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OPEN RIVERS : RETHINKING THE MISSISSIPPI

WATER, ART & ECOLOGY



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from multiple perspectives within and beyond the academy.

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INTRODUCTION

INTRODUCTION TO ISSUE THREE

By Patrick Nunnally, Editor

This issue of *Open Rivers* marks several new emphases for us. But then, when it's only our third issue, there are going to be new emphases, right?

What we have here originates, I think, more from a foundation in scholarly inquiry than some of our previous work. It is less oriented to the Mississippi River. And it was proposed by guest editors, Nenette Luarca-Shoaf and Laura Turner

Igoe, who are both art historians. They invited and worked with authors of the features and several of the columns. All of these new dimensions contribute greatly to the evolution of *Open Rivers*; there is much to ponder and learn from in the diverse mix of voices we offer in this issue. Happy reading!



Landscape view of the curving Mississippi River at Mississippi Palisades State Park, Illinois.

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INTRODUCTION

GUEST EDITORS' INTRODUCTION TO ISSUE THREE

By Laura Turner Igoe, Nenette Luarca-Shoaf

Water is a slippery subject: its visual and material properties spur intellectual inquiry and spiritual reverie; its fluctuating form repels categorization and confounds claims of ownership as it crosses property lines and national borders; and river and ocean currents facilitate commercial exchange along with environmental exploitation. This fluidity within so many human and non-human contexts has challenged and inspired artists for centuries, but the limits and opportunities of representing water take on new urgency in the context of the Anthropocene, in which flood events and drought—too much water or too little—will be an increasing reality.

The focus of this issue of the *Open Rivers* journal is on water, art, and ecology. Unlike previous

iterations, many of the essays and columns in this issue look beyond the Mississippi to consider a wide range of rivers and currents. We hope this breadth will encourage a rethinking of that iconic river through other conduits. The idea for this issue began with a panel, entitled “Fluid Currents: Water, Art, and Ecology,” that we co-chaired at the Southeastern College Art Conference in October 2015. Inspired by the conference’s host city of Pittsburgh, located at the confluence of three rivers, we wanted to generate a conversation about different ways that artists imagined and represented water conduits and their relationships with human and nonhuman life. Our call for papers received a large number of responses, ranging from the design of Baroque bridges and eighteenth-century fountains to early



*Seth Eastman, Detail of Distant View of Fort Snelling, 1847-49. Watercolor.
Reproduced by permission of the Minnesota Historical Society.*

twentieth-century photographs of California agricultural irrigation, and contemporary computer-generated sound art.

As art historians who specialize in nineteenth-century American art, we felt it crucial that the papers we selected for our panel, and also for this issue, open up a dialogue between historical and contemporary art. In her essay for the Primary Sources column, Emily Casey makes the case that Benjamin Franklin had national as well as scientific interests in mind in creating his landmark map of the Gulf Stream. Jayne Wilkinson's essay shows us that, three centuries later, oceanic flows are still being scrutinized as in the work of Swiss artist and filmmaker Ursula Biemann and the German multidisciplinary artist Hito Steyerl. Their installations at the 2014 Montreal Biennial

used water as both a motif and a medium through which the human and environmental costs of global capitalism can be made visible. Meanwhile, in her contribution about Marie Lorenz's *Tide and Current Taxi*, Meredith Davis explores the way that artistic practice can facilitate social and personal relationships between a wide range of people and the river on which they float. Poet and fiber artist Gwen Westerman brings us back to the Mississippi as she describes the ways in which she uses quilt making, landscape imagery, and narrative to assert Dakota ways of knowing and relating to water. Finally, Seth Feman's essay for the Teaching and Practice column outlines the way an exhibition catalyzed an art museum's multifaceted engagements in the water issues facing its community, both inside and outside of its galleries.

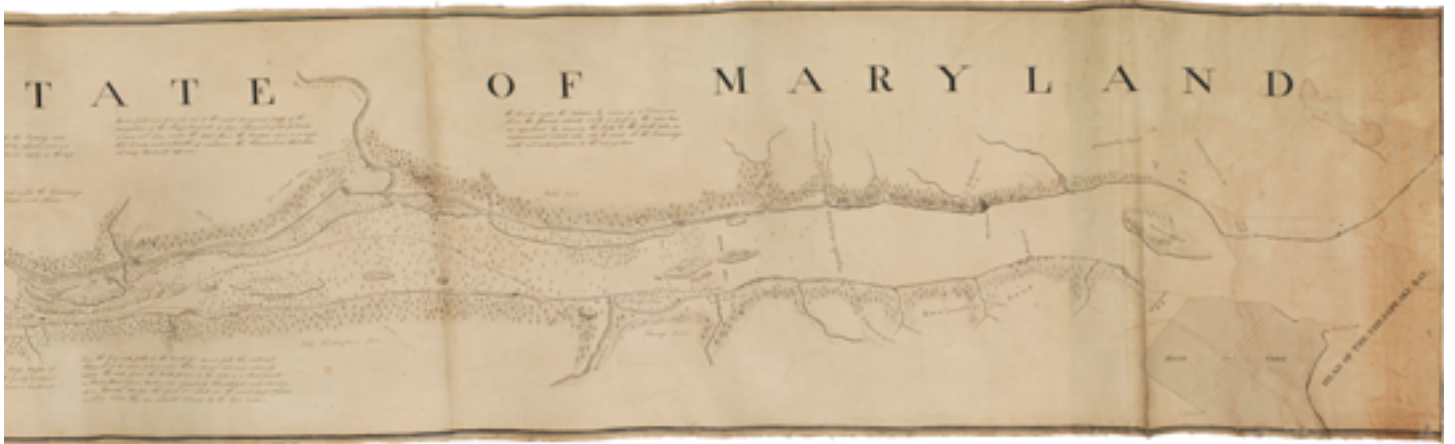
Mapping Water

Artists are becoming increasingly essential in calling attention to water as an urgent social and ecological issue, but using water as a lens for understanding art and visual culture from the past can also reveal evolving conceptions of nature and ecology, the flow of people and objects, and definitions of place. For instance, a survey of the lower Susquehanna River (Fig. 1) by the British-born architect and engineer Benjamin Henry Latrobe offers a particularly illuminating attempt to visualize the interconnectedness between water, geology, vegetation, and human

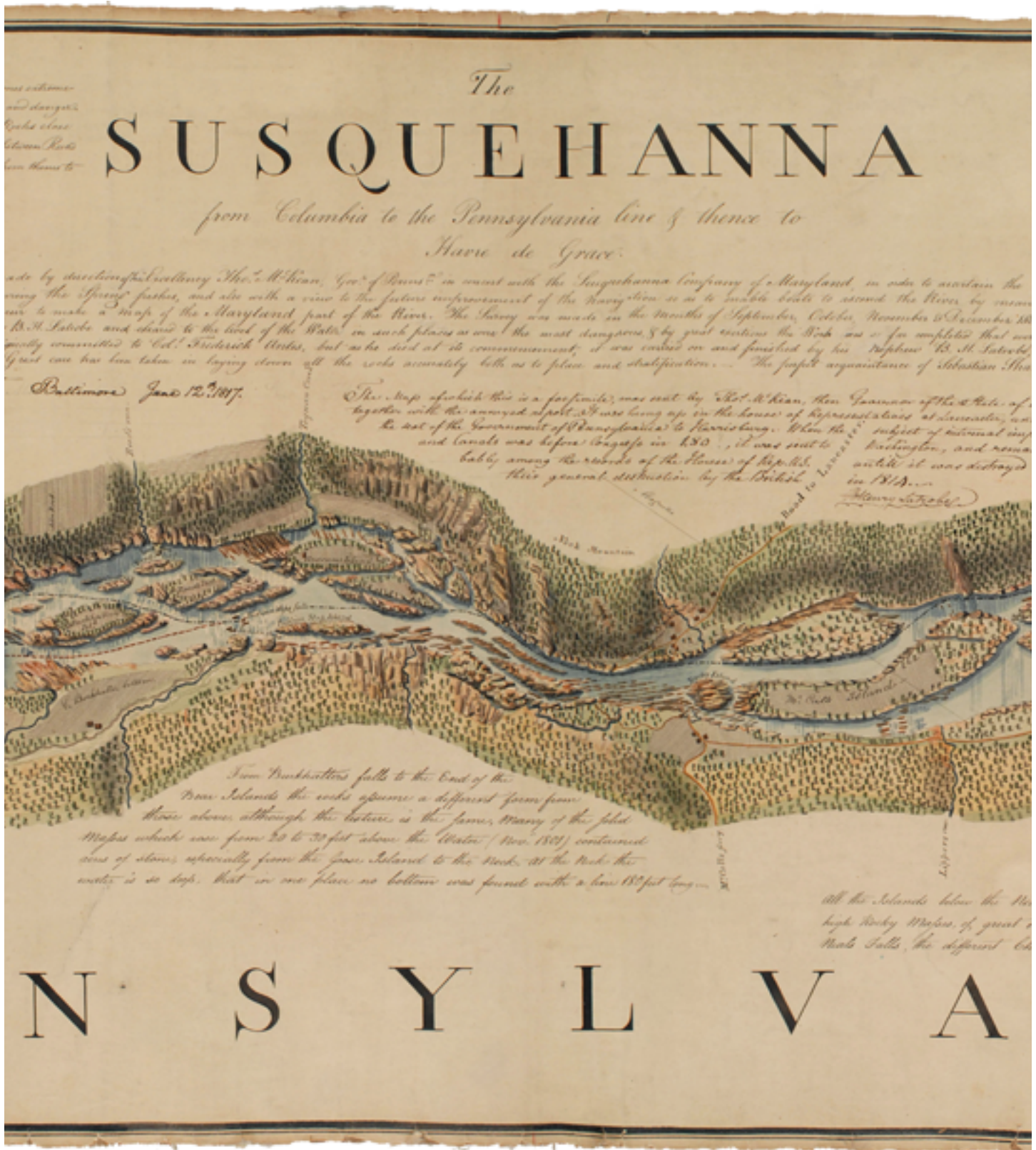
interventions, decades before the articulation of "ecology" as a scientific concept by late nineteenth-century naturalists such as Ernst Haeckel. [1] This map, which currently survives as a copy donated to the Library Company of Baltimore (now the Maryland Historical Society) in 1817, provided a detailed engineering and natural history record of the lower Susquehanna, one of the most important commercial rivers in the Mid-Atlantic region. The river supported agriculture and lumber industries on its shores and branches, but rapids, small islands, and large rocks



Benjamin Latrobe, Susquehanna River Survey Map, 1817 copy after 1801-02 original, pencil, pen, ink, and watercolor on paper, Special Collections, Courtesy of the Maryland Historical Society.



Benjamin Latrobe, Susquehanna River Survey Map, 1817 copy after 1801-02 original, pencil, pen, ink, and watercolor on paper, Special Collections, Courtesy of the Maryland Historical Society.



Benjamin Latrobe, Susquehanna River Survey Map Detail, 1817 copy after 1801-02 original, pencil, pen, ink, and watercolor on paper, Special Collections, Courtesy of the Maryland Historical Society.

impeded passage on the lower portion of the river from Columbia, Pennsylvania, to Conowingo Falls, Maryland. Pennsylvania Governor Thomas McKean commissioned Latrobe to improve navigation along the river and complete a survey in 1801. The resulting map portrays its serpentine subject with an astonishing degree of detail and clarity on a large scale. Seventeen feet long and drawn with pencil, pen, ink, and watercolor, the map extends across nearly seven pages of white paper pasted on a continuous sheet of linen, stored on two wooden rollers. The process of unrolling and reading the map mimics the experience of traveling along the river itself, as the viewer must incrementally take in the carefully delineated town plans, farms, roads, streams, and evenly spaced trees.

This comprehensive survey and concurrent work along the Susquehanna forced Latrobe to assess the interrelatedness of various elements of the river's ecology and also revealed to him the limits of human control in such a watery context. The architect-engineer later reflected, "the improvement of the navigation of the

Susquehanna has taught me that a thorough knowledge of the river in all its stages of rise and fall is necessary on each particular spot, before it can be judged whether a very plausible scheme of improvement in one state of the river may not be an absolute obstruction in another." [2] While this statement appears to confirm the architect's acute awareness of dynamism in the natural world, the map demonstrates that Latrobe's "thorough knowledge" of the Susquehanna was, in fact, limited to the portion of the river controlled by the state of Pennsylvania. The Mason-Dixon line neatly slices diagonally through the last third of the represented river, marking a contrast between the colorful, detailed segment on the left and the bare, pencil and ink sketch on the right. Latrobe was only marginally successful in clearing or blasting rocks to create a navigable channel past the river's rapids and falls, due to budgetary restrictions; the route was only passable when the water was high in the spring. The Susquehanna survey ultimately reveals the limits of human knowledge and the seemingly arbitrary nature of state borders in its documentation of human and nonhuman relationships in and along the river.

Claiming Water

It is important also to acknowledge the ways that visual representations have created and shaped cultural narratives about watery places. In *Distant View of Fort Snelling* (1847-49, Fig. 2), U.S. Army Captain and artist Seth Eastman represents the northernmost military installation at the time, built near the confluence of the Mississippi and Minnesota (then known as St. Peters) Rivers. It was the artist's home for several years in the 1840s and also anchored his perception and experience of the Mississippi River valley. While this locale had long been an axis for the seasonal movements and sacred activities of Indigenous people, Eastman confines his representation of Native Americans to two figures in the foreground—neither of whom looks

out onto the vista beyond—and another pair who bring their canoe to rest on an island in the river. Eastman only vaguely represents the figures and their activities. He uses them to create the scene's picturesque qualities: the loose brushstrokes and the brown and red colors used to render the figures are similar to that which Eastman used on the gnarled branches and logs in the foreground, and the variance in size among the figures conveys a sense of the gorge's depth and the scale of the overall landscape. Still, the alignment of the standing native figure in the foreground with the round tower recalls attempts by the federal and territorial governments to restrict the movements of Native American (Dakota, Ho Chunk, Ojibwe, and Sac and Fox) peoples in the period.

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The darker tones, rustic quality, and confined space of the foreground opens up onto a lush, light-filled vista over which the massive limestone military complex presides. Located just above center, it is flanked on the left by the rectangular territorial plots and houses constructed by American settlers, and on the right by a cleared and fenced area of land. The shape of the fort's roof is mimicked by the hills behind it, and the dense cluster of trees seems to bend in its direction. The glassy surface of the river is luminous, reflecting the trees and sky, and recalling the Dakota name for this vicinity, *Mni Sota Makoce*, "the land where the waters are so clear they reflect the clouds."^[3] But the water's placid quality also obscures the role that the river had

in motivating and facilitating settlement, further naturalizing the presence of the fort.

In the 1830s and 40s, Eastman created hundreds of postcard-sized watercolors depicting the Mississippi River valley.^[4] Although they were not seen by many people at the time as such, the watercolors were the building blocks for easel paintings that Eastman exhibited in New York and St. Louis and a popular moving panorama by Henry Lewis that toured the U.S. and parts of Europe, its scrolling movement and theatrical presentation simulating a steamboat tour of the Mississippi. Eastman's views were disseminated even more widely as engravings and lithographs in illustrated magazines, as well as ethnographic and folkloric volumes by Henry Rowe Schoolcraft



*Seth Eastman, Distant View of Fort Snelling, 1847-49. Watercolor.
Reproduced by permission of the Minnesota Historical Society.*

and Mary Eastman, respectively.[5] In its ubiquity, Eastman's imagery had the ability to supplant other narratives and insert a territorializing one, in which humans and the natural world existed

in a harmonious balance. But his views also promised of land, abundant timber, and access to water for transport and agricultural needs for prospective settlers.

Making Water Visible

Both Latrobe's map of the Susquehanna and Eastman's view of Fort Snelling attempt to fix watery spaces in order to facilitate Anglo-American control and habitation. But their drawings, perhaps unwittingly, also illuminate the entangled relationships between the plants, rocks, structures, and peoples that depend on rivers. The essays in this issue likewise investigate the struggles and successes of artists attempting

to make water currents—whether riverine or oceanic—and their ecological systems perceptible and tangible to their audience. For these artists, this visualization is vital and necessary—whether to assist trade or renew appreciation of overlooked, industrial environments or to reimagine invisible data flows in a changing climate—but water proves time and again to be a surprising and unpredictable subject.

Footnotes

[1] For more on the history of this survey and Latrobe's involvement, see Benjamin Henry Latrobe and Darwin H. Stapleton, *The Engineering Drawings of Benjamin Henry Latrobe*, ed. Darwin H. Stapleton, *The Papers of Benjamin Henry Latrobe : Series II, The Architectural and Engineering Drawings* (New Haven, Conn.: Published for the Maryland Historical Society by Yale University Press, 1980), 75–109.

[2] Benjamin Latrobe to Richard Bate, Washington, November 21, 1809. Benjamin Henry Latrobe, *The Correspondence and Miscellaneous Papers of Benjamin Henry Latrobe*, ed. John C. Van Horne and Lee W. Formwalt, *The Papers of Benjamin Henry Latrobe. Series IV, Correspondence and Miscellaneous Papers* (New Haven, Conn.: Published for the Maryland Historical Society by Yale University Press, 1984), 2:786.

[3] Gwen Westerman and Bruce White, *Mni Sota Makoce: The Land of the Dakota* (St. Paul: Minnesota Historical Society Press, 2012), 13.

[4] On Seth Eastman, see Boehme, Sarah E., Christian F. Feest, Patricia Condon Johnston. *Seth Eastman: A Portfolio of North American Indians*. Afton, MN: Afton Historical Society Press, 1995. For more on the watercolors, see John Francis McDermott, *Seth Eastman's Mississippi: A Lost Portfolio Recovered* (Urbana: University of Illinois Press, 1973).

[5] Henry Rowe Schoolcraft, *Historical and Statistical Information respecting the History, Condition, and Prospects of the Indian Tribes of the United States*, Vols. 1-6 (Philadelphia: Lippincott, Grambo, and Co., 1851-57); Mary H. Eastman, *Dahcotah, or, Life and legends of the Sioux around Fort Snelling* (New York: J. Wiley, 1849).

Footnotes Continued

[5 Continued] Eastman's watercolors were also the main source material for Henry Lewis's *Das Illustrierte Mississippithal*, a portfolio of prints likely related to his panorama imagery, published in Germany. On the Lewis panorama, see Bertha Heilbron, "Notes and documents: A Mississippi Panorama." *Minnesota History* 23:4 (December 1942): 349-54, and Introduction, *The Valley of the Mississippi Illustrated*. Translated by A. Hermina Poatgieter. St. Paul: Minnesota Historical Society, 1967.

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Nnette Luarca-Shoaf is Associate Curator of Learning and Interpretation at the Art Institute of Chicago. She curated the 2014 exhibition, *Navigating the West: George Caleb Bingham and the River*, and contributed to the catalogue published by Yale University Press and the Amon Carter Museum of American Art. She earned a Ph.D. in art history from the University of Delaware and was the 2014-15 Sawyer Seminar Postdoctoral Fellow at the University of Minnesota.

FEATURE

LIQUID ECONOMIES, NETWORKS OF THE ANTHROPOCENE

By Jayne Wilkinson

A constant flow of watery images streams through our newsfeeds almost daily. Videos, infographics, animations, flow charts, and various other forms of visual communication tell us that water is either in excess or retreat, revealing that we have too much or too little. We hear of massive droughts, heat waves, oil spills, acidic oceans choked with plastics, deaths of refugees at sea, and on and on. Recently it was announced that five islands in the Solomon Island archipelago have been swallowed by the Pacific Ocean, destroying villages and displacing communities. [i] Across the globe, the daily news suggests that either an abundance or an absence of water threatens our existence. Clearly the fragility of human dependence on water has many guises, yet our vulnerability to such catastrophic events is countered by a persistent cultural imaginary that stubbornly prefigures oceans and rivers as natural and unchanging spaces devoid of human presence.

As a material, water is both transparent and reflective. It flows and is contained; its uses are both poetic and practical. Water sustains us biologically yet endangers us with unpredictable force. It is these contradictory qualities that make water such a rich source of aesthetic representation. Historically, oceans and ports often appeared in painting to register both the sublime power of nature and the industrial power of man, serving in effect to reinforce the colonial power of the state. As a contemporary visual subject, the contradictions of water are many: fresh water is disappearing but the oceans are rising; trade routes crisscross the surface of the oceans in a

slow moving but ceaseless transportation network while the fiber-optic cables that lie fathoms below form a digital network operative at light speed; floods, tsunamis, and so-called “weather events” happen with increasing consistency, yet these disasters are still treated as though they are both unpreventable and exceptional, rather than a consequence of the changing climate, for which humans are responsible.

The question that motivates this essay asks how artists might express the paradoxical relationship between the contemporary industrial-technological uses of the surfaces, and depths, of the ocean and the cultural or mythical conceptions of the sea as equal parts dangerous, sublime, and eternal. This line of inquiry departs from Nicholas Mirzoeff’s argument for what he terms a “countervisuality,” that is, a visual regime that claims the right to make visible and explicit the destabilization of the planet’s life-supporting conditions.[ii] Mirzoeff notes that, in light of the operative invisibility of marine biopower, “there is a remarkable investment (in all senses, whether economic, psychoanalytic, or emotional) in the imagining of the marine as elemental, primordial and unchanging.”[iii] By naturalizing what is now an industrial site, cultural depictions of the sea makes its degradation nearly imperceptible. According to Mirzoeff, the role of an artwork in an era thoroughly transformed by human interventions must instead be to envisage the conditions and networks that are so efficient in their disruptive potential as to be rendered invisible. Using water as a primary conceit, recent video works by Ursula Biemann and Hito Steyerl, both

exhibited at the 2014 Biennale de Montréal, are examples of projects that address, and attempt to make visible, the economic and digital flows that structure life under a system of global capital. Encompassing thoroughly divergent

methodologies, both artists contribute, in different ways, to a growing countervisuality that is powerfully resistant to dominant cultural representations of the oceans as natural and unchanging.

Deep Weather

Using familiar documentary film tropes mixed with experimental juxtapositions and poetic narration, *Deep Weather* (2013), a video essay by Swiss artist and filmmaker Ursula Biemann, deploys water as a representational motif in order to examine the global consequences of resource extraction and rising sea levels. Opening with expansive aerial shots of the Northern Alberta oil sands, the video traces the course of the Athabasca River through to the tailing ponds that result from the energy-intensive process of bitumen extraction. The scene then shifts dramatically to

a coastal area of Bangladesh, where an endless stream of women and men continuously fill bags with sand and carry them to the shoreline in an attempt to protect their home from rising sea levels by means of an organized but rudimentary solution.

The narrative that emerges reveals the intense labor and enormous collective efforts required for both the extraction and the protection of eroding terrain. In Bangladesh, the long line of workers performing the Sisyphean task of hauling



Ursula Biemann, video still from Deep Weather (2013). Courtesy of the artist.



Ursula Biemann, video still from Deep Weather (2013). Courtesy of the artist.



Ursula Biemann, video still from Deep Weather (2013). Courtesy of the artist.

sandbags in order to fill the boundless space of the sea makes the exertions of the human body all too visible; in contrast, the workers that populate the oil sands are conspicuously absent from the frame. The relentless rhythm of the Bangladeshi people moving constantly across the screen is matched only by the artist's whispered description of the drillers in Alberta: "Day and night they mine the black sediments that will bring toxic clouds over the boreal woods." There is a relentless but unpictured labor, as though the earth itself might mysteriously and infinitely provide the resources we demand, without our intervention. Who comprises the "they" to which Biemann refers? The oil extracted in Alberta is entirely contingent on dirty but highly paid human labor. But without imaging this often dangerous work, and the workers who perform it, Biemann's view of the oil sands foregrounds a kind of technological sublime, removing the individual in order to make the horror of environmental destruction palpably, terrifyingly visible. By juxtaposing these two scenes, Biemann attempts to articulate a connection across

vastly different geographic and political regimes, drawing our attention to the global relations that structure energy and extraction industries. Yet the demand for ever-increasing amounts of oil and gas, the destruction of the landscape in both Alberta and Bangladesh, the impact of the release of massive quantities of carbon into the atmosphere, and the physical labor of what Biemann calls "self-organized humanitarian landscaping" cannot be simplistically linked in a unidirectional chain of cause and effect. Foregrounding the intense labor required to protect an eroding shore in one of the world's poorest countries against the absent but highly paid laborers in one of the world's wealthiest regions reminds us not of our responsibility to the environment, but of the unequal outcomes of climate change. By using water as a multifaceted, representational form—one that suggests the simultaneous production of energy and the erasure of terrain—Biemann leads the viewer to consider the relationship between vastly disparate geographies, and the unequal distribution of resources and wealth across global economies as a result of rising sea levels.

Visualizing Water in the Anthropocene

The economic and digital flows that structure life under globalization are, undoubtedly, linked to the world's oceans and waterways, and are likewise implicated in social and political power. The late Allan Sekula was one of the first contemporary artists to point to these conditions and realize them in aesthetic terms. His meticulously researched projects, including the photographic series *Fish Story* (1989–95) and the film essay *The Forgotten Space* (2010, written and directed with Noël Burch) read as commentaries on the endgame of twentieth-century capitalism. Blending documentary investigations with conceptual photography, texts, and occasionally sculptural forms, Sekula's work provided a way to visualize, and therefore think of, the ocean as the invisible backdrop to a system of global capital

that requires cheap transportation methods to support the even cheaper labor that produces consumer goods. In the introduction to the film, Sekula states: "The sea is forgotten until disaster strikes. But perhaps the biggest seagoing disaster is the global supply chain, which—maybe in a more fundamental way than financial speculation—leads the world economy to the abyss."^[iv] It is easy to read the ever-unfolding horizon of oceanic space as romantic, but as Sekula's work makes clear, it is precisely the intersections of global capital, the fluidity of instruments of international finance, and the networking of marine biopower that make the oceans a site that continues to register the violence of industrial colonization.

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The collapsing scales of oceanic space, through the intersecting networks of trade, labor, consumption, and capital, seem to be symptomatic of what is now commonly understood as the Anthropocene era. Following the sciences, scholars in the humanities have widely adopted this term to describe an entirely new geologic period, marking a shift in the definition of human beings from biological to geological agents, together wielding a collective force that has a direct impact on the structure of the planet itself.[v] Debates around how to periodize this era variously consider the burning of fossil fuels, the industrial revolution, and the genocide of the Indigenous peoples of the Americas as the changes wrought by humans that have most impacted the biosphere.[vi] The Anthropocene era threatens not the earth's survival but the conditions, both biological and geological, upon which the survival of human and non-human life depends. In response

to this threat, all components of the biosphere, including the oceans that regulate global weather patterns, are now understood as though they are provisional or contingent. Indeed, as philosopher Peter Sloterdijk has argued, explication is the condition of modernity: everything that used to be taken for granted—air, land, water—has become explicit in its devaluation.[vii] Or rather, we've taken note: the air we breathe is smoggy, the land polluted, the water either too powerful or too scarce. These spheres of life become urgent and visible when we recognize that they are in danger of disappearing altogether.



Hito Steyerl, Liquidity Inc., 2014, single channel high definition digital video and sound in architectural environment, 30 minutes.

Image courtesy of the Artist and Andrew Kreps Gallery, New York

Liquidity Inc.

Given its multiple capacities, attempts to articulate water as a critical material and visual element of contemporary life seem crucial, particularly if we are to register the scale of geologic time and the position of humanity within a new era. How might water, which brings its own contested history of representation through art historical discourses, become not necessarily a metaphor but perhaps a code or term to articulate the interrelated flows of capital and environmental change? German multidisciplinary artist Hito Steyerl considers water as a primary element of the Anthropocene in her video installation *Liquidity Inc.* (2014). The video combines documentary, narrative and digital processes to explore water, or rather, liquidity, as a representational form that encompasses natural resources, economic cycles, and the broad financialization of life. In the gallery, the

work is installed within a large blue structure, suggestive of a tidal wave or perhaps a freighter but covered in material like that of gymnasium floor mats, encouraging visitors to lounge within the projection space itself. Entering this wave, the viewer encounters hundreds, perhaps thousands, of images, gifs, hashtags, CGI reconstructions, 3D models, and sound bytes that continuously crowd the screen, punctuating the loosely told story of former financial analyst Jacob Wood. Following the economic crash of 2008, the global financial services firm Lehman Brothers laid off Wood, who was then forced to change careers, becoming a mixed martial arts fighter. The artist presents his narrative as a lesson in liquidity, an example of the fluidity and adaptability required to survive in a speculative economy. This flexible if privileged worker describes his ability to change and acclimate to new economic realities;



Hito Steyerl, Liquidity Inc., 2014, single channel high definition digital video and sound in architectural environment, 30 minutes.

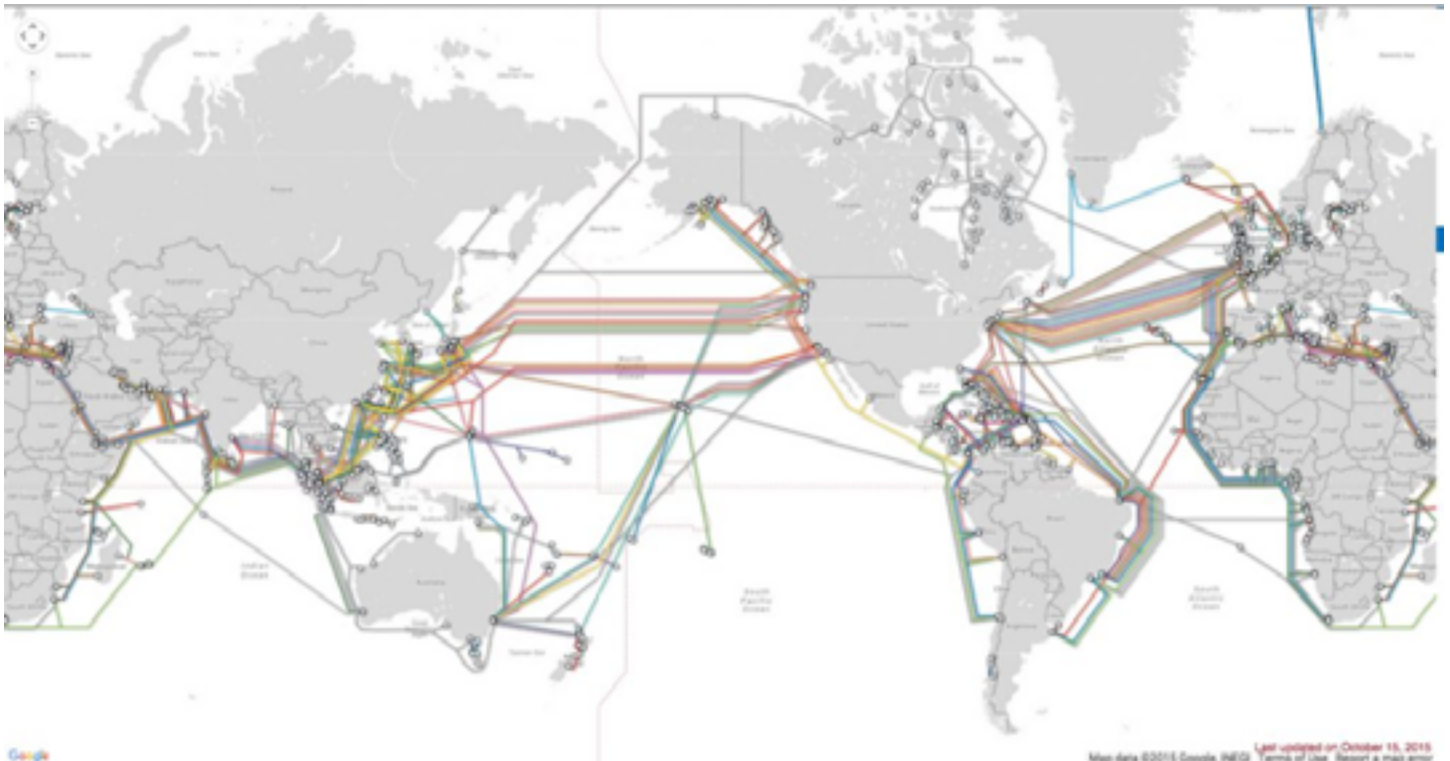
Image courtesy of the Artist and Andrew Kreps Gallery, New York

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he must “be like water”—a phrase borrowed from Bruce Lee that suggests a fighter’s best strategy is to make himself completely fluid, and thus an impossible target. Here, fluidity is internalized and expressed within the body of the financial worker-becoming-fighter.

Wood tells his story in straightforward interview segments, but a parallel narrator—water itself—is also apparent, its mute voice bubbling up in silvery letters across the screen: “even though I cover this planet, I am not from here. Nor are you. I run through your veins. Your eyes. Your touchscreens and portfolios. I am gushing through your heart, plumbing and wires. I am liquidity incorporated. I am water.” The continual presence of the water-narrator suggests that the work’s true subject is not limited to the fractured narrative of flexible labor and the general precariousness of contemporary life. *Liquidity Inc.*

directly probes the relationship between liquidity as a property of water—its state as a liquid and its capacity for frictionless flow—and the fluidity of currencies and financial products exchanged across the globe in fractions of seconds. The speed and instantaneity of the global market is mimicked in Steyerl’s frequent treatment of the projection screen as a computer desktop, one that is constantly updating itself as it shifts between frames depicting Hokusai’s Great Wave and a combination of real and computer-generated images of the sea and its horizon. Against this background of familiar oceanic imagery, Steyerl collages all manner of digital formats, linking weather and water in the collapsing of virtual and real space. In so doing, *Liquidity Inc.* suggests that while the “cloud” may be the corporate metaphor par excellence for the putative desirability of immateriality, it is within the waters of



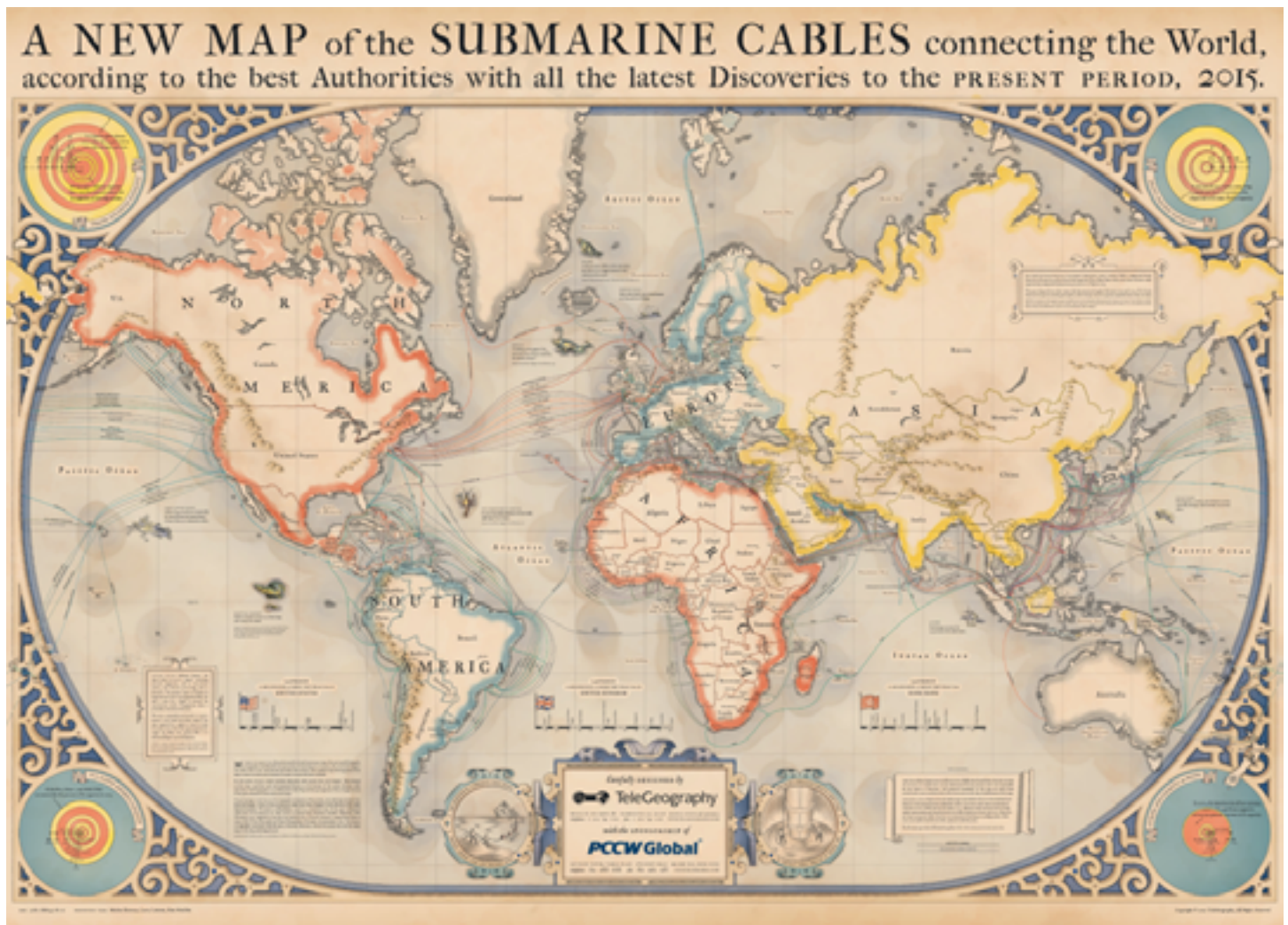
TeleGeography’s interactive cable map, based on research by Global Bandwidth, depicting active and planned submarine cable systems and their landing stations. Selecting a cable on the map projection or from the submarine cable list provides access to the cable’s profile, including the cable’s name, ready-for-service (RFS) date, length, owners, website, and landing points.

the world's oceans that the Internet's clouds are materially networked.

Materializing the Cloud

So often the virtual domain is regarded as existing without or beyond the constraints of physical space, but as a planetary-scale infrastructure, the “cloud” was first made possible by an incremental rise in computing power, server space, and trans-continental fiber-optic connectivity—in other words, physical space, hardware and industrial infrastructure.[viii] And at least part of that

infrastructure exists along the ocean floor, in the dark, alien depths of the earth's largest oceans. The vast lengths of fiber-optic cable that span the globe facilitate the financial, social, and consumer networks upon which the contemporary Internet economy relies; in one of the least visible places on earth, we locate the infrastructure that permits the world to be made most visible. While the



Telegeography Submarine Cable Map (2015), a map showing contemporary submarine cable infrastructure with elements of medieval and renaissance cartography.
www.telegeography.com.

cables exchange data at virtually light speeds fathoms below, the surfaces of the seas constitute a corollary network supporting the much slower transportation of cheap consumer goods and raw materials across the planet. It is perhaps not surprising that the conditions of digital connectivity upon which so much of the exchange of capital relies also mimic the colonial trade routes of earlier generations of empire building and naval power.[ix]

As a parallel component of her art practice, much of Hito Steyerl's writing on the politics of the screen and the aesthetics of representation attempts to render the digital palpably tangible and material. She describes the Internet as a condition—not an interface, but an environment. [x] Accordingly, this Internet condition—a space in which nothing and no one is free from constant networking—is, “also a sphere of liquidity, of looming rainstorms and unstable climates. It is the realm of complexity gone haywire, spinning

strange feedback loops. A condition partly created by humans but also only partly controlled by them, indifferent to anything but movement, energy, rhythm, and complication....We thought it was a plumbing system, so how did this tsunami creep up in my sink? How is this algorithm drying up this rice paddy?”[xi]

Through these contradictory metaphors, Steyerl reminds us that the Internet is ubiquitous in its spatiality, but operates as a material entity. We are now fully embedded in a computational landscape and are always attached to a network, indeed, to multiple networks, simultaneously; in real time, we update statuses, post pictures, hashtag emotional states, meme jokes, tweet politics. Despite this entrenchment in the virtual world, we are still tethered to an earth, and its oceans, whose physical spaces are the spaces of the Internet, try as we might to reduce the biological to the virtual once and for all.

Liquid Visuality

If the destruction wrought by human activity across the globe structures a collective anxiety about the future, it is through the aesthetics of such destructive forces that we register such anxieties. By visualizing water in the context of the Anthropocene, artists are able to make explicit both its value as an increasingly rare commodity that all life requires and the force with which it is increasingly destructive. As Irmgard Emmelhainz has argued, “The Anthropocene [means] not a new image of the world, but rather a radical change in the conditions of visibility and the subsequent transformation of the world into images.”[xii] The circumstances of life, and the visibility of its processes, have been transformed. As a speculation on environmental integrity or a transformative portrayal of shifting geopolitical

boundaries, water's fluidity and its multidimensional complexities speak to an ongoing anxiety about the environmental, climatic, economic, social, and political crises of our time. It is easy to think of water as the virtual metaphor par excellence for the digital world, widely imagined as fluid, shape-shifting, and formless. But the metaphor is also somewhat ill-fitting, balancing the necessity of a valuable resource against the environmentally destructive networks that support global communications.[xiii] Water refuses to be stilled, it can rarely be contained, and although it is necessary for life, too much or too little can be fatal; moreover, it controls, in some way, almost every climatic pattern and weather event on earth. Despite the vastness and, for many, the inaccessibility and invisibility of the

world's oceans, water may come to be—more than oil and gas, more than the minerals in our

computer chips, more than the air we breathe—the resource that most defines the contemporary era.

A version of this paper was presented on a panel titled “Fluid Currents: Water, Art and Ecology” at the 2015 Southeastern College Art Conference in Pittsburgh; sections of it were first published in Prefix Photo 31, May 2015, and appear here with kind permission of Prefix Institute of Contemporary Art, Toronto. The author would like to thank Laura Igoe and Nnette Luarca-Shoaf for their ongoing support of this work.

Footnotes

[i] Simon Albert, Alistair Grinham, Badin Gibbes, Javier Leon, John Church. “Sea Level Rise Swallows 5 Whole Pacific Islands,” *Scientific American* online, May 9, 2016. <http://www.scientificamerican.com/article/sea-level-rise-swallows-5-whole-pacific-islands/>

[ii] Mirzoeff states that, “Like all forms of countervisuality, contesting the Anthropocene visibility is a decolonial politics that claims the right to see what there is to be seen and name it as such: a planetary destabilization of the conditions supportive of life, requiring a decolonization of the biosphere itself.” Nicholas Mirzoeff, “Visualizing the Anthropocene,” *Public Culture* 26: 2 (2014): 230.

[iii] Nicholas Mirzoeff, “The Sea and the Land: Biopower and Visuality from Slavery to Katrina,” *Culture, Theory and Critique* 50 (2009): 291.

[iv] *The Forgotten Space*, directed by Allan Sekula and Noël Burch, 2010.

[v] Dipesh Chakrabarty, “The Climate of History: Four Theses,” *Critical Inquiry* 35 (2009): 206. Chakrabarty is frequently credited with bringing the discourse of anthropogenic climate change into the humanities. The first scientists to use the term Anthropocene, to name a new geological age, were chemist Paul J. Crutzen and his collaborator, marine scientist Eugene F. Stoermer, in a short statement in 2000, which was then elaborated in 2002. See Paul J. Crutzen and Eugene F. Stoermer, “Geology of Mankind,” *Nature* 415, (Jan. 3, 2002).

[vi] See Simon L. Lewis and Mark A. Maslin, “Defining the Anthropocene,” *Nature* 519 (March 12, 2015) for a critical assessment of anthropogenic signatures in the geological record that suggest a new epoch is under way.

[vii] Peter Sloterdijk, *Terror from the Air*, trans. Amy Patton and Steve Corcoran (Los Angeles: Semiotext(e), 2009).

[viii] Among other accounts of the cloud's material history, see Metahaven, “Captives of the Cloud: Part I,” *e-flux journal* 37, September 2012. <http://www.e-flux.com/journal/captives-of-the-cloud-part-i/>

[ix] For a historical account of oceanic trade routes, see Emily Casey's essay on Benjamin Franklin's representation of the Gulf Stream, published in this issue.

[x] Hito Steyerl, “Too Much World: Is the Internet Dead?” *e-flux journal* 49, November 2013. <http://>

[xi] Ibid.

Footnotes Continued

[xii] Irmgard Emmelhainz, “Conditions of Visuality Under the Anthropocene and Images of the Anthropocene to Come,” *e-flux* 63, March 2015. <http://www.e-flux.com/journal/conditions-of-visibility-under-the-anthropocene-and-images-of-the-anthropocene-to-come/>

[xiii] This is largely because of the vast amount of energy required to power data centers, which has increasingly been reported in the mainstream media. For example, see Bryan Walsh, “Your Data is Dirty: The Carbon Price of Cloud Computing,” *Time*, April 2, 2014. Accessed June 9, 2016. <http://time.com/46777/your-data-is-dirty-the-carbon-price-of-cloud-computing/> and Ingrid Burrington, “The Environmental Toll of a Netflix Binge,” *The Atlantic*, December 16, 2015. Accessed June 9, 2016. <http://www.theatlantic.com/technology/archive/2015/12/there-are-no-clean-clouds/420744/>

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About the Author

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FEATURE

DEPICTING THE POWER OF WATER IN ART AND POETRY

By Gwen Westerman, Nenette Luarca-Shoaf,
Laura Turner Igoe

O*pen Rivers* guest editors Nenette Luarca-Shoaf and Laura Turner Igoe contacted Gwen Westerman, professor, visual artist, and an enrolled member of the Sisseton Wahpeton Dakota Oyate. The interview was conducted via email on March 31, 2016; it has been edited for length and clarity.

Editors [OR] Since the focus of *Open Rivers* journal is water, we're especially interested in the way that rivers and water figures into your work. Could you talk about how and why you represent watery places in works like Otokaheya, Owamni Omni, and Anpetu Sapa Win?

Gwen Westerman [GW] In our Dakota way, mni or water, is our first medicine. Without it, there is no life. The rivers and water in this region have served Dakota people as travelways, sources of food, and later sources of commerce. The three connected pieces portray Wakpa Tanka, the Mississippi River, as I imagine that it has changed over time. "Otokaheya" (In the Beginning) represents the unlimited power of the only significant falls on the Mississippi River as they might have been 10,000 years ago. Geologists suggest that at that time, the falls would have been much farther east of their current location in present-day Minneapolis, nearer to what is now St. Paul, Minnesota. "Owamni Omni" (Whirlpool) is the Dakota name for this place, although Father Hennepin would claim it for St. Anthony in 1680. This piece is

based on a 1780 engraving by explorer Jonathon Carver, titled "The falls of St Anthony in the River Mississippi" which depicts a Dakota village on the far bank. "Anpetu Sapa Win" (Dark Day Woman) takes its title from the story of a woman who went over the falls in a canoe with her young child because her husband took a second wife. However, this piece depicts the degradation of the river due to the betrayal of industrialization and the environmental impact of "progress."

[OR] Do you grapple with environmental change in your work, especially as it has impacted local river systems?

[GW] Absolutely. I used a single piece of hand-dyed fabric for the water in all three of these works. Otokaheya is one piece of fabric and is full of movement and power. Owamni Omni depicts the river and the falls with that same fabric, less than half of the surface, still full of movement, yet with little (literally and figuratively) human impact. The last one, Anpetu Sapa Win, is comprised of even less "water" and very little movement—the result of human disregard for the value of water. I also create landscapes that incorporate traditional Dakota songs and stories and provide a counter-narrative to the power lines, wind turbines, and pipelines that threaten to destroy not only the land, but also the water. ("Buffalo Ridge I" and "Buffalo Ridge II" are examples.) I take a lot of photographs of power lines, wind turbines, dams, bridges, and cell phone towers in the plains



*Gwen Nell Westerman (Sisseton Wahpeton Dakota Oyate, b. 1957),
“Otokaheya” (In the Beginning), quilted fabric, 2009.
© Gwen Westerman. Image courtesy of the artist.*

where I live to incorporate into my art. I'm a little wary when I do that, hoping it doesn't look like suspicious activity that will get me arrested!

[OR] Do you find fiber and textile to be conducive or challenging materials for conveying ideas about water?

[GW] Working from a quilting tradition and hand-dyeing fabric make for a very labor-intensive art form. I once told my friend who is a water color artist that I wished I were a painter because it didn't appear to take as much time as quilting. He looked at me sideways, and told me I was a painter, but I used fabric instead of paint. Traditional forms of quilting are very labor intensive ("Waci Au" is a good example). However, the shift I have made in the past few years to landscapes has made fabric and textiles a very conducive material for telling stories about water.

[OR] We are intrigued that you refer to your fiber art as "narratives" on your website. What stories do they tell? What is it about fiber and textile that help you tell these stories?

[GW] I am influenced in every aspect of what I do by the stories I have heard throughout my life. Many of those are cultural stories of Dakota experiences in this world, and more broadly an American Indian experience. The quilts my grandma made from the leftover scraps of fabric I used to sew my own clothes in junior and senior high school tell many stories. The quilts my great-grandma made during the Depression from the worn-out shirts and dresses of her family tell different stories. Many of us have those kinds of quilts—patterns called "log cabin," "lone star," or "wedding ring." So in my mind, quilts have always told a story. Most people can relate somehow to quilts, fiber, and textiles. It is somehow more approachable, and there is an urge to touch it, to be close to it. My quilts, especially the art

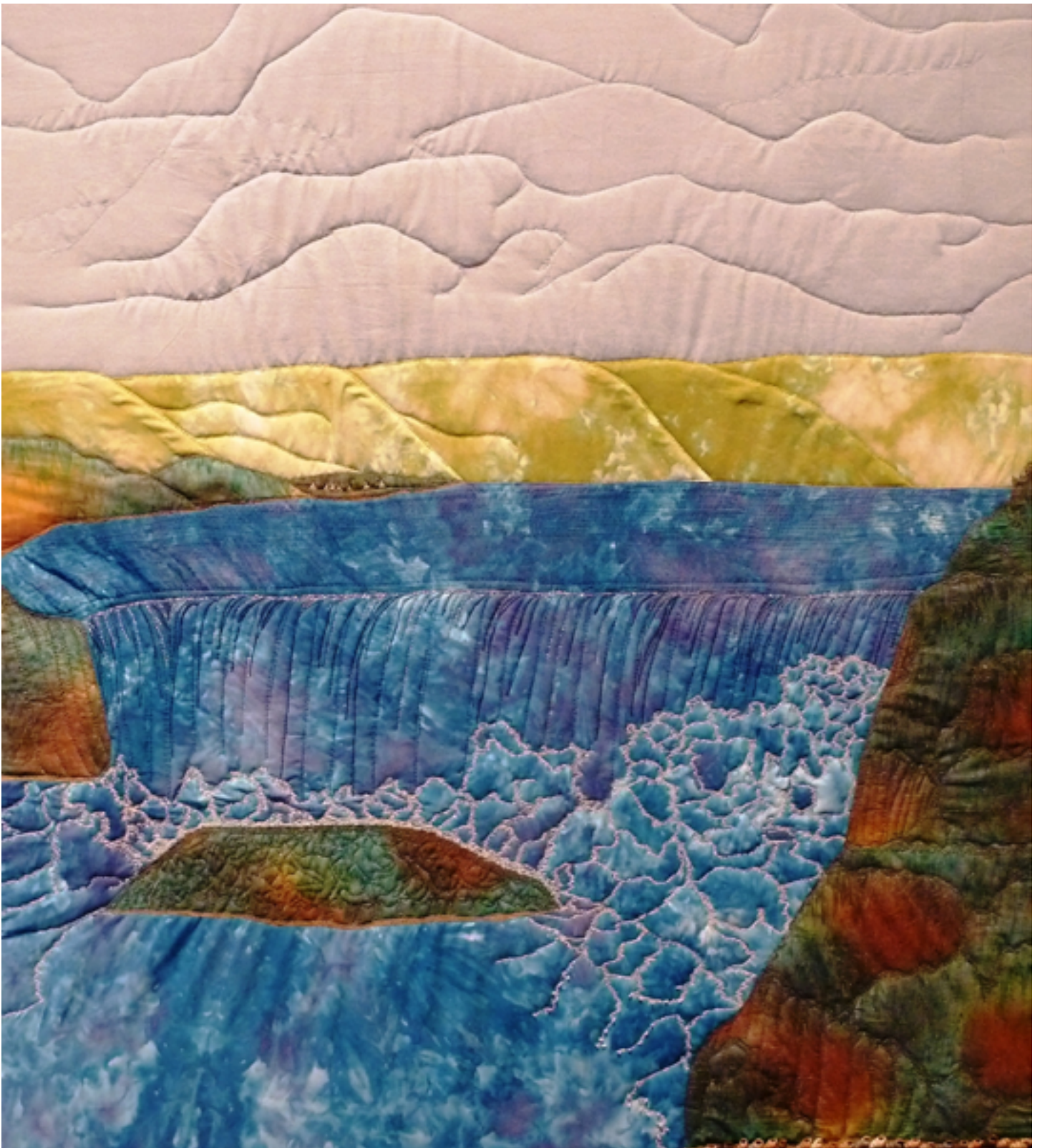
quilts, incorporate Dakota stories and language in a different form that might reach more people than words in a book.

[OR] How does your visual art relate to your poetry?

[GW] Both genres are image based. The pieces have to fit together in a specific and intricate way. They are both snapshots of a fuller story. To me, they are two sides of the same coin. I don't find them mutually exclusive in any way; in fact, I think they support each other—and they are both driven by telling stories about our Dakota experiences.

[OR] You were recently an artist-in-residence at the Minnesota Historical Society. How did working with the collection affect your artistic practice?

[GW] The Artist-in-Residence Fellowship at the MHS was an amazing experience and I am so very grateful to have been provided that opportunity! Working with their collections of textile works made by Dakota women (mostly) and those in the Minneapolis Institute of Arts and the American Museum of Natural History brought me into direct contact with their techniques. I could see their stitching, their choices of materials and colors, their improvisations when they ran out of fabric or ribbon. I could also document the changes in their handiwork as new materials were introduced or new fashions were brought into their communities. They sewed by hand and later on by treadle sewing machine. Holding their work in my hands, some of it 160 years old, was like holding their hands. I realized that we have been "artistic" for generations and generations and that what I do is a continuation of their love of beauty, of creating something for someone else, and of telling a story.



*Gwen Nell Westerman (Sisseton Wahpeton Dakota Oyate, b. 1957),
"Owamni Omni" (Whirlpool), quilted fabric, 2009.
© Gwen Westerman. Image courtesy of the artist.*

The author recounts her poem from "Follow the Blackbirds" (Michigan State University Press, 2013).

This is my explaining ceremony

My strongest memories are of water. A rough rock ledge that reached out for the horizon beyond the lake, holding a perfect place to play in its palm. Cradled by the beat of waves washing ashore, I watched slick, black-green moss sway in clear swells, and was not afraid at four. Sounds of water comfort me.

At ten, I splashed through 14-Mile Creek with my cousins, turning over smooth stones and sharp rocks with flattened, shining forks tied to long willow sticks. We speared unsuspecting blue and gold crawdad treats hiding in the deep swift stream. Our grandmas gathered glistening green watercress for a summer feast, but a child with fast food tastes, I refused to eat. Sounds of water connect me.

Near the old home place, my grandma said the spring at Greasy Mountain never runs dry and the edge of 100 Highway always crumbles with each late winter thaw. I followed the black asphalt road as it snakes toward the turnout for the spring, and took my children there to drink the water, clear and cold. Sounds of water call me.

A grandma's words that can fill a rain barrel or wash away fences and fields like a flood. Sounds that bring life ticking on a tin roof, that sting bare legs and hearts. Sounds of water flowing. Sounds of water falling. Sounds of water filling.



*Gwen Nell Westerman (Sisseton Wahpeton Dakota Oyate, b. 1957),
“Anpetu Sapa Win” (Dark Day Woman), quilted fabric, 2009.*

© Gwen Westerman. Image courtesy of the artist.

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Gwen Westerman is Professor of English and Director of the Humanities Program at Minnesota State University, Mankato. A recipient of the 2014 Hognander Minnesota History Award and the 2015 Native American Artist-in-Residence Fellowship at the Minnesota Historical Society, Gwen is an enrolled member of the Sisseton Wahpeton Dakota Oyate.

Nenette Luarca-Shoaf is Associate Curator of Learning and Interpretation at the Art Institute of Chicago. She curated the 2014 exhibition, *Navigating the West: George Caleb Bingham and the River*, and contributed to the catalogue published by Yale University Press and the Amon Carter Museum of American Art. She earned a Ph.D. in art history from the University of Delaware and was the 2014-15 Sawyer Seminar Postdoctoral Fellow at the University of Minnesota.

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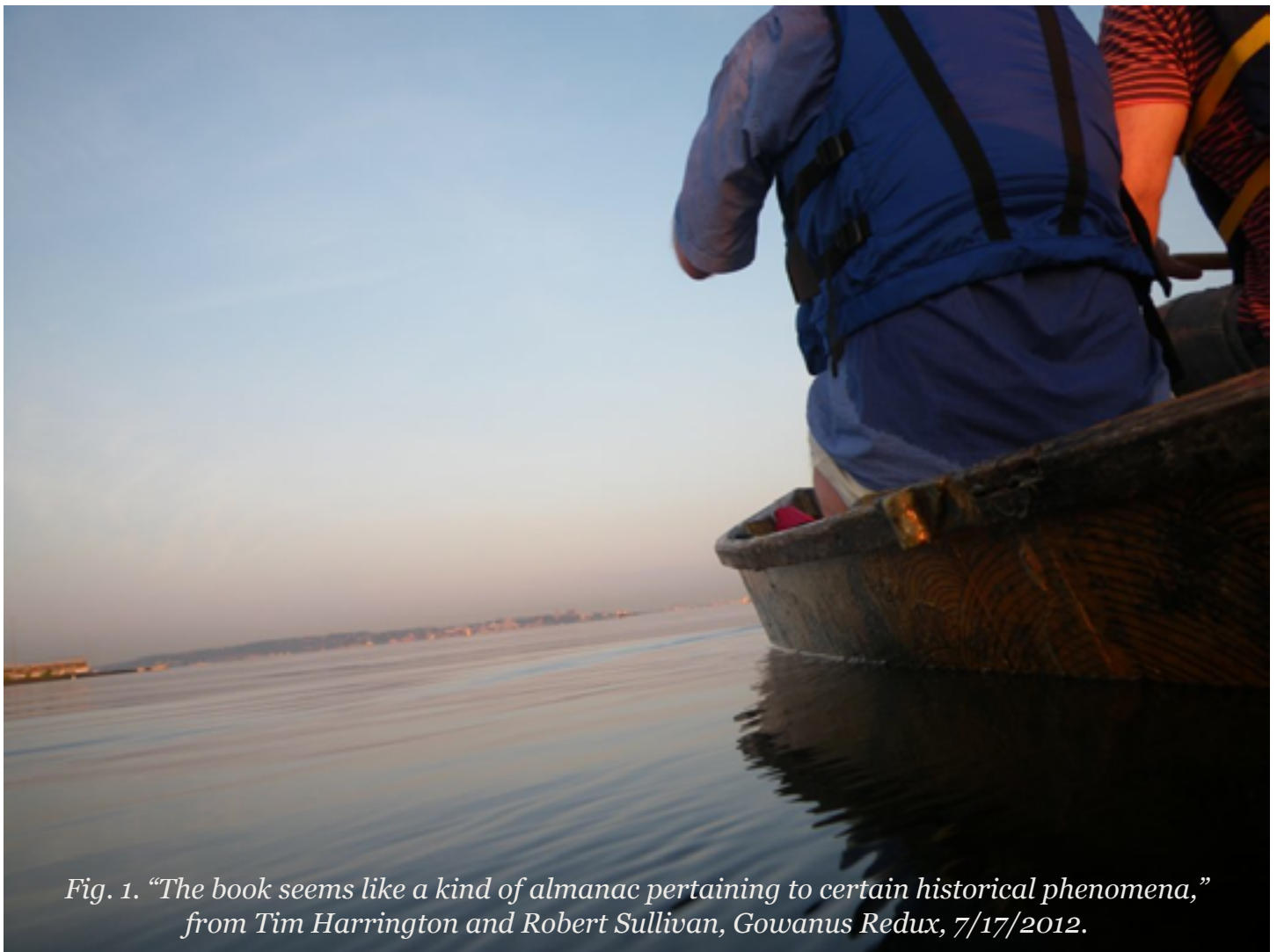
FEATURE

RE-IMAGINING THE RIVER: THE TRANSFORMATION OF NEW YORK'S WATERWAYS IN MARIE LORENZ'S *TIDE AND CURRENT TAXI*.

By Meredith Davis

**“When you find a network of forgotten public space, it opens the entire city.”
Marie Lorenz (Horvitz 2010)**

For more than ten years, artist Marie Lorenz has been creating a work of art called the *Tide and Current Taxi*. For this project, Lorenz transports one to four passengers along the



*Fig. 1. “The book seems like a kind of almanac pertaining to certain historical phenomena,”
from Tim Harrington and Robert Sullivan, Gowanus Redux, 7/17/2012.*

myriad waterways of New York City (and occasionally other destinations) in a small boat made by the artist. Using oars, paddles and, most importantly, the push and pull of the water itself, Lorenz and her passengers have drifted and paddled the rivers, inlets, bays, estuaries, creeks, and canals of what has aptly been called New York's "6th Borough." Lorenz photographs each taxi ride and posts these photographs and her accompanying text on the *Tide and Current Taxi website*, where viewers may virtually stow away on well over one hundred trips. Boat passengers and website viewers alike have explored creeks, bays, and various corners of the harbor; paddled or scrolled past islands created by decades of dumping, boat graveyards, and sites of waterfront "revitalization."

Alongside the ephemeral experiences that Lorenz and her passengers created, an increasingly rich archive of experiences and conversations is preserved in the photo journals that Lorenz shares on the *Tide and Current Taxi website*. Lorenz presents each journey as a story of shared experiences of the water and shoreline intermingled with musings, chance occurrences, and imaginings. Even for those who might not ever get to take a ride in Lorenz' little boat, the *Tide and Current Taxi* photo journal allows us,

alongside the taxi passengers, to re-conceptualize our relationship to urban waterways as we share in the adventures of others, seeing what they saw, listening to their conversations. The result is a vision of waterways as social spaces and sites where a new kind of landscape aesthetic that captures and even celebrates the messy ways that human beings are inextricably connected to (rather than masters of) the natural and unnatural things with which we share our world.

The *Tide and Current Taxi* performs a number of important transformations. First, it converts the mostly commercial spaces of the urban waterways into a social setting, one where gift exchange replaces capitalist exchange. Second, the Taxi reimagines the experience of landscape as a collaborative, multi-sensory activity instead of one that centers around the individual, preferably isolated, viewer. Third, both the social aspect of the project and the specific imagery of the photo journals challenge the aesthetics of landscape, rejecting untouched "wilderness" or pristine nature in favor of the real (and ubiquitous) urban spaces of New York. Finally, Lorenz invites us to reimagine these spaces as vibrant, dynamic, and living, but as inevitably bound up with human history.

River as Palimpsest

Historically, rivers are closely connected to human settlement and the trade and commerce that settlement inevitably engenders. Any geographer, historian, or mariner will tell you: look at any of the great ancient cities and you will see that they are built around a harbor, and most often along a navigable river. Rivers move boats and boats move cargo and facilitate trade; trade and concomitant forms of cultural exchange together build civilization. The advent of steam navigation in the nineteenth century made the waterways into rationalized and speedy highways, but

almost as quickly, the development of railroads transformed the human relationship to rivers once again, as waterways were no longer the primary movers of people and goods (Burrows and Wallace 1999). Industrialization brought with it tourism and rivers became tourist sites as well as ready sources of water to aid in industrial processes (Gassan 2008). The *Tide and Current Taxi* heightens our awareness of each of these versions of the urban waterway: a commercial and industrial artery; a peripheral space; and an

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aestheticized landscape, meant to inspire and invigorate.

Lorenz easily toggles from one way of experiencing the river to another, producing a complex and layered portrait of the urban waterway that embraces the many pasts that lay upon one another like a palimpsest. *Tide and Current Taxi* combines physical, historical, economic, and cultural geography, while also paying attention to our present, lived experiences. For example, in 2013 Lorenz organized 14 trips around the theme of mapping and mapmaking. The *Taxi* website records one excursion from that year with artist Lisa Sigal in a photo journal entry titled *Freedom*

and Captivity. The journal consists of 62 photographs of the trip, each accompanied by text written by Lorenz. The text that Lorenz writes and pairs with each photo journal is not a series of captions, but a narrative that works in tandem with the images. These texts share snippets of conversation, ideas, details about the water or wind that affect the trip and that may not be visible in the photographs, and other information that adds to the narrative. In addition, the text helps to set the pace and the tone of each trip, often conveying a sense that as the boat drifts, so do conversations, thoughts, and perceptions.



Fig. 2. “Also, the whole thing seemed to be listing, ever so slightly, to the starboard side,” from *Freedom/Captivity* with Lisa Sigal, 9/5/2013.

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Lorenz and Sigal set out to observe the Vernon Bain Correctional Facility, an 800-bed jail barge that is moored in the Bronx and, because of a strong wind and current, they stop on North Brother Island nearby. North Brother Island has many pasts, but is probably most famous for the hospital that once stood there, where Typhoid Mary was detained for the last 20 years of her life (Seitz and Miller 2001, 211–228). The photographs of Lorenz and Sigal’s journey capture many minute and particular details of their own specific trip, such as the fact that the prison barge “seemed to be listing to one side” (Fig 2). But

Lorenz also documents her conversation with Sigal, in which they consider how water can be used to separate people from one another as well as to facilitate connection. “Both a road and a barrier,” Lorenz writes (Figs 3-4).



Fig. 3. “We talked about how water is used as a barrier, psychological as well as practical,” from Freedom/Captivity with Lisa Sigal, 9/5/2013.

Give and Take

This journey, like so many of those taken as part of the *Tide and Current Taxi*, explores more than the physical geography of an urban waterway, freely ranging from the biological to the phenomenological, social, and historical. Lorenz and her passengers drift from one topic to another, seamlessly and with abandon. The common thread is built in, since the passengers are all literally in the same boat. On another 2015

taxi ride, passenger and writer Catherine Despont asks Lorenz, “Do you have good conversations when you are out in the boat?” and Lorenz writes, “The best, I said. I think because we are all facing the same direction” (Fig 5).

This comment steers us toward one of the most important aspects of the *Tide and Current Taxi*, which is the intimate and unavoidably social



Fig. 4. “Rikers Island, North Brother Island, and the prison barge, have all been used at one time or another as a place to keep people away from other people,” from Freedom/Captivity with Lisa Sigal, 9/5/2013.

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character of the project. Typically a ferry or taxi service is a commercial pursuit: the taxi operator picks up passengers, and for a fee, brings them to a specified destination. Perhaps the most famous ferryman of New York harbor was the young Cornelius Vanderbilt, “robber baron” and billionaire, who ferried passengers from his native Staten Island to Manhattan as a teenager. Vanderbilt was hardly a pioneer—small wooden rowboats transported freight and passengers from the deepest parts of the New York Harbor to shore, or from one shore to another for centuries, just as similarly modest boats continue to serve passengers and commercial enterprise all around the world. The key difference between these

ferries or taxis and the *Tide and Current Taxi* is, of course, that Marie Lorenz offers her rides for free, and that hardly any of her passengers are trying to get from point A to point B. The journey itself is the destination.

Although itineraries are often determined by the passenger, or by passenger and artist together, it is Lorenz who offers the ride, and the passenger who accepts the gift of the ride. Thus the relationship between Lorenz and her passengers is not an economic one, and the trip becomes collaborative. Passengers reciprocate by sharing expertise, insights, ideas, and experiences. From evolutionary biologists to historians,



Fig. 5. “Do you have good conversations when you are out in the boat, asked Catherine,” from *Photography with Susannah Ray and Catherine Despont*, 7/3/2015.

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urban planners, painters, anthropologists, and photographers, her passengers share their unique perspectives, and these shape the voyages. In interviews and her photo journal, Lorenz makes clear that she considers her passengers to be the guides and experts on their shared voyages. In a 2010 interview, she explains, “One of my favorite trips was with the writer Samantha Hunt, who had just published a book about Nicola Tesla (semi fictional). The last scene was set on Barren Island, so we paddled around the island and she told me about the different things she had imagined took place there. It was perfect, floating along in this imaginary space” (Horvitz 2010). At some points in the photo journals, we can see that

Lorenz’s job is not just to shepherd the boat from place to place and back again, but also to socially and aesthetically respond to her passengers. Lorenz takes cues from them and the physical setting about what to notice, think, or imagine, and she shares those perceptions and imaginings with us via the website.

Passengers on the *Tide and Current Taxi* not only shape the trip and return Lorenz’ act of generosity with the ideas or views they share, they also reciprocate in concrete ways, and these tiny gifts are regularly celebrated in the photo journals of the *Taxi*. Images and text describe a wonderful sandwich or special cookie brought and shared



Fig. 6. “Sarah brought ‘Stroopwafel’ from the Netherlands,” from *Tidal Cycles with Sarah Cameron Sunde and Kara Hearn*, 6/26/2015.

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by a passenger (Fig 6). These details celebrate the dynamics of gift giving, noted by anthropologist Marcel Mauss, among others: rather than a finite, self-contained event, a gift generates another and sets in motion a chain of social interactions (Mauss 1990, 65). In an essay on contemporary art and generosity, Ted Purves writes, “In a capital economy, an overarching system of absolute value (monetary systems) is assumed, so that exchanges have no left over relations when they are finished. If you get a donkey for a day’s work, it is because both of them were valued to be the same in monetary terms. The transaction is over, and you can move on to the next one. In a gift economy, transactions are never really over,

because each one produces more reciprocal ties (Purves 2005, 43). Curator and writer Mary Jane Jacobs has also noted that many recent artists have deployed generosity as a tool through which they may transform the role of “audience member” for a work of art into one that is more active, and allowing the audience member to co-produce the work of art, to bring their own knowledge, ideas, and feelings to the experience (Jacob 2005, 5). This spirit of collaboration is specifically and consciously represented in the photographic representation of the experience of each voyage that Lorenz produces and shares. One of the ways through which Lorenz visually communicates the social nature of the experience is by including



Fig. 7. “He told stories of explorations that he and his friends have taken,” from Steve Duncan: Urban Explorer, 6/19/2008.

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her passengers prominently in so many of the photographs taken on each trip. In these, we see passengers and the landscape around them together. For Lorenz and the photographs' viewers, the experience of the journey is not solitary; we experience the surroundings alongside others who are also there, seeing it too (Figs 7-8). These photographs prevent us from divorcing the "view" from the conditions in which that landscape has been experienced, that is, from aboard a small, floating wooden boat and in the company of others.

This determinedly *social* experience of place is quite a departure, I'd argue, from the Romantic

ideal of how we should experience the outdoors, best personified perhaps, by Henry David Thoreau or the landscape painter Thomas Cole, who in his *Essay on American Scenery* praised solitude in nature as a restorative state which not only heightened awareness and perception, but also offered spiritual nourishment (Cole 1836). While European and American Romantics of the nineteenth century celebrated untouched places, whether Thoreau's Maine Woods or Cole's Catskills, Lorenz highlights places that are right amidst, and a part of, the urban fabric, deeply connected to human history, and shaped by human activity as well as other forces (Fig. 9).



Fig. 8. "The current swept us north into Spuyten Duyvil," from *The One Borough Ramble with Amanda Huron* 9/9/2007.

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Lorenz and her passengers explore these places from a very different perspective. They do not stand apart, taking in a view from a promontory, or gazing out at a watery scene from *terra firma*. From the *Taxi*, everything around is immediate, *near, around* or *below*. The surroundings observed—water, shoreline—are inseparable from the passengers’ own experiences, floating, rocking, and swaying on that same water. And so the relationship between passengers and place is also one of give and take, as each impacts the other. While those of us who experience these journeys in the photographic journals that memorialize

them don’t feel, smell, or taste the places visited, the photographs and captions regularly remind us that these voyages are multisensory, describing sounds, smells, and tactile sensation.



Fig. 9. “we saw Manhattan in the morning light,” from *Total Lunar Eclipse with Melissa Brown, Erinn Fierst, Brian Dunn, and Birgit Rathsmann*, 8/28/2007.

Unexpected Responses

The *Tide and Current Taxi* often visits sites such as landfills, the industrial waterfront, and canals, perhaps because we can see human and natural forces interacting with one another so vividly in these places. One of the most significant qualities of this project is the way in which it invites viewers to see such places anew. An example of this can be found in the photo narratives of the many taxi rides taken over the past decade through the Gowanus Canal in Brooklyn. The Gowanus is a man-made canal in the middle of the currently

residential area of south Brooklyn, New York. Heavily polluted, the canal was designated a federal Superfund site in 2010. Dug between 1853 and 1874 in a low-lying area where the small Gowanus creek ran through New York Harbor's saltwater estuary, the canal played a significant role in the industrial development of the area in the late nineteenth century (Alexiou 2015, 8-9). As the areas around the canal have gentrified over the last two decades, however, the canal itself has become a source of an array of feelings, from



Fig. 10. "I asked Josiah what he would do with the canal if the whole thing were up to him," from Josiah McElheny and Anne Daems, 11/24/2009.

disgust to fascination. Lorenz has visited the canal with several passengers over the last decade, from fellow artists to writers and scientists. Her images of the canal evoke a wide and confusing range of reactions, and it seems that the artist's attraction to this site has to do with the way one might come into contact, in quick succession, with a bloated dead rat, a large healthy blue-claw crab, an iconic silo reflected in the still water, and a wrecked boat, half-submerged. These encountered objects do not evoke the responses one might expect. For example, we feel horror at the sight of the large crab, or the heron, making its way in the canal, silently pleading with it to

“Go somewhere else!” Nature intermingles with pollution and filth without any qualms, even if we find the muck of our own making monstrous or uninhabitable. Conversely, many of the journals for the Gowanus trips include photographs where the still and stagnant water of the canal strikingly reflects the colorful shapes of the rusted bulkheads, silos, colorful cement factories, cranes, sheds, and drawbridges that line the shores (Fig. 10). These images of a post-industrial waterfront and Superfund site are classically beautiful and poised. Lorenz even manages to capture the compelling ways in which a permanent oil slick that glistens on the surface of one section of the



Fig. 11. “iridescent residue from the manufactured gas plants that contaminated this place for years,” from Evolution with Eben Kirksey and Latasha Wright, 7/4/2015.

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Gowanus can be as appealing as an oil painting on canvas (Fig. 11).

The *Tide and Current Taxi* regularly presents us with these kinds of dissonances. We experience visual pleasure at the colors, shapes, and forms seen in the photographs, but also horror as we stare at toxic coal tar residue floating on water or heaps of garbage washed upon the shore. Sometimes the transition from experiencing beauty to revulsion is swift; other times, less so. But most trips along the urban waterways of the New York area include a fair variety of experiences, and even this heterogeneity is a bit

dizzying at times. Lorenz and her passengers encounter an urban landscape that is both beautiful and revolting. Biologist Latasha Wright and anthropologist/ecologist Eben Kirksey, for example, are described as “equal parts fascinated, grossed out” on a trip on the Gowanus, and Lorenz offers many photographs showing us how deeply revolting the canal can be (Fig 12). While exploring a hundred-year-old landfill in Jamaica Bay recently torn open by Hurricane Sandy, Lorenz took pictures of the trash that are visually striking, but she also recalls through her text that, “As we picked through the debris with sticks, I fought back a wave of revulsion. There was



Fig. 12. “The boom has done a good job of catching some coal tar churned up by the new flushing tunnel,” from *Evolution with Eben Kirksey and Latasha Wright*, 7/4/2015.

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something scary about digging into this hundred year old trash.” (Fig 13).

Lorenz intentionally creates dissonance between the visual image and text in several instances. At one point in her 2015 Gowanus taxi ride with Eben Kirksey and Latasha Wright, she describes Kirksey’s research on frogs. Kirksey is trying to learn why those that live in industrialized areas are dying out less dramatically than those in less polluted places. Under a photograph of the grey industrial shoreline, some abandoned silos, a rusty boat, and some cranes, she tells us, “I imagined a frog enjoying the site of all this industrial

decay as much as I do.” Moments later, Lorenz asks the scientists if there is more life in the city above the water or below, and they begin to list off the many things living in each realm. Below a photograph of the Gowanus cement plant, its sheds, silos, and conveyors reflected in still, seemingly lifeless water, Lorenz quotes the scientists listing the species living in the water: “Cnidarians, mollusks, amphipods, decapods, nematode worms, polychaete worms, annelid worms, nematode worms.” The dissonance between the seemingly inert scene represented in the photograph and this extensive list of vibrant living things initially seems comical, but it also



Fig. 13. “There was something scary about digging into this hundred-year-old trash,” from Treasure Map, with Essye Klempler and Beverly Acha, 9/6/2013.

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invites us to reimagine the places we may have assumed to be devoid of “nature” as teeming with life. Lorenz encourages us to imagine these tiny species dancing and swimming beneath the hulking shapes of buildings in the photograph (Fig 14). Similar contrasts are created in the narrative of a trip up the Coney Island Creek with photographer Susannah Ray and writer Catherine Despont. Ray has been photographing the shorelines of New York since Hurricane Sandy for her project, *A Further Shore*, which focuses on New York’s waterways as spaces of rejuvenation and revelation. In the narrative, one image stands

out. In it, Lorenz shows us a fenced-off, stagnant patch of water facing a blank billboard. A small island of Styrofoam, plastic soda bottles, and a raft of unidentifiable, brownish debris floats in the center of this water. The caption to the photograph, “”This is where I always wanted to be! She said,” is startling, horrific. Ray’s exclamation makes more sense in the narrative, where we learn that this spot is one she had frequently seen and photographed from the roadway above. And yet the dissonance between emotion and image that is found in this image/text pairing is still



Fig. 14. “nematode worms, polychaete worms, annelid worms – those all look like worms to us but they are radically different,” from Evolution with Eben Kirksey and Latasha Wright, 7/4/2015.

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funny, disconcerting, and challenging. How could this be where she wanted to be? (Fig 15)

The muck and the revulsion that we, alongside Lorenz and her fellow travellers, feel at the sight of it prompts us to ask: Is this project simply a confrontation with our own version of Frankenstein's monster, an aberration of our own making, an unnatural, monstrous place that can only be met with disgust and the desire to flee? I think not. In fact, I think that the photo narrative offers another kind of reaction, one where imagination coexists with a real fascination with what is present here and now, with the materiality of

coal tar, of glassy or milky green water, hills of gravel. Real journeys through the urban wilderness must, after all, confront what is really there.

As I have already suggested, the art historical landscape conventions that took shape in the United States in the early part of the nineteenth century celebrate hard-to-reach places as Eden-like. Yet scholarship reminds us that those pristine landscapes were themselves fictional (Myers 1995, Harris and Pickman 1996). For example, the iconic works of the Hudson River School painters portray the Hudson River as wild, but these paintings were made after the



Fig. 15. "this is where I always wanted to be!" she said," from Photography with Susannah Ray and Catherine Despont, 7/3/2015.

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Erie Canal had turned the river into a busy thoroughway, accessible not only to painters, but also to westward-going immigrants, commerce, and tourism (Ferber 2009). We see few signs of the industry that dotted the shores of the Hudson in those nineteenth-century paintings, and as William Cronon has suggested, this bias for the “untouched” landscape, over those in which human interaction with the physical environment is obvious, persists to this day (Cronon 1996). Lorenz and her taxi passengers do not seek out such places; they instead explore a buried garbage pile in the middle of a city’s waterways, a desolate and mucky canal, a boat graveyard,

or a forgotten beach alongside a highway. These are the mundane, overlooked environments that urban dwellers typically ignore or rush past.

The *Tide and Current Taxi* creates a transformational experience, changing our perceptions of the city. These transformations can be understood in terms of what French theorist Guy Debord (a thinker who has been central to Lorenz’ practice) has called the strategy of *détournement* – a turning of something against, or away from, its accepted uses. *Détournement*, said Debord, is “not a negation of Style, but a style of negation” in which values are reversed, overturned, or turned



Fig. 16 “And the waves and wakes held us against the pier” from Victoria Mayer – Traveler, 8/9/2008”

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against the structures they support in order to create new opportunities, new avenues for resistance or reconstruction of perception (Debord 1994, 144–146). In reconceiving the taxi ride as a gift that is freely given, Lorenz not only alters the relationship between herself and others in the boat, but also reimagines the waterway itself as a public place available for new kinds of awareness. When Lorenz and her passengers marvel at a pile of trash, an oil slick, an island formed out of garbage, a boat graveyard, or a site of industrial contamination and record the effects that these sites have on their senses, their imaginations, or their sense of the city, they practice a kind of *détournement* where the Romantic approach to “landscape” is both negated and at the same time

grafted on to the kinds of urban sites, smells, and sounds that Romanticism elided. As witnesses to these small voyages, we who follow the comings and goings of the Tide and Current Taxi are transformed, too. We may become curious about garbage, where it goes, and how it interacts with forces in the environment, what might choose to grow on it, or what it might show us about the tides.



Fig. 17. “The waves and ferry wake heaped up under the Brooklyn Bridge,” from Unexpected Adventure with Michael Taussig, Lan Tuazon and Dave Denz, 7/11/2015.

Float

Perhaps I should have started this essay by talking about floating, drifting, and bobbing along, since this aspect of the project is, perhaps, its most fundamental condition, because the most basic collaboration of all is between artist and passengers and the material that conveys them, the water. There is no motor on the *Tide and Current Taxi*. It moves from point to point using only human power and the powerful forces of the wind and water. The dynamic movement of the water is generated by the tides, by wind, and by the topography, including natural formations as well as the dredging of channels, the depositing of trash and of other obstacles. Piers, large boats, and other structures also create water conditions providing obstacles for the *Taxi*. Together these forces make the water a volatile three-dimensional space rather than a placid surface. A small boat floating in that volume is dramatically pushed and pulled, carried along in unpredictable ways. (Fig 16)

When she moved to New York, Lorenz was immediately impressed by the highly dynamic and intertwined currents that surround Lower Manhattan. It is this system of currents that made the tip of Manhattan a natural meeting place for peoples centuries ago, who could harness those tides to travel from places as far away as Canarsie, Sandy Hook, or Long Island. Knowledge of the currents takes time, and requires attentive observation, but in the *Tide and Current Taxi*, such knowledge is not used to gain mastery over the physical environment, but rather to collaborate with it. Planning trips around tides and the currents means collaboration with the ocean, the moon, and the wind. It means getting up too early, or setting out late. And it means that often, you don't get where you want to go, or you travel further than you intend. With this mode of travel, the scheduled rationalization of river transportation that has been

in place since the advent of the steam engine is replaced by the rhythm of ebb tide and flood tide, as the "driver" of the boat relinquishes agency and becomes a passenger, carried along by the force of the water and wind as much if not more than by human effort.

This aspect of the *Tide and Current Taxi* is very much present in the photo journal, where the artist constantly tells us not only about the water conditions and how the water is moving the boat, but also about the somewhat precarious situations she and her passengers often find themselves in while being pushed and pulled round by a powerful water system (Fig. 17). While Lorenz and her passengers do use paddles, they use them in cooperation with the tides of the Harbor, which are some of the strongest on earth. As Lorenz has explained, "In the New York Harbor the tide can travel up to 6 knots, which is an incredible amount of power for a small boat. In some places, at some times of day, traveling with the tidal current is equivalent to having a small outboard motor" (Horvitz 2010). When tides, wind, and current are harnessed, the collaborative spirit is extended to the environment, and some human agency is relinquished.

In interviews and writings, Lorenz explains that much of her early work was inspired by her interest in floating. Lorenz has always considered floating to be a perceptually heightened state; when we float, whether as swimmers or passengers in a boat, our point of view is altered by the rise and fall of the water, by the very fact that the water supports us. And in a small boat, everyone is acutely aware that they are floating *together*. One person's movement tips the entire boat a few degrees in one direction or the other; the way the boat sits in the water is determined by the *us* inside and our total weight.

The significance of Lorenz's project is that it enacts, in an open-ended, distinctly social way, a model of being in the physical environment that is sensory and embodied. In terms of aesthetics, such an experience might be termed phenomenological, with phenomenology being an approach to both consciousness and perception that emphasizes the temporal, embodied, and sensory aspects of experience. Due to its distinctly social and interactive qualities, *The Tide and Current Taxi* enacts what we might call a social phenomenology of the urban environment. Agency, intention, and therefore possession (or subjugation) of the environment are replaced with a collaborative conception of human interaction with the environment. Lorenz's taxi rides are not voyages of conquest and ownership, whether of territory or even of knowledge, empirically gathered and taxonomically categorized. Rather these are voyages that allow us to appreciate the "vibrant matter" that political theorist Jane Bennett, another important influence on Lorenz, writes about. Lorenz has stated about the current, "I guess I love the way it organizes the junk, how it gets distributed. There will be 10 drinking straws. But they all end up in this one area. The water just sorted it out. Logs, basketballs—100 feet away there is glass, ceramics. It forms a natural topography—it is really dramatic because there is so much garbage. The water is making this tableau for you" (Lorenz 2015). Bennett has praised authors who "can direct sensory, linguistic and imaginative attention toward a material vitality" in our midst (Bennett 2010, 17). But Bennett

calls on us to do more than merely notice our material reality; she calls for us to become aware of the extent to which the material world *shapes* reality. Rather than a full denial of our own agency, Bennett suggests that as we become more aware of the "living, throbbing confederations" of forces that shape our physical reality, we come to appreciate a "spectrum of agentic capacities" that reach well beyond the human. Tides, crabs, plastic flotsam, and wafting odors play their roles, too (Bennett 2010, 23, 30).

On board the *Tide and Current Taxi*, a wide range of responses to the environment pass from one passenger to another. Some of what is shared has the solidity of "information," but often it is the ideas, emotions, and sensations that carry most weight in the narratives that Lorenz presents. "I'm taking pictures the whole time — thinking of the story of the trip," says Lorenz. In the development of that story, the artist says, the governing question is almost always, "How did it [the trip] change our perspective?" (Lorenz 2015).

As I've argued in this essay, the "perspective" that Lorenz mentions is more than just a view, but a social and phenomenological experience that provides opportunities for the exchange of ideas, flights of imagination, feelings of revulsion, wonder, embarrassment, self-doubt, gratitude, admiration, camaraderie. Lorenz manages to reorient our perception, challenging us to see the miraculous beauty of light on an oil spill, the hidden riches inside forgotten islands of junk.

A version of this paper was presented on a panel titled "Watershed Moments: Enlightenment to Contemporary Engagements with Forms of Water" at the 2015 Southeastern College Art Conference in Pittsburgh.

All photographs are from the "Tide and Current Taxi" by Marie Lorenz and reproduced by permission of the artist.

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About the Author

Meredith Davis is an associate professor of art history at Ramapo College of New Jersey, with a focus on American art of the nineteenth and twentieth centuries. In her teaching, she brings an interdisciplinary, place-based approach to the study of the humanities. She has taught courses on New Jersey and the Hudson River, and has directed an NEH-funded summer workshop, "The Hudson River in the Nineteenth Century and the Modernization of America" since 2011. She lives with her family in New York City.

IN REVIEW

GODS OF THE MISSISSIPPI

By Christine Croxall

Nearly twenty years ago Thomas Tweed and a host of collaborators, responding to the cultural and historiographic shifts of the era, called for narratives of the United States' religious past that "draw on new motifs and plots and include a wider range of settings and characters" than those available at the time.[1] Michael Pasquier's edited volume, *Gods of the Mississippi*, extends Tweed's project to the Mississippi River, an understudied

region in American religious history but familiar habitat for Pasquier, who wrote his first book on French missionary priests in the Ohio and Mississippi valleys in the nineteenth century, and now researches and teaches about the intersection of religious practice and the environment along the Gulf Coast and the Mississippi River Delta.[2]

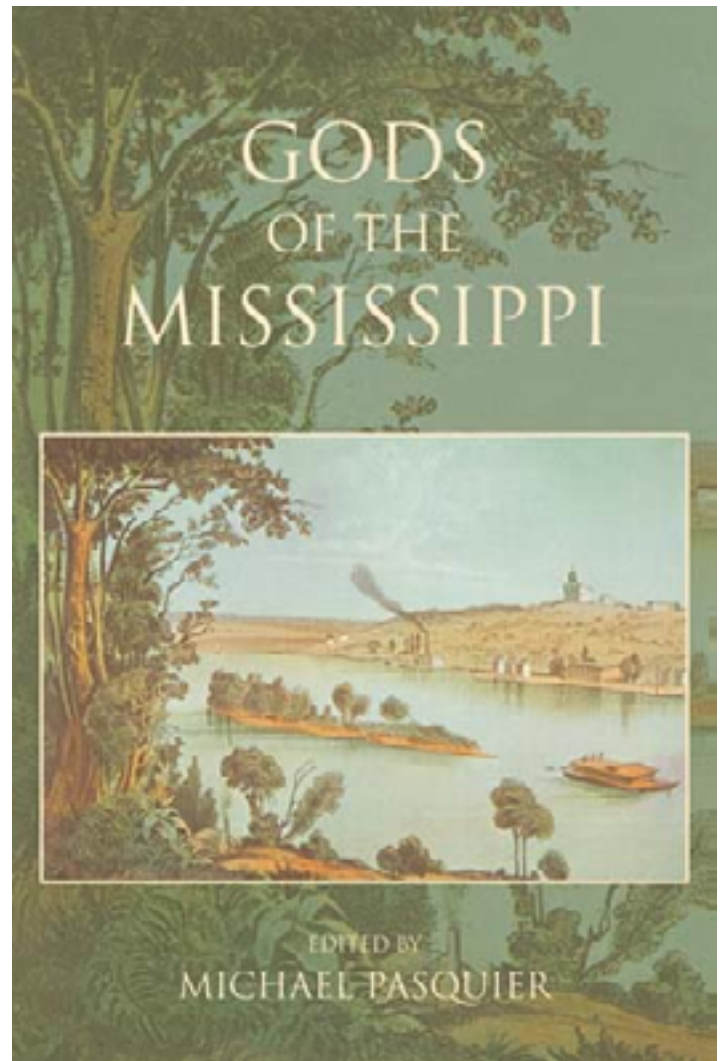


A large group of African-American spectators stands on the banks of Buffalo Bayou to witness a baptism, circa 1900. Courtesy of Special Collections, University of Houston Libraries.

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Organized chronologically, the volume's nine essays span the colonial era through the early twenty-first century, and follow the river from its headwaters in present-day Minnesota to its mouth at the Gulf of Mexico. Following Pasquier's brief introduction, Jon F. Sensbach's thoughtful essay puts the Mississippi River in a larger Atlantic context by foregrounding the enslaved Africans forcibly transported to the region in the eighteenth and early nineteenth centuries. They arrived, Sensbach contends, with rich and varied religious beliefs, practices, and rituals from Africa and passed their religious traditions to their descendants, while also adapting to other religious worldviews they encountered and creating new religious forms that left an "indelible African imprint" on the region and the nation (19).

The next three essays explore the notion, held by religious leaders and churchgoers alike in the nineteenth century, that the United States was the center of the divine project to complete history, and that the Mississippi River Valley would play a special role in the unfolding of God's plan. Sylvester Johnson considers the alignment between Protestant missions and U.S. imperialism in Indian country. Buoyed by visions of converting American Indians as a prelude to the end times, missionaries sent by the Presbyterian Synod of Georgia and South Carolina and the American Board of Commissioners for Foreign Missions set up a series of mission plantations in present-day Mississippi, funded by the government's Civilization Fund and the Indians' own annuities, to harness Chickasaw and Choctaw labor, as Johnson demonstrates, and inculcate Anglo-American, Protestant economic and religious practices. Arthur Remillard traces the meaning-making that accompanied three early-nineteenth-century explorers' efforts to identify the source of the Mississippi River. Zebulon Pike, Giacomo Beltrami, and Henry Rowe Schoolcraft successively claimed to have found the origins of the mighty river in present-day northern Minnesota, each one correcting his predecessor's claims and deploying the



Michael Pasquier, ed., Gods of the Mississippi
(Bloomington: *Indiana University Press*,
2013. xvi + 224 pp.,
cloth, \$75.00; paper, \$27.00)

findings in larger ideological projects. Promoting ideologies of a different sort, Mormons, Vermont Pilgrims, Millerites, and other adherents to new religious movements in the antebellum era conceived of the Mississippi River valley as the locale for millennial culminations. Though their predictions of the end times failed to materialize, Thomas Ruys Smith attests that their ideas about the river's religious significance spread into the wider culture.

Two other contributors join Remillard in analyzing the import of space and place in Mississippi River religious communities. Seth Perry demonstrates that Mormons marshaled the location and beauty of Nauvoo, their settlement on a bluff overlooking the Mississippi River in Illinois, to promote Mormon identity and Mormon immigration, while their detractors registered dissonance between the loveliness of Nauvoo's location and the suspicious Mormon practices in the town. Justin D. Poché explores how African Americans and French- and German-descended white inhabitants in the parishes lining the river between Baton Rouge and New Orleans from the late nineteenth century through the twentieth century used sacralized spaces—churches, devotional grottos, and cemeteries, but also front porches, the levee, and the river itself—to manage the complexities of environmental and social change, even as the petroleum industry collaborated with civic leaders to sponsor a competing narrative of “a mythic and therapeutic southern past” bolstered by heritage tourism (163).

Essays by John M. Giggie, Alison Collis Greene, and John Hayes explore religiosity in the Mississippi and Arkansas Delta region since the late nineteenth century. According to Giggie, instead of subsisting in the so-called nadir, African American men and women in the three decades after Reconstruction innovated by incorporating fraternal organizations, motifs of train travel, and consumer goods into their spiritual lives in order to negotiate the limitations of Jim Crow segregation in the Delta. Greene contextualizes the emergence and brief success of the Southern Tenant Farmers' Union, a cross-class, interracial collaboration that grew out of the rural crisis during the Great Depression and generated a fierce backlash from the middle-class establishment. Both Giggie and Greene point

out the appeal of the Pentecostal-Holiness movement—with its experiential, improvisational worship style, openness to women's leadership, and theology of personal holiness—among the impoverished inhabitants of the Delta. Musical icon Johnny Cash drew on a different religious heritage from the Arkansas Delta of his youth. Hayes tracks Cash's religious trajectory, from a regionally grounded, oral southern Folk Religion, to an ahistorical, individualistic, culturally dominant Neo-Evangelicalism in the 1970s, and back again. Ironically, the middle-class, educated audience of his later years, who shared little of his cultural heritage, embraced Cash's folk religiosity for its authenticity, candor, and substance.

Targeting an audience of historians and scholars of religion, *Gods of the Mississippi* would be a useful companion to geographers, sociologists, anthropologists, and cultural theorists interested in the intersections of religious practice and geographical environment. Though weighted heavily toward the southern segment of the river, the collection as a whole succeeds at depicting an array of religious expressions and forms circulating along the Mississippi, primarily in the last two centuries, and captures some of the unique demographic diversity of the region. Shifting the orientation from the standard east-west trajectory to a north-south flow, the collection emphasizes movement and heterogeneity in the religious lives of the inhabitants. These are not linear, grand narratives in the making, but situated, “intentionally convoluted stories” capturing how diverse people have made religious meaning along the unpredictable and uncontrollable river (11).

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[2] Michael Pasquier, *Fathers on the Frontier: French Missionaries and the Roman Catholic Priesthood in the United States, 1789-1870* (Oxford: Oxford University Press, 2010).

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About the Author

Christine Alice Croxall recently completed her doctoral degree in history at the University of Delaware. Her current project examines competing Protestant and Catholic efforts to Christianize the Mississippi River Valley between 1780 and 1830. In the 2016-2017 academic year she will be a postdoctoral fellow at the John C. Danforth Center on Religion and Politics at Washington University in St. Louis.

PRIMARY SOURCES

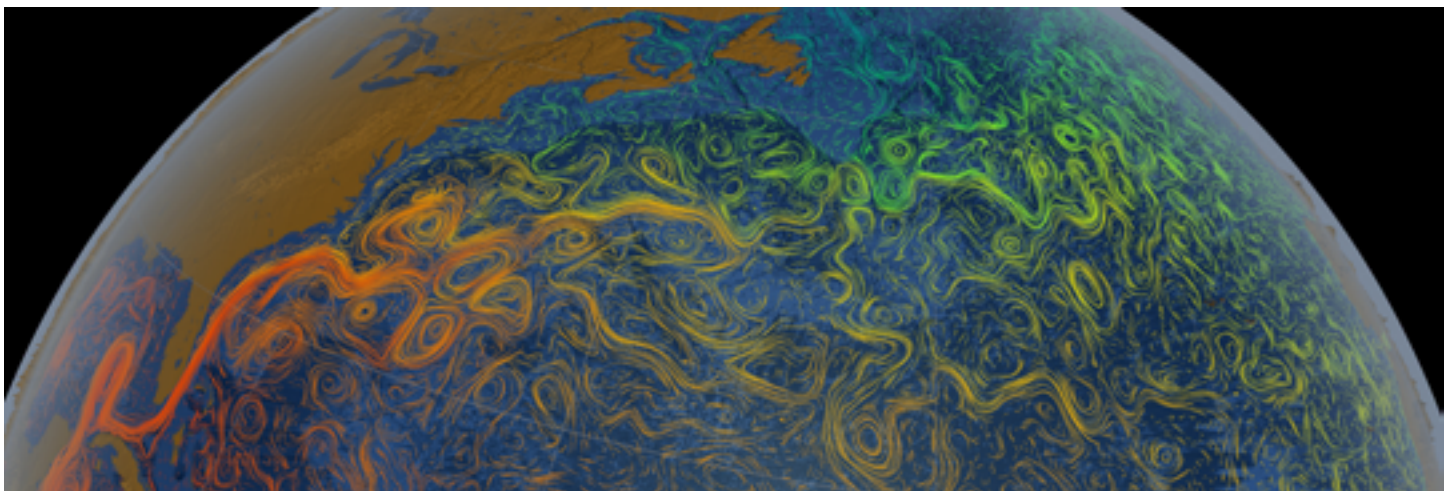
MAPPING OCEAN CURRENTS

By Emily Clare Casey

How can a map visualize a water current—something that is powerful and physically palpable, but that lies beneath the surface and is largely invisible to the eye? In a recent map, scientists at the National Aeronautics and Space Administration (NASA) represented the course of the Gulf Stream in the Atlantic Ocean through swirls of vibrant color denoting its thermal temperature (Fig. 1). The Gulf Stream is a warm ocean current that flows north from the Gulf of Mexico, along the east coast of the United States, to an area off the southeast coast of Newfoundland, where it joins the North Atlantic Current. Its central location has facilitated or hindered transatlantic passage for centuries, making knowledge of the Gulf Stream indispensable to navigators. Even before advanced technologies of thermal mapping and computer-generated imagery were available, mapmakers and scientists grappled with the problem of how to represent phenomena like currents with the tools they had. In the eighteenth century, American polymath

Benjamin Franklin turned his attention to this problem and created one of the earliest known maps of the Gulf Stream.

Franklin’s “Map of the Gulf Stream” was developed over nearly two decades of Anglo-American conflict, first published in 1768 in England, then in France in 1785, with a final version created in 1786 in Philadelphia at the close of the American Revolution (Fig. 2). Franklin printed the 1786 version of the map in the proceedings of the American Philosophical Society. Accompanying it was his essay, “Maritime Observations,” written in the form of a letter to a French scientist colleague Alphonse Le Roy. In the text, he established his authority in addressing maritime matters through the self-deprecating declaration that, “the garrulity of the old man has got hold of me, and as I may never have another occasion of writing on this subject, I think I may as well now, once for all, empty my nautical budget, and give you all the thoughts that have in my various long



*Figure 1, “Ocean flows colored with sea surface temperature data,” NASA/Goddard Space Flight Center Scientific Visualization Studio.
<https://svs.gsfc.nasa.gov/cgi-bin/details.cgi?aid=3913>.*

voyages occurred to me relating to navigation” (Franklin 1786). While earlier renderings of the map superimposed the Gulf Stream onto large, pre-existing maps of the entire Atlantic, this version shows a close view of North America and the branch of the Gulf Stream that runs along its coast, to Greenland. Based on Franklin’s own

observations of sea conditions during his many voyages between North America and Europe as a diplomat, and drawing on the knowledge of New England sea captains among his acquaintances, the map artfully blends Franklin’s scientific and political interests.

Mapping Currents

Franklin responded to the problem of representing a current by combining an abstracted representation of flowing water with common symbols from hydrographic charts. At the center of the map, the Gulf Stream cuts across a simplified representation of the North American Atlantic coast like a sinewy arm. Curving from

the lower left edge of the page to the bottom right corner, a collection of densely engraved lines suggests the ocean’s flow. Arrows and notations of “minutes”—a method for measuring distance in nautical miles—indicate the current’s direction. Ships dotted along the stream and just outside it



Figure 2, “A chart of the Gulf Stream,” Benjamin Franklin, James Poupard, engraver. Appears in “Maritime Observations” in the *Transactions of the American Philosophical Society*, 1786. Library of Congress Geography and Map Division, Washington, D.C.

illustrate the methods of navigating the current discussed in the text.

In “Maritime Observations,” Franklin describes how, as post-master general in the 1750s, he had been intrigued by discrepancies in arrival times between ships sailing from England to the American colonies. This prompted him to make inquiries of a Nantucket sea captain—his cousin Timothy Folger—who brought to his attention a band of water along the northeast coast of

America with a strong directional flow and a distinct change in temperature. Folger explained to Franklin that those ships traveling from England who attempted to “stem” the Stream—that is sail within it, against its current—met with delays while those who simply “crossed” it reached American shores much sooner. Although this phenomenon was familiar to New England whaling crews, it was relatively unknown among sailors navigating British merchant and navy ships.

Mapping Politics

Writing that “it was a pity no notice was taken of this current on the charts,” Franklin intended his own map of the Gulf Stream’s contours to be a transatlantic offering for the benefit of all nations. The methods for describing the course and nature of the Gulf Stream in the map and accompanying text ultimately extends beyond scientific observation to project ideas about the place of the United States in the Atlantic World. Through its focus on environmental phenomena, Franklin’s map naturalizes transatlantic circulation as a human as well as ecological imperative. The text makes an explicit link between the course of the Gulf Stream and the commercial networks between Europe, Africa, and North and South America. Significantly, in a period when European and British imperial powers used naval force and commercial blockades to limit American access around the Atlantic, and in the Caribbean in particular, an image of the continuous and free circulation of ocean currents had a political and cultural subtext. It implies the inevitable continuation of an interconnected Atlantic world after United States independence by envisioning it as an ecological as well as a political network. The fact that the Gulf Stream runs north along the North American coast and then east to Europe underscores the importance of the United States within this network as it imagines the current moving out from the new nation. Acting as a

doorway to the United States, through which European traders were required to cross in their voyages across the Atlantic, the current insists on the significance of U.S. ports along the trading routes of the Atlantic world.

Details in the map shape Franklin’s argument. While the main illustration of the Gulf Stream focuses on its course along the eastern coast of the United States, the inset map in the upper left pictures the complete flow of Atlantic currents circulating in the ocean. Here, ocean currents move continuously around the island of Great Britain, past the shores of Europe and Africa, and then up the coast of the United States. Close inspection reveals that the marks reproducing this circum-Atlantic current are in the form of small fish, vigorously swimming around the ocean, propelled by the directional flow of water. The map’s subject matter and mode of representation therefore combine to emphasize Atlantic circulation. Importantly, it visualizes this circulation of fish and ships as rotating centripetally around not a political power, but an environmental body: the sea. In this way, the form of the current imagines a global arena for transnational exchange that is not controlled by a single nation, but founded in an environmental system available to all. For the United States, keen to assert belonging in the

world of global trade, such an inclusive message was particularly important.

The map's cartouche, a small inset scene featuring the title inscribed on a rock face, further promotes the prominence of the United States within this maritime sphere. On either side of the inscribed monolith, we see the figure of Franklin—identifiable by his profile and eighteenth-century clothing—in conversation with a crowned merman with a trident, representing Neptune, an allegorical figure of the sea. Neptune

appears to be providing Franklin with a first-hand account of the Atlantic's mysteries, as if knowledge of the Gulf Stream allows the ocean to speak more clearly to its navigators. British prints traditionally represented Neptune with Britannia, the symbolic representation of the empire in female form. These pairings implied that Britain's celebrated naval and mercantile might was natural and approved by the sea itself. Adopting this trope for his own purposes, Franklin's replacement of Britannia with his own portrait makes a similar claim for the early United States.

Mapping Culture

Franklin's choice of publication venue is central to his ambitions for the map beyond geographic utility. Franklin helped found the American Philosophical Society in the eighteenth century as an institution to promote American contributions to the intellectual culture of the Atlantic world. In the years after the Revolution, its members encouraged the economic and cultural development of the new United States through their scientific and technological innovations. They aspired to elevate the country as an equal participant in a transnational community of learned societies by sharing their discoveries in astronomy, anthropology, the natural sciences, and other fields. The political and scientific aims of Franklin's map correspond with the mission of the American Philosophical Society by asserting the importance of the United States in the Atlantic flow of goods, bodies, and knowledge propelled by the Gulf Stream. The second volume of *Transactions*, in which Franklin printed his "Maritime Observations," also traveled this route, broadcasting American intellectual pursuits to foreign ports and physically carrying Franklin's map along the current it represents.

In 1799, Jonathan Williams, Jr., Franklin's nephew, expanded upon his uncle's research in order to further explore the dynamic nature of

the Gulf Stream. His essay on "Thermometrical Navigation," also printed in the *Transactions of the American Philosophical Society*, incorporated water temperature data collected by Williams during Franklin's final transatlantic voyage. Williams theorized that sailors could navigate ocean currents by temperature alone, rather than by the stars or other visible markers (Williams 1799). While Williams' theory over-simplified the importance of temperature to understanding the sea, NASA's present-day thermal visualization of ocean currents exhibits the ongoing imperative to find new, creative means to document and visualize the Gulf Stream. Williams's early measurements suggest the relationship between Franklin's "Map of the Gulf Stream" and the oceanographic technologies of our own day. In so doing, they offer context for understanding how scientists and seafarers concerned with the benefits of maritime circulation might picture an ocean current's fluid dynamic. In their attempts to document and make visible an elusive, yet powerful, natural conduit, both maps demonstrate the importance of environmental forces in propelling or impeding economic trade, communicating information, and projecting political agendas in the Atlantic world.

A version of this paper was presented on a panel titled “Fluid Currents: Water, Art and Ecology” at the 2015 Southeastern College Art Conference in Pittsburgh.

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Casey, Emily Clare. 2016. “Mapping Ocean Currents.” *Open Rivers: Rethinking The Mississippi*, no. 3. <http://editions.lib.umn.edu/openrivers/article/mapping-ocean-currents/>.

About the Author

Emily Clare Casey is a doctoral candidate in the history of art at the University of Delaware. Her dissertation, “Waterscapes: Representing the Sea in the American Imagination, 1760-1815,” explores how eighteenth-century British Americans visualized their place in a global world through representations of the sea in art, literature, and material culture. She is the 2016-2017 Sylvan C. Coleman and Pam Coleman Memorial Fund Fellow at the Metropolitan Museum of Art.

GEOGRAPHIES

WHAT IS CLEAN WATER WORTH?

By Bonnie Keeler

Minnesotans are fortunate to live in a land rich in water resources. Clean water is part of our sense of place and cultural identity. Abundant water underpins our agriculture, manufacturing, and tourism industries. In theory, clean water should be incredibly valuable—water is essential to our lives and livelihoods. In practice, clean water is cheap. Our water bills are

a minor household expense and the public can access the majority of our lakes and rivers for free. *If clean water is so valuable, then why is it cheap?*

It turns out that understanding the true value of water is not an easy task. We don't purchase units of clear lakes or safe swimming beaches at



Paddling the narrows of Splash Lake from Ensign Lake in the Boundary Waters Canoe Area Wilderness (BWCAW) in northeast Minnesota, a pristine, yet rugged wilderness established by Congress in 1978. The 1,000,000+ acre BWCAW is enjoyed by some 200,000 visitors annually. Photo by Alex Messenger. Courtesy of [Messenger Photography](#).

the store. Even when consumers have to pay for water, scarcity does not always drive up prices. Some of the cheapest water rates in the U.S. are in drought-stricken California. Instead, economists in search of the true value of clean water

need to look beyond markets for clues about how people respond to changes in water quality and what we might be willing to pay to protect it.

Value Does Not Equal Price

Value is just a representation of how much people are willing to trade to get a little bit more of something else. We express our values in everyday decisions about how to spend our money and time. For example, I might pay \$3 for a latte or spend 20 minutes in my car to drive my son to soccer practice. These actions signal the value I place on these goods and activities. However, the prices we pay are not a perfect representation of our true values. I actually value

my son's participation in soccer so much that I would willingly spend 60 minutes in the car to get him to practice, even though I only have to "pay" for 20 minutes. This discrepancy between price and value is one reason why what we are billed by our water utility or the fees we pay to access parks or beaches aren't accurate representations of the true value of clean water. *So how else can we figure out what clean water is really worth?*

How Much Do You Love Lakes and Rivers?

Now think about your behavior with respect to water bodies, particularly the lakes, rivers and streams near your home. What would you be willing to give up in higher taxes for cleaner rivers? How much farther would you drive to swim in a clear lake over a dirty one? The answers to these questions provide some of our only clues to how the public values freshwater resources.

To estimate the public value of clean water, most economists rely on surveys that ask people directly how much they would be willing to pay for cleaner water or healthy rivers. Or they query respondents on their recreational behavior, asking what waters they visited last year and how far they traveled to get there. These pieces of information are critical to understanding how much people are willing to give up in terms of their time and resources to access higher quality lakes or rivers.

The problem with this traditional approach is that surveys are expensive. They also take a lot of time to design, distribute, and analyze. The most recent survey data we have on lake users in Minnesota dates back to 1998. Today researchers interested in informing water management decisions want to quickly and cheaply investigate user preferences for clean water over time and space in a way that could deliver value-of-water information to policy makers on demand.

Last year, my colleague Spencer Wood of the University of Washington had a brilliant idea to use photos uploaded to the photo-sharing site Flickr as a way to measure where and how frequently people visit different natural or cultural attractions. The solution satisfies the need for a large sample size, with thousands of photos available on the site, which also provides information about where the photo was taken as well as the home base of the photographer.

In a recent study we applied Spencer’s approach to investigate visitation to Minnesota lakes. It worked like this: if a Flickr user uploaded a photo taken within the boundary of a lake and tagged it with the geolocator (the tool that lets users mark the location on a map), we recorded a visit to that particular lake. We combined data on these “photo-visits” with information on users’ home

locations to estimate how far they traveled to visit lakes of varying water clarity. We also controlled for other factors such as lake size, amenities, access, and proximity to population centers. We found that all else being equal, lakes with greater water quality received more visits than dirtier lakes, and that lake users were willing to travel farther (up to an hour more, round trip) to visit cleaner, clearer lakes.

Faster, Cheaper, But... Biased

In our study, social media proved to be a unique, free, and quick way of assessing the preferences of lake visitors. These data provided interesting clues to how recreationists value clean water — evidence that was previously unavailable in Minnesota. Of course, social media doesn’t provide all of the information we would like to have and we don’t understand how the behavior of social media users differs from the rest of the public. To address these issues, we started a new project aimed at better understanding how to

account for issues of bias and representation in social media that will expand our study to look at tens of thousands of lakes across 17 U.S. states. Our work involves leading economists, social media experts, and limnologists to explore how we can adapt standard econometric approaches that rely on specially designed surveys that account for user demographics and location to the comparably uncontrolled and uncertain data generated from social media posts.

Why Is It Useful To Understand the Value of Clean Water?

Despite passage of the Clean Water Act mandating that all waters are “boatable, swimmable and fishable,” an estimated 40 percent of lakes and rivers in Minnesota are classified as “impaired” and unfit for these basic human uses. Efforts to restore watersheds are expensive and public dollars to support those investments are limited. Quantifying the value of clean lakes and rivers is critical in making the case that the potential benefits of clean water protection or restoration exceed monetary costs.

The value of clean water is more than what we pay in the store and more than the cost of bottled water or infrastructure required to clean up degraded waters. Clean water is also worth more than what we reveal through our recreational behavior. To understand the true value of clean water we need additional research on the health effects of drinking polluted water, the loss in property value as lake clarity declines, and the ways changing water quality affects the health and productivity of aquatic ecosystems and waterfowl. Only then will we truly understand what our waters are really worth.

Recommended Citation

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Bonnie Keeler is program director and lead scientist for The Natural Capital Project, a partnership combining research innovation at the University of Minnesota's Institute on the Environment and Stanford University with the global reach of conservation science and policy at The Nature Conservancy and the World Wildlife Fund.

TEACHING AND PRACTICE

FINDING COMMON GROUND IN COASTAL VIRGINIA: THE CHRYSLER MUSEUM FACES THE RISING TIDES

By Seth Feman

According to state officials, Coastal Virginia is home to the second largest U.S. population at risk from climate change (second only to the people of New Orleans). Because of the added problem of land subsidence, sea levels along the Virginia coast are rising faster than the global average, with some estimates projecting a relative sea level rise of two to five feet within 100 years. The area includes major shipping ports and the world's largest naval operation. The rising waters therefore pose immediate threats to international commerce, national security, and the health and wellbeing of the more than 1.7-million people living throughout the region.[1]

At the Chrysler Museum of Art in Norfolk, Virginia, these issues confront us daily. The museum faces the Hague, an inlet of the Elizabeth River and one of the tidal waterways connected to the Chesapeake Bay. The roadways surrounding the museum become unpassable due to storm surges as well as so-called blue sky or nuisance flooding (when on cloudless days water gathers due to downstream flows and high tides). Although the museum's first floor is above the currently predicted 100-year flood level, the building can become an island during high water incidents. As part of the museum's recent expansion and renovation, the institution developed an emergency preparedness plan that focused primarily on water risks. As a result, the museum installed emergency floodgates and relocated all

mechanical systems and art storage to elevated locations.

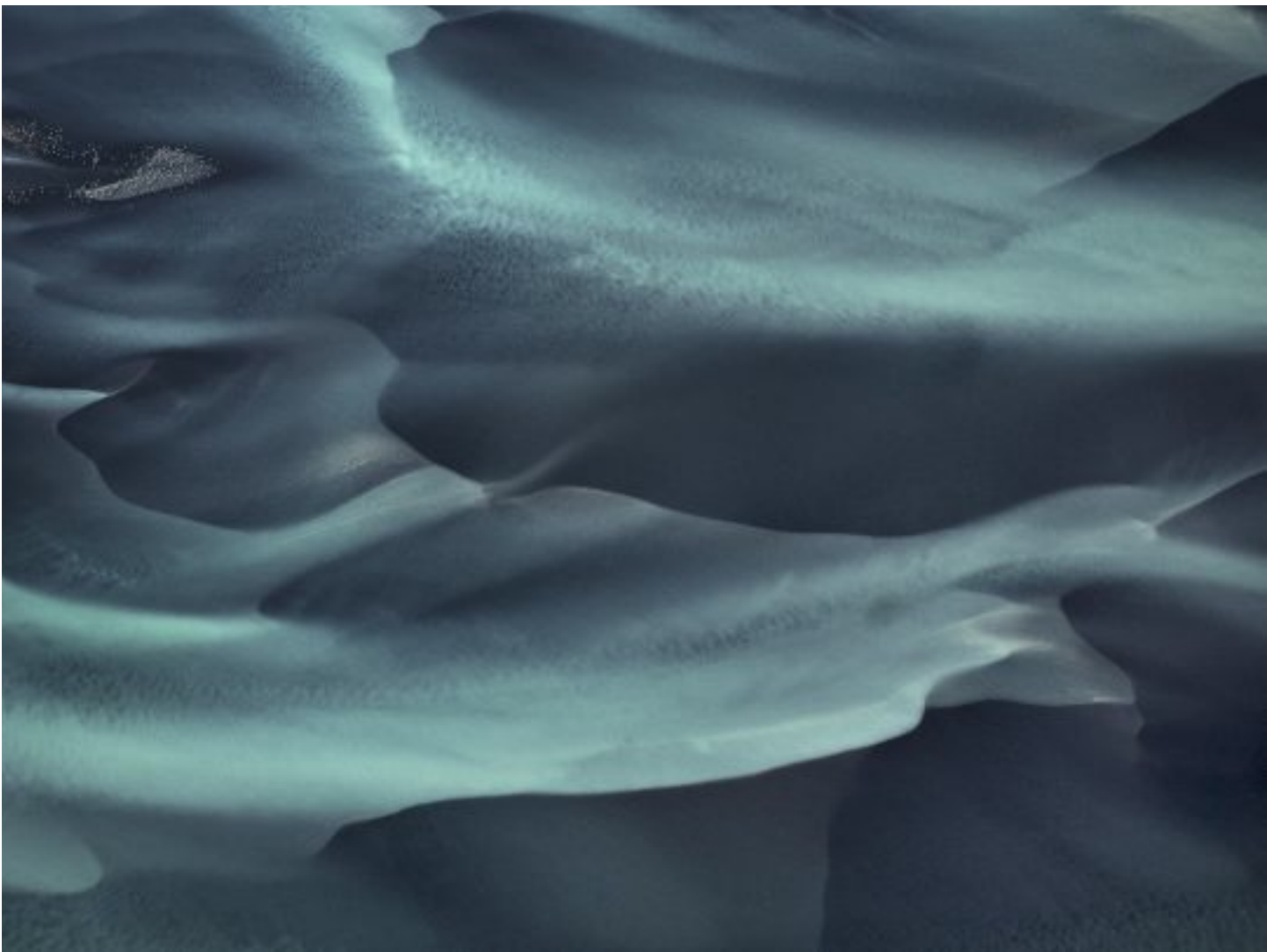
When the museum hosted the travelling exhibition Edward Burtynsky: Water (February 12–May 15, 2016), it offered us the opportunity to address the sea level issues that bedevil our community while enhancing our commitment to bringing art and people together. Through a combination of exhibitions, public programs, and partnerships, the Chrysler served as a community hub where we encouraged visitors to consider water from multiple perspectives and to share their understanding with each other. The experience exceeded our expectations and will now serve as a model for future exhibition planning and programming. It has shown us how to develop synergistic opportunities that bring art historical and social concerns together as we fulfill our mission of using art to enrich and transform peoples' lives.

The exhibition included about 60 enormous color photographs (starting at about 4' x 5') made by the Canadian artist Edward Burtynsky (b. 1955). Created over a five-year period, the images investigate the systems humans use to capture and control water—dams, wells, canals, and irrigation pumps—and their ecological repercussions—dry lakebeds, abandoned farmland, and vast algae blooms. Often taken from a birds-eye or aerial perspective, the photographs are highly abstract, even painterly, playing with one's sense of scale and depth. Although a far cry from traditional

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environmental or documentary photographs, Burtynsky's colorful and monumental abstractions raise environmental awareness in unexpected ways. When confronted by environmental issues, many of us feel overwhelmed by the magnitude of the situation. By encouraging people to puzzle through issues of form, color, and scale, Burtynsky's seductive images compel people to consider ecological issues more carefully. Looking closely becomes an important step for grappling with major environmental problems.

To extend and add nuance to the themes of the Burtynsky show, the museum organized three additional exhibitions. Intrigued by Burtynsky's truth-claim—the notion that the camera offers a distortionless picture of the world—we also organized a collections-based photography show that interrogated the ways photographers have manipulated both their images and the natural world in order to create images of the land. The resulting show, *New Light on Land*, offered an eclectic selection of photographs—from environmentalist critiques to grand visions of the



Edward Burtynsky (Canadian, b. 1955), Olfusa River #1, Iceland, digital chromogenic print, 2012. © Edward Burtynsky. Image courtesy of Nicholas Metivier Gallery, Toronto; Howard Greenberg Gallery, New York; and Bryce Wolkowitz Gallery, New York.

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untrammelled earth—to examine how nature has inspired photographic innovation and creativity since the advent of the medium. Organized into broad themes, the show explored photography’s role in the rise of landscape tourism, in the perception of foreign terrain, in the relationship between people and the earth, and in the expressive possibilities of nature. The photography show went hand in hand with a collection-based show of picturesque seascapes by William Trost Richards (1833–1905). Combining sketches, finished works, and the artist’s materials, the show invited visitors to explore Richards’ working process as he sought out direct encounters with nature’s beauty at a time of rapid urban growth.

In our glass galleries, we exhibited *Cities: Departure and Deviation*, an installation by artist Norwood Viviano. Composed in shades of white, black, and gray, Viviano’s hanging blown-glass

pendants read as graphs, plotting the growth and decline of urban populations (width) over time (height). The forms may seem straightforward, but by turning statistical information into alluring aesthetic forms, Viviano, like Burtynsky, draws viewers into a deeper analysis of ecological change. Forms that represent cities like New York show ceaseless and startling growth, while those that map cities like Flint, Michigan, show booms and busts, inviting viewers to think about how industry, race relations, and the environment affect population. A form Viviano made of Norfolk, Virginia, for example, remains relatively thin, with slight tapering in the 20th century on the heels of school integration and Massive Resistance. One wonders what will happen going forward as the waters encroach upon the city.

The museum’s education and public programs team developed a range of activities to engage



William Trost Richards (American, 1833–1905), Rocky Coast (probably Cornwall), ca. 1890s, oil on canvas, gift of Edith Ballinger Price, Chrysler Museum of Art.

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diverse audiences. These included a variety of traditional exhibition-related events: a Q&A with Burtynsky; a screening of the photographer's award-winning film *Watermark*; a lecture by Pulitzer Prize-winning photographer Preston Gannaway, who discussed her documentary photographs of Norfolk's at-risk Ocean View neighborhood; and our most popular Family Day to date. The Family Day welcomed 1,500 people to the museum with kid-friendly activities, and the education team created a family guide that helped visitors of all ages explore Burtynsky's photographs.

Download: [Why Water? Family Guide, created by the Chrysler Museum of Art's Education Department.](#)
Courtesy of the Chrysler Museum of Art. (646 KB)

The museum staff organized nontraditional events in order to open up the themes of the exhibitions in innovative ways. For example, in addition to standard docent tours, educators led a walking tour that connected the museum's exhibitions with an exhibition in the neighboring arts district. That show included work by more than 20 artists with ties to Coastal Virginia, many of whom address the unique features of the region, including its waterways.

The museum hosted two unique movement performances that investigated the theme of water from symbolic and religious perspectives. In *Water Relics*, a performance choreographed by dance professor Megan Thompson and theater artist Jenifer Alonzo, dancers led visitors through



Norwood Viviano (American, b. 1972), installation detail of Cities: Departure and Deviation, 2011, blown glass and vinyl cut drawings. Installation photograph by Ed Pollard, Chrysler Museum Photographer. Courtesy of the Chrysler Museum of Art.

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various museum spaces, using the architecture and their gestures to enact a series of vignettes inspired by an ancient Greek flood myth while evoking the sensation of descending through the depths. In *Waters in our Midst*, choreographed by dance professor Ann Mazzocca, dancers performed a series of movements drawn from Afro-Caribbean folkloric traditions that call upon Yoruba *orishas*, or divinities, associated with water. The dance projects were conceived of independently, but they both succeeded in engaging visitors' haptic and affective senses and in attracting new audiences to the museum.

Through strategic partnerships, the museum became a site for interdisciplinary study. Partnering with the Chesapeake Bay Foundation, the National Oceanic and Atmospheric

Administration (NOAA), and Old Dominion University, the museum hosted the annual Blue Planet Forum. About 250 people attended the event, which included lectures by Russell Lord, curator from the New Orleans Museum of Art who organized the Burtynsky exhibition, nature photographer Dave Harp, the former EPA advisor for the Chesapeake Bay Jeff Corbin, and the Chesapeake Bay director of NOAA Peyton Robertson. The event examined how works of art can be used to engage scientific questions and raise awareness about the environment.

Working with Virginia Sea Grant, Old Dominion University, and the Hampton Roads Planning District Commission, the museum also hosted the Adaptation Forum, a quarterly meeting designed to bring together flooding adaptation



Preston Gannaway (American, b. 1977), Twins, 2013, from the series Between the Devil and the Deep Blue Sea. © Preston Gannaway. Image courtesy of the artist.

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specialists. The event was attended by about 150 visitors, including municipal and state government officials, scientific researchers, private sector engineers, and NGO representatives, and through a series of lectures and dialogues, they shared recent research about resilience, risk reduction, and adaptation to sea level rise. With the museum as the site of the forum, additional speakers were invited to broaden the discussion to art and museums. Chrysanthe Broikos, curator of the National Building Museum, spoke about developing museum exhibitions that can raise awareness and inspire action related to environmental issues, and artist Norwood Viviano and oceanographer George Mcleod discussed their gathering and use of laser data to create works of art.

While the water-themed exhibitions and programming enabled us to facilitate discussions about sea level rise, they also allowed the museum to establish itself as a collaborator in the

region's broader preparedness efforts. The City of Norfolk has recently appointed a Chief Resiliency Officer to address flood adaptation issues, and the museum will serve as a forum for strategizing city-wide flood mitigation initiatives. The museum has also begun participating in the Norfolk Resiliency Office's outreach programs, like those teaching residents how to reduce rainwater flooding through landscaping and rain-capture devices. Again working with the city, the museum has helped write a National Endowment for the Arts grant for a public art project that will respond to sea level issues and a museum representative will serve on the selection committee. Finally, the museum education team will design its annual summer camp as a STEAM (science, technology, engineering, arts, and mathematics) program that investigates water in all its forms, and the educators will lead programs at a new statewide charter school that challenges participants to design a museum capable of embracing and responding to water.



Waters in our Midst. Photograph by Maegan Douglas, Chrysler Museum Public Programs Coordinator. Courtesy of the Chrysler Museum of Art.

Footnotes

[1] For a collection of studies and statistics, see Old Dominion University's Center for Sea Level Rise: www.centerforsealevelrise.org.

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About the Author

Seth Feman is the Curator of Exhibitions and Acting Curator of Photography at the Chrysler Museum of Art in Norfolk, Virginia, and a doctoral candidate in the American Studies Program at the College of William and Mary. His dissertation on modernism in Washington, DC, along with his other published work on American art, historicizes aesthetic experience by examining how qualities of affect, mobility, and vision become embedded in museum spaces, the language of media, and specific works of art.

PERSPECTIVES

MAKING THE MOST OF THE GOVERNOR'S WATER SUMMIT

By Alicia Uzarek

When over 800 Minnesotans gather in a windowless basement on the first beautiful spring-like day, there must be a compelling reason. In this case the reason was water.

In spring 2015, the Pollution Control Agency released a report stating that half or fewer of the lakes in Minnesota watersheds dominated by agricultural and urban land fully support the standard for safe swimming, among other things. Residents of the Land of 10,000 [Beloved] Lakes were alarmed and asked for change.

Gov. Mark Dayton and his administration heard that call and one year later hosted the first-ever Governor's Water Summit in downtown St. Paul on Saturday, February 27, 2016. The goal was to bring public attention to the serious challenges facing Minnesota's water and bring together citizens, water-quality experts, legislators, regulators and other stakeholders to propose meaningful solutions to address these challenges.



Gov. Mark Dayton delivers the opening remarks of Minnesota's first-ever Governor's Water Summit. Photo by Alicia Uzarek, courtesy of Friends of the Mississippi River.

FMR & Partners Strategize

When the Governor makes an environmental issue a priority, environmental groups rally and respond.

Friends of the Mississippi River (FMR) is one of those environmental groups. FMR works to engage community members to protect, restore, and enhance the Mississippi River and its watershed in the Twin Cities region. When we heard of the summit, we collaborated with our friends in the Minnesota Environmental Partnership (MEP)—a statewide coalition of environmental and conservation nonprofits working for clean energy, clean water, and investments in Minnesota’s Great Outdoors through policy initiatives, public education, and community events—to formulate a strategy for the summit.

Knowing a diverse group of attendees representing many interests would be present, FMR and our partners worked together to make sure our

ideas to improve Minnesota’s waters were heard loud and clear. The first step was ensuring that FMR’s advocates and environmental advocates throughout the MEP had a chance to sign up for the summit. As soon as the date was announced, the invitations were out—which was a very good thing, as the summit reached capacity in just a couple of days!

Next, we worked with our MEP collaborators to host a Water Summit Briefing. Over snacks and homebrew, 30 volunteer advocates discussed our top priorities and talking points and enjoyed great conversation with local water quality policy experts. In addition to these in-person efforts, FMR and our partners used social media, with the hashtag #ActOnMNwater, to spread our talking points and share that any Minnesotan with online access could weigh-in via a portal set up by the governor’s administration, both to offer and rank proposed clean water solutions.

Results and Next Steps

The day of the summit, staff from FMR, our partner groups, and environmental advocates put on buttons and stickers with our messages. We then split up and successfully carried our core messages into many of the summit’s breakout sessions. All suggested ideas were recorded and then shared via the online portal, where many of our top clean water priorities also received top votes, including:

- Fully funding the Forever Green Initiative at the University of Minnesota to develop innovative, economically viable cropping systems that also protect our land, air, and water.
- Advancing biofuels from perennial crops by establishing a state perennial cellulosic biofuel standard requiring at least 50 percent of the ethanol blended into Minnesota gasoline be derived from perennial or cover crops by 2026.
- Establishing mandatory drain-tile permits for agricultural operations. Drainage authorities deserve to know when and where drain tile lines are patched into their systems, and downstream communities and drinking water suppliers deserve accountability from upstream polluters.

Without a doubt, the Water Summit also generated a significant media buzz, helping to highlight the need to address today's biggest source of water pollution: agriculture (see "media" below). The summit also achieved its goal of drawing a variety of water interests to the table. However, voices of Minnesota's minority populations appeared to be underrepresented. This was made especially clear through a short protest by an American Indian group during Governor Dayton's keynote speech opening the day. The Governor did want to hear from all groups and

agreed to meet with the group immediately after his opening remarks.

Moving forward, FMR and our partners look forward to seeing how we can turn the summit's many innovative ideas into real, measureable changes. We'll continue to work with the governor's office to ensure that the best ideas move up from these basement conversations into noticeable improvements for Minnesotans' waters, communities, and wildlife.

Media Coverage

FMR staff were featured prominently in the media before and after the Water Summit.

- Gov. Mark Dayton struggles to reconcile desire for clean water and a strong farm economy, by J. Patrick Coolican and Josephine Marcotty, Star Tribune.
- Can we save Minnesota's water? These 800 are going to try, by Christopher Magan and Dave Orrick, Pioneer Press.

- Gov. Dayton rallies support for clean water at summit after facing a protest, by J. Patrick Coolican, Star Tribune.
- Related: FMR's press statement.

To learn more about FMR, including how to take part in their work, go to fmr.org.

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About the Author

Alicia Uzarek is the Policy Advocate for Friends of the Mississippi River, a group that engages people to protect, restore, and enhance the river in the Twin Cities region. She works closely with partners to build community support for the public values of the river. Alicia's background includes environmental planning, program development, community organizing and coalition building. She holds a master's degree in urban and regional planning from the University of Minnesota Humphrey School and a bachelor's degree in psychology, global studies, and art from Pacific Lutheran University.