

## Enhancing the Fishing Opportunities at Possum Kingdom Reservoir

Fishing is a very popular recreational activity at Possum Kingdom Reservoir (PK). Popular species that anglers target are Largemouth Bass, Striped Bass, White Bass, catfish spp. and crappie spp. Texas Parks and Wildlife Department (TPWD) conducted a nine-month creel from September 2020 thru May 2021 and found that anglers fished an estimated 182,479 hours and had an estimated direct expenditure of \$2,369,143. During that time Largemouth Bass and crappie anglers comprised 66% of the angler hours. Degradation of fisheries habitat from the natural reservoir aging process and the large water fluctuations has contributed to limiting the ability of the Largemouth Bass, crappie spp. and sunfish spp. populations to reach their full potential. Since 2013, TPWD (in partnerships with the Brazos River Authority (BRA), Hells Gate Bass Club, and Mineral Wells Bass Club), have been enhancing fisheries habitat and in turn the fishing with the deployment of artificial habitat reefs, construction of brush piles, and the planting of aquatic vegetation. Along with the enhancements, TPWD has stocked 900,825 Florida Largemouth Bass fingerlings, 994,540 Striped Bass Fry, 726,565 Striped Bass Fingerlings and 149,038 Smallmouth Bass Fingerlings to boost the fish populations.

In 2021, through a continued partnership with the BRA, TPWD was able to further enhance the fisheries habitat of PK. This report focuses on the 2021 efforts funded by the BRA.

2021 PK Project: With the approval of the BRA, sixteen Mossback Trophy Tree Kits were constructed and placed in PK (Figure 1). Selected locations provided easy access for boat anglers while minimizing the potential for boating hazards and providing a larger reef for fish to congregate. Trophy Tree Kits (Figure 2) when deployed cover approximately 60 square feet. The Kits were placed at a depth of 14 to 16 (when full) around previously placed Mossback Reef Kits (for habitat improvement locations

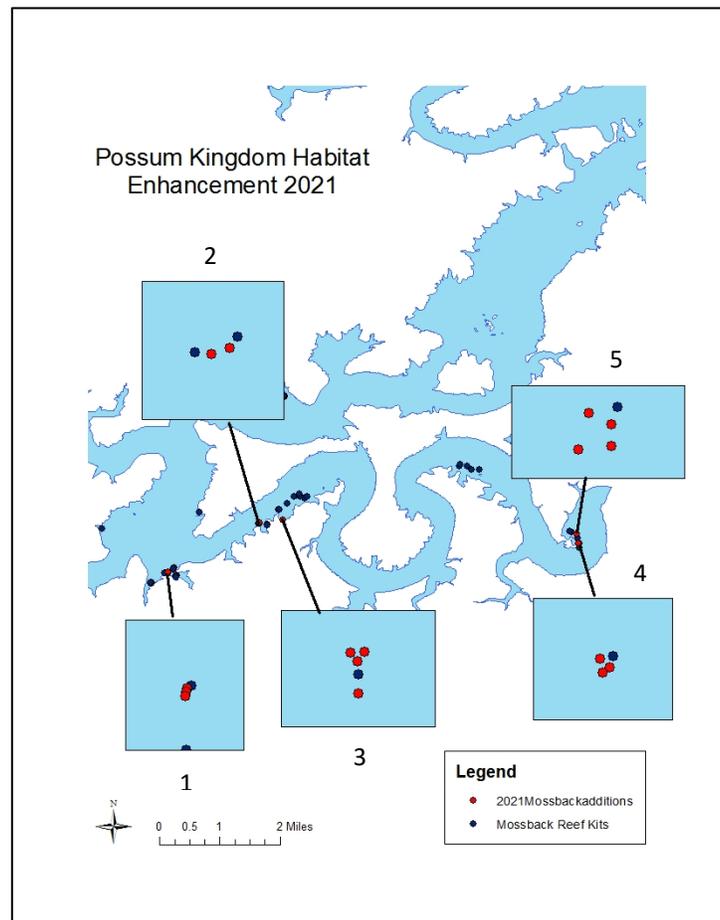


Figure 1 Location of Mossback Reef Kits and Mossback Enhancements from 2021 (Trophy Tree Kits) with inserts showing location on Possum Kingdom.

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[www.https://tpwd.texas.gov/fishboat/fish/recreational/lakes/possum\\_kingdom/structure.phtml](https://tpwd.texas.gov/fishboat/fish/recreational/lakes/possum_kingdom/structure.phtml)). Habitat enhancement locations (Table 1) were determined from previous observations of the Reef Kits with side scan sonar (Figure 3) and angling. Reef kits that showed fish activity or produced catches, but had limited habitat nearby, were chosen to receive the additional Trophy Trees. A Trophy Tree Kit consists of 3 vertical trunks standing 40" tall on a single base (Figure 4) with 12 limbs each to provide cover for Largemouth Bass, crappie spp. and sunfish spp. to ambush prey that is holding on the Reef Kits.

Past Projects: Since 2013 TPWD, the BRA and other partners have placed artificial habitat in multiple areas in PK. They have included clusters of various habitat types including individual Mossback structures, Mossback Reef Kits, and PVC cube structures (Georgia Cubes). To date, 164 artificial structures have been deployed in the reservoir. These structures enhance the habitat from the Peanut Patch area of the reservoir into Cedar Creek and continue toward the dam on inside bends of the original Brazos River channel. These structures have been documented to hold fish and support a thriving fishery in and around the structures.



Figure 2 Looking into a Mossback Trophy Tree Kit showing the areas Largemouth Bass and crappie spp. can ambush prey from.

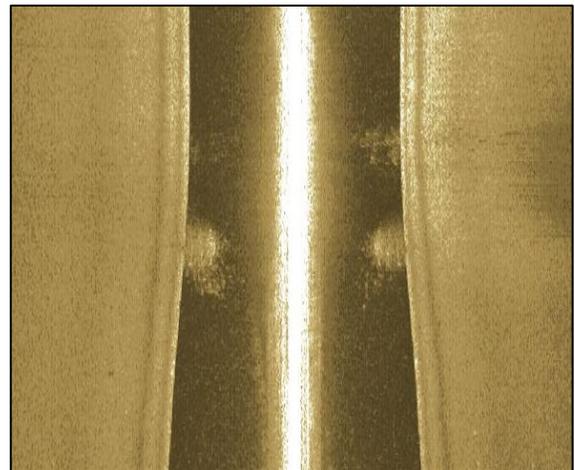


Figure 3 Screen capture of a Mossback Reef Kit standing vertical emulating standing timber. Also notice the small dots (Fish) around the structure.



Figure 4 Construction of a Mossback Trophy Tree Kit.

Location	Latitude	Longitude
1	32° 51.124'	-98° 31.959'
2	32° 51.842'	-98° 30.634'
3	32° 51.881'	-98° 30.298'
4	32° 51.687'	-98° 26.057'
5	32° 51.547'	-98° 26.023'

Table 1 Location of the 2021 Mossback Trophy Tree Kits.