

The Effect of Water Development on Bats

By Bryn Dayton

Bats are creatures that are popping up much more on our radar lately. With the increased mortality rates among bats, we are realizing what a valuable resource and treasure we have in these creatures. Bats hold a special place in our ecosystem, agriculture and the economy in that they manage the insect population. The insects that bats eat save the US up to 53 billion dollars in pest control, meaning that the insects that bats eat reduce our need for other pest control. And not only do bats control insects for agriculture, but they are keeping our forests healthy as well. This relates directly to rangeland as some livestock are grazed in forested areas. The health of our rangeland is dependent on the service this species performs. One of the problems we face today in managing rangeland is that bats are drowning in the tanks and troughs we develop for our livestock.

This is an issue that hits home to rangeland, especially in the west, because it is all about water. We need to take care of the bats, and solve this problem. We are not taking care of these bats with our current water development practices. Bats rarely have more than one pup at a time. Because of this, bat populations take a long time to recover from high mortality rates. Because of this sensitivity, it is doubly important to help protect and consider this wildlife species when managing rangeland.

The problem with water development today is that bats, along with birds, and other small animals, are drowning in the structures we create for our cows. While bats can drown in natural sources of water, ranchers can have a positive effect by preventing bats from drowning in their tanks and troughs. Bats and water development are essential parts of our modern rangeland ecosystem, and ranchers can have a big impact on their ability to thrive.

Utah has a semi-arid climate, and everything is very dry. We have to develop water for the human population, and ranchers have to develop water for their livestock. Water development on rangeland is critical in Utah, because water is critical for the livestock. If livestock do not have access to a stream or a well, or stream access is limited, then an alternate source of water must be provided. There are different ways to accomplish this. The water can be piped in from a well, or a stream, or water can be brought out by truck to a tank or trough. Some ranchers dig a pond for their cattle. Simply put, water development is making water resources available to cattle where they normally would not be found.

When ranchers develop water, their main goal is access for the cattle. Even with this as their goal, ranchers are aware of their environment and they understand that to have healthy livestock, they need a healthy environment. Ranchers do not make an effort to drown bats, that would create more work keeping their tanks clean. What this issue really boils down to is education. In my experience, ranchers are willing to make changes to their management if they know that they can positively impact the environment, thus providing a better environment for their livestock. However, they do not always know how to manage for these bats, and that is where the problem lies.

Generally, bats need water surfaces to be ten feet long, and two and a half feet wide, at least. This area is called a scoop zone. If water sources do not meet a bat's minimum scoop zone, they are not able to safely consume that water. Bats drink water "on the wing." If there are obstructions blocking their path, or the tanks are too small, then the bats can fall into the water and drown.

Though it would be easier for ranchers if the water they provided for their cattle was available only to their livestock, many times wildlife share water with the cattle. Since this is a

reality, water sources need to be provided that fit both the cattle, and the wildlife's needs. Not only will this help species like the bat, but it will also help the cows. Cows need clean water to consume. If bat and other animal carcasses are rotting in the tanks and troughs, the water quality is going to diminish. A couple dead bats may seem like a small problem, but for some ranchers, this can get out of hand, and some ranchers have reported having dozens of bats in their water tank.

Many times the harm that is done to these thirsty bats is unintentional. Sometimes just putting a tank or trough by a fence or by natural obstructions like tree branches, can cause these bats to drown. Ranchers are not always aware of how their water development affects the wildlife, but they can help make things better for both the livestock and the wildlife.

There are many things that can keep bats and birds from drowning in tanks and troughs. Ranchers can be aware of what bats are in the area, and provide troughs to fit the bats' scoop zone. Also, obstructions such as boards lying on top of a tank, or barbed wire can be very easily removed. Water level can also be critical in the case of these bats. It may seem counter-intuitive, but as water levels drop, the danger of bats drowning rises. This is because the bats will have to fly lower into the trough to get to the surface of the water, and can be impeded by the wall of the trough. Maintaining high water levels can help prevent drowning. Finally, ranchers can install ramps in troughs, which are very inexpensive. These ramps are commonly referred to as escape ramps. They can be made of a variety of materials, but the standard ramp is made of corrugated metal that hangs into the water, and provides a means of escape that is much more feasible than the steep walls of the tank.

Ranchers can have the initial impact to keep these bats from drowning. They can become more educated on this issue and manage with bats in mind. Bat's health can impact not only the

quality of life for the livestock, but our agriculture and pest management as well. This is an issue that is impacting all us, and ranchers can be a key player in solving this problem.

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