Cobble Bar Forest

State Rank: S2 - Imperiled

Cobble Bar Forest next to cobble shore and flood deposited trees. Photo: Patricia Swain, NHESP.

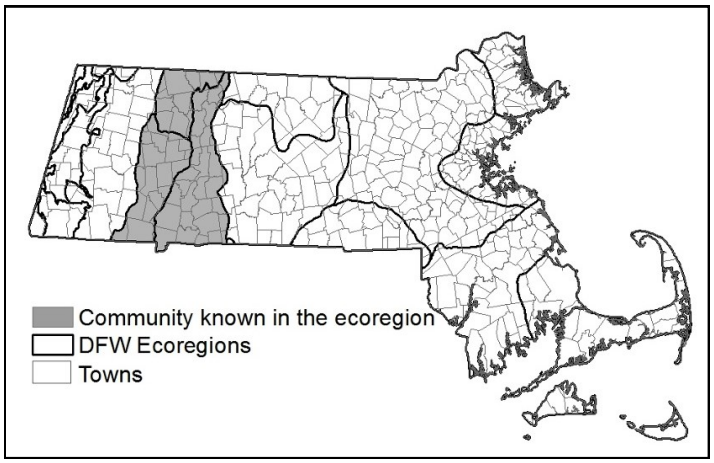
Cobble Bar Forests occur on bands of cobble-sized rocks or other coarse material deposited along powerful rivers during annual flood events. Their open canopies typically include sycamores and cottonwoods with silver maple, green ash, and elm.

Description: Cobble Bar Forests occur on coarse alluvial substrate (cobble, gravel, and sand deposited by rivers) on flood and ice scoured river shores and islands in relatively low gradient sections of high energy rivers where the bank is low. These forests are often young or successional, with fairly open canopies. Older, possibly more stabilized, community occurrences accumulate silt and other relatively fine sediments that bury the coarse materials and the bases of trees. These deeper sediments raise the shoreline, which changes the flood and scour regimes. The result is that protected areas of Cobble Bar Forest succeed to other types of floodplain forest, at least until flooding scours the shoreline in the natural course of river dynamics.

Characteristic Species: In Cobble Bar Forests, sycamore and cottonwood may be more abundant than silver maple in the canopy. Slightly inland from the disturbed river edge, green ash and American elm regularly occur. The shrub layer, usually with scattered plants, may be dominated by dense cover of invasive species such as common privet, Japanese knotweed, Japanese barberry, multiflora rose, and bush honeysuckle. The typically sparse herbaceous layer plants grow between cobbles on patches of finer material. The layer includes native and exotic disturbance adapted species: sedges, deer-tongue grass, sensitive fern, horsetail, and false Solomon's seal. Vines can be dense particularly at open edges where grapes and Oriental bittersweet can cover tree and shrub foliage and tie them into impenetrable masses.

Sycamore, a characteristic species of Cobble Bar Forests, features: Trunk (L). Photo: Karan A. Rawlins, University of Georgia, Bugwood.org. Leaves and fruit (R). Photo: Allen Bridgman, South Carolina Department of Natural Resources, Bugwood.org.

Differentiating from Related Communities: Cobble Bar Forests are limited to cobble and other coarse substrates along high-energy rivers where little deposition of finer materials occurs and flooding and ice flows scour the surface. These narrow bands of forest are close to the river edge where flood waters recede quickly after the flood events, not behind berms that retain flood waters. Other floodplain communities including High-terrace, Major-river, Transitional, and Small-river Floodplain Forests generally occur on silt and mixed mineral and organic soil substrates. Major -river, Transitional, and Small-river Floodplain Forests are behind low berms that slow flood waters and detain them causing alluvial silt deposition. Cobble Bar Forests are the only floodplain forests with abundant sycamore, although other floodplain forest species, particularly cottonwood and silver maple are present as associates. High-energy Riverbank Communities also occur within the zone of active erosion on cobble and sand substrates along steep-gradient, fast-flowing rivers, but have no trees with sparse, open low vegetation.



Habitat for Associated Fauna: Riverside forests are often part of the habitat of the wide ranging riverine and upland animals providing sheltered, riverside corridors for deer and migratory songbirds. Shady riverbanks are patrolled by dragonflies. Changes in water quality and quantity alter herbaceous, and eventually tree, species, changing habitat for birds and browsers such as deer and rabbits.

Examples with Public Access: Robinson SP, Agawam; Westfield River Access, Westfield.

Sycamore with base of trunk partially buried in river deposited sediments with understory of dense privet. Photo: Patricia Swain, NHESP.

From: *Classification of Natural Communities of Massachusetts* http://www.mass.gov/nhesp/
Natural Heritage & Endangered Species Program, Division of Fisheries & Wildlife, 1 Rabbit Hill Rd., Westborough, MA 01581
Updated: 2016
(508) 389-6360