Pond Construction and Maintenance

At the May 1, 2021, TCFLOA meeting, Josh Clarke of HC Oilfield Services (Chester) and John Melvin of Aquatic Remediation Services (Bryan) shared their extensive knowledge and experience about ponds. Ponds add fun and value to property, reportedly $30,000 per acre.

Josh Clarke, whose grandfather began constructing ponds on his property in the 1970's, has been constructing ponds and observing how they hold up for decades. If you are planning to build a new pond, Josh recommends a Y-shaped drainage area for the site. Springs, if present, will keep the water clear, cool, and oxygenated. Ask your neighbors how their ponds are doing.

It is important to analyze the soil type that will be underneath the pond. Drilling test holes can be costly. Josh, who was selected to rebuild Lake Amanda, stated that soil tests at Lake Amanda showed the need for significant excavation. However, when Josh checked the NRCS soil survey data for the site, he determined that he could reduce the expense by mixing the soil. NRCS soil survey data for Tyler County is available online at https://www.nrcs.usda.gov/wps/portal/nrcs/surveylist/soils/survey/state/?stateId=TX. If your chosen site has heavy clay, it will need to be packed.

Josh likes a levee that is 12' wide on the top and with a 4:1 slope to reduce pressure and to facilitate mowing. When digging a pond, reserve the topsoil for the backslope of the levee to prevent clay erosion fingers. Once the levee is formed, push the reserved topsoil back over the levee. A dug-out pond should be dug at least 8' deep with a horseshoe-shaped levee constructed on the sloping side.

The spillway should be dry, wide, and grassed over so that it can handle heavy rains. Josh builds berms to divert the overflow from the levee and to disperse the water. If a spillway siphon system is installed, it serves as a deep-water release, removing stale water and increasing oxygen at deeper levels.

While there are no guarantees, Josh has had issues with very few ponds. He knows of about half a dozen ponds on HW-256 (Harmony) that will not hold water even though their sites were promising. Josh has been able to fix some ponds by breaking up the dirk and repacking it. He repaired an oil well water reserve pit in Colmesneil by removing a pine tap root and covering the hole with clay.

John Melvin followed with a discussion of pond maintenance. It is easier to manage ponds if they are built right – with grassy, sloping levees, for example. Fertilizing a pond stimulates the growth of microscopic plants. East Texas soil is acidic, which causes the pond water to be acidic. For fertilizer to be effective in these conditions, agricultural lime should be applied.

Clear water is pretty but is not ideal for fish such as bass. Pond clarity to about 18"-24" is good. A muddy pond can be corrected by either mechanical or chemical means. Fill a jar with pond water. If the mud settles to the bottom, the pond can be treated by mechanical methods; if it does not settle out, then treat the pond with lime, aluminum sulfate or gypsum. Pond dyes are sometimes used for esthetics of muddy ponds.

For small ponds, John recommends channel catfish, bluegills, redear sunfish or largemouth bass. Croppie need a large area and are good for reservoirs but are generally not good for ponds. Too many species of fish in a pond can cause stunting. John likes tilapia for bass food because tilapia die when the weather gets cold and will therefore not overpopulate in the pond.

To determine a pond's fish population, electrofishing devices are used to bring the fish to the surface by stunning them. The stunned fish are retrieved, weighed, measured, counted, and then returned to the pond. The fish's otoliths, also known as ear stones, record the fish's annual growth increments. Similar to the light spring and dark summer rings of trees, fish otoliths' light rings record summer growth while the dark rings record winter growth. If there are unwanted fish in the pond, they can be eliminated by draining the pond and applying pesticides; then restock with the desired fish.

Grass carp are used to clear vegetation, such as hydrilla from Lake Conroe. Texas Parks and Wildlife is trying to prevent grass carp from getting out of designated ponds. When applying for the state permit, apply for as many grass carp as possible, as it is not necessary to buy all of them at once. If you later decide you want more, you can use the same permit – up to number permitted. However, be careful to not overpopulate and be aware that grass carp may churn up the bottom of the pond.

It is important to put herbicides out correctly. READ THE LABLE. Water temperature is important when applying herbicides because warm water holds less usable oxygen for fish and plant decay in warm water further reduces the oxygen.

John recommended websites https://www.pondboss.com/Home and Texas A&M's website https://aquaplant.tamu.edu/.