February | Volume 22 | Issue 2 | Pond & Tank

SOMERVELL COUNTY

AGRICLUTURAL NEWSLETTER

EASTERN HERCULES BEETLE

TEXAS A&M AGRILIFE EXTENSION

Description: The eastern hercules beetle is one of the largest insects in the United States. The males can reach a length of 7 inches. Males have large horns which are usually about 1/3 of the body length. On some, the horns are longer than the rest of the body. Males use the horns to fight with other males as they compete for mating. The coloration of the beetles is variable, but females are typically brownish black and males typically have black heads and black, brown or green bodies. There are several subspecies some of which are colored differently. Many have dark colored spots on the elytra.

Habitat & Hosts: The larvae are large, white, C-shaped grubs. The larvae feed on rotten material (logs, stumps, dead leaves and rotten fruit). They produce large rectangular fecal pellets about .4 inches long. The larvae pupate in late summer.

Adults emerge from the pupal stage, but stay underground during the winter. They emerge in the summer and live above ground for 3-6 months. They have been observed feeding on the bark and sap of ash trees and on rotten fruit.

WHAT'S INSIDE:

Tri-County Landowner Program

WEED ID & BRUSH CONTROL

FEBRUARY 22, 2022

Cost: $20/individual or $30/couple

Registration: 5:30pm

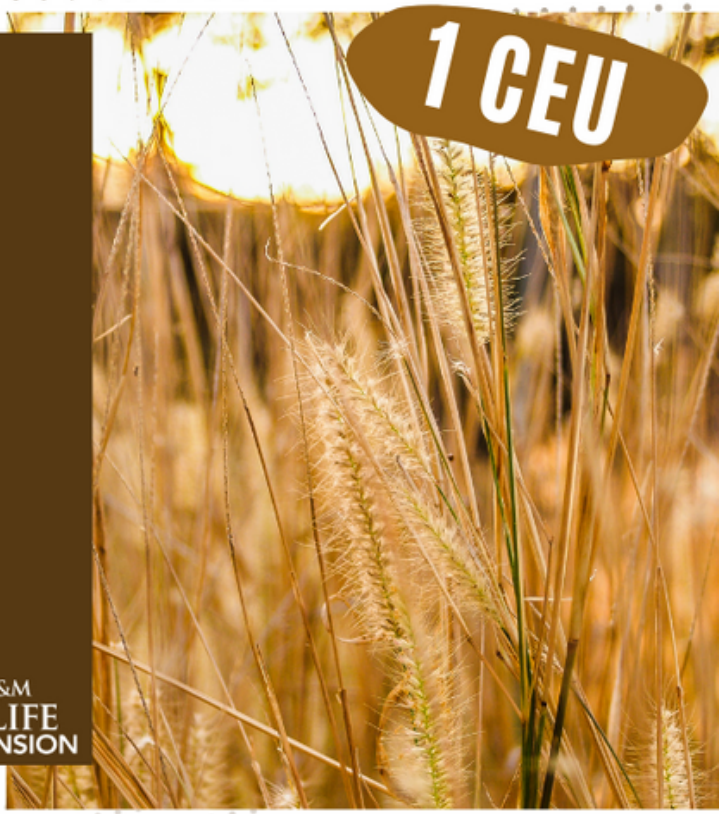
Program Starts: 6:00pm

Location: 109 W Chambers St, Cleburne, TX 76033

Speaker: James Jackson

MEAL PROVIDED

TEXAS A&M AGRILIFE EXTENSION



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LEAKY POND?

The most common causes of leakage are:

1. improper pond construction;
2. permeable soils or layers with high sand or gravel content;
3. thin layers of soil with fractured or layered bedrock or solution cavities (sinkholes) as their substrate.

In arid parts of Texas and Oklahoma, subsurface caliche high in calcium carbonate or gypsum is associated with leaky ponds. The keys to repairing a leaky pond are properly identifying the cause of the seepage problem and selecting an appropriate method of sealing the pond.

Repairing a leaky pond is often expensive. When it is a viable option, re-working and compacting a pond is the cheapest alternative at about $300 to 1,000 per acre. Treating a pond with a minimal rate of bentonite (i.e., 1 pound per square foot) will cost $3,500 to 4,000 per acre for the bentonite alone. Other treatments cost still more.

Seeps, wet spots or wetland vegetation on or below the dam are indicators of leakage through or under the dam or levees. Older ponds can develop leaks around drain or overflow pipes. If the water drops rapidly to a certain level, carefully check the perimeter of the pond at the waterline for holes or discontinuities in the soil. In addition to inspecting the pond, gather as much information as possible about the pond history, site characteristics, and construction practices used. Important questions include:

- Was the site properly prepared by removing the existing vegetation and topsoil?
- Was the pond levee built properly, in compacted layers of 6 inches or less?
- Were the levee and pond bottom areas adequately compacted?
- Is the area known for sand or gravel lenses or sinkholes?
- How deep is the soil?
- Is there fractured or jointed bedrock in the pond basin?

Spot Treatments: If seepage appears localized, dig out the suspect area and cover that section with a 1-foot-thick layer of compacted clay soil. Form the clay blanket with two layers of soil, compacting each layer separately. When repairing leaks in dams or levees avoid making vertical cuts, as they are difficult to seal. Dam or levee cuts should be made in a broad V shape so the new fill will bond with existing soil as it is compacted.

Compaction: Compaction works well when the soil has a wide and well-graded range of soil particle sizes. With soil containing sand, silt and at least 10 percent clay, water acts as a lubricant and the force of compaction squeezes air from the soil and locks the different size particles into the smallest possible arrangement. This leaves little space for water to move through the compacted layer. For adequate compaction be certain to:

- compact thin layers;
- use sufficient compactive force;
- make sure that the soil has the right amount of moisture.

Compact no more than 8 to 9 inches of loose soil at a time. This will give a compacted layer about 6 inches thick.

Bentonite: Sodium bentonite is a highly plastic clay that expands 8 to 20 times in volume when wet. It is used to fill in voids in porous soils. Bentonite has been used successfully on relatively sandy soil (at least 10 to 15 percent sand) where there is adequate support for the bentonite-treated layers. Calcium bentonite does not swell to the same extent as sodium bentonite and should not be used. The amount of bentonite needed varies with soil type and laboratory testing is recommended to determine optimum application rates.

Clay Blanket: Compacted blankets of clay soil have been used successfully to seal areas of exposed, fractured rock or other permeable material. The best soils are those with a wide range of soil particle sizes and with 20 percent or more clay. Again, a minimum thickness of 1 foot is recommended.

Liners: Properly installed, a liner is 100 percent effective in stopping seepage. For soils with high gypsum content, a liner is the only option. A traditional remedy has been to fence pigs, cattle or other animals in the pond basin.

Livestock manure aids in sealing the pond bottom, and animals trampling the pond bottom compacts a deeper layer of soil. This method gives mixed results and can cause nutrient pollution of surface or ground water until the pond seals up.

VEGETATION

Muskgrass (Chara)

- Foul, musty – garlic-like odor giving muskgrass its name
- Height can range from just under an inch to about 6.5 feet
- Has no flower
- Do not extend above the water surface
- Often has a “grainy” or “crunchy” texture
- Grows in both shallow and deep brackish or freshwater
- Prefers hard or alkaline waters
- Consumed by many species of ducks and provides habitat or shelter for invertebrates and small fish

Filamentous Algae

- Single algae cells that form long visible chains, threads, or filaments
- Filaments intertwine forming a mat that resembles wet wool
- Starts growing along the bottom in shallow water or attached to structures in the water (like rocks or other aquatic plants).
- Often, filamentous algae floats to the surface forming large mats, which are commonly referred to as “Pond scums.”
- No known direct food value to wildlife
- Provide habitats for many micro and macro invertebrates

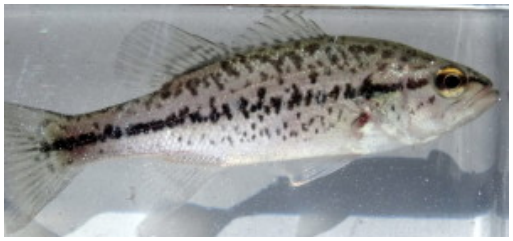
DESIREABLE SPECIES

Blue Catfish

Channel Catfish

- Do well in most pond environments
- Can be stocked alone in ponds of any size or as a supplement to bass and forage populations in ponds larger than 1 acre
- Expect them to become the dominant predator in size.
- Large blue catfish primarily consume fish and will compete with other sportfish for prey
- In ponds primarily managed for bass fishing, channel catfish are the preferred species.

Largemouth Bass



This species is the most sought-after sport fish in Texas and, in almost all multi-species pond environments, is the primary predator.

Redear Sunfish

Redear sunfish can be stocked with bluegill in Texas ponds as supplemental forage. This species is also a fine sport fish and can increase angling opportunities. Because they eat snails they may also reduce fish parasites within a pond.

Bluegill

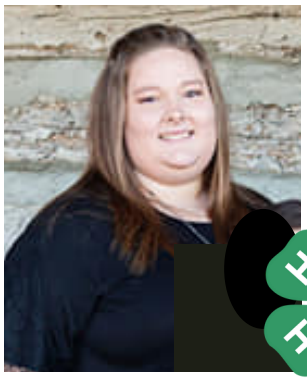
- Fine sport fish and the only fish species which can produce the large numbers of small fish needed to provide food for bass.
- Without them, a quality bass population will probably not develop.
- Overpopulation of bluegill most commonly occurs because of excessive escape cover (aquatic vegetation) or over-harvesting of the bassin the first season of fishing—both of which reduce predation on the young bluegill

Fathead Minnow

- Relatively slow swimmer (very vulnerable to predation)
- Offers no long-term benefit when stocked in ponds containing established bass populations
- Very useful when stocked with catfish that are not being fed regularlyor in new bass-bluegill ponds to increase first-year growth of the bass and bluegill.

Hybrid Striped Bass

Hybrid striped bass are another sport fish that can be stocked in any size pond to provide additional sport fishing. They will readily accept artificial feeds, but will not reproduce in ponds. Hybrids can be stocked alone, with fathead minnows or sunfish, or in bass-bluegill ponds.



"Cultivators are the most valuable citizens...they are tied to their country."
— Thomas Jefferson

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Tri-County Landowner Program

POND & TANK MANAGEMENT

MARCH 22, 2022

Cost: $20/individual or $30/couple
Registration: 5:30pm
Program Starts: 6:00pm
Location:405 W County Rd 714, Burleson, TX 76028
Speaker: Brittney Chesser
MEAL PROVIDED

1 CEU

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