

Riverscour Prairies

River shores along West Virginia's wildest whitewater rapids host rare plant communities more exciting (to an ecologist) than a raft trip downstream. Eddy out, get out, and check it out! Piles of boulders mixed with sand, gravel, uprooted trees, and garbage attest to ongoing upheaval by floods. Behind these piles of rubble may be patches of sunny prairies with clumps of giant grasses and scattered grotesque, contorted trees. The diversity of plants, native and exotic, is dizzying. Watch out, don't slip on a rock or step on a copperhead.



Ecological Description: Riverscour prairies occur along the banks of high energy rivers, often at constrictions where rapids occur. During floods violent flows uproot or damage any trees that manage to become established, creating habitats that are open and sunny. Similar sunny riverside habitats are created by ice-scour along high elevation streams. The alluvial substrates are typically coarse sands, gravels, cobbles, and boulders, which are often classified by soil scientists as Udifluvents and Psamments. Some of the most interesting sites also have exposed, scoured bedrock. Although these habitats are frequently flooded, they may also become extremely hot and dry for extended periods during the growing season. The sites often have complex microtopography which contributes to high plant species diversity. Relative elevation differences of just a meter can greatly influence the energy and duration of flooding, which may create distinct zones of vegetation parallel to the stream.

Riverscour prairies at low to middle elevations in WV are often dominated by warm season grasses (species that flower late in the summer), including big bluestem (*Andropogon gerardii*), switchgrass (*Panicum virgatum*), and Indiangrass (*Sorghastrum nutans*). These same species grow in the tallgrass prairies of the American Midwest. Some riverscour prairies have significant cover by shrubs such as silky dogwood (*Cornus amomum*), winterberry (*Ilex verticillata*), and smooth azalea (*Rhododendron arborescens*). There are usually some scattered, flood-battered sycamores (*Platanus occidentalis*) or river birches (*Betula nigra*), but these rarely reach tree size. There is often a great diversity of sun-loving herbs (heliophytes), with high representation of grasses and composites, including many rare species and many non-native weeds. Characteristic herbs include blue wild indigo (*Baptisia australis*), trumpetweed (*Eupatorium fistulosum*), early goldenrod (*Solidago juncea*), riverbank goldenrod (*Solidago simplex* var. *racemosa*), Monongahela Barbara's buttons (*Marshallia grandiflora*), blue mistflower (*Conoclinium coelestinum*), Indian hemp (*Apocynum cannabinum*), flowering spurge (*Euphorbia corollata*), and balsam ragwort (*Packera paupercula*).

Ice-scour prairies at high elevations lack warm season grasses and other low elevation species and host a number of rare herbs with northern affinities, including water sedge (*Carex aquatilis*), Sticky Bog-asphodel (*Triantha glutinosa*), Canadian burnet (*Sanguisorba canadensis*) and northern bentgrass (*Agrostis mertensii*).

Animals that need these habitats:

Relatively few animal surveys have focused on riverscour prairies. They are likely to host cryptic species, especially insects and other invertebrates. The state rare Appalachian tiger beetle (*Cicindela ancocisconensis*) is known from these habitats along several rivers. Snakes, including poisonous copperheads (*Agkistrodon contortrix*) use these habitats to bask in the sun.

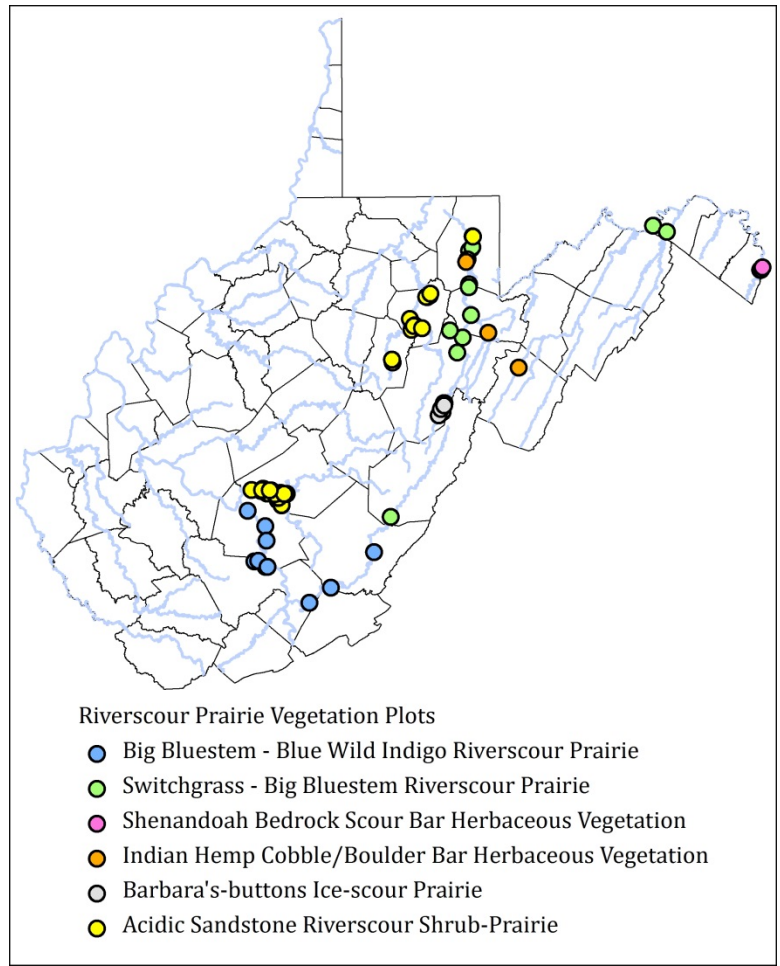
Distribution: Riverscour prairies are found along high gradient reaches of several WV rivers including the Greenbrier, Gauley, New, Buckhannon, Tygart Valley, Cheat, Cacapon, and Potomac. Ice scour prairies are known only from the upper Shaver’s Fork River.



Places to see and visit: [Gauley River National Recreation Area](#), [Greenbrier River](#), [Harpers Ferry National Historical Park](#), [New River Gorge National River](#), [Tygart Valley River](#), Upper Shaver Fork River





Conservation issues: The hydrology of many WV rivers has been altered by roads and railroads built parallel to rivers, often on both sides. The hydrology of some rivers has been completely altered by the building of dams (e.g. Bluestone, Summersville), which have flooded reaches upstream while reducing habitat-maintaining floods to communities downstream. These changes have undoubtedly affected the extent and location of riverscour prairies. Existing riverscour prairies are sometimes threatened by development, such as bridge or pipeline crossings, within the river channel. Trampling can be a localized threat in popular boating and fishing areas. Non-native plant species are nearly ubiquitous in these communities, but frequent flooding disturbance often precludes their permanent dominance. Permanent transects have been established by the National Park Service to monitor changes in riverscour prairie vegetation along the Gauley and New Rivers.

Classification:

NatureServe Ecological Systems: Central Appalachian River Floodplain, South-Central Interior Large Floodplain



USNVC Association WV Scientific Name [Common Name]	Code	G Rank	S Rank	Links
<i>Andropogon gerardii</i> - <i>Panicum virgatum</i> - <i>Baptisia australis</i> Herbaceous Vegetation [Big Bluestem - Blue Wild Indigo Riverscour Prairie]	CEGL006283	G3	S1	
<i>Panicum virgatum</i> - <i>Andropogon gerardii</i> Gravel Wash Herbaceous Vegetation [Switchgrass - Big Bluestem Riverscour Prairie]	CEGL006477	G2G3	S2	

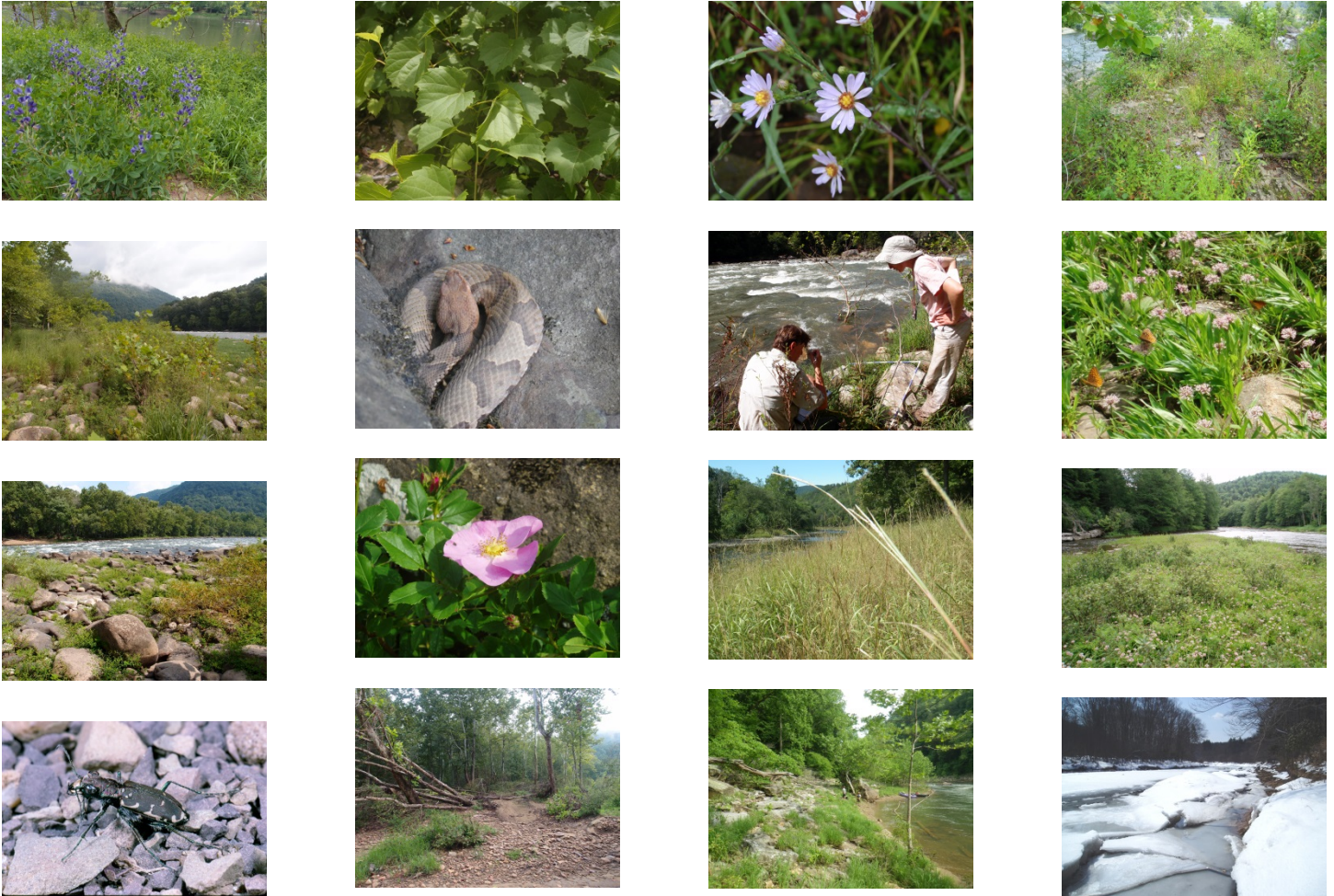
<i>Conoclinium coelestinum</i> - <i>Acalypha gracilens</i> - <i>Polygonum lapathifolium</i> Herbaceous Rivershore [Shenandoah Bedrock Scour Bar Herbaceous Vegetation]	CEGL006481	GNR	S1	
<i>Apocynum cannabinum</i> Riverscour Herbaceous Vegetation [Indian Hemp Cobble/Boulder Bar Herbaceous Vegetation]	CEGL006554	GNR	S2S3	
<i>Rhododendron arborescens</i> / <i>Marshallia grandiflora</i> - <i>Triantha glutinosa</i> - <i>Platanthera flava</i> var. <i>herbiola</i> Herbaceous Vegetation [Barbara's-buttons Ice-scour Prairie]	CEGL006598	G1	S1	
(<i>Betula nigra</i> , <i>Ilex verticillata</i>) / <i>Andropogon gerardii</i> - <i>Solidago simplex</i> var. <i>racemosa</i> Herbaceous Vegetation [Acidic Sandstone Riverscour Shrub-Prairie]	CEGL006623	G2	S2	

Key to Associations:

1. Tall grass prairies with high cover by warm season grasses, including *Andropogon gerardii*, *Panicum virgatum*, and *Sorghastrum nutans* **2**
1. Herbaceous communities with few or no warm season grasses. **4**
2. *Baptisia australis* usually present, often abundant. Prairies along the New, Greenbrier, and Shenandoah Rivers, along river reaches through or downstream from areas of calcareous bedrock. ***Andropogon gerardii* - *Panicum virgatum* - *Baptisia australis* Herbaceous Vegetation** [Big Bluestem - Blue Wild Indigo Riverscour Prairie]
2. *Baptisia australis* usually absent. **3**
3. *Solidago simplex* var. *racemosa* and/or *Packera paupercula* usually present. Shrubs (including dwarf trees) often have high cover. Substrate typically includes large boulders or bedrock of acidic sandstone with plants established in cracks and crevices. Prairies along the Gauley, Tygart Valley, Buckhannon, and Cheat Rivers. **(*Betula nigra*, *Ilex verticillata*) / *Andropogon gerardii* - *Solidago simplex* var. *racemosa* Herbaceous Vegetation** [Acidic Sandstone Riverscour Shrub-Prairie]
3. *Solidago simplex* var. *racemosa* and *Packera paupercula* usually absent. Low diversity prairies along river reaches through shale in the Ridge and Valley, and on cobble and boulder bars along the Cheat River and its tributaries. ***Panicum virgatum* - *Andropogon gerardii* Gravel Wash Herbaceous Vegetation** [Switchgrass - Big Bluestem Riverscour Prairie]
4. Ice scour prairies at high elevations along the upper Shavers Fork River with *Marshallia grandiflora*. ***Rhododendron arborescens* / *Marshallia grandiflora* - *Triantha glutinosa* - *Platanthera flava* var. *herbiola* Herbaceous Vegetation** [Barbara's-buttons Ice-scour Prairie]
4. Herbaceous riverscour communities at lower elevations. *Marshallia grandiflora* absent. **5**
5. Low diversity communities dominated by *Apocynum cannabinum*, sometimes occurring adjacent to (towards the river from) tall grass prairies and sometimes along river reaches which lack tall grass prairies. ***Apocynum cannabinum* Riverscour Herbaceous Vegetation** [Indian Hemp cobble/boulder bar].

5. High diversity forb dominated communities on bedrock shelves along the Shenandoah and Potomac Rivers in the far eastern panhandle. *Conoclinium coelestinum* - *Acalypha gracilens* - *Polygonum lapathifolium*
Herbaceous Rivershore [Shenandoah Bedrock Scour Bar Herbaceous Vegetation]

Photo gallery:



References:

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