

Upper Tennessee River Roundtable
Request for Proposals
Botany Surveys and Wildlife Habitat Surveys for Devil's Fork Portal Closures

Purpose

Upper Tennessee River Roundtable (UTRR) is seeking proposals from qualified individuals to complete botany surveys and wildlife habitat surveys in preparation for portal closures and trail work at Devil's Fork.

Background

Upper Tennessee River Roundtable intends to close the portals and work on the trail at Devil's Fork on U.S. Forest Service land as part of a pilot project being funded by the Virginia Department of Mines, Minerals and Energy with the Office of Surface Mining. Match for the project will be provided by Friends of Southwest Virginia for development of a parking lot.

Scope of Services

Botany surveys: These surveys need to be done in the "staging area" where there could be equipment onsite to do the portal work, if there is a large-scale gate construction, and along the access corridor from the Devil's Fork Trail to the portals, the path between the portals, and about 100 feet around the mouths of the portals. This should cover any potential ground that would be disturbed. (The trail does not need to be included in the surveys.)

Botany surveys must be completed by July 15 to meet U.S. Fish and Wildlife Service requirements for the small-whorled pogonia.

Potential staging areas: after the first creek crossing there is a large flat area, and there is also the original old parking lot down by the creek (off to the left below the current parking lot – access by taking the left fork just before the parking area).

Wildlife habitat surveys: These surveys need to be done in the same areas. Look at the habitat and describe it as well as look for animals and their sign (including birds, butterflies, herps, etc).

(Note: DMME will do bat surveys.)

See attached list for species found in the George Washington and Jefferson National Forest, so not all species on the list are anticipated to be found in the Devil's Fork area.

Proposal Requirements

The following elements shall be included in proposal:

- Describe plan for conducting botany surveys and wildlife habitat surveys.

- Include qualification and experience in completing similar surveys.
- Provide two references for similar work.
- Include proposed price for completing surveys.
- Describe timeline for survey work and whether any other current workload could interfere with completion by the July 15 deadline.
- State whether individual submitting proposal carries professional liability insurance and/or workers compensation insurance.

Payment

Upper Tennessee River Roundtable will provide payment to individual submitting the selected proposal as soon as payment is received from Virginia Department of Mines, Minerals and Energy.

Submittal of Proposals

Written proposals are due by 5 p.m. Monday, July 9, 2018. Submit to: Carol Doss, Executive Director, Upper Tennessee River Roundtable, P.O. Box 2359, Abingdon, Virginia 24212 or email to uppertnriver@yahoo.com.

(Scroll down to see species list from U.S. Forest Service.)

Documentation of Threatened, Endangered or Sensitive Species Occurrences for (PROJECT NAME)

Coding for Occurrence Analysis Results (OAR) for 199 species

Forest updated **May 1, 2018** (based on Region 8 sensitive species list effective **March 15, 2018**)

| OAR | GW | J | Species Name | Common Name | Range on or near GWJNFs | Habitat - Detail | TES | GRank | VA SRank | WV SRank |
|-------------------|----|---|----------------------------------|------------------------|---|--|-----|-------|----------|----------|
| VERTEBRATE | | | | | | | | | | |
| Fish | | | | | | | | | | |
| | - | X | <i>Ammocrypta clara</i> | Western sand darter | Clinch R, Powell R | Aquatic-rivers. | S | G3 | S1 | - |
| | - | X | <i>Chrosomus cumberlandensis</i> | Blackside dace | Upper Cumberland R, Upper Powell R, Poor Fk Cumberland R | Aquatic-streams. | T | G2 | S1 | S3 (KY) |
| | - | X | <i>Erimonax monachus</i> | Spotfin chub | Lower N Fk Holston R | Aquatic-streams. | T | G2 | S1 | - |
| | - | X | <i>Erimystax cahni</i> | Slender chub | Two sites - Powell R, Lee Co | Aquatic-rivers. | T | G1 | S1 | - |
| | - | X | <i>Erimystax insignis</i> | Blotched chub | Clinch-Powell system, S Fk Holston R | Aquatic-streams/rivers. | S | G4 | S3 | - |
| | - | X | <i>Etheostoma acuticeps</i> | Sharphead darter | S and Middle Fk Holston R | Aquatic-rivers. | S | G3 | S1 | - |
| | - | X | <i>Etheostoma cinereum</i> | Ashy Darter | Upper Clinch R, Guest R gorge | Aquatic-rivers. | S | G2G3 | S1 | - |
| | - | X | <i>Etheostoma osburni</i> | Candy darter | Big Stony Ck, Dismal Creek, Cripple Creek (New R watershed) | Aquatic-streams. | PT | G3 | S1 | S2 |
| | - | X | <i>Etheostoma percnurum</i> | Duskytail darter | Copper Ck, Clinch R | Aquatic-rivers. | E | G1 | S1 | - |
| | - | X | <i>Etheostoma denoncourti</i> | Golden darter | Four sites Clinch R, lower Copper Ck. | Aquatic-rivers. Formerly: Tippecanoe darter, <i>Etheostoma tippecanoe</i> . | S | G3G4 | S1 | S2 |
| | - | X | <i>Etheostoma vulneratum</i> | Wounded darter | N & S Fk Holston R, Clinch R, Powell R. | Aquatic-Rivers. | S | G3 | S2S3 | - |
| | - | X | <i>Icthyomyzon greeleyi</i> | Mountain brook lamprey | M, N Fk Holston R, Copper Ck, Indian Ck, Clinch R, Powell R | Aquatic-rivers. | S | G3G4 | S2 | S1 |
| | - | X | <i>Notropis ariommus</i> | Popeye shiner | N Fk Holston R, Clinch R, Powell R | Aquatic-rivers. | S | G3 | S2S3 | S2 |
| | X | X | <i>Notropis semperasper</i> | Roughhead shiner | Upper James R watershed above Buchanan (Cowpasture R, Jackson R, Craig Ck) | Aquatic-rivers. | S | G2G3 | S2S3 | - |
| | - | X | <i>Noturus flavipinnis</i> | Yellowfin madtom | Lower & Mid reaches of Copper Ck, Powell R | Aquatic-streams. | T | G1 | S1 | - |
| | X | X | <i>Noturus gilberti</i> | Orangefin madtom | S Fk Roanoke R watershed, Roanoke R above Salem, Craig Ck, Johns Ck, Cowpasture R | Aquatic-streams. | S | G2 | S2 | - |
| | - | X | <i>Percina burtoni</i> | Blotchside logperch | N Fk Holston R, Clinch R, Copper Ck, Little R | Aquatic-rivers. | S | G2G3 | S1 | - |
| | - | X | <i>Percina rex</i> | Roanoke logperch | Upper Roanoke R watershed | Aquatic-rivers. | E | G1G2 | S1S2 | - |
| | - | X | <i>Percina williamsi</i> | Sickle darter | S & N Fk Holston R above Saltville, Clinch R - lower Copper Ck. | Aquatic-rivers. Formerly: <i>Percina macrocephala</i> . | S | G2 | S1S2 | S2 |
| | - | X | <i>Phenacobius teretulus</i> | Kanawha minnow | Upper New R watershed | Aquatic-streams. | S | G3G4 | S2S3 | S1 |
| Amphibian | | | | | | | | | | |
| | - | X | <i>Aneides aeneus</i> | Green salamander | Bland, Dickenson, Lee, Russell, Scott, Tazewell, Washington, Wise, Wythe Cos VA; Greenbrier, Monroe, Pendleton Cos WV | Damp (not wet) crevices in shaded rock outcrops and ledges; beneath loose bark; in cracks of standing or fallen trees; in or under logs on ground. | S | G3G4 | S3 | S3 |

| OAR | GW | J | Species Name | Common Name | Range on or near GWJNFs | Habitat - Detail | TES | GRank | VA SRank | WV SRank |
|----------------|----|---|--|-----------------------------------|--|---|-----|--------|----------|----------|
| | - | X | <i>Cryptobranchus alleganiensis</i> | Hellbender | N & S Fk Holston (Whitetop Laurel), Clinch R, Copper Ck, Powell R. | Aquatic-rivers, streams. | S | G3G4 | S2S3 | S2 |
| | - | X | <i>Desmognathus organi</i> | Northern pygmy salamander | Grayson, Smyth, Washington Cos. Whitetop Mt. and Mt. Rogers | Spruce-fir forests and adjacent northern hardwoods, >3600' | S | G3 | S2 | - |
| | - | X | <i>Plethodon hubrichti</i> | Peaks of Otter salamander | Peaks of Otter, Apple Orchard Mtn | Mixed oak, late successional with loose rocks and logs, >1800'. | S | G2 | S2 | - |
| | X | - | <i>Plethodon punctatus</i> | Cow Knob salamander | Shenandoah Mtn, VA & WV | Mixed oak, late successional with loose rocks and logs, >2500'. | S | G3 | S2 | S1 |
| | X | - | <i>Plethodon sherando</i> | Big Levels salamander | Big Levels, Augusta Co | Forest and rocky talas slopes 1900' – 3580'. | S | G2 | S2 | - |
| | X | - | <i>Plethodon virginia</i> | Shenandoah Mountain salamander | Rockingham Co | Temperate forests between 3600' – 3900'. | S | G2G3 | S2 | SNR |
| | - | X | <i>Plethodon welleri</i> | Weller's salamander | Mt Rogers & Whitetop Mtn | Spruce-fir forests and adjacent northern hardwoods. | S | G3 | S2 | - |
| Reptile | | | | | | | | | | |
| | X | - | <i>Clemmys guttata</i> | Spotted turtle | Maple Flats, Augusta Co | Mostly unpolluted, shallow bodies of water with a soft bottom and aquatic vegetation; small marshes, marshy pastures, bogs, fens, woodland streams, swamps, small ponds, vernal pools, and lake margins. | S | G5 | S4 | S1 |
| | X | - | <i>Glyptemys insculpta</i> | Wood turtle | Page, Rockingham, Shenandoah Cos; N Shenandoah R watershed | Along permanent streams during much of year; in summer may roam widely overland; variety of terrestrial habitats adjacent to streams, including deciduous woods, cultivated fields, and woodland bogs, marshy fields and pastures. Overwinters in streams. | S | G3 | S2 | S3 |
| | X | X | <i>Pituophis melanoleucus</i> | Pinesnake | Historic records from Allegheny, Augusta, Botetourt, Craig, Rockingham Cos., VA; Monroe Co, WV. No current records known from GWJNF. | Xeric, pine-dominated or pine-oak woodland with open, low understory established on sandy soils; require forest openings, with level, well-drained sandy soils and little shrub cover as nesting/hibernation sites. | S | G4 | S1? | SH |
| Bird | | | | | | | | | | |
| | - | X | <i>Ammodramus henslowii</i> | Henslow's Sparrow | Pulaski Co (Radford Arsenal). No nest records known on GWJNF. | Open fields, meadows with grass interspersed with weeds or shrubby vegetation, especially in damp or low-lying areas; unmowed hayfields. | S | G4 | S1B | S3B |
| Mammal | | | | | | | | | | |
| | - | X | <i>Corynorhinus rafinesquii</i> | Rafinesque's big-eared bat | Has not been found in VA but has occurred nearby in WV, KY, & TN. In 1978, a large nursery colony was found in Hancock Co., TN, very close to the VA-TN border. Only possible in Lee, Scott, Washington Co. | Caves in winter, large hollow trees summer, may also use cliff-lines, buildings, and bridges in summer. Not on VADCR-NHP "Rare Animal" list. | S | G3G4 | S2 | S1 |
| | X | X | <i>Corynorhinus townsendii virginianus</i> | Virginia big-eared bat | Summer: VA - Tazewell Co (3 caves), Highland Co (1 cave); WV - Pendleton Co (4 caves); Winter: Highland, Rockingham, Bland, and Tazewell Cos (6 caves); Pendleton Co (6 caves). Largest VA population in Tazewell Co and largest WV population in Pendleton Co. Small numbers of bats (usually <10) in a few other widely scattered caves during summer months. Bath & Pulaski Co records are historic. No occupied caves currently known on Forest. | Resides in caves winter and summer. Short distance migrant (<40 miles) between winter and summer caves. Forages primarily on moths and foraging habitat is common (fields, forests, meadows, etc.). Forages within 6 miles of summer caves. USFWS Critical Habitat is 5 caves in WV (4 Pendleton Co and 1 Tucker Co). Closest Critical Habitat cave to GWJNF is ~3 miles in Pendleton Co, WV. OAR code of "2" used when project further than 6 miles from summer or winter occupied cave. | E | G3G4T2 | S1 | S2 |
| | - | X | <i>Glaucomys sabrinus coloratus</i> | Carolina northern flying squirrel | Mt Rogers & Whitetop area | Spruce-fir forests and adjacent northern hardwoods. | E | G5T2 | S1 | - |
| | X | - | <i>Glaucomys sabrinus fuscus</i> | Virginia northern flying squirrel | Laurel Fork area, Highland Co | Spruce forests and adjacent northern hardwoods. | S | G5T2 | S1 | S2 |
| | - | X | <i>Myotis grisescens</i> | Gray bat | Ridge & Valley, Clinch R watershed | Caves winter and summer, forages widely. | E | G3 | S1 | - |

| OAR | GW | J | Species Name | Common Name | Range on or near GWJNFs | Habitat - Detail | TES | GRank | VA SRank | WV SRank |
|--|----|---|-------------------------------|--------------------------|--|--|-----|-------|----------|----------|
| | X | X | <i>Myotis leibii</i> | Eastern small-footed bat | Blue Ridge, Ridge & Valley, Cumberland Mtns | Hibernates in caves during winter, roosts in crevices of large rock outcrops, cliffs, and under large rocks in talus & boulder-fields during summer, plus similar man-made structures like rip-rap and bridges, forages widely in all forested and open habitat types over both ridges and valleys. | S | G1G3 | S2 | S1 |
| | X | X | <i>Myotis septentrionalis</i> | Northern long-eared bat | Blue Ridge, Ridge & Valley, Cumberland Mtns | Hibernates in crevices and cracks of cave walls during winter (sometimes mines & tunnels), difficult to find and rarely seen. During summer, forages widely and roosts singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. Also may roost in structures like barns, sheds, & houses. Decline due to WNS. | T | G1G2 | S3 | S3 |
| | X | X | <i>Myotis sodalis</i> | Indiana bat | Blue Ridge, Ridge & Valley, Cumberland Mtns | Caves winter, upland hardwoods summer, forages widely along riparian areas and open woodlands. | E | G2 | S1 | S1 |
| | X | X | <i>Perimyotis subflavus</i> | Tricolored bat | Every county in VA, WV, KY | Caves in winter: Caves, trees, cliffs, barns during summer months. Decline due to WNS. Formally: Eastern pipistrelle. | S | G3 | S1S3 | |
| INVERTEBRATE | | | | | | | | | | |
| Snail (Mollusk, Class Gastropoda) | | | | | | | | | | |
| | X | - | <i>Fontigens tartarea</i> | Organ cavesnail | Bath, Highland Cos | Caves. Obligate troglobite. | S | G2 | S1S2 | S2 |
| | - | X | <i>Gastrodonta fonticula</i> | Appalachia bellytooth | No known records on GWJ. Scott and Wise Co records need to be verified. | Damp, wooded environments, particularly in deep piles of wet leaf litter and around rotting wood debris. | S | G3G4 | SU | SNR |
| | X | X | <i>Glyphyalinia raderi</i> | Maryland glyph | Alleghany, Montgomery Cos | Calciphile, edge of seeps within leaf litter. May burrow. | S | G2 | S1S2 | S2 |
| | X | - | <i>Helicodiscus diadema</i> | Shaggy coil | Alleghany Co | Calciphile; semi-open, calcium-rich environments, especially limestone rubble/talus and thinly wooded limestone hills. | S | G1 | S1 | - |
| | X | X | <i>Helicodiscus triodus</i> | Talus coil | Alleghany, Botetourt, Rockbridge Cos | Calciphile, limestone rubble on wooded hillsides and near cave entrances. | S | G2 | S1S2 | SH |
| | - | X | <i>Io fluviialis</i> | Spiny riversnail | Clinch R, N Fk Holston R | Aquatic-rivers. | S | G2 | S2 | - |
| | - | X | <i>Paravitrea septadens</i> | Brown supercoil | Breaks Interstate Park, Dickenson Co; Buchanan Co., VA. No known records on GWJ. | Steep forested slopes and in ravines, often among woody debris, rocks, or deeper leaf litter; mixed eastern hemlock-hardwood forest, also in richer hardwood stands. | S | G1 | S1 | - |
| | - | X | <i>Stenotrema altispira</i> | Highland slitmouth | No known records on GWJ. Grayson and Smyth Co records need to be verified. | Higher elevations, in leaf litter and woody debris. | S | G3 | S1 | - |
| | - | X | <i>Ventridens decussatus</i> | Crossed dome | No known records on GWJ. Scott Co records need to be verified. | High elevations, usually >3000', in leaf litter, particularly oak leaves. | S | G3 | SU | - |
| | - | - | <i>Vertigo bollesiana</i> | Delicate vertigo | No known records on GWJ. VA and WV records need to be verified. | Leaf litter often under shrubs, on cliff-face ledges and boulder tops in mesic upland forest, and damp microsites in northern white cedar wetlands. | S | G4 | SU | - |
| | X | - | <i>Vertigo clappi</i> | Cupped vertigo | Greenbrier & Pendelton Cos, WV | Well-rotted, humid leaf litter and fine soil on shaded boulders, talus, ledges, and bases of forested lime-rich bedrock outcrops. | S | G1G2 | SU | SNR |
| Mussel (Mollusk, Class Bivalvia) | | | | | | | | | | |
| | - | X | <i>Alasmidonta marginata</i> | Elktoe | Greenbrier R & New R, WV. Upper New R; Reed Creek; Sinking Creek (Giles Co.); Wolf Creek (Bland Co.); upper S Fk Holston; historical Upper Clinch. | Aquatic-rivers. | S | G4 | S1S2 | S2 |
| | X | - | <i>Alasmidonta varicosa</i> | Brook floater | Potomac drainage | Aquatic-rivers. | S | G3 | S1 | S1 |

| OAR | GW | J | Species Name | Common Name | Range on or near GWJNFs | Habitat - Detail | TES | GRank | VA SRank | WV SRank |
|-----|----|---|---|----------------------------|---|---|-----|-------|----------|----------|
| | - | X | <i>Alasmidonta viridis</i> | Slippershell mussel | Historic in Upper Clinch R excluding Copper Creek where extant; Upper S Fk Holston | Aquatic-rivers. | S | G4G5 | S1 | - |
| | - | X | <i>Cumberlandia monodonta</i> | Spectaclecase | 2 sites Clinch R | Aquatic-rivers. | E | G3 | S1 | - |
| | - | X | <i>Cyrogenia stegaria</i> | Fanshell | Lower Clinch R, Scott Co | Aquatic-rivers. | E | G1Q | S1 | S1 |
| | - | X | <i>Dromus dromas</i> | Dromedary pearlymussel | Clinch R, Powell R, N Fk Holston R | Aquatic-rivers. | E | G1 | S1 | - |
| X | X | X | <i>Elliptio lanceolata</i> | Yellow lance | Roanoke R, James R | Aquatic-rivers. | T | G2G3 | S2S3 | - |
| | - | X | <i>Epioblasma brevidens</i> | Cumberlandian combshell | Clinch R, Powell R, N Fk Holston R | Aquatic-rivers. | E | G1 | S1 | - |
| | - | X | <i>Epioblasma capsaeformis</i> | Oyster mussel | Clinch R, Powell R, N Fk Holston R | Aquatic-rivers. | E | G1 | S1 | - |
| | - | X | <i>Epioblasma florentina aureola</i> | Golden riffleshell | Restricted to lower 1.0 mile of Indian Ck to Clinch R. All other historical populations in M & Upper Tennessee R system now extirpated. | Aquatic-rivers. Formerly: tan riffleshell. | E | G1T1 | S1 | - |
| | - | X | <i>Epioblasma torulosa gubernaculum</i> | Green-blossom pearlymussel | Clinch R, N Fk Holston R | Aquatic-rivers. | E | G2TX | SX | - |
| | - | X | <i>Epioblasma triquetra</i> | Snuffbox | Clinch R, Powell R, N Fk Holston R | Aquatic-rivers. | E | G3 | S1 | S2 |
| | - | X | <i>Fusconaia cor</i> | Shiny pigtoe | Clinch R, Powell R, N Fk Holston R, Copper Ck | Aquatic-rivers. | E | G1 | S1 | - |
| | - | X | <i>Fusconaia cuneolus</i> | Fine-rayed pigtoe | Clinch R, Powell R, Copper Ck, Little R | Aquatic-rivers. | E | G1 | S1 | - |
| | - | X | <i>Fusconaia masoni</i> | Atlantic pigtoe | Roanoke R, Craig Ck drainage | Aquatic-rivers. | S | G2 | S2 | - |
| | - | X | <i>Hemistena lata</i> | Cracking pearlymussel | Clinch R, Powell R | Aquatic-rivers. | E | G1 | S1 | - |
| | - | X | <i>Lampsilis abrupta</i> | Pink mucket | Clinch R | Aquatic-rivers. | E | G2 | SX | S1 |
| X | - | X | <i>Lampsilis cariosa</i> | Yellow lampmussel | N Fk Shenandoah R; Shenandoah, Warren Cos. | Aquatic-rivers. | S | G3G4 | S2 | S1 |
| | - | X | <i>Lasmigona holstonia</i> | Tennessee heelsplitter | Upper Clinch, N and M Fk Holston R drainages; Wolf Ck, Bland Co below Burkes Garden | Aquatic-streams. | S | G3 | S1 | - |
| X | - | X | <i>Lasmigona subviridis</i> | Green floater | Widely distributed in N & S Fk Shenandoah R, Pedlar R, James R | Aquatic-rivers. | S | G3 | S2 | S2 |
| | - | X | <i>Lemiox rimosus</i> | Birdwing pearlymussel | Clinch R, Powell R, Copper Ck, Little R | Aquatic-rivers. | E | G1 | S1 | - |
| X | X | X | <i>Parvaspina collina</i> | James spiny mussel | Potts Ck, Craig Ck, Johns Ck, Patterson Run, Pedlar R, Cowpasture R, Mill Ck (Deerfield) | Aquatic-rivers. Formerly: <i>Pleurobema collina</i> . | E | G1 | S1 | S1 |
| | - | X | <i>Pegias fabula</i> | Little-winged pearlymussel | Clinch R, N Fk Holston R, S Fk Holston R, Little R | Aquatic-streams. | E | G1 | S1 | - |
| | - | X | <i>Plethobasus cyphus</i> | Sheepnose | Clinch R, Powell R | Aquatic-rivers. | E | G3 | S1 | S1 |
| | - | X | <i>Pleurobema cordatum</i> | Ohio pigtoe | Clinch R | Aquatic-rivers. | S | G4 | S1 | S2 |
| | - | X | <i>Pleurobema oviforme</i> | Tennessee clubshell | Clinch R, Powell R, N, Middle, S Fk Holston R | Aquatic-streams. | S | G2G3 | S2S3 | - |
| | - | X | <i>Pleurobema plenum</i> | Rough pigtoe | Clinch R | Aquatic-rivers. | E | G1 | SH | SH |
| | - | X | <i>Pleurobema rubrum</i> | Pyramid pigtoe | Upper Clinch R | Aquatic-rivers. | S | G2G3 | SH | - |
| | - | X | <i>Pleuronaia barnesiana</i> | Tennessee pigtoe | Clinch R, Powell R, N Middle, S Fk Holston R | Aquatic-rivers. | S | G2G3 | S2 | - |
| | - | X | <i>Pleuronaia dolabelloides</i> | Slabside pearlymussel | Clinch R, M Fk Holston, N Fk Holston R | Aquatic-rivers. | E | G2 | S2 | - |

| OAR | GW | J | Species Name | Common Name | Range on or near GWJNFs | Habitat - Detail | TES | GRank | VA SRank | WV SRank |
|---|----|---|--|------------------------------------|---|--|-----|--------|----------|----------|
| | - | X | <i>Ptychobranchus subtentum</i> | Fluted kidneyshell | Holston R., Powell R., Indian R., Clinch R., Little R., Copper Ck., Big Moccasin Ck. Critical Habitat: Indian Ck, VA: M Fk Holston R. VA: Big Moccasin Ck., VA: Copper Ck., VA; Clinch R, TN, VA: Powell R., TN, VA | Aquatic-rivers. | E | G2 | S2 | - |
| | - | X | <i>Quadrula cylindrica strigillata</i> | Rough rabbits foot | Clinch R, Powell R, N Fk Holston R, Copper Ck | Aquatic-streams. | E | G3G4T2 | S2 | - |
| | - | X | <i>Quadrula intermedia</i> | Cumberland monkeyface | Powell R | Aquatic-rivers. | E | G1 | S1 | - |
| | - | X | <i>Quadrula sparsa</i> | Appalachian monkeyface | Clinch R, Powell R | Aquatic-rivers. | E | G1 | S1 | - |
| | - | X | <i>Toxolasma lividum</i> | Purple lilliput | N Fk Holston R, Clinch R | Aquatic-rivers. | S | G3Q | SH | - |
| | - | X | <i>Villosa perpurpurea</i> | Purple bean | Clinch R, Copper Ck | Aquatic-rivers. | E | G1 | S1 | - |
| | - | X | <i>Villosa trabalis</i> | Cumberland bean | Clinch R | Aquatic-rivers. | E | G1 | SX | - |
| Spider (Arachnid) | | | | | | | | | | |
| | - | X | <i>Microhexura montivaga</i> | Spruce-fir moss spider | Whitetop Mtn | Damp, well-drained moss and liverwort mats on boulders in mature spruce-fir forests. | E | G1 | S1 | - |
| Amphipod (Crustacean, Order Amphipoda) | | | | | | | | | | |
| | - | X | <i>Stygobromus abditus</i> | James Cave amphipod | James, Sam Bells caves, Pulaski Co; Watsons cave, Wythe Co; and other New River caves. | Aquatic-caves, water well. | S | G3 | S3 | - |
| | - | X | <i>Stygobromus emarginatus</i> | Greenbrier Cave amphipod | Greenbrier, Monroe Cos, WV | Aquatic-caves. | S | G3 | - | S3 |
| | X | - | <i>Stygobromus gracilipes</i> | Shenandoah Valley cave amphipod | Frederick, Rockingham, Shenandoah, Warren Cos | Aquatic-caves. | S | G3G4 | S3 | S1 |
| | X | - | <i>Stygobromus hoffmani</i> | Alleghany County cave amphipod | Low Moor cave, Alleghany Co | Aquatic-caves, groundwater habitats including springs and seeps. | S | G2 | S2 | - |
| | X | - | <i>Stygobromus mundus</i> | Bath County cave amphipod | Alleghany, Bath Cos | Aquatic-caves. | S | G2G3 | S1S2 | - |
| | - | X | <i>Stygobromus pollostus</i> | Least Cave stygobromid | Greenbrier, Monroe Cos, WV | Aquatic-caves. | S | G2G3 | - | S3 |
| | - | X | <i>Stygobromus spinatus</i> | Spiny Cave stygobromid | Greenbrier, Monroe Cos, WV | Aquatic-caves. | S | G2G3 | - | S2 |
| Isopod (Crustacean, Order Isopoda) | | | | | | | | | | |
| | X | - | <i>Antrolana lira</i> | Madison Cave Isopod | Documented population centers in Waynesboro-Grottoes area, Augusta Co; Harrisonburg area Rockingham Co; valley of main stem of Shenandoah R, Warren, Cos,VA: Jefferson Co, WV. Not known from GWNF. | Aquatic-subterranean obligate in caves and karst groundwater. | T | G2G4 | S2 | S1 |
| | - | X | <i>Caecidotea incurva</i> | Incurved cave isopod | McCullin Cave, Smyth Co; Groseclose Cave No. 1, Wythe Co | Aquatic-caves. | S | G2G4 | S2 | - |
| | X | X | <i>Miktoniscus racovitzai</i> | Racovitz's terrestrial cave isopod | Alleghany, Botetourt, Page, Rockbridge, Shenandoah Cos | Aquatic-caves. | S | G3G4 | S2 | - |
| Crayfish (Crustacean, Order Decapoda) | | | | | | | | | | |
| | - | X | <i>Cambarus callainus</i> | Big Sandy crayfish | In VA, Upper Russell Fk drainage Big Sandy R | Aquatic-streams. Fast flowing streams of moderate width. Formerly: <i>Cambarus veteranus</i> . | T | G2 | S1S2 | S1 |
| Centipede (Insect, Order Chilopoda) | | | | | | | | | | |
| | X | X | <i>Escaryus cryptorobius</i> | Montane centipede | The Priest, Nelson Co; Whitetop Mtn, near junction of Grayson, Washington, Smyth Co | Upper soil horizon, spruce-birch forests. | S | G2 | S2 | - |

| OAR | GW | J | Species Name | Common Name | Range on or near GWJNFs | Habitat - Detail | TES | GRank | VA SRank | WV SRank |
|---|----|---|-------------------------------------|-------------------------------------|---|---|-----|-------|----------|----------|
| | - | X | <i>Escaryus orestes</i> | Whitetop Mountain centipede | Whitetop Mtn, near junction of Grayson, Washington, Smyth Co | Dark moist soil and litter, spruce-birch forests. | S | G1G2 | S1S2 | - |
| Springtail (Insect, Order Collembola) | | | | | | | | | | |
| | X | - | <i>Pygmarrhopalites sacer</i> | A cave springtail | Bath Co | Caves. | S | G2 | S2 | - |
| Dragonfly (Insect, Order Odonata) | | | | | | | | | | |
| | X | X | <i>Gomphus viridifrons</i> | Green-faced clubtail | New R, Craig Ck, Pound R, Locust Spring | Aquatic-rivers. | S | G3G4 | S2 | S2 |
| | - | X | <i>Ophiogomphus howei</i> | Pygmy snaketail | Upper New R; Carroll, Grayson, Wythe Cos | Aquatic-rivers. | S | G3 | S1S2 | - |
| Stonefly (Insect, Order Plecoptera) | | | | | | | | | | |
| | - | X | <i>Allocapnia fumosa</i> | Smokies snowfly | High elevation rheocrenes (flowing springs) of Mt. Rogers. Grayson, Smyth Cos. | Aquatic-streams. | S | G2 | S1S2 | |
| | - | X | <i>Megaleuctra williamsae</i> | Smokies needelfly | Mt Rogers & Whitetop Mtn | Aquatic-streams. | S | G2 | S1S2 | - |
| | - | X | <i>Taeniopteryx nelsoni</i> | Cryptic willowfly | Lewis Fk & Grindstone Branch N of Mt Rogers | Aquatic-streams. | S | G1 | S1 | - |
| Beetle (Insect, Order Coleoptera) | | | | | | | | | | |
| | X | X | <i>Cicindela patruela</i> | Northern barrens tiger beetle | Blue Ridge, Ridge & Valley | Eroded slopes of exposed sandstone and conglomerate. | S | G3 | S2 | S2S3 |
| | - | - | <i>Pseudanopthalmus avernus</i> | Avernus Cave beetle | Endemic to Endless Caverns (commercial cave, non-FS) Rockingham Co. | Caves. | S | G1 | S1 | - |
| | - | X | <i>Pseudanopthalmus cordicollis</i> | Little Kennedy Cave beetle | Endemic to Wise Co. | Caves. | S | G1 | S1 | - |
| | X | - | <i>Pseudanopthalmus intersectus</i> | Crossroads Cave beetle | Known only from Crossroads Cave, Millboro Springs, Bath Co. | Caves. | S | G1G2 | S1 | - |
| Scorpionfly (Insect, Order Mecoptera) | | | | | | | | | | |
| | - | X | <i>Brachyanorpa jeffersoni</i> | Jefferson's short-nosed scorpionfly | Sugar Run Mountain, Giles Co; Whitetop Mtn, Smyth Co. | Moist soil around seeps. Only known from high elevation. Larvae use short burrows in loose soil and moss. | S | G2 | S1S2 | - |
| Butterfly, Skipper, Moth (Insect, Order Lepidoptera) | | | | | | | | | | |
| | - | X | <i>Atrytone arogos</i> | Arogos skipper | Historic records, Blacksburg area. Caldwell Fields records need to be verified. | Relatively undisturbed grasslands, prairies, sand prairies, serpentine barrens, grassland/herbaceous, old field. Larval host plant; big bluestem <i>Andropogon gerardi</i> . | S | G3 | SH | - |
| | X | X | <i>Calephelis borealis</i> | Northern metalmark | Alleghany, Augusta, Bath, Botetourt, Craig, Lee, Montgomery, Russell, Scott Cos: Historic records from Giles, Rockbridge Cos. | Openings within forested or wooded areas, natural outcrops, shale or limestone barrens, glades or powerline right of ways. Larvae host plant; round-leaf ragwort, <i>Senecio obovatus</i> . | S | G3G4 | S2S3 | S2 |
| | X | X | <i>Callophrys irus</i> | Frosted elfin | Frederick, Montgomery, Page, Roanoke Cos. | Dry, open woods, clearings, and road/powerline ROWs with abundant wild indigo, <i>Baptisia tinctoria</i> . | S | G3 | S2? | S1 |
| | X | X | <i>Danaus plexippus</i> | Monarch | Blue Ridge, Ridge & Valley | Mixed hardwood/conifer forest; shrubland; grassland/herbaceous; old field; suburban/orchard; cropland/hedgerow. Larval host plant; milkweeds <i>Asclepias</i> spp. | S | G4 | S4 | S4 |
| | X | X | <i>Speyeria idalia</i> | Regal fritillary | Blue Ridge, Ridge & Valley | Riparian, grasslands-shrublands. Larval host plant, violets, <i>Viola</i> spp. | S | G3 | S1 | S1 |
| | X | X | <i>Erora laeta</i> | Early hairstreak | Bedford, Botetourt, Page, Rockbridge, Warren, Wise Cos., VA; Monroe, Pendleton Cos., WV. Historic records from Giles, Montgomery Cos. | Hardwood forests or hardwood-northern conifer mixed forests. Larval host food, young fruit of American beech, <i>Fagus grandifolia</i> , nuts of beaked hazelnut <i>Corylus cornuta</i> . Canopy dweller. | S | GU | S2 | S2 |

| OAR | GW | J | Species Name | Common Name | Range on or near GWJNFs | Habitat - Detail | TES | GRank | VA SRank | WV SRank |
|--|----|---|-----------------------------------|------------------------------|--|---|-----|--------|----------|----------|
| | X | X | <i>Erynnis martialis</i> | Mottled duskywing | Historic records from Augusta, Bedford, Botetourt, Craig, Montgomery, Rockbridge Cos. | Open woodland; barrens; open brushy fields. Larval host plant; New Jersey tea <i>Ceanothus americanus</i> . | S | G3 | S1S3 | S3 |
| | X | X | <i>Erynnis persius persius</i> | Persius duskywing | Blue Ridge, Ridge & Valley | Bogs, wet meadows, open seepages in boreal forests. Larval host plant; lupine, <i>Lupinus perennis</i> , wild indigo, <i>Baptisia tinctoria</i> . | S | G5T1T3 | S1 | - |
| | X | - | <i>Pyrgus centaureae wyandot</i> | Appalachian grizzled skipper | Ridge & Valley | Shale barrens, open shaley oak woodlands. Larval host plant; cinquefoil, <i>Potentilla</i> spp, strawberry, <i>Fragaria virginina</i> . | S | G5T1T2 | S1 | S1 |
| | X | X | <i>Catocala herodias gerhardi</i> | Herodias underwing | Bald Knob, Bath Co; Poverty Hollow, Montgomery Co; Sand Mtn, Wythe Co (non FS property) | Pitch pine/bear oak scrub woodlands, >3000'. Larval host plant; oak, <i>Quercus</i> spp. | S | G3T3 | S2S3 | SU |
| | - | X | <i>Catocala marmorata</i> | Marbled underwing | Montgomery Co | Mesic montane hardwood forests; Forested wetland, riparian. Larval host plants; willows/cottonwoods, <i>Salix/Populus</i> . | S | G3G4 | S2 | - |
| | X | - | <i>Euchlaena milnei</i> | Milne's euchlaena moth | Warm Springs Mtn, Catawba Creek Slopes, Sweet Spring Hollow, Salt Pond Mtn. (Doe Creek) | Moist, forested slopes of mixed pine hardwoods. Acidic oak woods. | S | G2G4 | S2 | S2 |
| Bee (Insect, Order Hymenoptera) | | | | | | | | | | |
| | X | X | <i>Bombus affinis</i> | Rusty-patched bumble bee | Bath Co, VA: new location on Warm Springs RD, Duncan Knob found 6/2017. Following VA/WV county occurrences historic (Alleghany, Carroll, Frederick, Giles, Grayson, Montgomery, Nelson, Page, Pulaski, Rockbridge, Rockingham, Wythe Cos., VA; Hardy, Hampshire, Monroe, Pendleton, Pocahontas Cos, WV). | Habitat generalist: grasslands, old field, mature woods, open woodlands, mixed farmland edges, marshes, urban areas. Feeds from a variety of plants for pollen and nectar, including flowering rhododendron and mountain laurel. Nest sites include abandoned rodent burrows, fallen dead wood, stumps. Queen only overwinters. | E | G1 | SH | - |
| NON-VASCULAR PLANT | | | | | | | | | | |
| Lichen | | | | | | | | | | |
| | - | X | <i>Alectoria fallacina</i> | Witch's-hair lichen | Smyth, Grayson Co | S. Appalachian endemic. Conifer trees, especially fir rarely on birch, in spruce-fir forests; rarely fire cherry communities. | S | G2 | SH | SNR |
| | - | X | <i>Gymnoderma lineare</i> | Rock gnome lichen | Whitetop Mtn | Spruce-fir forests. | E | G2 | S1 | - |
| | X | X | <i>Heterodermia appalachensis</i> | Appalachian shield lichen | St. Mary's Wilderness, Augusta Co.; Skidmore Fork, Rockingham Co.; Browns Run, Page Co.; rock outcrop, 6 mi. SE of Edinburg, Page Co.; summit of Whitetop Mt, Washington Co. | Bark of hardwoods, occasionally on shaded rocks. | S | G2? | S1 | - |
| | - | X | <i>Heterodermia erecta</i> | A foliose lichen | Whitetop Mtn | S. Appalachian endemic. | S | G1? | S1 | - |
| | - | X | <i>Hypotrachyna oostingii</i> | A foliose lichen | Mount Rogers, on Smyth, Grayson Co. line | Spruce-fir forests. | S | G2? | SU | - |
| | - | X | <i>Hypotrachyna virginica</i> | Virginia hypotrachyna lichen | Mt Rogers & Whitetop Mtn | Spruce-fir forests. Found on spruce, fir, rhododendron in spruce-fir and fire-cherry communities in S. Appalachian Mtns. Typically at higher elevations, has been found at lower elevations. | S | G1G2 | S1 | SNR |
| | - | X | <i>Lecanora masana</i> | A lichen | Whitetop Mtn, and Grayson, Smyth Cos | S. Appalachian endemic. Spruce-fir, northern hardwood-conifer forest. | S | | | |
| | X | - | <i>Melanelia culbersonii</i> | Culberson's Black-parmelia | Massanutten (Fridley watershed) Rockingham Co; along trail from Wolf Gap Campground to Big Schloss, Shenandoah Co. | Rocks in open areas and on talus slopes. Fully exposed, minimally weathered quartzite and sandstone boulderfields at elevations from about 1000-3300 ft. | S | G2 | S4 | - |
| Liverwort | | | | | | | | | | |
| | - | X | <i>Bazzania nudicaulis</i> | A liverwort | Mt Rogers & Whitetop Mtn | Bark and rock outcrops in spruce-fir forests. | S | G2G3 | S? | - |
| | X | - | <i>Cephaloziella spinicaulis</i> | A liverwort | Along SR 33, 10 miles W of Harrisonburg. | Damp soil in crevices of shaded sedimentary rocks, in hemlock-hardwoods forest and humid to dry faces of ledges and cliffs in open oak-hickory forest. | S | G3G4 | SNR | - |
| | - | X | <i>Leptoscyphus cuneifolius</i> | Wedge Flapwort | Grayson Co | Bark of Fraser fir. | S | G4G5 | SH | - |

| OAR | GW | J | Species Name | Common Name | Range on or near GWJNFs | Habitat - Detail | TES | GRank | VA SRank | WV SRank |
|-----------------------|----|---|---|---------------------------|---|--|-----|-------|----------|----------|
| | - | X | <i>Nardia lescurii</i> | A liverwort | Blue Ridge, Ridge & Valley | Riparian - on peaty soil over rocks, usually in shade and associated with water, <3000'. | S | G3? | S1 | - |
| | - | X | <i>Plagiochila austinii</i> | A liverwort | Little Stony Ck – Cascades; Red Ck on Beartown Mtn | Rich, moist, densely forested ravines; shaded outcrops. | S | G3 | S? | - |
| | - | X | <i>Plagiochila corniculata</i> | A liverwort | Grayson, Smyth Cos | Limited to densely shaded, humid, often fog-enshrouded mountain summits, usually to the spruce-fir association. Most commonly found on Fraser fir. | S | G4? | SNR | - |
| | - | X | <i>Plagiochila sullivantii</i> var. <i>sullivantii</i> | A liverwort | Whitetop Mtn, Salt Pond Mtn | Moist shaded rock outcrops, under cliff ledges, in crevices. | S | G2T2 | SNR | - |
| | X | X | <i>Plagiochila virginica</i> | A liverwort | Bath, Giles, Highland, Roanoke Cos | S. Appalachian endemic. Damp to intermittently dry calcareous or sandstone ledges or cliffs in partially exposed sites. | S | G3 | SNR | SNR |
| | X | X | <i>Radula tenax</i> | A liverwort | Alleghany, Amherst, Dickenson, Giles, Highland, Nelson, Smyth, Washington Cos | Moist rocks or trees in mountains below spruce-fir zone; Depressed, dense mats on moist rocks, less frequently on tree trunks, in mountainous and hilly regions. Two discrete modes of occurrence: on shaded, damp rocks, and on tree bark in deep, moist forests. Does not tolerate submersion. | S | G3G4 | SU | SNR |
| | - | X | <i>Sphenobolopsis pearsonii</i> | A liverwort | Mt Rogers & Whitetop Mtn | Bark of Fraser fir, mountain ash, occasionally on red spruce, >5000'. | S | G2 | S? | - |
| Moss | | | | | | | | | | |
| | - | X | <i>Sphagnum flavicomans</i> | Northeastern peatmoss | Whitetop Mtn | Bogs, seeps. | S | G3 | SU | - |
| VASCULAR PLANT | | | | | | | | | | |
| | - | X | <i>Abies fraseri</i> | Fraser fir | Grayson, Smyth Cos | S. Appalachian endemic. Spruce-fir forests, bogs >5000' | S | G2 | S1 | SNR |
| | X | X | <i>Aconitum reclinatum</i> | Trailing white monkshood | Blue Ridge, Ridge & Valley | Rich cove sites, streambanks, seepages; all with high pH. | S | G3 | S3 | S3 |
| | - | X | <i>Actaea rubifolia</i> | Appalachian black cohosh | Lower Clinch R watershed, Scott, Wise Cos | Moist, rich wooded bluffs over limestone. | S | G3 | S1 | - |
| | X | X | <i>Allium oxiphilum</i> | Nodding onion | Monroe, Summers, Mercer, Greenbrier Cos, WV | Shale barrens, sandstone glades. | S | G2 | S1 | S2 |
| | X | - | <i>Arabis patens</i> | Spreading rockcress | Frederick, Lee, Page, Shenandoah, Warren Cos, VA; Hampshire, Hardy, Pendleton Cos, WV | Shaded, calcareous cliffs, bluffs, and talus slopes. | S | G3 | S1 | S2 |
| | X | X | <i>Berberis canadensis</i> | American barberry | Blue Ridge, Ridge & Valley | Calcareous open woods, bluffs, cliffs, and along fencerows. | S | G3 | S3S4 | S1 |
| | - | X | <i>Betula uber</i> | Virginia round-leaf birch | One location: Cressy Ck, Smyth Co. | Riparian, mixed open forest, usually disturbed sites. | T | G1Q | S1 | - |
| | X | - | <i>Boechea serotina</i> | Shale barren rockcress | Ridge & Valley N of James R watershed | Shale barrens and adjacent open oak woods. | E | G2 | S2 | S2 |
| | X | - | <i>Boltonia montana</i> | Mountain doll's-daisy | Augusta Co | Sinkhole ponds. | S | G1G2 | S1 | - |
| | - | X | <i>Botrychium jenmanii</i> | Alabama Grapefern | Russell & Wise Cos. | Open woods, old fields, pastures. Formerly: <i>Sceptridium jenmanii</i> | S | G3G4 | SH | - |
| | X | X | <i>Buckleya distichophylla</i> | Piratebush | Blue Ridge S of Roanoke R, Ridge & Valley S of James R | Open oak and hemlock woods. | S | G3 | S2 | - |
| | - | X | <i>Cardamine clematitis</i> | Mountain bittercress | Blue Ridge, Ridge & Valley, S of New R watershed | Riparian, spring seeps, rocky streamsides. | S | G3 | S1 | - |
| | X | X | <i>Carex polymorpha</i> | Variable sedge | Blue Ridge, Ridge & Valley, N of James R | Open acid soil, oak-heath woodlands, responds positively to fire. | S | G3 | S2 | S1 |
| | X | X | <i>Carex schweinitzii</i> | Schweinitz's sedge | Augusta, Bath, Highland, Montgomery, Pulaski, Washington Cos | Bogs, limestone fens, marl marshes. | S | G3G4 | S1 | - |
| | - | X | <i>Chelone cuthbertii</i> | Cuthbert turtlehead | Blue Ridge Plateau, Grayson, Carroll Cos | Bogs, wet meadows, boggy woods and thickets. | S | G3 | S2 | - |

| OAR | GW | J | Species Name | Common Name | Range on or near GWJNFs | Habitat - Detail | TES | GRank | VA SRank | WV SRank |
|-----|----|---|-----------------------------------|-------------------------------------|---|---|-----|-------|----------|----------|
| | - | X | <i>Cleistesioipsis bifaria</i> | Small spreading pogonia | Craig, Dickenson, Scott, Wise Cos | Well drained, rather open, scrubby hillsides, oak-pine-heath woodlands, acidic soils. | S | G4? | S2 | S1 |
| | - | X | <i>Clematis addisonii</i> | Addison's leatherflower | Montgomery, Roanoke, Botetourt, Rockbridge Cos | Open glades & rich woods over limestone and dolostone. | S | G1? | S2 | - |
| | X | X | <i>Clematis coactilis</i> | Virginia white-haired leatherflower | Ridge & Valley, Rockbridge Co, S to Wythe Co | Shale barrens, rocky calcareous woodlands. | S | G3 | S3 | - |
| | X | - | <i>Clematis viticaulis</i> | Millboro leatherflower | Endemic to VA, only in Bath, Rockbridge Cos. | Shale barrens, open shaly woodlands. | S | G1 | S1 | - |
| | X | X | <i>Corallorhiza bentleyi</i> | Bentley's coralroot | Alleghany, Bath, Giles Cos VA; Monroe, Pocahontas Cos WV | Dry, acid woods, along roadsides, well-shaded trails. | S | G2 | S2 | S1 |
| | X | X | <i>Delphinium exaltatum</i> | Tall larkspur | Blue Ridge, Ridge & Valley | Dry calcareous soil in open grassy glades or thin woodlands. | S | G3 | S3 | S2 |
| | X | - | <i>Echinodorus tenellus</i> | Dwarf burhead | Pines Chapel Pond, Augusta Co | Pond margins, wet depressions in sandy soil. | S | G5? | S1 | - |
| | X | X | <i>Echinacea laevigata</i> | Smooth coneflower | Alleghany, Montgomery Cos | Open woodlands and glades over limestone or dolomite. | E | G2G3 | S2 | - |
| | X | X | <i>Euphorbia purpurea</i> | Glade spurge | Blue Ridge, Ridge & Valley | Rich, swampy woods, seeps and thickets. | S | G3 | S2 | S2 |
| | X | X | <i>Gaylussacia brachycera</i> | Box huckleberry | Alleghany, Bath, Bland, Carroll, Craig, Dickenson, Montgomery Cos | Dry, acidic forests, woodlands of oaks, pines, and other heaths. | S | G3 | S1 | S2 |
| | X | X | <i>Gymnocarpium appalachianum</i> | Appalachian oak fern | Alleghany, Augusta, Bath, Highland, Page, Rockbridge, Rockingham, Warren Cos | Maple-birch-hemlock woods on mountain slopes and summits, moist sandstone, talus slopes, or bouldery colluvium. Requires cool, moist microclimate, typically on north-facing slopes with cold air seepage >2000'. | S | G3 | S3 | S1 |
| | X | - | <i>Helenium virginicum</i> | Virginia sneezeweed | Endemic to Augusta, Rockingham Cos. | Seasonally dry meadows and sinkhole depressions. | T | G3 | S2 | - |
| | X | - | <i>Helonias bullata</i> | Swamp-pink | Augusta, Nelson Cos | Sphagnum bogs, seeps, and streamsides. | T | G3 | S2S3 | - |
| | X | - | <i>Heuchera alba</i> | White alumroot | Shenandoah Mtn | High elevation rocky woods and bluffs. | S | G2Q | S1 | S2 |
| | X | X | <i>Ilex collina</i> | Long-stalked holly | Blue Ridge, Ridge & Valley | Bogs, seep, shrubby streamheads, >3100'. | S | G3 | S1 | S2 |
| | - | X | <i>Iliamna corei</i> | Peter's Mountain-mallow | One location: Narrows, Peters Mountain, Giles Co. | Rich, open woods along sandstone outcrops, soil pockets, fire maintained. | E | G1 | S1 | - |
| | X | X | <i>Isotria medeoloides</i> | Small whorled pogonia | In mountains of VA known only from Bedford, Craig, and Lee Cos; other VA occurrences in Piedmont & Coastal Plain. | Open, mixed hardwood forests on level to gently sloping terrain with north to east aspect. | T | G2? | S2 | S1 |
| | X | X | <i>Juglans cinerea</i> | Butternut | Blue Ridge, Ridge & Valley | Well-drained bottomland and floodplain, rich mesophytic forests, mostly along toeslopes. | S | G4 | S3? | S3 |
| | X | X | <i>Liatris helleri</i> | Turgid gayfeather | Blue Ridge, Ridge & Valley | Shale barrens, mountain hillside openings. <i>L.turgida</i> synonymous with <i>L. helleri</i> . | S | GNR | S3 | S2 |
| | - | X | <i>Lilium grayi</i> | Gray's lily | Blue Ridge, Mt Rogers & Whitetop Mtn (occurrences north of Floyd Co questionable). | Bogs, open seeps, wet meadows, grassy balds. | S | G3 | S2 | - |
| | X | X | <i>Monotropsis odorata</i> | Sweet pinesap | Blue Ridge, Ridge & Valley | Dry oak-pine-heath woodlands, soil usually sandy. | S | G3 | S3 | S1 |
| | - | X | <i>Packera millefolium</i> | Piedmont ragwort | Lee, Scott Cos | Open limestone outcrops and cedar barrens. | S | G2 | S2 | - |
| | X | X | <i>Parnassia grandifolia</i> | Largeleaf grass-of-Parnassus | Augusta, Bland, Giles, Grayson, Lee, Montgomery, Russell, Washington, Wythe | Fens, thinly wooded, gravelly seeps over limestone, dolomite, amphibolite, and ultramafic rocks; restricted to calcareous or magnesium-rich soils. | S | G3 | S1 | - |
| | X | - | <i>Paxistima canbyi</i> | Canby's mountain lover | Ridge & Valley, Sarver Barrens SBA, Craig Co | Calcareous cliffs and bluffs, usually undercut by stream. | S | G2 | S2 | S2 |

| OAR | GW | J | Species Name | Common Name | Range on or near GWJNFs | Habitat - Detail | TES | GRank | VA SRank | WV SRank |
|-----|----|---|----------------------------------|------------------------|---|--|-----|-------|----------|----------|
| | X | X | <i>Phemeranthus teretifolius</i> | Quill fameflower | Amherst, Augusta (west side of Blue Ridge, near Laurel Springs Gap, Humpback Mtn SBA), Bedford, Carrol, Craig (Bald Mtn SBA), Grayson, Montgomery, Nelson, Page, Roanoke, Rockingham, Warren Cos, VA; Hardy & Hampshire Cos, WV | Calcareous sandstone glades, metabasalt barrens. Also <i>Talinum teretifolium</i> (Roundleaf fameflower) | S | G4 | S4 | S1 |
| | X | X | <i>Phlox buckleyi</i> | Sword-leaf phlox | Blue Ridge, Ridge & Valley | Open, often dry oak woodlands and rocky slopes, usually over shale in humus rich soils, often along roadsides. | S | G2 | S2 | S2 |
| | X | X | <i>Poa paludigena</i> | Bog bluegrass | Blue Ridge, Ridge & Valley | Shrub swamps and seeps, usually under shade. | S | G3 | S2 | S1 |
| | X | - | <i>Potamogeton hillii</i> | Hill's pondweed | Bath Co | Clear, cold calcareous ponds. | S | G3 | S1 | - |
| | X | - | <i>Potamogeton tennesseensis</i> | Tennessee pondweed | Ridge & Valley | Ponds, back water of streams and rivers. | S | G2G3 | S1 | S2 |
| | X | X | <i>Pycnanthemum torrei</i> | Torrey's mountain-mint | Bland, Bath, Giles, Rockbridge, Wythe Cos | Open, dry rocky woods, roadsides, and thickets near streams, heavy clay soil over calcareous rock. | S | G2 | S2 | S1 |
| | X | X | <i>Scirpus ancistrochaetus</i> | Northeastern bulrush | Ridge & Valley | Mountain ponds, sinkhole ponds in Shenandoah Valley. | E | G3 | S2 | S1 |
| | X | X | <i>Scutellaria saxatilis</i> | Rock skullcap | Blue Ridge, Ridge & Valley | Rich, dry to mesic ridgetop woods, 32 counties in VA, likely G4/S4. | S | G3 | S3 | S2 |
| | - | X | <i>Silene ovata</i> | Mountain catchfly | Dickenson, Lee, Wise Cos | Rich woodlands and forests over limestone. | S | G3 | S1 | - |
| | - | X | <i>Spiraea virginiana</i> | Virginia spiraea | Blue Ridge, Ridge & Valley, S of New R | Scoured banks of streams, riverside or island shrub thickets. | T | G2 | S1 | S1 |
| | X | X | <i>Thermopsis mollis</i> | Soft-haired thermopsis | Amherst, Bath, Bedford, Botetourt, Montgomery, Rockbridge Cos | Dry, open forests, woodlands, and clearings. | S | G3G4 | S3 | - |
| | X | X | <i>Trifolium virginicum</i> | Kate's Mountain clover | Alleghany, Augusta, Bath, Botetourt, Craig, Frederick, Highland, Rockbridge, Rockingham, Shenandoah, Warren Cos | Shale barrens. | S | G3 | S3 | S3 |
| | - | X | <i>Tsuga caroliniana</i> | Carolina hemlock | Blue Ridge north to James R. | Rocky ridges and slopes, usually dry and well drained. | S | G3 | S3 | - |
| | X | X | <i>Vitis rupestris</i> | Sand grape | Ridge & Valley | Scoured banks of rivers and streams over calcareous bedrock. | S | G3 | S1 | S2 |

LEGEND FOR TES SPECIES LIST IN OCCURRENCE ANALYSIS RESULTS:

OAR CODES:

- 1 = Project located out of known species range.
- 2 = Lack of suitable habitat for species in project area.
- 3 = Habitat present, species was searched for during field survey, but not found.
- 4 = Species occurs in project area, but outside of activity area.
- 5 = Field survey located species in activity area.
- 6 = Species not seen during field survey, but possibly occurs in activity area based on habitat observed; or field survey not conducted when species is recognizable (time of year or time of day). Therefore assume presence and no additional surveys needed.

7 = Aquatic species or habitat known or suspected downstream of project/activity area, but outside identified geographic bounds of water resource cumulative effects analysis area (defined as point below which sediment amounts are immeasurable and insignificant).

8 = Aquatic species or habitat known or suspected downstream of project/activity area, but inside identified geographic bounds of water resource cumulative effects analysis area.

9 = Project occurs in a 6th level watershed included in the USFWS/FS T&E Mussel and Fish Conservation Plan (August 8, 2007 U.S. Fish & Wildlife Service concurrence on updated watersheds). Conservation measures from the USFWS/FS T&E Mussel and Fish Conservation Plan applied.

10 = Historic records for this species only; or no known records on GWJ; or species considered extirpated from Virginia/West Virginia.

SPECIES: The term “species” includes any subspecies of fish, wildlife or plants, and any distinct population segment of any species or vertebrate fish or wildlife, which interbreeds when mature (Endangered Species Act of 1973, as amended through the 100th Congress).

RANGE: The geographical distribution of a species. For use here “range” is expressed as where a species is known or expected to occur on or near the George Washington and Jefferson National Forests in terms of landform (feature name, physiographic province), political boundary (county name), or watershed (river, or stream name).

HABITAT: A place where the physical and biological elements of ecosystems provide a suitable environment and the food, cover and space resources needed for plant and animal livelihood (FSM 2605-91-8, pg. 10 of 13).

TES CODES:

T = Federally listed as Threatened

E = Federally listed as Endangered

P = Federally Proposed as T or E

S = Southern Region (R8) Sensitive species

GLOBAL RANK: Global ranks are assigned by a consensus of the network of natural heritage programs, scientific experts, NatureServe and The Nature Conservancy to designate a rarity rank based on the range-wide status of a species or variety. This system was developed by The Nature Conservancy and is widely used by other agencies and organizations as the best available scientific and objective assessment of taxon rarity and level of threat to its existence. The ranks are assigned after considering a suite of factors including number of occurrences, numbers of individuals, and severity of threats.

G1 = Extremely rare and critically imperiled with 5 or fewer occurrences or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.

G2 = Very rare and imperiled with 6 to 20 occurrences or few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.

G3 = Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range; or vulnerable to extinction because of other factors. Usually fewer than 100 occurrences are documented.

G4 = Common and apparently secure globally, although it may be rare in parts of its range, especially at the periphery.

G5 = Very common and demonstrably secure globally, although it may be rare in parts of its range, especially at the periphery.

GH = Formally part of the world's biota with the exception that may be rediscovered.

GX = Believed extinct throughout its range with virtually no likelihood of rediscovery.

GU = Possibly rare, but status uncertain and more data needed.

G? = Unranked, or, if following a ranking, ranking uncertain (ex. G3?).

G_Q = Taxon has a questionable taxonomic assignment, such as G3Q.

G_T = Signifies the rank of a subspecies or variety. For example, a G5T1 would apply to a subspecies of a species that is demonstrably secure globally (G5) but the subspecies warrants a rank of T1, critically imperiled.

STATE RANK: The following ranks are used by the Virginia Department of Conservation and Recreation to set protection priorities for natural heritage resources. Natural Heritage Resources (NHRs) are rare plant and animal species, rare and exemplary natural communities, and significant geologic features. The criterion for ranking NHRs is the number of populations or occurrences, i.e. the number of known distinct localities; the number of individuals in existence at each locality or, if a highly mobile organism (e.g., sea turtles, many birds, and butterflies), the total number of individuals; the quality of the occurrences, the number of protected occurrences; and threats.

- **S1** - Extremely rare; usually 5 or fewer populations or occurrences in the state; or may be a few remaining individuals; often especially vulnerable to extirpation.
- **S2** - Very rare; usually between 6 and 20 populations or occurrences; or with many individuals in fewer occurrences; often susceptible to becoming extirpated.
- **S3** - Rare to uncommon; usually between 21 and 100 populations or occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.
- **S4** - Common; usually >100 populations or occurrences, but may be fewer with many large populations; may be restricted to only a portion of the state; usually not susceptible to immediate threats.
- **S5** - Very common; demonstrably secure under present conditions.
- **SA** - Accidental in the state.
- **S#B** - Breeding status of an organism within the state.
- **SH** - Historically known from the state, but not verified for an extended period, usually > 15 years; this rank is used primarily when inventory has been attempted recently.
- **S#N** - Non-breeding status within the state. Usually applied to winter resident species.
- **SR** - Reported for Virginia, but without persuasive documentation that would provide a basis for either accepting or rejecting the report.
- **SU** - Status uncertain, often because of low search effort or cryptic nature of the element.
- **SX** - Apparently extirpated from the state.
- **SZ** - Long distance migrant, whose occurrences during migration are too irregular, transitory and/or dispersed to be reliably identified, mapped and protected.
- **NA** - Not Applicable- A conservation status rank is not applicable because the species is not a suitable target for conservation activities.

These ranks should not be interpreted as legal designations.

