

## Ross Mosteller

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Livestock & Natural Resources

### **Pond Ecology & Management**

Part of my professional title is Natural Resources, something I've been called out on for not giving more attention to. That is fair, livestock is my primary interest, but everyone can agree that without a healthy balance of our natural resources, animal life is in trouble. One of the most important of our natural resources is water. Today let's look at constructed ponds, as that is a general topic area that creates lots of discussion at the Extension office throughout the year. Winter might seem like a strange time to discuss this topic, but read on, it will make sense!

Pond ecology can be described as the interaction of the life in a pond with the environment that exists within. A newly created, deep, spring-fed pond may have little life of any kind in it because of cool water temperatures and lack of food supply. On the flip side, a shallow, nutrient-rich pond, directly exposed to full sunlight, with little water flowing through it, will be full of algae and aquatic plants. It may have very little animal life present because of low oxygen levels. This is most often the ponds that generate questions in the office with dead fish, poor water quality, aquatic weeds and in some cases the toxic harmful Blue Green Algae blooms.

All ponds age and just like everything else in life, they require management. A pond begins with mostly water, few nutrients, and little aquatic life. Over time the pond accumulates nutrients through a process called eutrophication. The addition of nutrients stimulates the growth of aquatic life. These organisms will live, grow and die. Their remains decay in the pond and the nutrients it took to grow them are released back into the pond water, creating a cycle. Slowly over time there will be an accumulation of material that resists decay and the pond will fill in. Ponds will become bogs and will eventually resemble dry land. This process of returning to dry land can happen in a decade or may take centuries. If this is not what you want out of your pond, your job is to slow the process down as much as possible.

Everyone has a different desired use for ponds be it; food/fishing, recreation, aesthetics, a water source or simply outdoor enjoyment. While the aging process described is natural, there are some management principles to employ to extend pond life. A long life is best achieved by limiting the inputs of nutrients to the pond. Capture sediment before it enters the pond, limit the use of fertilizers within the watershed when possible, limit animal access, and prevent the addition of organic matter. Flushing nutrients from the pond is encouraged by a clean, year-round water supply. Mechanical removal of plant vegetation is also a method of removing significant nutrients from a pond. Finally, aeration is valuable for both supporting aquatic life and promoting the decay of waste material. Keeping the surface clear of plant cover and open to wind action are aids to better aeration, not to mention fishing.

If this has triggered an interest in pond management, you are in luck! Meadowlark Extension District will be hosting a pond management meeting, Tuesday, March 21, 1:00 pm at the Ozawkie Township Hall in Ozawkie. Joe Grekin, K-State Fisheries and Aquatic Extension specialist, will be discussing many of the practices mentioned above, as well as touching on Blue Green algae. K-State Extension Watershed specialists, Will Boyer will also be on hand to discuss options for using ponds as an effective water source for livestock. There is no cost to attend, but we do request an RSVP by March 15 to [rmostell@ksu.edu](mailto:rmostell@ksu.edu) or 785-336-2184. Hope to have you join us in Ozawkie to talk about ponds!