

**URGENCY BUT NOT PANIC:
IDEAS FOR TEACHING THE GLOBAL WATER CRISIS**



ONGOING COLLABORATION ACROSS CENTERS,
ACROSS DISCIPLINES, AND IN NORMAL TIMES,
ACROSS THE HALL



University of
Pittsburgh

Global Studies Center
University Center for International Studies

A GLOBAL CHALLENGE, A UNIVERSAL TRUTH


“WHETHER THEY LACK IT, HAVE TOO MUCH OF IT, OR CANNOT DRINK IT, EVERY HUMAN BEING ON THE PLANET FACES THE CHALLENGE OF WATER. SUCH A **GLOBAL** CHALLENGE CAN ONLY BE MET BY A COLLECTIVE RESPONSE.”

AGENCE FRANÇAISE DE DÉVELOPPEMENT

“UNDER HEAVEN NOTHING IS MORE SOFT AND YIELDING THAN WATER.
YET FOR ATTACKING THE SOLID AND STRONG,
NOTHING IS BETTER;
IT HAS NO EQUAL.
THE WEAK CAN OVERCOME THE STRONG;
THE SUPPLE CAN OVERCOME THE STIFF...
THE TRUTH OFTEN SEEMS PARADOXICAL.”
TAO TE CHING



TOPICS

- WATER AWARENESS AND THE HYDROSOCIAL CYCLE
 - TECH AS SOLUTION? INTERDISCIPLINARY OPPORTUNITIES?
 - MAUDE BARLOW AND THE RIGHT TO WATER
 - ACTIVISM: WORLD WATER DAY, PROJECT 17, AND WATER PROTECTORS
 - SUSTAINABLE DEVELOPMENT GOALS
 - CULTURAL ISSUES SURROUNDING WATER
- 

FROM LOCAL AWARENESS TO GLOBAL AWARENESS AND BACK AGAIN



THE ASSUMPTION THAT WATER IS A PUBLIC GOOD AND IS SAFE



NPR ✓

Yesterday at 4:26 PM · 🌐

The FBI is being called in after someone remotely hacked into a water treatment plant in Oldsmar, Fla. on Friday — increasing the level of lye in the city's drinking water by a factor of 100.

An operator reset the levels before it posed a threat, officials say.



NPR.ORG

FBI Called In After Hacker Tries To Poison Tampa-Area City's Water With Lye

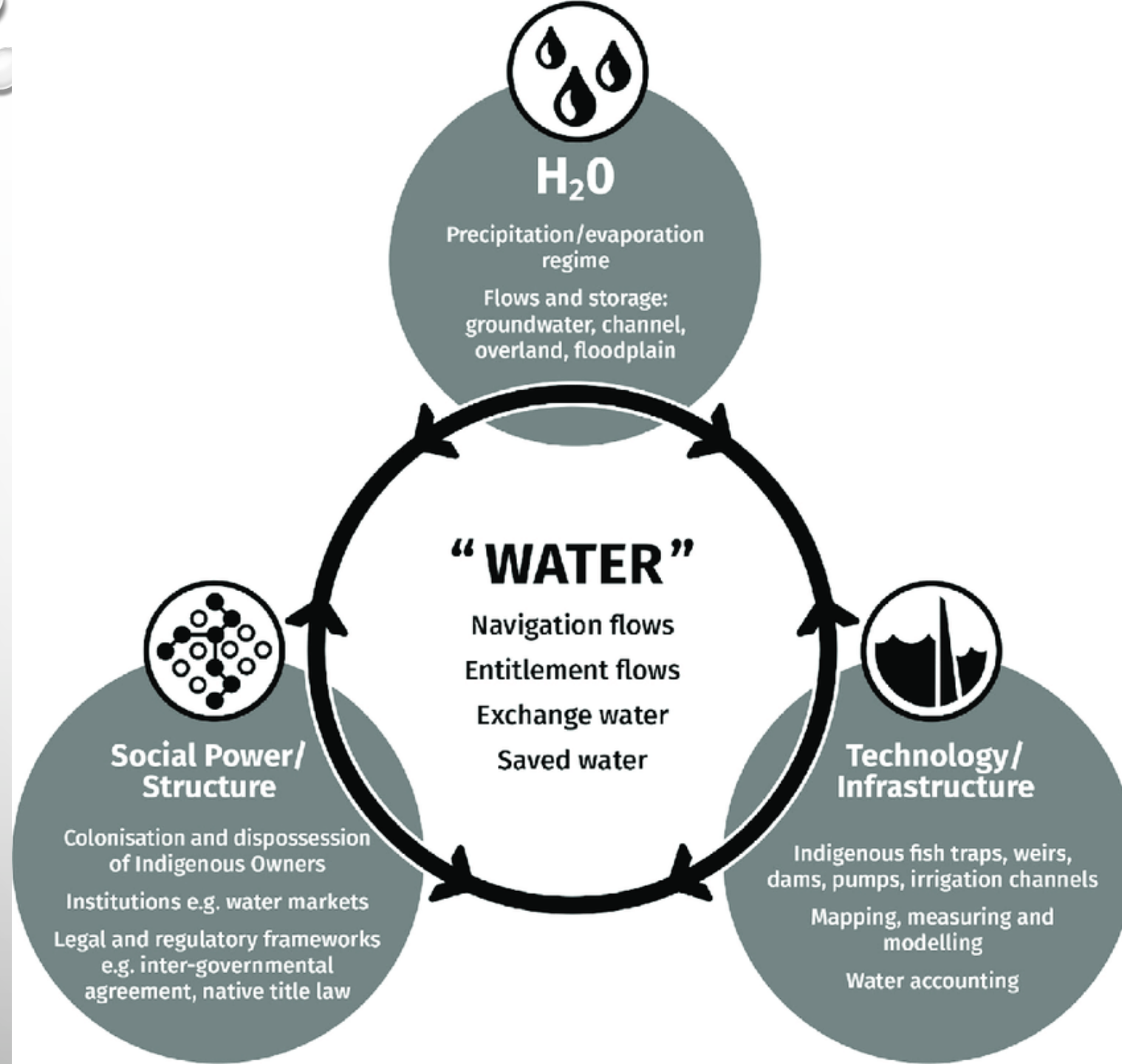
‘Dangerous Stuff’: Hackers Tried to Poison Water Supply of Florida Town

For years, cybersecurity experts have warned of attacks on small municipal systems. In Oldsmar, Fla., the levels of lye were changed and could have sickened residents.

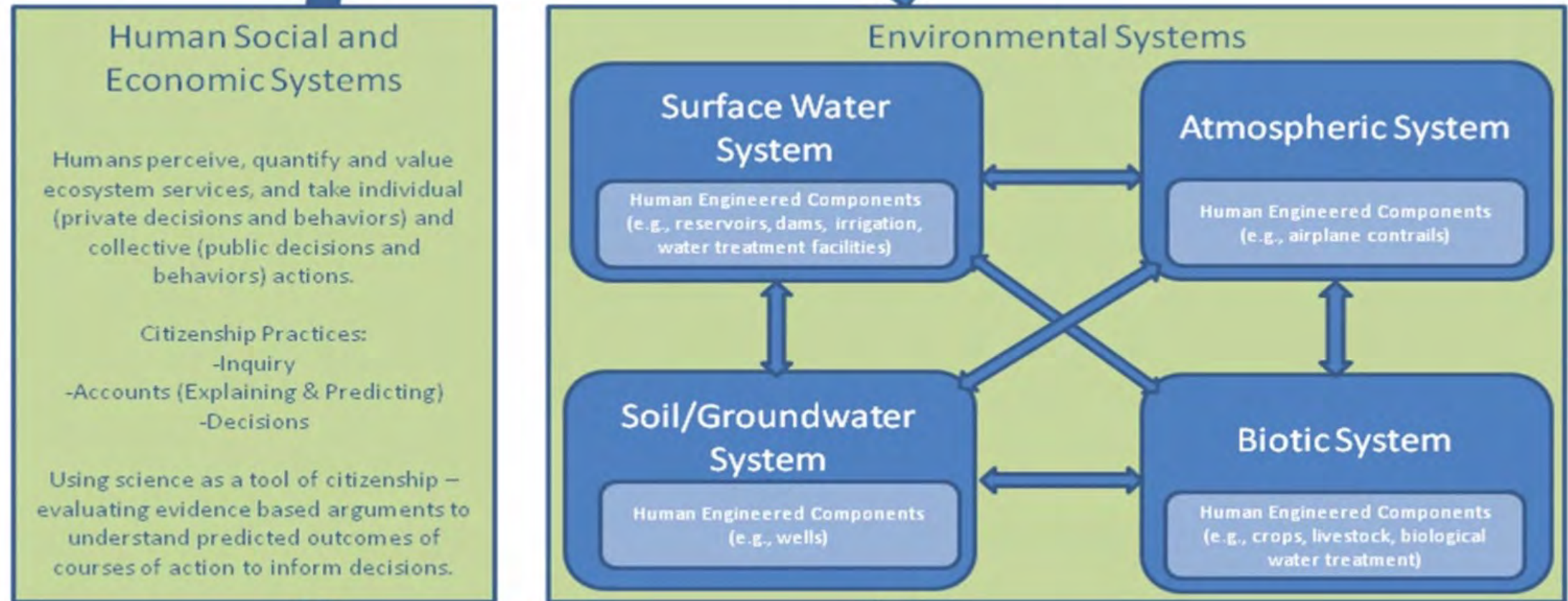


“This is dangerous stuff,” Sheriff Bob Gualtieri of Pinellas County said at a news conference Monday of hackers who remotely accessed the City of Oldsmar’s water supply system and changed the levels of lye. Pinellas County Sheriff’s Office





Human Decisions & Actions Impact
Distribution & Quality of Fresh Water

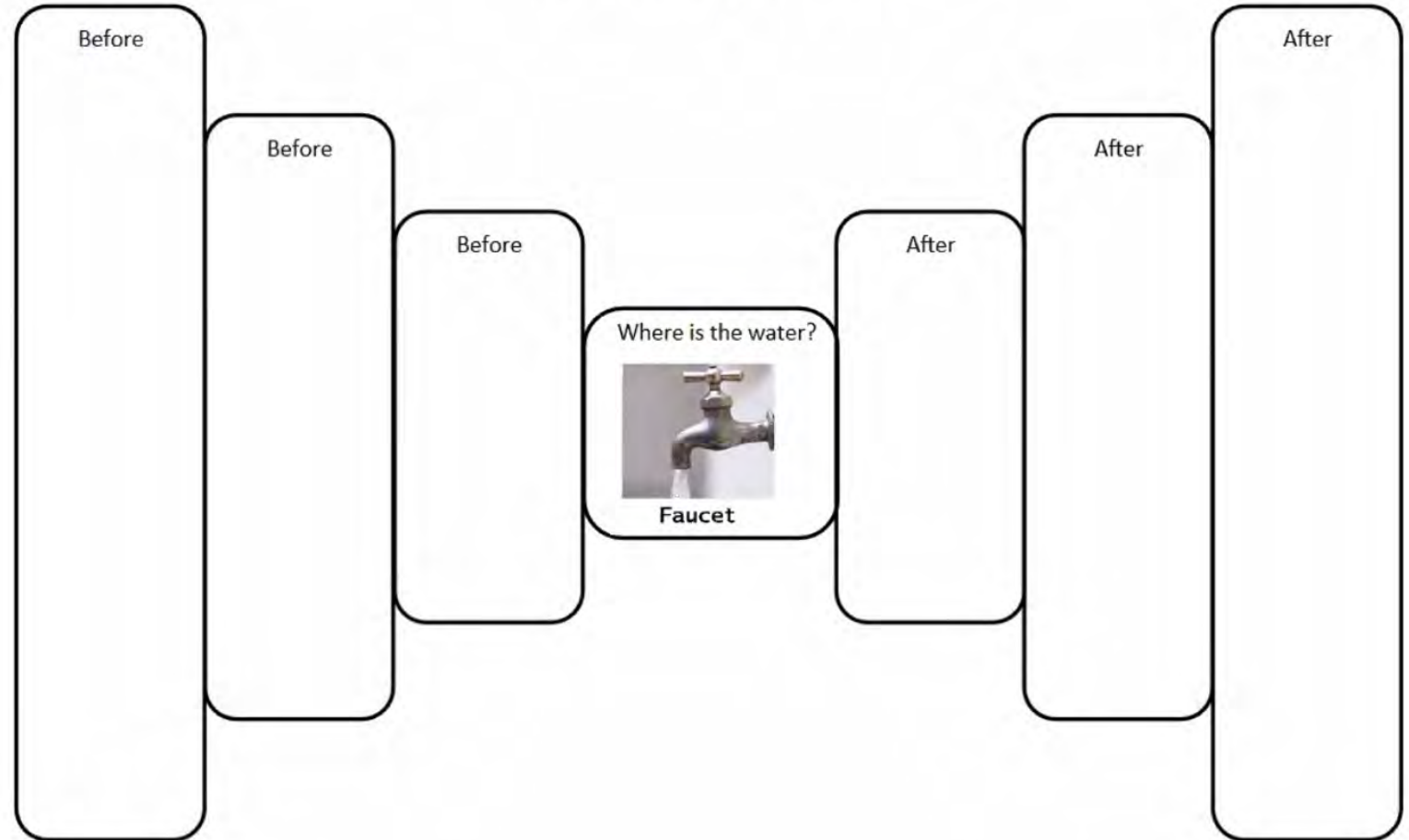


Ecosystem Services are Valued by People
(Freshwater of sufficient quantity, quality and distribution
for supporting human and natural system functions)

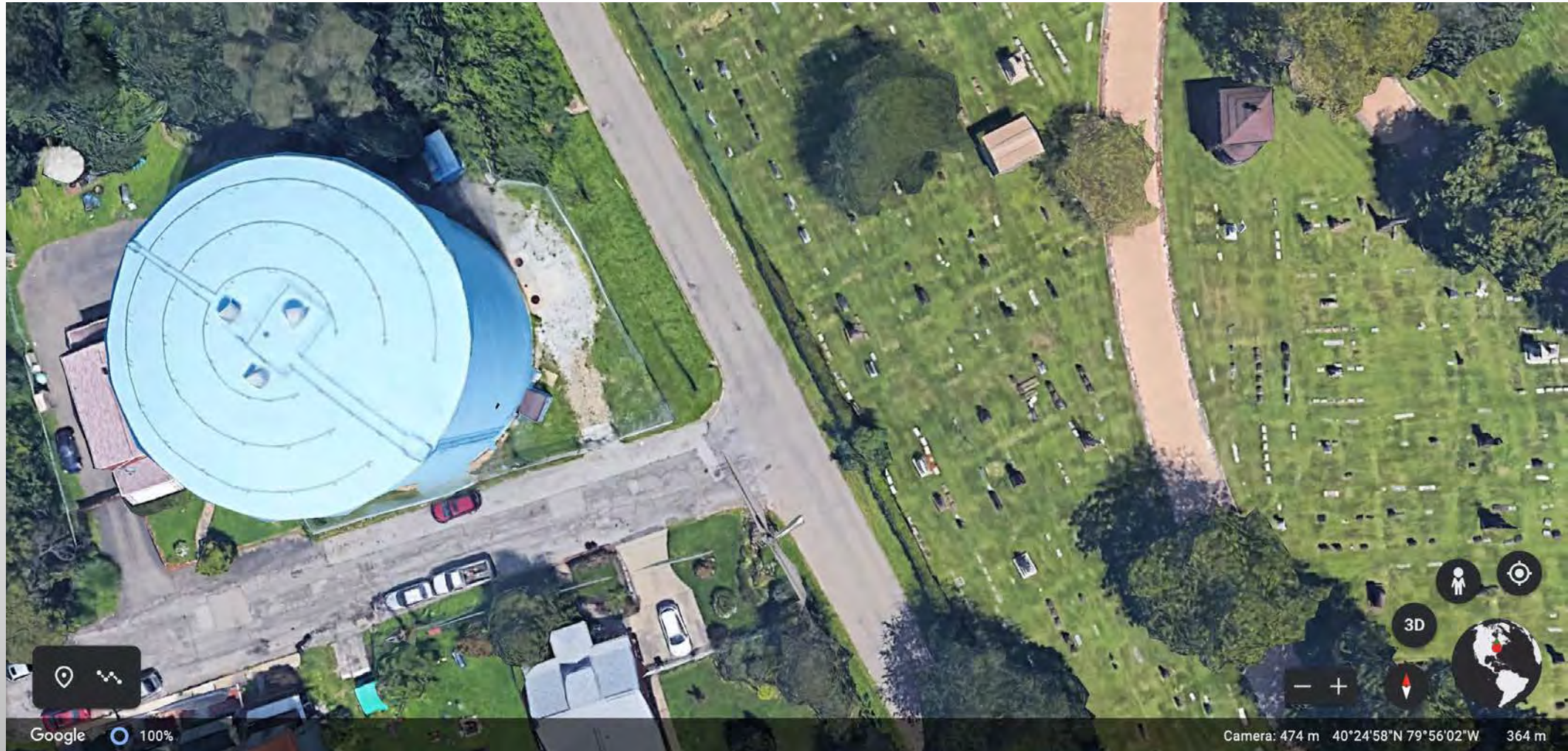
Instruction: Reasoning Tools for Water

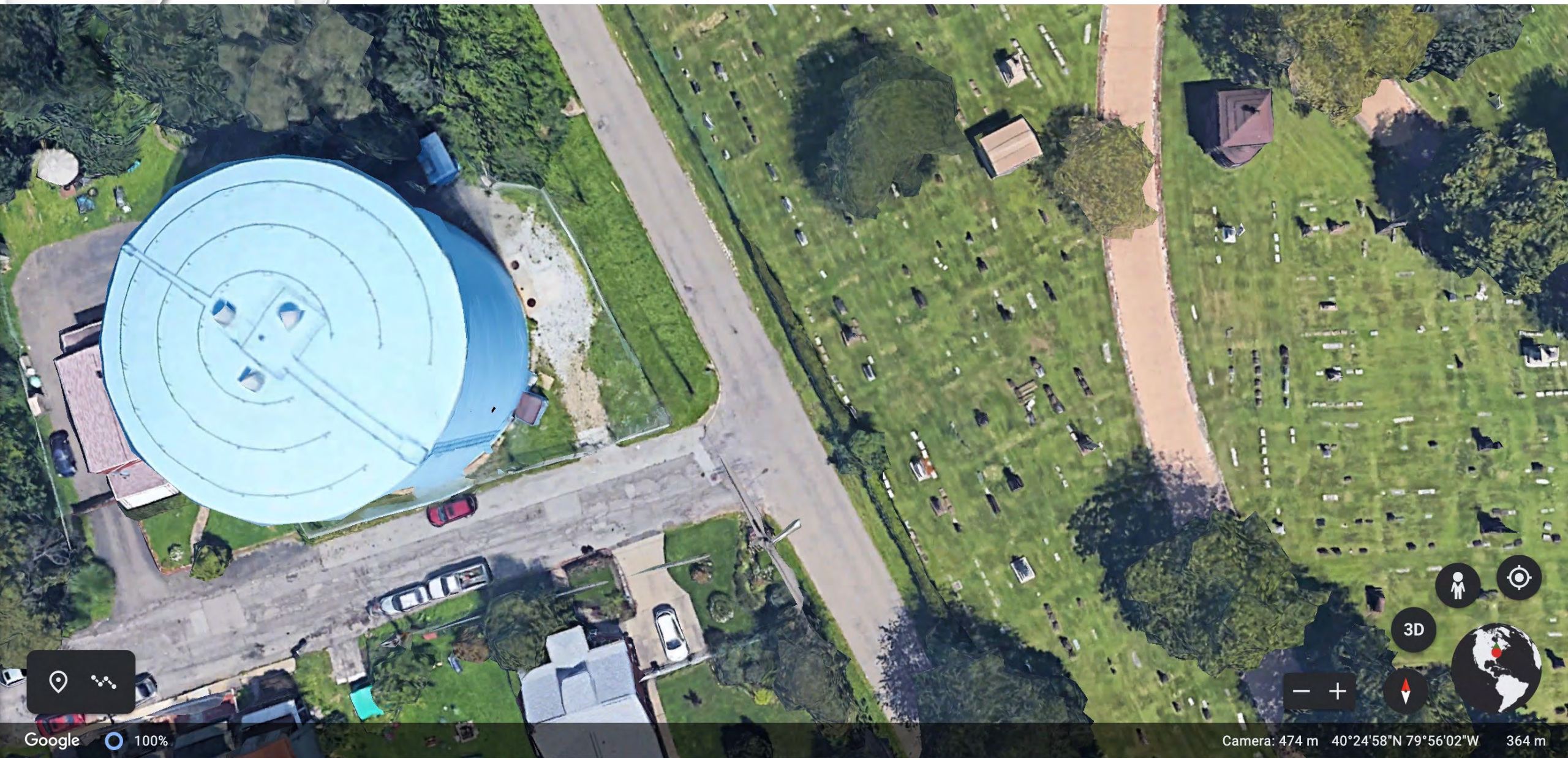
Pathways Tool

Tools in the form of graphic organizers that support students in progressing from level 2 to level 3 and level 3 to level 4.



TOM'S IDEAS ABOUT USING GOOGLE EARTH. WHERE ARE THE WATER TOWERS AND WHY ARE THEY THERE?





Google 100%

Camera: 474 m 40°24'58"N 79°56'02"W 364 m

Pittsburgh Zoo &
PPG Aquarium
Temporarily closed



Highland Park Off
Leash Exercise Area

Highland Park Sand
Volleyball Courts

Highland
Park Super
Playground

Lake Point
Shelter

Highland Park

Rhododendron
Shelter

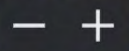
Flynn Parklet

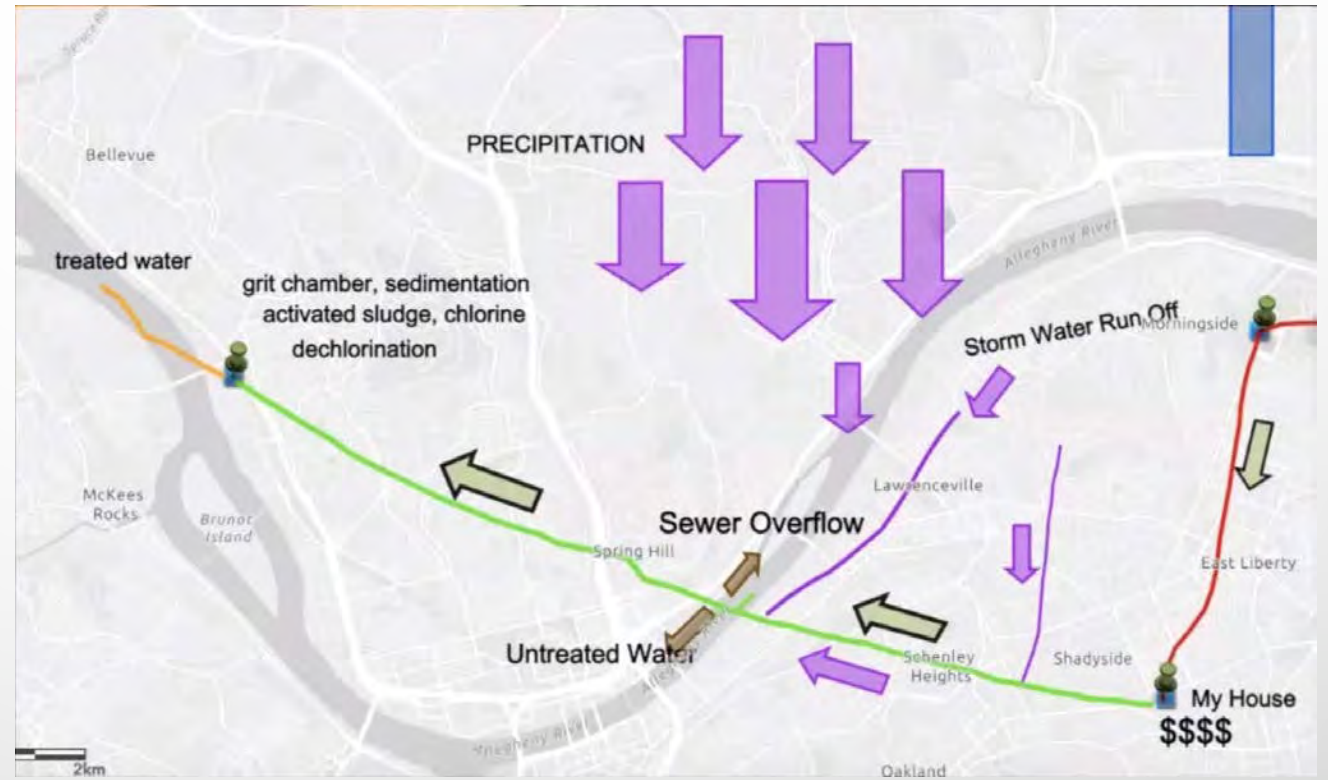
Farmhouse
Playground

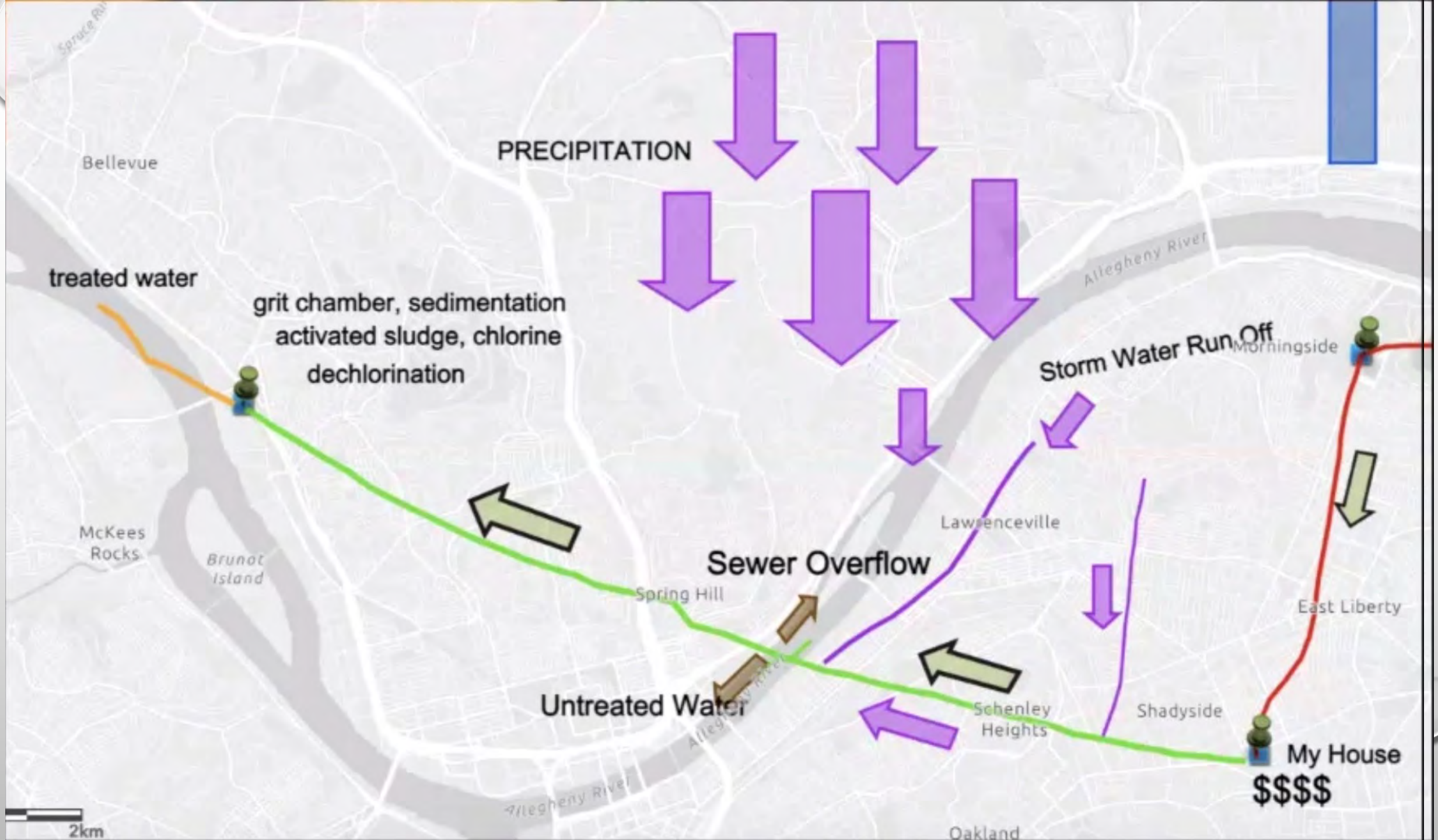
King Estate



3D







GEOPHYSICAL ASPECTS

Advection
Aquifer storage and recovery
Climate change
Condensation
Deep percolation
Erosion and Geological processes
Estuaries
Evaporation
Glaciers
Groundwater
Hydrofracking
Hyporheic zone and flows
Infiltration
Interception
Macropores and flow
Ocean storage
Plant Uptake
Precipitation (rain, snow, sleet, hail, etc.)
River discharge
Rivers, Lakes, Streams, Seas, Oceans

Runoff
Saltwater intrusion
Snowmelt
Soil and rock drying, wetting, cracking, freezing, thawing, etc.
Soil moisture
Springs
Storage
Sublimation
Subsurface flows
Terrestrial and Aquatic ecosystems
Wetlands, Coral reefs, etc.
Thermal stripping
Transport
Vapour, liquid, ice
Water table

Non-Exhaustive List of Elements to Incorporate in Hydrosocial Models (generated by the Hydro Cycle Working Group)

Rebecca L. Farnum* (King's College London), Ruth Macdougall (Independent Artist), and Charlie Thompson (IAEA)

Political, Economic, Cultural Aspects

Agriculture

Biodiversity and environmental concerns

Bioenergy

Colours of water (blue, green, grey, etc.)

Cloud seeding

Consumption patterns

Consumptive vs. Non-consumptive uses

Corporate vs. national vs. regional vs.
household vs. individual uses of water

Dams

Ecosystems goods and services

Efficiency

Gains, losses, and the paracommons

Fisheries and aquaculture

Industries

Metaphysical and Spiritual Issues

Outflow

Political borders

Pumping

Quality

Pollution (acid rain, ocean plastics, etc.)

Recreation (water parks, swimming, etc.)

Recycled water

Manufactured reservoirs

Rural vs. Urban use

Securities (food, water resources, state,
energy, community, economic, etc.)

Transport

Waterways

Users and sectors

Virtual water

Use in services

‘Water flows uphill to money’

Water-Energy-Food Nexus

Wastewater attitudes

Elements to Incorporate (generated by the Hydro

Cycle Working Group) Rebecca L. Farnum* (King’s

College London), Ruth Macdougall (Independent

CREATING YOUR OWN HYDROSOCIAL CYCLE

- Local Water & Sewer Department Website
 - <https://www.pgh2o.com/your-water>
- USGS Water Use in the United States
 - https://www.usgs.gov/mission-areas/water-resources/science/water-use-united-states?qt-science_center_objects=0#qt-science_center_objects
- Our World in Data, Global Water Use
 - <https://ourworldindata.org/water-use-stress>

Map of US Aquifers



THE PROMISE OF TECHNOLOGY?



AN OPPORTUNITY FOR INTERDISCIPLINARY COLLABORATION?

SCIENCE – IS THE SCIENCE SOUND AND
ACCURATE?

IS THIS METHOD POSSIBLE ON A LARGER
SCALE?

MATH - WOULD IT REALLY PAY FOR ITSELF?

SOCIAL STUDIES – WHY MUST
TECHNOLOGY BE APPROPRIATE TO THE
SETTING, ESPECIALLY IN DEVELOPING
COUNTRIES?

HOW MIGHT YOUNGER STUDENTS REACT
TO THIS?

LANGUAGE ARTS – RESEARCH AND WRITE
AN ARGUMENT/INFORMATIVE SPEECH
ABOUT APPROPRIATE TECHNOLOGY



MAUDE BARLOW ON THE RIGHT TO WATER (2003)

MAUDE BARLOW, AUTHOR OF **BLUE GOLD**, WILL DESCRIBE THE MOVEMENT TO GUARANTEE A WATER-SECURE FUTURE BASED ON CONSERVATION, EQUITY AND THE PUBLIC GOOD.

THIS SPEECH WAS GIVEN AT THE 2003 BIONEERS NATIONAL CONFERENCE. SINCE 1990, BIONEERS HAS ACTED AS A FERTILE HUB OF SOCIAL AND SCIENTIFIC INNOVATORS WITH PRACTICAL AND VISIONARY SOLUTIONS FOR THE WORLD'S MOST PRESSING ENVIRONMENTAL AND SOCIAL CHALLENGES.

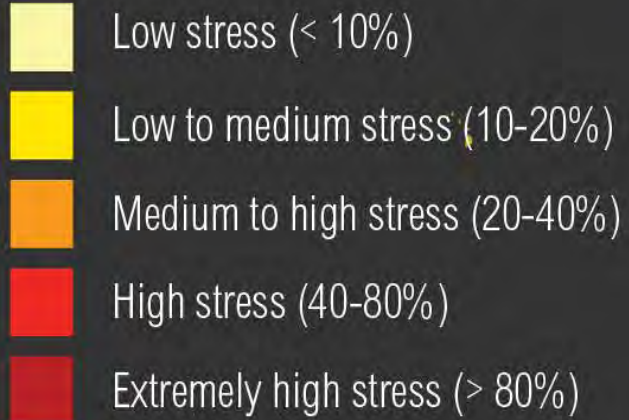
5:44 TO 14:40

MAUDE BARLOW: THE COMMODIFICATION AND PRIVATIZATION OF WATER VS. THE RIGHT TO WATER



WATER STRESS BY COUNTRY

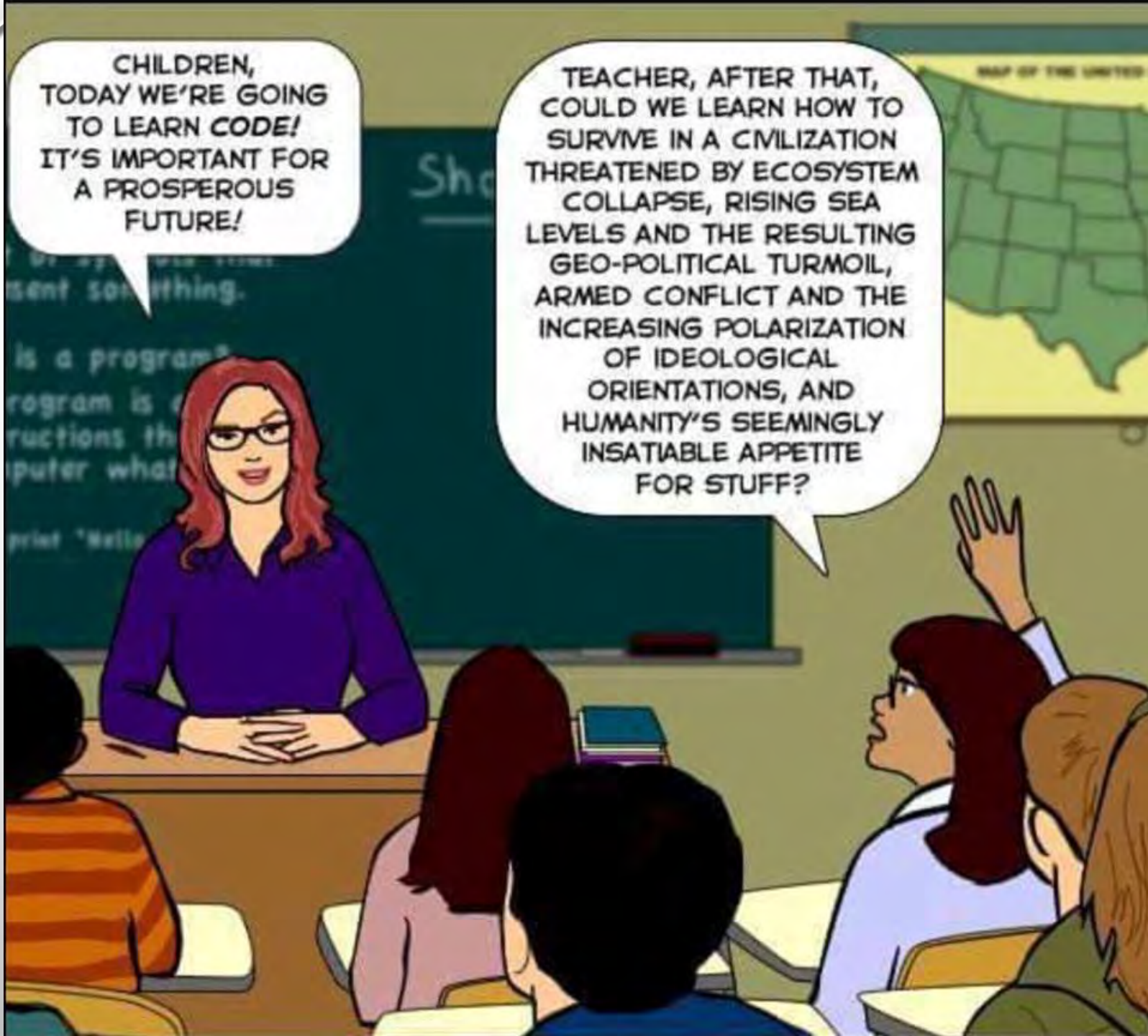
ratio of withdrawals to supply



This map shows the average exposure of water users in each country to water stress, the ratio of total withdrawals to total renewable supply in a given area. A higher percentage means more water users are competing for limited supplies. Source: WRI Aqueduct, Gassert et al. 2013

CHILDREN,
TODAY WE'RE GOING
TO LEARN **CODE**!
IT'S IMPORTANT FOR
A PROSPEROUS
FUTURE!

TEACHER, AFTER THAT,
COULD WE LEARN HOW TO
SURVIVE IN A CIVILIZATION
THREATENED BY ECOSYSTEM
COLLAPSE, RISING SEA
LEVELS AND THE RESULTING
GEO-POLITICAL TURMOIL,
ARMED CONFLICT AND THE
INCREASING POLARIZATION
OF IDEOLOGICAL
ORIENTATIONS, AND
HUMANITY'S SEEMINGLY
INSATIABLE APPETITE
FOR STUFF?



"When we teach honestly about the frightening constellation of global forces that threatens the survival of whole cultures, of ecosystems, and of the very planet itself, we can't ignore the potential impact that this may have on our students. Our pedagogy has to be more political: We need to invite students to consider alternatives. We need to invite them to *become* a part of building alternatives. They must recognize that they can make a difference, with others — and that engagement in the world can defeat cynicism." *From Rethinking Globalization*

world water day





UN WATER
22 MARCH
WORLD
WATER
DAY

2021 Valuing water

#Water2me

Learn

Share

Act

VALUING WATER

Water means different things to different people.


This conversation is about what water means to you.

How is water important to your home and family life, your livelihood, your cultural practices, your wellbeing, your local environment?

By recording - and celebrating - all the different ways water benefits our lives, we can value water properly and safeguard it effectively for everyone.



WORLD WATER DAY MONDAY, MARCH 22, 2021

- WORLD WATER DAY CELEBRATES WATER AND RAISES AWARENESS OF THE 2.2 BILLION PEOPLE LIVING WITHOUT ACCESS TO SAFE WATER. IT IS ABOUT TAKING ACTION TO TACKLE THE GLOBAL WATER CRISIS AND ACHIEVING SUSTAINABLE DEVELOPMENT GOAL 6: WATER AND SANITATION FOR ALL BY 2030.
 - **THE THEME OF WORLD WATER DAY 2021 IS VALUING WATER.** BEYOND THE ISSUES OF PRICING, THIS TOPIC INCLUDES THE ENVIRONMENTAL, SOCIAL AND CULTURAL VALUE PEOPLE PLACE ON WATER.
 - [HTTPS://WWW.WORLDWATERDAY.ORG/LEARN](https://www.worldwaterday.org/learn)
- 

BBC'S PROJECT 17

SEVENTEEN 17 YEAR-OLDS TALK ABOUT THE 17 SDGS

The screenshot shows the BBC Project 17 website. At the top, the BBC News World Service logo is on the left, and the title "PROJECT 17" is in large, bold, white letters on a pink background. Below the title is a navigation bar with links for "Home", "Episodes", "Clips", and "Podcast".

The main content area is divided into several sections:

- Left sidebar:** Features The Open University logo and a large image of a diverse group of young people at a protest or rally. Below this is a link icon and the text "How education is crucial in reducing inequality" and "Find out more about the Sustainable Development Goals on the Open University website".
- Right sidebar:** Titled "Available now", it features a video player showing a young woman named Yolanda from South Africa. Below the video is the text "Goal 4: Quality education" and "All available episodes (4 total)".
- Bottom row:** Three video thumbnails are displayed, each with a play button and a duration: 5:15, 5:10, and 4:11.

"ACCESS TO CLEAN WATER FOR ALL" IS GOAL SIX IN THE UN'S SUSTAINABLE DEVELOPMENT GOALS, A SET OF TARGETS ANNOUNCED IN 2015 TO TRANSFORM LIVES AROUND THE WORLD BY 2030.

THIS VIDEO IS PART OF **PROJECT 17**, A WORLD SERVICE SERIES PRODUCED IN COLLABORATION WITH THE OPEN UNIVERSITY, IN WHICH 17-YEAR-OLDS LOOK AT PROGRESS ON THE UN'S 17 GOALS.

IT WAS FILMED BEFORE THE CORONAVIRUS PANDEMIC AND SO SOCIAL DISTANCING HAS NOT BEEN OBSERVED.


VIDEO BY NJOROGI MUIGAI AND ELEANOR LAYHE

RELEASE DATE:

15 JANUARY 2021

[HTTPS://WWW.BBC.CO.UK/PROGRAMMES/P0943QFS](https://www.bbc.co.uk/programmes/p0943qfs)

Home Episodes Clips Podcast



▶

One girl's quest for clean water

Seventeen-year-old Joyce lives in Rwanda, Africa. She set out to discover out why some rural communities in the country don't have access to clean water.

She heard about the dangers some residents face trying to obtain water, and met people who are working to create solutions.

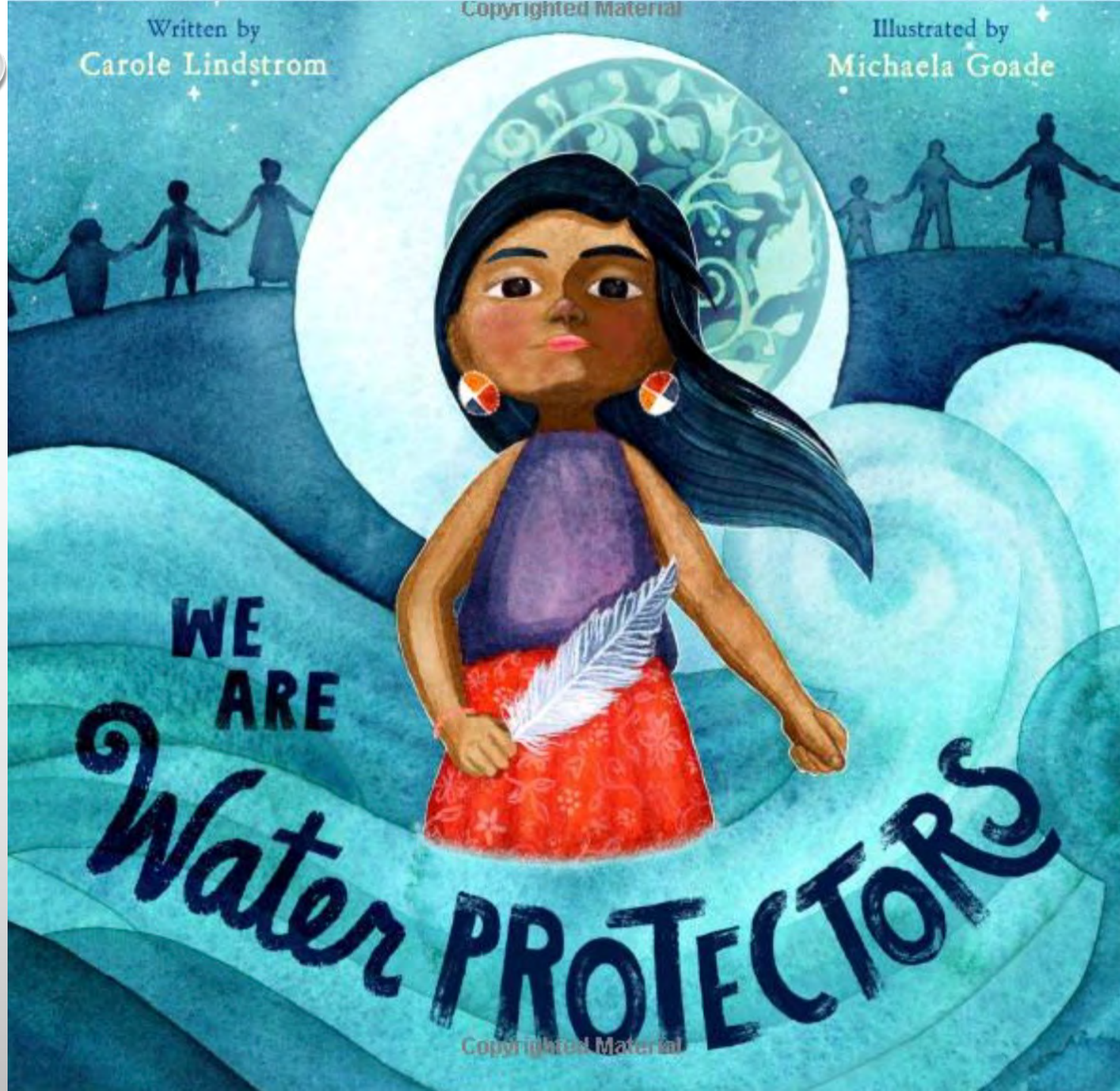
This clip is from

PROJECT 17

Written by
Carole Lindstrom

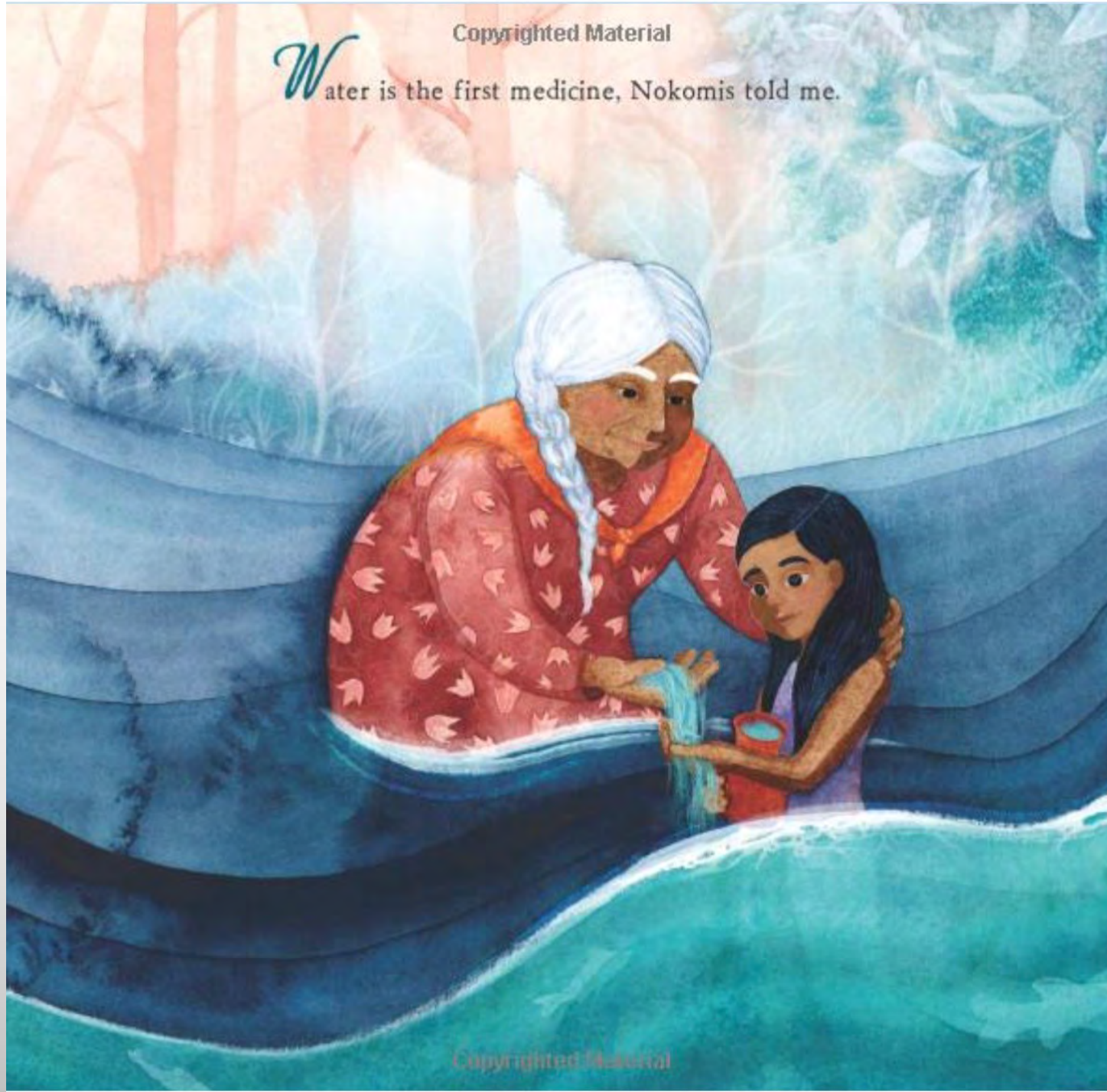
Copyrighted Material

Illustrated by
Michaela Goade



Copyrighted Material

Water is the first medicine, Nokomis told me.



WE ARE WATER PROTECTORS READ ALOUD (5 MINUTES)



EARTH STEWARD AND WATER PROTECTOR PLEDGE

I will do my best to honor Mother Earth and all its living beings, including the water and land. I will always remember to treat the Earth as I would like to be treated.

I will treat . . .
the winged ones,
the crawling ones,
the four-legged,
the two-legged,
the plants,
trees,
rivers,
lakes,
the Earth
with kindness and respect.

I pledge to make this world a better place by being a steward of the Earth and a protector of the water.

My Name

Today's Date

Copyrighted Material

WATER PROTECTORS HOLD THEIR GROUND IN WILD RICE COUNTRY (YES! MAGAZINE)

WINONA LADUKE

🕒 5 MIN READ

FEB 3, 2021




Environmental activist Winona LaDuke, center, alongside other Water Protectors, stand in front of the construction site for the Line 3 oil pipeline near Palisade, Minnesota, on Jan. 9, 2021.

PHOTO BY KEREM YUCEL / AFP / GETTY IMAGES





“WE ARE NOT PROTESTORS, WE ARE WATER
PROTECTORS.”

- [HTTPS://WWW.PRI.ORG/STORIES/2016-10-31/STANDING-ROCK-ACTIVISTS-DONT-CALL-US-
PROTESTERS-WERE-WATER-PROTECTORS](https://www.pri.org/stories/2016-10-31/standing-rock-activists-dont-call-us-protesters-were-water-protectors)
- 

THE U.N. AND WATER

ONE OF THE MOST IMPORTANT RECENT MILESTONES HAS BEEN THE RECOGNITION IN JULY 2010 BY THE UNITED NATIONS GENERAL ASSEMBLY OF THE HUMAN RIGHT TO WATER AND SANITATION. THE ASSEMBLY RECOGNIZED THE RIGHT OF EVERY HUMAN BEING TO HAVE ACCESS TO ENOUGH WATER FOR PERSONAL AND DOMESTIC USES, MEANING BETWEEN 50 AND 100 LITRES OF WATER PER PERSON PER DAY.

THE WATER MUST BE SAFE, ACCEPTABLE AND AFFORDABLE.

THE WATER COSTS SHOULD NOT EXCEED 3 PER CENT OF HOUSEHOLD INCOME.

MOREOVER, THE WATER SOURCE HAS TO BE WITHIN 1,000 METRES OF THE HOME AND COLLECTION TIME SHOULD NOT EXCEED 30 MINUTES.

[HTTPS://WWW.UN.ORG/EN/SECTIONS/ISSUES-DEPTH/WATER/](https://www.un.org/en/sections/issues-depth/water/)

MORE FROM MAUDE BARLOW



Our Right to Water:

*A People's Guide to Implementing the United Nations'
Recognition of the Right to Water and Sanitation*

Introduction	pg 4
Why do we need the Right to Water and Sanitation?	pg 6
Why did it take so long to get the Right to Water and Sanitation?	pg 9
What do the two Right to Water and Sanitation resolutions mean?	pg 12
What obligations do the Right to Water and Sanitation resolutions confer on governments?	pg 15
How should the global water justice movement promote the Right to Water and Sanitation?	pg 18
Conclusion	pg 21



2.5 billion

people lack adequate sanitation facilities



748 million

people use unsafe drinking water sources

7% Malaria

11% Diarrhea

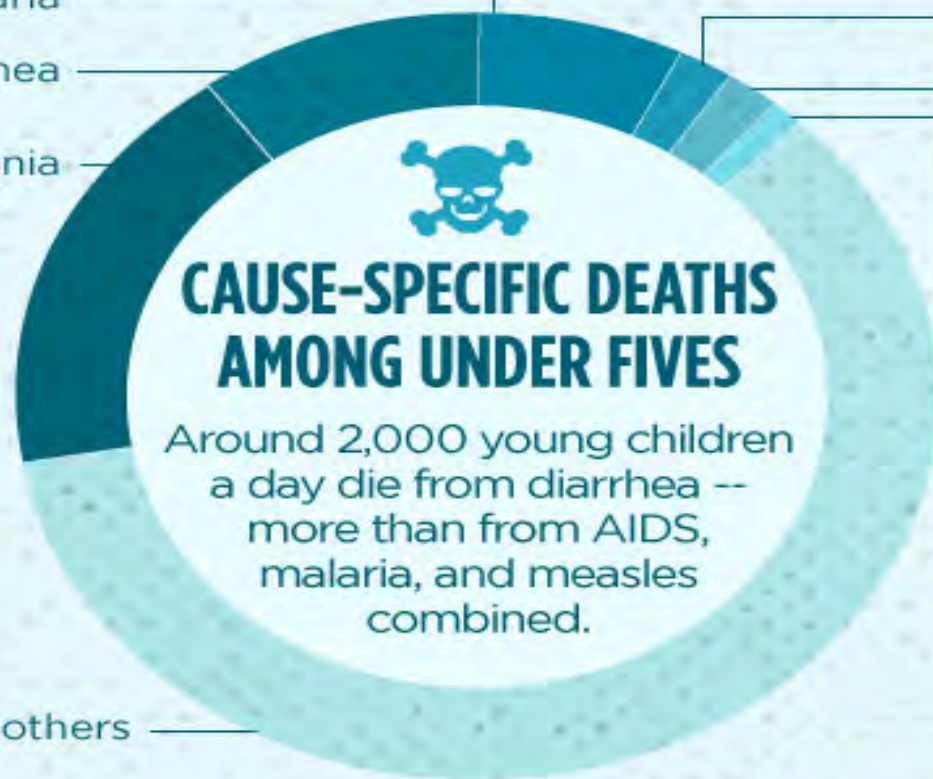
18% Pneumonia

2% Meningitis

2% AIDS

1% Measles

59% All others



1.1 billion

people practice open defecation



80%

of sewage in developing countries is discharged untreated directly into water bodies

ESTIMATED DIARRHEA DEATHS IN UNDER-FIVES CAUSED BY POOR ACCESS TO WATER/SANITATION



3.5 million

people die each year from inadequate water supply, sanitation and hygiene.

378,694
Sub Saharan Africa

265,412
Southern Asia

61,209
Rest of the world



705,315 Total

SOURCES: U.N. Water, WHO, WaterAid. | Designed by Inez Torre/CNN



ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL

BEFORE COVID-19

DESPITE PROGRESS,
BILLIONS STILL LACK
WATER AND SANITATION SERVICES



2.2 BILLION PEOPLE
LACK SAFELY MANAGED
DRINKING WATER
(2017)



4.2 BILLION PEOPLE
LACK SAFELY MANAGED
SANITATION
(2017)



TWO IN FIVE
HEALTH CARE FACILITIES
WORLDWIDE HAVE
NO
SOAP AND WATER OR
ALCOHOL-BASED
HAND RUB
(2018)



COVID-19 IMPLICATIONS



3 BILLION
PEOPLE WORLDWIDE
LACK BASIC HANDWASHING
FACILITIES AT HOME
↓ ↓ ↓
THE MOST EFFECTIVE METHOD FOR
COVID-19 PREVENTION



WATER SCARCITY
COULD DISPLACE
700 MILLION PEOPLE
BY 2030



SOME COUNTRIES EXPERIENCE
A FUNDING GAP OF 61% FOR ACHIEVING
WATER AND SANITATION TARGETS



SUSTAINABLE
DEVELOPMENT **GOALS**

SUSTAINABLE DEVELOPMENT GOALS



[Home](#) [Episodes](#) [Clips](#) [Podcast](#)

Episodes

[All](#) [Available now \(4\)](#) [Next on \(12\)](#)



Goal 4: Quality education

Seventeen 17-year-olds tell us what they want from the UN Sustainable Development Goals.



Goal 3: Good health

Seventeen 17-year-olds tell us what they want from the UN Sustainable Development Goals.



Goal 2: Zero hunger

Seventeen-year-old Rosa wants to know why so many children in Guatemala are malnourished



Goal 1: No poverty

Millions of UK children live in poverty. Seventeen-year-old Lanre wants to know why

SUSTAINABLE DEVELOPMENT GOALS

[HTTPS://SDGS.UN.ORG/GOALS](https://sdgs.un.org/goals)

- HOW MANY GOALS ARE DIRECTLY RELATED TO WATER?
- HOW MANY GOALS OVERLAP WITH SDG 6?
- IN WHAT WAYS DO OTHER GOALS OVERLAP?



The Water Crisis Is A Women's Crisis

Access to water and sanitation is a global crisis. It's also a women's crisis. The burden of collecting water disproportionately falls to women and girls. Often overlooked is the inextricable linkage between Clean Water and Sanitation (SDG6) and Gender Equality (SDG5). To solve gender equality, we must solve the water crisis. And to solve the water crisis, we must unlock new sources of capital through innovative financing. Doing so will unleash the power and potential of girls and women globally.

[Read the full story 'water crisis is a women's crisis'.](#)



Ugandan Water Project

4m · 🌐



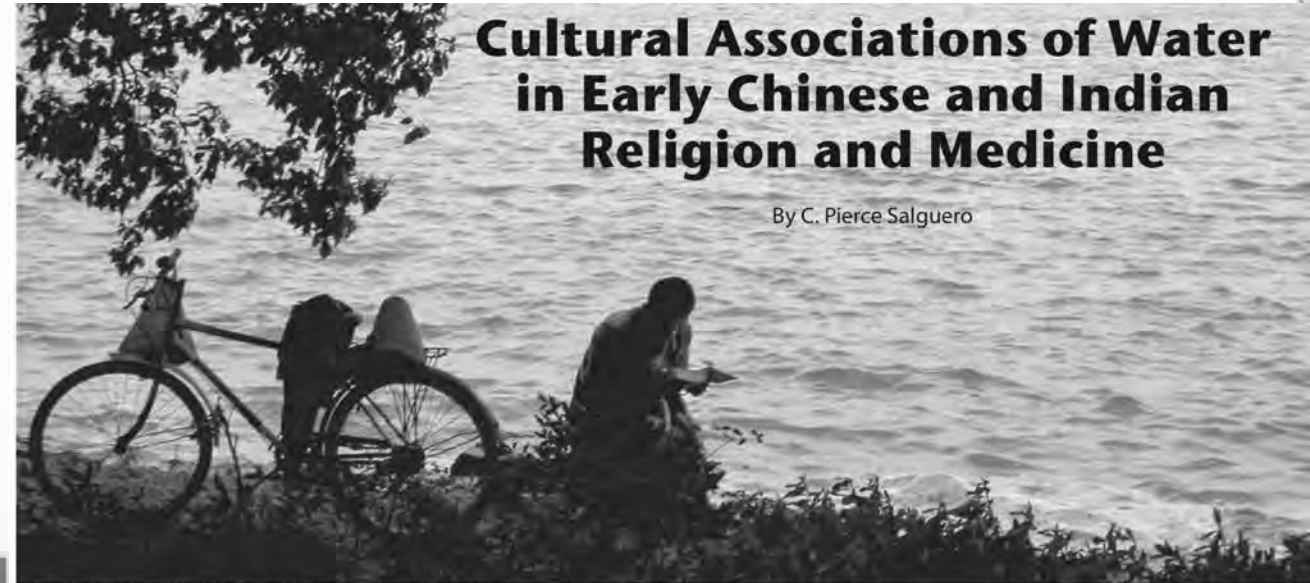
In Uganda, women and girls are most often tasked with the daily burden of collecting and treating water. This means the day when a community in Uganda receives convenient clean water access is a day when women and girls are empowered to return to school, start a business, enjoy their families, and thrive.



CULTURAL ATTITUDES TOWARDS WATER WHO

- 1. PROMOTE THE UNDERSTANDING THAT WATER AND CULTURE ARE INSEPARABLE ELEMENTS OF HUMAN LIFE. CULTURE SHOULD BE REGARDED AS THE PERMANENTLY EVOLVING SET OF DISTINCTIVE SPIRITUAL, MATERIAL, INTELLECTUAL AND EMOTIONAL FEATURES OF SOCIETY OR A SOCIAL GROUP. IT ENCOMPASSES – IN ADDITION TO ART AND LITERATURE – LIFESTYLES, WAYS OF LIVING TOGETHER, VALUE SYSTEMS, TRADITIONS AND BELIEFS.1 THE WAY WATER IS USED AND VALUED CONSTITUTES AN INTEGRAL PART OF A SOCIETY'S CULTURAL IDENTITY.
- 2. FOSTER THE DIALOGUE OF CULTURES TO FIND SOLUTIONS FOR WATER-RELATED PROBLEMS. CULTURAL DIVERSITY, STAKEHOLDER INVOLVEMENT AND INTERCULTURAL DIALOGUE SHOULD BE THE GUIDING PRINCIPLES FOR THE DEVELOPMENT OF AWARENESS RAISING, EDUCATIONAL AND CAPACITY BUILDING MATERIAL AND METHODS.
- 3. PROMOTE INCLUSIVE, SOLUTION-ORIENTED WATER GOVERNANCE THAT TAKES INTO ACCOUNT ALL FACETS OF CULTURAL DIVERSITY AND THAT SEEKS INFORMED CONSENSUS. INDIGENOUS KNOWLEDGE HOLDERS SHOULD BE INVOLVED AS FULL PARTNERS.

[HTTPS://SSWM.INFO/ARCTIC-WASH/MODULE-1-INTRODUCTION/FURTHER-RESOURCES-SUSTAINABILITY-RELATION-WATER-SANITATION/WATER%2C-SANITATION-AND-CULTURE](https://sswm.info/arctic-wash/module-1-introduction/further-resources-sustainability-relation-water-sanitation/water%2C-sanitation-and-culture)



Cultural Associations of Water in Early Chinese and Indian Religion and Medicine

By C. Pierce Salguero

Reading and relaxing by West Lake (Xihu) in Hangzhou, eastern China. Photo courtesy of the author.

Water and Asia



Water, Tradition, and Innovation Flowing through Japan's Cultural History

By Monika Dix

Floating torii gate at Shirahige Shrine, Lake Biwa, Shiga Prefecture, Japan. Source: © Shutterstock.

Water, a gift from nature, is an essential part of our daily lives. People use water every day, everywhere, for everything—often without much consideration for its significance in terms of the larger social, cultural, historical, economic, and environmental implications for the twenty-first century. As an island nation, Japan has a deep connection with water in various ways, creating a cultural history where water and life go hand in hand. In Japan, water bridges past and present, tradition and

masterpieces of Japanese literature, art, and architecture such as *The Tale of Genji* and *The Phoenix Pavilion (Byōdō-in)* in Uji, which are still admired today as the fruits of Heian Japan's Golden Age. Today, Kyoto is one of the few cities in Japan combining historic temples, traditional Japanese houses, and prewar architecture with innovation, as is visible in Kyoto's modern central train station and the city's expansive high-speed transit system.

Situated in the Yamashiro Basin, Kyoto is surrounded by three rivers,

While it invariably has been recognized as a necessary part of human life, water has been understood and spoken about in a variety of ways across cultures over the course of history. This article briefly provides an overview of the prevailing cultural associations of water in early Chinese and Indian traditions of religion and medicine. I take a comparative approach, drawing attention to both points of connection and difference between Chinese and Indian systems of thought. While it cannot be comprehensive in such few pages, it is hoped that this short piece may provide starting points for further exploration of the rich webs of connotations water has had in premodern societies globally, and in Asia in particular.



EDUCATION ABOUT ASIA

FALL 2017 WAS AN ISSUE DEVOTED TO WATER

The “Mundane Violence” of International Water Conflicts

by [Kimberley Thomas](#)

Statistics about water resources abound. Some, like the combined length of rivers in the United States (3.5 million miles), make for interesting but forgettable trivia. Others, like the number of people who experience severe water scarcity each year (four billion), declare an issue of urgent and global concern. The staggering magnitude and profound implications of this water crisis alone are difficult to comprehend, and yet the calamity is even further compounded by climate change and internatio...

Published [Fall 2017](#) in [Volume 22:2 \(Fall 2017\): Water and Asia](#).

References [China](#), [India](#), [Indonesia](#), [Mongolia](#), [Myanmar](#), [Pakistan](#), [Russia](#), [Turkmenistan](#), [Uzbekistan](#), [Vietnam](#), [China and Inner Asia](#), [South Asia](#), [Southeast Asia](#), [Economics](#), [International Relations](#), [Political Science](#)

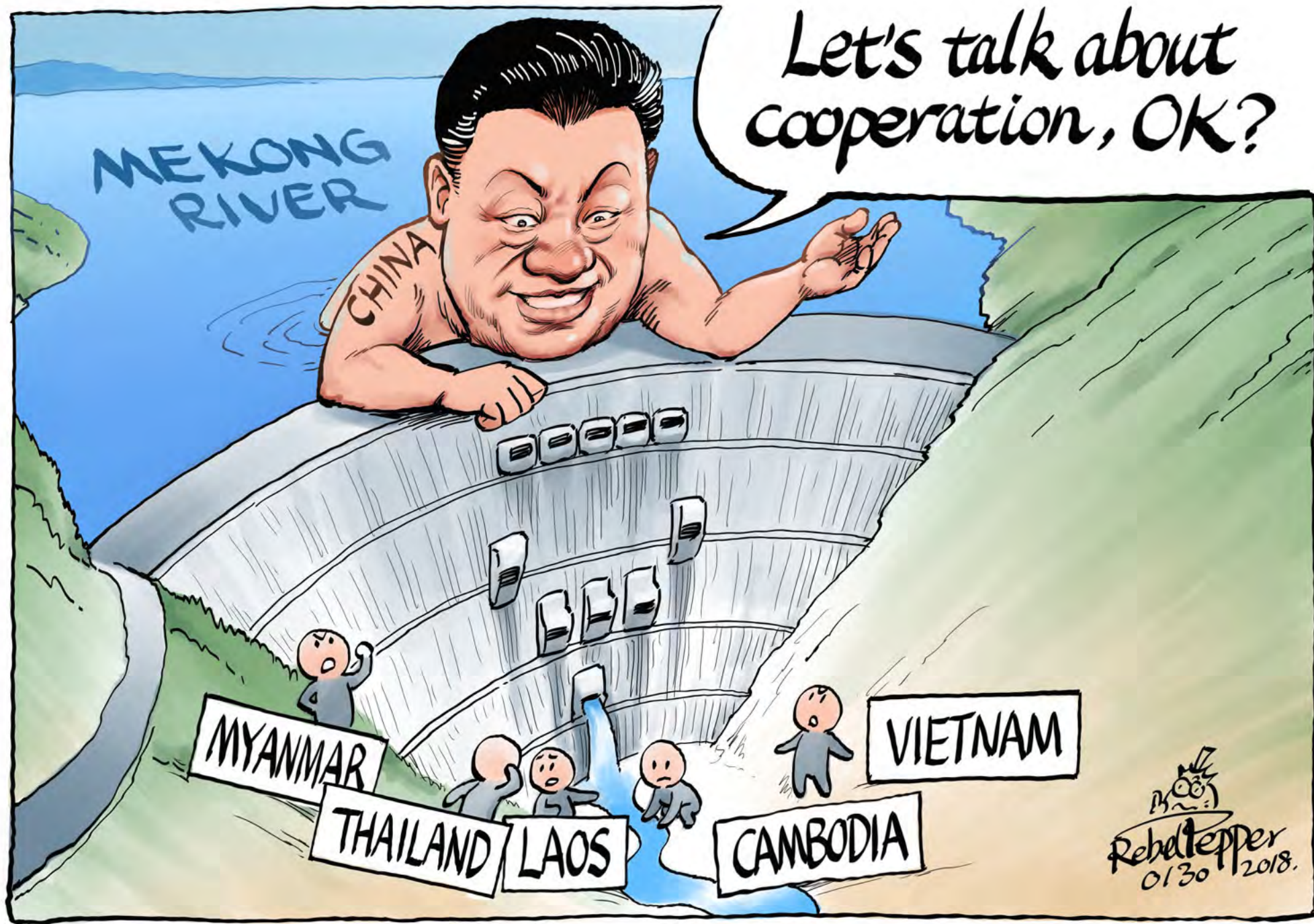
China’s Water Challenges: National and Global Implications

by [David A. Pietz](#)

China's environmental challenges have received wide attention in recent years. A variety of disturbing images and stories from media outlets have fueled a pervasive image of China as an environmental wasteland, while expanding scholarship has inventoried China's air, water, and land problems. Reasonable observers can disagree on the prescriptive responses necessary to address such challenges, but there seems little disagreement that a fundamental tension has existed between China's breakne...

Published [Fall 2017](#) in [Volume 22:2 \(Fall 2017\): Water and Asia](#).

References [China](#), [China and Inner Asia](#), [Environmental Studies](#), [Geography](#), [International Relations](#), [Political Science](#)





Rebel Tepper
©RFA.04.16.20.



RESOURCES

- BIONEERS: [HTTPS://BIONEERS.ORG/ABOUT/PURPOSE/](https://BIONEERS.ORG/ABOUT/PURPOSE/)
- YES! MAGAZINE: WATER PROTECTORS [HTTPS://WWW.YESMAGAZINE.ORG/OPINION/2021/02/03/WATER-PROTECTORS-PIPELINE-PALISADE-MINNESOTA](https://WWW.YESMAGAZINE.ORG/OPINION/2021/02/03/WATER-PROTECTORS-PIPELINE-PALISADE-MINNESOTA)
- WATER AND CONFLICT IN ASIA?
ASIA-PACIFIC CENTER FOR SECURITY STUDIES
SEPTEMBER 17, 1999 HONOLULU, HAWAII
- [HTTPS://APCSS.ORG/PUBLICATIONS/REPORT_WATER&CONFLICT_99.HTML](https://APCSS.ORG/PUBLICATIONS/REPORT_WATER&CONFLICT_99.HTML)
- ASIA'S WATER WARS: IS THE MEKONG STILL A RIVER?

[HTTPS://WWW.WHATSORB.COM/CLIMATE/ASIA-S-WATER-WAR-THE-POWER-OF-CHINA-OVER-THE-IMPORTANT-MEKONG-RIVER](https://WWW.WHATSORB.COM/CLIMATE/ASIA-S-WATER-WAR-THE-POWER-OF-CHINA-OVER-THE-IMPORTANT-MEKONG-RIVER)

FLORIDA WATER SUPPLY HACKED

[HTTPS://WWW.NYTIMES.COM/2021/02/08/US/OLDSMAR-FLORIDA-WATER-SUPPLY-HACK.HTML?SMID=FB-NYTIMES&SMTYP=CUR&FBCLID=IWAR148XII-DUOM9AJRJXHTNBNIYZZLWRDV2RXFIE7NKDG_2G7RPV2HUYPD](https://WWW.NYTIMES.COM/2021/02/08/US/OLDSMAR-FLORIDA-WATER-SUPPLY-HACK.HTML?SMID=FB-NYTIMES&SMTYP=CUR&FBCLID=IWAR148XII-DUOM9AJRJXHTNBNIYZZLWRDV2RXFIE7NKDG_2G7RPV2HUYPD)

RESOURCES CONTINUED

- **CHARACTERISTICS OF THE HYDROSOCIAL CYCLE: RE-ENVISIONING THE HYDRO CYCLE: THE HYDROSOCIAL SPIRAL AS A PARTICIPATORY TOOLBOX FOR WATER EDUCATION AND MANAGEMENT** REBECCA L. FARNUM* (KING'S COLLEGE LONDON), RUTH MACDOUGALL (INDEPENDENT ARTIST), AND CHARLIE THOMPSON (IAEA)
- [HTTP://WWW.REBECCALFARNUM.COM/WP-CONTENT/UPLOADS/2019/09/FARNUM-MACDOUGALL-THOMPSON-HYDROSOCIAL-SPIRAL.PDF](http://www.rebeccalfarnum.com/wp-content/uploads/2019/09/farnum-macdougall-thompson-hydrosocial-spiral.pdf)
- EDUCATION ABOUT ASIA: FALL 2017 ISSUE HIGHLIGHTED WATER AND ASIA.

ANCIENT WISDOM ABOUT WATER

UNDER HEAVEN NOTHING IS MORE SOFT AND YIELDING THAN WATER.
YET FOR ATTACKING THE SOLID AND STRONG, NOTHING IS BETTER;
IT HAS NO EQUAL.

THE WEAK CAN OVERCOME THE STRONG;
THE SUPPLE CAN OVERCOME THE STIFF.

UNDER HEAVEN EVERYONE KNOWS THIS,
YET NO ONE PUTS IT INTO PRACTICE.

THEREFORE THE SAGE SAYS:

HE WHO TAKES UPON HIMSELF THE HUMILIATION OF THE PEOPLE
IS FIT TO RULE THEM.

HE WHO TAKES UPON HIMSELF THE COUNTRY'S DISASTERS DESERVES
TO BE KING OF THE UNIVERSE.

THE TRUTH OFTEN SEEMS PARADOXICAL.

(TRANSLATION BY [GIA-FU FENG AND JANE ENGLISH](#))



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