

Smarter Water for North Texas

Texas Conservation Alliance TCAtexas.org



Importance of Bottomland Hardwood Forests

Bottomland hardwood forests are the most biologically productive ecosystems on land (second only to coastal estuaries where fresh and salt water mix). The river itself is the lifeblood of the bottoms, flowing across the floodplain during spring floods and leaving behind soil, seeds from upstream forests, and sediments that become natural fertilizer for plants. These rich moist soils nourish an explosion of diversity. .

As the seasonal rains fall, the river grows from its summer trickle to a fast-moving flow that eventually spills over the banks, flowing out into the forest. With every increment up-slope, the amount of time an area is inundated with water varies. And as the amount of standing water and length of inundation varies, so does the vegetation. A change in topography of even a few inches brings different kinds of trees.

Seasonal flooding also fills small streams and replenishes tannin-stained backwater sloughs. Shifts in the river create “ox-bow” lakes and inland marshes. Trees that can’t withstand the fast water of big moving rivers thrive in these quieter wetlands lost in deep forest.

The many vital functions that bottomland hardwood forests, taken together, provide “services” that economists estimate would cost billions of dollars per year to replace. Bottomland forests maintain the water quality of rivers by holding back sediments and filtering pollutants. This temporary retention of nutrients and pollutants allows many wastes to degrade into less harmful forms. Clean water nurtures wildlife, supplies water to communities and farms, and provides the fresh water and nutrients necessary for coastal estuaries that serve as the nurseries for much of ocean life. The forests increase the quantity and quality of groundwater recharge by first holding water, then filtering and releasing it through underlying soil layers. Bottomland forests also slow down flood flows, minimizing erosion by providing dense root systems to bind soil material.

East Texas bottomland forests provide other benefits as well. Wood from hardwood trees is used for structural timber and crating, firewood, railroad ties, and pulp for cardboard. Cypress is prized for wood paneling. The bottoms nurture fish, freshwater mussels, birds, and the food and fur-bearing mammals that early settlers depended on as they built modern Texas out of untamed wilderness.

Bottomland hardwood forests support at least 273 kinds of birds, 116 species of fish, 31 of amphibians, 54 reptiles, and 45 mammals, supporting a multi-million dollar recreation industry – hunting, fishing, birding, hiking, paddling, photography, biking, and nature tourism. Waterfowl by the thousands take refuge on their long flights from nesting to wintering grounds.

Sadly, more than 85% of Texas’ original bottomland hardwood forests live only in memory. Never abundant, they’ve been converted to pasture and pines and drowned by dozens of

reservoirs. "Improved" pastures substitute a single species of grass, usually non-native and unpalatable to wildlife, in place of once-diverse habitat. As the number of hardwood trees has declined, hunters and wildlife biologists are seeing impacts to waterfowl populations and other wildlife.

If built, new reservoirs proposed in East Texas will inundate hundreds of thousands of additional acres of bottomland hardwood forests.