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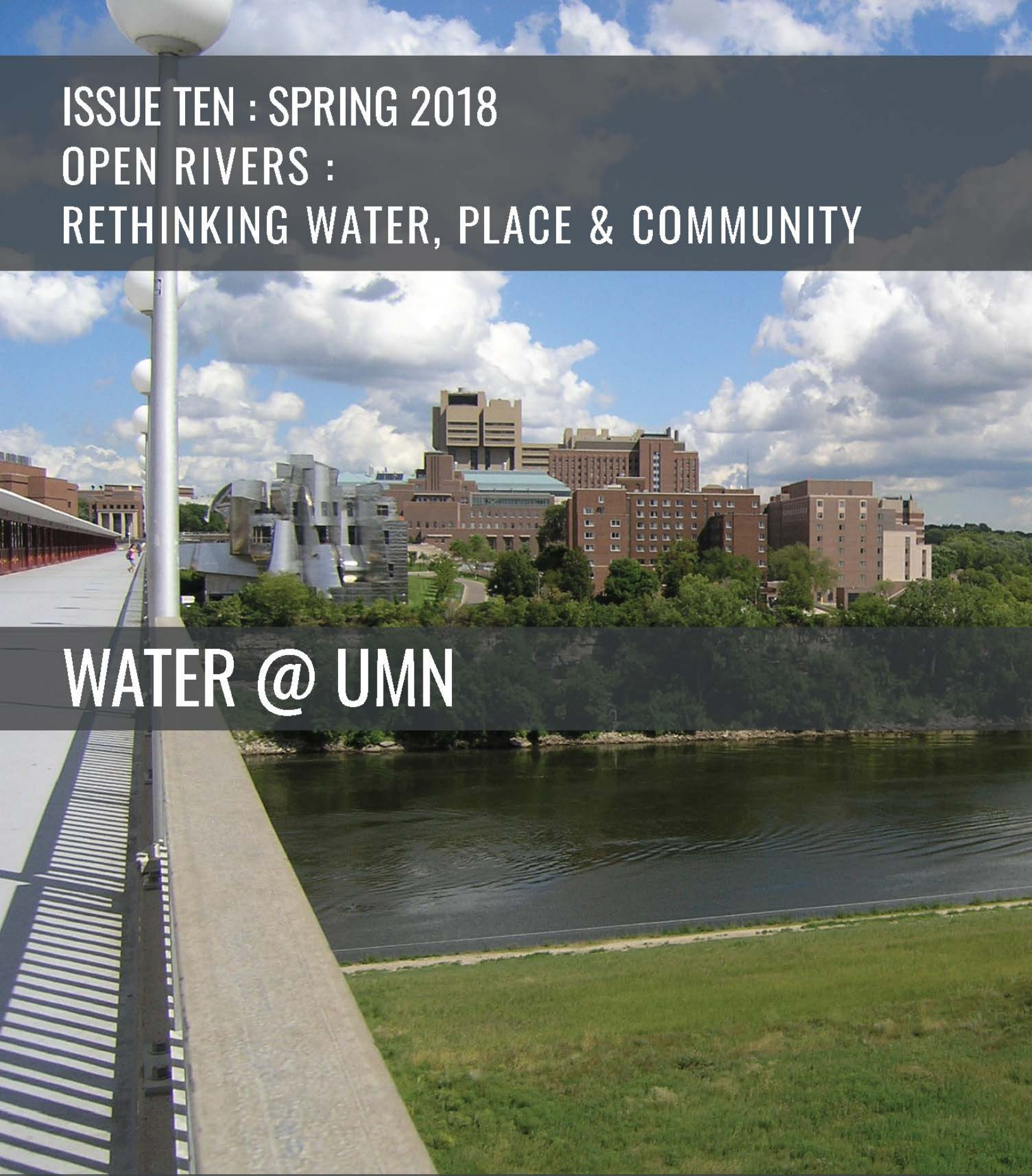
OPEN RIVERS : RETHINKING WATER, PLACE & COMMUNITY



WATER @ UMN

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The cover image is of The East Bank of the Minneapolis campus of the University of Minnesota and the Mississippi River from the Washington Avenue Bridge. Image courtesy of Patrick Nunnally.

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FEATURE

WATER @ UMN ROUNDUP

By Ben Gosack, Roxanne Biidabinokwe Gould, John S. Gulliver, Tim Gustafson, Beth Knudsen, Leslie Paas, Mark Pedelty, Jim Perry, Robert Poch, Dimple Roy, and Anika Terton

As the editors put this issue on "Water @ UMN" together, we realized that the breadth, complexity, and variety of water-related work at the University of Minnesota could never be encompassed in a few articles. Accordingly, we sent a prompt out as widely as we could, asking water scholars to tell us, in a few paragraphs, what it was about their work that they were most excited about. The short pieces that follow contain some of their responses, in no particular order.

As part of Welcome Week 2010, incoming students to the University had the opportunity to canoe on the Mississippi River. Image courtesy of University of Minnesota.

Roxanne Biidabinokwe Gould

Assistant Professor, Ruth A. Meyer Center for Indigenous Education and Environmental Education, University of Minnesota Duluth

Indigenous Women's Water Practices, Responsibilities and Resistance: Implications for Sustainability

When I was a child, there were pristine and healthy bodies of water where my family camped, fished, and swam. Today most of these bodies of water are polluted and are no longer safe to swim or fish because of industry, development, chemical run offs from farms, salted roads, and climate change. There is a growing concern and movement across the Indigenous world to save and reclaim these bodies of water as the original Indigenous stewards.

The focus of this research is on Indigenous women's traditional practices, responsibilities, and resistance in regard to water since women are often seen as the traditional caretakers of the water in Indigenous communities. Their relationship to water in many communities is connected to creation, sacred sites, pregnancy, and birth. Early observers of Indigenous peoples have often overlooked the importance of Indigenous women's cosmology and contributions to their nations.

Interviews are being conducted with Indigenous women from four regions of the country: (1) where there is a scarcity of water, (2) where Indigenous homelands are/will be impacted by rising sea levels as a result of climate change, and (3) where there is an abundance of water, but the water is polluted as in my Anishinaabe homeland. Indigenous women from the Great Lakes, Dakotas, Southwest, and Hawaiian Islands are being interviewed for this comparative case study which will be examined through a critical Indigenous pedagogy of place.

As the world is forced to address water issues related to drought, pollution, depleted aquifers, rising sea levels, and destruction brought on by development, climate change, and massive storms, I argue that there is a need to look at traditional ecological knowledge (TEK) of Indigenous peoples in collaboration with western science to problem solve the water issues faced by our planet.

John S. Gulliver

Professor, Department of Civil, Environmental, and Geo-Engineering, University of Minnesota Twin Cities

My group's research includes the development of technology to manage and treat stormwater runoff before it enters receiving water bodies. First, we developed the MPD Infiltrometer, which is used to take multiple infiltration rate measurements simultaneously and quantify parameters for infiltration practices. Second, we developed the SAFL Baffle, which is designed to place in a catchment to hold sediment so that it can later be cleaned out by a vactor truck. Third, we developed the iron enhanced sand filter, which will retain both dissolved and particulate phosphorus. These devices are all being built and/or used by cities, counties, state agencies, and other municipal entities to clean up stormwater runoff.

Jim Perry, Beth Knudsen, Ben Gosack, Dimple Roy, Leslie Paas, Anika Terton

Jim Perry, H.T. Morse Distinguished Professor of Water Quality and Environmental Management, Department of Fisheries, Wildlife and Conservation Biology, University of Minnesota Twin Cities,

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Seeking and climate sensitive watershed management in 2050

Watersheds are ecosystems and should be managed at the ecosystem scale. However, the future is uncertain due to a range of influences like climate change, demographics, and economics. We cannot predict the future so we must manage adaptively. Globally and locally, we need knowledge, tools, and people to achieve that adaptive approach to management. A current effort ties together a global capacity development approach to watershed-based ecosystem management, and university classes that use an innovative tool developed by Minnesota Department of Natural Resources (DNR) (i.e., the Watershed Health Assessment Framework or WHAF).

The Adaptive Watershed (TAW) is a capacity development program developed by the University of Minnesota and the International Institute for Sustainable Development. It is implemented in a 4-day workshop setting, drawing together stakeholders from a wide range of backgrounds, all with a common interest in a single watershed. The workshop consists of 14 modules. The first seven take participants through a series of steps that help them understand the watershed and its people. The next four advance informed decision making for watershed management. The final three help participants take an inclusive approach to management and commit to future action.

The logic of TAW is brought home in upper level and graduate level water quality classes at the University of Minnesota. The WHAF is a visualization and analysis tool focused on watershed scale management. Students work in groups of four, each using the WHAF to characterize a specific Minnesota watershed. Each group is then given scenarios intended to represent climatic conditions that sub-basins in their watershed are expected to experience in 2050. The overall question posed is: *What should the Board and Manager do in the next 3-5 years to be most ready to adapt to the conditions of 2050?*

Several lessons have emerged from the work to date:

1. Minnesota's WHAF tool is highly innovative and is a rich resource for planning.

2. Traditional approaches to management planning seek to engage stakeholders and represent the breadth of their interests. However, that practice often fails to recognize or protect vulnerable communities; TAW explicitly addresses that.

3. Climate-sensitive planning traditionally predicts future climate conditions (e.g., mean temperature, precipitation) and uncertainty about those predictions. It is relatively rare and somewhat difficult to predict future extreme events, yet those extremes will control much of the perceived impact.

4. It is uncommon to include demographic and economic predictions in such scenarios.

Weaving together the international aspects of TAW, the local aspects of the WHAF, and university classes advances capacity for innovative, forward looking, climate-sensitive ecosystem management of Minnesota watersheds.

Tim Gustafson, Mark Pedelty, Robert Poch

Tim Gustafson, Senior Lecturer, Department of Writing Studies, University of Minnesota Twin Cities,

Mark Pedelty, Professor, Department of Communication Studies, University of Minnesota Twin Cities,

Robert Poch, Senior Fellow, Department of Curriculum and Instruction, University of Minnesota Twin Cities

A River Dance: Ecosong's "Watershed" Spreads the Word About Chloride Pollution and Residential Deicers

Watershed

See the video "Watershed" here.

The Mississippi Watershed Management Organization's Salt Smart program aims to reduce chloride pollution in Minnesota's rivers, lakes, and aquifers through educating residents about the overuse of deicers. When our Ecosong team applied to the MWMO for a mini-grant, they asked if we might be interested in the Salt Smart effort. We certainly were, and within a matter of weeks Tim Gustafson had composed "Watershed," a song about reducing the use of road salts. Here I (Pedelty) intend to explain how we went from a song and concept to the music video embedded above.

At Ecosong we make music videos for environmental partners. Before "Watershed" we produced "We Live in the Lake" to help the Lake Pepin Legacy Alliance (LPLA) recruit members for lake restoration efforts and "You Can Build a Garden" to support Blue Thumb and Minnehaha Creek Watershed District's water and soil stewardship initiatives. "Watershed" was a bit different in that the performers involved came from our campus community and not organizational staff and local musicians, as was the case in our previous videos, all of which and more can be viewed at Ecosong.net.

We Live in the Lake

See the video "We Live in the Lake" here.

After Tim wrote "Watershed," the Hypoxic Punks recorded it at Atomic K Studios, drawing on the talents of engineer Karl Demer. With the recording in hand, I storyboarded and scripted the music video, imagining a bunch of dancers and musicians representing various wintry archetypes (hockey player, figure skater, snowmobiler, grumpy old men, etc.). In my head I imagined them dancing with shovels, but never could I have envisioned anything like what the nine very talented volunteer dancers produced. Given only the most basic blocking and role identities (salters, slippers, "Vanna White" presenters, and shovelers), these skilled artists crafted and performed captivating choreography. Never was so much accomplished for so little. In return for pizza and tacos at rehearsals, we were given dazzling movement and kinesthetic storytelling.

Then, as always, Karl and I edited the video. I come in to our editing sessions with a rough sequence in mind and a Director's sense of entitlement, but Karl has the decades of advanced engineering skills to advance it far beyond anything I could ever do on my own. Lesson one of production and direction is giving the lead editor space to be creative. Those sessions typically go something like this:

> Mark: "Is it possible to have the titling appear to be part of the background?"
> Karl: "Sure." [Karl's fingers then fly over the keyboard and touchpad] "Like that?"
> Mark: "Yes, that looks great."
> Karl: "Have you thought about using a font and graphic like this?"
> Mark: "That looks great."

You Can Build a Garden

See the video of "You Can Build a Garden" here.

"Watershed" was a bit different than the previous music videos and audio and video projects we produced before that. It was a single take sequence rather than a compilation of separate scenes. I knew that with a $3000 budget (the other projects were far costlier) that multiple scenes, shoots, and editing sessions would not be possible, but in this case that limitation felt like a virtue. We had the luxury, therefore, of using the best of about 8 performances and then choosing between various camera angles. The video has the feel of a live performance rather than a media construct because it is a single sequence with constant movement in the frame.

From writing grants to web design for Ecosong.net, making these videos is a lot of "work," but it is every bit as enjoyable as it looks. Ecosong is based on a philosophy of free association—volunteers doing what they love—as well as collaboration and creativity.

With just 5,500 views so far (as of March 23, 2018) spread across the three music videos, we can't claim to have radically expanded the audience for any of our partners' local outreach efforts, at least not yet. Nevertheless, audience feedback, sixteen festival selections, and six festival awards indicate that these videos might have potential to continue serving their purpose and perhaps will reach new viewers beyond the local target audience. To make that happen we need to continue learning more about social media outreach and campaign execution.

One of the most promising developments in that regard is Claire Doty and Ella Cochran's work to develop a curriculum for "We Live in the Lake." LPLA's Rylee Main and MacKenzie Consoer are assisting them in that effort. Students in high schools in the Lake Pepin area, as well as visitors to local parks and nature centers, will watch "We Live in the Lake" and a short instructional video introducing them to the lake's serious sedimentation problem. They will produce videos illustrating their families' connections to the lake (fishing, paddling, etc.) and discuss creative ways to get people involved in restoration.

No matter how many people eventually view these videos, the community music-making and media production involved in each project have helped to organize and mobilize communities of practice. When people are able to combine their individual talents and environmental action, it stokes organizational esprit-de-corps and brings in new blood. That is well illustrated by the talent onscreen in "We Live in the Lake" and "You Can Build a Garden." And for each performer on screen there is an engineer, accountant, cook, editor, education director, and others making it all happen behind the camera. Paolo Friere refers to such community work as "codification," creating something that everyone can point to as representing their collective objective.

That's what we do, in a nutshell. If you are interested in learning more about Ecosong's methods and philosophy, please read "We Live in the Lake": Ecomusicology as Community Pedagogy in the *Journal of Music History Pedagogy*. Get involved if it sounds like your thing. Our next projects include a music video about marine sanctuaries in Western Washington, a Minnesota State Park tour, and a global grant project where we will join efforts with partners in India, China, Tanzania, and Haiti. Ecosong is an outgrowth of the Hypoxic Punks band and has been in operation for over a decade, but with projects like "Watershed" we feel like we are just getting started.

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