

Bottomland Types

Cottonwood

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Definition and composition.—Cottonwood is pure or comprises a majority of the stocking, but it is associated with other bottomland hardwoods. Eastern, plains, and swamp cottonwood are included under the type name. The chief associates in the younger stages are black and sandbar willow. Sweetgum is rare. White or green ash, silver maple, and American elm may occur in the northern extremities of the type and pecan, sycamore, and sugarberry in the southern.

Geographic distribution.—The type is characteristic of the fronts or banks of all major streams in the central and southern forests. It is found along major streams of the Great Plains, but particularly within the Mississippi, Ohio, and Missouri river systems. Along the East Coast, cottonwood as a type occurs only in small groups along river and stream bottoms.

Ecological relationships.—Cottonwood is a temporary, pioneer type capable of phenomenal growth. Along with the willows, it establishes itself wherever moist, bare soil is available: on newly made sandbars, front land ridges, and well-drained flats, and occasionally on abandoned fields on well-drained ridges in the first bottoms. Where cottonwood and willow occur together, cottonwood outgrows willow and eventually becomes dominant unless frequent and extended flooding during the growing season covers the trees and only willow survives. Sites commonly silt in during the life of the stand, with possible elevation changes as great as 6 m (20 ft.), though the increment from any one flood may range from only 2.5 cm (1 in.) to .9 to 1.5 m (3 to 5 ft.). Cottonwoods and willow are relatively short lived and cannot regenerate under shade. Invaders in the next successional stage are sycamore, pecan, sugarberry, hackberry, river birch, green ash, American elm, silver maple, red maple, and boxelder. As soils build up and willows

and cottonwoods drop out, succession in the central forest usually passes to the silver maple—American elm type or to boxelder, and in the southern forest to sycamore—sweetgum—American elm, sugarberry—American elm—green ash, or boxelder. The cottonwood type merges with the cottonwood—willow type in the Great Plains area.

Variants and associated vegetation.—Common understory tree species are boxelder, sugarberry, red maple, silver maple, American elm, red mulberry, roughleaf dogwood, and swamp-privet. Undergrowth may consist of stinging nettle, pokeweed, poison-ivy, greenbrier, trumpet-creeper, peppervine, dewberry, and grape. Herbs may or may not be present, depending on how dense the overstory is and how long floodwaters cover the ground during the growing season.

Levee systems and stream channelization have restricted the area available for formation of the cottonwood type.

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