



WRRC
WATER RESOURCES RESEARCH CENTER



COLLEGE OF
AGRICULTURE
& LIFE SCIENCES

Water Policies of Israel and Arizona: Lessons Learned and Outstanding Challenges

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Heartbeat of Israel Lecture
Tucson, Arizona
November 13, 2013

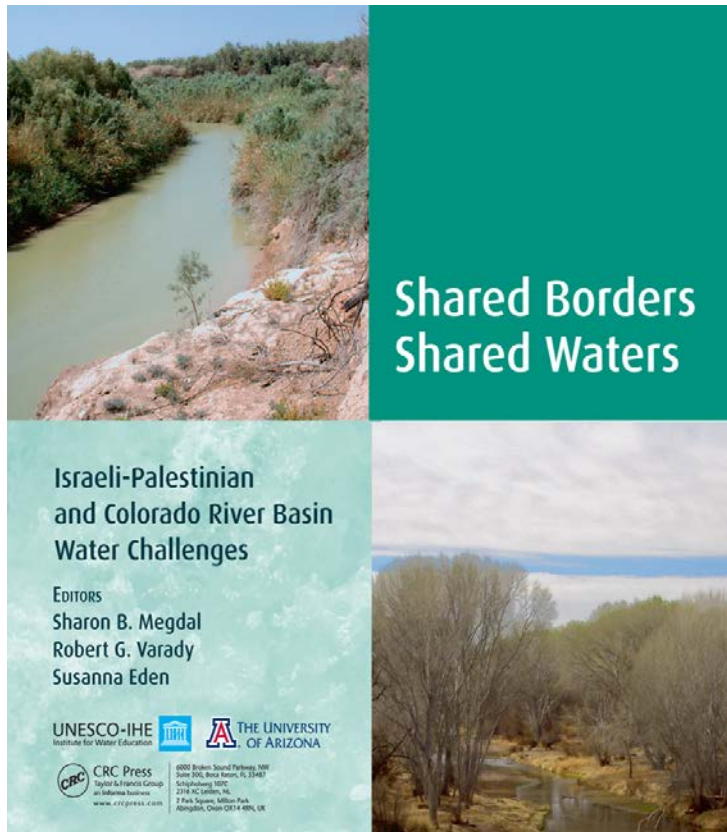
Water Management Issues/Challenges

- Growth and the need for additional supplies (competition)
- Drought/climate variability
- Water-energy Nexus
- Water quantity assessments
- Water quality
- Desalination
- Use of recycled water for potable and other water needs
- Access to and utilization of renewable supplies
- Transboundary water issues
- The surface water/groundwater interface
- Riparian areas and other environmental considerations
- Water rights settlements
- Conservation programs
- Water storage and recovery (water banking)
- Groundwater replenishment
- Water cost/pricing
- Water Planning

Uncertainty!



Transferability of water management and policy approaches and lessons learned (both + and -)



Israel Water Management Program – November 2012

Video link
<http://vimeo.com/57014686>



Some commonalities

- Growing regions with populations of about 6.5 to 7.5 million people => growing municipal and industrial water demands
- Important agricultural sectors
- Semi-arid to arid regions
- Recent drought experiences
- Projected hotspot of climate change
- Shared borders
- Historical reliance on groundwater
- Water reuse is important
- Environmental degradation

WATER SCARCITY

Abraham Tenne, April 2011

The overall goal of
the Israeli Water Authority

Assure that water will be
sustainable, available, reliable,
in the required
quantities, locations and qualities.

Stakeholder Involvement and Education

WATER AUTHORITY Abraham Tenne, April 2011 STATE OF ISRAEL

CLOSING THE GAP

- ❖ Water saving and efficient use of water.
- ❖ Water wells purification and aquifers water quality improvement.
- ❖ Increasing capacity of waste water treatment and upgrading effluent quality.
- ❖ Desalination.

ARIZONA WATER RESOURCE

Volume 17, Number 4

Fall 2009

Arizona, Middle East Water Issues Focus of WRRC Workshop



Arizona, Israel, Palestinian Territories Share Common Concerns

The Arizona-Israeli-Palestinian Water Management and Policy Workshop (AIP for short), a Water Resources Research Center project that was two and a half years in the planning, focused on critical water issues of the three and semi-arid

Special Workshop Edition of Newsletter

This issue of the *Arizona Water Resource* newsletter provides information about the Arizona, Israeli, and Palestinian Water Management and Policy Workshop. (See page 8 for workshop agenda.) Additional information about the workshop is available at the WRRC web site.

Complicating their task are the formidable political issues that trouble the waters, and much else in the Middle East. Arizona water affairs, too, are marked by the need to consider and negotiate the claims of sovereign entities, specifically neighboring Mexico and Indian nations. Arizona fortunately does not have to contend with the worrisome, highly-changed political climate prevailing in the Middle East.

It is hoped that the workshop will pay a long-term benefit by promoting peace. By working together to identify research needs and developing an international, collaborative research program, workshop participants were engaged in "science diplomacy" a strategy to promote understanding and peace. 🌱

Workshop participants, including managers, NGO representatives, students and scholars from a range of disciplines worked together to better understand water management challenges and to consider solutions as well as build the groundwork for future collaboration on projects and programs. The workshop was conducted Aug. 31 to Sept. 2 in Tucson.

In some ways, this commitment might appear to break new ground for WRRC. With the event, WRRC looked beyond Arizona and the West, its primary geographical areas of interest, to participate in a workshop featuring Middle East water affairs. This view, however, overlooks commonalities among the regions. Arizona, Israel and the Palestinian Territories are arid/semi-arid lands, and they confront similar water concerns. Rather than breaking new ground, the workshop was an opportunity for WRRC to view Arizona and regional water issues in an international or global context.

Further, what was gained at the workshop — the issues, challenges and research needs the participants identified — will benefit other arid and semi-arid regions struggling with similar concerns having to do with water shortages, poor water quality and effective governance.

The regions have another shared interest besides a dry climate. Israel and the Palestinian Territories are facing the challenge of sharing groundwater and surface water resources.

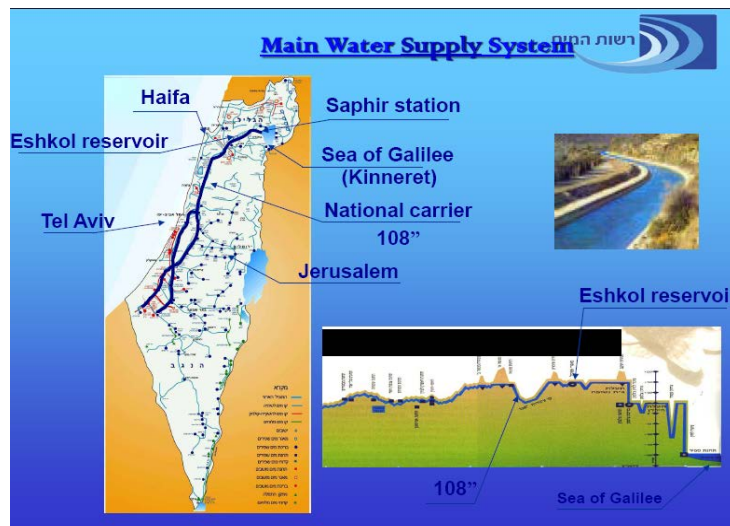
The Face of Drought



The Israeli Water Authority used the above photo in a campaign to encourage drought awareness. The campaign included providing water awareness days at elementary schools, involving the parents and distributing water conservation devices. Israeli presenters at the AIP workshop used the striking image to dramatize the occurrence of drought in their country. Drought was one of the issues of concern shared by all the regions participating in the workshop: Arizona, Israel and the Palestinian Territories.

Governance and management differ

Israel	Arizona
Centralized decision making – Israel Water Authority regulates, allocated, sets prices; master planning	Decentralized
Water allotments can be changed	Water rights not easily changed
Pricing the same across municipalities	Pricing across municipalities varies widely
Law includes allocation for environment	Environment is “forgotten” sector
Etc...Grey water standards not established	Grey water use easily permitted



Recharge of water is an important water management tool



Agua Fria Recharge Project, Phx – CAP Photo



South Avra Valley Storage and Recovery Project, Tucson, Arizona Water Policy class field trip, 4/5/2013

New biofilter project at Kfar Saba

...The Kfar Saba biofilter harvests storm water and treats polluted groundwater. The treated water is injected into the groundwater aquifer, where it is stored. The water can then be recovered at any point along the aquifer for a variety of uses. In addition, the system is an integral part of the urban design and contributes to the amenity of the local park. The project is being conducted jointly by KKL-JNF, JNF Australia and Monash University in Australia.



Photo: KKL-JNF Photo Archive

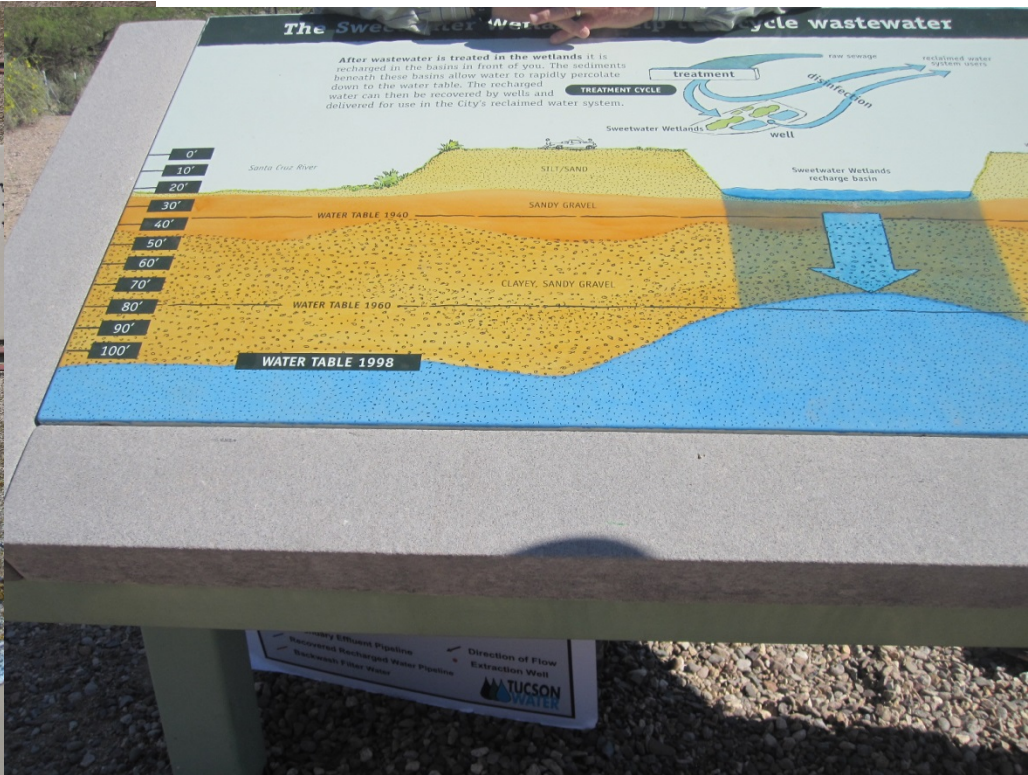
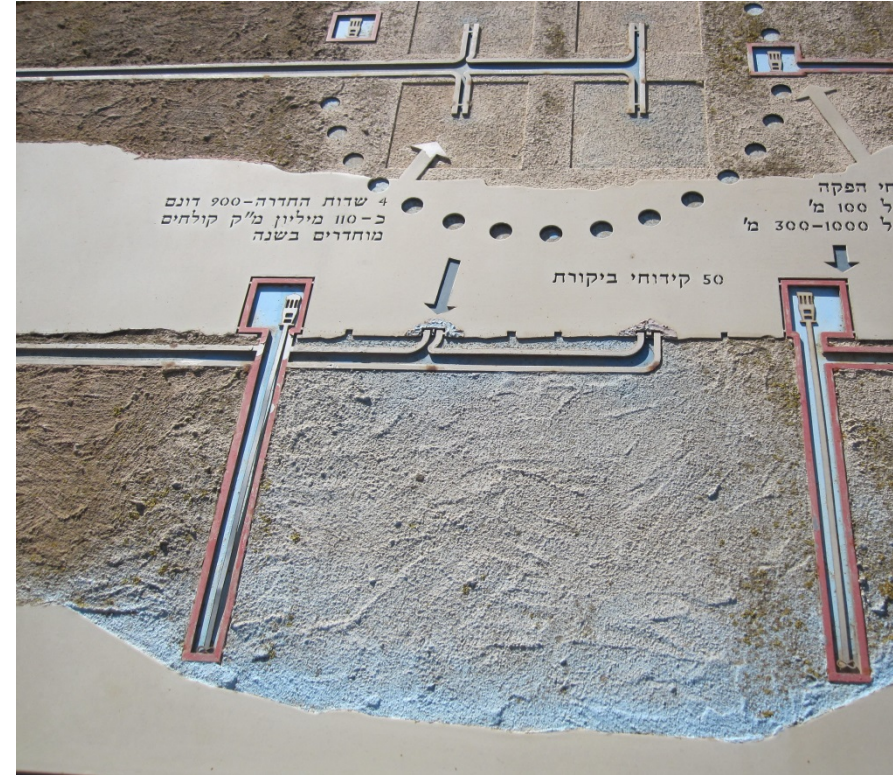
<http://www.kkl.org.il/eng/water-for-israel/water-installations/#{F0D4F93D-C9FD-41B1-8AC6-4B1A101AAC5A}>

Yaron Zinger, Lead designer-investigator

Recharge and use of effluent



By the Shardan Recharge Facility



Public understanding of methods is important

Effluent recharge basin by the Santa Cruz River next to Sweetwater Wetlands

Farming practices and water sources



Has seawater desalination in Israel eliminated the water scarcity issue?



Border situations differ



 A commemorative plaque with Hebrew and English text. At the top, it reads "שיתוף פעולה בין עמק חפר לטול כארם לפתרון הבעיות הסביבתיות" and "Cooperation Between Emek Hefer and Tul Karem for a Solution to the Environmental Problems". Below this, there are two panels: one showing a map of the region and another showing a group of men signing a document. The plaque also includes logos of various organizations and the date "1996".

הסכם ראשון לשיתוף פעולה
 שנחתם ב-1996

הסכם שני לשיתוף פעולה
 שנחתם ב-1998

The first agreement for
 cooperation, signed in 1996

The second agreement for
 cooperation, signed in 1998

כאשר החמירה בעיית הזיהום הנשפך לנחל אלכסנדר מהצד הפלסטיני של הקו הירוק, יזם ראש המועצה האזורית עמק חפר, שיתוף פעולה עם השכני הפלסטיני. מושל נפת חול

As the problem of the pollution flowing into the Alexander River from the Palestinian side of the Green Line became increasingly exacerbated, the head of the Emek Hefer Regional Council initiated cooperation with

Challenges to Cooperation



US-MX border water issues handled through the International Boundary and Water Commission (ibwc.gov)

MX Commissioner
Roberto Salmon

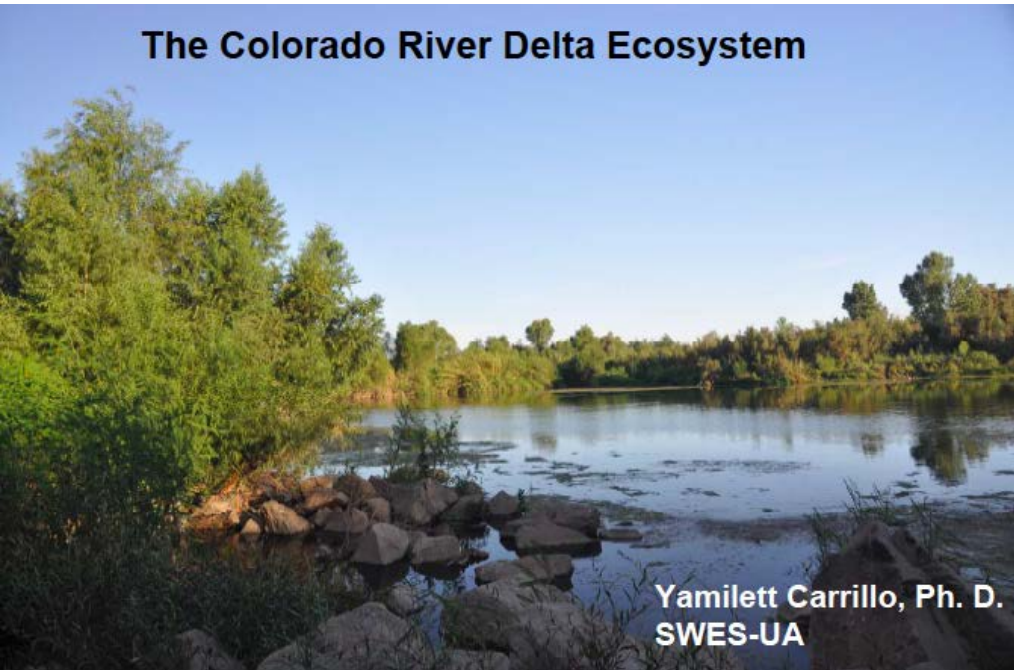


US Commissioner
Edward Drusina



Minute 319: Historic agreement signed in November 2012 to share Colorado River shortage and surplus and address Colorado River Delta ecosystem

The Colorado River Delta Ecosystem



Yamilett Carrillo, Ph. D.
SWES-UA



Photo Courtesy of Bryce Emily Megdal

Cooperative framework adopted by the IBWC in August 2009 has guided development of aquifer reports for the Santa Cruz and San Pedro aquifers

Development of the cooperative framework took considerable time.



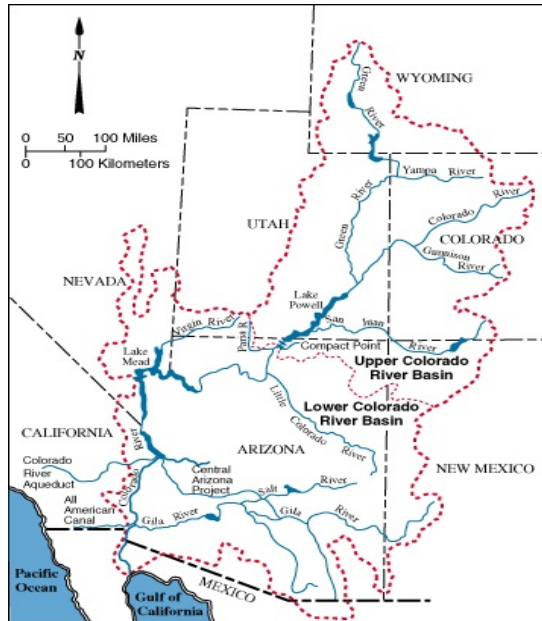
Photo taken 19 August 2009



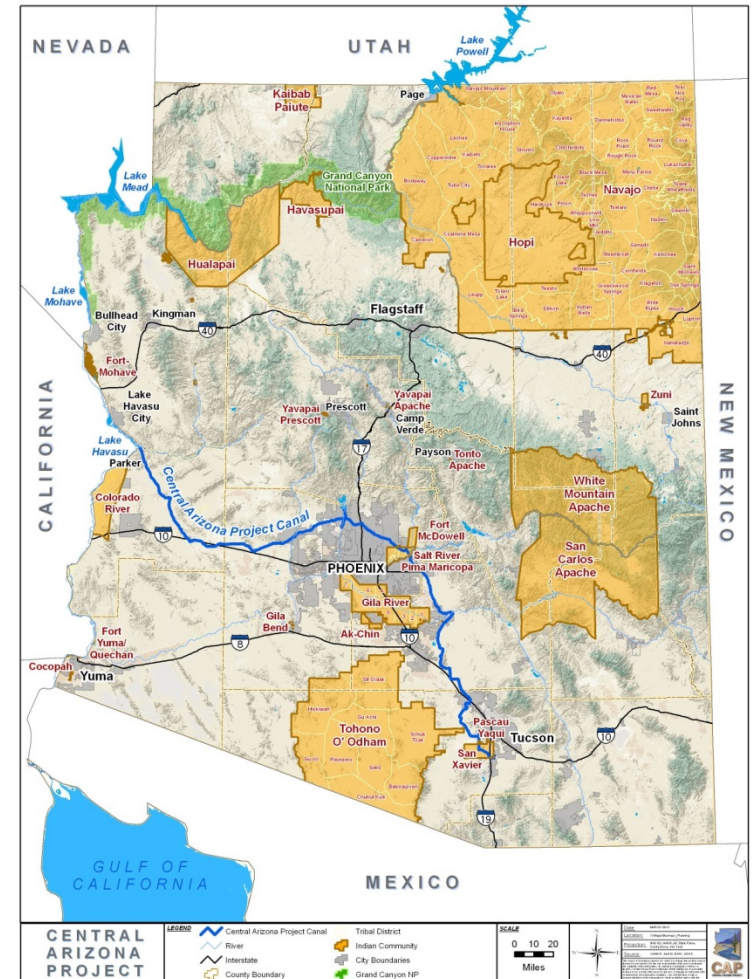
TAAP Workshop and Binational Advisory Committee meeting

Other shared borders

- Arizona with Native American Nations and other states



- Israel with Jordan
 - Lower Jordan River
 - Red Sea
 - Dead Sea



Jordan

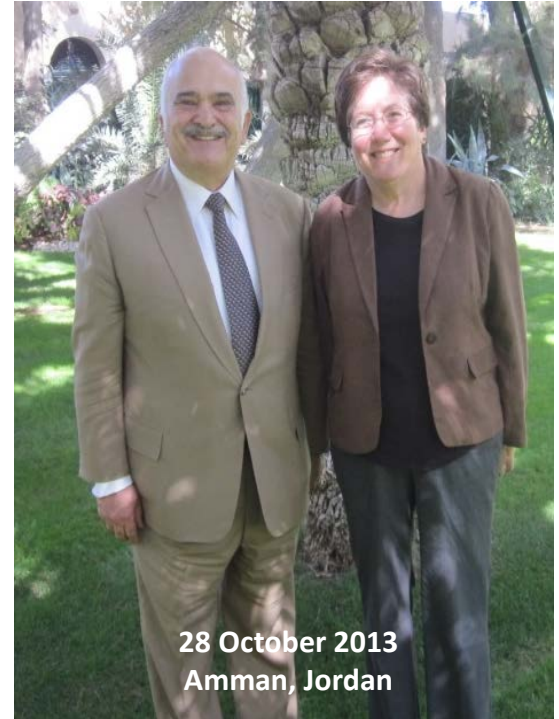
Prince Hassan calls for equitable sharing of water resources

by JT | Nov 05, 2013 | 21:37



HRH Prince Hassan delivers an address at the opening ceremony of International Water Week in Amsterdam on Monday (Petra photo)

AMMAN — HRH Prince Hassan has called for the equitable sharing of water resources and greater collaboration to support stability in the West Asia North Africa region.

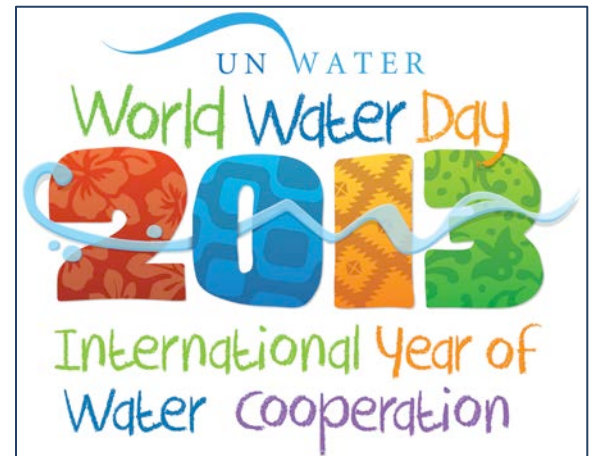


28 October 2013
Amman, Jordan

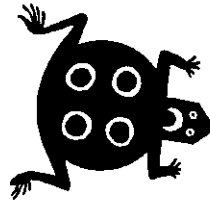


Tomorrow morning, November 14, I am participating in a panel presentation entitled “Why Cooperate?”

- Can think about this question across individuals, water using sectors, intrastate or intranational jurisdictions, and international jurisdictions
- Can think of this question across the public and private sectors, etc.
- Some simple answers...
 - Why not?
 - We’ll arrive at a better solution
 - Other?



The frog does not drink up the pond
in which he lives. – *American Indian
Proverb*



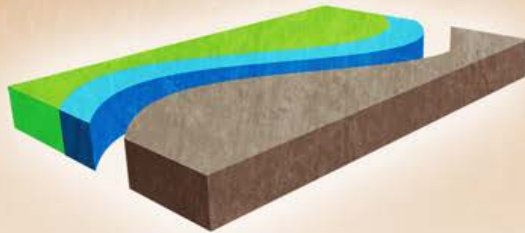
Thank you!
Questions?

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WRRC CONFERENCE 2014

CLOSING THE GAP BETWEEN WATER SUPPLY AND DEMAND



TUESDAY, APRIL 8, 2014
THE UNIVERSITY OF ARIZONA
TUCSON, AZ



COLLEGE OF
AGRICULTURE
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Arizona Department
of Water Resources

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WRRC Weekly Wave
August 6, 2013
Vol. Staff Bvta Test

In This Issue:

- Summer Arizona Water Resources
- Photo Recap: Jean McClain in Israel
- WSP Research Highlights
- New EnvWaP Database

...And much more!

Upcoming Events

Aug. 9	Sept. 10	Sept. 12	Sept. 20	Oct. 10	Nov. 13
Brown Bag Seminar, Prof. Amit Gross (Ben-Gurion Univ.)	National Protect Your Groundwater Day	Brown Bag Seminar, Tony Willardson (DVSWC)	Ready or Not? Climate Smart Southwest Water Conference (ICC)	Brown Bag Seminar, Dr. Benjamin Ruddlell (ASU)	WSP Distinguished Speaker Series: Dr. Alon Tal (Ben-Gurion Univ.)

Save the Date: April 8, 2014

WRRC 2014 The WRRC's 2014 Annual Conference, "Closing the Gap Between Water Supply and Demand," will be held Tuesday, April 8, 2014 at the University of Arizona Student Union Memorial Center in Tucson, Ariz.

Up Next: Aug. 9, Prof. Amit Gross

Scarce Water Resources and Development of Appropriate Decentralized Technologies for Sustainable Water Supply in the Negev Desert

Location: WRRC Sol Resnick Conference Room (350 N. Campbell)
Time: 2 - 3:30 p.m.

EnvWaP Database

Facebook Photo Recap

WRRC in the News