



# Verde Watershed Currents

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— PRESCOTT VALLEY EFFLUENT AUCTION OCT 29 AND 30  
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## VWA LEARNS ABOUT FOREST-TREATMENT STUDIES IN THE BEAVER CREEK WATERSHED

The August meeting of VWA was held at the historic Beaver Creek Ranger Station adjacent to Wet Beaver Creek. Peter Pillis, Forest Archaeologist for the Coconino National Forest, presented information on the history of the area including development of the Ranger Station and early Forest Service activities.

Loyd Barnett, former Watershed Staff on the Coconino National Forest, gave a presentation on the Beaver Creek Watershed Project. This project, conducted jointly by the Rocky Mountain Research Station and the Coconino National Forest, was a part of the Arizona Watershed Program, which included several National Forests, the U.S. Geological Survey, and Arizona state agencies and universities, with special congressional funding. At Beaver Creek a variety of vegetation treatments were applied and field data collected from 1958 through 1981. Stream gages were constructed on 18 watersheds ranging from approximately 100 to 2000 acres in size plus two larger ones of 10 to 20 thousand acres. Initiated in order to evaluate opportunities to increase water yield through vegetation treatments, it quickly expanded to include effects of these treatments on other resources and uses including sediment production, timber growth and yield, range forage, wildlife habitat for a variety of species, aesthetic acceptability to public users, and economics.

Treatments in pinyon-juniper woodlands resulted in very little detected water yield increase. Treatments in the ponderosa pine started with the most extreme – clear-cut – and proceeded downward to approximately 1/3 reduc-

tion in tree density. Early results from the more extreme treatments appeared promising; however, after 5-7 years the increases could not be detected. In addition, the detected increases were most common in years with winter precipitation higher than the long-term average – after the first 1-2 winters following treatment, increases could not be detected in winters with below average precipitation.

Beaver Creek Watersheds include some of the highest precipitation and water yield ponderosa pine areas in Arizona. Measured water year (Oct-Sep) precipitation has been as high as 46 inches with water yield as high as 23 inches (in water year 1972-73 with 42 of the 46 inches as winter precipitation) on a watershed near Stoneman Lake. Annual water yield varied greatly as a result of winter precipitation but averaged 4-8 inches in the small ponderosa pine watersheds.

The Beaver Creek watershed studies did not address ground water recharge. It was believed that these small basalt flow watersheds did not allow significant percolation to contribute to recharge, al-

*Cont'd on Pg 4*



Former Verde Watershed Association Chairman, Loyd Barnett, at VWA booth at Verde River Days celebration on Sept. 29, 2007.

## PRESCOTT VALLEY EFFLUENT AUCTION OCTOBER 29 AND 30

The Town of Prescott Valley plans an auction on October 29 and 30 of 2,724 acre-feet of 100-year assured water-supply credits for effluent water. For full details, see article on Page 3!



## Verde River Basin Partnership Mtg Oct 11

A meeting of the general membership of the Verde River Basin Partnership will be held on Thursday, October 11 at 2:00pm at the Prescott Library -- Founders Suite A & B.

### AGENDA

1. Welcome and introduction of members and audience by Chair.
2. Determination that a quorum exists.
3. Committee Reports
  - A. Communications Committee
  - B. TAG
  - C. Structure Committee
  - D. Coordinating Committee
4. Consideration and possible action on acceptance of new Partnership bylaws.
5. Discussion and possible action on requesting funds and in-kind services from non-governmental members
6. Future Agenda Items
7. Adjourn

## PRESCOTT NATIONAL FOREST SEEKS CITIZEN INPUT IN FOREST PLANNING

The Prescott National Forest (PNF) is using both informal and formal communication methods to gather input to help identify the Needs for Change for future Forest Plan guidance.

The PNF is continuing to learn from citizens by extending an invitation to them to develop landscape visions for their communities. The vision descriptions are expected to include Social, Economic, and Ecological factors and will also consider how the Prescott National Forest influences or is a part of the vision. The PNF hopes to have enough interest so that 11 informal community meetings open to all, in and around the forest, will take place. The meetings will primarily be sponsored by a group or network from the area, probably on their regular meeting date, and will be community-wide meetings. The PNF will offer the services of a professional, impartial facilitator to assist with organizing and running the meeting. Forest Service personnel expect to attend the meetings to introduce and describe the reasoning for vision development. They will also provide assistance with getting the word out to people who might be interested.

The vision statements are expected to be complete by January of 2008, and the PNF will eventually publish them in draft and final planning documents.

While the Forest can't promise to address every part of each community vision, it will use them as a basis for identifying needs for change in the current Forest Plan and will potentially include the essence of the vision statements in desired condition descriptions in the future modified Forest Plan. Naturally, the Forest will meet the requirements of law and regulations and consider interests of national constituencies as well.

In March, the Forest will sponsor formal public meetings—expected to take place in Prescott, Cottonwood, and to be determined third location. At these meetings it hopes to report back on how the visions were used in the draft Need for Change report, continue to invite citizens to identify issues and interests, and attempt to prioritize the modifications that may be needed in current Forest Plan Guidance. Ultimately, the Forest Supervisor, Alan Quan, will give final approval to a high priority list of topics to be addressed in detail during the Plan Revision process.

Contact Sally Hess-Samuelson at 928-443-8216 or [shesssamuelson@fs.fed.us](mailto:shesssamuelson@fs.fed.us) to share concerns or to invite her to speak to your group or network. Written comments may be shared at <http://www.fs.fed.us/r3/prescott/plan-revision/get-involved.shtml>

— *Contributed by Sally Hess-Samuelson, Prescott National Forest*

## WINTER 2007/8 FORECAST

We are all tired of the drought that has gripped Arizona for well over a decade. Weatherwise, the drought has been most obvious during winters when the lack of rain and mountain snow result in poor runoff conditions, summer fires, and reduced water supplies. So, what can we expect for this winter? After last winter's "No Show" El Nino winter, when Arizona should have had wet weather, we are all hoping for a return to normal or wet weather. Sadly, in the tropical eastern Pacific Ocean conditions have developed into a La Nina, or cooler than normal water temperature and these conditions are forecast to persist at least through mid-winter. In Arizona, La Nina winters have a better chance of being dry than El Nino winters have of being wet. Official forecasts from the National Weather Service and the Climate Prediction Center are all forecasting a strong likelihood of a dry winter season. We should all plan for the drought to continue this winter, and be pleasantly surprised if Nature provides otherwise. — *Contributed by Charles Ester, Salt River Project*

## WATERSHED MONITOR NEW SRP WEBSITE

At this year's Verde River Day celebration SRP rolled out a new website at [www.WatershedMonitor.com](http://www.WatershedMonitor.com). The site contains information about river flows and precipitation on the Salt and Verde Watersheds. In developing this website, it was SRP's desire to develop an attractive site that would allow the lay person to better understand how a river system can be monitored and the importance of the data. Maps, stick diagrams, and pictures of most of the sites allow the average person to identify with a monitoring site. There are also graphs that show real time data and several options for displaying recent history. So check out the site at [www.WatershedMonitor.com](http://www.WatershedMonitor.com) and let SRP know what you think about the ability to check the pulse of the Salt and Verde Watersheds. — **Greg Kornrumph, SRP**

## UPPER VERDE RIVER WATER-SHED COALITION COMMITS TO ACHIEVEMENT OF SAFE YIELD IN THE PRESCOTT ACTIVE MANAGEMENT AREA

At its monthly meeting on Wednesday, Sept. 26, the Upper Verde River Watershed Protection Coalition agreed to add achieving safe yield in the Prescott Active Management Area (PrAMA) to its goals. Safe yield represents a long-term balance between the amount of ground water pumped in the PrAMA and the amount of recharge to the aquifer. For many years, ground-water pumpage in the PrAMA has substantially exceeded recharge. Arizona State law regards safe yield as a goal that the PrAMA must try to reach by 2025. The addition of achievement of safe yield to the goals of the Coalition must now be endorsed by each of its participating entities, which include Prescott, Prescott Valley, Chino Valley, Dewey-Humboldt, Yavapai County, and the Yavapai-Prescott Tribe. — **Ed Wolfe**

## PRESCOTT VALLEY EFFLUENT AUCTION OCTOBER 29 AND 30

The Town of Prescott Valley plans an auction on October 29 and 30 of 2,724 acre-feet of 100-year assured water-supply credits for effluent water. The Arizona Department of Water Resources (ADWR) issued a physical availability determination in mid-2006 that the Town was then recharging 1,103 acre-feet per year of treated effluent annually. ADWR further recognized that the Town has the physical capability to produce, treat and recharge the remaining 1,621 acre-feet per year of effluent. The Town expects to recharge the entire 2,724 acre-feet per year by 2014.

It is not the effluent itself that is being auctioned, but the right to use ground water in an amount equal to the amount of effluent recharged to the aquifer by the Town. The purchaser of the effluent credits will receive a renewable supply of water that meets the tests of the Assured Water Supply Program. This means that it is physically, legally, and continuously available, meets water quality standards, and is consistent with the Safe Yield Goal of the Prescott Active Management Area and its Third Management Plan. The owner of effluent credits can use them for pumping from ADWR approved recovery wells, following the Town's recharge of an equal or greater amount of effluent.

Working with an Omaha investment group, Aqua Capital Management, LP, the Town set a price-floor agreement with Aqua Capital that established the price of the effluent credits at \$19,500 per acre-foot. However, auction participants must submit minimum bids of \$22,500 per acre-foot in order to cover the Town's costs of product development, market analysis and contract preparation. If the Town does not receive an appropriate bid, Aqua

Capital will receive the effluent credits under the terms of the price-floor agreement.

As summarized in the Daily Courier (September 18, 2007), the purchase terms include:

- Rights to the water and any first-generation water that may result from on-site use of the water under a specific development plan that has a certificate for assured water supply;
- The right to use or sell the water interests to subsequent buyers;
- A down payment of 25 percent of the selected bid price per acre-foot multiplied by the available 1,103 acre-feet;
- Pledging additional payments if a Certificate of Assured Water Supply is issued, upon receipt of a building permit, or upon resale of the effluent;
- An option to buy the remaining 1,621 acre-feet as it becomes available.

Prescott Valley officials point out that this is the first time in their knowledge that a water resource in the desert southwest has been turned into a commodity and priced according to its true value. John Munderloh, the Town's Water Resource Manager, adds that by allowing the full value of water to be realized the highest and best use can occur and that market forces, rather than governmental controls, may be the most effective means of achieving water conservation. He says that what was considered a waste product a few years ago, and later just suitable for golf course irrigation, has now become a valuable commodity as a result of high quality treatment, recharge and recovery, all requiring substantial capital investments.

For more information check the website at: <http://www.waterexchange.com/auction/>

— **Ed Wolfe & Loyd Barnett**

## **WELCOME NEW MEMBERS:**

**Craig Sommers  
Town of Clarkdale**

**Suzette Russi**

**Paulden Area Homeowners Association**

**Greg & Patsy Olsen, Montezuma Water Company**

**Alice Brawley-Chesworth, City of Phoenix**

# Yavapai County Water Advisory Committee (WAC) Update

Although the WAC has several ongoing efforts, this update is focused on three WAC activities: A geospatial database for the Verde Valley surface-water system by NAU; a study of the Middle Verde River baseflow by the USGS; and the scoping of an Appraisal Level Water Resources Management Study with the Bureau of Reclamation for part of Yavapai County.

**Verde Valley Geospatial Database:** At its July, 2007, meeting the WAC approved an expenditure of \$34,342 to fund a new project that represents the first step in building a surface-water model to better understand how surface-water flows in the middle Verde River Valley respond to hydrologic conditions. Plans for this project are: (1) to collect existing information about human-created surface-water inputs and outputs—especially as related to river diversions for irrigation—in the Verde Valley between the Clarkdale and Verde Falls stream gages; (2) to prepare a geo-referenced conceptual surface-water model (in which all data are recorded and evaluated within a single, uniform digital-map database); and (3) to investigate and review existing and available surface-water modeling software. The products of this project will include recommendations for future work. However, the results of this work are valuable in their own right whether or not subsequent steps are carried out. The principle investigator is Dr. Abe Springer of NAU. However, much of the work will be performed by Rob Ross, a graduate student.

**Verde River Baseflow Evaluation:** The objective of this investigation is to provide information about streamflow conditions of the Middle Verde River and some tributaries. The information will support on-going numerical ground-water modeling efforts by the USGS as well as surface water modeling efforts. The specific objectives were to collect data on stream discharge, specific conductance, temperature, pH, and dissolved oxygen along the main stem of the Verde River and some tributaries in the Verde Valley. The Project Chief is Donald Bills of the U.S. Geological Survey (USGS) Flagstaff Science Center. The

USGS Tucson office and the University of Arizona have provided significant support.

The field work was conducted in June 2007. Base flow measurements were collected along with field parameters and water samples. Streamflow data are being compiled and analyzed by the USGS, and water quality samples are being analyzed by University of Arizona. According to the August 7, 2007, USGS project review, data processing is ongoing. However significant findings so far include identification of previously undocumented spring discharge into the Verde River. As expected, this work reinforces an appreciation of the complexity of the Verde Valley surface water system. Future plans include distribution of the data, and proposals for additional work will be forthcoming.

**Bureau of Reclamation Appraisal Level Water Resource Management Study:** This investigation is in the scoping phase. Preliminary presentations and discussion of the WAC indicate such an appraisal level study is aligned with the WAC's mission, thus the WAC is developing a Plan of Study and pursuing a cost share agreement with Reclamation and ADWR .

Appraisal Studies are preliminary investigations to determine the desirability of proceeding to a feasibility study. Appraisal reports generally use existing data and information to identify plans for meeting current and projected water resource needs and problems of the planning area. Three questions should be answered by the study: (1) Is there a problem (i.e. unmet water demand)? (2) Is there at least one potential solution to the problem (alternatives to meet the demand)? and (3) Is there a Federal interest? The Bureau of Reclamation requires a 50/50 cost share with a local partner(s) to fund the study.

Please contact the WAC Coordinator, John Rasmussen, for more details on any of the WAC activities or if you would like to be added to the WAC email-recipient list ([john.rasmussen@co.yavapai.az.us](mailto:john.rasmussen@co.yavapai.az.us) or 928-442-5199).

— *Prepared by John Rasmussen, Coordinator, Yavapai County Water Advisory Committee*

## Forest Treatment Studies

documented some seepage losses along channels in two watersheds. These were not used for subsequent comparisons.

The Beaver Creek watershed studies were phased out in 1981-82. Water years 1978, 1979, and 1980 had the wettest consecutive three winters since record keeping began, and flooding across transportation routes was a more immediate concern than increasing water yield. Analysis of the data, which are archived at the University of Arizona, has continued. A description of the area, maps, summary of watershed treatments and results, along with precipitation and streamflow data, are available on line through

University of Arizona Office of Arid Lands Studies: <http://ag.arizona.edu.OALS/watershed/beaver>. In addition, there are over 700 publications that directly or indirectly report results of the Beaver Creek project. A large number of them are in areas other than water—for example, various aspects of wildlife habitat as affected by differing treatments

Dan Neary of the Rocky Mountain Research Station then discussed a current project to use some of the stream gage installations – still present on the ground -- for new research incorporating fire management activities and their effects. — *Submitted by Loyd Barnett*

# VERDE RIVER BASIN PARTNERSHIP COMPLETES BYLAWS AND SEEKS ALTERNATE FUNDING

The Verde River Basin Partnership completed ten months of work on its bylaws this July, at which time the document was robustly discussed in an open meeting of the full Partnership held July 26th. Clarification and concerns were raised and addressed by Members and participants attending the meeting. Fine tuning and wordsmithing have now been completed; the final draft has been distributed to all members, and approval is expected at the next meeting to be held 2pm October 11th at the Prescott Public Library.

Although Senator McCain asked President Bush to include funding in the administration's fiscal 2008 budget for the first year of studies called for in Title II of Public Law 109-110, the request was denied. In the absence of federal funding, the Partnership's Technical Advisory Group has worked with the U.S. Geological Survey to identify a smaller component of the first year's work that could be funded by alternate sources. Some of the Verde Valley municipalities have pledged per capita donations to fund Partnership operations and/or part of the cost of initial USGS work. To date, the Part-

nership's work has been carried out solely by in-kind donations of services by its members.

A report on the first phase of the Verde River Ecological Flows study will soon be ready for distribution. The study is a collaboration of the Verde River Basin Partnership, The Nature Conservancy, and the Arizona Water Institute. Its purpose is to develop conceptual models of the Verde River ecosystem that link hydrologic variation to ecological response. The first phase of the study included a synthesis of available literature and a two-day experts, workshop that tapped the knowledge and experience of an interdisciplinary group of experts in the fields of ecology, biology, hydrology, and geomorphology. The goal of the workshop was to develop conceptual models, document stream-flow ecology relationships, and develop a prioritized agenda for further research. The report describes the physical setting, riparian ecosystem, and wildlife resources of the Verde River; documents results and outcomes from the workshop; and develops linkages between hydrologic variation and ecologic response. The completed ecological flows study will provide a component of the Partnership's deliverables specified under Title II.

## Membership Form for the Verde Watershed Association

Government units	\$ 100 per year
Business for profit	100 per year
Civic groups and non-profits	50 per year
Individuals	25 per year

Make check payable and mail to:

**Verde Watershed Association**  
**P.O. Box 4001**  
**Cottonwood, AZ 86326**

Name: \_\_\_\_\_ Phone: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_ Fax: \_\_\_\_\_  
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E-mail address to receive the Verde Currents E-Newsletter:  
\_\_\_\_\_

**Web site: [www.vwa.org](http://www.vwa.org)**