

A No-freeze Watering Trough

Steve Ekblad and Jesse Crockford

For years ranchers have been using water tanks with electric or gas heaters to provide open water in the winter around farmsteads and feedlots. For Flint Hills ranchers in Kansas who run cow herds on rangeland through the winter, providing open livestock water has been a continual problem. Until recently there were few solutions to this problem other than daily breaking ice.

The Soil Conservation Service is now offering an alternative that ranchers can consider when planning a new stockwater pond and also could be installed in an existing stockwater pond. This alternative is a freeze-proof tank partially buried in the backslope of the pond embankment. A freeze-proof tank will provide running water in all but the most extreme cases of sub-zero weather. The water is kept from freezing by the combination of special design, partial burial of the tank, and continuous flow of water.

To deliver water to the tank, plastic pipeline 1 1/2 inches in diameter is placed through the dam at the time of construction. A 2 feet minimum of soil is placed on and around the tank, which acts as insulation in cold weather. Water from the ponds runs through the tank and, in winter, discharges through an overflow pipe into a pit filled with gravel or large crushed stone. A pit 6 × 6 × 6 feet is large enough to handle the amount of overflow. A float valve in the tank controls the water level. In winter continuous flow is maintained by opening a circulation valve depicted in the design drawing. This assures a small constant flow of water while also allowing the float to operate.

The benefits of a freeze-proof tank far outweigh its initial cost at the time of pond construction. By having the watering facility below the dam, livestock can be excluded from the water source by fencing. This reduces the risk of cattle breaking through the ice and drowning. It also prevents cattle from bogging down in silt during periods of drought or low water. Fencing the dam and permanent pool will improve the water quality for livestock and protect the landowner's investment.

Secondary benefits of restricting livestock access to water impoundments are in the form of increased wildlife habitat. Water quality is improved, thereby improving the fisheries aspect of the pond. The fenced out area also provides for a small fringe of ungrazed vegetation around the pond that can be used by upland wildlife for nesting and loafing areas.

Finally, the most important benefit of this approach is the rancher will have reliable stockwater on rangeland throughout the winter.



Jesse Crockford stands by a freeze-proof stockwater tank below a dam in Morris County.