



Forest Service  
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# Nantahala and Pisgah National Forests



## Final Environmental Impact Statement

for the  
Land Management Plan

**Appendix C: Ecological Sustainability Analysis**

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**Final Environmental Impact Statement  
Nantahala and Pisgah National Forests  
Appendix C. Ecological Sustainability Analysis**

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In addition to the discussion in Chapter 3, this appendix further describes the analysis process used in the Ecological Sustainability Evaluations (ESE) in the EIS. Further information for individual analyses can be found in the project record.

Topics covered in this appendix include:

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## Background

To conduct the ecological sustainability evaluation in the EIS, this planning effort used the Ecological Sustainability Evaluation (ESE) tool, a strategic conservation planning tool used by the US Forest Service Southern Region for forest planning efforts. This analysis tool is based on the structure of the Open Standards for the Practice of Conservation (CMP 2018) planning tool and utilizes a standardized process that is adaptable to forest-specific priorities and needs. The ESE tool employs prioritization algorithms utilizing rank, importance rating, attributes and indicators, stressors and threats, scope and severity ratings, and management opportunities to assist and support management decisions. The tool includes a process record with documentation for assumptions made within the tool.

The general approach to evaluating ecological sustainability and species diversity in the ESE is as follows:

- 1) define ecological systems, and the key characteristics, stressors and threats to these systems;
- 2) identify species for these ecological systems and link them to species groups;
- 3) link species groups to ecological systems ;
- 4) identify indicators and values to sustain all ecological systems and species groups;
- 5) estimate outcomes of the indicators for each alternative;
- 6) calculate ecological sustainability scores for each ecological systems and species group by alternative; and
- 7) check plan components for species specific needs.

This appendix is organized roughly around these steps, and also references additional information in the project record, including the ESE tool

For the first step in this process, the forest plan defines ecological systems as ecozones and unique habitats found across the Forests in the aquatic systems, terrestrial ecosystems, and plant and animal diversity sections of the plan. The forest plan also includes desired conditions related to the key characteristics of these systems and outlines the stressors and threats.

## Species considered in the Ecological Sustainability Analysis

The next step in the process is to identify species associated with these ecological systems. Species identified below were considered for analysis in the NP ESE Tool. In addition to threatened and endangered species and species of conservation concern (SCC), an additional 689 plant and animal species were included in this analysis based on the request of the public or other species experts involved in the development of the plan and EIS. These species do not have regulatory requirements for the Forest Service but were considered if 1) they were of general conservation concern to all or part of the local scientific community, and 2) are known to occur on the Forests, or suitable habitat exists and species occurrence is proximal to the Forests. The collaborative process for identifying these species can be found in the project record. This list is not meant to be inclusive of all species occurring on the Forests, but rather to be a broad enough representation of species diversity to afford analysis of potential effects of the planning framework on the health and resiliency of forest habitats and species persistence and recovery.

Species identified as Threatened & Endangered, or Species of Conservation Concern are identified by status. ‘Other’ species included in this analysis that do not have a status listed as T&E or SCC include state-listed species, state watch list species, focal species, or ecologically, socially, or culturally important species.

**Table C-1. Species included in the NP ESE Tool that were considered for analysis.**

Group	Type	Common Name	Scientific Name	Status
Animal	Amphibian	Spotted Salamander	<i>Ambystoma maculatum</i>	other
Animal	Amphibian	Mole Salamander	<i>Ambystoma talpoideum</i>	other
Animal	Amphibian	Eastern Tiger Salamander	<i>Ambystoma tigrinum</i>	other
Animal	Amphibian	Green Salamander	<i>Aneides aeneus</i>	SCC
Animal	Amphibian	Eastern Hellbender	<i>Cryptobranchus alleganiensis alleganiensis</i>	SCC
Animal	Amphibian	Seepage Salamander	<i>Desmognathus aeneus</i>	other
Animal	Amphibian	Dwarf Black-bellied Salamander	<i>Desmognathus folkertsi</i>	SCC
Animal	Amphibian	Imitator Salamander	<i>Desmognathus imitator</i>	other
Animal	Amphibian	Waterrock Knob Salamander	<i>Desmognathus imitator pop. 1</i>	other
Animal	Amphibian	Northern Pygmy Salamander	<i>Desmognathus organi</i>	SCC

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Animal	Amphibian	Santeetlah Dusky Salamander	<i>Desmognathus santeetlah</i>	other
Animal	Amphibian	Southern Pygmy Salamander	<i>Desmognathus wrighti</i>	SCC
Animal	Amphibian	Northern Two-lined Salamander	<i>Eurycea bislineata</i>	other
Animal	Amphibian	Junaluska Salamander	<i>Eurycea junaluska</i>	SCC
Animal	Amphibian	Longtail Salamander	<i>Eurycea longicauda</i>	SCC
Animal	Amphibian	Four-toed Salamander	<i>Hemidactylum scutatum</i>	other
Animal	Amphibian	Common Mudpuppy	<i>Necturus maculosus maculosus</i>	other
Animal	Amphibian	Blue Ridge Gray-cheeked Salamander	<i>Plethodon amplius</i>	other
Animal	Amphibian	Tellico Salamander	<i>Plethodon aureolus</i>	SCC
Animal	Amphibian	Chattahoochee Slimy Salamander	<i>Plethodon chattahoochee</i>	SCC
Animal	Amphibian	Cheoah Bald Salamander	<i>Plethodon cheoah</i>	SCC
Animal	Amphibian	Slimy Salamander	<i>Plethodon glutinosus</i>	other
Animal	Amphibian	Red-cheeked Salamander	<i>Plethodon jordani</i>	other
Animal	Amphibian	South Mountain Gray-cheeked Salamander	<i>Plethodon meridianus</i>	other
Animal	Amphibian	Southern Ravine Salamander	<i>Plethodon richmondi</i>	other
Animal	Amphibian	Red-legged Salamander	<i>Plethodon shermani</i>	other
Animal	Amphibian	Southern Appalachian Salamander	<i>Plethodon teyahalee</i>	other

Group	Type	Common Name	Scientific Name	Status
Animal	Amphibian	Southern Zigzag Salamander	<i>Plethodon ventralis</i>	SCC
Animal	Amphibian	Wehrle's Salamander	<i>Plethodon wehrlei</i>	other
Animal	Amphibian	Weller's Salamander	<i>Plethodon welleri</i>	SCC
Animal	Amphibian	Yonahlossee Salamander	<i>Plethodon yonahlossee</i>	other
Animal	Amphibian	Crevice Salamander	<i>Plethodon yonahlossee pop. 1</i>	other
Animal	Amphibian	Mountain Chorus Frog	<i>Pseudacris brachyphona</i>	other
Animal	Arachnid	a lampshade weaver	<i>Hypochilus coylei</i>	other
Animal	Arachnid	a lampshade weaver	<i>Hypochilus shearri</i>	other
Animal	Arachnid	Spruce-Fir Moss Spider	<i>Microhexura montivaga</i>	T&E
Animal	Arachnid	a cave cobweb spider	<i>Nesticus bishopi</i>	other
Animal	Arachnid	Linville Caverns Spider	<i>Nesticus carolinensis</i>	other
Animal	Arachnid	Lost Nantahala Cave Spider	<i>Nesticus cooperi</i>	other
Animal	Arachnid	a cave cobweb spider	<i>Nesticus crosbyi</i>	other
Animal	Arachnid	a cave cobweb spider	<i>Nesticus gertschi</i>	other
Animal	Arachnid	a cave cobweb spider	<i>Nesticus mimus</i>	other
Animal	Arachnid	a cave cobweb spider	<i>Nesticus nasicus</i>	other
Animal	Arachnid	a cave cobweb spider	<i>Nesticus reclusus</i>	other
Animal	Arachnid	a cave cobweb spider	<i>Nesticus shearri</i>	other
Animal	Arachnid	a cave cobweb spider	<i>Nesticus silvanus</i>	other
Animal	Arachnid	a cave cobweb spider	<i>Nesticus sp. 1</i>	other
Animal	Arachnid	a cave cobweb spider	<i>Nesticus sp. 2</i>	other
Animal	Bird	Sharp-shinned Hawk	<i>Accipiter striatus</i>	other

Group	Type	Common Name	Scientific Name	Status
Animal	Bird	Southern Appalachian Northern Saw-whet Owl	<i>Aegolius acadicus pop. 1</i>	other
Animal	Bird	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	other
Animal	Bird	Le Conte's Sparrow	<i>Ammospiza (Ammodramus) leconteii</i>	other
Animal	Bird	Chuck-will's-widow	<i>Antrostomus carolinensis</i>	other
Animal	Bird	Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	other
Animal	Bird	Golden Eagle	<i>Aquila chrysaetos</i>	other
Animal	Bird	Short-eared Owl	<i>Asio flammeus</i>	other
Animal	Bird	Long-eared Owl	<i>Asio otus</i>	other
Animal	Bird	Upland Sandpiper	<i>Bartramia longicauda</i>	other
Animal	Bird	Cedar Waxwing	<i>Bombycilla cedrorum</i>	other
Animal	Bird	Ruffed Grouse	<i>Bonasa umbellus</i>	Focal
Animal	Bird	Broad-winged Hawk	<i>Buteo platypterus</i>	other
Animal	Bird	Canada Warbler	<i>Cardellina canadensis</i>	other
Animal	Bird	Veery	<i>Catharus fuscescens</i>	other
Animal	Bird	Hermit Thrush	<i>Catharus guttatus</i>	other
Animal	Bird	Swainson's Thrush	<i>Catharus ustulatus</i>	other
Animal	Bird	Henslow's Sparrow	<i>Centronyx (Ammodramus) henslowii</i>	other
Animal	Bird	Brown Creeper	<i>Certhia americana</i>	other
Animal	Bird	Chimney Swift	<i>Chaetura pelagica</i>	other
Animal	Bird	Common Nighthawk	<i>Chordeiles minor</i>	other
Animal	Bird	Sedge Wren	<i>Cistothorus platensis</i>	other
Animal	Bird	Evening Grosbeak	<i>Coccothraustes vespertinus</i>	other

Group	Type	Common Name	Scientific Name	Status
Animal	Bird	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	other
Animal	Bird	Northern Flicker	<i>Colaptes auratus</i>	other
Animal	Bird	Northern Bobwhite	<i>Colinus virginianus</i>	other
Animal	Bird	Olive-sided Flycatcher	<i>Contopus cooperi</i>	other
Animal	Bird	Eastern Wood-peewee	<i>Contopus virens</i>	other
Animal	Bird	Common Raven	<i>Corvus corvax</i>	other
Animal	Bird	Bobolink	<i>Dolichonyx oryzivorus</i>	other
Animal	Bird	Pileated Woodpecker	<i>Dryocopus pileatus</i>	other
Animal	Bird	Alder Flycatcher	<i>Empidonax alnorum</i>	other
Animal	Bird	Least Flycatcher	<i>Empidonax minimus</i>	other
Animal	Bird	Willow Flycatcher	<i>Empidonax traillii</i>	other
Animal	Bird	Acadian Flycatcher	<i>Empidonax virescens</i>	other
Animal	Bird	Rusty Blackbird	<i>Euphagus carolinus</i>	other
Animal	Bird	Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	other
Animal	Bird	Merlin	<i>Falco columbarius</i>	other
Animal	Bird	Peregrine Falcon	<i>Falco peregrinus</i>	SCC
Animal	Bird	American Kestrel	<i>Falco sparverius</i>	other
Animal	Bird	Kentucky Warbler	<i>Geothlypis formosa</i>	other
Animal	Bird	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SCC
Animal	Bird	Worm-eating Warbler	<i>Helmitheros vermivorum</i>	other
Animal	Bird	Wood Thrush	<i>Hylocichla mustelina</i>	other
Animal	Bird	Yellow-breasted Chat	<i>Icteria virens</i>	other
Animal	Bird	Loggerhead shrike	<i>Lanius ludovicianus</i>	other

Group	Type	Common Name	Scientific Name	Status
Animal	Bird	Nashville Warbler	<i>Leiothlypis (Oreothlypis) ruficapilla</i>	other
Animal	Bird	Swainson's Warbler	<i>Limnothlypis swainsonii</i>	other
Animal	Bird	Southern Appalachian Red Crossbill	<i>Loxia curvirostra pop. 1</i>	other
Animal	Bird	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	other
Animal	Bird	Wild Turkey	<i>Meleagris gallopavo</i>	Focal
Animal	Bird	Lincoln's Sparrow	<i>Melospiza lincolni</i>	other
Animal	Bird	Black-and-white Warbler	<i>Mniotilla varia</i>	other
Animal	Bird	Louisiana Waterthrush	<i>Parkesia motacilla</i>	other
Animal	Bird	Savannah Sparrow	<i>Passerculus sandwichensis</i>	other
Animal	Bird	Indigo Bunting	<i>Passerina cyanea</i>	other
Animal	Bird	Bachman's Sparrow	<i>Peucaea aestivalis</i>	other
Animal	Bird	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	other
Animal	Bird	Scarlet Tanager	<i>Piranga olivacea</i>	other
Animal	Bird	Summer Tanager	<i>Piranga rubra</i>	other
Animal	Bird	Black-capped Chickadee	<i>Poecile atricapillus practica</i>	SCC
Animal	Bird	Vesper Sparrow	<i>Pooecetes gramineus</i>	other
Animal	Bird	Purple Martin	<i>Progne subis</i>	other
Animal	Bird	Prothonotary Warbler	<i>Protonotaria citrea</i>	other
Animal	Bird	Bank Swallow	<i>Riparia riparia</i>	other
Animal	Bird	American Woodcock	<i>Scolopax minor</i>	other
Animal	Bird	Ovenbird	<i>Seiurus aurocapilla</i>	other
Animal	Bird	Northern Parula	<i>Setophaga americana</i>	other

Group	Type	Common Name	Scientific Name	Status
Animal	Bird	Bay-breasted Warbler	<i>Setophaga castanea</i>	other
Animal	Bird	Cerulean Warbler	<i>Setophaga cerulea</i>	SCC
Animal	Bird	Hooded Warbler	<i>Setophaga citrina</i>	other
Animal	Bird	Yellow-rumped Warbler	<i>Setophaga coronata</i>	other
Animal	Bird	Prairie Warbler	<i>Setophaga discolor</i>	other
Animal	Bird	Yellow-throated Warbler	<i>Setophaga dominica</i>	other
Animal	Bird	Blackburnian Warbler	<i>Setophaga fusca</i>	other
Animal	Bird	Magnolia Warbler	<i>Setophaga magnolia</i>	other
Animal	Bird	Blackpoll Warbler	<i>Setophaga striata</i>	other
Animal	Bird	Brown-headed Nuthatch	<i>Sitta pusilla</i>	other
Animal	Bird	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	other
Animal	Bird	Pine Siskin	<i>Spinus pinus</i>	other
Animal	Bird	American Tree Sparrow	<i>Spizella arborea</i>	other
Animal	Bird	Field Sparrow	<i>Spizella pusilla</i>	other
Animal	Bird	Eastern Meadowlark	<i>Sturnella magna</i>	other
Animal	Bird	Bewick's Wren	<i>Thryomanes bewickii</i>	other
Animal	Bird	Brown Thrasher	<i>Toxostoma rufum</i>	other
Animal	Bird	Barn Owl	<i>Tyto alba</i>	other
Animal	Bird	Golden-winged Warbler	<i>Vermivora chrysoptera</i>	SCC
Animal	Bird	Blue-winged Warbler	<i>Vermivora cyanoptera</i>	other
Animal	Bird	Yellow-throated Vireo	<i>Vireo flavifrons</i>	other
Animal	Bird	Warbling Vireo	<i>Vireo gilvus</i>	other
Animal	Bird	Blue-headed Vireo	<i>Vireo solitarius</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Animal	Bird	White-throated Sparrow	<i>Zonotrichia albicollis</i>	other
Animal	Crustacean	Bennett's Cave Mill Water Slater	<i>Caecidotea carolinensis</i>	other
Animal	Crustacean	Valley River Crayfish	<i>Cambarus brimleyorum</i>	other
Animal	Crustacean	Red Burrowing Crayfish	<i>Cambarus carolinus</i>	other
Animal	Crustacean	Chauga Crayfish	<i>Cambarus chaugaensis</i>	SCC
Animal	Crustacean	Grandfather Mountain Crayfish	<i>Cambarus eeseeohensis</i>	other
Animal	Crustacean	Little Tennessee Crayfish	<i>Cambarus georgiae</i>	SCC
Animal	Crustacean	Hiwassee Crayfish	<i>Cambarus hiwasseenensis</i>	other
Animal	Crustacean	Carolina Foothills Crayfish	<i>Cambarus johni</i>	other
Animal	Crustacean	Broad River Stream Crayfish	<i>Cambarus lenati</i>	other
Animal	Crustacean	Knotty Burrowing Crayfish	<i>Cambarus nodosus</i>	other
Animal	Crustacean	Hiwassee Headwaters Crayfish (Parrish Crayfish)	<i>Cambarus parrishi</i>	SCC
Animal	Crustacean	French Broad Crayfish	<i>Cambarus reburrus</i>	other
Animal	Crustacean	Broad River Spiny Crayfish	<i>Cambarus spicatus</i>	other
Animal	Crustacean	Tuckasegee Stream Crayfish	<i>Cambarus tuckasegee</i>	other
Animal	Crustacean	Carolina Skistodiaptomus	<i>Skistodiaptomus carolinensis</i>	other
Animal	Crustacean	Carolina Seep Scud	<i>Stygobromus carolinensis</i>	SCC
Animal	Crustacean	an ostracod	<i>Waltonocythere acuta</i>	other

Group	Type	Common Name	Scientific Name	Status
Animal	Fish	Lake Sturgeon	<i>Acipenser fulvescens</i>	other
Animal	Fish	Snail Bullhead	<i>Ameiurus brunneus</i>	other
Animal	Fish	Flat Bullhead	<i>Ameiurus platycephalus</i>	other
Animal	Fish	Freshwater Drum	<i>Aplodinotus grunniens</i>	other
Animal	Fish	River Carpsucker	<i>Carpoides carpio</i>	other
Animal	Fish	Quillback	<i>Carpoides cyprinus</i>	other
Animal	Fish	Carolina Quillback	<i>Carpoides sp. cf. cyprinus</i>	other
Animal	Fish	Atlantic Highfin Carpsucker	<i>Carpoides sp. cf. velifer</i>	other
Animal	Fish	Smoky Dace	<i>Clinostomus funduloides ssp. 1</i>	other
Animal	Fish	Banded Sculpin	<i>Cottus carolinae</i>	SCC
Animal	Fish	Spotfin Chub	<i>Erimonax monachus</i>	T&E
Animal	Fish	Southern Blotched Chub	<i>Erimystax insignis eristigma</i>	SCC
Animal	Fish	Sharthead Darter	<i>Etheostoma acuticeps</i>	SCC
Animal	Fish	Tuckasegee Darter	<i>Etheostoma gutselli</i>	other
Animal	Fish	Turquoise Darter	<i>Etheostoma inscriptum</i>	SCC
Animal	Fish	Redline Darter	<i>Etheostoma rufilineatum</i>	other
Animal	Fish	Snubnose Darter	<i>Etheostoma simoterum</i>	other
Animal	Fish	Seagreen Darter	<i>Etheostoma thalassinum</i>	other
Animal	Fish	Wounded Darter	<i>Etheostoma vulneratum</i>	SCC
Animal	Fish	Mooneye	<i>Hiodon tergisus</i>	other
Animal	Fish	Rosyface Chub	<i>Hybopsis rubrifrons</i>	SCC
Animal	Fish	Ohio Lamprey	<i>Ichthyomyzon bdellium</i>	other
Animal	Fish	Smallmouth Buffalo	<i>Ictiobus bubalus</i>	other

Group	Type	Common Name	Scientific Name	Status
Animal	Fish	Black Buffalo	<i>Ictiobus niger</i>	other
Animal	Fish	Bluegill	<i>Lepomis macrochirus</i>	other
Animal	Fish	American Brook Lamprey	<i>Lethenteron appendix</i>	SCC
Animal	Fish	Striped Shiner	<i>Luxilus chryscephalus</i>	other
Animal	Fish	Redeye Bass	<i>Micropterus coosae</i>	other
Animal	Fish	Smallmouth Bass	<i>Micropterus dolomieu</i>	other
Animal	Fish	Largemouth Bass	<i>Micropterus salmoides</i>	other
Animal	Fish	Smallmouth Redhorse	<i>Moxostoma breviceps</i>	other
Animal	Fish	Robust Redhorse	<i>Moxostoma robustum</i>	other
Animal	Fish	Sicklefin Redhorse	<i>Moxostoma sp. 2</i>	SCC
Animal	Fish	Yellowfin Shiner	<i>Notropis lutipinnis</i>	other
Animal	Fish	Highland Shiner	<i>Notropis micropteryx</i>	other
Animal	Fish	Mimic Shiner	<i>Notropis volucellus</i>	other
Animal	Fish	Mountain Madtom	<i>Noturus eleutherus</i>	other
Animal	Fish	Stonecat	<i>Noturus flavus</i>	SCC
Animal	Fish	Blotchside Logperch	<i>Percina burtoni</i>	SCC
Animal	Fish	Logperch	<i>Percina caprodes</i>	SCC
Animal	Fish	Olive Darter	<i>Percina squamata</i>	SCC
Animal	Fish	Sickle Darter	<i>Percina williamsi (P. macrocephala)</i>	other
Animal	Fish	Paddlefish	<i>Polyodon spathula</i>	other
Animal	Fish	Eastern Blacknose Dace	<i>Rhinichthys atratulus</i>	other
Animal	Fish	Brook Trout	<i>Salvelinus fontinalis</i>	other

Group	Type	Common Name	Scientific Name	Status
Animal	Fish	Sauger	<i>Sander canadensis</i>	other
Animal	Insect-Aquatic	a small minnow mayfly	<i>Baetopus trishae</i>	other
Animal	Insect-Aquatic	Benfield's Bearded Small Minnow Mayfly	<i>Barbetais benfieldi</i>	other
Animal	Insect-Aquatic	Ocellated Darner	<i>Boyeria grafiana</i>	other
Animal	Insect-Aquatic	Cancelled Long-horned Caddisfly	<i>Ceraclea cancellata</i>	other
Animal	Insect-Aquatic	Chalk-fronted Corporal	<i>Ladona julia</i>	other
Animal	Insect-Aquatic	Mountain River Cruiser	<i>Macromia margarita</i>	other
Animal	Insect-Aquatic	Mount Mitchell Caddisfly	<i>Manophylax altus</i>	other
Animal	Insect-Aquatic	Smokies Needlefly	<i>Megaleuctra williamsae</i>	other
Animal	Insect-Aquatic	Edmund's Snaketail	<i>Ophiogomphus edmundo</i>	SCC
Animal	Insect-Aquatic	Pygmy Snaketail	<i>Ophiogomphus howei</i>	other
Animal	Insect-Aquatic	Appalachian Snaketail	<i>Ophiogomphus incurvatus</i>	other
Animal	Insect-Aquatic	Maine Snaketail	<i>Ophiogomphus mainensis</i>	SCC
Animal	Insect-Aquatic	Lofty Microcaddisfly	<i>Palaeagapetus celsus</i>	other
Animal	Insect-Aquatic	Friendly Free-living Caddisfly	<i>Rhyacophila amicis</i>	SCC
Animal	Insect-Aquatic	Marked Free-living Caddisfly	<i>Rhyacophila vibox</i>	other
Animal	Insect-Aquatic	Cherokee Clubtail	<i>Stenogomphus consanguis</i>	other
Animal	Insect-Aquatic	Smokies Forestfly	<i>Zapada chila</i>	other
Animal	Insect-Terrestrial	Rusty-patched Bumblebee	<i>Bombus affinis</i>	T&E
Animal	Insect-Terrestrial	Variable Cuckoo Bumblebee	<i>Bombus bariabilis</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Animal	Insect-Terrestrial	American Bumblebee	<i>Bombus pennsylvanicus</i>	other
Animal	Insect-Terrestrial	Yellow-banded Bumblebee	<i>Bombus terricola</i>	other
Animal	Insect-Terrestrial	Half Black Bumblebee	<i>Bombus vagans</i>	other
Animal	Insect-Terrestrial	Dusky Azure	<i>Celastrina nigra</i>	other
Animal	Insect-Terrestrial	Gorgone Checkerspot	<i>Chlosyne gorgone</i>	other
Animal	Insect-Terrestrial	Monarch	<i>Danaus plexippus</i>	other
Animal	Insect-Terrestrial	Early Hairstreak	<i>Erora laeta</i>	other
Animal	Insect-Terrestrial	Mottled Duskywing	<i>Erynnis martialis</i>	other
Animal	Insect-Terrestrial	Milne's Looper Moth	<i>Euchlaena milnei</i>	other
Animal	Insect-Terrestrial	Olympia Marble	<i>Euchloe olympia</i>	other
Animal	Insect-Terrestrial	Mary Alice's Small-headed Fly	<i>Eulonchus marialiciae</i>	SCC
Animal	Insect-Terrestrial	Baltimore Checkerspot	<i>Euphydryas phaeton</i>	other
Animal	Insect-Terrestrial	Fingered Lemmeria Moth	<i>Lemmeria digitalis</i>	other
Animal	Insect-Terrestrial	Slender-bodied Sput-throat Grasshopper	<i>Melanoplus attenuatus</i>	other
Animal	Insect-Terrestrial	Divergent Melanoplus	<i>Melanoplus divergens</i>	other
Animal	Insect-Terrestrial	Nubile Short-wing Grasshopper	<i>Melanoplus nubilus</i>	other
Animal	Insect-Terrestrial	Serrulate Melanoplus	<i>Melanoplus serrulatus</i>	other
Animal	Insect-Terrestrial	an owlet moth	<i>Meropleon diversicolor sullivani</i>	other
Animal	Insect-Terrestrial	American Burying Beetle	<i>Nicrophorus americanus</i>	other
Animal	Insect-Terrestrial	Giant Swallowtail	<i>Papilio cresphontes</i>	other

Group	Type	Common Name	Scientific Name	Status
Animal	Insect-Terrestrial	Appalachian Tawny Crescent	<i>Phyciodes batesii maconensis</i>	SCC
Animal	Insect-Terrestrial	Smyth's Green Comma	<i>Polygonia faunus smythi</i>	other
Animal	Insect-Terrestrial	Gray Comma	<i>Polygonia progne</i>	other
Animal	Insect-Terrestrial	Appalachian Grizzled Skipper	<i>Pyrgus wyandot</i>	other
Animal	Insect-Terrestrial	Hickory Hairstreak	<i>Satyrium caryaevorus</i>	other
Animal	Insect-Terrestrial	Edwards' Hairstreak	<i>Satyrium edwardsii</i>	other
Animal	Insect-Terrestrial	Northern Bush Katydid	<i>Scudderia septentrionalis</i>	other
Animal	Insect-Terrestrial	Cullasaja Aphrodite Fritillary	<i>Speyeria aphrodite cullasaja</i>	SCC
Animal	Insect-Terrestrial	Diana Fritillary	<i>Speyeria diana</i>	other
Animal	Insect-Terrestrial	Regal Fritillary	<i>Speyeria idalia</i>	other
Animal	Insect-Terrestrial	Golden-banded Skipper	<i>Teleonus (Autochton) cellus</i>	other
Animal	Insect-Terrestrial	a carabid beetle	<i>Trechus carolinae</i>	other
Animal	Insect-Terrestrial	Unicoi Mountains Ground Beetle	<i>Trechus lucentus unicoi</i>	other
Animal	Insect-Terrestrial	Mitchell's Ground Beetle	<i>Trechus mitchellensis</i>	other
Animal	Insect-Terrestrial	Rosenberg's Ground Beetle	<i>Trechus rosenbergi</i>	other
Animal	Insect-Terrestrial	a carabid beetle	<i>Trechus satanicus</i>	other
Animal	Insect-Terrestrial	Lichen Grasshopper	<i>Trimerotropis saxatalis</i>	other
Animal	Mammal	Elk	<i>Cervus elaphus</i>	other
Animal	Mammal	Rafinesque's Big-eared Bat (mountain subspecies)	<i>Corynorhinus rafinesquii rafinesquii</i>	SCC

Group	Type	Common Name	Scientific Name	Status
Animal	Mammal	Virginia Big-eared Bat	<i>Corynorhinus townsendii virginianus</i>	T&E
Animal	Mammal	Big Brown Bat	<i>Eptesicus fuscus</i>	SCC
Animal	Mammal	Carolina Northern Flying Squirrel	<i>Glaucomys sabrinus coloratus</i>	T&E
Animal	Mammal	Southern Rock Vole	<i>Microtus chrotorrhinus carolinensis</i>	other
Animal	Mammal	Least Weasel	<i>Mustela nivalis</i>	other
Animal	Mammal	Gray Myotis (Gray Bat)	<i>Myotis grisescens</i>	T&E
Animal	Mammal	Eastern Small-footed Myotis	<i>Myotis leibii</i>	SCC
Animal	Mammal	Little Brown Myotis (Little Brown Bat)	<i>Myotis lucifugus</i>	SCC
Animal	Mammal	Northern Long-eared Bat (Northern Myotis)	<i>Myotis septentrionalis</i>	T&E
Animal	Mammal	Indiana Myotis (Indiana Bat)	<i>Myotis sodalis</i>	T&E
Animal	Mammal	Southern Appalachian Woodrat	<i>Neotoma floridana haematoria</i>	other
Animal	Mammal	Alleghany Woodrat	<i>Neotoma magister</i>	SCC
Animal	Mammal	White-tailed Deer	<i>Odocoileus virginianus</i>	Focal
Animal	Mammal	Tri-colored Bat	<i>Perimyotis subflavus</i>	SCC
Animal	Mammal	Eastern Cougar	<i>Puma concolor cougar</i>	other
Animal	Mammal	Eastern Water Shrew (Southern Water Shrew)	<i>Sorex albifrons (Sorex palustris punctulatus)</i>	SCC
Animal	Mammal	Appalachian Cottontail	<i>Sylvilagus obscurus</i>	SCC
Animal	Mammal	American Black Bear	<i>Ursus americanus</i>	Focal
Animal	Mollusk-Aquatic	Appalachian Elktoe	<i>Alasmidonta raveneliana</i>	T&E

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Animal	Mollusk-Aquatic	Carolina Elktoe	<i>Alasmidonta robusta</i>	other
Animal	Mollusk-Aquatic	Brook Floater	<i>Alasmidonta varicosa</i>	SCC
Animal	Mollusk-Aquatic	Slippershell Mussel	<i>Alasmidonta viridis</i>	SCC
Animal	Mollusk-Aquatic	Christy's Elimia	<i>Elimia christyi</i>	SCC
Animal	Mollusk-Aquatic	Spike	<i>Euryenia (Elliptio) dilatata</i>	other
Animal	Mollusk-Aquatic	Longsolid	<i>Fusconaia subrotunda</i>	other
Animal	Mollusk-Aquatic	Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	SCC
Animal	Mollusk-Aquatic	Tennessee Heelsplitter	<i>Lasmigona holstonia</i>	other
Animal	Mollusk-Aquatic	Smooth Mudalia	<i>Leptoxis virgata</i>	other
Animal	Mollusk-Aquatic	Cumberland Moccasinshell	<i>Medionidus conradicus</i>	other
Animal	Mollusk-Aquatic	Littlewing Pearlymussel	<i>Pegias fabula</i>	T&E
Animal	Mollusk-Aquatic	Tennessee Clubshell	<i>Pleurobema oviforme</i>	SCC
Animal	Mollusk-Aquatic	Dainty Hornsnail	<i>Pleurocera parva</i>	other
Animal	Mollusk-Aquatic	Tennessee Pigtoe	<i>Pleuronaia (Fusconaia) barnesiana</i>	SCC
Animal	Mollusk-Aquatic	Pink Heelsplitter	<i>Potamilus alatus</i>	other
Animal	Mollusk-Aquatic	Kidneyshell	<i>Ptychobranchus fasciolaris</i>	other
Animal	Mollusk-Aquatic	Creeper	<i>Strophitus undulatus</i>	other
Animal	Mollusk-Aquatic	Purple Lilliput	<i>Toxolasma lividum</i>	other
Animal	Mollusk-Aquatic	Savannah Lilliput	<i>Toxolasma pullus</i>	other
Animal	Mollusk-Aquatic	Tennessee Bean	<i>Venustaconcha (Villosa) trabalis</i>	T&E
Animal	Mollusk-Aquatic	Notched Rainbow	<i>Villosa constricta</i>	other
Animal	Mollusk-Aquatic	Eastern Creekshell	<i>Villosa delumbis</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Animal	Mollusk-Aquatic	Rainbow Mussel	<i>Villosa iris</i>	other
Animal	Mollusk-Aquatic	Mountain Creekshell	<i>Villosa vanuxemensis</i>	SCC
Animal	Mollusk-Terrestrial	Appalachian Thorn	<i>Carychium clappi</i>	other
Animal	Mollusk-Terrestrial	Obese Thorn	<i>Carychium exiguum</i>	other
Animal	Mollusk-Terrestrial	File Thorn	<i>Carychium nannodes</i>	other
Animal	Mollusk-Terrestrial	Snowhill Ambersnail	<i>Catinella hubrichti</i>	other
Animal	Mollusk-Terrestrial	Sawtooth Disc	<i>Discus bryanti</i>	other
Animal	Mollusk-Terrestrial	Mountain Pillsnail	<i>Euchemotrema fasciatum</i>	other
Animal	Mollusk-Terrestrial	Rock-loving Covert	<i>Fumonelix cherohalaensis</i>	other
Animal	Mollusk-Terrestrial	Summit Covert	<i>Fumonelix clingmanica</i>	other
Animal	Mollusk-Terrestrial	Big-tooth Covert	<i>Fumonelix jonesiana</i>	other
Animal	Mollusk-Terrestrial	Talus Covert	<i>Fumonelix langdoni</i>	other
Animal	Mollusk-Terrestrial	Engraved Covert	<i>Fumonelix orestes</i>	other
Animal	Mollusk-Terrestrial	Roan Mountain Covert	<i>Fumonelix roanensis</i>	other
Animal	Mollusk-Terrestrial	Cinnamon Covert	<i>Fumonelix wheatleyi</i>	other
Animal	Mollusk-Terrestrial	Clingman Covert	<i>Fumonelix wheatleyi clingmanicus</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Animal	Mollusk-Terrestrial	Dark Glyph	<i>Glyphyalinia junaluskana</i>	other
Animal	Mollusk-Terrestrial	Furrowed Glyph	<i>Glyphyalinia luticola</i>	other
Animal	Mollusk-Terrestrial	Pink Glyph	<i>Glyphyalinia pentadelphia</i>	other
Animal	Mollusk-Terrestrial	Spiral Coil	<i>Helicodiscus bonamicus</i>	SCC
Animal	Mollusk-Terrestrial	Fringed Coil	<i>Helicodiscus fimbriatus</i>	other
Animal	Mollusk-Terrestrial	Twilight Coil	<i>Helicodiscus multidens</i>	other
Animal	Mollusk-Terrestrial	Talus Coil	<i>Helicodiscus triodus</i>	SCC
Animal	Mollusk-Terrestrial	Smoky Mountain Covert	<i>Inflectarius ferrissi</i>	other
Animal	Mollusk-Terrestrial	Velvet Covert	<i>Inflectarius subpalliatus</i>	SCC
Animal	Mollusk-Terrestrial	Fuzzy Covert	<i>Inflectarius verus</i>	other
Animal	Mollusk-Terrestrial	Wandering Globe	<i>Mesodon altivagus</i>	other
Animal	Mollusk-Terrestrial	Balsam Globe	<i>Mesodon andrewsae</i>	other
Animal	Mollusk-Terrestrial	Sealed Globelet Snail	<i>Mesodon mitchellianus</i>	other
Animal	Mollusk-Terrestrial	Mountain Button	<i>Mesomphix andrewsae</i>	other
Animal	Mollusk-Terrestrial	Broad Button	<i>Mesomphix latior</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Animal	Mollusk-Terrestrial	Black Mantleslug	<i>Pallifera hemphilli</i>	other
Animal	Mollusk-Terrestrial	High Mountain Supercoil	<i>Paravitrea andrewsae</i>	SCC
Animal	Mollusk-Terrestrial	Mirey Ridge Supercoil	<i>Paravitrea clappi</i>	other
Animal	Mollusk-Terrestrial	Ramp Cove Supercoil	<i>Paravitrea lacteodons</i>	other
Animal	Mollusk-Terrestrial	Lamellate Supercoil	<i>Paravitrea lamellioides</i>	other
Animal	Mollusk-Terrestrial	Glossy Supercoil	<i>Paravitrea placentula</i>	other
Animal	Mollusk-Terrestrial	Sculpted Supercoil	<i>Paravitrea ternaria</i>	SCC
Animal	Mollusk-Terrestrial	Open Supercoil	<i>Paravitrea umbilicaris</i>	other
Animal	Mollusk-Terrestrial	Roan Supercoil	<i>Paravitrea varidens</i>	SCC
Animal	Mollusk-Terrestrial	Dwarf Proud Globe	<i>Patera clarki clarki</i>	other
Animal	Mollusk-Terrestrial	Noonday Globe	<i>Patera clarki nantahala</i>	T&E
Animal	Mollusk-Terrestrial	Fragile Glyph	<i>Pilsbryna (Glyphyalinia) clingmani</i>	SCC
Animal	Mollusk-Terrestrial	Oar Tooth Bud	<i>Pilsbryna nadopalma</i>	other
Animal	Mollusk-Terrestrial	Honey Glyph	<i>Pilsbryna vanattai</i>	other
Animal	Mollusk-Terrestrial	Appalachian Scrubsnail	<i>Praticolella lawae</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Animal	Mollusk-Terrestrial	Great Smoky Slitmouth	<i>Stenotrema depilatum</i>	other
Animal	Mollusk-Terrestrial	Crinkled Ambersnail	<i>Succinea campestris</i>	other
Animal	Mollusk-Terrestrial	Squatty Ambersnail	<i>Succinea unicolor</i>	other
Animal	Mollusk-Terrestrial	Golden Ambersnail	<i>Succinea wilsoni</i>	other
Animal	Mollusk-Terrestrial	Budded Threetooth	<i>Triodopsis tennesseensis</i>	other
Animal	Mollusk-Terrestrial	Golden Dome	<i>Ventridens arcellus</i>	other
Animal	Mollusk-Terrestrial	Bidentate dome	<i>Ventridens coelaxis</i>	other
Animal	Mollusk-Terrestrial	Sculptured Dome	<i>Ventridens collisella</i>	other
Animal	Mollusk-Terrestrial	Hollow Dome	<i>Ventridens lasmodon</i>	other
Animal	Mollusk-Terrestrial	Flat Dome Snail	<i>Ventridens suppressus</i>	other
Animal	Mollusk-Terrestrial	Delicate Vertigo Snail	<i>Vertigo bollesiana</i>	other
Animal	Mollusk-Terrestrial	Smallmouth Vertigo	<i>Vertigo parvula</i>	other
Animal	Mollusk-Terrestrial	a vertigo snail	<i>Vertigo sp. 3</i>	other
Animal	Mollusk-Terrestrial	Blunt Wedge	<i>Xolotrema carolinense</i>	other
Animal	Mollusk-Terrestrial	Appalachian Gloss	<i>Zonitoides patuloides</i>	other
Animal	Reptile	Eastern Spiny Softshell	<i>Apalone spinifera spinifera</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Animal	Reptile	Timber Rattlesnake	<i>Crotalus horridus</i>	other
Animal	Reptile	Coal Skink	<i>Eumeces anthracinus</i>	other
Animal	Reptile	Bog Turtle	<i>Glyptemys muhlenbergii</i>	SCC
Animal	Reptile	Common Map Turtle	<i>Graptemys geographica</i>	other
Animal	Reptile	Eastern Milksnake	<i>Lampropeltis triangulum triangulum</i>	other
Animal	Reptile	Eastern Slender Glass Lizard	<i>Ophisaurus attenuatus longicaudus</i>	other
Animal	Reptile	Northern Pinesnake	<i>Pituophis melanoleucus</i>	other
Animal	Reptile	Queen Snake	<i>Regina septemvittata</i>	other
Animal	Reptile	Loggerhead Musk Turtle	<i>Sternotherus minor</i>	other
Animal	Reptile	Eastern Box Turtle	<i>Terrapene carolina</i>	other
Animal	Reptile	Cumberland Slider	<i>Trachemys scripta troostii</i>	other
Animal	Reptile	Eastern Smooth Earthsnake	<i>Virginia valeriae</i>	other
Plant	Nonvascular Plant	Fontana Lichen	<i>Acanthothecis fontana</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Acrobolbus ciliatus</i>	SCC
Plant	Nonvascular Plant	Mougeot's Yoke Moss	<i>Amphidium mougeotii</i>	other
Plant	Nonvascular Plant	Knothole Moss	<i>Anacamptodon splachnoides</i>	other
Plant	Nonvascular Plant	A Foliose Lichen	<i>Anaptychia crinalis</i>	other
Plant	Nonvascular Plant	Liverwort	<i>Anastrophyllum saxicola</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Nonvascular Plant	Black Falcate Split Moss	<i>Andreaea rothii var. rothii</i>	other
Plant	Nonvascular Plant	Rock Split Moss	<i>Andreaea rupestris</i>	other
Plant	Nonvascular Plant	A Liiverwort	<i>Aneura sharpii</i>	SCC
Plant	Nonvascular Plant	Common Silver Moss	<i>Anomobryum julaceum</i>	other
Plant	Nonvascular Plant	Foliose lichen	<i>Anzia americana</i>	SCC
Plant	Nonvascular Plant	Tokyo Soil Moss	<i>Archidium ohioense</i>	other
Plant	Nonvascular Plant	Golden Spruce Dots	<i>Arthonia cupressina</i>	other
Plant	Nonvascular Plant	Mountain Red Dot Lichen	<i>Arthonia kermesina</i>	SCC
Plant	Nonvascular Plant	Ol' Birch Spots	<i>Arthopyrenia betulicola</i>	SCC
Plant	Nonvascular Plant	Delgelius Spots	<i>Arthopyrenia degelii</i>	SCC
Plant	Nonvascular Plant	A Catherinea Moss	<i>Atrichum altecristatum</i>	other
Plant	Nonvascular Plant	A Catherinea Moss	<i>Atrichum tenellum</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Barbilophozia attenuata</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Barbilophozia hatcheri</i>	SCC
Plant	Nonvascular Plant	Small Twist Teeth Moss	<i>Barbula indica var. indica</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Nonvascular Plant	Dwarf Apple Moss	<i>Bartramidula wilsonii</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Bazzania nudicaulis</i>	SCC
Plant	Nonvascular Plant	A Moss	<i>Brachelyma subulatum</i>	other
Plant	Nonvascular Plant	Peak moss	<i>Brachydontium trichodes</i>	SCC
Plant	Nonvascular Plant	Northern Shorthusk	<i>Brachyelytrum aristosum</i>	other
Plant	Nonvascular Plant	Anderson's Melon-moss	<i>Brachymenium andersonii</i>	other
Plant	Nonvascular Plant	Mexican Melon-moss	<i>Brachymenium systylium</i>	other
Plant	Nonvascular Plant	Sprawling Grass Moss	<i>Brachythecium oedipodium</i>	other
Plant	Nonvascular Plant	Rusty Feather Moss	<i>Brachythecium plumosum</i>	other
Plant	Nonvascular Plant	Reflexed Feather Moss	<i>Brachythecium reflexum</i>	other
Plant	Nonvascular Plant	Rota's Feather Moss	<i>Brachythecium rotaeanum</i>	SCC
Plant	Nonvascular Plant	Rough-stalked Feather Moss	<i>Brachythecium rutabulum</i>	other
Plant	Nonvascular Plant	Smooth-stalked	<i>Brachythecium salebrosum</i>	other
Plant	Nonvascular Plant	Velvet Moss	<i>Brachythecium velutinum</i>	other
Plant	Nonvascular Plant	Boar Moss	<i>Brothera leana</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Nonvascular Plant	Arrowhead Moss	<i>Bryhnia novae-angliae</i>	other
Plant	Nonvascular Plant	Gorge Moss	<i>Bryocrumia vivicolor</i>	other
Plant	Nonvascular Plant	Moss	<i>Bryoerythrophyllum ferruginascens</i>	SCC
Plant	Nonvascular Plant	A Moss	<i>Bryoerythrophyllum inaequalifolium</i>	other
Plant	Nonvascular Plant	A Red Foot Moss	<i>Bryoerythrophyllum recurvirostrum</i>	other
Plant	Nonvascular Plant	Sword Moss	<i>Bryoxiphium norvegicum</i>	SCC
Plant	Nonvascular Plant	Riverside Bryum	<i>Bryum riparium</i>	other
Plant	Nonvascular Plant	Evelyn's Buttons	<i>Buellia sharpiana</i>	other
Plant	Nonvascular Plant	Bug-on-a-stick moss	<i>Buxbaumia minakatae</i>	other
Plant	Nonvascular Plant	Paradoxical Campylopus	<i>Campylopus paradoxus</i>	other
Plant	Nonvascular Plant	Black Fish Hook Moss	<i>Campylopus atrovirens var. atrovirens</i>	SCC
Plant	Nonvascular Plant	Sandstone Grimmia	<i>Camylostelium saxicola</i>	other
Plant	Nonvascular Plant	Worthy Shield Lichen	<i>Canoparmelia amabilis</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Cephalozia macrostachya ssp. Australis</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Cephalozia pleniceps var. carolinana</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Nonvascular Plant	Liverwort	<i>Cephaloziella massalongi</i>	other
Plant	Nonvascular Plant	Roundleaf Liverwort	<i>Cephaloziella obtusilobula</i>	other
Plant	Nonvascular Plant	Liverwort	<i>Cephaloziella spinicaulis</i>	SCC
Plant	Nonvascular Plant	Sand-loving Iceland Lichen	<i>Cetraria arenaria</i>	other
Plant	Nonvascular Plant	Sea Storm Lichen	<i>Cetrelia cetrarioides</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Cheilolejeunea evansii</i>	SCC
Plant	Nonvascular Plant	A Moss	<i>Cirriphyllum piliferum</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Cololejeunea ornata</i>	other
Plant	Nonvascular Plant	Cynodontium Moss	<i>Cynodontium schisti</i>	other
Plant	Nonvascular Plant	Pygmy Cyrtos hypnum Moss	<i>Cyrtos hypnum pygmaeum</i>	SCC
Plant	Nonvascular Plant	A Moss	<i>Dichodontium pellucidum</i>	SCC
Plant	Nonvascular Plant	Variable Fork Moss	<i>Dicranella varia</i>	other
Plant	Nonvascular Plant	Thin-rib Curved-tail Moss	<i>Dicranum bonjeanii</i>	other
Plant	Nonvascular Plant	Fuscous Moss	<i>Dicranum fuscescens</i>	other
Plant	Nonvascular Plant	Rusty Fork Moss	<i>Dicranum spurium</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Nonvascular Plant	Bog Broom-moss	<i>Dicranum undulatum</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Diplophyllum andrewsii</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Diplophyllum apiculatum var. taxifolioides</i>	other
Plant	Nonvascular Plant	Liverwort	<i>Diplophyllum obtusatum</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Diplophyllum taxifolium var. mucronatum</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Diplophyllum taxifolium var. taxifolium</i>	other
Plant	Nonvascular Plant	Ambiguous Ditrichium	<i>Ditrichum ambiguum</i>	SCC
Plant	Nonvascular Plant	Golden Tread Moss	<i>Ditrichum rhynchosstegium</i>	SCC
Plant	Nonvascular Plant	Liverwort	<i>Drepanolejeunea appalachiana</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Dumortiera hirsuta ssp. Nepalensis</i>	other
Plant	Nonvascular Plant	Extinguisher Moss	<i>Encalypta procera</i>	SCC
Plant	Nonvascular Plant	Flattened Entodon	<i>Entodon compressus</i>	SCC
Plant	Nonvascular Plant	Sullivant's entodon	<i>Entodon sullivantii</i>	SCC
Plant	Nonvascular Plant	A Fruticose Lichen	<i>Ephebe americana</i>	other
Plant	Nonvascular Plant	A Fruticose Lichen	<i>Ephebe lanata</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Nonvascular Plant	Fructicose lichen	<i>Ephebe solida</i>	other
Plant	Nonvascular Plant	A False Crushed-rice Moss	<i>Fabronia ciliaris var. polycarpa</i>	other
Plant	Nonvascular Plant	Erin's Fellhanera	<i>Fellhanera eriniae</i>	other
Plant	Nonvascular Plant	Piedmont Crustose Lichen	<i>Fellhanera hybrida</i>	SCC
Plant	Nonvascular Plant	Smoky Mountain Crustose Lichen	<i>Fellhanera montesfumosi</i>	other
Plant	Nonvascular Plant	Maiden Hair Moss	<i>Fissidens adianthoides</i>	other
Plant	Nonvascular Plant	Appalachian pocket moss	<i>Fissidens appalachensis</i>	other
Plant	Nonvascular Plant	A Plume Moss	<i>Fissidens elegans</i>	other
Plant	Nonvascular Plant	Water Pocket Moss	<i>Fissidens fontanus</i>	other
Plant	Nonvascular Plant	A Water Moss	<i>Fontinalis flaccida</i>	other
Plant	Nonvascular Plant	A Water Moss	<i>Fontinalis sphagnifolia</i>	SCC
Plant	Nonvascular Plant	A Water Moss	<i>Fontinalis sullivantii</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Frullania appalachiana</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Frullania oakesiana</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Frullania plana</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Nonvascular Plant	Sterling Lips	<i>Graphis sterlingiana</i>	SCC
Plant	Nonvascular Plant	A Beard Moss	<i>Grimmia olneyi</i>	other
Plant	Nonvascular Plant	A Leaf Lichen	<i>Gyalectidium appendiculatum</i>	other
Plant	Nonvascular Plant	Rock Gnome Lichen	<i>Gymnoderma lineare</i>	T&E
Plant	Nonvascular Plant	Coiled Moss	<i>Herpetineuron toccae</i>	other
Plant	Nonvascular Plant	Flat Stump Moss	<i>Herzogiella turfacea</i>	SCC
Plant	Nonvascular Plant	Foliose lichen	<i>Heterodermia appalachensis</i>	SCC
Plant	Nonvascular Plant	A Centipede Lichen	<i>Heterodermia erecta</i>	other
Plant	Nonvascular Plant	A Centipede Lichen	<i>Heterodermia pseudospeciosa</i>	other
Plant	Nonvascular Plant	Lime Homalia	<i>Homalia trichomanoides</i>	SCC
Plant	Nonvascular Plant	Sharp's homaliadelphus	<i>Homaliadelphus sharpii</i>	SCC
Plant	Vascular Plant	ColchÃ³n de pobre	<i>Huperzia acerosa</i>	other
Plant	Vascular Plant	Appalachian fir clubmoss	<i>Huperzia appalachiana</i>	other
Plant	Nonvascular Plant	Brookside Feather Moss	<i>Hygroamblystegium fluviatile</i>	other
Plant	Nonvascular Plant	Closter's brook-hypnum	<i>Hygrohypnum closteri</i>	SCC
Plant	Nonvascular Plant	Shaded Feather Moss	<i>Hylocomiastrum umbratum</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Nonvascular Plant	A Cedar Moss	<i>Hypnum fauriei</i>	other
Plant	Nonvascular Plant	A Cedar Moss	<i>Hypnum plicatulum</i>	other
Plant	Nonvascular Plant	Meadow Feather Moss	<i>Hypnum pratense</i>	other
Plant	Nonvascular Plant	Oosting's Square Britches	<i>Hypotrachyna oostingii</i>	SCC
Plant	Nonvascular Plant	A Foliose Lichen	<i>Hypotrachyna sinuosa</i>	SCC
Plant	Nonvascular Plant	Virginia Square Britches	<i>Hypotrachyna virginica</i>	SCC
Plant	Nonvascular Plant	Masa's Disc Lichen	<i>Lecanora masana</i>	other
Plant	Nonvascular Plant	Liverwort	<i>Lejeunea blomquistii</i>	SCC
Plant	Nonvascular Plant	Appalachian Dust Bunnies	<i>Leparia lanata</i>	SCC
Plant	Nonvascular Plant	Grandfather Mountain excelsum	<i>Leptodontium excelsum</i>	SCC
Plant	Nonvascular Plant	Pale-margined Leptodontium	<i>Leptodontium flexifolium</i>	other
Plant	Nonvascular Plant	Mount Leconte Moss	<i>Leptohymenium sharpii</i>	SCC
Plant	Nonvascular Plant	Wedge Flapwort	<i>Leptoscyphus cunefolius</i>	SCC
Plant	Nonvascular Plant	Squirrel Tail Moss	<i>Leucodon andrewsianus</i>	other
Plant	Nonvascular Plant	Textured Lungwort	<i>Lobaria scrobiculata</i>	SCC

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Nonvascular Plant	Liverwort	<i>Lophocolea appalachiana</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Lophocolea muricata</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Lophozia capitata</i>	other
Plant	Nonvascular Plant	Sullivant's milled-moss	<i>Macrocoma sullivantii</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Mannia triandra</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Marsupella emarginata var. latiloba</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Marsupella funckii</i>	other
Plant	Nonvascular Plant	Foliose lichen	<i>Melanelia stygia</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Metzgeria furcata var. setigera</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Metzgeria pubescens</i>	other
Plant	Nonvascular Plant	Liverwort	<i>Metzgeria temperata</i>	other
Plant	Nonvascular Plant	Liverwort	<i>Metzgeria uncigera</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Metzgeria violacea</i>	other
Plant	Nonvascular Plant	Irrigated Rock Lichen	<i>Micareopsis irriguata</i>	other
Plant	Nonvascular Plant	A Moss	<i>Micromitrium megalosporum</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Nonvascular Plant	Double Spots	<i>Mycoproum biseptatum</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Mylia taylorii</i>	SCC
Plant	Nonvascular Plant	A Moss	<i>Nardia lescuri</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Nardia scalaris ssp. scalaris</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Nardia scalaris subsp. botryoidea</i>	other
Plant	Nonvascular Plant	Flat Feather Moss	<i>Neckera complanata</i>	SCC
Plant	Nonvascular Plant	A Hornwort	<i>Nothoceros aenigmaticus</i>	other
Plant	Nonvascular Plant	Coral Saucer Lichen	<i>Ochrolechia yasudae</i>	other
Plant	Nonvascular Plant	Andy's Scribble Lichen	<i>Opegrapha moroziana</i>	SCC
Plant	Nonvascular Plant	Drummond Moss	<i>Orotrichum strngulatum</i>	other
Plant	Nonvascular Plant	Translucent Orthodontium	<i>Orthodontium pellucens</i>	other
Plant	Nonvascular Plant	Drummond Moss	<i>Orthotrichum strangulatum</i>	other
Plant	Nonvascular Plant	Pringle's Eurhynchium	<i>Oxyrrhynchium pringlei</i>	other
Plant	Nonvascular Plant	Palamocladium	<i>Palamocladium leskeoides</i>	SCC
Plant	Nonvascular Plant	Foliose lichen	<i>Pannaria conoplea</i>	SCC

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Nonvascular Plant	Liverwort	<i>Pellia appalachiana</i> (= <i>Pelia X appalachiana</i> )	other
Plant	Nonvascular Plant	Waterfan Lichen	<i>Peltigera hydrothyria</i>	other
Plant	Nonvascular Plant	Appalachian Wart Lichen	<i>Pertusaria appalachensis</i>	SCC
Plant	Nonvascular Plant	Dwarf Apple Moss	<i>Philonotis cernua</i>	other
Plant	Nonvascular Plant	An Apple Moss	<i>Philonotis longiseta</i>	other
Plant	Nonvascular Plant	An Apple Moss	<i>Philonotis marchica</i>	other
Plant	Nonvascular Plant	Rosette lichen	<i>Physcia pseudospeciosa</i>	other
Plant	Nonvascular Plant	Appalachian Matchsticks	<i>Pilophorus fibula</i>	SCC
Plant	Nonvascular Plant	A Moss	<i>Pilosium chlorophyllum</i>	SCC
Plant	Nonvascular Plant	Liverwort	<i>Plagiochila austini</i>	SCC
Plant	Nonvascular Plant	Liverwort	<i>Plagiochila caduciloba</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Plagiochila columbiana</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Plagiochila corniculata</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Plagiochila echinata</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Plagiochila ludoviciana</i>	SCC

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Nonvascular Plant	Sharp's Leafy Liverwort	<i>Plagiochila sharpii</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Plagiochila sullivantii var. spinigera</i>	other
Plant	Nonvascular Plant	Sullivant's leafy liverwort	<i>Plagiochila sullivantii var. sullivantii</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Plagiochila undata</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Plagiochila virginica var. caroliniana</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Plagiochila virginica var. euryphylla</i>	other
Plant	Nonvascular Plant	Carolina Star-moss	<i>Plagiomnium carolinianum</i>	SCC
Plant	Nonvascular Plant	Marsh Magnificent Moss	<i>Plagiomnium ellipticum</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Plagiochila virginica var. virginica</i>	SCC
Plant	Nonvascular Plant	Long-beaked Thread Moss	<i>Plagiomnium rostratum</i>	SCC
Plant	Nonvascular Plant	Varied Rag Lichen	<i>Platismatia glauca</i>	other
Plant	Nonvascular Plant	A Moss	<i>Platydictya subtilis</i>	other
Plant	Nonvascular Plant	Pringles Water Feather Moss	<i>Platyhypnidium pringlei</i>	SCC
Plant	Nonvascular Plant	Long-beaked Water Feather Moss	<i>Platyhypnidium riparioides</i>	SCC
Plant	Nonvascular Plant	Hair-like Hair-cap	<i>Pogonatum dentatum</i>	SCC

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Nonvascular Plant	Spherical Bulb Nodding Moss	<i>Pohlia lescuriana</i>	SCC
Plant	Nonvascular Plant	Long Neck Nodding Moss	<i>Pohlia longicollis</i>	other
Plant	Nonvascular Plant	Pink-fruited Thread Moss	<i>Pohlia melanodon</i>	other
Plant	Nonvascular Plant	A Moss	<i>Pohlia rabunbaldensis</i>	SCC
Plant	Nonvascular Plant	Alpine Hair Moss	<i>Polytrichastrum alpinum</i>	SCC
Plant	Nonvascular Plant	Appalachian haircap moss	<i>Polytrichum appalachianum</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Porella japonica</i> ssp. <i>appalachiana</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Porella wataugensis</i>	SCC
Plant	Nonvascular Plant	Boulder Lichen	<i>Porpidia macrocarpa</i>	other
Plant	Nonvascular Plant	Boulder Lichen	<i>Porpidia tuberculosa</i>	other
Plant	Nonvascular Plant	Twisted Thread Moss	<i>Pterigynandrum filiforme</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Ptilidium ciliare</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Ptilidium pulcherrimum</i>	other
Plant	Nonvascular Plant	Speckled Shield Lichen	<i>Punctelia reddenda</i>	SCC
Plant	Nonvascular Plant	Many-fruited Feather Moss	<i>Pylaisiella polyantha</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Nonvascular Plant	Dark Mountain Fringe Moss	<i>Racomitrium aciculare</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Radula sullivantii</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Radula tenax</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Radula voluta</i>	SCC
Plant	Nonvascular Plant	Smaller Fern Moss	<i>Rauiella scita</i>	other
Plant	Nonvascular Plant	A Liverwort	<i>Reboulia hemisphaerica ssp. Dioica</i>	other
Plant	Nonvascular Plant	Himalayan Ribbed-weissia	<i>Rhabdoweisia crenulata</i>	SCC
Plant	Nonvascular Plant	A Moss	<i>Rhytidadelphus subpinnatus</i>	SCC
Plant	Nonvascular Plant	Golden Tundra-moss	<i>Rhytidium rugosum</i>	SCC
Plant	Nonvascular Plant	Liverwort	<i>Riccardia jugata</i>	SCC
Plant	Nonvascular Plant	Brodo's Pepperpot	<i>Rinodina brodoana</i>	SCC
Plant	Nonvascular Plant	Yellow Pepper Spores	<i>Rinodina chrysomeleana</i>	other
Plant	Nonvascular Plant	Highlands Moss	<i>Schlotheimia lancifolia</i>	SCC
Plant	Nonvascular Plant	Agoyan Cataract Moss	<i>Scopelophila cataractae</i>	SCC
Plant	Nonvascular Plant	Copper Moss	<i>Scopelophila ligulata</i>	SCC

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Nonvascular Plant	Narrowleaf Peatmoss	<i>Sphagnum angustifolium</i>	SCC
Plant	Nonvascular Plant	Northern Peatmoss	<i>Sphagnum capillifolium</i>	SCC
Plant	Nonvascular Plant	Pretty peatmoss	<i>Sphagnum fallax</i>	other
Plant	Nonvascular Plant	Peatmoss	<i>Sphagnum flavicomans</i>	other
Plant	Nonvascular Plant	Flexuous Peatmoss	<i>Sphagnum flexuosum</i>	SCC
Plant	Nonvascular Plant	Brown Peatmoss	<i>Sphagnum fuscum</i>	other
Plant	Nonvascular Plant	Henry's Peatmoss	<i>Sphagnum henryense</i>	other
Plant	Nonvascular Plant	Simple Peatmoss	<i>Sphagnum pylaesii</i>	SCC
Plant	Nonvascular Plant	Russow's peatmoss	<i>Sphagnum russowii</i>	SCC
Plant	Nonvascular Plant	Squarrose Peatmoss	<i>Sphagnum squarrosum</i>	SCC
Plant	Nonvascular Plant	Orange Peatmoss	<i>Sphagnum subsecundum</i>	other
Plant	Nonvascular Plant	A Peatmoss	<i>Sphagnum subtile</i>	other
Plant	Nonvascular Plant	Delicate Peatmoss	<i>Sphagnum tenellum</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Sphenolobopsis pearsonii</i>	SCC
Plant	Nonvascular Plant	Tennessee Twist	<i>Stereocaulon tennesseense</i>	SCC

Group	Type	Common Name	Scientific Name	Status
Plant	Nonvascular Plant	Powdered Moon Lichen	<i>Sticta limbata</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Lejeunea sharpii</i>	SCC
Plant	Nonvascular Plant	Japanese Yew-moss	<i>Taxiphyllum alternans</i>	SCC
Plant	Nonvascular Plant	Little Georgia moss	<i>Tetraphontium brownianum</i>	other
Plant	Nonvascular Plant	Hokkaido Fern Moss	<i>Thuidium recognitum</i>	other
Plant	Nonvascular Plant	Ammon's Tortula	<i>Tortula ammonsiana</i>	SCC
Plant	Nonvascular Plant	A Liverwort	<i>Tritomaria exsectiformis ssp. Exsectiformis</i>	other
Plant	Nonvascular Plant	Old Man's Beard	<i>Usnea angulata</i>	SCC
Plant	Nonvascular Plant	Floating Sickle-moss	<i>Warnstorffia fluitans</i>	SCC
Plant	Nonvascular Plant	Xanthoparmelia lichen	<i>Xanthoparmelia monticola</i>	SCC
Plant	Nonvascular Plant	A Moss	<i>Zygodon viridissimus var. rupestris</i>	other
Plant	Vascular Plant	Fraser fir	<i>Abies fraseri</i>	SCC
Plant	Vascular Plant	Black Maple	<i>Acer nigrum</i>	other
Plant	Vascular Plant	white monkshood	<i>Aconitum reclinatum</i>	other
Plant	Vascular Plant	Climbing fumatory	<i>Adlumia fungosa</i>	SCC
Plant	Vascular Plant	Piedmont Gerardia	<i>Agalinis decemloba</i>	other
Plant	Vascular Plant	Yellow Giant-hyssop	<i>Agastache nepetoides</i>	SCC
Plant	Vascular Plant	Arctic Bentgrass	<i>Agrostis mertensii</i>	other

Group	Type	Common Name	Scientific Name	Status
Plant	Vascular Plant	Bubbling Witch's Hair	<i>Alectoria fallacina</i>	other
Plant	Vascular Plant	Allegheny Onion	<i>Allium allegheniensis</i>	SCC
Plant	Vascular Plant	Red Ramps	<i>Allium tricoccum</i>	other
Plant	Vascular Plant	Green Alder	<i>Alnus viridis ssp crispa</i>	SCC
Plant	Vascular Plant	Roundleaf Serviceberry	<i>Amelanchier sanguinea</i>	other
Plant	Vascular Plant	Heartleaf Peppervine	<i>Ampelopsis cordata</i>	other
Plant	Vascular Plant	Dwarf Thimble-weed	<i>Anemone minima</i>	other
Plant	Vascular Plant	Purple-stem Angelica	<i>Angelica atropurpurea</i>	other
Plant	Vascular Plant	Lyre-leaved Rockcress	<i>Arabidopsis lyrata</i>	other
Plant	Vascular Plant	Tower Mustard	<i>Arabis glabra</i>	SCC
Plant	Vascular Plant	Porter's Rockcress	<i>Arabis laevigata var. burkii</i>	other
Plant	Vascular Plant	Spreading rockcress	<i>Arabis patens</i>	SCC
Plant	Vascular Plant	Hairy Rockcress	<i>Arabis pycnocarpa var. addressipilis</i>	other
Plant	Vascular Plant	Dragon's mouth	<i>Arethusa bulbosa</i>	SCC
Plant	Vascular Plant	Bog Jack-in-the-Pulpit	<i>Arisaema triphyllum ssp. stewardsonii</i>	other
Plant	Vascular Plant	Purple Chokeberry	<i>Aronia prunifolia</i>	other
Plant	Vascular Plant	Rose's Heartleaf	<i>Asarum rosei</i>	SCC
Plant	Vascular Plant	Purple Milkweed	<i>Asclepias purpurascens</i>	other
Plant	Vascular Plant	Bradley's Spleenwort	<i>Asplenium bradleyi</i>	SCC
Plant	Vascular Plant	Single-Sorus Spleenwort	<i>Asplenium monanthes</i>	SCC
Plant	Vascular Plant	Lobed Spleenwort	<i>Asplenium pinnatifidum</i>	SCC
Plant	Vascular Plant	Black-stem Spleenwort	<i>Asplenium resiliens</i>	other

Group	Type	Common Name	Scientific Name	Status
Plant	Vascular Plant	Wall-rue	<i>Asplenium ruta-muraria</i>	SCC
Plant	Vascular Plant	Northern Lady Fern	<i>Athyrium angustum</i>	SCC
Plant	Vascular Plant	Thin-pod White Wild Indigo	<i>Baptisia albescens</i>	other
Plant	Vascular Plant	Creamy Wild Indigo	<i>Baptisia bracteata</i>	other
Plant	Vascular Plant	Twining Screwstem	<i>Bartonia paniculata ssp. paniculata</i>	other
Plant	Vascular Plant	American barberry	<i>Berberis canadensis</i>	SCC
Plant	Vascular Plant	mountain paper birch	<i>Betula cordifolia</i>	SCC
Plant	Vascular Plant	Margarita, Romerillo	<i>Bidens alba var. radiata</i>	other
Plant	Vascular Plant	Coastal Plain Tickseed	<i>Bidens mitis</i>	other
Plant	Nonvascular Plant	Sharp-pointed Weissia	<i>Blindia acuta</i>	other
Plant	Vascular Plant	Porter's Rockcress	<i>Boechera burkii</i>	other
Plant	Vascular Plant	Dixie Grapefern	<i>Botrychium jenmanii</i>	SCC
Plant	Vascular Plant	Lance-leaf Moonwort	<i>Botrychium lanceolatum var. angustisegmentum</i>	SCC
Plant	Vascular Plant	Daisy-leaf Moonwort	<i>Botrychium matricariifolium</i>	SCC
Plant	Vascular Plant	Leathery Grape Fern	<i>Botrychium multifidum</i>	SCC
Plant	Vascular Plant	Blunt-lobed grape fern	<i>Botrychium oneidense</i>	SCC
Plant	Vascular Plant	Least Moonwort	<i>Botrychium simplex var. simplex</i>	SCC
Plant	Vascular Plant	Sideoats Grama Grass	<i>Bouteloua curtipendula var. curtipendula</i>	SCC
Plant	Vascular Plant	Brook Saxifrage	<i>Boykinia aconitifolia</i>	other
Plant	Vascular Plant	fringed brome grass	<i>Bromus ciliatus</i>	SCC

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Vascular Plant	Riverbank Brome	<i>Bromus latiglumis</i>	other
Plant	Vascular Plant	American Bluehearts	<i>Buchnera americana</i>	SCC
Plant	Vascular Plant	Piratebush	<i>Buckleya distichophylla</i>	SCC
Plant	Vascular Plant	Cain's Reedgrass	<i>Calamagrostis cainii</i>	other
Plant	Vascular Plant	Canada Reedgrass	<i>Calamagrostis canadensis var. canadensis</i>	SCC
Plant	Vascular Plant	Porter's Reedgrass	<i>Calamagrostis porteri</i>	SCC
Plant	Vascular Plant	Marsh Marigold	<i>Caltha palustris var. palustris</i>	other
Plant	Vascular Plant	Eastern Sweetshrub	<i>Calycanthus floridus var. floridus</i>	other
Plant	Vascular Plant	Shale Barren Bindweed	<i>Calystegia spithamea ssp. stans</i>	other
Plant	Vascular Plant	Marsh bellflower	<i>Campanula aparinoides var. aparinoides</i>	SCC
Plant	Vascular Plant	American harebell	<i>Campanula rotundifolia</i>	other
Plant	Vascular Plant	Mountain Bittercress	<i>Cardamine clematitis</i>	SCC
Plant	Vascular Plant	Mountain Watercress	<i>Cardamine rotundifolia</i>	SCC
Plant	Vascular Plant	White Bear Sedge	<i>Carex albursina</i>	other
Plant	Vascular Plant	Bailey's Sedge	<i>Carex baileyi</i>	SCC
Plant	Vascular Plant	Biltmore Sedge	<i>Carex biltmoreana</i>	other
Plant	Vascular Plant	Blue Ridge Brome Sedge	<i>Carex bromoides ssp. montana</i>	other
Plant	Vascular Plant	Brown Bog Sedge	<i>Carex buxbaumii</i>	other
Plant	Vascular Plant	Carey's Sedge	<i>Carex careyana</i>	SCC
Plant	Vascular Plant	Cherokee Sedge	<i>Carex cherokeensis</i>	SCC
Plant	Vascular Plant	Collin's Sedge	<i>Carex collinsii</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Vascular Plant	crested sedge	<i>Carex cristatella</i>	other
Plant	Vascular Plant	Star Sedge	<i>Carex echinata</i> ssp. <i>echinata</i>	other
Plant	Vascular Plant	Fescue Sedge	<i>Carex festucacea</i>	other
Plant	Vascular Plant	Fraser's Sedge	<i>Carex fraseriana</i>	other
Plant	Vascular Plant	Hitchcock's sedge	<i>Carex hitchcockiana</i>	SCC
Plant	Vascular Plant	A Wood Sedge	<i>Carex leavenworthii</i>	other
Plant	Vascular Plant	A Wood Sedge	<i>Carex leptonervia</i>	other
Plant	Vascular Plant	Appalachian Woodland Sedge	<i>Carex lucorum</i> var. <i>austrolucorum</i>	other
Plant	Vascular Plant	Manhart's Sedge	<i>Carex manhartii</i>	other
Plant	Vascular Plant	Wretched Sedge	<i>Carex misera</i>	other
Plant	Vascular Plant	Mitchell's Sedge	<i>Carex mitchelliana</i>	other
Plant	Vascular Plant	Oklahoma Sedge	<i>Carex oklahomensis</i>	other
Plant	Vascular Plant	Rich-woods Sedge	<i>Carex oligocarpa</i>	other
Plant	Vascular Plant	Few-seeded Sedge	<i>Carex oligosperma</i>	SCC
Plant	Vascular Plant	longstalk sedge	<i>Carex pedunculata</i>	SCC
Plant	Vascular Plant	Necklace Sedge	<i>Carex projecta</i>	SCC
Plant	Vascular Plant	Purple Sedge	<i>Carex purpurifera</i>	SCC
Plant	Vascular Plant	Radford's Sedge	<i>Carex radfordii</i>	SCC
Plant	Vascular Plant	Roan Mountain sedge	<i>Carex roanensis</i>	SCC
Plant	Vascular Plant	Ruth's Sedge	<i>Carex ruthii</i>	other
Plant	Vascular Plant	Bur-reed Sedge	<i>Carex sparganioides</i>	other
Plant	Vascular Plant	Three-seeded sedge	<i>Carex trisperma</i>	other
Plant	Vascular Plant	Beaked Sedge	<i>Carex utriculata</i>	SCC

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Vascular Plant	Wood's Sedge	<i>Carex woodii</i>	other
Plant	Vascular Plant	Northern Blue Cohosh	<i>Caulophyllum giganteum</i>	SCC
Plant	Vascular Plant	Climbing Bittersweet	<i>Celastrus scandens</i>	SCC
Plant	Vascular Plant	Mountain Hackberry	<i>Celtis occidentalis</i>	other
Plant	Vascular Plant	Nodding Chickweed	<i>Cerastium nutans</i>	other
Plant	Vascular Plant	Purple Willowherb	<i>Chamerion platphyllum</i>	SCC
Plant	Vascular Plant	Longleaf Spikegrass	<i>Chasmanthium sessiliflorum</i> <i>var. sessiliflorum</i>	other
Plant	Vascular Plant	Alabama Lipfern	<i>Cheilanthes alabamensis</i>	SCC
Plant	Vascular Plant	Cuthbert's Turtlehead	<i>Chelone cuthbertii</i>	SCC
Plant	Vascular Plant	Mountain Purple Turtlehead	<i>Chelone obliqua</i> var. <i>erwiniae</i>	SCC
Plant	Vascular Plant	Red Turtlehead	<i>Chelone obliqua</i> var. <i>obliqua</i>	SCC
Plant	Vascular Plant	Hicaco, Icaco, Jicaco	<i>Chrysobalanus icaco</i>	other
Plant	Vascular Plant	Golden Saxifrage	<i>Chrysosplenium americanum</i>	other
Plant	Vascular Plant	Slender Wood-reed	<i>Cinna latifolia</i>	other
Plant	Vascular Plant	Carolina Thistle	<i>Cirsium carolinianum</i>	SCC
Plant	Vascular Plant	Yellowwood	<i>Cladrastis kentukea</i>	other
Plant	Vascular Plant	Small Spreading Pogonia	<i>Cleistesiopsis bifaria</i>	other
Plant	Vascular Plant	Coastal Virgin's-bower	<i>Clematis catesbyana</i>	other
Plant	Vascular Plant	Whorled Horsebalm	<i>Collinsonia verticillata</i>	other
Plant	Vascular Plant	Sweet Fern	<i>Comptonia peregrina</i>	other
Plant	Vascular Plant	Spotted Coralroot	<i>Corallorrhiza maculata</i> var. <i>maculata</i>	other
Plant	Vascular Plant	Autumn Coral-root	<i>Corallorrhiza odontorhiza</i>	other

Group	Type	Common Name	Scientific Name	Status
Plant	Vascular Plant	Spring Coral-root	<i>Corallorrhiza wisteriana</i>	SCC
Plant	Vascular Plant	Large-flowered Tickseed	<i>Coreopsis grandiflora var. grandiflora</i>	SCC
Plant	Vascular Plant	Broadleaf Coreopsis	<i>Coreopsis latifolia</i>	other
Plant	Vascular Plant	Blue Ridge Coreopsis	<i>Coreopsis pubescens var. robusta</i>	other
Plant	Vascular Plant	Slender Corydalis	<i>Corydalis micrantha</i>	SCC
Plant	Vascular Plant	Balsam Mountain Hawthorn	<i>Crataegus oreophila</i>	other
Plant	Vascular Plant	Schuette's Hawthorn	<i>Crataegus schuettei</i>	other
Plant	Vascular Plant	Littlehip Hawthorn	<i>Crataegus spathulata</i>	other
Plant	Vascular Plant	Plains Sunrose	<i>Crocanthemum bicknellii</i>	SCC
Plant	Vascular Plant	Creeping Sunrose	<i>Crocanthemum propinquum</i>	SCC
Plant	Vascular Plant	Prairie-tea Croton	<i>Croton monanthogynus</i>	SCC
Plant	Vascular Plant	Fraser's sedge	<i>Cymophyllum fraserianus</i>	other
Plant	Vascular Plant	Small Yellow Lady's-slipper	<i>Cypripedium parviflorum var. parviflorum</i>	SCC
Plant	Vascular Plant	showy lady's-slipper	<i>Cypripedium reginae</i>	other
Plant	Vascular Plant	Bulblet Bladder Fern	<i>Cystopteris bulbifera</i>	other
Plant	Vascular Plant	fragile fern	<i>Cystopteris fragilis</i>	SCC
Plant	Vascular Plant	Upland Bladder-fern	<i>Cystopteris tenuis</i>	other
Plant	Vascular Plant	Robin Runaway	<i>Dalibarda repens</i>	SCC
Plant	Vascular Plant	Bog Oatgrass	<i>Danthonia epilis</i>	other
Plant	Vascular Plant	tall larkspur	<i>Delphinium exaltatum</i>	SCC
Plant	Vascular Plant	Prickly Ground-pine	<i>Dendrolycopodium dendroideum</i>	other

Group	Type	Common Name	Scientific Name	Status
Plant	Vascular Plant	Pennsylvania Ground Pine	<i>Dendrolycopodium hickeyi</i>	other
Plant	Vascular Plant	Tufted Hairgrass	<i>Deschampsia cespitosa</i> ssp. <i>glaуca</i>	SCC
Plant	Vascular Plant	toothed tick-trefoil	<i>Desmodium cuspidatum</i>	other
Plant	Vascular Plant	Large-bract Tick-trefoil	<i>Desmodium cuspidatum</i> var. <i>cuspidatum</i>	other
Plant	Vascular Plant	Elf Orpine	<i>Diamorpha smallii</i>	other
Plant	Vascular Plant	Eastern beakgrass	<i>Diarrhena americana</i>	SCC
Plant	Vascular Plant	Bleeding heart	<i>Dicentra eximia</i>	other
Plant	Vascular Plant	Bicknell's Witch Grass	<i>Dichanthelium bicknellii</i>	other
Plant	Vascular Plant	American Witch Grass	<i>Dichanthelium columbianum</i>	other
Plant	Vascular Plant	Low White-haried Witch Grass	<i>Dichanthelium linearifolium</i>	other
Plant	Vascular Plant	Riverbank Bush-honeysuckle	<i>Diervilla rivularis</i>	SCC
Plant	Vascular Plant	Glade Fern	<i>Diplazium pycnocarpon</i>	other
Plant	Vascular Plant	Leatherwood	<i>Dirca palustris</i>	other
Plant	Vascular Plant	Shootingstar	<i>Dodecatheon meadia</i>	SCC
Plant	Vascular Plant	Branching Draba	<i>Draba ramosissima</i>	SCC
Plant	Vascular Plant	Spinulose Woodfern	<i>Dryopteris carthusiana</i>	other
Plant	Vascular Plant	Crested Woodfern	<i>Dryopteris cristata</i>	other
Plant	Vascular Plant	Goldie's Woodfern	<i>Dryopteris goldiana</i>	other
Plant	Vascular Plant	Eastern Purple Coneflower	<i>Echinacea purpurea</i>	SCC
Plant	Vascular Plant	Wild Mock Cucumber	<i>Echinocystis lobata</i>	other

Group	Type	Common Name	Scientific Name	Status
Plant	Vascular Plant	American Waterwort	<i>Elatine americana</i>	other
Plant	Vascular Plant	Englemann's Spikerush	<i>Eleocharis engelmannii</i>	other
Plant	Vascular Plant	Bald Spikerush	<i>Eleocharis erythropoda</i>	other
Plant	Vascular Plant	Small's Spikerush	<i>Eleocharis palustris</i>	other
Plant	Vascular Plant	Canada Waterweed	<i>Elodea canadensis</i>	other
Plant	Vascular Plant	Nuttall's Elodea	<i>Elodea nuttallii</i>	other
Plant	Vascular Plant	nodding wild rye	<i>Elymus canadensis</i>	other
Plant	Vascular Plant	Great Plains Wild Rye	<i>Elymus canadensis var. canadensis</i>	other
Plant	Vascular Plant	Riverbank Wild Rye	<i>Elymus riparius</i>	other
Plant	Vascular Plant	Slender Wheatgrass	<i>Elymus trachycaulus ssp. trachycaulus</i>	SCC
Plant	Vascular Plant	Hair willow-herb	<i>Epilobium ciliatum ssp. ciliatum</i>	SCC
Plant	Vascular Plant	linear-leaved willow-herb	<i>Epilobium leptophyllum</i>	other
Plant	Vascular Plant	Harbringer-of-spring	<i>Erigenia bulbosa</i>	SCC
Plant	Vascular Plant	Tawny cotton-grass	<i>Eriophorum virginicum</i>	other
Plant	Vascular Plant	Eastern Wahoo	<i>Euonymus atropurpureus var. atropurpureus</i>	other
Plant	Vascular Plant	Godfrey's thoroughwort	<i>Eupatorium godfreyanum</i>	other
Plant	Vascular Plant	Pink Throughwort	<i>Eupatorium incarnatum</i>	SCC
Plant	Vascular Plant	Britton's Eupatorium	<i>Eupatorium sessilifolium var. brittonianum</i>	other
Plant	Vascular Plant	glade spurge	<i>Euphorbia purpurea</i>	SCC
Plant	Vascular Plant	Alexander's Rock Aster	<i>Eurybia avita</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Vascular Plant	Piedmont Aster	<i>Eurybia mirabilis</i>	other
Plant	Vascular Plant	Creeping Aster	<i>Eurybia surculosa</i>	other
Plant	Vascular Plant	Nuttall's Flat-top Goldenrod	<i>Euthamia graminifolia var. nuttallii</i>	other
Plant	Vascular Plant	Spotted Joe-pye Weed	<i>Eutrochium maculatum var. maculatum</i>	other
Plant	Vascular Plant	Crested Climbing Buckwheat	<i>Fallopia cristata</i>	other
Plant	Vascular Plant	Queen-of-the-Prairie	<i>Filipendula rubra</i>	SCC
Plant	Vascular Plant	Pink Throughwort	<i>Fleischmannia incarnata</i>	other
Plant	Vascular Plant	Large Witch-alder	<i>Fothergilla major</i>	SCC
Plant	Vascular Plant	Woodland Strawberry	<i>Fragaria vesca var. americana</i>	other
Plant	Vascular Plant	Carolina Buckthorn	<i>Frangula caroliniana</i>	other
Plant	Vascular Plant	American Colombo	<i>Frasera caroliniensis</i>	SCC
Plant	Vascular Plant	Galax	<i>Galax urceolata</i>	Focal
Plant	Vascular Plant	Rough Bedstraw	<i>Galium asprellum</i>	other
Plant	Vascular Plant	Lanceleaf Wild Licorice	<i>Galium lanceolatum</i>	other
Plant	Vascular Plant	Creeping Snowberry	<i>Gaultheria hispida</i>	other
Plant	Vascular Plant	Appalachian Gentian	<i>Gentiana austromontana</i>	other
Plant	Vascular Plant	Closed Gentian	<i>Gentiana clausa</i>	other
Plant	Vascular Plant	Balsam Gentian	<i>Gentiana saponaria var. latidens</i>	SCC
Plant	Vascular Plant	Fringed Gentian	<i>Gentianopsis crinita</i>	SCC
Plant	Vascular Plant	Bent Avens	<i>Geum geniculatum</i>	SCC
Plant	Vascular Plant	spreading avens	<i>Geum radiatum</i>	T&E

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Vascular Plant	Lax Mannagrass	<i>Glyceria laxa</i>	SCC
Plant	Vascular Plant	Smoky Mountain Mannagrass	<i>Glyceria nubigena</i>	SCC
Plant	Vascular Plant	dwarf rattlesnake plantain	<i>Goodyera repens</i>	other
Plant	Vascular Plant	Virginia Stickseed	<i>Hackelia virginiana</i>	other
Plant	Vascular Plant	Littleleaf Sneezeweed	<i>Helenium brevifolium</i>	SCC
Plant	Vascular Plant	Pond Fern Moss	<i>Helodium paludosum</i>	other
Plant	Vascular Plant	swamp-pink	<i>Helonias bullata</i>	T&E
Plant	Vascular Plant	Long-Flower Alumroot	<i>Heuchera longiflora</i>	SCC
Plant	Vascular Plant	Grotto Alumroot	<i>Heuchera parviflora var. parviflora</i>	other
Plant	Vascular Plant	Sauratown Grotto Alumroot	<i>Heuchera parviflora var. saurensis</i>	SCC
Plant	Vascular Plant	Downy Alumroot	<i>Heuchera pubescens</i>	SCC
Plant	Vascular Plant	Crested Coralroot	<i>Hexalectris spicata</i>	SCC
Plant	Vascular Plant	Mountain Heartleaf	<i>Hexastylis contracta</i>	SCC
Plant	Vascular Plant	French Broad Heartleaf	<i>Hexastylis rhombiformis</i>	SCC
Plant	Vascular Plant	Granite Dome Bluet	<i>Houstonia longifolia var. glabra</i>	other
Plant	Vascular Plant	Summer Bluet	<i>Houstonia lanceolata</i>	other
Plant	Vascular Plant	Roan Mountain Bluet	<i>Houstonia montana</i>	T&E
Plant	Vascular Plant	Summer Bluet	<i>Houstonia purpurea var. calycosa</i>	other
Plant	Vascular Plant	Mountain Golden-heather	<i>Hudsonia montana</i>	T&E
Plant	Vascular Plant	Puerto Rico clubmoss	<i>Huperzia acerosa</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Vascular Plant	Appalachian fir clubmoss	<i>Huperzia appalachiana</i>	other
Plant	Vascular Plant	Rock Fir Clubmoss	<i>Huperzia porophila</i>	SCC
Plant	Vascular Plant	Ashy Hydrangea	<i>Hydrangea cinerea</i>	other
Plant	Vascular Plant	Golden Seal	<i>Hydrastis canadensis</i>	SCC
Plant	Vascular Plant	Largeleaf Waterleaf	<i>Hydrophyllum macrophyllum</i>	other
Plant	Vascular Plant	Gorge Filmy Fern	<i>Hymenophyllum tayloriae</i>	SCC
Plant	Vascular Plant	Blue Ridge St. John's-wort	<i>Hypericum buckleyi</i>	other
Plant	Vascular Plant	pale St. John's-wort	<i>Hypericum ellipticum</i>	other
Plant	Vascular Plant	Mountain St. John's-wort	<i>Hypericum graveolens</i>	other
Plant	Vascular Plant	Blue Ridge St. John's-wort	<i>Hypericum mitchellianum</i>	other
Plant	Vascular Plant	Standing Cedar	<i>Ipomopsis rubra</i>	other
Plant	Vascular Plant	small whorled pogonia	<i>Isotria medeoloides</i>	T&E
Plant	Vascular Plant	Whorled Pogonia	<i>Isotria verticillata</i>	other
Plant	Vascular Plant	Butternut	<i>Juglans cinerea</i>	other
Plant	Vascular Plant	narrow-panicked rush	<i>Juncus brevicaudatus</i>	other
Plant	Vascular Plant	Nodding Rush	<i>Juncus secundus</i>	other
Plant	Vascular Plant	Torrey's Rush	<i>Juncus torreyi</i>	other
Plant	Vascular Plant	Highland Rush	<i>Juncus trifidus</i>	SCC
Plant	Vascular Plant	Two-flower Dwarf-dandelion	<i>Krigia biflora var. biflora</i>	other
Plant	Vascular Plant	Smooth Peavine	<i>Lathyrus venosus</i>	other
Plant	Vascular Plant	Rough Blazing-star	<i>Liatris aspera</i>	SCC

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Vascular Plant	Heller's Blazing-star	<i>Liatris helleri</i>	T&E
Plant	Vascular Plant	New England Blazing-star	<i>Liatris scariosa var. scariosa</i>	other
Plant	Vascular Plant	Earle's Blazing Star	<i>Liatris squarrulosa</i>	SCC
Plant	Vascular Plant	Shale-barren Blazing Star	<i>Liatris turgida</i>	SCC
Plant	Vascular Plant	Gray's Lily	<i>Lilium grayi</i>	SCC
Plant	Vascular Plant	Wood Lily	<i>Lilium philadelphicum var. philadelphicum</i>	SCC
Plant	Vascular Plant	Flatrock Pimpernel	<i>Lindernia monticola</i>	other
Plant	Vascular Plant	Loesel's twayblade	<i>Liparis loeselii</i>	SCC
Plant	Vascular Plant	Southern Twayblade	<i>Listera australis</i>	other
Plant	Vascular Plant	Heartleaf Twayblade	<i>Listera cordata var. cordata</i>	other
Plant	Vascular Plant	American fly-honeysuckle	<i>Lonicera canadensis</i>	SCC
Plant	Vascular Plant	Yellow Honeysuckle	<i>Lonicera flava</i>	other
Plant	Vascular Plant	Heath Woodrush	<i>Luzula multiflora var. multiflora</i>	other
Plant	Vascular Plant	northern bog clubmoss	<i>Lycopodiella inundata</i>	SCC
Plant	Vascular Plant	Fraser's Loosestrife	<i>Lysimachia fraseri</i>	SCC
Plant	Vascular Plant	Southern Loosestrife	<i>Lysimachia tonsa</i>	other
Plant	Vascular Plant	Eastern Agave	<i>Manfreda virginica</i>	other
Plant	Vascular Plant	Climbing Milkvine	<i>Matelea obliqua</i>	SCC
Plant	Vascular Plant	Meehania	<i>Meehania cordata</i>	other
Plant	Vascular Plant	Three-flowered melic grass	<i>Melica nitens</i>	SCC

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Vascular Plant	Virginia Bluebells	<i>Mertensia virginica</i>	other
Plant	Vascular Plant	Carey Saxifrage	<i>Micranthes careyana</i>	other
Plant	Vascular Plant	Carolina Saxifrage	<i>Micranthes caroliniana</i>	other
Plant	Vascular Plant	West Indian Dwarf Polypody	<i>Micropolyptodium nimbatum</i>	SCC
Plant	Vascular Plant	mountain sandwort	<i>Minuartia groenlandica</i>	SCC
Plant	Vascular Plant	Purple Bee-balm	<i>Monarda media</i>	SCC
Plant	Vascular Plant	Arkansas Horsemint	<i>Monarda punctata var. arkansana</i>	other
Plant	Vascular Plant	sweet pinesap	<i>Monotropa odorata</i>	other
Plant	Vascular Plant	marsh muhly	<i>Muhlenbergia glomerata</i>	SCC
Plant	Vascular Plant	Mexican Muhly	<i>Muhlenbergia mexicana</i>	other
Plant	Vascular Plant	Rock Muhly	<i>Muhlenbergia sobolifera</i>	other
Plant	Vascular Plant	Woodland Muhly	<i>Muhlenbergia sylvatica</i>	other
Plant	Vascular Plant	Roan Rattlesnakeroot	<i>Nabalus roanensis</i>	other
Plant	Vascular Plant	Slender Water-nymph	<i>Najas gracillima</i>	other
Plant	Vascular Plant	Perennial Sundrops	<i>Oenothera perennis</i>	SCC
Plant	Vascular Plant	Sampson's Snakeroot	<i>Orbexilum pedunculatum</i>	SCC
Plant	Vascular Plant	Divided-leaf Ragwort	<i>Packera millefolium</i>	SCC
Plant	Vascular Plant	Prairie Ragwort	<i>Packera paupercula var. appalachiana</i>	SCC
Plant	Vascular Plant	Balsam Ragwort	<i>Packera paupercula var. paupercula</i>	other
Plant	Vascular Plant	Schweinitz's Ragwort	<i>Packera schweinitziana</i>	SCC
Plant	Vascular Plant	Serpentine Ragwort	<i>Packera serpenticola</i>	SCC

Group	Type	Common Name	Scientific Name	Status
Plant	Vascular Plant	Ginseng	<i>Panax quinquefolius</i>	Focal
Plant	Vascular Plant	Dwarf ginseng	<i>Panax trifolius</i>	other
Plant	Vascular Plant	Pennsylvania Pellitory	<i>Parietaria pensylvanica</i>	other
Plant	Vascular Plant	Large-leaved grass-of-parnassus	<i>Parnassia grandifolia</i>	SCC
Plant	Vascular Plant	Mountain Nailwort	<i>Paronychia montana</i>	other
Plant	Vascular Plant	Hairy-seed Crown Grass	<i>Paspalum pubiflorum var. glabrum</i>	other
Plant	Vascular Plant	Swamp Lousewort	<i>Pedicularis lanceolata</i>	SCC
Plant	Vascular Plant	Purple-stem Cliff-brake	<i>Pellaea atropurpurea</i>	other
Plant	Vascular Plant	Northern Beech Fern	<i>Phegopteris connectilis</i>	SCC
Plant	Vascular Plant	Fameflower	<i>Phemeranthus teretifolius</i>	other
Plant	Vascular Plant	Hairy Mock-orange	<i>Philadelphus hirsutus</i>	other
Plant	Vascular Plant	Odorless Mock-orange	<i>Philadelphus inodorus</i>	other
Plant	Vascular Plant	Broadleaf phlox	<i>Phlox amplifolia</i>	other
Plant	Vascular Plant	Wild Blue Phlox	<i>Phlox divaricata</i>	other
Plant	Vascular Plant	Moss Pink	<i>Phlox subulata</i>	SCC
Plant	Vascular Plant	Fetterbush	<i>Pieris floribunda</i>	other
Plant	Vascular Plant	Large White Fringed Orchid	<i>Platanthera blephariglottis</i>	other
Plant	Vascular Plant	Tuberclled rein-orchid	<i>Platanthera flava var. herbicolor</i>	SCC
Plant	Vascular Plant	large purple fringed orchid	<i>Platanthera grandiflora</i>	SCC
Plant	Vascular Plant	White Fringeless orchid	<i>Platanthera integrilabia</i>	T&E
Plant	Vascular Plant	purple fringeless orchid	<i>Platanthera peramoena</i>	SCC

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Vascular Plant	fowl bluegrass	<i>Poa palustris</i>	SCC
Plant	Vascular Plant	drooping bluegrass	<i>Poa saltuensis</i>	SCC
Plant	Vascular Plant	Seneca Snakeroot	<i>Polygala senega var. senega</i>	SCC
Plant	Vascular Plant	Erect Knotweed	<i>Polygonum erectum</i>	other
Plant	Vascular Plant	Glade Knotweed	<i>Polygonum tenue</i>	other
Plant	Vascular Plant	Canada Leaf-cup	<i>Polymnia canadensis</i>	other
Plant	Vascular Plant	Bigtooth Aspen	<i>Populus grandidentata</i>	other
Plant	Vascular Plant	Leafy Pondweed	<i>Potamogeton foliosus</i>	other
Plant	Vascular Plant	Eastern Shooting Star	<i>Primula meadia</i>	other
Plant	Vascular Plant	Canada plum	<i>Prunus nigra</i>	other
Plant	Vascular Plant	Choke Cherry	<i>Prunus virginiana var. virginiana</i>	other
Plant	Vascular Plant	Wafer-ash	<i>Ptelea trifoliata</i>	other
Plant	Vascular Plant	Basil Mountain-mint	<i>Pycnanthemum clinopodioides</i>	other
Plant	Vascular Plant	Stone Mountain-mint	<i>Pycnanthemum curvipes</i>	SCC
Plant	Vascular Plant	Torrey's mountain-mint	<i>Pycnanthemum torreyi</i>	other
Plant	Vascular Plant	American Shinleaf	<i>Pyrola americana</i>	other
Plant	Vascular Plant	Chinquapin Oak	<i>Quercus muehlenbergii</i>	other
Plant	Vascular Plant	Pin Oak	<i>Quercus palustris</i>	other
Plant	Vascular Plant	Allegheny Mountain Buttercup	<i>Ranunculus allegheniensis</i>	other
Plant	Vascular Plant	Early Buttercup	<i>Ranunculus fascicularis</i>	SCC
Plant	Vascular Plant	Roseroot	<i>Rhodiola rosea</i>	other
Plant	Vascular Plant	Cumberland Azalea	<i>Rhododendron cumberlandense</i>	SCC

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Vascular Plant	Pink-shell Azalea	<i>Rhododendron vaseyi</i>	SCC
Plant	Vascular Plant	White Beakrush	<i>Rhynchospora alba</i>	SCC
Plant	Vascular Plant	Fruitful Locust	<i>Robinia hispida var. fertilis</i>	SCC
Plant	Vascular Plant	Kelsey's locust	<i>Robinia hispida var. kelseyi</i>	SCC
Plant	Vascular Plant	Boynton's Locust	<i>Robinia hispida var. rosea</i>	other
Plant	Vascular Plant	Hartwig's Locust	<i>Robinia viscosa var. hartwigii</i>	SCC
Plant	Vascular Plant	Clammy Locust	<i>Robinia viscosa var. viscosa</i>	SCC
Plant	Vascular Plant	American red raspberry	<i>Rubus idaeus ssp. strigosus</i>	SCC
Plant	Vascular Plant	Bristly Blackberry	<i>Rubus setosus</i>	other
Plant	Vascular Plant	A Coneflower	<i>Rudbeckia laciniata var. humilis</i>	other
Plant	Vascular Plant	Chauncey's Coneflower	<i>Rudbeckia triloba var. beadlei</i>	SCC
Plant	Vascular Plant	A Coneflower	<i>Rudbeckia triloba var. rupestris</i>	other
Plant	Vascular Plant	Pursh's wild petunia	<i>Ruellia purshiana</i>	SCC
Plant	Vascular Plant	Pale Dock	<i>Rumex altissimus</i>	other
Plant	Vascular Plant	Prairie Pink	<i>Sabatia campestris</i>	other
Plant	Vascular Plant	Rose Gentian	<i>Sabatia capitata</i>	other
Plant	Vascular Plant	Northern Pearlwort	<i>Sagina procumbens</i>	other
Plant	Vascular Plant	Bunched Arrowhead	<i>Sagittaria fasciculata</i>	T&E
Plant	Vascular Plant	Mountain Sweet Pitcher Plant	<i>Sarracenia jonesii</i>	T&E
Plant	Vascular Plant	Green Pitcher Plant	<i>Sarracenia oreophila</i>	T&E
Plant	Vascular Plant	Southern Appalachian Purple Pitcher Plant	<i>Sarracenia purpurea var. montana</i>	SCC

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Vascular Plant	Leathery Grape Fern	<i>Sceptridium multifidum</i>	other
Plant	Vascular Plant	Blunt-lobed Grape Fern	<i>Sceptridium oneidense</i>	other
Plant	Vascular Plant	Heartleaf Skullcap	<i>Scutellaria ovata ssp. ovata var. ovata</i>	other
Plant	Vascular Plant	A Heartleaf Skullcap	<i>Scutellaria ovata ssp. rugosa</i>	other
Plant	Vascular Plant	Appalachian Skullcap	<i>Scutellaria ovata ssp. rugosa var. 1</i>	other
Plant	Vascular Plant	Rock skullcap	<i>Scutellaria saxatilis</i>	SCC
Plant	Vascular Plant	Showy Skullcap	<i>Scutellaria serrata</i>	other
Plant	Vascular Plant	Cliff Stonecrop	<i>Sedum glaucophyllum</i>	SCC
Plant	Vascular Plant	Wild Senna	<i>Senna hebecarpa</i>	other
Plant	Vascular Plant	Northern Oconee Bells	<i>Shortia galacifolia var. brevistyla</i>	SCC
Plant	Vascular Plant	Southern Oconee Bells	<i>Shortia galacifolia var. galacifolia</i>	SCC
Plant	Vascular Plant	Sticky Catchfly	<i>Silene caroliniana var. pensylvanica</i>	other
Plant	Vascular Plant	Ovate Catchfly	<i>Silene ovata</i>	SCC
Plant	Vascular Plant	Huger's carrion-flower	<i>Smilax hugeri</i>	other
Plant	Vascular Plant	Rough-leaved Goldenrod	<i>Solidago aestivalis</i>	other
Plant	Vascular Plant	Forest Goldenrod	<i>Solidago arguta var. arguta</i>	other
Plant	Vascular Plant	Lance-leaf Goldenrod	<i>Solidago lancifolia</i>	SCC
Plant	Vascular Plant	Downy Goldenrod	<i>Solidago puberula var. puberula</i>	other
Plant	Vascular Plant	Rough-leaved Goldenrod	<i>Solidago rugosa var. sphagnophila</i>	other

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Plant	Vascular Plant	Granite Dome Goldenrod	<i>Solidago simulans</i>	SCC
Plant	Vascular Plant	Blue Ridge Goldenrod	<i>Solidago spithamea</i>	T&E
Plant	Vascular Plant	Squarrose goldenrod	<i>Solidago squarrosa</i>	other
Plant	Vascular Plant	bog goldenrod	<i>Solidago uliginosa</i> var. <i>uliginosa</i>	SCC
Plant	Vascular Plant	Elm-leaf Goldenrod	<i>Solidago ulmifolia</i>	SCC
Plant	Vascular Plant	Greenfruit Bur-reed	<i>Sparganium emersum</i>	SCC
Plant	Vascular Plant	freshwater cordgrass	<i>Spartina pectinata</i>	SCC
Plant	Vascular Plant	Prairie Wedgescale	<i>Sphenopholis intermedia</i>	other
Plant	Vascular Plant	Pink root	<i>Spigelia marilandica</i>	SCC
Plant	Vascular Plant	Narrow-leaf MeadowSweet	<i>Spiraea alba</i>	other
Plant	Vascular Plant	Broadleaf MeadowSweet	<i>Spiraea latifolia</i>	other
Plant	Vascular Plant	Virginia Spiraea	<i>Spiraea virginiana</i>	T&E
Plant	Vascular Plant	yellow nodding ladies'-tresses	<i>Spiranthes ochroleuca</i>	SCC
Plant	Vascular Plant	Prairie Dropseed	<i>Sporobolus heterolepis</i>	SCC
Plant	Vascular Plant	Clingman's Hedge-nettle	<i>Stachys clingmanii</i>	SCC
Plant	Vascular Plant	Heartleaf Hedge-nettle	<i>Stachys cordata</i>	SCC
Plant	Vascular Plant	Smooth Hedge-nettle	<i>Stachys tenulifolia</i>	other
Plant	Vascular Plant	Longstalk Starwort	<i>Stellaria alsine</i>	other
Plant	Vascular Plant	Core's Starwort	<i>Stellaria corei</i>	other
Plant	Vascular Plant	Pinebarren Death-camas	<i>Stenanthium leimanthoides</i>	SCC
Plant	Vascular Plant	Mountain Camellia	<i>Stewartia ovata</i>	other

Group	Type	Common Name	Scientific Name	Status
Plant	Vascular Plant	White Mandarin	<i>Streptopus amplexifolius</i>	SCC
Plant	Vascular Plant	Purple-stem Aster	<i>Symphyotrichum firmum</i>	other
Plant	Vascular Plant	Smooth Blue Aster	<i>Symphyotrichum laeve</i> var. <i>laeve</i>	SCC
Plant	Vascular Plant	New England Aster	<i>Symphyotrichum novae-angliae</i>	other
Plant	Vascular Plant	Aromatic Aster	<i>Symphyotrichum oblongifolium</i>	SCC
Plant	Vascular Plant	Barrens Silky Aster	<i>Symphyotrichum pratense</i>	SCC
Plant	Vascular Plant	Rhiannon's Aster	<i>Symphyotrichum rhiannon</i>	SCC
Plant	Vascular Plant	Short's Aster	<i>Symphyotrichum shortii</i>	SCC
Plant	Vascular Plant	Pineland Squarehead	<i>Tetragonotheca helianthoides</i>	other
Plant	Vascular Plant	Small-leaved Meadowrue	<i>Thalictrum macrostylum</i>	SCC
Plant	Vascular Plant	Mountain Thaspium	<i>Thaspium pinnatifidum</i>	SCC
Plant	Vascular Plant	Ash-leaved Golden-banner	<i>Thermopsis fraxinifolia</i>	SCC
Plant	Vascular Plant	Appalachian Golden-banner	<i>Thermopsis mollis</i>	SCC
Plant	Vascular Plant	Aaron's-rod	<i>Thermopsis villosa</i>	SCC
Plant	Vascular Plant	bristly sarsaparilla, American Arborvitae	<i>Thuja occidentalis</i>	other
Plant	Vascular Plant	American Basswood	<i>Tilia americana</i> var. <i>americana</i>	other
Plant	Vascular Plant	Fragile Tortula	<i>Tortula fragilis</i>	other
Plant	Vascular Plant	Hairy Spiderwort	<i>Tradescantia hirsuticaulis</i>	other
Plant	Vascular Plant	Sticky Bog Asphodel	<i>Triantha glutinosa</i>	SCC

Group	Type	Common Name	Scientific Name	Status
Plant	Vascular Plant	Appalachian Filmy-fern	<i>Trichomanes boschianum</i>	SCC
Plant	Vascular Plant	Dwarf Filmy-fern	<i>Trichomanes petersii</i>	SCC
Plant	Vascular Plant	Deerhair Bulrush	<i>Trichophorum cespitosum</i>	other
Plant	Vascular Plant	Glade Bluecurls	<i>Trichostema brachiatum</i>	SCC
Plant	Vascular Plant	narrow-leaved blue curls	<i>Trichostema setaceum</i>	other
Plant	Vascular Plant	Starflower	<i>Trientalis borealis</i>	SCC
Plant	Vascular Plant	Mottled Trillium	<i>Trillium discolor</i>	SCC
Plant	Vascular Plant	Bent White Trillium	<i>Trillium flexipes</i>	other
Plant	Vascular Plant	Alabama Least Trillium	<i>Trillium pusillum var. ozarkanum</i>	SCC
Plant	Vascular Plant	Southern Nodding Trillium	<i>Trillium rugelii</i>	other
Plant	Vascular Plant	Sweet White Trillium	<i>Trillium simile</i>	SCC
Plant	Vascular Plant	Early Horse Gentian	<i>Triosteum aurantiacum var. aurantiacum</i>	other
Plant	Vascular Plant	Three Birds Orchid	<i>Triphora trianthophoros var. trianthophoros</i>	other
Plant	Vascular Plant	Soft Triisetum	<i>Triisetum spicatum</i>	other
Plant	Vascular Plant	Eastern Hemlock	<i>Tsuga canadensis</i>	other
Plant	Vascular Plant	Carolina Hemlock	<i>Tsuga caroliniana</i>	SCC
Plant	Vascular Plant	Tower Mustard	<i>Turritis glabra</i>	other
Plant	Vascular Plant	September Elm	<i>Ulmus serotina</i>	other
Plant	Vascular Plant	Northern Lowbush Blueberry	<i>Vaccinium angustifolium</i>	SCC
Plant	Vascular Plant	Hairy blueberry	<i>Vaccinium hirsutum</i>	other
Plant	Vascular Plant	large cranberry	<i>Vaccinium macrocarpon</i>	SCC

Group	Type	Common Name	Scientific Name	Status
Plant	Vascular Plant	Woodland Cornsalad	<i>Valerianella umbilicata</i>	other
Plant	Vascular Plant	Blue Vervain	<i>Verbena hastata</i>	other
Plant	Vascular Plant	A Crownbeard	<i>Verbesina helianthoides</i>	other
Plant	Vascular Plant	Frostweed	<i>Verbesina virginica var. virginica</i>	other
Plant	Vascular Plant	Walter's Crownbeard	<i>Verbesina walteri</i>	other
Plant	Vascular Plant	American Speedwell	<i>Veronica americana</i>	SCC
Plant	Vascular Plant	Blue Water Speedwell	<i>Veronica anagallis-aquatica</i>	other
Plant	Vascular Plant	Culver's-root	<i>Veronicastrum virginicum</i>	other
Plant	Vascular Plant	Appalachian blue violet	<i>Viola appalachiensis</i>	SCC
Plant	Vascular Plant	Alpine Violet	<i>Viola labradorica</i>	other
Plant	Vascular Plant	Three-parted Violet	<i>Viola tripartita</i>	other
Plant	Vascular Plant	Prostrate Blue Violet	<i>Viola walteri</i>	other
Plant	Vascular Plant	Appalachian Cliff Fern	<i>Woodsia appalachiana</i>	SCC
Plant	Vascular Plant	Weakleaf Yucca	<i>Yucca flaccida</i>	other

## Species excluded from full analysis

Not all species considered for inclusion in the ESE were carried forward into the analysis. Species shown here were excluded from further analysis for one of the following reason: (1) species was eliminated by one or more members of expert panel prior to DEIS (refer to project record for description of this panel); (2) species was eliminated by state, federal, or other species expert during DEIS comment period; (3) species is not known to occur on the Forests; (4) species is considered common and persistence is not at risk on the Forests; (5) knowledge of species range and ecology is insufficient to assess associated habitats and conditions; (6) incorrectly identified on unit and/or in NC; (7) species taxonomy revised or questionable; or (8) uncertain recent documentation on Forests.

**Table C-2. Species included in the ESE Tool that were not carried into the ecological sustainability evaluation, and rationale for exclusion.**

Group	Type	Common Name	Scientific Name	Rationale for Exclusion From Further Analysis
Animal	Amphibian	Eastern Tiger Salamander	<i>Ambystoma tigrinum</i>	2
Animal	Amphibian	Waterrock Knob Salamander	<i>Desmognathus imitator</i> pop. 1	2
Animal	Amphibian	Northern Two-lined Salamander	<i>Eurycea bislineata</i>	2
Animal	Amphibian	Blue Ridge Gray-cheeked Salamander	<i>Plethodon amplus</i>	2
Animal	Amphibian	South Mountain Gray-cheeked Salamander	<i>Plethodon meridianus</i>	2
Animal	Amphibian	Wehrle's Salamander	<i>Plethodon wehrlei</i>	2
Animal	Amphibian	Crevice Salamander	<i>Plethodon yonahlossee</i> pop. 1	2
Animal	Bird	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	1
Animal	Bird	Le Conte's Sparrow	<i>Ammospiza (Ammodramus) leconteii</i>	1
Animal	Bird	Short-eared Owl	<i>Asio flammeus</i>	1
Animal	Bird	Long-eared Owl	<i>Asio otus</i>	1
Animal	Bird	Upland Sandpiper	<i>Bartramia longicauda</i>	1
Animal	Bird	Swainson's Thrush	<i>Catharus ustulatus</i>	1
Animal	Bird	Henslow's Sparrow	<i>Centronyx (Ammodramus) henslowii</i>	1
Animal	Bird	Common Nighthawk	<i>Chordeiles minor</i>	1
Animal	Bird	Sedge Wren	<i>Cistothorus platensis</i>	1

Group	Type	Common Name	Scientific Name	Rationale for Exclusion From Further Analysis
Animal	Bird	Evening Grosbeak	<i>Coccothraustes vespertinus</i>	1
Animal	Bird	Olive-sided Flycatcher	<i>Contopus cooperi</i>	1
Animal	Bird	Bobolink	<i>Dolichonyx oryzivorus</i>	1
Animal	Bird	Rusty Blackbird	<i>Euphagus carolinus</i>	1
Animal	Bird	Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	1
Animal	Bird	Merlin	<i>Falco columbarius</i>	1
Animal	Bird	Loggerhead shrike	<i>Lanius ludovicianus</i>	1
Animal	Bird	Nashville Warbler	<i>Leiothlypis (Oreothlypis) ruficapilla</i>	1
Animal	Bird	Lincoln's Sparrow	<i>Melospiza lincolnii</i>	1
Animal	Bird	Savannah Sparrow	<i>Passerculus sandwichensis</i>	1
Animal	Bird	Bachman's Sparrow	<i>Peucaea aestivalis</i>	1
Animal	Bird	Summer Tanager	<i>Piranga rubra</i>	1
Animal	Bird	Purple Martin	<i>Progne subis</i>	1
Animal	Bird	Prothonotary Warbler	<i>Protonotaria citrea</i>	1
Animal	Bird	Bank Swallow	<i>Riparia riparia</i>	1
Animal	Bird	Northern Parula	<i>Setophaga americana</i>	1
Animal	Bird	Bay-breasted Warbler	<i>Setophaga castanea</i>	1
Animal	Bird	Blackpoll Warbler	<i>Setophaga striata</i>	1
Animal	Bird	American Tree Sparrow	<i>Spizella arborea</i>	1
Animal	Bird	Bewick's Wren	<i>Thryomanes bewickii</i>	1

Group	Type	Common Name	Scientific Name	Rationale for Exclusion From Further Analysis
Animal	Bird	Barn Owl	<i>Tyto alba</i>	1
Animal	Bird	White-throated Sparrow	<i>Zonotrichia albicollis</i>	1
Animal	Mammal	Eastern Cougar	<i>Puma concolor cougar</i>	1
Animal	Mollusk-Terrestrial	Snowhill Ambersnail	<i>Catinella hubrichti</i>	1
Animal	Mollusk-Terrestrial	Furrowed Glyph	<i>Glyphyalinia luticola</i>	1
Animal	Reptile	Eastern Slender Glass Lizard	<i>Ophisaurus attenuatus longicaudus</i>	1
Plant	Nonvascular Plant	Fontana Lichen	<i>Acanthothecis fontana</i>	5
Plant	Nonvascular Plant	Mougeot's Yoke Moss	<i>Amphidium mougeotii</i>	3
Plant	Nonvascular Plant	Knothole Moss	<i>Anacamptodon splachnoides</i>	3
Plant	Nonvascular Plant	A Foliose Lichen	<i>Anaptychia crinalis</i>	6
Plant	Nonvascular Plant	Black Falcate Split Moss	<i>Andreaea rothii var. rothii</i>	8
Plant	Nonvascular Plant	Rock Split Moss	<i>Andreaea rupestris</i>	8
Plant	Nonvascular Plant	Common Silver Moss	<i>Anomobryum julaceum</i>	5
Plant	Nonvascular Plant	Tokyo Soil Moss	<i>Archidium ohioense</i>	5
Plant	Nonvascular Plant	Golden Spruce Dots	<i>Arthonia cupressina</i>	3
Plant	Nonvascular Plant	A Catherinea Moss	<i>Atrichum altecristatum</i>	5
Plant	Nonvascular Plant	A Catherinea Moss	<i>Atrichum tenellum</i>	5
Plant	Nonvascular Plant	A Liverwort	<i>Barbilophozia attenuata</i>	5
Plant	Nonvascular Plant	Small Twist Teeth Moss	<i>Barbula indica var. indica</i>	5
Plant	Nonvascular Plant	Sharp-pointed Weissia	<i>Blindia acuta</i>	8

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Rationale for Exclusion From Further Analysis</b>
Plant	Nonvascular Plant	A Moss	<i>Brachelyma subulatum</i>	5
Plant	Nonvascular Plant	Northern Shorthusk	<i>Brachyelytrum aristosum</i>	4
Plant	Nonvascular Plant	Sprawling Grass Moss	<i>Brachythecium oedipodium</i>	5
Plant	Nonvascular Plant	Rusty Feather Moss	<i>Brachythecium plumosum</i>	5
Plant	Nonvascular Plant	Reflexed Feather Moss	<i>Brachythecium reflexum</i>	5
Plant	Nonvascular Plant	Rough-stalked Feather Moss	<i>Brachythecium rutabulum</i>	8
Plant	Nonvascular Plant	Smooth-stalked	<i>Brachythecium salebrosum</i>	5
Plant	Nonvascular Plant	Velvet Moss	<i>Brachythecium velutinum</i>	5
Plant	Nonvascular Plant	Boar Moss	<i>Brothera leana</i>	5
Plant	Nonvascular Plant	Arrowhead Moss	<i>Bryhnia novae-angliae</i>	8
Plant	Nonvascular Plant	A Red Foot Moss	<i>Bryoerythrophyllum recurvirostrum</i>	5
Plant	Nonvascular Plant	Evelyn's Buttons	<i>Buellia sharpiana</i>	3
Plant	Nonvascular Plant	Bug-on-a-stick moss	<i>Buxbaumia minakatae</i>	5
Plant	Nonvascular Plant	Paradoxical Campylopsus	<i>Campylopsus paradoxus</i>	5
Plant	Nonvascular Plant	Sandstone Grimmia	<i>Camylostelium saxicola</i>	8
Plant	Nonvascular Plant	Worthy Shield Lichen	<i>Canoparmelia amabilis</i>	7
Plant	Nonvascular Plant	A Liverwort	<i>Cephalozia macrostachya ssp. <i>australis</i></i>	7
Plant	Nonvascular Plant	Liverwort	<i>Cephaloziella massalongi</i>	5
Plant	Nonvascular Plant	Roundleaf Liverwort	<i>Cephaloziella obtusilobula</i>	8

Group	Type	Common Name	Scientific Name	Rationale for Exclusion From Further Analysis
Plant	Nonvascular Plant	Cynodontium Moss	<i>Cynodontium schisti</i>	5
Plant	Nonvascular Plant	Thin-rib Curved-tail Moss	<i>Dicranum bonjeanii</i>	5
Plant	Nonvascular Plant	Fuscous Moss	<i>Dicranum fuscescens</i>	5
Plant	Nonvascular Plant	Rusty Fork Moss	<i>Dicranum spurium</i>	5
Plant	Nonvascular Plant	A Liverwort	<i>Diplophyllum andrewsii</i>	5
Plant	Nonvascular Plant	A Liverwort	<i>Diplophyllum apiculatum var. taxifolioides</i>	7
Plant	Nonvascular Plant	A Liverwort	<i>Diplophyllum taxifolium var. mucronatum</i>	8
Plant	Nonvascular Plant	A Liverwort	<i>Diplophyllum taxifolium var. taxifolium</i>	8
Plant	Nonvascular Plant	A Liverwort	<i>Dumortiera hirsuta ssp. nepalensis</i>	4
Plant	Nonvascular Plant	Pond Fern Moss	<i>Elodium paludosum</i>	5
Plant	Nonvascular Plant	Fructicose lichen	<i>Ephebe solida</i>	4
Plant	Nonvascular Plant	A False Crushed-rice Moss	<i>Fabronia ciliaris var. polycarpa</i>	5
Plant	Nonvascular Plant	Erin's Fellhanera	<i>Fellhanera eriniae</i>	3
Plant	Nonvascular Plant	Smoky Mountain Crustose Lichen	<i>Fellhanera montesfumosi</i>	3
Plant	Nonvascular Plant	Maiden Hair Moss	<i>Fissidens adianthoides</i>	5
Plant	Nonvascular Plant	A Plume Moss	<i>Fissidens elegans</i>	5
Plant	Nonvascular Plant	Water Pocket Moss	<i>Fissidens fontanus</i>	8

Group	Type	Common Name	Scientific Name	Rationale for Exclusion From Further Analysis
Plant	Nonvascular Plant	A Water Moss	<i>Fontinalis flaccida</i>	5
Plant	Nonvascular Plant	A Water Moss	<i>Fontinalis sullivantii</i>	5
Plant	Nonvascular Plant	A Liverwort	<i>Frullania oakesiana</i>	5
Plant	Nonvascular Plant	A Liverwort	<i>Frullania plana</i>	8
Plant	Nonvascular Plant	A Beard Moss	<i>Grimmia olneyi</i>	8
Plant	Nonvascular Plant	A Leaf Lichen	<i>Gyalectidium appendiculatum</i>	5
Plant	Nonvascular Plant	Coiled Moss	<i>Herpetineuron toccae</i>	5
Plant	Nonvascular Plant	A Centipede Lichen	<i>Heterodermia pseudospeciosa</i>	5
Plant	Nonvascular Plant	Brookside Feather Moss	<i>Hygroamblystegium fluviatile</i>	5
Plant	Nonvascular Plant	A Cedar Moss	<i>Hypnum fauriei</i>	8
Plant	Nonvascular Plant	A Cedar Moss	<i>Hypnum plicatulum</i>	5
Plant	Nonvascular Plant	Squirrel Tail Moss	<i>Leucodon andrewsianus</i>	8
Plant	Nonvascular Plant	A Liverwort	<i>Lophozia capitata</i>	5
Plant	Nonvascular Plant	A Liverwort	<i>Mannia triandra</i>	5
Plant	Nonvascular Plant	A Liverwort	<i>Marsupella emarginata var. latiloba</i>	8
Plant	Nonvascular Plant	A Liverwort	<i>Marsupella funckii</i>	5
Plant	Nonvascular Plant	A Liverwort	<i>Metzgeria pubescens</i>	5
Plant	Nonvascular Plant	Liverwort	<i>Metzgeria temperata</i>	5
Plant	Nonvascular Plant	A Moss	<i>Micromitrium megalosporum</i>	5

Group	Type	Common Name	Scientific Name	Rationale for Exclusion From Further Analysis
Plant	Nonvascular Plant	A Moss	<i>Nardia lescuri</i>	4
Plant	Nonvascular Plant	A Hornwort	<i>Nothoceros aenigmaticus</i>	4
Plant	Nonvascular Plant	Coral Saucer Lichen	<i>Ochrolechia yasudae</i>	5
Plant	Nonvascular Plant	Drummond Moss	<i>Orthotrichum strangulatum</i>	5
Plant	Nonvascular Plant	Liverwort	<i>Pellia appalachiana</i> (= <i>Pelia X appalachiana</i> )	4
Plant	Nonvascular Plant	Waterfan Lichen	<i>Peltigera hydrothyria</i>	4
Plant	Nonvascular Plant	An Apple Moss	<i>Philonotis longiseta</i>	5
Plant	Nonvascular Plant	An Apple Moss	<i>Philonotis marchica</i>	5
Plant	Nonvascular Plant	Liverwort	<i>Plagiochila caduciloba</i>	4
Plant	Nonvascular Plant	A Liverwort	<i>Plagiochila columbiana</i>	3
Plant	Nonvascular Plant	A Liverwort	<i>Plagiochila undata</i>	5
Plant	Nonvascular Plant	A Liverwort	<i>Plagiochila virginica</i> var. <i>euryphylla</i>	7
Plant	Nonvascular Plant	Varied Rag Lichen	<i>Platismatia glauca</i>	5
Plant	Nonvascular Plant	A Moss	<i>Platydictya subtilis</i>	5
Plant	Nonvascular Plant	Long Neck Nodding Moss	<i>Pohlia longicollis</i>	5
Plant	Nonvascular Plant	Boulder Lichen	<i>Porpidia macrocarpa</i>	5
Plant	Nonvascular Plant	Boulder Lichen	<i>Porpidia tuberculosa</i>	5
Plant	Nonvascular Plant	Twisted Thread Moss	<i>Pterigynandrum filiforme</i>	8
Plant	Nonvascular Plant	A Liverwort	<i>Ptilidium pulcherrimum</i>	5

Group	Type	Common Name	Scientific Name	Rationale for Exclusion From Further Analysis
Plant	Nonvascular Plant	Many-fruited Feather Moss	<i>Pylaisiella polyantha</i>	4
Plant	Nonvascular Plant	A Liverwort	<i>Radula sullivantii</i>	4
Plant	Nonvascular Plant	Smaller Fern Moss	<i>Rauiella scita</i>	8
Plant	Nonvascular Plant	A Liverwort	<i>Reboulia hemisphaerica</i> ssp. <i>dioica</i>	5
Plant	Nonvascular Plant	Yellow Pepper Spores	<i>Rinodina chrysomeleana</i>	5
Plant	Nonvascular Plant	Henry's Peatmoss	<i>Sphagnum henryense</i>	3
Plant	Nonvascular Plant	A Peatmoss	<i>Sphagnum subtile</i>	3
Plant	Nonvascular Plant	Hokkaido Fern Moss	<i>Thuidium recognitum</i>	5
Plant	Nonvascular Plant	Fragile Tortula	<i>Tortula fragilis</i>	3
Plant	Nonvascular Plant	A Liverwort	<i>Tritomaria exsectiformis</i> ssp. <i>exsectiformis</i>	3
Plant	Nonvascular Plant	A Moss	<i>Zygodon viridissimus</i> var. <i>rupestris</i>	8
Plant	Vascular Plant	Black Maple	<i>Acer nigrum</i>	5
Plant	Vascular Plant	Piedmont Gerardia	<i>Agalinis decemloba</i>	3
Plant	Vascular Plant	Roundleaf Serviceberry	<i>Amelanchier sanguinea</i>	4
Plant	Vascular Plant	Heartleaf Peppervine	<i>Ampelopsis cordata</i>	5
Plant	Vascular Plant	Dwarf Thimble-weed	<i>Anemone minima</i>	8
Plant	Vascular Plant	Purple-stem Angelica	<i>Angelica atropurpurea</i>	5
Plant	Vascular Plant	Lyre-leaved Rockcress	<i>Arabidopsis lyrata</i>	4

Group	Type	Common Name	Scientific Name	Rationale for Exclusion From Further Analysis
Plant	Vascular Plant	Hairy Rockcress	<i>Arabis pycnocarpa var. addressipilis</i>	8
Plant	Vascular Plant	Purple Chokeberry	<i>Aronia prunifolia</i>	4
Plant	Vascular Plant	Purple Milkweed	<i>Asclepias purpurascens</i>	3
Plant	Vascular Plant	Black-stem Spleenwort	<i>Asplenium resiliens</i>	4
Plant	Vascular Plant	Thin-pod White Wild Indigo	<i>Baptisia albescens</i>	3
Plant	Vascular Plant	Creamy Wild Indigo	<i>Baptisia bracteata</i>	3
Plant	Vascular Plant	Twining Screwstem	<i>Bartonia paniculata ssp. paniculata</i>	4
Plant	Vascular Plant	Margarita, Romerillo	<i>Bidens alba var. radiata</i>	6
Plant	Vascular Plant	Coastal Plain Tickseed	<i>Bidens mitis</i>	5
Plant	Vascular Plant	Brook Saxifrage	<i>Boykinia aconitifolia</i>	4
Plant	Vascular Plant	Cain's Reedgrass	<i>Calamagrostis cainii</i>	3
Plant	Vascular Plant	Marsh Marigold	<i>Caltha palustris var. palustris</i>	3
Plant	Vascular Plant	Eastern Sweetshrub	<i>Calycanthus floridus var. floridus</i>	7
Plant	Vascular Plant	Shale Barren Bindweed	<i>Calystegia spithamea ssp. stans</i>	3
Plant	Vascular Plant	American harebell	<i>Campanula rotundifolia</i>	3
Plant	Vascular Plant	White Bear Sedge	<i>Carex albursina</i>	5
Plant	Vascular Plant	Biltmore Sedge	<i>Carex biltmoreana</i>	4
Plant	Vascular Plant	Blue Ridge Brome Sedge	<i>Carex bromoides ssp. montana</i>	4

Group	Type	Common Name	Scientific Name	Rationale for Exclusion From Further Analysis
Plant	Vascular Plant	Brown Bog Sedge	<i>Carex buxbaumii</i>	3
Plant	Vascular Plant	Collin's Sedge	<i>Carex collinsii</i>	3
Plant	Vascular Plant	crested sedge	<i>Carex cristatella</i>	8
Plant	Vascular Plant	Star Sedge	<i>Carex echinata</i> ssp. <i>echinata</i>	4
Plant	Vascular Plant	Fescue Sedge	<i>Carex festucacea</i>	4
Plant	Vascular Plant	Fraser's Sedge	<i>Carex fraseriana</i>	4
Plant	Vascular Plant	A Wood Sedge	<i>Carex leavenworthii</i>	5
Plant	Vascular Plant	A Wood Sedge	<i>Carex leptonervia</i>	4
Plant	Vascular Plant	Appalachian Woodland Sedge	<i>Carex lucorum</i> var. <i>austrolucorum</i>	4
Plant	Vascular Plant	Manhart's Sedge	<i>Carex manhartii</i>	4
Plant	Vascular Plant	Wretched Sedge	<i>Carex misera</i>	4
Plant	Vascular Plant	Mitchell's Sedge	<i>Carex mitchelliana</i>	3
Plant	Vascular Plant	Oklahoma Sedge	<i>Carex oklahomensis</i>	5
Plant	Vascular Plant	Ruth's Sedge	<i>Carex ruthii</i>	4
Plant	Vascular Plant	Bur-reed Sedge	<i>Carex sparganioides</i>	5
Plant	Vascular Plant	Three-seeded sedge	<i>Carex trisperma</i>	3
Plant	Vascular Plant	Wood's Sedge	<i>Carex woodii</i>	4
Plant	Vascular Plant	Mountain Hackberry	<i>Celtis occidentalis</i>	5
Plant	Vascular Plant	Nodding Chickweed	<i>Cerastium nutans</i>	5
Plant	Vascular Plant	Longleaf Spikegrass	<i>Chasmanthium sessiliflorum</i> var. <i>sessiliflorum</i>	4

Group	Type	Common Name	Scientific Name	Rationale for Exclusion From Further Analysis
Plant	Vascular Plant	Hicaco, Icaco, Jicaco	<i>Chrysobalanus icaco</i>	6
Plant	Vascular Plant	Golden Saxifrage	<i>Chrysosplenium americanum</i>	4
Plant	Vascular Plant	Slender Wood-reed	<i>Cinna latifolia</i>	4
Plant	Vascular Plant	Whorled Horsebalm	<i>Collinsonia verticillata</i>	8
Plant	Vascular Plant	Sweet Fern	<i>Comptonia peregrina</i>	4
Plant	Vascular Plant	Autumn Coral-root	<i>Corallorrhiza odontorhiza</i>	4
Plant	Vascular Plant	Broadleaf Coreopsis	<i>Coreopsis latifolia</i>	4
Plant	Vascular Plant	Blue Ridge Coreopsis	<i>Coreopsis pubescens var. robusta</i>	5
Plant	Vascular Plant	Balsam Mountain Hawthorn	<i>Crataegus oreophila</i>	5
Plant	Vascular Plant	Schuette's Hawthorn	<i>Crataegus schuettei</i>	4
Plant	Vascular Plant	Littlehip Hawthorn	<i>Crataegus spathulata</i>	3
Plant	Vascular Plant	showy lady's-slipper	<i>Cypripedium reginae</i>	6
Plant	Vascular Plant	Bulblet Bladder Fern	<i>Cystopteris bulbifera</i>	3
Plant	Vascular Plant	Upland Bladder-fern	<i>Cystopteris tenuis</i>	3
Plant	Vascular Plant	Bog Oatgrass	<i>Danthonia epilis</i>	4
Plant	Vascular Plant	Prickly Ground-pine	<i>Dendrolycopodium dendroideum</i>	3
Plant	Vascular Plant	Large-bract Tick-trefoil	<i>Desmodium cuspidatum var. cuspidatum</i>	5
Plant	Vascular Plant	Elf Orpine	<i>Diamorpha smallii</i>	3
Plant	Vascular Plant	Bleeding heart	<i>Dicentra eximia</i>	4

Group	Type	Common Name	Scientific Name	Rationale for Exclusion From Further Analysis
Plant	Vascular Plant	American Witch Grass	<i>Dichanthelium columbianum</i>	4
Plant	Vascular Plant	Low White-haried Witch Grass	<i>Dichanthelium linearifolium</i>	5
Plant	Vascular Plant	Glade Fern	<i>Diplazium pycnocarpon</i>	4
Plant	Vascular Plant	Leatherwood	<i>Dirca palustris</i>	4
Plant	Vascular Plant	Spinulose Woodfern	<i>Dryopteris carthusiana</i>	5
Plant	Vascular Plant	Crested Woodfern	<i>Dryopteris cristata</i>	4
Plant	Vascular Plant	Goldie's Woodfern	<i>Dryopteris goldiana</i>	4
Plant	Vascular Plant	Wild Mock Cucumber	<i>Echinocystis lobata</i>	3
Plant	Vascular Plant	American Waterwort	<i>Elatine americana</i>	5
Plant	Vascular Plant	Englemann's Spikerush	<i>Eleocharis engelmannii</i>	3
Plant	Vascular Plant	Bald Spikerush	<i>Eleocharis erythropoda</i>	5
Plant	Vascular Plant	Small's Spikerush	<i>Eleocharis palustris</i>	5
Plant	Vascular Plant	Canada Waterweed	<i>Elodea canadensis</i>	3
Plant	Vascular Plant	Nuttall's Elodea	<i>Elodea nuttallii</i>	5
Plant	Vascular Plant	Great Plains Wild Rye	<i>Elymus canadensis var. canadensis</i>	5
Plant	Vascular Plant	Riverbank Wild Rye	<i>Elymus riparius</i>	5
Plant	Vascular Plant	linear-leaved willow-herb	<i>Epilobium leptophyllum</i>	4
Plant	Vascular Plant	Tawny cotton-grass	<i>Eriophorum virginicum</i>	4
Plant	Vascular Plant	Eastern Wahoo	<i>Euonymus atropurpureus var. atropurpureus</i>	5

Group	Type	Common Name	Scientific Name	Rationale for Exclusion From Further Analysis
Plant	Vascular Plant	Godfrey's thoroughwort	<i>Eupatorium godfreyanum</i>	4
Plant	Vascular Plant	Britton's Eupatorium	<i>Eupatorium sessilifolium var. brittonianum</i>	5
Plant	Vascular Plant	Alexander's Rock Aster	<i>Eurybia avita</i>	5
Plant	Vascular Plant	Piedmont Aster	<i>Eurybia mirabilis</i>	3
Plant	Vascular Plant	Creeping Aster	<i>Eurybia surculosa</i>	4
Plant	Vascular Plant	Nuttall's Flat-top Goldenrod	<i>Euthamia graminifolia var. nuttallii</i>	7
Plant	Vascular Plant	Spotted Joe-pye Weed	<i>Eutrochium maculatum var. maculatum</i>	5
Plant	Vascular Plant	Crested Climbing Buckwheat	<i>Fallopia cristata</i>	5
Plant	Vascular Plant	Woodland Strawberry	<i>Fragaria vesca var. americana</i>	5
Plant	Vascular Plant	Carolina Buckthorn	<i>Frangula caroliniana</i>	4
Plant	Vascular Plant	Rough Bedstraw	<i>Galium asprellum</i>	5
Plant	Vascular Plant	Lanceleaf Wild Licorice	<i>Galium lanceolatum</i>	5
Plant	Vascular Plant	Creeping Snowberry	<i>Gaultheria hispida</i>	6
Plant	Vascular Plant	Appalachian Gentian	<i>Gentiana austromontana</i>	4
Plant	Vascular Plant	Closed Gentian	<i>Gentiana clausa</i>	3
Plant	Vascular Plant	dwarf rattlesnake plantain	<i>Goodyera repens</i>	4
Plant	Vascular Plant	Grotto Alumroot	<i>Heuchera parviflora var. parviflora</i>	4

Group	Type	Common Name	Scientific Name	Rationale for Exclusion From Further Analysis
Plant	Vascular Plant	Granite Dome Bluet	<i>Houstonia longifolia</i> var. <i>glabra</i>	4
Plant	Vascular Plant	Summer Bluet	<i>Houstonia lanceolata</i>	8
Plant	Vascular Plant	Puerto Rico clubmoss	<i>Huperzia acerosa</i>	6
Plant	Vascular Plant	Appalachian fir clubmoss	<i>Huperzia appalachiana</i>	4
Plant	Vascular Plant	Ashy Hydrangea	<i>Hydrangea cinerea</i>	5
Plant	Vascular Plant	Largeleaf Waterleaf	<i>Hydrophyllum macrophyllum</i>	4
Plant	Vascular Plant	Blue Ridge St. John's-wort	<i>Hypericum buckleyi</i>	4
Plant	Vascular Plant	pale St. John's-wort	<i>Hypericum ellipticum</i>	5
Plant	Vascular Plant	Mountain St. John's-wort	<i>Hypericum graveolens</i>	4
Plant	Vascular Plant	Blue Ridge St. John's-wort	<i>Hypericum mitchellianum</i>	4
Plant	Vascular Plant	Standing Cedar	<i>Ipomopsis rubra</i>	3
Plant	Vascular Plant	Whorled Pogonia	<i>Isotria verticillata</i>	4
Plant	Vascular Plant	narrow-panicked rush	<i>Juncus brevicaudatus</i>	5
Plant	Vascular Plant	Nodding Rush	<i>Juncus secundus</i>	5
Plant	Vascular Plant	Torrey's Rush	<i>Juncus torreyi</i>	8
Plant	Vascular Plant	Two-flower Dwarf-dandelion	<i>Krigia biflora</i> var. <i>biflora</i>	5
Plant	Vascular Plant	Smooth Peavine	<i>Lathyrus venosus</i>	4
Plant	Vascular Plant	New England Blazing-star	<i>Liatis scariosa</i> var. <i>scariosa</i>	5

Group	Type	Common Name	Scientific Name	Rationale for Exclusion From Further Analysis
Plant	Vascular Plant	Flatrock Pimpernel	<i>Lindernia monticola</i>	3
Plant	Vascular Plant	Southern Twayblade	<i>Listera australis</i>	3
Plant	Vascular Plant	Heartleaf Twayblade	<i>Listera cordata var. cordata</i>	5
Plant	Vascular Plant	Yellow Honeysuckle	<i>Lonicera flava</i>	4
Plant	Vascular Plant	Heath Woodrush	<i>Luzula multiflora var. multiflora</i>	5
Plant	Vascular Plant	Southern Loosestrife	<i>Lysimachia tonsa</i>	8
Plant	Vascular Plant	Eastern Agave	<i>Manfreda virginica</i>	4
Plant	Vascular Plant	Virginia Bluebells	<i>Mertensia virginica</i>	3
Plant	Vascular Plant	Carey Saxifrage	<i>Micranthes careyana</i>	4
Plant	Vascular Plant	Arkansas Horsemint	<i>Monarda punctata var. arkansana</i>	5
Plant	Vascular Plant	Mexican Muhly	<i>Muhlenbergia mexicana</i>	5
Plant	Vascular Plant	Rock Muhly	<i>Muhlenbergia sobolifera</i>	8
Plant	Vascular Plant	Woodland Muhly	<i>Muhlenbergia sylvatica</i>	5
Plant	Vascular Plant	Roan Rattlesnakeroot	<i>Nabalus roanensis</i>	4
Plant	Vascular Plant	Slender Water-nymph	<i>Najas gracillima</i>	5
Plant	Vascular Plant	Dwarf ginseng	<i>Panax trifolius</i>	4
Plant	Vascular Plant	Pennsylvania Pellitory	<i>Parietaria pensylvanica</i>	5
Plant	Vascular Plant	Mountain Nailwort	<i>Paronychia montana</i>	5
Plant	Vascular Plant	Hairy-seed Crown Grass	<i>Paspalum pubiflorum var. glabrum</i>	5

Group	Type	Common Name	Scientific Name	Rationale for Exclusion From Further Analysis
Plant	Vascular Plant	Purple-stem Cliff-brake	<i>Pellaea atropurpurea</i>	4
Plant	Vascular Plant	Hairy Mock-orange	<i>Philadelphus hirsutus</i>	4
Plant	Vascular Plant	Odorless Mock-orange	<i>Philadelphus inodorus</i>	4
Plant	Vascular Plant	Broadleaf phlox	<i>Phlox amplifolia</i>	4
Plant	Vascular Plant	Wild Blue Phlox	<i>Phlox divaricata</i>	5
Plant	Vascular Plant	Fetterbush	<i>Pieris floribunda</i>	5
Plant	Vascular Plant	Large White Fringed Orchid	<i>Platanthera blephariglottis</i>	3
Plant	Vascular Plant	Erect Knotweed	<i>Polygonum erectum</i>	5
Plant	Vascular Plant	Glade Knotweed	<i>Polygonum tenue</i>	5
Plant	Vascular Plant	Canada Leaf-cup	<i>Polymnia canadensis</i>	5
Plant	Vascular Plant	Bigtooth Aspen	<i>Populus grandidentata</i>	5
Plant	Vascular Plant	Leafy Pondweed	<i>Potamogeton foliosus</i>	4
Plant	Vascular Plant	Canada plum	<i>Prunus nigra</i>	3
Plant	Vascular Plant	Choke Cherry	<i>Prunus virginiana var. virginiana</i>	5
Plant	Vascular Plant	Wafer-ash	<i>Ptelea trifoliata</i>	4
Plant	Vascular Plant	Basil Mountain-mint	<i>Pycnanthemum clinopodioides</i>	5
Plant	Vascular Plant	American Shinleaf	<i>Pyrola americana</i>	3
Plant	Vascular Plant	Chinquapin Oak	<i>Quercus muehlenbergii</i>	4
Plant	Vascular Plant	Pin Oak	<i>Quercus palustris</i>	3

Group	Type	Common Name	Scientific Name	Rationale for Exclusion From Further Analysis
Plant	Vascular Plant	Allegheny Mountain Buttercup	<i>Ranunculus allegheniensis</i>	5
Plant	Vascular Plant	Roseroot	<i>Rhodiola rosea</i>	3
Plant	Vascular Plant	Boynton's Locust	<i>Robinia hispida var. rosea</i>	5
Plant	Vascular Plant	Bristly Blackberry	<i>Rubus setosus</i>	5
Plant	Vascular Plant	A Coneflower	<i>Rudbeckia laciniata var. humilis</i>	5
Plant	Vascular Plant	A Coneflower	<i>Rudbeckia triloba var. rupestris</i>	5
Plant	Vascular Plant	Pale Dock	<i>Rumex altissimus</i>	3
Plant	Vascular Plant	Prairie Pink	<i>Sabatia campestris</i>	3
Plant	Vascular Plant	Rose Gentian	<i>Sabatia capitata</i>	5
Plant	Vascular Plant	Northern Pearlwort	<i>Sagina procumbens</i>	5
Plant	Vascular Plant	Green Pitcher Plant	<i>Sarracenia oreophila</i>	3
Plant	Vascular Plant	Showy Skullcap	<i>Scutellaria serrata</i>	3
Plant	Vascular Plant	Wild Senna	<i>Senna hebecarpa</i>	5
Plant	Vascular Plant	Sticky Catchfly	<i>Silene caroliniana var. pensylvanica</i>	3
Plant	Vascular Plant	Huger's carrion-flower	<i>Smilax hugeri</i>	4
Plant	Vascular Plant	Forest Goldenrod	<i>Solidago arguta var. arguta</i>	4
Plant	Vascular Plant	Downy Goldenrod	<i>Solidago puberula var. puberula</i>	5
Plant	Vascular Plant	Rough-leaved Goldenrod	<i>Solidago aestivalis</i>	5

Group	Type	Common Name	Scientific Name	Rationale for Exclusion From Further Analysis
Plant	Vascular Plant	Squarrose goldenrod	<i>Solidago squarrosa</i>	8
Plant	Vascular Plant	Prairie Wedgescale	<i>Sphenopholis intermedia</i>	5
Plant	Vascular Plant	Narrow-leaf Meadowsweet	<i>Spiraea alba</i>	4
Plant	Vascular Plant	Broadleaf Meadowsweet	<i>Spiraea latifolia</i>	4
Plant	Vascular Plant	Smooth Hedge-nettle	<i>Stachys tenulifolia</i>	8
Plant	Vascular Plant	Longstalk Starwort	<i>Stellaria alsine</i>	4
Plant	Vascular Plant	Purple-stem Aster	<i>Symphyotrichum firmum</i>	5
Plant	Vascular Plant	New England Aster	<i>Symphyotrichum novae-angliae</i>	4
Plant	Vascular Plant	Pineland Squarehead	<i>Tetragonotheca helianthoides</i>	3
Plant	Vascular Plant	bristly sarsaparilla, American Arborvitae	<i>Thuja occidentalis</i>	6
Plant	Vascular Plant	American Basswood	<i>Tilia americana var. americana</i>	5
Plant	Vascular Plant	Hairy Spiderwort	<i>Tradescantia hirsuticaulis</i>	5
Plant	Vascular Plant	Deerhair Bulrush	<i>Trichophorum cespitosum</i>	4
Plant	Vascular Plant	narrow-leaved blue curls	<i>Trichostema setaceum</i>	8
Plant	Vascular Plant	Bent White Trillium	<i>Trillium flexipes</i>	3
Plant	Vascular Plant	Southern Nodding Trillium	<i>Trillium rugelii</i>	4
Plant	Vascular Plant	Early Horse Gentian	<i>Triosteum aurantiacum var. aurantiacum</i>	5

<b>Group</b>	<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Rationale for Exclusion From Further Analysis</b>
Plant	Vascular Plant	Three Birds Orchid	<i>Triphora trianthophoros</i> var. <i>trianthophoros</i>	4
Plant	Vascular Plant	Soft Trisetum	<i>Trisetum spicatum</i>	5
Plant	Vascular Plant	Eastern Hemlock	<i>Tsuga canadensis</i>	4
Plant	Vascular Plant	September Elm	<i>Ulmus serotina</i>	8
Plant	Vascular Plant	Hairy blueberry	<i>Vaccinium hirsutum</i>	4
Plant	Vascular Plant	Woodland Cornsalad	<i>Valerianella umbilicata</i>	5
Plant	Vascular Plant	Blue Vervain	<i>Verbena hastata</i>	5
Plant	Vascular Plant	A Crownbeard	<i>Verbesina helianthoides</i>	3
Plant	Vascular Plant	Frostweed	<i>Verbesina virginica</i> var. <i>virginica</i>	3
Plant	Vascular Plant	Walter's Crownbeard	<i>Verbesina walteri</i>	3
Plant	Vascular Plant	Blue Water Speedwell	<i>Veronica anagallis-aquatica</i>	3
Plant	Vascular Plant	Culver's-root	<i>Veronicastrum virginicum</i>	3
Plant	Vascular Plant	Alpine Violet	<i>Viola labradorica</i>	5
Plant	Vascular Plant	Three-parted Violet	<i>Viola tripartita</i>	5
Plant	Vascular Plant	Prostrate Blue Violet	<i>Viola walteri</i>	8
Plant	Vascular Plant	Weakleaf Yucca	<i>Yucca flaccida</i>	8

## **Species associations to ecosystems, unique habitats and species groups**

Species in table C-3 are those that were included in the ecological sustainability evaluation (ESE tool) and were associated with coarse-filter elements (ecosystems and/or species groups) based on Forest Service interdisciplinary team members, pre-DEIS expert panel (refer to project record for description of this panel), and other state, federal, or other species expert advice during DEIS comment period. Boxes with an 'X' indicate those ecosystems and species group associations with which the species is associated. Species persistence and recovery is noted for all Threatened and Endangered species as well as Species of Conservation Concern. An explanation of how vegetation modeling outputs were used to inform the ESE tool, including the crosswalk between forest types and ecozones, can be found in Appendix D.

Table C-3. Species included in the ESE Tool that were carried into the ecological sustainability analysis and Ecosystem/Species Group Associations, based on Forest preliminary associations, pre-DEIS expert panel (refer to project record for description of this panel), and other state, federal, or other species expert advice during DEIS comment period.























## Expected outcomes for ecosystems, unique habitats and species groups

Table C-5 provides expected outcomes and composite scores by alternative and time period for all ESE ecozones, unique habitats, and terrestrial species groups. Indicator ranges and weights are described in the NP ESE Tool. Ecozone composite scores are carried to the next table to display forest-wide condition and expected outcomes. Aquatic Species Group composite scores are summarized at the bottom of this table. More information on aquatic ecological sustainability, as represented by watershed health and resilience, is available in the watershed composite score summary.

Table C-5 also contains elements and indicators that are not housed in the ESE Tool, but have been included to improve analysis of potential effects. The same composite score process was used for these components.

Indicators for coarse-filter elements were identified based on primary factors influencing habitat quality and quantity on the Forests that are relevant to the particular ecosystem or species group. To be useful, these indicators needed to have reliable and relevant data available. Data sources for each element are included in this appendix and represent the use of best available science. Using best available science does not mean all relevant data was used, but rather reliable, accurate, and repeatable information. Data for each indicator was ranked poor, fair, good, or very good based on simple quartiles or statistical summary of data distribution (Table C-4). These processes are documented in the project record.

A key consideration in using the ESE tool for this evaluation is capturing the direction of anticipated change from current to future conditions under the planning framework. To do this, the ESE tool uses four categories of overall scoring: poor, fair, good and very good. Since many of the ecozones in western NC were damaged and degraded in the past, many are currently estimated to be in a category of *poor* or *fair* condition (compared with desired conditions Proposed Plan, Terrestrial Ecosystems, Tables 2 & 3), depending on the extent of recovery that has occurred over the last 80 to 100 years and may take multiple planning cycles to see improvement.

**Table C-4. Overall Ecological Sustainability Scores**

Range of Condition Score	Condition	Definition of Ecological Sustainability Evaluation Score Applied to Planning Elements
3.25 to 4	Very Good (VG)	Element conditions are optimal
2.50 to 3.24	Good (G)	Element conditions are acceptable
1.75 to 2.49	Fair (F)	Element conditions are slightly inadequate
1.00 to 1.74	Poor (P)	Element conditions are severely inadequate

Another important interpretation of ESE tool conditions for this evaluation is whether or not the ecozone or species group scores would improve over the next 10 to 50 years, even if the condition remains in the same condition category. When the ecological sustainability score improves over existing condition by moving from a lower to a higher ranking, or by improving the score within the same ranking over time, it is assumed that plant and animal species associated with the ecozone or species group would persist, and potentially improve this persistence or recovery. Maintaining a stable score means that the current condition of the plant and animal species associated with the ecozone or species group would be maintained. Conversely, declining overall scores over time indicate that alternatives may not adequately protect ecosystem sustainability and the diversity of associated species. The EIS discloses when it is

beyond the authority of the Forest Service, or not within the inherent capability of the plan area, to maintain or restore ecological conditions that would result in maintaining or improving the ecological sustainability score.

**Table C-5.** Expected outcomes and composite scores by alternative and time period for all NP ESE Tool Ecosystems (ecozones and unique habitats) and terrestrial Species Groups. Indicator ranges and weights are described in the NP ESE Tool. Ecozone composite scores are carried to the next table to display forest-wide condition and expected outcomes. This table contains elements and indicators that are not housed in the ESE Tool, but have been included to improve analysis of potential effects. The same composite score process was used for these components. Aquatic Species Group composite scores are summarized at the bottom of this table. More information on aquatic ecological sustainability, as represented by watershed health and resilience, is available in the watershed composite score summary. Column headings represent Alternatives A-E at time period of 10 years (i.e. A-10) and 50 years (i.e. A-50). B1 versus B2 represent the results of Tier 1 versus Tier 2 objectives.

Element Type	Element Name	Indicator Name	Data Source(s)	Weight	Existing	A-10	A-50	B1-10	B1-50	B2-10	B2-50	C1-10	C1-50	C2-10	C2-50	D1-10	D1-50	D2-10	D2-50	E1-10	E1-50	E2-10	E2-50
Ecosystem	Acidic Cove Forest	Percent of ecosystem dominated by characteristic canopy species	FSVeg, PNV	Moderate																			
Ecosystem	Acidic Cove Forest	Percent of ecosystem exhibiting old growth conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Acidic Cove Forest	Percent of ecosystem exhibiting young forest conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Acidic Cove Forest	Percent of ecosystem occupied by nonnative invasive plant species	NCNHP EO rank; recent observations	Moderate																			
Ecosystem	Acidic Cove Forest	Total open road density within the acidic cove forest ecosystem	INFRA, FSVeg, PNV	Moderate																			
<b>Ecosystem Acidic Cove Forest</b>			<b>COMPOSITE SCORE</b>																				
Ecosystem	Beech Gap/Boulderfield Forest	Percent of ecosystem dominated by characteristic native vegetation	NCNHP description; recent observations	Very High																			
Ecosystem	Beech Gap/Boulderfield Forest	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	Very High																			
<b>Ecosystem Beech Gap/Boulderfield Forest</b>			<b>COMPOSITE SCORE</b>																				
Ecosystem	Calcareous Oak-walnut Forest	Percent of ecosystem dominated by characteristic native vegetation	NCNHP description; recent observations	High																			
Ecosystem	Calcareous Oak-walnut Forest	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	Very High																			
<b>Ecosystem Calcareous Oak-walnut Forest</b>			<b>COMPOSITE SCORE</b>																				
Ecosystem	Carolina Hemlock Forest	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	High																			
Ecosystem	Carolina Hemlock Forest	Percent of ecosystem occupied by Carolina Hemlock	aerial imagery; recent observations	Very High																			
Ecosystem	Carolina Hemlock Forest	Percent of ecosystem representing high quality habitat	recent observations	Very High																			
<b>Ecosystem Carolina Hemlock Forest</b>			<b>COMPOSITE SCORE</b>																				
Ecosystem	Caves and Abandoned Mines	Percent of known caves and abandoned mines identified as Biologically Significant (supporting bat or other rare species populations) per the Federal Cave Resources Protection Act (FCRPA)	FS Significant Cave Resources determination	High																			
Ecosystem	Caves and Abandoned Mines	Presence of WNS in bat populations within abandoned caves and mines	FS, NCWRC, et al. cave monitoring	Very High																			
Ecosystem	Caves and Abandoned Mines	The percent of occupied mines of caves (by rare bats) adversely impacted by WNS	FS, NCWRC, et al. cave monitoring	High																			
<b>Ecosystem Caves and Abandoned Mines</b>			<b>COMPOSITE SCORE</b>																				
Ecosystem	Dry Oak Forest	Percent of ecosystem dominated by the ecologically characteristic canopy species	FSVeg, PNV	High																			
Ecosystem	Dry Oak Forest	Percent of ecosystem exhibiting old growth conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Dry Oak Forest	Percent of ecosystem exhibiting young forest conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Dry Oak Forest	Percent of ecosystem in open canopy condition	LIDAR, departure assessment, NRV estimation, gap analysis, Cumulative	Very High																			
Ecosystem	Dry Oak Forest	Percent of ecosystem NOT occupied by invasive species	recent observations	Low																			
Ecosystem	Dry Oak Forest	Total open road density within the dry oak forest ecosystem	INFRA, FSVeg, PNV	Moderate																			
<b>Ecosystem Dry Oak Forest</b>			<b>COMPOSITE SCORE</b>																				
Ecosystem	Dry-mesic Oak Forest	Percent of ecosystem dominated by the ecologically characteristic canopy species	FSVeg, PNV	High																			
Ecosystem	Dry-mesic Oak Forest	Percent of ecosystem exhibiting old growth conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Dry-mesic Oak Forest	Percent of ecosystem exhibiting young forest conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Dry-mesic Oak Forest	Percent of ecosystem in open canopy condition	LIDAR, departure assessment, NRV estimation, gap analysis, Cumulative	Very High																			
Ecosystem	Dry-mesic Oak Forest	Percent of ecosystem NOT occupied by invasive species	recent observations	Moderate																			

Red - poor; yellow- fair; light green - good; dark green - very good

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Element Type	Element Name	Indicator Name	Data Source(s)	Weight	Existing	A-10	A-50	B1-10	B1-50	B2-10	B2-50	C1-10	C1-50	C2-10	C2-50	D1-10	D1-50	D2-10	D2-50	E1-10	E1-50	E2-10	E2-50
Ecosystem	Dry-mesic Oak Forest	Total open road density within the dry-mesic oak forest ecosystem	INFRA, FSVeg, PNV	Moderate																			
Ecosystem	Dry-mesic Oak Forest																						
Ecosystem	Floodplain Forest	Percent of ecosystem dominated by the ecologically characteristic canopy species	FSVeg, PNV	Moderate																			
Ecosystem	Floodplain Forest	Percent of ecosystem exhibiting old growth conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Floodplain Forest	Percent of ecosystem exhibiting young forest conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Floodplain Forest	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	Very High																			
Ecosystem	Floodplain Forest	Total open road density within the floodplain forest ecosystem	INFRA, FSVeg, PNV	Moderate																			
Ecosystem	Floodplain Forest																						
Ecosystem	Floodplain Pools	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	Very High																			
Ecosystem	Floodplain Pools	Percent of floodplain pools experiencing at least one flood annually	USGS flow data; expert judgement	Moderate																			
Ecosystem	Floodplain Pools																						
Ecosystem	Grassy Balds	Percent of ecosystem in open canopy condition	LiDAR, departure assessment; NRV estimation	Very High																			
Ecosystem	Grassy Balds	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	High																			
Ecosystem	Grassy Balds	Percent of ecosystem occurrences within 100 feet of road or trail	NCNHP EO; INFRA; FS trails data	High																			
Ecosystem	Grassy Balds																						
Ecosystem	High Elevation Granitic Domes	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	High																			
Ecosystem	High Elevation Granitic Domes	Percent of ecosystem occurrences within 100 feet of road or trail	NCNHP EO; INFRA; FS trails data	Very High																			
Ecosystem	High Elevation Granitic Domes																						
Ecosystem	High Elevation Red Oak Forest	Percent of ecosystem dominated by the ecologically characteristic canopy species	FSVeg, PNV	Moderate																			
Ecosystem	High Elevation Red Oak Forest	Percent of ecosystem exhibiting old growth conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	High Elevation Red Oak Forest	Percent of ecosystem exhibiting young forest conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	High Elevation Red Oak Forest	Percent of ecosystem in open canopy condition	LiDAR, departure assessment, NRV estimation, gap analysis,	High																			
Ecosystem	High Elevation Red Oak Forest	Total open road density within the high elevation red oak ecosystem	INFRA, FSVeg, PNV	Moderate																			
Ecosystem	High Elevation Red Oak Forest																						
Ecosystem	High Elevation Rocky Summits	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	High																			
Ecosystem	High Elevation Rocky Summits	Percent of ecosystem occurrences within 100 feet of road or trail	NCNHP EO; INFRA; FS trails data	Very High																			
Ecosystem	High Elevation Rocky Summits																						
Ecosystem	Low Elevation Glades	Percent of ecosystem burned at desired return interval	NCNHP EO; FS Rx fire history	High																			
Ecosystem	Low Elevation Glades	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	Very High																			
Ecosystem	Low Elevation Glades	Percent of ecosystem occurrences within 100 feet of road or trail	NCNHP EO, INFRA, trails data	Very High																			
Ecosystem	Low Elevation Glades																						
Ecosystem	Low Elevation Granitic Domes	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	High																			
Ecosystem	Low Elevation Granitic Domes	Percent of ecosystem occurrences within 100 feet of road or trail	NCNHP EO; INFRA; FS trails data	Very High																			
Ecosystem	Low Elevation Granitic Domes																						
Ecosystem	Low Elevation Rocky Summits	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	Very High																			
Ecosystem	Low Elevation Rocky Summits	Percent of system acres burned at desired return interval	NCNHP EO; FS Rx fire history	Very High																			
Ecosystem	Low Elevation Rocky Summits	Percent of ecosystem occurrences within 100 feet of road or trail	NCNHP EO; INFRA; FS trails data	Very High																			
Ecosystem	Low Elevation Rocky Summits																						
Ecosystem	Mesic Oak Forest	Percent of ecosystem dominated by the ecologically characteristic canopy species	FSVeg, PNV	High																			
Ecosystem	Mesic Oak Forest	Percent of ecosystem exhibiting old growth conditions	FSVeg, PNV, NRV, Spectrum	High																			

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Element Type	Element Name	Indicator Name	Data Source(s)	Weight	Existing	A-10	A-50	B1-10	B1-50	B2-10	B2-50	C1-10	C1-50	C2-10	C2-50	D1-10	D1-50	D2-10	D2-50	E1-10	E1-50	E2-10	E2-50
Ecosystem	Mesic Oak Forest	Percent of ecosystem exhibiting young forest conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Mesic Oak Forest	Percent of ecosystem in open canopy condition	LIDAR, departure assessment, NRV estimation, gap analysis, Co-authors	Very High																			
Ecosystem	Mesic Oak Forest	Percent of ecosystem NOT occupied by invasive species	recent observations	Moderate																			
Ecosystem	Mesic Oak Forest	Total open road density within the mesic oak forest ecosystem	INFRA, FSVeg, PNV	Moderate																			
<b>Ecosystem</b>	<b>Mesic Oak Forest</b>				<b>COMPOSITE SCORE</b>																		
Ecosystem	Montane Calcareous Cliffs	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	High																			
Ecosystem	Montane Calcareous Cliffs	Percent of ecosystem occurrences within 100 feet of road or trail	NCNHP EO; INFRA; FS trails data	Very High																			
<b>Ecosystem</b>	<b>Montane Calcareous Cliffs</b>				<b>COMPOSITE SCORE</b>																		
Ecosystem	Montane Cliffs	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	High																			
Ecosystem	Montane Cliffs	Percent of ecosystem occurrences within 100 feet of road or trail	NCNHP EO; INFRA; FS trails data	High																			
<b>Ecosystem</b>	<b>Montane Cliffs</b>				<b>COMPOSITE SCORE</b>																		
Ecosystem	Montane Red Cedar Hardwood Woodlands	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	High																			
Ecosystem	Montane Red Cedar Hardwood Woodlands	Percent of ecosystem occurrences within 100 feet of road or trail	NCNHP EO; INFRA; FS trails data	Very High																			
<b>Ecosystem</b>	<b>Montane Red Cedar Hdwd Woodlands</b>				<b>COMPOSITE SCORE</b>																		
Ecosystem	Northern Hardwood Forest	Percent of ecosystem dominated by the ecologically characteristic canopy species	FSVeg, PNV	Moderate																			
Ecosystem	Northern Hardwood Forest	Percent of ecosystem exhibiting old growth conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Northern Hardwood Forest	Percent of ecosystem exhibiting young forest conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Northern Hardwood Forest	Percent of ecosystem NOT occupied by invasive species	recent observations	High																			
Ecosystem	Northern Hardwood Forest	Total open road density within the northern hardwood forest ecosystem	INFRA, FSVeg, PNV	Low																			
<b>Ecosystem</b>	<b>Northern Hardwood Forest</b>				<b>COMPOSITE SCORE</b>																		
Ecosystem	Pine Oak-Heath Forest	Percent of ecosystem dominated by the ecologically characteristic canopy species	FSVeg, PNV	Very High																			
Ecosystem	Pine Oak-Heath Forest	Percent of ecosystem exhibiting old growth conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Pine Oak-Heath Forest	Percent of ecosystem exhibiting young forest conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Pine Oak-Heath Forest	Percent of ecosystem in open canopy condition	LIDAR, departure assessment, NRV estimation, gap analysis, Co-authors	Very High																			
Ecosystem	Pine Oak-Heath Forest	Percent of ecosystem occupied by invasive species	NCNHP EO rank; recent observations	Moderate																			
Ecosystem	Pine Oak-Heath Forest	Total open road density within the pine oak-heath ecosystem	INFRA, FSVeg, PNV	Moderate																			
<b>Ecosystem</b>	<b>Pine Oak-Heath Forest</b>				<b>COMPOSITE SCORE</b>																		
Ecosystem	Rich Cove Forest	Percent of ecosystem dominated by the ecologically characteristic canopy species	FSVeg, PNV	Moderate																			
Ecosystem	Rich Cove Forest	Percent of ecosystem exhibiting mature forest characteristics	FSVeg, PNV, NRV, Spectrum	Very High																			
Ecosystem	Rich Cove Forest	Percent of ecosystem exhibiting old growth conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Rich Cove Forest	Percent of ecosystem exhibiting young forest conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Rich Cove Forest	Percent of ecosystem occupied by invasive species	NCNHP EO rank; recent observations	Very High																			
Ecosystem	Rich Cove Forest	Total open road density within the rich cove forest ecosystem	INFRA, FSVeg, PNV	Moderate																			
<b>Ecosystem</b>	<b>Rich Cove Forest</b>				<b>COMPOSITE SCORE</b>																		
Ecosystem	Rocky Bars and Shore	Percent of ecosystem experiencing periodic flooding	NCNHP EO; USGS flow data; expert judgement	High																			
Ecosystem	Rocky Bars and Shore	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	Very High																			
<b>Ecosystem</b>	<b>Rocky Bars and Shore</b>				<b>COMPOSITE SCORE</b>																		
Ecosystem	Seeps	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	High																			
Ecosystem	Seeps	Percent of ecosystem occurrence within 100 meters of road or trail	NCNHP EO; INFRA; FS trails data	Very High																			
<b>Ecosystem</b>	<b>Seeps</b>				<b>COMPOSITE SCORE</b>																		

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Element Type	Element Name	Indicator Name	Data Source(s)	Weight	Existing	A-10	A-50	B1-10	B1-50	B2-10	B2-50	C1-10	C1-50	C2-10	C2-50	D1-10	D1-50	D2-10	D2-50	E1-10	E1-50	E2-10	E2-50
Ecosystem	Serpentine Woodlands	Percent of ecosystem burned at desired return interval	NCNHP EO; FS Rx fire history	High																			
Ecosystem	Serpentine Woodlands	Percent of the ecosystem with unpermitted rock or mineral harvest	Professional judgement; expert advice	High																			
<b>Ecosystem</b>	<b>Serpentine Woodlands</b>			<b>COMPOSITE SCORE</b>																			
Ecosystem	Shortleaf Pine Forest	Percent of ecosystem dominated by the ecologically characteristic canopy species	FSVeg, PNV	Very High																			
Ecosystem	Shortleaf Pine Forest	Percent of ecosystem exhibiting old growth conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Shortleaf Pine Forest	Percent of ecosystem exhibiting young forest conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Shortleaf Pine Forest	Percent of ecosystem in open canopy condition	LiDAR, departure assessment, NRV estimation, gap analysis,	Very High																			
Ecosystem	Shortleaf Pine Forest	Percent of ecosystem occupied by invasive species	recent observations	Moderate																			
Ecosystem	Shortleaf Pine Forest	Total open road density within the shortleaf pine ecosystem	INFRA, FSVeg, PNV	Moderate																			
<b>Ecosystem</b>	<b>Shortleaf Pine Forest</b>			<b>COMPOSITE SCORE</b>																			
Ecosystem	Shrub Balds	Percent of ecosystem in open canopy condition	LiDAR, aerial photography	High																			
<b>Ecosystem</b>	<b>Shrub Balds</b>			<b>COMPOSITE SCORE</b>																			
Ecosystem	Southern Appalachian Bogs	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	Very High																			
Ecosystem	Southern Appalachian Bogs	Percent of ecosystem occurrences within 100 feet of road or trail	NCNHP EO; INFRA; FS trails data	Very High																			
Ecosystem	Southern Appalachian Bogs	Shrub to herbaceous species ratio	aerial imagery; recent observations	Very High																			
<b>Ecosystem</b>	<b>Southern Appalachian Bogs</b>			<b>COMPOSITE SCORE</b>																			
Ecosystem	Spray Cliffs	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	High																			
Ecosystem	Spray Cliffs	Percent of ecosystem occurrences within 100 feet of road or trail	NCNHP EO; INFRA; FS trails data	Moderate																			
<b>Ecosystem</b>	<b>Spray Cliffs</b>			<b>COMPOSITE SCORE</b>																			
Ecosystem	Spruce-fir Forest	Percent of ecosystem exhibiting old growth conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Spruce-fir Forest	Percent of ecosystem exhibiting young forest conditions	FSVeg, PNV, NRV, Spectrum	High																			
Ecosystem	Spruce-fir Forest	Percent of the ecosystem dominated by the ecologically characteristic canopy species	FSVeg, PNV	Very High																			
Ecosystem	Spruce-fir Forest	Percent of the ecosystem impacted by balsam wooly adelgid	aerial imagery; recent observations	High																			
Ecosystem	Spruce-fir Forest	Total open road density within the spruce-fir forest ecosystem	INFRA, FSVeg, PNV	Moderate																			
<b>Ecosystem</b>	<b>Spruce-fir Forest</b>			<b>COMPOSITE SCORE</b>																			
Ecosystem	Swamp Forest-bog Complex	Percent of ecosystem NOT occupied by invasive species	recent observations	High																			
<b>Ecosystem</b>	<b>Swamp Forest-bog Complex</b>			<b>COMPOSITE SCORE</b>																			
Ecosystem	Vernal Pools	Percent of ecosystem NOT occupied by invasive species	recent observations	High																			
Ecosystem	Vernal Pools	Presence of fish in seasonal wetlands	recent observations	Very High																			
<b>Ecosystem</b>	<b>Vernal Pools</b>			<b>COMPOSITE SCORE</b>																			
Ecosystem	White Pine Forest	Percent of ecosystem dominated by the ecologically characteristic canopy species	FSVeg, PNV	Very High																			
Ecosystem	White Pine Forest	Percent of ecosystem NOT occupied by invasive species	recent observations	Very High																			
<b>Ecosystem</b>	<b>White Pine Forest</b>			<b>COMPOSITE SCORE</b>																			
Ecosystem	Woodlands and Shale Slopes	Percent of ecosystem burned at desired return interval	FS Rx fire history	Moderate																			
Ecosystem	Woodlands and Shale Slopes	Percent of ecosystem NOT occupied by invasive species	NCNHP EO rank; recent observations	Very High																			
Ecosystem	Woodlands and Shale Slopes	Percent of ecosystem occurrences within 100 feet of road or trail	NCNHP EO; INFRA; FS trails data	Moderate																			
<b>Ecosystem</b>	<b>Woodlands and Shale Slopes</b>			<b>COMPOSITE SCORE</b>																			
Species Group	Bark and Leaf Epiphytes	Ecological system acres in late and old growth seral classes (mesic ecozones)	FSVeg, NRV, PNV	Very High																			
Species Group	Bark and Leaf Epiphytes	Ecological system acres with mid-aged trees (mesic ecozones)	FSVeg, NRV, PNV	Moderate																			
<b>Species Group</b>	<b>Bark and Leaf Epiphytes</b>			<b>COMPOSITE SCORE</b>																			
Species Group	Closed Canopy Associates	Percent of NP with at least moderately closed canopy	FSVeg, PNV, NRV, Spectrum	High																			
<b>Species Group</b>	<b>Closed Canopy Associates</b>			<b>COMPOSITE SCORE</b>																			

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Element Type	Element Name	Indicator Name	Data Source(s)	Weight	Existing	A-10	A-50	B1-10	B1-50	B2-10	B2-50	C1-10	C1-50	C2-10	C2-50	D1-10	D1-50	D2-10	D2-50	E1-10	E1-50	E2-10	E2-50
Species Group	Coarse Woody Debris and Downed Wood Associates	CWD density	FVS	High																			
<b>Species Group</b>	<b>CWD and Downed Wood Associates</b>				<b>COMPOSITE SCORE</b>																		
Species Group	Dispersal-limited Species	Barriers to Aquatic Species Movement	WCF, ESE WS module (mean CS)	High		Yellow	Yellow	Light Green	Yellow	Light Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow							
Species Group	Dispersal-limited Species	Barriers to movement of small-ranging species (road density)	ESE ES Road Density (mean ES), INFRA, FSVeg, PNV	High																			
Species Group	Dispersal-limited Species	Barriers to movement of small-ranging species (gap size)	FSVeg, Spectrum, disturbance, gap analysis	High																			
Species Group	Dispersal-limited Species	Potential effects of forest management on TE/SCC	NCNHP	High		Yellow		Light Green		Yellow	Yellow							Yellow	Yellow	Yellow	Yellow	Yellow	
Species Group	Dispersal-limited Species	Potential effects of forest management on terrestrial salamanders	Apodaca and Smith (2019)	High							Yellow									Yellow		Yellow	
<b>Species Group</b>	<b>Dispersal-limited Species</b>				<b>COMPOSITE SCORE</b>																		
Species Group	Fire-adapted Species	Percent ecozone burned at desired return interval (Buck Creek Serpentine Barrens)	FSVeg, PNV, FS Rx fire history	Very High																			
Species Group	Fire-adapted Species	Percent ecozone burned at desired return interval (Low Elevation Glades)	FSVeg, PNV, FS Rx fire history	High		Red	Red	Red	Yellow	Yellow	Yellow	Red	Yellow	Yellow	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	
Species Group	Fire-adapted Species	Percent ecozone burned at desired return interval (Low Elevation Rocky Summits)	FSVeg, PNV, FS Rx fire history	Very High		Red	Red	Red	Yellow	Red	Yellow	Red	Yellow	Red	Red	Red	Yellow	Red	Yellow	Red	Yellow	Yellow	
Species Group	Fire-adapted Species	Percent ecozone burned at desired return interval (Woodlands and Shale Slopes)	FSVeg, PNV, FS Rx fire history	Moderate		Red		Yellow		Yellow													
Species Group	Fire-adapted Species	Percent open forest conditions within fire-adapted ecozones	FSVeg, PNV, NRV, Spectrum	High		Red																	
<b>Species Group</b>	<b>Fire-adapted Species</b>				<b>COMPOSITE SCORE</b>																		
Species Group	Fire-intolerant Species	Acres burned within mesic ecozones	FSVeg, PNV, FS Rx fire history	Very High																			
<b>Species Group</b>	<b>Fire-intolerant Species</b>				<b>COMPOSITE SCORE</b>																		
Species Group	Forest Edge and Transition Associates	Acres of edge and transitional habitat	FS Gap Analysis; USGS Landcover	Moderate																			
Species Group	Forest Edge and Transition Associates	Miles of forest edge	FS Gap Analysis; USGS Landcover	Moderate																			
<b>Species Group</b>	<b>Forest Edge and Transition Associates</b>				<b>COMPOSITE SCORE</b>																		
Species Group	Hard and Soft Mast Dependent Species	Percent od oak ecozones in mid- and late-seral forest	FSVeg, NRV, PNV, Spectrum	Moderate		Light Green	Yellow																
Species Group	Hard and Soft Mast Dependent Species	Miles of forest edge (soft mast)	FS Gap Analysis; USGS Landcover	High																			
Species Group	Hard and Soft Mast Dependent Species	Pounds per acre of acorn production (hard mast)	FVS	High																			
<b>Species Group</b>	<b>Hard/Soft Mast Dependent Species</b>				<b>COMPOSITE SCORE</b>																		
Species Group	Interior Forest Associates	Acres of interior forest habitat	FS Gap Analysis; USGS Landcover	High																			
Species Group	Interior Forest Associates	Edge to Interior Forest Ratio	FS Gap Analysis; USGS Landcover	Moderate																			
Species Group	Interior Forest Associates	Percent of Forest with Canopy Cover >/= 60%	NC Audubon	High																			
<b>Species Group</b>	<b>Interior Forest Associates</b>				<b>COMPOSITE SCORE</b>																		
Species Group	Old Forest Associates	CWD density under natural conditions	FVS	High																			
Species Group	Old Forest Associates	Percent of each ecozone contributing to old growth forest characteristics	FSVeg, NRV, Spectrum	Very High																			
Species Group	Old Forest Associates	Percent of forest represented by small openings (<0.25 acre)	FS Gap Analysis	High																			
Species Group	Recreation Traffic Sensitive Species	Cave/Mine Gate Indicator	FS data, NCWRC data	Moderate		Yellow	Light Green																
Species Group	Recreation Traffic Sensitive Species	Roads & Trail Indicator	FS data, SAB summary analysis	High		Yellow	Yellow																
<b>Species Group</b>	<b>Recreation Traffic Sensitive Species</b>				<b>COMPOSITE SCORE</b>																		
Species Group	Road Density Sensitive Species	NHD Density Near Roads and Trails	NHDPlus, INFRA	Moderate																			
Species Group	Road Density Sensitive Species	Percent of animal element occurrences (T&E/SCC) within 100 feet of an open road	INFRA; NCNHP EO's	Moderate		Yellow	Light Green	Yellow	Light Green	Yellow													
Species Group	Road Density Sensitive Species	Open road density	INFRA	High																			
<b>Species Group</b>	<b>Road Density Sensitive Species</b>				<b>COMPOSITE SCORE</b>																		
Species Group	Snag and Den Tree Associates	Snag Density	FVS	High																			
<b>Species Group</b>	<b>Snag and Den Tree Associates</b>				<b>COMPOSITE SCORE</b>																		
Species Group	Species Persistence and Recovery	Amount of NHNA (top 3 ranks) in MA Group 1 (or density estimate)	NCNHP; FS data	High																			
Species Group	Species Persistence and Recovery	Dam and Stream Crossing Density	NP WCF	High																			

Red - poor; yellow- fair; light green - good; dark green - very good

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Element Type	Element Name	Indicator Name	Data Source(s)	Weight	Existing	A-10	A-50	B1-10	B1-50	B2-10	B2-50	C1-10	C1-50	C2-10	C2-50	D1-10	D1-50	D2-10	D2-50	E1-10	E1-50	E2-10	E2-50
Species Group	Species Persistence and Recovery	Riparian Road and Trail Density	NP WCF	High	Light Green																		
Species Group	Species Persistence and Recovery	Salamander core habitat and connectivity	Apodaca and Smith (2019)	High	Light Green	Yellow	Light Green	Yellow	Light Green	Light Green													
Species Group	Species Persistence and Recovery	Susceptibility to Climate Change	NCNHP, FS data	High	Light Green																		
Species Group	Species Persistence and Recovery	Susceptibility to Forest Management	NCNHP, FS data	High	Light Green	Light Green	Light Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Light Green	Light Green	Light Green	Light Green	Light Green	Light Green		
Species Group	Species Persistence and Recovery	Roads & Trail Indicator	NCNHP, FS data	High	Yellow																		
<b>Species Group</b>	<b>Species Persistence and Recovery</b>	<b>COMPOSITE SCORE</b>			Light Green																		
Species Group	Woodland Associates	Percent of acres burned at desired return interval	FS Rx fire history	Moderate	Red	Red	Red	Yellow	Yellow	Yellow	Yellow	Red	Yellow	Yellow	Red	Red	Yellow	Yellow	Yellow	Yellow	Light Green	Dark Green	
Species Group	Woodland Associates	Percent of acres burned at desired return interval (Buck Creek Serpentine Barrens)	FS Rx fire history	High	Dark Green																		
Species Group	Woodland Associates	Percent of NP exhibiting open forest characteristics	LiDAR, NRV, Spectrum	Very High	Red	Yellow																	
Species Group	Young Forest Associates	Percent of NP exhibiting open forest characteristics	LiDAR, NRV, Spectrum	Moderate	Light Green																		
Species Group	Young Forest Associates	Percent of NP exhibiting young forest characteristics	FSVeg, NRV, Spectrum	High	Red	Red	Red	Red	Yellow	Dark Green	Dark Green	Yellow	Yellow	Dark Green	Red	Yellow	Dark Green	Red	Yellow	Dark Green	Yellow	Dark Green	
Species Group	Young Forest Associates	Percent of permanent openings functioning as young forest (ESH)	FS Gap Analysis; FS permanent openings data	Moderate	Yellow																		
Species Group	Stream Associates				Light Green	Yellow	Light Green																
Species Group	Small River Associates				Light Green	Yellow	Light Green																
Species Group	Medium and Large River Associates				Light Green																		
Species Group	Pond, Lake, and Reservoir Associates				Light Green																		

Red - poor; yellow- fair; light green - good; dark green - very good

## Expected outcomes for watersheds

This table includes the ESE Tool Composite Scores for USGS 6th level hydrologic units associated with the Nantahala and Pisgah National Forests. Ownership across these watersheds is fragmented-- there are no 6th level hydrologic units with 100% Forest Service ownership. Therefore, each watershed was evaluated on a suite of indicators that addresses both FS lands and other ownerships in the calculation of overall watershed response to implementation of the revised forest plan. This table summarizes those results by alternative and time period. Individual indicator descriptions and values for each watershed can be found in the project record. Priority Watersheds are highlighted.

**Table C-6. ESE Tool Composite Scores for USGS 6th level hydrologic units associated with the Nantahala and Pisgah National Forests.**

HUC 12	Watershed Name	%FS	Existing	A-10	A-50	BCDE-10	BCDE-50
030501010101	Curtis Creek	88.50%					
030501010102	Headwaters Catawba River	50.89%					
030501010104	Buck Creek	63.73%					
030501010105	Mackey Creek-Catawba River	32.94%					
030501010106	Toms Creek-Catawba River	24.71%					
030501010201	Armstrong Creek	46.23%					
030501010202	North Fork Catawba River	38.59%					
030501010302	Lower Linville River	87.04%					
<b>030501010303</b>	<b>Lake James-Catawba River</b>	<b>23.43%</b>					
030501010401	Upper Warrior Fork	83.38%					
030501010402	Irish Creek	37.75%					
<b>030501010501</b>	<b>Upper Johns River</b>	<b>48.98%</b>					
<b>030501010502</b>	<b>Upper Wilson Creek</b>	<b>79.24%</b>					
030501010503	Mulberry Creek	46.83%					
<b>030501010504</b>	<b>Lower Wilson Creek</b>	<b>83.19%</b>					
<b>030501010505</b>	<b>Middle Johns River</b>	<b>47.65%</b>					
<b>030501010506</b>	<b>Lower Johns River</b>	<b>22.11%</b>					
030601010103	Horsepasture River	6.06%					
030601010104	Whitewater River	38.64%					
<b>030601020201</b>	<b>Headwaters Chattooga River</b>	<b>48.79%</b>					
<b>030601020202</b>	<b>Headwaters West Fork Chattooga River</b>	<b>77.67%</b>					
<b>060101050101</b>	<b>North Fork French Broad River</b>	<b>77.87%</b>					

HUC 12	Watershed Name	%FS	Existing	A-10	A-50	BCDE-10	BCDE-50
060101050102	Cold Springs Creek-Pigeon River	47.84%					
060101050104	Catheys Creek	63.55%					
060101050105	Cherryfield Creek-French Broad River	14.69%					
060101050202	Davidson River	89.45%					
060101050203	Williamson Creek-French Broad River	13.97%					
060101050401	Boylston Creek	6.51%					
060101050402	South Fork Mills River	84.00%					
060101050403	Mills River	61.83%					
060101050501	South Hominy Creek	22.34%					
060101050503	Lower Hominy Creek	9.12%					
060101050704	Avery Creek-French Broad River	6.05%					
060101050705	Bent Creek-French Broad River	27.52%					
060101050801	Dillingham Creek	58.73%					
060101050803	Upper Ivy Creek	16.07%					
060101051001	Upper Big Laurel Creek	9.42%					
060101051002	Upper Shelton Laurel Creek	68.24%					
060101051003	Lower Shelton Laurel Creek	39.06%					
060101051004	Lower Big Laurel Creek	21.49%					
060101051103	Big Pine Creek-French Broad River	9.26%					
060101051201	Meadow Fork	34.76%					
060101051202	Spring Creek	18.77%					
060101051203	Shut-in Creek-French Broad River	64.85%					
060101060101	Lake Logan-West Fork Pigeon River	84.30%					
060101060102	Little East Fork Pigeon River-West Fork Pigeon River	40.58%					
060101060103	East Fork Pigeon River	44.12%					
060101060302	Lower Cataloochee Creek	9.06%					

HUC 12	Watershed Name	%FS	Existing	A-10	A-50	BCDE-10	BCDE-50
060101060303	Walters Lake-Pigeon River	6.32%					
060101060305	Cold Springs Creek-Pigeon River	86.31%					
060101080101	Headwaters North Toe River	11.87%					
060101080105	Big Crabtree Creek	7.41%					
060101080201	Upper South Toe River	68.72%					
060101080203	Lower South Toe River	8.95%					
060101080301	Headwaters Cane River	8.32%					
060101080303	Upper Cane River	15.95%					
060101080304	Bald Mountain Creek	13.66%					
060101080306	Lower Cane River	28.56%					
060101080602	Little Rock Creek	17.60%					
060101080603	Big Rock Creek	23.06%					
060101080604	Hollow Poplar Creek-Nolichucky River	34.37%					
060102020102	Middle Creek-Little Tennessee River	34.99%					
060102020103	Coweeta Creek-Little Tennessee River	54.30%					
060102020104	Upper Cartoogechaye Creek	45.24%					
060102020105	Lower Cartoogechaye Creek	45.63%					
060102020106	Skeenah Creek-Little Tennessee River	9.35%					
<b>060102020201</b>	<b>Upper Cullasaja River</b>	<b>48.93%</b>					
060102020202	Ellijay Creek	16.84%					
<b>060102020203</b>	<b>Lower Cullasaja River</b>	<b>31.98%</b>					
<b>060102020301</b>	<b>Buck Creek - Tusquitee</b>	<b>96.90%</b>					
060102020302	Headwaters Nantahala River	82.05%					
060102020303	Nantahala Lake-Nantahala River	81.27%					
060102020304	Whiteoak Creek-Nantahala River	59.55%					
060102020305	Big Creek-Nantahala River	69.15%					

HUC 12	Watershed Name	%FS	Existing	A-10	A-50	BCDE-10	BCDE-50
060102020306	Fontana Lake-Nantahala River	38.21%					
060102020401	Lake Emory-Little Tennessee River	9.21%					
060102020402	Cowee Creek	33.55%					
060102020403	Burnington Creek	53.54%					
060102020404	Tellico Creek-Little Tennessee River	32.16%					
060102020405	Brush Creek-Little Tennessee River	14.33%					
<b>060102020406</b>	<b>Alarka Creek</b>	<b>15.92%</b>					
<b>060102020407</b>	<b>Upper Fontana Lake-Little Tennessee River</b>	<b>30.96%</b>					
060102020501	Panther Creek	74.96%					
060102020502	Stecoh Creek	41.86%					
<b>060102020505</b>	<b>Lower Fontana Lake-Little Tennessee River</b>	<b>23.98%</b>					
<b>060102030101</b>	<b>Wolf Creek-Tuckasegee River</b>	<b>65.14%</b>					
<b>060102030104</b>	<b>Cedar Cliff Lake-Tuckasegee River</b>	<b>17.53%</b>					
<b>060102030105</b>	<b>Caney Fork</b>	<b>63.25%</b>					
060102030106	Cullowhee Creek	23.10%					
<b>060102030107</b>	<b>Wayehutta Creek-Tuckasegee River</b>	<b>15.83%</b>					
060102030301	Savannah Creek	26.90%					
060102030304	Conley Creek-Tuckasegee River	15.29%					
060102030405	Fontana Lake-Tuckasegee River	6.39%					
060102040101	Tulula Creek	54.84%					
060102040102	Sweetwater Creek	22.48%					
060102040103	Snowbird Creek	48.86%					
060102040104	West Buffalo Creek	19.90%					
<b>060102040105</b>	<b>Santeetlah Creek</b>	<b>98.08%</b>					
060102040106	Santeetlah Lake	42.39%					
<b>060102040107</b>	<b>Yellow Creek-Cheoah River</b>	<b>76.11%</b>					

HUC 12	Watershed Name	%FS	Existing	A-10	A-50	BCDE-10	BCDE-50
060102040401	Lake Cheoah-Little Tennessee River	22.96%					
060102040402	Slick Rock Creek	99.93%					
060200020105	Shooting Creek	46.13%					
060200020201	Tusquitee Creek	58.77%					
<b>060200020202</b>	<b>Fires Creek</b>	<b>94.76%</b>					
060200020203	Sweetwater Creek-Hiwassee River	10.11%					
060200020303	Fall Branch-Hiwassee River	19.73%					
060200020401	Headwaters Valley River	56.18%					
060200020402	Upper Valley River	33.40%					
060200020403	Middle Valley River	30.20%					
060200020404	Lower Valley River	8.45%					
060200020603	Nottely River	29.68%					
060200020701	Hanging Dog Creek	30.17%					
060200020702	Grape Creek-Hiwassee Lake	29.16%					
060200020703	Lake Cherokee-Persimmon Creek	20.75%					
060200020704	Beaverdam Creek	54.13%					
060200020705	Hiwassee Lake-Hiwassee River	31.96%					
060200020902	Apalachia Lake-Hiwassee River	34.24%					
<b>060200020903</b>	<b>Shuler Creek</b>	<b>88.43%</b>					

## Plan component crosswalk to species

Table C-7 documents the final step of the Ecological Sustainability Evaluation process, in which plan components are checked to ensure species specific needs are met. In Table C-7, plan components that contribute to directly or indirectly to the sustainability of the species are listed in the left column, and each plan component row identifies the species groups associated with that plan component. Boxes with an 'X' indicate plan components that provide for the persistence of species in ecosystems and species group associations. To see which species are associated with each ecosystem or species group, refer to Table C-3 in this appendix.

Following the plan revision objection period, Table C-8 was added to provide more clarity about the linkage between species and species groups and plan components that provide for their persistence. This information is not new and is not intended to replace the material contained in Table C-7. It is organized in a different way to provide additional clarity regarding the linkage between plan components and SCC. This table is focused on SCC; a similar process was completed for threatened and endangered species in the Biological Assessment.

Beyond these tables, the following additional information is provided to clarify the link between plan direction and species persistence:

- Healthy and resilient forests and clean and abundant water are two of the main themes of the revised forest plan, resulting in a planning framework that supports persistence and recovery of federally listed species and species of conservation concern.
- Of the approximately 1,184 plan components, approximately 550 (46%) are related directly or indirectly to maintaining, restoring, enhancing ecological integrity in some way. The remaining plan components focus primarily on social and economic aspects of the revised forest plan.
- The revised forest plan is built on a foundation of ecological integrity and this table addresses species persistence and recovery at the coarsest scale.
- Addressing species persistence and recovery at scales smaller than this occurs during plan implementation and the analysis of specific projects.
- Not every fine filter scale component mentions every species that it relates to, and this does not mean there are no fine filter plan components for a species. It means that there are no species-specific plan components are needed beyond what is addressed in larger landscape scale elements such as ecozones and watersheds (coarse filter).
- Species are also associated with species groups and unique habitats that focus on specific habitat characteristics. Plan components associated with these elements (e.g. snag density, coarse woody debris density, etc.) can be considered fine filter components for relevant species regardless of whether each species is specifically mentioned.
- Stresses and threats for federally listed species and species of conservation concern are identified in the project record in two places: within the species assessment fields of the ESE Tool and during the SCC selection process. Table C-8 consolidates those data sources into one place.
- PAD-S-04 ensures that surveys for rare species will be conducted as appropriate, during plan implementation. It helps address endemism or otherwise restricted range, limited knowledge, and susceptibility to stochastic events associated with many rare species.

**Table C-7.** Revised plan components relating directly or indirectly to ecological sustainability/integrity and relationship to ecozones, unique habitats, and species groups in the NP ESE.

**Table C-7.** Revised plan components relating directly or indirectly to ecological sustainability/integrity and relationship to ecozones, unique habitats, and species groups in the NP ESE.

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**Table C-7.** Revised plan components relating directly or indirectly to ecological sustainability/integrity and relationship to ecozones, unique habitats, and species groups in the NP ESE.

**Table C-8. Plan components associated with providing persistence for Species of Conservation Concern**

<b>Green Salamander (<i>Aneides aeneus</i>)</b> Primary Stresses and Threats: development (loss of vegetative cover), over-collecting, disease, climate change	This species is associated with thirteen coarse filter elements in the ESE: six ecozones, three unique habitats, and four species groups (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics for green salamander, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&TExPC.xlsx), and range from very broad to very specific. Additionally, AQS-DC-02, BAC-DC-04, OGN-DC-02, OGN-O-01, PAD-S-08, REC-S-19, SZ-S-03, TA-DC-08, TIM-S-07, WLF-DC-04, WLF-DC-06, and WLF-S-01 provide for maintenance of habitat characteristics critical to the persistence of green salamander on the Forests, and PAD-S-03 and PAD-S-15 specifically address stresses and threats to green salamander.
<b>Dwarf Black-bellied Salamander (<i>Desmognathus folkertsi</i>)</b> Primary Stresses and Threats: hydrologic modification, riparian temperature modification, roadkill (roads within riparian corridors), endemism	This species is associated with twenty-two coarse filter elements in the ESE: seven ecozones, four unique habitats, and eleven species groups (including six aquatic species groups) (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics for dwarf black-bellied salamander, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&TExPC.xlsx), and range from very broad to very specific. Aquatic indicators used in the ESE, specifically road and trail crossing density, riparian road density, and riparian forest cover address stresses and threats to the species. Streamside zone (SZ) plan components, AQS-DC-02, BAC-DC-04, OGN-DC-02, OGN-O-01, PAD-S-08, REC-S-19, TA-DC-08, TIM-S-07, WLF-DC-04, WLF-DC-06, and WLF-S-01 provide for maintenance of habitat characteristics critical to the persistence of dwarf back-bellied salamander on the Forests.
<b>Northern Pygmy Salamander (<i>Desmognathus organi</i>)</b> Primary Stresses and Threats: development (loss of vegetative cover), over-collecting, invasive species, trampling, climate change	This species is associated with eighteen coarse filter elements in the ESE: eight ecozones, five unique habitats, and five species groups (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for northern pygmy salamander, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&TExPC.xlsx), and range from very broad to very specific. Streamside zone (SZ) plan components, AQS-DC-02, BAC-DC-04, OGN-DC-02, OGN-O-01, PAD-S-08, REC-S-19, TA-DC-08, TIM-S-07, WLF-DC-04, WLF-DC-06, and WLF-S-01 provide for maintenance of habitat characteristics critical to the persistence of northern pygmy salamander on the Forests.
<b>Southern Pygmy Salamander (<i>Desmognathus wrighti</i>)</b> Primary Stresses and Threats: Primary Stresses and Threats: development (loss of vegetative cover), over-collecting, invasive species, trampling, climate change	This species is associated with seventeen coarse filter elements in the ESE: eight ecozones, four unique habitats, and five species groups (EIS Appendix C, Table XXX). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for southern pygmy salamander, therefore contributing to species persistence

on the Forests. These plan components are listed in the project record (SCC&TExPC.xlsx), and range from very broad to very specific. Streamside zone (SZ) plan components, AQS-DC-02, BAC-DC-04, OGN-DC-02, OGN-O-01, PAD-S-08, REC-S-19, TA-DC-08, TIM-S-07, WLF-DC-04, WLF-DC-06, and WLF-S-01 provide for maintenance of habitat characteristics critical to the persistence of southern pygmy salamander on the Forests.

**Junaluska Salamander (*Eurycea junaluska*)**

Primary Stresses and Threats: hydrologic modification, riparian temperature modification, roadkill (roads within riparian corridors), endemism

This species is associated with twenty-two coarse filter elements in the ESE: seven ecozones, three unique habitats, and twelve species groups (including seven aquatic species groups) (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for Junaluska salamander, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&TExPC.xlsx), and range from very broad to very specific. Aquatic indicators used in the ESE, specifically road and trail crossing density, riparian road density, and riparian forest cover address stresses and threats to the species. Streamside zone (SZ) plan components, AQS-DC-02, BAC-DC-04, OGN-DC-02, OGN-O-01, PAD-S-08, REC-S-19, TA-DC-08, TIM-S-07, WLF-DC-04, WLF-DC-06, and WLF-S-01 provide for maintenance of habitat characteristics critical to the persistence of Junaluska salamander on the Forests.

**Longtail Salamander (*Eurycea longicauda*)**

Primary Stresses and Threats: hydrologic modification, riparian temperature modification, roadkill (roads within riparian corridors), endemism

This species is associated with twenty-five coarse filter elements in the ESE: seven ecozones, six unique habitats, and twelve species groups (including seven aquatic species groups) (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for longtail salamander, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&TExPC.xlsx), and range from very broad to very specific. Aquatic indicators used in the ESE, specifically road and trail crossing density, riparian road density, and riparian forest cover address stresses and threats to the species. Streamside zone (SZ) plan components, AQS-DC-02, BAC-DC-04, OGN-DC-02, OGN-O-01, PAD-S-08, REC-S-19, TA-DC-08, TIM-S-07, WLF-DC-04, WLF-DC-06, and WLF-S-01 provide for maintenance of habitat characteristics critical to the persistence of longtail salamander on the Forests. This species can be associated with caves and mines but has never been found in these habitats on the Forests. PAD-S-11, while focusing on protection of rare bats, also protects longtail salamander, should it occur in these habitats.

**Tellico Salamander (*Plethodon aureolus*)**

Primary Stresses and Threats: development (loss of vegetative cover), habitat fragmentation, over-collecting, endemism

This species is associated with fifteen coarse filter elements in the ESE: eight ecozones, two unique habitats, and five species groups (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for Tellico salamander, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&TExPC.xlsx), and range from very broad to very specific. Streamside zone (SZ) plan components, AQS-DC-02, BAC-DC-04, OGN-DC-02, OGN-O-01, PAD-S-08, REC-S-19, TA-DC-08, TIM-S-07, WLF-DC-04, WLF-DC-06, and WLF-S-01 provide for maintenance of habitat characteristics critical to the persistence of Tellico salamander on the Forests. The road density indicator used in the ESE for aquatic species provides landscape level information on

<p>estimated open road and trail density on the Forests and provides a starting point for project-level analysis to address habitat fragmentation and connectivity for terrestrial salamanders.</p>
<p><b>Chattahoochee Slimy Salamander (<i>Plethodon chattahoochee</i>)</b></p> <p>Primary Stresses and Threats: development (loss of vegetative cover), habitat fragmentation, over-collecting, endemism</p>
<p>This species is associated with fourteen coarse filter elements in the ESE: seven ecozones, two unique habitats, and five species groups (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for Chattahoochee slimy salamander, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&amp;TExPC.xlsx), and range from very broad to very specific. Streamside zone (SZ) plan components, AQS-DC-02, BAC-DC-04, OGN-DC-02, OGN-O-01, PAD-S-08, REC-S-19, TA-DC-08, TIM-S-07, WLF-DC-04, WLF-DC-06, and WLF-S-01 provide for maintenance of habitat characteristics critical to the persistence of Chattahoochee slimy salamander on the Forests. The road density indicator used in the ESE for aquatic species provides landscape level information on estimated open road and trail density on the Forests and provides a starting point for project-level analysis to address habitat fragmentation and connectivity for terrestrial salamanders.</p>
<p><b>Cheoah Bald Salamander (<i>Plethodon cheoah</i>)</b></p> <p>Primary Stresses and Threats: development (loss of vegetative cover), habitat fragmentation, over-collecting, endemism</p>
<p>This species is associated with sixteen coarse filter elements in the ESE: eight ecozones, three unique habitats, and five species groups (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for Cheoah Bald salamander, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&amp;TExPC.xlsx), and range from very broad to very specific. Streamside zone (SZ) plan components, AQS-DC-02, BAC-DC-04, OGN-DC-02, OGN-O-01, PAD-S-08, REC-S-19, TA-DC-08, TIM-S-07, WLF-DC-04, WLF-DC-06, and WLF-S-01 provide for maintenance of habitat characteristics critical to the persistence of Cheoah Bald salamander on the Forests. The road density indicator used in the ESE for aquatic species provides landscape level information on estimated open road and trail density on the Forests and provides a starting point for project-level analysis to address habitat fragmentation and connectivity for terrestrial salamanders.</p>
<p><b>Southern Zigzag Salamander (<i>Plethodon ventralis</i>)</b></p> <p>Primary Stresses and Threats: development (loss of vegetative cover), habitat fragmentation, over-collecting</p>
<p>This species is associated with fourteen coarse filter elements in the ESE: seven ecozones, two unique habitats, and five species groups (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for southern zigzag salamander, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&amp;TExPC.xlsx), and range from very broad to very specific. Streamside zone (SZ) plan components, AQS-DC-02, BAC-DC-04, OGN-DC-02, OGN-O-01, PAD-S-08, REC-S-19, TA-DC-08, TIM-S-07, WLF-DC-04, WLF-DC-06, and WLF-S-01 provide for maintenance of habitat characteristics critical to the persistence of southern zigzag salamander on the Forests. The road density indicator used in the ESE for aquatic species provides landscape level information on estimated open road and trail density on the Forests and provides a starting point for project-level analysis to address habitat fragmentation and connectivity for terrestrial salamanders.</p>
<p><b>Weller's Salamander (<i>Plethodon welleri</i>)</b></p>

<b>Primary Stresses and Threats:</b> development (loss of vegetative cover), habitat fragmentation, over-collecting, endemism
<p>This species is associated with sixteen coarse filter elements in the ESE: eight ecozones, three unique habitats, and five species groups (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for Weller's salamander, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&amp;TExPC.xlsx), and range from very broad to very specific. Streamside zone (SZ) plan components, AQS-DC-02, BAC-DC-04, OGN-DC-02, OGN-O-01, PAD-S-08, REC-S-19, TA-DC-08, TIM-S-07, WLF-DC-04, WLF-DC-06, and WLF-S-01 provide for maintenance of habitat characteristics critical to the persistence of Weller's salamander on the Forests. The road density indicator used in the ESE for aquatic species provides landscape level information on estimated open road and trail density on the Forests and provides a starting point for project-level analysis to address habitat fragmentation and connectivity for terrestrial salamanders.</p>
<b>Peregrine Falcon (<i>Falco peregrinus</i>)</b>
<p><b>Primary Stresses and Threats:</b> poaching, pesticides, recreational use at nesting/fledging sites</p> <p>This species is associated with nine coarse filter elements in the ESE: one ecozone, six unique habitats, and one species group (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for peregrine falcon, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&amp;TExPC.xlsx), and range from very broad to very specific. Specifically, FHL-S-04, FHL-S-04, PAD-S-08, REC-S-19, and RM-S-04 provide for maintenance of habitat characteristics critical to the persistence of peregrine falcon on the Forests. PAD-S-06, EE-GLS-03, HD-GLS-06, and PL-GLS-03 specifically address stresses and threats to peregrine falcon.</p>
<b>Bald Eagle (<i>Haliaeetus leucocephalus</i>)</b>
<p><b>Primary Stresses and Threats:</b> poaching, pesticides, recreational use at nesting/fledging sites</p> <p>This species is associated with six coarse filter elements in the ESE: three unique habitats, and three species groups (including two aquatic species groups) (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for bald eagle, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&amp;TExPC.xlsx), and range from very broad to very specific. Specifically, FHL-S-04, FHL-S-04, PAD-S-08, WLF-DC-02, WLF-DC-05, WLF-DC-06, WLF-DC-08, WLF-S-01, and RM-S-04 provide for maintenance of habitat characteristics critical to the persistence of bald eagle on the Forests. PAD-S-14, FL-GLS-04, and FL-GLS-05 specifically address stresses and threats to bald eagle.</p>
<b>Southern Appalachian Black-capped Chickadee (<i>Poecile atricapillus practica</i>)</b>
<p><b>Primary Stresses and Threats:</b> loss of snags, endemism</p> <p>This species is associated with ten coarse filter elements in the ESE: four ecozones, two unique habitats, and four species groups (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for southern Appalachian black-capped chickadee, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&amp;TExPC.xlsx), and range from very broad to very specific. Specifically, CDW-DC-03, OGN-DC-02, OGN-O-01, OGN-S-01, and WLF-S-01 provide for maintenance of habitat characteristics critical to the persistence of this species (i.e. recruitment and retention of snags).</p>

<b>Cerulean Warbler (<i>Setophaga cerulea</i>)</b>
<b>Primary Stresses and Threats:</b> nest parasitism, loss of forested habitat/structure
This species is associated with sixteen coarse filter elements in the ESE: six ecozones, five unique habitats, and five species groups (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for cerulean warbler, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&TExPC.xlsx), and range from very broad to very specific. Specifically, BAC-DC-04, ECO-MgmtApp, FL-GLS-04, UM-GLS-02, WLF-DC-04, WLF-DC-06, and WLF-DC-08 provide for maintenance of habitat characteristics critical to the persistence of this species (i.e. forest structure, canopy cover).
<b>Golden-winged Warbler (<i>Vermivora chrysoptera</i>)</b>
<b>Primary Stresses and Threats:</b> loss of forested habitat/structure, loss of young/open habitat
This species is associated with ten coarse filter elements in the ESE: four ecozones, three unique habitats, and three species groups (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for golden-winged warbler, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&TExPC.xlsx), and range from very broad to very specific. Specifically, BAC-DC-02, BAM-GLS-01, BAM-GLS-02, BAM-GLS-03, ECO-MgmtApp, ECO-DC-03, ECO-DC-06, ECO-O-02, GB-GLS-06, GB-GLS-07, HD-GLS-02, HW-GLS-04, MAT-DC-01, MAT-DC-02, MAT-DC-03, MAT-DC-05, PL-GLS-06, TA-O-05, TIM-DC-06, UM-GLS-01, and UM-GLS-02 provide for maintenance of habitat characteristics critical to the persistence of this species (i.e. young forest).
<b>Forest-dwelling Bats</b>
Rafinesque's Big-eared Bat ( <i>Corynorhinus rafinesquii rafinesquii</i> ) Big Brown Bat ( <i>Eptesicus fuscus</i> ) Eastern Small-footed Myotis ( <i>Myotis leibii</i> ) Little Brown Bat ( <i>Myotis lucifugus</i> ) Tri-colored Bat ( <i>Perimyotis subflavus</i> )
<b>Primary Stresses and Threats:</b> white-nosed syndrome, loss of forested habitat/structure (roosting), climate change (as it affects cave conditions) (roosting), disturbance of cave habitats (roosting), loss of young/open/riparian habitat (foraging)
These species are cumulatively associated with forty-five coarse filter elements in the ESE: eleven ecozones, twenty-four unique habitats, and ten species groups (including two aquatic species groups) (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for forest-dwelling bats, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&TExPC.xlsx), and range from very broad to very specific. Specifically, SZ-S-04, WLF-DC-02, WLF-DC-04, WLF-DC-05, WLF-DC-06, WLF-S-01, WLF-G-01, PAD-S-09, PAD-S-10, PAD-S-11, PAD-S-12, PAD-S-13, PAD-MgmtApp, BLM-GLS-02, BLM-GLS-03, NG-GLS-01, and MAT-DC-01 provide for maintenance of habitat characteristics critical to the persistence of this species (i.e. snags, caves, foraging areas).
<b>Terrestrial Snails</b>
Spiral Coil ( <i>Helicodiscus bonamicus</i> ) Talus Coil ( <i>Helicodiscus triodus</i> ) Velvet Covert ( <i>Inflectarius subpalliatius</i> ) High Mountain Supercoil ( <i>Paravitrea andrewsae</i> ) Sculpted Supercoil ( <i>Paravitrea ternaria</i> )

<p><b>Roan Supercoil (<i>Paravitrea varidens</i>)</b>  <b>Fragile Glyph (<i>Pilsbryna (Glyphyalinia) clingmani</i>)</b></p> <p><b>Primary Stresses and Threats:</b> climate change (as it affects leaf litter microhabitats), loss of forested cover, endemism</p>
<p>These species are cumulatively associated with eight coarse filter elements in the ESE: five ecozones, one unique habitat, and two species groups (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for terrestrial snails, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&amp;TExPC.xlsx), and range from very broad to very specific. Specifically, OGN-DC-03, WLF-DC-04, and WLF-DC-08 provide for maintenance of habitat characteristics critical to the persistence of this species (i.e. moist forest floor conditions).</p>
<p><b>Mary Alice's Small-headed Fly (<i>Eulonchus marialicae</i>)</b>  <b>Primary Stresses and Threats:</b> pesticide use, lack of species knowledge</p>
<p>This species is associated with one coarse filter element in the ESE: closed canopy forests (species group) (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for Mary Alice's Small-headed Fly, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&amp;TExPC.xlsx), and range from very broad to very specific. Specifically, FHL-S-02, FHL-S-04, FHL-G-02, BAC-G-01, and RW-S-04 provide for maintenance of habitat characteristics critical to the persistence of this species (i.e. pesticide use).</p>
<p><b>Butterflies</b>  <b>Appalachian Tawny Crescent (<i>Phycoides batesii maconensis</i>)</b>  <b>Cullasaja Aphrodite Fritillary (<i>Speyeria aphrodite cullasaja</i>)</b></p> <p><b>Primary Stresses and Threats:</b> loss of foraging and nectaring habitat, pesticide use</p>
<p>These species are cumulatively associated with ten coarse filter elements in the ESE: five unique habitats and five species groups (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for pollinators such as the species addressed here, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&amp;TExPC.xlsx), and range from very broad to very specific. Specifically, WLF-DC-02, WLF-DC-05, WLF-G-04, MAT-DC-03, LSU-MgmtApp, FHL-S-02, FHL-S-04, FHL-G-02, BAC-G-01, and RW-S-04 provide for maintenance of habitat characteristics critical to the persistence of this species (i.e. pesticide use, pollinator habitat).</p>
<p><b>Allegheny Woodrat (<i>Neotoma magister</i>)</b>  <b>Primary Stresses and Threats:</b> disturbance of nesting and denning areas</p>
<p>This species is associated with four coarse filter elements in the ESE: two ecozones and two unique habitats (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for Allegheny woodrat, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&amp;TExPC.xlsx), and range from very broad to very specific. Specifically, BLM-GLS-05, BAM-GLS-17, PAD-S-07, PAD-S-08, and REC-S-19, provide for maintenance of habitat characteristics critical to the persistence of this species (i.e. protection of rocky areas).</p>
<p><b>Eastern Water Shrew (<i>Sorex albifrons (Sorex palistrus punctulatus)</i>)</b>  <b>Primary Stresses and Threats:</b> loss of riparian cover and habitat</p>
<p>This species is associated with thirteen coarse filter elements in the ESE: five ecozones, three unique habitats, and five species groups (including four aquatic species groups) (EIS Appendix C, Table C-3).</p>

As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for eastern water shrew, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&TExPC.xlsx), and range from very broad to very specific. Aquatic Ecosystem (AQS) a and Streamside Zone (SZ) plan components provide for maintenance of habitat characteristics critical to the persistence of this species (i.e. healthy riparian habitats).

**Appalachian Cottontail (*Sylvilagus obscurus*)**

**Primary Stresses and Threats:** loss of forest structure (high elevation open and edge habitats)

This species is associated with four coarse filter elements in the ESE: two ecozones and two unique habitats (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for Appalachian cottontail, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&TExPC.xlsx), and range from very broad to very specific. Specifically, BAM-GLS-02, NS-GLS-02, MAT-DC-03, WLF-DC-06, WLF-DC-07, and WLF-S-01 (i.e. high elevation brushy and open edge forest).

**Bog Turtle (*Glyptemys muhlenbergii*)**

**Primary Stresses and Threats:** development, overcollecting, hydrologic disturbance

This species is associated with eight coarse filter elements in the ESE: two unique habitats, and six species groups (including five aquatic species groups) (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for bog turtle, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&TExPC.xlsx), and range from very broad to very specific. Aquatic Ecosystem (AQS) a and Streamside Zone (SZ) plan components, as well as HD-GLS-03, HD-GLS-14, NM-GLS-07, and CF-DC-11 provide for maintenance of habitat characteristics critical to the persistence of this species.

**Aquatic Species**

Amphibians: eastern hellbender

Crustaceans: Yancey sideswimmer, Chauga crayfish, Little Tennessee crayfish, Hiwassee headwaters crayfish

Fish: banded sculpin, southern blotched chub, sharphead darter, turquoise darter, wounded darter, rosyface chub, sicklefin redhorse, stonecat, blotchside logperch, logperch, olive darter, American brook lamprey

Insects: *R. amicus*, Edmund's snaketail, Maine snaketail

Mollusks: brook floater, slippershell mussel, Tennessee pigtoe, wavy-rayed lampmussel, Tennessee clubshell, mountain creekshell, Christy's elimia

**Primary Stresses and Threats:** sedimentation, hydrologic modification, water temperature modification, toxic runoff (point and nonpoint source)

These species are associated with one or more of twelve coarse filter elements in the ESE: three unique habitats and nine aquatic species groups (EIS Appendix C, Table C-3). As stated above, many plan components are associated with these elements and are directly or indirectly providing for habitat characteristics suitable for aquatic species, therefore contributing to species persistence on the Forests. These plan components are listed in the project record (SCC&TExPC.xlsx), and range from very broad to very specific. Streamside zone (SZ), water resources (WTR), and aquatic species (AQS) plan components, FAC-G-01, SLS-DC-02, TA-DC-07, TA-DC-08, TA-DC-10, TIM-S-03, TIM-S-04, and TIM-S-07 provide for maintenance of habitat characteristics critical to the persistence of aquatic species on the Forests. Additionally, indicators used in the ESE for aquatic species provides landscape level information on existing and expected conditions for aquatic species on the Forests and was

<p>completed for every 6<sup>th</sup> level hydrologic unit on the Forests, including those supporting rare aquatic species.</p>
<h2>PLANTS</h2>
<p><b>Bark and Leaf Epiphytes</b></p> <p><b>Lichens:</b> <i>Anzia americana</i>, <i>Arthonia kermesina</i>, <i>Arthopyrenia betulicola</i>, <i>Arthopyrenia degelii</i>, <i>Graphis sterlingiana</i>, <i>Heterodermia appalachensis</i>, <i>Hypotrachyna sinuosa</i>, <i>Hypotrachyna virginica</i>, <i>Lobaria scrobiculata</i>, <i>Pannaria conoplea</i>, <i>Pertusaria appalachensis</i>, <i>Punctelia reddenda</i>, <i>Sticta limbata</i>, and <i>Usnea angulata</i>.</p> <p><b>Liverworts:</b> <i>Bazzania nudicaulis</i>, <i>Cheilolejeunea evansii</i>, <i>Drepanolejeunea appalachiana</i>, <i>Leptoscyphus cunefolius</i>, <i>Lophocolea muricata</i>, <i>Plagiochila corniculata</i>, <i>Riccardia jugata</i>, <i>Sphenolobopsis pearsonii</i>, and <i>Lejeunea sharpii</i>.</p> <p><b>Mosses:</b> <i>Brachythecium rotaeatum</i>, <i>Herzogiella turfacea</i>, <i>Leptodontium excelsum</i>, and <i>Schlotheimia lancifolia</i>.</p> <p><b>Primary Stresses and Threats:</b> timber harvest, road construction, prescribed fire, natural disturbances such as severe wind or wildfire. Other impacts to trees including balsam woolly adelgid, hemlock woolly adelgid, climate change, and/or stochastic events.</p>
<p>This species group is coarsely associated with nine ecozones and seven unique habitats, and six species groups (EIS Appendix C, Table C-3). Many plan components are associated with these elements and either directly or indirectly provide or enhance habitat for bark or leaf epiphytes. In particular, those plan components that enhance coarse woody debris, old growth, and mature forests improve suitable habitat for these species. Specific plan components include: ECO-DC-02, WLF-DC-06, OGN-DC-01, OG-DC-02, OGN-O-01, TIM-S-01, TIM-S-02, LSU-G-03, MAT-DC-01, BAC-DC-02, CDW-DC-02, CDW-DC-03, CDW-S-18, RW-DC-01, RW-S-01, SIA-DC-01, SIA-S-01, and SIA-S-02, MAT-DC-01, PAD-S-03 and PAD-S-04.</p>
<p><b>Fire Intolerant Species</b></p> <p><b>Lichens:</b> <i>Anzia americana</i>, <i>Arthonia kermesina</i>, <i>Arthopyrenia betulicola</i>, <i>Arthopyrenia degelii</i>, <i>Fellhanera hybrida</i>, <i>Graphis sterlingiana</i>, <i>Heterodermia appalachensis</i>, <i>Hypotrachyna oostingii</i>, <i>Hypotrachyna sinuosa</i>, <i>Hypotrachyna virginica</i>, <i>Lepraria lanata</i>, <i>Lobaria scrobiculata</i>, <i>Pannaria conoplea</i>, <i>Pertusaria appalachensis</i>, <i>Punctelia reddenda</i>, <i>Rinodina brodoana</i>, <i>Stereocaulon tenesseense</i>, <i>Sticta limbata</i> and <i>Usnea angulata</i>.</p> <p><b>Liverworts:</b> <i>Acrobolbus ciliatus</i>, <i>Bazzania nudicaulis</i>, <i>Cheilolejeunea evansii</i>, <i>Drepanolejeunea appalachiana</i>, <i>Leptoscyphus cunefolius</i>, <i>Lophocolea muricata</i>, <i>Plagiochila corniculata</i>, <i>Plagiochila ludoviciana</i>, <i>Plagiochila echinata</i>, <i>Plagiochila sullivantii</i> var. <i>sullivantii</i>, <i>Plagiochila virginica</i> var. <i>caroliniana</i>, <i>Porella wataugensis</i>, <i>Ptilidium ciliare</i>, <i>Riccardia jugata</i>, <i>Sphenolobopsis pearsonii</i>, and <i>Lejeunea sharpii</i></p> <p><b>Mosses:</b> <i>Brachydontium trichodes</i>, <i>Brachythecium rotaeatum</i>, <i>Cirriphyllum piliferum</i>, <i>Cryptohypnum pygmaeum</i>, <i>Ditrichum ambiguum</i>, <i>Entodon sullivantii</i>, <i>Herzogiella turfacea</i>, <i>Homalia trichomanoides</i>, <i>Leptodontium excelsum</i>, <i>Leptohymenium sharpii</i>, <i>Neckera complanata</i>, <i>Pilosium chlorophyllum</i>, <i>Plagiommium carolinianum</i>, <i>Plathynidium ripariooides</i>, <i>Pohlia rabunensis</i>, <i>Racomitrium aciculare</i>, <i>Rhabdoweisia crenulata</i>, <i>Schlotheimia lancifolia</i>, <i>Scopelophila cataractae</i>, <i>Sphagnum squarrosum</i>, and <i>Syntrichia ammoniana</i>.</p> <p><b>Clubmosses and Ferns:</b> <i>Athyrium angustum</i>, <i>Botrychium angustisegmentum</i>, <i>Botrychium matricariifolium</i>, <i>Phegopteris connectilis</i>, and <i>Botrychium oneidense</i></p> <p><b>Grasses:</b> <i>Diarrhena americana</i>, <i>Glyceria nubigena</i>, and <i>Poa palustris</i></p> <p><b>Sedges:</b> <i>Carex baileyi</i>, <i>Carex careyana</i>, <i>Carex pedunculata</i>, <i>Carex projecta</i>, and <i>Carex radfordii</i></p> <p><b>Orchids:</b> <i>Corallorrhiza wisteriana</i></p> <p><b>Forbs:</b> <i>Asarum rosei</i>, <i>Cardamine clematitis</i>, <i>Cardamine rotundifolia</i>, <i>Caulophyllum giganteum</i>, <i>Dalibardia repens</i>, <i>Eriogonum bulbosa</i>, <i>Geum geniculatum</i>, <i>Hexastylis rhombiformis</i>, <i>Rubus idaeus</i> ssp.</p>

*strigosus*, *Scutellaria saxatilis*, *Shortia galacifolia* var. *brevistyla*, *Shortia galacifolia* var. *galacifolia*, *Solidago ulmifolia* var. *ulmifolia*, *Stachys cordata*, *Streptopus amplexifolius* var. *amplexifolius*, *Trientalis borealis*, *Trillium discolor*, *Trillium pusillum* var. *ozarkanum*, and *Trillium simile*

**Woody Plants:** *Buckleya distichophylla*, *Diervilla rivularis*, *Lonicera canadensis*, *Abies fraseri* and *Betula cordifolia*

**Primary Stresses and Threats:** high severity prescribed fire or wildfires

This species group is associated with seven ecozones, four unique habitats, and six species groups (EIS Appendix C, Table C-3). Various plan components are associated with these elements and either directly or indirectly provide or enhance habitat for fire intolerant species. In particular, those plan components that enhance closed canopy and old growth and mature mesic forests improve suitable habitat for these species. Specific plan components include: ECO-DC-02, ECO-DC-08, ECO-O-06, PAD-DC-06 (in part), PAD-S-04, PAD-G-02, OGN-DC-01, OG-DC-03, OGN-S-03, FR-DC-02, FR-DC-03, FR-DC-05, FR-G-03, BAC-DC-02, BAC-DC-09, EIA-S-04, SIA-DC-02, SIA-S-04, RNA-DC-01, RNA-S-10, AT-DC-02, AT-G-04, CDW-DC-02, CDW-S-23, CDW-S-23, RW-DC-01, and MQ 7-10-T1.

**Rock Outcrop Associates**

**Lichens:** *Leparia lanata*, *Melanelia stygia*, *Usnea angulata*, and *Xanthoparmelia monticola*.

**Liverworts:** *Barbilophozia hatcheri*, *Cephaloziella spinicaulis*, *Mylia taylorii*, *Nardia scalaris* ssp. *scalaris*, and *Plagiochila austini*

**Mosses:** *Campylopus atrovirens* var. *atrovirens*, *Encalypta procera*, *Entodon compressus*, *Homaliadelphus sharpii*, *Palamocladium leskeoides*, *Bartramidula wilsonii*, *Rhytidium rugosum*, *Scopelophila cataractae*, *Scopelophila ligulata*, *Sphagnum tenellum*, and *Syntrichia ammonsiana*

**Clubmosses and Ferns:** *Asplenium bradleyi*, *Asplenium monanthes*, *Asplenium pinnatifidum*, *Asplenium ruta-muraria* var. *cryptolepis*, *Athyrium angustum*, *Cystopteris fragilis*, *Didymoglossum petersii*, *Myriopteris alabamensis*, and *Woodsia appalachiana*

**Grasses:** *Bouteloua curtipendula* var. *curtipendula*, *Calamagrostis canadensis* var. *canadensis*, and *Muhlenbergia glomerata*

**Rush:** *Juncus trifidus*

**Orchids:** *Hexalectris spicata*

**Forbs:** *Adlumia fungosa*, *Allium allegheniense*, *Arabis patens*, *Campanula rotundifolia*, *Coreopsis grandiflora* var. *grandiflora*, *Corydalis micrantha*, *Crocanthemum bicknellii*, *Crocanthemum propinquum*, *Croton monanthogynus*, *Draba ramosissima*, *Echinacea purpurea*, *Heuchera longiflora*, *Heuchera parviflora* var. *sauensis*, *Heuchera pubescens*, *Lilium philadelphicum* var. *philadelphicum*, *Packera paupercula* var. *appalachiana*, *Phlox subulata*, *Dodecatheon meadia*, *Pycnanthemum curvipes*, *Rudbeckia triloba* var. *beadlei*, *Ruellia purshiana*, *Sedum glaucophyllum*, *Solidago simulans*, *Stenanthium leimanthoides*, *Sympotrichum pratense*, *Sympyotrichum oblongifolium*, *Thermopsis mollis*, and *Trichostema brachiatum*

**Woody Plants:** *Berberis canadensis*, *Buckleya distichophylla*, *Robinia hispida* var. *fertilis*, *Robinia hispida* var. *kelseyi*, *Robinia viscosa* var. *viscosa*, *Robinia viscosa* var. *hartwigii*, and *Tsuga caroliniana*

**Primary Stresses and Threats:** recreational trampling, non-native invasive plant infestations, woody plant invasion, climate change, or stochastic events.

This species group is associated with nine unique habitats (EIS Appendix C, Table C-3). Numerous plan components are associated with these habitats and either directly or indirectly provide or enhance habitat for rock outcrop species. In particular, those plan components that enhance or maintain unique habitats, reduce non-native invasive plant infestations, or minimize trampling improve suitable habitat for these species. Specific plan components include: CC-DC-01, PAD-DC-02, PAD-DC-03, PAD-DC-04, PAD-DC-06 (in part), PAD-O-02, PAD-S-03, PAD-S-04, PAD-S-08, PAD-G-02, FHL-DC-03,

FHL-O-02, FHL-S-04, REC-S-08, REC-S-19, SIA-DC-01, SIA-S-02, EXF-DC-07, CDW-DC-03, CDW-S-05, RM-S-03, MQ- 2-7-T1, MQ 4-3-T1, and MQ 6-7-T2.

### Closed Canopy Associates

**Lichens:** *Anzia americana*, *Arthonia kermesina*, *Arthopyrenia betulicola*, *Arthopyrenia degelii*, *Fellhanera hybrida*, *Graphis sterlingiana*, *Heterodermia appalachensis*, *Hypotrachyna oostingii*, *Hypotrachyna sinuosa*, *Hypotrachyna virginica*, *Lepraria lanata*, *Lobaria scrobiculata*, *Pannaria conoplea*, *Pertusaria appalachensis*, *Punctelia reddenda*, *Rinodina brodoana*, *Stereocaulon tenesseense*, and *Sticta limbata*

**Liverworts:** *Acrobolbus ciliatus*, *Bazzania nudicaulis*, *Cheilolejeunea evansii*, *Drepanolejeunea appalachiana*, *Leptoscyphus cunefolius*, *Lophocolea muricata*, *Plagiochila corniculata*, *Plagiochila ludoviciana*, *Plagiochila echinata*, *Plagiochila sullivantii* var. *sullivantii*, *Plagiochila virginica* var. *caroliniana*, *Porella wataugensis*, *Ptilidium ciliare*, *Riccardia jugata*, *Sphenolobopsis pearsonii*, and *Taxilejeunea sharpii*

**Mosses:** *Brachydontium trichodes*, *Brachythecium rotaeatum*, *Cirriphyllum piliferum*, *Cryptohypnum pygmaeum*, *Ditrichum ambiguum*, *Entodon sullivantii*, *Herzogiella turfacea*, *Homalia trichomanoides*, *Leptodontium excelsum*, *Leptohymenium sharpii*, *Neckera complanata*, *Pilosium chlorophyllum*, *Plagiommium carolinianum*, *Plathynidium riparioides*, *Pohlia rabunensis*, *Racomitrium aciculare*, *Rhabdoweisia crenulata*, *Schlotheimia lancifolia*, *Scopelophila cataractae*, *Sphagnum squarrosum*, and *Syntrichia ammonsiana*.

**Clubmosses and Ferns:** *Athyrium angustum*, *Botrychium angustisegmentum*, *Botrychium matricariifolium*, *Phegopteris connectilis*, *Botrychium jenmanii*, and *Botrychium oneidense*

**Grasses:** *Calamagrostis porteri*, *Diarrhena americana*, *Glyceria nubigena*, *Melica nitens*, and *Poa palustris*

**Sedges:** *Carex baileyi*, *Carex careyana*, *Carex cherokeensis*, *Carex hitchcockiana*, *Carex pedunculata*, *Carex projecta*, *Carex purpurifera*, *Carex radfordii*, and *Carex roanensis*

**Orchids:** *Corallorrhiza wisteriana*, *Cypripedium parviflorum* var. *parviflorum*, *Hexalectris spicata*, *Liparis loeselii*, *Platanthera grandiflora*, *Platanthera herbacea*, and *Platanthera peramoena*

**Forbs:** *Adlumia fungosa*, *Agastache nepetoides*, *Asarum rosei*, *Cardamine clematitis*, *Cardamine rotundifolia*, *Caulophyllum giganteum*, *Celastrus scandens*, *Cirsium carolinianum*, *Dalibardia repens*, *Delphinium exaltatum*, *Erigenia bulbosa*, *Euphorbia purpurea*, *Frasera caroliniensis*, *Geum geniculatum*, *Heuchera longiflora*, *Heuchera pubescens*, *Hexastylis contracta*, *Hexastylis rhombiformis*, *Hydrastis canadensis*, *Lysimachia fraseri*, *Monarda media*, *Rubus idaeus* ssp. *strigosus*, *Scutellaria saxatilis*, *Shortia galacifolia* var. *brevistyla*, *Shortia galacifolia* var. *galacifolia*, *Silene ovata*, *Solidago ulmifolia* var. *ulmifolia*, *Spigelia marilandica*, *Stachys clingmanii*, *Stachys cordata*, *Streptopus amplexifolius* var. *amplexifolius*, *Symphyotrichum shortii*, *Thaspium pinnatifidum*, *Thermopsis fraxinifolia*, *Thermopsis mollis*, *Trientalis borealis*, *Trillium discolor*, *Trillium pusillum* var. *ozarkanum*, *Trillium simile*, and *Viola appalachensis*

**Woody Plants:** *Berberis canadensis*, *Buckleya distichophylla*, *Diervilla rivularis*, *Fothergilla major*, *Lonicera canadensis*, *Rhododendron cumberlandense*, *Rhododendron vaseyi*, *Robinia hispida* var. *fertilis*, *Robinia hispida* var. *kelseyi*, *Robinia viscosa* var. *viscosa*, *Abies fraseri*, *Betula cordifolia*, and *Tsuga caroliniana*

**Primary Stresses and Threats:** : timber harvest, road construction, high intensity prescribed fire, natural disturbances such as severe wind or wildfire. Other impacts to trees include pest infestations such as balsam woolly adelgid, hemlock woolly adelgid, emerald ash borer, or pine beetle. And climate change can impact the canopy through time.

This species group is associated with eleven ecozones, four unique habitats, and eight species groups (EIS Appendix C, Table C-3). Many plan components are associated with these habitats and either directly or indirectly provide or enhance habitat for closed canopy species. In particular, those plan components that enhance or maintain unique habitats, reduce non-native invasive plant infestations, or minimize trampling improve suitable habitat for these species. Specific plan components include: SZ-DC-02, ECO-DC-02, PAD-DC-06 (in part), PAD-S-03, PAD-S-04, PAD-G-02, OGN-DC-01, OG-DC-

<p>03, OGN-S-01, OGN-S-02, OGN-S-03, FHL-DC-01, FHL-O-01, TIM-S-01, TIM-S-02, FR-DC-03, FR-G-03, TA-S-04, TA-G-02, MAT-DC-01, BAC-DC-02, BAC-DC-03, AT-DC-02, AT-S-02, CDW-DC-02, CDW-DC-03, CDW-S-18, RW-DC-01, SIA-S-04, SIA-S-06, RNA-DC-01, RNA-S-10, MQ 2-8-T2, MQ 2-3-T2, and MQ 6-5-T2.</p>
<p><b>Southern Appalachian Bogs and Open Wetland Meadow Associates</b></p> <p><b>Mosses:</b> <i>Dicranum undulatum</i>, <i>Sphagnum angustifolium</i>, <i>Sphagnum capillifolium</i>, <i>Sphagnum flexuosum</i>, and <i>Sphagnum russowii</i></p> <p><b>Clubmosses and Ferns:</b> <i>Lycopodiella inundata</i></p> <p><b>Grassess:</b> <i>Bromus ciliatus</i></p> <p><b>Sedges:</b> <i>Carex baileyi</i>, <i>Carex oligosperma</i>, <i>Carex projecta</i>, <i>Carex utriculata</i>, and <i>Rhynchospora alba</i></p> <p><b>Orchids:</b> <i>Arethusa bulbosa</i>, <i>Liparis loeselii</i>, <i>Platanthera grandiflora</i>, <i>Platanthera herbicolor</i>, and <i>Platanthera peramoena</i></p> <p><b>Forbs:</b> <i>Chelone obliqua</i> var. <i>erwiniae</i>, <i>Chelone obliqua</i> var. <i>obliqua</i>, <i>Dalibardia repens</i>, <i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>, <i>Filipendula rubra</i>, <i>Helenium brevifolium</i>, <i>Oenothera perennis</i>, <i>Palustricodon aparinoides</i> var. <i>aparinoides</i>, <i>Pedicularis lanceolata</i>, <i>Sarracenia purpurea</i> var. <i>montana</i>, <i>Solidago uliginosa</i> var. <i>uliginosa</i>, <i>Sparganium acaule</i>, <i>Triantha glutinosa</i>, and <i>Veronica americana</i></p> <p><b>Woody Plants:</b> <i>Rhododendron vaseyi</i> and <i>Vaccinium macrocarpon</i></p> <p><b>Primary Stresses and Threats:</b> hydrology, non-native invasive plant infestations, woody plant invasion, feral pigs, climate change, or stochastic events.</p>
<p>This species group is closely associated with two unique habitats (EIS Appendix C, Table C-3). Various plan components are associated with these habitats and either directly or indirectly provide or enhance habitat for rock outcrop species. In particular, those plan components that enhance or maintain natural hydrological flows, reduce non-native invasive plant infestations, or reduce woody plant invasions improve suitable habitat for these species. Specific plan components include: PAD-DC-02, PAD-DC-03, PAD-DC-06 (in part), PAD-O-3, PAD-S-03, PAD-S-04, PAD-G-02, SIA-DC-01, SZ-S-01, CF-DC-11, WTR-DC-04, REC-S-20, HD-GLS-03, EXF-DC-07, GB-GLS-04, NM-GLS-07, FHL-DC-03, FHL-O-02, FHL-S-04, MQ- 2-7-T1, and MQ 4-2-T1.</p>
<p><b>Grassy Bald Associates</b></p> <p><b>Clubmosses and Ferns:</b> <i>Botrychium matricariifolium</i>, <i>Botrychium simplex</i> var. <i>simplex</i>, and <i>Botrychium multifidum</i></p> <p><b>Grassess:</b> <i>Bromus ciliatus</i>, <i>Calamagrostis canadensis</i> var. <i>canadensis</i>, and <i>Poa palustris</i></p> <p><b>Forbs:</b> <i>Chamerion angustifolium</i> ssp. <i>circumvagum</i>, <i>Delphinium exaltatum</i>, <i>Lilium philadelphicum</i> var. <i>philadelphicum</i>, <i>Monarda media</i>, <i>Packera schweinitziana</i>, <i>Solidago lancifolia</i>, and <i>Spiranthes ochroleuca</i>,</p> <p><b>Woody Plants:</b> <i>Alnus viridis</i> ssp <i>crispa</i> and <i>Rhododendron cumberlandense</i></p> <p><b>Primary Stresses and Threats:</b> recreational trampling, non-native invasive plant infestations, woody plant invasion, feral pigs, climate change, or stochastic events.</p>
<p>This species group is coarsely associated with one unique habitat and one species group (EIS Appendix C, Table C-3). Various plan components are associated with these two elements and either directly or indirectly provide or enhance habitat for grassy bald species. In particular, those plan components that reduce competing herbaceous and woody vegetation, reduce non-native invasive plant infestations, or minimize recreational impacts improve suitable habitat for these species. Specific plan components include: PAD-DC-02, PAD-DC-03, PAD-DC-06 (in part), PAD-O-04, PAD-S-03, PAD-S-04, PAD-G-02, SIA-DC-01, RM-O-1, FHL-DC-03, FHL-O-02, FHL-S-04, MQ- 2-7-T1, and MQ 4-4-T1</p>
<p><b>Open Woodlands and Fire-adapted Associates</b></p> <p><b>Lichens:</b> <i>Xanthoparmelia monticola</i></p> <p><b>Grassess:</b> <i>Bouteloua curtipendula</i> var. <i>curtipendula</i>, <i>Calamagrostis porteri</i>, <i>Deschampsia cespitosa</i> ssp. <i>glaucia</i>, <i>Elymus trachycaulus</i> ssp. <i>trachycaulus</i>, <i>Melica nitens</i>, <i>Muhlenbergia glomerata</i>, <i>Poa saltuensis</i>, and <i>Sporobolus heterolepis</i></p> <p><b>Sedges:</b> <i>Carex purpurifera</i></p>

**Orchids:** *Hexalectris spicata* and *Spiranthes ochroleuca*

**Forbs:** *Agastache nepetoides*, *Allium allegheniense*, *Arabis glabra*, *Buchnera americana*, *Celastrus scandens*, *Chamerion angustifolium* ssp. *circumvagum*, *Cirsium carolinianum*, *Crocanthemum propinquum*, *Delphinium exaltatum*, *Echinacea purpurea*, *Euphorbia purpurea*, *Fleischmannia incarnata*, *Frasera caroliniensis*, *Gentianopsis crinita*, *Liatris aspera*, *Liatris squarrulosa*, *Liatris turgida*, *Lilium philadelphicum* var. *philadelphicum*, *Lysimachia fraseri*, *Matelea obliqua*, *Orbexilum pedunculatum*, *Packera serpentica*, *Parnassia grandifolia*, *Pedicularis lanceolata*, *Polygala senega*, *Dodecatheon meadia*, *Pycnanthemum curvipes*, *Ranunculus fascicularis*, *Ruellia purshiana*, *Sarracenia purpurea* var. *montana*, *Silene ovata*, *Spigelia marilandica*, *Sympotrichum laeve*, *Sympotrichum pratense*, *Sympyotrichum oblongifolium*, *Sympyotrichum rhianon*, *Sympyotrichum shortii*, *Thalictrum macrostylum*, *Thaspium pinnatifidum*, *Thermopsis fraxinifolia*, *Thermopsis mollis*, *Thermopsis villosa*, and *Trichostema brachiatum*

**Woody Plants:** *Berberis canadensis*, *Fothergilla major*, *Robinia hispida* var. *fertilis*, *Robinia hispida* var. *kelseyi*, *Robinia viscosa* var. *viscosa*, and *Tsuga caroliniana*

**Primary Stresses and Threats:** Dense midstory and overstory canopy, fire exclusion, non-native invasive plant infestations, or stochastic events.

This species group is associated with six ecozones, six unique habitats, and five species groups (EIS Appendix C, Table C-3). Many plan components are associated with these elements and either directly or indirectly provide or enhance habitat for fire adapted and open woodland species. In particular, those plan components that enhance or maintain unique habitats, reduce non-native invasive plant infestations, or increase prescribe burns improve suitable habitat for these species. Specific plan components include: PAD-DC-02, PAD-DC-03, PAD-DC-06 (in part), PAD-O-01, PAD-S-03, PAD-S-04, PAD-G-02, FHL-DC-03, FHL-O-02, FHL-S-04, FHL-S-05, TA-G-02, MQ 2-2-T2, MQ 2-4-T2, MQ- 2-7-T1, MQ 3-5-T2, MQ 7-10-T1, WLF-DC-05, ECO-O-05, ECO-O-06, OGN-S-01, FR-DC-01, and FR-DC-05.

#### Spray Cliff Associates

**Liverworts:** *Acrobolbus ciliatus*, *Aneura maxima*, *Lejeunea blomquistii*, *Lophocolea appalachiana*, *Mylia taylorii*, *Plagiochila echinata*, *Plagiochila sullivantii* var. *sullivantii*, *Plagiochila virginica* var. *caroliniana*, *Porella japonica* ssp. *appalachiana*, and *Radula voluta*

**Mosses:** *Bryoxiphium norvegicum*, *Cirriphyllum piliferum*, *Dichodontium pellucidum*, *Entodon sullivantii*, *Homalia trichomanoides*, *Bartramidula wilsonii*, *Plagiomnium ellipticum*, *Sphagnum pylaesii*, *Sphagnum squarrosum*, *Taxiphyllum alternans*, and *Warnstorffia fluitans*

**Clubmosses and Ferns:** *Asplenium monanthes*, *Didymoglossum petersii*, *Huperzia porophila*, *Hymenophyllum tayloriae*, *Moranopteris nimbatum*, *Phegopteris connectilis*, and *Vandeboschia boschianum*

**Grasses:** *Spartina pectinata*

**Forbs:** *Chelone obliqua* var. *obliqua*

**Primary Stresses and Threats:** trampling from recreational use

This species group is closely associated with one unique habitat (EIS Appendix C, Table C-3). Various plan components are associated with this habitat and either directly or indirectly provide or enhance habitat for rock outcrop species. In particular, those plan components that enhance or maintain natural hydrological flows, reduce non-native invasive plant infestations, or reduce woody plant invasions improve suitable habitat for these species. Specific plan components include: PAD-DC-02, PAD-DC-03, PAD-DC-06 (in part), PAD-S-03, PAD-S-04, PAD-G-02, SIA-DC-01, SZ-S-01, REC-O-01, MQ- 5-1-T2.

#### Forest Seep and Stream Associates

**Liverworts:** *Acrobolbus ciliatus*, *Aneura maxima*, *Lejeunea blomquistii*, *Lophocolea appalachiana*, *Mylia taylorii*, *Plagiochila echinata*, *Plagiochila sullivantii* var. *sullivantii*, *Plagiochila virginica* var. *caroliniana*, *Porella japonica* ssp. *appalachiana*, and *Radula voluta*

**Mosses:** *Dicranum undulatum*, *Encalyptera procera*, *Fontinalis sphagnifolia*, *Hygrohypnum closteri*, *Plagiomnium ellipticum*, *Plagiomnium rostratum*, *Rhytidadelphus subpinnatus*, and *Sphagnum squarrosum*

**Clubmosses and Ferns:** *Lycopodiella inundata*

**Grasses:** *Bromus ciliatus*, *Calamagrostis canadensis* var. *canadensis*, *Glyceria laxa*, and *Glyceria nubigena*

**Sedges:** *Carex baileyi*, *Carex oligosperma*, *Carex projecta*, and *Rhynchospora alba*

**Orchids:** *Liparis loeselii*, *Platanthera grandiflora*, and *Platanthera peramoena*

**Forbs:** *Cardamine clematitis*, *Cardamine rotundifolia*, *Chelone obliqua* var. *erwiniae*, *Chelone obliqua* var. *obliqua*, *Epilobium ciliatum* ssp. *ciliatum*, *Gentiana latidens*, *Geum geniculatum*, *Helenium brevifolium*, *Hexastylis rhombiformis*, *Lilium grayi*, *Parnassia grandifolia*, *Pedicularis lanceolata*, *Solidago uliginosa* var. *uliginosa*, *Streptopus amplexifolius* var. *amplexifolius*, *Triantha glutinosa*, and *Veronica americana*

**Woody Plants:** *Diervilla rivularis*, *Lonicera canadensis*, *Rhododendron vaseyi*, *Vaccinium macrocarpon*

**Primary Stresses and Threats:** road construction, hydrological flow changes, feral pigs, non-native invasive plant infestations

This species group is associated with five ecozones and one unique habitat (EIS Appendix C, Table C-3). Various plan components are associated with this habitat and either directly or indirectly provide or enhance habitat for rock outcrop species. In particular, those plan components that enhance or maintain natural hydrological flows, reduce non-native invasive plant infestations, or reduce woody plant invasions improve suitable habitat for these species. Specific plan components include: PAD-DC-02, PAD-DC-03, PAD-DC-06 (in part), PAD-S-03, PAD-S-04, PAD-G-02, SIA-DC-01, TIM-SD-07, TA-S-04, WTR-DC-04, WTR-DC-12, SZ-S-01, FHL-DC-03, FHL-O-02, FHL-S-04, and MQ- 2-7-T1.