

Making Worlds with Cyborg Fish

by Caroline Gottschalk Druschke and Candice Rai

Forthcoming in *Tracing Rhetoric and Material Life: Ecological Approaches*, edited by B. McGreavy, G. McHendry, S. Senda-Cook, and J. Wells. Palgrave Macmillan's Studies in Media and Environmental Communication Series

How can we present a proposal intended not to say what is, or what ought to be, but to provoke thought, a proposal that requires no other verification than the way in which it is able to “slow down” reasoning and create an opportunity to arouse a slightly different awareness of the problems and situations mobilizing us?

-Isabelle Stengers

riprap of things:/ Cobble of milky way./[...] all change, in thoughts,/ As well as things.

-Gary Snyder

This chapter invites a provocative awareness of the riprap and cobble that co-compose a watershed assemblage we call the cyborg fish: comprising connections, interruptions, and viscosities among, at minimum, a researcher, a river, an estuary, water temperature, lunar tide, public policy, fish with a biological imperative to migrate, two fish-blocking dams, and a human monkeywrencher committed to helping those fish bypass those dams at all costs. Gilles Deleuze and Felix Guattari theorize assemblage as a dynamic coming together of heterogeneous elements—semiotic and material, human and other-than-human, natural and built—into a

multiplicity of relational ties.¹ These elements, held together and apart through various viscosities and velocities, establish particular orders, ways of being, strata, territories, and social imaginaries within places and times, all the while undergoing constant movement, reordering, mutation, and disintegration.

Our interest in assemblage is deeply tethered to our commitment to understanding the connections between rhetoric and ecology in the places of persuasion: pointing not only to the connections among arguments, people, technologies, and texts, for example, but also to the connections among species through distribution patterns, migrations, trophic relationships, energy fluxes, and the like, and how those connections are stitched together and held apart in various places and times. By expanding the concerns of rhetoric through an ecological perspective—and expanding the concerns of ecology through a rhetorical perspective—we point rhetorical studies beyond a systemic, networked orientation to discourse and text, and toward the diverse energetics that weave among and through the biotic and abiotic materials of the world. This is an orientation toward the possibilities of work “from the inside,” an approach that, as Karen Barad explains, “doesn’t presume to take a position outside of science but rather constructively and deconstructively engages with science from the inside (not uncritically but not as critique).”²

Drawing on immersive ethnographic fieldwork that documents and theorizes encounters with rivers, river herring, dams, symbols, emotions, and humans, this chapter employs an ecological sensibility to offer a speculative inquiry into what we refer to as diadromous methodology.³ The term diadromous derives from the Greek roots *dia*—across or through—and *drómos*—run, path, or way, referencing something that moves across or through channels. Diadromous methodology, as we propose and employ the concept here, patterns itself after the

diadromous, migratory alewives (*Alosa pseudoharengus*) at the center of this cyborg fish assemblage, who adapt physiologically and behaviorally to thrive in ocean and fresh water. The concept of diadromy when applied to methodology points us toward the threads, connections, and speeds of the assemblage; to capacities to migrate, adapt, and even transform; and to the role of something we might name rhetoric or ecology in holding these fleeting alliances together and apart. Diadromy pressures assemblage thinking by placing explicit emphasis on this methodology's ability to transform *us*, in part by employing Isabelle Stengers' call to "'slow down' reasoning and create an opportunity to arouse a slightly different awareness of the problems and situations mobilizing us."⁴ Engaging in criticism that insists on taking a pause—to explore and even inhabit the interconnectedness of elements that bleed into one another—can open new lines of sight that are necessary for creating transgressive ways to mobilize anew.

This methodology—where we take “methodology” to always also mean “politics”—as it is employed here allows us to assemble with monkeywrenchers, rivers, dams, and fish in a coastal Rhode Island watershed to create playful, consequential, *diadromous* versions of “trans-species commoning.”⁵ It allows us to imagine how a diadromous, ecological practice of rhetoric from inside science and activism—in their earthly and ethereal manifestations—might move us into the creation of dynamic, albeit fleeting, trans-species alliances through our actions and our texts. In this instance, diadromous methodology points us toward our participation in the assemblage of the cyborg fish—a creature composed of fish-human-river-dam and inspired as much by biological knowledge of diadromous fish as by the creative vision of Donna Haraway.⁶ In so doing, diadromous methodology and its cyborg fish offer an addition to what Woelfle-Erskine and Cole point to as “naturalcultural strategies for resisting logics of domination, hierarchy, and homogenization in particular situations.”⁷ Through diadromous methodology, we

gathered with fish, dams, and other humans to co-theorize and co-participate in a cyborg fish assemblage. By offering that work here—through a description of our shared place; an introduction to its humans, fish, and dams; and an exploration of the controversies, collaborations, and sinews that run through that place and those actors in the assemblage—we propose a speculative vision for rhetorical studies that orients the field toward playful and consequential engagements with a more expansive array of co-creators.

Ecological and Methodological Approaches to Distributed Agency

A recent turn toward thinking about rhetoric ecologically comes with the conceptualization of rhetoric as ontological: the idea that rhetoric is of and about the conditions of being and not simply a way of knowing about those conditions.⁸ Rhetoric, in this sense, is part and parcel of the dynamic entanglement of all the elements of the world, while also offering the tools, capacities, and orientations that allow us to attune to and act within this world. This move suggests that rhetoric exceeds human desire and intention, as its enmeshments within complex assemblages are tied to forces and vectors that motor with and without human intention. As such, rhetoric's scope includes things obviously rhetorical and things seemingly not: fish, emotion, public memory, temperature, discourse, dreams, bodies, tools, and on. Rhetoric becomes something like a discipline and practice that, as S. Scott Graham envisions, treats “the symbolic, the affective, and the physical as ontological coequals.”⁹ We suggest here that diadromous methodology, and the cyborg fish it renders, align with this framing.

Thomas Rickert defines rhetoric as “one of the modalities for *attunement* to the world,” as “something world-transforming for individuals and groups immersed in vibrant, ecologically attuned environments.”¹⁰ Diane Davis points to “an originary (or preoriginary) rhetoricity—an

affectability or persuadability—that is the condition for symbolic action,” while Rickert similarly calls rhetoric an “emergent result of environmentally situated and interactive engagements, redolent of a world that affects us, that persuades us prior to symbolicity.”¹¹ Rhetoric is “ambient,” as Rickert argues, because of “its embodied and embedded or situated character, its dispersal across things that themselves have gradations of agency, and its dynamic emergence within an environment that occasions certain effects.”¹²

While Graham rightly criticizes Rickert’s Heideggerian insistence on authenticity and withdrawal and its tendency to configure rhetoric as “result” and “dynamic emergence” rather than a constitutive, ontological force unto itself, Rickert’s notion of distributed agency remains useful for our fish-work here. In Rickert’s view, the rhetorical concept of *kairos* is a form of attunement and dispersed agency—ontological, material, emplaced—a quality that manifests, ambiently, through the interactions of elements in the world, as an opportunity for action that is “dispersed into the material environs.”¹³ Jane Bennett also conceives agency as dispersed throughout the environs of place, insisting that we take seriously the agentive qualities and political dimensions of matter. Thus, she calls for a political theory of vital materialism where human and non-human elements interact in dynamic assemblages in which agency resides not with human beings and “human efforts” but rather “becomes distributed across an ontologically heterogeneous field.”¹⁴

Human agency is, therefore, decentered and leveled out, existing on a horizontal plane alongside vibrant matter. Where human agency exists, it manifests as embedded and made possible within and against the whole. This is something like being caught in a sticky web where one lifts a leg to make a movement in this direction only to find it not only harder to move than anticipated but also that one is necessarily always moving the web and all elements therein in

unpredictable ways. This unpredictable stickiness is akin to Woelfle-Erskine and Cole's insights on the stochastic responses of non-human species and evokes the need for a diadromous approach. Diadromous methodology recognizes that, rather than hindering movement, this stochastic stickiness can be productive; it emphasizes that the surprising interplay of the symbolic, the affective, and the physical actually provides the conditions for co-creativity and agency.

Rhetoric as eco-ontological names a manner in which we discover ourselves in the world—emplaced, embedded, entangled—and becomes the art of, or more like a capacity for, attunement to the world and its everyday activities. Because we, and the thing we call rhetoric, emerge in and from place and situation, rhetorical activity might be imagined, in Rickert's terms, as “kairotic, adaptive responses to evolving situations” where these situations are actually co-created through rhetoric itself.¹⁵ In our analysis here, “rhetoric”—and “ecology,” for that matter—names the thing(s) that hold together and apart this watershed assemblage we come to refer to as the cyborg fish.

In our case, the elements of fish, river, human, tide, temperature, and dam—the materials of the cyborg fish—are stuck together in a stochastically sticky way, at times arranging themselves in related waves that offer *kairotic* opportunities for action, as we soon detail. The diadromous methodology proposed here—and the cyborg fish that diadromous methodology helps to discover and co-create—offers a way to study the stickiness of place through field immersion in place. Diadromous methodology, as we will describe, allowed us as researchers to approach a distributed, complex assemblage through long-term engagement with place, people, and fish: co-author Caroline Gottschalk Druschke's (CGD's) dwelling in a particular ecosystem; the transgressive participation it sparked in an assemblage we dub the cyborg fish; and the

speculative consequences of that participation for rhetoric, environmental communication, and politics.

Spring Migration¹⁶

A love story.

On a stormy night in April 2014, CGD crossed two bridges over a New England bay to arrive at a film festival screening of the documentary film *DamNation*.¹⁷ Commissioned and conceived by Patagonia's founder Yvon Chouinard and aquatic ecologist Matt Stoecker, *DamNation* tells a powerful story of dam construction and removal in the American West and its consequences for migratory fish species. It is a beautiful film: epic, powerful, hyperbolic, clear-cut. Native Chinook salmon and steelhead trout emerge as the clear protagonists, buttressed by the efforts of activists fighting on their behalf against misguided, capitalist, expansion-hungry, mid-century American politicians and engineers and the concrete behemoths they wrought. The sides are clear: pristine nature pitted against technology and capitalism run amuck, what Woelfle-Erskine and Cole point to as the ongoing impacts and logics of Manifest Destiny in the American West. There are right and wrong answers. And the right ones are explosive, energized, expansive. Cathartic.

But as CGD sat in that auditorium with hundreds of other people watching the film, cheering the electrifying demolition of Washington's Condit Dam, and later asking questions of co-producer/director Travis Rummel who traveled in for the screening, there was an equally epic, though humbly modest, story playing out all around us: in the small rivers and mill streams all around us in coastal New England. That very month, as it does up and down the U.S. Atlantic coast, an ancient, evolutionary force pulled an estimated 70,000 alewives and

bluebacks—collectively known as river herring—back into the 7.5 mile long Missituk River that birthed them, to fight flashy flows in hopes of migrating into their freshwater spawning grounds upstream.¹⁸

While it might seem that this biological, migratory force has nothing to do with rhetoric, we will, in fact, be making the very case that it does. For now, let it suffice to say that if we understand rhetorical force as not simply the arguments contained within alphabetic texts or wielded by human agents, but as ecological and ambient, as exceeding human desire and intention, as all that might move the collective us, we can begin to see how this chemical, climatic, and biological force can become entangled in that which constitutes persuasion and its conditions: words, images, hormones, processes, ideologies, myths, desires, fish sex, and so on. As we see it, something we could call persuasion and maybe rhetoric is clearly at work in the complex assemblage of physiology, lunar high tides, rainfall, water temperature, memory, smell, chemistry, and more that combine to pull river herring—*kairotically*, right on cue—from their meanderings in the Atlantic Ocean back into the tiny ponds of their birth. This urging, signaling, and calling is a form of persuasion, and maybe argument, to these river herring that it is time to return home. And the audience obliges.

As diadromous fish, river herring depend as much on the ocean as on their upstream, freshwater habitat, where each female and male alewife works together to fertilize up to 100,000 tiny pink eggs that, if they survive the miniscule odds of not getting eaten or destroyed along the way, will drift onto the substrate below, hatch, mature, and finally migrate downstream to the open ocean in autumn. River herring are known to travel to the edges of the continental shelf in their three to five years at sea: surviving predation, acidification, disorientation, commercial trawling, and a stunning physiological transformation that allows them to thrive in the freshwater

habitat of their births, then in saltwater, and back to their freshwater origins to spawn the next generation. So, as CGD sat watching *DamNation*'s iconic, powerful, *visible* salmon in April 2014, thousands of humble river herring inconspicuously made their way into the mouth of the Missituk River, past a bevy of hungry osprey and cormorants, around the river's first dogleg, and smack into the stone face of the Main Street mill dam. Thousands of years of evolution could not surmount ten feet of stone dam or a failing fish ladder: the concrete structure meant to serve as a stairway for migrating herring to bypass the dam.

While river herring's dorsal fins rarely break the surface, the buildup of fish in the brackish water below the dam is a sight to behold: a pulse of silver flashing beneath the clear, amber water. Herman Melville's Ishmael was describing the Atlantic Ocean when he mused, "the waves rolled by like scrolls of silver; and, by their soft, suffusing seethings, made what seemed a silvery silence, not a solitude," but he may as well have been describing the spring river herring run on the Missituk River.¹⁹ Those lucky enough to know about the pulse of life beneath the unbroken water keep their eyes glued to the river each spring, riveted to the Sisyphean task at hand. The alewives fight heroically against the surging current, the poorly designed fish ladder, and the stone face of the dam, meditative in their consternation. They labor together, writhing in unison at a speed that appears a slow and perfect standstill, a speed they can persist at, as a federal fisheries biologist friend put it, "infinitely." Their biological, infinite, even hopeful patience is a jarring affront to the avatar of efficient, early industrial capitalism they face: the nineteenth-century mill dam. In their coordinated movement, the annual congregation of river herring bodies serves as a provocative argument against the seemingly impenetrable dam.

Beginning in 2010, the river herring's purgatory at the dam was arrested by the most modest of saviors: a large, green, bent, ripped, zip tied, PVC pipe-handled net that scooped them up rather unceremoniously and launched them over the face of the dam. Not much worse for wear, the river herring continued their journey upstream until they were scooped again over a second failing fish ladder, and completed their journey up into the freshwater habitat in which they spawn. From 2010 to 2016, a growing number of net-wielding community volunteers joined forces with the fish at those two ladders—communicating through cell phones, standing on temporary structures, filming with GoPros, donning waders, navigating currents and tides—to hoist the fish ten at a time over the two dams and on to new life.

Human Activism on the Missituk River

One way to engage with the story of the Missituk River would be to focus on its loudest and boldest human characters. A significant body of work in rhetoric of science and environmental communication takes this tack, focusing primarily on the agency of human actors that advocate, argue, interject, and act in the realm of public debate, especially in environmental controversies.²⁰ Our story of the Missituk herring, too, could be told through its heroic, larger than life human actor: the man who bought those green nets and who single-handedly started the work of the Missituk herring lifters—we'll call him Hayduke²¹—with a simple announcement to the state fisheries biologist:

Tom, I'm going to start tossing some herring over the dam.

In 2010, Hayduke noticed the amber water was thick with herring because of a recent fish stocking effort in the state. He realized the increasing numbers of migrating river herring were not making it through the fish ladder (built in the late 1960s for now-extirpated Atlantic salmon),

thanks to poor placement of the ladder's opening and higher than passable water velocity through the ladder. Hayduke immediately called the state fisheries biologist, Tom, to tell him there was a problem with the fish ladder that would have a long-term negative impact on the river herring restoration program. Tom already knew of the problem, but the state was limited in its ability to address the issue by the labor and cost required to pass river herring over the dam by hand or by tanker truck. Hayduke promptly announced that he planned to step in.

State representatives quickly placed Hayduke's effort within rhetorical ecologies of institutions, channeling his work into technological procedures, processes, and paperwork. Hayduke, for example, had to seek approval from the town as the legal owners of the dam and complete paperwork, apply for scientific collector permits, and carry liability insurance. But Hayduke pointed to the earliest days of the fish lift, before the paperwork and permits:

The town turned a blind eye and said 'Do what you've got to do.' And the state didn't say anything. And I had no insurance, no herring permits, nothing... It was just that simple. Nobody called me. I went down on my own... And I was violating like every law. I took a yellow caution vest and I just wrote [Department of the Environment] on the back. And Frank and I went down in there and started throwing fish over... And then people would start to show up and I would say, "Do you want to help? Come on down!"

Hayduke worked against the current of the river and of town, state, and federal management to take matters into his own hands because, as he explained:

Nobody else was doing it. I've always had a passion for migratory fish. I saw a problem. I knew it was a problem. And I decided to do something about it.

The work, for Hayduke, was an all-consuming passion:

It's just like this is like my Disneyland. It's my Super Bowl and my World Series. It's, you know, it's everything.

Hayduke used to engage with formal river herring policy discussions through the New England Fisheries Management Council and the National Oceanographic and Atmospheric Administration (NOAA) but explained that he finally became fed up with what he saw as

regulatory inaction on river herring protection. Hayduke's activism changed its focus to immediate (and sometimes unsanctioned), pragmatic, *kairotic* action: namely, getting the fish over the dam as soon as possible:

I mean I could try to win some of those, but I don't really bother... I just move fish. For those who joined Hayduke's movement, there was something seductive about the plight of the underdog river herring. The fish lifters stood up for river herring against what they saw as a mismanaged bureaucracy that thwarted efforts to get these fish past New England's 14,000 dams. Hayduke saw hope and salvation in these fish, magic and amazement, and many lifters did, too. A powerful sense of righteousness and wonder embedded itself within the culmination of elements in this place that constituted rhetorical force and *kairotic* opportunity.

For five years, the group labored to lift fish over the dam, until 2015, when a planned renovation of the fish ladder promised to resolve the situation. But a slow start to construction in late fall 2014 meant the renovation of the Main Street ladder was abandoned for winter. Back at work in spring 2015, the crew demolished the lower reaches of the Main Street fish ladder, blocked a portion of the dam, and rerouted the streambed and flow to accommodate their work. Construction inched along while anxious federal fisheries managers and town residents worried the ice would soon melt on the downstream salt pond, coinciding with a new or full moon and heavy rains that would signal the herring to make their way upstream. River herring run on seasonal, *kairotic* time; the timing of their spring migration is a moving target dependent on a variety of ambient factors, and that uncertainty added to the anxiety of the river herring's advocates—both public and governmental—as construction crept along.

Despite Hayduke's focus on just moving fish, the seemingly glacial pace of the work crew and the impending arrival of the river herring offered an exigence for Hayduke to vent his

frustration at state and federal management. As spring progressed, and water temperature rose, the fish lifters were cc'ed on a series of anxious emails from Hayduke to NOAA, state, local officials, which built to a March 2015 all-caps email demanding federal officials cease construction and reroute the flow of the river:

YOU NEED TO MAKE A DECISION AND YOUR DECISION NEEDS TO BE SOON.

Without a sufficient response, Hayduke offered his own solution two days later, emailing schematic drawings of a slight site alteration that would allow for netting, and imploring officials to stop work and execute plan B.

Kairos emerged from the interaction of email, anxiety, warming temperatures, and soon-to-be-migrating fish, as local, state, and federal officials decided to halt work and adopt Hayduke's design. Officials followed up with a series of emails forwarded through Hayduke to the lifters containing strict instructions about applying for and carrying state licenses to access the gated construction area and locked up nets. Where, in other years, dynamic groups of up to 50 people would meet at self-organized times to lift fish together, in spring 2015, netting became a policed and regulated activity, dispersed to individual participants only when they took the initiative to attend a training, secure state permits, and remember the combination for the newly locked nets. Even Hayduke's impressive skills at community organizing were not enough to consolidate the energy that had existed in previous years. The window of opportunity, it seemed, had passed. *Kairos* was swept downstream.

In late 2015, construction crews finished work on the Missituk fish ladders, and the state environmental agency distributed a celebratory press release about the herring's now "seamless" run to their historic spawning grounds. News coverage of the state's opening ceremony at the ladder referred to Hayduke as "a simple bystander." In light of the reconstructed ladders, "[The

group's] efforts weren't needed." But when herring returned to the Missituk in spring 2016, it became clear that thousands of river herring, once again, gathered in the pool below the upstream ladder, unable to reach their spawning grounds further upstream. The fish lifters responded by gathering, once again, too: an arrangement of human bodies below the fish ladder, mingling with bodies of in-migrating alewives and bluebacks and assorted aquatic creatures, navigating permit genres and emails and technical equipment, and moving in unison with the bodies and life histories of these fish.

The partial failure of the technical solution at this fish ladder served as a reminder that countered prevailing public narratives in which a single action, like the Elwha River dam removal in Washington State, can seem to restore an entire river system. New England's estimated 14,000 dams, paired with myriad anthropogenic impacts, mean that one dam removal or improved fish ladder cannot "fix" a system, if "fixing" means something like returning it to a "natural" state. Instead, the present and foreseeable future of Missituk river herring life history involves a complex assemblage of alewife, blueback, dams, fish ladders, nets, fish lifters, researchers, river, rain, tide, arthropods, moon, gravel, permits, nutrients, and on and on: "lines of articulation or segmentarity, strata and territories" as one actor is segmented from the next, "but also lines of flight, movements of deterritorialization and destratification" across them as phenomena speed up and slow down through tides, days, weeks, seasons, people to "accelerate and rupture."²² The insights of assemblage theory—which the Missituk river bears to us so starkly—is that while our forms of agency are always discovered in a place and time and that there is always opportunity everywhere for agency and change, this change is limited, contingent, unpredictable, partial, here and now, not always and forever, fragile and incremental. We know not what it is that we can really do—such is a form of wonder and of hope that keeps

us moving and reaching in the face of such radical unknowability and stickiness. Among other things, a diadromous methodology can help us archive the forms of reaching present in a place (such as fish lifting designed to solve a problem) and imagine the forms we might take up wherever we dwell.

So we can imagine environmental communication and rhetoric of science researchers being interested in the Missituk lifters; they offer an elegant community-based solution to the technical problem presented by the malfunctioning ladders, while posing poignant questions about legitimacy and authority over this seasonal, biological migration. The group is interesting, too, because while some members seem to engage in “legitimate” forms of participation with state and federal agencies (e.g., attending public fisheries forums), many seem to participate in the annual fish migration not so much to engage with the work of federal agencies, but to step outside of frustrating formal processes of public participation in environmental decision-making. By self-organizing fish lifts, the group sidesteps technocratic models of environmental governance and policymaking, a lack of productive forums for citizen involvement, and the futility of the decide-announce-defend model of public participation processes.²³ Community members literally and figuratively work upstream and engage with ongoing conversations about stakeholder interest in agency-led environmental efforts and the possibilities for active community engagement.²⁴

But we want to push readers outside of this anthropocentric, non-distributed frame. We suggest that conceiving the Missituk events through a diadromous methodology focused on the complex assemblage of the cyborg fish (that includes CGD) offers more potential for environmental communication and rhetoric of science, allowing us to understand this tale not as a human-centered display of activist agency, but as a creative, dynamic, consequential cyborg

assemblage that works with, through, and beyond: altering the ecologies of the Missituk watershed, both material and symbolic.²⁵ In other words, we suggest that it may be more useful, more fundamentally and creatively productive, to look instead to how human joined with and was joined by fish, net, dam, and river to co-create the assemblage we point to as the cyborg fish. Diadromous methodology—enacted above as we detailed the tangle of forces bundled together by the thing we call rhetoric that co-create the spring migration, and below as we work through the figure of the cyborg fish—begins to get at how we might reorient our rhetorical perspectives to slow down and capture the deep interconnectedness of elements in the assemblage (animal, mineral, symbolic, and more) that work together in and against a sort of consonance of place. We argue that the attempt to attune to such consonance, to perceive and tentatively and partially represent it in narrative form, is an affordance of this field-based diadromous approach.

Assembling the Cyborg Fish

The assemblage of fish, river, dam, and fish on the Missituk River exemplifies and becomes accessible through theoretical and physical diadromy, in the figure we refer to as the cyborg fish. Haraway conceives the cyborg as animal and machine, organic and inorganic, alive and not alive; as she puts it, cyborgs are “creatures simultaneously animal and machine, who populate worlds ambiguously natural and crafted.”²⁶ Importantly, Haraway seeks to muddy the borders between animal and human, human and machine, biotic and abiotic, you and me, us and them. Through the figure of the cyborg fish, we seek to fuse rhetoric with ecology, human with fish, nature with culture, metaphysics with ontology, and find inspiration for a diadromous methodology that is marked not so much by specific practices so much as an orientation to analyze and participate in such fusing and dissipating across things as manifested and emergent

in place. We build from the way that, as Haraway argues, “cyborg imagery can suggest a way out of the maze of dualisms in which we have explained our bodies and our tools to ourselves.”²⁷ As she insists, “A cyborg does not seek unitary identity... there is no drive in cyborgs to produce total theory, but there is an intimate experience of boundaries, their construction and destruction.”²⁸ Cyborg fish demonstrate our orientation toward assemblage, pointing us toward what is and is not included in the cyborg fish at any given time, as the cyborg fish accelerates and slows, moves fluidly across species and policies, migrates from Missituk watershed, to researcher, to MacBook, to printed book chapter, to reader: maybe altering your own human-fish assemblage.

The Missituk herring-human-river-dam-ladder assemblage is a cyborg fish because its existence and the conditions of this existence are facilitated, constrained, and shaped by the workings together of many factors and actors that are stitched together, always tenuously, through the exchange of energies that are both *trophic*—which is to say ecological(-rhetorical), related to the exchange of energy as organisms associate with one another through acts of eating and decomposition—and *tropic*—which is to say rhetorical(-ecological), related to turning toward another body or force. This tropic and trophic orientation that we are advocating for is to perceive of one’s objects of study not as objects at all, but more as rhetorical-ecological process and connective tissue. In this configuration, the unit of observation and analysis stresses this simultaneous, inseparable interface of what is often called *rhetoric* (symbolic systems, human cultural stuff, ideology, social matters, shared desires, designs, memories, and affects that tenuously enable the coordination of humans within assemblages) and what is often called *ecology* (natural, built environments and forces, matter, biological rhythms, bodily logics, knowledge and ways of being that become entangled with and exist beyond human design and

perception) in order to reframe the ontological equality of the physical, the symbolic, and the affective. Where, for Graham, if things “gather through electromagnetism and gravity, that gathering is not ontologically distinct from their gathering through representation or ideological hegemony,” in our own rhetorical-ecological diadromous context, if things gather through gravity, salinity, chemical signature, nutrient budget, or hunger, that gathering is not ontologically distinct from their gathering through capitalist logics or narrative or metaphor.²⁹ And all of the above have interest for us here.

We bring rhetoric together with ecology, the exchange of symbolic and physical energies, the exchange of calories and affective responses, as actually part and parcel of the same thing at base, and our synthesis emphasizes this energetic as extending beyond the intentional. Where Emily Plec describes a related sort of internatural communication as including, “the exchange of intentional energy between humans and other animals as well as communication among animals and other forms of life,” the trans-species, diadromous rhetoric that we are advancing here is not always or only intentional or emerging from motive.³⁰ Nor is it necessarily an “emergent *result* of environmentally situated and interactive engagements,”³¹ as Rickert argues, though rhetoric strikes us as a useful name for connective force at work on the Missituk, holding together the cyborg fish assemblage and naming the conditions that pull it apart.

This conception of rhetoric as affinity or persuadability, as a form of attunement with symbolic, affective, physical environment or, better, *ecosystem*, seems to label the *tropic* turnings we see at work on the Missituk, as leaf turns toward sun, alewife turns toward headwaters, fish lifter turns toward fish.³² And yet, we understand this theoretical perspective—this attention to the turning and attraction of *tropic* conceptions—as more useful, more revelatory, more productive in CGD’s deep engagement on the Missituk, when paired with an

attention to the *trophic* dimensions of energy's exchange—as alewife eats zooplankton, human eats alewife, human resists eating alewife, alewife resists being eaten by human. The cyborg fish, then, becomes manifest as assemblage through both *tropic* persuadability and *trophic* flux: through the communing of nature, culture, fish, human, and biology in processes more-than-human and more-than-biotic and through Missituk activists who assemble and are assembled by mill dams, fish ladders, and mill ponds as integral components of the herring's life cycle. Here, the figure of the cyborg fish offers a way to understand the life and death of an activist project that is not really a death, one that offers the possibility for perpetual life if life becomes something more like energy, or movement, or capacity to act on and through and with others, or possibility, or hope, as Haraway rendered it:

From another perspective, a cyborg world might be about lived social and bodily realities in which people are not afraid of their joint kinship with animals and machines, not afraid of permanently partial identities and contradictory standpoints. The political struggle is to see from both perspectives at once because each reveals both dominations and possibilities unimaginable from the other vantage point.³³

Energy, in this perspective, continues to flow—from sun to phytoplankton to zooplankton to alewife to osprey to maggot and on. This conception of the cyborg—and the diadromous methodology that enables it—asks us to inhabit a political orientation that insists we “see from both perspectives at once,” and more than both, which is also to say that we truly open ourselves up to being moved, changed, and persuaded ourselves. Taking on the perspective of plankton, fish, river, learning to see from these multiple perspectives, offers a sort of perspectivism that, as Peter Skafish describes, offers, “a way of thinking in which the first reference is not to the self but to the other person: every thought, subject, or collective depends on and comes from the other,” where personhood extends beyond the human.³⁴ This perspectival politics is a transformative move that can open up creative space for the sort of speculative new awareness

for which Stengers calls. As Skafish notes, “When our basic ontological tenets end up ‘twisty,’ [...] there are political effects.”³⁵ Diadromous methodology—and its positioning of the researcher within the assemblage—warrants these political effects as ones that are embedded in place, sticky, contingent, and limited, even as they remain vehicular and agentic. Diadromous methods can help us identify and co-invent deeply situational and *kairotic* forms of and capacities for reaching (toward change or problem solving) in place and time, and to identify and co-invent the supports and conditions (be they powerful arguments, material resources or otherwise) required to help us reach toward whatever political effects seems to occasion our collective striving, even if we never fully reach them.

In our experiences on the Missituk River, deep engagement in the field and with its people and things, and the development of supporting knowledge about ecology, economics, political science, anthropology, and more, have been essential to the awareness of constant disturbance, to adopting a different perspective, to forming politics rooted in change, contingency, dynamism, and ecology, to learning to see anew, to being persuaded in manners not planned on or even, in some cases, desired, to being jolted fundamentally through encounter with others. To the recognition of the cyborg fish and to the transfer of energy that it performs and represents. And to the political consequences of that recognition. In short, the cyborg fish warrants the queer possibilities of diadromous methodologies.

The cyborg fish assemblage exists in a real, experienced, tangible place of persuasion—the Missituk watershed—where river herring bodies gather annually to fulfill their biological imperative against all odds; where technology and capitalism conjoined to build a dam fueled by human desire for progress and later by sentimentality when the dam outlived its functional use, embedding itself into alewife and blueback life history; and where various actors—including

CGD—are compelled to gather, act, argue, and intervene together. Such a place catalyzes and constitutes the terrain of invention, a location both material and conceptual composed of enmeshments, in this case, of river herring biology and life history, mill dam, fish ladder, fish lifters, state and federal fisheries policies, circulating topoi, and all manner of other things that weave and are woven among these things that help them gather here to co-create playful and even transgressive naturalcultural assemblages.

Where Rickert points to rhetoric as “one of the modalities for *attunement* to the world,”³⁶ CGD’s ambient fieldwork on the Missituk—composed of watching, waiting, wading, touching, reading, listening, talking, laboring, kayaking, teaching, lifting in coordination with and with growing awareness of tides, temperatures, arthropods, predators, storms, nutrients, offshore trawlers, sediment, sand, cobble, dam—offers ecology as another essential modality for the type of creative, world-changing, world-making work that can and does emerge from the assemblages within we immerse ourselves as researchers. CGD’s spiritual practice and study of ecology is apt here, as what the Cary Institute calls, “The scientific study of the processes influencing the distribution and abundance of organisms, the interactions among organisms, and the interactions between organisms and the transformation and flux of energy and matter.”³⁷ This ecological orientation offers another perspective onto how we might deepen our understanding of the vast enmeshments and collective, agentive forces that compose any assemblage. In the case of the Missituk River assemblage discussed here, immersion in the field prepared CGD to compose together with other humans and other-than-humans: creating relationships, vibrant spring herring runs, informational signage, experiences, cyborg fish, and attuning CGD to the possibilities of a more-than-natural diadromous rhetoric. In other words, ecology reminds us of *trophic* energy and materiality, offering a useful correction for *tropic*-heavy symbolic views of rhetoric. While it

may not be correct to divide ecology and rhetoric in this way—in fact, we are certain it is *not* correct—we offer the distinction here as a useful heuristic. A thought experiment with legs, or, in this, case fins. CGD’s fieldwork on the Missituk and the trans-species labor it blossomed into offered a diadromous methodology: of ecology alongside rhetoric as a modality for attunement with the capacity to make change. It offered rhetoric as an active force, a multidimensional energetics with the attractive capacity to hold assemblages together, and rip them apart.

Back on the Missituk itself, as time passes, more dreams, desires, actions, nutrients, chemicals, bacteria, arguments entangle themselves in that place, providing more resources from which to solve its contentious and urgent problems—though what constitutes a “problem” and “appropriate action” is always, continuously, open for debate as we—an open, trans-species “we”—mobilize in inventive assemblages. We can think of this rhetorical action as deeply situated monkeywrenching that attends to and loops in wide-scale environmental advocacy, but does so in a manner saturated with the tools and resources and details and biota and abiota of very specific places and times: the creation of a diadromous methodology. Indeed, it is our contention that capacities for response must be (are always already) situated: *kairotic*, embedded, emplaced, entangled, and attuned to the here and now.

Joining the river herring, who are beckoned to their natal rivers each spring by a mysterious assemblage of ambient biological forces, are fish lifters, who leave children and family at home to gather at the dam, donning waders or warm coats, nets and buckets in hand, in water and along the banks, and organize their bodies into the collective to work in the most mundane and (un)common ways. All the bodies and things, biologies and desires in deep connection, materiality tethered to persuasion as rhetoric-ecology: ripped flesh of fingers, flashy river flows, flying herring scales, freezing water and briny smell, slippery rocks, human with

herring, dam and river, failing fish ladder, aging nets, arguments for how to move through or control, catch and release, the life of the river—all and more engaged in *phronetic* study, gaining the sort of wisdom concerned with action to which Aristotle long ago pointed. The fish lifters of the Missituk have dropped out of disembodied, immaterial discussions of fisheries policy in nondescript meeting rooms across the region and have stepped into the cold spring water to gain a sort of experiential knowledge, a practical or applied wisdom inaccessible through other means. More than anything else, this diverse group—fish, human, river, dam, net—engages with and through the natural, built, and symbolic ecologies of this place: each participant is lost at moments to the flow of the river, the argument, the action, the herring's plight. Flows of ecological and rhetorical energy—*trophic* and *tropic* interactions—become indistinguishable. Rhetoric is part of the ecology of this place and ecology becomes rhetorical. Here, again, the unit of analysis is rhetoric-ecology, the eye trained on the place of interface and con-fusion. Persuasion pulls the herring upstream, pulls the lifters to and in the river, orchestrates their collective movements down the line of lifters, seems to self-organize the coordinated movement of wader-clad bodies in the river, the hoots, the yells, the cheers, the silence. Pulls the lifters to take action: action that is mostly illegitimate, sometimes ill-informed, usually collaborative, often contentious, and always consequential, and action, too, that becomes entangled not merely with the plight of the fish, but also with the ambient and biological forces to which these fish are responding. And, in so doing, the lifters assemble with the river herring and the fish ladder and the river and the dam—and the researcher—to collectively monkeywrench a future not for but *with* these fish.

Creating Human-Fish Worlds: The Activism of Cyborg Fish

True to our ecological, speculative mode, we want to decenter the role of Hayduke and his fellow human activists engaged in important political work and, instead, draw attention to an ecological view of rhetoric as an attractive force that shapes and holds together the infinitely complex workings of the elements of the world and to a diadromous methodology that hopes to grant tentative and fraught access to these complex worldings. While migrating river herring might be thought of as beyond the scope of rhetoric, we are arguing in no uncertain terms that the force of river herring migration—or of any other natural or social force that includes but exceeds human beings—is entangled with our understanding of rhetoric. That even though the annual fish migration is beyond human control or even past our capacity to know and predict the myriad factors that trigger the calling in of river herring from miles away at sea to the precise freshwater pools in which they were spawned, pairing rhetoric with ecology through a diadromous methodological approach allows us to see, learn from, participate in, *and be transformed by* this persuasive, trans-species force. Because rhetoric is immersed within and emerges in concordance with emplaced ecologies and never apart from them, rhetoric can act as a means for reshaping and mutating ecologies as one of many elements within the assemblage that can exert force.

In focusing on the persuasive forces of river herring, we join rich conversations among rhetoricians and communication researchers interested in the rhetorical qualities of biology, environment, and animals.³⁸ We engage with that work, but we note that what our work does differently, among other things, is to move us out of discussions of “natural” animals, into the figure of the cyborg, a move that necessarily expands our definitions of rhetoric and rhetoric’s possibility. The case of the Missituk herring assemblage demonstrates actants engaged in a project together. It exemplifies *praxis*—a getting something done thanks to a particular dynamic

assemblage of time, space, people, policies, and things. It shows people participating in forms of public engagement but recognizes that engagement is deeply woven into that wider assemblage. Human actors school with river herring—communing with them—as piscine actors school with humans. The figure of the cyborg fish helps us consider the persuasive capacities of river herring migration, actual and analog, and to recast activism and engagement beyond the human agent.

Like Zoe Todd’s “fish plurality,” which attends to the plentiful and competing, codified and ephemeral, “multiple ways of knowing or defining fish,”³⁹ the cyborg fish suggests that one aim of diadromous methodology is the attention to a deeply enplaced and intimate form of communing and acting within and in response to a constellation of forces, people, things, desires, affects, frictions, and arguments within an ecosystem. As the diadromous cyborg fish is capable of knowing in multiple ways—swimming across and through strikingly different ambient environments, existing and sensing and responding to new elements as they cross different aquatic terrains—so, too, must a diadromous view of rhetoric adopt an immersive orientation toward seeing, sensing, knowing in multiple, and perceiving the places and ways things, people, elements fold into and create each other, and then folding and creating themselves anew.

In short, without understanding the river system of the Missituk, or the life history of the alewife, it is easy to focus on the Missituk Herring Association as a rhetorical case study that marks the gathering of anthropocentric, agentic rhetorical energy—through Hayduke’s impassioned pleas to join him, through the community’s *kairotic* interest in the spring migration, through the big personalities of the state and federal fisheries managers and of the even bigger personality of Hayduke himself. By adopting a view of rhetorical ecologies, we begin to see how strategic, relational, and material arguments in favor of fish migration travel across time and space, between and among the many players described above, and we might even take stock of

the genres, permits, technologies, and images through which arguments about fish passage travel. But a biophysically grounded ecological orientation to the system—a diadromous methodological orientation—demands an expanded interpretation. Fish lifter, fish, and net may have assembled to create the cyborg fish, but even when the community activists and the construction crew recede into the distance, frustrated, on the one hand, work completed, on the other, the cyborg fish goes on, and carries with it the rhetorical energy that once gave life to the activist movement. The cyborg fish carries on: maybe biological fish and concrete ladder and wooden baffle but no human. The cyborg fish is perpetual energy, rendered in alternate form. Energy, like water, finds a way.

This is a view of rhetoric as velocity, flow, force, communion, embeddedness tangled with materiality and nature, a force welded as much to biology as persuasion or the influence of crafted human argument. It is, in its sparest form, to say that understanding rhetorical ecology is to understand the forces and flows of one's place in the world. The urgency toward action and the shape that action might take emerges in the forms allowed by the amalgamation of these workings together. Human actors are only a sliver of the actors, and our—a trans-species “our”—ability not only to act but also to perceive how, why, and when to act is a capacity manifest from and imbricated within the places we inhabit in the world. Thus, the will to act, as well as the dispersal of action, are always flows that are tied to human and more-than-human factors.

The successful endgame, then, of this type of ecological engagement is generally not the dramatic overthrow of systems of power in a grand narrative peopled with heroes and villains, where good overcomes evil in an epic battle that results in a new world. Rather, we advocate for the creative exploration of methods and modes more subtle, nested, and complicit—where one is

never sure how one's actions make a difference, where one is willing to give up one's notion of oneself, where making a difference might mean slight alterations in what others can see or do, where sometimes imperceptible micro-changes are, in fact, the thing to be celebrated and noticed as victory. Even that we are writing and you are reading this now indicates a certain success for the ecological engagement that Hayduke, the river herring, the fish lifters, the Missituk, CGD, and CR practiced together—in that the rhetorical velocity of those actions has resulted in the circulation and open possibilities of those stories and bodies and energies for us and maybe for you. That their work might alter us—and you—slightly is something. It is not a grand narrative of change that sweeps us away, but it is a profoundly hopeful message of small changes in the face of radical complexity, contingency, and impossibility.

Just as diadromous river herring rely on both freshwater and saltwater to survive, rhetoricians interested in our places—and in acting in our places—might rely on diadromous approaches that account for rhetoric-ecology to attune to Gary Snyder's "riprap of things:/ Cobble of milky way" in order to creatively foster "all change, in thoughts,/ As well as things."⁴⁰ If we have any hope of consequence, of worldmaking in current earthly conditions, we need to engage with field methods and work to understand both rhetorical theory and biophysical materiality. We need to try to understand things like fish, human, dam, river, and tide, even if we fail at it. We need to embrace the ethical demand to know—both know about and intimately know—what we are talking about.

We urge environmental rhetoricians and communicators to play with diadromous approaches—in our case, qualitative, experimental, and ecological field methodologies that allow us to listen to, learn from, and create with the connections between humans, river herring, rivers, tides, and dams. We encourage researchers to learn and practice from both the outside and

the inside of science; to run upstream and down through watersheds, theories, and power structures; to become more porous to the diverse and changing ambient environments in which we work and which we co-create, in their symbolic, affective, and biophysical forms. At its heart, this move requires an expansion of the matters of concern—both conceptual and material—that we attune to in learning about the world and acting within it. This deep engagement with people and things—the interruption it provokes and concordant attention to divergent, diffractive, surprising, transgressive threads across and among beings and things—offers the possibility for work in rhetorical ecologies, environmental communication, and rhetoric of science to contribute to informed analyses and actions that can support broader normative goals of sustainability, environmental and social justice, and what we take to be the root goal of rhetoric: the negotiation of a more equitable and ethical life in common.

Like the diadromous fish that can miraculously adapt from fresh water to salt water somehow return home to their natal rivers from thousands of miles away, rhetoricians can strive to be similarly flexible but emplaced. Consider what we could gain from homing to our natal rivers, digging in, and listening. Sensing. Attuning. Communing with others. *And acting.* Borrowing the rhetorical energy of the fish, the river, the dam, the riffle, getting out of its way, hitching a ride, and engaging this power as it pulls us downstream and then up. That may not be a satisfying answer, but only a pregnant question: *What if?*

¹ Gilles Deleuze and Felix Guattari, *A Thousand Plateaus*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987).

² Karen Barad, "Nature's Queer Performativity," *Qui Parle: Critical Humanities and Social Sciences* 19, no. 2 (2011): 51.

³ Pronounced \dī-'a-drə-məs\.

⁴ Isabelle Stengers, "The Cosmopolitical Proposal," in *Making Things Public: Atmospheres of Democracy*, eds. Bruno Latour and Peter Weibel (Cambridge: MIT Press, 2005), 994.

⁵ Cleo Woelfle-Erskine and July Cole, "Transfiguring the Anthropocene: Stochastic Reimaginings of Human-Beaver Worlds," *TSQ: Transgender Studies Quarterly* 2, no. 2 (2015): 311.

⁶ Donna J. Haraway, "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century," in *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991), 149-181.

⁷ Woelfle-Erskine and Cole, "Transfiguring the Anthropocene," 300.

⁸ Ecological approaches to rhetoric include Anis Bawarshi, "The Ecology of Genre," in *Ecocomposition: Theoretical and Pedagogical Approaches*, eds. Christian R. Weisser and Sidney I. Dobrin (Albany: State University of New York Press, 2001); Jenny Edbauer, "Unframing Models of Public Distribution: From Rhetorical Situation to Rhetorical Ecologies," *Rhetoric Society Quarterly* 35, no. 4 (2005). For examples of key ontological texts, see Thomas Rickert, *Ambient Rhetoric: The Attunements of Rhetorical Being* (Pittsburgh: University of Pittsburgh Press, 2013); S. Scott Graham, "Object-Oriented Ontology's Binary Duplication and the Promise of Thing-Oriented Ontologies," in *Rhetoric, Through Everyday Things*, eds. Scot Barnett and Casey Boyle (Birmingham: University of Alabama Press, 2016).

⁹ Graham, "Binary Duplication," 121.

¹⁰ Rickert, *Ambient Rhetoric*, xviii-xv.

¹¹ Diane Davis, *Inessential Solidarity: Rhetoric and Foreigner Relations* (Pittsburgh: University of Pittsburgh Press, 2010), 2; Rickert, *Ambient Rhetoric*, 34.

¹² Rickert, *Ambient Rhetoric*, 36.

¹³ *Ibid.*, 95.

¹⁴ Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham: Duke University Press, 2010), 23.

¹⁵ Rickert, *Ambient Rhetoric*, 29.

¹⁶ Caroline Gottschalk Druschke conceived and conducted all fieldwork for this chapter from April 2011 to present, including participant observation, email exchanges, pedagogy, and 52 semi-structured interviews. From 2012 to 2016, Druschke worked in collaboration with Kristen C. Hychka, Peter Schooling, Evan Dunphy, and with community fish lifters, migratory fish experts, and local, state, and federal officials involved in freshwater restoration and marine fisheries. Much of the narrative voice is Druschke's. Candice Rai contributed theoretical and writerly support.

¹⁷ This paper builds on Druschke's broader fieldwork, an Institutional Review Board-approved research study that requires the use of pseudonyms for many people and places throughout.

¹⁸ "Missituk" is not the river's actual name. Missituk translates as "great tidal river" (missi = great; tuk = river pushed by tide or wind) in the family of Algonquin languages that provide so many place and river names throughout New England.

¹⁹ Herman Melville, *Moby Dick* (New York: Bantam Books, 1964), 219.

²⁰ See Phaedra C. Pezzullo, *Toxic Tourism: Rhetorics of Pollution, Travel, and Environmental Justice* (Birmingham: University of Alabama Press, 2009); Carl G. Herndl and Danny A. Bauer, "Speaking Matters: Liberation Theology, Rhetorical Performance, and Social Action," *College Composition and Communication* 54, no. 4 (2003); Danielle Endres, "Science and Public Participation: An Analysis of Public Scientific Argument in the Yucca Mountain Controversy," *Environmental Communication: A Journal of Nature and Culture* 3, no. 4 (2009)

²¹ Fans of Edward Abbey may understand this pseudonym and its parallels. With a dogged passion for migratory fish, a lack of inhibition in the face of state and federal fisheries regulators, a sharp mind for engineering fish passage solutions, boundless energy despite sometimes troublesome health, and a night job that allowed him daytime hours for his activism, Hayduke became in many ways the voice of river herring on New England's southern coast.

²² Deleuze and Guattari, *A Thousand Plateaus*, 3-4.

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- ²³ For more on the difficulties of public engagement in environmental policymaking, see Stephen P. Depoe, John W. Delicath, and Marie-France Aepli Elsenbeer, *Communication and Public Participation in Environmental Decision Making* (Albany: State University of New York, 2004).
- ²⁴ Harry Collins and Robert Evans describe “upstream” science studies, while Gregg Walker, Susan Senecah, and Steven Daniels offer environmental communication frameworks for considering community engagement. See Harry M. Collins and Robert Evans, “The Third Wave of Science Studies: Studies of Expertise and Experience,” *Social Studies of Science* 32, no. 2 (2002); Gregg B. Walker, Susan L. Senecah, and Steven E. Daniels, “From the Forest to the River: Citizens’ Views of Stakeholder Engagement,” *Human Ecology Review* 13, no. 2 (2006).
- ²⁵ See Caroline Gottschalk Druschke, “Watershed as Common-place: Communicating for Conservation at the Watershed Scale,” *Environmental Communication: A Journal of Nature and Culture* 7, no. 1 (2013).
- ²⁶ Haraway, “A Cyborg Manifesto,” 149.
- ²⁷ *Ibid.*, 181.
- ²⁸ *Ibid.*
- ²⁹ Graham, “Binary Duplication,” 121.
- ³⁰ Emily Plec, *Perspectives on Human-animal Communication: Internatural Communication* (New York: Routledge, 2013).
- ³¹ Rickert, *Ambient Rhetoric*, 34, emphasis ours.
- ³² Recent examples of rhetoric scholars interested in *tropic* and *trophic* dimensions of rhetoric include Caroline Gottschalk Druschke, “What are We Talking About When We Talk About Ecology,” (roundtable presentation, Rhetoric Society of America Conference, Atlanta, May 29, 2016); John Muckelbauer, “Implicit Paradigms of Rhetoric: Aristotelian, Cultural, and Heliotropic,” in *Rhetoric, Through Everyday Things*, eds. Scot Barnett and Casey Boyle (Birmingham: University of Alabama Press, 2016); Diane Keeling and Jennifer Prairie, “Trophic and Tropic Dynamics: An Ecological Perspective of Tropes,” this volume.
- ³³ Haraway, “A Cyborg Manifesto,” 154.
- ³⁴ Peter Skafish, “The Metaphysics of the Extra-Moderns: On the Decolonization of Thought—A Conversation with Eduardo Viveiros de Castro,” *Common Knowledge* 22, no. 3 (2016), 404.
- ³⁵ *Ibid.*, 410.
- ³⁶ Rickert, *Ambient Rhetoric*, xviii.
- ³⁷ “Definition of Ecology,” Cary Institute of Ecosystem Studies, accessed May 30, 2016, <http://www.caryinstitute.org/>.
- ³⁸ Contemporary rhetorical animal studies kicked off with George Kennedy, followed thereafter by a small but steady swell of interest represented by, among others, Debra Hawhee and Diane Davis. See George Kennedy, “A Hoot in the Dark: The Evolution of General Rhetoric,” *Philosophy & Rhetoric* 25, no. 1 (1992); Debra Hawhee, “Toward a Bestial Rhetoric,” *Philosophy and Rhetoric* 44, no. 1 (2011); Diane Davis, “Creaturally Rhetorics,” *Philosophy and Rhetoric* 44, no. 1 (2011).
- ³⁹ Zoe Todd, “Fish Pluralities: Human-animal Relations and Sites of Engagement in Paulatuuq, Arctic Canada,” *Études/Inuit/Studies* 38, no. 1-2 (2014): 217.
- ⁴⁰ Gary Snyder, *Riprap and Cold Mountain Poems* (Berkeley: Counterpoint Press, 2009).