

High-energy Riverbank Community

State Rank: S3 - Vulnerable



High-energy Riverbank Community next to fast flowing river. Photo: Patricia Swain, NHESP.

Description: High-energy Riverbank Communities occur within the zone of active erosion and sedimentation of steep-gradient, fast-flowing rivers and are shaped by continued annual flood events and winter ice scour. They are characterized by cobble and sand substrates and sparse, open vegetation. High-energy Riverbank communities occur as both narrow rocky zones along riverbanks and as large areas on the exposed, upstream ends of riverine islands. They are broadly defined communities with variation in structure and dominant species both among rivers and among sites within rivers. Differences in severity of scouring and flooding create a gradient of substrate types from the river's edge to the upland transition that can correlate to changes in vegetation.

Characteristic Species: Vegetation on open cobbles is usually a sparse mix of native and non-native species such as false dragonhead, cocklebur, beggar's ticks, and lady's thumb, growing with colt's-foot, wild heal-all, and scattered

High-energy Riverbank Communities are dominated by a sparse mix of native and non-native species. Severe flooding and ice scour on cobble shores of steep gradient, fast flowing rivers maintain the vegetation in narrow bands.

riverbank-sedge. On Connecticut River islands there is typically a distinct band of switchgrass with mixed grasslands of switchgrass, big and little bluestem, Indian grass, and goldenrods in the sandier areas with dense patches of sandbar willow and sandbar cherry. Intense flooding and ice scour prevent establishment and growth of trees or tall shrubs. Short shrubs such as shadbush, silky dogwood, willows, and sapling sycamores form a vegetation zone on the sandiest sections, typically bordering floodplain forests that occupy siltier soils.

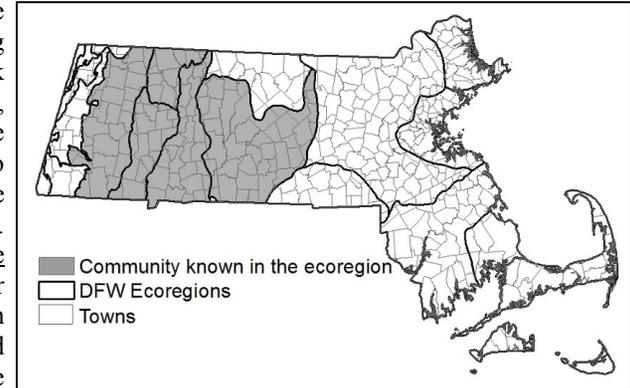


Clumps of willow in a High-energy Riverbank Community on the scoured upstream end of a riverine island. Photo: Bruce A. Sorrie, NHESP.

Differentiating from Related Communities: High-energy Riverbank Communities occur on cobble and sand substrates and have sparse, open low vegetation. On river islands the presence of zones of switch grass, big bluestem,

and Indian grass are indicative of the community. Along rivers, High-energy Riverbank Communities have, on average, sparser vegetation and more and drier bare ground than do High-energy Riverside Meadows or Riverside Seeps. High-energy Riverside Meadows occur in moister areas with more sand and silt in the sediments with dense and dominant groups of prairie dogbane, riverbank-sedge, Canadian burnet, and water horsetail. Riverside Seeps occur at the base of steep riverbanks where groundwater seeps out of the bottom of the upland slope; they are wetter than associated High-energy Riverside Meadows and High-energy Riverbank Communities and are characterized by yellow monkey flower, Canadian burnet, and golden Alexanders as a group. Low-energy Riverbank Communities are open herbaceous/graminoid communities on sandy or silty mineral soils of stream banks that do not experience severe flooding or ice scour. They are often dominated by reed canary grass, Canada blue joint grass, or other dense grasses, with some of the same species typical of disturbed areas as High-energy Riverbanks. Cobble bars that have a tree canopy (cover >30%) are classified as Cobble Bar Forests.

Habitat for Associated Fauna: High-Energy Riverbank Communities are very open. They provide habitat for migrating shorebirds, including Dunlins and Spotted Sandpipers, and other birds of open habitats such as Killdeer. Dragonfly



and tiger beetle larvae live in burrows in sand between cobbles and boulders; adult tiger beetles forage above the high-water mark.

Examples with Public Access: Gilbert A. Bliss SF/Chesterfield Gorge Reservation (TTOR), Chesterfield; Tolland SF, Otis, Sandisfield, Tolland; Sunderland Islands WMA, Deerfield, Sunderland; Green River WMA, Colrain, Leyden; Mohawk Trail SF, Charlemont, Florida, Hawley, Savoy.



Coarse substrate and sparse vegetation in High-energy Riverbank Community. Photo: Matthew R. Burne, NHESP.

