brief, unsigned informed consent statement coupled with an agreement worksheet (Appendix A) as a

means of rights disclosure and negotiation when we contact potential interviewees, either via a paper copy when recruiting through personal conversations or attached to recruitment emails. Participants will be told that they can read the consent form for more information about the study. We will also review this document with them prior to beginning each interview. This document includes a form that participants can use to set their own terms for how their stories and cultural knowledge will be recorded, shared, analyzed, and archived. This form will accompany the data throughout all stages of analysis and archiving, and will thus guide specific data management protections above and beyond the basic outline in our data management plan (Appendix E).

#### **5. Confidentiality**

Confidentiality will be preserved by default by de-identifying data, although participants may elect to have their identity accompany their data. Unless otherwise requested by participants on the informed consent agreement worksheet (Appendix A), data will be kept in confidential form (i.e. with personally identifiable information removed) during data collection and processing. For all participant data, reference keys linking data files and participant identity will be kept in a password-protected, electronic file encrypted using VeraCrypt software. The encrypted file will be stored on a desktop computer in 111B Norman Smith Hall, University of Maine, Orono and also backed up to the cloud using Google Team Drive storage, while the password itself will only be known to study personnel. These data and keys will be destroyed in August 2020 at the end of the project. Where participants have elected to have their identity accompany their data, these data will not be kept in confidential form (i.e. personally identifiable information will not be removed). Where participants have elected to have their data shared more broadly (refer to the Informed Consent Statement and Agreement Worksheet in Appendix A and the Data Management Plan in Appendix E), these data including transcripts and recordings will be kept in perpetuity by the Penobscot Nation after August 2020. The TranscribeMe! service will be used for producing transcripts. Personnel will provide participants with copies of handwritten notes within one week of the interview and a polished transcript of the audio file (if recorded) within one month. In cases where this may not be possible due to other commitments, personnel will contact participants and negotiate a new deadline.

#### **6. Risks to Participants**

For this study, the most apparent risks participants will face are to their time and convenience. However, as Harding et al. (2012) explain, research between academic institutions and indigenous groups presents unique complexities and risks to participants because standard review criteria do not “give adequate consideration to sovereignty or aboriginal rights” (p. 6). Specific types of consequences can include potential adverse effects among the community and at the governmental level as a result of the research. In response, we have designed this research to specifically address these risks through: 1) participant recruitment strategies that empower members of the Penobscot Nation to recruit members of their own community; 2) the use of an agreement worksheet to be negotiated by participants themselves; and 3) the implementation of a shared data management plan to govern this collaboration between the Penobscot Nation and the University of Maine.

#### **7. Benefits**

Participants will benefit from gaining access to the record of their interviews and from contributing to academic research about and for their community, which will be produced and interpreted with this community and also enhance relationships between the Penobscot Nation and University of Maine communities. The overall benefit of the study will be advancing decolonizing methodologies and supporting decision making about dams and river restoration.

## 8. Compensation

Participants will not receive compensation as part of this study.

### References

- Christians, C. G. (2015). Neutral science and the ethics of resistance. In N. N. Denzin & M. D. Giardina (Eds.), *Qualitative inquiry: Past, present, and future: A critical reader* (pp. 69–87). London: Routledge.
- Harding, A., Harper, B., O’Neill, C., Berger, P., Harris, S., & Donatuto, J. (2012). Conducting research with tribal communities: Sovereignty, ethics, and data-sharing issues. *Environmental Health Perspectives, 120*(1), 6–10.
- Opperman, J. J., Royte, J., Banks, J., Rose Day, L., & Apse, C. (2011). The Penobscot River, Maine, USA: A basin-scale approach to balancing power generation and ecosystem restoration. *Ecology and Society, 16*(3), 7.
- Penobscot Culture & Historic Preservation Website. (Copyright 2018). <https://www.penobscotculture.com/index.php/8-about/81-tribal-facts>. (Accessed October 25, 2018).
- Ranco, D. (2006). Toward a Native anthropology: Hermeneutics, hunting stories, and theorizing from within. *Wicazo Sa Review, 21*(2), 61–78.
- Simonds, V. W., & Christopher, S. (2013). Adapting Western research methods to Indigenous ways of knowing. *American Journal of Public Health, 103*(2), 2185–2192.

## APPENDIX G

### INFORMED CONSENT AND AGREEMENT FOR DECOLONIZING RESEARCH

Tyler Quiring, Bridie McGreavy, and Darren Ranco would like to work with you on research about your relationship to the Penobscot River and dams. This research is being conducted as a collaboration between researchers from the Penobscot Nation Department of Natural Resources and the Universities of Maine and New Hampshire. We are working together because members of the Penobscot Nation asked us to study the outcomes of the Penobscot River Restoration Project and decision making about dams more broadly. We will explain our research to you in detail as it currently stands, but please feel free to offer guidance and ask questions.

***What we will ask you to do:***

Our team's work has many pieces which we are happy to tell you more about. If you agree, we would like to start with a conversation today, with the possibility of additional follow-up conversations if needed for you to be able to share your experiences the way you want. We have brought a set of questions to support this process, but we have learned from our partners in the Department of Natural Resources that it's also important to let the river lead, so we welcome your thoughts about how best to do this. Each conversation will likely take between 30 and 90 minutes and will be audio recorded with your permission. Questions we ask may include:

- How does your life or work relate to the river?
- How have dams affected you, your tribe, or other tribes?
- Are there kinds of research or partnerships that would be useful to you?

***Risks of this study:***

For this study, the most apparent risks you will face as a participant are to your time and convenience. We also realize that relationships between European descendants and Wabanaki people have had a long, complex, and traumatic history, and that this history shapes our university's work with the Penobscot Nation. Because of this history, we have developed research review in partnership with the Penobscot Nation so that we are getting the story right, taking care with how you are represented to your Nation and other communities, and exploring what role you may wish to have in research planning, interpretation, and sharing. Please let me know if you have thoughts about these, or if there are other concerns we should be aware of.

***Benefits of this study:***

The immediate benefits of this research to you include having access to a record of this conversation, which we will provide. In addition, other benefits we see coming out of this work include contributions to Penobscot Nation cultural and scientific resources, ongoing decision making about the Penobscot River, decision making about dams more generally, and ethical research collaboration between universities and native tribes. Please let us know if you would like to talk about any of these benefits and if there are other potential benefits that would be important to you.

***Confidentiality:***

By default, we will preserve your confidentiality by removing personal identifiers from the written and audio records of our conversations. By default, your responses will be kept in confidential form (with personally identifiable information removed) during data collection and processing, and will only be accessible to research personnel and there will be a key linking your name to your responses. This key will be stored on a desktop computer in 111B Norman Smith Hall and backed up to the cloud

using Google Drive. The key will be protected using software that provides additional security, and the password will only be known to study personnel. Your responses will be kept until the completion of this study in August 2020. Using the form on this page, you can also choose to have your identity accompany your responses and to have your responses be kept in perpetuity by the Penobscot Nation after August 2020. If you agree to have this conversation recorded, we will use an external service to prepare a transcript the recording.

***Voluntary:***

The decision to take part in this study is up to you. You do not have to participate. If you decide to take part in the study, you may quit at any time. Whatever you decide will in no way penalize you. If you wish to quit, just let us know. You may also skip any questions you do not wish to answer.

***Contact information:***

If have further questions about this study, you may discuss them with: Tyler Quiring (207) 417-5023, tyler.quiring@maine.edu; Bridie McGreavy (207) 581-1943, bridie.mcgreavy@maine.edu; Darren Ranco (207) 581-1801, darren.ranco@maine.edu; or any of the other personnel involved (let us know if you would like their contact information). If you have any questions about your rights as a research participant, please contact the Office of Research Compliance, University of Maine, (207) 581-1498 or (207) 581-2657 (or email umric@maine.edu).

**Agreement (participant completes):**

1. Date: \_\_\_\_\_
  
2. I want my data to be shared with the Penobscot Nation Cultural and Historic Preservation Department's archives: Yes No
  - a. *With my name included:* Yes No
  - b. *Both transcript and audio recording:* Yes No
  - c. *To be available to other Penobscot tribal citizens in a password protected website:* Yes No

Comment:
  
3. I want my data to be shared publicly: Yes No
  - a. *With my name included:* Yes No

Comment:
  
4. I want to be involved in future planning for this research: Yes No

Comment:

## APPENDIX H

### INTERVIEW PROTOCOL FOR DECOLONIZING RESEARCH

1. Our tribal collaborators have emphasized the importance of focusing on how Burnurwurbskek shapes life and action here, so we'd like to let the river guide this interview if that's okay. How does your life or work relate to the river?

*[Based on response, either continue conversation organically or refer to the following questions.]*

2. What else would you like us to know about the river and the tribe? *Explore: What is your sense of the relation between the river, its islands, and the tribe over time?*
3. How have dams affected you, your tribe, or other tribes? *Explore: For sustenance fishing, pollution and disease, your professional work, and the landscape and waters of the reservation.*
4. We're interested in whether people make decisions about groups of dams or one dam at a time. In your experience, how does this typically go and do any examples stand out?
5. When you think about how people make decisions about dams, what do you think those decisions should be based on? *Explore: What information or forms of knowledge do you see shaping decisions about dams (ex: media, science, policy) and how do these interact in ways that matter for the tribe? What needs and opportunities do you see?*

*We're interested in understanding your perspectives about the Penobscot River Restoration Project.*

6. Were you involved in that Project? [If so], how were you involved? [In either case], what are your impressions of the project?
  - a. [If involved] What were the Penobscot Nation's goals for the Project? *Explore: To what extent did the project accomplish these goals?*
7. Did tribal members have a voice in the project? In ways and how did this matter? *Explore: How did collaboration go between the Nation and other groups?*
8. What were some of the other factors that shaped how the project went, if any? *Explore: What other groups were involved and what kind of influence did these groups have on the project?*
9. Did the Project have any unforeseen positive or negative consequences, and if so, what were these?
10. Could anything have been done differently during the Project to support the Penobscot Nation's goals? If so, how could this have been approached differently?
11. Are there kinds of research or partnerships that would be useful to your work? If so, what might these be?

12. Would you like to receive information about our project, and if so, how would you like to receive this information?
13. We're wondering if have any feedback about these questions. Are they appropriate for the tribe or this context? Are there other questions we should be asking people about dams and rivers? If so, what are these questions?
14. Who else should we talk to?
15. Is there anything else you would like to offer this conversation we didn't ask about?

## APPENDIX I

### DATA MANAGEMENT PLAN FOR DECOLONIZING RESEARCH

For this study, priorities of accessibility, preservation, and confidentiality all matter and shape each other. Below we describe how these connect with data management in a framework. This framework is intended to set fundamental protections while allowing for ongoing negotiation of additional protections.

In this plan, we refer multiple times to “data,” which means all recorded information collected as part of this study. For interviews, data are the written notes, audio recordings, and typed transcripts researchers produce from a conversation. “Research participants” are members of the Penobscot Nation who have agreed to have their experiences documented, “study personnel” are those listed as researchers on the second page of the informed consent form (Appendix A), and “The Penobscot Nation” refers to official tribal government and staff.

#### *Accessibility:*

Accessibility refers to who gets to look at the data and in what forms. This includes four key audiences: research participants; the Penobscot Nation; research personnel; and the general public. Considering accessibility means making decisions for each of these audiences and considering how these needs shape each other.

For this study, participants are the original owners of their data. The Penobscot Nation has an interest in these data for the purposes of cultural and historical preservation, and study personnel are handling these data given their interests in analysis to draw that support their careers and serve your community. The general public have provided funding for this research and could benefit from these data, either directly or indirectly through our analysis.

Study personnel will provide participant data back to participants in a timely manner. For interviews, this means giving the participant copies of handwritten notes within one week of the interview and providing a polished transcript of the audio file (if recorded) within one month. If this may not possible, study personnel will discuss a new deadline with participants.

#### *Preservation:*

Preservation refers to data storage and archiving practices that support and confidentiality. This is both short-term (storage during data analysis) and long-term (data archiving for future reference). Considering preservation means making decisions about where and how data are kept, and who takes care of these data for our research agreements.

For this study, research participants, study personnel, and the Penobscot Nation all serve roles related to data preservation. Research participants will provide the data, study personnel will help coordinate the collection, short-term storage, and analysis of data, and the Penobscot Nation will help provide platforms and techniques for data archiving.

Study personnel will store personally identifiable data in password-protected systems that, unless otherwise noted on the informed consent form, will only be accessible to study personnel. For the purposes of *this* study, we consider the data to be ‘owned’ by the participants, the Penobscot Nation, and the study personnel during the research process. Once the research process is completed by

August 2020, ownership over the data will be exclusively by the research participants and the Penobscot Nation.

This ownership is reflected in the consent form. Part of preservation includes preserving the wishes of participants to not share their data. In the case that participants have indicated “No” to questions 2 and 3 on the informed consent agreement worksheet, these data will be deleted in the future. There are two ways this can happen. One way is in August 2020 when the study has been completed. At this point, data subject to deletion and stored on personal or work computers or on any backups will be destroyed. Other deletion events may happen if any study personnel leave their institutions (*all* of the listed Universities *and* the Penobscot Nation) before the study ends in August 2020. If this happens, all data subject to deletion and stored on that individual’s personal computers or on any personal backups (but not including work computers or shared backups) will be destroyed. Deletion events will be coordinated by the individual highest on the list of study personnel who is still at their institution at the time of the event, who will notify the University of Maine’s and the Penobscot Nation’s Institutional Review Boards in writing when data deletion events have been triggered and completed.

*Confidentiality:*

Confidentiality refers to personally identifiable information of Penobscot Nation members. This involves information about the research participant or community members they may refer to. Considering confidentiality means making decisions about how much of the data will be anonymous and how to guarantee this.

Data will be kept in confidential form (with personally identifiable information removed) during data collection and processing. For all participant data, reference keys linking data files and participant identity will be kept in a password-protected, electronic file encrypted using VeraCrypt software. The encrypted file will be stored on a desktop computer in 111B Norman Smith Hall, University of Maine, Orono and also backed up to the cloud using Google Team Drive storage, with the password itself only known to study personnel.

Participants can choose have their data collected and stored in a non-confidential way (i.e. open identity). This can be chosen under questions 2 and 3 in the informed consent agreement worksheet pertaining to data sharing. If participants have answered “Yes” to question 3 in the informed consent agreement worksheet (to share their data publicly), these data will be reviewed by study personnel to protect the rights of other community members. This process will include at least one individual each from the University of Maine and the Penobscot Nation Department of Natural Resources, who will also discuss this process with the research participant. Participants who want to be involved in future stages of the research (including analysis and/or writing) can choose either on the worksheet or verbally at a later time to have their identity shared along with any excerpts of their data included in research outputs.

## BIOGRAPHY OF THE AUTHOR

Tyler Quiring was born in Kelowna, British Columbia. He graduated from Upper Columbia Academy in 2007, and earned a B.S. in Mass Communication with an emphasis in Media Production from Southern Adventist University in 2011 and an M.A. in Mass Communication from the University of Maine in 2015. He has authored or co-authored publications appearing in *Journal of Virtual Worlds Research*, *Oxford Encyclopedia of Climate Change Communication*, *Ocean & Coastal Management*, and *Environmental Communication*. He is a candidate for the Doctor of Philosophy degree in Communication from the University of Maine in May 2020.