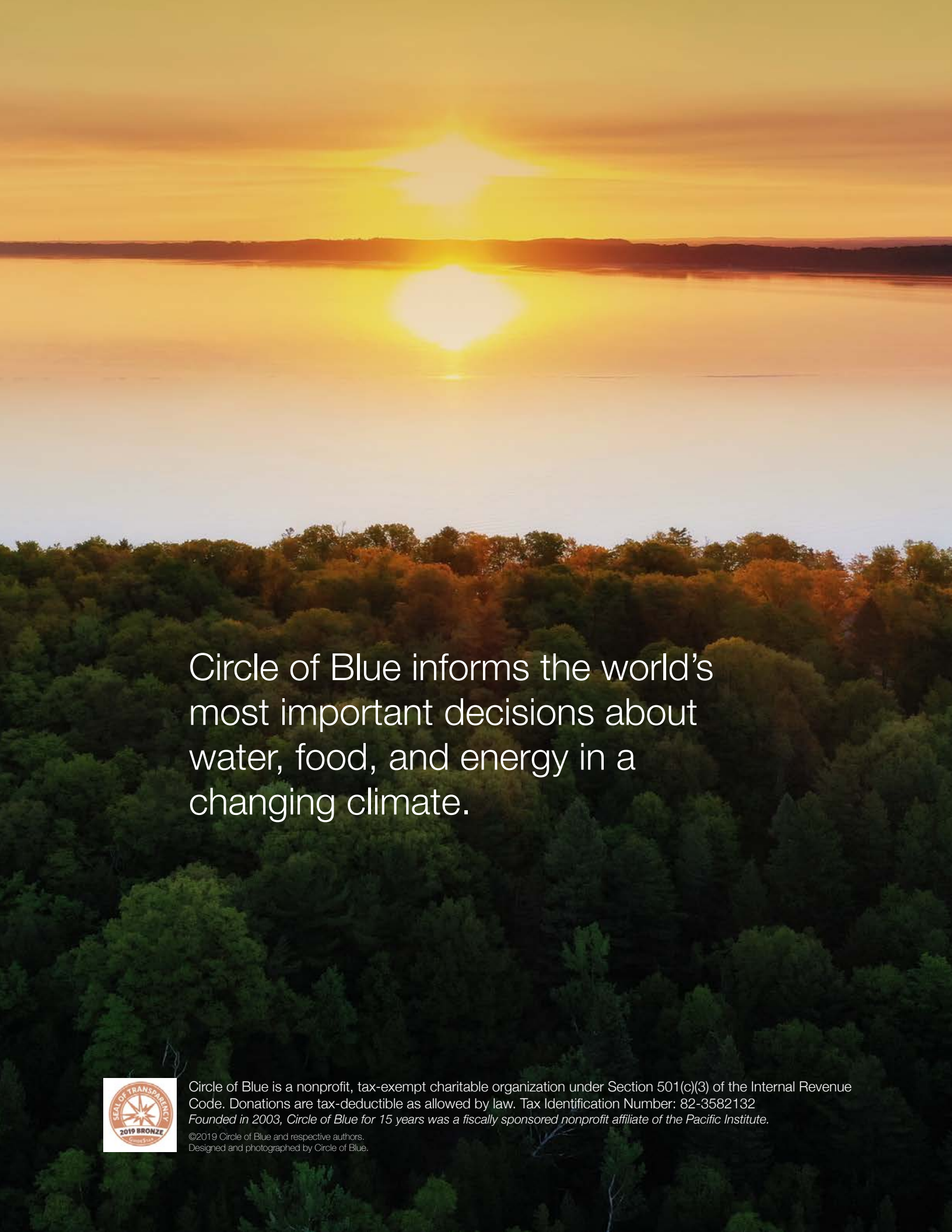
circle of blue

In a world searching for trusted reporting and answers to the most complicated, urgent questions of our time, Circle of Blue is

Where Water Speaks.

2019 Impact Report



Circle of Blue informs the world's most important decisions about water, food, and energy in a changing climate.

Circle of Blue is a nonprofit, tax-exempt charitable organization under Section 501(c)(3) of the Internal Revenue Code. Donations are tax-deductible as allowed by law. Tax Identification Number: 82-3582132
Founded in 2003, Circle of Blue for 15 years was a fiscally sponsored nonprofit affiliate of the Pacific Institute.

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Designed and photographed by Circle of Blue.

Fresh water scarcity is disrupting populations, economies, the environment – every aspect of life as we know it.

The effects are profound in health, food and energy and to the very planet itself.

We are witnessing a new crisis threshold, as major cities face total water shutdowns.

There are better ways to manage the water needs of people and planet. For over a decade, Circle of Blue has informed their discovery. Its trusted reporting has enhanced climate agreements, urban policy and citizen activity, and it has inspired collaboration from Davos to Detroit, from Washington to the Vatican.

Circle of Blue unites classic journalism, data literacy and transformative connectivity. Its visionary work across the Great Lakes, U.S., China, Australia, Mexico, India and the Middle East earned the Rockefeller Centennial Innovation Award, one of the nation's top honors.

Circle of Blue meets the demand for information and collaboration in the greatest challenge of the century.

In 2019, Circle of Blue has continued to push the boundaries to inform the world's most important decisions. For example:

- **From the shores of the Great Lakes, we created the first collaborative media and data project to report on groundwater contamination and depletion.**
- **Through our relationships with the World Economic Forum, Wilson Center, Society of Environmental Journalists, and other media and channels, we captured the attention of world leaders and policy makers.**
- **We've developed cutting-edge new technologies that will enliven so-called "data graveyards," and allow people a new level of transparency for their water quality and supplies, from lake associations in the Great Lakes to neighborhoods in Hyderabad.**
- **With Designing Water's Future, we have the moment to create the unprecedented global movement that combines storytelling with powerful citizen science and data collection, especially for young people.**
- **And, with your help, we separated from our friends and partners, the Pacific Institute, to make an historic transition to become our own 501(c)3 nonprofit organization.**

Designed for Impact and Engagement

"Circle of Blue is an integral part of the global network of innovators that is restructuring and re-organizing social systems to yield better solutions and create stronger, more resilient societies." That's how Judith Rodin, president emeritus of the Rockefeller Foundation, describes our breakthrough model of front-line reporting, data collection, design, and convening. Circle of Blue uniquely closes the loop, using our award-winning journalism as provocation for workshops, presentations, and events that lead to transformational change.

Global Entrepreneurship Summit, The Hague

World Economic Forum India Summit, Delhi

This year's presentations and workshops streched from Washington to Stockholm, from Flint to the Netherlands.

World Economic Forum Transformation Maps
Circle of Blue curates the World Economic Forum Water Transformation Maps, a dynamic knowledge repository for global issues that reaches the Forum's extensive expert and public networks.

Leaders on Purpose CEO Summit
Leaders on Purpose is a research collaboration between professionals at Harvard University, Unilever, The World Bank and The London School of Economics. It describes itself as "a community of leaders at the frontier of a new business logic - driving impact at a scale for a just and sustainable world." At this April's CEO Summit, J. Carl Ganter moderated two sessions: the Sustainability Working Group and Blended Finance for the Global Goals.

The National Association for Environmental Management
The National Association for Environmental Management's annual sustainability conference, Impact, serves internal leaders bringing vision into business operations. Circle of Blue's J. Carl Ganter led the Designing Water's Future session at this year's event.

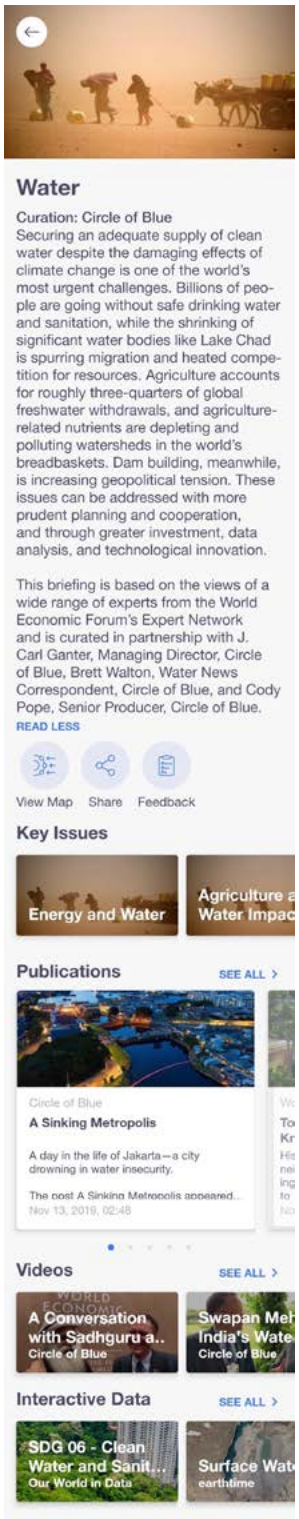
Stockholm World Water Week
For more than 5 years, Circle of Blue has been an official media partner of the Stockholm International Water Institute's World Water Week, a gloabl water symposium on water, development and sustainability. This year, J. Carl Ganter moderated the World Bank and 2030 Water Resources Group session.

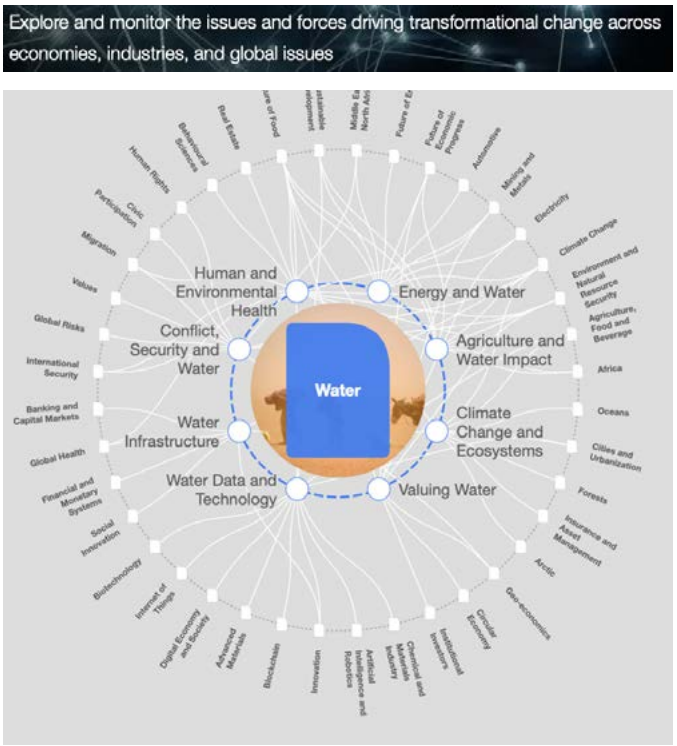
Global Entrepreneurship Summit
Water was among the top priorities at the Global Entrepreneurship Summit hosted June 4 in The Hague, The Netherlands where J. Carl Ganter moderated the session, "The Future Now: Water," and emceed the Water Solutions Stage. The Government of The Netherlands and U.S. State Department hosted the conference of some 2,000 leaders, innovators, and investors.

Society of Environmental Journalists Annual Conference: Fresh Water, Fresh Ideas
At the University of Michigan-Flint, J Carl Ganter moderated Water Wars or Water Peace?, a panel discussion on a major driver of social conflict in developing countries: access to fresh water.

Impact and Engagement

Global, national, and regional NGOs, government agencies, students, journalists, and public citizens rely on Circle of Blue's timely and contextualized reportage. Here are some direct impacts.





World Economic Forum Transformation Maps

- **The National Academies of Sciences**, Engineering, and Medicine cited Circle of Blue reporting in its August 2019 report on managing Legionella in water systems.
- **Sen. Kamala Harris** of California cited Circle of Blue's water rates reporting in the Water Justice Act, a bill she introduced in the Senate in July 2019.
- **Chicago's new mayor Lori Lightfoot** cited American Public Media's water rates reporting as a reason for a moratorium in May 2019 on water shutoffs in that city. American Public Media's reporting was informed and inspired by Circle of Blue surveys and coverage.
- **Jersey Water Works**, a water infrastructure coalition, cited our work in its April 2019 report on water affordability in New Jersey.
- **California's State Water Resources Control Board** cited Circle of Blue water rates reporting in its January 2019 report on designing a state low-income assistance program for water bills.
- **Circle of Blue's annual water rates survey** captures national attention, media such as NPR and the New York Times, and has informed legislation.

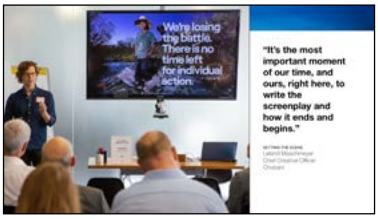
IN DEVELOPMENT
Designing Water's Future Empowers and Informs Responses to Global Water Crises

At a rare moment in history, Designing Water's Future will activate and unite the collective genius of data experts, citizen scientists, storytellers, young people, governments, companies, and the public to create new narratives and actively engage people around the world.

Designing Water's Future will engage cross-disciplinary teams of next-generation thinkers to shift the world's dangerous course through:

- Creative design and innovative communications
- Citizen science
- Applied data analyses and visualization
- AI-powered connectivity

Contact us for details and to learn about sponsor opportunities for this developing initiative.

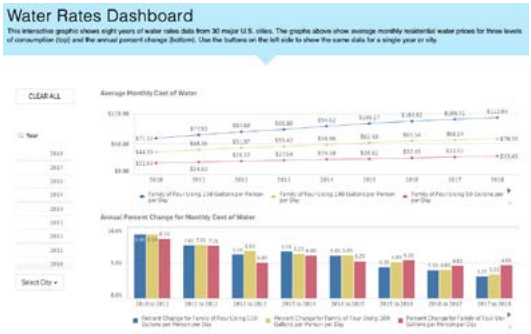


2019: Original Reporting from the Front Lines

Circle of Blue's non-advocacy, on-the-ground reportage makes complex issues understandable and provides trusted information and data that connects local stories to global trends.

U.S. Water Pricing & Affordability

San Antonio, Texas - © J. Carl Ganter 2019



> This year's survey finds that the extensive investments large cities are making to their water systems comes as the federal government continues to display the decades old aversion to paying for improving infrastructure.

The country's metropolitan centers aren't waiting for Beltway politics to be resolved before making investments in their water sytems. They are forging ahead to prepare for the challenges ahead. In the U.S., the largest increases in water prices were clustered in Arizona and California, states vulnerable to drought, climate change, and other natural hazards that could tighten water supplies. Cities in these states are spending billions of dollars on water recycling facilities and distribution systems.

These investments must be paid for, at a time when water systems face added financial pressures. Until recent years municipal water service was relatively inexpensive. Not anymore. The cost of replacing aging pipes and upgrading treatment plants is causing water bills to rise several times faster than inflation. At the same time, incomes for the poorest households are stuck in place. Affordability is now a defining issue for water utilities and governments.

Circle of Blue has been a leading source for original reporting and analysis on the costs of municipal water, and the effect on communities. Our annual water pricing survey, now in its 11th year, is the only one of its kind, and is highly valued for giving an empirical dimension to the problem now facing many Americans. Sen. Kamala Harris of California cited Circle of Blue's water rates reporting in the Water Justice Act, a bill she introduced in the Senate in July 2019.

“Day Zero” Cities

Sao Paulo - © J. Carl Ganter

Today we are faced to reckon with an era of water uncertainty where “Day Zero” countdowns are becoming increasingly more frequent. “Zeropolis: Big cities, little water,” a continuing series by Circle of Blue, highlights cities across the globe that are grappling with severe water shortages, investigating why water is being depleted, who is most affected, and if the city is likely to experience its own “Day Zero.”

In Chennai and Harare today, millions of Indians and Zimbabweans find themselves short of water. History, unfortunately, is repeating. São Paulo, in 2014, nearly drained its main reservoir as officials sluggishly responded to a drought. Cape Town came close to doing the same last year when dry weather exposed the fragility of a water system that relied primarily on rainfall.

What is the next center of population and commerce to be roiled by a severely constricted water supply?

Jakarta, Indonesia
(Circle of Blue and Wilson Quarterly)

It’s an urgent question. Climate change is loosening the bounds of the possible, for both flood and drought. Cities are growing at breakneck pace. Dry taps can trigger disease outbreaks and violent confrontations for scarce water. Shortages erode business confidence and economic output, while adding stress to the lives of residents.

And yet, according to water researchers, advance warning of urban water crises — the failures that could arise in specific cities in the next few months or two years — has proved achingly elusive to forecast globally with analytical rigor and accuracy.

Legionnaires' Disease

© J. Carl Ganter 2019

Circle of Blue has been at the forefront of the emerging threat of Legionnaires' Disease, the deadliest waterborne illness in the United States today. The pneumonia-like illness is spread by inhaling droplets contaminated with the Legionella bacteria and it kills about one in 11 people infected.

Our reporter, Brett Walton, scooped the New York Times on the this fall's outbreak of the illness in North Carolina. The National Academies of Sciences, Engineering, and Medicine cited Circle of Blue in its August 2019 report on managing Legionella in water systems. As proud as we are of those achievements, our leading accomplishment is our sustained attention to a danger with major implications for water and energy sustainability as well as public health.

Cases of Legionnaires' Disease have increased five-fold in the last two decades, and the Great Lakes region has one of the highest rates of infection. Yet we were the only news organization with a reporter at this year's Legionella Conference, hosted by the National Science Foundation and the National Environmental Health Association. Our coverage of this emergent issue continues the Legionnaires' story as has unfolded from isolated incidents into a growing challenge to the nation's infrastructure and water management policies.

The National Academies of Sciences, Engineering, and Medicine cited Circle of Blue reporting in its August 2019 report on managing Legionella in water systems.

Global Water Disruptions

Murray-Darling Basin, Australia - © J. Carl Ganter 2019

From Australia to India to Asia, we've chronicled and photographed the effects of a changing climate on water. In Australia as in California, new norms are transforming towns into tinderboxes. In India, some parts of the country are parched and others are swamped. The mighty Mekong River, like many others, is perishing by a thousand cuts, and the mountainous glaciers that sustain millions are vanishing.

The United Nations says that "water is the primary medium through which we will feel the effects of climate change" and it "plays a pivotal role in how the world mitigates and adapts to the effects of climate change." And yet, the news media, like charitable organizations, are increasingly swept up in the immediate dangers and the simpler narratives. The Rockefeller Foundation, which recognized Circle of Blue with its Centennial Innovation Award, has discontinued its water.

Rural U.S. Water Systems

Rising sewer bills, a result of inadequate infrastructure and heavy rainfall, are driving small, rural communities towards bankruptcy. In North Carolina, dozens of towns with aging and declining populations, low incomes, and soaring sewer rates are running chronic budget deficits in their sanitation operations. We're tracking a pattern of fragile economics, failing infrastructure and poor systems management to highlight the stirrings of a rural financial crisis rooted in municipal sewer failures.

Post-Disaster “Recovery”

Paradise, California - © Brett Walton 2019

No contemporary town has encountered a water system so extensively contaminated by chemicals released during a fire as Paradise, Calif. Utility leaders and outside experts say that ridding the pipes of benzene and other volatile chemicals may take years. The health of the water system has emerged as the central tension in the town’s recovery.

“When the Camp Fire swept across California’s Sierra Nevada foothills last November, flames nearly leveled the town of Paradise. More than nine out of 10 buildings were destroyed, and 86 people were killed. The tragic burning of Paradise also represents a new chapter in America’s relationship with fire damage.”

So began the first of a series of stories on the water troubles in Paradise by Circle of Blue’s nationally-recognized journalist Brett Walton.

After the flames – and the headlines – had passed on, a terrible reality waited to be told: the aftermath of the Camp Fire marked a new chapter in post-disaster recovery, for beneath the blast furnace heat that incinerated buildings and vehicles above ground, an intricate network of drinking water pipes below the surface became so contaminated with toxic chemicals that many are unusable. No town water system has ever lost nearly all of its customers, which are its source of revenue, and attempted such a feat of investigation, outreach, and rehabilitation from fire with so few resources. But it is one that could easily be repeated as fire seasons lengthen in the West, more acres are consumed, and communities expand into wildland areas that are susceptible to burning.

And fire is not the only growing threat to water in communities. Climate change is loosening the bounds of the possible, for both flood and drought. Cities are growing at breakneck pace. And yet, according to water researchers, advance warning of urban water crises — the failures that could arise in specific cities in the next few months or two years — has proved achingly elusive to forecast globally with analytical rigor and accuracy. The stakes for accurate assessments couldn’t be higher.

> North Jakarta is particularly vulnerable. Lake Pluit, at bottom of image, flows black with sewage that a pumping station, top left, pushes up and over a levee, top right.

Jakarta © J. Carl Ganter 2019 for Wilson Quarterly

Global Groundwater

Groundwater is the most abundant source of liquid freshwater on the planet. Aquifers hold at least 25 times the water as rivers, lakes, and streams. Some two billion people rely on groundwater as a primary source of drinking water and nearly half the water used to irrigate crops comes from underground.

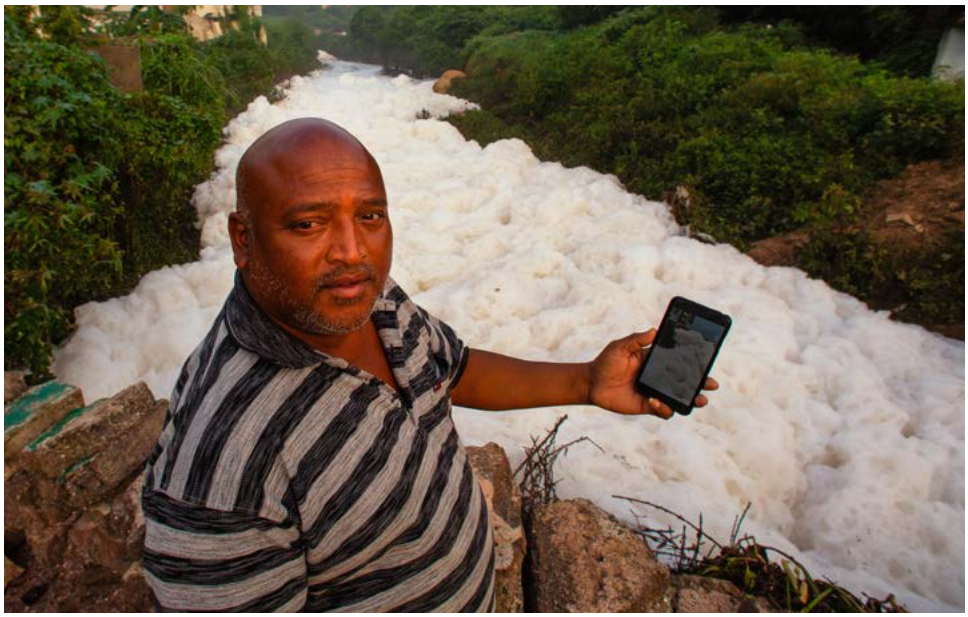
Yet despite its importance, groundwater is being used recklessly. It is being drawn out far faster than it can be replenished, promising scarcity ahead. The very act of pulling water from subterranean geologic formations can cause their collapse, altering landscapes. Sinking coastal megacities like Jakarta face the threat of sea levels that are rising. And everywhere, underground aquifer structures, without the support of their water, can collapse, never to hold water again. Groundwater is also threatened by pollution, from sea water incursions, sewage and agricultural run-off to the newer industrial chemicals such as PFAS and fracking waste. We're reporting on it all. Our latest multimedia report, "Jakarta: A Sinking Metropolis," headlined the Wilson Quarterly, one of the most prestigious policy magazines published by the Woodrow Wilson International Center for Scholars in Washinton.

U.S. Groundwater

The same threats to global groundwater affect the United States. To locate sufficient supplies of fresh water, America's groundwater wells are being drilled deeper and deeper, according to an analysis of more than 10 million well records since the 1950s. As the nation searches for more groundwater, the scope of the Clean Water Act's role in groundwater has come into play. A case before the Supreme Court sets up a ruling with national implications.

We've maintained a steady stream of stories to keep groundwater on the radar. In our home state of Michigan, we've reported on how authorities waited for years to heed warnings on PFAS chemicals. And we're continuing to build on our collaborative work with local and regional media, covering Michigan's emerging groundwater crisis.

Polluted Waters Take Toll on Health and Environment



Hyderabad, India © J. Carl Ganter 2019

Polluted waters are an underestimated and underappreciated global scourge. That conclusion comes from a recently released World Bank report, whose authors claim water pollution is an "invisible crisis" that will worsen as the planet warms. As Richard Damania, the report's lead author, told Circle of Blue. "It's bad all around."

Attempts to meet water challenges have provided their own set of perils. For example, the waste product from desalination is growing too large to ignore. That's according to a United Nations think tank, which provides the first estimate of global brine production from desalination.

Pollution comes in many other forms: nitrates, arsenic, lead, PFAS, fracking and mining waste, and toxic algal blooms. Circle of Blue keeps a spotlight on these increasing threats, which is even more important as policymakers debate profound rollbacks to regulations on water use and contamination by industry.

U.S. Oil & Gas Developments Confront Water Challenges

Fossil fuel production in the Permian basin is reaching ever greater heights, so New Mexico lawmakers moved to clarify the legal status of the salty, chemical-laden water that is a byproduct of the fracking process. Wells produce far more wastewater than oil.This is just one of the stories to emerge from the Permian basin region and across the nation, where the intersection between water and energy, and their impacts upon markets and policies, are becoming increasingly profound. Our continuing coverage informs the discussion as officials consider how to restore – or repurpose – water that's a toxic byproduct.

More than 40,000 people turn to Circle of Blue's audio online broadcasts, which focus weekly on where water insecurity threatens economies, sparks conflict, displaces populations, and disrupts daily life. The podcast is featured on iTunes, Spotify, Stitcher, Soundcloud, and iHeartRadio.

Listen on Apple Podcasts | LISTEN ON Spotify | LISTEN ON iHeartRADIO

What's Up With Water
This podcast presents the week's leading water stories, including an original story from Circle of Blue. Stories include:

- How Venezuela's worst-ever power outage deepened water insecurity
- Deaths in South Sudan from thirst and water-related violence
- How local residents, citing water concerns, opposed a proposed Mexico City airport
- When taps ran dry for Millions in Zimbabwe's Capital
- When India's Monsoon Season, the wettest in 25 Years, came to an end

Speaking of Water
This podcast is dedicated to water issues running "beneath the headlines," and features water experts on topics from water conflict to environmental restoration efforts.

HotSpots H2O
HotSpots H2O is excerpted regulary by the World Bank, World Economic Forum, and U.S. Department of State.

INTRODUCING
Circle of Blue Board of Directors

Richard F. Odell is recently retired from IMG Academy where he was Vice President of Student Affairs and IMG Academy Headmaster. He founded the PK-PG school of 1,000 students on IMG's Bradenton, Florida campus in 2000. The school's academic program and delivery is specifically designed to meet the college preparatory expectations of students and their families from 90 countries. This is accomplished by offering a unique blend of teaching styles that work for students who come to the school with a passion for sport and spend half of each day in that sport and the other half in school.

Mr. Odell began his professional career in 1972, working in fundraising and alumni affairs at his alma mater, Heidelberg University from which he had recently graduated. In 1976, he began serving independent schools in a variety of administrative capacities including: chief financial officer, development, alumni and marketing director, Assistant Headmaster, Headmaster and President. Much of his career has focused on serving schools that have struggled to find a niche that would provide long-term financial stability, a strong public image and success. He has also helped schools develop new revenue sources, streamline administrative operations and think strategically about what elementary–secondary education might look like 10 years out and help Boards, Administrators and faculty design facilities and programs ahead of the education curve. He is regarded by many as an education visionary.

Dr. Peter Gleick is a world-renowned expert, innovator, and communicator on water and climate issues. In 1987, Dr. Gleick co-founded the Pacific Institute, which he led as president until mid-2016, when he became president emeritus.

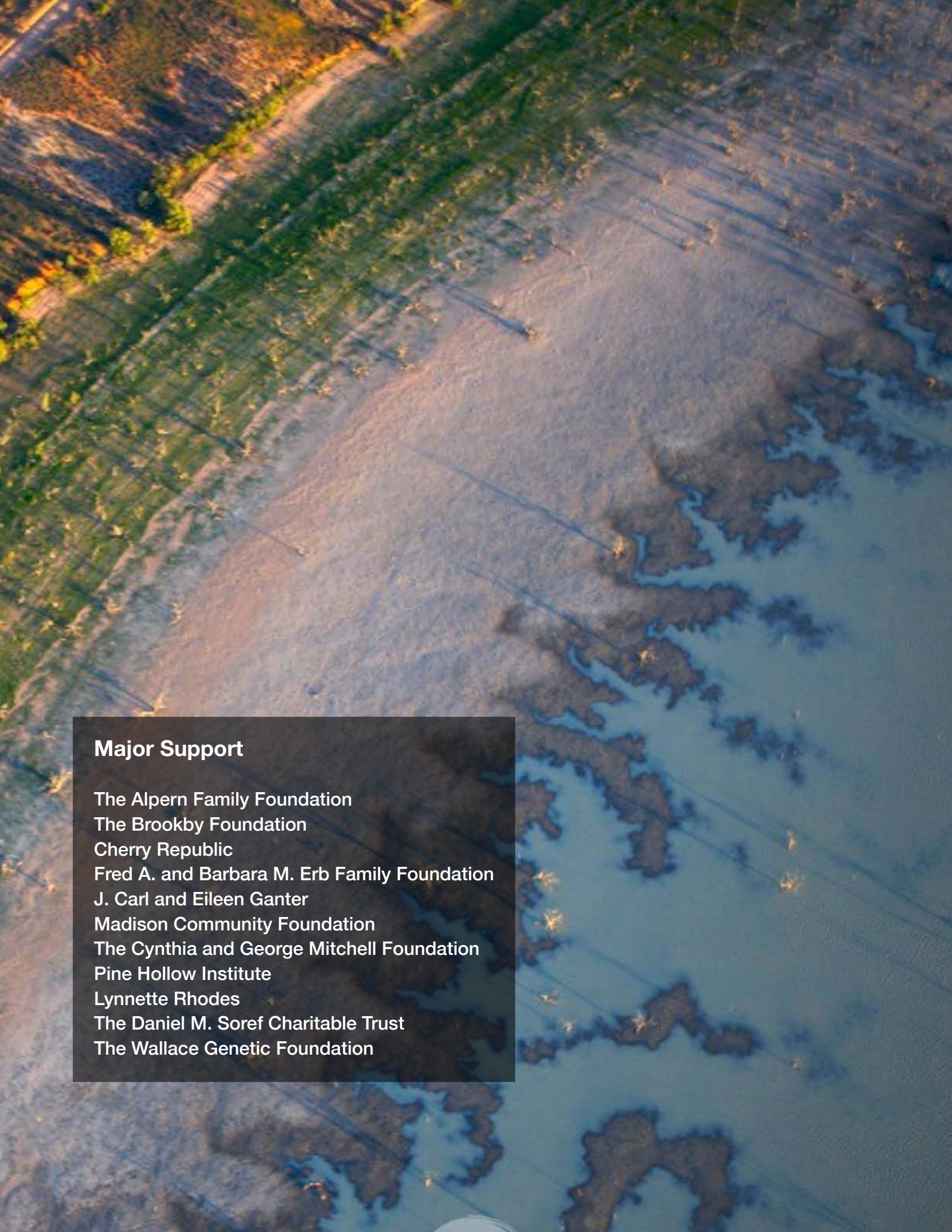
In 2003, Dr. Gleick was awarded a MacArthur Fellowship for his work on water resources. Among the issues he has addressed are conflicts over water resources, water and climate change, development, and human health. In 2006, Dr. Gleick was elected to the U.S. National Academy of Sciences. In 2011, Dr. Gleick was the launch Chairman of the "new task force on scientific ethics and integrity" of the American Geophysical Union. Dr. Gleick received the International Water Resources Association (IWRA) Ven Te Chow Memorial Award in 2011, and that same year he and the Pacific Institute were awarded the first U.S. Water Prize. In 2014, the Guardian newspaper listed Dr. Gleick as one of the world's top 10 "water tweeters."

Margaret Catley-Carlson was Chair and is now a Patron of the Global Water Partnership, a working partnership among all those involved in water management formed in 1996 by the World Bank, the United Nations Development Program and the Swedish International Development Cooperation Agency.

Ms. Catley-Carlson served as President of the Canadian International Development Agency (1983-1989) and the Population Council (1993-1999). Ms. Catley-Carlson was also Deputy Minister of Health and Welfare in Canada and Deputy Executive Director for the United Nations Children's Fund (UNICEF). Ms. Catley-Carlson's 24-year career in government began with diplomatic posts in Sri Lanka and London as an employee of Canada's Department of External Affairs.

Captain Jerry Linenger is a retired United States Navy flight surgeon and NASA astronaut who spent nearly five months aboard the Russian Space Station Mir. He faced numerous life-threatening events, including a fire, repeated failure of critical life-support systems, and a computer malfunction that sent the space station tumbling uncontrollably through space. Linenger is one of eight storytellers featured in National Geographic's ONE STRANGE ROCK, a ten-part television documentary series exploring life on Earth in the company of astronauts.

A Naval Academy graduate, Linenger holds doctorates in both medicine and research methodology, as well as dual master's degrees in Policy and Systems Management. He has also been awarded three honorary doctorate degrees in science. Linenger was awarded the 2013 "Trailblazer Award" from WSU School of Medicine for his lifelong contributions to medical research and to the advancement of medicine. In 2008, NASA awarded Linenger the Distinguished Service Medal, the highest award conferred by NASA, citing his courage and outstanding service to country. Since 2005, Linenger has advised Circle of Blue and currently serves on its Board. He is author of the books Off the Planet: Surviving Five Perilous Months Aboard the Space Station MIR, and Letters from Mir: An Astronaut's Letters to His Son.



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Madison Community Foundation
The Cynthia and George Mitchell Foundation
Pine Hollow Institute
Lynnette Rhodes
The Daniel M. Soref Charitable Trust
The Wallace Genetic Foundation

“No one is better positioned to deliver groundbreaking knowledge on the critical resource of global water than Circle of Blue.”

Ian Bremmer
President, Eurasia Group

circle of blue
where water speaks

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