

Verde Watershed Currents

Winter 2015

Mountain lions: beautiful, majestic, and mysterious.

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Arizona black walnuts: a tasty food source.

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A dry fall, but a hopeful outlook for winter.

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Mountain Lions: Who Are These Elusive Animals?

Mountain lions (*Puma concolor*) spend much more time near humans than ever imagined based on recent studies using GPS, cameras, and telemetry. If you have spent much time outdoors, you have probably walked right past a lion without knowing it. Although they are found in areas where humans recreate and live, mountain lions avoid contact with humans. Lion predation on humans is extremely rare.

Mountain lions are known by many different common names including cougar, puma, and catamount. Once roaming nearly all of the U.S., mountain lions were prized by hunters and despised by farmers and ranchers who, following the over-hunting of deer populations, began to suffer livestock losses from lions.

Subsequently, by the early 1900s, lions were eliminated from nearly all of their range in Midwest and Eastern U.S. The Florida panther, an endangered subspecies of mountain lion, was not completely exterminated from its historical range and continues to live in the Southeastern U.S., albeit in very small numbers.

In recent decades, mountain lions have again been sighted in parts of their former eastern range. In 2011, a lion killed by a vehicle in Connecticut had genetic traits of lions in the Black Hills of South Dakota, 2,000 miles away.

The mountain lion is an apex predator at the top of the food chain, similar to wolves, bears, and grizzlies. These large carnivores have a pivotal role in reducing deer and elk populations and they keep them moving, which curbs overgrazing. A survey of North America research found that 68% of lion prey is hooved mammals.



Mountain lion (*Puma concolor*)

Title photo: Watson Lake with snow, by William Sircy

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Mountain Lion, photo by U.S. Fish and Wildlife Service

Mountain Lions (continued from page 1)

Arizona's lions occupy a diverse range including high elevation forests, rimrock canyons, and mountainous deserts. They often use dense underbrush and rocky areas to enable the predation method of stalking or ambushing unsuspecting prey. The Verde Valley offers high quality habitat with a variety of elevation, landform, and vegetation from forest to mixed grass and scrublands; all contributing to an assortment of prey species.

Mountain lions prefer ecotones for habitat. Ecotones are the transitional borders between different ecosystem communities. For example, an ecotone occurs where riparian habitat meets a clearing, a rock cliff meets bushes, and willow thickets meet stream banks. These areas provide forage and cover for deer and other prey, along with the ideal setting for predation opportunities. Landform diversity is abundant in the Verde Valley. Studies in the Southwest have shown that riparian corridor and rock ledge ecotones have the highest lion use, suggesting habitat selection based on prey densities and diversity.

Riparian corridors - like those along the Verde River and its many tributaries and arroyos - provide *essential* travel routes for mountain lions. The vegetation diversity along the Verde River allows for a great density of prey species for lions.

The current estimated population of lions in Arizona is between 1,750 and 3,500. Hunting and other

Beginning around 22 months of age, females have an average litter of 2 to 3 kittens and can reproduce every 17 months, depending on prey abundance. Gestation is approximately 92 days. Males begin breeding around 2 years of age.



When cougars are born, they have spots, but they lose them as they grow, and by the age of 2 1/2 years, the spots will completely be gone.

harvesting have gradually increased since the early 1980s and the numbers of lions killed per year fluctuate between 250 and 350 animals according to the Arizona Game and Fish Department. Predator control agents take approximately 15% of these.

Mountain lions are one of the most beautiful, majestic, and truly mysterious animals in America. They fill a complex role in our landscape, and they are critically important if we are to have a healthy habitat for all species.

Article adapted by Kathy Davis from original article by Southwest Wildlife Conservation Center, www.southwestwildlife.org

*"What makes the desert beautiful is that somewhere it hides a well."
~Antoine de Saint-Exupéry*



Arizona Black Walnut

The range of the Arizona black walnut (*Juglans major*) in the U.S. spans from Central Arizona into Southwestern New Mexico and east through Central Texas. Distribution continues into Northern Mexico from Eastern Sonora to Western Coahuila. This tree is often called the Arizona walnut, and in Spanish, the word for walnut is *nogal*.

Juglans major literally means "the larger walnut" - an appropriate name since this tree can grow to 50 feet tall with a diameter of 2 feet. It grows in rocky upland canyons and along streams from upper-elevation desert areas to the mountains, a range covering 1,000 to 7,000 feet.

The Arizona walnut's mature size depends on moisture availability, and they grow largest in riparian areas with year-round water. They have a round-headed form with a spreading crown. They are slow growing and long lived. In moist habitats, the tree typically has a single, stout trunk. In drier areas, its character is usually several slender trunks. They occur in pure or mixed stands or as scattered individuals.

Along the Verde River and its tributaries, large trees are common. As typical for the

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Photo by Whitney Cranshaw
Article by Kathy Davis

The State of the Watershed

Since the Monsoon ended, precipitation over the Verde River Watershed has been slightly below normal. From October through December, the Verde River Watershed accumulated an average of 3.46 inches of precipitation; normal is 3.86 inches. During this period, the months of October and November were exceptionally dry with an average of only 0.60 inches of precipitation being measured. Thankfully, December received above normal precipitation (2.86 inches) erasing most of the fall precipitation deficit.

Most of the precipitation that fell through mid-December was in the form of rain, with only light amounts of snow being observed at higher elevations. However, the recent New Year's storm dropped snow down to the valley floors over the Verde River Watershed. This produced significant improvement in snow conditions at the Natural Resource Conservation Service's SNOTEL (snow telemetry) sites located over the watershed, increasing measurements from 25 percent of normal to 75 percent of normal. The combination of early winter rain (increased soil moisture) and the recent snowfall is a great start to the season of streamflow runoff from January to May.

While the fall was underwhelming, most climate indicators continue to point to the greater likelihood of a wet winter in the watershed. The Verde River Watershed is already off to a good start with December rain/snow above normal and climate forecasts continuing to produce an optimistic winter outlook. In addition, sea surface temperatures over the Equatorial Pacific continue to slowly warm with a weak El Niño event likely later this winter. Even with a dry fall and below normal snow on the ground, there are many reasons to stay optimistic.

Article by James Walter, Salt River Project



Granite Creek with snow,
photo by Prescott Creeks

Water Conservation in Winter

While we often hear about water conservation in the summer, we can still reduce our water use and increase our water awareness in the wintertime.

- Disconnect outdoor hoses, even if you have frost proof hose bibbs (faucets), allowing water to drain from the bibb. Otherwise, one hard freeze overnight can burst either the bibb or the pipe.
- Insulate pipes and faucets in unheated areas like the attic, an unheated garage, or a crawl space under the house. Wrap the water pipes *before* temperatures plummet.
- Seal off access doors and cracks. Winter winds infiltrating through overlooked openings can quickly freeze exposed water pipes.
- Find the master water shutoff valve. So if a pipe bursts anywhere in the house, you can quickly stop the flow. *Find it now*, before you need it.
- Use a shower bucket. While waiting for your shower to heat up, catch that cold water to clean, water plants, etc. You can use this trick year-round.
- Drip your faucets? Yes, but only sparingly and in certain conditions. This counterintuitive tip could save the most water overall. In severe cold weather - especially if you haven't yet insulated those vulnerable pipes and/or you will be elsewhere - open faucets so they drip occasionally, which keeps water moving to prevent freezing. Use this tip in combination with the shower bucket technique.

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

We produce and distribute free, science-based, educational materials at various levels of detail ranging from simple FAQ sheets to an in-depth Primer on Water Resources.

You can find them on our website at www.vrbp.org.

Arizona Walnut (continued from page 3)

species, it can be found amongst certain associated trees including Arizona sycamore (*Platanus wrightii*), Fremont cottonwood (*Populus fremontii*), velvet ash (*Fraxinus velutina*), and western soapberry (*Sapindus saponaria var. drummondii*).

Arizona black walnut trees produce walnuts - of course! The rounded walnut is composed of an outer husk, a hard shell, and an edible nut inside. The small, oily, edible nuts ripen from midsummer to fall. For Yavapai and Apaches in the Verde River Basin, these tasty, nutritious nuts were food. Other uses included medicine, dyes, building materials, and firewood.

The shell is hard and thick with deep grooves. People smash them open with rocks or a hammer. Birds, rodents, and javelina also eat the nuts. On late fall nights, one can hear steel-jawed javelinas cracking walnut shells to feast on the nuts.

Online Directory

Our newly updated online government directory was developed to help citizens easily find and contact their elected officials and natural-resource managers concerning water-resource and natural-resource issues.



You can visit our home page www.vrbp.org and look for this image to enter the directory.

The Partnership will not request individuals using this site to endorse any position, legislation, or elected official.

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