



Verde Watershed

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“The City of Prescott, Arizona Department of Environmental Quality and the Arizona Water Protection Fund Commission have granted a combined amount of nearly \$1.4 million - representing 95% of the total estimated budget - for habitat restoration in the Watson Woods Preserve along Granite Creek. The remaining 5% percent of necessary funding will likely come from individual donors.” —Article on Pg 3

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DODDER, GIOIA, HARRINGTON AND MEYER HONORED BY VERDE RIVER CITIZENS ALLIANCE

Every year the Verde River Citizens Alliance (VRCA) honors those individuals who, in the judgment of the Executive Board, have made an outstanding contribution to the preservation of the Verde River. Recipients at VRCA's year-end meeting on December 15 were:

- Joanna Dodder, journalist: honored for the consistently high quality over the last 10 years of her coverage of Yavapai County water issues for the Daily Courier, the Verde Independent, and the Camp Verde Bugle.
- Tony Gioia, Mayor of Camp Verde (2004-present), former Camp Verde council member, and co-chair of the Yavapai County Water Advisory Committee (1999-2004): honored for his staunch advocacy for the health of the Verde River, including his recent trip to Washington, D.C., to lobby for federal designation of Fossil Creek as a Wild

and Scenic River.

- Michelle Harrington, volunteer and employee of the Center for Biological Diversity (CBD) since 1999, and currently its Rivers Conservation Manager: honored for her leadership of the CBD's "Save the Verde" campaign.

- Bill Meyer, retired U.S. Geological Survey ground-water hydrologist, former member of the Yavapai County Water Advisory Committee's Technical/Administrative Committee, vice-chair of the Verde River Basin Partnership Technical Advisory Group (TAG) and chair of the TAG's Hydrology subcommittee, and author or co-author of several reports on ground-water issues in the upper Verde watershed: honored for his contributions in interpreting and publicizing ground-water science as it relates to the upper Verde watershed.

Contributed by - Ed Wolfe

ARIZONA WATER INSTITUTE AWARDS FUNDING FOR PHASE II OF VERDE RIVER ECOLOGICAL FLOWS STUDY

The Arizona Water Institute (AWI) announced in its Nov. 1 newsletter that it has awarded a grant of \$32,394 for Phase II of Verde River Ecological Flows Study. This follows a previous AWI grant of nearly \$50,000 for the first year's work (Phase I) of the study, from which a report and bibliography will be released shortly. The Verde River Ecological Flows Study is a collaboration among the AWI, the Verde River Basin Partnership, and The Na-

ture Conservancy. The goal of the project is to determine the water needs of the Verde River ecologic system and the potential consequences of a changed flow regime on riparian-area ground-water levels and Verde River ecology. This information will be vital as water managers seek to best utilize the Verde River Basin's water resources in response to growing human water demands.

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PRESCOTT VALLEY HOLDS SUCCESSFUL EFFLUENT AUCTION

Water Property Investors of Port Washington, NY, was the winning bidder in the October 29-30 auction of 100-year assured water-supply credits for effluent water generated and being sold by the Town of Prescott Valley.

The winning bid was \$24,650 for each of the 1,103 acre-feet of effluent credits that the Town was selling. Water Property Investors now has the option of eventually purchasing at the same price an additional 1,621 acre-feet of effluent credits that will be generated and recharged to the aquifer by the town's waste-water treatment facilities.

The price for the initial 1,103 acre-feet is over \$27 million dollars, and the total price including the additional optional purchase of 1,621 acre-feet is more than \$67 million dollars. The Town will pay a 10 percent break-up fee to Aqua Capital Management, LP, of Omaha, which had guaranteed a \$19,500 per acre-foot floor for the auction.

According to the Daily Courier (October 31, 2007), Prescott Valley officials hope to apply the sale proceeds for the Town's share of the cost with the City of Prescott for purchase of the Big Chino Water Ranch in Big Chino Valley and construction of a pipeline to deliver the water.

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 of the Arizona Department of Water Resources. The owner of effluent credits can use them or sell them for beneficial use within the Town of Prescott Valley following the town's recharge of an equal or greater amount of effluent.

Prepared by Ed Wolfe

COLORADO RIVER STATES RATIFY LANDMARK AGREEMENT

Seven Western states ratified a landmark agreement, put into effect by Interior Secretary Dirk Kempthorne's signature on December 13, 2007, to conserve and share scarce Colorado River water, increasing protection through 2025 for millions of people from the effects of drought, growth, and climate change. The agreement spells out for the first time how the states and the federal government will manage the river both in times of drought and surplus.

The pact calls for the Lake Powell and Lake Mead reservoirs to rise and fall in tandem, maintaining a degree of balanced water storage between the two. It also sets shortage triggers, based on Lake Mead water-surface elevation, for the lower-basin states. As water levels decline to prescribed elevations, water deliveries are reduced by set amounts to Arizona and Nevada until lake levels are restored.

Normal deliveries for consumptive use, aggregating 7.5 million acre-feet (maf) per year, to the lower-basin states (4.4 maf to California, 2.8 maf to Arizona, and 0.3 maf to Nevada) will occur in years when the Lake Mead surface elevation is above 1,075 feet, which is 9.37 maf stored in the reservoir, making up 44 percent of its live capacity of 21.2 maf.

In years when the surface elevation of Lake Mead is projected to be at or below 1,075 feet on January 1 shortages will be declared and deliveries to Arizona and Nevada will be reduced (under previous agreements, California's

deliveries will stay at 4.4 maf). Three levels of shortage and accompanying delivery reductions are recognized with the lowest being below 25 percent capacity with a delivery reduction of 0.5 maf. At all three levels Arizona sustains 96 percent of the reduction and Nevada has the remaining 4 percent.

On January 1, 2008 Lake Mead was at an elevation of 1,115 feet with 12.88 maf in storage, or 55 percent of capacity. Since filling after construction in the 1930's its lowest elevation was 1,083 feet, or 43 percent of capacity, in 1956. The current drought, along with increasing water use by both upper and lower basin states, and concerns of potential future declines in flow led to the agreement among all the seven basin states.

Another element of the plan permits the lower basin states, for the first time, to impose conservation measures and bank the saved water in the Lake Mead reservoir, increasing the likelihood of keeping the lake levels above the shortage triggers.

The Record of Decision—Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead can be downloaded from <http://www.usbr.gov/lc/region/programs/strategies/RecordofDecision.pdf>.

Contributed by Ed Wolfe and Loyd Barnett

COMMUNITY WORKS TO SAVE REGIONAL TREASURE

The 126 acre Watson Woods Riparian Preserve is home to a rare and threatened Frémont cottonwood/red willow riparian (streamside) gallery forest along Granite Creek in Prescott, Arizona. Granite Creek, a mixed perennial/intermittent creek in the Upper Verde River Watershed, was once host to a 1,000-acre forest that reached from the Granite Dells four miles upstream into what is now downtown Prescott. An early settler's account of the area described the creek's banks in the 1860s as "lined with extensive growth of jungle willows, wild vines, cottonwood and ash trees...."

Almost 150 years later, a visitor to the same area today would report a drastically different experience. Fort Whipple corralled a herd of 2,000 cattle near the creek, Watson Lake Dam was built in the early 1900s, and more recently the area has been used for target shooting, off-road vehicle use, small-scale dumping of household trash, and wood-cutting. The largest-scale and most significant disturbance was a sand and gravel mining operation during the mid-to-late 20th century, and in 2004 Granite Creek was added to EPA's 303d list of "impaired waters."

While significantly degraded, Watson Woods is one of the best remaining examples of riparian habitat in central Arizona. The City of Prescott, thousands of community volunteers, and Prescott Creeks (a local grassroots organization) are restoring this historic and important ecosystem. The Preserve was established in 1995 with a 25-year lease between the City of Prescott (the landowner) and Prescott Creeks. Major grants from the Arizona Water Protection Fund Commission, the Arizona Game and Fish Heritage Fund, and the US Fish and Wildlife Service were combined with smaller local contributions to fund a management plan, development of infrastructure (fences, gates, interpretive signs, etc.), and biological studies. In 2004 Prescott Creeks secured grant funding from the Arizona Water Protection Fund to begin work on a restoration plan

for Granite Creek within the Watson Woods Riparian Preserve.

Restoration design assessments for the Preserve focused largely on channel geomorphology and function, floodplain function, hydrology, stream bank stability, and riparian vegetation. The Watson Woods Riparian Preserve Restoration Plan, completed earlier this year, describes critical restoration design elements including: realignment of four reaches of the Granite Creek channel, creation of six ephemeral wetland habitats, and revegetation with appropriate native species throughout the Preserve. Noxious weed eradication, 2.1 miles of community interpretive trails, interpretive signage and a new main entrance on the western edge of Preserve are also detailed in the plan, as are many opportunities for community members to participate in all aspects of the restoration project. Design and planning for the restoration project took over a decade; our timeline calls for major on-the-ground components to be complete in two years. Extensive biological and physical monitoring will follow for three years.

The City of Prescott, Arizona Department of Environmental Quality and the Arizona Water Protection Fund Commission have granted a combined amount of nearly \$1.4 million – representing 95% of the total estimated budget – to implement this important project. The remaining 5% percent of necessary funding will likely come from individual donors.

On-the-ground restoration work is expected to begin during the fall of 2008. If you would like to volunteer your time for this exciting project, make a financial contribution, or if you belong to a group that would like a field trip or presentation, please call Prescott Creeks at (928) 445-5669, or email Info@PrescottCreeks.org to make arrangements. Additional information can be found at: www.PrescottCreeks.org. *by: Michael Byrd, Prescott Creeks Executive Director and Preserve Manager*

PHASE II OF VERDE RIVER ECOLOGICAL FLOWS STUDY *Cont'd from Pg 1*

The first year's work included compilation of a bibliography, development of conceptual flow-ecology models, and formulation of a research agenda for Phase II. The Phase-1 conceptual flow-ecology models were largely developed during a two-day workshop held in May, 2007. The workshop focused on the main stem of Verde River from its headwaters through the Verde Valley. The participants, representing 15 different universities, agencies, and institutions, included 35 experts in hydrology, geomorphology, riparian ecology, ichthyology, ornithology, mammalogy, herpetology, entomology, and water quality.

Building on the accomplishments of Phase I, the Phase II team, led by Arizona State University ecologist, Dr. Juliet Stromberg, will begin implementing the research agenda developed in the workshop—integrated data collection to confirm and further develop flow-ecology response models. Integrated collection of hydrologic and ecologic data will take place at key study sites to further develop and test flow-ecology models and as a first step in developing methods for geographically broad application on the Verde River and beyond. *Contributed by - Ed Wolfe*

YAVAPAI COUNTY WATER ADVISORY COMMITTEE (WAC) UPDATE

This update includes three WAC projects: the Central Yavapai Highlands Water Resource Management Study (Appraisal study with Bureau of Reclamation and ADWR); NAU's Verde Valley Geospatial Database work (surface-water model development); and Long-Term Growth and Water Use Scenario Development by Hoyt Johnson (H3J Consulting).

Appraisal-Level-Water-Resource Management Study: This investigation, known as the Central Yavapai Highlands Water Resource Management Study, will begin in January 2008. The Study has been approved by the WAC and the Board of Supervisors. The Plan of Study is complete, and the Cost-Share Agreement between the Bureau of Reclamation, ADWR, and Yavapai County will be signed by the parties soon. The study area includes the Verde Valley above the gage near Camp Verde, and the Big and Little Chino Sub-basins. The

Plan of Study will be posted on the WAC website <http://www.co.yavapai.az.us/Content.aspx?id=20562> after the cost-share agreement is signed.

The study is estimated to require three years at an estimated cost of \$600,000. Half of the cost is to be borne by Yavapai County and the Arizona Department of Water Resources (ADWR) and half by the U.S. Bureau of Reclamation, which is the lead agency in the study. Some share of the costs for Yavapai County and the ADWR can be fulfilled as in-kind services, which include relevant recent or current investigations carried out by the County's Water Advisory Committee or by 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 study will begin with an assessment of the current and future water demands. This will provide an answer to the first of the three main questions the study will address: Are there demands that will be unmet in 2050? If so, where are demands unmet and by how much? The next phases will assess the available supplies and then alternatives for meeting the demand will be developed and evaluated.

Verde Valley Geospatial Database: The Technical Committee (TAC) of the WAC will have the first update presentation at its January 10, 2007 meeting in Cottonwood (9:00 AM at the County Building on South

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SRP GRANTS COCOPAI \$1,500 FOR COTTONWOOD PUBLIC LIBRARY BOOK COLLECTION

A collection of books and studies about a timely topic—water—was unveiled at the Cottonwood Public Library during a Tuesday, Oct. 30, open house. Cocopai Resource Conservation and Development, Inc. received a \$1,500 grant from Salt River Project to stock the Cottonwood Library with this special collection.

Mayor Diane Joens and SRP Water Resource Manager Charlie Ester served with Cottonwood Library Director John O'Neill on the Cocopai Cottonwood Library Action Team. The Cottonwood Bookmarks also assisted with the project. Cottonwood's Assistant City Manager and Water Resources Director, Robert B. Hardy, has his own extensive collection of water reference books and suggested the titles for the collection. Cocopai Coordinator Bob Arambula also helped. Ester says, "SRP is committed to assisting with projects in the Verde Watershed communities to promote good will and assist with information and knowledge about water issues.

Concerning the new books, O'Neill says, "All books will be located in the library's Southwestern collection and

will be available to all county residents for pick up at their local Yavapai Library Network library once a hold has been placed on a particular title. Patrons can place holds online via home computers at <http://yavapailibrary.org/> or at network library catalog terminals."

Membership of Cocopai—a 34-year-old conservation and development organization—is comprised of appointed elected officials from cities, towns and counties in Yavapai and Coconino counties. Private businesses, corporations, chambers of commerce, and others are members. RC&D is a unique process that helps people protect and develop their economic, natural, and social resources in ways that improve their area's economy, environment, and quality of life. Cocopai has completed more than 200 projects. A list is available at www.cocopai.org. Serving communities since 1973, Cocopai RC&D provides leadership to address natural resource conservation issues through cooperative efforts. Cocopai's service area extends from Page to Black Canyon City and includes Coconino and Yavapai Counties.

From a Cocopai RC&D press release

(WAC) UPDATE *Cont'd from Pg 4*

6th Street). Rob Ross and Abe Springer of NAU will provide descriptions of the field work and analyses performed so far.

The purpose of the initiative, as described in the July 12, 2007 scope of work, is to collect data and assemble a GIS package relevant to building a surface-water model to better understand how surface-water flows in the middle Verde River Valley respond to hydrologic conditions. The current work will stand alone. However it is envisioned as a first phase of a multi-phased project to achieve the desired model outcome.

The current project includes collection of existing information about human-created surface-water inputs and outputs along the Verde River from the Clarkdale gage to the Verde Falls gage; preparation of a geo-referenced conceptual surface-water model; and research and review of existing available relevant modeling software. Recommendations for future work will be included.

Long-Term Growth and Water Use Scenario Development: The USGS is currently working to develop a ground-water model for Northern Arizona including the Verde River watershed, known as the Northern Arizona Regional Ground-Water Flow Model. The WAC has contracted with Hoyt Johnson (H3J Consulting) to develop scenarios for the part of Yavapai County within the model area (Prescott AMA, Big Chino Area, and Verde Valley).

The initial scenario project is nearing completion. The growth area and rates of growth have been defined by the jurisdictions. The growth has been modeled over the landscape based on a set of criteria, or "growth rules" (spatial growth model). The water-use values and potential locations have been defined.

The data will be reviewed by the WAC and its Technical Committee (TAC) prior to a final summary report.

The data files will then be transferred to the USGS ready to be inserted into the model grid. Table 1, below, shows the population as reported by the jurisdictions for the purpose of the first ("most likely") scenario.

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 or 928-442-5199).

Table 1: Population totals as reported by jurisdictions to TAC of WAC (draft)

	Incorp	Unincorp	Total
2006	132,778	75,399	208,177
Increase	22,079	7,162	29,241
2010	154,857	82,561	237,418
Increase	32,624	8,233	40,857
2015	187,481	90,795	278,276
Increase	37,430	7,498	44,928
2020	224,911	98,292	323,203
Increase	44,186	6,677	50,863
2025	269,097	104,969	374,066
Increase	49,791	5,685	55,476
2030	318,888	110,654	429,542
Increase	43,134	4,652	47,786
2035	362,022	115,307	477,328
Increase	23,223	3,845	27,068
2040	385,244	119,152	504,396
Increase	5,608	3,381	8,989
2045	390,852	122,533	513,385

Prepared by John Rasmussen

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: _____

City, State, Zip _____

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