



Verde Watershed Currents

Spring 2016

Water and land use are intertwined.

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Have you ever watched a black phoebe in action?

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Dry at the end of winter; where will spring take us?

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Connecting Water and Land Use

In nature, water and land are intimately intertwined, yet in our communities, we often manage them as if they are separate. Frequently, the two efforts are handled by different cohorts, sometimes within the same branch and level of government, sometimes in different ones. Planning that separates water and land use can lead to inconsistencies, inefficiencies, and consequences that may prevent a community from achieving the future it desires.

General plans, also called comprehensive plans, consist of a declaration of community goals and development policies. They are large in scale and long in terms. Since land-use decisions within a community will lock in water-use patterns for decades or longer, collaborative planning between land planners and other departments (economic development, utilities, sustainability, etc.) would yield plans that have the best odds of success. In Arizona, state statutes require most communities, because of their size and/or growth rate, to include a water-resource element in their general plans, which must identify available water supplies, current and future water demand based on projected population growth, and future supplies that could satisfy the future demand. This is the framework for sound planning, but is the language binding enough to be successful?

The state requirement does not call for specific policies, objectives, and implementation measures to assess how the goals of the community general plans will be met, nor does it ask for evaluation methods or benchmarks. There is no requirement to evaluate water acquisition and use against other elements in the plan such as economic development or quality of life, which are often dependent on the preservation of natural assets. Additionally, the language does not require regional coordination and planning. In some areas of Arizona called Active Management Areas (AMAs), intercommunity planning within the AMA boundaries is required, yet even within AMAs, there are concerns about plan enforcement and the absence of requirements for regional planning with nearby communities outside the boundaries.



Xeriscaping and irrigation specifications are some tools for helping reach water-use goals.
Photo: DesertCorner, CC-BY-SA-3.0

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Low-density, rural-residential land use in Yavapai County, photo by Big Picture Media

Water and Land (continued from page 1)

Communities - cities, towns, and counties - can take responsibility for their own water future by meeting the state requirements and then filling in the gaps. A plan's water-resource element, and all other elements, should have individual goals with references to specific codes and ordinances. Using language and goals that are binding can make the difference between a functioning plan and one that amounts to optimistic brainstorming. Foremost in achieving a functioning plan is a meaningful consistency assessment of goals, including linkages to all elements in the plan. Another top priority is insuring that water-supply acquisitions (in-place or proposed) are sustainable and are aligned with the other objectives of the plan. A successful plan would also consider external factors like drought, climate change, and others that will likely reduce future supply.

When addressing zoning codes and subdivision requirements for water planning, communities can require large-scale developments to meet specific standards related to the size of their impact. It is important to address small and single-lot development considerations as well. In fact, for rural communities, these often collectively have the biggest impact. Communities can prohibit homeowner's associations from imposing rules that necessitate water use, such as having lawns. Another zoning technique is the use of conservation overlay zones, which can protect significant riparian areas, wetlands, and other water-related habitat areas. Additionally, compact and infill development, as well as ensuring an orderly, core-outwards development pattern, will help minimize both water demand and water infrastructure costs.

Another way to greatly reduce water demand is to implement outdoor landscaping codes and standards. These may include specifying irrigation practices, limiting the use of turf, instituting rainwater harvesting

incentives and/or codes, and providing an approved-plant list. Reducing indoor-water use for both new and existing homes and buildings can make a big impact too. Water-efficient building programs, and both codes and incentives for homebuilders, developers, and homeowners all play an important role.

Communities can also adjust water-service connection charges to reflect the real cost of new water-users, including infrastructure and new water-supply acquisitions. A realistic water-demand offset program can be fruitful as well, allowing a community to preserve an amount of water equal to or more than a new project will use by requiring the developer to pay for water savings elsewhere, thus resulting in "net zero" water use.

Utility considerations play a major role in water use. The operation and maintenance of existing infrastructure and new project planning would optimally be integrated into water-supply goals, such as wastewater treatment and reuse, and water-use goals. A community could evaluate being its own water provider or it can require that water providers meet effective infrastructure efficiencies, assist providers in water conservation programs, and examine options for wastewater reuse.

As we review these examples of integrated planning, we can see many ways to manage our water resources for securing the future our communities want. Most communities in the Verde River Watershed and throughout the Southwest are growing fast, but our water supplies are not. Without adequate planning - as well as funding and follow-through - our water-supply problems will increase along with our population. The failure to connect land-use and water planning may have far-reaching and increasingly unacceptable consequences for our communities and our environment. What is the future we want?

Article by Marianne Davis

"Any river is really the summation of the whole valley. To think of it as nothing but water is to ignore the greater part." ~Hal Borland



Black Phoebes

The black phoebe (*Sayornis nigricans*), with its sooty black body and crisp white belly, is a dapper flycatcher. They are small, plump songbirds with large heads, often showing a slight peak at the rear of the crown. They have a characteristic "tail-wagging" motion when their medium-long, squared tail is lowered and fanned.

Black phoebes breed in the western and southwestern United States, Mexico, Central America, and parts of South America. They are homebodies that reside year-round throughout most of their breeding range. Living in a variety of habitats, they are always near water from small streams to lakes, all the way to the salt-sprayed rocks and cliffs of the Pacific Ocean.

In the Verde River Watershed where shallow water is found - whether at the edge of the river or a pond or in moist canyon bottoms - black phoebes occur. This flycatcher eats arthropods, especially insects, almost exclusively. Their diet includes bees, wasps, flies, beetles, bugs, grasshoppers, damselflies, dragonflies, termites, and spiders. From a strategic vantage point, often

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Photo by Jamie Chavez
Article by Kathy Davis

The State of the Watershed

The winter of 2016 will be one that many will not forget. This will not be due to record rains and Verde River floods, but the winter when El Niño did not deliver. Going into the winter, El Niño, an equatorial Pacific sea-surface temperature phenomenon that typically brings excess winter rains to Arizona, was hyped as the "Godzilla El Niño" and the "Bruce Lee El Niño."

For the most part, El Niño's sea-surface temperatures lived up to the hype, tying the strongest event on record (1997-1998). However, the phenomenon did not release its rain and snow on Arizona. In fact, the Verde River Watershed only received 4.67 inches of precipitation this winter (December-March), which is only 66% of normal. In addition, warm temperatures over the month of February melted the snow pack much earlier than usual.

While the early snowmelt did generate runoff into the Verde River system, the volume of water has been well below normal. For the January to March period, a total of 80,000 acre-feet of runoff passed by the USGS's "Verde River below Tangle Creek" streamflow gage. This comes in at only 55% of median, and is 60,000 acre-feet less than last year for the same period.

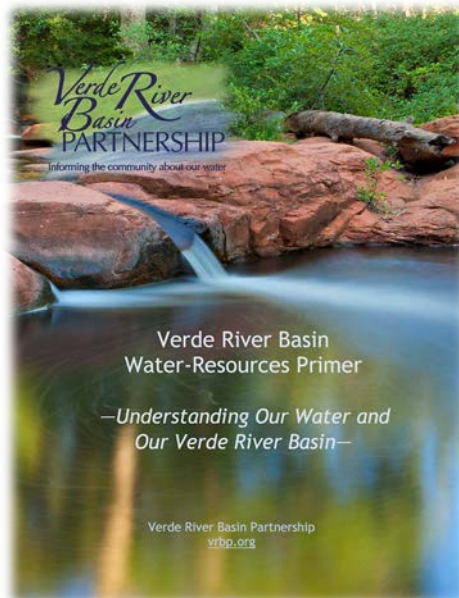
So now that winter is over, will we see a repeat of last year's near-record setting spring rains? The NWS official forecast does just slightly favor a greater likelihood of above normal precipitation this spring. However, even if this does occur, rising sun angles and warming temperatures will limit any significant benefits.

Article by James Walter, Salt River Project



Photo by Marianne Davis

Conservation: Valuing Our Water



Read or download the Water-Resources Primer online at www.vrbp.org.

For this issue, instead of the usual water conservation tips and ideas in our conservation column, we decided to announce the release of our recent publication, the *Verde River Basin Water-Resources Primer - Understanding Our Water and Our Verde River Basin*, an illustrated textbook, which explains the workings of the Verde River system, both above and below ground.

Once we consider the amazing nature of the global water cycle, appreciate the regional rarity of freshwater, and learn about our local water sources, we at the Partnership can't help but recognize the value the Verde River system brings to our communities and the reasons to strive for efficient water use.

The Verde River Basin Partnership

◆ Informing the community about our water ◆

The Verde River Basin Partnership is a non-profit organization comprised of both individual members and entity partner members (public and private organizations) who share a common goal. This goal is to support and preserve the long-term health of the Verde River and its watershed.

Our mission:

The Partnership is a scientific and educational resource raising awareness among citizens and community leaders about the workings and limitations of Verde River Basin's interconnected groundwater and surface water systems, and the life they support.

Our vision:

The Partnership aims to secure the long-term health of Verde River Basin's groundwater and surface waters, by assisting citizens and community leaders in exploring strategies and management practices that will sustain the Verde River system for all future generations.

Learn more about us and get involved:

- Visit our website www.vrbp.org
- Find us on Facebook
- Read our Guiding Principles
- Become a volunteer
- Make a donation
- Email us at info@vrbp.org

We aim to provide the information that our community wants through articles and publications and bring the best experts to our community through presentations and field trips.

Black Phoebes (continued from page 3)

a branch, they scan the water surface and the air above for meals on the wing. Once the prey is found, the bird swoops, captures it mid-flight, and returns to its perch. They are also capable of seizing small minnows from just below the water's surface. On rare occasions, they eat small berries. They feed mainly during the day but occasionally hunt for insects around electric lights in the evening. Their graceful aerial acrobatic hunting is a treasure to watch.

Their habitat must include a supply of mud for nest building and the specialized nesting requirements of these birds probably cause their somewhat irregular range. Their open cup nests are constructed from fresh mud and dry grass plastered onto a near vertical surface, such as a cliff. There, the nest is out of the rain and rather inaccessible to predators like snakes and ringtails.

The male gives the female a tour of potential nest sites, but it is the female who makes the final decision and



Black phoebe, Photo: © Frank Schulenburg, CC-BY-SA-3.0

does all of the nest construction. Black phoebes are primarily monogamous and pairs stay together for as long as five years. Experienced breeders stay on or near their territories from previous years and often raise two broods in a single season.

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