



ISSUE NINE : WINTER 2018
OPEN RIVERS :
RETHINKING WATER, PLACE & COMMUNITY

INNOVATIONS

<http://openrivers.umn.edu>

An interdisciplinary online journal rethinking the Mississippi
from multiple perspectives within and beyond the academy.

ISSN 2471-190X

The cover image is of tending water and listening at Water Bar in Greensboro, North Carolina, courtesy Shanai Matteson, Works Progress, and Water Bar & Public Studio.

Except where otherwise noted, this work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/). This means each author holds the copyright to her or his work, and grants all users the rights to: share (copy and/or redistribute the material in any medium or format) or adapt (remix, transform, and/or build upon the material) the article, as long as the original author and source is cited, and the use is for noncommercial purposes.

Open Rivers: Rethinking Water, Place & Community is produced by the [University of Minnesota Libraries Publishing](https://www.libraries.umn.edu/) and the [University of Minnesota Institute for Advanced Study](https://www.umn.edu/institute-for-advanced-study/).

Editors

Editor:
Patrick Nunnally, Institute for Advanced Study,
University of Minnesota

Administrative Editor:
Phyllis Mauch Messenger, Institute for Advanced
Study, University of Minnesota

Assistant Editor:
Laurie Moberg, Doctoral Candidate,
Anthropology, University of Minnesota

Media and Production Manager:
Joanne Richardson, Institute for Advanced Study,
University of Minnesota

Contact Us

Open Rivers
Institute for Advanced Study
University of Minnesota
Northrop
84 Church Street SE
Minneapolis, MN 55455

Telephone: (612) 626-5054
Fax: (612) 625-8583
E-mail: openrvrs@umn.edu
Web Site: <http://openrivers.umn.edu>

ISSN 2471-190X

Editorial Board

Jay Bell, Soil, Water, and Climate, University of
Minnesota

Tom Fisher, Metropolitan Design Center,
University of Minnesota

Lewis E. Gilbert, Institute on the Environment,
University of Minnesota

Mark Gorman, Policy Analyst, Washington, D.C.

Jennifer Gunn, History of Medicine, University of
Minnesota

Katherine Hayes, Anthropology, University of
Minnesota

Nenette Luarca-Shoaf, Art Institute of Chicago

Charlotte Melin, German, Scandinavian, and
Dutch, University of Minnesota

David Pellow, Environmental Studies, University
of California, Santa Barbara

Laura Salvesson, Mill City Museum, Minnesota
Historical Society

Mona Smith, Dakota transmedia artist; Allies:
media/art, Healing Place Collaborative

CONTENTS

Introductions

Introduction to Issue Nine

By Patrick Nunnally, Editor 4

Features

Water Bar: Water is All We Have

By Shanai Matteson 6

Free-Flowing Waters: A Vision for a Lower Mississippi River Wilderness

By John Ruskey and Boyce Upholt 34

On The Uncompromising Hand: Remembering Spirit Island

By Andrea Carlson 63

Geographies

Where the Water Flows: Understanding Glacier's Triple Divide Peak

By Quinn Feller 75

Primary Sources

The Story Behind a Nassau Bottle Excavated at Historic Fort Snelling

By Nancy Buck Hoffman 81

Perspectives

In Quad Cities, Reconnection to the Riverfront Is Well Into Its Fourth Decade

By Patrick Nunnally 86

Teaching and Practice

Mosquitos, Muck, and Mussels: A Look Into Scientific Research

By Lea Davidson, James Doherty, Laura Gould, and Hayley Stutzman 91

In Review

Review of *Underwater*

By Margaret Flood 98

GEOGRAPHIES

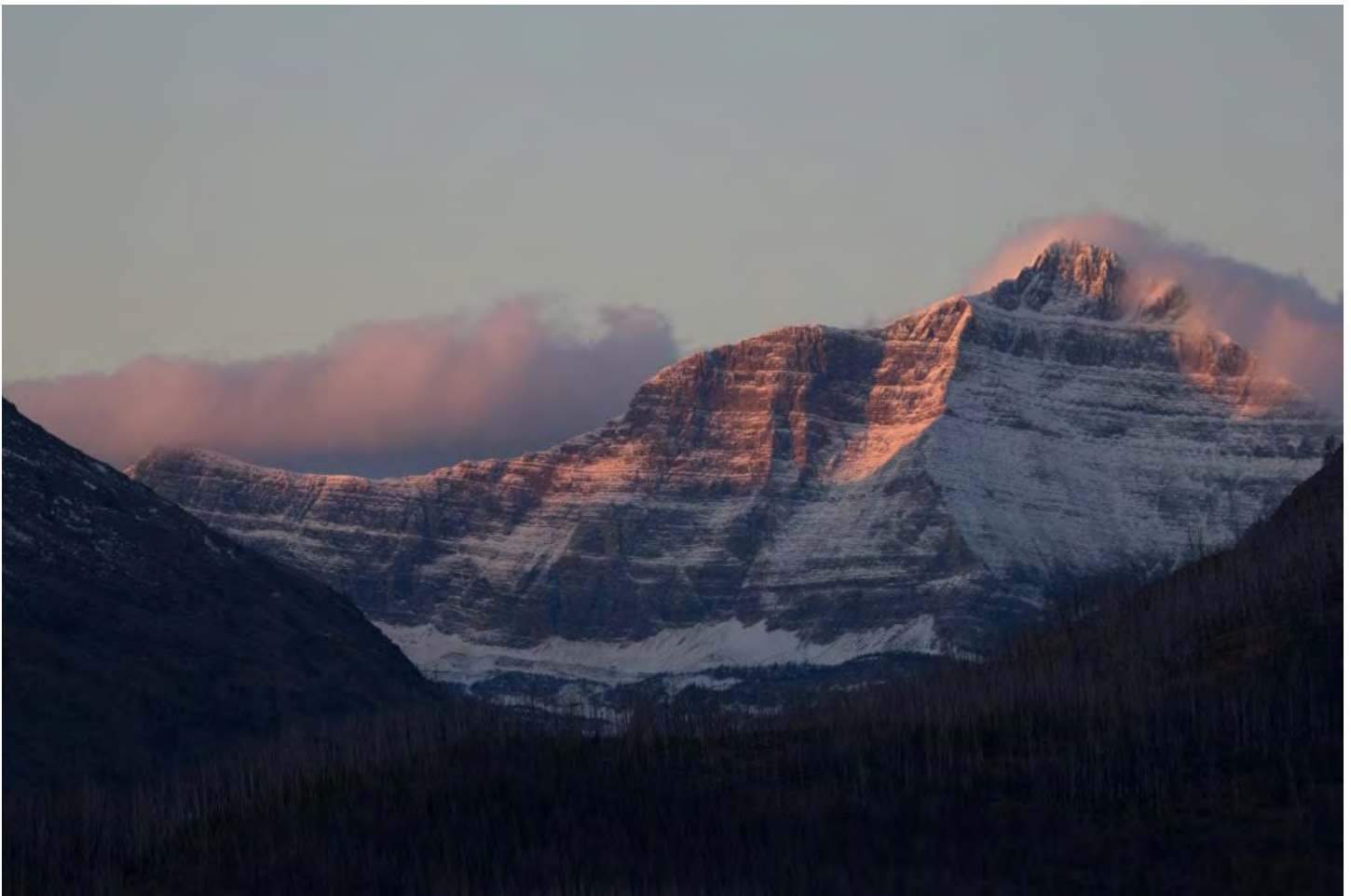
WHERE THE WATER FLOWS: UNDERSTANDING GLACIER'S TRIPLE DIVIDE PEAK

By Quinn Feller

Imagine pouring out a glass of water. Where does the water go?

After soaking your computer or floor, it would eventually flow to join a greater body of water and become part of a larger drainage system. Where

I grew up, outside of Milwaukee, my water would join with Lake Michigan. In the Twin Cities, where I went to university, it would flow into the Mississippi River. From Jackson, Wyoming, where I'm writing now, it would combine with the Snake River and flow into the Pacific Ocean.



First snow at Triple Divide Peak. Image courtesy of Daniel Lombardi.

ISSUE NINE : WINTER 2018

But Glacier National Park, where I worked in the summer of 2017, has a unique little point called Triple Divide Peak. Triple Divide Peak marks the division of three major watersheds. If you poured out your water on top of Triple Divide, it would flow into the Columbia River watershed, and eventually the Pacific Ocean; it would flow into the Nelson River watershed, and eventually Hudson Bay and the Atlantic Ocean; and it would flow into the Mississippi River watershed, and eventually the Gulf of Mexico and Atlantic Ocean.

Triple Divide is commonly hailed as unique and significant because water from its peak flows into three oceans. That depends on whether you

think Hudson Bay connects to the Atlantic or Arctic Ocean, and there is certainly some dispute surrounding that. There's another triple divide peak in Canada that flows directly into the Arctic and Pacific Oceans, as well as into Hudson Bay. So, depending on what you think about Hudson Bay, either Canada or Montana has a triple ocean divide. The International Hydrographic Organization considers it to be in the Arctic division of oceans and seas, so that might be a win for Montana. The significance of these triple divides as possibly flowing into three oceans also depends on your definitions of oceans, which isn't always straightforward. Regardless, though, they all flow into three distinct and major



A view of Triple Divide peak as featured on an interpretive wayside panel. Triple Divide Peak is in the distant background between Kakitos Mountain on the left and Norris Mountain in the center. Image courtesy of Glacier National Park.

ISSUE NINE : WINTER 2018

drainages. (As a side note, the naming schema for water around triple divides tend to follow a similar structure; surrounding rivers, streams, and glaciers are often named for the drainage they join. Triple Divide Peak in Montana has the Pacific, Atlantic, and Hudson Bay Creeks. Snow Dome has the Columbia and Athabasca Glaciers, as well as the Dome and Stuttfield Glaciers.)

As an exhibits specialist in Glacier, my job was to design interpretive wayside panels with our seasonal media team. One of our selected topics was Triple Divide Peak. (If you've ever been to a national park, or really any public land or well traversed road, you may have seen a wayside on

the side of the road. They're meant to be quick interpretations of what you're seeing, an opportunity for visitors to connect to the place they're in without necessarily interacting with a ranger.) I always thought I had a pretty good grasp of what a watershed was and how drainages worked from my time studying and living by the Mississippi, but I learned so much throughout the course of making this wayside.

Unique in its geography and the sheer size of its combined drainage, Triple Divide Peak drains into basins that cumulatively cover 1,823,000 square miles. It connects incredibly different portions of North America. To the east, the Great



Northeastern view from Triple Divide Pass in Glacier National Park showing Triple Divide Peak. Photographer Andy Curtis, 2004.

ISSUE NINE : WINTER 2018

Plains lead into the agriculturally productive interior of the United States, and eventually the Mississippi Delta. The Flathead River joins with the Pend Oreille, then flows into the Columbia, where human influence has inspired massive dams and conservation, in turn. The northern rivers, despite historic use by First Nations, are now known for the presence of fur traders and hydroelectric development in more recent years (a common motif along rivers and land in North America).

Triple Divide Peak brings together three major drainages in northwestern Montana, almost in Canada. I knew this, I had told people this, and I thought it was a pretty neat concept. And I knew that continental divides acted as drainage divides. But I hadn't reasoned through the idea that

Triple Divide, in order to flow to three different oceans, must be a place where two continental divides meet, in this case the Great Divide and the Laurentian Divide. Snow Dome in Canada is at a similar intersection, where the Great Divide and the Arctic Divide meet. There are other triple divides that aren't at the intersections of continental divides, though. In Wyoming, Three Waters Mountain marks the triple point where the Colorado, Columbia, and Mississippi watersheds meet. California has its own Triple Divide Peak in Tulare County, where the Kern River, the Kaweah River, and the Kings River watersheds meet. Europe has triple divides in Switzerland (Witenwasserstock and Lunghin Pass, if you're curious). Asia, interestingly, has no major triple divides because of the massive endorheic basin in its interior. Endorheic is one of my new favorite



View of Triple Divide Peak in the distance, showing the upper end of St. Mary Lake and Wild Goose Island, Glacier National Park, Montana. Photo taken from Going-to-the-Sun Road. Photographer Ken Thomas, 2006.

words. When water collects without an outlet to a river or ocean, it forms an endorheic basin. Much of the Sahara Desert is part of one endorheic basin, draining into Lake Chad. Antarctica is the only other continent with a multi-ocean triple divide, and that again depends on how you define oceans.

As singular as Triple Divide is, we wanted to emphasize connection over division in our wayside sign. The same drops that enter the water in Glacier will make their way to three oceans. They might flow past your house, or they might grow the food you eat. With so many points

of connection and collection across the world, we have to consider the greater impact of our actions.

Melting snow and ice provide a critical source of water, sustaining habitats for countless plants and animals, here and downstream. Protecting these pristine waters also supports agriculture, recreation, and industry across the continent. As the climate warms and glaciers recede, the store of water that nourishes the continent will diminish. Though Triple Divide Peak seems far away, what happens here has effects that reach close to home.”


Glacier National Park
National Park Service
U.S. Department of the Interior

It's All Downstream From Here



Triple Divide Peak, the distant mountain peeking out across the lake, is one of the few places in the world where streams feeding three major watersheds originate. Glacier National Park's waters flow across the continent to very different places: the Pacific Ocean, Hudson Bay, and the Gulf of Mexico.

Melting snow and ice provide a critical source of water, sustaining habitats for countless plants and animals, here and downstream. Protecting these pristine waters also supports agriculture, recreation, and industry across the continent. As the climate warms and glaciers recede, the store of water that nourishes the continent will diminish. Though Triple Divide Peak seems far away, what happens here has effects that reach close to home.



- Columbia River Watershed
- Saskatchewan/Nelson River Watershed
- Missouri/Mississippi River Watershed

West Glacier
Apparatus Village

Lake McDonald
Lodge

Avalanche Creek

The Loop

Logan Pass

Jackson Glacier
Overlook

Living Sun

St. Mary

ELEVATION

Logan Pass	6646 ft	2026 m
Current Location	4512 ft	1375 m
St. Mary	4551 ft	1387 m

DIRECTION

DISTANCE

West Glacier	45.3 mi	72.9 km
Logan Pass	13.5 mi	21.7 km
St. Mary	4.7 mi	7.6 km

“Triple Divide Peak, the distant mountain peeking out across the lake, is one of the few places in the world where streams feeding three major watersheds originate. Glacier National Park’s waters flow across the continent to very different places: the Pacific Ocean, Hudson Bay, and the Gulf of Mexico.” Image of the sign courtesy of Glacier National Park.

Recommended Citation

Feller, Quinn. 2018. "Where the Water Flows: Understanding Glacier's Triple Divide Peak." *Open Rivers: Rethinking Water, Place & Community*, no. 9. <http://editions.lib.umn.edu/openrivers/article/where-the-water-flows-understanding-glaciers-triple-divide-peak/>.

About the Author

Quinn Feller is most likely to be found in Wyoming or Montana, though she hails from Wisconsin. Growing up near Lake Michigan and going to school along the Mississippi River (in the Twin Cities) helped inspire her interest in water systems. She currently designs educational publications for the National Park Service and affiliated organizations, and works and resides in Jackson, WY.