

ROCKY BAR AND SHORE (YADKIN FALLS BEDROCK SCOUR SUBTYPE)

Concept: Subtype covers examples in which *Solidago plumosa* is a prominent component, known only from the Falls of the Yadkin River in the Uwharrie Mountains. It consists of very open communities on bedrock along river shorelines, kept bare of soil by flood scouring but not flooded for significant periods. Substrate condition created by flood scouring is the most important aspect of being in the floodplain. Floods also bring nutrients and seed input, but these communities are not significantly affected by wetness.

Sites: This subtype is known from a single site, in the gorge of the Yadkin River where it crosses the Uwharrie Mountains. It occurs on bedrock outcrops along the river bank, which apparently are kept free of soil development and forest vegetation by scouring by flood waters. It likely was extensive in the gorge, but is now confined to the small areas that are not submerged by waters behind Badin Dam and Falls Dam.

Soils: Small soil pockets and crevices in rock outcrops.

Hydrology: Intermittently flooded for brief periods. Prior to dam construction, the river likely rose rapidly during floods because of its limited floodplain in the gorge, and had rapid flow capable of substantial corrosion. Even with the dams, brief, intense flooding likely occurs occasionally, and probably remains important in maintaining the community. Most of the time, available moisture may be quite limited in shallow soil pockets, but a bit more available in deeper crevices.

Vegetation: Sparse, patchy vegetation, limited to plants rooted in crevices and small pockets of soil. Most of the plants are herbaceous, but sparse shrubs, vines, and small trees are present. The flora is a mix of species shared with other bar subtypes, with rock outcrop communities, with communities of basic upland communities, and ruderal species. *Schizachyrium scoparium* and *Solidago plumosa* are among the most abundant species. Other herbaceous species include *Dichanthelium* sp., *Eurybia pilosa*, *Allium cernuum*, *Manfreda virginica*, *Muhlenbergia capillaris*, *Phemeranthus teretifolius*, *Hypericum gentianoides*, *Oenothera humifusa*, *Tragia urticifolia*, *Sporobolus claudenstinus*, and *Symphotrichum dumosum*. Woody species include *Platanus occidentalis*, *Liquidambar styraciflua*, *Diospyros virginiana*, *Ulmus alata*, *Hypericum prolificum*, *Cornus stricta*, *Cephalanthus occidentalis*, *Ilex decidua*, *Amorpha schwerinii*, *Gelsemium sempervirens*, *Campsis radicans*, and *Muscadinia rotundifolia*.

Dynamics: Unlike other bar communities, this subtype is not subject to reworking or substantial new deposition of sediment. It is subject to occasional natural scouring by floods but likely is stable for periods of years between floods. Natural flood disturbance may be frequent on the lower parts but rare on the upper parts, suggesting a gradient of dynamics approaching those of upland rock outcrops on the higher parts. Flood scouring may kill some plants, but plants rooted in deeper crevices may well survive to resprout.

Range: A single site is known, along the Yadkin River on the border of Montgomery and Stanley counties.

Associations: Bordered by the river. The one example grades to Piedmont Alluvial Forest and Basic Mesic Forest.

Distinguishing Features: The Yadkin Falls Bedrock Scour Subtype differs from the other Piedmont subtypes by having a substrate of hard bedrock, with plants rooted in crevices or limited soil pockets, in combination with a flooding regime that includes some flooding but not for appreciable periods of time. Vegetation thus is dominated by perennial herbs and is fairly stable. This is in contrast to the loose boulder, cobble, or gravel substrate and unstable vegetation of the other Piedmont subtypes. It is distinguished from the Mountain Bedrock Scour Subtype by geographic location and corresponding biogeographic differences. At present, the presence of *Solidago plumosa* is sufficient to distinguish it. No other bedrock scour communities are known in the Piedmont. If any are found, at least in the central or eastern Piedmont, they may be placed here, but likely will call for a new subtype.

Variation: Only a single example is known, but if any more Piedmont bedrock scour communities are found, they potentially could be fairly different.

Comments: This subtype appears to be conceptually intermediate between river bar and rock outcrop communities. At the one example, floodplain forest on well-developed soil occurs at similar elevations to the higher parts of this community, suggesting that the rock outcrop as well as the flood scouring is necessary for its occurrence.

Rare Plant Species: *Solidago plumosa*, *Baptisia albescens*, *Amorpha schwerinii*.

Synonyms: *Schizachyrium scoparium* - *Solidago plumosa* Herbaceous Vegetation (CEGL004459). Ecological Systems: Southern Piedmont Large Floodplain Forest (CES202.324)

Examples: Yadkin River Scour Banks

References:

Bates, M.J. 2001. Montgomery County Natural Heritage Inventory. North Carolina Natural Heritage Program and Land Trust for Central North Carolina.

Carolina Vegetation Survey.