

EVERY DROP MATTERS

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DESERT BIGHORN SHEEP

Arizona Game and Fish has been hauling water to wildlife for a year straight without a break — a first in the department's history.

This work ensures the approximately 3,000 wildlife waters in Arizona, more than 1,000 owned by Arizona Game and Fish and around 2,000 constructed by the U.S. Forest Service and Bureau of Land Management, provide life-saving hydration to the state's species.

Joe Currie has been leading the effort for nearly 20 years and is implementing efforts to create efficiencies and increase staff safety. In early March, he discussed why the program is necessary and what it feels like to deliver water to wildlife during record-breaking years of heat and no rainfall.

What is your background, and how long have you been working on the life-saving initiative to bring water to wildlife?

I went to college for a biology degree and a couple years after graduation, I got my job as a technician here at Arizona Game and Fish in the Development Program working on wildlife waters. I have stayed here for the last 28 years working on wildlife waters: the first six years as a technician, followed by three years as a crew leader of the technicians, and then the rest of my 19 years as the planning program manager for water catchments. In this role, I conduct site visits to catchments and redesign them to meet current standards to make them more efficient and also last longer because we are having longer periods of no rain.

Speaking of that, we had one of the driest winters on record. How does that impact your work, and what does that look like for water delivery efforts?



JOE CURRIE

During a normal year, we water haul from April to September. This year, we've been water hauling since March 2024, and we haven't stopped. We've also done a little bit of maintenance, but for the most part, all we have been doing for the whole year is water hauling to keep catchments full because they're getting so much pressure on them from wildlife. Not only has it been the driest, but it's also almost the warmest year on record.

The warmer temperatures in the winter actually increase water use because the plants that wildlife normally eat are now dead and dry and waiting for spring to green up. So it takes more water for wildlife to process their food and stay hydrated; the water requirements of a dry winter like we had are almost more than the summer.

That feels very stressful.

When you're trying to prevent any deaths of animals due to water, it is stressful because you have to try and keep up with the whole state. I've been



GAMBEL'S QUAIL



here 28 years, and this is one of the top three most stressful, hardest years we've ever had for water. In 2002-03, we had a severe year like this and hauled over 2.6 million gallons. 2016-17 also was another bad year.

This year is probably going to be the worst because we're going to go straight into summer, and we'll have been water hauling for over a year straight without breaks — we've never done that before. 2025 will likely be a record-setting year for gallons of water hauled if it doesn't rain soon.

The frequency that animals come to drink is dependent upon three things: air temperature, moisture in the air and moisture in their food.

What types of wildlife drink from the catchments?

It's absolutely everything; we have literally seen just about everything drink from these. I've even seen a rattlesnake drink from a catchment. In addition, the bees use the water catchments a lot, and we must account for evaporation of one-half and three-quarters of an inch of water every day.

Why are these waters necessary?

One thing many people don't realize is the need for these waters is human induced. We've put in roads, fences and cities and drilled wells, which have all manipulated the habitat. During monsoon storms, wildlife used to travel great distances to follow those storms and now they can't because there's a city, highway or multiple fences in the way.

Sensors are being installed at the wildlife waters statewide. How does the technology work and what benefits does it bring?

The sensors help provide a better understanding of water catchments including how they work and what are the contributors to how they function. The other part is employee safety and efficiency of resources to save money and time. Some of these catchments take a whole day to get out to and back, so if we can save staff that whole day of checking that one water catchment or two or three water catchments, that's a huge help to managing wildlife as a whole.

We are prioritizing sensor installation based on the waters that are the remotest and hardest to get to. We have installed nearly 100 Ranchbot sensors at wildlife waters and have 200 more to implement. The sensors are satellite-based, and we can access the information, including the water level and a rain gauge, for each catchment in real time. The sensors also can have a high and low water warning for each water catchment. Once the water gets down so low, it gives you an intermediate warning that you're nearing a critical point.

What other efforts are you implementing to add efficiencies to the process?

Where you get your water from to take it to the catchments can be hours and miles away from the site. We purchased what we call a "nurse truck," which carries 4,000 gallons of water. That truck is positioned near where the team is hauling water, and the delivery trucks refill from the nurse truck to reduce trips to the water source.

This not only helps our team be

more efficient, but it also ensures there is someone near them in case they break down or need assistance. People don't tend to realize how remote the catchments can be; they can be 30 miles down a dirt road.

We're also building catchments with much higher water capacity, so the chances of having to haul water to them is lower, as long as we're getting normal rainfall. However, even without normal rainfall, some of the new catchments are still at 50 percent capacity — if you had a normal or an older-style catchment, that's more water than they hold.

Arizona Game and Fish does not receive any general fund tax dollars, so donations from the public contribute greatly to these efforts. How have donations been used recently?

Donations to the Send Water program have a large impact on our operations and are used for on-the-ground work to bring water to wildlife.

We bought materials for redeveloping catchments, and we completed five this fiscal year. The materials cost was about \$165,000 for the five catchments and that was covered by donations.

We have repaired the water trailers to the tune of about \$50,000 this year, which helps us keep them on the road delivering water.

Donations also have supported \$150,000 in helicopter costs to haul water to desert bighorn sheep due to the remoteness of those wildlife waters.

In addition, donations helped purchase five temporary water tanks and water troughs. We put the temporary tank or trough in locations where a water catchment is not working, so we can still have a functioning water source at those spots. You can go a few days without eating, but you can't go a day without drinking — nothing can. That daily requirement of water is essential for all living things.

What does it feel like to deliver water to wildlife?

It's really special when you're pulling up to a site and there are animals standing there and looking at you. They'll stand at a distance and watch until you dump the water, or you'll be dumping the water, and they'll show up and stand at a distance waiting, because they still have their innate fear of humans. But the need for water overcomes that fear to a certain extent.

When I was a crew leader, we were driving to work on a water catchment and noticed a mule deer doe at a rancher's water staring into the trough. We stopped and checked the trough, and the deer had been staring at the pipeline that came in through the bottom. She could see and smell the water that was about two inches down inside that pipe. The deer walked about 50 yards away and watched us.

The valve was plugged, so we fixed it and got the water flowing back into the trough. When we returned to the truck, she immediately walked back up to the water and drank. When you see those situations, it's fulfilling. You know that you're helping wildlife for not only that day, but for the future for people to enjoy and observe. 🦌

■ Elaine Pittman is the editor of *Arizona Wildlife Views*.

SEND WATER TO WILDLIFE

Arizona is in a cycle of long-term drought. For the state's wildlife, this means less drinking water and a bigger fight for survival, especially during the dangerously hot and dry summer months. It costs more than \$1 million annually for the Arizona Game and Fish Department and its partners to deliver water to man-made catchments every year, with some of the most remote areas requiring helicopters to reach them. Visit sendwater.org to learn more and donate. 🦌

