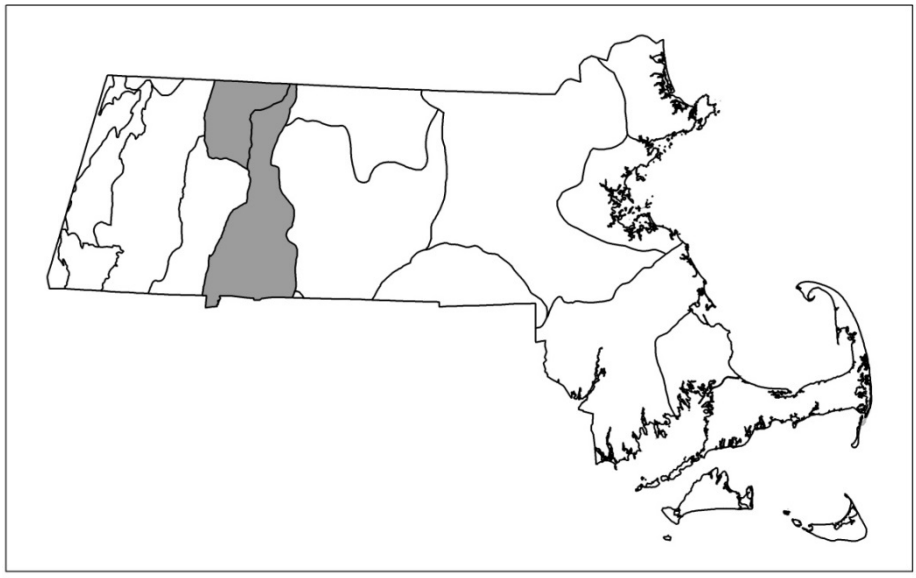
# Cobble Bar Forest

**Community Code**: CP1A2B5000

**State Rank:** S2



**Concept:** A variant of high-energy riverbanks, characterized by open forests dominated by sycamores and cottonwoods growing on sandy cobble bars.

**Environmental Setting:** 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 meandering.

**Vegetation Description**: All floodplain forest communities in Massachusetts have silver maple in the canopy, but associated plant species vary depending on the intensity and duration of flooding and on geographic location. In Cobble Bar Forests, sycamore (*Platanus occidentalis*) and cottonwood (*Populus deltoides*) may be more abundant than silver maple (*Acer saccharinum*) in the canopy. Slightly inland from the disturbed river edge, green ash (*Fraxinus pennsylvanica*) and American elm (*Ulmus americana*) often occur. The shrub layer, usually with scattered plants, may be dominated by dense cover of invasive species such as common privet (*Ligustrum vulgare*), Japanese knotweed (*Fallopia japonica*), Japanese barberry (*Berberis thunbergii*), multiflora rose (*Rosa multiflora*), and bush honeysuckle (*Lonicera* spp.). The herbaceous layer is diverse, with plants growing between cobbles and patches of

sand. The typically sparse herbaceous layer includes native and exotic disturbance-adapted species and annuals as well as perennials: sedges (*Carex* spp.), deer-tongue grass (*Dichanthelium clandestinum*), sensitive fern (*Onoclea sensibilis*), horsetail (*Equisetum* spp.), and false Solomon's seal (*Maianthemum racemosum*). Vines can be dense particularly at open edges where grapes (*Vitis* spp.), Oriental bittersweet (*Celastrus orbiculatus*), Virginia creeper (*Parthenocissus quinquefolia*), and poison ivy (*Toxicodendron radicans*) can cover tree and shrub foliage and tie them into impenetrable masses.

**Differentiating Occurrences:** 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 (*Platanus occidentalis*), although other floodplain forest species, particularly cottonwood (*Populus deltoides*) and silver maple (*Acer saccharinum*), 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 sparse, open low vegetation with no trees.

**Associated Fauna:** Provide habitat for riverine odonates.

**Public Access:** Robinson State Park, Agawam; Westfield River Access, Westfield.

**Threats:** This is a high-disturbance habitat and non-native taxa are abundant.

**Management Needs:** Maintenance of normal flooding intensity is needed to maintain community.

**USNVC/NatureServe:** Close to: *Platanus occidentalis* - (*Fraxinus pennsylvanica*, *Celtis laevigata*, *Acer saccharinum*) Temporarily Flooded Forest Alliance: *Platanus occidentalis* - *Fraxinus pennsylvanica* Forest (CEGL006036).