



Watering Wildlife

An innovative idea to ensure livestock and wildlife have a source of water is revolutionizing ranching and wildlife management

Story by
Matthew Renda

For wildlife and livestock forced to endure the parched summers within the arid Central Valley—especially when the range is stricken by a fourth year of drought—the establishment of watering holes across the open landscape can mean the difference between life and death for certain animals.

When Monterey County rancher George Work came up with an idea to change how wildlife and livestock survive such brutally dry conditions, he never thought it would catch on as much as it has. Looking back, Work recalled his innovation came less as a sudden flash of inspiration than as a series of slight but important modifications that led to a safe watering system. While fame and fortune are unlikely to result from his

innovations, wildlife experts with the California Department of Fish and Wildlife believe the future of ground water drinkers has been forever changed.

“It’s a cattle trough that can also function as a bird bath,” Work said from his expansive 12,000 acre ranch in southeast Monterey County.

Work dubbed it a ground drinker and said it serves as a multi-purpose water source for all kinds of wildlife that range across the rolling grasslands. Blue oaks dot the landscape with draping branches and gnarled trunks, as grey pines stand tall with their strange-looking and scraggly bearing.

“The ground drinkers provide water for a whole bunch of species,” said Bob Stafford, an environmental scientist with CDFW. Stafford has implemented Work’s design at wildlife areas managed by CDFW. Each unit can cost from \$500 to \$1,000.

“It’s viable for tule elk, deer, pronghorn and kit foxes,” Stafford said. “The design is even long enough for bats. It’s good for our hunted species and our non-hunted species as well.”

The new style drinker updates traditional water troughs that ranchers had conventionally spaced out across their property so cattle could access water as they graze pastures. Instead of the traditional model of a curved tub that resides 2 to 3 feet above the ground, Work designed a trough that resembles a slit carved out of a concrete slab that fills with water. Work also designed a float mechanism that exerts pressure on a valve when the water dips below a certain level, prompting replenishment. The valve ensures the water level never falls more than 2 inches below the rim of the trough.

This is particularly important when considering avian species such as songbirds or baby quail. The species faced challenges with the older version of water trough.

“When the water level is near the rim they can sit there and drink,” Work said. “But if the water is down 2 inches they can’t get a good hold and then about 85 percent of the birds can’t drink.”

The float mechanism that supplies steady water is protected by a steel cover, as various kinds of wildlife would otherwise damage the gears and necessitate nearly daily repairs.

“The hogs would just rip this thing



Opposite page, Monterey County rancher George Work crouches atop a ground drinker he designed that has revolutionized the concept of watering cattle herds as well as wild animals. The new design resembles a slit carved out of a concrete slab that fills with water. What is unique about the system is a float mechanism that exerts pressure on a valve that prompts replenishment when the water dips below a certain level. The new design is safe for grazing cattle as well as wildlife. The design, developed by Work, offers a protective shield that keeps larger animals from wrecking the float mechanism, thus allowing the water level to stay high enough for small critters and birds to sit on the side and have access to water. This page, trail cameras capture night images of wild pigs and birds.

apart," Work said, referring to the non-native feral pigs that have populated the hills around the ranch.

Stafford said bears could also destroy the mechanism without some steel protection.

"Bears are good at breaking the valve," said Stafford. "But once we figured out how to protect the mechanism, we've had no problems."

Work is a third generation farmer, born in the hills just 10 miles outside of San Miguel and raised while wandering the valleys and hilltops of his sprawling ranch. Today, his land holds about 120 head of cattle. But to label Work a rancher is to minimize his status as a jack of all trades.

He believes the foundation of ecological science should be through observation, not necessarily academic research. In his opinion, if someone wants to know about the natural world, they should live in it as he has for 78 years, not spend daylight hours in a library or sifting through PDFs on the Internet.

Work is a problem solver by necessity, and many of his theories on local ecology are born from a need to maximize the value of his land. His ideas are as diverse as they are practical for his livelihood, from how to bolster the population of elderberry to how to introduce certain species of grasses to certain topographical areas.

Work's ranch also hosts programs sponsored by the Wounded Warrior Project. Wounded Warrior is a charity and service organization that offers a variety of programs, services and events for wounded veterans of the military actions following the events of 9/11. Work has opened up miles of horse trails for the wounded veterans to ride in an effort to mollify their physical and emotional trauma.

Another way Work has utilized his land through the decades is by hosting hunters. Back in the 1990s he hosted a quail hunting club. He and his neighboring ranchers soon found that if quail had access to water every quarter mile rather than every half mile, the bird population would boom. They figured correctly that

hunters would arrive in droves and go away happier.

The first designs of the ground drinker were arranged so as to benefit quail particularly.

"Quail is a wonderful bird species to work with," Work said.

Soon after, as the ground drinker began to provide positive yields, Work grew frustrated over the havoc caused by the feral pigs to his troughs. That's when he came up with the steel protective plate. As he realized that more hunters wanted to hunt pigs than quail, he modified his

"If you distribute water across the landscape, it helps manage grazing, it keeps wildlife out of streams and it prevents overgrazing and erosion of areas that are near a natural water supply."

Karl Striby, National Resource Conservation Service

design again.

Then after deer hunting became vogue, he modified it so it could accommodate all forms of wildlife.

"It was about providing water for game at first," Work said. "You provide water for deer and elk than you get a return when hunters pay to use your land. You have got to get a return for the money you spend."

For Work, seeing the benefit of that return on your investment started more than 15 years ago.

In 1998, Work met Karl Striby, a rangeland management specialist for the National Resource Conservation Service. The conservation service partners with landowners to help encourage ecologically-oriented best practices.

"George took advantage of our Wildlife Habitat Incentives Program and he applied for a grant to build and install the first ground drinker," Striby said. "He liked it so much and it worked so well for the intended purpose that he got a little seed money from what was then the Department of Fish and Game to build the steel forms."

Striby said he was convinced almost immediately that the ground drinkers would be a valuable tool in helping ranchers manage their livestock and provide water for habitat.

"The strong point is that water is

made available to any species that can walk, crawl or fly," Striby said.

So Striby teamed up with Bill Tietje, who works in the Department of Environmental Science, Policy and Management for the University of California Cooperative Extension.

Together, the pair began to proselytize about the benefits of the ground drinker versus conventional troughs.

"I just provided information about the value for wildlife and tried to get ranchers interested," said Tietje.

Since then, Striby and the conservation service have included ground drinkers in their technical guide standards, a service they provide to ranchers and farmers throughout the United States.

"Under trough conservation practices,

we provide specifications (for the ground drinker) including recommended materials, how to build it and what you need to do to have a good installation," he said. "If you distribute water across the landscape, it helps manage grazing, it keeps wildlife out of streams and it prevents overgrazing and erosion of areas that are near a natural water supply."

Work's ideas have spread to other ranchers. Mitch Roth, a neighbor down the road, has installed several ground drinkers in pastures throughout his property.

For Work, seeing other practitioners adopt his innovations is far more important than receiving praise from members of the scientific, resource management or academic community.

"You'd be surprised at how many things you can do that make economic and ecological sense, but nobody follows the example," Work said. "Having Mitch install these ground drinkers is probably the greatest compliment that anybody paid me."

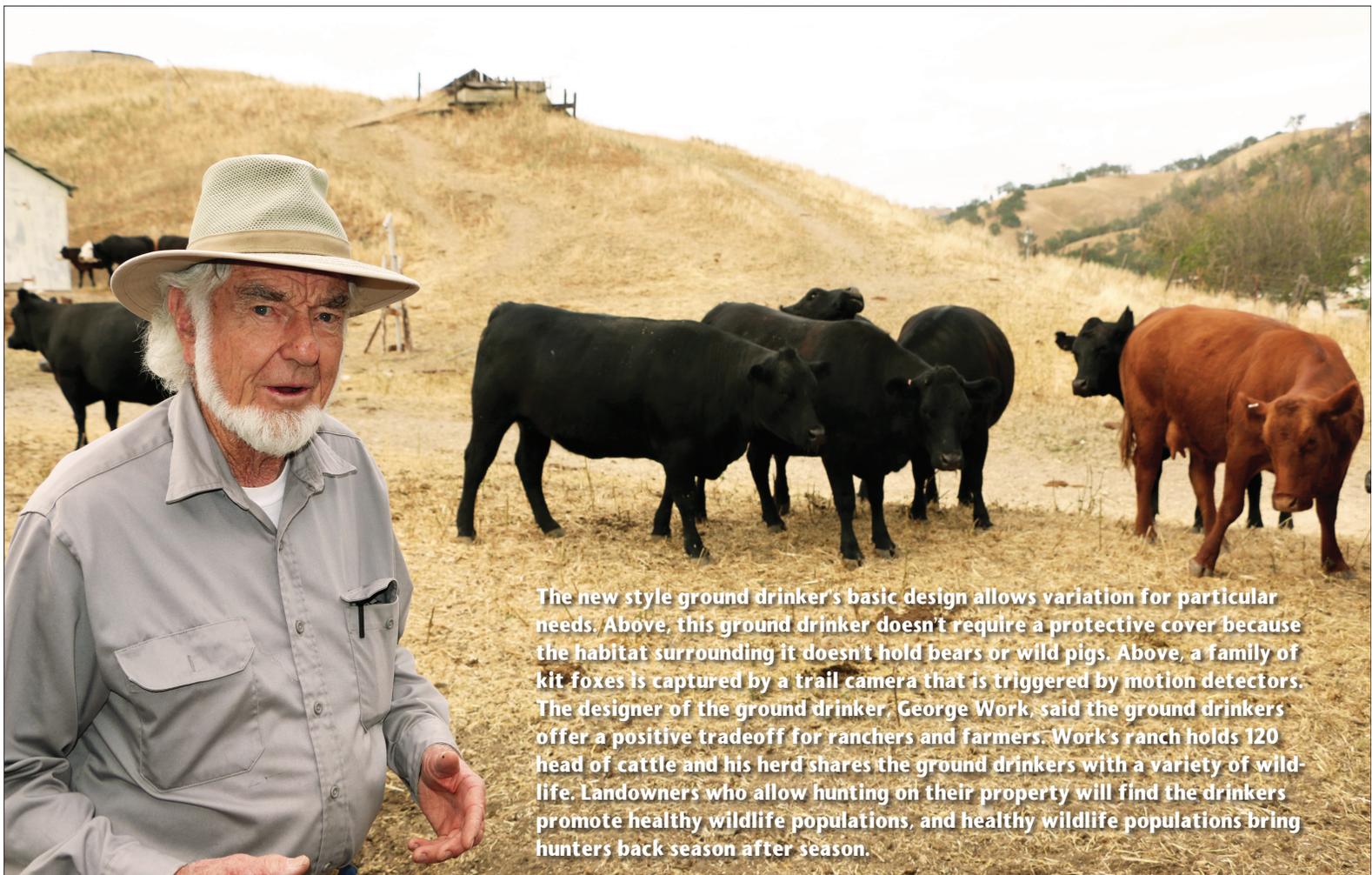
From early on, decision-makers at CDFW saw how wildlife might benefit from the rebooted design. Stafford, the environmental scientist who is based out of San Luis Obispo, pushed CDFW to install a dozen ground drinkers in the Carrizo Plains Ecological Preserve. "They are going to be our standard drinkers," he said.

The valleys and declivities of the massive ecological preserve are populated by spiny saltbush and brush, while the upslope areas are dominated by annual grasses with the water drainage areas characterized by common saltbush. In the hills, shrubs such as bush lupine, buckwheat occupy the shade cast by junipers and scrub oaks. The entire swath of rolling territory is alive with manifold species.

Stafford has extended ground drinkers across the territory, allowing species such as elk to spread out more evenly on the preserve, rather than gathering around a decreasing natural water supply.

He further asserts the animals have grown used to the presence of the ground drinkers. "We know it works, because we have radio collars on the elk," Stafford

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The new style ground drinker's basic design allows variation for particular needs. Above, this ground drinker doesn't require a protective cover because the habitat surrounding it doesn't hold bears or wild pigs. Above, a family of kit foxes is captured by a trail camera that is triggered by motion detectors. The designer of the ground drinker, George Work, said the ground drinkers offer a positive tradeoff for ranchers and farmers. Work's ranch holds 120 head of cattle and his herd shares the ground drinkers with a variety of wildlife. Landowners who allow hunting on their property will find the drinkers promote healthy wildlife populations, and healthy wildlife populations bring hunters back season after season.



After contacting two men in a routine stop of a parked Toyota pickup, wardens found 20 large bear claws, above, along with a bear liver and gall bladder stuffed in a plastic bag and concealed inside dog boxes built into the bed of the truck. Inside one of the wooden boxes, at right, and secured by a bungee cord, wardens recovered a .22-caliber revolver in a leather holster. The pickup, opposite page, had been customized with a platform secured across the front bumper. The ledge allows the owner's three dogs to stand at alert as the vehicle continues to move.



gall bladders attached. Stevenson also found a second Ruger .22-caliber revolver attached with a bungee cord to the roof of the passenger's side dog box.

The driver and passenger were arrested, the vehicle impounded and the dogs released to the county's animal control. Both subjects were initially charged with two felonies and one misdemeanor in the Fish and Game Code. The bear claws, gall bladders and livers were

sent to the wildlife forensics laboratory where they were determined to be a sow and two male cubs.

Seven months later, in November 2013, an El Dorado County Superior Court convicted both men. Both received sentences of 36 months summary probation, 30 days in jail and \$17,500 in fines. Both men's hunting privileges were revoked for life. 

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said. "I can see it right now how they gather around the ground drinkers and use them."

The fact that a more abundant water supply exists in ecological preserves means that certain species, which would otherwise be decreasing in numbers due to the drought, are able to be more productive. From a hunting perspective, the ability to keep the herd healthy and flush means more opportunity.

"It benefits deer hunting, elk hunting," Stafford said. "It even helps the bird population somewhat."

Yet, it's not only what it provides for wildlife, but the ground drinkers are instrumental in helping manage a disappearing yet vital resource—water.

Because the ground drinkers measure a foot wide and 12 feet long, the surface area is considerably less than the more traditional 4-by-8 foot troughs. With less surface area, evaporation happens at a much slower rate, thereby naturally conserving water.

"It gives about a 50 percent water savings, which is particularly important during a drought," Stafford said.

Work also said the units are critical for an environment where water is a precious commodity.

"Wildlife has to drink just like us, every single day," he said. "But even if you aren't in a drought, you still need water. Around here it doesn't rain for six months at a time." 

Matthew Renda is a California-based freelance writer who lives in Santa Cruz with his wife. He enjoys being in the outdoors whenever his schedule affords. This is the first time one of his stories has appeared in Outdoor California

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