

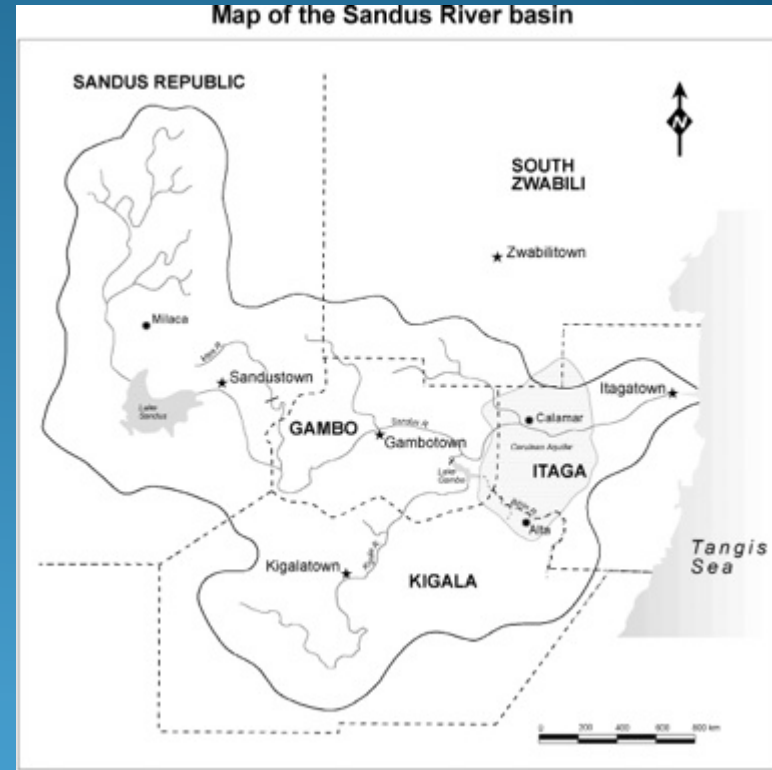
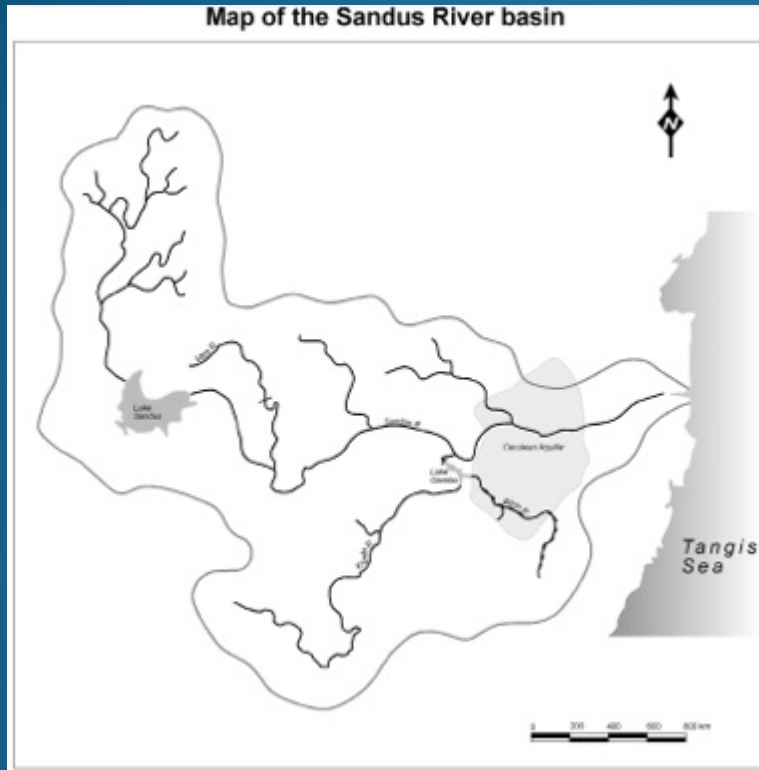
Lessons from 25 Years as a Hydropolitical Pracademic

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28 November 2018

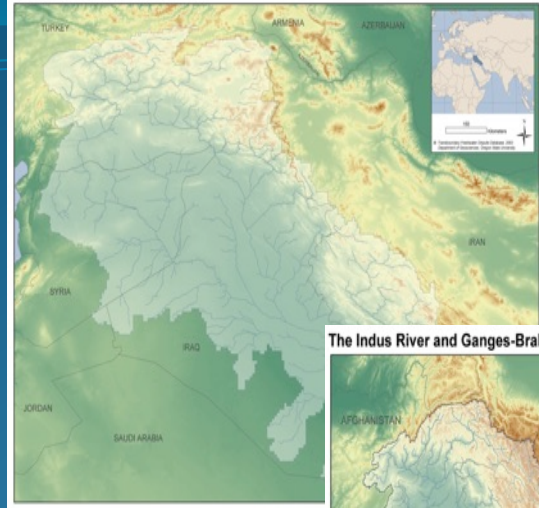
What is Water Conflict Management & Transformation??



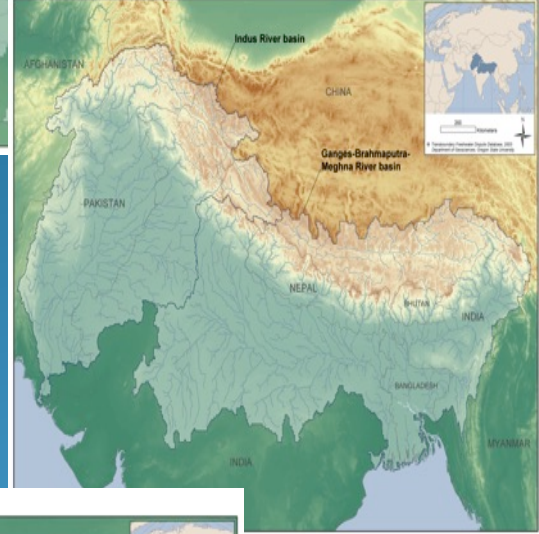
What changes when a border is present?

What capacity do we need to address the change?

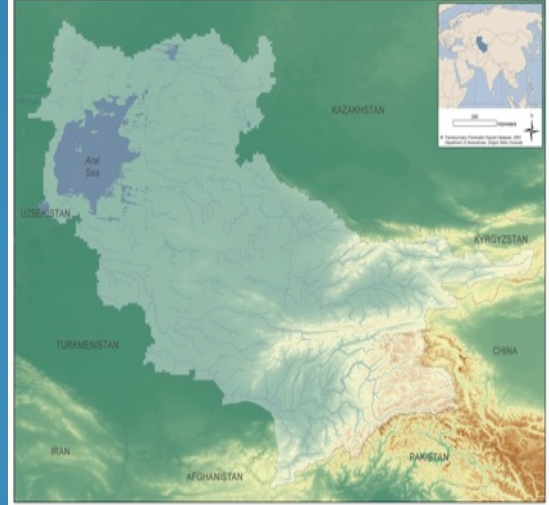
The Tigris-Euphrates River basin



The Indus River and Ganges-Brahmaputra-Meghna River basins



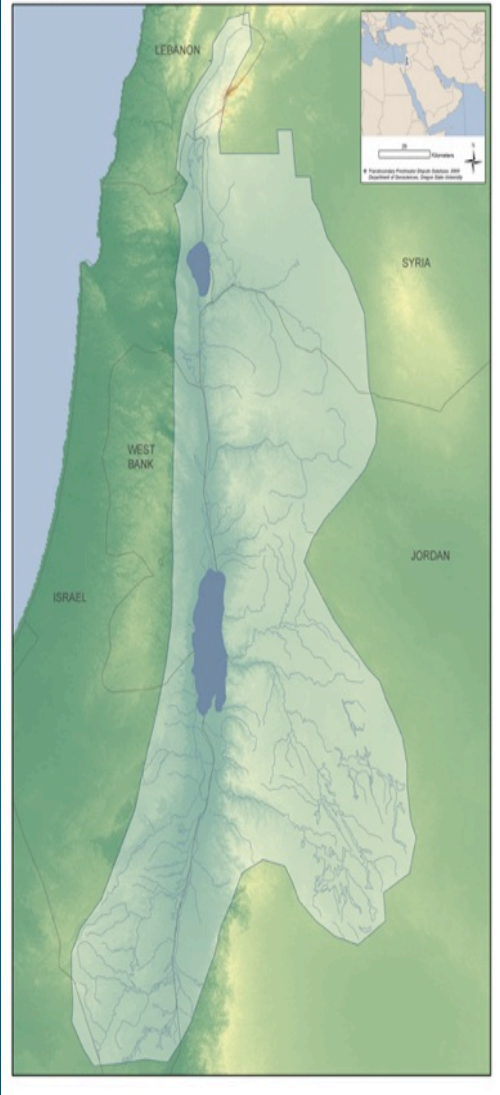
The Aral Sea basin



The Nile River basin



The Jordan River basin



Decrease in
water
quantity/quality

Population,
variability &
economies
up

Human
suffering/death,
ecosystem
degradation, &
political tensions

??

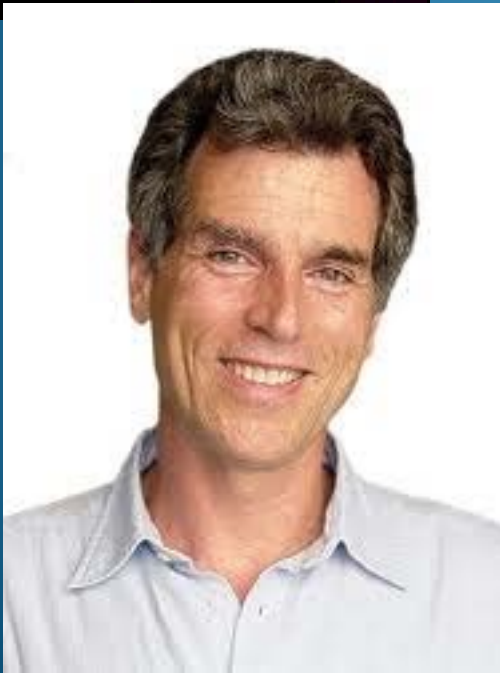
Cross border
violence & war

Environment,
Scarcity, and
Violence

THOMAS E. HOMER-DIXON

Scarcity → → Violence

“The renewable resource most likely to stimulate interstate resource war is river water.” 1991

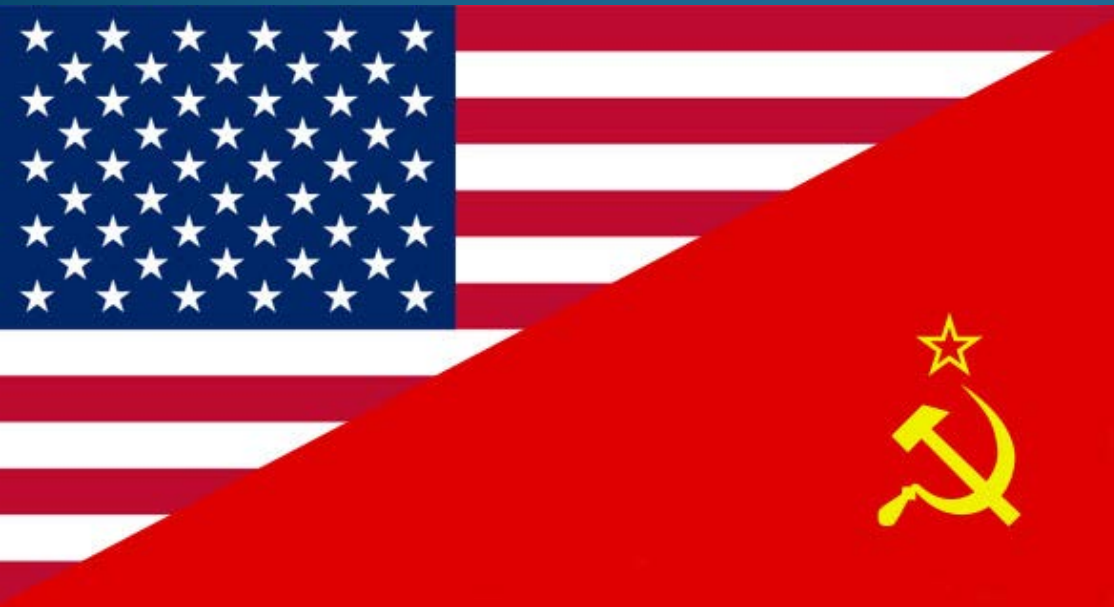


“Fierce competition for fresh water may well become a source of conflict and wars in the future.” Kofi Annan 2001

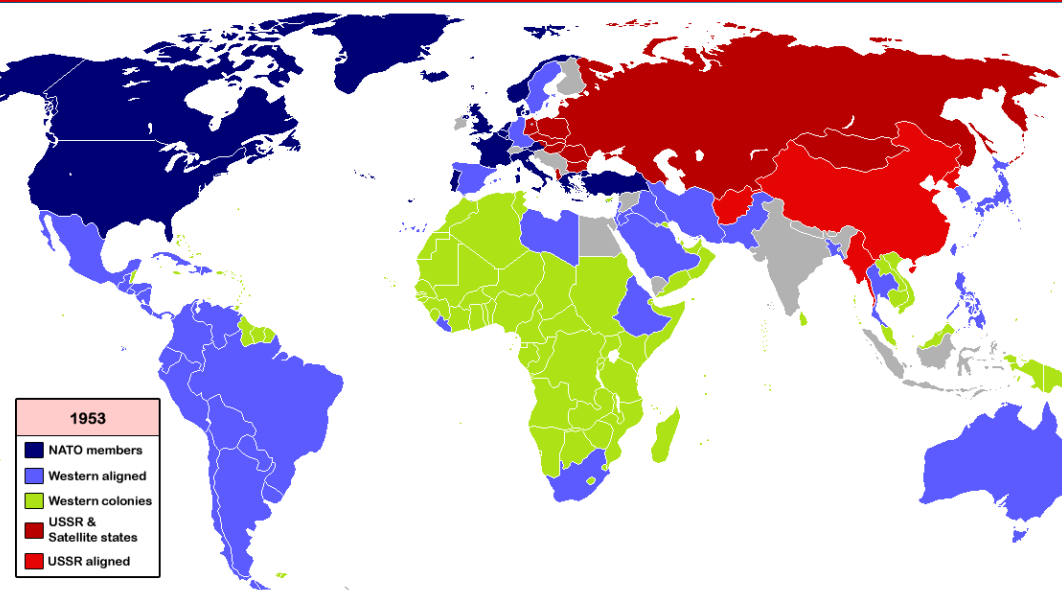
Lesson 1:

Context Shapes the Message:

People are people



Scientists and security community affirming their role and relevance.





- Project MEDEA (Measurements of Earth Data for Environmental Analysis), 1992
- NIC Environment Center, 1997
- Global Water Security: Intelligence Community Assessment, 2012
 - Formal agreement
 - History of collaboration
 - Allocation mechanism
 - Dispute Resolution mechanism

Decrease in
water
quantity/quality

Population,
variability &
economies
up

Human
suffering/death,
ecosystem
degradation, &
political tensions

??

Cross border
violence & war

Decrease in
water
quantity/quality

Population,
variability &
economies
up

Tensions draw focus
& resources, leading
to hydro-cooperation

??

Environmental
Peacemaking

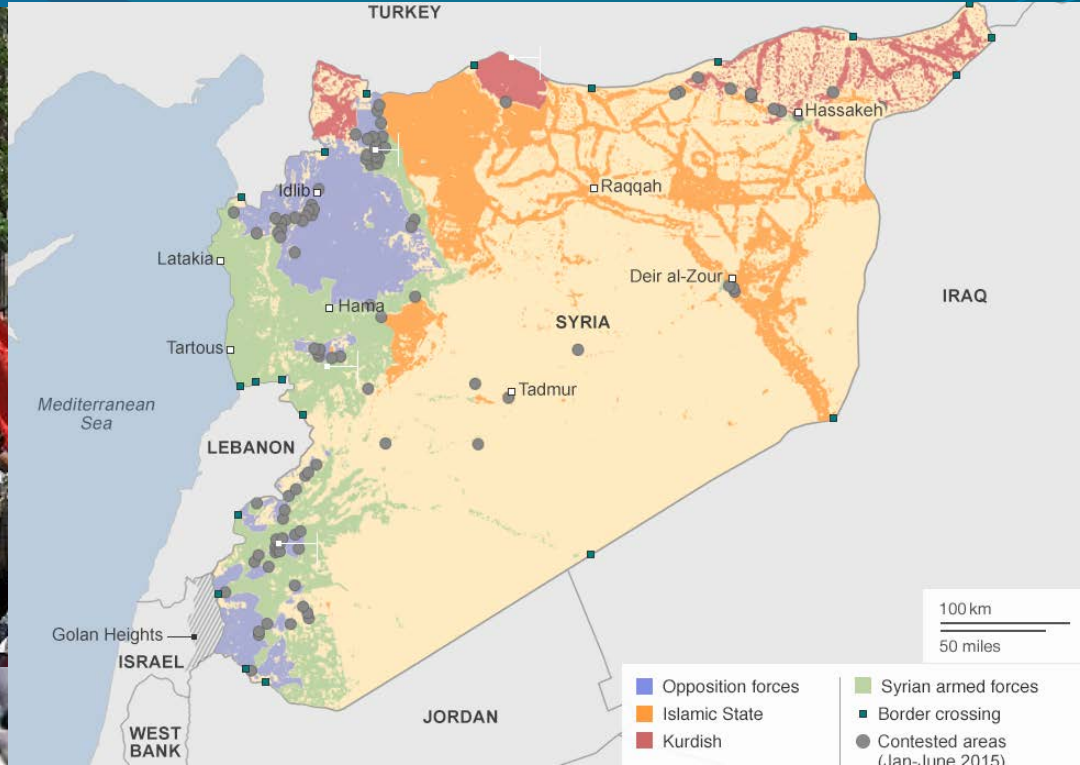
Decrease in
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Population,
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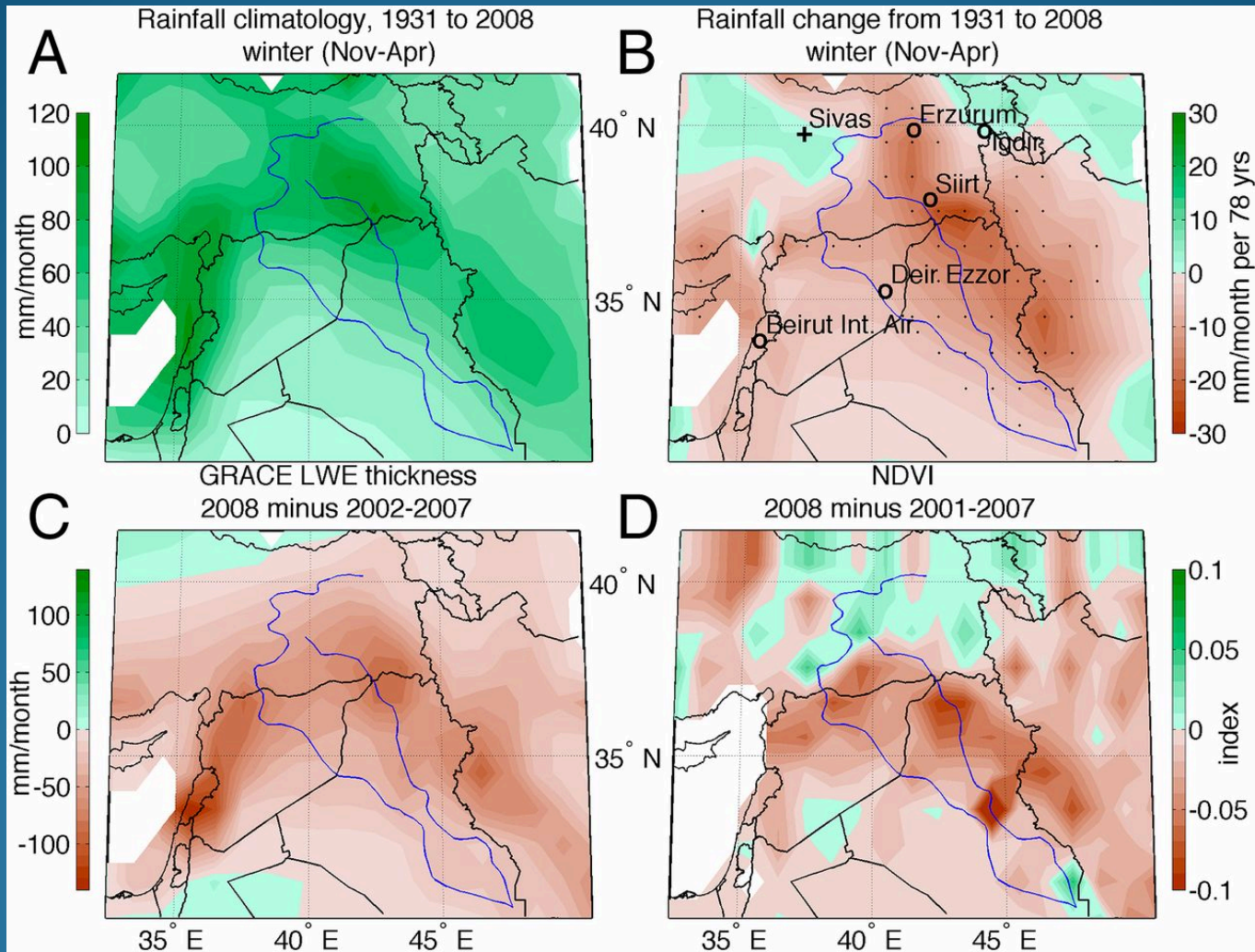
Human
suffering/death,
ecosystem
degradation, &
political tensions

??

National implosion
w/security
implications??

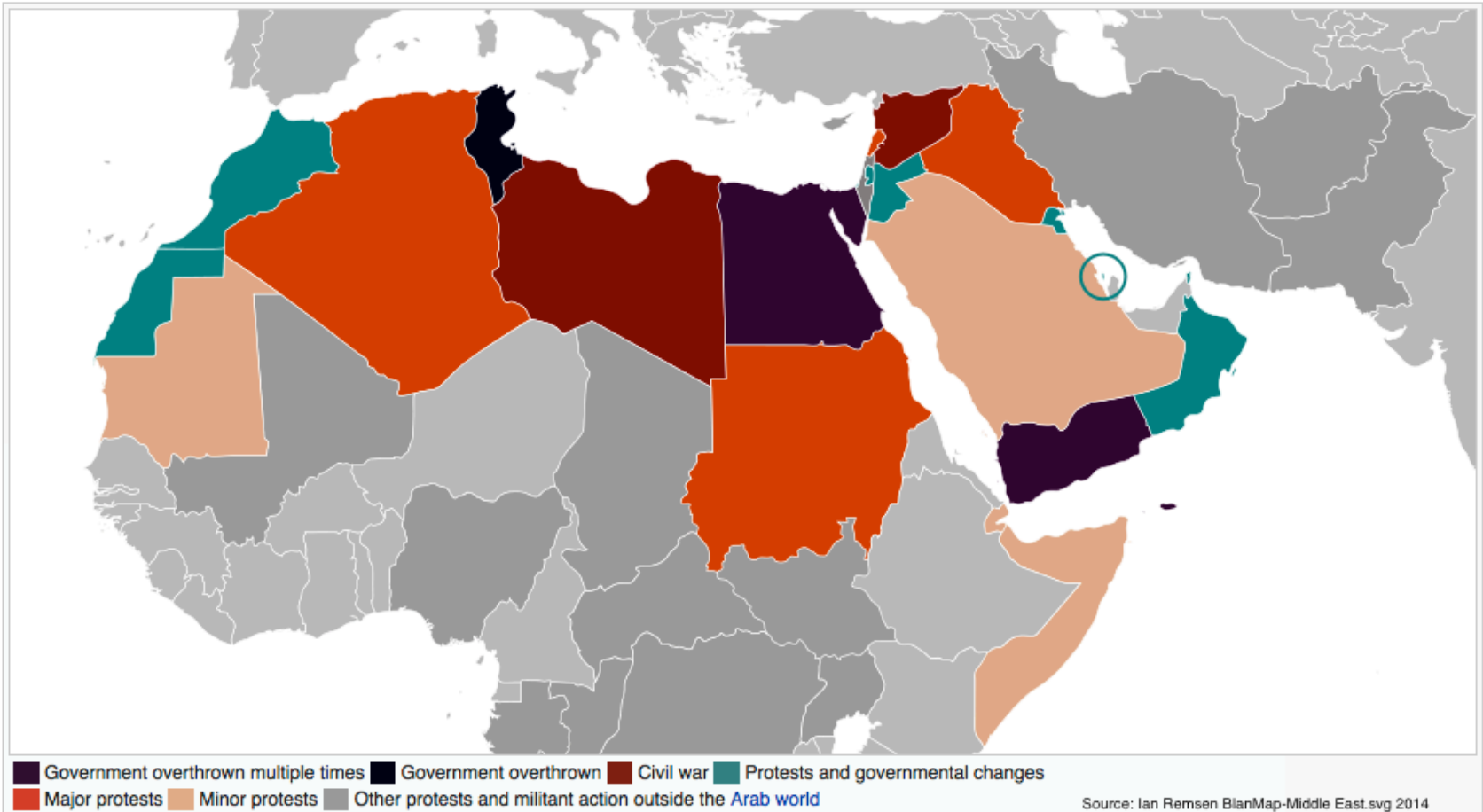


(A) **Observed winter (November–April) precipitation climatology, 1931–2008,**
(B) **UEA CRU version 3.1 data.**



Colin P. Kelley et al. PNAS 2015;112:3241-3246

Summary of conflicts by country [\[edit \]](#)



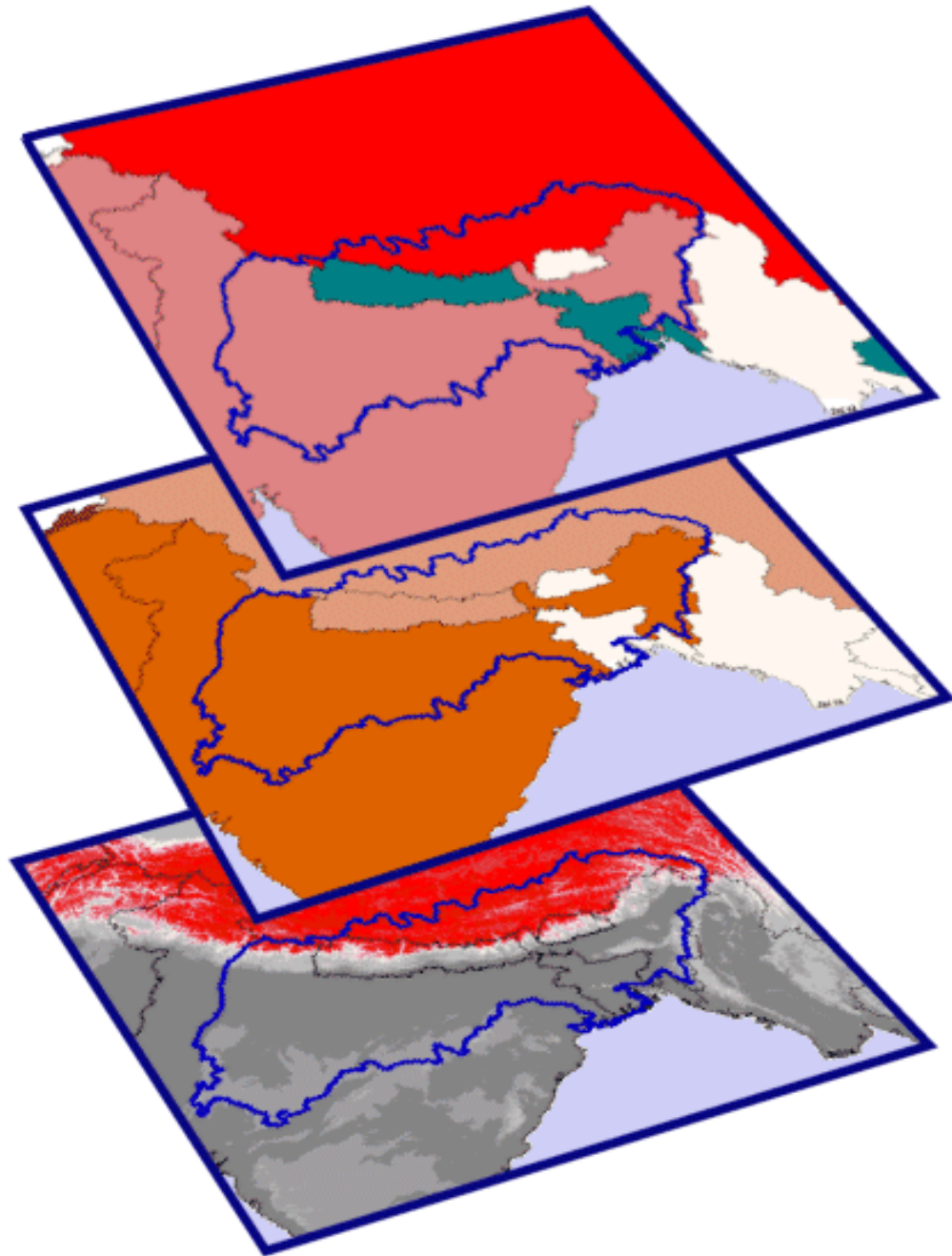
Lesson 2:

The issues are not what you think.

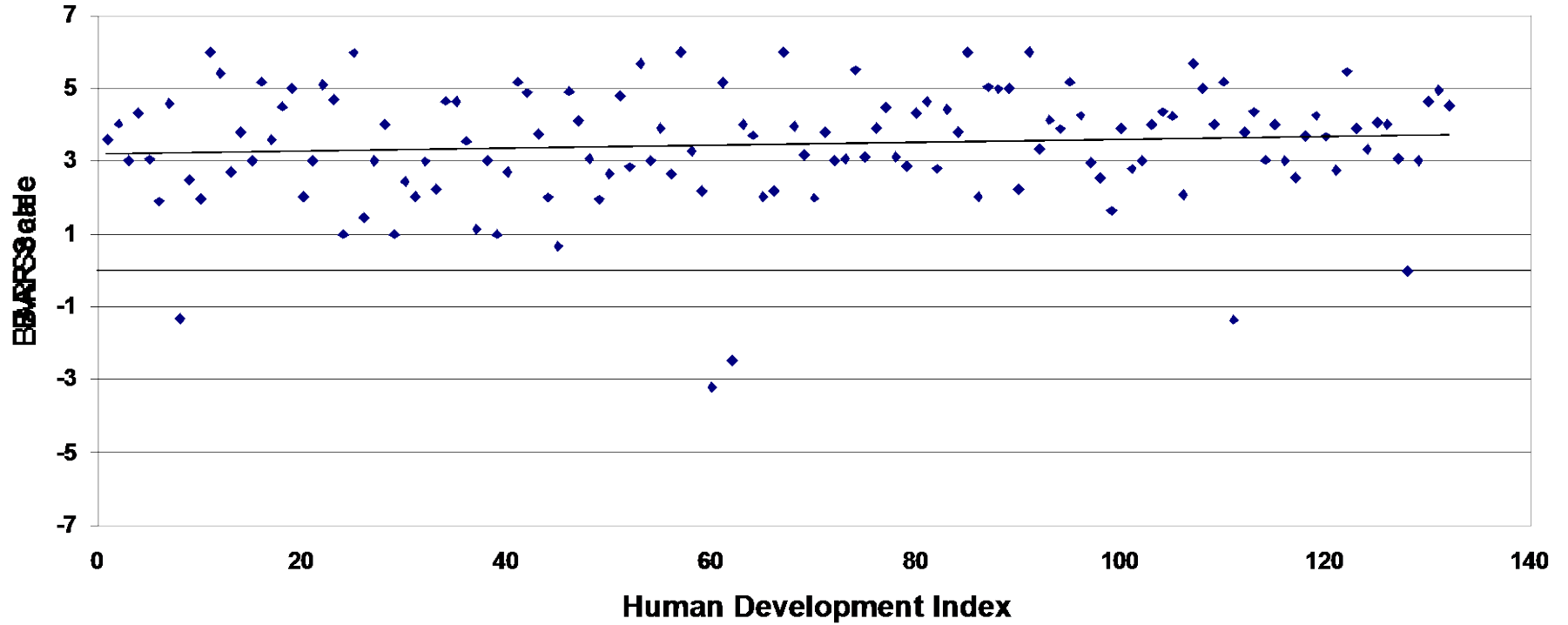
- Scarcity is not the driver of politics; it's about sudden change and institutional capacity
- Indicators of conflict also indicate cooperation

Basins@Risk GIS [minimize] [maximize] [close]

- International Basins (TFDD)
- Vote in 1997 UN Convention (TFDD)
- Ethnic Minorities (GEDS)
- Landcover (EROS Data Center)
- SWSI (Ohlsson)
- Population (NCGIA)
- Elevation (EROS Data Center)



Human Development Index Vs. BAR Scale (By Country)



BASINS AT RISK: Working Hypothesis

“The likelihood of conflict rises as the rate of change within the basin exceeds the institutional capacity to absorb that change.”

What *are* indicators?

Sudden physical changes or lower institutional capacity are more conducive to disputes:

- 1) Uncoordinated development: a major project *in the absence* of a treaty or commission
- 2) “Internationalized basins”
- 3) General animosity

WHAT TO DO ABOUT WATER?

NEGOTIATE IT

NERD BOX

The map displays nearly 2,000 incidents, involving conflict and collaboration alike, over shared river basins from 1990 to 2008. The circles in the sidebar (facing page) compare about 2,200 events—including another 200 disputes over resources other than shared rivers—from the same period.

HOTSPOT

Later this year, Turkey will complete the Ilisu Dam on the Tigris River, part of a national push to boost electrical power capacity. Besides submerging the 12,000-year-old settlement of Hasankeyf, the dam may damage the already fragile Mesopotamian marshes downstream in Iraq. Germany, Austria, and Switzerland withdrew funding for the dam in 2009.

HOTSPOT

Tajikistan is planning the Rogun hydroelectric dam on a tributary of the Amu Darya river. The dam would be the tallest in the world and help alleviate the country's energy shortages. Uzbekistan, fearing irrigation shortfalls, has imposed tariffs and travel restrictions on its neighbor to the east.

HOTSPOT

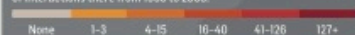
In a channel of the Mekong two miles north of the Cambodian border, Laos intends to construct the Don Sahong Dam. The power project could affect fishing in Cambodia, Vietnam, and Thailand, so those countries are demanding a say in the plan.

HOTSPOT

In 2011, Ethiopia began building the Grand Renaissance Dam on the Blue Nile, a tributary that provides about 60 percent of the Nile's water. Egypt and Sudan are concerned about the dam's effect on water flow downstream. Ethiopia says it will finish the project in 2017.

KEY

The color of each international river basin indicates the total number of interactions there from 1990 to 2008.



Circle size indicates the number of hostile events in each basin.



HEAT MAP

WHERE WILL THE WORLD'S WATER CONFLICTS ERUPT?

DATA VISUALIZATION BY PITCH INTERACTIVE

As the climate shifts, rivers will both flood and dry up more often, according to the latest report from the Intergovernmental Panel on Climate Change. Shortages are especially likely in parts of the world already strapped for water, so political scientists expect feuds will become even more intense. To track disputes worldwide, researchers at Oregon State University spent a decade building a comprehensive database of international exchanges—both conflicts and alliances—over shared water resources. They found that countries often begin disputes belligerently but ultimately reach peaceful agreements. Says Aaron Wolf, the geographer who leads the project, “For me the really interesting part is how even Arabs and Israelis, Indians and Pakistanis, are able to resolve their differences and find a solution.” **KATIE PECK**

RIVER LOCATIONS COURTESY THE GLOBAL RUNOFF DATA CENTRE. 36088 HOBLENZ, GERMANY

EVENTS BY INTENSITY

The researchers graded each exchange on a 15-point scale. Collaborative interactions outnumber hostile ones.



Lesson 3:

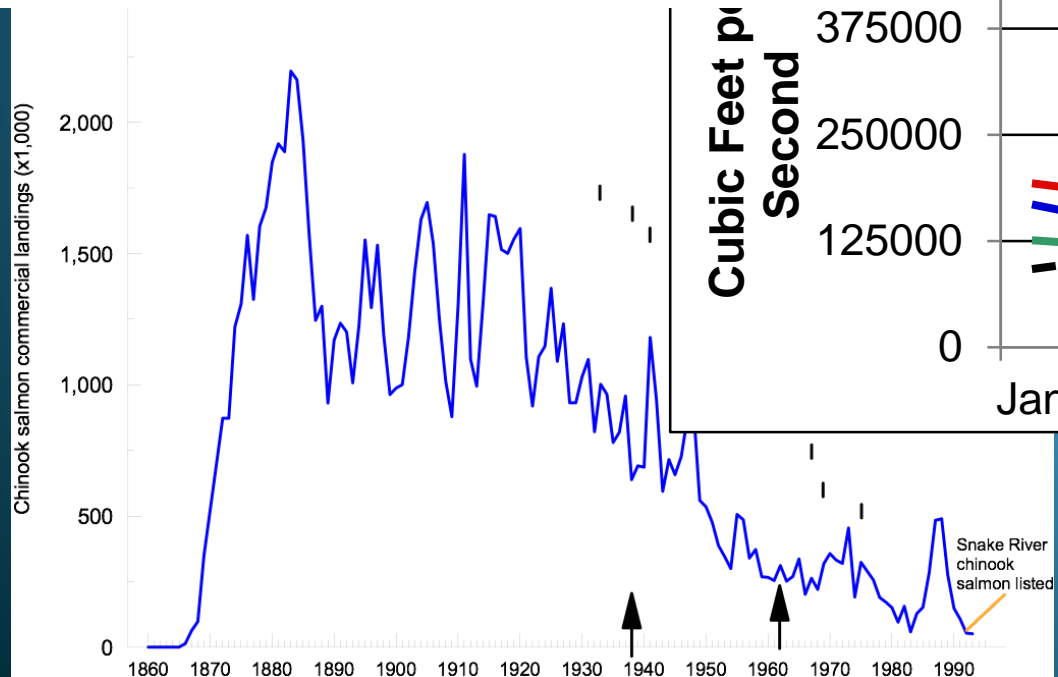
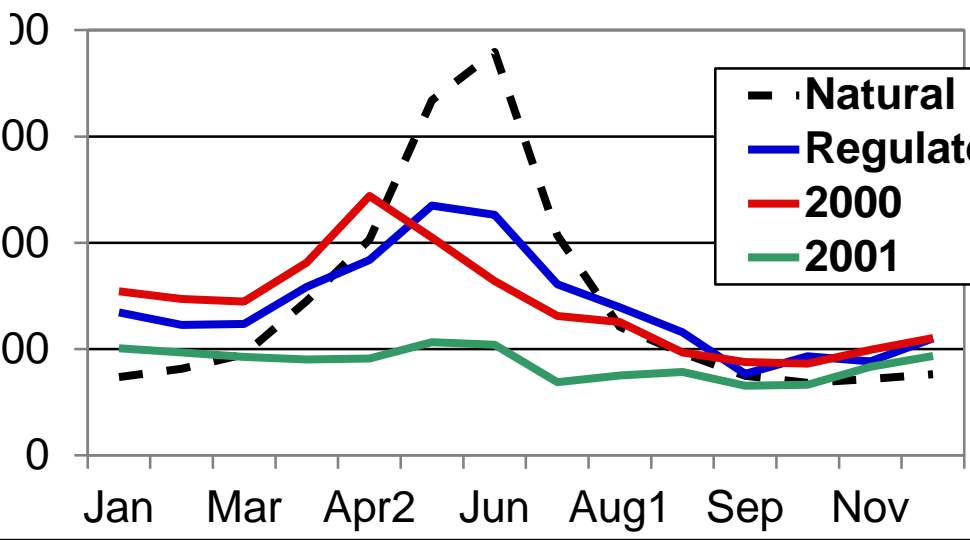
Don't forget the spirit – and fun! – of water:

- Elevating the conversation and connecting with new allies.

Universities Consortium for Columbia Basin Governance



2011 Flows at The Dalles -- compared to average





River Festivals



We drink it. They live in it.
We all rely on it.

#DefendWater

alabamariversalliance

Photo: iStockphoto.com/stephen-alexander

This block features a central image of an alligator swimming underwater, surrounded by aquatic plants. The text is overlaid on the image, and the Alabama Rivers Alliance logo is at the bottom left.



River Festivals



Water is sexy!!



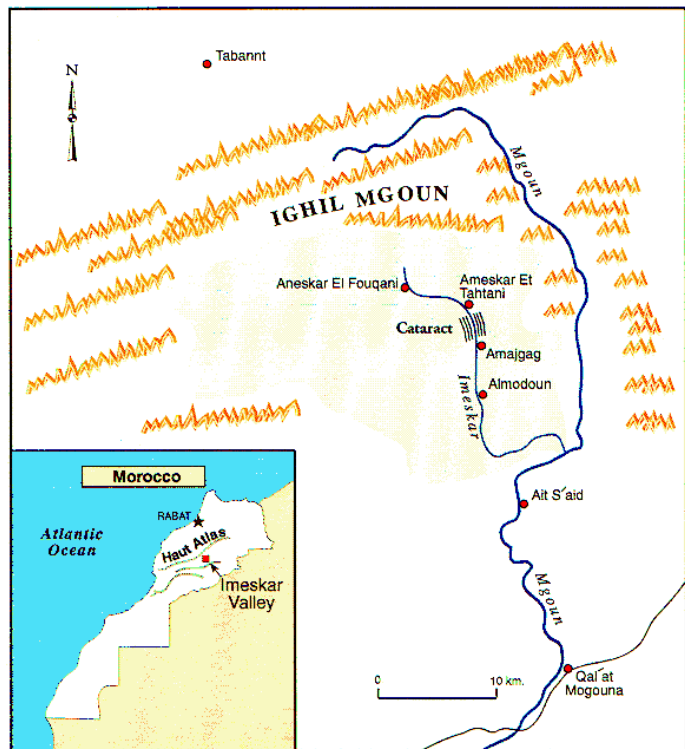
GET YOUR OWN WATER BOTTLE

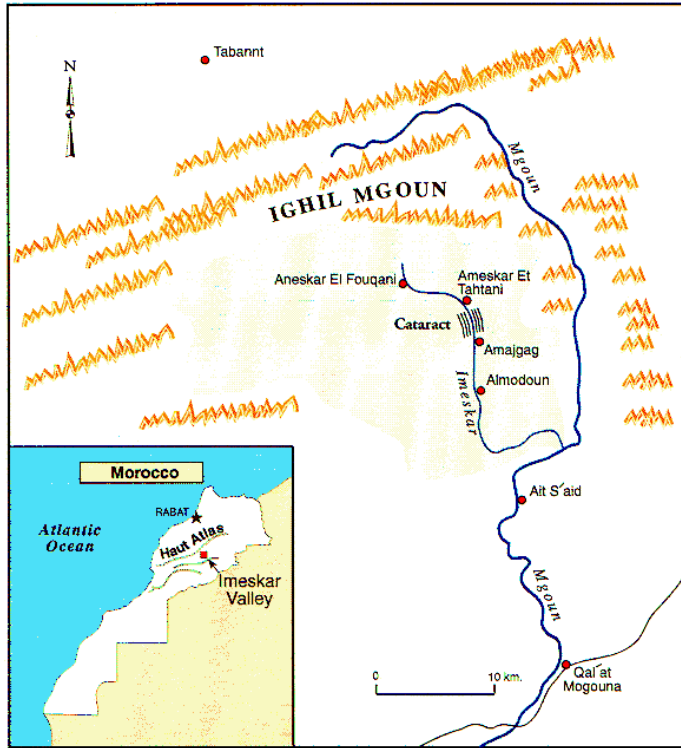
specially signed by
Matt Damon
Water.org Co-Founder

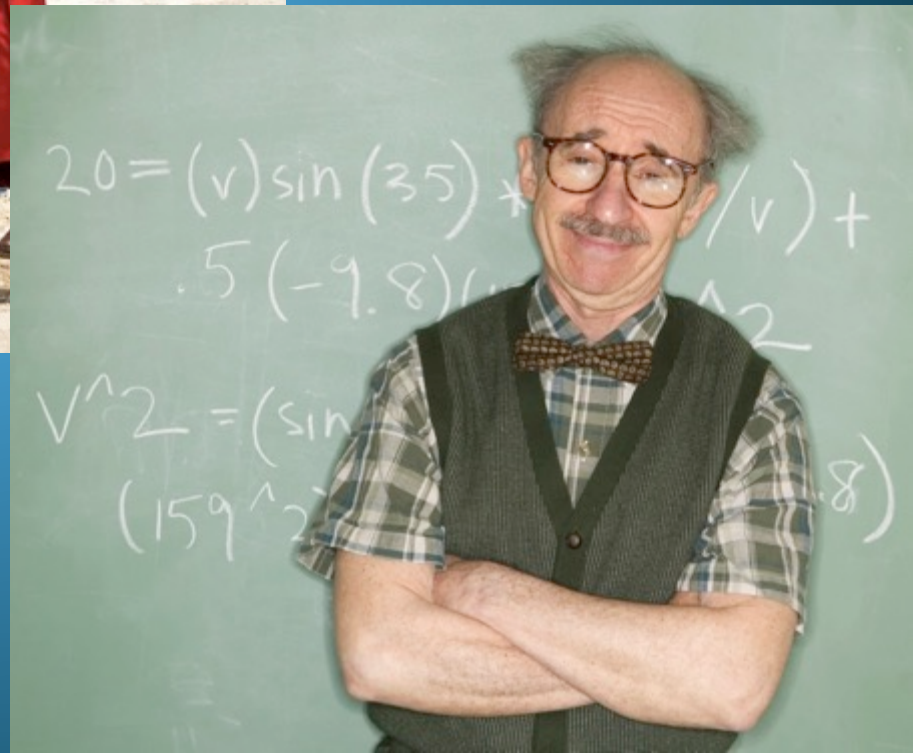
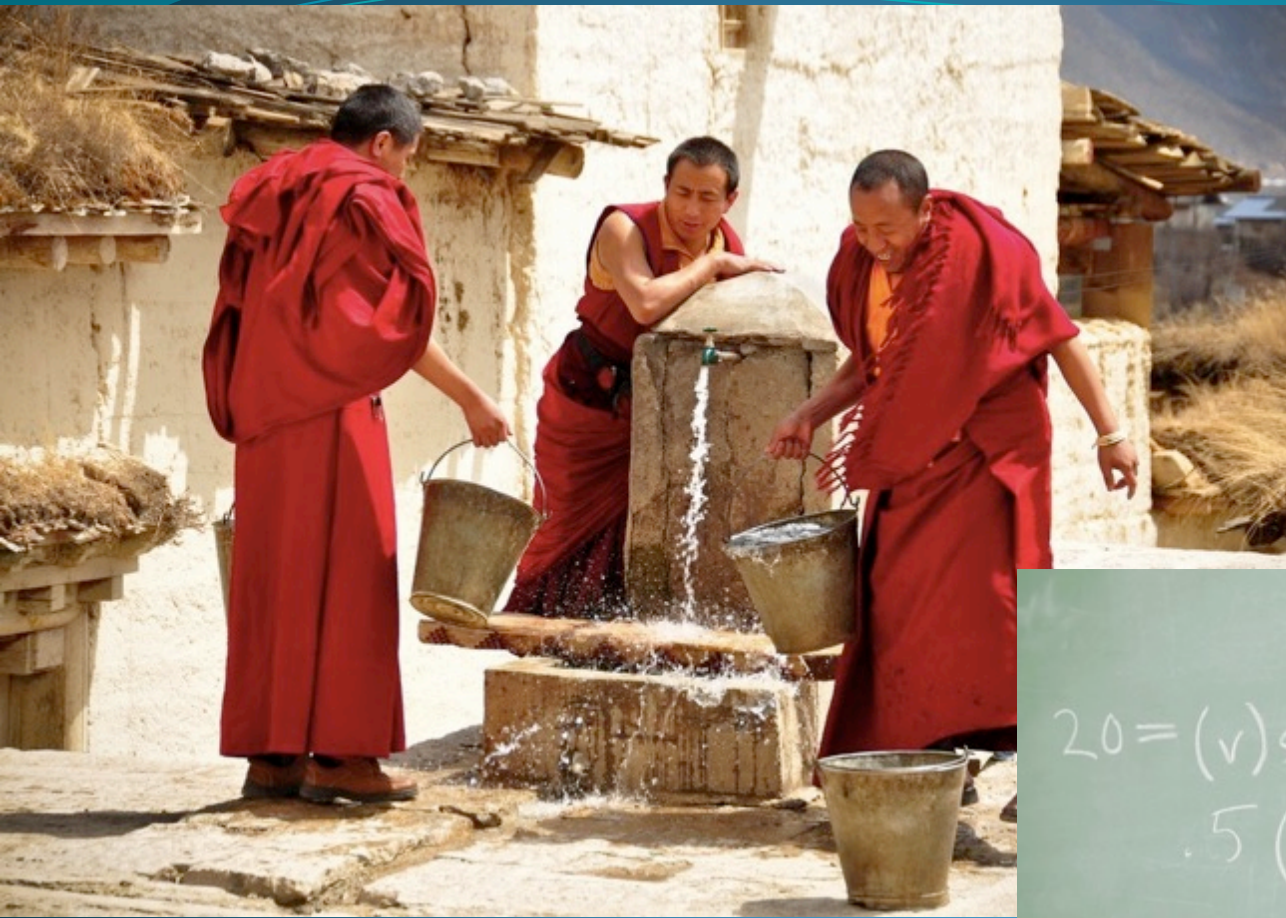
For a limited time, you can bid on Water.org's CamelBak water bottles autographed by co-founder Matt Damon. All proceeds help Water.org bring clean water to people around the world.

Bid | Buy A Bottle | Donate











Egyptian Coptic Church tapped to play the role of mediator in Nile River dispute



Coptic Pope Tawadros II (R), head of the Coptic Orthodox Church, shakes hands with former army chief Abdel Fattah al-Sisi upon Sisi's arrival for a visit the night before Easter, in Cairo, April 19, 2014. Sisi was elected president a month later. (photo by REUTERS)

Universities Consortium for Columbia Basin Governance



Maximizing “Benefits”

- The Pacific Northwest recognizes the value of the Columbia River Treaty in facilitating shared water resource management in the Basin to *maximize benefits* to both the United States and Canada.


U.S. Entity Regional Recommendation – December 2013

- The primary objective of the Treaty should be to *maximize benefits* to both countries through the coordination of planning and operations.

Columbia River Treaty Review B.C. Decision – October 2013

Columbia River Basin

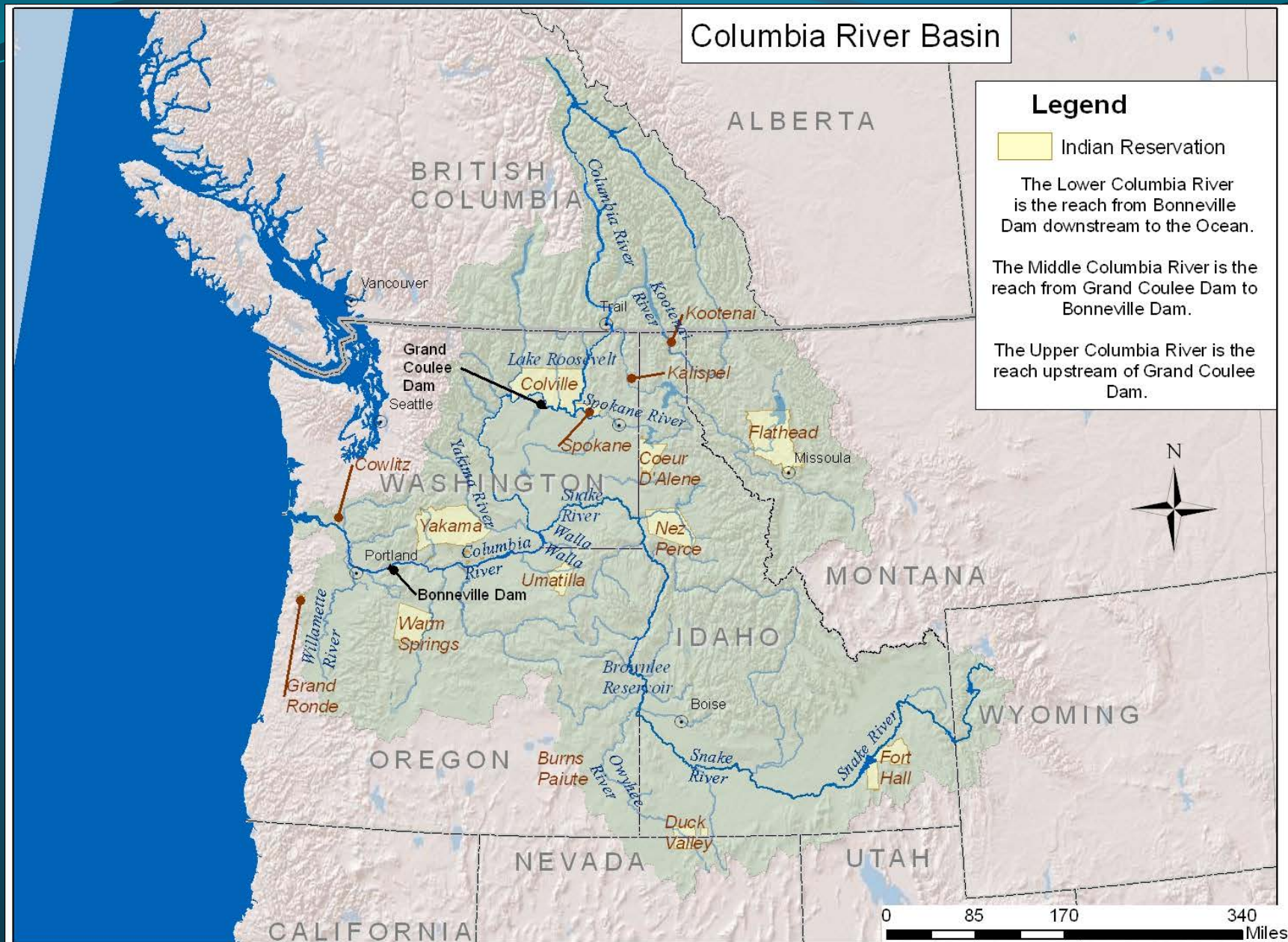
Legend

 Indian Reservation

The Lower Columbia River is the reach from Bonneville Dam downstream to the Ocean.

The Middle Columbia River is the reach from Grand Coulee Dam to Bonneville Dam.

The Upper Columbia River is the reach upstream of Grand Coulee Dam.



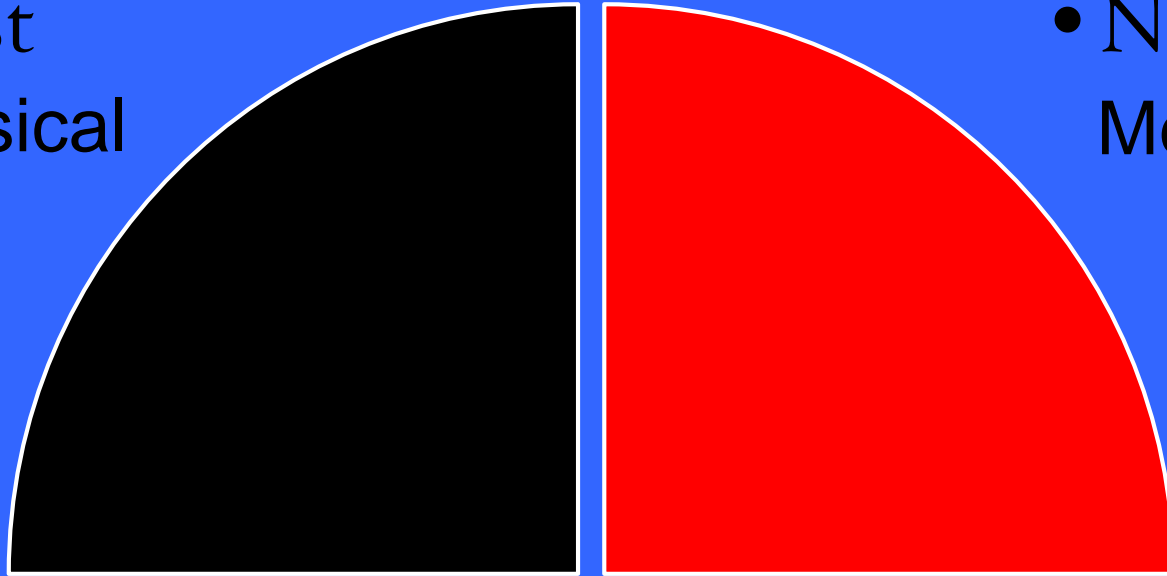
Men

- West
- Physical

Father sky

Objective

- North
- Mental



Medicine Wheel from Shoshone-Bannock and Oglala Lakota Traditions

Source: Sammy Matsaw Jr. 2016

- South
- Spiritual

Mother earth

- East
- Emotional

Women

Subjective

New Directions: Spiritual Aspect of Water

NATIONAL POLICY STATEMENT

for Freshwater Management 2014

issued by notice in gazette on 4 July 2014

newzealand.govt.nz

NEW ZEALAND NATIONAL POLICY STATEMENT for Freshwater Management 2014

- “Addressing tāngata whenua values and interests across all of the well-beings, and including the involvement of iwi and hapū in the overall management of fresh water, are key to meeting obligations under the Treaty of Waitangi (1840).”
- All things in the natural world have mauri (life force) and wairua (a spiritual dimension). Respect for the spiritual integrity of the environment and the atua (God) that created it will ensure that the taonga (treasure) can be protected and passed on to succeeding generations.

The
Spirit of
Dialogue

*Lessons
from Faith Traditions in
Transforming Conflict*

Aaron T. Wolf



Island Press, Fall 2017
Code 4SPIRIT for 20% discount

Thank you!

