Water Trivia

- Groundwater can take a human lifetime just to traverse a mile.
- Most of the earth’s surface water is permanently frozen or salty.
- Water is the only substance that is found naturally on earth in three forms: liquid, gas, solid.
- If all the world’s water were fit into a gallon jug, the fresh water available for us to use would equal only about one tablespoon.

http://www.lenn-tech.com/water-trivia-facts.htm

APS Retires Childs-Irving Power Plants

FOSSIL CREEK, Ariz. – In a landmark decision, APS shut down two historic hydroelectric power plants, returning full stream flow to Fossil Creek, a tributary of the Verde River. The free flowing creek will yield an additional 14 miles of wetland ecosystem valuable to wildlife, riparian habitat, and creek-side recreation.

The flow was diverted in 1909 by the Arizona Power Company to operate the state’s first hydroelectric power plant at Childs. The Irving plant followed in 1916.

The Yavapai-Apache people provided much of the labor that built the dam, structures, flumes and pipes that diverted water from the stream into the electric generating plants. Fossil Creek provides a cultural connection with many important Western Apache Clan stories and legends originating from Tonto Apache (Dilzh’e’e’) ancestors who lived in the Canyon. Descendants still visit and use the area today.

Yavapai-Apache Nation historian and councilman Vincent Randall told the gathering on June 18, "It's our people that built the dam, and we're proud of having been involved with its success over the decades. But now that its time has passed, we ask for forgiveness of the water for what our ancestors did. What we ought to be are good stewards. I am happy because we can be blessed that the water is free."

Chairman Jamie Fullmer spoke with heartfelt sincerity about the significance of the day for the Yavapai-Apache Nation.

Leaders from American Rivers, Arizona Riparian Council, Center for Biological Diversity, The Nature Conservancy and Northern Arizona Audubon Society were closely involved in the decommissioning process and elatedly spoke at the gathering.

As part of the preparations for the return of full flow to Fossil Creek, the Northern Arizona University Stream Ecology and Restoration Group collaborated with managers of the U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, U.S. Forest Service and the Arizona Game and Fish Department to conduct a native fish restoration project. The project included the removal of non-native species and construction of a fish barrier that keeps non-native fish from entering the restored area. Ongoing monitoring is planned.

The Childs and Irving power plants gave a powerful boost to Arizona’s frontier economy, first providing power to the Jerome, Clarkdale and Bradshaw Mountain copper mining camps and most of Yavapai County.

In 1920 Phoenix had reached 44,000 in population and as much as 70 percent of the fledgling city’s power needs were met by the Childs and Irving systems.

In modern times the Childs and Irving plants provided less than one percent of APS’s power. The cost to dismantle the plants is $13 million. The Forest Service will manage the area when APS finishes in 2009. APS holds a "non-consumptive" right to Fossil Springs water flow that will be assigned to the Forest Service and changed to an instream flow water right. Sen. John McCain said, "I intend to introduce legislation to include Fossil Creek in the Wild and Scenic Rivers system to ensure future generations will enjoy this very special place."

APS president and CEO Jack Davis said, "Our decision was based on what was best for Arizona. As a responsible corporate citizen, APS carefully reviewed our business goals and determined that closing the power plants, returning the stream to its full flow and recreating the natural condition of this beautiful area was simply the right decision."

APS president and CEO Jack Davis marked the end of an era when he flipped the switch that shut down the Childs and Irving power plants and returned full flow to Fossil Creek on June 18, 2005.
Arizona Town Hall Makes Water Recommendations

GRAND CANYON – The 85th Arizona Town Hall focused on the theme, “Arizona’s Water Future.” A record 177 participants spent two-and-one-half days discussing Arizona water issues, developing recommendations, and producing a consensus report of findings and recommendations.

Four previous Town Hall sessions dealt with water and some legislation followed each. Oftentimes it has taken two to three years for this to occur. In the last legislative session ADWR received some funding restoration and discussion/debate began on a number of bills introduced by Representative Tom O’Halleran to implement the Town Hall’s recommendations.

Acknowledging the benefits of past planning for such items as the Central Arizona Project and the establishment of Active Management Areas to reduce the rate of mining groundwater, the group recognized needs for more active planning and management of water. This is especially the case for rural Arizona. In addition to adopting a “culture of conservation,” Arizona must engage in long-term planning based on good science and data collection throughout the state. To achieve this the Arizona Department of Water Resources (ADWR) needs to be properly staffed and funded. Recognizing the connection between the water resource and land uses, they recommended new or amended legislation to empower counties and local entities to address water management issues. Town Hall recommended that local governments receive the authority to consider availability of water in approving or disapproving new subdivisions. The Town Hall also recommended that legislation be considered to authorize locally initiated and operated regional water management authorities for coordinated management of regional water resources.

The work of the Verde Watershed Association was recognized as its Chairman, Loyd Barnett, was invited to be a participant in the Town Hall. VWA members Anita MacFarlane and Tony Gioia were also participants. In subsequent months reports were given to local areas throughout the state. Barnett and MacFarlane participated in a Verde Valley report to invited community leaders. The 85th Arizona Town Hall was held Oct. 31 through Nov. 3 at the Grand Canyon.

Founded in 1962, the Arizona Town Hall twice each year brings together a wide cross section of approximately 150 prominent Arizona citizens to consider and discuss a topic of major concern to Arizona’s future. The resulting official report is then bound with the background research and distributed to Town Hall members, all members of the Arizona Legislature and other elected officials, all public libraries and to the general public. Reports are available at www.aztownhall.org. Shirley Agnos, President Arizona Town Hall, Ph: (602)252-9600, Email: townhall@cybertrails.com

Verde Watershed Events

VWA Arsenic Mini-Seminar Planned for Watershed’s Private Well Owners

The Verde Watershed Association is planning two mini-seminars to help private well owners learn about arsenic mitigation. Municipal and private water providers must reduce arsenic to fewer than 10 parts per billion by January 23, 2006. How will private well owners mitigate arsenic in their wells? The presentation will be held in Prescott on Thursday, Oct. 13 from 7 to 9 p.m. at the Mackin Building. VWA will sponsor the same mini-seminar presentation for Verde Valley residents on Thursday, Nov. 10 from 7 to 9 p.m. at the Camp Verde School. An update will also be given on the federal government’s requirement for municipal and private water providers to mitigate arsenic and how well they are able to comply. Watch for more mini-seminar details to be announced.

Verde River Days, Sept. 24 VWA will sponsor an information booth. Be sure to stop by. If you would like to help, please call Carol Johnson at 634-6106.

Verde Watershed Association (VWA) meets the third Wednesday of the month at 10 a.m. in the various watershed communities. Next meeting Aug. 17 at the Cottonwood Public Safety Building, 199 S. Sixth Street. Loyd Barnett, Ph: (928) 284-0161, Email: lbarnett @npgcable.com, Web site http://vwa.southwest-water.org

Rangeland Health and Stream Restoration Workshops for Land Owners, Ranchers and Conservationists

Hyde Mountain Vista Group is sponsoring a rangeland workshop Friday, Sept. 9 and a stream restoration workshop Saturday, Sept. 10. Both begin at 9 a.m. at the Walnut Creek Center for Education and Research. The registration fee for each is $30, and includes the all-day training, lunch, and take-home field guides. Space is limited. The Walnut Creek Center for Education and Research is a 280-acre former homestead and ranger station now leased to a unique consortium of Prescott College, Yavapai College, Sharlot Hall Museum and Northern Arizona University. The consortium operates the facility as an outdoor classroom, research station and archaeological field camp. The Center is located on Co. Rd. 125, about 1.5 miles from the Williamson Valley Rd. intersection, approximately 40 miles north of Prescott and 35 miles south of Seligman. Susan Brook, Ph: 928-541-7538, or Email hydemountainvista@yahoo.com

Upper and Middle Verde Watershed

USGS Report Available Online

The USGS has completed the first phase of a report to the Yavapai County Water Advisory Committee on the Preliminary Geophysical Framework of the Upper and Middle Verde River Watershed, Yavapai County, Arizona by Langenheim, DeWitt and Witt. It is available online in PDF format at http://pubs.usgs.gov/of/2003/1154/
Grew up next to the Verde River from the time I was three, so the Verde has always been home to me. Winding through the Valley she flows So free—giving life to everything Around her the way God wants it to be.

As a child, played along her banks Caught fish and turtles, swam and Laid out in the sun—this was my fun. Gave cattails as gifts when they were Painted and dried. Watched the clouds As they rolled by—dreamed of the future, Laughed and cried. Came here for comfort When a pet or loved one died. Now you can See why the Verde River has always Been home to me.

As a teenager, rode inner tubes down Her middle, walked along her shores, Burned campfire coals for hotdogs and S'mores, talked and sang with friends As we watched the moon and stars. Listened to the bull frogs as they sang Their songs with glee. This also made the Verde River home to me.

As the Verde River winds through The canyons and is fed by natural springs As she rolls along—the trees, grass, Flowers, birds, wildlife, and people Of the Valley to her soul belong. Listen to her story as it is told In the words of a story or song. The Verde River is the life blood Of central Arizona and for this very reason Her use must be projected. She can be enjoyed But her ribbon of life must Be protected. She’s the last of her kind, Another like her you will not find. She must be used only as God had in mind. And then you’ll see, the Verde River Throughout the Valleys will Always be home to you and me!

Billie J. Helm, Historian, Songwriter, Singer

Billie J. Crose Owens-Helm was born in Prescott, Ariz. Her family moved to Clarkdale in the Verde Valley when she was three. Her father worked for the Phelps Dodge Smelter Company and the town of Clarkdale during his career. Her mother worked for the Clarkdale Post Office. Helm was raised and attended kindergarten through high school in Clarkdale. She lived all of her life in Arizona except for 14 years in Layton, Utah. She now resides in Camp Verde, Ariz., after retiring with 21 years of government service that included time with the USDA Forest Service and the National Park Service at Montezuma Castle and Tuzigoot National Monuments and the Albright Training Center at the Grand Canyon. Billie is the mother of six children, four stepchildren, and several grandchildren and great-grand children. Her deceased husband Frank Owens and present husband Charles (Bill) Helm were both raised at Fossil Creek. Bill’s father was the operator at the Irving Power Plant for many years from 1929. Helm’s purpose in writing and composing poetry and songs is to preserve the history of herself and her pioneer family in the Verde Valley, her cowboy uncles and husband, and other early settlers there and in the surrounding areas. Helm also wants to share what it was really like growing up in early central Arizona, to share her feelings, experiences, and perception of life as she has lived it. She produced a CD called Arizona Girl that can be ordered by calling (928) 567-3108.

Southwest Hydrology

Want to stay current on water issues in the Southwest? Sign up for a free subscription of Southwest Hydrology, the trade magazine designed to inform and connect the water communities of the Southwest. It is written by and for consultants, regulators, researchers, water managers, lawyers, policy makers, and everyone in the industry who works with water issues in our semiarid environment. Recent feature topics have included waterborne pathogens, sustainability of water resources, the drought on the Colorado River, remote sensing of hydrologic parameters, and 21st century agriculture. In addition, the magazine contains news of governments, companies, professional societies, and individuals; reviews of books and software; a calendar of upcoming events; job opportunities, and more. Southwest Hydrology is distributed by mail free of charge six times per year to more than 5,300 subscribers. To sign up, view back issues, or just learn more, visit the Southwest Hydrology Web site at www.swhydro.arizona.edu, or phone (520) 626-1805.
**Officials Attend Water Field School**

FLAGSTAFF – County supervisors, city council members, tribal government representatives and others attended the Watershed Research & Education Program’s 2005 Field School in Water Science, Law and Policy for Decision Makers. Michael Pearce of Fennemore Craig gave an overview on Arizona water law. Grant Loomis of the Tonto National Forest, Abe Springer and Charlie Schlinger of NAU, and Rich Martin gave presentations on ground water and surface water hydrology. Tom O’Halloran addressed water issues from his perspective at the Arizona State Legislature. A panel discussion was led by Arnold Taylor, Hopi Tribe; Chip Davis, Yavapai County and Carol Erwin, U.S. Bureau of Reclamation. Participants took excursions to learn about springs, natural and constructed wetlands for effluent finishing, and to a city of Flagstaff wastewater treatment plant that produces effluent for irrigation and maintaining stream flow. They discussed issues involving effluent and endocrine disruptors, flood plains and ground water supplies developed from the Coconino aquifer. The July 7 and 8 event was cosponsored by Central Arizona Project (CAP), Salt River Project (SRP) and U.S. Bureau of Reclamation. The Watershed Research & Education Program at NAU plans to hold the Field School for Decision Makers every other year, with the next offering in 2007, alternating with their biennial Field School for K-12 Educators program scheduled for 2006. Charlie Schlinger, Ph: (928) 523-0652, Email: charles.schlinger@NAU.EDU

**Extension Sponsors Master Watershed Stewards**

YAVAPAI COUNTY—The University of Arizona Cooperative Extension of Yavapai County will offer the 5th Annual Master Watershed Steward Program Sept. 27 through Nov. 3, 2005. The program is designed to educate county residents about water and environmental resources, training them as community volunteers. This intensive 56-hour program covers a multitude of topics including hydrology, geology, climatology, ecology, water law, and agency responsibilities and activities—especially as they relate to Arizona and Yavapai County. Classes meet Tuesday and Thursday from 8:30 a.m. to 12:30 p.m. at Dead Horse Ranch State Park in Cottonwood, Ariz. Russ Radden, U-A Cooperative Extension, Natural Resources Program Coordinator, Ph: (928) 445-6590, Ext. 227 Email: rdradden@ag.arizona.edu

**Prescott City Council Commits to Mitigation and Safe Yield**

PRESCOTT – The Prescott City Council voted unanimously on July 12 to set aside the historically irrigated land water rights on the Big Chino Ranch for mitigation and/or safe yield of the Prescott Active Management Area (PrAMA). Estimations are the historically irrigated lands purchased by the city of Prescott from the Big Chino Ranch (formerly a portion of the JWK Ranch) encompass approximately 1,200 acres. Under Arizona Statute 45-555 a. and b., a city or town in the Prescott Active Management Area may purchase and retire historically irrigated land in the Big Chino basin at an exchange rate of three acre-feet of water per acre. For the City of Prescott this equates to approximately 3,600 acre-feet of water rights. Carol A. Johnson, P.E., Utilities Manager, City of Prescott, Phone: (928) 777-1130, Email: carol.johnson@cityofprescott.net

**Camp Verde Town Council Refers Water Company Lease Purchase Decision to Voters on Nov. 8 Ballot**

CAMP VERDE – The Camp Verde Town Council is working on a lease purchase agreement with the Camp Verde Water Company, and will refer the decision to voters on the Nov. 8 ballot. Mayor Tony Gioia says ownership of the company will make the town a water provider and enable them to create a portfolio of water rights on behalf of the towns’ residents. “I believe it’s a move forward to have a public utility owned by the Camp Verde public,” he says.

The town’s idea is to lease the company now and purchase it in the future. The town would both control the operations and make decisions for further expansion of the system. They have also examined the feasibility of owning and operating the Camp Verde Sanitary District. Tony Gioia, Mayor, Town of Camp Verde, Ph: 928-567-6631, Email: tgioia@commspeed.net

**Gerry Wildeman New Prescott Active Management Area Director**

PRESCOTT – Gerry Wildeman is the newly appointed area director of the Prescott Active Management Area. Wildeman, who recently completed her doctoral studies in environmental planning from Arizona State University, has been at ADWR for 12 years. She currently works for the Arizona Water Banking Authority. She earned a master’s degree in forestry at Northern Arizona, and a bachelor’s in biology at ASU. Wildeman will assume her new duties in early August.

**Cottonwood and Clarkdale Sign Asset Purchase Agreement for Cottonwood Waterworks**

COTTONWOOD – The city of Cottonwood and town of Clarkdale have approved an asset purchase agreement with the city of Cottonwood’s Municipal Property Corporation and Cottonwood Water Works, Inc. Cottonwood and Clarkdale will each own their own part of the water company with Clarkdale contracting with Cottonwood for their financing, and the operation and maintenance of their company. The two communities will reassess the agreement in three years. With plans to close in September, the cash purchase price is $11.5 million with a growth premium of $1,500 for each new connection for seven years. Bonds will be repaid from municipal water company revenues. Robert B. Hardy, City of Cottonwood, Ph: 928-634-5526, Email: rhardy@ci.cottonwood.az.us

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**Highlights of the Verde River Watershed**

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NAU Studies Middle Verde Watershed Springs System

FLAGSTAFF--Northern Arizona University geology student Stephen Flora recently completed a master’s degree thesis studying springs in the Middle Verde River watershed. Guided by Dr. Abe Springer, Flora inventoried and characterized more than 160 springs. Characterization included discharge (flow rate), water chemistry, geologic unit, landform, and vegetation. A Microsoft Access database and GIS map were created and are available on the Web.

After the initial inventory, 16 springs from a variety of geologic formations were selected for a 12 month pilot monitoring study to understand seasonal fluctuations in discharge and their relationship to regional hydrogeology. The main recharge events for the aquifers in this region are from winter and spring snowmelt. Hydrographs of the springs show those located in the shallow Permian karst limestone aquifer are the most variable. Clover Springs was dry in January, had a flow of 600 gallons per minute in peak snowmelt in March, and had declined to 50 gallons per minute in May after recharge from snowmelt had ceased. By contrast, half of the springs in other strata showed little change in discharge in response to recharge events, and the remainder had small, but significant, increases during or after recharge periods.

Stable isotope analyses were used to characterize the hydrogeology of different geologic formations and to determine the source of water from the aquifers influencing spring discharge.

Flora’s pilot study was conducted during the recent drought (Nov. 2002 through Oct. 2003). During the summer and fall of 2005 Dr. Springer and his students are repeating the survey to see how the springs responded to a wet winter.

Information from this study is useful for future management of water resources in the region.

Abe Springer, Ph.D., Associate Professor, Department of Geology, Director Water Collaborative, Northern Arizona University, Ph: (928) 523-7198, Email: abe.springer@nau.edu

To view the report on the Web:
http://verde.nau.edu/Research/Flora/springs.html

Spring in Page Springs, Verde Valley - Photo by Diane Smith Joens
Verde Watershed Association
P.O. Box 4595
Camp Verde, AZ 86322

We're on the Web!
http://vwa.southwest-water.org
Email: verdewatershed@yahoo.com

VWA LOGO
Designed to reflect the beautiful physical qualities of the Verde River and its watershed, the VWA logo was originally created by a student. VWA members scrapped the idea of a professional design in favor of outreach to students and education. The design process encouraged ownership by the stakeholders.

Help VWA update our mailing list! Mail corrections to Carol Johnson, Secretary-Treasurer, P.O. Box 4595, Camp Verde, AZ 86322 or Email cjinasedona@aol.com

Submit items for the Verde Currents to Editor Diane Joens at dianej@sedona.net or Ph: (928) 634-4112

Thanks to volunteers Brenda Hauser, Doree Christensen, Carol Johnson and Loyd Barnett for assistance with this issue of the Currents.

VWA Membership 2005
Thank You for Supporting VWA

Please help with the costs of the Verde Currents newsletter, mini-seminars and other VWA services by joining the Verde Watershed Association [January-December 2005].

Please make check payable and mail to:
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Camp Verde, AZ 86322

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