

Avoiding Algae Issues in Stock Ponds

By Tommy Bass

In recent years, the algae that shows up in the ponds and reservoirs people visit and use has caused them to take a closer look. This concern is valid because when blue-green algae are present, harmful algal blooms (HABs) are possible (more information at the DPHHS website: hab.mt.gov). HABs produce toxins that can sicken or kill animals that enter or drink the water. Cattle deaths from HABs have been documented in Montana, making this issue of particular concern to livestock producers who rely on stock ponds to water their animals.

An important strategy for reducing the risk of algae blooms is to reduce nitrogen and phosphorus transport into surface water. While dissolved and particulate nutrients are carried into water by natural processes, excessive nutrients increase algae growth. Nutrients originate from various sources, including lawns and landscaped environments, agricultural lands, and contributions from wildlife, livestock, and even human wastes.

When planning conservation opportunities associated with livestock and water, the following philosophy can be helpful, “Keep clean water clean and avoid direct contact.” The first part is in regard to diverting stormwater away from pens, corrals and heavy use areas to keep them as dry as possible. This has benefits in overall animal health and foot health for all livestock, particularly horses and cattle. For livestock headed to market, clean cattle are often regarded more favorably and may bring better prices. Less mud in corrals and pens also improves the comfort and safety of workers and working horses. From a water quality standpoint, drier livestock environments reduce potential for contaminated runoff from these areas.

Best management practices to, “Keep clean water clean,” include diverting stormwater from corrals, pens and heavy use areas through the use of berms, ditches, or grassy swales. Additionally, gutters can be added to barn and shed roofs to divert rain and snowmelt away from these areas

where livestock congregate. When corrals and pens are due for renovations, consider moving them further uphill. Many old facilities were built in coulees for shelter and access to natural water sources; however, with modern watering technology, corrals and pens can be relocated uphill from these areas and provide cleaner, healthier water in tanks and troughs. Once clean water enters livestock environments, it is then considered wastewater.

The second part of the livestock and clean water philosophy, “avoid direct contact,” refers to the benefits from limiting or excluding manure and confined animal contact with surface water and well heads. In confinement areas, such as seasonal feeding, lambing and calving lots, animals should have no direct contact with surface waters. This is different from pasture and rangeland scenarios where some strategic access to streams as part of a managed riparian grazing plan can be an important part of a sustainable system.

Cattle congregating near an earthen stock pond can rapidly degrade the water quality in the pond to the detriment of the animals’ health and the quality of the resource. Strategies that encourage livestock to enter, drink, and move away from

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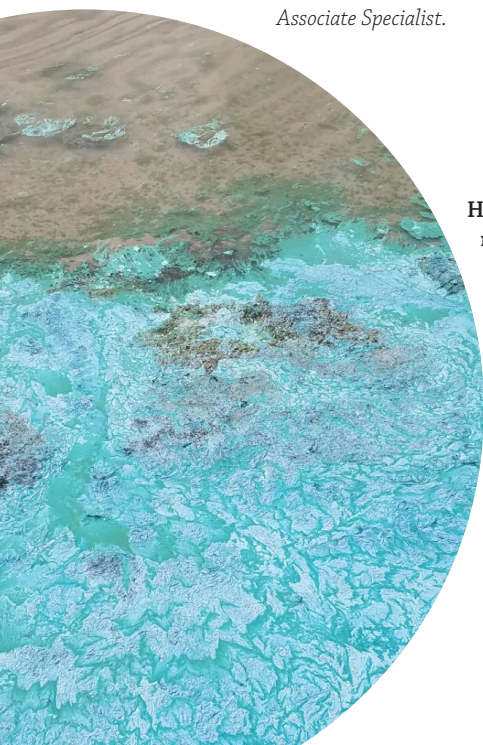
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the watering area are good for animal health and water quality. Aside from the point of access, a vegetated or riparian buffer around the rest of the pond or stream will allow nature to filter out nutrients, sediment, and other pollutants. There are several best management practices (BMPs) that encourage cattle to spend less time loafing near water sources. A few strategies include providing minerals and supplements, water tanks, shade, or windbreaks on higher ground away from ponds and streams.

After a harsh winter and spring, winter pastures can look like a bare lot. Compared to natural and vegetated areas, bare and/or compacted soils are more prone to runoff during rain events, causing soil and nutrient loss. There are practices that can alleviate the impact on these areas, improve their utility for the next season, and reduce pollution potential. During the times these pastures or large corrals are occupied, feed bunks or hay feeders should be periodically moved around the pasture. Rotational grazing strategies and pen/pasture rest periods can be implemented for all seasons. Dragging high use areas with a chain harrow can break up and spread manure around the pasture and distribute nutrients, encourage grass regrowth, and improve soil quality.

Simple management steps year-round can result in better water quality, more efficient use of ranch infrastructure, healthier livestock, and improved overall productivity. These investments in conservation can help preserve the water quality and utility of earthen stock ponds and other resources, especially near the end of summer when water and grass resources become more scarce. ■

Tommy Bass is an MSU Extension Livestock Environment Associate Specialist.



Harmful algal blooms may resemble pea soup, wet paint, or grass clippings and may appear as blue/green discoloration on the water, along rocks, and on the shore.

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