

Arkansas Pond Bulletin

December 2023

Quick Hit: Habitat

Fish need somewhere to hang out. Providing them suitable habitat promotes a healthier fish community and often better fishing. Fish habitat is a term that includes just about anything a fish could hover around, within, or underneath, and it even includes the bottom substrate that could be used for burrowing into or building spawning nests upon. For the purpose of this article, here-forward "habitat" will be referring to structures (artificial or plant-based) that fish can use as a place to spawn, feed, or hide.

Fish habitat provides substrate for microbes and periphyton to grow. This attracts small fish to feed on the organic life, and use the habitat as refuge from predation if it is dense enough. Predator fish come to feed on the small fish within and around the habitat. If the habitat is large and complex enough, it is possible to have every species of fish in the pond occupying the same structure. This is beneficial to the fish community as everything a fish needs is located in a small area. It is also beneficial to the angler as all the fish you may want to catch are congregated in a small known area, which can increase fishing efficiency.

Studies evaluating habitat and fish abundance/condition have yet to paint a clear picture on the ideal amount and type of habitat to maximize various fishery goals. What we do see is that habitat that is too sparse, too abundant, or too homogenous produces poorer results in fishery performance metrics than those habitat characteristics falling somewhere in the middle. There appears to be a sweet spot between about 20 and 40% total area occupied by habitat that results in better performance out of the typical Arkansas sportfish combination, including bluegill, largemouth bass, and crappie. Unique fisheries featuring channel catfish only, hybrid sunfish with or without channel catfish, and hybrid striped bass can thrive with little to no habitat so long as they are fed fish feed daily. These unique fisheries are usually located in ponds smaller than about 1 acre.

While fishing is often far back in many of our minds come winter and Christmas time, it's actually a good time to start gathering materials for spring habitat projects. Natural Christmas trees are a popular addition to the pond or lake. Be sure all ornaments and decorations are removed, attach a concrete block to the tree and deploy it at your favorite



"Crappie Condos" made from bamboo, concrete and 5-gallon buckets.



Catfish spawning crib made from halved 55 gallon barrels, pallets, and concrete blocks.

fishing spot. Alternatively, if you want to donate your tree to help local public fisheries, the Arkansas Game and Fish Commission designates numerous Christmas tree drop-off points at popular boat ramps. Leave your tree at these sites and either AGFC or local anglers will go deploy the trees to hot spots around the lake. Check www.agfc.com for news on drop-off locations. Christmas trees provide about one year of good fish cover, though the mostly bare trunk can last for longer.

When preparing fish habitat sites, think diversity. The best habitat sites utilize a range of structure diameters and gap widths to accommodate various sizes of various species. For example, using tree debris, stack trunks so that they cross-cross leaving large open gaps for large fish to swim through. Then, use intermediate and small limbs to create very dense areas of small sticks that only small fish can get through. This will provide a habitat site offering refuge for tiny fish all the way to your largest predators.

Fish habitat can be made from just about anything, your imagination is your limit. Wooden shipping pallets make excellent habitat, either stacked in towers, or in combinations of stacked, slanted, and vertical arrangements. Pallets will need 1-3 concrete blocks, depending on the manufacture of the pallet and size of the structure, added to sink them consistently. Other common DIY habitat options include "crappie condos" made by embedding bamboo trunks into 5-gallon buckets of concrete. These can be trimmed to the height and width of your choosing and they are a great way to put nuisance bamboo stands to good use. "Georgia cube" is a term referring to a PVC cube interwoven with corrugated drain pipe popularized by the Georgia Department of Natural Resources that has been utilized by state agencies for habitat projects throughout the US. The structure is weighted by pouring gravel into the bottom pipes before assembling the structure, or attaching concrete blocks. There are also commercial pre-made artificial habitats available for purchase. While these products can be expensive if you need a large area enhanced, they are often easier and quicker to assemble, transport and deploy than some of the other options mentioned. Additionally, they last forever while some forms of woody cover



"Georgia Cubes" made from PVC and corrugated drain pipe.

would need periodic replenishment. Used drums and barrels cut in half and laid on the bottom can provide excellent cavity habitat for catfish to spawn in. Just make sure you know what the barrels were containing before their retirement, and that they are properly cleaned before deployment to ensure harmful residues don't affect your water, fish, and, potentially, fillets. Piles of broken concrete culverts, large rocks, and construction scrap can also serve as fish habitat. Aquatic plants provide excellent natural habitat for fish. Shoreline emergent plants that only grow a few feet deep into the water tend to be more easily managed than fully submerged species. Many aquatic plants can quickly spread to nuisance abundance if not closely monitored, so they are often discouraged in smaller ponds. That said, allowing *some* plant growth can be beneficial to the fishery.

What to Watch Out for in December:

There may be some ponds that have not yet turned over. Severe turnovers can be triggered by a sudden and dramatic drop in temperature, usually associated with heavy wind and rainfall. If a turnover/oxygen-related fish kill occurs, the largest fish of each species will be the first to go, often grass carp followed by the largest bluegills, crappie, largemouth bass, and then catfish. Once a low-dissolved oxygen kill has begun, the only thing that can provide relief is aeration or flushing the pond with fresh oxygenated well water. Unless the pond owner already has sufficiently-sized emergency aeration or pumping equipment in place for this possibility, they will likely take too long to acquire it after the fact to make much difference. Encourage clients who have invested greatly in their fisheries (trophy bass and crappie ponds, for example) to consider installing aeration systems to prevent this from occurring in the first place. All we can do in most cases is assess the extent of the kill and recommend a restocking plan.

Pond Management Tasks for December:

Winter drawdowns, for the appropriate situations, should be underway. Application of agricultural lime for water chemistry adjustments can begin. Fertilization, feeding and herbicide applications should be suspended until spring. If fish are still responding to feed, continue feeding until they stop. Aquatic dye duration for weed/algae control will start to decline as rainfall increases. Fish stocking, especially forage fish like fathead minnow, golden shiner, and bluegill, can continue. Periodically inspect drains and spillways to clear debris and clogs. Continue daily operation of aerators. For diffused aeration systems that have not yet been activated, follow the startup schedule of: Day 1, run 30 minutes then turn it off the rest of the day. Day 2, run 1 hour. Day 3, run 2 hours. Day 4, run 4 hours. Continue doubling the run time each day until you are

running 24 hrs/day. There is benefit to continuously operating aerators through winter, but those wanting to save a little on electricity and wear/tear can turn off their aerators for the winter once water temperature decreases into the mid to low 50's°F.

Scott Jones

Small Impoundment Extension Specialist / Instructor II

Department of Aquaculture and Fisheries

University of Arkansas Pine Bluff

870.575.8185 (Office)

jones@uapb.edu

AFS - Certified Fisheries Professional