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October 22, 2016

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Greetings, Al!

Zach and I have been reviewing the habitat map created for Vilbig Bass Club. The ultimate goal for providing a detailed habitat map is to improve the Lake Vilbig fishery and habitat within a reasonable budget.

After reviewing the map, having a good understanding of the fishery and understanding the goals, I have several thoughts for you guys. First, knowing the important species for most Vilbig anglers are crappie, largemouth bass and catfish (to some extent) we need to consider how to improve the habitat primarily for the benefit of these species...and their food chain. As you know, the lake is mostly dominated (by total mass) by carp and gar. Gar compete for forage fish, carp compete for space. Gar live primarily in the densest aquatic plants, around the water willow and shallow weeds. Carp patrol the bottom of the lake, as deep as they can go, usually 8-9 feet deep. One of the interesting things to me about largemouth bass in Vilbig is that spawns are always excellent, and enough fish grow into the 2-3 pound size class to keep the lake supplied. Some bass grow into the 4-6 pound sizes, but the dominant size, each time we've analyzed the lake, are the 10-13" bass. Our sampling of white crappie shows fair recruitment, but not enough fish growing big enough to catch. Catfish are doing fine. I think it's safe to assume they are reproducing and creating a sustainable population. I wouldn't worry about doing anything to help the catfish.

As you guys design the best game plan to meet the goals of improving the fishery with habitat inside a reasonable budget, my recommendation is to consider the food chains of these two key species. Crappie and bass are carnivores. They eat meat. Crappie are limited by mouth size, bass...not so much. The backbone of the food chain for bass and crappie are bluegills. The second key food source are shad, especially threadfins. Threadfins are so prolific (remember they die when water temps drop below 42...which

hasn't been an issue for Vilbig in recent years), they provide a good food source for big crappie and medium-sized bass. Gizzard shad are a reasonable temporary food source for both bass and bluegill, and for catfish. But, gizzard shad quickly outgrow their usefulness.

My suggestion is to figure out the most reasonable way to improve the food chain, focusing on small bluegills. As you think it through, use the map to help figure out what can be done to enhance habitat for small bluegill...to offer them the best protection and food chain to allow baby bluegills the best opportunity to grow into the 3-7" size ranges. They love the water willow, but so do the gar. Gar eat bluegills.

You already have some good structure. The peripheral plants are excellent for bluegills. There are rock piles in many different places around the lake. That gives vertical structure for bass, bluegills and crappie. There are remnants of woody debris in quite a few places, too. Remember this, dense structure/cover/habitat is what small fish need to survive long enough to become large enough to be a significant source of food for those critical sizes of growing bass. Recent university research is beginning to show that 30% coverage of a lake with habitat, structure, and cover is prime. More than 40% coverage borders on excessive, especially for a fishing lake.

One question to answer is, "Will introducing structure help your fishery?" There are gaps in the fishery, mostly due to abundant predators overeating their food chain. What that means is we have too many mouths at the feed trough. While there is abundant rock piles, underwater humps and islands, with a good sprinkling of native aquatic plants, and some under water woody structure, there isn't enough "dense" cover for small bluegills, except aquatic plants with toothy gar right there with them. The lake is fertile, meaning fish can reproduce quite well. But, survival depends on places to hide with abundant food for tiny mouths associated with it.

In a perfect world, I'd suggest you guys save and use Christmas trees. I love that idea, except for two key problems. First, they last underwater for 4-7 years...and that's it. Secondly, they are prone to being eaten by beavers, using the limbs to build their lodges that time of year. We probably don't need to mention how much work it takes to put them in the lake properly. But, the benefits may outweigh those key problems. Christmas trees are free and labor is volunteer. That counts a lot.

In today's marketplace, there are some artificial habitat products proving to be effective. Actually, we've got some solid university research proving the value. The best product, at this time, are Mossback Fish Habitat. They attract fish, plus the folks at Mossback are willing to work with us to design the best habitat for the application at hand. Research from South Dakota State University on a 125 acre east Texas lake is finding Mossbacks not only hold fish, but also provide a benefit no one truly thought about. See the photograph...the "trunk" of the tree is PVC pipe. The "limbs" are made of recycled plastic, shaped similar to angle iron. What the researchers are finding is that the limbs of this habitat captures dying plankton, silt and other organic matter as it drifts toward the lake bottom. Nutrients in that debris feed colonies of bacteria, called, "periphyton" as well as microscopic algae. That creates a micro-food chain that attracts small bugs, which attracts small fish and so on, up the food chain. They've also learned to create what the company calls, "Fish Cities", where a number of Mossbacks are placed to cover areas at least 100 square feet, and 5-7 feet vertically. Some of their Fish Cities in the research lake cover as much as 1,000 square feet.

Here's the problem. They are fairly expensive, even with a discount offered to their dealers. Each Fish City costs \$2,500-4,500. The upside to this medium is that they last forever. Placed in areas where the water is 10 feet deep, near or adjacent to other structure, especially near the underwater rock piles and humps.

Speaking of placement, as you guys study the habitat map, I'd offer this suggestion. Have the committee, with some of the better anglers, plot where they catch the most fish. Identify those as "A" areas. Mark them on the map. Then, look for the next best areas and mark those as "B" areas. Then, do it again with the next layer, calling them "C" zones. You'll soon see the best areas to place structure/habitat. Bolster the "A" zones, first. Then, look at the "B" areas.

With a proposed budget of \$2,000, and if you are interested in the Mossback products, I'd suggest putting some in one or two places and see how well they attract and hold fish. If it works for you, go get more money and do more.

In my opinion, and fully knowing there's a \$2,000 budget, I still must recommend what I think is the right thing to do to meet the goals outlined above. To impact the fishery by improving habitat by filling the existing gaps, I think a budget of \$12-15,000 is more appropriate. I see at least four places to recommend Fish Cities. One should be place on the southeast side of the lake, where there's a rapid drop off into a hold 14 feet deep. There's a sunken boat to the west, rock piles to the east and northeast, not far from the overflow/drain pipe. Another one is in the center of the lake, where there are many rock piles scattered along that narrow point. I'd install one southeast of the rock piles, in the deepest water. Still another spot is the west, square-shaped cove where the bottom is 19 feet deep. A Fish City in the middle is a good place. Another good place is the main body of the lake, surrounding the center island.

If budget is totally restrictive, use Christmas trees and mimic Fish Cities. Focus on points with other structure and cover, whether you use artificial structure, Christmas trees or something else creative.

There are several other considerations. If you choose to create Fish Cities, be sure to have tops at least four feet under water. There are a number of ways to mark them. You can mark them with buoys, decoys, or with bamboo sticks rising from the water. Buoys seem to be most effective, especially in waters with lot of activity.

Here's the bottom line. Additional fish habitat as the stuff described above accomplishes several purposes. First, it attracts more fish, especially young baitfish. It will also attract crappie for the crappie fishermen, and bass for bass anglers. It also creates a micro-food chain in the water column. The only other semblance of that in Lake Vilbig will be algae growing on the larger underwater rocks.

I expect you'll want more discussion and may want to have a conversation. I suggest you have some brainstorming sessions to best figure out how to use your available resources for your best interests. Also talk about how to get more dollars for permanent structure.

You've got my phone numbers and email address.

Looking forward to be of further service,



Bob Lusk