

Water Resources Research Center

College of Agriculture and Life Sciences



Conserve to Enhance: Supporting Environmental Water Needs through Voluntary Water Conservation

Verde Watershed Association
February 17, 2010

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Presentation Overview

- Conserve to Enhance – The Concept
- Stakeholder Involvement
- Alternative Mechanisms
- Establishing Pilot Programs
- Implementation Considerations
- Questions/Discussion



WRRC Mission

The University of Arizona's Water Resources Research Center (WRRC) promotes understanding of critical state and regional water management and policy issues through research, community outreach and public education.

The WRRC is committed to:

- assisting communities in water management and policy;
- educating teachers, students and the public about water; and
- encouraging scientific research on state water issues.

Focus on Water Policy and Management

Web site: www.cals.arizona.edu/azwater

Projects Completed with U.S. Bureau of Reclamation Support

- Environmental enhancement projects need funds to secure water supplies

(Megdal et al, 2006 "Projects to Enhance Arizona's Environment")

- Public interest in preserving and enhancing riparian areas

(Katz, 2006)

- Water conservation as a source of water for environment

(Schwarz and Megdal, 2007; 2008; Megdal and Bate, 2008)



Aravaipa Canyon, Arizona



Verde River, Arizona

Goals: Conserve to Enhance

- Provide water to environmental enhancement projects
- Environment as a water customer
- Connect individual conservation to environmental concerns
- Create a simple accounting mechanism
- Create a reliable funding source



Aravaipa Canyon, Arizona



Verde River, Arizona

The Conserve to Enhance Mechanism

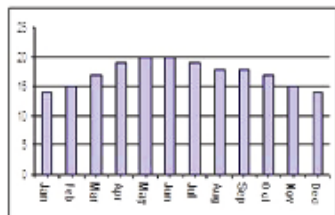
- Voluntary reductions in water consumption
- Water savings translate into money savings
- Savings translated into donations for water for environmental enhancement projects

CITY ITEMIZED WATER VOLUME CHARGES BILL PERIOD = 31 DAYS METER NUMBER 0600XXXX

WATER USAGE	IN GALLONS	IN CCFS
THIS MONTH:	9724	13
LAST MONTH:	10472	14
THIS MO. LAST YR.	10472	14

CURRENT READING

MONTHLY SERV CHRG	5.35
VOL \$ 1.10 * 13.00	14.30
CAP CHARGE	.28
TOTAL	19.93



Additional information

WATER CONSERVATION BANKING

JANUARY BASELINE

14 @ \$1.10 + SERVICAP CHARGES 21.03

AMOUNT DUE 21.03

JAN. WCB CONTRIBUTION 1.10

1 CCF CONSERVED

Conservation to Date: 1 CCF

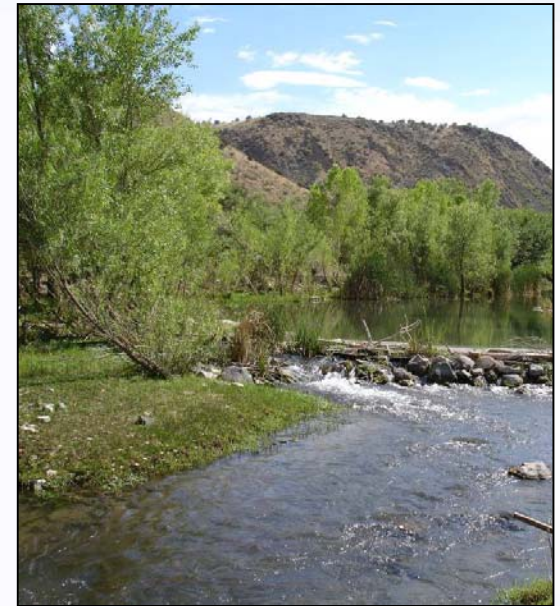
Donations Can Go Toward...

- Purchase of water
 - Reclaimed water/Effluent
 - Groundwater
- Lease water
- Secure instream flows
- Acquire easements and retire pumping
- Recharge groundwater
- Other



Possible Criteria for Projects

- Select environmental enhancement projects
 - Public accessibility
 - Sustainable water management
 - Water needs
 - Available water supplies
 - Native vegetation
 - Habitat quality
 - Length of investment/Funding needs
 - Project status (Ongoing vs. new)
 - Permitting needs



Verde River, Arizona (Jeanmarie Haney, TNC)

Statewide Environmental Water Needs Assessment

Goals:

- Increase understanding of environmental water needs in Arizona on the part of water professionals, policymakers, and the public.
- Help place the environment “at the table” as a water using sector in Arizona water planning.

General Project Timeline

- One-year Assessment
 - Spring/Summer 2010 – Assemble and analyze information from environmental flow studies
 - Fall 2010 – Review of draft report and guidebook
 - January 2011 - Guidebook and report publicly available
- Second year - Actively disseminate findings

Main Products

Technical and Spatial Assessment of
Studies of Environmental Flow Needs

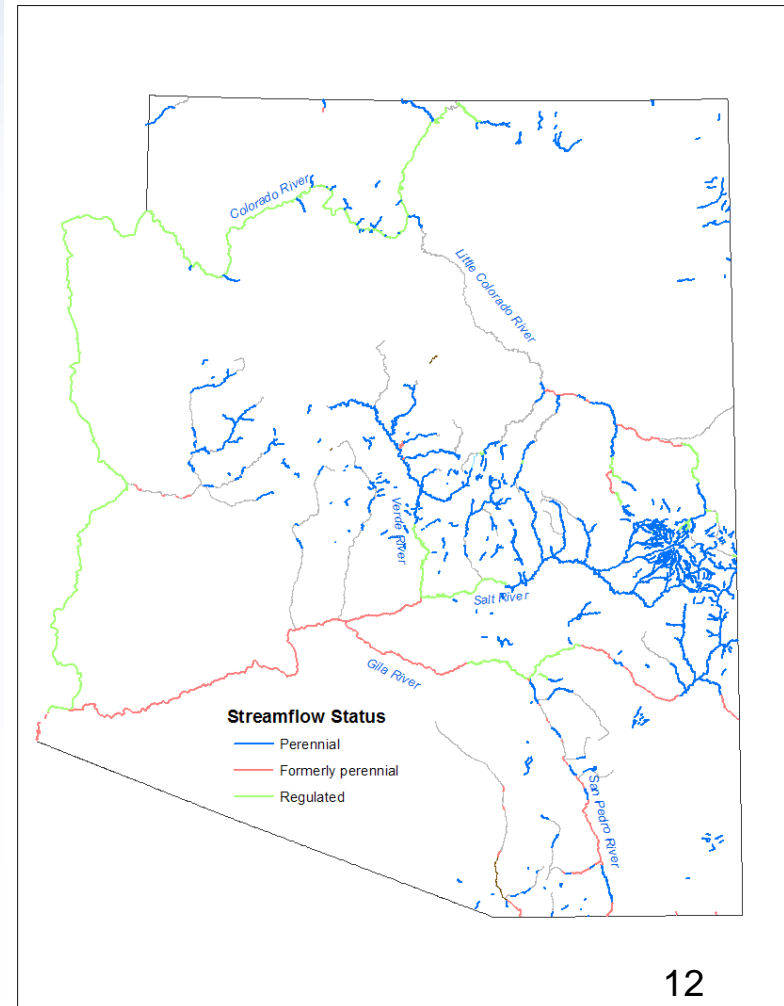
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graph TD; A[Technical and Spatial Assessment of Studies of Environmental Flow Needs] --> B[Guidebook of Existing Methodologies]; A --> C[Identification of Information Gaps];
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Guidebook of Existing
Methodologies

Identification of Information
Gaps

Inventory of Studies

- Current & Historical Conditions
- Flow Regime
- Flow Requirements & Relationships with Biota
- Risk Assessments
- Economic Valuation
- Water Quality Reqts. & Relationships with Biota



Stakeholder Involvement

- Outreach efforts have included roundtables, presentations, workshops, one-on-one meetings, and surveys with:
 - Utilities
 - City and county officials
 - Environmental groups
 - Homeowners/residents
 - Professors
 - Hydrologists
 - Water conservation professionals



Stakeholder Feedback

When asked *how they would like to contribute* to a fund supporting water for environmental enhancement or riparian restoration, respondents (n=137) chose:

- Tax on water use (59%)
- Money saved through conservation (42%)
- Voluntary donation on utility bill (41%)



Stakeholder Feedback

- Perceived Benefits:
 - Value of program as educational tool
 - May stimulate existing water conservation programs
- Concerns:
 - Costs for utility vs. costs for customer
 - Lost revenues from reduced demand
 - Increased competition for limited supplies
- Variations on original mechanism

A Simpler Mechanism

- Check-box donation programs
 - Exists in three communities
 - Does not connect donations to conservation actions
 - Demonstrates support for environmental water supply
 - May be useful for first phase of project
 - Limited billing system modifications



A Simpler Mechanism



ENROLLMENT FORM

YES! I would like to 'GIVE TO THE FLOW' through the Blue Water program and help put water back into the Deschutes River. I agree to sign up for the selected level and pay the extra charge on my monthly water bill. Please return the completed form with your Avion Water bill.

NAME

AVION WATER ACCOUNT NUMBER

STREET ADDRESS

CITY, STATE, ZIP

DAYTIME PHONE/E-MAIL

You can discontinue at any time by contacting Avion Water. Information not sold or shared.

BLUEWATER LEVELS

PLEASE CHOOSE ONE OF THESE OPTIONS

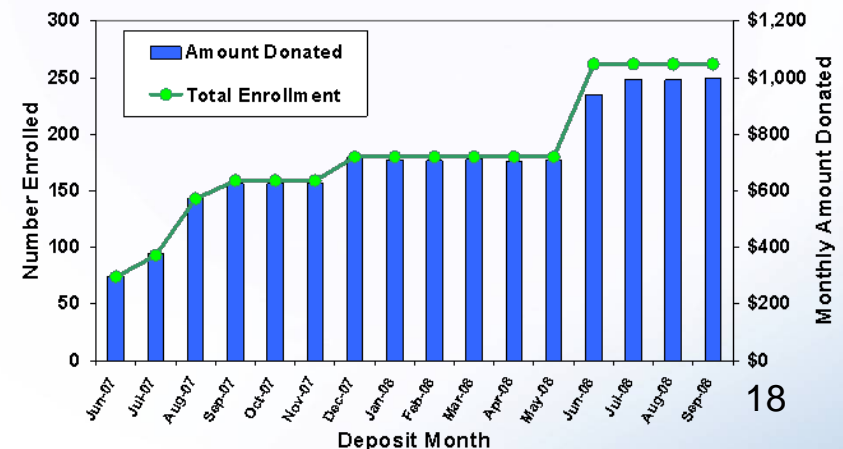
- River Otter \$6.40
- Blue Heron \$4.80
- Rainbow Trout \$3.20
- Spotted Frog \$1.60

Thank you for your contribution to the Deschutes River! 100 percent of your donation goes to the Deschutes River Conservancy, a local 501(c)3 non-profit. Your donation is tax deductible. Save your bill stub as receipt.



Lessons Learned from Checkbox Programs

- Don't go it alone!
 - Initiated through partnerships between cities/water utilities and local environmental organizations.
- Water can be hard to find!
 - Limited availability of water for lease in some basins.
- Demonstrate results!
 - On website
 - In annual report



A Similar Mechanism

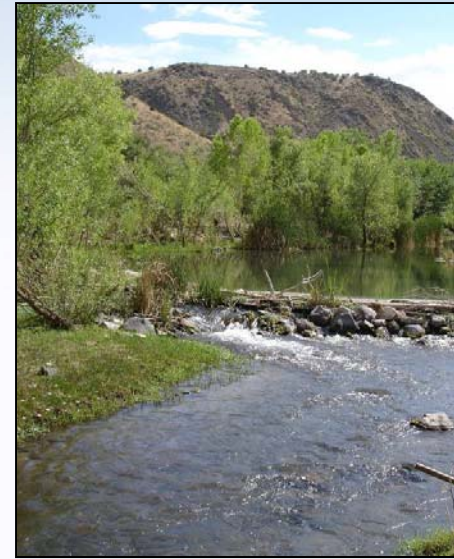
Water Restoration Certificates



- Certificate represents 1,000 gallons of water & costs \$1
- Linked to allow people to offset water use
 - National Average
 - Dollar Amount
 - Gallons Used
 - Personalized Calculator
- Used to support NFWF-approved projects

Starting a Program

- Build partnerships
- Identify funding sources
- Share the concept
- Evaluate interest
- Implement pilot programs
 - Funding mechanism
 - Recruit participants
 - Oversight body
 - Receiving projects



Verde River, Arizona (Jeanmarie Haney, TNC)



Esperanza Ranch, Arizona

Roles of Partners

	City	Water Utility	Non-profits	Citizens	Businesses
Manage program	X	X	X		
Advertise program	X		X		X
Make donations	X		X	X	X
Serve on Advisory Board	X	X	X	X	X

Building Partnerships

- Tucson Pilot Program

- NGOs

- Tucson Water

- Local Government



- Offers subsidies for rainwater harvesting

- Identifying additional funding

- Established Advisory Board

Building Partnerships

- Northern Arizona Outreach
 - Water Managers
 - Flagstaff
 - Prescott
 - Chino Valley
 - NGOs
 - Educational Organizations



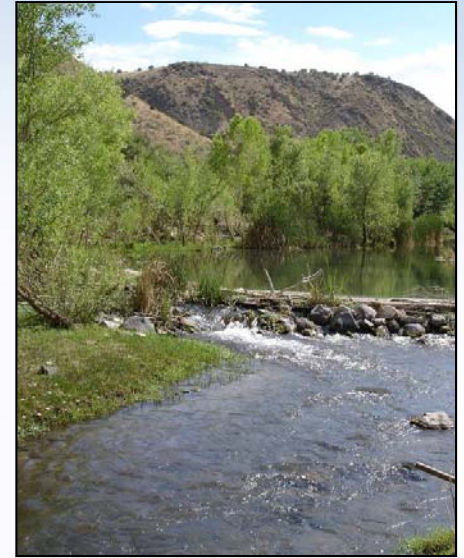
How to Encourage Participation

- Connect to environmental concerns
- Subsidize water conservation
- Link with existing conservation programs
- Match donations
- Set tangible goals



Manage Funds

- Develop fund management processes
 - Partner with existing organizations
 - Oversight body
 - Degree of discretion in decision making



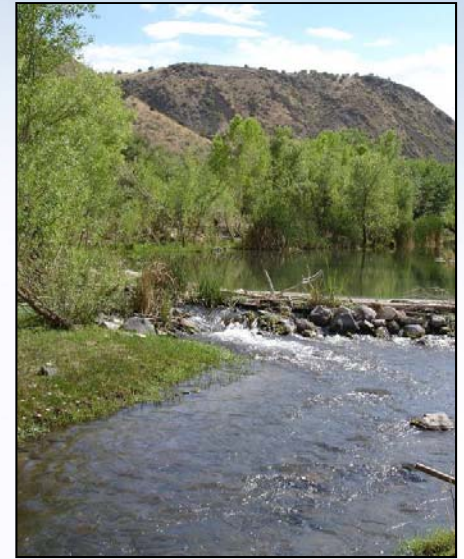
Verde River, Arizona (Jeanmarie Haney, TNC)



Esperanza Ranch, Arizona

Considerations

- Utility billing systems
- Water available for purchase
- Simple messages/explanations
- Accountability
 - Tracking contributions
 - Tangible, local benefits
- Encourage partnerships and broad participation



Verde River, Arizona (Jeanmarie Haney, TNC)



Esperanza Ranch, Arizona

Next Steps

- Partners Needed
 - Program Development
 - Water Conservation
 - Environmental Restoration Priorities
 - Outreach
 - Funding



Questions?



Esperanza Ranch, Arizona

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Conserve to Enhance

References:

- Megdal, Dr. Sharon B., Bate, Joanna, and Andrew Schwarz. June 2009. *Securing Water for Environmental Purposes: Establishing Pilot Programs*, Intl. Journal of Environmental, Cultural, Economic and Social Sustainability 5.*
- Schwarz, Andrew and Dr. Sharon B. Megdal. January 2008. *Conserve to Enhance*, Journal of the American Water Works Association 100 (1): 42-53.
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- Schwarz, Andrew and Dr. Sharon B. Megdal. 2007. *Water Conservation Banking: Municipal Water Conservation to Support Environmental Enhancement*. WRRC and US Bureau of Reclamation, Tucson, AZ.*
- Megdal, Dr. Sharon B., Lacroix, Kelly Mott, and Andrew Schwarz. 2006. *Projects to Enhance Arizona's Environment: An Examination of Their Functions, Water Requirements, and Public Benefits*. WRRC and US Bureau of Reclamation, Tucson, AZ.*

*Available on WRRC website: <http://cals.arizona.edu/azwater/publications.php>