

Water for Nature

Sustainable Water Network

(formerly the Sustainable Water Workgroup)

www.azwaterfuture.org

Kristen Wolfe



Sustainable Water Network

Sustainable Water Network

- ▶ Coalition of >30 environmental, community, conservation groups and individuals
- ▶ Looking for solutions to protect/restore our diminishing rivers, streams and springs and to balance AZ Water interests

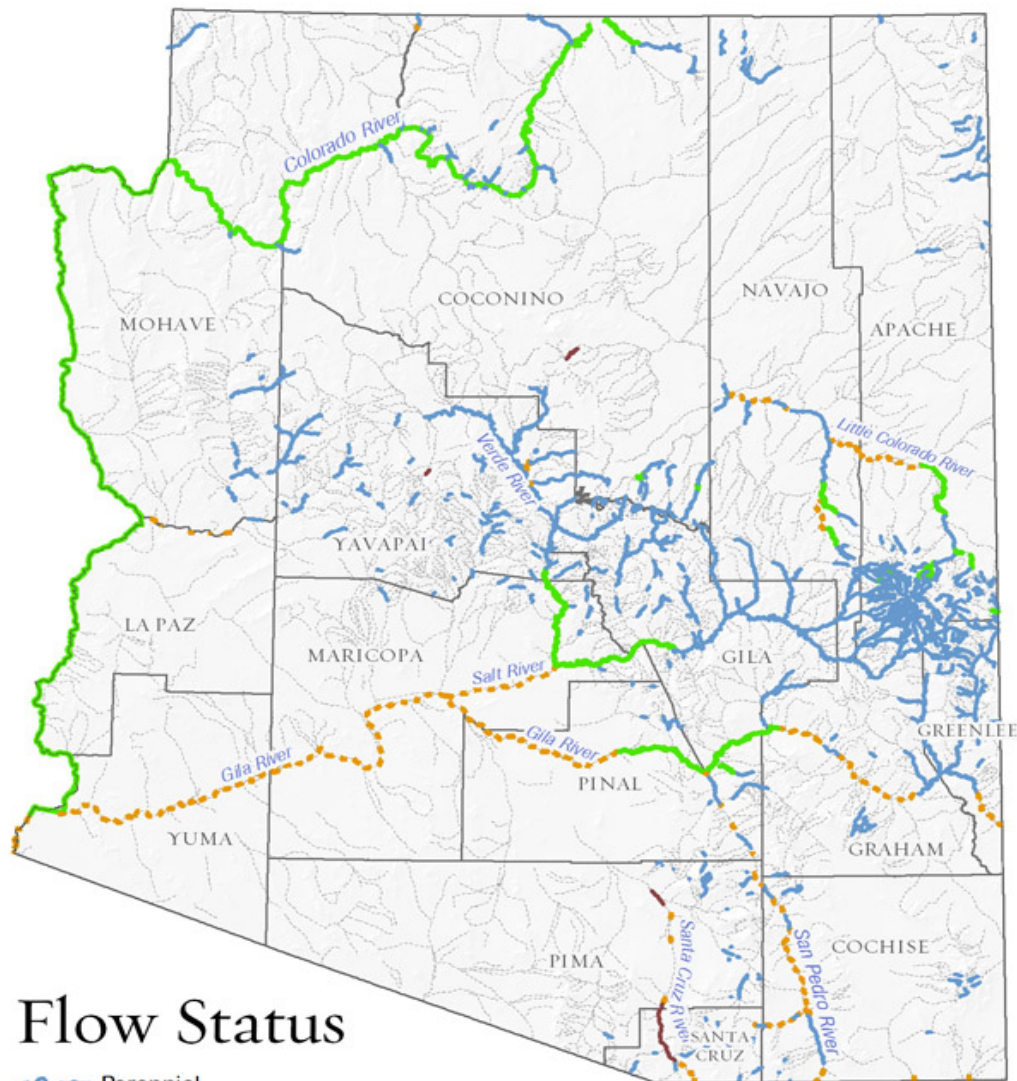


Sustainable Water Network



Photo: Gary Beverly; otters in the Verde River

Major free-flowing streams in Arizona



Flow Status

- Perennial
- Formerly Perennial
- Regulated
- Effluent Dominated (May Be Formerly Perennial)
- Intermittent or Ephemeral



Flow status data created from TNC Freshwater Assessment, available from azconservation.org

1992



— Free-flowing streams

1892



Source: Phoenix Gazette

Tan lines= formerly perennial



Key Factors affecting AZ rivers



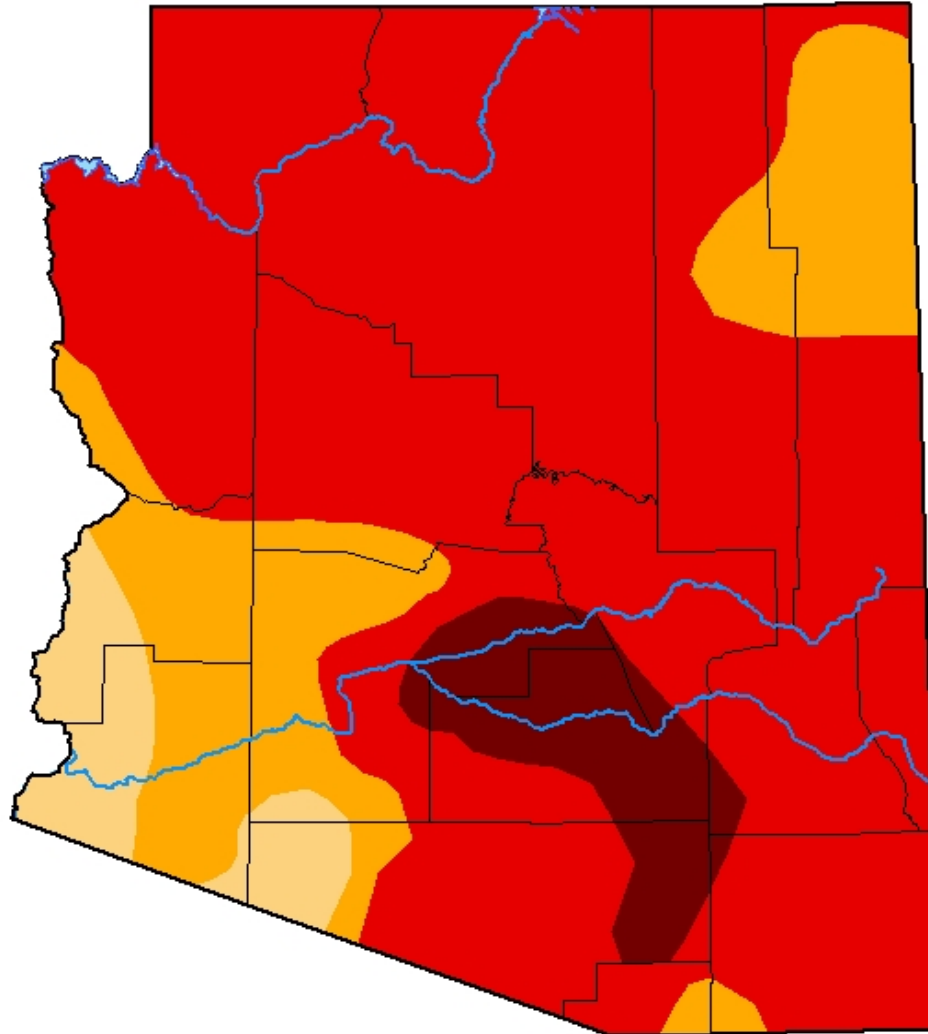
Overallocation of surface waters

Groundwater pumping







Climate change

U.S. Drought Monitor Arizona

October 13, 2020
(Released Thursday, Oct. 15, 2020)
Valid 8 a.m. EDT



Intensity:

-  None
-  D0 Abnormally Dry
-  D1 Moderate Drought
-  D2 Severe Drought
-  D3 Extreme Drought
-  D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

Curtis Riganti
National Drought Mitigation Center



droughtmonitor.unl.edu

Groundwater is being depleted

Dry wells; land subsidence; drying rivers

Outside AMA's- no limits; no meters = no data

Legislature failed to consider about a dozen bills addressing groundwater depletion



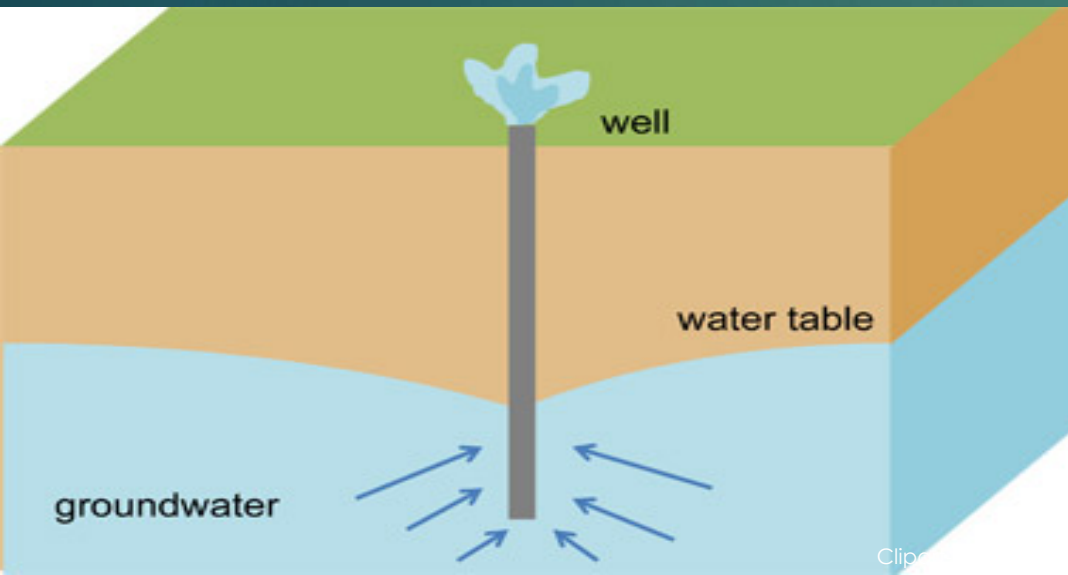
Surface water

Water for rivers/environment was excluded from AZ water laws

Bifurcated

law

Groundwater



Colorado River – DCP; 2026 renegotiations

Other rivers of the state – plan for them??

Ephemeral / Intermittent streams

ARIZONA'S NEXT WATER CRISIS
It's one of Arizona's most precious
rivers. Hundreds of new wells may
leave it running dry

Ian James and Rob O'Dell, Arizona Republic
Dec. 5, 2019

**"This system has allowed for unchecked
pumping to dry up rivers in many parts of the
state**, from the Rillito in Tucson to the Gila
River in Maricopa, said Robert Glennon, a
law professor and water expert at the
University of Arizona. **He called it Arizona's
"crazy, bifurcated system."**

Recent UA study confirms
groundwater pumping is
drying up Arizona rivers

[Alison Steinbach](#)

azcentral.com

July 21, 2019

Return of the non-soon: Arizona's second
dry monsoon season breaks records

[Madeline Ackley](#) Arizona Republic
Oct. 11, 2020

Trump rollback of clean water
rules leaves many Arizona
streams without protections

[Ian James](#) Arizona Republic
Jan. 23, 2020

Less Than Zero
Despite decades of accepted science,
California and Arizona are still miscounting
their water supplies
by Abrahm Lustgarten, ProPublica July 17, 2015

**"We know for a fact that pumping aquifers can dry
up rivers. But it is the law ... it would be a huge
upset to the economy to do away with that"**
Thomas Buschatzke, director of the Arizona Department of Water
Resources

Water for healthy, flowing rivers is NOT “just for the environment”

*Outdoor water-related activities

\$7.1 billion to the state’s GDP

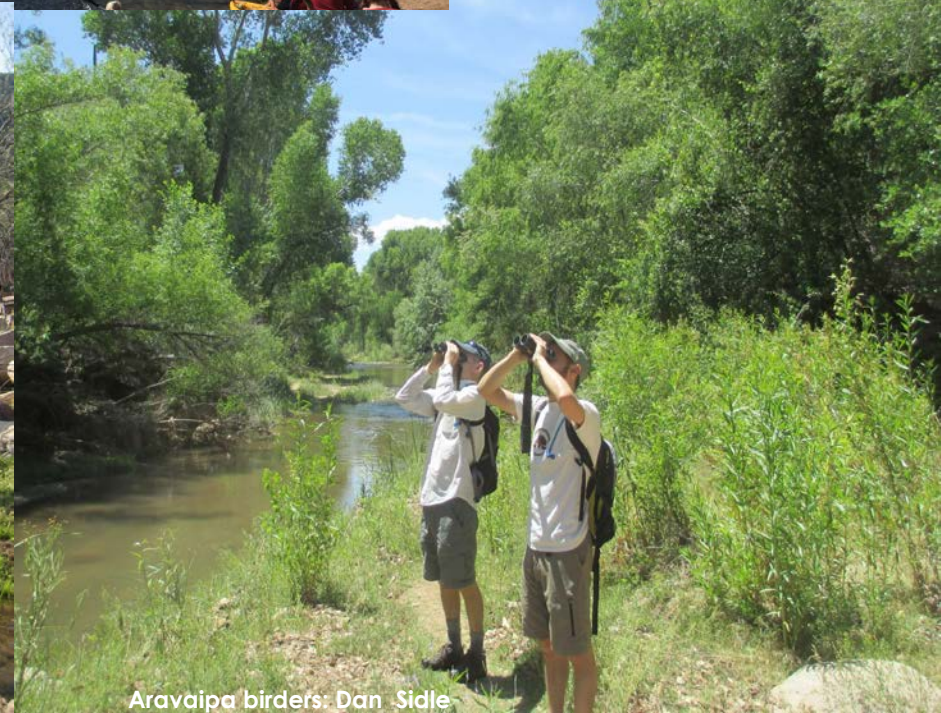
Audubon Arizona – Economic Contributions of Water-Related Outdoor Recreation

Hiking, kayaking, fishing, picnicking

Provides goods and services:

- human uses
- wildlife, aquatic life
- ecosystem services

Cultural, spiritual, health benefits, community aspects



Studies / discussions of environmental water in AZ

▶ Water Resources Development Commission 2011

▶ (Brenda Burman, Chair)

- ▶ A complete and current field assessment of the extent of perennial and intermittent surface water would enable a better understanding of how to manage surface water in the future.
- ▶ Water planning efforts have benefitted from the development of modeling data on the relationship between ground and surface water.
- ▶ Evaluation of future water supply options should include consideration of potential impacts on risks to water-dependent natural resources.



“The Forgotten Sector: AZ Water Law and the Environment” (Megdal et al., 2011)

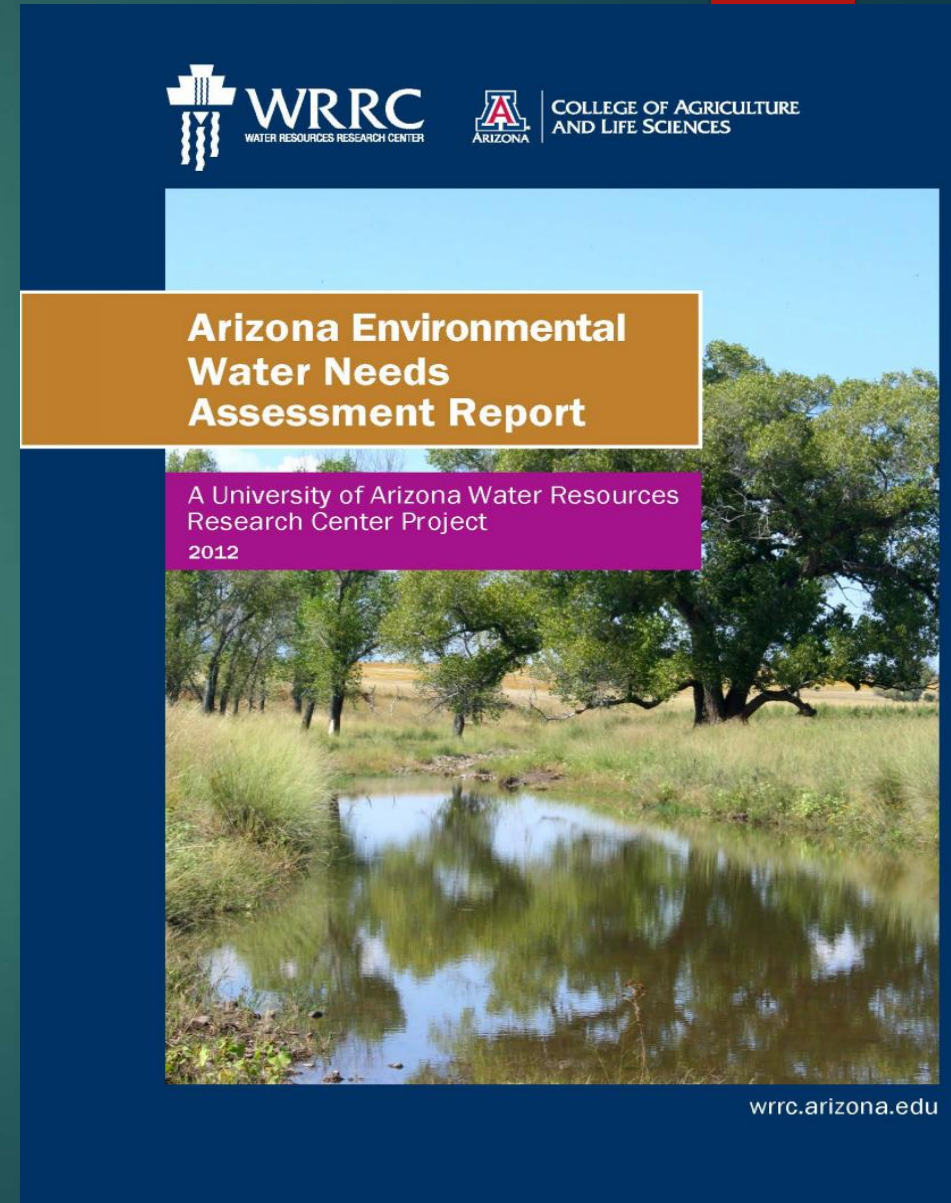
Change AZ law:

- **Expand the Public Trust Doctrine** to include environmental needs
- Prior Appropriation - **Beneficial use to include the benefit of conservation**; conserved water can be left in a stream for more than 5 years (not subject to forfeiture) or the rights to conserved water can be sold to conservation groups
- **Change Instream Flow law** to allow individuals to hold severed/transferred rights for ISF
- **Pass a law to establish minimum water flows or levels (other western states have this)**
- **Groundwater- Adopt designated riparian protection areas** (within AMA's); ban new wells or create criteria to establish if well would adversely affect the riparian area.
- **Voluntary arrangements with NGO's; Conserve to Enhance Program**



Arizona Environmental Water Needs Assessment 2012 (WRRC)

- ▶ Reviews 93 e-flow studies
- ▶ Database regarding existing studies
- ▶ Still many critical data gaps
- ▶ “Studies demonstrated the connection between water availability and ecosystem health”
- ▶ “Assessment report and Guidebook can be used in water planning and policymaking statewide”
- ▶ “Aim of the AzEWNA is to support the efforts of those working to conserve desert rivers and streams”



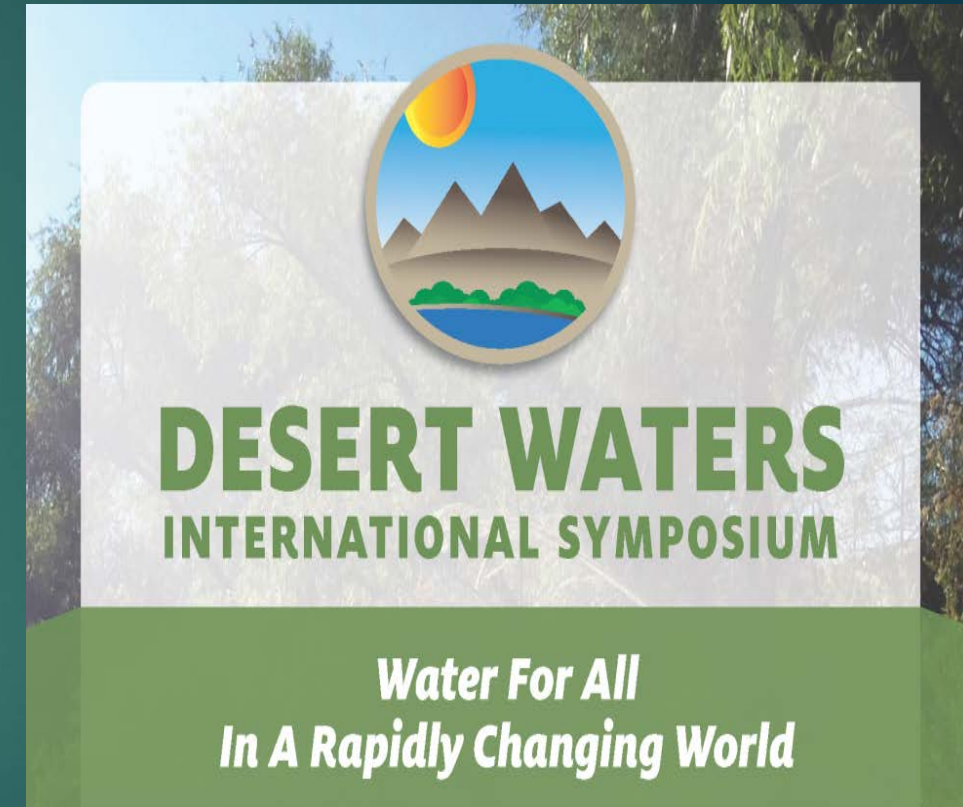
AZ Roadmap for Considering Water for AZ's Natural Areas 2014 (WRRC)

- Part of the **Connecting the Environment to Arizona Water Planning (EnWaP) Project**
 - 78% of perennial and intermittent streams have not been studied for water needs
 - Few studies of surface water/groundwater requirements for ephemerals river systems
 - 1000 stakeholders - surveys, interviews, focus groups, workshops, presentations
- “Examines Routes and Roadblocks to considering the water needs of riparian and aquatic ecosystems in AZ water management and planning”
- “Foster dialogue among water users about voluntary, stakeholder-driven options for addressing natural areas”
- Recommendations:
 - Improve education on water for water natural areas
 - Provide funding to maintain water in natural areas
 - Establishing priority areas and assessing values
 - Manage water for multiple benefits, including natural areas

Desert Waters International Symposium 4/19

(Sky Island Alliance; WRRC)

- ▶ **Moral responsibility to be stewards of water** (Gov. Stephen Roe Lewis, Gila River Indian Community)
- ▶ **Personhood for rivers; Public Trust**
- ▶ “First in time, first in right” – Nature is the first user
- ▶ Australia – rivers have rights (allocations)
- ▶ **Agriculture – fallowing; recharge, conservation easements**
 - ▶ **1/3 water in the west goes for feed crops; 55% in CRB**
- ▶ Outrage about how little water we save for rivers
- ▶ Acknowledge the rights of the environment and indigenous users
- ▶ Future:
 - ▶ Precautionary Principle
 - ▶ **Economic benefits of healthy ecosystems,**
 - ▶ ***brave leadership**



Water for nature in other countries

▶ Australia

- ▶ 1914 – guaranteed minimum flows
- ▶ 1994 – separated water rights from the land = shares
- ▶ Government bought shares for the environment (river flows)

▶ Desert Waters Intern'l Symp. Con't:

▶ Challenges and next steps:

- ▶ **“our relationship with water reflects our relationship with each other”**
- ▶ **“unprecedented times call for unprecedented actions”**
- ▶ **Things are changing rapidly; can't defend the status quo; need brave new leaders**

▶ South Africa

- ▶ National Water Act 1998 (2 part reserves)
 - ▶ Reserves for basic needs – drinking, bathing, cooking
 - ▶ Reserves for ecosystem health
- ▶ **Think of water on the community level vs. individual**
- ▶ **“Shared vision” - “We are proud custodians of our rivers. They sustain our economy and heritage. We protect and manage them so that they can continuously bring benefits equitably to our people, our nation and to our neighbors”**
- ▶ **Water for ecosystems ultimately benefits people**

Environmental flows in water management

▶ Brisbane Declaration 2007

- ▶ E-flows are essential for freshwater ecosystem health and human well-being
- ▶ Urgent need to protect rivers globally

▶ **It called for governments, banks, river organizations and more – to commit to maintaining and restoring healthy river flows; use of e-flows**

▶ Brisbane declaration 2018

▶ *“Environmental flows describe the quantity, timing, and quality of freshwater flows and levels necessary to sustain aquatic ecosystems which, in turn, support human cultures, economies, sustainable livelihoods, and well-being”*

▶ Stockholm Water Prize (2019) – Dr. Jackie King

▶ **Research “on river ecosystems and the natural structures depending on healthy rivers” / E-flows are vital to sound water management**

▶ **“Dr King has helped decision-makers understand that healthy river ecosystems are not a luxury, but the basis for sustainable development.”** SIWI's Executive Director Torgny Holmgren

“Four Ways to Ensure Long-Term Water Security in the West”
Ted Kowalski 10/24/19 (Walton Family Foundation)

- ▶ “We need to place a higher priority on protecting and acknowledging the environment. The health of the river itself is critically important – and the river should not have to settle for the leftovers in water-use negotiations.
- ▶ **We must consider the environmental health of the river to be as important as the needs for hydro power or agricultural and municipal uses.”**



Learning from the Colorado River Conversations

Apr 1 12:00PM
BROWN BAG

[Webinar Only](#)

Katharine Jacobs, Director, Center for Climate Adaptation Science and Solutions and Professor, Environmental Science, University of Arizona
Amy McCoy, Partner, Martin & McCoy

Allows space for all ideas / concerns to be heard, discussed

Need to reframe relationship with science

Need to broaden conversations, who has a voice beyond management?

System approach to river management; respecting the river and it's right to exist

Don't need to be an expert to be part of the conversation

Looked at various extreme scenarios

WRRC Annual Conference 2020: Water at the Crossroads – the next 40 years

- ▶ Former Gov. Bruce Babbitt discussed the **statutory commission** required to get the GMA passed; need this to solve central AZ water issues
 - ▶ Mentioned “cut to the river” – water transfers
 - ▶ More new voices at the table; water for nature
- ▶ Audience questions:
 - ▶ What is your primary water focus?
 - ▶ **Water for the environment was 2nd highest**
 - ▶ What do you see as the greatest opportunity for improvement in water management?
 - ▶ Groundwater was #1; **water for the environment was #2**



WRRC AZ Water Blueprint: A Roadmap to Good Stewardship 9-17-20

- ▶ Working toward watershed function and health
- ▶ Some info on flow regimes; working with DEQ for more flow data
- ▶ Continually working to improve it – ex- data for stream needs, minimum flows, appropriate timing
- ▶ May do a story map on WOTS – what was regulated and is no longer
- ▶ May include water-dependent habitats; water flow info from previous WRRC flow reports

- ▶ Kyl Center- working on Water Index resiliency Scorecards – “The Water Index promotes informed discussion of water challenges and assists decision-makers in sound management strategies”



Sarah Porter, Director, Kyl Center for Water Policy
Susan Craig, Water Policy Analyst, Kyl Center for Water Policy

Ephemeral streams – Waters Of The State (WOTS)



Recent changes to the Clean Water Act resulted in loss of protection for ephemeral streams

>95% of AZ waterways are ephemeral

Critical for desert habitat

- move water / nutrients downstream
 - habitat for wildlife
 - groundwater recharge
 - water quality – slow flood waters; absorb pollutants
- 

ADEQ and stakeholders currently deciding which streams will not be protected

Develop a state surface water protection program

Border wall destruction of riparian areas and critical habitats

Sacred Arizona spring drying up as border wall construction continues

Water flow is at an all-time low at Quitobaquito Springs, a culturally vital oasis home to two endangered species next to the U.S.-Mexico border.

National Geographic, Douglas Main
July 20, 2022



Kate Scott

Border wall through San Pedro River



Groundwater pumping in San Bernardino Wildlife Refuge



Darwin Kurc 8/20



Recurring themes / potential solutions from conferences, articles



Forfeiture rights – need changes; not compatible with conservation of water

Need data - minimum flows; groundwater depletion; Best practices includes e-flows

Riparian protection areas; priority areas – need more data

Ephemerals – critical ; status unknown now

Tribal perspectives

Watershed health, river health is critical for economic health; it's not one or the other

Brave new leaders

More voices at water decision-making tables

We must consider the environmental health of the river to be as important as other needs



Proposed bills – “Conserved water”

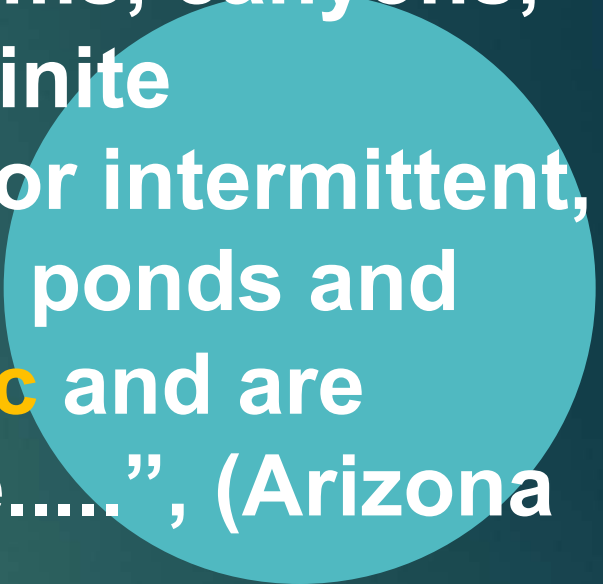

- ▶ **SB1465** – Dalessandro: Bradley, Gonzales, Steele
- ▶ **HB2758** – Engel: Campbell, Cobb, Gabaldon, Rodriguez
 - ▶ **A water right can be severed from the land and transferred for use for watershed health.**
 - ▶ **Allow conserved water to remain in the river**
 - ▶ **Retain right’s priority date**
 - ▶ **Water right not subject to forfeiture**
 - ▶ **Require ADWR to survey health of watersheds; ecological water needs**
- ▶ **HB2675** – Griffin: Bowers, Dunn, Nutt
 - ▶ **Water right holder files a conservation plan; water rights not subject to abandonment claims**

Sound, sustainable water management? Water leadership?

- ▶ Water for nature is not recognized as a user/stakeholder
- ▶ Current forfeiture laws are not compatible with water conservation
- ▶ Current law and management practices do not recognize the connection between surface and groundwater (most other western states do)
- ▶ Lack of data regarding groundwater pumping
- ▶ Lack of data regarding river, stream e-flow needs (78% of streams have not be assessed)
- ▶ Lack of data regarding watershed needs, riparian corridor needs
- ▶ Shift in economy; new economic engines = more resilience in changing desert conditions

Ways to include water for nature?

- ▶ Over-arching water goals for the state that include rivers, groundwater and effects of climate change
 - ▶ No state policies on river depletions; ephemeral protection
- ▶ Will it take a process/mandate like the Groundwater Management Act?
- ▶ Who / how to develop best practices management plans - data; science
- ▶ Tribal participation; perspectives
- ▶ Need a bigger table; with new voices – water for nature
- ▶ Change the laws! (perhaps Nov. election results will help move this obstacle)
- ▶ Economic shifts - Tourism, water-related activities; other values of rivers - just as important as current uses; more sustainable, resilient economy and environment
- ▶ Water markets – “cut to the river”; use markets for more water for nature
- ▶ Border wall – mitigation for current destruction; future issues with flows
- ▶ Brave new water leaders - bring people together



“The waters of all sources, flowing in streams, canyons, ravines or other natural channels, or in definite underground channels, whether perennial or intermittent, flood, waste or surplus water, and of lakes, ponds and springs on the surface, **belong to the public** and are subject to appropriation and beneficial use.....”, (Arizona Revised Statutes § 45-141).

<https://new.azwater.gov/surface-water>

How much influence does the public have in how they are being managed?

“The Responsibility of Knowing” (10X Water Summit, Houston)”

Water decision-making tables:

- Include water for healthy rivers
- More voices
- Public input

Revise laws:

- Allow for more options
- More resiliency

Rivers and the ecosystems they support should be protected for ALL



Photo: Sandy Bahf

Photo: Janarie Kay Remelli, wikimedia commons



**"No problem can
be solved from the
same level of
consciousness
that created it."**

Albert Einstein

**Think boldly
Think holistically
Change Now**

**To better protect what's
left and allow rivers to
exist**