

## SIGNS OF WATER: COMMUNITY PERSPECTIVES ON WATER, RESPONSIBILITY, AND HOPE

Edited by Robert Boschman & Sonya L. Jakubec

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## Contributors

**BARBARA AMOS** holds her degree from the University of Waterloo. She is an interdisciplinary artist who has developed creative projects that address multicultural issues and environmental concerns. Her commissions include a 90-foot sectional painting about creating community in a recreation centre; a photographic commission about multiculturalism in a hospital covering 45 linear feet; and a steel scope about environmental fragmentation with a handmade lens on a city street. She was also invited to create a scope for the International Sculpture Garden in Burlington, Ontario. In 2017 she worked with a school to empower young people to ask questions about migration and a changing climate. The project culminated in new curriculum and the completion of a 12x16 foot painting for an outdoor learning centre. She exhibited one of her sketchbooks at the Whitney Museum and The Los Angeles County Museum of Modern Art. She was invited to become a member of the Trico Changemakers Studio at Mount Royal University. Her work is featured in more than 20 publications. Her paintings are in many collections and she is represented by Abbozzo Gallery at 401 Richmond in Toronto and Gibson Fine Art, Calgary. For more information: [www.BarbaraAmos.com](http://www.BarbaraAmos.com).

**ROBERT BOSCHMAN** is professor and chair of English, Languages, and Cultures at Mount Royal University in Calgary, Alberta. He is co-founder of Under Western Skies, a biennial conference series on the environment held at Mount Royal from 2010 to 2016. His first book, *In the Way of Nature* (McFarland), was published in 2009. *Found in Alberta: Environmental Themes for the Anthropocene* (Wilfrid Laurier University Press) appeared in 2014, followed by *On Active Grounds: Agency and Time in the Environmental Humanities* (WLUP) in 2019, both coedited with

Mario Trono. He also collaborates with Bill Bunn and Sarah Elizabeth Howden in documenting abandoned uranium extraction communities, with funding from the Social Sciences and Humanities Research Council of Canada. In 2020, he contributed to *Critical Zones: The Science and Politics of Landing on Earth* (ZKM and MIT Press), coedited by Bruno Latour and Peter Weibel. Boschman's *White Coal City: A Memoir of Place and Family* (University of Regina Press) was published in February 2021. His environmental photography can be viewed at [robertboschman.com](http://robertboschman.com).

**BILL BUNN** is an associate professor at Mount Royal University. He teaches composition, creative writing, and writing pedagogy. He is currently engaged in a SSHRC research project with Robert Boschman and Sarah Elizabeth Howden to investigate the impacts of uranium extraction on five mining communities around the world. He co-published an article with Boschman, titled, "Nuclear Avenue: 'Cyclonic Development,' Abandonment, and Relations in Uranium City, Canada," in *Humanities*, 2018. His recent novel for young adults, *Out on the Drink*, was published by Bitinduck Press in 2017.

**DENISE L. DI SANTO** is a water resources planner with a passion for connecting water and people through collaboration and inclusive watershed-based processes. She holds a Master of Science degree in renewable natural resources from the University of Arizona, a bachelor of science degree in geography from the University of Calgary, and a bachelor of education degree from Lakehead University in Thunder Bay, Ontario. With broad watershed management experience, Denise takes a systems approach to water management, identifying enabling conditions for ecosystem protection and recovery toward enduring solutions for resilient watersheds and communities. From her research on groundwater contamination and community impacts in the U.S. desert Southwest, she continues to seek out new learning in the Pacific Northwest and Western Canada. A water protector, Denise appreciates the knowledge and perspectives presented to her by people and communities throughout western North America, and the lessons that come from the sharing of stories. She believes that water resources management is about *managing us* as inhabitants of watersheds.

**ANNA FRANK** provides expert consulting in Regulatory Affairs, Environmental engineering science, risk assessment, water resource management and protection, and all issues related to sustainability, hydrology, and climate change adaptation. With over a decade of research and teaching experience in the Faculty of Technical Sciences at the University of Novi Sad, Serbia, and at the Water Institute at the University of Waterloo, Dr. Frank has contributed to many papers and conference presentations. She also provides consulting services to the industry since 2011, such as Dufferin Research's environmental studies until 2020, and currently she offers her expertise and scientific support for decision-making for the international consulting company, YORDAS Group. In addition, she has managed several multi-country projects funded by the European Union.

**MARIA ELISA DE PAULA EDUARDO GARAVELLO** is a senior professor at the University of São Paulo. She conducts research on the environment and society, focusing on “otherness” and “dialogue of knowledge” in relation to the following themes: traditional and local communities, food security and sovereignty, environment, sustainability and autonomy, development and public policies.

**ANDREA GARCIA** is a biologist with a background in ecology and remote sensing/GIS related to the Cerrado (Brazilian Savannah). With a Master's degree in applied ecology, specializing in economics, her PhD is in applied ecology from the University of São Paulo, Brazil. Published in several journals, her work focuses on modeling changes in land cover and land use in the Amazon Basin and elsewhere, in order to shed light on processes shaping landscapes and how they relate to ecological and developmental theories.

**C. R. GRIMMER**, who also goes by Chelsea Grimmer and uses she/her and they/them pronouns interchangeably, is the author of the award-winning poetry collection *The Lyme Letters* (Texas Tech University Press) as well as *O-(ezekiel's wife)* (GASHER Journal and Press). They completed their PhD in literature and cultural studies at the University of Washington with support from The Simpson Center for the Humanities' Andrew

W. Mellon Foundation Public Humanities Fellowship and The Harlan Hahn Disability Studies Fellowship. C. R. created and hosts *The Poetry Vlog (TPV)*, has published poems in *Poetry Magazine*, *FENCE Magazine*, and *[PANK]*, in addition to articles in journals such as *The Comparatist*. Their current scholarly book project, *Poetry as Public Scholarship: Activist Poetics in the Time of Social Media*, combines research analysis and practitioner discourses to examine the relationships between racial capitalism and poetry's circulation on social media. For more information, visit [crgrimmer.com](http://crgrimmer.com).

**SHIRLEY ANNE SWELCHALOT HARDMAN**, a PhD candidate, is a Stó:lō ascendant living in Shxw̓ha:y Village. She earned a Master's degree in Indigenous Education at Simon Fraser University and is completing her doctoral work at the University of British Columbia in Educational Studies. Shirley participates in the Indigenous resurgence, listening deeply and learning from storytellers and Indigenous knowledge keepers. She is Senior Advisor on Indigenous Affairs at the University of the Fraser Valley. Ey Si:yam Hoych'ka Si:yam.

**RICHARD HARRISON** is the winner of the 2017 Governor General's Award for English Poetry for his book *On Not Losing My Father's Ashes in the Flood*. As his contribution to this volume of essays underscores, the intersection of technology and myth is one of his principal concerns. Along with six other well-received and award-winning books of poetry, Richard is the co-author of *Secret Identity Reader: Essays on Sex, Death, and the Superhero* and the co-editor of *Now is the Winter: Thinking About Hockey*.

**SONYA L. JAKUBEC** is a registered nurse and professor in the School of Nursing and Midwifery at Mount Royal University (MRU) in Calgary, Alberta. Her research is concerned with the interconnection of supportive environments and wellbeing across the lifespan and currently focuses on aspects of the Healthy Parks-Healthy People movement. Committed to knowledge mobilization for social and environmental benefit, Sonya contributes to research, knowledge synthesis, and dissemination for students across health and community practice disciplines, for decision makers at

all levels of program delivery, management and policy-making, and for general scholarly and public learning.

**MICHAELA KECK** received her PhD in American Studies at Goethe University in Frankfurt/Main, Germany. She teaches literature and cultural studies at the Institute for English and American Studies at Carl von Ossietzky University of Oldenburg. She also taught undergraduate and graduate courses at National Sun Yat-sen University in Taiwan (2006–2009) and in the American Studies program at the University of Groningen in Holland (2011–2012). Her research interests are at the intersections of literature and the environment as well as literature and visual culture. She is the author of *Walking in the Wilderness: The Peripatetic Tradition in Nineteenth-Century American Literature and Painting* (2006) and, more recently, *Deliberately Out of Bounds: Women's Work on Myth in Nineteenth-Century American Fiction* (2017). She has published several articles about ecocritical readings of nineteenth-century American nature writings and landscape painting, among them “Thoreau’s Walden and the American Dream” in *Bloom’s Literary Themes*. With an additional interest in women’s fiction, she has written a number of book chapters and journal articles about women writers ranging from Louisa May Alcott to Margaret Atwood. Other research foci are Afro-American fiction and visual culture as well as captivity narratives. For more information, see <https://www.uni-oldenburg.de/en/michaela-keck/>.

**MARCELLA LAFEVER**, PhD (University of New Mexico, 2005) is an associate professor in communications at the University of the Fraser Valley. Marcella’s research focuses on the social exclusion that results from public dialogue and decision-making where cultural ways of speaking are outside the norms expected in dominant Canadian culture. Her 9P Planning model posits a process that builds intercultural relationships to increase social inclusion in public dialogue. Dr. LaFever’s current work investigates use of Indigenous storytelling as a form of dialogic participation.

**JULIE LAPLANTE** is a full professor of anthropology in the School of Sociological and Anthropological Studies at the University of Ottawa and has been working on human-plant entanglements in healing since

the early 1990s. At first, she directed her attention to the intersections in-between indigenous and bio-scientific/humanitarian plant and molecule based medicine in the Brazilian Amazon; later, she focused on both ancestral and clinical bodily, visual, and sonorous abilities in healing with plants at two edges of the Indian Ocean (South Africa, Java Indonesia) and more recently in Cameroon. Dr. Plante was a senior research fellow at the Max Planck Institute for Social Anthropology (2006–2010). She has published in numerous journals and is the author of *Pouvoir Guérir: médecines autochtones et humanitaires* (Presses Université Laval, 2004), as well as *Healing Roots: Anthropology in Life and Medicine* (Berghahn Books, 2015); recently, she co-edited *Search After Method. Sensing, Moving, and Imagining in Anthropological Fieldwork* (Berghahn Books, 2020). Other publications include *Becoming-Plant in Indian Ocean Worlds: Lines, Flows, Winds, and Water* (2015) and the production of an anthropological film, *Jamu Stories* (2015).

**JUPONG LIN** is a Taiwan-born interdisciplinary artist, writer, and educator. JuPong's installations and community performances blend paper-folding, poetics, and contemplative movement. Impelled by the existential threat of climate catastrophe, JuPong reclaims ancestral traditions to activate deep, personal, and systemic transformation for a just transition. JuPong has exhibited and performed nationally; her poetry has been published in *Dark Matter Women Witnessing* and *Honoring Nature* (2021). JuPong has been a faculty member in the Master of Fine Arts in Interdisciplinary Arts (MFAIA) program at Goddard College since 2005. As the Director of the program, she led an initiative to establish a concentration in decolonial arts.

**SHARON MEIER MACDONALD**, MA in counselling, is a registered social worker whose work as mental health educator focuses on the importance of enlisting community members as change agents. When her community of Ghost Valley, Alberta, faced the challenge of clear-cut logging, neighbours asked her to fill a leadership role. MacDonald's story of the Ghost Valley's initial experiences was published as "Taking Action for the Ghost" in the December 2015 issue of *Wild Lands Advocate*. She thereafter led the Ghost Valley Community to produce the film *Forests, Fins & Footprints*:



*Clearcutting a Community*, screened by several film festivals, including the 2018 International Wildlife Film Festival.

**ARIVALAGAN MURUGESHAPANDIAN** is an assistant professor, Department of Folklore, St. Xavier's College, Palayamkottai, Tamil Nadu State, South India. He earned his doctoral degree at the Madras Institute of Development Studies, Chennai, Tamil Nadu, South India and conducted doctoral research on the topic of Forests, Environmental Change and Tribal Communities in Colonial Tamilnadu. Between 2008 and 2011, he was an international SEPHIS doctoral fellow at the International Institute of Social History, in The Netherlands. In his current research, Arivalagan specializes in environmental history and tribal studies. In 2016, he was invited to deliver a talk for the Series on Tamil Worlds at the University of Toronto. His paper, "Beyond Colonialism: Towards a New Environmental History of India," was published in *Environmental History in the Making, Volume 1: Explaining* (Springer, in 2017). Another contribution, "'Self' rather than the 'Other': Towards a Subjective Ethnography of Kani Community," was published in *Rethinking Social Justice* (Orient Black Swan, 2020).

**DEVORA NEUMARK**, PhD, is a second-generation Holocaust survivor born to refugees from Russia and Poland. They are an interdisciplinary artist-researcher, educator, and community-engaged practitioner. Devora taught in the Goddard College Master of Fine Arts in Interdisciplinary Arts program from July 2003 to May 2021 and is a Yale School of Public Health-certified Climate Change Adaptation Practitioner. Their SSHRC-funded research-creation dissertation, titled *Radical Beauty for Troubled Times: Involuntary Displacement and the (Un)Making of Home* (Concordia University, 2013), is an inquiry into the relationship between the traumas associated with forced dislocation and the deliberate beautification of home. Devora is currently developing two related bodies of contemplative artwork: one engages wellness and the cultivation of joy as radical practice; the other is focused on environmental trauma and mainstreaming climate justice.



**PEARL PENNER** holds a Masters degree in Community and Regional Planning with an Indigenous Community Planning focus from the University of British Columbia. Pearl was born and raised in Abbotsford, BC, and grew up around the teachings of the Medicine Wheel. She learned from Elder Mary Uslick, who brought the vision of the Medicine Wheel to the Stó:lō Nation Territory. Pearl has dedicated her career to working with Indigenous people and communities.

**FERNANDA VIEGAS REICHARDT**, a graduate of law, holds a PhD in sciences (applied ecology) and concluded her postdoctoral research at the University of São Paulo, Brazil. She also served as a researcher at the Institute of Advanced Studies at the University of São Paulo and at the MARE Research Center of the Portuguese Foundation for Science and Technology. Her research adopts a trans-interdisciplinary approach and emphasizes the human and environmental rights of the traditional peoples of the Cerrado (Brazilian Savannah), including the Xavante peoples.


**BOB SANDFORD** is the Global Water Futures Chair, Water & Climate Security at the United Nations University Institute for Water, Environment and Health. He is the co-author of the UN *Water in the World We Want* report on post-2015 global sustainable development goals relating to water. In his work, Bob is committed to translating scientific research outcomes into language decision-makers can use to craft timely and meaningful public policy, and to bringing international example to bear on local water issues. Bob is Senior Advisor on water issues for the Interaction Council, a global public policy forum composed of more than thirty former Heads of State including Canadian Prime Minister Jean Chrétien, U.S. President Bill Clinton, and the former Prime Minister of Norway, Gro Brundtland. Bob is a Fellow of the Centre for Hydrology at the University of Saskatchewan and a Fellow of the Biogeoscience Institute at the University of Calgary. He sits on the Advisory Board of Living Lakes Canada and is a member of the Forum for Leadership on Water (FLOW), a national water policy research group centred in Toronto. In addition to many other books, Bob is the author of a number of high-profile works on water, including *Cold Matters: The State & Fate of Canada's Snow and Ice* and *Saving Lake Winnipeg*. Bob co-authored with Kerry Freek,

*Flood Forecast: Climate Risk & Resilience in Canada*. His book, *Vanishing Glaciers: The Snows of Yesteryear and the Future Climate of the Mountain West*, won the 2017 Lane Anderson Prize for the best science writing in Canada.

**HENRY BIKWIBILI TANTOH** is a geographer by training with a PhD in geography and environmental studies from the University of the Witwatersrand, South Africa; he also holds a Bachelor's and a Master's degree in Geography and Environmental Planning from the University of Dschang, Cameroon. Dr. Tanto is a lecturer and a researcher. His research explores the social, economic, and political aspects of natural resource management and environmental governance and their relationships to wider societal change. Much of his recent work has been concerned with the politics of natural resource management in sub-Saharan Africa, with a particular focus on co-management of water resources and systems that promote stakeholder participation, community development, political ecology, climate change and sustainability.

**REG WHITEN**, M.E.Des, RPP, P.Ag is a watershed stewardship agrologist and an experienced consultant in land-use planning and management through northern Canada. He has served as Land-Use Advisor to Treaty 8 First Nations, as Senior Planner to the Peel Watershed Planning Commission (2008–2009), and as Watershed Steward to the City of Dawson Creek (2010–2014). Reg continues to consult on land-use and watershed management with specialization on rural and First Nations community engagement. Currently, he serves also as Sustainability Facilitator with the Boreal Centre for Sustainability, which he founded in 2000. Last year, he was appointed by the BC government to serve as a Member of the BC Environmental Appeal Board, Forest Appeals Commission and Oil & Gas Appeals Tribunal. He has travelled extensively, and now maintains a homestead property practicing northern permaculture.





*From many stories and communities in this amazing collection comes a universal truth: water is sacred and we separate ourselves from it at our peril. Protecting watersheds and the rights of local communities and Indigenous people who dwell on them will lead us to a water-secure future and a more equitable and just society. A wonderful book, ultimately filled with hope, as it weaves together the strands of the path ahead.*

—MAUDE BARLOW, author and activist

Water is more important than ever before. It is increasingly controversial in direct proportion to its scarcity, demand, neglect, and commodification. There is no place on the planet where water is not, or will not be, of critical concern.

*Signs of Water* brings together scholars and experts from five continents in an interdisciplinary exploration of the theoretical approaches, social and political issues, and anthropogenic hazards surrounding water in the twenty-first century. From the kitchen taps of Detroit, Michigan, to the water-harvesting infrastructure of Tokyo, from the Upper Xingu Basin of Brazil to the Sunda Deep of the Java Trench, these essays flow through time and place to uncover the many issues surrounding water today.

**ROBERT BOSCHMAN** is Professor of American Literature and the Environmental Humanities at Mount Royal University, where he chairs the Department of English, Languages, and Cultures.

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