



Maryland's Endangered Ecosystems

Maryland Sierra Club Endangered Species Workgroup

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Rod Simmons



Extensive upland pine barrens of Maryland's Western Shore: *Pinus rigida* – *Quercus coccinea* – *Quercus falcata* / (*Quercus marilandica*) / *Gaylussacia frondosa* Woodland (USNVC: CEGLO06329) at the "Central Farm" of the Beltsville Agricultural Research Center (BARC) in northern Prince George's County. Global/State Ranks: G2G3/S3.



Small White Fringed Orchid
(*Platanthera blephariglottis*)

Photo by Randy Emmitt

Photo by R. H. Simmons

Sphagnous seepage swales in Pitch Pine barrens at the “Central Farm” of the Beltsville Agricultural Research Center (BARC) support the state threatened Small White Fringed Orchid (*Platanthera blephariglottis*) among other rarities.



Photo by R.H. Simmons

Old-age Pitch Pine (*Pinus rigida*) and tangle of graminoids (grass-like plants) and shrubs at the exceptionally pristine **Aitcheson Bog** on the west side of I-95 in northern Prince George's County, Maryland - one of the finest and last remaining examples of the globally-rare **Fall Line Magnolia Bog community**: *Nyssa sylvatica* - *Magnolia virginiana* - (*Pinus rigida*) / *Rhododendron viscosum* - *Toxicodendron vernix* / *Smilax pseudochina* Woodland (USNVC: CEGL006219). Global/State Ranks: G1/S1.



Steep, rugged bluffs along the Potomac River at Chapman State Park in Charles County, Maryland opposite Mason Neck National Wildlife Refuge. This coastal plain landscape was formed where river bluffs and deep ravines over millennia exposed underlying calcareous and glauconitic marine sands and marl beds deposited during the Paleocene, Eocene, and Miocene epochs when the area was a shallow sea at the western edge of the Atlantic Ocean.



Photo by R.H. Simmons

Globally-rare **Coastal Plain Dry Calcareous Forest**: *Quercus muhlenbergii* / *Cercis canadensis* / *Dichanthelium boscii* - *Bromus pubescens* - *Erigeron pulchellus* var. *pulchellus* - *Aquilegia canadensis* Forest (USNVC: CEGL007748) on steep, southwest-facing slope at Chapman State Park, Charles County, Maryland. Global/State Ranks: G1/S1.

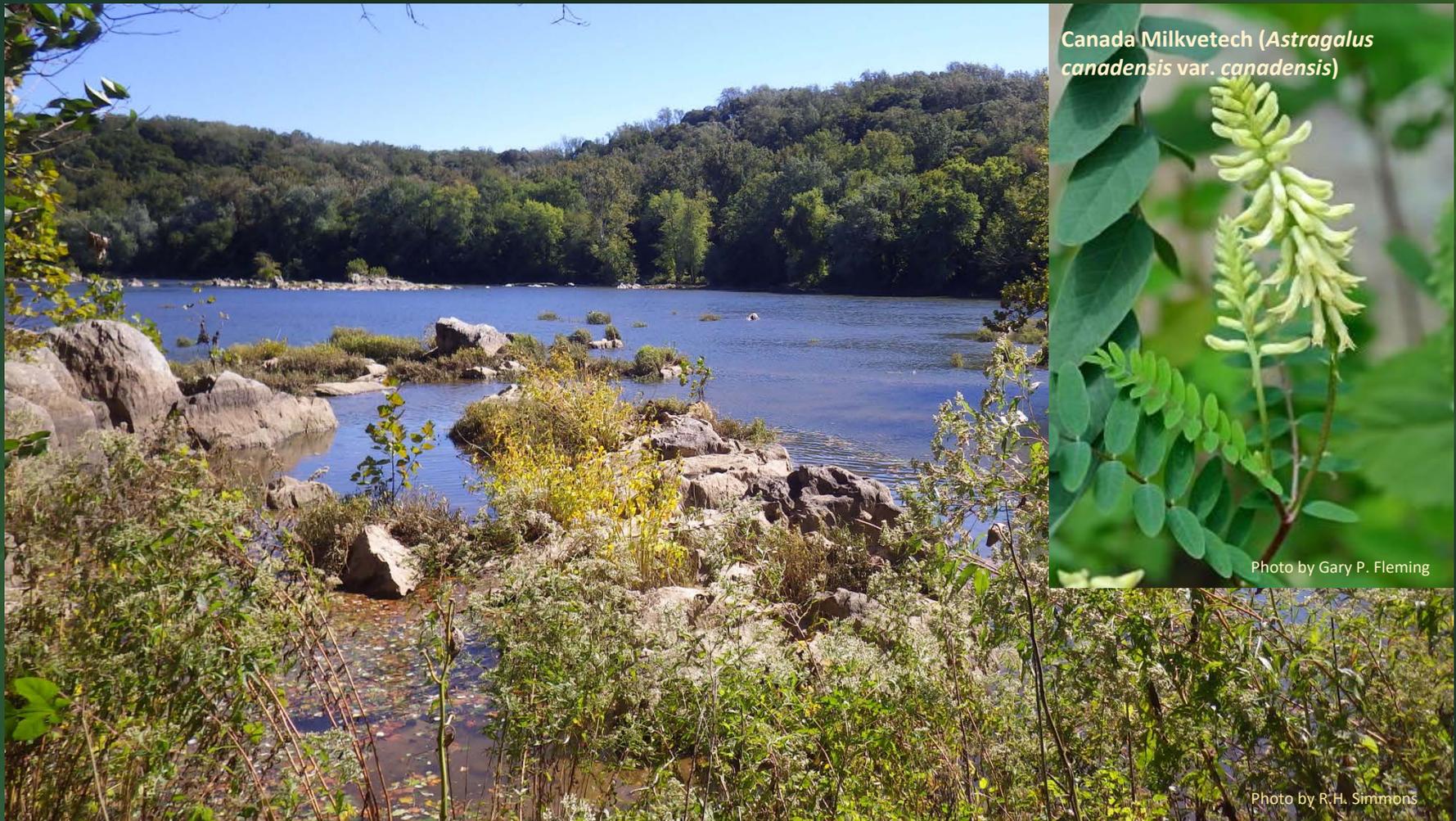


The Maryland State Champion Chinquapin Oak (*Quercus muehlenbergii*) in old-age **Shell-Marl Ravine Forest** at Chapman State Park. At present, Shell-Marl Ravine Forest is perhaps best classified in the United States National Vegetation Classification (USNVC) as a coastal variant of **Coastal Plain / Outer Piedmont Basic Mesic Forest: *Fagus grandifolia* - *Liriodendron tulipifera* - *Carya cordiformis* / *Lindera benzoin* / *Podophyllum peltatum* Forest** (USNVC: CEGL006055).



Photo by R.H. Simmons

Globally rare **Potomac River Bedrock Terrace Hardpan Forest**: *Carya glabra* - *Quercus* (*rubra*, *montana*) - *Fraxinus americana* / *Viburnum rafinesqueanum* / *Piptochaetium avenaceum* Forest (USNVC: CEGLO06209) at Plummers Island, Montgomery County, Maryland. Global/State Ranks: G1G2/S1.



Canada Milkvetch (*Astragalus canadensis* var. *canadensis*)

Photo by Gary P. Fleming

Photo by R.H. Simmons

Scoured outcrops and rocky woodland at Plummers Island along the Potomac River in the Potomac Gorge (above photo) once supported **Canada Milkvetch**. “Endangered by habitat loss and excessive browse by White-tailed Deer, Maryland stations could scarcely be called populations, rather scattered plants at six locations” (MNHP 2016). Global/State Ranks: G5T5/S1 E.



The denuded, post-construction footprint of a recently completed natural channel design (NCD) stream construction project along the north braid of the west branch of Turkeycock Run at Mason District Park in Fairfax County, Virginia. NCD projects are highly destructive to forest communities and wetlands because they require extensive clearing of canopy trees and forest along the stream banks as staging areas and to create artificial floodplains and stream channels.

Best practice recommendations to help ensure the preservation and future sustainability of forested stream valleys

Hold central the overarching concept of Do No Harm and for keeping sites natural and causing as little disturbance as possible.

All jurisdictions share a public trust responsibility and commitment to properly steward and preserve their natural resources for present and future generations and the good of the environment. It is critical to thoroughly assess and present all irreplaceable natural resources potentially affected by a stream restoration or wetlands project as necessary environmental review prior to construction. The pros and cons of a project need to be properly quantified and weighed if a quality outcome is to be expected.

Adopt the policy that disallows the construction of highly destructive, misapplied stream construction and stormwater management projects in small order, interior forested, upper headwater stream valleys.

The careful and *selective* armoring of stream banks and channels with wood or boulders and/or log jams and wood snags that mimic natural processes are proven best practice recommendations for stabilizing and helping to restore eroded stream channels. Sometimes the No Build Option is the best alternative.

Be vigilant in controlling non-native invasive plants along waterways. It is also critical to acquire some funding for large-scale projects to accomplish work out of reach of staff and volunteers.

Continually help educate others as to the essential value and effective means of preserving natural resources, stream valleys and wetlands, and our irreplaceable native biodiversity. This is largely outside the scope of most planners/designers, engineers, builders, property managers, and homeowners.



Photo by R.H. Simmons

Globally rare, old-age “flatwoods” glade of Piedmont Ultramafic Woodland:
Pinus virginiana - *Quercus stellata* - *Quercus marilandica* / *Schizachyrium*
scoparium Woodland [Provisional] at Travilah Serpentine Barrens,
Montgomery County, Maryland.

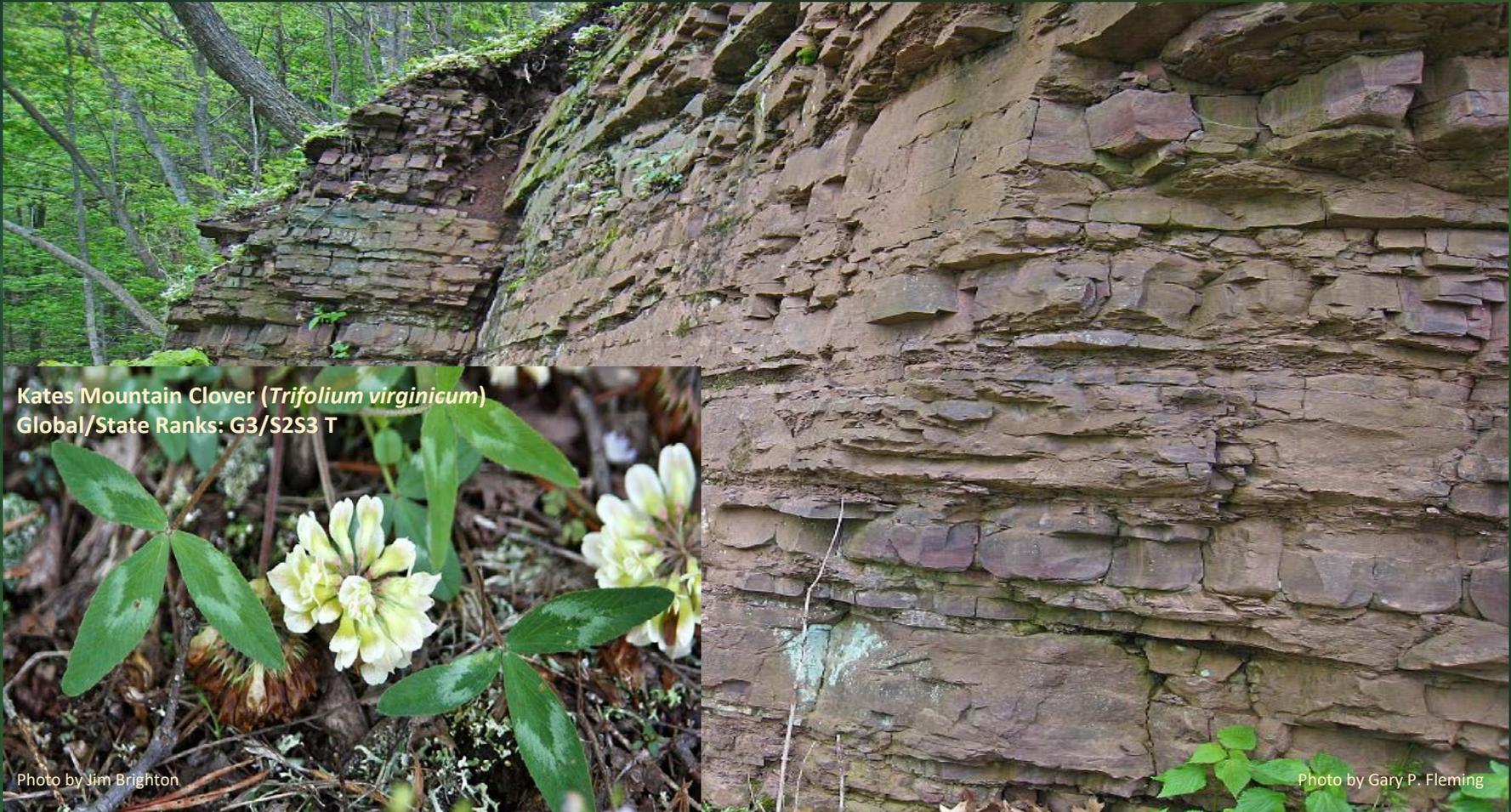


Ozark Milkvetch (*Astragalus distortus* var. *distortus*)
Global/State Ranks: G5/S2 T

Photo by Bio406d at the University of Texas

Photo by R.H. Simmons

Ozark Milkvetch “appears limited to areas underlain by calcareous shale or siltstone” and is “notably disjunct from the lower Midwest to xerophytic habitats in VA, e. WV, and w. MD” (VBA 2017). This species “occurs in shale barrens of Allegany County and Triassic Basin siltstone bluffs of Montgomery County (historically) in Maryland. “Piedmont stations not seen since 1939” (MNHP 2016).



Kates Mountain Clover (*Trifolium virginicum*)
Global/State Ranks: G3/S2S3 T

Photo by Jim Brighton

Photo by Gary P. Fleming

“Long thought to be a strict shale-barren endemic, and still by far most common on shale substrates. In recent years, however, rare occurrences have been documented on Ridge and Valley calcareous sandstone and limestone, Blue Ridge metabasalt, and diabase and ultramafic rocks of the Piedmont” (VBA 2017). “Threatened due to small population sizes, woody succession of shale barren habitat (see Tyndall 2015), and to an unknown extent fragmentation and isolation of the remaining habitat patches” (MNHP 2016).



Photo by R.J. Soreng

Pristine Threeway Sedge Basin Fen: *Dulichium arundinaceum* - *Carex folliculata* - *Juncus* spp. Herbaceous Vegetation – a high-elevation montane peatland community at Rock Lodge, Appalachian Plateau of Maryland, Garrett County. The whitish-colored plants are White Beakrush (*Rhynchospora alba*). Global/State Ranks: GNR/S3.

A close-up photograph of a turtle, likely a Spiny-tailed Turtle, resting on a bed of brown leaves and green plants. The turtle's shell is black with prominent yellow or orange markings. Its head is red with black spots, and its eyes are visible. The word "QUESTIONS?" is overlaid in large, bold, yellow letters on the left side of the image.

QUESTIONS?