Appendix C. Ecological Sustainability Analysis

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This Appendix was updated on March 26, 2020 to improve accuracy in Table A for NPESE Ecosystems and Species Groups. All contents remain draft until the final Environmental Impact Statement is accepted. Changes from the previously posted version appear in red.

Background

The Ecological Sustainability Evaluation (ESE) tool is a strategic conservation planning tool used by the US Forest Service Southern Region for forest planning. Ecological sustainability in this context is defined as the capability of ecosystems to maintain ecological integrity (36 CFR 219.19). 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 while 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.

Evaluation Process

The general approach to evaluating ecological sustainability and species diversity is to 1) define **ecological systems** (ecozones and unique habitats), 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; 7) check **plan components** for species specific needs.

This appendix breaks down these steps in detail. Just below this introduction, the **ecological systems** (ecozones and unique habitats are defined). Then the species groups for the aquatic and terrestrial ecosystems are described one by one. Each **species** group includes Table A that identifies the species associated with that species group, Table B, the **indicators** and ratings associated with those indicators, and Table C the estimated **outcomes** by alternative including the composite **scores**. The crosswalk between species groups and **plan components** is found in Appendix D.

Composite Scores

A key consideration in using the ESE tool in this evaluation is the direction of change from current conditions to expected future conditions over time. The ESE tool has four broad categories of conditions calculated using the Ecological Sustainability scoring system, “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 1. Overall Eological Sustainability Scores

Range of Condition Score	Condition	Definition of Ecological Sustainability Evaluation Score Applied to Planning Elements
3.51 – 4.00	Very Good (VG)	Element conditions are optimal
2.51 – 3.50	Good (G)	Element conditions are acceptable
1.51 – 2.50	Fair (F)	Element conditions are slightly inadequate
1.00 – 1.50	Poor (P)	Element conditions are severely inadequate

An 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. Using a coarse-filter perspective, when the ecological sustainability score improves over the 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 even expand. 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 DEIS will disclose 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.

Defining the Ecological Systems

Step 1 of the Ecological Sustainability Evaluation Tool process is to define the ecological systems in use. For this tool, the ecological systems are the watersheds, ecosystems (ecozone and unique habitats of the forest). In Step 3, these are then associated with species groups, which are shown below.

Aquatic species groups:

- Aquatic Species Senstive to Invasives Species
- Hydrologic Modification Sensitive Species
- Medium and Large River Associates
- Non-point Source Pollution Sensitive Species
- Point Source Pollution Sensitive Species
- Pond, Lake and Reservoir Associates
- Sediment Sensitive Species
- Small River Associates
- Stream Associates

Ecozone ecoystems:

- Acidic Cove Forest
- Dry Oak Forest
- Dry-mesic Oak Forest
- Floodplain Forest
- High Elevation Red Oak Forest
- Mesic Oak Forest
- Northern Hardwood Forest
- Pine-oak Heath Forest
- Rich Cove Forest
- Shortleaf Pine Forest
- Spruce-fir Forest

Unique habitat ecosystems:

- Beech Gaps/Boulderfield Forest
- Calcareous Oak-walnut Forest
- Carolina Hemlock Forest
- Caves and Abandoned Mines
- Floodplain Pools
- Grassy Balds
- High Elevation Granitic Domes
- High Elevation Rocky Summit
- Low Elevation Glades
- Low Elevation Granitic Domes
- Low Elevation Rocky Summit
- Montane Calcareous Cliffs
- Montane Cliffs
- Montane Red Cedar Hardwood Woodlands
- Rocky Bar and Shore
- Seeps
- Serpentine Woodlands
- Shrub Balds
- Southern Appalachian Bogs
- Spray Cliffs
- Swamp Forest Bog Complex
- Upland Vernal Pools
- White Pine Forest

Unique habitats (Continued)

- Woodlands and Shale Slopes

Species groups (across ecosystems):

- Bark/Leaf Epiphytes
- Closed Canopy Forest Associates
- Coarse Woody Debris/Downed Wood Associates
- Fire adapted Species
- Fire Intolerant Species
- Forest Edge and Transition Associates
- Hard and Soft Mast Dependent Species
- Interior Forest Associates
- Old Growth Forest Associates
- Road Density Sensitive Species
- Snag and Den Tree Associates
- Woodland Associates
- Young Forest Associates

Identifying Species Analyzed in the Ecological Sustainability Tool

Step 2 of the ESE tool evaluation process is to identify the species that are analyzed in the tool. All of the species in the tool are shown below. The rationale for including species that are neither Federally-listed nor Species of Conservation Concern is described in Chapter 3 of the DEIS, and specific rationale for each species inclusion is contained within the Ecological Sustainability Tool. To see the species associated with each species group, see Table A of each species group further below in this appendix.

Key to species

*Federally-listed Species

**Species of Conservation Concern (July 1, 2015)

***Proposed SCC addition (August 28, 2018)

****Federally-listed, USFWS guidance not to include in analysis (species considered extirpated

Abies fraseri - Fraser fir

Acanthothecis fontana - Fontana Lichen

Accipiter striatus - Sharp-shinned Hawk

Acer nigrum - Black Maple

Acipenser fulvescens - Lake Sturgeon

Aconitum reclinatum - white monkshood

Acrobolbus ciliatus – A Liverwort**

Adlumia fungosa - Climbing fumatory**

Aegolius acadicus pop. 1 - Southern Appalachian Northern Saw-whet Owl

Agalinis decemloba - Piedmont Gerardia

Agastache nepetoides - Yellow Giant-hyssop

Agrostis mertensii - Arctic Bentgrass

Alasmidonta raveneliana - Appalachian elktoe*

Alasmidonta robusta - Carolina Elktoe

Alasmidonta varicosa - Brook Floater**

Alasmidonta viridis - Slippershell Mussel**

Alectoria fallacina - Bubbling Witch's Hair

Allium tricoccum - Red Ramps

Alnus viridis ssp crispa - Green Alder**

Ambystoma maculatum - Spotted Salamander

Ambystoma talpoideum - Mole Salamander

Ambystoma tigrinum tigrinum - Eastern Tiger Salamander

Ameiurus brunneus - Snail Bullhead

Ameiurus platycephalus - Flat Bullhead

Amelanchier sanguinea - Roundleaf Serviceberry

Ammodramus henslowii - Henslow's Sparrow
Ammodramus leconteii - Le Conte's Sparrow
Ammodramus savannarum - Grasshopper Sparrow
Ampelopsis cordata - Heartleaf Peppervine
Amphidium mougeotii - Mougeot's Yoke Moss
Anacamptodon splachnoides - Knothole Moss
Anaptychia crinalis - A Foliose Lichen
Anastrophyllum saxicola - Liverwort
Andreaea rothii var. *rothii* - Black Falcate Split Moss
Andreaea rupestris - Rock Split Moss
Aneides aeneus - Green Salamander**
Anemone minima - Dwarf Thimble-weed
Aneura sharpii - A Liiverwort
Angelica atropurpurea - Purple-stem Angelica
Anomobryum julaceum - Common Silver Moss
*Antrostomus carolinen*sis - Chuck-will's-widow
*Antrostomus vocifer*us - Whip-poor-will
Anzia americana - Foliose lichen**
Apalone spinifera spinifera - Eastern Spiny Softshell
Aplodinotus grunniens - Freshwater Drum
Aquila chrysaetos - Golden Eagle
Arabidopsis lyrata - Lyre-leaved Rockcress
Arabis glabra - Tower Mustard**
Arabis laevigata var. *burkii* - Porter's Rockcress
Arabis patens - Spreading rockcress**
Arabis pycnocarpa var. addressipilis - Hairy Rockcress
Archidium ohioense - Tokyo Soil Moss
*Arethusa bulb*osa - Dragon's mouth**
Arisaema triphyllum ssp. stewardsonii - Bog Jack-in-the-Pulpit**
Aronia prunifolia - Purple Chokeberry
Arthonia cupressina - Golden Spruce Dots
Arthonia kermesia - Mountain Red Dot Lichen**
Arthopyrenia betulicola - Ol' Birch Spots**
Arthopyrenia degelii - Delgelius Spots**
Asclepias purpurascens - Purple Milkweed
Asio flammeus - Short-eared Owl
Asio otus - Long-eared Owl
Asplenium bradleyi - Bradley's Spleenwort**
Asplenium monanthes - Single-Sorus Spleenwort**
Asplenium pinnatifidum - Lobed Spleenwort**
Asplenium resiliens - Black-stem Spleenwort
Asplenium ruta-muraria - Wall-rue**
Athyrium angustum - Northern Lady Fern
Atrichum altecristatum - A Catherinea Moss
Atrichum tenellum - A Catherinea Moss
*Autochton cellu*s - Golden-banded Skipper
Baetopus trishae - a mayfly
Baptisia albescens - Thin-pod White Wild Indigo

Baptisia bracteata - Creamy Wild Indigo

Barbaetis benfieldi - Benfield's Bearded Small Minnow Mayfly

Barbilophozia attenuata - A Liverwort

Barbilophozia hatcheri - A Liverwort**

Barbula indica var. indica - Small Twist Teeth Moss

Bartonia paniculata ssp. paniculata - Twining Screwstem

Bartramia longicauda - Upland Sandpiper

Bartramidula wilsonii - Dwarf Apple Moss**

Bazzania nudicaulis - A Liverwort**

Berberis canadensis - American barberry**

Betula cordifolia - mountain paper birch**

Bidens alba var. *radiata* - Margarita, Romerillo

Bidens mitis - Coastal Plain Tickseed

Blindia acuta - Sharp-pointed Weissia

Boechera burkii - Porter's Rockcress

Bombus affinis - Rusty-patched Bumblebee*

Bombus bariabilis - Variable Cuckoo Bumblebee

Bombus pennsylvanicus - American Bumblebee

Bombus terricola - Yellow-banded Bumblebee

Bombus vagans - Half Black Bumblebee

Bombycilla cedrorum - Cedar Waxwing

Bonasa umbellus - Ruffed Grouse

Botrychium jenmanii - Dixie Grapefern

Botrychium lanceolatum var. angustisegmentum - Lance-leaf Moonwort**

Botrychium matricariifolium - Daisy-leaf Moonwort**

Botrychium multifidum - Leathery Grape Fern**

Botrychium oneidense - Blunt-lobed grape fern**

Botrychium simplex var. simplex - Least Moonwort**

Bouteloua curtipendula var. curtpiendula - Sideoats Grama Grass**

Boyeria grafiana - Ocellated Darner

Boykinia aconitifolia - Brook Saxifrage

Brachelyma subulatum - A Moss

Brachydontium trichodes - Peak moss**

Brachyelytrum aristosum - Northern Shorthusk

Brachymenium andersonii - Anderson's Melon-moss

Brachymenium systylium - Mexican Melon-moss

Brachythecium oedipodium - Sprawling Grass Moss

Brachythecium plumosum - Rusty Feather Moss

Brachythecium reflexum - Reflexed Feather Moss

Brachythecium rotaeanum - Rota's Feather Moss**

Brachythecium rutabulum - Rough-stalked Feather Moss

Brachythecium salebrosum - Smooth-stalked

Brachythecium velutinum - Velvet Moss

Bromus ciliatus - fringed brome grass**

Bromus latiglumis - Riverbank Brome

Brothera leana - Boar Moss

Bryhnia novae-angliae - Arrowhead Moss

Bryocrumia vivicolor - Gorge Moss

Bryoerythrophyllum ferruginascens - Moss**

Bryoerythrophyllum inaequalifolium - A Moss

Bryoerythrophyllum recurvirostrum - A Red Foot Moss

Bryoxiphium norvegicum - Sword Moss**

Bryum riparium - Riverside Bryum

Buchnera americana - American Bluehearts

Buckleya distichophylla - Piratebush**

Buellia sharpiana - Evelyn's Buttons

Buteo platypterus - Broad-winged Hawk

Buxbaumia minakatae - Bug-on-a-stick moss

Caecidotea carolinensis - Bennet's Cave Mill Water Slater

Calamagrostis cainii - Cain's Reedgrass

Calamagrostis canadensis var. canadensis - Canada Reedgrass**

Calamagrostis porteri ssp. porteri - Porter's Reedgrass**

Caltha palustris var. palustris - Marsh Marigold

Calycanthus floridus var. floridus - Eastern Sweetshrub

Calystegia spithamaea ssp. stans - Shale Barren Bindweed

Cambarus brimleyorum - Valley River Crayfish

Cambarus carolinus - Red Burrowing Crayfish

Cambarus chaugaensis - Chauga Crayfish**

Cambarus eeseeohensis - Grandfather Mountain Crayfish

Cambarus georgiae - Little Tennessee Crayfish**

Cambarus hiwasseensis - Hiwassee Crayfish

Cambarus johni - Carolina Foothills Crayfish

Cambarus lenati - Broad River Stream Crayfish

Cambarus nodosus - Knotty Burrowing Crayfish

Cambarus parrishi - Hiwassee Headwaters Crayfish (Parrish Crayfish)**

Cambarus reburrus - French Broad Crayfish

Cambarus spicatus - Broad River Spiny Crayfish

Cambarus tuckasegee - Tuckasegee Stream Crayfish

Campanula aparinoides var. aparinoides - Marsh bellflower**

Campanula rotundifolia - American harebell**

Campylopsus paradoxus - Paradoxical Campylopsus

Campylopus atrovirens var. atrovirens - Black Fish Hook Moss

Camylostelium saxicola - Sandstone Grimmia

Canoparmelia amabilis - Worthy Shield Lichen

Cardamine clematitis - Mountain Bittercress

Cardamine rotundifolia - Mountain Watercress

Cardellina canadensis - Canada Warbler

Carex albursina - White Bear Sedge

Carex baileyi - Bailey's Sedge**

Carex biltmoreana - Biltmore Sedge

Carex bromoides ssp. montana - Blue Ridge Brome Sedge

Carex buxbaumii - Brown Bog Sedge

Carex careyana - Carey's Sedge**

Carex cherokeensis - Cherokee Sedge**
Carex collinsii - Collin's Sedge
Carex cristatella - crested sedge
Carex echinata ssp. echinata - Star Sedge
Carex festucacea - Fescue Sedge
Carex fraseriana - Fraser's Sedge
Carex hitchcockiana - Hitchcock's sedge**
Carex leavenworthii - A Wood Sedge
Carex leptonervia - A Wood Sedge
Carex lucorum var. austrolucorum - Appalachian Woodland Sedge
Carex manhartii - Manhart's Sedge
Carex misera - Wretched Sedge
Carex mitchelliana - Mitchell's Sedge
Carex oklahomensis - Oklahoma Sedge
Carex oligocarpa - Rich-woods Sedge**
Carex oligosperma - Few-seeded Sedge
Carex pedunculata - longstalk sedge**
Carex projecta - Necklace Sedge**
Carex purpurifera - Purple Sedge**
Carex radfordii - Radford's Sedge**
Carex roanensis - Roan Mountain sedge**
Carex ruthii - Ruth's Sedge
Carex sparganioides - Bur-reed Sedge
Carex trisperma - Three-seeded sedge
Carex utriculata - Beaked Sedge**
Carex woodii - Wood's Sedge
Carpiodes carpio - River Carpsucker
Carpiodes cyprinus - Quillback
Carpiodes sp. cf. cyprinus - a carpsucker
Carpiodes sp. cf. velifer - Atlantic Highfin Carpsucker
Carychium clappi - Appalachian Thorn
Carychium exiguum - Obese Thorn
Carychium nannodes - File Thorn
Catharus fuscescens - Veery
Catharus guttatus - Hermit Thrush
Catharus ustulatus - Swainson's Thrush
Catinella hubrichti - Snowhill Ambersnail
Caulophyllum giganteum - Northern Blue Cohosh
Celastrina nigra - Dusky Azure
Celastrus scandens - Climbing Bittersweet**
Celtis occidentalis - Mountain Hackberry
Cephalozia macrostachya ssp. australis - A Liverwort
Cephalozia pleniceps var. carolinana - A Liverwort
Cephaloziella massalongi - Liverwort
Cephaloziella obtusilobula - Roundleaf Liverwort
Cephaloziella spinicaulis - Liverwort**
Ceraclea cancellata - a longhorned caddisfly
Cerastium nutans - Nodding Chickweed

Certhia americana - Brown Creeper
Cervus elaphus - Elk
*Cetraria arenar*ia - Sand-loving Iceland Lichen
Cetrelia cetrarioides - Sea Storm Lichen
Chaetura pelagica - Chimney Swift
Chamerion platphyllum - Purple Willowherb**
Chasmanthium sessiliflorum var. sessiliflorum - Longleaf Spikegrass
Cheilanthes alabamensis - Alabama Lipfern**
Cheilolejeunea evansii - A Liverwort**
Chelone cuthbertii - Cuthbert's Turtlehead**
Chelone obliqua var. erwiniae - Mountain Purple Turtlehead**
Chelone obliqua var. obliqua - Red Turtlehead
Chlosyne gorgone - Gorgone Checkerspot
Chordeiles minor - Common Nighthawk
Chrysobalanus icaco - Hicaco, Icaco, Jicaco
Chrysosplenium americanum - Golden Saxifrage
Cinna latifolia - Slender Wood-reed
Cirriphyllum piliferum - A Moss
Cirsium carolinianum - Carolina Thistle
Cistothorus platensis - Sedge Wren
Cladrastis kentukea - Yellowwood
Cleistesiopsis bifaria - Small Spreading Pogonia**
Clematis catesbyana - Coastal Virgin's-bower
Clinostomus sp. 1 - Smoky Dace
Coccothraustes vespertinus - Evening Grosbeak
Coccyzus erythropthalmus - Black-billed Cuckoo
Colaptes auratus - Northern Flicker
Colinus virginianus - Northern Bobwhite
Collinsonia verticillata - Whorled Horsebalm
Cololejeunea ornata - A Liverwort
Comptonia peregrina - Sweet Fern
Contopus cooperi - Olive-sided Flycatcher
Contopus virens - Eastern Wood-pewee
Corallorhiza maculata var. maculata - Spotted Coralroot
Corallorhiza odontorhiza - Autumn Coral-root
Corallorhiza wisteriana - Spring Coral-root**
Coreopsis grandiflora var. grandiflora - Large-flowered Tickseed
Coreopsis latifolia - Broadleaf Coreopsis
Coreopsis pubescens var. robusta - Blue Ridge Coreopsis
Corvus corvax - Common Raven
Corydalis micrantha - Slender Corydalis**
Corynorhinus rafinesquii rafinesquii - Rafinesque's Big-eared Bat**
Corynorhinus townsendii virginianus - Virginia Big-eared Bat*
Cottus carolinae - Banded Sculpin**
Crataegus oreophila - Balsam Mountain Hawthorn
Crataegus schuettei - Schuette's Hawthorn
Crataegus spathulata - Littlehip Hawthorn
Crocanthemum bicknellii - Plains Sunrose**

Crocanthemum propinquum - Creeping Sunrose**

Crotalus horridus - Timber Rattlesnake

Croton monanthogynus - Prarie-tea Croton**

Cryptobranchus alleganiensis alleganiensis - Hellbender**

Cymophyllus fraserianus - Fraser's sedge

Cynodontium schisti - Cynodontium Moss

Cypripedium parviflorum var. parviflorum - Small Yellow Lady's-slipper**

Cypripedium reginae - showy lady's-slipper

Cyrto-hypnum pygmaeum - Pygmy Cyrto-hypnum Moss

Cystopteris bulbifera - Bulblet Bladder Fern

Cystopteris fragilis - fragile fern**

Cystopteris tenuis - Upland Bladder-fern

Dalibarda repens - Robin Runaway**

Danaus plexippus - Monarch Butterfly

Danthonia epilis - Bog Oatgrass

Delphinium exaltatum - tall larkspur**

Dendrolycopodium dendroideum - Prickly Ground-pine

Dendrolycopodium hickeyi - Pennslyvania Ground Pine

Deschampsia cespitosa ssp. glauca - Tufted Hairgrass**

Desmodium cuspidatum - toothed tick-trefoil

Desmodium cuspidatum var. cuspidatum - Large-bract Tick-trefoil

Desmognathus aneneus - Seepage Salamander

Desmognathus folkertsi - Dwarf Blackbelly Salamander**

Desmognathus imitator - Imitator Salamander

Desmognathus imitator pop. 1 - Waterrock Knob Salamander

Desmognathus organi - Northern Pigmy Salamander**

Desmognathus santeetlah - Santeetlah Dusky Salamander

Desmognathus wrighti - Southern Pygmy Salamander***

Diamorpha smallii - Elf Orpine

Diarrhena americana - Eastern beakgrass**

Dicentra eximia - Bleeding heart

Dichanthelium bicknellii - Bicknell's Witch Grass

Dichanthelium columbianum - American Witch Grass

Dichanthelium linearifolium - Low White-haried Witch Grass

Dichodontium pellucidum - A Moss**

Dicranella varia - Variable Fork Moss

Dicranum bonjeanii - Thin-rib Curved-tail Moss

Dicranum fuscescens - Fuscous Moss

Dicranum spurium - Rusty Fork Moss

Dicranum undulatum - Bog Broom-moss**

Diervilla rivularis - Riverbank Bush-honeysuckle**

Diplazium pycnocarpon - Glade Fern

Diplophyllum andrewsii - A Liverwort

Diplophyllum apiculatum var. taxifolioides - A Liverwort

Diplophyllum obtusatum - Liverwort

Diplophyllum taxifolium var. mucronatum - A Liverwort

Diplophyllum taxifolium var. taxifolium - A Liverwort

Dirca palustris - Leatherwood
Discus bryanti - Sawtooth Disc
Ditrichum ambiguum - Ambiguous Ditrichium**
Ditrichum rhynchostegium - Golden Tread Moss**
Dodecatheon meadia - Shootingstar**
Dolichonyx oryzivorus - Bobolink
Draba ramosissima - Branching Draba**
Drepanolejeunea appalachiana - Liverwort**
Dryocopus pileatus - Pileated Woodpecker
Dryopteris carthusiana - Spinulose Woodfern
Dryopteris cristata - Crested Woodfern
Dryopteris goldiana - Goldie's Woodfern
Dumortiera hirsuta ssp. nepalensis - A Liverwort
Echinacea purpurea - Eastern Purple Coneflower**
Echinocystis lobata - Wild Mock Cucumber
Elatine americana - American Waterwort
Eleocharis engelmannii - Englemann's Spikerush
Eleocharis erythropoda - Bald Spikerush
Eleocharis palustris - Small's Spikerush
Elimia christyi - Christy's Elimia**
Elliptio dilatata - Spike
Elodea canadensis - Canada Waterweed
Elodea nuttallii - Nuttall's Elodea
Elymus canadensis - nodding wild rye
Elymus canadensis var. canadensis - Great Plains Wild Rye
Elymus riparius - Riverbank Wild Rye
Elymus trachycaulus ssp. trachycaulus - Slender Wheatgrass**
Empidonax alnorum - Alder Flycatcher
Empidonax minimus - Least Flycatcher
Empidonax traillii - Willow Flycatcher
Empidonax virescens - Acadian Flycatcher
Encalypta procera - Extinguisher Moss**
Entodon compressus - Flattened Entodon**
Entodon sullivantii - Sullivant's entodon**
Ephebe americana - A Fructicose Lichen
Ephebe lanata - A Fructicose Lichen
Ephebe solida - Fructicose lichen
Epilobium ciliatum ssp. ciliatum - Hair willow-herb**
Epilobium leptophyllum - linear-leaved willow-herb
Eptesicus fuscus - Big Brown Bat**
Erigenia bulbosa - Harbringer-of-spring**
Erimonax monachus - Spotfin Chub*
Erimystax insignis eristigma - Southern Blotched Chub**
Eriophorum virginicum - Tawny cotton-grass
Erora laeta - Early Hairstreak
Erynnis martialis - Mottled Duskywing
Etheostoma acuticeps - Sharphead Darter**
Etheostoma gutselli - Tuckasegee Darter

Etheostoma inscriptum - Turquoise Darter**

Etheostoma rufilineatum - Redline Darter

Etheostoma tennesseense (E. simoterum) - Tennessee (Snubnose) Darter

Etheostoma thalassinum - Seagreen Darter

Etheostoma vulneratum - Wounded Darter**

Euchemotrema fasciatum - Mountain Pillsnail

Euchlaena milnei - a geotromid moth

Euchloe olympia - Olympia Marble

Eulonchus marialiciae - Mary Alice's Small-headed Fly**

Eumeces anthracinus - Coal Skink

Euonymus atropurpureus var. atropurpureus - Eastern Wahoo

Eupatorium godfreyanum - Godfrey's thoroughwort

Eupatorium incarnatum - Pink Throughwort**

Eupatorium sessilifolium var. brittonianum - Britton's Eupatorium

Euphagus carolinus - Rusty Blackbird

Euphagus cyanocephalus - Brewer's Blackbird

Euphorbia purpurea - glade spurge**

Euphydryas phaeton - Baltimore Checkerspot

Eurybia avita - Alexander's Rock Aster

Eurybia mirabilis - Piedmont Aster

Eurybia surculosa - Creeping Aster

Eurycea bislineata - Two-lined Salamander

Eurycea junaluska - Junaluska Salamander**

Eurycea longicauda - Longtail Salamander***

Euthamia graminifolia var. nuttallii - Nuttall's Flat-top Goldenrod

Eutrochium maculatum var. maculatum - Spotted Joe-pye Weed

Fabronia ciliaris var. polycarpa - A False Crushed-rice Moss

Falco columbarius - Merlin

Falco peregrinus - Peregrine Falcon**

Falco sparverius - American Kestrel

Fallopia cristata - Crested Climbing Buckwheat

Fellhanera eriniae - Erin's Fellhanera

Fellhanera hybrida - Piedmont Crustose Lichen**

Fellhanera montesfumosi - Smoky Mountain Crustose Lichen

Filipendula rubra - Queen-of-the-Prairie**

Fissidens adianthoides - Maiden Hair Moss

Fissidens appalachensis - Appalachian pocket moss**

Fissidens elegans - A Plume Moss

Fissidens fontanus - Water Pocket Moss

Fleischmannia incarnata - Pink Throughwort

Fontinalis flaccida - A Water Moss

Fontinalis sphagnifolia - A Water Moss**

Fontinalis sullivantii - A Water Moss

Fothergilla major - Large Witch-alder**

Fragaria vesca var. americana - Woodland Strawberry

Frangula caroliniana - Carolina Buckthorn

Frasera caroliniensis - American Colombo**

Frullania appalachiana - A Liverwort**
Frullania oakesiana - A Liverwort
Frullania plana - A Liverwort
Fumonelix cherohalaensis - Roan Covert
Fumonelix clingmanica - Summit Covert
Fumonelix jonesiana - Big-tooth Covert
Fumonelix langdoni - Talus Covert
Fumonelix orestes - Engraved Covert
Fumonelix roanensis - Rock-loving Covert
Fumonelix wheatleyi - Cinnamon Covert
Fumonelix wheatleyi clingmanicus - Clingman Covert
Fusconaia (Pleuronaia) barnesiana - Tennessee Pigtoe**
Fusconaia subrotunda - Longsolid
Galax urceolata - Galax
Galium asprellum - Rough Bedstraw
Galium lanceolatum - Lanceleaf Wild Licorice
Gaultheria hispidula - Creeping Snowberry
Gentiana austromontana - Appalachian Gentian
Gentiana clausa - Closed Gentian
Gentiana saponaria var. latidens - Balsam Gentian**
Gentianopsis crinita - Fringed Gentian**
Geothlypis formosa - Kentucky Warbler
Geum geniculatum - Bent Avens**
Geum radiatum - spreading avens*
Glaucomys sabrinus coloratus - Carolina Northern Flying Squirrel*
Glyceria laxa - Lax Mannagrass**
Glyceria nubigena - Smoky Mountain Mannagrass**
Glyphyalinia clingmani - Fragile Glyph**
Glyphyalinia junaluskana - Dark Glyph
*Glyphyalinia luticol*a - Furrowed Glyph
Glyphyalinia pentadelphia - Pink Glyph
Glyptemys muhlenbergii - Bog Turtle**
Gomphus consanguis - Cherokee Clubtail
Goodyera repens - dwarf rattlesnake plantain
Graphis sterlingiana - Sterling Lips**
Graptemys geographica - Common Map Turtle
Grimmia olneyi - A Beard Moss
Gyalectidium appendiculatum - A Leaf Lichen
Gymnoderma lineare - Rock Gnome Lichen*
Hackelia virginiana - Virginia Stickseed
Haliaeetus leucocephalus - Bald Eagle**
Helenium brevifolium - Littleleaf Sneezeweed**
Helicodiscus bonamicus - Spiral Coil**
Helicodiscus fimbriatus - Fringed Coil
Helicodiscus multidens - Twilight Coil
Helicodiscus triodus - Talus Coil**
Helmitheros vermivorum - Worm-eating Warbler
Helodium paludosum - Pond Fern Moss

Helonias bullata - swamp-pink*
Hemidactylium scutatum - Four-toed Salamander
Herpetineuron toccoae - Coiled Moss
Herzogiella turfacea - Flat Stump Moss**
Heterodermia appalachensis - Foliose lichen**
Heterodermia erecta - A Centipede Lichen
Heterodermia pseudospeciosa - A Centipede Lichen
Heuchera longiflora - Long-Flower Alumroot**
Heuchera parviflora var. parviflora - Grotto Alumroot
Heuchera parviflora var. saurensis - Sauratown Grotto Alumroot
Heuchera pubescens - Downy Alumroot**
Hexalectris spicata - Crested Coralroot**
Hexastylis contracta - Mountain Heartleaf**
Hexastylis rhombiformis - French Broad Heartleaf**
Hiodon tergisus - Mooneye
Homalia trichomanoides - Lime Homalia**
Homaliadelphus sharpii - Sharp's homaliadelphus**
Houstonia longifolia var. glabra - Granite Dome Bluet
Houstonia montana - Roan Mountain Bluet*
Houstonia purpurea var. calycosa - Summer Bluet
Hudsonia montana - Mountain Golden-heather*
Huperzia acerosa - Colchon de pobre
Huperzia appalachiana - Appalachian fir clubmoss
Huperzia porophila - Rock Fir Clubmoss**
Hybopsis rubrifrons - Rosyface Chub**
Hydrangea cinerea - Ashy Hydrangea
Hydrastis canadensis - Golden Seal**
Hydrophyllum macrophyllum - Largeleaf Waterleaf
Hygroamblystegium fluviatile - Brookside Feather Moss
Hygrohypnum closteri - Closter's brook-hypnum
Hylocichla mustelina - Wood Thrush
Hylocomiastrum umbratum - Shaded Feather Moss
Hymenophyllum tayloriae - Gorge Filmy Fern**
Hypericum buckleyi - Blue Ridge St. John's-wort
Hypericum ellipticum - pale St. John's-wort
Hypericum graveolens - Mountain St. John's-wort
Hypericum mitchellianum - Blue Ridge St. John's-wort
Hypnum fauriei - A Cedar Moss
Hypnum plicatulum - A Cedar Moss
Hypnum pratense - Meadow Feather Moss
Hypochilus coylei - a lampshade weaver
Hypochilus sheari - a lampshade weaver
Hypotrachyna oostingii - Oosting's Square Britches**
Hypotrachyna sinuosa - A Foliose Lichen**
Hypotrachyna virginica - Virginia Square Britches**
Ichthyomyzon bdellium - Ohio Lamprey
Icteria virens - Yellow-breasted Chat
Ictiobus bubalus - Smallmouth Buffalo

Ictiobus niger - Black Buffalo
Inflectarius ferrissi - Smoky Mountain Covert
Inflectarius subpalliatus - Velvet Covert**
Inflectarius verus - a snail
Ipomopsis rubra - Standing Cedar
Isotria medeoloides - small whorled pogonia*
Isotria verticillata - Whorled Pogonia
Juglans cinerea - Butternut
Juncus brevicaudatus - narrow-panicled rush
Juncus secundus - Nodding Rush
Juncus torreyi - Torrey's Rush
Juncus trifidus - Highland Rush**
Krigia biflora var. biflora - Two-flower Dwarf-dandelion
Ladona julia - Chalk-fronted Corporal
Lampetra (*Lethenteron*) *appendix* - American Brook Lamprey**
Lampropeltis triangulum triangulum - Eastern Milk Snake
Lampsilis fasciola - Wavy-rayed Lampmussel
Lanius ludovicianus - Loggerhead shrike
Lasmigona holstonia - Tennessee Heelsplitter
Lathyrus venosus - Smooth Peavine
Lecanora masana - Masa's Disc Lichen
Lejeunea blomquistii - Liverwort**
Lemmeria digitalis - Fingered Lemmeria Moth
Leparia lanata - Appalachian Dust Bunnies**
Lepomis macrochirus - Bluegill
Leptodontium excelsum - Grandfather Mountain excelsum**
Leptodontium flexifolium - Pale-margined Leptodontium
Leptohymenium sharpii - Mount Leconte Moss**
Leptoscyphus cunefolius - Wedge Flapwort**
Leptoxis virgata - Smooth Mudalia
Leucodon andrewsianus - Squirrel Tail Moss
Liatris helleri - Heller's Blazing-star*
Liatris scariosa var. scariosa - New England Blazing-star
Liatris squarrulosa - Earle's Blazing Star**
Liatris turgida - Shale-barren Blazing Star**
Lilium grayi - Gray's Lily**
Lilium philadelphicum var. philadelphicum - Wood Lily**
Limnothlypis swainsonii - Swainson's Warbler
Lindernia monticola - Flatrock Pimpernel
Liparis loeselii - Loesel's twayblade**
Listera australis - Southern Twayblade
Listera cordata var. cordata - Heartleaf Twayblade
Lobaria scrobiculata - Textured Lungwort**
Lonicera canadensis - American fly-honeysuckle**
Lonicera flava - Yellow Honeysuckle
Lophocolea appalachiana - Liverwort**
Lophocolea muricata - A Liverwort**
Lophozia capitata - A Liverwort

Loxia curvirostra pop. 1 - Southern Appalachian Red Crossbill
Luxilus chrysocephalus - Striped Shiner
Luzula multiflora var. multiflora - Heath Woodrush
Lycopodiella inundata - northern bog clubmoss**
Lysimachia fraseri - Fraser's Loosestrife**
Lysimachia tonsa - Southern Loosestrife
Macrocoma sullivantii - Sullivant's manned-moss
Macromia margarita - Mountain River Cruiser
Manfreda virginica - Eastern Agave
Mannia triandra - A Liverwort
Manophylax altus - Mount Mitchell Caddisfly
Marsupella emarginata var. latiloba - A Liverwort
Marsupella funckii - A Liverwort
Medionidus conradicus - Cumberland Moccasinshell
Meehania cordata - Meehania
Megaleuctra williamsae - William's Rare Winter Stonefly
Melanelia stygia - Foliose lichen**
Melanerpes erythrocephalus - Red-headed Woodpecker
Melanoplus attenuatus - a spur-throat grasshopper
Melanoplus divergens - Divergent Melanoplus
Melanoplus nubilus - Nubile Short-wing Grasshopper
Melanoplus serrulatus - Serrulate Melanoplus
Meleagris gallopavo - Wild Turkey
Melica nitens - Three-flowered melic grass**
Melospiza lincolnii - Lincoln's Sparrow
Meropleon diversicolor sullivani - Sullivan's Meropleon
Mertensia virginica - Virginia Bluebells
Mesodon altivagus - Wandering Globe
Mesodon andrewsae - Balsam Globe
Mesodon mitchellianus - Sealed Globelet
Mesomphix andrewsae - Mountain Button
Mesomphix latior - Broad Button
Metzgeria furcata var. setigera - A Liverwort
Metzgeria pubescens - A Liverwort
Metzgeria temperata - Liverwort
Metzgeria uncigera - Liverwort
Metzgeria violacea - A Liverwort
Micareopsis irriguata - Irrigated Rock Lichen**
Micranthes careyana - Carey Saxifrage
Micranthes caroliniana - Carolina Saxifrage
Microhexura montivaga - Spruce Fir Moss Spider*
Micromitrium megalosporum - A Moss
Micropolypodium nimbatum - West Indian Dwarf Polypody**
Micropterus coosae - Redeye Bass
Micropterus dolomieu - Smallmouth Bass
Micropterus salmoides - Largemouth Bass
Microtus chrotorrhinus carolinensis - Southern Rock Vole
Minuartia groenlandica - mountain sandwort**

Mniotilta varia - Black-and-white Warbler
Monarda media - Purple Bee-balm**
Monarda punctata var. arkansana - Arkansas Horsemint
Monotropsis odorata - sweet pinesap**
Moxostoma breviceps - Smallmouth Redhorse
Moxostoma robustum - Robust Redhorse
Moxostoma sp. 2 (cf. macrolepidotum) - Sicklefin Redhorse***
Muhlenbergia glomerata - marsh muhly**
Muhlenbergia mexicana - Mexican Muhly
Muhlenbergia sobolifera - Rock Muhly
Muhlenbergia sylvatica - Woodland Muhly
Mustela nivalis - Least Weasel
Mycoproum biseptatum - Double Spots
Mylia tayorii - A Liverwort**
Myotis grisescens - Gray Myotis (Gray Bat)*
Myotis leibii - Eastern Small-footed Bat**
Myotis lucifugus - Little Brown Bat**
Myotis septentrionalis - Northern Long-eared Bat*
Myotis sodalis - Indiana Bat*
Nabalus roanensis - Roan Rattlesnakeroot
Najas gracillima - Slender Waternymph
Nardia lescuri - A Moss
Nardia scalaris ssp. scalaris - A Liverwort
Nardia scalaris subsp botryoidea - A Liverwort
Neckera complanata - Flat Feather Moss
Necturus maculosus - Common Mudpuppy
Neotoma floridana haematoria - Southern Appalachian Woodrat
Neotoma magister - Alleghany Woodrat**
*Nesticus bishop*i - a cave cobweb spider
Nesticus carolinensis - Linville Caverns Spider
Nesticus cooperi - Lost Nantahala Cave Spider
Nesticus crosbyi - a cave cobweb spider
Nesticus gertschi - a cave cobweb spider
Nesticus mimus - a cave cobweb spider
Nesticus nasicus - a cave cobweb spider
Nesticus reclusus - a cave cobweb spider
*Nesticus shear*i - a cave cobweb spider
Nesticus silvanus - a cave cobweb spider
Nesticus sp. 1 - a cave cobweb spider
Nesticus sp. 2 - a cave cobweb spider
Nicrophorus americanus - American Burying Beetle
Nothoceros aenigmaticus - A Hornwort
Notropis lutipinnis - Yellowfin Shiner
Notropis micropteryx - Highland Shiner
Notropis volucellus - Mimic Shiner
Noturus eleutherus - Mountain Madtom
Noturus flavus - Stonecat**
Ochrolechia yasudae - Coral Saucer Lichen

Odocoileus virginianus - White-tailed Deer
Oenothera perennis - Perennial Sundrops**
Opegrapha moroziana - Andy's Scribble Lichen**
Ophiogomphus edmundo - Edmund's Snaketail**
Ophiogomphus howei - Pygmy Snaketail
Ophiogomphus incurvatus - Appalachian Snaketail
Ophiogomphus mainensis - Maine Snaketail**
Ophisaurus attenuatus longicaudus - Eastern Slender Glass Lizard
Orbexilum pedunculatum - Sampson's Snakeroot
Oreothlypis ruficapilla - Nashville Warbler
Orotrichum strngulatum - Drummond Moss
Orthodontium pellucens - Translucent Orthodontium
Orthotrichum strangulatum - Drummond Moss
Oxyrrhynchium pringlei - Pringle's Eurhynchium
Packera millefolium - Divided-leaf Ragwort**
Packera paupercula var. appalachiana - Prairie Ragwort**
Packera paupercula var. paupercula - Balsam Ragwort
Packera schweinitziana - Schweinitz's Ragwort**
Packera serpenticola - Serpentine Ragwort**
Palaeagapetus celsus - a caddisfly
Palamocladium leskeoides - Palamocladium**
Pallifera hemphilli - Black Mantleslug
Panax quinquefolius - Ginseng
Panax trifolius - Dwarf ginseng
Pannaria conoplea - Foliose lichen**
Papilio cresphontes - Giant Swallowtail
Paravitrea andrewsae - High Mountain Supercoil**
Paravitrea clappi - Mirey Ridge Supercoil
Paravitrea lacteodons - Ramp Cove Supercoil
Paravitrea lamellidens - Lamellate Supercoil
Paravitrea placentula - Glossy Supercoil
Paravitrea ternaria - Sculpted Supercoil**
Paravitrea umbilicaris - Open Supercoil
Paravitrea varidens - Roan Supercoil**
Parietaria pensylvanica - Pennsylvania Pellitory
Parkesia motacilla - Louisiana Waterthrush
Parnassia grandifolia - Large-leaved grass-of-parnassus**
Paronychia montana - Mountain Nailwort
Paspalum pubiflorum var. glabrum - Hairy-seed Crown Grass
Passerculus sandwichensis - Savannah Sparrow
Passerina cyanea - Indigo Bunting
Patera clarki clarki - Dwarf Proud Globe
Patera clarki nantahala - Noonday Globe*
Pedicularis lanceolata - Swamp Lousewort**
Pegias fabula - Littlewing Pearlymussel*
Pellaea atropurpurea - Purple-stem Cliff-brake
Pellia appalachiana (= Pelia X appalachiana) - Liverwort
Peltigera hydrothyria - Waterfan Lichen

Percina burtoni - Blotchside Logperch***

Percina caprodes - Logperch**

Percina squamata - Olive Darter**

Percina williamsi (P. macrocephala) - Sickle Darter

Perimyotis subflavus - Tri-colored Bat**

Pertusaria appalachensis - Appalachian Wart Lichen**

Peucaea aestivalis - Bachman's Sparrow

Phegopteris connectilis - Northern Beech Fern**

Phemeranthus teretifolius - Fameflower

Philadelphus hirsutus - Hairy Mock-orange

Philadelphus inodorus - Odorless Mock-orange

Philonotis cernua - Dwarf Apple Moss

Philonotis longiseta - An Apple Moss

*Philonotis marchic*a - An Apple Moss

Phlox amplifolia - Broadleaf phlox

Phlox divaricata - Wild Blue Phlox

Phlox subulata - Moss Pink**

Phyciodes batesii maconensis - Appalachian Tawny Crescent**

Physcia pseudospeciosa - Rosette lichen

Pieris floribunda - Fetterbush

Pilophorus fibula - Appalachian Matchsticks**

Pilosium chlorophyllum - A Moss**

Pilsbryna nadopalma - Oar Tooth Bud

Pilsbryna vanattai - Honey Glyph

Pipilo erythrophthalmus - Eastern Towhee

Piranga olivacea - Scarlet Tanager

Piranga rubra - Summer Tanager

Pituophis melanoleucus - Northern Pinesnake

Plagiochila austinii - Liverwort**

Plagiochila caduciloba - Liverwort

Plagiochila columbiana - A Liverwort

Plagiochila corniculata - A Liverwort**

Plagiochila echinata - A Liverwort**

Plagiochila ludoviciana - A Liverwort

Plagiochila sharpii - Sharp's Leafy Liverwort**

Plagiochila sullivantii var. spinigera - A Liverwort

Plagiochila sullivantii var. sullivantii - Sullivant's leafy liverwort**

Plagiochila undata - A Liverwort

Plagiochila virginica var. caroliniana - A Liverwort

Plagiochila virginica var. euryphylla - A Liverwort

Plagiomnium carolinianum - Carolina Star-moss**

Plagiomnium ellipticum - Marsh Magnificent Moss**

Plagiomnium rostratum - Long-beaked Thread Moss**

Platanthera blephariglottis - Large White Fringed Orchid

Platanthera flava var. herbiola - Turbercled rein-orchid**

Platanthera grandiflora - large purple fringed orchid**

Platanthera integrilabia - White Fringeless orchid*

Platanthera peramoena - purple fringeless orchid**

Platismatia glauca - Varied Rag Lichen

Platydictya subtilis - A Moss

Platyhypnidium pringlei - Pringles Water Feather Moss**

Platyhypnidium riparioides - Long-beaked Water Feather Moss

Plethodon amplus - Blue Ridge Gray-cheeked Salamander

Plethodon aureolus - Tellico Salamander**

Plethodon chattahoochee - Chattahoochee Slimy Salamander**

Plethodon cheoah - Cheoah Bald Salamander**

Plethodon glutinosus - Northern Slimy Salamander

Plethodon jordani - Jordan's Salamander (Red-cheeked Salamander)

Plethodon longicris (P. yonahlossee pop. 1) - Crevice Salamander

Plethodon meridianus - South Mountain Gray-cheeked Salamander

Plethodon richmondi - Southern Ravine Salamander

Plethodon shermani - Red-legged Salamander

Plethodon teyahalee - Southern Appalachian Salamander

Plethodon ventralis - Southern Zigzag Salamander***

Plethodon wehrlei - Wehrle's Salamander

Plethodon welleri - Weller's Salamander**

Plethodon yonahlossee - Yonahlossee Salamander

Pleurobema oviforme - Tennessee Clubshell**

Pleurocera parva - Dainty Hornsnail

Poa palustris - fowl bluegrass**

Poa saltuensis - drooping bluegrass**

Poecile atricapillus practica - Southern App Black-capped Chickadee**

Pogonatum dentatum - Hair-like Hair-cap**

Pohlia lescuriana - Spherical Bulb Nodding Moss**

Pohlia longicollis - Long Neck Nodding Moss

Pohlia melanodon - Pink-fruited Thread Moss

Pohlia rabunbaldensis - A Moss**

Polydon spathula - Paddlefish

Polygala senega var. senega - Seneca Snakeroot**

Polygonia faunus smythi - Smyth's Green Comma

Polygonia progne - Gray Comma

Polygonum erectum - Erect Knotweed

Polygonum tenue - Glade Knotweed

Polymnia canadensis - Canada Leaf-cup

Polytrichastrum alpinum - Alpine Hair Moss**

Polytrichum appalachianum - Appalachian haircap moss

Pooecetes gramineus - Vesper Sparrow

Populus grandidentata - Bigtooth Aspen

Porella japonica ssp. appalachiana - A Liverwort

Porella wataugensis - A Liverwort**

Porpidia macrocarpa - Boulder Lichen

Porpidia tuberculosa - Boulder Lichen

Potamilus alatus - Pink Heelsplitter

Potamogeton foliosus - Leafy Pondweed

Praticolella lawae - Appalachian Scrubsnail
Primula meadia - Eastern Shooting Star
Progne subis - Purple Martin
Protonotaria citrea - Prothonotary Warbler
Prunus nigra - Canada plum
Prunus virginiana var. virginiana - Choke Cherry
Pseudacris brachyphona - Mountain Chorus Frog
Ptelea trifoliata - Wafer-ash
Pterigynandrum filforme - Twisted Thread Moss
Ptilidium ciliare - A Liverwort**
Ptilidium pulcherrimum - A Liverwort
Ptychobranchus fasciolaris - Kidneyshell
Puma concolor cougar - Eastern Cougar****
Punctelia reddenda - Speckled Shield Lichen**
Pycnanthemum clinopodioides - Basil Mountain-mint
Pycnanthemum curvipes - Stone Mountain-mint**
Pycnanthemum torreyi - Torrey's mountain-mint
Pylaisiella polyantha - Many-fruited Feather Moss
Pyrgus wyandot - Appalachian Grizzled Skipper
Pyrola americana - American Shinleaf
Quercus muehlenbergii - Chinquapin Oak
Quercus palustris - Pin Oak
Racomitrium aciculare - Dark Mountain Fringe Moss**
Radula sullivantii - A Liverwort
Radula tenax - A Liverwort
Radula voluta - A Liverwort**
Ranunculus allegheniensis - Allegheny Mountain Buttercup
Ranunculus fascicularis - Early Buttercup**
Rauiella scita - Smaller Fern Moss
Reboulia hemisphaerica ssp. dioica - A Liverwort
Regina septemvittata - Queen Snake
Rhabdoweisia crenulata - Himalayan Ribbed-weissia**
Rhinichthys atratulus - Blacknose Dace
Rhodiola rosea - Roseroot
Rhododendron cumberlandense - Cumberland Azalea**
Rhododendron vaseyi - Pink-shell Azalea**
Rhyacophila amicis - a caddisfly**
Rhyacophila vibox - a rhyacophilan caddisfly
Rhynchospora alba - White Beakrush**
Rhytidadelphus subpinnatus - A Moss**
Rhytidium rugosum - Golden Tundra-moss**
Riccardia jugata - Liverwort**
Rinodina chrysomeleana - Yellow Pepper Spores
Riparia riparia - Bank Swallow
Robinia hispida var fertilis - Fruitful Locust**
Robinia hispida var kelseyi - Kelsey's locust**
Robinia hispida var. rosea - Boynton's Locust
Robinia viscosa var. hartwigii - Hartwig's Locust**

Robinia viscosa var. viscosa - Clammy Locust**

Rubus dalibardia - Robin Runaway

Rubus idaeus ssp. strigosus - American red raspberry**

Rubus setosus - Bristly Blackberry

Rudbeckia laciniata var. humilis - A Coneflower

Rudbeckia triloba var. beadlei - Chauncey's Coneflower

Rudbeckia triloba var. rupestris - A Coneflower

Ruellia purshiana - Pursh's wild petunia**

Rumex altissimus - Pale Dock

Sabatia campestris - Prairie Pink

Sabatia capitata - Rose Gentian

Sagina procumbens - Northern Pearlwort

Sagittaria fasciculata - Bunched Arrowhead*

Salvelinus fontinalis - Brook Trout

Sander canadensis - Sauger

Sarracenia jonesii - Mountain Sweet Pitcher Plant*

Sarracenia oreophila - Green Pitcher Plant

Sarracenia purpurea var. montana - Southern App Purple Pitcher Plant**

Satyrium caryaevorus - Hickory Hairstreak

Satyrium edwardsii - Edwards' Hairstreak

Sceptridium multifidum - Leathery Grape Fern

Sceptridium oneidense - Blunt-lobed Grape Fern

Schlotheimia lancifolia - Highlands Moss**

Scolopax minor - American Woodcock

Scopelophila cataractae - Agoyan Cataract Moss**

Scopelophila ligulata - Copper Moss**

Scudderia septentrionalis - Northern Bush Katydid

Scutellaria ovata ssp. ovata var. ovata - Heartleaf Skullcap

Scutellaria ovata ssp. rugosa - A Heartleaf Skullcap

Scutellaria ovata ssp. rugosa var. 1 - Appalachian Skullcap

Scutellaria saxatilis - Rock skullcap**

*Scutellaria serrat*a - Showy Skullcap

Sedum glaucophyllum - Cliff Stonecrop**

Seiurus aurocapilla - Ovenbird

Senna hebecarpa - Wild Senna

Setophaga americana - Northern Parula

Setophaga castanea - Bay-breasted Warbler

Setophaga cerulea - Cerulean Warbler**

Setophaga citrina - Hooded Warbler

Setophaga coronata - Yellow-rumped Warbler

Setophaga discolor - Prairie Warbler

Setophaga dominica - Yellow-throated Warbler

Setophaga fusca - Blackburnian Warbler

Setophaga magnolia - Magnolia Warbler

Setophaga striata - Blackpoll Warbler

Shortia galacifolia var. brevistyla - Northern Oconee Bells**

Shortia galacifolia var. galacifolia - Southern Oconee Bells**

Silene caroliniana var. pensylvanica - Sticky Catchfly
Silene ovata - Ovate Catchfly**
Sitta pusilla - Brown-headed Nuthatch
Skistodiaptomus carolinensis - Carolina Skistodiaptomus
Smilax hugeri - Huger's carrion-flower
Solidago arguta var. arguta - Forest Goldenrod
Solidago lancifolia - Lance-leaf Goldenrod
Solidago puberula var. puberula - Downy Goldenrod
Solidago rugosa var. sphagnophila - Rough-leaved Goldenrod
Solidago simulans - Granite Dome Goldenrod**
Solidago spithamaea - Blue Ridge Goldenrod*
Solidago squarrosa - Squarrose goldenrod
Solidago uliginosa var. uliginosa - bog goldenrod**
Solidago ulmifolia - Elm-leaf Goldenrod**
Sorex palustris punctulatus - Southern Water Shrew**
Sparganium emersum - Greenfruit Bur-reed**
Spartina pectinata - freshwater cordgrass**
Speyeria aphrodite cullasaja - Cullasaja Aphrodite Fritillary**
Speyeria diana - Diana Fritillary
Speyeria idalia - Regal Fritillary
Sphagnum angustifolium - Narrowleaf Peatmoss**
Sphagnum capillifolium - Northern Peatmoss**
Sphagnum fallax - Pretty peatmoss
Sphagnum flavicomans - Peatmoss
Sphagnum flexuosum - Flexuous Peatmoss**
Sphagnum fuscum - Brown Peatmoss
Sphagnum henryense - Henry's Peatmoss
Sphagnum pylaesii - Simple Peatmoss**
Sphagnum russowii - Russow's peatmoss**
Sphagnum squarrosum - Squarrose Peatmoss**
Sphagnum subsecundum - Orange Peatmoss
Sphagnum subtile - A Peatmoss
Sphagnum tenellum - Delicate Peatmoss**
Sphenolobopsis pearsonii - A Liverwort**
Sphenopholis intermedia - Prairie Wedgescale
Sphyrapicus varius - Yellow-bellied Sapsucker
Spigelia marilandica - Pink root**
Spinus pinus - Pine Siskin
Spiraea alba - Narrow-leaf Meadowsweet
Spiraea latifolia - Broadleaf Meadowsweet
Spiraea virginiana - Virginia Spiraea*
Spiranthes ochroleuca - yellow nodding ladies'-tresses
Spizella arborea - American Tree Sparrow
Spizella pusilla - Field Sparrow
Sporobolus heterolepis - Prairie Dropseed**
Stachys clingmanii - Clingman's Hedge-nettle**
Stachys cordata - Heartleaf Hedge-nettle**
Stachys tenulifolia - Smooth Hedge-nettle

Stellaria alsine - Longstalk Starwort

Stellaria corei - Core's Starwort

Stenanthium leimanthoides - Pinebarren Death-camas**

Stenotrema depilatum - Great Smoky Slitmouth

Stereocaulon tennesseense - Tennessee Twist**

Sternotherus minor - Loggerhead Musk Turtle

Stewartia ovata - Mountain Camellia**

Sticta limbata - Powdered Moon Lichen**

Streptopus amplexifolius - White Mandarin**

Strophitus undulatus - Squawfoot

Sturnella magna - Eastern Meadowlark

Stygobromus carolinensis - Yancey Sideswimmer (Carolina Seep Scud)**

Succinea campestris - Crinkled Ambersnail

Succinea unicolor - Squatty Ambersnail

Succinea wilsoni - Golden Ambersnail

Sylvilagus obscurus - Appalachian Cottontail**

Symphyotrichum firmum - Purple-stem Aster

Symphyotrichum laeve var. laeve - Smooth Blue Aster**

Symphyotrichum novae-angliae - New England Aster

Symphyotrichum oblongifolium - Aromatic Aster**

Symphyotrichum pratense - Barrens Silky Aster

Symphyotrichum rhiannon - Rhiannon's Aster**

Symphyotrichum shortii - Short's Aster**

Taxilejeunea sharpii - A Liverwort

Taxiphyllum alternans - Japanese Yew-moss**

Terrapene carolina - Eastern Box Turtle

Tetragonotheca helianthoides - Pineland Squarehead

Tetrodontium brownianum - Little Georgia moss

Thalictrum macrostylum - Small-leaved Meadowrue**

Thaspium pinnatifidum - Mountain Thaspium**

Thermopsis fraxinifolia - Ash-leaved Golden-banner**

Thermopsis mollis - Appalachian Golden-banner**

Thermopsis villosa - Aaron's-rod

Thryomanes bewickii altus - Appalachian Bewick's Wren

Thuidium recognitum - Hokkaido Fern Moss

Thuja occidentalis - bristly sarsaparilla, American Arborvitae

Tilia americana var. americana - American Basswood

Tortula ammonsiana - Ammon's Tortula**

Tortula fragilis - Fragile Tortula

Toxolasma lividum - Purple Lilliput

Toxolasma pullus - Savannah Lilliput

Toxostoma rufum - Brown Thrasher

Trachemys scripta troostii - Cumberland Slider

Tradescantia hirsuticaulis - Hairy Spiderwort

Trechus carolinae - a carabid beetle

Trechus lucentus unicoi - Unicoi Mountains Ground Beetle

Trechus mitchellensis - Mitchell's Ground Beetle

Trechus rosenbergi - Rosenberg's Ground Beetle

Trechus satanicus - a carabid beetle

Triantha glutinosa - Sticky Bog Asphodel**

Trichomanes boschianum - Appalachian Filmy-fern**

Trichomanes petersii - Dwarf Filmy-fern**

Trichophorum cespitosum - Deerhair Bulrush

Trichostema brachiatum - Glade Bluecurls**

Trichostema setaceum - narrow-leaved blue curls

Trientalis borealis - Starflower**

Trillium discolor - Mottled Trillium**

Trillium flexipes - Bent White Trillium

Trillium pusillum var. ozarkanum - Alabama Least Trillium

Trillium rugelii - Southern Nodding Trillium

Trillium simile - Sweet White Trillium**

Trimerotropis saxatalis - Lichen Grasshopper

Triodopsis tennesseensis - Budded Threetooth

Triosteum aurantiacum var. aurantiacum - Early Horse Gentian

Triphora trianthophoros var. trianthophoros - Three Birds Orchid

Trisetum spicatum - Soft Trisetum

Tritomaria exsectiformis ssp. exsectiformis - A Liverwort

Tsuga canadensis - Eastern Hemlock

Tsuga caroliniana - Carolina Hemlock

Turritis glabra - Tower Mustard

Tyto alba - Barn Owl

Ulmus serotina - September Elm

Ursus americanus - Black Bear

Usnea angulata - Old Man's Beard**

Vaccinium angustifolium - Northern Lowbush Blueberry

Vaccinium hirsutum - Hairy blueberry

Vaccinium macrocarpon - large cranberry**

Valerianella umbilicata - Woodland Cornsalad

Ventridens arcellus - Golden Dome

Ventridens coelaxis - Bidentate dome

Ventridens collisella - Sculptured Dome

Ventridens lasmodon - Hollow Dome

Ventridens suppressus - Flat Dome

Verbena hastata - Blue Vervain

Verbesina helianthoides - A Crownbeard

Verbesina virginica var. virginica - Frostweed

Verbesina walteri - Walter's Crownbeard

Vermivora chrysoptera - Golden-winged Warbler**

Vermivora cyanoptera - Blue-winged Warbler

Veronica americana - American Speedwell**

Veronica anagallis-aquatica - Blue Water Speedwell

Veronicastrum virginicum - Culver's-root

Vertigo bollesiana - Delicate Vertigo

Vertigo parvula - Smallmouth Vertigo

Vertigo sp. 3 - a vertigo snail

Villosa constricta - Notched Rainbow

Villosa delumbis - Eastern Creekshell

Villosa iris - Rainbow

Villosa trabalis - Cumberland Bean****

Villosa vanuxemensis - Mountain Creekshell**

Viola appalachiensis - Appalachian blue violet**

Viola labradorica - Alpine Violet

Viola tripartita - Three-parted Violet

Viola walteri - Prostrate Blue Violet

Viola walteri var appalachiensis - Appalachian Violet

Vireo flavifrons - Yellow-throated Vireo

Vireo gilvus - Warbling Vireo

Vireo solitarius - Blue-headed Vireo

Virginia valeriae valeriae - Eastern Earthsnake

Waltoncythere acuta - Transylvania Crayfish Ostracod

Warnstorfia fluitans - Floating Sickle-moss**

Woodsia appalachiana - Appalachian Cliff Fern**

Xanthoparmelia monticola - Xanthoparmelia lichen**

Xolotrema caroliniense - Blunt Wedge

Yucca flaccida - Weakleaf Yucca

Zapada chila - Smokies Forestfly

Zonitoides patuloides - Appalachian Gloss

Zonotrichia albicollis - White-throated Sparrow

Zygodon viridissimus var. *rupestris* - A Moss

Linking Species Groups to Indicators, Outcomes and Sustainability Scores

The next several sections of this appendix address **Steps 4 through 6** of the Ecological Sustainability Evaluation tool process in which species groups are linked to indicators, outcomes are estimated for each alternative and ecological sustainability scores are calculated for each species group by alternative.

Aquatic Species Groups

The section of this appendix includes tabular information about each aquatic species group, including the species associated with each group (Table A), the **indicators** and ratings associated with those indicators (Table B), and estimated **outcomes** by alternative including the composite **scores (Table C)**. In addition, the aquatic ecosystems analysis also includes information about permitted discharges by watershed (**Table F**) and nonindigenous aquatic species associated with the Nantahala and Pisgah NF.

Stream (Orders 1-4) Associates

Table A. Species Included in the Stream Associates Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Species Weight
Amphibian	*Cryptobranchus alleganiensis alleganiensis*	Hellbender	High
Amphibian	*Desmognathus aneneus*	Seepage Salamander	Moderate
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander	High
Amphibian	*Desmognathus imitator*	Imitator Salamander	Moderate
Amphibian	*Desmognathus imitator pop. 1*	Waterrock Knob Salamander	Moderate
Amphibian	*Desmognathus organi*	Northern Pigmy Salamander	High
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander	Moderate
Amphibian	*Eurycea bislineata*	Two-lined Salamander	Moderate
Amphibian	*Eurycea junaluska*	Junaluska Salamander	High
Amphibian	*Eurycea longicauda*	Longtail Salamander	Moderate

Taxa Group	Scientific Name	Common Name	Species Weight
Amphibian	*Necturus maculosus*	Common Mudpuppy	High
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog	Moderate
Aquatic Insect	*Ophiogomphus edmundo*	Edmund's Snaketail	Moderate
Aquatic Insect	*Ophiogomphus howei*	Pygmy Snaketail	Moderate
Aquatic Insect	*Ophiogomphus incurvatus*	Appalachian Snaketail	Moderate
Aquatic Insect	*Ophiogomphus mainensis*	Maine Snaketail	Moderate
Aquatic Insect	*Rhyacophila amicis*	a caddisfly	High
Aquatic Insect	*Rhyacophila vibox*	a rhyacophilan caddisfly	High
Bird	*Parkesia motacilla*	Louisiana Waterthrush	Moderate
Crustacean	*Cambarus brimleyorum*	Valley River Crayfish	Moderate
Crustacean	*Cambarus carolinus*	Red Burrowing Crayfish	Moderate
Crustacean	*Cambarus chaugaensis*	Chauga Crayfish	High
Crustacean	*Cambarus eeseeohensis*	Grandfather Mountain Crayfish	Moderate
Crustacean	*Cambarus georgiae*	Little Tennessee Crayfish	High
Crustacean	*Cambarus johni*	Carolina Foothills Crayfish	Moderate
Crustacean	*Cambarus lenati*	Broad River Stream Crayfish	Moderate
Crustacean	*Cambarus nodosus*	Knotty Burrowing Crayfish	Moderate
Crustacean	*Cambarus parrishi*	Hiwassee Headwaters Crayfish (Parrish Crayfish)	High
Crustacean	*Cambarus reburrus*	French Broad Crayfish	Moderate
Crustacean	*Cambarus spicatus*	Broad River Spiny Crayfish	Moderate
Crustacean	*Cambarus tuckasegee*	Tuckasegee Stream Crayfish	Moderate
Fish	*Rhinichthys atratulus*	Blacknose Dace	High
Fish	*Salvelinus fontinalis*	Brook Trout	High
Mammal	*Sorex palustris punctulatus*	Southern Water Shrew	High

Taxa Group	Scientific Name	Common Name	Species Weight
Nonvascular Plant	*Fissidens appalachensis*	Appalachian pocket moss	High
Nonvascular Plant	*Gymnoderma lineare*	Rock Gnome Lichen	High
Reptile	*Apalone spinifera spinifera*	Eastern Spiny Softshell	Moderate
Reptile	*Glyptemys muhlenbergii*	Bog Turtle	Moderate
Reptile	*Graptemys geographica*	Common Map Turtle	Moderate
Reptile	*Regina septemvittata*	Queen Snake	Moderate
Reptile	*Sternotherus minor*	Loggerhead Musk Turtle	Moderate
Vascular Plant	*Spiraea virginiana*	Virginia Spiraea	Moderate

Small River (Orders 4-6) Associates

Table A. Species Included in the Small River Associates Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)
The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Species Weight
Amphibian	*Cryptobranchus alleganiensis alleganiensis*	Hellbender	High
Amphibian	*Desmognathus aneneus*	Seepage Salamander	Moderate
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander	Moderate
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander	Moderate
Amphibian	*Eurycea bislineata*	Two-lined Salamander	Moderate
Amphibian	*Eurycea junaluska*	Junaluska Salamander	High
Amphibian	*Eurycea longicauda*	Longtail Salamander	Moderate
Aquatic Insect	*Gomphus consanguis*	Cherokee Clubtail	Moderate
Aquatic Insect	*Ladona julia*	Chalk-fronted Corporal	Moderate
Aquatic Insect	*Megaleuctra williamsae*	William's Rare Winter Stonefly	High

Taxa Group	Scientific Name	Common Name	Species Weight
Aquatic Insect	*Ophiogomphus edmundo*	Edmund's Snaketail	Moderate
Aquatic Insect	*Ophiogomphus howei*	Pygmy Snaketail	Moderate
Aquatic Insect	*Ophiogomphus incurvatus*	Appalachian Snaketail	Moderate
Aquatic Insect	*Ophiogomphus mainensis*	Maine Snaketail	Moderate
Aquatic Insect	*Palaeagapetus celsus*	a caddisfly	High
Aquatic Insect	*Rhyacophila amicis*	a caddisfly	High
Aquatic Insect	*Rhyacophila vibox*	a rhyacophilan caddisfly	High
Bird	*Parkesia motacilla*	Louisiana Waterthrush	Moderate
Crustacean	*Cambarus brimleyorum*	Valley River Crayfish	Moderate
Crustacean	*Cambarus carolinus*	Red Burrowing Crayfish	Moderate
Crustacean	*Cambarus chaugaensis*	Chauga Crayfish	High
Crustacean	*Cambarus eeseeohensis*	Grandfather Mountain Crayfish	Moderate
Crustacean	*Cambarus georgiae*	Little Tennessee Crayfish	High
Crustacean	*Cambarus hiwasseensis*	Hiwassee Crayfish	Moderate
Crustacean	*Cambarus johni*	Carolina Foothills Crayfish	Moderate
Crustacean	*Cambarus lenati*	Broad River Stream Crayfish	Moderate
Crustacean	*Cambarus nodosus*	Knotty Burrowing Crayfish	Moderate
Crustacean	*Cambarus parrishi*	Hiwassee Headwaters Crayfish (Parrish Crayfish)	High
Crustacean	*Cambarus reburrus*	French Broad Crayfish	High
Crustacean	*Cambarus spicatus*	Broad River Spiny Crayfish	Moderate
Fish	*Ameiurus brunneus*	Snail Bullhead	High
Fish	*Ameiurus platycephalus*	Flat Bullhead	High
Fish	*Cottus carolinae*	Banded Sculpin	Moderate
Fish	*Erimonax monachus*	Spotfin Chub	High

Taxa Group	Scientific Name	Common Name	Species Weight
Fish	*Erimystax insignis eristigma*	Southern Blotched Chub	High
Fish	*Etheostoma acuticeps*	Sharphead Darter	High
Fish	*Etheostoma gutselli*	Tuckasegee Darter	High
Fish	*Etheostoma inscriptum*	Turquoise Darter	High
Fish	*Etheostoma rufilineatum*	Redline Darter	High
Fish	*Etheostoma tennesseense (E. simoterum)*	Tennessee Darter (Snubnose Darter)	High
Fish	*Etheostoma thalassinum*	Seagreen Darter	High
Fish	*Etheostoma vulneratum*	Wounded Darter	High
Fish	*Hybopsis rubrifrons*	Rosyface Chub	High
Fish	*Ichthyomyzon bdellium*	Ohio Lamprey	High
Fish	*Lampetra (Lethenteron) appendix*	American Brook Lamprey	High
Fish	*Micropterus coosae*	Redeye Bass	High
Fish	*Micropterus dolomieu*	Smallmouth Bass	High
Fish	*Myotis grisescens*	Gray Myotis (Gray Bat)	Moderate
Fish	*Notropis lutipinnis*	Yellowfin Shiner	High
Fish	*Notropis micropteryx*	Highland Shiner	High
Fish	*Notropis volucellus*	Mimic Shiner	High
Fish	*Noturus eleutherus*	Mountain Madtom	High
Fish	*Noturus flavus*	Stonecat	High
Fish	*Percina burtoni*	Blotchside Logperch	High
Fish	*Percina caprodes*	Logperch	High
Fish	*Percina squamata*	Olive Darter	High
Fish	*Percina williamsi (P. macrocephala)*	Sickle Darter	High
Fish	*Salvelinus fontinalis*	Brook Trout	High

Taxa Group	Scientific Name	Common Name	Species Weight
Mammal	*Necturus maculosus*	Common Mudpuppy	High
Mammal	*Sorex palustris punctulatus*	Southern Water Shrew	Moderate
Mollusk	*Alasmidonta robusta*	Carolina Elktoe	High
Mollusk	*Alasmidonta varicosa*	Brook Floater	High
Mollusk	*Alasmidonta viridis*	Slippershell Mussel	High
Mollusk	*Elimia christyi*	Christy's Elimia	Moderate
Mollusk	*Lampsilis fasciola*	Wavy-rayed Lampmussel	High
Mollusk	*Lasmigona holstonia*	Tennessee Heelsplitter	High
Nonvascular Plant	*Gymnoderma lineare*	Rock Gnome Lichen	Moderate
Reptile	*Apalone spinifera spinifera*	Eastern Spiny Softshell	Moderate
Reptile	*Graptemys geographica*	Common Map Turtle	Moderate
Reptile	*Regina septemvittata*	Queen Snake	Moderate
Reptile	*Sternotherus minor*	Loggerhead Musk Turtle	Moderate
Reptile	*Terrapene carolina*	Eastern Box Turtle	Moderate
Vascular Plant	*Diervilla rivularis*	Riverbank Bush-honeysuckle	Very High
Vascular Plant	*Spiraea virginiana*	Virginia Spiraea	High

Medium – Large River (Orders 6+) Associates

Table A. Species Included in the Medium and Large River Associates Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Species Weight
Amphibian	*Cryptobranchus alleganiensis alleganiensis*	Hellbender	High

Taxa Group	Scientific Name	Common Name	Species Weight
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander	Moderate
Amphibian	*Eurycea bislineata*	Two-lined Salamander	Moderate
Amphibian	*Eurycea junaluska*	Junaluska Salamander	High
Amphibian	*Necturus maculosus*	Common Mudpuppy	High
Aquatic Insect	*Ladona julia*	Chalk-fronted Corporal	High
Aquatic Insect	*Macromia margarita*	Mountain River Cruiser	High
Aquatic Insect	*Manophylax altus*	Mount Mitchell Caddisfly	Moderate
Aquatic Insect	*Megaleuctra williamsae*	William's Rare Winter Stonefly	Moderate
Aquatic Insect	*Ophiogomphus edmundo*	Edmund's Snaketail	High
Aquatic Insect	*Ophiogomphus howei*	Pygmy Snaketail	High
Aquatic Insect	*Ophiogomphus incurvatus*	Appalachian Snaketail	High
Aquatic Insect	*Ophiogomphus mainensis*	Maine Snaketail	High
Aquatic Insect	*Palaeagapetus celsus*	a caddisfly	Moderate
Aquatic Insect	*Rhyacophila amicis*	a caddisfly	Moderate
Aquatic Insect	*Rhyacophila vibox*	a rhyacophilan caddisfly	Moderate
Aquatic Insect	*Zapada chila*	Smokies Forestfly	Moderate
Bird	*Haliaeetus leucocephalus*	Bald Eagle	High
Crustacean	*Cambarus brimleyorum*	Valley River Crayfish	High
Crustacean	*Cambarus georgiae*	Little Tennessee Crayfish	High
Crustacean	*Cambarus hiwasseensis*	Hiwassee Crayfish	High
Crustacean	*Cambarus lenati*	Broad River Stream Crayfish	High
Crustacean	*Cambarus reburrus*	French Broad Crayfish	High
Crustacean	*Cambarus spicatus*	Broad River Spiny Crayfish	High
Crustacean	*Cambarus tuckasegee*	Tuckasegee Stream Crayfish	High

Taxa Group	Scientific Name	Common Name	Species Weight
Crustacean	*Waltoncythere acuta*	Transylvania Crayfish Ostracod	High
Fish	*Acipenser fulvescens*	Lake Sturgeon	High
Fish	*Ameiurus brunneus*	Snail Bullhead	High
Fish	*Ameiurus platycephalus*	Flat Bullhead	High
Fish	*Aplodinotus grunniens*	Freshwater Drum	High
Fish	*Carpiodes carpio*	River Carpsucker	High
Fish	*Carpiodes cyprinus*	Quillback	High
Fish	*Carpiodes sp. cf. cyprinus*	a carpsucker	High
Fish	*Carpiodes sp. cf. velifer*	Atlantic Highfin Carpsucker	High
Fish	*Cottus carolinae*	Banded Sculpin	High
Fish	*Erimonax monachus*	Spotfin Chub	High
Fish	*Erimystax insignis eristigma*	Southern Blotched Chub	High
Fish	*Etheostoma acuticeps*	Sharphead Darter	High
Fish	*Etheostoma gutselli*	Tuckasegee Darter	High
Fish	*Etheostoma inscriptum*	Turquoise Darter	High
Fish	*Etheostoma rufilineatum*	Redline Darter	High
Fish	*Etheostoma tennesseense (E. simoterum)*	Tennessee Darter (Snubnose Darter)	High
Fish	*Etheostoma thalassinum*	Seagreen Darter	High
Fish	*Etheostoma vulneratum*	Wounded Darter	High
Fish	*Hiodon tergisus*	Mooneye	High
Fish	*Hybopsis rubrifrons*	Rosyface Chub	High
Fish	*Ichthyomyzon bdellium*	Ohio Lamprey	High
Fish	*Ictiobus bubalus*	Smallmouth Buffalo	High
Fish	*Ictiobus niger*	Black Buffalo	High

Taxa Group	Scientific Name	Common Name	Species Weight
Fish	*Lampetra (Lethenteron) appendix*	American Brook Lamprey	High
Fish	*Lepomis macrochirus*	Bluegill	High
Fish	*Micropterus coosae*	Redeye Bass	High
Fish	*Micropterus dolomieu*	Smallmouth Bass	High
Fish	*Micropterus salmoides*	Largemouth Bass	High
Fish	*Moxostoma breviceps*	Smallmouth Redhorse	High
Fish	*Moxostoma robustum*	Robust Redhorse	High
Fish	*Moxostoma sp. 2 (M. sp. cf. macrolepidotum)*	Sicklefin Redhorse	High
Fish	*Notropis lutipinnis*	Yellowfin Shiner	High
Fish	*Notropis micropteryx*	Highland Shiner	High
Fish	*Notropis volucellus*	Mimic Shiner	High
Fish	*Noturus eleutherus*	Mountain Madtom	High
Fish	*Noturus flavus*	Stonecat	High
Fish	*Percina burtoni*	Blotchside Logperch	High
Fish	*Percina caprodes*	Logperch	High
Fish	*Percina squamata*	Olive Darter	High
Fish	*Percina williamsi (P. macrocephala)*	Sickle Darter	High
Fish	*Polydon spathula*	Paddlefish	High
Fish	*Rhinichthys atratulus*	Blacknose Dace	High
Fish	*Sander canadensis*	Sauger	High
Mammal	*Myotis grisescens*	Gray Myotis (Gray Bat)	Moderate
Mollusk	*Alasmidonta raveneliana*	Appalachian elktoe	High
Mollusk	*Alasmidonta varicosa*	Brook Floater	High
Mollusk	*Alasmidonta viridis*	Slippershell Mussel	High

Taxa Group	Scientific Name	Common Name	Species Weight
Mollusk	*Elimia christyi*	Christy's Elimia	High
Mollusk	*Elliptio dilatata*	Spike	High
Mollusk	*Fusconaia (Pleuronaia) barnesiana*	Tennessee Pigtoe	High
Mollusk	*Fusconaia subrotunda*	Longsolid	High
Mollusk	*Lampsilis fasciola*	Wavy-rayed Lampmussel	High
Mollusk	*Lasmigona holstonia*	Tennessee Heelsplitter	High
Mollusk	*Leptoxis virgata*	Smooth Mudalia	High
Mollusk	*Medionidus conradicus*	Cumberland Moccasinshell	High
Mollusk	*Pegias fabula*	Littlewing Pearlymussel	High
Mollusk	*Pleurobema oviforme*	Tennessee Clubshell	High
Mollusk	*Pleurocera parva*	Dainty Hornsnail	High
Mollusk	*Potamilus alatus*	Pink Heelsplitter	High
Mollusk	*Ptychobranchus fasciolaris*	Kidneyshell	High
Mollusk	*Strophitus undulatus*	Squawfoot	High
Mollusk	*Toxolasma lividum*	Purple Lilliput	High
Mollusk	*Toxolasma pullus*	Savannah Lilliput	High
Mollusk	*Villosa constricta*	Notched Rainbow	High
Mollusk	*Villosa delumbis*	Eastern Creekshell	High
Mollusk	*Villosa iris*	Rainbow	High
Mollusk	*Villosa trabilis*	Cumberland Bean	High
Mollusk	*Villosa vanuxemensis*	Mountain Creekshell	High
Reptile	*Apalone spinifera spinifera*	Eastern Spiny Softshell	Moderate
Reptile	*Graptemys geographica*	Common Map Turtle	Moderate
Reptile	*Regina septemvittata*	Queen Snake	Moderate

Taxa Group	Scientific Name	Common Name	Species Weight
Reptile	*Sternotherus minor*	Loggerhead Musk Turtle	Moderate
Reptile	*Trachemys scripta troostii*	Cumberland Slider	Moderate
Vascular Plant	*Spiraea virginiana*	Virginia Spiraea	High

Pond, Lake and Reservoir Associates

Table A. Species Included in the Pond, Lake, and Reservoir Associates Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Species Weight
Amphibian	*Necturus maculosus*	Common Mudpuppy	Moderate
Bird	*Haliaeetus leucocephalus*	Bald Eagle	High
Crustacean	*Cambarus reburrus*	French Broad Crayfish	Moderate
Fish	*Acipenser fulvescens*	Lake Sturgeon	High
Fish	*Ameiurus platycephalus*	Flat Bullhead	High
Fish	*Lepomis macrochirus*	Bluegill	High
Fish	*Micropterus salmoides*	Largemouth Bass	High
Reptile	*Apalone spinifera spinifera*	Eastern Spiny Softshell	Moderate
Reptile	*Graptemys geographica*	Common Map Turtle	Moderate
Reptile	*Regina septemvittata*	Queen Snake	Moderate
Reptile	*Terrapene carolina*	Eastern Box Turtle	Moderate
Reptile	*Trachemys scripta troostii*	Cumberland Slider	Moderate

Hydrologic Modification Sensitive Species

Table A. Species Included in the Hydrologic Modification Sensitive Species Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Species Weight
Amphibian	*Ambystoma maculatum*	Spotted Salamander	Moderate
Amphibian	*Ambystoma talpoideum*	Mole Salamander	Moderate
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander	Moderate
Amphibian	*Cryptobranchus alleganiensis alleganiensis*	Hellbender	High
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander	Moderate
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander	Moderate
Amphibian	*Eurycea bislineata*	Two-lined Salamander	Moderate
Amphibian	*Eurycea junaluska*	Junaluska Salamander	Moderate
Amphibian	*Eurycea longicauda*	Longtail Salamander	Moderate
Amphibian	*Hemidactylium scutatum*	Four-toed Salamander	Moderate
Amphibian	*Necturus maculosus*	Common Mudpuppy	High
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog	Moderate
Aquatic Insect	*Ceraclea cancellata*	a longhorned caddisfly	High
Aquatic Insect	*Gomphus consanguis*	Cherokee Clubtail	Moderate
Aquatic Insect	*Ladona julia*	Chalk-fronted Corporal	Moderate
Aquatic Insect	*Macromia margarita*	Mountain River Cruiser	Moderate
Aquatic Insect	*Manophylax altus*	Mount Mitchell Caddisfly	High
Aquatic Insect	*Megaleuctra williamsae*	William's Rare Winter Stonefly	High
Aquatic Insect	*Ophiogomphus edmundo*	Edmund's Snaketail	Moderate

Taxa Group	Scientific Name	Common Name	Species Weight
Aquatic Insect	*Ophiogomphus howei*	Pygmy Snaketail	Moderate
Aquatic Insect	*Ophiogomphus incurvatus*	Appalachian Snaketail	Moderate
Aquatic Insect	*Ophiogomphus mainensis*	Maine Snaketail	Moderate
Aquatic Insect	*Palaeagapetus celsus*	a caddisfly	High
Aquatic Insect	*Rhyacophila amicis*	a caddisfly	High
Aquatic Insect	*Rhyacophila vibox*	a rhyacophilan caddisfly	High
Aquatic Insect	*Zapada chila*	Smokies Forestfly	High
Crustacean	*Caecidotea carolinensis*	Bennet's Cave Mill Water Slater	Low
Crustacean	*Cambarus brimleyorum*	Valley River Crayfish	High
Crustacean	*Cambarus carolinus*	Red Burrowing Crayfish	Moderate
Crustacean	*Cambarus chaugaensis*	Chauga Crayfish	High
Crustacean	*Cambarus eeseeohensis*	Grandfather Mountain Crayfish	Moderate
Crustacean	*Cambarus georgiae*	Little Tennessee Crayfish	High
Crustacean	*Cambarus hiwasseensis*	Hiwassee Crayfish	Moderate
Crustacean	*Cambarus johni*	Carolina Foothills Crayfish	Moderate
Crustacean	*Cambarus lenati*	Broad River Stream Crayfish	Moderate
Crustacean	*Cambarus nodosus*	Knotty Burrowing Crayfish	Moderate
Crustacean	*Cambarus parrishi*	Hiwassee Headwaters Crayfish (Parrish Crayfish)	High
Crustacean	*Cambarus reburrus*	French Broad Crayfish	Moderate
Crustacean	*Cambarus spicatus*	Broad River Spiny Crayfish	Moderate
Crustacean	*Cambarus tuckasegee*	Tuckasegee Stream Crayfish	Moderate
Crustacean	*Skistodiaptomus carolinensis*	Carolina Skistodiaptomus	Low
Crustacean	*Stygobromus carolinensis*	Yancey Sideswimmer (Carolina Seep Scud)	Low
Crustacean	*Waltoncythere acuta*	Transylvania Crayfish Ostracod	Moderate

Taxa Group	Scientific Name	Common Name	Species Weight
Fish	*Acipenser fulvescens*	Lake Sturgeon	High
Fish	*Ameiurus brunneus*	Snail Bullhead	High
Fish	*Ameiurus platycephalus*	Flat Bullhead	High
Fish	*Aplodinotus grunniens*	Freshwater Drum	High
Fish	*Carpiodes carpio*	River Carpsucker	Moderate
Fish	*Carpiodes cyprinus*	Quillback	Moderate
Fish	*Carpiodes sp. cf. cyprinus*	a carpsucker	Moderate
Fish	*Carpiodes sp. cf. velifer*	Atlantic Highfin Carpsucker	Moderate
Fish	*Clinostomus sp. 1*	Smoky Dace	High
Fish	*Cottus carolinae*	Banded Sculpin	High
Fish	*Erimonax monachus*	Spotfin Chub	High
Fish	*Erimystax insignis eristigma*	Southern Blotched Chub	High
Fish	*Etheostoma acuticeps*	Sharphead Darter	High
Fish	*Etheostoma gutselli*	Tuckasegee Darter	High
Fish	*Etheostoma inscriptum*	Turquoise Darter	High
Fish	*Etheostoma rufilineatum*	Redline Darter	High
Fish	*Etheostoma tennesseense (E. simoterum)*	Tennessee Darter (Snubnose Darter)	High
Fish	*Etheostoma thalassinum*	Seagreen Darter	High
Fish	*Etheostoma vulneratum*	Wounded Darter	High
Fish	*Hiodon tergisus*	Mooneye	Moderate
Fish	*Hybopsis rubrifrons*	Rosyface Chub	High
Fish	*Ichthyomyzon bdellium*	Ohio Lamprey	Low
Fish	*Ictiobus bubalus*	Smallmouth Buffalo	High
Fish	*Ictiobus niger*	Black Buffalo	High

Taxa Group	Scientific Name	Common Name	Species Weight
Fish	*Lampetra (Lethenteron) appendix*	American Brook Lamprey	Low
Fish	*Lepomis macrochirus*	Bluegill	Low
Fish	*Luxilus chrysocephalus*	Striped Shiner	High
Fish	*Micropterus coosae*	Redeye Bass	Moderate
Fish	*Micropterus dolomieu*	Smallmouth Bass	High
Fish	*Micropterus salmoides*	Largemouth Bass	Moderate
Fish	*Moxostoma breviceps*	Smallmouth Redhorse	High
Fish	*Moxostoma robustum*	Robust Redhorse	High
Fish	*Moxostoma sp. 2 (M. sp. cf. macrolepidotum)*	Sicklefin Redhorse	High
Fish	*Notropis lutipinnis*	Yellowfin Shiner	High
Fish	*Notropis micropteryx*	Highland Shiner	High
Fish	*Notropis volucellus*	Mimic Shiner	High
Fish	*Noturus eleutherus*	Mountain Madtom	High
Fish	*Noturus flavus*	Stonecat	High
Fish	*Percina burtoni*	Blotchside Logperch	High
Fish	*Percina caprodes*	Logperch	High
Fish	*Percina squamata*	Olive Darter	High
Fish	*Percina williamsi (P. macrocephala)*	Sickle Darter	High
Fish	*Polydon spathula*	Paddlefish	High
Fish	*Rhinichthys atratulus*	Blacknose Dace	High
Fish	*Salvelinus fontinalis*	Brook Trout	High
Fish	*Sander canadensis*	Sauger	Moderate
Mollusk	*Alasmidonta raveneliana*	Appalachian elktoe	High
Mollusk	*Alasmidonta robusta*	Carolina Elktoe	High

Taxa Group	Scientific Name	Common Name	Species Weight
Mollusk	*Alasmidonta varicosa*	Brook Floater	Moderate
Mollusk	*Alasmidonta viridis*	Slippershell Mussel	High
Mollusk	*Elimia christyi*	Christy's Elimia	High
Mollusk	*Elliptio dilatata*	Spike	High
Mollusk	*Fusconaia (Pleuronaia) barnesiana*	Tennessee Pigtoe	High
Mollusk	*Fusconaia subrotunda*	Longsolid	High
Mollusk	*Lampsilis fasciola*	Wavy-rayed Lampmussel	High
Mollusk	*Lasmigona holstonia*	Tennessee Heelsplitter	High
Mollusk	*Leptoxis virgata*	Smooth Mudalia	High
Mollusk	*Medionidus conradicus*	Cumberland Moccasinshell	High
Mollusk	*Pegias fabula*	Littlewing Pearlymussel	High
Mollusk	*Pleurobema oviforme*	Tennessee Clubshell	High
Mollusk	*Pleurocera parva*	Dainty Hornsnail	High
Mollusk	*Potamilus alatus*	Pink Heelsplitter	High
Mollusk	*Ptychobranchus fasciolaris*	Kidneyshell	High
Mollusk	*Toxolasma lividum*	Purple Lilliput	High
Mollusk	*Toxolasma pullus*	Savannah Lilliput	High
Mollusk	*Villosa constricta*	Notched Rainbow	High
Mollusk	*Villosa delumbis*	Eastern Creekshell	High
Mollusk	*Villosa iris*	Rainbow	High
Mollusk	*Villosa trabilis*	Cumberland Bean	High
Mollusk	*Villosa vanuxemensis*	Mountain Creekshell	High
Reptile	*Glyptemys muhlenbergii*	Bog Turtle	High
Reptile	*Graptemys geographica*	Common Map Turtle	Moderate

Taxa Group	Scientific Name	Common Name	Species Weight
Reptile	*Regina septemvittata*	Queen Snake	Moderate
Reptile	*Sternotherus minor*	Loggerhead Musk Turtle	Moderate
Reptile	*Terrapene carolina*	Eastern Box Turtle	Moderate
Reptile	*Trachemys scripta troostii*	Cumberland Slider	Moderate
Vascular Plant	*Spiraea virginiana*	Virginia Spiraea	High

Sediment Sensitive Species

Table A. Species Included in the Sediment Sensitive Species Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)
The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Species Weight
Fish	*Acipenser fulvescens*	Lake Sturgeon	Moderate
Mollusk	*Alasmidonta raveneliana*	Appalachian elktoe	High
Mollusk	*Alasmidonta robusta*	Carolina Elktoe	High
Mollusk	*Alasmidonta varicosa*	Brook Floater	High
Mollusk	*Alasmidonta viridis*	Slippershell Mussel	High
Amphibian	*Ambystoma maculatum*	Spotted Salamander	Moderate
Amphibian	*Ambystoma talpoideum*	Mole Salamander	Moderate
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander	Moderate
Crustacean	*Caecidotea carolinensis*	Bennet's Cave Mill Water Slater	Low
Crustacean	*Cambarus brimleyorum*	Valley River Crayfish	Moderate
Crustacean	*Cambarus carolinus*	Red Burrowing Crayfish	Moderate
Crustacean	*Cambarus chaugaensis*	Chauga Crayfish	High
Crustacean	*Cambarus eeseeohensis*	Grandfather Mountain Crayfish	Moderate

Taxa Group	Scientific Name	Common Name	Species Weight
Crustacean	*Cambarus georgiae*	Little Tennessee Crayfish	Moderate
Crustacean	*Cambarus hiwasseensis*	Hiwassee Crayfish	Moderate
Crustacean	*Cambarus johni*	Carolina Foothills Crayfish	Moderate
Crustacean	*Cambarus lenati*	Broad River Stream Crayfish	Moderate
Crustacean	*Cambarus nodosus*	Knotty Burrowing Crayfish	Low
Crustacean	*Cambarus parrishi*	Hiwassee Headwaters Crayfish (Parrish Crayfish)	High
Crustacean	*Cambarus reburrus*	French Broad Crayfish	Moderate
Crustacean	*Cambarus spicatus*	Broad River Spiny Crayfish	Moderate
Crustacean	*Cambarus tuckasegee*	Tuckasegee Stream Crayfish	Moderate
Aquatic Insect	*Ceraclea cancellata*	a longhorned caddisfly	High
Fish	*Clinostomus sp. 1*	Smoky Dace	High
Fish	*Cottus carolinae*	Banded Sculpin	High
Amphibian	*Cryptobranchus alleganiensis alleganiensis*	Hellbender	High
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander	Moderate
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander	Moderate
Crustacean	*Elimia christyi*	Christy's Elimia	High
Mollusk	*Elliptio dilatata*	Spike	High
Fish	*Erimonax monachus*	Spotfin Chub	High
Fish	*Erimystax insignis eristigma*	Southern Blotched Chub	High
Fish	*Etheostoma acuticeps*	Sharphead Darter	High
Fish	*Etheostoma gutselli*	Tuckasegee Darter	High
Fish	*Etheostoma inscriptum*	Turquoise Darter	High
Fish	*Etheostoma rufilineatum*	Redline Darter	High
Fish	*Etheostoma tennesseense (E. simoterum)*	Tennessee Darter (Snubnose Darter)	High

Taxa Group	Scientific Name	Common Name	Species Weight
Fish	*Etheostoma thalassinum*	Seagreen Darter	High
Fish	*Etheostoma vulneratum*	Wounded Darter	High
Amphibian	*Eurycea bislineata*	Two-lined Salamander	Moderate
Amphibian	*Eurycea junaluska*	Junaluska Salamander	High
Amphibian	*Eurycea longicauda*	Longtail Salamander	Moderate
Mollusk	*Fusconaia (Pleuronaia) barnesiana*	Tennessee Pigtoe	High
Mollusk	*Fusconaia subrotunda*	Longsolid	High
Reptile	*Glyptemys muhlenbergii*	Bog Turtle	Moderate
Aquatic Insect	*Gomphus consanguis*	Cherokee Clubtail	Moderate
Reptile	*Graptemys geographica*	Common Map Turtle	Moderate
Reptile	*Hemidactylium scutatum*	Four-toed Salamander	Moderate
Fish	*Hybopsis rubrifrons*	Rosyface Chub	High
Aquatic Insect	*Ladona julia*	Chalk-fronted Corporal	Moderate
Mollusk	*Lampsilis fasciola*	Wavy-rayed Lampmussel	High
Mollusk	*Lasmigona holstonia*	Tennessee Heelsplitter	High
Mollusk	*Lepomis macrochirus*	Bluegill	Moderate
Mollusk	*Leptoxis virgata*	Smooth Mudalia	High
Fish	*Luxilus chrysocephalus*	Striped Shiner	High
Aquatic Insect	*Macromia margarita*	Mountain River Cruiser	Moderate
Aquatic Insect	*Manophylax altus*	Mount Mitchell Caddisfly	High
Mollusk	*Medionidus conradicus*	Cumberland Moccasinshell	High
Aquatic Insect	*Megaleuctra williamsae*	William's Rare Winter Stonefly	High
Fish	*Micropterus coosae*	Redeye Bass	Moderate
Fish	*Micropterus dolomieu*	Smallmouth Bass	Moderate

Taxa Group	Scientific Name	Common Name	Species Weight
Fish	*Micropterus salmoides*	Largemouth Bass	Moderate
Fish	*Moxostoma breviceps*	Smallmouth Redhorse	Moderate
Fish	*Moxostoma robustum*	Robust Redhorse	Moderate
Fish	*Moxostoma sp. 2 (M. sp. cf. macrolepidotum)*	Sicklefin Redhorse	High
Amphibian	*Necturus maculosus*	Common Mudpuppy	Moderate
Fish	*Notropis lutipinnis*	Yellowfin Shiner	High
Fish	*Notropis micropteryx*	Highland Shiner	High
Fish	*Notropis volucellus*	Mimic Shiner	High
Fish	*Noturus eleutherus*	Mountain Madtom	High
Fish	*Noturus flavus*	Stonecat	High
Aquatic Insect	*Ophiogomphus edmundo*	Edmund's Snaketail	Moderate
Aquatic Insect	*Ophiogomphus howei*	Pygmy Snaketail	Moderate
Aquatic Insect	*Ophiogomphus incurvatus*	Appalachian Snaketail	Moderate
Aquatic Insect	*Ophiogomphus mainensis*	Maine Snaketail	Moderate
Aquatic Insect	*Palaeagapetus celsus*	a caddisfly	High
Mollusk	*Pegias fabula*	Littlewing Pearlymussel	High
Fish	*Percina burtoni*	Blotchside Logperch	High
Fish	*Percina caprodes*	Logperch	High
Fish	*Percina squamata*	Olive Darter	High
Fish	*Percina williamsi (P. macrocephala)*	Sickle Darter	High
Mollusk	*Pleurobema oviforme*	Tennessee Clubshell	High
Mollusk	*Pleurocera parva*	Dainty Hornsnail	High
Mollusk	*Potamilus alatus*	Pink Heelsplitter	High
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog	Moderate

Taxa Group	Scientific Name	Common Name	Species Weight
Mollusk	*Ptychobranchus fasciolaris*	Kidneyshell	High
Reptile	*Regina septemvittata*	Queen Snake	Moderate
Fish	*Rhinichthys atratulus*	Blacknose Dace	High
Aquatic Insect	*Rhyacophila amicis*	a caddisfly	High
Aquatic Insect	*Rhyacophila vibox*	a rhyacophilan caddisfly	High
Fish	*Salvelinus fontinalis*	Brook Trout	High
Fish	*Sander canadensis*	Sauger	Moderate
Crustacean	*Skistodiaptomus carolinensis*	Carolina Skistodiaptomus	Low
Mammal	*Sorex palustris punctulatus*	Southern Water Shrew	Moderate
Reptile	*Sternotherus minor*	Loggerhead Musk Turtle	Moderate
Crustacean	*Stygobromus carolinensis*	Yancey Sideswimmer (Carolina Seep Scud)	High
Mollusk	*Toxolasma lividum*	Purple Lilliput	High
Mollusk	*Toxolasma pullus*	Savannah Lilliput	High
Mollusk	*Villosa constricta*	Notched Rainbow	High
Mollusk	*Villosa delumbis*	Eastern Creekshell	High
Mollusk	*Villosa iris*	Rainbow	High
Mollusk	*Villosa trabilis*	Cumberland Bean	High
Mollusk	*Villosa vanuxemensis*	Mountain Creekshell	High
Crustacean	*Waltoncythere acuta*	Transylvania Crayfish Ostracod	Low
Aquatic Insect	*Zapada chila*	Smokies Forestfly	High

Nonpoint Pollution Sensitive Species

Table A. Species Included in the Nonpoint Source Pollution Sensitive Species Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Species Weight
Amphibian	*Ambystoma maculatum*	Spotted Salamander	Moderate
Amphibian	*Ambystoma talpoideum*	Mole Salamander	Moderate
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander	Moderate
Amphibian	*Cryptobranchus alleganiensis alleganiensis*	Hellbender	High
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander	Moderate
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander	Moderate
Amphibian	*Eurycea bislineata*	Two-lined Salamander	Moderate
Amphibian	*Eurycea junaluska*	Junaluska Salamander	Moderate
Amphibian	*Eurycea longicauda*	Longtail Salamander	Moderate
Amphibian	*Hemidactylium scutatum*	Four-toed Salamander	Moderate
Amphibian	*Necturus maculosus*	Common Mudpuppy	High
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog	High
Aquatic Insect	*Baetopus trishae*	a mayfly	High
Aquatic Insect	*Barbaetis benfieldi*	Benfield's Bearded Small Minnow Mayfly	High
Aquatic Insect	*Boyeria grafiana*	Ocellated Darner	High
Aquatic Insect	*Ceraclea cancellata*	a longhorned caddisfly	High
Aquatic Insect	*Gomphus consanguis*	Cherokee Clubtail	High
Aquatic Insect	*Ladona julia*	Chalk-fronted Corporal	High
Aquatic Insect	*Macromia margarita*	Mountain River Cruiser	High

Taxa Group	Scientific Name	Common Name	Species Weight
Aquatic Insect	*Manophylax altus*	Mount Mitchell Caddisfly	High
Aquatic Insect	*Megaleuctra williamsae*	William's Rare Winter Stonefly	High
Aquatic Insect	*Ophiogomphus edmundo*	Edmund's Snaketail	High
Aquatic Insect	*Ophiogomphus howei*	Pygmy Snaketail	High
Aquatic Insect	*Ophiogomphus incurvatus*	Appalachian Snaketail	High
Aquatic Insect	*Ophiogomphus mainensis*	Maine Snaketail	High
Aquatic Insect	*Palaeagapetus celsus*	a caddisfly	High
Aquatic Insect	*Rhyacophila amicis*	a caddisfly	High
Aquatic Insect	*Rhyacophila vibox*	a rhyacophilan caddisfly	High
Crustacean	*Caecidotea carolinensis*	Bennet's Cave Mill Water Slater	Low
Crustacean	*Cambarus brimleyorum*	Valley River Crayfish	High
Crustacean	*Cambarus carolinus*	Red Burrowing Crayfish	High
Crustacean	*Cambarus chaugaensis*	Chauga Crayfish	High
Crustacean	*Cambarus eeseeohensis*	Grandfather Mountain Crayfish	High
Crustacean	*Cambarus georgiae*	Little Tennessee Crayfish	High
Crustacean	*Cambarus hiwasseensis*	Hiwassee Crayfish	High
Crustacean	*Cambarus johni*	Carolina Foothills Crayfish	High
Crustacean	*Cambarus lenati*	Broad River Stream Crayfish	High
Crustacean	*Cambarus nodosus*	Knotty Burrowing Crayfish	High
Crustacean	*Cambarus parrishi*	Hiwassee Headwaters Crayfish (Parrish Crayfish)	High
Crustacean	*Cambarus reburrus*	French Broad Crayfish	High
Crustacean	*Cambarus spicatus*	Broad River Spiny Crayfish	High
Crustacean	*Cambarus tuckasegee*	Tuckasegee Stream Crayfish	High
Crustacean	*Skistodiaptomus carolinensis*	Carolina Skistodiaptomus	Moderate

Taxa Group	Scientific Name	Common Name	Species Weight
Crustacean	*Stygobromus carolinensis*	Yancey Sideswimmer (Carolina Seep Scud)	Moderate
Crustacean	*Waltoncythere acuta*	Transylvania Crayfish Ostracod	Moderate
Fish	*Acipenser fulvescens*	Lake Sturgeon	Moderate
Fish	*Ameiurus brunneus*	Snail Bullhead	Moderate
Fish	*Ameiurus platycephalus*	Flat Bullhead	Moderate
Fish	*Aplodinotus grunniens*	Freshwater Drum	High
Fish	*Carpiodes carpio*	River Carpsucker	Moderate
Fish	*Carpiodes cyprinus*	Quillback	Moderate
Fish	*Carpiodes sp. cf. cyprinus*	a carpsucker	Moderate
Fish	*Carpiodes sp. cf. velifer*	Atlantic Highfin Carpsucker	Moderate
Fish	*Clinostomus sp. 1*	Smoky Dace	High
Fish	*Cottus carolinae*	Banded Sculpin	High
Fish	*Erimonax monachus*	Spotfin Chub	High
Fish	*Erimystax insignis eristigma*	Southern Blotched Chub	High
Fish	*Etheostoma acuticeps*	Sharphead Darter	High
Fish	*Etheostoma gutselli*	Tuckasegee Darter	High
Fish	*Etheostoma inscriptum*	Turquoise Darter	High
Fish	*Etheostoma rufilineatum*	Redline Darter	High
Fish	*Etheostoma tennesseense (E. simoterum)*	Tennessee Darter (Snubnose Darter)	High
Fish	*Etheostoma thalassinum*	Seagreen Darter	High
Fish	*Etheostoma vulneratum*	Wounded Darter	High
Fish	*Hiodon tergisus*	Mooneye	Moderate
Fish	*Hybopsis rubrifrons*	Rosyface Chub	High
Fish	*Ichthyomyzon bdellium*	Ohio Lamprey	Moderate

Taxa Group	Scientific Name	Common Name	Species Weight
Fish	*Ictiobus bubalus*	Smallmouth Buffalo	Moderate
Fish	*Ictiobus niger*	Black Buffalo	Moderate
Fish	*Lampetra (Lethenteron) appendix*	American Brook Lamprey	Moderate
Fish	*Lepomis macrochirus*	Bluegill	Moderate
Fish	*Luxilus chrysocephalus*	Striped Shiner	High
Fish	*Micropterus coosae*	Redeye Bass	High
Fish	*Micropterus dolomieu*	Smallmouth Bass	Moderate
Fish	*Micropterus salmoides*	Largemouth Bass	Moderate
Fish	*Notropis lutipinnis*	Yellowfin Shiner	High
Fish	*Notropis micropteryx*	Highland Shiner	High
Fish	*Notropis volucellus*	Mimic Shiner	High
Fish	*Noturus eleutherus*	Mountain Madtom	Moderate
Fish	*Noturus flavus*	Stonecat	Moderate
Fish	*Percina burtoni*	Blotchside Logperch	High
Fish	*Percina caprodes*	Logperch	High
Fish	*Percina squamata*	Olive Darter	High
Fish	*Percina williamsi (P. macrocephala)*	Sickle Darter	High
Fish	*Polydon spathula*	Paddlefish	Moderate
Fish	*Rhinichthys atratulus*	Blacknose Dace	High
Fish	*Salvelinus fontinalis*	Brook Trout	High
Fish	*Sander canadensis*	Sauger	Moderate
Mollusk	*Alasmidonta raveneliana*	Appalachian elktoe	High
Mollusk	*Alasmidonta robusta*	Carolina Elktoe	High
Mollusk	*Alasmidonta varicosa*	Brook Floater	High

Taxa Group	Scientific Name	Common Name	Species Weight
Mollusk	*Alasmidonta viridis*	Slippershell Mussel	High
Mollusk	*Elimia christyi*	Christy's Elimia	High
Mollusk	*Elliptio dilatata*	Spike	High
Mollusk	*Fusconaia (Pleuronaia) barnesiana*	Tennessee Pigtoe	High
Mollusk	*Lampsilis fasciola*	Wavy-rayed Lampmussel	High
Mollusk	*Lasmigona holstonia*	Tennessee Heelsplitter	High
Mollusk	*Leptoxis virgata*	Smooth Mudalia	High
Mollusk	*Medionidus conradicus*	Cumberland Moccasinshell	High
Mollusk	*Pegias fabula*	Littlewing Pearlymussel	High
Mollusk	*Pleurobema oviforme*	Tennessee Clubshell	High
Mollusk	*Pleurocera parva*	Dainty Hornsnail	High
Mollusk	*Potamilus alatus*	Pink Heelsplitter	High
Mollusk	*Ptychobranchus fasciolaris*	Kidneyshell	High
Mollusk	*Toxolasma lividum*	Purple Lilliput	High
Mollusk	*Toxolasma pullus*	Savannah Lilliput	High
Mollusk	*Villosa constricta*	Notched Rainbow	High
Mollusk	*Villosa delumbis*	Eastern Creekshell	High
Mollusk	*Villosa iris*	Rainbow	High
Mollusk	*Villosa trabilis*	Cumberland Bean	High
Mollusk	*Villosa vanuxemensis*	Mountain Creekshell	High
Reptile	*Apalone spinifera spinifera*	Eastern Spiny Softshell	Moderate
Reptile	*Glyptemys muhlenbergii*	Bog Turtle	Moderate
Reptile	*Graptemys geographica*	Common Map Turtle	Moderate
Reptile	*Regina septemvittata*	Queen Snake	Moderate

Taxa Group	Scientific Name	Common Name	Species Weight
Reptile	*Sternotherus minor*	Loggerhead Musk Turtle	Moderate
Reptile	*Trachemys scripta troostii*	Cumberland Slider	Moderate

Point Source Pollution Sensitive Species

Table A. Species Included in the Point Source Pollution Sensitive Species Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Species Weight
Amphibian	*Ambystoma maculatum*	Spotted Salamander	Moderate
Amphibian	*Ambystoma talpoideum*	Mole Salamander	Moderate
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander	Moderate
Amphibian	*Cryptobranchus alleganiensis alleganiensis*	Hellbender	High
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander	Moderate
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander	Moderate
Amphibian	*Eurycea bislineata*	Two-lined Salamander	Moderate
Amphibian	*Eurycea junaluska*	Junaluska Salamander	High
Amphibian	*Eurycea longicauda*	Longtail Salamander	Moderate
Amphibian	*Hemidactylium scutatum*	Four-toed Salamander	Moderate
Amphibian	*Necturus maculosus*	Common Mudpuppy	High
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog	High
Aquatic Insect	*Baetopus trishae*	a mayfly	High
Aquatic Insect	*Barbaetis benfieldi*	Benfield's Bearded Small Minnow Mayfly	High
Aquatic Insect	*Boyeria grafiana*	Ocellated Darner	High
Aquatic Insect	*Ceraclea cancellata*	a longhorned caddisfly	High

Taxa Group	Scientific Name	Common Name	Species Weight
Aquatic Insect	*Gomphus consanguis*	Cherokee Clubtail	High
Aquatic Insect	*Ladona julia*	Chalk-fronted Corporal	High
Aquatic Insect	*Macromia margarita*	Mountain River Cruiser	High
Aquatic Insect	*Manophylax altus*	Mount Mitchell Caddisfly	High
Aquatic Insect	*Megaleuctra williamsae*	William's Rare Winter Stonefly	High
Aquatic Insect	*Ophiogomphus edmundo*	Edmund's Snaketail	High
Aquatic Insect	*Ophiogomphus howei*	Pygmy Snaketail	High
Aquatic Insect	*Ophiogomphus incurvatus*	Appalachian Snaketail	High
Aquatic Insect	*Ophiogomphus mainensis*	Maine Snaketail	High
Aquatic Insect	*Palaeagapetus celsus*	a caddisfly	High
Aquatic Insect	*Rhyacophila amicis*	a caddisfly	High
Aquatic Insect	*Rhyacophila vibox*	a rhyacophilan caddisfly	High
Aquatic Insect	*Zapada chila*	Smokies Forestfly	High
Crustacean	*Caecidotea carolinensis*	Bennet's Cave Mill Water Slater	Low
Crustacean	*Cambarus brimleyorum*	Valley River Crayfish	High
Crustacean	*Cambarus carolinus*	Red Burrowing Crayfish	High
Crustacean	*Cambarus chaugaensis*	Chauga Crayfish	High
Crustacean	*Cambarus eeseeohensis*	Grandfather Mountain Crayfish	High
Crustacean	*Cambarus georgiae*	Little Tennessee Crayfish	Moderate
Crustacean	*Cambarus hiwasseensis*	Hiwassee Crayfish	High
Crustacean	*Cambarus johni*	Carolina Foothills Crayfish	High
Crustacean	*Cambarus lenati*	Broad River Stream Crayfish	High
Crustacean	*Cambarus nodosus*	Knotty Burrowing Crayfish	High
Crustacean	*Cambarus parrishi*	Hiwassee Headwaters Crayfish (Parrish Crayfish)	High

Taxa Group	Scientific Name	Common Name	Species Weight
Crustacean	*Cambarus reburrus*	French Broad Crayfish	High
Crustacean	*Cambarus spicatus*	Broad River Spiny Crayfish	High
Crustacean	*Cambarus tuckasegee*	Tuckasegee Stream Crayfish	High
Crustacean	*Skistodiaptomus carolinensis*	Carolina Skistodiaptomus	Moderate
Crustacean	*Stygobromus carolinensis*	Yancey Sideswimmer (Carolina Seep Scud)	Moderate
Crustacean	*Waltoncythere acuta*	Transylvania Crayfish Ostracod	Moderate
Fish	*Acipenser fulvescens*	Lake Sturgeon	Moderate
Fish	*Ameiurus brunneus*	Snail Bullhead	Moderate
Fish	*Ameiurus platycephalus*	Flat Bullhead	Moderate
Fish	*Aplodinotus grunniens*	Freshwater Drum	High
Fish	*Carpiodes carpio*	River Carpsucker	Moderate
Fish	*Carpiodes cyprinus*	Quillback	Moderate
Fish	*Carpiodes sp. cf. cyprinus*	a carpsucker	Moderate
Fish	*Carpiodes sp. cf. velifer*	Atlantic Highfin Carpsucker	Moderate
Fish	*Clinostomus sp. 1*	Smoky Dace	High
Fish	*Cottus carolinae*	Banded Sculpin	High
Fish	*Erimonax monachus*	Spotfin Chub	High
Fish	*Erimystax insignis eristigma*	Southern Blotched Chub	High
Fish	*Etheostoma acuticeps*	Sharphead Darter	High
Fish	*Etheostoma gutselli*	Tuckasegee Darter	High
Fish	*Etheostoma inscriptum*	Turquoise Darter	High
Fish	*Etheostoma rufilineatum*	Redline Darter	High
Fish	*Etheostoma tennesseense (E. simoterum)*	Tennessee Darter (Snubnose Darter)	High
Fish	*Etheostoma thalassinum*	Seagreen Darter	High

Taxa Group	Scientific Name	Common Name	Species Weight
Fish	*Etheostoma vulneratum*	Wounded Darter	High
Fish	*Hiodon tergisus*	Mooneye	Moderate
Fish	*Hybopsis rubrifrons*	Rosyface Chub	High
Fish	*Ichthyomyzon bdellium*	Ohio Lamprey	Moderate
Fish	*Ictiobus bubalus*	Smallmouth Buffalo	Moderate
Fish	*Ictiobus niger*	Black Buffalo	Moderate
Fish	*Lampetra (Lethenteron) appendix*	American Brook Lamprey	Moderate
Fish	*Lepomis macrochirus*	Bluegill	Moderate
Fish	*Luxilus chrysocephalus*	Striped Shiner	High
Fish	*Micropterus coosae*	Redeye Bass	High
Fish	*Micropterus dolomieu*	Smallmouth Bass	High
Fish	*Micropterus salmoides*	Largemouth Bass	Moderate
Fish	*Moxostoma breviceps*	Smallmouth Redhorse	Moderate
Fish	*Moxostoma robustum*	Robust Redhorse	Moderate
Fish	*Moxostoma sp. 2 (M. sp. cf. macrolepidotum)*	Sicklefin Redhorse	High
Fish	*Notropis lutipinnis*	Yellowfin Shiner	High
Fish	*Notropis micropteryx*	Highland Shiner	High
Fish	*Notropis volucellus*	Mimic Shiner	High
Fish	*Noturus eleutherus*	Mountain Madtom	High
Fish	*Noturus flavus*	Stonecat	High
Fish	*Percina burtoni*	Blotchside Logperch	High
Fish	*Percina caprodes*	Logperch	High
Fish	*Percina squamata*	Olive Darter	High
Fish	*Percina williamsi (P. macrocephala)*	Sickle Darter	High

Taxa Group	Scientific Name	Common Name	Species Weight
Fish	*Polydon spathula*	Paddlefish	Moderate
Fish	*Rhinichthys atratulus*	Blacknose Dace	High
Fish	*Salvelinus fontinalis*	Brook Trout	High
Fish	*Sander canadensis*	Sauger	High
Mammal	*Sorex palustris punctulatus*	Southern Water Shrew	Moderate
Mollusk	*Alasmidonta raveneliana*	Appalachian elktoe	High
Mollusk	*Alasmidonta robusta*	Carolina Elktoe	High
Mollusk	*Alasmidonta varicosa*	Brook Floater	High
Mollusk	*Alasmidonta viridis*	Slippershell Mussel	High
Mollusk	*Elimia christyi*	Christy's Elimia	High
Mollusk	*Elliptio dilatata*	Spike	High
Mollusk	*Fusconaia (Pleuronaia) barnesiana*	Tennessee Pigtoe	High
Mollusk	*Fusconaia subrotunda*	Longsolid	High
Mollusk	*Lampsilis fasciola*	Wavy-rayed Lampmussel	High
Mollusk	*Lasmigona holstonia*	Tennessee Heelsplitter	High
Mollusk	*Leptoxis virgata*	Smooth Mudalia	High
Mollusk	*Medionidus conradicus*	Cumberland Moccasinshell	High
Mollusk	*Pegias fabula*	Littlewing Pearlymussel	High
Mollusk	*Pleurobema oviforme*	Tennessee Clubshell	High
Mollusk	*Pleurocera parva*	Dainty Hornsnail	High
Mollusk	*Potamilus alatus*	Pink Heelsplitter	High
Mollusk	*Ptychobranchus fasciolaris*	Kidneyshell	High
Mollusk	*Toxolasma lividum*	Purple Lilliput	High
Mollusk	*Toxolasma pullus*	Savannah Lilliput	High

Taxa Group	Scientific Name	Common Name	Species Weight
Mollusk	*Villosa constricta*	Notched Rainbow	High
Mollusk	*Villosa delumbis*	Eastern Creekshell	High
Mollusk	*Villosa iris*	Rainbow	High
Mollusk	*Villosa trabilis*	Cumberland Bean	High
Mollusk	*Villosa vanuxemensis*	Mountain Creekshell	High
Reptile	*Apalone spinifera spinifera*	Eastern Spiny Softshell	Moderate
Reptile	*Glyptemys muhlenbergii*	Bog Turtle	Moderate
Reptile	*Graptemys geographica*	Common Map Turtle	Moderate
Reptile	*Regina septemvittata*	Queen Snake	Moderate
Reptile	*Sternotherus minor*	Loggerhead Musk Turtle	Moderate
Reptile	*Trachemys scripta troostii*	Cumberland Slider	Moderate

Aquatic Species Sensitive to Invasive Species

Table A. Species Included in the Aquatic Species Sensitive to Invasive Species Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Species Weight
Crayfish	*Cambarus brimleyorum*	Valley River Crayfish	Moderate
Crayfish	*Cambarus carolinus*	Red Burrowing Crayfish	Moderate
Crayfish	*Cambarus chaugaensis*	Chauga Crayfish	Moderate
Crayfish	*Cambarus eeseeohensis*	Grandfather Mountain Crayfish	Moderate
Crayfish	*Cambarus georgiae*	Little Tennessee Crayfish	Moderate
Crayfish	*Cambarus hiwasseensis*	Hiwassee Crayfish	Moderate
Crayfish	*Cambarus johni*	Carolina Foothills Crayfish	Moderate

Taxa Group	Scientific Name	Common Name	Species Weight
Crayfish	*Cambarus lenati*	Broad River Stream Crayfish	Moderate
Crayfish	*Cambarus nodosus*	Knotty Burrowing Crayfish	Moderate
Crayfish	*Cambarus parrishi*	Hiwassee Headwaters Crayfish (Parrish Crayfish)	Moderate
Crayfish	*Cambarus reburrus*	French Broad Crayfish	Moderate
Crayfish	*Cambarus spicatus*	Broad River Spiny Crayfish	Moderate
Crayfish	*Cambarus tuckasegee*	Tuckasegee Stream Crayfish	Moderate
Fish	*Salvelinus fontinalis*	Brook Trout	High
Mussel	*Alasmidonta raveneliana*	Appalachian elktoe	High
Mussel	*Alasmidonta robusta*	Carolina Elktoe	High
Mussel	*Alasmidonta varicosa*	Brook Floater	High
Mussel	*Alasmidonta viridis*	Slippershell Mussel	High
Mussel	*Elliptio dilatata*	Spike	High
Mussel	*Fusconaia (Pleuronaia) barnesiana*	Tennessee Pigtoe	High
Mussel	*Fusconaia subrotunda*	Longsolid	High
Mussel	*Lampsilis fasciola*	Wavy-rayed Lampmussel	High
Mussel	*Lasmigona holstonia*	Tennessee Heelsplitter	High
Mussel	*Medionidus conradicus*	Cumberland Moccasinshell	High
Mussel	*Pegias fabula*	Littlewing Pearlymussel	High
Mussel	*Pleurobema oviforme*	Tennessee clubshell	High
Mussel	*Potamilus alatus*	Pink Heelsplitter	High
Mussel	*Ptychobranchus fasciolaris*	Kidneyshell	High
Mussel	*Toxolasma lividum*	Purple Lilliput	High
Mussel	*Toxolasma pullus*	Savannah Lilliput	High
Mussel	*Villosa constricta*	Notched Rainbow	High

Taxa Group	Scientific Name	Common Name	Species Weight
Mussel	*Villosa delumbis*	Eastern Creekshell	High
Mussel	*Villosa iris*	Rainbow	High
Mussel	*Villosa trabilis*	Cumberland Bean	High
Mussel	*Villosa vanuxemensis*	Mountain Creekshell	High

Indicators, Rating Definitions and Weights

Table B. Indicators and Rating Definitions Used in the Ecological Sustainability Tool for the Above Aquatic Ecosystem Species Groups

The right column indicates the relative weight (i.e., strength of relationship) of the indicator to the ecosystem. All indicators are not used for all calculations (e.g., presence of Corbicula is not used in watersheds that do not support freshwater mussels).

Indicator	Poor	Fair	Good	Very Good	Weight
Hydrologic Connectivity: combined dam and stream crossing rating (density). *This indicator uses data from FS lands only.*	>4.7	2.4-4.7	0.9-2.3	0.0-0.8	High
Sedimentation Risk: riparian road and trail density (mi/mi^2. *This indicator uses data from FS lands only.*	>1.5	0.8-1.5	0.4-0.7	0.0-0.3	High
Aquatic Community Composition/Invasive Species Abundance: percent of suitable brook trout habitat occupied by brown and/or rainbow trout. *This indicator includes all lands within USGS HUCs containing FS land.*	>75	50-75	25-40	<25	High
Water Temperature Regime: extent (percent) of riparian areas classificed as forested. *This indicator uses data from all ownerships.*	<25	25-49	50-75	>75	High
Invasive Species Abundance: presence or absence of Corbicula in watersheds known to support freshwater mussels. *This indicator indcludes all lands within USGS HUCs containing FS lands.*	present	N/A	N/A	absent	Moderate
Nonpoint Source Pollution Threat: extent of (percent) urban and agricultural lancover classes. *This indicator uses data from all ownerships.*	>75	50-75	25-49	<25	Moderate

Indicator	Poor	Fair	Good	Very Good	Weight
Point Source Pollution Threat: number of permitted discharges. *This indicator uses data from all ownerships.*	>3	2	1	0	Low

Expected Outcomes (by Watershed, Indicator, Alternative and Time Period)

Table C. Expected Outcomes, by Watershed, Alternative and Indicator, for the Above Aquatic Ecosystems Species Groups Within the Ecological Sustainability Tool

Watershed names are abbreviated where "C."= creek, "R."=river, and "L."=lake.

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Alarka C.	Aquatic Community Composition	18%	VG	A	10	17.44	VG
Alarka C.	Aquatic Community Composition	18%	VG	A	50	17.04	VG
Alarka C.	Aquatic Community Composition	18%	VG	BCD	10	17.39	VG
Alarka C.	Aquatic Community Composition	18%	VG	BCD	50	16.79	VG
Alarka C.	Hydrologic Connectivity	1.2	G	A	10	1	G
Alarka C.	Hydrologic Connectivity	1.2	G	A	50	0.2	VG
Alarka C.	Hydrologic Connectivity	1.2	G	BCD	10	0.6	VG
Alarka C.	Hydrologic Connectivity	1.2	G	BCD	50	0	VG
Alarka C.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Alarka C.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Alarka C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Alarka C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Alarka C.	Nonpoint Source Pollution Threat	84%	P	A	10	84%	P
Alarka C.	Nonpoint Source Pollution Threat	84%	P	A	50	84%	P
Alarka C.	Nonpoint Source Pollution Threat	84%	P	BCD	10	84%	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Alarka C.	Nonpoint Source Pollution Threat	84%	P	BCD	50	84%	P
Alarka C.	Sedimentation Risk	0.4	G	A	10	0.37	G
Alarka C.	Sedimentation Risk	0.4	G	A	50	0.23	VG
Alarka C.	Sedimentation Risk	0.4	G	BCD	10	0.31	VG
Alarka C.	Sedimentation Risk	0.4	G	BCD	50	0	VG
Alarka C.	Water Temperature Regime	92%	VG	A	10	74%	G
Alarka C.	Water Temperature Regime	92%	VG	A	50	74%	G
Alarka C.	Water Temperature Regime	92%	VG	BCD	10	4%	G
Alarka C.	Water Temperature Regime	92%	VG	BCD	50	74%	G
Apalachia L.-Hiwassee R.	Aquatic Community Composition	67%	F	A	10	66.83	F
Apalachia L.-Hiwassee R.	Aquatic Community Composition	67%	F	A	50	66.43	F
Apalachia L.-Hiwassee R.	Aquatic Community Composition	67%	F	BCD	10	66.83	F
Apalachia L.-Hiwassee R.	Aquatic Community Composition	67%	F	BCD	50	66.43	F
Apalachia L.-Hiwassee R.	Hydrologic Connectivity	0.9	G	A	10	0.7	VG
Apalachia L.-Hiwassee R.	Hydrologic Connectivity	0.9	G	A	50	0	VG
Apalachia L.-Hiwassee R.	Hydrologic Connectivity	0.9	G	BCD	10	0.8	VG
Apalachia L.-Hiwassee R.	Hydrologic Connectivity	0.9	G	BCD	50	0.5	VG
Apalachia L.-Hiwassee R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Apalachia L.-Hiwassee R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Apalachia L.-Hiwassee R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Apalachia L.-Hiwassee R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Apalachia L.-Hiwassee R.	Nonpoint Source Pollution Threat	66%	F	A	10	66%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Apalachia L.-Hiwassee R.	Nonpoint Source Pollution Threat	66%	F	A	50	66%	F
Apalachia L.-Hiwassee R.	Nonpoint Source Pollution Threat	66%	F	BCD	10	66%	F
Apalachia L.-Hiwassee R.	Nonpoint Source Pollution Threat	66%	F	BCD	50	66%	F
Apalachia L.-Hiwassee R.	Point Source Pollution Threat	2	F	A	10	2	F
Apalachia L.-Hiwassee R.	Point Source Pollution Threat	2	F	A	50	2	F
Apalachia L.-Hiwassee R.	Point Source Pollution Threat	2	F	BCD	10	2	F
Apalachia L.-Hiwassee R.	Point Source Pollution Threat	2	F	BCD	50	2	F
Apalachia L.-Hiwassee R.	Sedimentation Risk	0.4	G	A	10	0.37	G
Apalachia L.-Hiwassee R.	Sedimentation Risk	0.4	G	A	50	0.25	VG
Apalachia L.-Hiwassee R.	Sedimentation Risk	0.4	G	BCD	10	0.39	G
Apalachia L.-Hiwassee R.	Sedimentation Risk	0.4	G	BCD	50	0.35	G
Apalachia L.-Hiwassee R.	Water Temperature Regime	88%	VG	A	10	64%	G
Apalachia L.-Hiwassee R.	Water Temperature Regime	88%	VG	A	50	64%	G
Apalachia L.-Hiwassee R.	Water Temperature Regime	88%	VG	BCD	10	64%	G
Apalachia L.-Hiwassee R.	Water Temperature Regime	88%	VG	BCD	50	64%	G
Armstrong C.	Aquatic Community Composition	72%	F	A	10	71.78	F
Armstrong C.	Aquatic Community Composition	72%	F	A	50	71.38	F
Armstrong C.	Aquatic Community Composition	72%	F	BCD	10	71.78	F
Armstrong C.	Aquatic Community Composition	72%	F	BCD	50	71.38	F
Armstrong C.	Hydrologic Connectivity	1.1	G	A	10	0.9	G
Armstrong C.	Hydrologic Connectivity	1.1	G	A	50	0.1	VG
Armstrong C.	Hydrologic Connectivity	1.1	G	BCD	10	1	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Armstrong C.	Hydrologic Connectivity	1.1	G	BCD	50	0.7	VG
Armstrong C.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Armstrong C.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Armstrong C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Armstrong C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Armstrong C.	Nonpoint Source Pollution Threat	54	F	A	10	54%	F
Armstrong C.	Nonpoint Source Pollution Threat	54	F	A	50	54%	F
Armstrong C.	Nonpoint Source Pollution Threat	54	F	BCD	10	54%	F
Armstrong C.	Nonpoint Source Pollution Threat	54	F	BCD	50	54%	F
Armstrong C.	Sedimentation Risk	0.7	G	A	10	0.67	G
Armstrong C.	Sedimentation Risk	0.7	G	A	50	0.53	G
Armstrong C.	Sedimentation Risk	0.7	G	BCD	10	0.67	G
Armstrong C.	Sedimentation Risk	0.7	G	BCD	50	0.65	G
Armstrong C.	Water Temperature Regime	92%	VG	A	10	14%	P
Armstrong C.	Water Temperature Regime	92%	VG	A	50	14%	P
Armstrong C.	Water Temperature Regime	92%	VG	BCD	10	14%	P
Armstrong C.	Water Temperature Regime	92%	VG	BCD	50	14%	P
Avery C.-French Broad R.	Aquatic Community Composition	0%	VG	A	10	0	VG
Avery C.-French Broad R.	Aquatic Community Composition	0%	VG	A	50	0	VG
Avery C.-French Broad R.	Aquatic Community Composition	0%	VG	BCD	10	0	VG
Avery C.-French Broad R.	Aquatic Community Composition	0%	VG	BCD	50	0	VG
Avery C.-French Broad R.	Hydrologic Connectivity	0.9	G	A	10	0.7	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Avery C.-French Broad R.	Hydrologic Connectivity	0.9	G	A	50	0	VG
Avery C.-French Broad R.	Hydrologic Connectivity	0.9	G	BCD	10	0.8	VG
Avery C.-French Broad R.	Hydrologic Connectivity	0.9	G	BCD	50	0.5	VG
Avery C.-French Broad R.	Nonpoint Source Pollution Threat	94%	P	A	10	94%	P
Avery C.-French Broad R.	Nonpoint Source Pollution Threat	94%	P	A	50	94%	P
Avery C.-French Broad R.	Nonpoint Source Pollution Threat	94%	P	BCD	10	94%	P
Avery C.-French Broad R.	Nonpoint Source Pollution Threat	94%	P	BCD	50	94%	P
Avery C.-French Broad R.	Point Source Pollution Threat	4	P	A	10	4	P
Avery C.-French Broad R.	Point Source Pollution Threat	4	P	A	50	4	P
Avery C.-French Broad R.	Point Source Pollution Threat	4	P	BCD	10	4	P
Avery C.-French Broad R.	Point Source Pollution Threat	4	P	BCD	50	4	P
Avery C.-French Broad R.	Sedimentation Risk	0	VG	A	10	0	VG
Avery C.-French Broad R.	Sedimentation Risk	0	VG	A	50	0	VG
Avery C.-French Broad R.	Sedimentation Risk	0	VG	BCD	10	0	VG
Avery C.-French Broad R.	Sedimentation Risk	0	VG	BCD	50	0	VG
Avery C.-French Broad R.	Water Temperature Regime	43%	F	A	10	38%	F
Avery C.-French Broad R.	Water Temperature Regime	43%	F	A	50	38%	F
Avery C.-French Broad R.	Water Temperature Regime	43%	F	BCD	10	38%	F
Avery C.-French Broad R.	Water Temperature Regime	43%	F	BCD	50	38%	F
Bald Mountain C.	Aquatic Community Composition	100%	P	A	10	99.9	P
Bald Mountain C.	Aquatic Community Composition	100%	P	A	50	99.5	P
Bald Mountain C.	Aquatic Community Composition	100%	P	BCD	10	99.9	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Bald Mountain C.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Bald Mountain C.	Hydrologic Connectivity	1.1	G	A	10	0.9	G
Bald Mountain C.	Hydrologic Connectivity	1.1	G	A	50	0.1	VG
Bald Mountain C.	Hydrologic Connectivity	1.1	G	BCD	10	1.1	G
Bald Mountain C.	Hydrologic Connectivity	1.1	G	BCD	50	1	G
Bald Mountain C.	Nonpoint Source Pollution Threat	87%	P	A	10	87	P
Bald Mountain C.	Nonpoint Source Pollution Threat	87%	P	A	50	87	P
Bald Mountain C.	Nonpoint Source Pollution Threat	87%	P	BCD	10	87%	P
Bald Mountain C.	Nonpoint Source Pollution Threat	87%	P	BCD	50	87%	P
Bald Mountain C.	Sedimentation Risk	0	VG	A	10	0	VG
Bald Mountain C.	Sedimentation Risk	0	VG	A	50	0	VG
Bald Mountain C.	Sedimentation Risk	0	VG	BCD	10	0	VG
Bald Mountain C.	Sedimentation Risk	0	VG	BCD	50	0	VG
Bald Mountain C.	Water Temperature Regime	87%	VG	A	10	59%	G
Bald Mountain C.	Water Temperature Regime	87%	VG	A	50	59%	G
Bald Mountain C.	Water Temperature Regime	87%	VG	BCD	10	59%	G
Bald Mountain C.	Water Temperature Regime	87%	VG	BCD	50	59%	G
Beaverdam C.	Aquatic Community Composition	100%	P	A	10	99.9	P
Beaverdam C.	Aquatic Community Composition	100%	P	A	50	99.5	P
Beaverdam C.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Beaverdam C.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Beaverdam C.	Hydrologic Connectivity	1.2	G	A	10	1	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Beaverdam C.	Hydrologic Connectivity	1.2	G	A	50	0.2	VG
Beaverdam C.	Hydrologic Connectivity	1.2	G	BCD	10	1.1	G
Beaverdam C.	Hydrologic Connectivity	1.2	G	BCD	50	0.8	VG
Beaverdam C.	Invasive Sp. Abundance: Corbicula	absent	P	A	10	present	P
Beaverdam C.	Invasive Sp. Abundance: Corbicula	absent	P	A	50	present	P
Beaverdam C.	Invasive Sp. Abundance: Corbicula	absent	P	BCD	10	Present	P
Beaverdam C.	Invasive Sp. Abundance: Corbicula	absent	P	BCD	50	Present	P
Beaverdam C.	Nonpoint Source Pollution Threat	46%	G	A	10	46	G
Beaverdam C.	Nonpoint Source Pollution Threat	46%	G	A	50	46	G
Beaverdam C.	Nonpoint Source Pollution Threat	46%	G	BCD	10	46%	G
Beaverdam C.	Nonpoint Source Pollution Threat	46%	G	BCD	50	46%	G
Beaverdam C.	Sedimentation Risk	0.5	G	A	10	0.47	G
Beaverdam C.	Sedimentation Risk	0.5	G	A	50	0.33	VG
Beaverdam C.	Sedimentation Risk	0.5	G	BCD	10	0.47	G
Beaverdam C.	Sedimentation Risk	0.5	G	BCD	50	0.45	G
Beaverdam C.	Water Temperature Regime	94%	VG	A	10	47%	F
Beaverdam C.	Water Temperature Regime	94%	VG	A	50	47%	F
Beaverdam C.	Water Temperature Regime	94%	VG	BCD	10	47%	F
Beaverdam C.	Water Temperature Regime	94%	VG	BCD	50	47%	F
Bent C.-French Broad R.	Aquatic Community Composition	83%	P	A	10	82.96	P
Bent C.-French Broad R.	Aquatic Community Composition	83%	P	A	50	82.56	P
Bent C.-French Broad R.	Aquatic Community Composition	83%	P	BCD	10	82.92	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Bent C.-French Broad R.	Aquatic Community Composition	83%	P	BCD	50	82.33	P
Bent C.-French Broad R.	Hydrologic Connectivity	1	G	A	10	0.8	VG
Bent C.-French Broad R.	Hydrologic Connectivity	1	G	A	50	0.1	VG
Bent C.-French Broad R.	Hydrologic Connectivity	1	G	BCD	10	0.4	VG
Bent C.-French Broad R.	Hydrologic Connectivity	1	G	BCD	50	0	VG
Bent C.-French Broad R.	Nonpoint Source Pollution Threat	73%	F	A	10	73	F
Bent C.-French Broad R.	Nonpoint Source Pollution Threat	73%	F	A	50	73	F
Bent C.-French Broad R.	Nonpoint Source Pollution Threat	73%	F	BCD	10	73%	F
Bent C.-French Broad R.	Nonpoint Source Pollution Threat	73%	F	BCD	50	73%	F
Bent C.-French Broad R.	Point Source Pollution Threat	2	F	A	10	2	F
Bent C.-French Broad R.	Point Source Pollution Threat	2	F	A	50	2	F
Bent C.-French Broad R.	Point Source Pollution Threat	2	F	BCD	10	2	F
Bent C.-French Broad R.	Point Source Pollution Threat	2	F	BCD	50	2	F
Bent C.-French Broad R.	Sedimentation Risk	0.9	F	A	10	0.87	F
Bent C.-French Broad R.	Sedimentation Risk	0.9	F	A	50	0.73	G
Bent C.-French Broad R.	Sedimentation Risk	0.9	F	BCD	10	0.81	F
Bent C.-French Broad R.	Sedimentation Risk	0.9	F	BCD	50	0.46	G
Bent C.-French Broad R.	Water Temperature Regime	64%	G	A	10	20%	P
Bent C.-French Broad R.	Water Temperature Regime	64%	G	A	50	20%	P
Bent C.-French Broad R.	Water Temperature Regime	64%	G	BCD	10	20%	P
Bent C.-French Broad R.	Water Temperature Regime	64%	G	BCD	50	20%	P
Big Crabtree C.	Aquatic Community Composition	86%	P	A	10	85.86	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Big Crabtree C.	Aquatic Community Composition	86%	P	A	50	85.46	P
Big Crabtree C.	Aquatic Community Composition	86%	P	BCD	10	85.86	P
Big Crabtree C.	Aquatic Community Composition	86%	P	BCD	50	85.46	P
Big Crabtree C.	Hydrologic Connectivity	0.2	VG	A	10	0	VG
Big Crabtree C.	Hydrologic Connectivity	0.2	VG	A	50	0	VG
Big Crabtree C.	Hydrologic Connectivity	0.2	VG	BCD	10	0.2	VG
Big Crabtree C.	Hydrologic Connectivity	0.2	VG	BCD	50	0	VG
Big Crabtree C.	Nonpoint Source Pollution Threat	93%	P	A	10	93	P
Big Crabtree C.	Nonpoint Source Pollution Threat	93%	P	A	50	93	P
Big Crabtree C.	Nonpoint Source Pollution Threat	93%	P	BCD	10	93%	P
Big Crabtree C.	Nonpoint Source Pollution Threat	93%	P	BCD	50	93%	P
Big Crabtree C.	Sedimentation Risk	0	VG	A	10	0	VG
Big Crabtree C.	Sedimentation Risk	0	VG	A	50	0	VG
Big Crabtree C.	Sedimentation Risk	0	VG	BCD	10	0	VG
Big Crabtree C.	Sedimentation Risk	0	VG	BCD	50	0	VG
Big Crabtree C.	Water Temperature Regime	87%	VG	A	10	16%	P
Big Crabtree C.	Water Temperature Regime	87%	VG	A	50	16%	P
Big Crabtree C.	Water Temperature Regime	87%	VG	BCD	10	16%	P
Big Crabtree C.	Water Temperature Regime	87%	VG	BCD	50	16%	P
Big C.-Nantahala R.	Aquatic Community Composition	91%	P	A	10	91.38	P
Big C.-Nantahala R.	Aquatic Community Composition	91%	P	A	50	90.98	P
Big C.-Nantahala R.	Aquatic Community Composition	91%	P	BCD	10	91.38	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Big C.-Nantahala R.	Aquatic Community Composition	91%	P	BCD	50	90.98	P
Big C.-Nantahala R.	Hydrologic Connectivity	0.4	VG	A	10	0.2	VG
Big C.-Nantahala R.	Hydrologic Connectivity	0.4	VG	A	50	0	VG
Big C.-Nantahala R.	Hydrologic Connectivity	0.4	VG	BCD	10	0.3	VG
Big C.-Nantahala R.	Hydrologic Connectivity	0.4	VG	BCD	50	0	VG
Big C.-Nantahala R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Big C.-Nantahala R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Big C.-Nantahala R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Big C.-Nantahala R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Big C.-Nantahala R.	Nonpoint Source Pollution Threat	33%	G	A	10	33%	G
Big C.-Nantahala R.	Nonpoint Source Pollution Threat	33%	G	A	50	33%	G
Big C.-Nantahala R.	Nonpoint Source Pollution Threat	33%	G	BCD	10	33%	G
Big C.-Nantahala R.	Nonpoint Source Pollution Threat	33%	G	BCD	50	33%	G
Big C.-Nantahala R.	Point Source Pollution Threat	1	G	A	10	1	G
Big C.-Nantahala R.	Point Source Pollution Threat	1	G	A	50	1	G
Big C.-Nantahala R.	Point Source Pollution Threat	1	G	BCD	10	1	G
Big C.-Nantahala R.	Point Source Pollution Threat	1	G	BCD	50	1	G
Big C.-Nantahala R.	Sedimentation Risk	0.9	F	A	10	0.87	F
Big C.-Nantahala R.	Sedimentation Risk	0.9	F	A	50	0.73	G
Big C.-Nantahala R.	Sedimentation Risk	0.9	F	BCD	10	0.87	F
Big C.-Nantahala R.	Sedimentation Risk	0.9	F	BCD	50	0.85	F
Big C.-Nantahala R.	Water Temperature Regime	95%	VG	A	10	6%	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Big C.-Nantahala R.	Water Temperature Regime	95%	VG	A	50	6%	P
Big C.-Nantahala R.	Water Temperature Regime	95%	VG	BCD	10	6%	P
Big C.-Nantahala R.	Water Temperature Regime	95%	VG	BCD	50	6%	P
Big Pine C.-French Broad R.	Aquatic Community Composition	0%	VG	A	10	0	VG
Big Pine C.-French Broad R.	Aquatic Community Composition	0%	VG	A	50	0	VG
Big Pine C.-French Broad R.	Aquatic Community Composition	0%	VG	BCD	10	0	VG
Big Pine C.-French Broad R.	Aquatic Community Composition	0%	VG	BCD	50	0	VG
Big Pine C.-French Broad R.	Hydrologic Connectivity	0.6	VG	A	10	0.4	VG
Big Pine C.-French Broad R.	Hydrologic Connectivity	0.6	VG	A	50	0	VG
Big Pine C.-French Broad R.	Hydrologic Connectivity	0.6	VG	BCD	10	0.6	VG
Big Pine C.-French Broad R.	Hydrologic Connectivity	0.6	VG	BCD	50	0.3	VG
Big Pine C.-French Broad R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Big Pine C.-French Broad R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Big Pine C.-French Broad R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Big Pine C.-French Broad R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Big Pine C.-French Broad R.	Nonpoint Source Pollution Threat	91%	P	A	10	91	P
Big Pine C.-French Broad R.	Nonpoint Source Pollution Threat	91%	P	A	50	91	P
Big Pine C.-French Broad R.	Nonpoint Source Pollution Threat	91%	P	BCD	10	91%	P
Big Pine C.-French Broad R.	Nonpoint Source Pollution Threat	91%	P	BCD	50	91%	P
Big Pine C.-French Broad R.	Point Source Pollution Threat	1	G	A	10	1	G
Big Pine C.-French Broad R.	Point Source Pollution Threat	1	G	A	50	1	G
Big Pine C.-French Broad R.	Point Source Pollution Threat	1	G	BCD	10	1	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Big Pine C.-French Broad R.	Point Source Pollution Threat	1	G	BCD	50	1	G
Big Pine C.-French Broad R.	Sedimentation Risk	0.5	G	A	10	0.47	G
Big Pine C.-French Broad R.	Sedimentation Risk	0.5	G	A	50	0.43	G
Big Pine C.-French Broad R.	Sedimentation Risk	0.5	G	BCD	10	0.47	G
Big Pine C.-French Broad R.	Sedimentation Risk	0.5	G	BCD	50	0.45	G
Big Pine C.-French Broad R.	Water Temperature Regime	86%	VG	A	10	77%	VG
Big Pine C.-French Broad R.	Water Temperature Regime	86%	VG	A	50	77%	VG
Big Pine C.-French Broad R.	Water Temperature Regime	86%	VG	BCD	10	77%	VG
Big Pine C.-French Broad R.	Water Temperature Regime	86%	VG	BCD	50	77%	VG
Big Rock C.	Aquatic Community Composition	85%	P	A	10	85.27	P
Big Rock C.	Aquatic Community Composition	85%	P	A	50	84.87	P
Big Rock C.	Aquatic Community Composition	85%	P	BCD	10	85.27	P
Big Rock C.	Aquatic Community Composition	85%	P	BCD	50	84.87	P
Big Rock C.	Hydrologic Connectivity	1	G	A	10	0.8	VG
Big Rock C.	Hydrologic Connectivity	1	G	A	50	0	VG
Big Rock C.	Hydrologic Connectivity	1	G	BCD	10	0.9	G
Big Rock C.	Hydrologic Connectivity	1	G	BCD	50	0.6	VG
Big Rock C.	Nonpoint Source Pollution Threat	77%	P	A	10	77%	P
Big Rock C.	Nonpoint Source Pollution Threat	77%	P	A	50	77%	P
Big Rock C.	Nonpoint Source Pollution Threat	77%	P	BCD	10	77%	P
Big Rock C.	Nonpoint Source Pollution Threat	77%	P	BCD	50	77%	P
Big Rock C.	Sedimentation Risk	0.5	G	A	10	0.47	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Big Rock C.	Sedimentation Risk	0.5	G	A	50	0.33	VG
Big Rock C.	Sedimentation Risk	0.5	G	BCD	10	0.49	G
Big Rock C.	Sedimentation Risk	0.5	G	BCD	50	0.45	G
Big Rock C.	Water Temperature Regime	88%	VG	A	10	81%	VG
Big Rock C.	Water Temperature Regime	88%	VG	A	50	81%	VG
Big Rock C.	Water Temperature Regime	88%	VG	BCD	10	81%	VG
Big Rock C.	Water Temperature Regime	88%	VG	BCD	50	81%	VG
Boylston C.	Aquatic Community Composition	80%	P	A	10	80.19	P
Boylston C.	Aquatic Community Composition	80%	P	A	50	79.79	P
Boylston C.	Aquatic Community Composition	80%	P	BCD	10	80.19	P
Boylston C.	Aquatic Community Composition	80%	P	BCD	50	79.79	P
Boylston C.	Hydrologic Connectivity	1.1	G	A	10	0.9	G
Boylston C.	Hydrologic Connectivity	1.1	G	A	50	0.1	VG
Boylston C.	Hydrologic Connectivity	1.1	G	BCD	10	1.1	G
Boylston C.	Hydrologic Connectivity	1.1	G	BCD	50	0.8	VG
Boylston C.	Nonpoint Source Pollution Threat	94%	P	A	10	94%	P
Boylston C.	Nonpoint Source Pollution Threat	94%	P	A	50	94%	P
Boylston C.	Nonpoint Source Pollution Threat	94%	P	BCD	10	94%	P
Boylston C.	Nonpoint Source Pollution Threat	94%	P	BCD	50	94%	P
Boylston C.	Sedimentation Risk	0	VG	A	10	0	VG
Boylston C.	Sedimentation Risk	0	VG	A	50	0	VG
Boylston C.	Sedimentation Risk	0	VG	BCD	10	0	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Boylston C.	Sedimentation Risk	0	VG	BCD	50	0	VG
Boylston C.	Water Temperature Regime	61%	G	A	10	33%	F
Boylston C.	Water Temperature Regime	61%	G	A	50	33%	F
Boylston C.	Water Temperature Regime	61%	G	BCD	10	33%	F
Boylston C.	Water Temperature Regime	61%	G	BCD	50	33%	F
Brush C.-Little Tennessee R.	Aquatic Community Composition	100%	P	A	10	99.9	P
Brush C.-Little Tennessee R.	Aquatic Community Composition	100%	P	A	50	99.5	P
Brush C.-Little Tennessee R.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Brush C.-Little Tennessee R.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Brush C.-Little Tennessee R.	Hydrologic Connectivity	1.1	G	A	10	0.9	G
Brush C.-Little Tennessee R.	Hydrologic Connectivity	1.1	G	A	50	0.1	VG
Brush C.-Little Tennessee R.	Hydrologic Connectivity	1.1	G	BCD	10	1	G
Brush C.-Little Tennessee R.	Hydrologic Connectivity	1.1	G	BCD	50	0.7	VG
Brush C.-Little Tennessee R.	Nonpoint Source Pollution Threat	86%	P	A	10	86%	P
Brush C.-Little Tennessee R.	Nonpoint Source Pollution Threat	86%	P	A	50	86%	P
Brush C.-Little Tennessee R.	Nonpoint Source Pollution Threat	86%	P	BCD	10	86%	P
Brush C.-Little Tennessee R.	Nonpoint Source Pollution Threat	86%	P	BCD	50	86%	P
Brush C.-Little Tennessee R.	Sedimentation Risk	0	VG	A	10	0	VG
Brush C.-Little Tennessee R.	Sedimentation Risk	0	VG	A	50	0	VG
Brush C.-Little Tennessee R.	Sedimentation Risk	0	VG	BCD	10	0	VG
Brush C.-Little Tennessee R.	Sedimentation Risk	0	VG	BCD	50	0	VG
Brush C.-Little Tennessee R.	Water Temperature Regime	92%	VG	A	10	68%	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Brush C.-Little Tennessee R.	Water Temperature Regime	92%	VG	A	50	68%	G
Brush C.-Little Tennessee R.	Water Temperature Regime	92%	VG	BCD	10	68%	G
Brush C.-Little Tennessee R.	Water Temperature Regime	92%	VG	BCD	50	68%	G
Buck C.	Aquatic Community Composition	100%	P	A	10	99.9	P
Buck C.	Aquatic Community Composition	100%	P	A	50	99.5	P
Buck C.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Buck C.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Buck C.	Hydrologic Connectivity	1.2	G	A	10	1	G
Buck C.	Hydrologic Connectivity	1.2	G	A	50	0.2	VG
Buck C.	Hydrologic Connectivity	1.2	G	BCD	10	1.1	G
Buck C.	Hydrologic Connectivity	1.2	G	BCD	50	0.8	VG
Buck C.	Nonpoint Source Pollution Threat	37%	G	A	10	37%	G
Buck C.	Nonpoint Source Pollution Threat	37%	G	A	50	37%	G
Buck C.	Nonpoint Source Pollution Threat	37%	G	BCD	10	37%	G
Buck C.	Nonpoint Source Pollution Threat	37%	G	BCD	50	37%	G
Buck C.	Sedimentation Risk	0.5	G	A	10	0.47	G
Buck C.	Sedimentation Risk	0.5	G	A	50	0.33	VG
Buck C.	Sedimentation Risk	0.5	G	BCD	10	0.47	G
Buck C.	Sedimentation Risk	0.5	G	BCD	50	0.45	G
Buck C.	Water Temperature Regime	95%	VG	A	10	69%	G
Buck C.	Water Temperature Regime	95%	VG	A	50	69%	G
Buck C.	Water Temperature Regime	95%	VG	BCD	10	69%	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Buck C.	Water Temperature Regime	95%	VG	BCD	50	69%	G
Buck C. - Tusquitee	Aquatic Community Composition	87%	P	A	10	86.97	P
Buck C. - Tusquitee	Aquatic Community Composition	87%	P	A	50	86.57	P
Buck C. - Tusquitee	Aquatic Community Composition	87%	P	BCD	10	86.92	P
Buck C. - Tusquitee	Aquatic Community Composition	87%	P	BCD	50	86.32	P
Buck C. - Tusquitee	Hydrologic Connectivity	0.6	VG	A	10	0.4	VG
Buck C. - Tusquitee	Hydrologic Connectivity	0.6	VG	A	50	0	VG
Buck C. - Tusquitee	Hydrologic Connectivity	0.6	VG	BCD	10	0	VG
Buck C. - Tusquitee	Hydrologic Connectivity	0.6	VG	BCD	50	0	VG
Buck C. - Tusquitee	Nonpoint Source Pollution Threat	6%	VG	A	10	6%	VG
Buck C. - Tusquitee	Nonpoint Source Pollution Threat	6%	VG	A	50	6%	VG
Buck C. - Tusquitee	Nonpoint Source Pollution Threat	6%	VG	BCD	10	6%	VG
Buck C. - Tusquitee	Nonpoint Source Pollution Threat	6%	VG	BCD	50	6%	VG
Buck C. - Tusquitee	Sedimentation Risk	0.9	F	A	10	0.87	F
Buck C. - Tusquitee	Sedimentation Risk	0.9	F	A	50	0.75	F
Buck C. - Tusquitee	Sedimentation Risk	0.9	F	BCD	10	0.81	F
Buck C. - Tusquitee	Sedimentation Risk	0.9	F	BCD	50	0.46	G
Buck C. - Tusquitee	Water Temperature Regime	94%	VG	A	10	48%	F
Buck C. - Tusquitee	Water Temperature Regime	94%	VG	A	50	48%	F
Buck C. - Tusquitee	Water Temperature Regime	94%	VG	BCD	10	48%	F
Buck C. - Tusquitee	Water Temperature Regime	94%	VG	BCD	50	48%	F
Burningtown C.	Aquatic Community Composition	88%	P	A	10	88.28	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Burningtown C.	Aquatic Community Composition	88%	P	A	50	87.88	P
Burningtown C.	Aquatic Community Composition	88%	P	BCD	10	88.28	P
Burningtown C.	Aquatic Community Composition	88%	P	BCD	50	87.88	P
Burningtown C.	Hydrologic Connectivity	0.9	G	A	10	0.7	VG
Burningtown C.	Hydrologic Connectivity	0.9	G	A	50	0	VG
Burningtown C.	Hydrologic Connectivity	0.9	G	BCD	10	0.8	VG
Burningtown C.	Hydrologic Connectivity	0.9	G	BCD	50	0.6	VG
Burningtown C.	Nonpoint Source Pollution Threat	47%	G	A	10	47%	G
Burningtown C.	Nonpoint Source Pollution Threat	47%	G	A	50	47%	G
Burningtown C.	Nonpoint Source Pollution Threat	47%	G	BCD	10	47%	G
Burningtown C.	Nonpoint Source Pollution Threat	47%	G	BCD	50	47%	G
Burningtown C.	Sedimentation Risk	0.6	G	A	10	0.57	G
Burningtown C.	Sedimentation Risk	0.6	G	A	50	0.43	G
Burningtown C.	Sedimentation Risk	0.6	G	BCD	10	0.37	G
Burningtown C.	Sedimentation Risk	0.6	G	BCD	50	0.55	G
Burningtown C.	Water Temperature Regime	92%	VG	A	10	16	P
Burningtown C.	Water Temperature Regime	92%	VG	A	50	16	P
Burningtown C.	Water Temperature Regime	92%	VG	BCD	10	16%	P
Burningtown C.	Water Temperature Regime	92%	VG	BCD	50	16%	P
Caney Fork	Aquatic Community Composition	45%	G	A	10	45.37	G
Caney Fork	Aquatic Community Composition	45%	G	A	50	44.97	G
Caney Fork	Aquatic Community Composition	45%	G	BCD	10	45.32	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Caney Fork	Aquatic Community Composition	45%	G	BCD	50	44.72	G
Caney Fork	Hydrologic Connectivity	0.5	VG	A	10	0.3	VG
Caney Fork	Hydrologic Connectivity	0.5	VG	A	50	0	VG
Caney Fork	Hydrologic Connectivity	0.5	VG	BCD	10	0	VG
Caney Fork	Hydrologic Connectivity	0.5	VG	BCD	50	0	VG
Caney Fork	Nonpoint Source Pollution Threat	37%	G	A	10	37%	G
Caney Fork	Nonpoint Source Pollution Threat	37%	G	A	50	37%	G
Caney Fork	Nonpoint Source Pollution Threat	37%	G	BCD	10	37%	G
Caney Fork	Nonpoint Source Pollution Threat	37%	G	BCD	50	37%	G
Caney Fork	Sedimentation Risk	0.8	F	A	10	0.77	F
Caney Fork	Sedimentation Risk	0.8	F	A	50	0.63	G
Caney Fork	Sedimentation Risk	0.8	F	BCD	10	0.71	G
Caney Fork	Sedimentation Risk	0.8	F	BCD	50	0.36	G
Caney Fork	Water Temperature Regime	95%	VG	A	10	29%	F
Caney Fork	Water Temperature Regime	95%	VG	A	50	29%	F
Caney Fork	Water Temperature Regime	95%	VG	BCD	10	29%	F
Caney Fork	Water Temperature Regime	95%	VG	BCD	50	29%	F
Catheys C.	Aquatic Community Composition	43%	G	A	10	43.26	G
Catheys C.	Aquatic Community Composition	43%	G	A	50	42.86	G
Catheys C.	Aquatic Community Composition	43%	G	BCD	10	43.21	G
Catheys C.	Aquatic Community Composition	43%	G	BCD	50	42.61	G
Catheys C.	Hydrologic Connectivity	0.9	G	A	10	0.2	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Catheys C.	Hydrologic Connectivity	0.9	G	A	50	0	VG
Catheys C.	Hydrologic Connectivity	0.9	G	BCD	10	0.3	VG
Catheys C.	Hydrologic Connectivity	0.9	G	BCD	50	0	VG
Catheys C.	Nonpoint Source Pollution Threat	37%	G	A	10	37%	G
Catheys C.	Nonpoint Source Pollution Threat	37%	G	A	50	37%	G
Catheys C.	Nonpoint Source Pollution Threat	37%	G	BCD	10	37%	G
Catheys C.	Nonpoint Source Pollution Threat	37%	G	BCD	50	37%	G
Catheys C.	Point Source Pollution Threat	1	G	A	10	1	G
Catheys C.	Point Source Pollution Threat	1	G	A	50	1	G
Catheys C.	Point Source Pollution Threat	1	G	BCD	10	1	G
Catheys C.	Point Source Pollution Threat	1	G	BCD	50	1	G
Catheys C.	Sedimentation Risk	0.7	G	A	10	0.67	G
Catheys C.	Sedimentation Risk	0.7	G	A	50	0.53	G
Catheys C.	Sedimentation Risk	0.7	G	BCD	10	0.61	G
Catheys C.	Sedimentation Risk	0.7	G	BCD	50	0.36	G
Catheys C.	Water Temperature Regime	89%	VG	A	10	47%	F
Catheys C.	Water Temperature Regime	89%	VG	A	50	47%	F
Catheys C.	Water Temperature Regime	89%	VG	BCD	10	47%	F
Catheys C.	Water Temperature Regime	89%	VG	BCD	50	47%	F
Cedar Cliff L.-Tuckasegee R.	Aquatic Community Composition	39%	G	A	10	38.5	G
Cedar Cliff L.-Tuckasegee R.	Aquatic Community Composition	39%	G	A	50	38.1	G
Cedar Cliff L.-Tuckasegee R.	Aquatic Community Composition	39%	G	BCD	10	38.45	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Cedar Cliff L.-Tuckasegee R.	Aquatic Community Composition	39%	G	BCD	50	37.85	G
Cedar Cliff L.-Tuckasegee R.	Hydrologic Connectivity	0.8	VG	A	10	0.6	VG
Cedar Cliff L.-Tuckasegee R.	Hydrologic Connectivity	0.8	VG	A	50	0	VG
Cedar Cliff L.-Tuckasegee R.	Hydrologic Connectivity	0.8	VG	BCD	10	0.2	VG
Cedar Cliff L.-Tuckasegee R.	Hydrologic Connectivity	0.8	VG	BCD	50	0	VG
Cedar Cliff L.-Tuckasegee R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Cedar Cliff L.-Tuckasegee R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Cedar Cliff L.-Tuckasegee R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Cedar Cliff L.-Tuckasegee R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Cedar Cliff L.-Tuckasegee R.	Nonpoint Source Pollution Threat	83%	P	A	10	83%	P
Cedar Cliff L.-Tuckasegee R.	Nonpoint Source Pollution Threat	83%	P	A	50	83%	P
Cedar Cliff L.-Tuckasegee R.	Nonpoint Source Pollution Threat	83%	P	BCD	10	83%	P
Cedar Cliff L.-Tuckasegee R.	Nonpoint Source Pollution Threat	83%	P	BCD	50	83%	P
Cedar Cliff L.-Tuckasegee R.	Sedimentation Risk	0.2	VG	A	10	0.17	VG
Cedar Cliff L.-Tuckasegee R.	Sedimentation Risk	0.2	VG	A	50	0.15	VG
Cedar Cliff L.-Tuckasegee R.	Sedimentation Risk	0.2	VG	BCD	10	0.11	VG
Cedar Cliff L.-Tuckasegee R.	Sedimentation Risk	0.2	VG	BCD	50	0	VG
Cedar Cliff L.-Tuckasegee R.	Water Temperature Regime	90%	VG	A	10	44%	F
Cedar Cliff L.-Tuckasegee R.	Water Temperature Regime	90%	VG	A	50	44%	F
Cedar Cliff L.-Tuckasegee R.	Water Temperature Regime	90%	VG	BCD	10	44%	F
Cedar Cliff L.-Tuckasegee R.	Water Temperature Regime	90%	VG	BCD	50	44%	F
Cherryfield C.-French Broad R.	Aquatic Community Composition	94%	P	A	10	93.88	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Cherryfield C.-French Broad R.	Aquatic Community Composition	94%	P	A	50	93.48	P
Cherryfield C.-French Broad R.	Aquatic Community Composition	94%	P	BCD	10	93.88	P
Cherryfield C.-French Broad R.	Aquatic Community Composition	94%	P	BCD	50	93.48	P
Cherryfield C.-French Broad R.	Hydrologic Connectivity	1.1	G	A	10	0.9	G
Cherryfield C.-French Broad R.	Hydrologic Connectivity	1.1	G	A	50	0.1	VG
Cherryfield C.-French Broad R.	Hydrologic Connectivity	1.1	G	BCD	10	1	G
Cherryfield C.-French Broad R.	Hydrologic Connectivity	1.1	G	BCD	50	0.8	VG
Cherryfield C.-French Broad R.	Nonpoint Source Pollution Threat	86%	P	A	10	86%	P
Cherryfield C.-French Broad R.	Nonpoint Source Pollution Threat	86%	P	A	50	86%	P
Cherryfield C.-French Broad R.	Nonpoint Source Pollution Threat	86%	P	BCD	10	86%	P
Cherryfield C.-French Broad R.	Nonpoint Source Pollution Threat	86%	P	BCD	50	86%	P
Cherryfield C.-French Broad R.	Point Source Pollution Threat	5	P	A	10	5	P
Cherryfield C.-French Broad R.	Point Source Pollution Threat	5	P	A	50	5	P
Cherryfield C.-French Broad R.	Point Source Pollution Threat	5	P	BCD	10	5	P
Cherryfield C.-French Broad R.	Point Source Pollution Threat	5	P	BCD	50	5	P
Cherryfield C.-French Broad R.	Sedimentation Risk	0	VG	A	10	0	VG
Cherryfield C.-French Broad R.	Sedimentation Risk	0	VG	A	50	0	VG
Cherryfield C.-French Broad R.	Sedimentation Risk	0	VG	BCD	10	0	VG
Cherryfield C.-French Broad R.	Sedimentation Risk	0	VG	BCD	50	0	VG
Cherryfield C.-French Broad R.	Water Temperature Regime	73	G	A	10	16%	P
Cherryfield C.-French Broad R.	Water Temperature Regime	73	G	A	50	16%	P
Cherryfield C.-French Broad R.	Water Temperature Regime	73	G	BCD	10	16%	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Cherryfield C.-French Broad R.	Water Temperature Regime	73	G	BCD	50	16%	P
Cold Springs C.-Pigeon R.	Aquatic Community Composition	67%	F	A	10	67.32	F
Cold Springs C.-Pigeon R.	Aquatic Community Composition	67%	F	A	50	66.92	F
Cold Springs C.-Pigeon R.	Aquatic Community Composition	67%	F	BCD	10	67.27	F
Cold Springs C.-Pigeon R.	Aquatic Community Composition	67%	F	BCD	50	66.67	F
Cold Springs C.-Pigeon R.	Hydrologic Connectivity	1.5	G	A	10	1.3	G
Cold Springs C.-Pigeon R.	Hydrologic Connectivity	1.5	G	A	50	0.5	VG
Cold Springs C.-Pigeon R.	Hydrologic Connectivity	1.5	G	BCD	10	0.8	VG
Cold Springs C.-Pigeon R.	Hydrologic Connectivity	1.5	G	BCD	50	0	VG
Cold Springs C.-Pigeon R.	Nonpoint Source Pollution Threat	16%	VG	A	10	16%	VG
Cold Springs C.-Pigeon R.	Nonpoint Source Pollution Threat	16%	VG	A	50	16%	VG
Cold Springs C.-Pigeon R.	Nonpoint Source Pollution Threat	16%	VG	BCD	10	16%	VG
Cold Springs C.-Pigeon R.	Nonpoint Source Pollution Threat	16%	VG	BCD	50	16%	VG
Cold Springs C.-Pigeon R.	Point Source Pollution Threat	1	G	A	10	1	G
Cold Springs C.-Pigeon R.	Point Source Pollution Threat	1	G	A	50	1	G
Cold Springs C.-Pigeon R.	Point Source Pollution Threat	1	G	BCD	10	1	G
Cold Springs C.-Pigeon R.	Point Source Pollution Threat	1	G	BCD	50	1	G
Cold Springs C.-Pigeon R.	Sedimentation Risk	1.2	F	A	10	1.17	F
Cold Springs C.-Pigeon R.	Sedimentation Risk	1.2	F	A	50	1.03	F
Cold Springs C.-Pigeon R.	Sedimentation Risk	1.2	F	BCD	10	1.11	F
Cold Springs C.-Pigeon R.	Sedimentation Risk	1.2	F	BCD	50	0.78	F
Cold Springs C.-Pigeon R.	Water Temperature Regime	96%	VG	A	10	9%	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Cold Springs C.-Pigeon R.	Water Temperature Regime	96%	VG	A	50	9%	P
Cold Springs C.-Pigeon R.	Water Temperature Regime	96%	VG	BCD	10	9%	P
Cold Springs C.-Pigeon R.	Water Temperature Regime	96%	VG	BCD	50	9%	P
Conley C.-Tuckasegee R.	Aquatic Community Composition	92%	P	A	10	92.29	P
Conley C.-Tuckasegee R.	Aquatic Community Composition	92%	P	A	50	91.89	P
Conley C.-Tuckasegee R.	Aquatic Community Composition	92%	P	BCD	10	92.29	P
Conley C.-Tuckasegee R.	Aquatic Community Composition	92%	P	BCD	50	91.89	P
Conley C.-Tuckasegee R.	Hydrologic Connectivity	1.6	G	A	10	1.4	G
Conley C.-Tuckasegee R.	Hydrologic Connectivity	1.6	G	A	50	0.6	VG
Conley C.-Tuckasegee R.	Hydrologic Connectivity	1.6	G	BCD	10	1.5	G
Conley C.-Tuckasegee R.	Hydrologic Connectivity	1.6	G	BCD	50	1.2	G
Conley C.-Tuckasegee R.	Nonpoint Source Pollution Threat	85%	P	A	10	85%	P
Conley C.-Tuckasegee R.	Nonpoint Source Pollution Threat	85%	P	A	50	85%	P
Conley C.-Tuckasegee R.	Nonpoint Source Pollution Threat	85%	P	BCD	10	85%	P
Conley C.-Tuckasegee R.	Nonpoint Source Pollution Threat	85%	P	BCD	50	85%	P
Conley C.-Tuckasegee R.	Point Source Pollution Threat	3	P	A	10	3	P
Conley C.-Tuckasegee R.	Point Source Pollution Threat	3	P	A	50	3	P
Conley C.-Tuckasegee R.	Point Source Pollution Threat	3	P	BCD	10	3	P
Conley C.-Tuckasegee R.	Point Source Pollution Threat	3	P	BCD	50	3	P
Conley C.-Tuckasegee R.	Sedimentation Risk	0.5	G	A	10	0.47	G
Conley C.-Tuckasegee R.	Sedimentation Risk	0.5	G	A	50	0.33	VG
Conley C.-Tuckasegee R.	Sedimentation Risk	0.5	G	BCD	10	0.47	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Conley C.-Tuckasegee R.	Sedimentation Risk	0.5	G	BCD	50	0.45	G
Conley C.-Tuckasegee R.	Water Temperature Regime	84%	VG	A	10	58%	G
Conley C.-Tuckasegee R.	Water Temperature Regime	84%	VG	A	50	58%	G
Conley C.-Tuckasegee R.	Water Temperature Regime	84%	VG	BCD	10	58%	G
Conley C.-Tuckasegee R.	Water Temperature Regime	84%	VG	BCD	50	58%	G
Cowee C.	Aquatic Community Composition	89%	P	A	10	88.93	P
Cowee C.	Aquatic Community Composition	89%	P	A	50	88.53	P
Cowee C.	Aquatic Community Composition	89%	P	BCD	10	88.93	P
Cowee C.	Aquatic Community Composition	89%	P	BCD	50	88.53	P
Cowee C.	Hydrologic Connectivity	1	G	A	10	0.8	VG
Cowee C.	Hydrologic Connectivity	1	G	A	50	0	VG
Cowee C.	Hydrologic Connectivity	1	G	BCD	10	0.9	G
Cowee C.	Hydrologic Connectivity	1	G	BCD	50	0.7	VG
Cowee C.	Nonpoint Source Pollution Threat	67%	F	A	10	67%	F
Cowee C.	Nonpoint Source Pollution Threat	67%	F	A	50	67%	F
Cowee C.	Nonpoint Source Pollution Threat	67%	F	BCD	10	67%	F
Cowee C.	Nonpoint Source Pollution Threat	67%	F	BCD	50	67%	F
Cowee C.	Sedimentation Risk	1	F	A	10	0.97	F
Cowee C.	Sedimentation Risk	1	F	A	50	0.83	F
Cowee C.	Sedimentation Risk	1	F	BCD	10	0.97	F
Cowee C.	Sedimentation Risk	1	F	BCD	50	0.95	F
Cowee C.	Water Temperature Regime	90%	VG	A	10	54%	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Cowee C.	Water Temperature Regime	90%	VG	A	50	54%	G
Cowee C.	Water Temperature Regime	90%	VG	BCD	10	54%	G
Cowee C.	Water Temperature Regime	90%	VG	BCD	50	54%	G
Coweeta C.-Little Tennessee R.	Aquatic Community Composition	77%	P	A	10	76.42	F
Coweeta C.-Little Tennessee R.	Aquatic Community Composition	77%	P	A	50	76.02	F
Coweeta C.-Little Tennessee R.	Aquatic Community Composition	77%	P	BCD	10	76.42	F
Coweeta C.-Little Tennessee R.	Aquatic Community Composition	77%	P	BCD	50	76.02	F
Coweeta C.-Little Tennessee R.	Hydrologic Connectivity	1.3	G	A	10	1.1	G
Coweeta C.-Little Tennessee R.	Hydrologic Connectivity	1.3	G	A	50	0.3	VG
Coweeta C.-Little Tennessee R.	Hydrologic Connectivity	1.3	G	BCD	10	1.2	G
Coweeta C.-Little Tennessee R.	Hydrologic Connectivity	1.3	G	BCD	50	1	G
Coweeta C.-Little Tennessee R.	Nonpoint Source Pollution Threat	46%	G	A	10	46%	G
Coweeta C.-Little Tennessee R.	Nonpoint Source Pollution Threat	46%	G	A	50	46%	G
Coweeta C.-Little Tennessee R.	Nonpoint Source Pollution Threat	46%	G	BCD	10	46%	G
Coweeta C.-Little Tennessee R.	Nonpoint Source Pollution Threat	46%	G	BCD	50	46%	G
Coweeta C.-Little Tennessee R.	Point Source Pollution Threat	1	G	A	10	1	G
Coweeta C.-Little Tennessee R.	Point Source Pollution Threat	1	G	A	50	1	G
Coweeta C.-Little Tennessee R.	Point Source Pollution Threat	1	G	BCD	10	1	G
Coweeta C.-Little Tennessee R.	Point Source Pollution Threat	1	G	BCD	50	1	G
Coweeta C.-Little Tennessee R.	Sedimentation Risk	0.7	G	A	10	0.67	G
Coweeta C.-Little Tennessee R.	Sedimentation Risk	0.7	G	A	50	0.53	G
Coweeta C.-Little Tennessee R.	Sedimentation Risk	0.7	G	BCD	10	0.67	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Coweeta C.-Little Tennessee R.	Sedimentation Risk	0.7	G	BCD	50	0.65	G
Coweeta C.-Little Tennessee R.	Water Temperature Regime	88%	VG	A	10	24%	P
Coweeta C.-Little Tennessee R.	Water Temperature Regime	88%	VG	A	50	24%	P
Coweeta C.-Little Tennessee R.	Water Temperature Regime	88%	VG	BCD	10	24%	P
Coweeta C.-Little Tennessee R.	Water Temperature Regime	88%	VG	BCD	50	24%	P
Cullowhee C.	Aquatic Community Composition	63%	F	A	10	63.35	F
Cullowhee C.	Aquatic Community Composition	63%	F	A	50	62.95	F
Cullowhee C.	Aquatic Community Composition	63%	F	BCD	10	63.35	F
Cullowhee C.	Aquatic Community Composition	63%	F	BCD	50	62.95	F
Cullowhee C.	Hydrologic Connectivity	0.7	VG	A	10	0.5	VG
Cullowhee C.	Hydrologic Connectivity	0.7	VG	A	50	0	VG
Cullowhee C.	Hydrologic Connectivity	0.7	VG	BCD	10	0.6	VG
Cullowhee C.	Hydrologic Connectivity	0.7	VG	BCD	50	0.3	VG
Cullowhee C.	Nonpoint Source Pollution Threat	77%	P	A	10	77%	P
Cullowhee C.	Nonpoint Source Pollution Threat	77%	P	A	50	77%	P
Cullowhee C.	Nonpoint Source Pollution Threat	77%	P	BCD	10	77%	P
Cullowhee C.	Nonpoint Source Pollution Threat	77%	P	BCD	50	77%	P
Cullowhee C.	Sedimentation Risk	0.5	G	A	10	0.47	G
Cullowhee C.	Sedimentation Risk	0.5	G	A	50	0.33	VG
Cullowhee C.	Sedimentation Risk	0.5	G	BCD	10	0.49	G
Cullowhee C.	Sedimentation Risk	0.5	G	BCD	50	0.45	G
Cullowhee C.	Water Temperature Regime	88%	VG	A	10	32%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Cullowhee C.	Water Temperature Regime	88%	VG	A	50	32%	F
Cullowhee C.	Water Temperature Regime	88%	VG	BCD	10	32%	F
Cullowhee C.	Water Temperature Regime	88%	VG	BCD	50	32%	F
Curtis C.	Aquatic Community Composition	62%	F	A	10	61.52	F
Curtis C.	Aquatic Community Composition	62%	F	A	50	61.12	F
Curtis C.	Aquatic Community Composition	62%	F	BCD	10	61.52	F
Curtis C.	Aquatic Community Composition	62%	F	BCD	50	61.12	F
Curtis C.	Hydrologic Connectivity	1.9	G	A	10	1.7	G
Curtis C.	Hydrologic Connectivity	1.9	G	A	50	0.9	G
Curtis C.	Hydrologic Connectivity	1.9	G	BCD	10	1.9	G
Curtis C.	Hydrologic Connectivity	1.9	G	BCD	50	1.6	G
Curtis C.	Nonpoint Source Pollution Threat	12%	VG	A	10	12%	VG
Curtis C.	Nonpoint Source Pollution Threat	12%	VG	A	50	12%	VG
Curtis C.	Nonpoint Source Pollution Threat	12%	VG	BCD	10	12%	VG
Curtis C.	Nonpoint Source Pollution Threat	12%	VG	BCD	50	12%	VG
Curtis C.	Point Source Pollution Threat	2	F	A	10	2	F
Curtis C.	Point Source Pollution Threat	2	F	A	50	2	F
Curtis C.	Point Source Pollution Threat	2	F	BCD	10	2	F
Curtis C.	Point Source Pollution Threat	2	F	BCD	50	2	F
Curtis C.	Sedimentation Risk	0.7	G	A	10	0.67	G
Curtis C.	Sedimentation Risk	0.7	G	A	50	0.53	G
Curtis C.	Sedimentation Risk	0.7	G	BCD	10	0.67	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Curtis C.	Sedimentation Risk	0.7	G	BCD	50	0.65	G
Curtis C.	Water Temperature Regime	96%	VG	A	10	10%	P
Curtis C.	Water Temperature Regime	96%	VG	A	50	10%	P
Curtis C.	Water Temperature Regime	96%	VG	BCD	10	10%	P
Curtis C.	Water Temperature Regime	96%	VG	BCD	50	10%	P
Davidson R.	Aquatic Community Composition	76%	P	A	10	75.73	P
Davidson R.	Aquatic Community Composition	76%	P	A	50	75.33	F
Davidson R.	Aquatic Community Composition	76%	P	BCD	10	75.68	P
Davidson R.	Aquatic Community Composition	76%	P	BCD	50	75.08	F
Davidson R.	Hydrologic Connectivity	1.2	G	A	10	1	G
Davidson R.	Hydrologic Connectivity	1.2	G	A	50	0.2	VG
Davidson R.	Hydrologic Connectivity	1.2	G	BCD	10	0.5	VG
Davidson R.	Hydrologic Connectivity	1.2	G	BCD	50	0	VG
Davidson R.	Nonpoint Source Pollution Threat	13%	VG	A	10	13%	VG
Davidson R.	Nonpoint Source Pollution Threat	13%	VG	A	50	13%	VG
Davidson R.	Nonpoint Source Pollution Threat	13%	VG	BCD	10	13%	VG
Davidson R.	Nonpoint Source Pollution Threat	13%	VG	BCD	50	13%	VG
Davidson R.	Point Source Pollution Threat	2	F	A	10	2	F
Davidson R.	Point Source Pollution Threat	2	F	A	50	2	F
Davidson R.	Point Source Pollution Threat	2	F	BCD	10	2	F
Davidson R.	Point Source Pollution Threat	2	F	BCD	50	2	F
Davidson R.	Sedimentation Risk	1	F	A	10	0.97	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Davidson R.	Sedimentation Risk	1	F	A	50	0.83	F
Davidson R.	Sedimentation Risk	1	F	BCD	10	0.91	F
Davidson R.	Sedimentation Risk	1	F	BCD	50	0.56	G
Davidson R.	Water Temperature Regime	94%	VG	A	10	22%	P
Davidson R.	Water Temperature Regime	94%	VG	A	50	22%	P
Davidson R.	Water Temperature Regime	94%	VG	BCD	10	22	P
Davidson R.	Water Temperature Regime	94%	VG	BCD	50	22%	P
Dillingham C.	Aquatic Community Composition	69%	F	A	10	69.17	F
Dillingham C.	Aquatic Community Composition	69%	F	A	50	68.77	F
Dillingham C.	Aquatic Community Composition	69%	F	BCD	10	69.12	F
Dillingham C.	Aquatic Community Composition	69%	F	BCD	50	68.52	F
Dillingham C.	Hydrologic Connectivity	1.8	G	A	10	1.6	G
Dillingham C.	Hydrologic Connectivity	1.8	G	A	50	0.8	VG
Dillingham C.	Hydrologic Connectivity	1.8	G	BCD	10	1.2	G
Dillingham C.	Hydrologic Connectivity	1.8	G	BCD	50	0	VG
Dillingham C.	Nonpoint Source Pollution Threat	42%	G	A	10	42%	G
Dillingham C.	Nonpoint Source Pollution Threat	42%	G	A	50	42%	G
Dillingham C.	Nonpoint Source Pollution Threat	42%	G	BCD	10	42%	G
Dillingham C.	Nonpoint Source Pollution Threat	42%	G	BCD	50	42%	G
Dillingham C.	Sedimentation Risk	0.1	VG	A	10	0.07	VG
Dillingham C.	Sedimentation Risk	0.1	VG	A	50	0	VG
Dillingham C.	Sedimentation Risk	0.1	VG	BCD	10	0.01	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Dillingham C.	Sedimentation Risk	0.1	VG	BCD	50	0	VG
Dillingham C.	Water Temperature Regime	92%	VG	A	10	41%	F
Dillingham C.	Water Temperature Regime	92%	VG	A	50	41%	F
Dillingham C.	Water Temperature Regime	92%	VG	BCD	10	41%	F
Dillingham C.	Water Temperature Regime	92%	VG	BCD	50	41%	F
East Fork Pigeon R.	Aquatic Community Composition	38%	G	A	10	37.94	G
East Fork Pigeon R.	Aquatic Community Composition	38%	G	A	50	37.54	G
East Fork Pigeon R.	Aquatic Community Composition	38%	G	BCD	10	37.94	G
East Fork Pigeon R.	Aquatic Community Composition	38%	G	BCD	50	37.54	G
East Fork Pigeon R.	Hydrologic Connectivity	1	G	A	10	0.8	VG
East Fork Pigeon R.	Hydrologic Connectivity	1	G	A	50	0	VG
East Fork Pigeon R.	Hydrologic Connectivity	1	G	BCD	10	0.9	G
East Fork Pigeon R.	Hydrologic Connectivity	1	G	BCD	50	0.7	VG
East Fork Pigeon R.	Nonpoint Source Pollution Threat	56%	F	A	10	56%	F
East Fork Pigeon R.	Nonpoint Source Pollution Threat	56%	F	A	50	56%	F
East Fork Pigeon R.	Nonpoint Source Pollution Threat	56%	F	BCD	10	56%	F
East Fork Pigeon R.	Nonpoint Source Pollution Threat	56%	F	BCD	50	56%	F
East Fork Pigeon R.	Point Source Pollution Threat	1	G	A	10	1	G
East Fork Pigeon R.	Point Source Pollution Threat	1	G	A	50	1	G
East Fork Pigeon R.	Point Source Pollution Threat	1	G	BCD	10	1	G
East Fork Pigeon R.	Point Source Pollution Threat	1	G	BCD	50	1	G
East Fork Pigeon R.	Sedimentation Risk	0.5	G	A	10	0.47	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
East Fork Pigeon R.	Sedimentation Risk	0.5	G	A	50	0.33	VG
East Fork Pigeon R.	Sedimentation Risk	0.5	G	BCD	10	0.49	G
East Fork Pigeon R.	Sedimentation Risk	0.5	G	BCD	50	0.45	G
East Fork Pigeon R.	Water Temperature Regime	89%	VG	A	10	18%	P
East Fork Pigeon R.	Water Temperature Regime	89%	VG	A	50	18%	P
East Fork Pigeon R.	Water Temperature Regime	89%	VG	BCD	10	18	P
East Fork Pigeon R.	Water Temperature Regime	89%	VG	BCD	50	18%	P
Ellijay C.	Aquatic Community Composition	66%	F	A	10	65.48	F
Ellijay C.	Aquatic Community Composition	66%	F	A	50	65.08	F
Ellijay C.	Aquatic Community Composition	66%	F	BCD	10	65.48	F
Ellijay C.	Aquatic Community Composition	66%	F	BCD	50	65.08	F
Ellijay C.	Hydrologic Connectivity	1.9	G	A	10	1.7	G
Ellijay C.	Hydrologic Connectivity	1.9	G	A	50	0.9	G
Ellijay C.	Hydrologic Connectivity	1.9	G	BCD	10	1.9	G
Ellijay C.	Hydrologic Connectivity	1.9	G	BCD	50	1.6	G
Ellijay C.	Nonpoint Source Pollution Threat	83%	P	A	10	83%	P
Ellijay C.	Nonpoint Source Pollution Threat	83%	P	A	50	83%	P
Ellijay C.	Nonpoint Source Pollution Threat	83%	P	BCD	10	83%	P
Ellijay C.	Nonpoint Source Pollution Threat	83%	P	BCD	50	83%	P
Ellijay C.	Sedimentation Risk	0.7	G	A	10	0.67	G
Ellijay C.	Sedimentation Risk	0.7	G	A	50	0.53	G
Ellijay C.	Sedimentation Risk	0.7	G	BCD	10	0.69	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Ellijay C.	Sedimentation Risk	0.7	G	BCD	50	0.65	G
Ellijay C.	Water Temperature Regime	92%	VG	A	10	22%	P
Ellijay C.	Water Temperature Regime	92%	VG	A	50	22%	P
Ellijay C.	Water Temperature Regime	92%	VG	BCD	10	22	P
Ellijay C.	Water Temperature Regime	92%	VG	BCD	50	22%	P
Fall Branch-Hiwassee R.	Aquatic Community Composition	100%	P	A	10	99.9	P
Fall Branch-Hiwassee R.	Aquatic Community Composition	100%	P	A	50	99.5	P
Fall Branch-Hiwassee R.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Fall Branch-Hiwassee R.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Fall Branch-Hiwassee R.	Hydrologic Connectivity	1.4	G	A	10	1.2	G
Fall Branch-Hiwassee R.	Hydrologic Connectivity	1.4	G	A	50	0.4	VG
Fall Branch-Hiwassee R.	Hydrologic Connectivity	1.4	G	BCD	10	1.3	G
Fall Branch-Hiwassee R.	Hydrologic Connectivity	1.4	G	BCD	50	1	G
Fall Branch-Hiwassee R.	Nonpoint Source Pollution Threat	80%	P	A	10	80%	P
Fall Branch-Hiwassee R.	Nonpoint Source Pollution Threat	80%	P	A	50	80%	P
Fall Branch-Hiwassee R.	Nonpoint Source Pollution Threat	80%	P	BCD	10	80%	P
Fall Branch-Hiwassee R.	Nonpoint Source Pollution Threat	80%	P	BCD	50	80%	P
Fall Branch-Hiwassee R.	Sedimentation Risk	0.7	G	A	10	0.67	G
Fall Branch-Hiwassee R.	Sedimentation Risk	0.7	G	A	50	0.53	G
Fall Branch-Hiwassee R.	Sedimentation Risk	0.7	G	BCD	10	0.67	G
Fall Branch-Hiwassee R.	Sedimentation Risk	0.7	G	BCD	50	0.65	G
Fall Branch-Hiwassee R.	Water Temperature Regime	78%	VG	A	10	83%	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Fall Branch-Hiwassee R.	Water Temperature Regime	78%	VG	A	50	83%	VG
Fall Branch-Hiwassee R.	Water Temperature Regime	78%	VG	BCD	10	83	VG
Fall Branch-Hiwassee R.	Water Temperature Regime	78%	VG	BCD	50	83%	VG
Fires C.	Aquatic Community Composition	100%	P	A	10	99.9	P
Fires C.	Aquatic Community Composition	100%	P	A	50	99.5	P
Fires C.	Aquatic Community Composition	100%	P	BCD	10	99.85	P
Fires C.	Aquatic Community Composition	100%	P	BCD	50	99.25	P
Fires C.	Hydrologic Connectivity	2.2	G	A	10	2	G
Fires C.	Hydrologic Connectivity	2.2	G	A	50	1.2	G
Fires C.	Hydrologic Connectivity	2.2	G	BCD	10	1.6	G
Fires C.	Hydrologic Connectivity	2.2	G	BCD	50	0	VG
Fires C.	Nonpoint Source Pollution Threat	6%	VG	A	10	6%	VG
Fires C.	Nonpoint Source Pollution Threat	6%	VG	A	50	6%	VG
Fires C.	Nonpoint Source Pollution Threat	6%	VG	BCD	10	6%	VG
Fires C.	Nonpoint Source Pollution Threat	6%	VG	BCD	50	6%	VG
Fires C.	Sedimentation Risk	1.7	P	A	10	1.67	P
Fires C.	Sedimentation Risk	1.7	P	A	50	1.55	F
Fires C.	Sedimentation Risk	1.7	P	BCD	10	1.61	P
Fires C.	Sedimentation Risk	1.7	P	BCD	50	1.26	F
Fires C.	Water Temperature Regime	98%	VG	A	10	48%	F
Fires C.	Water Temperature Regime	98%	VG	A	50	48%	F
Fires C.	Water Temperature Regime	98%	VG	BCD	10	48%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Fires C.	Water Temperature Regime	98%	VG	BCD	50	48%	F
Fontana L.-Nantahala R.	Aquatic Community Composition	100%	P	A	10	99.9	P
Fontana L.-Nantahala R.	Aquatic Community Composition	100%	P	A	50	99.5	P
Fontana L.-Nantahala R.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Fontana L.-Nantahala R.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Fontana L.-Nantahala R.	Hydrologic Connectivity	1	G	A	10	0.8	VG
Fontana L.-Nantahala R.	Hydrologic Connectivity	1	G	A	50	0	VG
Fontana L.-Nantahala R.	Hydrologic Connectivity	1	G	BCD	10	0.9	G
Fontana L.-Nantahala R.	Hydrologic Connectivity	1	G	BCD	50	0.6	VG
Fontana L.-Nantahala R.	Nonpoint Source Pollution Threat	64%	F	A	10	64%	F
Fontana L.-Nantahala R.	Nonpoint Source Pollution Threat	64%	F	A	50	64%	F
Fontana L.-Nantahala R.	Nonpoint Source Pollution Threat	64%	F	BCD	10	64%	F
Fontana L.-Nantahala R.	Nonpoint Source Pollution Threat	64%	F	BCD	50	64%	F
Fontana L.-Nantahala R.	Point Source Pollution Threat	1	G	A	10	1	G
Fontana L.-Nantahala R.	Point Source Pollution Threat	1	G	A	50	1	G
Fontana L.-Nantahala R.	Point Source Pollution Threat	1	G	BCD	10	1	G
Fontana L.-Nantahala R.	Point Source Pollution Threat	1	G	BCD	50	1	G
Fontana L.-Nantahala R.	Sedimentation Risk	0.6	G	A	10	0.57	G
Fontana L.-Nantahala R.	Sedimentation Risk	0.6	G	A	50	0.43	G
Fontana L.-Nantahala R.	Sedimentation Risk	0.6	G	BCD	10	0.57	G
Fontana L.-Nantahala R.	Sedimentation Risk	0.6	G	BCD	50	0.65	G
Fontana L.-Nantahala R.	Water Temperature Regime	89%	VG	A	10	100%	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Fontana L.-Nantahala R.	Water Temperature Regime	89%	VG	A	50	100%	VG
Fontana L.-Nantahala R.	Water Temperature Regime	89%	VG	BCD	10	100%	VG
Fontana L.-Nantahala R.	Water Temperature Regime	89%	VG	BCD	50	100%	VG
Fontana L.-Tuckasegee R.	Aquatic Community Composition	100%	P	A	10	99.9	P
Fontana L.-Tuckasegee R.	Aquatic Community Composition	100%	P	A	50	99.5	P
Fontana L.-Tuckasegee R.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Fontana L.-Tuckasegee R.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Fontana L.-Tuckasegee R.	Hydrologic Connectivity	1.9	G	A	10	1.7	G
Fontana L.-Tuckasegee R.	Hydrologic Connectivity	1.9	G	A	50	0.9	G
Fontana L.-Tuckasegee R.	Hydrologic Connectivity	1.9	G	BCD	10	1.8	G
Fontana L.-Tuckasegee R.	Hydrologic Connectivity	1.9	G	BCD	50	1.6	G
Fontana L.-Tuckasegee R.	Nonpoint Source Pollution Threat	94%	P	A	10	94%	P
Fontana L.-Tuckasegee R.	Nonpoint Source Pollution Threat	94%	P	A	50	94%	P
Fontana L.-Tuckasegee R.	Nonpoint Source Pollution Threat	94%	P	BCD	10	94%	P
Fontana L.-Tuckasegee R.	Nonpoint Source Pollution Threat	94%	P	BCD	50	94%	P
Fontana L.-Tuckasegee R.	Point Source Pollution Threat	2	F	A	10	2	F
Fontana L.-Tuckasegee R.	Point Source Pollution Threat	2	F	A	50	2	F
Fontana L.-Tuckasegee R.	Point Source Pollution Threat	2	F	BCD	10	2	F
Fontana L.-Tuckasegee R.	Point Source Pollution Threat	2	F	BCD	50	2	F
Fontana L.-Tuckasegee R.	Sedimentation Risk	0	VG	A	10	0	VG
Fontana L.-Tuckasegee R.	Sedimentation Risk	0	VG	A	50	0	VG
Fontana L.-Tuckasegee R.	Sedimentation Risk	0	VG	BCD	10	0	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Fontana L.-Tuckasegee R.	Sedimentation Risk	0	VG	BCD	50	0	VG
Fontana L.-Tuckasegee R.	Water Temperature Regime	79%	VG	A	10	9%	P
Fontana L.-Tuckasegee R.	Water Temperature Regime	79%	VG	A	50	9%	P
Fontana L.-Tuckasegee R.	Water Temperature Regime	79%	VG	BCD	10	9%	P
Fontana L.-Tuckasegee R.	Water Temperature Regime	79%	VG	BCD	50	9%	P
Grape C.-Hiwassee L.	Aquatic Community Composition	0%	VG	A	10	0	VG
Grape C.-Hiwassee L.	Aquatic Community Composition	0%	VG	A	50	0	VG
Grape C.-Hiwassee L.	Aquatic Community Composition	0%	VG	BCD	10	0	VG
Grape C.-Hiwassee L.	Aquatic Community Composition	0%	VG	BCD	50	0	VG
Grape C.-Hiwassee L.	Hydrologic Connectivity	1	G	A	10	0.8	VG
Grape C.-Hiwassee L.	Hydrologic Connectivity	1	G	A	50	0	VG
Grape C.-Hiwassee L.	Hydrologic Connectivity	1	G	BCD	10	0.9	G
Grape C.-Hiwassee L.	Hydrologic Connectivity	1	G	BCD	50	0.7	VG
Grape C.-Hiwassee L.	Nonpoint Source Pollution Threat	73%	F	A	10	73%	F
Grape C.-Hiwassee L.	Nonpoint Source Pollution Threat	73%	F	A	50	73%	F
Grape C.-Hiwassee L.	Nonpoint Source Pollution Threat	73%	F	BCD	10	73%	F
Grape C.-Hiwassee L.	Nonpoint Source Pollution Threat	73%	F	BCD	50	73%	F
Grape C.-Hiwassee L.	Point Source Pollution Threat	2	F	A	10	2	F
Grape C.-Hiwassee L.	Point Source Pollution Threat	2	F	A	50	2	F
Grape C.-Hiwassee L.	Point Source Pollution Threat	2	F	BCD	10	2	F
Grape C.-Hiwassee L.	Point Source Pollution Threat	2	F	BCD	50	2	F
Grape C.-Hiwassee L.	Sedimentation Risk	0.5	G	A	10	0.47	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Grape C.-Hiwassee L.	Sedimentation Risk	0.5	G	A	50	0.33	VG
Grape C.-Hiwassee L.	Sedimentation Risk	0.5	G	BCD	10	0.47	G
Grape C.-Hiwassee L.	Sedimentation Risk	0.5	G	BCD	50	0.45	G
Grape C.-Hiwassee L.	Water Temperature Regime	78%	VG	A	10	64%	G
Grape C.-Hiwassee L.	Water Temperature Regime	78%	VG	A	50	64%	G
Grape C.-Hiwassee L.	Water Temperature Regime	78%	VG	BCD	10	64%	G
Grape C.-Hiwassee L.	Water Temperature Regime	78%	VG	BCD	50	64%	G
Hanging Dog C.	Aquatic Community Composition	76%	P	A	10	76.04	P
Hanging Dog C.	Aquatic Community Composition	76%	P	A	50	75.64	P
Hanging Dog C.	Aquatic Community Composition	76%	P	BCD	10	76.04	P
Hanging Dog C.	Aquatic Community Composition	76%	P	BCD	50	75.64	P
Hanging Dog C.	Hydrologic Connectivity	0.3	VG	A	10	0.1	VG
Hanging Dog C.	Hydrologic Connectivity	0.3	VG	A	50	0	VG
Hanging Dog C.	Hydrologic Connectivity	0.3	VG	BCD	10	0.2	VG
Hanging Dog C.	Hydrologic Connectivity	0.3	VG	BCD	50	0.1	VG
Hanging Dog C.	Invasive Sp. Abundance: Corbicula	present		A	10	present	P
Hanging Dog C.	Invasive Sp. Abundance: Corbicula	present		A	50	present	P
Hanging Dog C.	Invasive Sp. Abundance: Corbicula	present		BCD	10	Present	P
Hanging Dog C.	Invasive Sp. Abundance: Corbicula	present		BCD	50	Present	P
Hanging Dog C.	Nonpoint Source Pollution Threat	70%	F	A	10	70%	F
Hanging Dog C.	Nonpoint Source Pollution Threat	70%	F	A	50	70%	F
Hanging Dog C.	Nonpoint Source Pollution Threat	70%	F	BCD	10	70%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Hanging Dog C.	Nonpoint Source Pollution Threat	70%	F	BCD	50	70%	F
Hanging Dog C.	Sedimentation Risk	0.9	F	A	10	0.87	F
Hanging Dog C.	Sedimentation Risk	0.9	F	A	50	0.73	G
Hanging Dog C.	Sedimentation Risk	0.9	F	BCD	10	0.87	F
Hanging Dog C.	Sedimentation Risk	0.9	F	BCD	50	0.85	F
Hanging Dog C.	Water Temperature Regime	94%	VG	A	10	88%	VG
Hanging Dog C.	Water Temperature Regime	94%	VG	A	50	88%	VG
Hanging Dog C.	Water Temperature Regime	94%	VG	BCD	10	88%	VG
Hanging Dog C.	Water Temperature Regime	94%	VG	BCD	50	88%	VG
Headwaters Cane R.	Aquatic Community Composition	72%	F	A	10	72.39	F
Headwaters Cane R.	Aquatic Community Composition	72%	F	A	50	71.99	F
Headwaters Cane R.	Aquatic Community Composition	72%	F	BCD	10	72.39	F
Headwaters Cane R.	Aquatic Community Composition	72%	F	BCD	50	71.99	F
Headwaters Cane R.	Hydrologic Connectivity	1.6	G	A	10	1.4	G
Headwaters Cane R.	Hydrologic Connectivity	1.6	G	A	50	0.6	VG
Headwaters Cane R.	Hydrologic Connectivity	1.6	G	BCD	10	1.6	G
Headwaters Cane R.	Hydrologic Connectivity	1.6	G	BCD	50	1.3	G
Headwaters Cane R.	Nonpoint Source Pollution Threat	92%	P	A	10	92%	P
Headwaters Cane R.	Nonpoint Source Pollution Threat	92%	P	A	50	92%	P
Headwaters Cane R.	Nonpoint Source Pollution Threat	92%	P	BCD	10	92%	P
Headwaters Cane R.	Nonpoint Source Pollution Threat	92%	P	BCD	50	92%	P
Headwaters Cane R.	Sedimentation Risk	0.1	VG	A	10	0.07	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Headwaters Cane R.	Sedimentation Risk	0.1	VG	A	50	0	VG
Headwaters Cane R.	Sedimentation Risk	0.1	VG	BCD	10	0.09	VG
Headwaters Cane R.	Sedimentation Risk	0.1	VG	BCD	50	0.05	VG
Headwaters Cane R.	Water Temperature Regime	96%	VG	A	10	45%	F
Headwaters Cane R.	Water Temperature Regime	96%	VG	A	50	45%	F
Headwaters Cane R.	Water Temperature Regime	96%	VG	BCD	10	45%	F
Headwaters Cane R.	Water Temperature Regime	96%	VG	BCD	50	45%	F
Headwaters Catawba R.	Aquatic Community Composition	100%	P	A	10	99.9	P
Headwaters Catawba R.	Aquatic Community Composition	100%	P	A	50	99.5	P
Headwaters Catawba R.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Headwaters Catawba R.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Headwaters Catawba R.	Hydrologic Connectivity	3	F	A	10	2.8	F
Headwaters Catawba R.	Hydrologic Connectivity	3	F	A	50	2	G
Headwaters Catawba R.	Hydrologic Connectivity	3	F	BCD	10	2.9	F
Headwaters Catawba R.	Hydrologic Connectivity	3	F	BCD	50	2.7	F
Headwaters Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Headwaters Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Headwaters Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Headwaters Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Headwaters Catawba R.	Nonpoint Source Pollution Threat	50%	F	A	10	50%	F
Headwaters Catawba R.	Nonpoint Source Pollution Threat	50%	F	A	50	50%	F
Headwaters Catawba R.	Nonpoint Source Pollution Threat	50%	F	BCD	10	50%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Headwaters Catawba R.	Nonpoint Source Pollution Threat	50%	F	BCD	50	50%	F
Headwaters Catawba R.	Sedimentation Risk	0.4	G	A	10	0.37	G
Headwaters Catawba R.	Sedimentation Risk	0.4	G	A	50	0.23	VG
Headwaters Catawba R.	Sedimentation Risk	0.4	G	BCD	10	0.39	G
Headwaters Catawba R.	Sedimentation Risk	0.4	G	BCD	50	0.35	G
Headwaters Catawba R.	Water Temperature Regime	92%	VG	A	10	26%	F
Headwaters Catawba R.	Water Temperature Regime	92%	VG	A	50	26%	F
Headwaters Catawba R.	Water Temperature Regime	92%	VG	BCD	10	26	F
Headwaters Catawba R.	Water Temperature Regime	92%	VG	BCD	50	26%	F
Headwaters Chattooga R.	Aquatic Community Composition	73%	F	A	10	72.57	F
Headwaters Chattooga R.	Aquatic Community Composition	73%	F	A	50	72.17	F
Headwaters Chattooga R.	Aquatic Community Composition	73%	F	BCD	10	72.57	F
Headwaters Chattooga R.	Aquatic Community Composition	73%	F	BCD	50	72.17	F
Headwaters Chattooga R.	Hydrologic Connectivity	1.8	G	A	10	1.6	G
Headwaters Chattooga R.	Hydrologic Connectivity	1.8	G	A	50	0.8	VG
Headwaters Chattooga R.	Hydrologic Connectivity	1.8	G	BCD	10	1.7	G
Headwaters Chattooga R.	Hydrologic Connectivity	1.8	G	BCD	50	1.5	G
Headwaters Chattooga R.	Nonpoint Source Pollution Threat	52%	F	A	10	52%	F
Headwaters Chattooga R.	Nonpoint Source Pollution Threat	52%	F	A	50	52%	F
Headwaters Chattooga R.	Nonpoint Source Pollution Threat	52%	F	BCD	10	52%	F
Headwaters Chattooga R.	Nonpoint Source Pollution Threat	52%	F	BCD	50	52%	F
Headwaters Chattooga R.	Point Source Pollution Threat	3	P	A	10	3	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Headwaters Chattooga R.	Point Source Pollution Threat	3	P	A	50	3	P
Headwaters Chattooga R.	Point Source Pollution Threat	3	P	BCD	10	3	P
Headwaters Chattooga R.	Point Source Pollution Threat	3	P	BCD	50	3	P
Headwaters Chattooga R.	Sedimentation Risk	0.5	G	A	10	0.47	G
Headwaters Chattooga R.	Sedimentation Risk	0.5	G	A	50	0.33	VG
Headwaters Chattooga R.	Sedimentation Risk	0.5	G	BCD	10	0.49	G
Headwaters Chattooga R.	Sedimentation Risk	0.5	G	BCD	50	0.45	G
Headwaters Chattooga R.	Water Temperature Regime	87%	VG	A	10	41%	F
Headwaters Chattooga R.	Water Temperature Regime	87%	VG	A	50	41%	F
Headwaters Chattooga R.	Water Temperature Regime	87%	VG	BCD	10	41%	F
Headwaters Chattooga R.	Water Temperature Regime	87%	VG	BCD	50	41%	F
Headwaters Nantahala R.	Aquatic Community Composition	67%	F	A	10	67.23	F
Headwaters Nantahala R.	Aquatic Community Composition	67%	F	A	50	66.83	F
Headwaters Nantahala R.	Aquatic Community Composition	67%	F	BCD	10	67.23	F
Headwaters Nantahala R.	Aquatic Community Composition	67%	F	BCD	50	66.83	F
Headwaters Nantahala R.	Hydrologic Connectivity	2	G	A	10	1.8	G
Headwaters Nantahala R.	Hydrologic Connectivity	2	G	A	50	1	G
Headwaters Nantahala R.	Hydrologic Connectivity	2	G	BCD	10	1.9	G
Headwaters Nantahala R.	Hydrologic Connectivity	2	G	BCD	50	1.6	G
Headwaters Nantahala R.	Nonpoint Source Pollution Threat	20%	VG	A	10	20%	VG
Headwaters Nantahala R.	Nonpoint Source Pollution Threat	20%	VG	A	50	20%	VG
Headwaters Nantahala R.	Nonpoint Source Pollution Threat	20%	VG	BCD	10	20%	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Headwaters Nantahala R.	Nonpoint Source Pollution Threat	20%	VG	BCD	50	20%	VG
Headwaters Nantahala R.	Sedimentation Risk	0.9	F	A	10	0.87	F
Headwaters Nantahala R.	Sedimentation Risk	0.9	F	A	50	0.73	G
Headwaters Nantahala R.	Sedimentation Risk	0.9	F	BCD	10	0.89	F
Headwaters Nantahala R.	Sedimentation Risk	0.9	F	BCD	50	0.85	F
Headwaters Nantahala R.	Water Temperature Regime	98%	VG	A	10	96%	VG
Headwaters Nantahala R.	Water Temperature Regime	98%	VG	A	50	96%	VG
Headwaters Nantahala R.	Water Temperature Regime	98%	VG	BCD	10	96%	VG
Headwaters Nantahala R.	Water Temperature Regime	98%	VG	BCD	50	96%	VG
Headwaters North Toe R.	Aquatic Community Composition	89.05%	P	A	10	88.95	P
Headwaters North Toe R.	Aquatic Community Composition	89.05%	P	A	50	88.55	P
Headwaters North Toe R.	Aquatic Community Composition	89.05%	P	BCD	10	88.95	P
Headwaters North Toe R.	Aquatic Community Composition	89.05%	P	BCD	50	88.55	P
Headwaters North Toe R.	Hydrologic Connectivity	0.9	G	A	10	0.7	VG
Headwaters North Toe R.	Hydrologic Connectivity	0.9	G	A	50	0	VG
Headwaters North Toe R.	Hydrologic Connectivity	0.9	G	BCD	10	0.9	G
Headwaters North Toe R.	Hydrologic Connectivity	0.9	G	BCD	50	0.6	VG
Headwaters North Toe R.	Nonpoint Source Pollution Threat	88%	P	A	10	88%	P
Headwaters North Toe R.	Nonpoint Source Pollution Threat	88%	P	A	50	88%	P
Headwaters North Toe R.	Nonpoint Source Pollution Threat	88%	P	BCD	10	88%	P
Headwaters North Toe R.	Nonpoint Source Pollution Threat	88%	P	BCD	50	88%	P
Headwaters North Toe R.	Point Source Pollution Threat	2	F	A	10	2	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Headwaters North Toe R.	Point Source Pollution Threat	2	F	A	50	2	F
Headwaters North Toe R.	Point Source Pollution Threat	2	F	BCD	10	2	F
Headwaters North Toe R.	Point Source Pollution Threat	2	F	BCD	50	2	F
Headwaters North Toe R.	Sedimentation Risk	0	VG	A	10	0	VG
Headwaters North Toe R.	Sedimentation Risk	0	VG	A	50	0	VG
Headwaters North Toe R.	Sedimentation Risk	0	VG	BCD	10	0	VG
Headwaters North Toe R.	Sedimentation Risk	0	VG	BCD	50	0	VG
Headwaters North Toe R.	Water Temperature Regime	80%	VG	A	10	74%	G
Headwaters North Toe R.	Water Temperature Regime	80%	VG	A	50	74%	G
Headwaters North Toe R.	Water Temperature Regime	80%	VG	BCD	10	74%	G
Headwaters North Toe R.	Water Temperature Regime	80%	VG	BCD	50	74%	G
Headwaters Valley R.	Aquatic Community Composition	100%	P	A	10	99.9	P
Headwaters Valley R.	Aquatic Community Composition	100%	P	A	50	99.5	P
Headwaters Valley R.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Headwaters Valley R.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Headwaters Valley R.	Hydrologic Connectivity	4.5	F	A	10	4.3	F
Headwaters Valley R.	Hydrologic Connectivity	4.5	F	A	50	3.5	F
Headwaters Valley R.	Hydrologic Connectivity	4.5	F	BCD	10	4.4	F
Headwaters Valley R.	Hydrologic Connectivity	4.5	F	BCD	50	4.1	F
Headwaters Valley R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Headwaters Valley R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Headwaters Valley R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Headwaters Valley R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Headwaters Valley R.	Nonpoint Source Pollution Threat	44%	G	A	10	44%	G
Headwaters Valley R.	Nonpoint Source Pollution Threat	44%	G	A	50	44%	G
Headwaters Valley R.	Nonpoint Source Pollution Threat	44%	G	BCD	10	44%	G
Headwaters Valley R.	Nonpoint Source Pollution Threat	44%	G	BCD	50	44%	G
Headwaters Valley R.	Sedimentation Risk	0.6	G	A	10	0.57	G
Headwaters Valley R.	Sedimentation Risk	0.6	G	A	50	0.43	G
Headwaters Valley R.	Sedimentation Risk	0.6	G	BCD	10	0.59	G
Headwaters Valley R.	Sedimentation Risk	0.6	G	BCD	50	0.55	G
Headwaters Valley R.	Water Temperature Regime	92%	VG	A	10	29%	F
Headwaters Valley R.	Water Temperature Regime	92%	VG	A	50	29%	F
Headwaters Valley R.	Water Temperature Regime	92%	VG	BCD	10	29%	F
Headwaters Valley R.	Water Temperature Regime	92%	VG	BCD	50	29%	F
Headwaters West Fork Chattooga R.	Aquatic Community Composition	48%	G	A	10	48.09	G
Headwaters West Fork Chattooga R.	Aquatic Community Composition	48%	G	A	50	47.69	G
Headwaters West Fork Chattooga R.	Aquatic Community Composition	48%	G	BCD	10	48.09	G
Headwaters West Fork Chattooga R.	Aquatic Community Composition	48%	G	BCD	50	47.69	G
Headwaters West Fork Chattooga R.	Hydrologic Connectivity	1.2	G	A	10	1	G
Headwaters West Fork	Hydrologic Connectivity	1.2	G	A	50	0.2	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Chattooga R.							
Headwaters West Fork Chattooga R.	Hydrologic Connectivity	1.2	G	BCD	10	1.1	G
Headwaters West Fork Chattooga R.	Hydrologic Connectivity	1.2	G	BCD	50	0.9	G
Headwaters West Fork Chattooga R.	Nonpoint Source Pollution Threat	24%	VG	A	10	24%	VG
Headwaters West Fork Chattooga R.	Nonpoint Source Pollution Threat	24%	VG	A	50	24%	VG
Headwaters West Fork Chattooga R.	Nonpoint Source Pollution Threat	24%	VG	BCD	10	24%	VG
Headwaters West Fork Chattooga R.	Nonpoint Source Pollution Threat	24%	VG	BCD	50	24%	VG
Headwaters West Fork Chattooga R.	Point Source Pollution Threat	3	P	A	10	3	P
Headwaters West Fork Chattooga R.	Point Source Pollution Threat	3	P	A	50	3	P
Headwaters West Fork Chattooga R.	Point Source Pollution Threat	3	P	BCD	10	3	P
Headwaters West Fork Chattooga R.	Point Source Pollution Threat	3	P	BCD	50	3	P
Headwaters West Fork Chattooga R.	Sedimentation Risk	0.7	G	A	10	0.67	G
Headwaters West Fork Chattooga R.	Sedimentation Risk	0.7	G	A	50	0.53	G
Headwaters West Fork Chattooga R.	Sedimentation Risk	0.7	G	BCD	10	0.69	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Headwaters West Fork Chattooga R.	Sedimentation Risk	0.7	G	BCD	50	0.65	G
Headwaters West Fork Chattooga R.	Water Temperature Regime	91%	VG	A	10	77%	VG
Headwaters West Fork Chattooga R.	Water Temperature Regime	91%	VG	A	50	77%	VG
Headwaters West Fork Chattooga R.	Water Temperature Regime	91%	VG	BCD	10	77%	VG
Headwaters West Fork Chattooga R.	Water Temperature Regime	91%	VG	BCD	50	77%	VG
Hiwassee L.-Hiwassee R.	Aquatic Community Composition	0%	VG	A	10	0	VG
Hiwassee L.-Hiwassee R.	Aquatic Community Composition	0%	VG	A	50	0	VG
Hiwassee L.-Hiwassee R.	Aquatic Community Composition	0%	VG	BCD	10	0	VG
Hiwassee L.-Hiwassee R.	Aquatic Community Composition	0%	VG	BCD	50	0	VG
Hiwassee L.-Hiwassee R.	Hydrologic Connectivity	6	P	A	10	5.8	P
Hiwassee L.-Hiwassee R.	Hydrologic Connectivity	6	P	A	50	5	P
Hiwassee L.-Hiwassee R.	Hydrologic Connectivity	6	P	BCD	10	5.9	P
Hiwassee L.-Hiwassee R.	Hydrologic Connectivity	6	P	BCD	50	5.6	P
Hiwassee L.-Hiwassee R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Hiwassee L.-Hiwassee R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Hiwassee L.-Hiwassee R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Hiwassee L.-Hiwassee R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Hiwassee L.-Hiwassee R.	Nonpoint Source Pollution Threat	69%	F	A	10	69%	F
Hiwassee L.-Hiwassee R.	Nonpoint Source Pollution Threat	69%	F	A	50	69%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Hiwassee L.-Hiwassee R.	Nonpoint Source Pollution Threat	69%	F	BCD	10	69%	F
Hiwassee L.-Hiwassee R.	Nonpoint Source Pollution Threat	69%	F	BCD	50	69%	F
Hiwassee L.-Hiwassee R.	Sedimentation Risk	0.5	G	A	10	0.47	G
Hiwassee L.-Hiwassee R.	Sedimentation Risk	0.5	G	A	50	0.33	VG
Hiwassee L.-Hiwassee R.	Sedimentation Risk	0.5	G	BCD	10	0.49	G
Hiwassee L.-Hiwassee R.	Sedimentation Risk	0.5	G	BCD	50	0.45	G
Hiwassee L.-Hiwassee R.	Water Temperature Regime	74%	G	A	10	37%	F
Hiwassee L.-Hiwassee R.	Water Temperature Regime	74%	G	A	50	37%	F
Hiwassee L.-Hiwassee R.	Water Temperature Regime	74%	G	BCD	10	37%	F
Hiwassee L.-Hiwassee R.	Water Temperature Regime	74%	G	BCD	50	37%	F
Hollow Poplar C.-Nolichucky R.	Aquatic Community Composition	83%	P	A	10	82.71	P
Hollow Poplar C.-Nolichucky R.	Aquatic Community Composition	83%	P	A	50	82.31	P
Hollow Poplar C.-Nolichucky R.	Aquatic Community Composition	83%	P	BCD	10	82.71	P
Hollow Poplar C.-Nolichucky R.	Aquatic Community Composition	83%	P	BCD	50	82.31	P
Hollow Poplar C.-Nolichucky R.	Hydrologic Connectivity	1	G	A	10	0.8	VG
Hollow Poplar C.-Nolichucky R.	Hydrologic Connectivity	1	G	A	50	0	VG
Hollow Poplar C.-Nolichucky R.	Hydrologic Connectivity	1	G	BCD	10	0.9	G
Hollow Poplar C.-Nolichucky R.	Hydrologic Connectivity	1	G	BCD	50	0.6	VG
Hollow Poplar C.-Nolichucky R.	Nonpoint Source Pollution Threat	66%	F	A	10	66%	F
Hollow Poplar C.-Nolichucky R.	Nonpoint Source Pollution Threat	66%	F	A	50	66%	F
Hollow Poplar C.-Nolichucky R.	Nonpoint Source Pollution Threat	66%	F	BCD	10	66%	F
Hollow Poplar C.-Nolichucky R.	Nonpoint Source Pollution Threat	66%	F	BCD	50	66%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Hollow Poplar C.-Nolichucky R.	Point Source Pollution Threat	1	G	A	10	1	G
Hollow Poplar C.-Nolichucky R.	Point Source Pollution Threat	1	G	A	50	1	G
Hollow Poplar C.-Nolichucky R.	Point Source Pollution Threat	1	G	BCD	10	1	G
Hollow Poplar C.-Nolichucky R.	Point Source Pollution Threat	1	G	BCD	50	1	G
Hollow Poplar C.-Nolichucky R.	Sedimentation Risk	0.8	F	A	10	0.77	F
Hollow Poplar C.-Nolichucky R.	Sedimentation Risk	0.8	F	A	50	0.63	G
Hollow Poplar C.-Nolichucky R.	Sedimentation Risk	0.8	F	BCD	10	0.79	F
Hollow Poplar C.-Nolichucky R.	Sedimentation Risk	0.8	F	BCD	50	0.75	F
Hollow Poplar C.-Nolichucky R.	Water Temperature Regime	92%	VG	A	10	80%	VG
Hollow Poplar C.-Nolichucky R.	Water Temperature Regime	92%	VG	A	50	80%	VG
Hollow Poplar C.-Nolichucky R.	Water Temperature Regime	92%	VG	BCD	10	80%	VG
Hollow Poplar C.-Nolichucky R.	Water Temperature Regime	92%	VG	BCD	50	80%	VG
Horsepasture R.	Aquatic Community Composition	92%	P	A	10	91.49	P
Horsepasture R.	Aquatic Community Composition	92%	P	A	50	91.09	P
Horsepasture R.	Aquatic Community Composition	92%	P	BCD	10	91.49	P
Horsepasture R.	Aquatic Community Composition	92%	P	BCD	50	91.09	P
Horsepasture R.	Hydrologic Connectivity	1.3	G	A	10	1.1	G
Horsepasture R.	Hydrologic Connectivity	1.3	G	A	50	0.3	VG
Horsepasture R.	Hydrologic Connectivity	1.3	G	BCD	10	1.2	G
Horsepasture R.	Hydrologic Connectivity	1.3	G	BCD	50	0.9	G
Horsepasture R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Horsepasture R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Horsepasture R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Horsepasture R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Horsepasture R.	Nonpoint Source Pollution Threat	94%	P	A	10	94%	P
Horsepasture R.	Nonpoint Source Pollution Threat	94%	P	A	50	94%	P
Horsepasture R.	Nonpoint Source Pollution Threat	94%	P	BCD	10	94%	P
Horsepasture R.	Nonpoint Source Pollution Threat	94%	P	BCD	50	94%	P
Horsepasture R.	Point Source Pollution Threat	4	P	A	10	4	P
Horsepasture R.	Point Source Pollution Threat	4	P	A	50	4	P
Horsepasture R.	Point Source Pollution Threat	4	P	BCD	10	4	P
Horsepasture R.	Point Source Pollution Threat	4	P	BCD	50	4	P
Horsepasture R.	Sedimentation Risk	0	VG	A	10	0	VG
Horsepasture R.	Sedimentation Risk	0	VG	A	50	0	VG
Horsepasture R.	Sedimentation Risk	0	VG	BCD	10	0	VG
Horsepasture R.	Sedimentation Risk	0	VG	BCD	50	0	VG
Horsepasture R.	Water Temperature Regime	96%	VG	A	10	46%	F
Horsepasture R.	Water Temperature Regime	96%	VG	A	50	46%	F
Horsepasture R.	Water Temperature Regime	96%	VG	BCD	10	46%	F
Horsepasture R.	Water Temperature Regime	96%	VG	BCD	50	46%	F
Irish C.	Aquatic Community Composition	100%	P	A	10	99.9	P
Irish C.	Aquatic Community Composition	100%	P	A	50	99.5	P
Irish C.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Irish C.	Aquatic Community Composition	100%	P	BCD	50	99.5	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Irish C.	Hydrologic Connectivity	0.9	G	A	10	0.7	VG
Irish C.	Hydrologic Connectivity	0.9	G	A	50	0	VG
Irish C.	Hydrologic Connectivity	0.9	G	BCD	10	0.9	G
Irish C.	Hydrologic Connectivity	0.9	G	BCD	50	0.6	VG
Irish C.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Irish C.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Irish C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Irish C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Irish C.	Nonpoint Source Pollution Threat	63%	F	A	10	63%	F
Irish C.	Nonpoint Source Pollution Threat	63%	F	A	50	63%	F
Irish C.	Nonpoint Source Pollution Threat	63%	F	BCD	10	63%	F
Irish C.	Nonpoint Source Pollution Threat	63%	F	BCD	50	63%	F
Irish C.	Sedimentation Risk	0.4	G	A	10	0.37	G
Irish C.	Sedimentation Risk	0.4	G	A	50	0.23	VG
Irish C.	Sedimentation Risk	0.4	G	BCD	10	0.39	G
Irish C.	Sedimentation Risk	0.4	G	BCD	50	0.35	G
Irish C.	Water Temperature Regime	84%	VG	A	10	61%	G
Irish C.	Water Temperature Regime	84%	VG	A	50	61%	G
Irish C.	Water Temperature Regime	84%	VG	BCD	10	61%	G
Irish C.	Water Temperature Regime	84%	VG	BCD	50	61%	G
L. Cheoah-Little Tennessee R.	Aquatic Community Composition	100%	P	A	10	99.9	P
L. Cheoah-Little Tennessee R.	Aquatic Community Composition	100%	P	A	50	99.5	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
L. Cheoah-Little Tennessee R.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
L. Cheoah-Little Tennessee R.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
L. Cheoah-Little Tennessee R.	Hydrologic Connectivity	0.1	VG	A	10	0	VG
L. Cheoah-Little Tennessee R.	Hydrologic Connectivity	0.1	VG	A	50	0	VG
L. Cheoah-Little Tennessee R.	Hydrologic Connectivity	0.1	VG	BCD	10	0	VG
L. Cheoah-Little Tennessee R.	Hydrologic Connectivity	0.1	VG	BCD	50	0	VG
L. Cheoah-Little Tennessee R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
L. Cheoah-Little Tennessee R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
L. Cheoah-Little Tennessee R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
L. Cheoah-Little Tennessee R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
L. Cheoah-Little Tennessee R.	Nonpoint Source Pollution Threat	78%	P	A	10	78%	P
L. Cheoah-Little Tennessee R.	Nonpoint Source Pollution Threat	78%	P	A	50	78%	P
L. Cheoah-Little Tennessee R.	Nonpoint Source Pollution Threat	78%	P	BCD	10	78%	P
L. Cheoah-Little Tennessee R.	Nonpoint Source Pollution Threat	78%	P	BCD	50	78%	P
L. Cheoah-Little Tennessee R.	Sedimentation Risk	0.6	G	A	10	0.57	G
L. Cheoah-Little Tennessee R.	Sedimentation Risk	0.6	G	A	50	0.43	G
L. Cheoah-Little Tennessee R.	Sedimentation Risk	0.6	G	BCD	10	0.59	G
L. Cheoah-Little Tennessee R.	Sedimentation Risk	0.6	G	BCD	50	0.55	G
L. Cheoah-Little Tennessee R.	Water Temperature Regime	94%	VG	A	10	30%	F
L. Cheoah-Little Tennessee R.	Water Temperature Regime	94%	VG	A	50	30%	F
L. Cheoah-Little Tennessee R.	Water Temperature Regime	94%	VG	BCD	10	30%	F
L. Cheoah-Little Tennessee R.	Water Temperature Regime	94%	VG	BCD	50	30%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
L. Cherokee-Persimmon C.	Aquatic Community Composition	0%	VG	A	10	0	VG
L. Cherokee-Persimmon C.	Aquatic Community Composition	0%	VG	A	50	0	VG
L. Cherokee-Persimmon C.	Aquatic Community Composition	0%	VG	BCD	10	0	VG
L. Cherokee-Persimmon C.	Aquatic Community Composition	0%	VG	BCD	50	0	VG
L. Cherokee-Persimmon C.	Hydrologic Connectivity	1.5	G	A	10	1.3	G
L. Cherokee-Persimmon C.	Hydrologic Connectivity	1.5	G	A	50	0.5	VG
L. Cherokee-Persimmon C.	Hydrologic Connectivity	1.5	G	BCD	10	1.5	G
L. Cherokee-Persimmon C.	Hydrologic Connectivity	1.5	G	BCD	50	1.2	G
L. Cherokee-Persimmon C.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
L. Cherokee-Persimmon C.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
L. Cherokee-Persimmon C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
L. Cherokee-Persimmon C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
L. Cherokee-Persimmon C.	Nonpoint Source Pollution Threat	80%	P	A	10	80%	P
L. Cherokee-Persimmon C.	Nonpoint Source Pollution Threat	80%	P	A	50	80%	P
L. Cherokee-Persimmon C.	Nonpoint Source Pollution Threat	80%	P	BCD	10	80%	P
L. Cherokee-Persimmon C.	Nonpoint Source Pollution Threat	80%	P	BCD	50	80%	P
L. Cherokee-Persimmon C.	Sedimentation Risk	0.4	G	A	10	0.37	G
L. Cherokee-Persimmon C.	Sedimentation Risk	0.4	G	A	50	0.23	VG
L. Cherokee-Persimmon C.	Sedimentation Risk	0.4	G	BCD	10	0.39	G
L. Cherokee-Persimmon C.	Sedimentation Risk	0.4	G	BCD	50	0.65	G
L. Cherokee-Persimmon C.	Water Temperature Regime	82%	VG	A	10	47%	F
L. Cherokee-Persimmon C.	Water Temperature Regime	82%	VG	A	50	47%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
L. Cherokee-Persimmon C.	Water Temperature Regime	82%	VG	BCD	10	47%	F
L. Cherokee-Persimmon C.	Water Temperature Regime	82%	VG	BCD	50	47%	F
L. Emory-Little Tennessee R.	Aquatic Community Composition	100%	P	A	10	99.9	P
L. Emory-Little Tennessee R.	Aquatic Community Composition	100%	P	A	50	99.5	P
L. Emory-Little Tennessee R.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
L. Emory-Little Tennessee R.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
L. Emory-Little Tennessee R.	Hydrologic Connectivity	4	F	A	10	3.8	F
L. Emory-Little Tennessee R.	Hydrologic Connectivity	4	F	A	50	3	F
L. Emory-Little Tennessee R.	Hydrologic Connectivity	4	F	BCD	10	4	F
L. Emory-Little Tennessee R.	Hydrologic Connectivity	4	F	BCD	50	3.7	F
L. Emory-Little Tennessee R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
L. Emory-Little Tennessee R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
L. Emory-Little Tennessee R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
L. Emory-Little Tennessee R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
L. Emory-Little Tennessee R.	Nonpoint Source Pollution Threat	91%	P	A	10	91%	P
L. Emory-Little Tennessee R.	Nonpoint Source Pollution Threat	91%	P	A	50	91%	P
L. Emory-Little Tennessee R.	Nonpoint Source Pollution Threat	91%	P	BCD	10	91%	P
L. Emory-Little Tennessee R.	Nonpoint Source Pollution Threat	91%	P	BCD	50	91%	P
L. Emory-Little Tennessee R.	Point Source Pollution Threat	2	F	A	10	2	F
L. Emory-Little Tennessee R.	Point Source Pollution Threat	2	F	A	50	2	F
L. Emory-Little Tennessee R.	Point Source Pollution Threat	2	F	BCD	10	2	F
L. Emory-Little Tennessee R.	Point Source Pollution Threat	2	F	BCD	50	2	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
L. Emory-Little Tennessee R.	Sedimentation Risk	0.7	G	A	10	0.67	G
L. Emory-Little Tennessee R.	Sedimentation Risk	0.7	G	A	50	0.53	G
L. Emory-Little Tennessee R.	Sedimentation Risk	0.7	G	BCD	10	0.69	G
L. Emory-Little Tennessee R.	Sedimentation Risk	0.7	G	BCD	50	0.65	G
L. Emory-Little Tennessee R.	Water Temperature Regime	64%	G	A	10	35%	F
L. Emory-Little Tennessee R.	Water Temperature Regime	64%	G	A	50	35%	F
L. Emory-Little Tennessee R.	Water Temperature Regime	64%	G	BCD	10	35%	F
L. Emory-Little Tennessee R.	Water Temperature Regime	64%	G	BCD	50	35%	F
L. James-Catawba R.	Aquatic Community Composition	100%	P	A	10	99.9	P
L. James-Catawba R.	Aquatic Community Composition	100%	P	A	50	99.5	P
L. James-Catawba R.	Aquatic Community Composition	100%	P	BCD	10	99.85	P
L. James-Catawba R.	Aquatic Community Composition	100%	P	BCD	50	99.25	P
L. James-Catawba R.	Hydrologic Connectivity	0.6	VG	A	10	0.4	VG
L. James-Catawba R.	Hydrologic Connectivity	0.6	VG	A	50	0	VG
L. James-Catawba R.	Hydrologic Connectivity	0.6	VG	BCD	10	0	VG
L. James-Catawba R.	Hydrologic Connectivity	0.6	VG	BCD	50	0	VG
L. James-Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
L. James-Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
L. James-Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
L. James-Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
L. James-Catawba R.	Nonpoint Source Pollution Threat	77%	P	A	10	77%	P
L. James-Catawba R.	Nonpoint Source Pollution Threat	77%	P	A	50	77%	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
L. James-Catawba R.	Nonpoint Source Pollution Threat	77%	P	BCD	10	77%	P
L. James-Catawba R.	Nonpoint Source Pollution Threat	77%	P	BCD	50	77%	P
L. James-Catawba R.	Point Source Pollution Threat	1	G	A	10	1	G
L. James-Catawba R.	Point Source Pollution Threat	1	G	A	50	1	G
L. James-Catawba R.	Point Source Pollution Threat	1	G	BCD	10	1	G
L. James-Catawba R.	Point Source Pollution Threat	1	G	BCD	50	1	G
L. James-Catawba R.	Sedimentation Risk	0	VG	A	10	0	VG
L. James-Catawba R.	Sedimentation Risk	0	VG	A	50	0	VG
L. James-Catawba R.	Sedimentation Risk	0	VG	BCD	10	0	VG
L. James-Catawba R.	Sedimentation Risk	0	VG	BCD	50	0	VG
L. James-Catawba R.	Water Temperature Regime	68%	G	A	10	33%	F
L. James-Catawba R.	Water Temperature Regime	68%	G	A	50	33%	F
L. James-Catawba R.	Water Temperature Regime	68%	G	BCD	10	33%	F
L. James-Catawba R.	Water Temperature Regime	68%	G	BCD	50	33%	F
L. Logan-West Fork Pigeon R.	Aquatic Community Composition	52%	F	A	10	52.26	F
L. Logan-West Fork Pigeon R.	Aquatic Community Composition	52%	F	A	50	51.86	F
L. Logan-West Fork Pigeon R.	Aquatic Community Composition	52%	F	BCD	10	52.26	F
L. Logan-West Fork Pigeon R.	Aquatic Community Composition	52%	F	BCD	50	51.86	F
L. Logan-West Fork Pigeon R.	Hydrologic Connectivity	0.7	VG	A	10	0.5	VG
L. Logan-West Fork Pigeon R.	Hydrologic Connectivity	0.7	VG	A	50	0	VG
L. Logan-West Fork Pigeon R.	Hydrologic Connectivity	0.7	VG	BCD	10	0.6	VG
L. Logan-West Fork Pigeon R.	Hydrologic Connectivity	0.7	VG	BCD	50	0.3	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
L. Logan-West Fork Pigeon R.	Nonpoint Source Pollution Threat	16%	VG	A	10	16%	VG
L. Logan-West Fork Pigeon R.	Nonpoint Source Pollution Threat	16%	VG	A	50	16%	VG
L. Logan-West Fork Pigeon R.	Nonpoint Source Pollution Threat	16%	VG	BCD	10	16%	VG
L. Logan-West Fork Pigeon R.	Nonpoint Source Pollution Threat	16%	VG	BCD	50	16%	VG
L. Logan-West Fork Pigeon R.	Sedimentation Risk	0.5	G	A	10	0.47	G
L. Logan-West Fork Pigeon R.	Sedimentation Risk	0.5	G	A	50	0.33	VG
L. Logan-West Fork Pigeon R.	Sedimentation Risk	0.5	G	BCD	10	0.49	G
L. Logan-West Fork Pigeon R.	Sedimentation Risk	0.5	G	BCD	50	0.45	G
L. Logan-West Fork Pigeon R.	Water Temperature Regime	95%	VG	A	10	33%	F
L. Logan-West Fork Pigeon R.	Water Temperature Regime	95%	VG	A	50	33%	F
L. Logan-West Fork Pigeon R.	Water Temperature Regime	95%	VG	BCD	10	33%	F
L. Logan-West Fork Pigeon R.	Water Temperature Regime	95%	VG	BCD	50	33%	F
Little East Fork Pigeon R.-West Fork Pigeon R.	Aquatic Community Composition	31%	G	A	10	31.37	G
Little East Fork Pigeon R.-West Fork Pigeon R.	Aquatic Community Composition	31%	G	A	50	30.97	G
Little East Fork Pigeon R.-West Fork Pigeon R.	Aquatic Community Composition	31%	G	BCD	10	31.37	G
Little East Fork Pigeon R.-West Fork Pigeon R.	Aquatic Community Composition	31%	G	BCD	50	30.97	G
Little East Fork Pigeon R.-West Fork Pigeon R.	Hydrologic Connectivity	0.9	G	A	10	0.7	VG
Little East Fork Pigeon R.-West Fork Pigeon R.	Hydrologic Connectivity	0.9	G	A	50	0	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Little East Fork Pigeon R.-West Fork Pigeon R.	Hydrologic Connectivity	0.9	G	BCD	10	0.8	VG
Little East Fork Pigeon R.-West Fork Pigeon R.	Hydrologic Connectivity	0.9	G	BCD	50	0.5	VG
Little East Fork Pigeon R.-West Fork Pigeon R.	Nonpoint Source Pollution Threat	60%	F	A	10	60%	F
Little East Fork Pigeon R.-West Fork Pigeon R.	Nonpoint Source Pollution Threat	60%	F	A	50	60%	F
Little East Fork Pigeon R.-West Fork Pigeon R.	Nonpoint Source Pollution Threat	60%	F	BCD	10	60%	F
Little East Fork Pigeon R.-West Fork Pigeon R.	Nonpoint Source Pollution Threat	60%	F	BCD	50	60%	F
Little East Fork Pigeon R.-West Fork Pigeon R.	Point Source Pollution Threat	1	G	A	10	1	G
Little East Fork Pigeon R.-West Fork Pigeon R.	Point Source Pollution Threat	1	G	A	50	1	G
Little East Fork Pigeon R.-West Fork Pigeon R.	Point Source Pollution Threat	1	G	BCD	10	1	G
Little East Fork Pigeon R.-West Fork Pigeon R.	Point Source Pollution Threat	1	G	BCD	50	1	G
Little East Fork Pigeon R.-West Fork Pigeon R.	Sedimentation Risk	0.5	G	A	10	0.47	G
Little East Fork Pigeon R.-West Fork Pigeon R.	Sedimentation Risk	0.5	G	A	50	0.33	VG
Little East Fork Pigeon R.-West Fork Pigeon R.	Sedimentation Risk	0.5	G	BCD	10	0.49	G
Little East Fork Pigeon R.-West	Sedimentation Risk	0.5	G	BCD	50	0.45	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Fork Pigeon R.							
Little East Fork Pigeon R.-West Fork Pigeon R.	Water Temperature Regime	85%	VG	A	10	82%	VG
Little East Fork Pigeon R.-West Fork Pigeon R.	Water Temperature Regime	85%	VG	A	50	82%	VG
Little East Fork Pigeon R.-West Fork Pigeon R.	Water Temperature Regime	85%	VG	BCD	10	82%	VG
Little East Fork Pigeon R.-West Fork Pigeon R.	Water Temperature Regime	85%	VG	BCD	50	82%	VG
Little Rock C.	Aquatic Community Composition	71%	F	A	10	70.5	F
Little Rock C.	Aquatic Community Composition	71%	F	A	50	70.1	F
Little Rock C.	Aquatic Community Composition	71%	F	BCD	10	70.5	F
Little Rock C.	Aquatic Community Composition	71%	F	BCD	50	70.1	F
Little Rock C.	Hydrologic Connectivity	0.6	VG	A	10	0.4	VG
Little Rock C.	Hydrologic Connectivity	0.6	VG	A	50	0	VG
Little Rock C.	Hydrologic Connectivity	0.6	VG	BCD	10	0.5	VG
Little Rock C.	Hydrologic Connectivity	0.6	VG	BCD	50	0.3	VG
Little Rock C.	Nonpoint Source Pollution Threat	83%	P	A	10	83%	P
Little Rock C.	Nonpoint Source Pollution Threat	83%	P	A	50	83%	P
Little Rock C.	Nonpoint Source Pollution Threat	83%	P	BCD	10	83%	P
Little Rock C.	Nonpoint Source Pollution Threat	83%	P	BCD	50	83%	P
Little Rock C.	Sedimentation Risk	0	VG	A	10	0	VG
Little Rock C.	Sedimentation Risk	0	VG	A	50	0	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Little Rock C.	Sedimentation Risk	0	VG	BCD	10	0	VG
Little Rock C.	Sedimentation Risk	0	VG	BCD	50	0	VG
Little Rock C.	Water Temperature Regime	88%	VG	A	10	8%	P
Little Rock C.	Water Temperature Regime	88%	VG	A	50	8%	P
Little Rock C.	Water Temperature Regime	88%	VG	BCD	10	8%	P
Little Rock C.	Water Temperature Regime	88%	VG	BCD	50	8%	P
Lower Big Laurel C.	Aquatic Community Composition	100%	P	A	10	99.9	P
Lower Big Laurel C.	Aquatic Community Composition	100%	P	A	50	99.5	P
Lower Big Laurel C.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Lower Big Laurel C.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Lower Big Laurel C.	Hydrologic Connectivity	0.4	VG	A	10	0.2	VG
Lower Big Laurel C.	Hydrologic Connectivity	0.4	VG	A	50	0	VG
Lower Big Laurel C.	Hydrologic Connectivity	0.4	VG	BCD	10	0.3	VG
Lower Big Laurel C.	Hydrologic Connectivity	0.4	VG	BCD	50	0.1	VG
Lower Big Laurel C.	Invasive Sp. Abundance: Corbicula	present		A	10	present	P
Lower Big Laurel C.	Invasive Sp. Abundance: Corbicula	present		A	50	present	P
Lower Big Laurel C.	Invasive Sp. Abundance: Corbicula	present		BCD	10	Present	P
Lower Big Laurel C.	Invasive Sp. Abundance: Corbicula	present		BCD	50	Present	P
Lower Big Laurel C.	Nonpoint Source Pollution Threat	79%	P	A	10	79%	P
Lower Big Laurel C.	Nonpoint Source Pollution Threat	79%	P	A	50	79%	P
Lower Big Laurel C.	Nonpoint Source Pollution Threat	79%	P	BCD	10	79%	P
Lower Big Laurel C.	Nonpoint Source Pollution Threat	79%	P	BCD	50	79%	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Lower Big Laurel C.	Sedimentation Risk	1.2	F	A	10	1.17	F
Lower Big Laurel C.	Sedimentation Risk	1.2	F	A	50	1.03	F
Lower Big Laurel C.	Sedimentation Risk	1.2	F	BCD	10	1.19	F
Lower Big Laurel C.	Sedimentation Risk	1.2	F	BCD	50	1.15	F
Lower Big Laurel C.	Water Temperature Regime	91%	VG	A	10	9%	P
Lower Big Laurel C.	Water Temperature Regime	91%	VG	A	50	9%	P
Lower Big Laurel C.	Water Temperature Regime	91%	VG	BCD	10	9%	P
Lower Big Laurel C.	Water Temperature Regime	91%	VG	BCD	50	9%	P
Lower Cane R.	Aquatic Community Composition	32%	G	A	10	32.13	G
Lower Cane R.	Aquatic Community Composition	32%	G	A	50	31.73	G
Lower Cane R.	Aquatic Community Composition	32%	G	BCD	10	32.13	G
Lower Cane R.	Aquatic Community Composition	32%	G	BCD	50	31.73	G
Lower Cane R.	Hydrologic Connectivity	1.1	G	A	10	0.9	G
Lower Cane R.	Hydrologic Connectivity	1.1	G	A	50	0.1	VG
Lower Cane R.	Hydrologic Connectivity	1.1	G	BCD	10	1	G
Lower Cane R.	Hydrologic Connectivity	1.1	G	BCD	50	0.8	VG
Lower Cane R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Lower Cane R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Lower Cane R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Lower Cane R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Lower Cane R.	Nonpoint Source Pollution Threat	73%	F	A	10	73%	F
Lower Cane R.	Nonpoint Source Pollution Threat	73%	F	A	50	73%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Lower Cane R.	Nonpoint Source Pollution Threat	73%	F	BCD	10	73%	F
Lower Cane R.	Nonpoint Source Pollution Threat	73%	F	BCD	50	73%	F
Lower Cane R.	Sedimentation Risk	1	F	A	10	0.97	F
Lower Cane R.	Sedimentation Risk	1	F	A	50	0.83	F
Lower Cane R.	Sedimentation Risk	1	F	BCD	10	0.99	F
Lower Cane R.	Sedimentation Risk	1	F	BCD	50	0.95	F
Lower Cane R.	Water Temperature Regime	91%	VG	A	10	39%	F
Lower Cane R.	Water Temperature Regime	91%	VG	A	50	39%	F
Lower Cane R.	Water Temperature Regime	91%	VG	BCD	10	39%	F
Lower Cane R.	Water Temperature Regime	91%	VG	BCD	50	39%	F
Lower Cartoogechaye C.	Aquatic Community Composition	100%	P	A	10	99.9	P
Lower Cartoogechaye C.	Aquatic Community Composition	100%	P	A	50	99.5	P
Lower Cartoogechaye C.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Lower Cartoogechaye C.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Lower Cartoogechaye C.	Hydrologic Connectivity	1.7	G	A	10	1.5	G
Lower Cartoogechaye C.	Hydrologic Connectivity	1.7	G	A	50	0.7	VG
Lower Cartoogechaye C.	Hydrologic Connectivity	1.7	G	BCD	10	1.6	G
Lower Cartoogechaye C.	Hydrologic Connectivity	1.7	G	BCD	50	1.3	G
Lower Cartoogechaye C.	Nonpoint Source Pollution Threat	55%	F	A	10	55%	F
Lower Cartoogechaye C.	Nonpoint Source Pollution Threat	55%	F	A	50	55%	F
Lower Cartoogechaye C.	Nonpoint Source Pollution Threat	55%	F	BCD	10	55%	F
Lower Cartoogechaye C.	Nonpoint Source Pollution Threat	55%	F	BCD	50	55%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Lower Cartoogechaye C.	Sedimentation Risk	0.8	F	A	10	0.77	F
Lower Cartoogechaye C.	Sedimentation Risk	0.8	F	A	50	0.63	G
Lower Cartoogechaye C.	Sedimentation Risk	0.8	F	BCD	10	0.79	F
Lower Cartoogechaye C.	Sedimentation Risk	0.8	F	BCD	50	0.75	F
Lower Cartoogechaye C.	Water Temperature Regime	78%	VG	A	10	86%	VG
Lower Cartoogechaye C.	Water Temperature Regime	78%	VG	A	50	86%	VG
Lower Cartoogechaye C.	Water Temperature Regime	78%	VG	BCD	10	86%	VG
Lower Cartoogechaye C.	Water Temperature Regime	78%	VG	BCD	50	86%	VG
Lower Cataloochee C.	Aquatic Community Composition	100%	P	A	10	99.9	P
Lower Cataloochee C.	Aquatic Community Composition	100%	P	A	50	99.5	P
Lower Cataloochee C.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Lower Cataloochee C.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Lower Cataloochee C.	Hydrologic Connectivity	3.3	F	A	10	3.1	F
Lower Cataloochee C.	Hydrologic Connectivity	3.3	F	A	50	2.3	G
Lower Cataloochee C.	Hydrologic Connectivity	3.3	F	BCD	10	3.2	F
Lower Cataloochee C.	Hydrologic Connectivity	3.3	F	BCD	50	2.9	F
Lower Cataloochee C.	Nonpoint Source Pollution Threat	91%	P	A	10	91%	P
Lower Cataloochee C.	Nonpoint Source Pollution Threat	91%	P	A	50	91%	P
Lower Cataloochee C.	Nonpoint Source Pollution Threat	91%	P	BCD	10	91%	P
Lower Cataloochee C.	Nonpoint Source Pollution Threat	91%	P	BCD	50	91%	P
Lower Cataloochee C.	Sedimentation Risk	0	VG	A	10	0	VG
Lower Cataloochee C.	Sedimentation Risk	0	VG	A	50	0	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Lower Cataloochee C.	Sedimentation Risk	0	VG	BCD	10	0	VG
Lower Cataloochee C.	Sedimentation Risk	0	VG	BCD	50	0	VG
Lower Cataloochee C.	Water Temperature Regime	98%	VG	A	10	21%	P
Lower Cataloochee C.	Water Temperature Regime	98%	VG	A	50	21%	P
Lower Cataloochee C.	Water Temperature Regime	98%	VG	BCD	10	21%	P
Lower Cataloochee C.	Water Temperature Regime	98%	VG	BCD	50	21%	P
Lower Cullasaja R.	Aquatic Community Composition	64%	F	A	10	63.59	F
Lower Cullasaja R.	Aquatic Community Composition	64%	F	A	50	63.19	F
Lower Cullasaja R.	Aquatic Community Composition	64%	F	BCD	10	63.54	F
Lower Cullasaja R.	Aquatic Community Composition	64%	F	BCD	50	62.94	F
Lower Cullasaja R.	Hydrologic Connectivity	1.1	G	A	10	0.9	G
Lower Cullasaja R.	Hydrologic Connectivity	1.1	G	A	50	0.1	VG
Lower Cullasaja R.	Hydrologic Connectivity	1.1	G	BCD	10	0.5	VG
Lower Cullasaja R.	Hydrologic Connectivity	1.1	G	BCD	50	0	VG
Lower Cullasaja R.	Nonpoint Source Pollution Threat	68%	F	A	10	68%	F
Lower Cullasaja R.	Nonpoint Source Pollution Threat	68%	F	A	50	68%	F
Lower Cullasaja R.	Nonpoint Source Pollution Threat	68%	F	BCD	10	68%	F
Lower Cullasaja R.	Nonpoint Source Pollution Threat	68%	F	BCD	50	68%	F
Lower Cullasaja R.	Point Source Pollution Threat	1	G	A	10	1	G
Lower Cullasaja R.	Point Source Pollution Threat	1	G	A	50	1	G
Lower Cullasaja R.	Point Source Pollution Threat	1	G	BCD	10	1	G
Lower Cullasaja R.	Point Source Pollution Threat	1	G	BCD	50	1	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Lower Cullasaja R.	Sedimentation Risk	0.6	G	A	10	0.57	G
Lower Cullasaja R.	Sedimentation Risk	0.6	G	A	50	0.43	G
Lower Cullasaja R.	Sedimentation Risk	0.6	G	BCD	10	0.51	G
Lower Cullasaja R.	Sedimentation Risk	0.6	G	BCD	50	0.16	VG
Lower Cullasaja R.	Water Temperature Regime	87%	VG	A	10	9%	P
Lower Cullasaja R.	Water Temperature Regime	87%	VG	A	50	9%	P
Lower Cullasaja R.	Water Temperature Regime	87%	VG	BCD	10	9%	P
Lower Cullasaja R.	Water Temperature Regime	87%	VG	BCD	50	9%	P
Lower Fontana L.-Little Tennessee R.	Aquatic Community Composition	100%	P	A	10	99.9	P
Lower Fontana L.-Little Tennessee R.	Aquatic Community Composition	100%	P	A	50	99.5	P
Lower Fontana L.-Little Tennessee R.	Aquatic Community Composition	100%	P	BCD	10	99.85	P
Lower Fontana L.-Little Tennessee R.	Aquatic Community Composition	100%	P	BCD	50	99.25	P
Lower Fontana L.-Little Tennessee R.	Hydrologic Connectivity	1.5	G	A	10	1.3	G
Lower Fontana L.-Little Tennessee R.	Hydrologic Connectivity	1.5	G	A	50	0.5	VG
Lower Fontana L.-Little Tennessee R.	Hydrologic Connectivity	1.5	G	BCD	10	0.9	G
Lower Fontana L.-Little Tennessee R.	Hydrologic Connectivity	1.5	G	BCD	50	0	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Lower Fontana L.-Little Tennessee R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Lower Fontana L.-Little Tennessee R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Lower Fontana L.-Little Tennessee R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Lower Fontana L.-Little Tennessee R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Lower Fontana L.-Little Tennessee R.	Nonpoint Source Pollution Threat	77%	P	A	10	77%	P
Lower Fontana L.-Little Tennessee R.	Nonpoint Source Pollution Threat	77%	P	A	50	77%	P
Lower Fontana L.-Little Tennessee R.	Nonpoint Source Pollution Threat	77%	P	BCD	10	77%	P
Lower Fontana L.-Little Tennessee R.	Nonpoint Source Pollution Threat	77%	P	BCD	50	77%	P
Lower Fontana L.-Little Tennessee R.	Sedimentation Risk	0.5	G	A	10	0.47	G
Lower Fontana L.-Little Tennessee R.	Sedimentation Risk	0.5	G	A	50	0.33	VG
Lower Fontana L.-Little Tennessee R.	Sedimentation Risk	0.5	G	BCD	10	0.41	G
Lower Fontana L.-Little Tennessee R.	Sedimentation Risk	0.5	G	BCD	50	0.06	VG
Lower Fontana L.-Little Tennessee R.	Water Temperature Regime	81%	VG	A	10	23%	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Lower Fontana L.-Little Tennessee R.	Water Temperature Regime	81%	VG	A	50	23%	P
Lower Fontana L.-Little Tennessee R.	Water Temperature Regime	81%	VG	BCD	10	23%	P
Lower Fontana L.-Little Tennessee R.	Water Temperature Regime	81%	VG	BCD	50	23%	P
Lower Hominy C.	Aquatic Community Composition	100%	P	A	10	99.9	P
Lower Hominy C.	Aquatic Community Composition	100%	P	A	50	99.5	P
Lower Hominy C.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Lower Hominy C.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Lower Hominy C.	Hydrologic Connectivity	3.9	F	A	10	3.7	F
Lower Hominy C.	Hydrologic Connectivity	3.9	F	A	50	2.9	F
Lower Hominy C.	Hydrologic Connectivity	3.9	F	BCD	10	3.8	F
Lower Hominy C.	Hydrologic Connectivity	3.9	F	BCD	50	3.6	F
Lower Hominy C.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Lower Hominy C.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Lower Hominy C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Lower Hominy C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Lower Hominy C.	Nonpoint Source Pollution Threat	91%	P	A	10	91%	P
Lower Hominy C.	Nonpoint Source Pollution Threat	91%	P	A	50	91%	P
Lower Hominy C.	Nonpoint Source Pollution Threat	91%	P	BCD	10	91%	P
Lower Hominy C.	Nonpoint Source Pollution Threat	91%	P	BCD	50	91%	P
Lower Hominy C.	Point Source Pollution Threat	1	G	A	10	1	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Lower Hominy C.	Point Source Pollution Threat	1	G	A	50	1	G
Lower Hominy C.	Point Source Pollution Threat	1	G	BCD	10	1	G
Lower Hominy C.	Point Source Pollution Threat	1	G	BCD	50	1	G
Lower Hominy C.	Sedimentation Risk	0.5	G	A	10	0.47	G
Lower Hominy C.	Sedimentation Risk	0.5	G	A	50	0.35	G
Lower Hominy C.	Sedimentation Risk	0.5	G	BCD	10	0.49	G
Lower Hominy C.	Sedimentation Risk	0.5	G	BCD	50	0.45	G
Lower Hominy C.	Water Temperature Regime	44%	F	A	10	32%	F
Lower Hominy C.	Water Temperature Regime	44%	F	A	50	32%	F
Lower Hominy C.	Water Temperature Regime	44%	F	BCD	10	32%	F
Lower Hominy C.	Water Temperature Regime	44%	F	BCD	50	32%	F
Lower Johns R.	Aquatic Community Composition	0%	VG	A	10	0	VG
Lower Johns R.	Aquatic Community Composition	0%	VG	A	50	0	VG
Lower Johns R.	Aquatic Community Composition	0%	VG	BCD	10	0	VG
Lower Johns R.	Aquatic Community Composition	0%	VG	BCD	50	0	VG
Lower Johns R.	Hydrologic Connectivity	1	G	A	10	0.8	VG
Lower Johns R.	Hydrologic Connectivity	1	G	A	50	0	VG
Lower Johns R.	Hydrologic Connectivity	1	G	BCD	10	0.3	VG
Lower Johns R.	Hydrologic Connectivity	1	G	BCD	50	0	VG
Lower Johns R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Lower Johns R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Lower Johns R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Lower Johns R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Lower Johns R.	Nonpoint Source Pollution Threat	79%	P	A	10	79%	P
Lower Johns R.	Nonpoint Source Pollution Threat	79%	P	A	50	79%	P
Lower Johns R.	Nonpoint Source Pollution Threat	79%	P	BCD	10	79%	P
Lower Johns R.	Nonpoint Source Pollution Threat	79%	P	BCD	50	79%	P
Lower Johns R.	Sedimentation Risk	0.3	VG	A	10	0.27	VG
Lower Johns R.	Sedimentation Risk	0.3	VG	A	50	0.13	VG
Lower Johns R.	Sedimentation Risk	0.3	VG	BCD	10	0.21	VG
Lower Johns R.	Sedimentation Risk	0.3	VG	BCD	50	0	VG
Lower Johns R.	Water Temperature Regime	78%	VG	A	10	9%	P
Lower Johns R.	Water Temperature Regime	78%	VG	A	50	9%	P
Lower Johns R.	Water Temperature Regime	78%	VG	BCD	10	9%	P
Lower Johns R.	Water Temperature Regime	78%	VG	BCD	50	9%	P
Lower Linville R.	Aquatic Community Composition	0%	VG	A	10	0	VG
Lower Linville R.	Aquatic Community Composition	0%	VG	A	50	0	VG
Lower Linville R.	Aquatic Community Composition	0%	VG	BCD	10	0	VG
Lower Linville R.	Aquatic Community Composition	0%	VG	BCD	50	0	VG
Lower Linville R.	Hydrologic Connectivity	1.7	G	A	10	1.5	G
Lower Linville R.	Hydrologic Connectivity	1.7	G	A	50	0.7	VG
Lower Linville R.	Hydrologic Connectivity	1.7	G	BCD	10	1.6	G
Lower Linville R.	Hydrologic Connectivity	1.7	G	BCD	50	1.3	G
Lower Linville R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Lower Linville R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Lower Linville R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Lower Linville R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Lower Linville R.	Nonpoint Source Pollution Threat	14%	VG	A	10	14%	VG
Lower Linville R.	Nonpoint Source Pollution Threat	14%	VG	A	50	14%	VG
Lower Linville R.	Nonpoint Source Pollution Threat	14%	VG	BCD	10	14%	VG
Lower Linville R.	Nonpoint Source Pollution Threat	14%	VG	BCD	50	14%	VG
Lower Linville R.	Sedimentation Risk	0.1	VG	A	10	0.07	VG
Lower Linville R.	Sedimentation Risk	0.1	VG	A	50	0	VG
Lower Linville R.	Sedimentation Risk	0.1	VG	BCD	10	0.09	VG
Lower Linville R.	Sedimentation Risk	0.1	VG	BCD	50	0.05	VG
Lower Linville R.	Water Temperature Regime	96%	VG	A	10	45%	F
Lower Linville R.	Water Temperature Regime	96%	VG	A	50	45%	F
Lower Linville R.	Water Temperature Regime	96%	VG	BCD	10	45%	F
Lower Linville R.	Water Temperature Regime	96%	VG	BCD	50	45%	F
Lower Shelton Laurel C.	Aquatic Community Composition	100%	P	A	10	99.9	P
Lower Shelton Laurel C.	Aquatic Community Composition	100%	P	A	50	99.5	P
Lower Shelton Laurel C.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Lower Shelton Laurel C.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Lower Shelton Laurel C.	Hydrologic Connectivity	2.4	F	A	10	2.2	G
Lower Shelton Laurel C.	Hydrologic Connectivity	2.4	F	A	50	1.4	G
Lower Shelton Laurel C.	Hydrologic Connectivity	2.4	F	BCD	10	2.4	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Lower Shelton Laurel C.	Hydrologic Connectivity	2.4	F	BCD	50	2.1	G
Lower Shelton Laurel C.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Lower Shelton Laurel C.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Lower Shelton Laurel C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Lower Shelton Laurel C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Lower Shelton Laurel C.	Nonpoint Source Pollution Threat	61%	F	A	10	61%	F
Lower Shelton Laurel C.	Nonpoint Source Pollution Threat	61%	F	A	50	61%	F
Lower Shelton Laurel C.	Nonpoint Source Pollution Threat	61%	F	BCD	10	61%	F
Lower Shelton Laurel C.	Nonpoint Source Pollution Threat	61%	F	BCD	50	61%	F
Lower Shelton Laurel C.	Point Source Pollution Threat	1	G	A	10	1	G
Lower Shelton Laurel C.	Point Source Pollution Threat	1	G	A	50	1	G
Lower Shelton Laurel C.	Point Source Pollution Threat	1	G	BCD	10	1	G
Lower Shelton Laurel C.	Point Source Pollution Threat	1	G	BCD	50	1	G
Lower Shelton Laurel C.	Sedimentation Risk	0.7	G	A	10	0.67	G
Lower Shelton Laurel C.	Sedimentation Risk	0.7	G	A	50	0.53	G
Lower Shelton Laurel C.	Sedimentation Risk	0.7	G	BCD	10	0.69	G
Lower Shelton Laurel C.	Sedimentation Risk	0.7	G	BCD	50	0.65	G
Lower Shelton Laurel C.	Water Temperature Regime	91%	VG	A	10	27%	F
Lower Shelton Laurel C.	Water Temperature Regime	91%	VG	A	50	27%	F
Lower Shelton Laurel C.	Water Temperature Regime	91%	VG	BCD	10	27%	F
Lower Shelton Laurel C.	Water Temperature Regime	91%	VG	BCD	50	27%	F
Lower South Toe R.	Aquatic Community Composition	28%	G	A	10	28.71	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Lower South Toe R.	Aquatic Community Composition	28%	G	A	50	28.31	G
Lower South Toe R.	Aquatic Community Composition	28%	G	BCD	10	28.71	G
Lower South Toe R.	Aquatic Community Composition	28%	G	BCD	50	28.31	G
Lower South Toe R.	Hydrologic Connectivity	1.9	G	A	10	1.7	G
Lower South Toe R.	Hydrologic Connectivity	1.9	G	A	50	0.9	G
Lower South Toe R.	Hydrologic Connectivity	1.9	G	BCD	10	1.8	G
Lower South Toe R.	Hydrologic Connectivity	1.9	G	BCD	50	1.5	G
Lower South Toe R.	Nonpoint Source Pollution Threat	91%	P	A	10	91%	P
Lower South Toe R.	Nonpoint Source Pollution Threat	91%	P	A	50	91%	P
Lower South Toe R.	Nonpoint Source Pollution Threat	91%	P	BCD	10	91%	P
Lower South Toe R.	Nonpoint Source Pollution Threat	91%	P	BCD	50	91%	P
Lower South Toe R.	Point Source Pollution Threat	1	G	A	10	1	G
Lower South Toe R.	Point Source Pollution Threat	1	G	A	50	1	G
Lower South Toe R.	Point Source Pollution Threat	1	G	BCD	10	1	G
Lower South Toe R.	Point Source Pollution Threat	1	G	BCD	50	1	G
Lower South Toe R.	Sedimentation Risk	0	VG	A	10	0	VG
Lower South Toe R.	Sedimentation Risk	0	VG	A	50	0	VG
Lower South Toe R.	Sedimentation Risk	0	VG	BCD	10	0	VG
Lower South Toe R.	Sedimentation Risk	0	VG	BCD	50	0	VG
Lower South Toe R.	Water Temperature Regime	82%	VG	A	10	21	P
Lower South Toe R.	Water Temperature Regime	82%	VG	A	50	21%	P
Lower South Toe R.	Water Temperature Regime	82%	VG	BCD	10	21%	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Lower South Toe R.	Water Temperature Regime	82%	VG	BCD	50	21%	P
Lower Valley R.	Aquatic Community Composition	0%	VG	A	10	0	VG
Lower Valley R.	Aquatic Community Composition	0%	VG	A	50	0	VG
Lower Valley R.	Aquatic Community Composition	0%	VG	BCD	10	0	VG
Lower Valley R.	Aquatic Community Composition	0%	VG	BCD	50	0	VG
Lower Valley R.	Hydrologic Connectivity	1.1	G	A	10	0.9	G
Lower Valley R.	Hydrologic Connectivity	1.1	G	A	50	0.1	VG
Lower Valley R.	Hydrologic Connectivity	1.1	G	BCD	10	1.1	G
Lower Valley R.	Hydrologic Connectivity	1.1	G	BCD	50	0.8	VG
Lower Valley R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Lower Valley R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Lower Valley R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Lower Valley R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Lower Valley R.	Nonpoint Source Pollution Threat	92%	P	A	10	92%	P
Lower Valley R.	Nonpoint Source Pollution Threat	92%	P	A	50	92%	P
Lower Valley R.	Nonpoint Source Pollution Threat	92%	P	BCD	10	92%	P
Lower Valley R.	Nonpoint Source Pollution Threat	92%	P	BCD	50	92%	P
Lower Valley R.	Sedimentation Risk	0.5	G	A	10	0.47	G
Lower Valley R.	Sedimentation Risk	0.5	G	A	50	0.33	VG
Lower Valley R.	Sedimentation Risk	0.5	G	BCD	10	0.49	G
Lower Valley R.	Sedimentation Risk	0.5	G	BCD	50	0.45	G
Lower Valley R.	Water Temperature Regime	74%	VG	A	10	17%	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Lower Valley R.	Water Temperature Regime	74%	VG	A	50	17%	P
Lower Valley R.	Water Temperature Regime	74%	VG	BCD	10	17%	P
Lower Valley R.	Water Temperature Regime	74%	VG	BCD	50	17%	P
Lower Wilson C.	Aquatic Community Composition	83%	P	A	10	83.38	P
Lower Wilson C.	Aquatic Community Composition	83%	P	A	50	82.98	P
Lower Wilson C.	Aquatic Community Composition	83%	P	BCD	10	83.33	P
Lower Wilson C.	Aquatic Community Composition	83%	P	BCD	50	82.73	P
Lower Wilson C.	Hydrologic Connectivity	1.7	G	A	10	1.5	G
Lower Wilson C.	Hydrologic Connectivity	1.7	G	A	50	0.7	VG
Lower Wilson C.	Hydrologic Connectivity	1.7	G	BCD	10	1.1	G
Lower Wilson C.	Hydrologic Connectivity	1.7	G	BCD	50	0	VG
Lower Wilson C.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Lower Wilson C.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Lower Wilson C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Lower Wilson C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Lower Wilson C.	Nonpoint Source Pollution Threat	18%	VG	A	10	18%	VG
Lower Wilson C.	Nonpoint Source Pollution Threat	18%	VG	A	50	18%	VG
Lower Wilson C.	Nonpoint Source Pollution Threat	18%	VG	BCD	10	18%	VG
Lower Wilson C.	Nonpoint Source Pollution Threat	18%	VG	BCD	50	18%	VG
Lower Wilson C.	Sedimentation Risk	0.5	G	A	10	0.47	G
Lower Wilson C.	Sedimentation Risk	0.5	G	A	50	0.33	VG
Lower Wilson C.	Sedimentation Risk	0.5	G	BCD	10	0.41	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Lower Wilson C.	Sedimentation Risk	0.5	G	BCD	50	0.06	VG
Lower Wilson C.	Water Temperature Regime	95%	VG	A	10	40%	F
Lower Wilson C.	Water Temperature Regime	95%	VG	A	50	40%	F
Lower Wilson C.	Water Temperature Regime	95%	VG	BCD	10	40%	F
Lower Wilson C.	Water Temperature Regime	95%	VG	BCD	50	40%	F
Mackey C.-Catawba R.	Aquatic Community Composition	69%	F	A	10	69.2	F
Mackey C.-Catawba R.	Aquatic Community Composition	69%	F	A	50	68.8	F
Mackey C.-Catawba R.	Aquatic Community Composition	69%	F	BCD	10	69.2	F
Mackey C.-Catawba R.	Aquatic Community Composition	69%	F	BCD	50	68.8	F
Mackey C.-Catawba R.	Hydrologic Connectivity	1.4	G	A	10	1.2	G
Mackey C.-Catawba R.	Hydrologic Connectivity	1.4	G	A	50	0.4	VG
Mackey C.-Catawba R.	Hydrologic Connectivity	1.4	G	BCD	10	1.3	G
Mackey C.-Catawba R.	Hydrologic Connectivity	1.4	G	BCD	50	1	G
Mackey C.-Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Mackey C.-Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Mackey C.-Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Mackey C.-Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Mackey C.-Catawba R.	Nonpoint Source Pollution Threat	67%	F	A	10	67%	F
Mackey C.-Catawba R.	Nonpoint Source Pollution Threat	67%	F	A	50	67%	F
Mackey C.-Catawba R.	Nonpoint Source Pollution Threat	67%	F	BCD	10	67%	F
Mackey C.-Catawba R.	Nonpoint Source Pollution Threat	67%	F	BCD	50	67%	F
Mackey C.-Catawba R.	Point Source Pollution Threat	1	G	A	10	1	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Mackey C.-Catawba R.	Point Source Pollution Threat	1	G	A	50	1	G
Mackey C.-Catawba R.	Point Source Pollution Threat	1	G	BCD	10	1	G
Mackey C.-Catawba R.	Point Source Pollution Threat	1	G	BCD	50	1	G
Mackey C.-Catawba R.	Sedimentation Risk	0.1	VG	A	10	0.07	VG
Mackey C.-Catawba R.	Sedimentation Risk	0.1	VG	A	50	0	VG
Mackey C.-Catawba R.	Sedimentation Risk	0.1	VG	BCD	10	0.09	VG
Mackey C.-Catawba R.	Sedimentation Risk	0.1	VG	BCD	50	0.05	VG
Mackey C.-Catawba R.	Water Temperature Regime	78%	VG	A	10	84%	VG
Mackey C.-Catawba R.	Water Temperature Regime	78%	VG	A	50	84%	VG
Mackey C.-Catawba R.	Water Temperature Regime	78%	VG	BCD	10	84%	VG
Mackey C.-Catawba R.	Water Temperature Regime	78%	VG	BCD	50	84%	VG
Meadow Fork	Aquatic Community Composition	74%	F	A	10	73.66	F
Meadow Fork	Aquatic Community Composition	74%	F	A	50	73.26	F
Meadow Fork	Aquatic Community Composition	74%	F	BCD	10	73.66	F
Meadow Fork	Aquatic Community Composition	74%	F	BCD	50	73.26	F
Meadow Fork	Hydrologic Connectivity	1.2	G	A	10	1	G
Meadow Fork	Hydrologic Connectivity	1.2	G	A	50	0.2	VG
Meadow Fork	Hydrologic Connectivity	1.2	G	BCD	10	1.2	G
Meadow Fork	Hydrologic Connectivity	1.2	G	BCD	50	0.9	G
Meadow Fork	Nonpoint Source Pollution Threat	67%	F	A	10	67%	F
Meadow Fork	Nonpoint Source Pollution Threat	67%	F	A	50	67%	F
Meadow Fork	Nonpoint Source Pollution Threat	67%	F	BCD	10	67%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Meadow Fork	Nonpoint Source Pollution Threat	67%	F	BCD	50	67%	F
Meadow Fork	Sedimentation Risk	1.3	F	A	10	1.27	F
Meadow Fork	Sedimentation Risk	1.3	F	A	50	1.13	F
Meadow Fork	Sedimentation Risk	1.3	F	BCD	10	1.29	F
Meadow Fork	Sedimentation Risk	1.3	F	BCD	50	1.25	F
Meadow Fork	Water Temperature Regime	92%	VG	A	10	23%	P
Meadow Fork	Water Temperature Regime	92%	VG	A	50	23%	P
Meadow Fork	Water Temperature Regime	92%	VG	BCD	10	23%	P
Meadow Fork	Water Temperature Regime	92%	VG	BCD	50	23%	P
Middle C.-Little Tennessee R.	Aquatic Community Composition	90%	P	A	10	89.48	P
Middle C.-Little Tennessee R.	Aquatic Community Composition	90%	P	A	50	89.08	P
Middle C.-Little Tennessee R.	Aquatic Community Composition	90%	P	BCD	10	89.48	P
Middle C.-Little Tennessee R.	Aquatic Community Composition	90%	P	BCD	50	89.08	P
Middle C.-Little Tennessee R.	Hydrologic Connectivity	1.5	G	A	10	1.3	G
Middle C.-Little Tennessee R.	Hydrologic Connectivity	1.5	G	A	50	0.5	VG
Middle C.-Little Tennessee R.	Hydrologic Connectivity	1.5	G	BCD	10	1.5	G
Middle C.-Little Tennessee R.	Hydrologic Connectivity	1.5	G	BCD	50	1.2	G
Middle C.-Little Tennessee R.	Nonpoint Source Pollution Threat	65%	F	A	10	65%	F
Middle C.-Little Tennessee R.	Nonpoint Source Pollution Threat	65%	F	A	50	65%	F
Middle C.-Little Tennessee R.	Nonpoint Source Pollution Threat	65%	F	BCD	10	65%	F
Middle C.-Little Tennessee R.	Nonpoint Source Pollution Threat	65%	F	BCD	50	65%	F
Middle C.-Little Tennessee R.	Sedimentation Risk	0.4	G	A	10	0.37	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Middle C.-Little Tennessee R.	Sedimentation Risk	0.4	G	A	50	0.23	VG
Middle C.-Little Tennessee R.	Sedimentation Risk	0.4	G	BCD	10	0.39	G
Middle C.-Little Tennessee R.	Sedimentation Risk	0.4	G	BCD	50	0.35	G
Middle C.-Little Tennessee R.	Water Temperature Regime	84%	VG	A	10	9%	P
Middle C.-Little Tennessee R.	Water Temperature Regime	84%	VG	A	50	9%	P
Middle C.-Little Tennessee R.	Water Temperature Regime	84%	VG	BCD	10	9%	P
Middle C.-Little Tennessee R.	Water Temperature Regime	84%	VG	BCD	50	9%	P
Middle Johns R.	Aquatic Community Composition	0%	VG	A	10	0	VG
Middle Johns R.	Aquatic Community Composition	0%	VG	A	50	0	VG
Middle Johns R.	Aquatic Community Composition	0%	VG	BCD	10	0	VG
Middle Johns R.	Aquatic Community Composition	0%	VG	BCD	50	0	VG
Middle Johns R.	Hydrologic Connectivity	1.6	G	A	10	1.4	G
Middle Johns R.	Hydrologic Connectivity	1.6	G	A	50	0.6	VG
Middle Johns R.	Hydrologic Connectivity	1.6	G	BCD	10	1	G
Middle Johns R.	Hydrologic Connectivity	1.6	G	BCD	50	0	VG
Middle Johns R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	pres	P
Middle Johns R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Middle Johns R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Middle Johns R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Middle Johns R.	Nonpoint Source Pollution Threat	53%	F	A	10	53%	F
Middle Johns R.	Nonpoint Source Pollution Threat	53%	F	A	50	53%	F
Middle Johns R.	Nonpoint Source Pollution Threat	53%	F	BCD	10	53%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Middle Johns R.	Nonpoint Source Pollution Threat	53%	F	BCD	50	53%	F
Middle Johns R.	Sedimentation Risk	0.5	G	A	10	0.47	G
Middle Johns R.	Sedimentation Risk	0.5	G	A	50	0.33	VG
Middle Johns R.	Sedimentation Risk	0.5	G	BCD	10	0.41	G
Middle Johns R.	Sedimentation Risk	0.5	G	BCD	50	0.06	VG
Middle Johns R.	Water Temperature Regime	93%	VG	A	10	20%	P
Middle Johns R.	Water Temperature Regime	93%	VG	A	50	20%	P
Middle Johns R.	Water Temperature Regime	93%	VG	BCD	10	20%	P
Middle Johns R.	Water Temperature Regime	93%	VG	BCD	50	20%	P
Middle Valley R.	Aquatic Community Composition	100%	P	A	10	99.9	P
Middle Valley R.	Aquatic Community Composition	100%	P	A	50	99.5	P
Middle Valley R.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Middle Valley R.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Middle Valley R.	Hydrologic Connectivity	1.3	G	A	10	1.1	G
Middle Valley R.	Hydrologic Connectivity	1.3	G	A	50	0.3	VG
Middle Valley R.	Hydrologic Connectivity	1.3	G	BCD	10	1.2	G
Middle Valley R.	Hydrologic Connectivity	1.3	G	BCD	50	0.9	G
Middle Valley R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Middle Valley R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Middle Valley R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Middle Valley R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Middle Valley R.	Nonpoint Source Pollution Threat	70%	F	A	10	70%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Middle Valley R.	Nonpoint Source Pollution Threat	70%	F	A	50	70%	F
Middle Valley R.	Nonpoint Source Pollution Threat	70%	F	BCD	10	70%	F
Middle Valley R.	Nonpoint Source Pollution Threat	70%	F	BCD	50	70%	F
Middle Valley R.	Sedimentation Risk	0.7	G	A	10	0.67	G
Middle Valley R.	Sedimentation Risk	0.7	G	A	50	0.53	G
Middle Valley R.	Sedimentation Risk	0.7	G	BCD	10	0.69	G
Middle Valley R.	Sedimentation Risk	0.7	G	BCD	50	0.65	G
Middle Valley R.	Water Temperature Regime	89%	VG	A	10	22%	P
Middle Valley R.	Water Temperature Regime	89%	VG	A	50	22%	P
Middle Valley R.	Water Temperature Regime	89%	VG	BCD	10	22%	P
Middle Valley R.	Water Temperature Regime	89%	VG	BCD	50	22%	P
Mills R.	Aquatic Community Composition	82%	P	A	10	82.32	G
Mills R.	Aquatic Community Composition	82%	P	A	50	81.92	G
Mills R.	Aquatic Community Composition	82%	P	BCD	10	82.28	G
Mills R.	Aquatic Community Composition	82%	P	BCD	50	81.67	G
Mills R.	Hydrologic Connectivity	2.6	F	A	10	2.4	F
Mills R.	Hydrologic Connectivity	2.6	F	A	50	1.6	G
Mills R.	Hydrologic Connectivity	2.6	F	BCD	10	2	G
Mills R.	Hydrologic Connectivity	2.6	F	BCD	50	0	VG
Mills R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Mills R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Mills R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Mills R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Mills R.	Nonpoint Source Pollution Threat	39%	G	A	10	39%	G
Mills R.	Nonpoint Source Pollution Threat	39%	G	A	50	39%	G
Mills R.	Nonpoint Source Pollution Threat	39%	G	BCD	10	39%	G
Mills R.	Nonpoint Source Pollution Threat	39%	G	BCD	50	39%	G
Mills R.	Point Source Pollution Threat	3	P	A	10	3	P
Mills R.	Point Source Pollution Threat	3	P	A	50	3	P
Mills R.	Point Source Pollution Threat	3	P	BCD	10	3	P
Mills R.	Point Source Pollution Threat	3	P	BCD	50	3	P
Mills R.	Sedimentation Risk	1	F	A	10	0.97	F
Mills R.	Sedimentation Risk	1	F	A	50	0.83	F
Mills R.	Sedimentation Risk	1	F	BCD	10	0.91	F
Mills R.	Sedimentation Risk	1	F	BCD	50	0.56	G
Mills R.	Water Temperature Regime	83%	VG	A	10	37%	F
Mills R.	Water Temperature Regime	83%	VG	A	50	37%	F
Mills R.	Water Temperature Regime	83%	VG	BCD	10	37%	F
Mills R.	Water Temperature Regime	83%	VG	BCD	50	37%	F
Mulberry C.	Aquatic Community Composition	29%	G	A	10	29.21	G
Mulberry C.	Aquatic Community Composition	29%	G	A	50	28.81	G
Mulberry C.	Aquatic Community Composition	29%	G	BCD	10	29.21	G
Mulberry C.	Aquatic Community Composition	29%	G	BCD	50	28.81	G
Mulberry C.	Hydrologic Connectivity	2.6	F	A	10	2.4	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Mulberry C.	Hydrologic Connectivity	2.6	F	A	50	1.6	G
Mulberry C.	Hydrologic Connectivity	2.6	F	BCD	10	2.5	F
Mulberry C.	Hydrologic Connectivity	2.6	F	BCD	50	2.2	G
Mulberry C.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Mulberry C.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Mulberry C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Mulberry C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Mulberry C.	Nonpoint Source Pollution Threat	54%	F	A	10	54%	F
Mulberry C.	Nonpoint Source Pollution Threat	54%	F	A	50	54%	F
Mulberry C.	Nonpoint Source Pollution Threat	54%	F	BCD	10	54%	F
Mulberry C.	Nonpoint Source Pollution Threat	54%	F	BCD	50	54%	F
Mulberry C.	Sedimentation Risk	0.6	G	A	10	0.57	G
Mulberry C.	Sedimentation Risk	0.6	G	A	50	0.43	G
Mulberry C.	Sedimentation Risk	0.6	G	BCD	10	0.59	G
Mulberry C.	Sedimentation Risk	0.6	G	BCD	50	0.55	G
Mulberry C.	Water Temperature Regime	89%	VG	A	10	6%	P
Mulberry C.	Water Temperature Regime	89%	VG	A	50	6%	P
Mulberry C.	Water Temperature Regime	89%	VG	BCD	10	6%	P
Mulberry C.	Water Temperature Regime	89%	VG	BCD	50	6%	P
Nantahala L.-Nantahala R.	Aquatic Community Composition	88%	P	A	10	88.26	P
Nantahala L.-Nantahala R.	Aquatic Community Composition	88%	P	A	50	87.86	P
Nantahala L.-Nantahala R.	Aquatic Community Composition	88%	P	BCD	10	88.26	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Nantahala L.-Nantahala R.	Aquatic Community Composition	88%	P	BCD	50	87.86	P
Nantahala L.-Nantahala R.	Hydrologic Connectivity	2.2	G	A	10	2	G
Nantahala L.-Nantahala R.	Hydrologic Connectivity	2.2	G	A	50	1.2	G
Nantahala L.-Nantahala R.	Hydrologic Connectivity	2.2	G	BCD	10	2.2	G
Nantahala L.-Nantahala R.	Hydrologic Connectivity	2.2	G	BCD	50	1.9	G
Nantahala L.-Nantahala R.	Nonpoint Source Pollution Threat	20%	VG	A	10	20%	VG
Nantahala L.-Nantahala R.	Nonpoint Source Pollution Threat	20%	VG	A	50	20%	VG
Nantahala L.-Nantahala R.	Nonpoint Source Pollution Threat	20%	VG	BCD	10	20%	VG
Nantahala L.-Nantahala R.	Nonpoint Source Pollution Threat	20%	VG	BCD	50	20%	VG
Nantahala L.-Nantahala R.	Sedimentation Risk	0.7	G	A	10	0.67	G
Nantahala L.-Nantahala R.	Sedimentation Risk	0.7	G	A	50	0.53	G
Nantahala L.-Nantahala R.	Sedimentation Risk	0.7	G	BCD	10	0.69	G
Nantahala L.-Nantahala R.	Sedimentation Risk	0.7	G	BCD	50	0.65	G
Nantahala L.-Nantahala R.	Water Temperature Regime	92%	VG	A	10	34%	F
Nantahala L.-Nantahala R.	Water Temperature Regime	92%	VG	A	50	34%	F
Nantahala L.-Nantahala R.	Water Temperature Regime	92%	VG	BCD	10	34%	F
Nantahala L.-Nantahala R.	Water Temperature Regime	92%	VG	BCD	50	34%	F
North Fork Catawba R.	Aquatic Community Composition	36%	G	A	10	36.09	G
North Fork Catawba R.	Aquatic Community Composition	36%	G	A	50	35.69	G
North Fork Catawba R.	Aquatic Community Composition	36%	G	BCD	10	36.09	G
North Fork Catawba R.	Aquatic Community Composition	36%	G	BCD	50	35.69	G
North Fork Catawba R.	Hydrologic Connectivity	1.9	G	A	10	1.7	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
North Fork Catawba R.	Hydrologic Connectivity	1.9	G	A	50	0.9	G
North Fork Catawba R.	Hydrologic Connectivity	1.9	G	BCD	10	1.8	G
North Fork Catawba R.	Hydrologic Connectivity	1.9	G	BCD	50	1.5	G
North Fork Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
North Fork Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
North Fork Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
North Fork Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
North Fork Catawba R.	Nonpoint Source Pollution Threat	63%	F	A	10	63%	F
North Fork Catawba R.	Nonpoint Source Pollution Threat	63%	F	A	50	63%	F
North Fork Catawba R.	Nonpoint Source Pollution Threat	63%	F	BCD	10	63%	F
North Fork Catawba R.	Nonpoint Source Pollution Threat	63%	F	BCD	50	63%	F
North Fork Catawba R.	Point Source Pollution Threat	3	P	A	10	3	P
North Fork Catawba R.	Point Source Pollution Threat	3	P	A	50	3	P
North Fork Catawba R.	Point Source Pollution Threat	3	P	BCD	10	3	P
North Fork Catawba R.	Point Source Pollution Threat	3	P	BCD	50	3	P
North Fork Catawba R.	Sedimentation Risk	0.4	G	A	10	0.37	G
North Fork Catawba R.	Sedimentation Risk	0.4	G	A	50	0.23	VG
North Fork Catawba R.	Sedimentation Risk	0.4	G	BCD	10	0.39	G
North Fork Catawba R.	Sedimentation Risk	0.4	G	BCD	50	0.35	G
North Fork Catawba R.	Water Temperature Regime	89%	VG	A	10	31%	F
North Fork Catawba R.	Water Temperature Regime	89%	VG	A	50	31%	F
North Fork Catawba R.	Water Temperature Regime	89%	VG	BCD	10	31%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
North Fork Catawba R.	Water Temperature Regime	89%	VG	BCD	50	31%	F
North Fork French Broad R.	Aquatic Community Composition	85%	P	A	10	84.83	P
North Fork French Broad R.	Aquatic Community Composition	85%	P	A	50	84.43	P
North Fork French Broad R.	Aquatic Community Composition	85%	P	BCD	10	84.78	P
North Fork French Broad R.	Aquatic Community Composition	85%	P	BCD	50	84.18	P
North Fork French Broad R.	Hydrologic Connectivity	3.4	F	A	10	3.2	F
North Fork French Broad R.	Hydrologic Connectivity	3.4	F	A	50	2.4	F
North Fork French Broad R.	Hydrologic Connectivity	3.4	F	BCD	10	2.8	F
North Fork French Broad R.	Hydrologic Connectivity	3.4	F	BCD	50	0.2	VG
North Fork French Broad R.	Nonpoint Source Pollution Threat	23%	VG	A	10	23%	VG
North Fork French Broad R.	Nonpoint Source Pollution Threat	23%	VG	A	50	23%	VG
North Fork French Broad R.	Nonpoint Source Pollution Threat	23%	VG	BCD	10	23%	VG
North Fork French Broad R.	Nonpoint Source Pollution Threat	23%	VG	BCD	50	23%	VG
North Fork French Broad R.	Sedimentation Risk	1	F	A	10	0.97	F
North Fork French Broad R.	Sedimentation Risk	1	F	A	50	0.85	F
North Fork French Broad R.	Sedimentation Risk	1	F	BCD	10	0.91	F
North Fork French Broad R.	Sedimentation Risk	1	F	BCD	50	0.56	G
North Fork French Broad R.	Water Temperature Regime	93%	VG	A	10	76%	VG
North Fork French Broad R.	Water Temperature Regime	93%	VG	A	50	76%	VG
North Fork French Broad R.	Water Temperature Regime	93%	VG	BCD	10	76%	VG
North Fork French Broad R.	Water Temperature Regime	93%	VG	BCD	50	76%	VG
Nottely R.	Aquatic Community Composition	0%	VG	A	10	0	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Nottely R.	Aquatic Community Composition	0%	VG	A	50	0	VG
Nottely R.	Aquatic Community Composition	0%	VG	BCD	10	0	VG
Nottely R.	Aquatic Community Composition	0%	VG	BCD	50	0	VG
Nottely R.	Hydrologic Connectivity	1.8	G	A	10	1.6	G
Nottely R.	Hydrologic Connectivity	1.8	G	A	50	0.8	VG
Nottely R.	Hydrologic Connectivity	1.8	G	BCD	10	1.8	G
Nottely R.	Hydrologic Connectivity	1.8	G	BCD	50	1.5	G
Nottely R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Nottely R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Nottely R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Nottely R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Nottely R.	Nonpoint Source Pollution Threat	71%	F	A	10	71%	F
Nottely R.	Nonpoint Source Pollution Threat	71%	F	A	50	71%	F
Nottely R.	Nonpoint Source Pollution Threat	71%	F	BCD	10	71%	F
Nottely R.	Nonpoint Source Pollution Threat	71%	F	BCD	50	71%	F
Nottely R.	Sedimentation Risk	0.7	G	A	10	0.67	G
Nottely R.	Sedimentation Risk	0.7	G	A	50	0.53	G
Nottely R.	Sedimentation Risk	0.7	G	BCD	10	0.69	G
Nottely R.	Sedimentation Risk	0.7	G	BCD	50	0.65	G
Nottely R.	Water Temperature Regime	86%	VG	A	10	56%	G
Nottely R.	Water Temperature Regime	86%	VG	A	50	56%	G
Nottely R.	Water Temperature Regime	86%	VG	BCD	10	56%	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Nottely R.	Water Temperature Regime	86%	VG	BCD	50	56%	G
Panther C.	Aquatic Community Composition	100%	P	A	10	99.9	P
Panther C.	Aquatic Community Composition	100%	P	A	50	99.5	P
Panther C.	Aquatic Community Composition	100%	P	BCD	10	0	P
Panther C.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Panther C.	Hydrologic Connectivity	2.7	F	A	10	2.5	F
Panther C.	Hydrologic Connectivity	2.7	F	A	50	1.7	G
Panther C.	Hydrologic Connectivity	2.7	F	BCD	10	2.6	F
Panther C.	Hydrologic Connectivity	2.7	F	BCD	50	2.3	G
Panther C.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Panther C.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Panther C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Panther C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Panther C.	Nonpoint Source Pollution Threat	26%	G	A	10	26%	G
Panther C.	Nonpoint Source Pollution Threat	26%	G	A	50	26%	G
Panther C.	Nonpoint Source Pollution Threat	26%	G	BCD	10	26%	G
Panther C.	Nonpoint Source Pollution Threat	26%	G	BCD	50	26%	G
Panther C.	Sedimentation Risk	1.5	F	A	10	1.47	F
Panther C.	Sedimentation Risk	1.5	F	A	50	1.33	F
Panther C.	Sedimentation Risk	1.5	F	BCD	10	1.49	F
Panther C.	Sedimentation Risk	1.5	F	BCD	50	1.45	F
Panther C.	Water Temperature Regime	92%	VG	A	10	12%	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Panther C.	Water Temperature Regime	92%	VG	A	50	12%	P
Panther C.	Water Temperature Regime	92%	VG	BCD	10	12%	P
Panther C.	Water Temperature Regime	92%	VG	BCD	50	12%	P
Santeetlah C.	Aquatic Community Composition	57%	F	A	10	56.79	F
Santeetlah C.	Aquatic Community Composition	57%	F	A	50	56.39	F
Santeetlah C.	Aquatic Community Composition	57%	F	BCD	10	56.74	F
Santeetlah C.	Aquatic Community Composition	57%	F	BCD	50	56.14	F
Santeetlah C.	Hydrologic Connectivity	2.4	F	A	10	2.2	G
Santeetlah C.	Hydrologic Connectivity	2.4	F	A	50	1.4	G
Santeetlah C.	Hydrologic Connectivity	2.4	F	BCD	10	1.8	G
Santeetlah C.	Hydrologic Connectivity	2.4	F	BCD	50	0	VG
Santeetlah C.	Nonpoint Source Pollution Threat	4%	VG	A	10	4%	VG
Santeetlah C.	Nonpoint Source Pollution Threat	4%	VG	A	50	4%	VG
Santeetlah C.	Nonpoint Source Pollution Threat	4%	VG	BCD	10	4%	VG
Santeetlah C.	Nonpoint Source Pollution Threat	4%	VG	BCD	50	4%	VG
Santeetlah C.	Sedimentation Risk	1	F	A	10	0.97	F
Santeetlah C.	Sedimentation Risk	1	F	A	50	0.83	F
Santeetlah C.	Sedimentation Risk	1	F	BCD	10	0.91	F
Santeetlah C.	Sedimentation Risk	1	F	BCD	50	0.56	G
Santeetlah C.	Water Temperature Regime	96%	VG	A	10	80%	VG
Santeetlah C.	Water Temperature Regime	96%	VG	A	50	80%	VG
Santeetlah C.	Water Temperature Regime	96%	VG	BCD	10	80%	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Santeetlah C.	Water Temperature Regime	96%	VG	BCD	50	80%	VG
Santeetlah L.	Aquatic Community Composition	100%	P	A	10	99.9	P
Santeetlah L.	Aquatic Community Composition	100%	P	A	50	99.5	P
Santeetlah L.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Santeetlah L.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Santeetlah L.	Hydrologic Connectivity	1.2	G	A	10	1	G
Santeetlah L.	Hydrologic Connectivity	1.2	G	A	50	0.2	VG
Santeetlah L.	Hydrologic Connectivity	1.2	G	BCD	10	1.2	G
Santeetlah L.	Hydrologic Connectivity	1.2	G	BCD	50	0.9	G
Santeetlah L.	Nonpoint Source Pollution Threat	59%	F	A	10	59%	F
Santeetlah L.	Nonpoint Source Pollution Threat	59%	F	A	50	59%	F
Santeetlah L.	Nonpoint Source Pollution Threat	59%	F	BCD	10	59%	F
Santeetlah L.	Nonpoint Source Pollution Threat	59%	F	BCD	50	59%	F
Santeetlah L.	Point Source Pollution Threat	3	P	A	10	3	P
Santeetlah L.	Point Source Pollution Threat	3	P	A	50	3	P
Santeetlah L.	Point Source Pollution Threat	3	P	BCD	10	3	P
Santeetlah L.	Point Source Pollution Threat	3	P	BCD	50	3	P
Santeetlah L.	Sedimentation Risk	1.1	F	A	10	1.07	F
Santeetlah L.	Sedimentation Risk	1.1	F	A	50	0.93	F
Santeetlah L.	Sedimentation Risk	1.1	F	BCD	10	1.09	F
Santeetlah L.	Sedimentation Risk	1.1	F	BCD	50	1.05	F
Santeetlah L.	Water Temperature Regime	81%	VG	A	10	48%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Santeetlah L.	Water Temperature Regime	81%	VG	A	50	48%	F
Santeetlah L.	Water Temperature Regime	81%	VG	BCD	10	48%	F
Santeetlah L.	Water Temperature Regime	81%	VG	BCD	50	48%	F
Savannah C.	Aquatic Community Composition	61%	F	A	10	60.73	F
Savannah C.	Aquatic Community Composition	61%	F	A	50	60.33	F
Savannah C.	Aquatic Community Composition	61%	F	BCD	10	60.73	F
Savannah C.	Aquatic Community Composition	61%	F	BCD	50	60.33	F
Savannah C.	Hydrologic Connectivity	1.9	G	A	10	1.7	G
Savannah C.	Hydrologic Connectivity	1.9	G	A	50	0.9	G
Savannah C.	Hydrologic Connectivity	1.9	G	BCD	10	1.8	G
Savannah C.	Hydrologic Connectivity	1.9	G	BCD	50	1.5	G
Savannah C.	Nonpoint Source Pollution Threat	74%	F	A	10	74%	F
Savannah C.	Nonpoint Source Pollution Threat	74%	F	A	50	74%	F
Savannah C.	Nonpoint Source Pollution Threat	74%	F	BCD	10	74%	F
Savannah C.	Nonpoint Source Pollution Threat	74%	F	BCD	50	74%	F
Savannah C.	Sedimentation Risk	0.7	G	A	10	0.67	G
Savannah C.	Sedimentation Risk	0.7	G	A	50	0.53	G
Savannah C.	Sedimentation Risk	0.7	G	BCD	10	0.69	G
Savannah C.	Sedimentation Risk	0.7	G	BCD	50	0.65	G
Savannah C.	Water Temperature Regime	88%	VG	A	10	50%	G
Savannah C.	Water Temperature Regime	88%	VG	A	50	50%	G
Savannah C.	Water Temperature Regime	88%	VG	BCD	10	50%	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Savannah C.	Water Temperature Regime	88%	VG	BCD	50	50%	G
Shooting C.	Aquatic Community Composition	95%	P	A	10	94.61	P
Shooting C.	Aquatic Community Composition	95%	P	A	50	94.21	P
Shooting C.	Aquatic Community Composition	95%	P	BCD	10	94.61	P
Shooting C.	Aquatic Community Composition	95%	P	BCD	50	94.21	P
Shooting C.	Hydrologic Connectivity	3.9	F	A	10	3.7	F
Shooting C.	Hydrologic Connectivity	3.9	F	A	50	2.9	F
Shooting C.	Hydrologic Connectivity	3.9	F	BCD	10	3.8	F
Shooting C.	Hydrologic Connectivity	3.9	F	BCD	50	3.5	F
Shooting C.	Nonpoint Source Pollution Threat	55%	F	A	10	55%	F
Shooting C.	Nonpoint Source Pollution Threat	55%	F	A	50	55%	F
Shooting C.	Nonpoint Source Pollution Threat	55%	F	BCD	10	55%	F
Shooting C.	Nonpoint Source Pollution Threat	55%	F	BCD	50	55%	F
Shooting C.	Sedimentation Risk	0.4	G	A	10	0.37	G
Shooting C.	Sedimentation Risk	0.4	G	A	50	0.23	VG
Shooting C.	Sedimentation Risk	0.4	G	BCD	10	0.39	G
Shooting C.	Sedimentation Risk	0.4	G	BCD	50	0.35	G
Shooting C.	Water Temperature Regime	78%	VG	A	10	8%	P
Shooting C.	Water Temperature Regime	78%	VG	A	50	8%	P
Shooting C.	Water Temperature Regime	78%	VG	BCD	10	8%	P
Shooting C.	Water Temperature Regime	78%	VG	BCD	50	8%	P
Shuler C.	Aquatic Community Composition	100%	P	A	10	99.9	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Shuler C.	Aquatic Community Composition	100%	P	A	50	99.5	P
Shuler C.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Shuler C.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Shuler C.	Hydrologic Connectivity	3.7	F	A	10	3.5	F
Shuler C.	Hydrologic Connectivity	3.7	F	A	50	2.7	F
Shuler C.	Hydrologic Connectivity	3.7	F	BCD	10	3.1	F
Shuler C.	Hydrologic Connectivity	3.7	F	BCD	50	2.6	F
Shuler C.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Shuler C.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Shuler C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Shuler C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Shuler C.	Nonpoint Source Pollution Threat	12%	VG	A	10	12%	VG
Shuler C.	Nonpoint Source Pollution Threat	12%	VG	A	50	12%	VG
Shuler C.	Nonpoint Source Pollution Threat	12%	VG	BCD	10	12%	VG
Shuler C.	Nonpoint Source Pollution Threat	12%	VG	BCD	50	12%	VG
Shuler C.	Sedimentation Risk	1.1	F	A	10	1.07	F
Shuler C.	Sedimentation Risk	1.1	F	A	50	0.93	F
Shuler C.	Sedimentation Risk	1.1	F	BCD	10	0.01	F
Shuler C.	Sedimentation Risk	1.1	F	BCD	50	0.66	G
Shuler C.	Water Temperature Regime	98%	VG	A	10	30%	F
Shuler C.	Water Temperature Regime	98%	VG	A	50	30%	F
Shuler C.	Water Temperature Regime	98%	VG	BCD	10	30%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Shuler C.	Water Temperature Regime	98%	VG	BCD	50	30%	F
Shut-in C.-French Broad R.	Aquatic Community Composition	58%	F	A	10	58.14	F
Shut-in C.-French Broad R.	Aquatic Community Composition	58%	F	A	50	57.74	F
Shut-in C.-French Broad R.	Aquatic Community Composition	58%	F	BCD	10	58.14	F
Shut-in C.-French Broad R.	Aquatic Community Composition	58%	F	BCD	50	57.74	F
Shut-in C.-French Broad R.	Hydrologic Connectivity	1.4	G	A	10	1.2	G
Shut-in C.-French Broad R.	Hydrologic Connectivity	1.4	G	A	50	0.4	VG
Shut-in C.-French Broad R.	Hydrologic Connectivity	1.4	G	BCD	10	1.3	G
Shut-in C.-French Broad R.	Hydrologic Connectivity	1.4	G	BCD	50	1	G
Shut-in C.-French Broad R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Shut-in C.-French Broad R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Shut-in C.-French Broad R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Shut-in C.-French Broad R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Shut-in C.-French Broad R.	Nonpoint Source Pollution Threat	36%	G	A	10	36%	G
Shut-in C.-French Broad R.	Nonpoint Source Pollution Threat	36%	G	A	50	36%	G
Shut-in C.-French Broad R.	Nonpoint Source Pollution Threat	36%	G	BCD	10	36%	G
Shut-in C.-French Broad R.	Nonpoint Source Pollution Threat	36%	G	BCD	50	36%	G
Shut-in C.-French Broad R.	Point Source Pollution Threat	3	P	A	10	3	P
Shut-in C.-French Broad R.	Point Source Pollution Threat	3	P	A	50	3	P
Shut-in C.-French Broad R.	Point Source Pollution Threat	3	P	BCD	10	3	P
Shut-in C.-French Broad R.	Point Source Pollution Threat	3	P	BCD	50	3	P
Shut-in C.-French Broad R.	Sedimentation Risk	1.4	F	A	10	1.37	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Shut-in C.-French Broad R.	Sedimentation Risk	1.4	F	A	50	1.23	F
Shut-in C.-French Broad R.	Sedimentation Risk	1.4	F	BCD	10	1.39	F
Shut-in C.-French Broad R.	Sedimentation Risk	1.4	F	BCD	50	1.35	F
Shut-in C.-French Broad R.	Water Temperature Regime	87%	VG	A	10	27%	F
Shut-in C.-French Broad R.	Water Temperature Regime	87%	VG	A	50	27%	F
Shut-in C.-French Broad R.	Water Temperature Regime	87%	VG	BCD	10	27%	F
Shut-in C.-French Broad R.	Water Temperature Regime	87%	VG	BCD	50	27%	F
Skeenah C.-Little Tennessee R.	Aquatic Community Composition	100%	P	A	10	99.9	P
Skeenah C.-Little Tennessee R.	Aquatic Community Composition	100%	P	A	50	99.5	P
Skeenah C.-Little Tennessee R.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Skeenah C.-Little Tennessee R.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Skeenah C.-Little Tennessee R.	Hydrologic Connectivity	0.9	G	A	10	0.7	VG
Skeenah C.-Little Tennessee R.	Hydrologic Connectivity	0.9	G	A	50	0	VG
Skeenah C.-Little Tennessee R.	Hydrologic Connectivity	0.9	G	BCD	10	0.8	VG
Skeenah C.-Little Tennessee R.	Hydrologic Connectivity	0.9	G	BCD	50	0.5	VG
Skeenah C.-Little Tennessee R.	Nonpoint Source Pollution Threat	91%	P	A	10	91%	P
Skeenah C.-Little Tennessee R.	Nonpoint Source Pollution Threat	91%	P	A	50	91%	P
Skeenah C.-Little Tennessee R.	Nonpoint Source Pollution Threat	91%	P	BCD	10	91%	P
Skeenah C.-Little Tennessee R.	Nonpoint Source Pollution Threat	91%	P	BCD	50	91%	P
Skeenah C.-Little Tennessee R.	Point Source Pollution Threat	1	G	A	10	1	G
Skeenah C.-Little Tennessee R.	Point Source Pollution Threat	1	G	A	50	1	G
Skeenah C.-Little Tennessee R.	Point Source Pollution Threat	1	G	BCD	10	1	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Skeenah C.-Little Tennessee R.	Point Source Pollution Threat	1	G	BCD	50	1	G
Skeenah C.-Little Tennessee R.	Sedimentation Risk	0.3	VG	A	10	0.27	VG
Skeenah C.-Little Tennessee R.	Sedimentation Risk	0.3	VG	A	50	0.13	VG
Skeenah C.-Little Tennessee R.	Sedimentation Risk	0.3	VG	BCD	10	0.29	VG
Skeenah C.-Little Tennessee R.	Sedimentation Risk	0.3	VG	BCD	50	0.25	VG
Skeenah C.-Little Tennessee R.	Water Temperature Regime	65%	G	A	10	6%	P
Skeenah C.-Little Tennessee R.	Water Temperature Regime	65%	G	A	50	6%	P
Skeenah C.-Little Tennessee R.	Water Temperature Regime	65%	G	BCD	10	6%	P
Skeenah C.-Little Tennessee R.	Water Temperature Regime	65%	G	BCD	50	6%	P
Slick Rock C.	Aquatic Community Composition	43%	G	A	10	43.34	G
Slick Rock C.	Aquatic Community Composition	43%	G	A	50	42.94	G
Slick Rock C.	Aquatic Community Composition	43%	G	BCD	10	43.34	G
Slick Rock C.	Aquatic Community Composition	43%	G	BCD	50	42.94	G
Slick Rock C.	Hydrologic Connectivity	0.6	VG	A	10	0.4	VG
Slick Rock C.	Hydrologic Connectivity	0.6	VG	A	50	0	VG
Slick Rock C.	Hydrologic Connectivity	0.6	VG	BCD	10	0.5	VG
Slick Rock C.	Hydrologic Connectivity	0.6	VG	BCD	50	0.2	VG
Slick Rock C.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Slick Rock C.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Slick Rock C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Slick Rock C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Slick Rock C.	Nonpoint Source Pollution Threat	0%	VG	A	10	0%	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Slick Rock C.	Nonpoint Source Pollution Threat	0%	VG	A	50	0%	VG
Slick Rock C.	Nonpoint Source Pollution Threat	0%	VG	BCD	10	0%	VG
Slick Rock C.	Nonpoint Source Pollution Threat	0%	VG	BCD	50	0%	VG
Slick Rock C.	Sedimentation Risk	0.3	VG	A	10	0.27	VG
Slick Rock C.	Sedimentation Risk	0.3	VG	A	50	0.13	VG
Slick Rock C.	Sedimentation Risk	0.3	VG	BCD	10	0.29	VG
Slick Rock C.	Sedimentation Risk	0.3	VG	BCD	50	0.25	VG
Slick Rock C.	Water Temperature Regime	100%	VG	A	10	36%	F
Slick Rock C.	Water Temperature Regime	100%	VG	A	50	36%	F
Slick Rock C.	Water Temperature Regime	100%	VG	BCD	10	36%	F
Slick Rock C.	Water Temperature Regime	100%	VG	BCD	50	36%	F
Snowbird C.	Aquatic Community Composition	66%	F	A	10	65.91	F
Snowbird C.	Aquatic Community Composition	66%	F	A	50	65.51	F
Snowbird C.	Aquatic Community Composition	66%	F	BCD	10	65.91	F
Snowbird C.	Aquatic Community Composition	66%	F	BCD	50	65.51	F
Snowbird C.	Hydrologic Connectivity	1.4	G	A	10	1.2	G
Snowbird C.	Hydrologic Connectivity	1.4	G	A	50	0.4	VG
Snowbird C.	Hydrologic Connectivity	1.4	G	BCD	10	1.3	G
Snowbird C.	Hydrologic Connectivity	1.4	G	BCD	50	1	G
Snowbird C.	Nonpoint Source Pollution Threat	52%	F	A	10	52%	F
Snowbird C.	Nonpoint Source Pollution Threat	52%	F	A	50	52%	F
Snowbird C.	Nonpoint Source Pollution Threat	52%	F	BCD	10	52%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Snowbird C.	Nonpoint Source Pollution Threat	52%	F	BCD	50	52%	F
Snowbird C.	Point Source Pollution Threat	1	G	A	10	1	G
Snowbird C.	Point Source Pollution Threat	1	G	A	50	1	G
Snowbird C.	Point Source Pollution Threat	1	G	BCD	10	1	G
Snowbird C.	Point Source Pollution Threat	1	G	BCD	50	1	G
Snowbird C.	Sedimentation Risk	1.2	F	A	10	1.17	F
Snowbird C.	Sedimentation Risk	1.2	F	A	50	1.03	F
Snowbird C.	Sedimentation Risk	1.2	F	BCD	10	1.19	F
Snowbird C.	Sedimentation Risk	1.2	F	BCD	50	1.15	F
Snowbird C.	Water Temperature Regime	96%	VG	A	10	94%	VG
Snowbird C.	Water Temperature Regime	96%	VG	A	50	94%	VG
Snowbird C.	Water Temperature Regime	96%	VG	BCD	10	94%	VG
Snowbird C.	Water Temperature Regime	96%	VG	BCD	50	94%	VG
South Fork Mills R.	Aquatic Community Composition	84%	P	A	10	84.29	P
South Fork Mills R.	Aquatic Community Composition	84%	P	A	50	83.89	P
South Fork Mills R.	Aquatic Community Composition	84%	P	BCD	10	84.24	P
South Fork Mills R.	Aquatic Community Composition	84%	P	BCD	50	83.64	P
South Fork Mills R.	Hydrologic Connectivity	0.9	G	A	10	0.7	VG
South Fork Mills R.	Hydrologic Connectivity	0.9	G	A	50	0	VG
South Fork Mills R.	Hydrologic Connectivity	0.9	G	BCD	10	0.3	VG
South Fork Mills R.	Hydrologic Connectivity	0.9	G	BCD	50	0	VG
South Fork Mills R.	Nonpoint Source Pollution Threat	17%	VG	A	10	17%	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
South Fork Mills R.	Nonpoint Source Pollution Threat	17%	VG	A	50	17%	VG
South Fork Mills R.	Nonpoint Source Pollution Threat	17%	VG	BCD	10	17%	VG
South Fork Mills R.	Nonpoint Source Pollution Threat	17%	VG	BCD	50	17%	VG
South Fork Mills R.	Sedimentation Risk	0.9	F	A	10	0.87	F
South Fork Mills R.	Sedimentation Risk	0.9	F	A	50	0.73	G
South Fork Mills R.	Sedimentation Risk	0.9	F	BCD	10	0.89	F
South Fork Mills R.	Sedimentation Risk	0.9	F	BCD	50	0.85	F
South Fork Mills R.	Water Temperature Regime	96%	VG	A	10	20%	P
South Fork Mills R.	Water Temperature Regime	96%	VG	A	50	20%	P
South Fork Mills R.	Water Temperature Regime	96%	VG	BCD	10	20%	P
South Fork Mills R.	Water Temperature Regime	96%	VG	BCD	50	20%	P
South Hominy C.	Aquatic Community Composition	80%	P	A	10	80	P
South Hominy C.	Aquatic Community Composition	80%	P	A	50	79.6	P
South Hominy C.	Aquatic Community Composition	80%	P	BCD	10	80	P
South Hominy C.	Aquatic Community Composition	80%	P	BCD	50	79.6	P
South Hominy C.	Hydrologic Connectivity	0.9	G	A	10	0.7	VG
South Hominy C.	Hydrologic Connectivity	0.9	G	A	50	0	VG
South Hominy C.	Hydrologic Connectivity	0.9	G	BCD	10	0.9	G
South Hominy C.	Hydrologic Connectivity	0.9	G	BCD	50	0.6	VG
South Hominy C.	Nonpoint Source Pollution Threat	78%	P	A	10	78%	P
South Hominy C.	Nonpoint Source Pollution Threat	78%	P	A	50	78%	P
South Hominy C.	Nonpoint Source Pollution Threat	78%	P	BCD	10	78%	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
South Hominy C.	Nonpoint Source Pollution Threat	78%	P	BCD	50	78%	P
South Hominy C.	Point Source Pollution Threat	1	G	A	10	1	G
South Hominy C.	Point Source Pollution Threat	1	G	A	50	1	G
South Hominy C.	Point Source Pollution Threat	1	G	BCD	10	1	G
South Hominy C.	Point Source Pollution Threat	1	G	BCD	50	1	G
South Hominy C.	Sedimentation Risk	0.5	G	A	10	0.47	G
South Hominy C.	Sedimentation Risk	0.5	G	A	50	0.33	VG
South Hominy C.	Sedimentation Risk	0.5	G	BCD	10	0.49	G
South Hominy C.	Sedimentation Risk	0.5	G	BCD	50	0.45	G
South Hominy C.	Water Temperature Regime	80%	VG	A	10	17%	P
South Hominy C.	Water Temperature Regime	80%	VG	A	50	17%	P
South Hominy C.	Water Temperature Regime	80%	VG	BCD	10	17%	P
South Hominy C.	Water Temperature Regime	80%	VG	BCD	50	17%	P
Spring C.	Aquatic Community Composition	83%	P	A	10	82.91	P
Spring C.	Aquatic Community Composition	83%	P	A	50	82.51	P
Spring C.	Aquatic Community Composition	83%	P	BCD	10	82.86	P
Spring C.	Aquatic Community Composition	83%	P	BCD	50	82.26	P
Spring C.	Hydrologic Connectivity	2.1	G	A	10	1.9	G
Spring C.	Hydrologic Connectivity	2.1	G	A	50	1.1	G
Spring C.	Hydrologic Connectivity	2.1	G	BCD	10	1.5	G
Spring C.	Hydrologic Connectivity	2.1	G	BCD	50	0	VG
Spring C.	Nonpoint Source Pollution Threat	82%	P	A	10	82%	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Spring C.	Nonpoint Source Pollution Threat	82%	P	A	50	82%	P
Spring C.	Nonpoint Source Pollution Threat	82%	P	BCD	10	82%	P
Spring C.	Nonpoint Source Pollution Threat	82%	P	BCD	50	82%	P
Spring C.	Sedimentation Risk	0.2	VG	A	10	0.17	VG
Spring C.	Sedimentation Risk	0.2	VG	A	50	0.03	VG
Spring C.	Sedimentation Risk	0.2	VG	BCD	10	0.11	VG
Spring C.	Sedimentation Risk	0.2	VG	BCD	50	0	VG
Spring C.	Water Temperature Regime	91%	VG	A	10	44%	F
Spring C.	Water Temperature Regime	91%	VG	A	50	44%	F
Spring C.	Water Temperature Regime	91%	VG	BCD	10	44%	F
Spring C.	Water Temperature Regime	91%	VG	BCD	50	44%	F
Stecoah C.	Aquatic Community Composition	100%	P	A	10	99.9	P
Stecoah C.	Aquatic Community Composition	100%	P	A	50	99.5	P
Stecoah C.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Stecoah C.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Stecoah C.	Hydrologic Connectivity	1.8	G	A	10	1.6	G
Stecoah C.	Hydrologic Connectivity	1.8	G	A	50	0.8	VG
Stecoah C.	Hydrologic Connectivity	1.8	G	BCD	10	1.7	G
Stecoah C.	Hydrologic Connectivity	1.8	G	BCD	50	1.4	G
Stecoah C.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Stecoah C.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Stecoah C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Stecoah C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Stecoah C.	Nonpoint Source Pollution Threat	59%	F	A	10	59%	F
Stecoah C.	Nonpoint Source Pollution Threat	59%	F	A	50	59%	F
Stecoah C.	Nonpoint Source Pollution Threat	59%	F	BCD	10	59%	F
Stecoah C.	Nonpoint Source Pollution Threat	59%	F	BCD	50	59%	F
Stecoah C.	Sedimentation Risk	1.2	F	A	10	1.17	F
Stecoah C.	Sedimentation Risk	1.2	F	A	50	1.03	F
Stecoah C.	Sedimentation Risk	1.2	F	BCD	10	1.19	F
Stecoah C.	Sedimentation Risk	1.2	F	BCD	50	1.15	F
Stecoah C.	Water Temperature Regime	90%	VG	A	10	58%	G
Stecoah C.	Water Temperature Regime	90%	VG	A	50	58%	G
Stecoah C.	Water Temperature Regime	90%	VG	BCD	10	58%	G
Stecoah C.	Water Temperature Regime	90%	VG	BCD	50	58%	G
Sweetwater C.	Aquatic Community Composition	100%	P	A	10	99.9	P
Sweetwater C.	Aquatic Community Composition	100%	P	A	50	99.5	P
Sweetwater C.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Sweetwater C.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Sweetwater C.	Hydrologic Connectivity	1	G	A	10	0.8	VG
Sweetwater C.	Hydrologic Connectivity	1	G	A	50	0	VG
Sweetwater C.	Hydrologic Connectivity	1	G	BCD	10	0.9	G
Sweetwater C.	Hydrologic Connectivity	1	G	BCD	50	0.6	VG
Sweetwater C.	Nonpoint Source Pollution Threat	78%	P	A	10	78%	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Sweetwater C.	Nonpoint Source Pollution Threat	78%	P	A	50	78%	P
Sweetwater C.	Nonpoint Source Pollution Threat	78%	P	BCD	10	78%	P
Sweetwater C.	Nonpoint Source Pollution Threat	78%	P	BCD	50	78%	P
Sweetwater C.	Sedimentation Risk	1	F	A	10	0.97	F
Sweetwater C.	Sedimentation Risk	1	F	A	50	0.83	F
Sweetwater C.	Sedimentation Risk	1	F	BCD	10	0.99	F
Sweetwater C.	Sedimentation Risk	1	F	BCD	50	0.95	F
Sweetwater C.	Water Temperature Regime	90%	VG	A	10	87%	VG
Sweetwater C.	Water Temperature Regime	90%	VG	A	50	87%	VG
Sweetwater C.	Water Temperature Regime	90%	VG	BCD	10	87%	VG
Sweetwater C.	Water Temperature Regime	90%	VG	BCD	50	87%	VG
Sweetwater C.-Hiwassee R.	Aquatic Community Composition	100%	P	A	10	99.9	P
Sweetwater C.-Hiwassee R.	Aquatic Community Composition	100%	P	A	50	99.5	P
Sweetwater C.-Hiwassee R.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Sweetwater C.-Hiwassee R.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Sweetwater C.-Hiwassee R.	Hydrologic Connectivity	4.7	F	A	10	4.5	F
Sweetwater C.-Hiwassee R.	Hydrologic Connectivity	4.7	F	A	50	3.7	F
Sweetwater C.-Hiwassee R.	Hydrologic Connectivity	4.7	F	BCD	10	4	F
Sweetwater C.-Hiwassee R.	Hydrologic Connectivity	4.7	F	BCD	50	4.3	F
Sweetwater C.-Hiwassee R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Sweetwater C.-Hiwassee R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Sweetwater C.-Hiwassee R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Sweetwater C.-Hiwassee R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Sweetwater C.-Hiwassee R.	Nonpoint Source Pollution Threat	90%	P	A	10	90%	P
Sweetwater C.-Hiwassee R.	Nonpoint Source Pollution Threat	90%	P	A	50	90%	P
Sweetwater C.-Hiwassee R.	Nonpoint Source Pollution Threat	90%	P	BCD	10	90%	P
Sweetwater C.-Hiwassee R.	Nonpoint Source Pollution Threat	90%	P	BCD	50	90%	P
Sweetwater C.-Hiwassee R.	Point Source Pollution Threat	3	P	A	10	3	P
Sweetwater C.-Hiwassee R.	Point Source Pollution Threat	3	P	A	50	3	P
Sweetwater C.-Hiwassee R.	Point Source Pollution Threat	3	P	BCD	10	3	P
Sweetwater C.-Hiwassee R.	Point Source Pollution Threat	3	P	BCD	50	3	P
Sweetwater C.-Hiwassee R.	Sedimentation Risk	0.4	G	A	10	0.37	G
Sweetwater C.-Hiwassee R.	Sedimentation Risk	0.4	G	A	50	0.23	VG
Sweetwater C.-Hiwassee R.	Sedimentation Risk	0.4	G	BCD	10	0.39	G
Sweetwater C.-Hiwassee R.	Sedimentation Risk	0.4	G	BCD	50	0.35	G
Sweetwater C.-Hiwassee R.	Water Temperature Regime	74%	G	A	10	88%	VG
Sweetwater C.-Hiwassee R.	Water Temperature Regime	74%	G	A	50	88%	VG
Sweetwater C.-Hiwassee R.	Water Temperature Regime	74%	G	BCD	10	88%	VG
Sweetwater C.-Hiwassee R.	Water Temperature Regime	74%	G	BCD	50	88%	VG
Tellico C.-Little Tennessee R.	Aquatic Community Composition	100%	P	A	10	99.9	P
Tellico C.-Little Tennessee R.	Aquatic Community Composition	100%	P	A	50	99.5	P
Tellico C.-Little Tennessee R.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Tellico C.-Little Tennessee R.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Tellico C.-Little Tennessee R.	Hydrologic Connectivity	3.3	F	A	10	3.1	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Tellico C.-Little Tennessee R.	Hydrologic Connectivity	3.3	F	A	50	2.3	G
Tellico C.-Little Tennessee R.	Hydrologic Connectivity	3.3	F	BCD	10	3.2	F
Tellico C.-Little Tennessee R.	Hydrologic Connectivity	3.3	F	BCD	50	2.9	F
Tellico C.-Little Tennessee R.	Nonpoint Source Pollution Threat	68%	F	A	10	68%	F
Tellico C.-Little Tennessee R.	Nonpoint Source Pollution Threat	68%	F	A	50	68%	F
Tellico C.-Little Tennessee R.	Nonpoint Source Pollution Threat	68%	F	BCD	10	68%	F
Tellico C.-Little Tennessee R.	Nonpoint Source Pollution Threat	68%	F	BCD	50	68%	F
Tellico C.-Little Tennessee R.	Sedimentation Risk	0.7	G	A	10	0.67	G
Tellico C.-Little Tennessee R.	Sedimentation Risk	0.7	G	A	50	0.53	G
Tellico C.-Little Tennessee R.	Sedimentation Risk	0.7	G	BCD	10	0.69	G
Tellico C.-Little Tennessee R.	Sedimentation Risk	0.7	G	BCD	50	0.65	G
Tellico C.-Little Tennessee R.	Water Temperature Regime	85%	VG	A	10	23%	P
Tellico C.-Little Tennessee R.	Water Temperature Regime	85%	VG	A	50	23%	P
Tellico C.-Little Tennessee R.	Water Temperature Regime	85%	VG	BCD	10	23%	P
Tellico C.-Little Tennessee R.	Water Temperature Regime	85%	VG	BCD	50	23%	P
Toms C.-Catawba R.	Aquatic Community Composition	100%	P	A	10	99.9	P
Toms C.-Catawba R.	Aquatic Community Composition	100%	P	A	50	99.5	P
Toms C.-Catawba R.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Toms C.-Catawba R.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Toms C.-Catawba R.	Hydrologic Connectivity	2.6	F	A	10	2.4	F
Toms C.-Catawba R.	Hydrologic Connectivity	2.6	F	A	50	1.6	G
Toms C.-Catawba R.	Hydrologic Connectivity	2.6	F	BCD	10	2.6	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Toms C.-Catawba R.	Hydrologic Connectivity	2.6	F	BCD	50	2.3	G
Toms C.-Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Toms C.-Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Toms C.-Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Toms C.-Catawba R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Toms C.-Catawba R.	Nonpoint Source Pollution Threat	76%	P	A	10	76%	P
Toms C.-Catawba R.	Nonpoint Source Pollution Threat	76%	P	A	50	76%	P
Toms C.-Catawba R.	Nonpoint Source Pollution Threat	76%	P	BCD	10	76%	P
Toms C.-Catawba R.	Nonpoint Source Pollution Threat	76%	P	BCD	50	76%	P
Toms C.-Catawba R.	Point Source Pollution Threat	2	F	A	10	2	F
Toms C.-Catawba R.	Point Source Pollution Threat	2	F	A	50	2	F
Toms C.-Catawba R.	Point Source Pollution Threat	2	F	BCD	10	2	F
Toms C.-Catawba R.	Point Source Pollution Threat	2	F	BCD	50	2	F
Toms C.-Catawba R.	Sedimentation Risk	0.4	G	A	10	0.37	G
Toms C.-Catawba R.	Sedimentation Risk	0.4	G	A	50	0.23	VG
Toms C.-Catawba R.	Sedimentation Risk	0.4	G	BCD	10	0.39	G
Toms C.-Catawba R.	Sedimentation Risk	0.4	G	BCD	50	0.35	G
Toms C.-Catawba R.	Water Temperature Regime	70%	G	A	10	54%	G
Toms C.-Catawba R.	Water Temperature Regime	70%	G	A	50	54%	G
Toms C.-Catawba R.	Water Temperature Regime	70%	G	BCD	10	54%	G
Toms C.-Catawba R.	Water Temperature Regime	70%	G	BCD	50	54%	G
Tulula C.	Aquatic Community Composition	100%	P	A	10	99.9	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Tulula C.	Aquatic Community Composition	100%	P	A	50	99.5	P
Tulula C.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Tulula C.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Tulula C.	Hydrologic Connectivity	1.9	G	A	10	1.7	G
Tulula C.	Hydrologic Connectivity	1.9	G	A	50	0.9	G
Tulula C.	Hydrologic Connectivity	1.9	G	BCD	10	1.9	G
Tulula C.	Hydrologic Connectivity	1.9	G	BCD	50	1.6	G
Tulula C.	Nonpoint Source Pollution Threat	46%	G	A	10	46%	G
Tulula C.	Nonpoint Source Pollution Threat	46%	G	A	50	46%	G
Tulula C.	Nonpoint Source Pollution Threat	46%	G	BCD	10	46%	P
Tulula C.	Nonpoint Source Pollution Threat	46%	G	BCD	50	46%	P
Tulula C.	Sedimentation Risk	1.4	F	A	10	1.37	F
Tulula C.	Sedimentation Risk	1.4	F	A	50	1.23	F
Tulula C.	Sedimentation Risk	1.4	F	BCD	10	1.39	F
Tulula C.	Sedimentation Risk	1.4	F	BCD	50	1.35	F
Tulula C.	Water Temperature Regime	91%	VG	A	10	33%	F
Tulula C.	Water Temperature Regime	91%	VG	A	50	33%	F
Tulula C.	Water Temperature Regime	91%	VG	BCD	10	33%	F
Tulula C.	Water Temperature Regime	91%	VG	BCD	50	33%	F
Tusquitee C.	Aquatic Community Composition	96%	P	A	10	95.73	P
Tusquitee C.	Aquatic Community Composition	96%	P	A	50	95.33	P
Tusquitee C.	Aquatic Community Composition	96%	P	BCD	10	95.73	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Tusquitee C.	Aquatic Community Composition	96%	P	BCD	50	95.33	P
Tusquitee C.	Hydrologic Connectivity	3	F	A	10	2.8	F
Tusquitee C.	Hydrologic Connectivity	3	F	A	50	2	G
Tusquitee C.	Hydrologic Connectivity	3	F	BCD	10	2.9	F
Tusquitee C.	Hydrologic Connectivity	3	F	BCD	50	2.6	F
Tusquitee C.	Nonpoint Source Pollution Threat	42%	G	A	10	42%	G
Tusquitee C.	Nonpoint Source Pollution Threat	42%	G	A	50	42%	G
Tusquitee C.	Nonpoint Source Pollution Threat	42%	G	BCD	10	42%	G
Tusquitee C.	Nonpoint Source Pollution Threat	42%	G	BCD	50	42%	G
Tusquitee C.	Sedimentation Risk	0.5	G	A	10	0.47	G
Tusquitee C.	Sedimentation Risk	0.5	G	A	50	0.45	G
Tusquitee C.	Sedimentation Risk	0.5	G	BCD	10	0.49	G
Tusquitee C.	Sedimentation Risk	0.5	G	BCD	50	0.45	G
Tusquitee C.	Water Temperature Regime	92%	VG	A	10	15%	P
Tusquitee C.	Water Temperature Regime	92%	VG	A	50	15%	P
Tusquitee C.	Water Temperature Regime	92%	VG	BCD	10	15%	P
Tusquitee C.	Water Temperature Regime	92%	VG	BCD	50	15%	P
Upper Big Laurel C.	Aquatic Community Composition	100%	P	A	10	990.9	P
Upper Big Laurel C.	Aquatic Community Composition	100%	P	A	50	99.5	P
Upper Big Laurel C.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Upper Big Laurel C.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Upper Big Laurel C.	Hydrologic Connectivity	4.2	F	A	10	4	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Upper Big Laurel C.	Hydrologic Connectivity	4.2	F	A	50	3.7	F
Upper Big Laurel C.	Hydrologic Connectivity	4.2	F	BCD	10	4.1	F
Upper Big Laurel C.	Hydrologic Connectivity	4.2	F	BCD	50	3.8	F
Upper Big Laurel C.	Nonpoint Source Pollution Threat	91%	P	A	10	91%	P
Upper Big Laurel C.	Nonpoint Source Pollution Threat	91%	P	A	50	91%	P
Upper Big Laurel C.	Nonpoint Source Pollution Threat	91%	P	BCD	10	91%	P
Upper Big Laurel C.	Nonpoint Source Pollution Threat	91%	P	BCD	50	91%	P
Upper Big Laurel C.	Point Source Pollution Threat	4	P	A	10	4	P
Upper Big Laurel C.	Point Source Pollution Threat	4	P	A	50	4	P
Upper Big Laurel C.	Point Source Pollution Threat	4	P	BCD	10	4	P
Upper Big Laurel C.	Point Source Pollution Threat	4	P	BCD	50	4	P
Upper Big Laurel C.	Sedimentation Risk	0	VG	A	10	0	VG
Upper Big Laurel C.	Sedimentation Risk	0	VG	A	50	0	VG
Upper Big Laurel C.	Sedimentation Risk	0	VG	BCD	10	0	VG
Upper Big Laurel C.	Sedimentation Risk	0	VG	BCD	50	0	VG
Upper Big Laurel C.	Water Temperature Regime	86%	VG	A	10	84%	VG
Upper Big Laurel C.	Water Temperature Regime	86%	VG	A	50	84%	VG
Upper Big Laurel C.	Water Temperature Regime	86%	VG	BCD	10	84%	VG
Upper Big Laurel C.	Water Temperature Regime	86%	VG	BCD	50	84%	VG
Upper Cane R.	Aquatic Community Composition	41%	G	A	10	40.48	G
Upper Cane R.	Aquatic Community Composition	41%	G	A	50	40.08	G
Upper Cane R.	Aquatic Community Composition	41%	G	BCD	10	40.48	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Upper Cane R.	Aquatic Community Composition	41%	G	BCD	50	40.08	G
Upper Cane R.	Hydrologic Connectivity	3.1	F	A	10	2.9	F
Upper Cane R.	Hydrologic Connectivity	3.1	F	A	50	2.1	G
Upper Cane R.	Hydrologic Connectivity	3.1	F	BCD	10	3	F
Upper Cane R.	Hydrologic Connectivity	3.1	F	BCD	50	2.7	F
Upper Cane R.	Nonpoint Source Pollution Threat	84%	P	A	10	84%	P
Upper Cane R.	Nonpoint Source Pollution Threat	84%	P	A	50	84%	P
Upper Cane R.	Nonpoint Source Pollution Threat	84%	P	BCD	10	84%	P
Upper Cane R.	Nonpoint Source Pollution Threat	84%	P	BCD	50	84%	P
Upper Cane R.	Point Source Pollution Threat	2	F	A	10	2	F
Upper Cane R.	Point Source Pollution Threat	2	F	A	50	2	F
Upper Cane R.	Point Source Pollution Threat	2	F	BCD	10	2	F
Upper Cane R.	Point Source Pollution Threat	2	F	BCD	50	2	F
Upper Cane R.	Sedimentation Risk	0.3	VG	A	10	0.27	VG
Upper Cane R.	Sedimentation Risk	0.3	VG	A	50	0.13	VG
Upper Cane R.	Sedimentation Risk	0.3	VG	BCD	10	0.29	VG
Upper Cane R.	Sedimentation Risk	0.3	VG	BCD	50	0.25	VG
Upper Cane R.	Water Temperature Regime	72%	G	A	10	14%	P
Upper Cane R.	Water Temperature Regime	72%	G	A	50	14%	P
Upper Cane R.	Water Temperature Regime	72%	G	BCD	10	14%	P
Upper Cane R.	Water Temperature Regime	72%	G	BCD	50	14%	P
Upper Cartoogechaye C.	Aquatic Community Composition	95%	P	A	10	94.98	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Upper Cartoogechaye C.	Aquatic Community Composition	95%	P	A	50	94.58	P
Upper Cartoogechaye C.	Aquatic Community Composition	95%	P	BCD	10	94.98	P
Upper Cartoogechaye C.	Aquatic Community Composition	95%	P	BCD	50	94.58	P
Upper Cartoogechaye C.	Hydrologic Connectivity	2.5	F	A	10	2.3	G
Upper Cartoogechaye C.	Hydrologic Connectivity	2.5	F	A	50	1.5	G
Upper Cartoogechaye C.	Hydrologic Connectivity	2.5	F	BCD	10	2.4	F
Upper Cartoogechaye C.	Hydrologic Connectivity	2.5	F	BCD	50	2.1	G
Upper Cartoogechaye C.	Nonpoint Source Pollution Threat	56%	F	A	10	56%	F
Upper Cartoogechaye C.	Nonpoint Source Pollution Threat	56%	F	A	50	56%	F
Upper Cartoogechaye C.	Nonpoint Source Pollution Threat	56%	F	BCD	10	56%	F
Upper Cartoogechaye C.	Nonpoint Source Pollution Threat	56%	F	BCD	50	56%	F
Upper Cartoogechaye C.	Sedimentation Risk	0.7	G	A	10	0.67	G
Upper Cartoogechaye C.	Sedimentation Risk	0.7	G	A	50	0.53	G
Upper Cartoogechaye C.	Sedimentation Risk	0.7	G	BCD	10	0.69	G
Upper Cartoogechaye C.	Sedimentation Risk	0.7	G	BCD	50	0.65	G
Upper Cartoogechaye C.	Water Temperature Regime	88%	VG	A	10	17%	P
Upper Cartoogechaye C.	Water Temperature Regime	88%	VG	A	50	17%	P
Upper Cartoogechaye C.	Water Temperature Regime	88%	VG	BCD	10	17%	P
Upper Cartoogechaye C.	Water Temperature Regime	88%	VG	BCD	50	17%	P
Upper Cullasaja R.	Aquatic Community Composition	61%	F	A	10	60.7	F
Upper Cullasaja R.	Aquatic Community Composition	61%	F	A	50	60.3	F
Upper Cullasaja R.	Aquatic Community Composition	61%	F	BCD	10	60.7	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Upper Cullasaja R.	Aquatic Community Composition	61%	F	BCD	50	60.3	F
Upper Cullasaja R.	Hydrologic Connectivity	0	VG	A	10	0	VG
Upper Cullasaja R.	Hydrologic Connectivity	0	VG	A	50	0	VG
Upper Cullasaja R.	Hydrologic Connectivity	0	VG	BCD	10	0	VG
Upper Cullasaja R.	Hydrologic Connectivity	0	VG	BCD	50	0	VG
Upper Cullasaja R.	Nonpoint Source Pollution Threat	53%	F	A	10	53%	F
Upper Cullasaja R.	Nonpoint Source Pollution Threat	53%	F	A	50	53%	F
Upper Cullasaja R.	Nonpoint Source Pollution Threat	53%	F	BCD	10	53%	F
Upper Cullasaja R.	Nonpoint Source Pollution Threat	53%	F	BCD	50	53%	F
Upper Cullasaja R.	Point Source Pollution Threat	6	P	A	10	6	P
Upper Cullasaja R.	Point Source Pollution Threat	6	P	A	50	6	P
Upper Cullasaja R.	Point Source Pollution Threat	6	P	BCD	10	6	P
Upper Cullasaja R.	Point Source Pollution Threat	6	P	BCD	50	6	P
Upper Cullasaja R.	Sedimentation Risk	0.7	G	A	10	0.67	G
Upper Cullasaja R.	Sedimentation Risk	0.7	G	A	50	0.53	G
Upper Cullasaja R.	Sedimentation Risk	0.7	G	BCD	10	0.61	G
Upper Cullasaja R.	Sedimentation Risk	0.7	G	BCD	50	0.26	VG
Upper Cullasaja R.	Water Temperature Regime	81%	VG	A	10	63%	G
Upper Cullasaja R.	Water Temperature Regime	81%	VG	A	50	63%	G
Upper Cullasaja R.	Water Temperature Regime	81%	VG	BCD	10	63%	G
Upper Cullasaja R.	Water Temperature Regime	81%	VG	BCD	50	63%	G
Upper Fontana L.-Little	Aquatic Community Composition	0%	VG	A	10	0	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Tennessee R.							
Upper Fontana L.-Little Tennessee R.	Aquatic Community Composition	0%	VG	A	50	0	VG
Upper Fontana L.-Little Tennessee R.	Aquatic Community Composition	0%	VG	BCD	10	0	VG
Upper Fontana L.-Little Tennessee R.	Aquatic Community Composition	0%	VG	BCD	50	0	VG
Upper Fontana L.-Little Tennessee R.	Hydrologic Connectivity	1.5	G	A	10	1.3	G
Upper Fontana L.-Little Tennessee R.	Hydrologic Connectivity	1.5	G	A	50	0.5	VG
Upper Fontana L.-Little Tennessee R.	Hydrologic Connectivity	1.5	G	BCD	10	0.8	VG
Upper Fontana L.-Little Tennessee R.	Hydrologic Connectivity	1.5	G	BCD	50	0	VG
Upper Fontana L.-Little Tennessee R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Upper Fontana L.-Little Tennessee R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Upper Fontana L.-Little Tennessee R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Upper Fontana L.-Little Tennessee R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Upper Fontana L.-Little Tennessee R.	Nonpoint Source Pollution Threat	71%	F	A	10	71%	F
Upper Fontana L.-Little Tennessee R.	Nonpoint Source Pollution Threat	71%	F	A	50	71%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Upper Fontana L.-Little Tennessee R.	Nonpoint Source Pollution Threat	71%	F	BCD	10	71%	F
Upper Fontana L.-Little Tennessee R.	Nonpoint Source Pollution Threat	71%	F	BCD	50	71%	F
Upper Fontana L.-Little Tennessee R.	Sedimentation Risk	0.6	G	A	10	0.57	G
Upper Fontana L.-Little Tennessee R.	Sedimentation Risk	0.6	G	A	50	0.43	G
Upper Fontana L.-Little Tennessee R.	Sedimentation Risk	0.6	G	BCD	10	0.51	G
Upper Fontana L.-Little Tennessee R.	Sedimentation Risk	0.6	G	BCD	50	0.16	VG
Upper Fontana L.-Little Tennessee R.	Water Temperature Regime	72%	G	A	10	63%	G
Upper Fontana L.-Little Tennessee R.	Water Temperature Regime	72%	G	A	50	63%	G
Upper Fontana L.-Little Tennessee R.	Water Temperature Regime	72%	G	BCD	10	63%	G
Upper Fontana L.-Little Tennessee R.	Water Temperature Regime	72%	G	BCD	50	63%	G
Upper Ivy C.	Aquatic Community Composition	96%	P	A	10	95.94	P
Upper Ivy C.	Aquatic Community Composition	96%	P	A	50	95.54	P
Upper Ivy C.	Aquatic Community Composition	96%	P	BCD	10	95.89	P
Upper Ivy C.	Aquatic Community Composition	96%	P	BCD	50	95.29	P
Upper Ivy C.	Hydrologic Connectivity	1.5	G	A	10	1.3	G
Upper Ivy C.	Hydrologic Connectivity	1.5	G	A	50	0.5	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Upper Ivy C.	Hydrologic Connectivity	1.5	G	BCD	10	0.8	VG
Upper Ivy C.	Hydrologic Connectivity	1.5	G	BCD	50	0	VG
Upper Ivy C.	Nonpoint Source Pollution Threat	84%	P	A	10	84%	P
Upper Ivy C.	Nonpoint Source Pollution Threat	84%	P	A	50	84%	P
Upper Ivy C.	Nonpoint Source Pollution Threat	84%	P	BCD	10	84%	P
Upper Ivy C.	Nonpoint Source Pollution Threat	84%	P	BCD	50	84%	P
Upper Ivy C.	Point Source Pollution Threat	1	G	A	10	1	G
Upper Ivy C.	Point Source Pollution Threat	1	G	A	50	1	G
Upper Ivy C.	Point Source Pollution Threat	1	G	BCD	10	1	G
Upper Ivy C.	Point Source Pollution Threat	1	G	BCD	50	1	G
Upper Ivy C.	Sedimentation Risk	0.2	VG	A	10	0.17	VG
Upper Ivy C.	Sedimentation Risk	0.2	VG	A	50	0.03	VG
Upper Ivy C.	Sedimentation Risk	0.2	VG	BCD	10	0.11	VG
Upper Ivy C.	Sedimentation Risk	0.2	VG	BCD	50	0	VG
Upper Ivy C.	Water Temperature Regime	84%	VG	A	10	53%	G
Upper Ivy C.	Water Temperature Regime	84%	VG	A	50	53%	G
Upper Ivy C.	Water Temperature Regime	84%	VG	BCD	10	53%	G
Upper Ivy C.	Water Temperature Regime	84%	VG	BCD	50	53%	G
Upper Johns R.	Aquatic Community Composition	87%	P	A	10	87.14	P
Upper Johns R.	Aquatic Community Composition	87%	P	A	50	86.74	P
Upper Johns R.	Aquatic Community Composition	87%	P	BCD	10	87.09	P
Upper Johns R.	Aquatic Community Composition	87%	P	BCD	50	86.49	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Upper Johns R.	Hydrologic Connectivity	2.9	F	A	10	2.7	F
Upper Johns R.	Hydrologic Connectivity	2.9	F	A	50	1.9	G
Upper Johns R.	Hydrologic Connectivity	2.9	F	BCD	10	2.3	G
Upper Johns R.	Hydrologic Connectivity	2.9	F	BCD	50	0	VG
Upper Johns R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Upper Johns R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Upper Johns R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Upper Johns R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Upper Johns R.	Nonpoint Source Pollution Threat	52%	F	A	10	52%	F
Upper Johns R.	Nonpoint Source Pollution Threat	52%	F	A	50	52%	F
Upper Johns R.	Nonpoint Source Pollution Threat	52%	F	BCD	10	52%	F
Upper Johns R.	Nonpoint Source Pollution Threat	52%	F	BCD	50	52%	F
Upper Johns R.	Sedimentation Risk	0.5	G	A	10	0.47	G
Upper Johns R.	Sedimentation Risk	0.5	G	A	50	0.33	VG
Upper Johns R.	Sedimentation Risk	0.5	G	BCD	10	0.41	G
Upper Johns R.	Sedimentation Risk	0.5	G	BCD	50	0.06	VG
Upper Johns R.	Water Temperature Regime	92%	VG	A	10	94%	VG
Upper Johns R.	Water Temperature Regime	92%	VG	A	50	94%	VG
Upper Johns R.	Water Temperature Regime	92%	VG	BCD	10	94%	VG
Upper Johns R.	Water Temperature Regime	92%	VG	BCD	50	94%	VG
Upper Shelton Laurel C.	Aquatic Community Composition	88%	P	A	10	88.09	P
Upper Shelton Laurel C.	Aquatic Community Composition	88%	P	A	50	87.69	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Upper Shelton Laurel C.	Aquatic Community Composition	88%	P	BCD	10	88.09	P
Upper Shelton Laurel C.	Aquatic Community Composition	88%	P	BCD	50	87.69	P
Upper Shelton Laurel C.	Hydrologic Connectivity	1.6	G	A	10	1.4	G
Upper Shelton Laurel C.	Hydrologic Connectivity	1.6	G	A	50	0.6	VG
Upper Shelton Laurel C.	Hydrologic Connectivity	1.6	G	BCD	10	1.5	G
Upper Shelton Laurel C.	Hydrologic Connectivity	1.6	G	BCD	50	1.2	G
Upper Shelton Laurel C.	Nonpoint Source Pollution Threat	31%	G	A	10	31%	G
Upper Shelton Laurel C.	Nonpoint Source Pollution Threat	31%	G	A	50	31%	G
Upper Shelton Laurel C.	Nonpoint Source Pollution Threat	31%	G	BCD	10	31%	G
Upper Shelton Laurel C.	Nonpoint Source Pollution Threat	31%	G	BCD	50	31%	G
Upper Shelton Laurel C.	Sedimentation Risk	1	F	A	10	0.97	F
Upper Shelton Laurel C.	Sedimentation Risk	1	F	A	50	0.83	F
Upper Shelton Laurel C.	Sedimentation Risk	1	F	BCD	10	0.99	F
Upper Shelton Laurel C.	Sedimentation Risk	1	F	BCD	50	0.95	F
Upper Shelton Laurel C.	Water Temperature Regime	94%	VG	A	10	63%	G
Upper Shelton Laurel C.	Water Temperature Regime	94%	VG	A	50	63%	G
Upper Shelton Laurel C.	Water Temperature Regime	94%	VG	BCD	10	63%	G
Upper Shelton Laurel C.	Water Temperature Regime	94%	VG	BCD	50	63%	G
Upper South Toe R.	Aquatic Community Composition	67%	F	A	10	66.84	F
Upper South Toe R.	Aquatic Community Composition	67%	F	A	50	66.44	F
Upper South Toe R.	Aquatic Community Composition	67%	F	BCD	10	66.84	F
Upper South Toe R.	Aquatic Community Composition	67%	F	BCD	50	66.44	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Upper South Toe R.	Hydrologic Connectivity	3.4	F	A	10	3.2	F
Upper South Toe R.	Hydrologic Connectivity	3.4	F	A	50	2.4	F
Upper South Toe R.	Hydrologic Connectivity	3.4	F	BCD	10	3.3	F
Upper South Toe R.	Hydrologic Connectivity	3.4	F	BCD	50	3	F
Upper South Toe R.	Nonpoint Source Pollution Threat	32%	G	A	10	32%	G
Upper South Toe R.	Nonpoint Source Pollution Threat	32%	G	A	50	32%	G
Upper South Toe R.	Nonpoint Source Pollution Threat	32%	G	BCD	10	32%	G
Upper South Toe R.	Nonpoint Source Pollution Threat	32%	G	BCD	50	32%	G
Upper South Toe R.	Sedimentation Risk	0.5	G	A	10	0.47	G
Upper South Toe R.	Sedimentation Risk	0.5	G	A	50	0.33	VG
Upper South Toe R.	Sedimentation Risk	0.5	G	BCD	10	0.49	G
Upper South Toe R.	Sedimentation Risk	0.5	G	BCD	50	0.45	G
Upper South Toe R.	Water Temperature Regime	94%	VG	A	10	14%	P
Upper South Toe R.	Water Temperature Regime	94%	VG	A	50	14%	P
Upper South Toe R.	Water Temperature Regime	94%	VG	BCD	10	14%	P
Upper South Toe R.	Water Temperature Regime	94%	VG	BCD	50	14%	P
Upper Valley R.	Aquatic Community Composition	97%	P	A	10	96.84	P
Upper Valley R.	Aquatic Community Composition	97%	P	A	50	96.44	P
Upper Valley R.	Aquatic Community Composition	97%	P	BCD	10	96.84	P
Upper Valley R.	Aquatic Community Composition	97%	P	BCD	50	96.44	P
Upper Valley R.	Hydrologic Connectivity	2.4	F	A	10	2.2	G
Upper Valley R.	Hydrologic Connectivity	2.4	F	A	50	1.4	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Upper Valley R.	Hydrologic Connectivity	2.4	F	BCD	10	2.3	G
Upper Valley R.	Hydrologic Connectivity	2.4	F	BCD	50	2	G
Upper Valley R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Upper Valley R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Upper Valley R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Upper Valley R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Upper Valley R.	Nonpoint Source Pollution Threat	67%	F	A	10	67%	F
Upper Valley R.	Nonpoint Source Pollution Threat	67%	F	A	50	67%	F
Upper Valley R.	Nonpoint Source Pollution Threat	67%	F	BCD	10	67%	F
Upper Valley R.	Nonpoint Source Pollution Threat	67%	F	BCD	50	67%	F
Upper Valley R.	Point Source Pollution Threat	3	P	A	10	3	P
Upper Valley R.	Point Source Pollution Threat	3	P	A	50	3	P
Upper Valley R.	Point Source Pollution Threat	3	P	BCD	10	3	P
Upper Valley R.	Point Source Pollution Threat	3	P	BCD	50	3	P
Upper Valley R.	Sedimentation Risk	0.7	G	A	10	0.67	G
Upper Valley R.	Sedimentation Risk	0.7	G	A	50	0.53	G
Upper Valley R.	Sedimentation Risk	0.7	G	BCD	10	0.69	G
Upper Valley R.	Sedimentation Risk	0.7	G	BCD	50	0.65	G
Upper Valley R.	Water Temperature Regime	83%	VG	A	10	6%	P
Upper Valley R.	Water Temperature Regime	83%	VG	A	50	6%	P
Upper Valley R.	Water Temperature Regime	83%	VG	BCD	10	6%	P
Upper Valley R.	Water Temperature Regime	83%	VG	BCD	50	6%	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Upper Warrior Fork	Aquatic Community Composition	82%	P	A	10	81.77	P
Upper Warrior Fork	Aquatic Community Composition	82%	P	A	50	81.37	P
Upper Warrior Fork	Aquatic Community Composition	82%	P	BCD	10	81.77	P
Upper Warrior Fork	Aquatic Community Composition	82%	P	BCD	50	81.37	P
Upper Warrior Fork	Hydrologic Connectivity	2.8	F	A	10	2.6	F
Upper Warrior Fork	Hydrologic Connectivity	2.8	F	A	50	1.8	G
Upper Warrior Fork	Hydrologic Connectivity	2.8	F	BCD	10	2.7	F
Upper Warrior Fork	Hydrologic Connectivity	2.8	F	BCD	50	2.4	F
Upper Warrior Fork	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Upper Warrior Fork	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Upper Warrior Fork	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Upper Warrior Fork	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Upper Warrior Fork	Nonpoint Source Pollution Threat	19%	VG	A	10	19%	VG
Upper Warrior Fork	Nonpoint Source Pollution Threat	19%	VG	A	50	19%	VG
Upper Warrior Fork	Nonpoint Source Pollution Threat	19%	VG	BCD	10	19%	VG
Upper Warrior Fork	Nonpoint Source Pollution Threat	19%	VG	BCD	50	19%	VG
Upper Warrior Fork	Sedimentation Risk	0.5	G	A	10	0.47	G
Upper Warrior Fork	Sedimentation Risk	0.5	G	A	50	0.33	VG
Upper Warrior Fork	Sedimentation Risk	0.5	G	BCD	10	0.49	G
Upper Warrior Fork	Sedimentation Risk	0.5	G	BCD	50	0.45	G
Upper Warrior Fork	Water Temperature Regime	94%	VG	A	10	23%	P
Upper Warrior Fork	Water Temperature Regime	94%	VG	A	50	23%	P

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Upper Warrior Fork	Water Temperature Regime	94%	VG	BCD	10	23%	P
Upper Warrior Fork	Water Temperature Regime	94%	VG	BCD	50	23%	P
Upper Wilson C.	Aquatic Community Composition	80%	P	A	10	79.47	P
Upper Wilson C.	Aquatic Community Composition	80%	P	A	50	79.07	P
Upper Wilson C.	Aquatic Community Composition	80%	P	BCD	10	79.42	P
Upper Wilson C.	Aquatic Community Composition	80%	P	BCD	50	78.82	P
Upper Wilson C.	Hydrologic Connectivity	3.2	F	A	10	3	F
Upper Wilson C.	Hydrologic Connectivity	3.2	F	A	50	2.2	G
Upper Wilson C.	Hydrologic Connectivity	3.2	F	BCD	10	2.5	F
Upper Wilson C.	Hydrologic Connectivity	3.2	F	BCD	50	0.1	VG
Upper Wilson C.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Upper Wilson C.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Upper Wilson C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Upper Wilson C.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Upper Wilson C.	Nonpoint Source Pollution Threat	23%	VG	A	10	23%	VG
Upper Wilson C.	Nonpoint Source Pollution Threat	23%	VG	A	50	23%	VG
Upper Wilson C.	Nonpoint Source Pollution Threat	23%	VG	BCD	10	23%	VG
Upper Wilson C.	Nonpoint Source Pollution Threat	23%	VG	BCD	50	23%	VG
Upper Wilson C.	Sedimentation Risk	0.8	F	A	10	0.77	F
Upper Wilson C.	Sedimentation Risk	0.8	F	A	50	0.63	G
Upper Wilson C.	Sedimentation Risk	0.8	F	BCD	10	0.71	G
Upper Wilson C.	Sedimentation Risk	0.8	F	BCD	50	0.36	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Upper Wilson C.	Water Temperature Regime	96%	VG	A	10	9%	P
Upper Wilson C.	Water Temperature Regime	96%	VG	A	50	9%	P
Upper Wilson C.	Water Temperature Regime	96%	VG	BCD	10	9%	P
Upper Wilson C.	Water Temperature Regime	96%	VG	BCD	50	9%	P
Walters L.-Pigeon R.	Aquatic Community Composition	100%	P	A	10	99.9	P
Walters L.-Pigeon R.	Aquatic Community Composition	100%	P	A	50	99.5	P
Walters L.-Pigeon R.	Aquatic Community Composition	100%	P	BCD	10	99.9	P
Walters L.-Pigeon R.	Aquatic Community Composition	100%	P	BCD	50	99.5	P
Walters L.-Pigeon R.	Hydrologic Connectivity	2.2	G	A	10	2	G
Walters L.-Pigeon R.	Hydrologic Connectivity	2.2	G	A	50	1.2	G
Walters L.-Pigeon R.	Hydrologic Connectivity	2.2	G	BCD	10	2.1	G
Walters L.-Pigeon R.	Hydrologic Connectivity	2.2	G	BCD	50	1.8	G
Walters L.-Pigeon R.	Invasive Sp. Abundance: Corbicula	present	P	A	10	present	P
Walters L.-Pigeon R.	Invasive Sp. Abundance: Corbicula	present	P	A	50	present	P
Walters L.-Pigeon R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	10	Present	P
Walters L.-Pigeon R.	Invasive Sp. Abundance: Corbicula	present	P	BCD	50	Present	P
Walters L.-Pigeon R.	Nonpoint Source Pollution Threat	94%	P	A	10	94%	P
Walters L.-Pigeon R.	Nonpoint Source Pollution Threat	94%	P	A	50	94%	P
Walters L.-Pigeon R.	Nonpoint Source Pollution Threat	94%	P	BCD	10	94%	P
Walters L.-Pigeon R.	Nonpoint Source Pollution Threat	94%	P	BCD	50	94%	P
Walters L.-Pigeon R.	Sedimentation Risk	0	VG	A	10	0	VG
Walters L.-Pigeon R.	Sedimentation Risk	0	VG	A	50	0	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Walters L.-Pigeon R.	Sedimentation Risk	0	VG	BCD	10	0	VG
Walters L.-Pigeon R.	Sedimentation Risk	0	VG	BCD	50	0	VG
Walters L.-Pigeon R.	Water Temperature Regime	82%	VG	A	10	67%	G
Walters L.-Pigeon R.	Water Temperature Regime	82%	VG	A	50	67%	G
Walters L.-Pigeon R.	Water Temperature Regime	82%	VG	BCD	10	67%	G
Walters L.-Pigeon R.	Water Temperature Regime	82%	VG	BCD	50	67%	G
Wayehutta C.-Tuckasegee R.	Aquatic Community Composition	100%	P	A	10	99.9	P
Wayehutta C.-Tuckasegee R.	Aquatic Community Composition	100%	P	A	50	99.5	P
Wayehutta C.-Tuckasegee R.	Aquatic Community Composition	100%	P	BCD	10	99.85	P
Wayehutta C.-Tuckasegee R.	Aquatic Community Composition	100%	P	BCD	50	99.25	P
Wayehutta C.-Tuckasegee R.	Hydrologic Connectivity	1.1	G	A	10	0.9	G
Wayehutta C.-Tuckasegee R.	Hydrologic Connectivity	1.1	G	A	50	0.1	VG
Wayehutta C.-Tuckasegee R.	Hydrologic Connectivity	1.1	G	BCD	10	0.5	VG
Wayehutta C.-Tuckasegee R.	Hydrologic Connectivity	1.1	G	BCD	50	0	VG
Wayehutta C.-Tuckasegee R.	Nonpoint Source Pollution Threat	84%	P	A	10	84%	P
Wayehutta C.-Tuckasegee R.	Nonpoint Source Pollution Threat	84%	P	A	50	84%	P
Wayehutta C.-Tuckasegee R.	Nonpoint Source Pollution Threat	84%	P	BCD	10	84%	P
Wayehutta C.-Tuckasegee R.	Nonpoint Source Pollution Threat	84%	P	BCD	50	84%	P
Wayehutta C.-Tuckasegee R.	Sedimentation Risk	0.4	G	A	10	0.37	G
Wayehutta C.-Tuckasegee R.	Sedimentation Risk	0.4	G	A	50	0.23	VG
Wayehutta C.-Tuckasegee R.	Sedimentation Risk	0.4	G	BCD	10	0.27	VG
Wayehutta C.-Tuckasegee R.	Sedimentation Risk	0.4	G	BCD	50	0	VG

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Wayehutta C.-Tuckasegee R.	Water Temperature Regime	84%	VG	A	10	7%	P
Wayehutta C.-Tuckasegee R.	Water Temperature Regime	84%	VG	A	50	7%	P
Wayehutta C.-Tuckasegee R.	Water Temperature Regime	84%	VG	BCD	10	7%	P
Wayehutta C.-Tuckasegee R.	Water Temperature Regime	84%	VG	BCD	50	7%	P
West Buffalo C.	Aquatic Community Composition	71%	F	A	10	70.87	F
West Buffalo C.	Aquatic Community Composition	71%	F	A	50	70.47	F
West Buffalo C.	Aquatic Community Composition	71%	F	BCD	10	70.87	F
West Buffalo C.	Aquatic Community Composition	71%	F	BCD	50	70.47	F
West Buffalo C.	Hydrologic Connectivity	2.1	G	A	10	1.9	G
West Buffalo C.	Hydrologic Connectivity	2.1	G	A	50	1.1	G
West Buffalo C.	Hydrologic Connectivity	2.1	G	BCD	10	2	G
West Buffalo C.	Hydrologic Connectivity	2.1	G	BCD	50	1.7	G
West Buffalo C.	Nonpoint Source Pollution Threat	80%	P	A	10	80%	P
West Buffalo C.	Nonpoint Source Pollution Threat	80%	P	A	50	80%	P
West Buffalo C.	Nonpoint Source Pollution Threat	80%	P	BCD	10	80%	P
West Buffalo C.	Nonpoint Source Pollution Threat	80%	P	BCD	50	80%	P
West Buffalo C.	Sedimentation Risk	0.5	G	A	10	0.47	G
West Buffalo C.	Sedimentation Risk	0.5	G	A	50	0.33	VG
West Buffalo C.	Sedimentation Risk	0.5	G	BCD	10	0.49	G
West Buffalo C.	Sedimentation Risk	0.5	G	BCD	50	0.45	G
West Buffalo C.	Water Temperature Regime	95%	VG	A	10	27%	F
West Buffalo C.	Water Temperature Regime	95%	VG	A	50	27%	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
West Buffalo C.	Water Temperature Regime	95%	VG	BCD	10	27%	F
West Buffalo C.	Water Temperature Regime	95%	VG	BCD	50	27%	F
West Fork French Broad R.	Aquatic Community Composition	66%	F	A	10	66.02	F
West Fork French Broad R.	Aquatic Community Composition	66%	F	A	50	65.62	F
West Fork French Broad R.	Aquatic Community Composition	66%	F	BCD	10	66.02	F
West Fork French Broad R.	Aquatic Community Composition	66%	F	BCD	50	65.62	F
West Fork French Broad R.	Hydrologic Connectivity	1.2	G	A	10	1	G
West Fork French Broad R.	Hydrologic Connectivity	1.2	G	A	50	0.2	VG
West Fork French Broad R.	Hydrologic Connectivity	1.2	G	BCD	10	1.1	G
West Fork French Broad R.	Hydrologic Connectivity	1.2	G	BCD	50	0.8	VG
West Fork French Broad R.	Nonpoint Source Pollution Threat	53%	F	A	10	53%	F
West Fork French Broad R.	Nonpoint Source Pollution Threat	53%	F	A	50	53%	F
West Fork French Broad R.	Nonpoint Source Pollution Threat	53%	F	BCD	10	53%	F
West Fork French Broad R.	Nonpoint Source Pollution Threat	53%	F	BCD	50	53%	F
West Fork French Broad R.	Point Source Pollution Threat	1	G	A	10	1	G
West Fork French Broad R.	Point Source Pollution Threat	1	G	A	50	1	G
West Fork French Broad R.	Point Source Pollution Threat	1	G	BCD	10	1	G
West Fork French Broad R.	Point Source Pollution Threat	1	G	BCD	50	1	G
West Fork French Broad R.	Sedimentation Risk	0.4	G	A	10	0.37	G
West Fork French Broad R.	Sedimentation Risk	0.4	G	A	50	0.23	VG
West Fork French Broad R.	Sedimentation Risk	0.4	G	BCD	10	0.39	G
West Fork French Broad R.	Sedimentation Risk	0.4	G	BCD	50	0.35	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
West Fork French Broad R.	Water Temperature Regime	88%	VG	A	10	54	G
West Fork French Broad R.	Water Temperature Regime	88%	VG	A	50	54%	G
West Fork French Broad R.	Water Temperature Regime	88%	VG	BCD	10	54%	G
West Fork French Broad R.	Water Temperature Regime	88%	VG	BCD	50	54%	G
Whiteoak C.-Nantahala R.	Aquatic Community Composition	84%	P	A	10	84.08	P
Whiteoak C.-Nantahala R.	Aquatic Community Composition	84%	P	A	50	83.68	P
Whiteoak C.-Nantahala R.	Aquatic Community Composition	84%	P	BCD	10	84.08	P
Whiteoak C.-Nantahala R.	Aquatic Community Composition	84%	P	BCD	50	83.68	P
Whiteoak C.-Nantahala R.	Hydrologic Connectivity	1	G	A	10	0.8	VG
Whiteoak C.-Nantahala R.	Hydrologic Connectivity	1	G	A	50	0	VG
Whiteoak C.-Nantahala R.	Hydrologic Connectivity	1	G	BCD	10	1	G
Whiteoak C.-Nantahala R.	Hydrologic Connectivity	1	G	BCD	50	0.7	VG
Whiteoak C.-Nantahala R.	Nonpoint Source Pollution Threat	41%	G	A	10	41%	G
Whiteoak C.-Nantahala R.	Nonpoint Source Pollution Threat	41%	G	A	50	41%	G
Whiteoak C.-Nantahala R.	Nonpoint Source Pollution Threat	41%	G	BCD	10	41%	G
Whiteoak C.-Nantahala R.	Nonpoint Source Pollution Threat	41%	G	BCD	50	41%	G
Whiteoak C.-Nantahala R.	Point Source Pollution Threat	1	G	A	10	1	G
Whiteoak C.-Nantahala R.	Point Source Pollution Threat	1	G	A	50	1	G
Whiteoak C.-Nantahala R.	Point Source Pollution Threat	1	G	BCD	10	1	G
Whiteoak C.-Nantahala R.	Point Source Pollution Threat	1	G	BCD	50	1	G
Whiteoak C.-Nantahala R.	Sedimentation Risk	1.1	F	A	10	1.07	F
Whiteoak C.-Nantahala R.	Sedimentation Risk	1.1	F	A	50	0.97	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Whiteoak C.-Nantahala R.	Sedimentation Risk	1.1	F	BCD	10	1.09	F
Whiteoak C.-Nantahala R.	Sedimentation Risk	1.1	F	BCD	50	1.05	F
Whiteoak C.-Nantahala R.	Water Temperature Regime	95%	VG	A	10	13%	P
Whiteoak C.-Nantahala R.	Water Temperature Regime	95%	VG	A	50	13%	P
Whiteoak C.-Nantahala R.	Water Temperature Regime	95%	VG	BCD	10	13%	P
Whiteoak C.-Nantahala R.	Water Temperature Regime	95%	VG	BCD	50	13%	P
Whitewater R.	Aquatic Community Composition	43%	G	A	10	42.6	G
Whitewater R.	Aquatic Community Composition	43%	G	A	50	42.2	G
Whitewater R.	Aquatic Community Composition	43%	G	BCD	10	42.6	G
Whitewater R.	Aquatic Community Composition	43%	G	BCD	50	42.2	G
Whitewater R.	Hydrologic Connectivity	1.4	G	A	10	1.2	G
Whitewater R.	Hydrologic Connectivity	1.4	G	A	50	0.4	VG
Whitewater R.	Hydrologic Connectivity	1.4	G	BCD	10	1.3	G
Whitewater R.	Hydrologic Connectivity	1.4	G	BCD	50	1.1	G
Whitewater R.	Nonpoint Source Pollution Threat	62%	F	A	10	62%	F
Whitewater R.	Nonpoint Source Pollution Threat	62%	F	A	50	62%	F
Whitewater R.	Nonpoint Source Pollution Threat	62%	F	BCD	10	62%	F
Whitewater R.	Nonpoint Source Pollution Threat	62%	F	BCD	50	62%	F
Whitewater R.	Point Source Pollution Threat	1	G	A	10	1	G
Whitewater R.	Point Source Pollution Threat	1	G	A	50	1	G
Whitewater R.	Point Source Pollution Threat	1	G	BCD	10	1	G
Whitewater R.	Point Source Pollution Threat	1	G	BCD	50	1	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Whitewater R.	Sedimentation Risk	0.3	VG	A	10	0.27	VG
Whitewater R.	Sedimentation Risk	0.3	VG	A	50	0.13	VG
Whitewater R.	Sedimentation Risk	0.3	VG	BCD	10	0.29	VG
Whitewater R.	Sedimentation Risk	0.3	VG	BCD	50	0.25	VG
Whitewater R.	Water Temperature Regime	96%	VG	A	10	6%	P
Whitewater R.	Water Temperature Regime	96%	VG	A	50	6%	P
Whitewater R.	Water Temperature Regime	96%	VG	BCD	10	6%	P
Whitewater R.	Water Temperature Regime	96%	VG	BCD	50	6%	P
Williamson C.-French Broad R.	Aquatic Community Composition	67%	F	A	10	66.87	F
Williamson C.-French Broad R.	Aquatic Community Composition	67%	F	A	50	66.47	F
Williamson C.-French Broad R.	Aquatic Community Composition	67%	F	BCD	10	66.87	F
Williamson C.-French Broad R.	Aquatic Community Composition	67%	F	BCD	50	66.47	F
Williamson C.-French Broad R.	Hydrologic Connectivity	1	G	A	10	0.8	VG
Williamson C.-French Broad R.	Hydrologic Connectivity	1	G	A	50	0	VG
Williamson C.-French Broad R.	Hydrologic Connectivity	1	G	BCD	10	0.6	VG
Williamson C.-French Broad R.	Hydrologic Connectivity	1	G	BCD	10	0.9	G
Williamson C.-French Broad R.	Nonpoint Source Pollution Threat	86%	P	A	10	86%	P
Williamson C.-French Broad R.	Nonpoint Source Pollution Threat	86%	P	A	50	86%	P
Williamson C.-French Broad R.	Nonpoint Source Pollution Threat	86%	P	BCD	10	86%	P
Williamson C.-French Broad R.	Nonpoint Source Pollution Threat	86%	P	BCD	50	86%	P
Williamson C.-French Broad R.	Point Source Pollution Threat	2	F	A	10	2	F
Williamson C.-French Broad R.	Point Source Pollution Threat	2	F	A	50	2	F

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Williamson C.-French Broad R.	Point Source Pollution Threat	2	F	BCD	10	2	F
Williamson C.-French Broad R.	Point Source Pollution Threat	2	F	BCD	50	2	F
Williamson C.-French Broad R.	Sedimentation Risk	0	VG	A	10	0	VG
Williamson C.-French Broad R.	Sedimentation Risk	0	VG	A	50	0	VG
Williamson C.-French Broad R.	Sedimentation Risk	0	VG	BCD	10	0	VG
Williamson C.-French Broad R.	Sedimentation Risk	0	VG	BCD	50	0	VG
Williamson C.-French Broad R.	Water Temperature Regime	63%	G	A	10	46%	F
Williamson C.-French Broad R.	Water Temperature Regime	63%	G	A	50	46%	F
Williamson C.-French Broad R.	Water Temperature Regime	63%	G	BCD	10	46%	F
Williamson C.-French Broad R.	Water Temperature Regime	63%	G	BCD	50	46%	F
Wolf C.-Tuckasegee R.	Aquatic Community Composition	38%	G	A	10	37.85	G
Wolf C.-Tuckasegee R.	Aquatic Community Composition	38%	G	A	50	37.45	G
Wolf C.-Tuckasegee R.	Aquatic Community Composition	38%	G	BCD	10	37.8	G
Wolf C.-Tuckasegee R.	Aquatic Community Composition	38%	G	BCD	50	37.2	G
Wolf C.-Tuckasegee R.	Hydrologic Connectivity	1.1	G	A	10	0.9	G
Wolf C.-Tuckasegee R.	Hydrologic Connectivity	1.1	G	A	50	0.6	VG
Wolf C.-Tuckasegee R.	Hydrologic Connectivity	1.1	G	BCD	10	0.5	VG
Wolf C.-Tuckasegee R.	Hydrologic Connectivity	1.1	G	BCD	50	0	VG
Wolf C.-Tuckasegee R.	Nonpoint Source Pollution Threat	36%	G	A	10	36%	G
Wolf C.-Tuckasegee R.	Nonpoint Source Pollution Threat	36%	G	A	50	36%	G
Wolf C.-Tuckasegee R.	Nonpoint Source Pollution Threat	36%	G	BCD	10	36%	G
Wolf C.-Tuckasegee R.	Nonpoint Source Pollution Threat	36%	G	BCD	50	36%	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Wolf C.-Tuckasegee R.	Sedimentation Risk	0.6	G	A	10	0.57	G
Wolf C.-Tuckasegee R.	Sedimentation Risk	0.6	G	A	50	0.43	G
Wolf C.-Tuckasegee R.	Sedimentation Risk	0.6	G	BCD	10	0.51	G
Wolf C.-Tuckasegee R.	Sedimentation Risk	0.6	G	BCD	50	0.16	VG
Wolf C.-Tuckasegee R.	Water Temperature Regime	92%	VG	A	10	34%	F
Wolf C.-Tuckasegee R.	Water Temperature Regime	92%	VG	A	50	34%	F
Wolf C.-Tuckasegee R.	Water Temperature Regime	92%	VG	BCD	10	34%	F
Wolf C.-Tuckasegee R.	Water Temperature Regime	92%	VG	BCD	50	34%	F
Yellow C.-Cheoah R.	Aquatic Community Composition	100%	P	A	10	99.9	P
Yellow C.-Cheoah R.	Aquatic Community Composition	100%	P	A	50	99.5	P
Yellow C.-Cheoah R.	Aquatic Community Composition	100%	P	BCD	10	99.85	P
Yellow C.-Cheoah R.	Aquatic Community Composition	100%	P	BCD	50	99.25	P
Yellow C.-Cheoah R.	Hydrologic Connectivity	2	G	A	10	1.8	G
Yellow C.-Cheoah R.	Hydrologic Connectivity	2	G	A	50	1	G
Yellow C.-Cheoah R.	Hydrologic Connectivity	2	G	BCD	10	1.4	G
Yellow C.-Cheoah R.	Hydrologic Connectivity	2	G	BCD	50	0	VG
Yellow C.-Cheoah R.	Invasive Sp. Abundance: Corbicula	absent	VG	A	10	Absent	VG
Yellow C.-Cheoah R.	Invasive Sp. Abundance: Corbicula	absent	VG	A	50	Absent	VG
Yellow C.-Cheoah R.	Invasive Sp. Abundance: Corbicula	absent	VG	BCD	10	Absent	VG
Yellow C.-Cheoah R.	Invasive Sp. Abundance: Corbicula	absent	VG	BCD	50	Absent	VG
Yellow C.-Cheoah R.	Nonpoint Source Pollution Threat	26%	G	A	10	26%	G
Yellow C.-Cheoah R.	Nonpoint Source Pollution Threat	26%	G	A	50	26%	G

Watershed	Indicator Name	Current Indicator Value	Current Indicator Rating	Alternative	Years From Current	Estimated Indicator Value	Estimated Indicator Rating
Yellow C.-Cheoah R.	Nonpoint Source Pollution Threat	26%	G	BCD	10	26%	G
Yellow C.-Cheoah R.	Nonpoint Source Pollution Threat	26%	G	BCD	50	26%	G
Yellow C.-Cheoah R.	Sedimentation Risk	1.1	F	A	10	1.07	F
Yellow C.-Cheoah R.	Sedimentation Risk	1.1	F	A	50	0.97	F
Yellow C.-Cheoah R.	Sedimentation Risk	1.1	F	BCD	10	1.01	F
Yellow C.-Cheoah R.	Sedimentation Risk	1.1	F	BCD	50	0.66	G
Yellow C.-Cheoah R.	Water Temperature Regime	94%	VG	A	10	16%	P
Yellow C.-Cheoah R.	Water Temperature Regime	94%	VG	A	50	16%	P
Yellow C.-Cheoah R.	Water Temperature Regime	94%	VG	BCD	10	16%	P
Yellow C.-Cheoah R.	Water Temperature Regime	94%	VG	BCD	50	16%	P

Permitted Discharges by Watershed

Table F. NPDES Permitted Discharges by 6th Level Hydrologic Units Included in the Nantahala/Pisgah Planning Area (NCDWR 2017)

HUC12	HUC12 NAME	FS	Other	TOTAL
60102020406	Alarka Creek	0	0	0
60200020902	Apalachia Lake-Hiwassee River	0	3	3
30501010201	Armstrong Creek	0	1	1
60101050704	Avery Creek-French Broad River	0	6	6
60101080304	Bald Mountain Creek	0	0	0
60200020704	Beaverdam Creek	0	0	0
60101050705	Bent Creek-French Broad River	1	0	1

HUC12	HUC12 NAME	FS	Other	TOTAL
60101080105	Big Crabtree Creek	0	0	0
60102020305	Big Creek-Nantahala River	0	0	0
60101051103	Big Pine Creek-French Broad River	0	1	1
60101080603	Big Rock Creek	0	0	0
60101050401	Boylston Creek	0	0	0
60102020405	Brush Creek-Little Tennessee River	0	0	0
30501010104	Buck Creek	0	0	0
60102020301	Buck Creek - Tusquitee	0	0	0
60102020403	Burningtown Creek	0	0	0
60102030105	Caney Fork	0	0	0
60101050104	Catheys Creek	0	1	1
60102030104	Cedar Cliff Lake-Tuckasegee River	0	0	0
60101050105	Cherryfield Creek-French Broad River	0	6	6
60101060305	Cold Springs Creek-Pigeon River	0	1	1
60102030304	Conley Creek-Tuckasegee River	0	4	4
60102020402	Cowee Creek	0	0	0
60102020103	Coweeta Creek-Little Tennessee River	0	1	1
60102030106	Cullowhee Creek	0	0	0
30501010101	Curtis Creek	0	1	1
60101050202	Davidson River	1	0	1
60101050801	Dillingham Creek	0	0	0
60101060103	East Fork Pigeon River	0	2	2
60102020202	Ellijay Creek	0	0	0
60200020303	Fall Branch-Hiwassee River	0	0	0

HUC12	HUC12 NAME	FS	Other	TOTAL
60200020202	Fires Creek	0	0	0
60102020306	Fontana Lake-Nantahala River	1	1	2
60102030405	Fontana Lake-Tuckasegee River	0	1	1
60200020702	Grape Creek-Hiwassee Lake	1	0	1
60200020701	Hanging Dog Creek	0	0	0
60101080301	Headwaters Cane River	0	0	0
30501010102	Headwaters Catawba River	0	0	0
30601020201	Headwaters Chattooga River	0	1	1
60102020302	Headwaters Nantahala River	0	0	0
60101080101	Headwaters North Toe River	0	2	2
60200020401	Headwaters Valley River	0	0	0
30601020202	Headwaters West Fork Chattooga River	2	1	3
60200020705	Hiwassee Lake-Hiwassee River	0	0	0
60101080604	Hollow Poplar Creek-Nolichucky River	0	2	2
30601010103	Horsepasture River	0	5	5
30501010402	Irish Creek	1	0	1
60102040401	Lake Cheoah-Little Tennessee River	0	2	2
60200020703	Lake Cherokee-Persimmon Creek	0	0	0
60102020401	Lake Emory-Little Tennessee River	0	1	1
30501010303	Lake James-Catawba River	0	0	0
60101060101	Lake Logan-West Fork Pigeon River	0	0	0
60101060102	Little East Fork Pigeon River-West Fork Pigeon River	0	1	1
60101080602	Little Rock Creek	0	0	0
60101051004	Lower Big Laurel Creek	0	0	0

HUC12	HUC12 NAME	FS	Other	TOTAL
60101080306	Lower Cane River	0	0	0
60102020105	Lower Cartoogechaye Creek	0	0	0
60101060302	Lower Cataloochee Creek	0	0	0
60102020203	Lower Cullasaja River	0	2	2
60102020505	Lower Fontana Lake-Little Tennessee River	0	0	0
60101050503	Lower Hominy Creek	0	1	1
30501010506	Lower Johns River	0	0	0
30501010302	Lower Linville River	0	0	0
60101051003	Lower Shelton Laurel Creek	0	1	1
60101080203	Lower South Toe River	0	1	1
60200020404	Lower Valley River	0	0	0
30501010504	Lower Wilson Creek	0	0	0
30501010105	Mackey Creek-Catawba River	0	4	4
60101051201	Meadow Fork	0	0	0
60102020102	Middle Creek-Little Tennessee River	0	0	0
30501010505	Middle Johns River	0	1	1
60200020403	Middle Valley River	0	0	0
60101050403	Mills River	1	4	5
30501010503	Mulberry Creek	0	0	0
60102020303	Nantahala Lake-Nantahala River	0	0	0
30501010202	North Fork Catawba River	0	2	2
60101050101	North Fork French Broad River	0	0	0
60200020603	Nottely River	0	0	0
60102020501	Panther Creek	0	0	0

HUC12	HUC12 NAME	FS	Other	TOTAL
60102040105	Santeetlah Creek	0	0	0
60102040106	Santeetlah Lake	1	1	2
60102030301	Savannah Creek	0	0	0
60200020105	Shooting Creek	0	0	0
60200020903	Shuler Creek	0	0	0
60101051203	Shut-in Creek-French Broad River	0	2	2
60102020106	Skeenah Creek-Little Tennessee River	0	1	1
60102040402	Slick Rock Creek	0	0	0
60102040103	Snowbird Creek	0	1	1
60101050402	South Fork Mills River	0	1	1
60101050501	South Hominy Creek	0	1	1
60101051202	Spring Creek	0	0	0
60102020502	Stecoah Creek	0	0	0
60102040102	Sweetwater Creek	0	0	0
60200020203	Sweetwater Creek-Hiwassee River	0	2	2
60102020404	Tellico Creek-Little Tennessee River	0	0	0
30501010106	Toms Creek-Catawba River	0	2	2
60102040101	Tulula Creek	0	0	0
60200020201	Tusquitee Creek	0	0	0
60101051001	Upper Big Laurel Creek	0	4	4
60101080303	Upper Cane River	0	1	1
60102020104	Upper Cartoogechaye Creek	0	0	0
60102020201	Upper Cullasaja River	1	5	6
60102020407	Upper Fontana Lake-Little Tennessee River	0	0	0

HUC12	HUC12 NAME	FS	Other	TOTAL
60101050803	Upper Ivy Creek	0	1	1
30501010501	Upper Johns River	1	0	1
60101051002	Upper Shelton Laurel Creek	0	0	0
60101080201	Upper South Toe River	0	0	0
60200020402	Upper Valley River	0	2	2
30501010401	Upper Warrior Fork	0	0	0
30501010502	Upper Wilson Creek	0	0	0
60101060303	Walters Lake-Pigeon River	0	1	1
60102030107	Wayehutta Creek-Tuckasegee River	0	1	1
60102040104	West Buffalo Creek	0	0	0
60101050102	West Fork French Broad River	0	2	2
60102020304	Whiteoak Creek-Nantahala River	0	1	1
30601010104	Whitewater River	0	0	0
60101050203	Williamson Creek-French Broad River	0	1	1
60102030101	Wolf Creek-Tuckasegee River	0	0	0
60102040107	Yellow Creek-Cheoah River	0	0	0

Nonindigenous Aquatic Species Associated with the Nantahala and Pisgah NFs

Table F. Nonindigenous Aquatic Species Associated with the Nantahala and Pisgah National Forests (USGS 2018)

Group	Scientific Name	Common Name	Native/Exotic	Relationship to NP
Coelenterate	*Craspedacusta sowerbyi*	a freshwater jellyfish	Exotic	known
Fish	*Carassius auratus*	Goldfish	Exotic	known

Group	Scientific Name	Common Name	Native/Exotic	Relationship to NP
Fish	*Channa argus*	Northern Snakehead	Exotic	nearby
Fish	*Ctenopharyngodon idella*	Grass Carp	Exotic	nearby
Fish	*Ctenopharyngodon idella*	Grass Carp (triploid)	Exotic	known
Fish	*Cyprinus carpio*	Common Carp	Exotic	known
Fish	*Oreochromis aureus*	Blue Tilapia	Exotic	nearby
Fish	*Piaractus brachypomus*	Pirapatinga Red-bellied Pacu	Exotic	nearby
Fish	*Pterygoplichthys disjunctivus*	Vermiculated Sailfin Catfish	Exotic	nearby
Fish	*Pterygoplichthys pardalis*	Amazon Sailfin Catfish	Exotic	nearby
Fish	*Salmo trutta*	Brown Trout	Exotic	known
Fish	*Tinca tinca*	Tench	Exotic	nearby
Mussel	*Corbicula fluminea*	Asian clam	Exotic	known
Snail	*Cipangopaludina chinensis*	Chinese Mysterysnail	Exotic	nearby
Snail	*Cipangopaludina japonica*	Japanese Mysterysnail	Exotic	nearby
Fish	*Ambloplites rupestris*	Rock Bass	Not Native to Atlantic Slope	known
Fish	*Ameiurus melas*	Black Bullhead	Not Native to Atlantic Slope	known
Fish	*Carpiodes velifer*	Highfin Carpsucker	Not Native to Atlantic Slope	known
Fish	*Cyprinella galactura*	Whitetail Shiner	Not Native to Atlantic Slope	known
Fish	*Esox masquinongy*	Muskellunge	Not Native to Atlantic Slope	known
Fish	*Hypentelium nigricans*	Northern Hog Sucker	Not Native to Atlantic Slope	known
Fish	*Ictalurus punctatus*	Channel Catfish	Not Native to Atlantic Slope	known
Fish	*Ictiobus bubalus*	Smallmouth Buffalo	Not Native to Atlantic Slope	known
Fish	*Lepomis microlophus*	Redear Sunfish	Not Native to Atlantic Slope	known
Fish	*Luxilus coccogenis*	Warpaint Shiner	Not Native to Atlantic Slope	known

Group	Scientific Name	Common Name	Native/Exotic	Relationship to NP
Fish	*Micropterus dolomieu*	Smallmouth Bass	Not Native to Atlantic Slope	known
Fish	*Micropterus punctulatus*	Spotted Bass	Not Native to Atlantic Slope	known
Fish	*Notropis leuciodus*	Tennessee Shiner	Not Native to Atlantic Slope	known
Fish	*Notropis rubricroceus*	Saffron Shiner	Not Native to Atlantic Slope	known
Fish	*Notropis spectrunculus*	Mirror Shiner	Not Native to Atlantic Slope	known
Fish	*Notropis telescopus*	Telescope Shiner	Not Native to Atlantic Slope	known
Fish	*Pomoxis annularis*	White Crappie	Not Native to Atlantic Slope	known
Fish	*Pylodictis olivaris*	Flathead Catfish	Not Native to Atlantic Slope	known
Fish	*Sander canadensis*	Sauger	Not Native to Atlantic Slope	known
Fish	*Sander vitreus*	Walleye	Not Native to Atlantic Slope	known
Turtle	*Trachemys scripta elegans*	Red-eared Slider	Not Native to Atlantic Slope	known
Crayfish	*Faxonius rusticus*	Rusty Crayfish	Not Native to North Carolina	known
Crayfish	*Faxonius virilis*	Virile Crayfish (Northern Crayfish)	Not Native to North Carolina	known
Fish	*Dorosoma petenense*	Threadfin Shad	Not Native to North Carolina	known
Fish	*Ictalurus furcatus*	Blue Catfish	Not Native to North Carolina	known
Fish	*Ictiobus cyprinellus*	Bigmouth Buffalo	Not Native to North Carolina	known
Fish	*Lepomis cyanellus*	Green Sunfish	Not Native to North Carolina	known
Fish	*Oncorhynchus mykiss*	Rainbow Trout	Not Native to North Carolina	known
Fish	*Oncorhynchus nerka*	Sockeye Salmon	Not Native to North Carolina	known
Fish	*Pimephales promelas*	Fathead Minnow	Not Native to North Carolina	known
Snail	*Viviparus georgianus*	Banded Mysterysnail	Not Native to North Carolina	nearby
Fish	*Ameiurus brunneus*	Snail Bullhead	Not Native to Tennessee Basin	known

Group	Scientific Name	Common Name	Native/Exotic	Relationship to NP
Fish	*Ameiurus platycephalus*	Flat Bullhead	Not Native to Tennessee Basin	known
Fish	*Dorosoma cepedianum*	Gizzard Shad	Not Native to Tennessee Basin	known
Fish	*Lepomis auritus*	Redbreast Sunfish	Not Native to Tennessee Basin	known
Fish	*Moxostoma rupiscartes*	Striped Jumprock	Not Native to Tennessee Basin	known
Fish	*Nocomis leptocephalus*	Bluehead Chub	Not Native to Tennessee Basin	known
Fish	*Perca flavescens*	Yellow Perch	Not Native to Tennessee Basin	known
Fish	*Alosa aestivalis*	Blueback Herring	Not Native to Western NC	known
Fish	*Alosa chrysochloris*	Skipjack Herring	Not Native to Western NC	known
Fish	*Alosa pseudoharengus*	Alewife	Not Native to Western NC	known
Fish	*Alosa sapidissima*	American Shad	Not Native to Western NC	known
Fish	*Amia calva*	Bowfin	Not Native to Western NC	known
Fish	*Anguilla rostrata*	American Eel	Not Native to Western NC	known
Fish	*Chrosomus oreas*	Mountain Redbelly Dace	Not Native to Western NC	known
Fish	*Clinostomus funduloides funduloides*	Rosyside Dace	Not Native to Western NC	nearby
Fish	*Etheostoma fusiforme*	Swamp Darter	Not Native to Western NC	known
Fish	*Lepomis gibbosus*	Pumpkinseed	Not Native to Western NC	known
Fish	*Lepomis gulosus*	Warmouth	Not Native to Western NC	known
Fish	*Micropterus coosae*	Redeye Bass (sensu lato)	Not Native to Western NC	known
Fish	*Morone americana*	White Perch	Not Native to Western NC	known
Fish	*Morone chrysops*	White Bass	Not Native to Western NC	known
Fish	*Morone chrysops x M. saxatilis*	Wiper	Not Native to Western NC	nearby
Fish	*Morone saxatilis*	Striped Bass	Not Native to Western NC	known
Fish	*Notropis chiliticus*	Redlip Shiner	Not Native to Western NC	known

Group	Scientific Name	Common Name	Native/Exotic	Relationship to NP
Fish	*Notropis lutipinnis*	Yellowfin Shiner	Not Native to Western NC	known

Terrestrial Ecosystems

Forest Structural Species Groups

Young Forest Associates

Table A. Species Included in the Young Forest Associates Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)
The right column indicates the relative weight (i.e. strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Weight
Bird	*Antrostomus carolinensis*	Chuck-will's-widow	Moderate
Bird	*Antrostomus vociferus*	Whip-poor-will	Moderate
Bird	*Bonasa umbellus*	Ruffed Grouse	Very High
Bird	*Colaptes auratus*	Northern Flicker	Moderate
Bird	*Colinus virginianus*	Northern Bobwhite	High
Bird	*Contopus virens*	Eastern Wood-pewee	Moderate
Bird	*Empidonax alnorum*	Alder Flycatcher	Moderate
Bird	*Empidonax minimus*	Least Flycatcher	Moderate
Bird	*Empidonax traillii*	Willow Flycatcher	Moderate
Bird	*Falco sparverius*	American Kestrel	Moderate
Bird	*Icteria virens*	Yellow-breasted Chat	Moderate
Bird	*Meleagris gallopavo*	Wild Turkey	Moderate
Bird	*Passerina cyanea*	Indigo Bunting	Moderate
Bird	*Pipilo erythrophthalmus*	Eastern Towhee	Moderate
Bird	*Poecile atricapillus practica*	Southern Appalachian Black-capped Chickadee	Moderate
Bird	*Pooecetes gramineus*	Vesper Sparrow	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Bird	*Scolopax minor*	American Woodcock	High
Bird	*Setophaga discolor*	Prairie Warbler	Moderate
Bird	*Spizella pusilla*	Field Sparrow	High
Bird	*Toxostoma rufum*	Brown Thrasher	Moderate
Bird	*Vermivora chrysoptera*	Golden-winged Warbler	High
Bird	*Vermivora cyanoptera*	Blue-winged Warbler	Moderate
Insect	*Autochton cellus*	Golden-banded Skipper	High
Insect	*Bombus affinis*	Rusty-patched Bumblebee	High
Insect	*Bombus bariabilis*	Variable Cuckoo Bumblebee	High
Insect	*Bombus pennsylvanicus*	American Bumblebee	High
Insect	*Bombus terricola*	Yellow-banded Bumblebee	High
Insect	*Bombus vagans*	Half Black Bumblebee	High
Insect	*Celastrina nigra*	Dusky Azure	High
Insect	*Chlosyne gorgone*	Gorgone Checkerspot	High
Insect	*Danaus plexippus*	Monarch Butterfly	High
Insect	*Erora laeta*	Early Hairstreak	High
Insect	*Erynnis martialis*	Mottled Duskywing	High
Insect	*Euchloe olympia*	Olympia Marble	High
Insect	*Euphydryas phaeton*	Baltimore Checkerspot	High
Insect	*Papilio cresphontes*	Giant Swallowtail	High
Insect	*Phyciodes batesii maconensis*	Appalachian Tawny Crescent	High
Insect	*Polygonia faunus smythi*	Smyth's Green Comma	High
Insect	*Polygonia progne*	Gray Comma	High
Insect	*Pyrgus wyandot*	Appalachian Grizzled Skipper	High
Insect	*Satyrium caryaevorus*	Hickory Hairstreak	High
Insect	*Satyrium edwardsii*	Edwards' Hairstreak	High
Insect	*Speyeria aphrodite cullasaja*	Cullasaja Aphrodite Fritillary	High
Insect	*Speyeria diana*	Diana Fritillary	High
Mammal	*Odocoileus virginianus*	White-tailed Deer	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Mammal	*Ursus americanus*	Black Bear	High
Nonvascular Plant	*Pogonatum dentatum*	Hair-like Hair-cap	Moderate
Nonvascular Plant	*Pohlia lescuriana*	Spherical Bulb Nodding Moss	Moderate
Nonvascular Plant	*Polytrichastrum alpinum*	Alpine Hair Moss	Moderate
Nonvascular Plant	*Scopelophila cataractae*	Agoyan Cataract Moss	High
Nonvascular Plant	*Scopelophila ligulata*	Copper Moss	High
Reptile	*Crotalus horridus*	Timber Rattlesnake	Moderate
Reptile	*Regina septemvittata*	Queen Snake	Moderate
Reptile	*Terrapene carolina*	Eastern Box Turtle	Moderate
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake	Moderate
Vascular Plant	*Frasera caroliniensis*	American Colombo	Moderate
Vascular Plant	*Lysimachia fraseri*	Fraser's Loosestrife	High
Vascular Plant	*Ranunculus fascicularis*	Early Buttercup	High
Vascular Plant	*Symphyotrichum shortii*	Short's Aster	Moderate
Vascular Plant	*Turritis glabra*	Tower Mustard	Moderate

Table B. Indicators and Rating Definitions Used in the NPESE for the Young Forest Associates Species Group

Additionally, relevant indicators from appropriate ecosystems are referenced in composite score calculations.

Indicator	Poor	Fair	Good	Very Good
Acres of forest as openings	<35,000	35,000-60,000	60,001-75,000	>75,000
Percent open canopy conditions (Grassy Balds)	<50	50-75	75-90	>90

Table C. Expected Outcomes, by Alternative and Indicator, for the Young Forest Associates Species Group Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Acres of forest as	13,125	19,974	30,538	34K	45K	77K	86,500	35,100	47K	76,500	86,500	33K	45,500	75,100	86,612

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
openings															
Percent open canopy conditions (Grassy Balds)	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Acres of forest as openings	Poor	Poor	Poor	Poor	Fair	Very Good	Very Good	Fair	Fair	Very Good	Very Good	Poor	Fair	Very Good	Very Good
Percent open canopy conditions (Grassy Balds)	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good

Old Growth Forest Associates

Table A. Species Included in the Old Growth Forest Associates Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Weight
Amphibian	*Ambystoma maculatum*	Spotted Salamander	Moderate
Amphibian	*Ambystoma talpoideum*	Mole Salamander	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander	Moderate
Amphibian	*Aneides aeneus*	Green Salamander	Moderate
Amphibian	*Desmognathus aneneus*	Seepage Salamander	Moderate
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander	Moderate
Amphibian	*Desmognathus imitator*	Imitator Salamander	Moderate
Amphibian	*Desmognathus imitator pop. 1*	Waterrock Knob Salamander	Moderate
Amphibian	*Desmognathus organi*	Northern Pigmy Salamander	Moderate
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander	Moderate
Amphibian	*Desmognathus wrighti*	Southern Pygmy Salamander	Moderate
Amphibian	*Eurycea bislineata*	Two-lined Salamander	Moderate
Amphibian	*Eurycea junaluska*	Junaluska Salamander	Moderate
Amphibian	*Eurycea longicauda*	Longtail Salamander	Moderate
Amphibian	*Plethodon amplus*	Blue Ridge Gray-cheeked Salamander	Moderate
Amphibian	*Plethodon aureolus*	Tellico Salamander	Moderate
Amphibian	*Plethodon chattahoochee*	Chattahoochee Slimy Salamander	Moderate
Amphibian	*Plethodon cheoah*	Cheoah Bald Salamander	Moderate
Amphibian	*Plethodon glutinosus*	Northern Slimy Salamander	Moderate
Amphibian	*Plethodon jordani*	Jordan's Salamander (Red-cheeked Salamander)	Moderate
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander	Moderate
Amphibian	*Plethodon meridianus*	South Mountain Gray-cheeked Salamander	Moderate
Amphibian	*Plethodon richmondi*	Southern Ravine Salamander	Moderate
Amphibian	*Plethodon shermani*	Red-legged Salamander	Moderate
Amphibian	*Plethodon teyahalee*	Southern Appalachian Salamander	Moderate
Amphibian	*Plethodon ventralis*	Southern Zigzag Salamander	Moderate
Amphibian	*Plethodon wehrlei*	Wehrle's Salamander	Moderate
Amphibian	*Plethodon welleri*	Weller's Salamander	Moderate
Amphibian	*Plethodon yonahlossee*	Yonahlossee Salamander	Moderate
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog	Moderate
Bird	*Aegolius acadicus pop. 1*	Southern Appalachian Northern Saw-whet Owl	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Bird	*Bonasa umbellus*	Ruffed Grouse	Moderate
Bird	*Catharus fuscescens*	Veery	Moderate
Bird	*Catharus guttatus*	Hermit Thrush	Moderate
Bird	*Catharus ustulatus*	Swainson's Thrush	Moderate
Bird	*Certhia americana*	Brown Creeper	Moderate
Bird	*Chaetura pelagica*	Chimney Swift	Moderate
Bird	*Coccyzus erythropthalmus*	Black-billed Cuckoo	Moderate
Bird	*Colaptes auratus*	Northern Flicker	Moderate
Bird	*Contopus virens*	Eastern Wood-pewee	Moderate
Bird	*Dryocopus pileatus*	Pileated Woodpecker	Moderate
Bird	*Empidonax minimus*	Least Flycatcher	Moderate
Bird	*Empidonax virescens*	Acadian Flycatcher	Moderate
Bird	*Geothlypis formosa*	Kentucky Warbler	Moderate
Bird	*Helmitheros vermivorum*	Worm-eating Warbler	Moderate
Bird	*Hylocichla mustelina*	Wood Thrush	Moderate
Bird	*Loxia curvirostra pop. 1*	Southern Appalachian Red Crossbill	Moderate
Bird	*Meleagris gallopavo*	Wild Turkey	Moderate
Bird	*Mniotilta varia*	Black-and-white Warbler	Moderate
Bird	*Parkesia motacilla*	Louisiana Waterthrush	Moderate
Bird	*Piranga olivacea*	Scarlet Tanager	Moderate
Bird	*Poecile atricapillus practica*	Southern Appalachian Black-capped Chickadee	Moderate
Bird	*Setophaga americana*	Northern Parula	Moderate
Bird	*Setophaga cerulea*	Cerulean Warbler	High
Bird	*Setophaga fusca*	Blackburnian Warbler	Moderate
Bird	*Setophaga magnolia*	Magnolia Warbler	Moderate
Bird	*Sphyrapicus varius*	Yellow-bellied Sapsucker	Moderate
Bird	*Vireo flavifrons*	Yellow-throated Vireo	Moderate
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat (mountain subspecies)	Moderate
Mammal	*Eptesicus fuscus*	Big Brown Bat	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Mammal	*Myotis grisescens*	Gray Myotis (Gray Bat)	Moderate
Mammal	*Myotis leibii*	Eastern Small-footed Bat	Moderate
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)	High
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)	Moderate
Mammal	*Myotis sodalis*	Indiana Bat	Moderate
Mammal	*Perimyotis subflavus*	Tri-colored Bat	Moderate
Mammal	*Ursus americanus*	Black Bear	High
Nonvascular Plant	*Arthonia kermesia*	Mountain Red Dot Lichen	Very High
Nonvascular Plant	*Arthopyrenia betulicola*	Ol' Birch Spots	High
Nonvascular Plant	*Frullania appalachiana*	A Liverwort	Moderate
Nonvascular Plant	*Graphis sterlingiana*	Sterling Lips	High
Nonvascular Plant	*Lobaria scrobiculata*	Textured Lungwort	High
Nonvascular Plant	*Metzgeria uncigera*	Liverwort	Moderate
Nonvascular Plant	*Metzgeria violacea*	A Liverwort	Moderate
Nonvascular Plant	*Plagiochila corniculata*	A Liverwort	Moderate
Nonvascular Plant	*Schlotheimia lancifolia*	Highlands Moss	Moderate
Nonvascular Plant	*Sphenolobopsis pearsonii*	A Liverwort	Moderate
Nonvascular Plant	*Sticta limbata*	Powdered Moon Lichen	Moderate
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake	Moderate
Vascular Plant	*Carex radfordii*	Radford's Sedge	High
Vascular Plant	*Corallorhiza maculata var. maculata*	Spotted Coralroot	Moderate
Vascular Plant	*Panax quinquefolius*	Ginseng	High
Vascular Plant	*Shortia galacifolia var. brevistyla*	Northern Oconee Bells	Moderate
Vascular Plant	*Shortia galacifolia var. galacifolia*	Southern Oconee Bells	Moderate

Table B. Indicators and Rating Definitions Used in the NPESE for the Old Growth Forest Associates Species Group

The right column indicates the relative weight (i.e., strength of relationship) of the indicator to the ecosystem. Additionally, relevant indicators from appropriate ecosystems are referenced in composite score calculations.

Indicator	Poor	Fair	Good	Very Good	Weight
Percent Old Forest (by ecozone)	See individual ecozone indicators				

Table C. Expected Outcomes, by Alternative and Indicator, for the Old Growth Forest Associates Species Group Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Old Forest (by ecozone)	See individual ecozone indicators														

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Old Forest (by ecozone)	See individual ecozone indicators														

Woodland Associates

Table A. Species Included in the Woodland Associates Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Weight
Bird	*Antrostomus vociferus*	Whip-poor-will	High
Bird	*Antrostomus carolinensis*	Chuck-will's-widow	Moderate
Bird	*Bonasa umbellus*	Ruffed Grouse	High
Bird	*Catharus guttatus*	Hermit Thrush	Moderate
Bird	*Colaptes auratus*	Northern Flicker	High
Bird	*Colinus virginianus*	Northern Bobwhite	High

Taxa Group	Scientific Name	Common Name	Weight
Bird	*Contopus virens*	Eastern Wood-pewee	Moderate
Bird	*Empidonax minimus*	Least Flycatcher	High
Bird	*Empidonax traillii*	Willow Flycatcher	High
Bird	*Melanerpes erythrocephalus*	Red-headed Woodpecker	Moderate
Bird	*Meleagris gallopavo*	Wild Turkey	High
Bird	*Mniotilta varia*	Black-and-white Warbler	Moderate
Bird	*Parkesia motacilla*	Lousiana Waterthrush	Moderate
Bird	*Passerina cyanea*	Indigo Bunting	High
Bird	*Pipilo erythrophthalmus*	Eastern Towhee	Moderate
Bird	*Poecile atricapillus practica*	Southern Appalachian Black-capped Chickadee	High
Bird	*Scolopax minor*	American Woodcock	Moderate
Bird	*Setophaga cerulea*	Cerulean Warbler	Moderate
Bird	*Setophaga discolor*	Prairie Warbler	Moderate
Bird	*Setophaga dominica*	Yellow-throated Warbler	Moderate
Bird	*Sitta pusilla*	Brown-headed Nuthatch	Moderate
Bird	*Spinus pinus*	Pine Siskin	Moderate
Bird	*Vermivora chrysoptera*	Golden-winged Warbler	Moderate
Bird	*Vermivora cyanoptera*	Blue-winged Warbler	Moderate
Insect	*Bombus affinis*	Rusty-patched Bumblebee	High
Insect	*Bombus terricola*	Yellow-banded Bumblebee	Moderate
Insect	*Celastrina nigra*	Dusky Azure	Moderate
Insect	*Chlosyne gorgone*	Gorgone Checkerspot	High
Insect	*Danaus plexippus*	Monarch Butterfly	Moderate
Insect	*Erora laeta*	Early Hairstreak	Moderate
Insect	*Erynnis martialis*	Mottled Duskywing	High
Insect	*Euchloe olympia*	Olympia Marble	High
Insect	*Euphydryas phaeton*	Baltimore Checkerspot	Moderate
Insect	*Melanoplus nubilus*	Nubile Short-wing Grasshopper	Moderate
Insect	*Melanoplus serrulatus*	Serrulate Melanoplus	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Insect	*Phyciodes batesii maconensis*	Appalachian Tawny Crescent	Moderate
Insect	*Pyrgus wyandot*	Appalachian Grizzled Skipper	High
Insect	*Satyrium caryaevorus*	Hickory Hairstreak	High
Insect	*Satyrium edwardsii*	Edwards' Hairstreak	High
Insect	*Speyeria aphrodite cullasaja*	Cullasaja Aphrodite Fritillary	Moderate
Insect	*Speyeria diana*	Diana Fritillary	Moderate
Insect	*Speyeria idalia*	Regal Fritillary	Moderate
Mammal	*Cervus elaphus*	Elk	Very High
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat (mountain subspecies)	Moderate
Mammal	*Corynorhinus townsendii virginianus*	Virginia Big-eared Bat	Moderate
Mammal	*Myotis leibii*	Eastern Small-footed Bat	Moderate
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)	Moderate
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)	Moderate
Mammal	*Myotis sodalis*	Indiana Bat	Moderate
Mammal	*Odocoileus virginianus*	White-tailed Deer	High
Mammal	*Perimyotis subflavus*	Tri-colored Bat	Moderate
Mammal	*Ursus americanus*	Black Bear	High
Reptile	*Crotalus horridus*	Timber Rattlesnake	Moderate
Reptile	*Terrapene carolina*	Eastern Box Turtle	Moderate
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake	Moderate
Vascular Plant	*Agastache nepetoides*	Yellow Giant-hyssop	High
Vascular Plant	*Buchnera americana*	American Bluehearts	Very High
Vascular Plant	*Calamagrostis porteri ssp. porteri*	Porter's Reedgrass	Very High
Vascular Plant	*Chamerion platphyllum*	Purple Willowherb	Very High
Vascular Plant	*Cleistesiopsis bifaria*	Small Spreading Pogonia	High
Vascular Plant	*Deschampsia cespitosa ssp. glauca*	Tufted Hairgrass	Very High
Vascular Plant	*Echinacea purpurea*	Eastern Purple Coneflower	High
Vascular Plant	*Elymus trachycaulus ssp. trachycaulus*	Slender Wheatgrass	Very High
Vascular Plant	*Frasera caroliniensis*	American Colombo	Very High

Taxa Group	Scientific Name	Common Name	Weight
Vascular Plant	*Gentianopsis crinita*	Fringed Gentian	High
Vascular Plant	*Liatris squarrulosa*	Earle's Blazing Star	Very High
Vascular Plant	*Liatris turgida*	Shale-barren Blazing Star	High
Vascular Plant	*Lysimachia fraseri*	Fraser's Loosestrife	High
Vascular Plant	*Monotropsis odorata*	Sweet Pinesap	High
Vascular Plant	*Muhlenbergia glomerata*	Marsh Muhly	Very High
Vascular Plant	*Packera paupercula var. appalachiana*	Prairie Ragwort	Very High
Vascular Plant	*Packera paupercula var. paupercula*	Balsam Ragwort	Very High
Vascular Plant	*Packera serpenticola*	Serpentine Ragwort	Very High
Vascular Plant	*Parnassia grandifolia*	Large-leaved grass-of-parnassus	Moderate
Vascular Plant	*Silene ovata*	Ovate Catchfly	High
Vascular Plant	*Sporobolus heterolepis*	Prairie Dropseed	Very High
Vascular Plant	*Stewartia ovata*	Mountain Camellia	Moderate
Vascular Plant	*Symphyotrichum rhiannon*	Rhiannon's Aster	Very High
Vascular Plant	*Thermopsis fraxinifolia*	Ash-leaved Golden-banner	High
Vascular Plant	*Thermopsis mollis*	Appalachian Golden-banner	Very High
Vascular Plant	*Thermopsis villosa*	Aaron's-rod	High
Vascular Plant	*Tsuga caroliniana*	Carolina Hemlock	High

Table B. Indicators and Rating Definitions Used in the NPESE for the Woodland Associates Species Group

Additionally, relevant indicators from appropriate ecosystems are referenced in composite score calculations.

Indicator	Poor	Fair	Good	Very Good
Percent open canopy conditions	<25	25-50	50-60	>60
Percent of system acres burned at desired return interval (Buck Creek Serpentine Barrens)	<25	25-50	50-75	>75
Percent of system acres burned at desired return interval	<25	25-50	51-75	>75

Table C. Expected Outcomes, by Alternative and Indicator, for the Woodland Associates Species Group Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent open canopy conditions	1.6	1.7	6	2	10	2	18	2	13	2	23	2	9	2	18
Percent of system acres burned at desired return interval (Buck Creek Serpentine Barrens)	75	80	80	80	80	90	90	80	80	90	90	80	80	90	90
Percent of system acres burned at desired return interval	0	10	33	10	45	45	75	10	45	45	75	10	45	45	75

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent open canopy conditions	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Percent of system acres burned at desired return interval (Buck Creek Serpentine Barrens)	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG
Percent of system acres burned at desired return interval	P	P	F	P	F	F	G	P	F	F	G	P	F	F	G

Ecozones (Ecosystems)

Spruce Fir Forest

Table A. Species Included in the Spruce-Fir Forest Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Desmognathus imitator*	Imitator Salamander
Amphibian	*Desmognathus imitator pop. 1*	Waterrock Knob Salamander
Amphibian	*Desmognathus organi*	Northern Pygmy Salamander
Amphibian	*Desmognathus wrighti*	Southern Pygmy Salamander
Amphibian	*Plethodon cheoah*	Cheoah Bald Salamander
Amphibian	*Plethodon wehrlei*	Wehrle's Salamander
Amphibian	*Plethodon welleri*	Weller's Salamander
Arachnid	*Microhexura montivaga*	Spruce Fir Moss Spider
Bird	*Aegolius acadicus pop. 1*	Southern Appalachian Northern Saw-whet Owl
Bird	*Aquila chrysaetos*	Golden Eagle
Bird	*Bonasa umbellus*	Ruffed Grouse
Bird	*Buteo platypterus*	Broad-winged Hawk
Bird	*Cardellina canadensis*	Canada Warbler
Bird	*Catharus fuscescens*	Veery
Bird	*Catharus guttatus*	Hermit Thrush
Bird	*Catharus ustulatus*	Swainson's Thrush
Bird	*Certhia americana*	Brown Creeper
Bird	*Chaetura pelagica*	Chimney Swift
Bird	*Coccyzus erythropthalmus*	Black-billed Cuckoo
Bird	*Colaptes auratus*	Northern Flicker
Bird	*Contopus virens*	Eastern Wood-pewee
Bird	*Corvus corvas*	Common Raven
Bird	*Dryocopus pileatus*	Pileated Woodpecker

Taxa Group	Scientific Name	Common Name
Bird	*Empidonax alnorum*	Alder Flycatcher
Bird	*Empidonax minimus*	Least Flycatcher
Bird	*Empidonax virescens*	Acadian Flycatcher
Bird	*Helmitheros vermivorum*	Worm-eating Warbler
Bird	*Hylocichla mustelina*	Wood Thrush
Bird	*Loxia curvirostra pop. 1*	Southern Appalachian Red Crossbill
Bird	*Meleagris gallopavo*	Wild Turkey
Bird	*Mniotilta varia*	Black-and-white Warbler
Bird	*Passerina cyanea*	Indigo Bunting
Bird	*Pipilo erythrophthalmus*	Eastern Towhee
Bird	*Piranga olivacea*	Scarlet Tanager
Bird	*Poecile atricapillus practica*	Southern Appalachian Black-capped Chickadee
Bird	*Poocetes grammineus*	Vesper Sparrow
Bird	*Seiurus aurocapilla*	Ovenbird
Bird	*Setophaga cerulea*	Cerulean Warbler
Bird	*Setophaga citrina*	Hooded Warbler
Bird	*Setophaga coronata*	Yellow-rumped Warbler
Bird	*Setophaga fusca*	Blackburnian Warbler
Bird	*Setophaga magnolia*	Magnolia Warbler
Bird	*Spinus pinus*	Pine Siskin
Bird	*Toxostoma rufum*	Brown Thrasher
Bird	*Vermivora chrysoptera*	Golden-winged Warbler
Insect	*Bombus affinis*	Rusty-patched Bumblebee
Insect	*Nicrophorus americanus*	American Burying Beetle
Insect	*Scudderia septentrionalis*	Northern Bush Katydid
Mammal	*Cervus canadensis*	Elk
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat
Mammal	*Corynorhinus townsendii virginianus*	Virginia Big-eared Bat
Mammal	*Eptesicus fuscus*	Big Brown Bat

Taxa Group	Scientific Name	Common Name
Mammal	*Glaucomys sabrinus coloratus*	Carolina Northern Flying Squirrel
Mammal	*Myotis grisescens*	Gray Myotis (Gray Bat)
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Sylvilagus obscurus*	Appalachian Cottontail
Mammal	*Ursus americanus*	Black Bear
Mollusk	*Mesodon altivagus*	Wandering Globe
Mollusk	*Pallifera hemphilli*	Black Mantleslug
Mollusk	*Paravitrea placentula*	Glossy Supercoil
Mollusk	*Patera clarki clarki*	Dwarf Proud Globe
Mollusk	*Patera clarki nantahala*	Noonday Globe
Mollusk	*Triodopsis tennesseensis*	Budded Threetooth
Mollusk	*Ventridens collisella*	Sculptured Dome
Mollusk	*Ventridens suppressus*	Flat Dome
Nonvascular Plant	*Acrobolbus ciliatus*	a liverwort
Nonvascular Plant	*Arthonia kermesia*	Mountain Red Dot Lichen
Nonvascular Plant	*Arthopyrenia betulicola*	Ol' Birch Spots
Nonvascular Plant	*Bazzania nudicaulis*	a liverwort
Nonvascular Plant	*Brachydontium trichodes*	Peak Moss
Nonvascular Plant	*Bryoerythrophyllum ferruginascens*	a moss
Nonvascular Plant	*Frullania appalachiana*	a liverwort
Nonvascular Plant	*Graphis sterlingiana*	Sterling Lips
Nonvascular Plant	*Gymnoderma lineare*	Rock Gnome Lichen
Nonvascular Plant	*Herzogiella turfacea*	Flat Stump Moss
Nonvascular Plant	*Hypotrachyna oostingii*	Oosting's Square Britches

Taxa Group	Scientific Name	Common Name
Nonvascular Plant	*Hypotrachyna sinuosa*	a foliose lichen
Nonvascular Plant	*Hypotrachyna virginica*	Virginia Square Britches
Nonvascular Plant	*Lecanora masana*	Masa's Disc Lichen
Nonvascular Plant	*Leparia lanata*	Appalachian Dust Bunnies
Nonvascular Plant	*Leptodontium excelsum*	Grandfather Mountain excelsum
Nonvascular Plant	*Leptohymenium sharpii*	Mount Leconte Moss
Nonvascular Plant	*Leptoscyphus cunefolius*	Wedge Flapwort
Nonvascular Plant	*Lobaria scrobiculata*	Textured Lungwort
Nonvascular Plant	*Metzgeria furcata var. setigera*	a liverwort
Nonvascular Plant	*Opegrapha moroziana*	Andy's Scribble Lichen
Nonvascular Plant	*Pannaria conoplea*	a foliose lichen
Nonvascular Plant	*Pertusaria appalachensis*	Appalachian Wart Lichen
Nonvascular Plant	*Plagiochila corniculata*	a liverwort
Nonvascular Plant	*Plagiochila sullivantii var. sullivantii*	Sullivant's leafy liverwort
Nonvascular Plant	*Ptilidium ciliare*	a liverwort
Nonvascular Plant	*Punctelia reddenda*	Speckled Shield Lichen
Nonvascular Plant	*Sphagnum flavicomans*	a peatmoss
Nonvascular Plant	*Sphagnum squarrosum*	Squarrose Peatmoss
Nonvascular Plant	*Sphenolobopsis pearsonii*	a liverwort
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Lampropeltis triangulum triangulum*	Eastern Milksnake
Reptile	*Regina septemvittata*	Queen Snake
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Abies fraseri*	Fraser fir
Vascular Plant	*Betula cordifolia*	Mountain Paper Birch
Vascular Plant	*Cardamine clematitis*	Mountain Bittercress
Vascular Plant	*Galax urceolata*	Galax
Vascular Plant	*Glyceria nubigena*	Smoky Mountain Mannagrass

Taxa Group	Scientific Name	Common Name
Vascular Plant	*Phegopteris connectilis*	Northern Beech Fern
Vascular Plant	*Poa palustris*	Fowl Bluegrass
Vascular Plant	*Rubus idaeus ssp. strigosus*	American red raspberry
Vascular Plant	*Solidago lancifolia*	Lance-leaf Goldenrod
Vascular Plant	*Streptopus amplexifolius*	White Mandarin

Table B. Indicators and Rating Definitions Used in the NPESE for the Spruce-Fir Forest Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent Canopy Ecologically Representative Species	<65	65-80	80-90	>90
Percent of Ecosystem Acres Affected by Balsam Wooly Adelgid	>60	40-60	20-40	<20
Total Open Road Density	>2	1.5-2	1-1.5	<1
Percent Ecosystem Acres in Old Growth Seral Class	<15	15-35	35-50	>50
Percent of Ecosystem in Forest Openings	<5	5-10	10-15	>15

Table C. Expected Outcomes, by Alternative and Indicator, for the Spruce-Fir Forest Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Canopy Ecologically Representative Species	77	77	82	77	82	77	82	77	82	77	82	77	82	77	82
Percent of Ecosystem Acres Affected by Balsam Wooly Adelgid	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Total Open Road Density	0.42	0.42	0.42	0.42	0.42	0.43	0.43	0.42	0.42	0.43	0.43	0.42	0.42	0.43	0.43

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Ecosystem Acres in Old Growth Seral Class	13	20	52	18	52	17	52	18	52	17	52	18	52	17	52
Percent Ecosystem Acres in Forest Openings	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Canopy Ecologically Representative Species	F	F	G	F	G	F	G	F	G	F	G	F	G	F	G
Percent of Ecosystem Acres Affected by Balsam Wooly Adelgid	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Total Open Road Density	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG
Percent Ecosystem Acres in Old Growth Seral Class	P	F	VG	F	VG	F	VG	F	VG	F	VG	F	VG	F	VG
Percent Ecosystem Acres in Forest Openings	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG

Northern Hardwood Forest

Table A. Species Included in the Northern Hardwood Forest Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Ambystoma talpoideum*	Mole Salamander
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander
Amphibian	*Aneides aeneus*	Green Salamander
Amphibian	*Desmognathus aneneus*	Seepage Salamander
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander
Amphibian	*Desmognathus imitator*	Imitator Salamander
Amphibian	*Desmognathus imitator pop. 1*	Waterrock Knob Salamander
Amphibian	*Desmognathus organi*	Northern Pygmy Salamander
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander
Amphibian	*Desmognathus wrighti*	Southern Pygmy Salamander
Amphibian	*Eurycea bislineata*	Two-lined Salamander
Amphibian	*Eurycea junaluska*	Junaluska Salamander
Amphibian	*Eurycea longicauda*	Longtail Salamander
Amphibian	*Hemidactylium scutatum*	Four-toed Salamander
Amphibian	*Plethodon amplus*	Blue Ridge Gray-cheeked Salamander
Amphibian	*Plethodon aureolus*	Tellico Salamander
Amphibian	*Plethodon chattahoochee*	Chattahoochee Slimy Salamander
Amphibian	*Plethodon cheoah*	Cheoah Bald Salamander
Amphibian	*Plethodon glutinosus*	Northern Slimy Salamander
Amphibian	*Plethodon jordani*	Jordan's Salamander (Red-cheeked Salamander)
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander
Amphibian	*Plethodon meridianus*	South Mountain Gray-cheeked Salamander
Amphibian	*Plethodon richmondi*	Southern Ravine Salamander
Amphibian	*Plethodon shermani*	Red-legged Salamander
Amphibian	*Plethodon teyahalee*	Southern Appalachian Salamander
Amphibian	*Plethodon ventralis*	Southern Zigzag Salamander
Amphibian	*Plethodon wehrlei*	Wehrle's Salamander

Taxa Group	Scientific Name	Common Name
Amphibian	*Plethodon welleri*	Weller's Salamander
Amphibian	*Plethodon yonahlossae*	Yonahlossee Salamander
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog
Arachnid	*Microhexura montivaga*	Spruce Fir Moss Spider
Bird	*Accipiter striatus*	Sharp-shinned Hawk
Bird	*Aegolius acadicus pop. 1*	Southern Appalachian Northern Saw-whet Owl
Bird	*Aquila chrysaetos*	Golden Eagle
Bird	*Bonasa umbellus*	Ruffed Grouse
Bird	*Buteo platypterus*	Broad-winged Hawk
Bird	*Cardellina canadensis*	Canada Warbler
Bird	*Catharus fuscescens*	Veery
Bird	*Catharus guttatus*	Hermit Thrush
Bird	*Catharus ustulatus*	Swainson's Thrush
Bird	*Certhia americana*	Brown Creeper
Bird	*Chaetura pelagica*	Chimney Swift
Bird	*Coccyzus erythropthalmus*	Black-billed Cuckoo
Bird	*Colaptes auratus*	Northern Flicker
Bird	*Contopus virens*	Eastern Wood-pewee
Bird	*Corvus corvas*	Common Raven
Bird	*Dryocopus pileatus*	Pileated Woodpecker
Bird	*Empidonax alnorum*	Alder Flycatcher
Bird	*Empidonax minimus*	Least Flycatcher
Bird	*Empidonax virescens*	Acadian Flycatcher
Bird	*Falco peregrinus*	Peregrine Falcon
Bird	*Helmitheros vermivorum*	Worm-eating Warbler
Bird	*Hylocichla mustelina*	Wood Thrush
Bird	*Icteria virens*	Yellow-breasted Chat
Bird	*Loxia curvirostra pop. 1*	Southern Appalachian Red Crossbill
Bird	*Meleagris gallopavo*	Wild Turkey

Taxa Group	Scientific Name	Common Name
Bird	*Mniotilta varia*	Black-and-white Warbler
Bird	*Parkesia motacilla*	Louisiana Waterthrush
Bird	*Passerina cyanea*	Indigo Bunting
Bird	*Pipilo erythrophthalmus*	Eastern Towhee
Bird	*Piranga olivacea*	Scarlet Tanager
Bird	*Poecile atricapillus practica*	Southern Appalachian Black-capped Chickadee
Bird	*Seiurus aurocapilla*	Ovenbird
Bird	*Setophaga cerulea*	Cerulean Warbler
Bird	*Setophaga citrina*	Hooded Warbler
Bird	*Setophaga coronata*	Yellow-rumped Warbler
Bird	*Setophaga dominica*	Yellow-throated Warbler
Bird	*Setophaga fusca*	Blackburnian Warbler
Bird	*Setophaga magnolia*	Magnolia Warbler
Bird	*Spinus pinus*	Pine Siskin
Bird	*Spizella pusilla*	Field Sparrow
Bird	*Toxostoma rufum*	Brown Thrasher
Bird	*Vermivora chrysoptera*	Golden-winged Warbler
Bird	*Vermivora cyanoptera*	Blue-winged Warbler
Bird	*Vireo flavifrons*	Yellow-throated Vireo
Insect	*Bombus affinis*	Rusty-patched Bumblebee
Insect	*Bombus bariabilis*	Variable Cuckoo Bumblebee
Insect	*Bombus pennsylvanicus*	American Bumblebee
Insect	*Bombus terricola*	Yellow-banded Bumblebee
Insect	*Bombus vagans*	Half Black Bumblebee
Insect	*Nicrophorus americanus*	American Burying Beetle
Insect	*Scudderia septentrionalis*	Northern Bush Katydid
Mammal	*Cervus canadensis*	Elk
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat
Mammal	*Corynorhinus townsendii virginianus*	Virginia Big-eared Bat

Taxa Group	Scientific Name	Common Name
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Glaucomys sabrinus coloratus*	Carolina Northern Flying Squirrel
Mammal	*Microtus chrotorrhinus carolinensis*	Southern Rock Vole
Mammal	*Mustela nivalis*	Least Weasel
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Neotoma floridana haematoria*	Southern Appalachian Woodrat
Mammal	*Neotoma magister*	Alleghany Woodrat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Sorex palustris punctulatus*	Southern Water Shrew
Mammal	*Sylvilagus obscurus*	Appalachian Cottontail
Mammal	*Ursus americanus*	Black Bear
Mollusk	*Pallifera hemphilli*	Black Mantleslug
Mollusk	*Paravitrea placentula*	Glossy Supercoil
Mollusk	*Patera clarki clarki*	Dwarf Proud Globe
Mollusk	*Patera clarki nantahala*	Noonday Globe
Mollusk	*Triodopsis tennesseensis*	Budded Threetooth
Mollusk	*Ventridens collisella*	Sculptured Dome
Mollusk	*Ventridens suppressus*	Flat Dome
Nonvascular Plant	*Arthopyrenia betulicola*	Ol' Birch Spots
Nonvascular Plant	*Graphis sterlingiana*	Sterling Lips
Nonvascular Plant	*Gymnoderma lineare*	Rock Gnome Lichen
Nonvascular Plant	*Hypotrachyna sinuosa*	a foliose lichen
Nonvascular Plant	*Hypotrachyna virginica*	Virginia Square Britches
Nonvascular Plant	*Lecanora masana*	Masa's Disc Lichen
Nonvascular Plant	*Lobaria scrobiculata*	Textured Lungwort

Taxa Group	Scientific Name	Common Name
Nonvascular Plant	*Pannaria conoplea*	a foliose lichen
Nonvascular Plant	*Pertusaria appalachensis*	Appalachian Wart Lichen
Nonvascular Plant	*Punctelia reddenda*	Speckled Shield Lichen
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces anthracinus*	Coal Skink
Reptile	*Lampropeltis triangulum triangulum*	Eastern Milksnake
Reptile	*Regina septemvittata*	Queen Snake
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Acconitum reclinatum*	White Monkshood
Vascular Plant	*Allium tricoccum*	Red Ramps
Vascular Plant	*Betula cordifolia*	Mountain Paper Birch
Vascular Plant	*Botrychium oneidense*	Blunt-lobed Grape Fern
Vascular Plant	*Cardamine clematitis*	Mountain Bittercress
Vascular Plant	*Cypripedium parviflorum var. parviflorum*	Small Yellow Lady's-slipper
Vascular Plant	*Delphinium exaltum*	Tall Larkspur
Vascular Plant	*Euphorbia purpurea*	Glade Spurge
Vascular Plant	*Geum geniculatum*	Bent Avens
Vascular Plant	*Glyceria nubigena*	Smoky Mountain Mannagrass
Vascular Plant	*Lilium grayi*	Gray's Lily
Vascular Plant	*Lonicera canadensis*	American fly-honeysuckle
Vascular Plant	*Meehania cordata*	Meehania
Vascular Plant	*Micranthes caroliniana*	Carolina saxifrage
Vascular Plant	*Monarda media*	Purple Bee-balm
Vascular Plant	*Platanthera grandiflora*	Large Purple Fringed Orchid
Vascular Plant	*Rhododendron vaseyi*	Pink-shell Azalea
Vascular Plant	*Robinia hispida var. fertilis*	Fruitful Locust
Vascular Plant	*Rubus idaeus ssp. strigosus*	American red raspberry
Vascular Plant	*Scutellaria saxatilis*	Rock Skullcap

Taxa Group	Scientific Name	Common Name
Vascular Plant	*Stachys clingmanii*	Clingman's Hedge-nettle
Vascular Plant	*Streptopus amplexifolius*	White Mandarin
Vascular Plant	*Trientalis borealis*	Starflower

Table B. Indicators and Rating Definitions Used in the NPESE for the Northern Hardwood Forest Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent Canopy Ecologically Representative Species	<18	18-36	36-55	56-66
Percent of Ecosystem Occupied by Invasive Species	>12	8-12	4-8	<4
Total Open Road Density	>2	1.5-2	1-1.5	<1
Percent of Ecosystem in Old Growth Seral Class	<15	15-35	35-50	>50
Total Open Road Density	<2	2-3	4-5	>5

Table C. Expected Outcomes, by Alternative and Indicator, for the Northern Hardwood Forest Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Canopy Ecologically Representative Species	86	86	87	86	87	87	88	86	86	87	87	87	88	88	89
Percent of Ecosystem Occupied by Invasive Species	8.5	8.5	7.0	8.5	7.0	13.0	10.0	8.5	7.0	13.0	10.0	8.5	7.0	13.0	10.0
Total Open Road Density	3.37	3.37	3.37	3.37	3.37	3.46	3.46	3.37	3.37	3.46	3.46	3.37	3.37	3.46	3.46
Percent of Ecosysten in Old Growth Seral Class	14.5	18	50	16	51	15	47	16	51	15	48	16	51	15	48
Percent of Ecosystem in Forest Openings	0.2	1.00	1.00	2.00	3.00	3.00	5.00	2.00	3.00	4.00	6.00	2.00	3.00	4.00	5.00

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Canopy Ecologically Representative Species	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Percent of Ecosystem Occupied by Invasive Species	F	F	G	F	G	P	F	F	G	P	F	F	G	P	F
Total Open Road Density	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Percent of Ecosysten in Old Growth Seral Class	P	F	G	P	G	P	G	P	G	P	G	P	G	P	G
Percent of Ecosystem in Forest Openings	P	P	P	F	F	F	G	F	F	G	VG	F	F	G	G

High Elevation Red Oak Forest

Table A. Species Included in the High Elevation Red Oak Forest Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Ambystoma maculatum*	Spotted Salamander
Amphibian	*Desmognathus imitator*	Imitator Salamander
Amphibian	*Desmognathus imitator pop. 1*	Waterrock Knob Salamander
Amphibian	*Desmognathus organi*	Northern Pigmy Salamander
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander
Amphibian	*Desmognathus wrighti*	Southern Pygmy Salamander
Amphibian	*Plethodon aureolus*	Tellico Salamander

Taxa Group	Scientific Name	Common Name
Amphibian	*Plethodon chattahoochee*	Chattahoochee Slimy Salamander
Amphibian	*Plethodon cheoah*	Cheoah Bald Salamander
Amphibian	*Plethodon glutinosus*	Northern Slimy Salamander
Amphibian	*Plethodon jordani*	Jordan's Salamander (Red-cheeked Salamander)
Amphibian	*Plethodon richmondi*	Southern Ravine Salamander
Amphibian	*Plethodon shermani*	Red-legged Salamander
Amphibian	*Plethodon teyahalee*	Southern Appalachian Salamander
Amphibian	*Plethodon ventralis*	Southern Zigzag Salamander
Amphibian	*Plethodon wehrlei*	Wehrle's Salamander
Amphibian	*Plethodon welleri*	Weller's Salamander
Arachnid	*Microhexura montivaga*	Spruce Fir Moss Spider
Bird	*Aegolius acadicus pop. 1*	Southern Appalachian Northern Saw-whet Owl
Bird	*Antrostomus vociferus*	Whip-poor-will
Bird	*Bonasa umbellus*	Ruffed Grouse
Bird	*Cardellina canadensis*	Canada Warbler
Bird	*Catharus fuscescens*	Veery
Bird	*Catharus guttatus*	Hermit Thrush
Bird	*Certhia americana*	Brown Creeper
Bird	*Colaptes auratus*	Northern Flicker
Bird	*Contopus virens*	Eastern Wood-pewee
Bird	*Dryocopus pileatus*	Pileated Woodpecker
Bird	*Empidonax virescens*	Acadian Flycatcher
Bird	*Helmitheros vermivorum*	Worm-eating Warbler
Bird	*Hylocichla mustelina*	Wood Thrush
Bird	*Icteria virens*	Yellow-breasted Chat
Bird	*Loxia curvirostra pop. 1*	Southern Appalachian Red Crossbill
Bird	*Meleagris gallopavo*	Wild Turkey
Bird	*Mniotilta varia*	Black-and-white Warbler
Bird	*Passerina cyanea*	Indigo Bunting

Taxa Group	Scientific Name	Common Name
Bird	*Pipilo erythrophthalmus*	Eastern Towhee
Bird	*Piranga olivacea*	Scarlet Tanager
Bird	*Seiurus aurocapilla*	Ovenbird
Bird	*Setophaga citrina*	Hooded Warbler
Bird	*Setophaga fusca*	Blackburnian Warbler
Bird	*Vermivora chrysoptera*	Golden-winged Warbler
Bird	*Vermivora cyanoptera*	Blue-winged Warbler
Bird	*Vireo flavifrons*	Yellow-throated Vireo
Insect	*Scudderia septentrionalis*	Northern Bush Katydid
Mammal	*Cervus elaphus*	Elk
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat (mountain subspecies)
Mammal	*Corynorhinus townsendii virginianus*	Virginia Big-eared Bat
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Glaucomys sabrinus coloratus*	Carolina Northern Flying Squirrel
Mammal	*Myotis grisescens*	Gray Myotis (Gray Bat)
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Ursus americanus*	Black Bear
Mollusk	*Mesomphix andrewsae*	Mountain Button
Mollusk	*Pallifera hemphilli*	Black Mantleslug
Mollusk	*Paravitrea lamellidens*	Lamellate Supercoil
Mollusk	*Paravitrea placentula*	Glossy Supercoil
Mollusk	*Paravitrea ternaria*	Sculpted Supercoil
Nonvascular Plant	*Ditrichum ambiguum*	Ambiguous Ditrichium
Nonvascular Plant	*Drepanolejeunea appalachiana*	a liverwort

Taxa Group	Scientific Name	Common Name
Nonvascular Plant	*Frullania appalachiana*	a liverwort
Nonvascular Plant	*Pannaria conoplea*	Foliose lichen
Nonvascular Plant	*Pertusaria appalachensis*	Appalachian Wart Lichen
Nonvascular Plant	*Pohlia rabunbaldensis*	a moss
Nonvascular Plant	*Punctelia reddenda*	Speckled Shield Lichen
Nonvascular Plant	*Sticta limbata*	Powdered Moon Lichen
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Lampropeltis triangulum triangulum*	Eastern Milk Snake
Reptile	*Regina septemvittata*	Queen Snake
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Betula cordifolia*	Mountain Paper Birch
Vascular Plant	*Cypripedium parviflorum var. parviflorum*	Small Yellow Lady's-slipper
Vascular Plant	*Rhododendron cumberlandense*	Cumberland Azalea
Vascular Plant	*Robinia hispida var kelseyi*	Kelsey's locust
Vascular Plant	*Vaccinium angustifolium*	Northern Lowbush Blueberry

Table B. Indicators and Rating Definitions Used in the NPESE for the High Elevation Red Oak Forest Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent Forest in Open Forest Condition	<20	20-30	30-40	>40
Percent Canopy Ecologically Representative Species	<75	75-87	86-95	>95
Total Open Road Density	>2	1.5-2	1-1.5	<1
Percent Ecosystem Acres in Old Growth Seral Class	<10, >60	10-19, 51-60	20-29, 41-50	30-40
Percent Ecosystem Acres in Forest Openings	<5	5-10	10-15	>15

Table C. Expected Outcomes, by Alternative and Indicator, for the High Elevation Red Oak Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Forest in Open Forest Condition	6	6	8	6	9	6	15	6	9	6	22	6	9	6	17
Percent Canopy Ecologically Representative Species	83	83	84	84	85	85	86	84	85	85	86	85	86	86	87
Total Open Road Density	0.79	0.79	0.79	0.79	0.79	0.80	0.80	0.79	0.79	0.80	0.80	0.79	0.79	0.80	0.80
Percent Ecosystem Acres in Old Growth Seral Class	19	21	50	20	55	18	49	20	55	19	50	20	55	18	50
Percent Ecosystem Acres in Forest Openings	<0.1	1.0	1.0	3.0	4.0	5.0	9.0	3.0	5.0	5.0	9.0	3.0	4.0	5.0	9.0

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Forest in Open Forest Condition	P	P	P	P	P	P	P	P	P	P	F	P	P	P	P
Percent Canopy Ecologically Representative Species	F	F	F	F	F	F	G	F	F	F	G	F	G	G	G
Total Open Road Density	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG
Percent Ecosystem Acres in Old Growth Seral Class	F	G	G	G	F	F	G	G	F	F	G	G	F	F	G

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Ecosystem Acres in Forest Openings	P	P	P	P	P	F	F	P	F	F	F	P	P	F	F

Mesic Oak Forest

Table A. Species Included in the Mesic Oak Forest Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Ambystoma talpoidium*	Mole Salamander
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander
Amphibian	*Aneides aeneus*	Green Salamander
Amphibian	*Desmognathus aneneus*	Seepage Salamander
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander
Amphibian	*Desmognathus imitator*	Imitator Salamander
Amphibian	*Desmognathus imitator pop. 1*	Waterrock Knob Salamander
Amphibian	*Desmognathus organi*	Northern Pigmy Salamander
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander
Amphibian	*Desmognathus wrighti*	Southern Pygmy Salamander
Amphibian	*Eurycea bislineata*	Two-lined Salamander
Amphibian	*Eurycea junaluska*	Junaluska Salamander
Amphibian	*Eurycea longicauda*	Longtail Salamander
Amphibian	*Hemidactylium scutatum*	Four-toed Salamander
Amphibian	*Plethodon amplus*	Blue Ridge Gray-cheeked Salamander
Amphibian	*Plethodon aureolus*	Tellico Salamander
Amphibian	*Plethodon chattahoochee*	Chattahoochee Slimy Salamander
Amphibian	*Plethodon cheoah*	Cheoah Bald Salamander
Amphibian	*Plethodon glutinosus*	Northern Slimy Salamander

Taxa Group	Scientific Name	Common Name
Amphibian	*Plethodon jordani*	Jordan's Salamander (Red-cheeked Salamander)
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander
Amphibian	*plethodon meridianus*	South Mountain Gray-cheeked Salamander
Amphibian	*Plethodon richmondi*	Southern Ravine Salamander
Amphibian	*Plethodon shermani*	Red-legged Salamander
Amphibian	*Plethodon teyahalee*	Southern Appalachian Salamander
Amphibian	*Plethodon ventralis*	Southern Zigzag Salamander
Amphibian	*Plethodon wehrlei*	Wehrle's Salamander
Amphibian	*Plethodon welleri*	Weller's Salamander
Amphibian	*Plethodon yonahlossee*	Yonahlossee Salamander
Amphibian	*Pseudacris brachyphona*	Mountian Chorus Frog
Bird	*Antrostomus carolinensis*	Whip-poor-will
Bird	*Bonasa umbellus*	Ruffed Grouse
Bird	*Buteo platypterus*	Broad-winged Hawk
Bird	*Cardellina canadensis*	Canada Warbler
Bird	*Catharus fuscescens*	Veery
Bird	*Catharus ustulatus*	Swainson's Thrush
Bird	*Chaetura pelagica*	Chimney Swift
Bird	*Colaptes auratus*	Northern Flicker
Bird	*Colinus virginianus*	Northern Bobwhite
Bird	*Contopus virens*	Eastern Wood-pewee
Bird	*Dryocopus pileatus*	Pileated Woodpecker
Bird	*Empidonax alnorum*	Alder Flycatcher
Bird	*Empidonax minimus*	Least Flycatcher
Bird	*Empidonax virescens*	Acadian Flycatcher
Bird	*Geothlypis formosa*	Kentucky Warbler
Bird	*Helmitheros vermivorum*	Worm-eating Warbler
Bird	*Hylocichla mustelina*	Wood Thrush
Bird	*Icteria virens*	Yellow-breasted Chat

Taxa Group	Scientific Name	Common Name
Bird	*Limnothlypis swainsonii*	Swainson's Warbler
Bird	*Meleagris gallopavo*	Wild Turkey
Bird	*Mniotilta varia*	Black-and-white Warbler
Bird	*Parkesia motacilla*	Louisiana Waterthrush
Bird	*Pipilo erythrophthalmus*	Eastern Towhee
Bird	*Piranga olivacea*	Scarlet Tanager
Bird	*Seiurus aurocapilla*	Ovenbird
Bird	*Setophaga cerulea*	Cerulean Warbler
Bird	*Setophaga citrina*	Hooded Warbler
Bird	*Setophaga discolor*	Prairie Warbler
Bird	*Setophaga dominica*	Yellow-throated Warbler
Bird	*Setophaga fusca*	Blackburnian Warbler
Bird	*Spizella pusilla*	Field Sparrow
Bird	*Toxostoma rufum*	Brown Thrasher
Bird	*Vermivora chrysoptera*	Golden-winged Warbler
Bird	*Vermivora cyanoptera*	Blue-winged Warbler
Bird	*Vireo flavifrons*	Yellow-throated Vireo
Insect	*Scudderia septentrionalis*	Northern Bush Katydid
Mammal	*Cervus canadensis*	Elk
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat (mountain subspecies)
Mammal	*Corynorhinus townsendii virginianus*	Virginia Big-eared Bat
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Microtus chrotorrhinus carolinensis*	Southern Rock Vole
Mammal	*Mustela nivelis*	Least Weasel
Mammal	*Myotis grisescens*	Gray Myotis (Gray Bat)
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)
Mammal	*Myotis sodalis*	Indiana Bat

Taxa Group	Scientific Name	Common Name
Mammal	*Neotoma floridana haematoria*	Southern Appalachian Woodrat
Mammal	*Neotoma magister*	Allegheny Woodrat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Sorxe palustris punctulatus*	Southern Water Shrew
Mammal	*Ursus americanus*	Black Bear
Mollusk	*Mesomphix andrewsae*	Mountain Button
Mollusk	*Pallifera hemphilli*	Black Mantleslug
Mollusk	*Paravitrea lamellidens*	Lamellate Supercoil
Mollusk	*Paravitrea placentula*	Glossy Supercoil
Mollusk	*Paravitrea ternaria*	Sculpted Supercoil
Mollusk	*Patera clarki clarki*	Dwarf Proud Globe
Mollusk	*Patera clarki nantahala*	Noonday Globe
Nonvascular Plant	*Drepanolejeunea appalachiana*	a liverwort
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Lampropeltis triangulum triangulum*	Eastern Milk Snake
Reptile	*Regina septemvittata*	Queen Snake
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Botrychium oneidense*	Blunt-lobed Grape Fern
Vascular Plant	*Buckleya distchophylla*	Piratebush
Vascular Plant	*Carex hitchcockiana*	Hitchcock's Sedge
Vascular Plant	*Carex roanensis*	Roan Mountain Sedge
Vascular Plant	*Delphium exaltatum*	Tall Larkspur
Vascular Plant	*Euphorbia purpurea*	Glade Spurge
Vascular Plant	*Fothergilla major*	Large Witch-alder
Vascular Plant	*Frasera caroliniensis*	American Columbo
Vascular Plant	*Hexalectris spicata*	Crested Coralroot
Vascular Plant	*Hexastylis contracta*	Mountain Heartleaf

Taxa Group	Scientific Name	Common Name
Vascular Plant	*Hydrastis canadensis*	Golden Seal
Vascular Plant	*Isotria medeoloides*	Small-whorled Pagonia
Vascular Plant	*Juglans cinerea*	Butternut
Vascular Plant	*Lysimachia fraseri*	Fraser's Loosestrife
Vascular Plant	*Monotropsis odorata*	Sweet Pinesap
Vascular Plant	*Rhododendron vaseyi*	Pink-shell Azalea
Vascular Plant	*Robinia hispida var fertilis*	Fruitful Locust
Vascular Plant	*Robinia viscosa var viscosa*	Clammy Locust
Vascular Plant	*Scutellaria ovata ssp. ovata var ovata*	Heartleaf Skullcap
Vascular Plant	*Silene ovata*	Ovate Catchfly
Vascular Plant	*Spigelia marilandica*	Pink Root
Vascular Plant	*Stewartia ovata*	Mountain Camellia
Vascular Plant	*Thermopsis fraxinofolia*	Ash-leaved Golden-banner
Vascular Plant	*Thermopsis mollis*	Appalachian Golden-banner
Vascular Plant	*Viola appalachiensis*	Appalachian Blue Violet

Table B. Indicators and Rating Definitions Used in the NPESE for the Mesic Oak Forest Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent Open Forest Condition	<20	20-30	30-40	>40
Percent Invasive Species Occupying System	>12	8-12	4-8	<4
Percent Canopy Ecologically Representative Species	<75	75-85	86-95	>95
Total Open Road Density	>2	1.5-2	1-1.5	<1
Percent Old Growth Forest	<15	15-35	35-50	51-60
Percent Forest Openings (Young Forest)	0-1, >10	1.1-2.5, 8-10	2.6-3.9, 6-8	4-6

Table C. Expected Outcomes, by Alternative and Indicator, for the Mesic Oak Forest Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Open Forest Condition	1.5	1.5	5	1.5	6	1.5	12	1.5	8	1.5	18	1.5	7	1.5	15
Percent Invasive Species Occupying System	12	9	7	9	7	15	11	9	7	9	7	9	7	15	11
Percent Canopy Ecologically Representative Species	82	83	85	85	86	86	87	86	87	87	88	88	89	90	91
Total Open Road Density	1.00	1.00	1.00	1.00	1.00	1.02	1.02	1.00	1.00	1.02	1.02	1.00	1.00	1.02	1.02
Percent Old Growth Forest	10	15	50	15	50	15	44	15	50	15	44	15	50	15	45
Percent Forest Openings (Young Forest)	0.5	1.0	1.0	3.0	4.0	7.0	9.0	3.0	5.0	7.0	9.0	3.0	4.0	7.0	9.0

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Open Forest Condition	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Percent Invasive Species Occupying System	F	F	G	F	G	P	F	F	G	F	G	P	F	P	F

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Canopy Ecologically Representative Species	F	F	F	F	G	G	G	G	G	G	G	G	G	G	G
Total Open Road Density	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Percent Old Growth Forest	P	F	G	F	G	F	G	F	G	F	G	F	G	F	G
Percent Forest Openings (Young Forest)	P	P	P	G	G	G	F	G	VG	G	F	G	VG	G	F

Dry-Mesic Oak Forest

Table A. Species Included in the Dry-Mesic Oak Forest Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Ambystoma talpoidium*	Mole Salamander
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander
Amphibian	*Aneides aeneus*	Green Salamander
Amphibian	*Desmognathus aneneus*	Seepage Salamander
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander
Amphibian	*Desmognathus imitator*	Imitator Salamander
Amphibian	*Desmognathus imitator pop. 1*	Waterrock Knob Salamander
Amphibian	*Desmognathus organi*	Northern Pigmy Salamander
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander
Amphibian	*Desmognathus wrighti*	Southern Pygmy Salamander
Amphibian	*Eurycea bislineata*	Two-lined Salamander
Amphibian	*Eurycea junaluska*	Junaluska Salamander

Taxa Group	Scientific Name	Common Name
Amphibian	*Eurycea longicauda*	Longtail Salamander
Amphibian	*Hemidactylium scutatum*	Four-toed Salamander
Amphibian	*Plethodon amplus*	Blue Ridge Gray-cheeked Salamander
Amphibian	*Plethodon aureolus*	Tellico Salamander
Amphibian	*Plethodon chattahoochee*	Chattahoochee Slimy Salamander
Amphibian	*Plethodon cheoah*	Cheoah Bald Salamander
Amphibian	*Plethodon glutinosus*	Northern Slimy Salamander
Amphibian	*Plethodon jordani*	Jordan's Salamander (Red-cheeked Salamander)
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander
Amphibian	*plethodon meridianus*	South Mountain Gray-cheeked Salamander
Amphibian	*Plethodon richmondi*	Southern Ravine Salamander
Amphibian	*Plethodon shermani*	Red-legged Salamander
Amphibian	*Plethodon teyahalee*	Southern Appalachian Salamander
Amphibian	*Plethodon ventralis*	Southern Zigzag Salamander
Amphibian	*Plethodon wehrlei*	Wehrle's Salamander
Amphibian	*Plethodon welleri*	Weller's Salamander
Amphibian	*Plethodon yonahlossee*	Yonahlossee Salamander
Amphibian	*Pseudacris brachyphona*	Mountian Chorus Frog
Bird	*Antrostomus carolinensis*	Whip-poor-will
Bird	*Bonasa umbellus*	Ruffed Grouse
Bird	*Dryocopus pileatus*	Pileated Woodpecker
Bird	*Meleagris gallopavo*	Wild Turkey
Bird	*Pipilo erythrophthalmus*	Eastern Towhee
Bird	*Seiurus aurocapilla*	Ovenbird
Insect	*Scudderia septentrionalis*	Northern Bush Katydid
Mammal	*Cervus canadensis*	Elk
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat (mountain subspecies)
Mammal	*Corynorhinus townsendii virginianus*	Virginia Big-eared Bat
Mammal	*Eptesicus fuscus*	Big Brown Bat

Taxa Group	Scientific Name	Common Name
Mammal	*Microtus chrotorrhinus carolinensis*	Southern Rock Vole
Mammal	*Mustela nivelis*	Least Weasel
Mammal	*Myotis grisescens*	Gray Myotis (Gray Bat)
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Neotoma floridana haematoria*	Southern Appalachian Woodrat
Mammal	*Neotoma magister*	Allegheny Woodrat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Ursus americanus*	Black Bear
Mollusk	*Pallifera hemphilli*	Black Mantleslug
Mollusk	*Paravitrea lamellidens*	Lamellate Supercoil
Mollusk	*Paravitrea placentula*	Glossy Supercoil
Mollusk	*Paravitrea ternaria*	Sculpted Supercoil
Mollusk	*Patera clarki clarki*	Dwarf Proud Globe
Mollusk	*Patera clarki nantahala*	Noonday Globe
Nonvascular Plant	*Drepanolejeunea appalachiana*	a liverwort
Nonvascular Plant	*Metzgeria violacea*	a liverwort
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces anthracinus*	Coal Skink
Reptile	*Lampropeltis triangulum triangulum*	Eastern Milk Snake
Reptile	*Regina septemvittata*	Queen Snake
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Carex roanensis*	Roan Mountain Sedge
Vascular Plant	*Fothergilla major*	Large Witch-alder
Vascular Plant	*Hexastylis contracta*	Mountain Heartleaf

Taxa Group	Scientific Name	Common Name
Vascular Plant	*Isotria medeoloides*	Small-whorled Pagonia
Vascular Plant	*Lysimachia fraseri*	Fraser's Loosestrife
Vascular Plant	*Monotropsis odorata*	Sweet Pinesap
Vascular Plant	*Robinia viscosa var viscosa*	Clammy Locust
Vascular Plant	*Robinia hispida var kelseyi*	Kelsey's Locust
Vascular Plant	*Stewartia ovata*	Mountain Camellia
Vascular Plant	*Thermopsis fraxinifolia*	Ash-leaved Golden-banner

Table B. Indicators and Rating Definitions Used in the NPESE for the Dry-Mesic Oak Forest Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent Open Forest Condition	1-15	16-30	31-50	>50
Percent Invasive Species Occupying System	>12	8-12	4-8	<4
Percent Canopy Ecologically Representative Species	<75	75-85	86-95	<95
Total Open Road Density	>2	1.5-2	1-1.5	<1
Percent Forest Openings (Young Forest)	<2, >15	2-4, 12-15	4-6, 8-11	6-8
Percent Old Growth Forest	<18	18-36	36-50	51-61

Table C. Expected Outcomes, by Alternative and Indicator, for the Dry-Mesic Oak Forest Ecosystem Within the NPESE

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Open Forest Condition	1	1	6	2	8	2	15	1	8	2	22	1	6	2	18
Percent Invasive Species Occupying System	8	8	5	5	5	11	9	5	5	11	9	5	5	11	9
Percent Canopy Ecologically	82	83	85	85	86	87	88	86	87	87	88	88	89	90	91

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Representative Species															
Total Open Road Density	1.19	1.19	1.19	1.21	1.21	1.19	1.19	1.19	1.19	1.21	1.21	1.19	1.19	1.21	1.21
Percent Forest Openings (Young Forest)	1.6	1.6	1.6	6.0	7.0	13.0	10.0	6.0	6.0	6.0	6.0	5.7	7.0	13.0	10.5
Percent Old Growth Forest	4	8	50	8	49	7	43	8	50	7	44	7	49	8	43

Indicator Rating		A		B1		B2		C1		C2		D1		D2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Open Forest Condition	P	P	P	P	P	P	P	P	P	P	F	P	P	P	P
Percent Invasive Species Occupying System	F	F	G	G	G	F	F	G	G	F	F	G	G	F	F
Percent Canopy Ecologically Representative Species	F	F	F	F	G	G	G	G	G	G	G	G	G	G	G
Total Open Road Density	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Percent Forest Openings (Young Forest)	P	P	P	G	VG	F	G	VG	VG	VG	VG	G	VG	F	G
Percent Old Growth Forest	P	P	G	P	G	P	G	P	G	P	G	P	G	P	G

Dry Oak Forest

Table A. Species Included in the Dry Oak Forest Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Ambystoma talpoidium*	Mole Salamander
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander
Amphibian	*Aneides aeneus*	Green Salamander
Amphibian	*Desmognathus aneneus*	Seepage Salamander
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander
Amphibian	*Desmognathus imitator*	Imitator Salamander
Amphibian	*Desmognathus imitator pop. 1*	Waterrock Knob Salamander
Amphibian	*Desmognathus organi*	Northern Pigmy Salamander
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander
Amphibian	*Desmognathus wrighti*	Southern Pygmy Salamander
Amphibian	*Eurycea bislineata*	Two-lined Salamander
Amphibian	*Eurycea junaluska*	Junaluska Salamander
Amphibian	*Eurycea longicauda*	Longtail Salamander
Amphibian	*Hemidactylium scutatum*	Four-toed Salamander
Amphibian	*Plethodon amplus*	Blue Ridge Gray-cheeked Salamander
Amphibian	*Plethodon aureolus*	Tellico Salamander
Amphibian	*Plethodon chattahoochee*	Chattahoochee Slimy Salamander
Amphibian	*Plethodon cheoah*	Cheoah Bald Salamander
Amphibian	*Plethodon glutinosus*	Northern Slimy Salamander
Amphibian	*Plethodon jordani*	Jordan's Salamander (Red-cheeked Salamander)
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander
Amphibian	*plethodon meridianus*	South Mountain Gray-cheeked Salamander
Amphibian	*Plethodon richmondi*	Southern Ravine Salamander
Amphibian	*Plethodon shermani*	Red-legged Salamander
Amphibian	*Plethodon teyahalee*	Southern Appalachian Salamander
Amphibian	*Plethodon ventralis*	Southern Zigzag Salamander

Taxa Group	Scientific Name	Common Name
Amphibian	*Plethodon wehrlei*	Wehrle's Salamander
Amphibian	*Plethodon welleri*	Weller's Salamander
Amphibian	*Plethodon yonahlossee*	Yonahlossee Salamander
Amphibian	*Pseudacris brachyphona*	Mountian Chorus Frog
Bird	*Bonasa umbellus*	Ruffed Grouse
Bird	*Cathrus fuscescens*	Veery
Bird	*Chaetura pelagica*	Chimney Swift
Bird	*Contopus virens*	Eastern Wood-pewee
Bird	*Corvus corvax*	Common Raven
Bird	*Dryocopus pileatus*	Pileated Woodpecker
Bird	*Empidonax alnorum*	Alder Flycatcher
Bird	*Empidonax virescens*	Acadian Flycatcher
Bird	*Helmitheros vermivorum*	Worm-eating Warbler
Bird	*Hylocichla mustelina*	Wood Thrush
Bird	*Meleagris gallopavo*	Wild Turkey
Bird	*Mniotilta varia*	Black-and-white Warbler
Bird	*Pipilo erythrophthalmus*	Eastern Towhee
Bird	*Piranga olivacea*	Scarlet Tanager
Bird	*Seiurus aurocapilla*	Ovenbird
Bird	*Setophaga citrina*	Hooded Warbler
Bird	*Setophaga fusca*	Blackburnian Warbler
Bird	*Vermivora cyanoptera*	Blue-winged Warbler
Bird	*Vireo flavifrons*	Yellow-throated Warbler
Insect	*Bombus affinis*	Rusty-patched Bumblebee
Insect	*Bombus bariabilis*	Variable Cuckoo Bumblebee
Insect	*Bombus pennsylvanicus*	American Bumblebee
Insect	*Bombus terricola*	Yellow-banded Bumblebee
Insect	*Bombus vagans*	Half Black Bumblebee
Insect	*Scudderia septentrionalis*	Northern Bush Katydid

Taxa Group	Scientific Name	Common Name
Mammal	*Cervus canadensis*	Elk
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat (mountain subspecies)
Mammal	*Corynorhinus townsendii virginianus*	Virginia Big-eared Bat
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Microtus chrotorrhinus carolinensis*	Southern Rock Vole
Mammal	*Mustela nivelis*	Least Weasel
Mammal	*Myotis grisescens*	Gray Myotis (Gray Bat)
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Neotoma floridana haematoria*	Southern Appalachian Woodrat
Mammal	*Neotoma magister*	Allegheny Woodrat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Ursus americanus*	Black Bear
Mollusk	*Carychium clappi*	Appalachian Thorn
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces anthracinus*	Coal Skink
Reptile	*Lampropeltis triangulum triangulum*	Eastern Milk Snake
Reptile	*Pituophis melanloeucas*	Northern Pinesnake
Reptile	*Regina septemvittata*	Queen Snake
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Fothergilla major*	Large Witch-alder
Vascular Plant	*Monotropsis odorata*	Sweet Pinesap
Vascular Plant	*Thermopsis fraxinifolia*	Ash-leaved Golden-banner
Vascular Plant	*Thermopsis mollis*	Appalachian Golden-banner
Vascular Plant	*Thermopsis villosa*	Aaron's-rod

Taxa Group	Scientific Name	Common Name
Vascular Plant	*Tsuga carolinensis*	Carolina Hemlock

Table B. Indicators and Rating Definitions Used in the NPESE for the Dry Oak Forest Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent Open Forest Conditions	<20	20-40	41-60	>60
Percent Invasive Species Occupying System	>15	6-15	2-5	<2
Percent Canopy Ecologically Representative Species	<75	75-85	86-95	>95
Total Open Road Density	>2	1.5-2	1-1.5	<1
Percent Forest Openings (Young Forest)	<3	3-5.9	6-9.9	10-22
Percent Old Growth Forest	<18	18-36	37-55	56-75

Table C. Expected Outcomes, by Alternative and Indicator, for the Dry Oak Forest Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Open Forest Conditions	1	2	5	2	7	3	15	2	6	3	21	2	7	3	17
Percent Invasive Species Occupying System	4	4	3	4	3	6	5	4	3	6	5	4	3	6	5
Percent Canopy Ecologically Representative Species	85	85	87	87	88	88	89	88	89	89	90	89	90	90	91
Total Open Road Density	0.83	0.83	0.83	0.83	0.83	0.84	0.84	0.83	0.83	0.84	0.84	0.83	0.83	0.84	0.84
Percent Forest Openings (Young Forest)	1.5	2	2	4	5	8	9	4	5	7	9	4	5	8	9

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Old Growth Forest	40	46.00	65.00	44.00	60.00	42.00	50.00	44.00	60.00	42.00	50.00	44.00	60.00	42.00	50.00

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Open Forest Conditions	P	P	P	P	P	P	P	P	P	P	F	P	P	P	P
Percent Invasive Species Occupying System	G	G	G	G	G	F	G	G	G	F	G	G	G	F	G
Percent Canopy Ecologically Representative Species	F	G	G	G	G	G	G	G	G	G	G	G	G	G	VG
Total Open Road Density	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG
Percent Forest Openings (Young Forest)	P	P	P	F	F	G	G	F	F	G	G	F	F	G	G
Percent Old Growth Forest	G	G	VG	G	VG	G	G	G	VG	G	G	G	VG	G	G

Acidic Cove Forest Associates

Table A. Species Included in the Acidic Cove Forest Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Ambystoma talpoideum*	Mole Salamander
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander
Amphibian	*Aneides aeneus*	Green Salamander
Amphibian	*Desmognathus aneneus*	Seepage Salamander
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander
Amphibian	*Desmognathus imitator*	Imitator Salamander
Amphibian	*Desmognathus organi*	Northern Pigmy Salamander
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander
Amphibian	*Desmognathus wrighti*	Southern Pygmy Salamander
Amphibian	*Eurycea bislineata*	Two-lined Salamander
Amphibian	*Eurycea junaluska*	Junaluska Salamander
Amphibian	*Eurycea longicauda*	Longtail Salamander
Amphibian	*Hemidactylium scutatum*	Four-toed Salamander
Amphibian	*Plethodon amplus*	Blue Ridge Gray-cheeked Salamander
Amphibian	*Plethodon aureolus*	Tellico Salamander
Amphibian	*Plethodon chattahoochee*	Chattahoochee Slimy Salamander
Amphibian	*Plethodon cheoah*	Cheoad Bald Salamander
Amphibian	*Plethodon glutinosus*	Northern Slimy Salamander
Amphibian	*Plethodon jordani*	Jordan's Salamander (Red-cheeked Salamander)
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander
Amphibian	*Plethodon meridianus*	South Mountain Gray-cheeked Salamander
Amphibian	*Plethodon richmondi*	Southern Ravine Salamander
Amphibian	*Plethodon shermani*	Red-legged Salamander
Amphibian	*Plethodon teyahalee*	Southern Appalachian Salamander
Amphibian	*Plethodon wehrlei*	Wehrle's Salamander

Taxa Group	Scientific Name	Common Name
Amphibian	*Plethodon welleri*	Weller's Salamander
Amphibian	*Plethodon yonahlossee*	Yonahlossee Salamander
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog
Bird	*Antrostomus carolinensis*	Chuck-will's widow
Bird	*Antrostomus vociferus*	Whip-poor-will
Bird	*Bonasa umbellus*	Ruffed Grouse
Bird	*Cardellina canadensis*	Canada Warbler
Bird	*Catharus fuscescens*	Veery
Bird	*Catharus guttatus*	Hermit Thrush
Bird	*Catharus ustulatus*	Swainson's Thrush
Bird	*Certhia americana*	Brown Creeper
Bird	*Chaetura pelagica*	Chimney Swift
Bird	*Coccyzus erythropthalmus*	Black-billed Cuckoo
Bird	*Colaptes auratus*	Northern Flicker
Bird	*Contopus virens*	Eastern Wood-pewee
Bird	*Dryocopus pileatus*	Pileated Woodpecker
Bird	*Empidonax minimus*	Least Flycatcher
Bird	*Empidonax trailii*	Willow Flycatcher
Bird	*Empidonax virescens*	Acadian Flycatcher
Bird	*Geothlypis formosa*	Kentucky Warbler
Bird	*Helmitheros vermivorum*	Worm-eating Warbler
Bird	*Hylocichla mustelina*	Wood Thrush
Bird	*Limnothlypis swainsonii*	Swainson's Warbler
Bird	*Loxia curvirostra pop. 1*	Southern Appalachian Red Crossbill
Bird	*Melanerpes erythrocephalus*	Red-headed Woodpecker
Bird	*Meleagris gallopavo*	Wild Turkey
Bird	*Mniotilta varia*	Black-and-white Warbler
Bird	*Parkesia motacilla*	Louisiana Waterthrush
Bird	*Pipilo erythropthalmus*	Eastern towhee

Taxa Group	Scientific Name	Common Name
Bird	*Piranga olivacea*	Scarlet Tanager
Bird	*Poecile atricapilus practica*	Southern Appalachian Black-capped Chickadee
Bird	*Scolopax minor*	American Woodcock
Bird	*Seiurus aurocapilla*	Ovenbird
Bird	*Setophaga americana*	Northern Parula
Bird	*Setophaga cerulea*	Cerulean Warbler
Bird	*Setophaga citrina*	Hooded Warbler
Bird	*Setophaga coronata*	Yellow-rumped Warbler
Bird	*Setophaga discolor*	Prairie Warbler
Bird	*Setophaga dominica*	Yellow-throated Warbler
Bird	*Setophaga fusca*	Blackburnian Warbler
Bird	*Vireo flavifrons*	Yellow-throated Vireo
Bird	*Vireo solitarius*	Blue-headed Vireo
Insect	*Scudderia septentrionalis*	Northern Bush Katydid
Insect	*Trechus carolinae*	a carabid beetle
Insect	*Trechus lucentus unicoi*	Unicoi Mountains Ground Beetle
Insect	*Trechus mitchellensis*	Mitchell's Ground Beetle
Insect	*Trechus rosenbergi*	Rosenberg's Ground Beetle
Insect	*Trechus satanicus*	a carabid beetle
Mammal	*Cervus elaphus*	Elk
Mammal	*Corynorhynus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Mustela nivalis*	Least Weasel
Mammal	*Myotis grisescens*	Gray Bat
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Bat
Mammal	*Myotis septentrionalis*	Northern Long-earedBat
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Neotoma magister*	Alleghany Woodrat

Taxa Group	Scientific Name	Common Name
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subglavus*	Tri-colored Bat
Mammal	*Sorex palustris punctulatus*	Southern Water Shrew
Mammal	*Ursus americana*	Black Bear
Mollusk	*Carychium clappi*	Appalachian Thorn
Mollusk	*Carychium exiguum*	Obese Thorn
Mollusk	*Carychium nannodes*	File Thorn
Mollusk	*Discus bryanti*	Sawtooth Disc
Mollusk	*Euchemotrema fasciatum*	Mountain Pillsnail
Mollusk	*Fumonelix cherohalaensis*	Roan Covert
Mollusk	*Fumonelix clingmanica*	Summit Covert
Mollusk	*Fumonelix jonesiana*	Big-tooth Covert
Mollusk	*Fumonelix langdoni*	Talus Covert
Mollusk	*Fumonelix orestes*	Engraved Covert
Mollusk	*Fumonelix roanensis*	Rock-loving Covert
Mollusk	*Fumonelix wheatleyi*	Cinnamon Covert
Mollusk	*Fumonelix wheatleyi clingmanicus*	Clingman Covert
Mollusk	*Glyphyalinia clingmani*	Fragile Glyph
Mollusk	*Glyphyalinia junaluskana*	Dark Glyph
Mollusk	*Glyphyalinia pentadelphia*	Pink Glyph
Mollusk	*Helicodiscus bonamicus*	Spiral Coil
Mollusk	*Helicodiscus fimbriatus*	Fringed Coil
Mollusk	*Helicodiscus multidens*	Twilight Coil
Mollusk	*Inflectarius ferrissi*	Smoky Mountain Covert
Mollusk	*Inflectarius subpalliatus*	Velvet Covert
Mollusk	*Inflectarius verus*	a snail
Mollusk	*Mesodon altivagus*	Wandering Globe
Mollusk	*Mesodon andrewsae*	Balsam Globe
Mollusk	*Mesodon mitchellianus*	Sealed Globelet

Taxa Group	Scientific Name	Common Name
Mollusk	*Mesomphix andrewsae*	Mountain Button
Mollusk	*Mesomphix latior*	Broad Button
Mollusk	*Pallifera hemphilli*	Black Mantleslug
Mollusk	*Paravitrea andrewsae*	High Mountain Supercoil
Mollusk	*Paravitrea lacteodons*	Ramp Cove Supercoil
Mollusk	*Paravitrea lamellidens*	Lamellate Supercoil
Mollusk	*Paravitrea placentula*	Glossy Supercoil
Mollusk	*Paravitrea ternaria*	Sculpted Supercoil
Mollusk	*Paravitrea umbilicaris*	Open Supercoil
Mollusk	*Paravitrea varidens*	Roan Supercoil
Mollusk	*Patera clarki clarki*	Dwarf Proud Globe
Mollusk	*Patera clarki nantahala*	Noonday Globe
Mollusk	*Pilsbryna nadopalma*	Oar Tooth Bud
Mollusk	*Pilsbryna vanattai*	Honey Glyph
Mollusk	*Praticolella lawae*	Appalachian Scrubsnail
Mollusk	*Stenotrema depilatum*	Great Smoky Slitmouth
Mollusk	*Succinea campestris*	Crinkled Ambersnail
Mollusk	*Succinea unicolor*	Squatty Ambersnail
Mollusk	*Succinea wilsoni*	Golden Ambersnail
Mollusk	*Triodopsis tennesseensis*	Budded Threetooth
Mollusk	*Ventridens arcellus*	Golden Dome
Mollusk	*Ventridens coelaxis*	Bidentate dome
Mollusk	*Ventridens collisella*	Sculptured Dome
Mollusk	*Ventridens lasmodon*	Hollow Dome
Mollusk	*Ventridens suppressus*	Flat Dome
Mollusk	*Vertigo bollesiana*	Delicate Vertigo
Mollusk	*Vertigo parvula*	Smallmouth Vertigo
Mollusk	*Vertigo sp. 3*	a vertigo snail
Mollusk	*Xolotrema caroliniense*	Blunt Wedge

Taxa Group	Scientific Name	Common Name
Mollusk	*Zonitoides patuloides*	Appalachian Gloss
Nonvascular Plant	*Acrobolbus ciliatus*	a liverwort
Nonvascular Plant	*Anzia americana*	Foliose Lichen
Nonvascular Plant	*Bartramidula wilsonii*	Dwarf Apple Moss
Nonvascular Plant	*Brachymenium andersonii*	Anderson's Melon-moss
Nonvascular Plant	*Brachythecium rotaeanum*	Rota's Melon-moss
Nonvascular Plant	*Brachymenium systylium*	Mexican Melon-moss
Nonvascular Plant	*Bryocrumia vivicolor*	Gorge Moss
Nonvascular Plant	*Bryoxiphilum norvegicum*	Sword Moss
Nonvascular Plant	*Cheilolejeunea evansii*	a liverwort
Nonvascular Plant	*Cirrophyllum piliferum*	a moss
Nonvascular Plant	*Cryrto-hypnum pygmaeum*	Pygmy Cryto-hypnum Moss
Nonvascular Plant	*Ditrichum ambigum*	Ambiguous Ditrichum
Nonvascular Plant	*Drepanolejeunea appalachiana*	a liverwort
Nonvascular Plant	*Entodon sullivantii*	Sullivant's Entodon
Nonvascular Plant	*Herzogiella turfacea*	Flat Stump Moss
Nonvascular Plant	*Heterodermia appalachianesis*	Foliose Lichen
Nonvascular Plant	*Homalia trichimanoides*	Lime Homalia
Nonvascular Plant	*Lejeunea blomquisti*	a liverwort
Nonvascular Plant	*Metzgeria violacea*	a liverwort
Nonvascular Plant	*Oxyrrhynchium pringlei*	Pringle's Eurthnchium
Nonvascular Plant	*Pilosium chlorophyllum*	a moss
Nonvascular Plant	*Plagiochila echinata*	A Liverwort
Nonvascular Plant	*Plagiochila ludovociana*	a liverwort
Nonvascular Plant	*Plagiochila sharpii*	Sharp's Leafy Liverwort
Nonvascular Plant	*Plagiochila virginica var. caroliniana*	A Liverwort
Nonvascular Plant	*Plagiomnium carolinianum*	Carolina Star-moss
Nonvascular Plant	*Pohlia melanodon*	Pink-fruited Thread Moss
Nonvascular Plant	*Porella wataugensis*	A Liverwort

Taxa Group	Scientific Name	Common Name
Nonvascular Plant	*Racomitrium aciculare*	Dark Mountain Fringe Moss
Nonvascular Plant	*Rhabdoweisia crenulata*	Himalayan Ribbed-weissia
Nonvascular Plant	*Riccardia jugata*	a liverwort
Nonvascular Plant	*Schlotheimia lancifolia*	Highlands Moss
Nonvascular Plant	*Taxilejuenea sharpii*	a liverwort
Nonvascular Plant	*Usnea angulata*	Old Man's Beard
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces anthracinus*	Coal Skink
Reptile	*Lampropeltis triangulatum triangulatum*	Eastern Milk Snake
Reptile	*Regina septemvittata*	Queen Snake
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Asarum rosei*	Rose's Heartleaf
Vascular Plant	*Buckleya distichophylla*	Piratebush
Vascular Plant	*Dallibardia repens*	Robin Runaway
Vascular Plant	*Diervilla rivularis*	Riverbank Bush-honeysuckle
Vascular Plant	*Hexastylis contracta*	Mountain Heartleaf
Vascular Plant	*Hexastylis rhombiformis*	French Broad Heartleaf
Vascular Plant	*Isotria medeoloides*	Small Whorled Pogonia
Vascular Plant	*Robinia hispida var. fertilis*	Fruitful Locust
Vascular Plant	*Shortia galacifolia var. brevistyla*	Northern Oconee Bells
Vascular Plant	*Shortia galacifolia var. galacifolia*	Southern Oconee Bells
Vascular Plant	*Stewartia ovata*	Mountain Camellia

Table B. Indicators and Rating Definitions Used in the NPESE for the Acidic Cove Forest Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent Invasive Species Occupying System	>12	8-12	4-8	<4
Percent Canopy Ecologically Representative Species	<75	75-85	86-95	>95

Indicator	Poor	Fair	Good	Very Good
Total Open Road Density	>2	1.5-2	1-1.5	<1
Percent Forest Openings (Young Forest)	<1.5	1.5-3, 7-8	3.1-4, 5.1-7	4.1-5
Percent Old Growth Forest	<16	16-32	33-47	48-56

Table C. Expected Outcomes, by Alternative and Indicator, for the Acidic Cove Forest Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Invasive Species Occupying System	4	4	3	4	3	6	5	4	3	6	5	4	3	6	5
Percent Canopy Ecologically Representative Species	71	71	72	71	72	72	73	71	71	72	72	72	73	73	74
Total Open Road Density	1.57	1.57	1.57	1.57	1.57	1.60	1.60	1.57	1.57	1.60	1.60	1.57	1.57	1.60	1.60
Percent Forest Openings (Young Forest)	1.5	2.0	2.0	3.0	5.0	8.0	8.0	3.0	4.0	8.0	8.0	3.0	5.0	8.0	8.0
Percent Old Growth Forest	3	6	41	6	41	5	32	6	41	5	29	6	41	5	31

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Invasive Species Occupying System	G	G	VG	G	VG	G	G	G	VG	G	G	G	VG	G	G
Percent Canopy Ecologically Representative Species	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Total Open Road Density	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Percent Forest Openings (Young Forest)	F	F	F	F	VG	F	F	F	G	F	F	F	VG	F	F
Percent Old Growth Forest	P	P	G	P	G	P	F	P	G	P	F	P	G	P	F

Rich Cove Forest

Table A. Species Included in the Rich Cove Forest Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Ambystoma talpoideum*	Mole Salamander
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander
Amphibian	*Aneides aeneus*	Green Salamander
Amphibian	*Desmognathus aneneus*	Seepage Salamander
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander
Amphibian	*Desmognathus imitator*	Imitator Salamander
Amphibian	*Desmognathus organi*	Northern Pigmy Salamander
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander
Amphibian	*Desmognathus wrighti*	Southern Pygmy Salamander

Taxa Group	Scientific Name	Common Name
Amphibian	*Eurycea bislineata*	Two-lined Salamander
Amphibian	*Eurycea junaluska*	Junaluska Salamander
Amphibian	*Eurycea longicauda*	Longtail Salamander
Amphibian	*Hemidactylium scutatum*	Four-toed Salamander
Amphibian	*Plethodon amplus*	Blue Ridge Gray-cheeked Salamander
Amphibian	*Plethodon aureolus*	Tellico Salamander
Amphibian	*Plethodon chattahoochee*	Chattahoochee Slimy Salamander
Amphibian	*Plethodon cheoah*	Cheoad Bald Salamander
Amphibian	*Plethodon glutinosus*	Northern Slimy Salamander
Amphibian	*Plethodon jordani*	Jordan's Salamander (Red-cheeked Salamander)
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander
Amphibian	*Plethodon meridianus*	South Mountain Gray-cheeked Salamander
Amphibian	*Plethodon richmondi*	Southern Ravine Salamander
Amphibian	*Plethodon shermani*	Red-legged Salamander
Amphibian	*Plethodon teyahalee*	Southern Appalachian Salamander
Amphibian	*Plethodon wehrlei*	Wehrle's Salamander
Amphibian	*Plethodon welleri*	Weller's Salamander
Amphibian	*Plethodon yonahlossee*	Yonahlossee Salamander
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog
Arachnid	*Microhexura montivaga*	Spruce-fir Moss Spider
Bird	*Aegolius acadius pop. 1*	Southern Appalachian Saw-whet Owl
Bird	*Antrostomus carolinensis*	Chuck-will's widow
Bird	*Antrostomus vociferus*	Whip-poor-will
Bird	*Bonasa umbellus*	Ruffed Grouse
Bird	*Cardellina canadensis*	Canada Warbler
Bird	*Catharus fuscescens*	Veery
Bird	*Catharus guttatus*	Hermit Thrush
Bird	*Catharus ustulatus*	Swainson's Thrush
Bird	*Certhia americana*	Brown Creeper

Taxa Group	Scientific Name	Common Name
Bird	*Chaetura pelagica*	Chimney Swift
Bird	*Coccyzus erythropthalmus*	Black-billed Cuckoo
Bird	*Colaptes auratus*	Northern Flicker
Bird	*Contopus virens*	Eastern Wood-pewee
Bird	*Dryocopus pileatus*	Pileated Woodpecker
Bird	*Empidonax minimus*	Least Flycatcher
Bird	*Empidonax virescens*	Acadian Flycatcher
Bird	*Geothlypis formosa*	Kentucky Warbler
Bird	*Helmitheros vermivorum*	Worm-eating Warbler
Bird	*Hylocichla mustelina*	Wood Thrush
Bird	*Icteria virens*	Yellow-breasted Chat
Bird	*Limnothlypis swainsonii*	Swainson's Warbler
Bird	*Loxia curvirostra pop. 1*	Southern Appalachian Red Crossbill
Bird	*Melanerpes erythrocephalus*	Red-headed Woodpecker
Bird	*Meleagris gallopavo*	Wild Turkey
Bird	*Mniotilta varia*	Black-and-white Warbler
Bird	*Parkesia motacilla*	Louisiana Waterthrush
Bird	*Pipilo erythropthalmus*	Eastern Towhee
Bird	*Piranga olivacea*	Scarlet Tanager
Bird	*Poecile atricapilus practica*	Southern Appalachian Black-capped Chickadee
Bird	*Scolopax minor*	American Woodcock
Bird	*Seiurus aurocapilla*	Ovenbird
Bird	*Setophaga americana*	Northern Parula
Bird	*Setophaga cerulea*	Cerulean Warbler
Bird	*Setophaga citrina*	Hooded Warbler
Bird	*Setophaga coronata*	Yellow-rumped Warbler
Bird	*Setophaga discolor*	Prairie Warbler
Bird	*Setophaga dominica*	Yellow-throated Warbler
Bird	*Setophaga fusca*	Blackburnian Warbler

Taxa Group	Scientific Name	Common Name
Bird	*Setophaga magnolia*	Magnolia Warbler
Bird	*Sitta pusilla*	Brown-headed Nuthatch
Bird	*Sphyrapicus varius*	Yellow-bellied Sapsucker
Bird	*Spinus pinus*	Pine Siskin
Bird	*Vireo flavifrons*	Yellow-throated Vireo
Bird	*Vireo solitarius*	Blue-headed Vireo
Insect	*Scudderia septentrionalis*	Northern Bush Katydid
Insect	*Trechus carolinae*	a carabid beetle
Insect	*Trechus lucentus unicoi*	Unicoi Mountains Ground Beetle
Insect	*Trechus mitchellensis*	Mitchell's Ground Beetle
Insect	*Trechus rosenbergi*	Rosenberg's Ground Beetle
Insect	*Trechus satanicus*	a carabid beetle
Mammal	*Cervus elaphus*	Elk
Mammal	*Corynorhynus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Mustela nivalis*	Least Weasel
Mammal	*Myotis grisescens*	Gray Bat
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Bat
Mammal	*Myotis septentrionalis*	Northern Long-earedBat
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Neotoma magister*	Alleghany Woodrat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subglavus*	Tri-colored Bat
Mammal	*Sorex palustris punctulatus*	Southern Water Shrew
Mammal	*Ursus americana*	Black Bear
Mollusk	*Carychium clappi*	Appalachian Thorn
Mollusk	*Carychium exiguum*	Obese Thorn
Mollusk	*Carychium nannodes*	File Thorn

Taxa Group	Scientific Name	Common Name
Mollusk	*Discus bryanti*	Sawtooth Disc
Mollusk	*Euchemotrema fasciatum*	Mountain Pillsnail
Mollusk	*Fumonelix cherohalaensis*	Roan Covert
Mollusk	*Fumonelix clingmanica*	Summit Covert
Mollusk	*Fumonelix jonesiana*	Big-tooth Covert
Mollusk	*Fumonelix langdoni*	Talus Covert
Mollusk	*Fumonelix orestes*	Engraved Covert
Mollusk	*Fumonelix roanensis*	Rock-loving Covert
Mollusk	*Fumonelix wheatleyi*	Cinnamon Covert
Mollusk	*Fumonelix wheatleyi clingmanicus*	Clingman Covert
Mollusk	*Glyphyalinia clingmani*	Fragile Glyph
Mollusk	*Glyphyalinia junaluskana*	Dark Glyph
Mollusk	*Glyphyalinia pentadelphia*	Pink Glyph
Mollusk	*Helicodiscus bonamicus*	Spiral Coil
Mollusk	*Helicodiscus fimbriatus*	Fringed Coil
Mollusk	*Helicodiscus multidens*	Twilight Coil
Mollusk	*Inflectarius ferrissi*	Smoky Mountain Covert
Mollusk	*Inflectarius subpalliatus*	Velvet Covert
Mollusk	*Inflectarius verus*	a snail
Mollusk	*Mesodon altivagus*	Wandering Globe
Mollusk	*Mesodon andrewsae*	Balsam Globe
Mollusk	*Mesodon mitchellianus*	Sealed Globelet
Mollusk	*Mesomphix andrewsae*	Mountain Button
Mollusk	*Mesomphix latior*	Broad Button
Mollusk	*Pallifera hemphilli*	Black Mantleslug
Mollusk	*Paravitrea andrewsae*	High Mountain Supercoil
Mollusk	*Paravitrea lacteodons*	Ramp Cove Supercoil
Mollusk	*Paravitrea lamellidens*	Lamellate Supercoil
Mollusk	*Paravitrea placentula*	Glossy Supercoil

Taxa Group	Scientific Name	Common Name
Mollusk	*Paravitrea ternaria*	Sculpted Supercoil
Mollusk	*Paravitrea umbilicaris*	Open Supercoil
Mollusk	*Paravitrea varidens*	Roan Supercoil
Mollusk	*Patera clarki clarki*	Dwarf Proud Globe
Mollusk	*Patera clarki nantahala*	Noonday Globe
Mollusk	*Pilsbryna nadopalma*	Oar Tooth Bud
Mollusk	*Pilsbryna vanattai*	Honey Glyph
Mollusk	*Praticolella lawae*	Appalachian Scrubsnail
Mollusk	*Stenotrema depilatum*	Great Smoky Slitmouth
Mollusk	*Succinea campestris*	Crinkled Ambersnail
Mollusk	*Succinea unicolor*	Squatty Ambersnail
Mollusk	*Succinea wilsoni*	Golden Ambersnail
Mollusk	*Triodopsis tennesseensis*	Budded Threetooth
Mollusk	*Ventridens arcellus*	Golden Dome
Mollusk	*Ventridens coelaxis*	Bidentate dome
Mollusk	*Ventridens collisella*	Sculptured Dome
Mollusk	*Ventridens lasmodon*	Hollow Dome
Mollusk	*Ventridens suppressus*	Flat Dome
Mollusk	*Vertigo bollesiana*	Delicate Vertigo
Mollusk	*Vertigo parvula*	Smallmouth Vertigo
Mollusk	*Vertigo sp. 3*	a vertigo snail
Mollusk	*Xolotrema caroliniense*	Blunt Wedge
Mollusk	*Zonitoides patuloides*	Appalachian Gloss
Nonvascular Plant	*Taxilejeunea sharpii*	a liverwort
Nonvascular Plant	*Tortula ammonsiana*	Ammon's Tortula
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces anthracinus*	Coal Skink

Taxa Group	Scientific Name	Common Name
Reptile	*Lampropeltis triangulatum triangulatum*	Eastern Milk Snake
Reptile	*Regina septemvittata*	Queen Snake
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Adlumia fungosa*	Climbing Fumatory
Vascular Plant	*Botrychium lanceolatum var. angustisegmentum*	Lance-leaf Moonwort
Vascular Plant	*Botrychium matricariifolium*	Daisy-leaf Moonwort
Vascular Plant	*Carex careyana*	Carey's Sedge
Vascular Plant	*Carex hitchcockiana*	Hitchcock's sedge
Vascular Plant	*Carex oligocarpa*	Rich-woods Sedge
Vascular Plant	*Carex pedunculata*	Longstalk Sedge
Vascular Plant	*Carex purpurifera*	Purple Sedge
Vascular Plant	*Carex radfordii*	Radford's Sedge
Vascular Plant	*Carex roanensis*	Roan Mountain Sedge
Vascular Plant	*Caulophylum giganteum*	Northern Blue Cohosh
Vascular Plant	*Celastrus scandens*	Climbing Bittersweet
Vascular Plant	*Corallorhiza wisteriana*	Spring Coral-root
Vascular Plant	*Cypripedium parviforum var. parviforum*	Small Yellow Lady's-slipper
Vascular Plant	*Delphinium exaltatum*	Tall Larkspur
Vascular Plant	*Diarrhena americana*	Eastern beakgrass
Vascular Plant	*Erigenia bulbosa*	Harbringer-of-spring
Vascular Plant	*Eupatorium incarnatum*	Pink Throughwort
Vascular Plant	*Euphorbia purpurea*	Glade Spurge
Vascular Plant	*Frasera caroliniensis*	American Colombo
Vascular Plant	*Heuchera longiflora*	Long-flower Alumroot
Vascular Plant	*Hexalectris spicata*	Crested Coralroot
Vascular Plant	*Hydrastis canadensis*	Golden Seal
Vascular Plant	*Isotria medoeloides*	Small-whorled Pogonia
Vascular Plant	*Juglans cinerea*	Butternut

Taxa Group	Scientific Name	Common Name
Vascular Plant	*Meehania cordata*	Meehania
Vascular Plant	*Monotropsis odorata*	Sweet Pinesap
Vascular Plant	*Panax conquefolius*	Ginseng
Vascular Plant	*Scutellaria ovata ssp. ovata var. ovata*	Heartleaf Skullcap
Vascular Plant	*Silene ovata*	Ovate Catchfly
Vascular Plant	*Spigella marilandica*	Pink Root
Vascular Plant	*Stachys cordata*	Heartleaf Hedge-nettle
Vascular Plant	*Symphyotrichum shortii*	Short's Aster
Vascular Plant	*Trientalis borealis*	Starflower
Vascular Plant	*Trillium discolor*	Mottled Trillium
Vascular Plant	*Trillium simile*	Sweet White Trillium
Vascular Plant	*Viola walteri var appalachiensis*	Appalachian Violet

Table B. Indicators and Rating Definitions Used in the NPESE for the Rich Cove Forest Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent Invasive Species Occupying System	>12	8-12	4-8	<4
Percent Canopy Ecologically Representative Species	<75	75-85	86-95	>95
Total Open Road Density	>2	1.5-2	1-1.5	<1
Percent Forest Openings (Young Forest)	<1.5	1.5-3, 7-8	3.1-4, 5.1-7	4.1-5
Percent Mature Forest	<18	18-36, 86-95	37-55, 69-85	56-68
Percent Old Growth Forest	<15	16-32	33-47	48-56

Table C. Expected Outcomes, by Alternative and Indicator, for the Rich Cove Forest Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Invasive Species Occupying System	13	13	9	13	9	20	15	13	9	20	15	13	9	20	15

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Canopy Ecologically Representative Species	74	74	75	74	75	75	76	74	74	75	75	75	76	76	77
Total Open Road Density	1.13	1.13	1.13	1.13	1.13	1.15	1.15	1.13	1.13	1.15	1.15	1.13	1.13	1.15	1.15
Percent Forest Openings (Young Forest)	1.5	1.5	2.0	2.0	3.0	8.0	8.0	2.0	3.0	8.0	9.0	2.0	3.0	7.0	9.0
Percent Mature Forest	33	50	80	50	79	46	67	50	79	46	66	50	79	46	68
Percent Old Growth Forest	3.5	7.0	43.0	7.0	43.0	5.0	32.0	7.0	43.0	6.0	29.0	7.0	43.0	5.0	32.0

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Invasive Species Occupying System	P	P	F	P	F	P	P	P	F	P	P	P	F	P	P
Percent Canopy Ecologically Representative Species	P	P	F	P	F	F	F	P	P	F	F	F	F	F	F
Total Open Road Density	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Percent Forest Openings (Young Forest)	F	F	F	F	F	F	F	F	F	F	P	F	F	F	P
Percent Mature Forest	F	G	G	G	G	G	VG	G	G	G	VG	G	G	G	VG
Percent Old Growth Forest	P	P	G	P	G	P	F	P	G	P	F	P	G	P	F

Pine Oak/Heath Forest

Table A. Species Included in the Pine-Oak Heath Forest Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Bird	*Antrostomus carolinensis*	Chuck-will's-widow
Bird	*Antrostomus vociferus*	Whip-poor-will
Bird	*Bonasa umbellus*	Ruffed Grouse
Bird	*Buteo platypterus*	Broad-winged Hawk
Bird	*Cardellina canadensis*	Canada Warbler
Bird	*Catharus fuscescens*	Veery
Bird	*Catharus guttatus*	Hermit Thrush
Bird	*Certhia americana*	Brown Creeper
Bird	*Chaetura pelagica*	Chimney Swift
Bird	*Colaptes auratus*	Northern Flicker
Bird	*Colinus virginianus*	Northern Bobwhite
Bird	*Contopus virens*	Eastern Wood-pewee
Bird	*Corvus corvax*	Common Raven
Bird	*Dryocopus pileatus*	Pileated Woodpecker
Bird	*Empidonax minimus*	Least Flycatcher
Bird	*Empidonax virescens*	Acadian Flycatcher
Bird	*Falco peregrinus*	Peregrine Falcon
Bird	*Geothylpis formosa*	Kentucky Warbler
Bird	*Helmitheros vermivorum*	Worm-eating Warbler
Bird	*Hylocichla mustelina*	Wood Thrush
Bird	*Icteria virens*	Yellow-breasted chat
Bird	*Limnothlypis swainsonii*	Swainson's Warbler
Bird	*Melanerpes erythrocephalus*	Red-headed Woodpecker
Bird	*Meleagris gallopavo*	Wild Turkey

Taxa Group	Scientific Name	Common Name
Bird	*Mniotilta varia*	Black-and-white Warbler
Bird	*Parkesia motacilla*	Lousiana Waterthrush
Bird	*Passerina cyanea*	Indigo bunting
Bird	*Pipilo erythrophthalmus*	Eastern Towhee
Bird	*Piranga olivacea*	Scarlet Tanager
Bird	*Scolopax minor*	American Woodcock
Bird	*Seiurus aurocapilla*	Ovenbird
Bird	*Setophaga cerulean*	Cerulean Warbler
Bird	*Setophaga citrina*	Hooded Warbler
Bird	*Setophaga coronata*	Yellow-rumped Warbler
Bird	*Setophaga discolor*	Prairie Warbler
Bird	*Setophaga dominica*	Yellow-throated Warbler
Bird	*Setophaga fusca*	Blackburnian Warbler
Bird	*Sitta pusilla*	Brown-headed Nuthatch
Bird	*Sphyrapicus varius*	Yellow-bellied Sapsucker
Bird	*Spinus pinus*	Pine Siskin
Bird	*Spizella pusilla*	Field Sparrow
Bird	*Toxostoma rufus*	Brown Thrasher
Bird	*Vermivora cyanoptera*	Blue-winged Warbler
Bird	*Vireo flavifrons*	Yellow-throated Warbler
Insect	*Bombus affinis*	Rusty-patched Bumblebee
Insect	*Scudderia septentrionalis*	Northern Bush Katydid
Mammal	*Cervus canadensis*	Elk
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat (mountain subspecies)
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Mustela nivelis*	Least Weasel
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)

Taxa Group	Scientific Name	Common Name
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Ursus americanus*	Black Bear
Mollusk	*Pallifera hemphilli*	Black Mantleslug
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces anthracinus*	Coal Skink
Reptile	*Pituophis melanloeucas*	Northern Pinesnake
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Fothergila major*	Large Witch-alder
Vascular Plant	*Monotropsis odorata*	Sweet Pinesap
Vascular Plant	*Thermopsis fraxinifolia*	Ash-leaved Golden-banner
Vascular Plant	*Thermopsis mollis*	Appalachian Golden-banner
Vascular Plant	*Thermopsis villosa*	Aaron's-rod
Vascular Plant	*Tsuga caroliniana*	Carolina Hemlock

Table B. Indicators and Rating Definitions Used in the NPESE for the Pine-Oak Heath Forest Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent Canopy Ecologically Representative Species	<75	75-85	86-95	>95
Percent Invasive Species Occupying System	>15	6-15	2-5	<2
Percent Open Forest Conditions	<25	25-50	50-75	>75
Total Open Road Density	>2	1.5-2	1-1.5	<1
Percent Forest Openings (Young Forests)	<4	4-8	8.1-12	12.1-19
Percent Old Growth Forest	<5, >50	5-10, 40-50	10-20, 30-40	20-30

Table C. Expected Outcomes, by Alternative and Indicator, for the Pine-Oak Heath Forest Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Canopy Ecologically Representative Species	70	70	72	72	74	74	76	73	75	75	79	72	74	74	76
Percent Invasive Species Occupying System	5	5	3	4	3	6	5	4	3	6	5	4	3	6	5
Percent Open Forest Conditions	1	1	3	2	8	3	18	2	5	3	25	2	5	3	13
Total Open Road Density	0.79	0.79	0.79	0.79	0.79	0.80	0.80	0.79	0.79	0.80	0.80	0.79	0.79	0.80	0.80
Percent Forest Openings (Young Forests)	1.5	2	2	3	4	7	9	3	4	7	8	3	4	8	9
Percent Old Growth Forest	7.3	14	60	18	52	16	48	18	54	16	49	18	53	16	47

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Canopy Ecologically Representative Species	P	P	P	P	P	P	F	P	F	F	F	P	P	P	F
Percent Invasive Species Occupying System	G	G	G	G	G	F	G	G	G	F	G	G	G	F	G
Percent Open Forest Conditions	P	P	P	P	P	P	P	P	P	P	F	P	P	P	P
Total Open Road Density	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Forest Openings (Young Forests)	P	P	P	P	F	F	G	P	F	F	F	P	F	F	F
Percent Old Growth Forest	F	F	F	G	P	G	F	G	P	G	F	G	P	G	F

Shortleaf Pine Forest

Table A. Species Included in the Shortleaf Pine Forest Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Bird	*Antrostomus vociferus*	Whip-poor-will
Bird	*Bonasa umbellus*	Ruffed Grouse
Bird	*Buteo platypterus*	Broad-winged Hawk
Bird	*Catharus fuscescens*	Veery
Bird	*Certhia americana*	Brown Creeper
Bird	*Chaetura pelagica*	Chimney Swift
Bird	*Colaptes auratus*	Northern Flicker
Bird	*Colinus virginianus*	Northern Bobwhite
Bird	*Contopus virens*	Easter Wood-pewee
Bird	*Dryocopus pileatus*	Pileated Woodpecker
Bird	*Empidonax minimus*	Least Flycatcher
Bird	*Empidonax virescens*	Acadian Flycatcher
Bird	*Geothlypis formosa*	Kentucky Warbler
Bird	*Helmitheros vermivorum*	Worm-eating Warbler
Bird	*Hylocichla mustelina*	Wood Thrush
Bird	*Limnothlypis swainsonii*	Swainson's Warbler
Bird	*Melanerpes erythrocephalus*	Red-headed Woodpecker

Taxa Group	Scientific Name	Common Name
Bird	*Meleagris gallopavo*	Wild Turkey
Bird	*Mnioltilta varia*	Black-and-white Warbler
Bird	*Parkesia motacilla*	Louisiana Waterthrush
Bird	*Pipilo erythrophthalmus*	Eastern Towhee
Bird	*Piranga olivacea*	Scarlet Tanager
Bird	*Scolopax minor*	American Woodcock
Bird	*Seiurus aurocapilla*	Ovenbird
Bird	*Setophaga discolor*	Prairie Warbler
Bird	*Spizella pusilla*	Field Sparrow
Bird	*Toxostoma rufum*	Brown Thrasher
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Microtus chrotorrhinus carolinensis*	Southern Rock Vole
Mammal	*Mustela nivalis*	Least Weasel
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Bat
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Neotoma floridana haematoria*	Southern Appalachian Woodrat
Mammal	*Neotoma magister*	Alleghany Woodrat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Ursus americanus*	Black Bear
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces anthracinus*	Coal Skink
Reptile	*Lampropeltis triangulum triangulum*	Eastern Milk Snake
Reptile	*Pituophis melanoleucus*	Northern Pinesnake
Reptile	*Regina septemvittata*	Queen Snake
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake

Taxa Group	Scientific Name	Common Name
Vascular Plant	*Liatris squarrulosa*	Earle's Blazing Star
Vascular Plant	*Monotropsis odorata*	Sweet Pinesap
Vascular Plant	*Symphyotrichum shortii*	Short's Aster
Vascular Plant	*Thermopsis mollis*	Appalachian Golden-banner
Vascular Plant	*Tsuga caroliniana*	Carolina Hemlock

Table B. Indicators and Rating Definitions Used in the NPESE for the Shortleaf Pine Forest Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent Invasive Species Occupying System	>15	6-15	2-5	<2
Percent Canopy Ecologically Representative Species	<75	75-85	86-95	>95
Total Open Road Density	>2	1.5-2	1-1.5	<1
Percent Forest Openings (Young Forest)	<3	3-6	6.1-9	9.1-13
Percent Open Forest	<25	26-50	51-75	>75
Percent Old Growth Forest	<8	8-16	17-25	26-35

Table C. Expected Outcomes, by Alternative and Indicator, for the Shortleaf Pine Forest Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Invasive Species Occupying System	5	5	3	5	3	6	5	5	3	6	5	5	3	6	5
Percent Canopy Ecologically Representative Species	75	76	78	77	82	82	88	76	80	79	83	77	82	82	88
Total Open Road Density	1.51	1.51	1.51	1.51	1.51	1.54	1.54	1.51	1.51	1.54	1.54	1.51	1.51	1.54	1.54
Percent Forest Openings (Young Forest)	3.3	3.5	4.0	7.0	7.0	8.0	7.0	5.0	7.0	7.0	6.0	6.0	7.0	8.0	7.0

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Open Forest	1.5	1.5	10.0	1.5	17.0	3.0	32.0	1.5	19.0	3.0	36.0	1.5	18.0	3.0	33.0
Percent Old Growth Forest	11.0	15.0	45.0	13.0	41.0	14.0	43.0	15.0	44.0	14.0	44.0	14.0	43.0	14.0	43.0

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Invasive Species Occupying System	G	G	G	G	G	F	G	G	G	F	G	G	G	F	G
Percent Canopy Ecologically Representative Species	F	F	F	F	F	F	G	F	F	F	F	F	F	F	G
Total Open Road Density	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Percent Forest Openings (Young Forest)	F	F	F	G	G	G	G	F	G	G	F	F	G	G	G
Percent Open Forest	P	P	P	P	P	P	F	P	P	P	F	P	P	P	F
Percent Old Growth Forest	F	F	G	F	G	F	G	F	G	F	G	F	G	F	G

Floodplain Forest

Table A. Species Included in the Floodplain Forest Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Ambystoma maculatum*	Spotted Salamander

Taxa Group	Scientific Name	Common Name
Amphibian	*Ambystoma talpoideum*	Mole Salamander
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander
Amphibian	*Desmognathus aneneus*	Seepage Salamander
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander
Amphibian	*Desmognathus imitator*	Imitator Salamander
Amphibian	*Desmognathus imitator pop. 1*	Waterrock Knob Salamander
Amphibian	*Desmognathus organi*	Northern Pigmy Salamander
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander
Amphibian	*Desmognathus wrighti*	Southern Pygmy Salamander
Amphibian	*Eurycea bislineata*	Two-lined Salamander
Amphibian	*Eurycea junaluska*	Junaluska Salamander
Amphibian	*Eurycea longicauda*	Longtail Salamander
Amphibian	*Hemidactylium scutatum*	Four-toed Salamander
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog
Bird	*Coccyzus erythropthalmus*	Black-billed Cuckoo
Bird	*Empidonax alnorum*	Alder Flycatcher
Bird	*Empidonax traillii*	Willow Flycatcher
Bird	*Empidonax virescens*	Acadian Flycatcher
Bird	*Geothlypis formosa*	Kentucky Warbler
Bird	*Haliaeetus leucocephalus*	Bald Eagle
Bird	*Limnothlypis swainsonii*	Swainson's Warbler
Bird	*Parkesia motacilla*	Louisiana Waterthrush
Bird	*Piranga olivacea*	Scarlet Tanager
Bird	*Scolopax minor*	American Woodcock
Bird	*Setophaga americana*	Northern Parula
Bird	*Setophaga citrina*	Hooded Warbler
Bird	*Setophaga dominica*	Yellow-throated Warbler
Bird	*Vireo flavifrons*	Yellow-throated Vireo
Bird	*Vireo gilvus*	Warbling Vireo

Taxa Group	Scientific Name	Common Name
Bird	*Vireo solitarius*	Blue-headed Vireo
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat (mountain subspecies)
Mammal	*Corynorhinus townsendii virginianus*	Virginia Big-earred Bat
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Mustela nivalis*	Least Weasel
Mammal	*Myotis grisescens*	Gray Myotis (Gray Bat)
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Sorex palustris punctulatus*	Southern Water Shrew
Mammal	*Ursus americanus*	Black Bear
Nonvascular Plant	*Gymnoderma lineare*	Rock Gnome Lichen
Nonvascular Plant	*Lejeunea blomquistii*	a liverwort
Nonvascular Plant	*Plagiomnium carolinianum*	Carolina Star-moss
Nonvascular Plant	*Taxilejeunea sharpii*	a liverwort
Nonvascular Plant	*Usnea angulata*	Old Man's Beard
Reptile	*Apalone spinifera spinifera*	Eastern Spiny Softshell
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Graptemys geographica*	Common Map Turtle
Reptile	*Lampropeltis triangulatum triangulatum*	Eastern Milk Snake
Reptile	*Ophisaurus attenuatus longicaudus*	Eastern Slender Glass Lizard
Reptile	*Regina septemvittata*	Queen Snake
Reptile	*Sternotherus minor*	Loggerhead Musk Turtle
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Trachemys scripta troostii*	Cumberland Slider
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake

Taxa Group	Scientific Name	Common Name
Vascular Plant	*Botrychium oneidense*	Blunt-lobed Grape Fern
Vascular Plant	*Bromus latiglumis*	Riverbank Brome
Vascular Plant	*Carex cherokeensis*	Cherokee Sedge
Vascular Plant	*Carex projecta*	Necklace Sedge
Vascular Plant	*Carex purpurifera*	Purple Sedge
Vascular Plant	*Diervilla rivularis*	Riverbank Bush-honeysuckle
Vascular Plant	*Hexastylis rhombiformis*	French Broad Heartleaf
Vascular Plant	*Juglans cinerea*	Butternut
Vascular Plant	*Panax quinquefolius*	Ginseng
Vascular Plant	*Platanthera peramoena*	Purple Fringeless Orchid
Vascular Plant	*Shortia galacifolia var. brevistyla*	Northern Oconee Bells
Vascular Plant	*Shortia galacifolia var. galacifolia*	Southern Oconee Bells
Vascular Plant	*Solidago ulmifolia*	Elm-leaf Goldenrod
Vascular Plant	*Spiraea virginiana*	Virginia Spiraea
Vascular Plant	*Stachys cordata*	Heartleaf Hedge-nettle
Vascular Plant	*Stewartia ovata*	Mountain Camellia

Table B. Indicators and Rating Definitions Used in the NPESE for the Floodplain Forest Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent Canopy Ecologically Representative Species	<75	75-85	86-95	>95
Percent of Ecosystem Occupied by Invasive Species	>12	8-12	4-8	<4
Total Open Road Density	>2	1.5-2	1-1.5	<1
Percent of Ecosystem in Old Growth Seral Class	<11	11-22	23-34	35-45
Percent of Ecosystem in Forest Openings	<2.5	2.5-4	4.1-6	7-9

Table C. Expected Outcomes, by Alternative and Indicator, for the Floodplain Forest Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Canopy Ecologically Representative Species	69	69	70	70	71	71	72	69	69	70	70	70	71	71	72
Percent of Ecosystem Occupied by Invasive Species	16.0	16.0	12.0	16.0	12.0	22.0	16.0	16.0	12.0	22.0	16.0	16.0	12.0	22.0	16.0
Total Open Road Density	4.73	4.73	4.73	4.73	4.73	4.81	4.81	4.73	4.73	4.81	4.81	4.73	4.73	4.81	4.81
Percent of Ecosystem in Old Growth Seral Class	<0.2	1	25	1	25	1	22	1	26	1	23	1	25	1	23
Percent of Ecosystem in Forest Openings	0.2	2.00	2.00	4.00	4.00	7.00	6.00	3.00	3.00	6.00	5.00	3.00	4.00	7.00	5.00

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent Canopy Ecologically Representative Species	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Percent of Ecosystem Occupied by Invasive Species	P	P	F	P	F	P	P	P	F	P	P	P	F	P	P
Total Open Road Density	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Percent of Ecosystem in Old Growth Seral Class	P	P	G	P	G	P	F	P	G	P	G	P	G	P	G

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of Ecosystem in Forest Openings	P	P	P	F	F	VG	G	F	F	G	G	F	F	VG	G

Forest Species Groups

Closed Canopy Associates

Table A. Species Included in the Closed Canopy Associates Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)
The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Weight
Amphibian	*Ambystoma maculatum*	Spotted Salamander	Moderate
Amphibian	*Ambystoma talpoideum*	Mole Salamander	High
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander	Moderate
Amphibian	*Aneides aeneus*	Green Salamander	High
Amphibian	*Desmognathus aneneus*	Seepage Salamander	Moderate
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander	Moderate
Amphibian	*Desmognathus imitator*	Imitator Salamander	Moderate
Amphibian	*Desmognathus imitator pop. 1*	Waterrock Knob Salamander	Moderate
Amphibian	*Desmognathus organi*	Northern Pigmy Salamander	Moderate
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander	Moderate
Amphibian	*Desmognathus wrighti*	Southern Pygmy Salamander	Moderate
Amphibian	*Eurycea bislineata*	Two-lined Salamander	Moderate
Amphibian	*Eurycea junaluska*	Junaluska Salamander	Moderate
Amphibian	*Eurycea longicauda*	Longtail Salamander	Moderate
Amphibian	*Plethodon amplus*	Blue Ridge Gray-cheeked Salamander	Moderate
Amphibian	*Plethodon aureolus*	Tellico Salamander	Very High

Taxa Group	Scientific Name	Common Name	Weight
Amphibian	*Plethodon chattahoochee*	Chattahoochee Slimy Salamander	Very High
Amphibian	*Plethodon cheoah*	Cheoah Bald Salamander	Very High
Amphibian	*Plethodon glutinosus*	Northern Slimy Salamander	Moderate
Amphibian	*Plethodon jordani*	Jordan's Salamander (Red-cheeked Salamander)	Moderate
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander	Moderate
Amphibian	*Plethodon meridianus*	South Mountain Gray-cheeked Salamander	Moderate
Amphibian	*Plethodon richmondi*	Southern Ravine Salamander	Moderate
Amphibian	*Plethodon shermani*	Red-legged Salamander	Very High
Amphibian	*Plethodon teyahalee*	Southern Appalachian Salamander	Moderate
Amphibian	*Plethodon ventralis*	Southern Zigzag Salamander	Very High
Amphibian	*Plethodon wehrlei*	Wehrle's Salamander	Moderate
Amphibian	*Plethodon welleri*	Weller's Salamander	Very High
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog	Moderate
Arachnid	*Microhexura montivaga*	Spruce Fir Moss Spider	Moderate
Bird	*Catharus fuscescens*	Veery	High
Bird	*Catharus guttatus*	Hermit Thrush	Moderate
Bird	*Catharus ustulatus*	Swainson's Thrush	Moderate
Bird	*Dryocopus pileatus*	Pileated Woodpecker	High
Bird	*Helmitheros vermivorum*	Worm-eating Warbler	Moderate
Bird	*Hylocichla mustelina*	Wood Thrush	High
Bird	*Meleagris gallopavo*	Wild Turkey	Low
Bird	*Mniotilta varia*	Black-and-white Warbler	Moderate
Bird	*Setophaga cerulea*	Cerulean Warbler	High
Bird	*Setophaga fusca*	Blackburnian Warbler	Moderate
Bird	*Shortia galacifolia var. brevistyla*	Northern Oconee Bells	Very High
Insect	*Euchlaena milnei*	a geotromid moth	Moderate
Insect	*Eulonchus marialiciae*	Mary Alice's Small-headed Fly	Moderate
Insect	*Lemmeria digitalis*	Fingered Lemmeria Moth	Moderate
Insect	*Meropleon diversicolor sullivani*	Sullivan's Meropleon	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Insect	*Nicrophorus americanus*	American Burying Beetle	Moderate
Insect	*Scudderia septentrionalis*	Northern Bush Katydid	Moderate
Insect	*Trechus carolinae*	a carabid beetle	Moderate
Insect	*Trechus lucentus unicoi*	Unicoi Mountains Ground Beetle	Moderate
Insect	*Trechus mitchellensis*	Mitchell's Ground Beetle	Moderate
Insect	*Trechus rosenbergi*	Rosenberg's Ground Beetle	Moderate
Insect	*Trechus satanicus*	a carabid beetle	Moderate
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat (mountain subspecies)	Moderate
Mammal	*Eptesicus fuscus*	Big Brown Bat	Moderate
Mammal	*Myotis grisescens*	Gray Myotis (Gray Bat)	Moderate
Mammal	*Myotis leibii*	Eastern Small-footed Bat	Moderate
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)	Moderate
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)	Moderate
Mammal	*Myotis sodalis*	Indiana Bat	Moderate
Mammal	*Neotoma floridana haematoria*	Southern Appalachian Woodrat	Moderate
Mammal	*Neotoma magister*	Alleghany Woodrat	Moderate
Mammal	*Odocoileus virginianus*	White-tailed Deer	Moderate
Mammal	*Perimyotis subflavus*	Tri-colored Bat	Moderate
Mammal	*Sorex palustris punctulatus*	Southern Water Shrew	Moderate
Mammal	*Ursus americanus*	Black Bear	Low
Mollusk	*Carychium clappi*	Appalachian Thorn	Moderate
Mollusk	*Carychium exiguum*	Obese Thorn	Moderate
Mollusk	*Carychium nannodes*	File Thorn	Moderate
Mollusk	*Helicodiscus fimbriatus*	Fringed Coil	Moderate
Mollusk	*Mesodon mitchellianus*	Sealed Globelet	Moderate
Mollusk	*Paravitrea lamellidens*	Lamellate Supercoil	Moderate
Mollusk	*Paravitrea ternaria*	Sculpted Supercoil	Moderate
Mollusk	*Pilsbryna nadopalma*	Oar Tooth Bud	Moderate
Mollusk	*Pilsbryna vanattai*	Honey Glyph	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Mollusk	*Triodopsis tennesseensis*	Budded Threetooth	Moderate
Mollusk	*Ventridens lasmodon*	Hollow Dome	Moderate
Mollusk	*Ventridens suppressus*	Flat Dome	Moderate
Mollusk	*Vertigo bollesiana*	Delicate Vertigo	Moderate
Mollusk	*Vertigo parvula*	Smallmouth Vertigo	Moderate
Nonvascular Plant	*Anzia americana*	Foliose Lichen	Moderate
Nonvascular Plant	*Arthonia kermesia*	Mountain Red Dot Lichen	Very High
Nonvascular Plant	*Arthopyrenia betulicola*	Ol' Birch Spots	High
Nonvascular Plant	*Bazzania nudicaulis*	A Liverwort	Very High
Nonvascular Plant	*Brachythecium rotaeanum*	Rota's Feather Moss	Very High
Nonvascular Plant	*Bryoxiphium norvegicum*	Sword Moss	Very High
Nonvascular Plant	*Cetrelia cetrarioides*	Sea Storm Lichen	Very High
Nonvascular Plant	*Cheilolejeunea evansii*	A Liverwort	Very High
Nonvascular Plant	*Drepanolejeunea appalachiana*	Liverwort	Moderate
Nonvascular Plant	*Fellhanera hybrida*	Piedmont Crustose Lichen	Very High
Nonvascular Plant	*Frullania appalachiana*	A Liverwort	High
Nonvascular Plant	*Graphis sterlingiana*	Sterling Lips	Very High
Nonvascular Plant	*Gymnoderma lineare*	Rock Gnome Lichen	High
Nonvascular Plant	*Heterodermia appalachensis*	Foliose lichen	Very High
Nonvascular Plant	*Leptohymenium sharpii*	Mount Leconte Moss	Very High
Nonvascular Plant	*Leptoscyphus cunefolius*	Wedge Flapwort	High
Nonvascular Plant	*Lobaria scrobiculata*	Textured Lungwort	Very High
Nonvascular Plant	*Lophocolea muricata*	A Liverwort	Very High
Nonvascular Plant	*Metzgeria uncigera*	Liverwort	Very High
Nonvascular Plant	*Pannaria conoplea*	Foliose lichen	Moderate
Nonvascular Plant	*Pertusaria appalachensis*	Appalachian Wart Lichen	Very High
Nonvascular Plant	*Pilosium chlorophyllum*	A Moss	Very High
Nonvascular Plant	*Plagiochila corniculata*	A Liverwort	High
Nonvascular Plant	*Plagiochila echinata*	A Liverwort	High

Taxa Group	Scientific Name	Common Name	Weight
Nonvascular Plant	*Plagiomnium carolinianum*	Carolina Star-moss	Very High
Nonvascular Plant	*Platyhypnidium pringlei*	Pringles Water Feather Moss	High
Nonvascular Plant	*Pohlia rabunbaldensis*	A Moss	Moderate
Nonvascular Plant	*Porella wataugensis*	A Liverwort	Very High
Nonvascular Plant	*Racomitrium aciculare*	Dark Mountain Fringe Moss	Very High
Nonvascular Plant	*Rhabdoweisia crenulata*	Himalayan Ribbed-weissia	Very High
Nonvascular Plant	*Riccardia jugata*	Liverwort	Very High
Nonvascular Plant	*Schlotheimia lancifolia*	Highlands Moss	Moderate
Nonvascular Plant	*Sphenolobopsis pearsonii*	A Liverwort	Very High
Nonvascular Plant	*Sticta limbata*	Powdered Moon Lichen	High
Reptile	*Terrapene carolina*	Eastern Box Turtle	Moderate
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake	Moderate
Vascular Plant	*Aconitum reclinatum*	white monkshood	Very High
Vascular Plant	*Adlumia fungosa*	Climbing fumatory	Moderate
Vascular Plant	*Botrychium lanceolatum var. angustisegmentum*	Lance-leaf Moonwort	High
Vascular Plant	*Buckleya distichophylla*	Piratebush	Moderate
Vascular Plant	*Cardamine clematitis*	Mountain Bittercress	High
Vascular Plant	*Carex careyana*	Carey's Sedge	Very High
Vascular Plant	*Carex hitchcockiana*	Hitchcock's sedge	High
Vascular Plant	*Carex purpurifera*	Purple Sedge	High
Vascular Plant	*Carex radfordii*	Radford's Sedge	High
Vascular Plant	*Carex roanensis*	Roan Mountain sedge	High
Vascular Plant	*Corallorhiza maculata var. maculata*	Spotted Coralroot	High
Vascular Plant	*Corallorhiza wisteriana*	Spring Coral-root	Very High
Vascular Plant	*Cypripedium parviflorum var. parviflorum*	Small Yellow Lady's-slipper	High
Vascular Plant	*Diarrhena americana*	Eastern beakgrass	Very High
Vascular Plant	*Erigenia bulbosa*	Harbringer-of-spring	Very High
Vascular Plant	*Euphorbia purpurea*	Glade Spurge	Moderate
Vascular Plant	*Geum geniculatum*	Bent Avens	High

Taxa Group	Scientific Name	Common Name	Weight
Vascular Plant	*Heuchera longiflora*	Long-Flower Alumroot	High
Vascular Plant	*Hexastylis contracta*	Mountain Heartleaf	Very High
Vascular Plant	*Hexastylis rhombiformis*	French Broad Heartleaf	Very High
Vascular Plant	*Hydrastis canadensis*	Golden Seal	High
Vascular Plant	*Hymenophyllum tayloriae*	Gorge Filmy Fern	High
Vascular Plant	*Lonicera canadensis*	American fly-honeysuckle	Moderate
Vascular Plant	*Panax quinquefolius*	Ginseng	Very High
Vascular Plant	*Phegopteris connectilis*	Northern Beech Fern	Very High
Vascular Plant	*Rubus idaeus ssp. strigosus*	American Red Raspberry	Very High
Vascular Plant	*Rudbeckia triloba var. beadlei*	Chauncey's Coneflower	Moderate
Vascular Plant	*Scutellaria ovata ssp. ovata var. ovata*	Heartleaf Skullcap	Very High
Vascular Plant	*Scutellaria saxatilis*	Rock Skullcap	High
Vascular Plant	*Setophaga americana*	Northern Parula	Moderate
Vascular Plant	*Shortia galacifolia var. galacifolia*	Southern Oconee Bells	Very High
Vascular Plant	*Silene ovata*	Ovate Catchfly	High
Vascular Plant	*Spigelia marilandica*	Pink Root	High
Vascular Plant	*Stachys cordata*	Heartleaf Hedge-nettle	Very High
Vascular Plant	*Stewartia ovata*	Mountain Camellia	Moderate
Vascular Plant	*Trientalis borealis*	Starflower	Very High
Vascular Plant	*Trillium discolor*	Mottled Trillium	High
Vascular Plant	*Trillium simile*	Sweet White Trillium	Very High
Vascular Plant	*Viola appalachiensis*	Appalachian Blue Violet	Moderate

Table B. Indicators and Rating Definitions Used in the NPESE for the Closed Canopy Associates Species Group

The right column indicates the relative weight (i.e., strength of relationship) of the indicator to the ecosystem. Additionally, relevant indicators from appropriate ecosystems are referenced in composite score calculations.

Indicator	Poor	Fair	Good	Very Good	Weight
Percent system with moderately closed forest canopy	<18	18.1-36, 81-99	36.1-55, 71-80	55.1-70	High

Table C. Expected Outcomes, by Alternative and Indicator, for the Closed Canopy Associates Species Group Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent system with moderately closed forest canopy	62	66	80	67	78	67	78	78	66	64	73	68	81	65	72

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent system with moderately closed forest canopy	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG

Forest Edge and Transition Associates

Table A. Species Included in the Forest Edge and Transition Associates Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Weight
Bird	*Accipiter striatus*	Sharp-shinned Hawk	Moderate
Bird	*Antrostomus carolinensis*	Chuck-will's-widow	Moderate
Bird	*Antrostomus vociferus*	Whip-poor-will	Moderate
Bird	*Aquila chrysaetos*	Golden Eagle	Moderate
Bird	*Bonasa umbellus*	Ruffed Grouse	High
Bird	*Buteo platypterus*	Broad-winged Hawk	Moderate
Bird	*Cardellina canadensis*	Canada Warbler	Moderate
Bird	*Catharus guttatus*	Hermit Thrush	Moderate
Bird	*Colaptes auratus*	Northern Flicker	Moderate
Bird	*Colinus virginianus*	Northern Bobwhite	Moderate
Bird	*Contopus virens*	Eastern Wood-pewee	Moderate
Bird	*Empidonax alnorum*	Alder Flycatcher	Moderate
Bird	*Empidonax minimus*	Least Flycatcher	Moderate
Bird	*Falco peregrinus*	Peregrine Falcon	Moderate
Bird	*Falco sparverius*	American Kestrel	Moderate
Bird	*Melanerpes erythrocephalus*	Red-headed Woodpecker	Moderate
Bird	*Meleagris gallopavo*	Wild Turkey	Moderate
Bird	*Passerina cyanea*	Indigo Bunting	Moderate
Bird	*Pipilo erythrophthalmus*	Eastern Towhee	Moderate
Bird	*Pooecetes gramineus*	Vesper Sparrow	Moderate
Bird	*Pyrgus wyandot*	Appalachian Grizzled Skipper	Moderate
Bird	*Scolopax minor*	American Woodcock	Moderate
Bird	*Seiurus aurocapilla*	Ovenbird	Moderate
Bird	*Setophaga citrina*	Hooded Warbler	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Bird	*Setophaga coronata*	Yellow-rumped Warbler	Moderate
Bird	*Setophaga discolor*	Prairie Warbler	Moderate
Bird	*Setophaga dominica*	Yellow-throated Warbler	Moderate
Bird	*Setophaga magnolia*	Magnolia Warbler	Moderate
Bird	*Sphyrapicus varius*	Yellow-bellied Sapsucker	Moderate
Bird	*Spinus pinus*	Pine Siskin	Moderate
Bird	*Spizella pusilla*	Field Sparrow	Moderate
Bird	*Toxostoma rufum*	Brown Thrasher	Moderate
Bird	*Vermivora chrysoptera*	Golden-winged Warbler	High
Bird	*Vermivora cyanoptera*	Blue-winged Warbler	Moderate
Bird	*Vireo solitarius*	Blue-headed Vireo	Moderate
Insect	*Autochton cellus*	Golden-banded Skipper	Moderate
Insect	*Bombus affinis*	Rusty-patched Bumblebee	Moderate
Insect	*Bombus bariabilis*	Variable Cuckoo Bumblebee	Moderate
Insect	*Bombus pennsylvanicus*	American Bumblebee	Moderate
Insect	*Bombus terricola*	Yellow-banded Bumblebee	Moderate
Insect	*Bombus vagans*	Half Black Bumblebee	Moderate
Insect	*Celastrina nigra*	Dusky Azure	Moderate
Insect	*Chlosyne gorgone*	Gorgone Checkerspot	Moderate
Insect	*Danaus plexippus*	Monarch Butterfly	Moderate
Insect	*Erora laeta*	Early Hairstreak	Moderate
Insect	*Erynnis martialis*	Mottled Duskywing	Moderate
Insect	*Euchloe olympia*	Olympia Marble	Moderate
Insect	*Euphydryas phaeton*	Baltimore Checkerspot	Moderate
Insect	*Papilio cresphontes*	Giant Swallowtail	Moderate
Insect	*Phyciodes batesii maconensis*	Appalachian Tawny Crescent	Very High
Insect	*Polygonia faunus smythi*	Smyth's Green Comma	Moderate
Insect	*Polygonia progne*	Gray Comma	Moderate
Insect	*Satyrium caryaevorus*	Hickory Hairstreak	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Insect	*Satyrium edwardsii*	Edwards' Hairstreak	Moderate
Insect	*Speyeria aphrodite cullasaja*	Cullasaja Aphrodite Fritillary	Moderate
Insect	*Speyeria diana*	Diana Fritillary	Moderate
Insect	*Speyeria idalia*	Regal Fritillary	Moderate
Mammal	*Cervus elaphus*	Elk	High
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat (mountain subspecies)	High
Mammal	*Corynorhinus townsendii virginianus*	Virginia Big-eared Bat	High
Mammal	*Eptesicus fuscus*	Big Brown Bat	High
Mammal	*Myotis grisescens*	Gray Myotis (Gray Bat)	High
Mammal	*Myotis leibii*	Eastern Small-footed Bat	High
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)	High
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)	High
Mammal	*Myotis sodalis*	Indiana Bat	High
Mammal	*Odocoileus virginianus*	White-tailed Deer	Very High
Mammal	*Perimyotis subflavus*	Tri-colored Bat	High
Mammal	*Ursus americanus*	Black Bear	High
Reptile	*Crotalus horridus*	Timber Rattlesnake	Moderate
Reptile	*Eumeces anthracinus*	Coal Skink	Moderate
Reptile	*Lampropeltis triangulum triangulum*	Eastern Milk Snake	Moderate
Reptile	*Ophisaurus attenuatus longicaudus*	Eastern Slender Glass Lizard	Moderate
Reptile	*Pituophis melanoleucus*	Northern Pinesnake	Moderate
Reptile	*Terrapene carolina*	Eastern Box Turtle	Moderate
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake	Moderate
Vascular Plant	*Calamagrostis porteri ssp. porteri*	Porter's Reedgrass	High
Vascular Plant	*Carex cherokeensis*	Cherokee Sedge	High
Vascular Plant	*Celastrus scandens*	Climbing Bittersweet	High
Vascular Plant	*Cleistesiopsis bifaria*	Small Spreading Pogonia	High
Vascular Plant	*Euphorbia purpurea*	glade spurge	Very High
Vascular Plant	*Fothergilla major*	Large Witch-alder	Very High

Taxa Group	Scientific Name	Common Name	Weight
Vascular Plant	*Liatris squarrulosa*	Earle's Blazing Star	Very High
Vascular Plant	*Liatris turgida*	Shale-barren Blazing Star	Very High
Vascular Plant	*Lysimachia fraseri*	Fraser's Loosestrife	Very High
Vascular Plant	*Melica nitens*	Three-flowered melic grass	High
Vascular Plant	*Monotropsis odorata*	Sweet Pinesap	High
Vascular Plant	*Ranunculus fascicularis*	Early Buttercup	High
Vascular Plant	*Rhododendron cumberlandense*	Cumberland Azalea	Very High
Vascular Plant	*Rhododendron vaseyi*	Pink-shell Azalea	High
Vascular Plant	*Robinia hispida var fertilis*	Fruitful Locust	Very High
Vascular Plant	*Robinia hispida var kelseyi*	Kelsey's locust	Very High
Vascular Plant	*Silene ovata*	Ovate Catchfly	Very High
Vascular Plant	*Stachys clingmanii*	Clingman's Hedge-nettle	Very High
Vascular Plant	*Stewartia ovata*	Mountain Camellia	High
Vascular Plant	*Thaspium pinnatifidum*	Mountain Thaspium	Very High
Vascular Plant	*Thermopsis fraxinifolia*	Ash-leaved Golden-banner	Very High
Vascular Plant	*Thermopsis mollis*	Appalachian Golden-banner	Very High

Table B. Indicators and Rating Definitions Used in the NPESE for the Forest Edge and Transition Associates Species Group

The right column indicates the relative weight (i.e., strength of relationship) of the indicator to the ecosystem. Additionally, relevant indicators from appropriate ecosystems are referenced in composite score calculations.

Indicator	Poor	Fair	Good	Very Good	Weight
Acres of edge and transitional habitat	<30,000	30,000-37,500	37,500-45,000	>45,000	Moderate

Table C. Expected Outcomes, by Alternative and Indicator, for the Forest Edge and Transition Associates Species Group Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Acres of edge and transitional habitat	46,500	47,048	49,300	49,707	51,903	50,330	55,049	42,743	43,607	44,802	49,023	50,084	54,609	51,029	59,431

Indicator Rating		A		B1		B2		C1		C2		D1		D2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Acres of edge and transitional habitat	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG

Interior Forest Associates

Table A. Species Included in the Interior Forest Associates Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Weight
Amphibian	*Ambystoma maculatum*	Spotted Salamander	Moderate
Amphibian	*Ambystoma talpoideum*	Mole Salamander	Moderate
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander	Moderate
Amphibian	*Aneides aeneus*	Green Salamander	Moderate
Amphibian	*Desmognathus aneneus*	Seepage Salamander	Moderate
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander	Moderate
Amphibian	*Desmognathus imitator*	Imitator Salamander	Moderate
Amphibian	*Desmognathus organi*	Northern Pigmy Salamander	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander	Moderate
Amphibian	*Desmognathus wrighti*	Southern Pygmy Salamander	Moderate
Amphibian	*Eurycea bislineata*	Two-lined Salamander	Moderate
Amphibian	*Eurycea junaluska*	Junaluska Salamander	Moderate
Amphibian	*Eurycea longicauda*	Longtail Salamander	Moderate
Amphibian	*Plethodon amplus*	Blue Ridge Gray-cheeked Salamander	Moderate
Amphibian	*Plethodon aureolus*	Tellico Salamander	Moderate
Amphibian	*Plethodon chattahoochee*	Chattahoochee Slimy Salamander	Moderate
Amphibian	*Plethodon cheoah*	Cheoah Bald Salamander	Moderate
Amphibian	*Plethodon glutinosus*	Northern Slimy Salamander	Moderate
Amphibian	*Plethodon jordani*	Jordan's Salamander (Red-cheeked Salamander)	Moderate
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander	Moderate
Amphibian	*Plethodon meridianus*	South Mountain Gray-cheeked Salamander	Moderate
Amphibian	*Plethodon richmondi*	Southern Ravine Salamander	Moderate
Amphibian	*Plethodon shermani*	Red-legged Salamander	Moderate
Amphibian	*Plethodon teyahalee*	Southern Appalachian Salamander	Moderate
Amphibian	*Plethodon ventralis*	Southern Zigzag Salamander	Moderate
Amphibian	*Plethodon wehrlei*	Wehrle's Salamander	Moderate
Amphibian	*Plethodon welleri*	Weller's Salamander	Moderate
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog	Moderate
Bird	*Accipiter striatus*	Sharp-shinned Hawk	Moderate
Bird	*Bonasa umbellus*	Ruffed Grouse	Moderate
Bird	*Cardellina canadensis*	Canada Warbler	Moderate
Bird	*Catharus fuscescens*	Veery	Moderate
Bird	*Catharus guttatus*	Hermit Thrush	Moderate
Bird	*Catharus ustulatus*	Swainson's Thrush	Moderate
Bird	*Certhia americana*	Brown Creeper	Moderate
Bird	*Coccyzus erythropthalmus*	Black-billed Cuckoo	Moderate
Bird	*Dryocopus pileatus*	Pileated Woodpecker	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Bird	*Empidonax virescens*	Acadian Flycatcher	Moderate
Bird	*Falco peregrinus*	Peregrine Falcon	Moderate
Bird	*Geothlypis formosa*	Kentucky Warbler	Moderate
Bird	*Helmitheros vermivorum*	Worm-eating Warbler	Moderate
Bird	*Hylocichla mustelina*	Wood Thrush	Moderate
Bird	*Meleagris gallopavo*	Wild Turkey	Moderate
Bird	*Mniotilta varia*	Black-and-white Warbler	Moderate
Bird	*Parkesia motacilla*	Louisiana Waterthrush	Moderate
Bird	*Piranga olivacea*	Scarlet Tanager	Moderate
Bird	*Setophaga americana*	Northern Parula	Moderate
Bird	*Setophaga cerulea*	Cerulean Warbler	Moderate
Bird	*Setophaga fusca*	Blackburnian Warbler	Moderate
Bird	*Vireo flavifrons*	Yellow-throated Vireo	Moderate
Bird	*Vireo solitarius*	Blue-headed Vireo	Moderate
Mammal	*Myotis leibii*	Eastern Small-footed Bat	Moderate
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)	Moderate
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)	Moderate
Mammal	*Myotis sodalis*	Indiana Bat	Moderate
Mammal	*Odocoileus virginianus*	White-tailed Deer	Moderate
Mammal	*Ursus americanus*	Black Bear	High
Nonvascular Plant	*Arthonia kermesia*	Mountain Red Dot Lichen	Very High
Nonvascular Plant	*Cheilolejeunea evansii*	a liverwort	High
Nonvascular Plant	*Fellhanera hybrida*	Piedmont Crustose Lichen	Moderate
Nonvascular Plant	*Graphis sterlingiana*	Sterling Lips	Very High
Nonvascular Plant	*Lobaria scrobiculata*	Textured Lungwort	High
Reptile	*Eumeces anthracinus*	Coal Skink	Moderate
Reptile	*Terrapene carolina*	Eastern Box Turtle	Moderate
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake	Moderate
Vascular Plant	*Botrychium lanceolatum var. angustisegmentum*	Lance-leaf Moonwort	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Vascular Plant	*Carex careyana*	Carey's Sedge	High
Vascular Plant	*Carex purpurifera*	Purple Sedge	Moderate
Vascular Plant	*Carex radfordii*	Radford's Sedge	High
Vascular Plant	*Erigenia bulbosa*	Harbringer-of-spring	High
Vascular Plant	*Hydrastis canadensis*	Golden Seal	Moderate
Vascular Plant	*Panax quinquefolius*	Ginseng	High
Vascular Plant	*Scutellaria ovata ssp. ovata var. ovata*	Heartleaf Skullcap	High
Vascular Plant	*Trientalis borealis*	Starflower	High
Vascular Plant	*Trillium discolor*	Mottled Trillium	High
Vascular Plant	*Trillium simile*	Sweet White Trillium	High

Table B. Indicators and Rating Definitions Used in the NPESE for the Interior Forest Associates Species Group

The right column indicates the relative weight (i.e., strength of relationship) of the indicator to the ecosystem. Additionally, relevant indicators from appropriate ecosystems are referenced in composite score calculations.

Indicator	Poor	Fair	Good	Very Good	Weight
Acres of interior forest habitat	<30,000	30,000-37,500	37,500-45,000	>45,000	Moderate

Table C. Expected Outcomes, by Alternative and Indicator, for the Interior Forest Associates Species Group Within the NPESE

Indica-tor Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Acres of interior forest habitat	413,494	393,447	313,259	486,807	454,321	475,394	412,255	378,312	346,361	365,088	280,240	473,681	412,721	460,731	347,972

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Acres of interior forest habitat	VG	G	G	VG	VG	VG	VG	G	G	G	G	VG	VG	VG	G

Road Density Sensitive Species Associates

Table A. Species Included in the Road Density Sensitive Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)
The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Weight
Amphibian	*Ambystoma maculatum*	Spotted Salamander	Moderate
Amphibian	*Ambystoma talpoideum*	Mole Salamander	Very High
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander	Moderate
Amphibian	*Aneides aeneus*	Green Salamander	Moderate
Amphibian	*Eurycea bislineata*	Two-lined Salamander	Moderate
Amphibian	*Eurycea junaluska*	Junaluska Salamander	High
Amphibian	*Eurycea longicauda*	Longtail Salamander	High
Amphibian	*Glyptemys muhlenbergii*	Bog Turtle	Moderate
Amphibian	*Hemidactylium scutatum*	Four-toed Salamander	Moderate
Amphibian	*Plethodon amplus*	Blue Ridge Gray-cheeked Salamander	Moderate
Amphibian	*Plethodon aureolus*	Tellico Salamander	High
Amphibian	*Plethodon chattahoochee*	Chattahoochee Slimy Salamander	High
Amphibian	*Plethodon cheoah*	Cheoah Bald Salamander	High
Amphibian	*Plethodon glutinosus*	Northern Slimy Salamander	Moderate
Amphibian	*Plethodon jordani*	Jordan's Salamander (Red-cheeked Salamander)	Moderate
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander	Moderate
Amphibian	*Plethodon meridianus*	South Mountain Gray-cheeked Salamander	Moderate
Amphibian	*Plethodon richmondi*	Southern Ravine Salamander	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Amphibian	*Plethodon shermani*	Red-legged Salamander	High
Amphibian	*Plethodon teyahalee*	Southern Appalachian Salamander	Moderate
Amphibian	*Plethodon ventralis*	Southern Zigzag Salamander	High
Amphibian	*Plethodon wehrlei*	Wehrle's Salamander	Moderate
Amphibian	*Plethodon welleri*	Weller's Salamander	High
Amphibian	*Plethodon yonahlossee*	Yonahlossee Salamander	Moderate
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog	Moderate
Bird	*Aegolius acadicus pop. 1*	Southern Appalachian Northern Saw-whet Owl	Moderate
Bird	*Aquila chrysaetos*	Golden Eagle	Moderate
Bird	*Meleagris gallopavo*	Wild Turkey	Moderate
Insect	*Phyciodes batesii maconensis*	Appalachian Tawny Crescent	Moderate
Insect	*Speyeria aphrodite cullasaja*	Cullasaja Aphrodite Fritillary	Moderate
Mammal	*Cervus canadensis*	Elk	Moderate
Mammal	*Odocoileus virginianus*	White-tailed Deer	Moderate
Mammal	*Ursus americanus*	Black Bear	High
Reptile	*Crotalus horridus*	Timber Rattlesnake	Moderate
Reptile	*Ophisaurus attenuatus longicaudus*	Eastern Slender Glass Lizard	Moderate
Reptile	*Pituophis melanoleucus*	Northern Pinesnake	Moderate
Reptile	*Terrapene carolina*	Eastern Box Turtle	Moderate
Vascular Plant	*Calamagrostis porteri ssp. porteri*	Porter's Reedgrass	Moderate
Vascular Plant	*Fothergilla major*	Large Witch-alder	Moderate
Vascular Plant	*Frasera caroliniensis*	American Colombo	Moderate
Vascular Plant	*Lysimachia fraseri*	Fraser's Loosestrife	High
Vascular Plant	*Oenothera perennis*	Perennial Sundrops	High
Vascular Plant	*Silene ovata*	Ovate Catchfly	Moderate
Vascular Plant	*Spiraea virginiana*	Virginia Spiraea	Moderate
Vascular Plant	*Stachys clingmanii*	Clingman's Hedge-nettle	High
Vascular Plant	*Thaspium pinnatifidum*	Mountain Thaspium	Moderate
Vascular Plant	*Thermopsis fraxinifolia*	Ash-leaved Golden-banner	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Vascular Plant	*Thermopsis villosa*	hairy Golden-banner	Moderate

Table B. Indicators and Rating Definitions Used in the NPESE for the Road Density Sensitive Species Group

The right column indicates the relative weight (i.e., strength of relationship) of the indicator to the ecosystem. Additionally, relevant indicators from appropriate ecosystems are referenced in composite score calculations.

Indicator	Poor	Fair	Good	Very Good	Weight
Total Open Road Density	>2	1.5-2	1-1.5	<1	High

Table C. Expected Outcomes, by Alternative and Indicator, for the Road Density Sensitive Species Group Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	Current	10	50	10	50	10	50	10	50	10	50	10	50	10	50
Total Open Road Density	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	Current	10	50	10	50	10	50	10	50	10	50	10	50	10	50
Total Open Road Density	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

Bark and Leaf Epiphyte Associates

Table A. Species Included in the Bark and Leaf Epiphytes Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Weight
Nonvascular Plant	*Alectoria fallacina*	Bubbling Witch's Hair	High
Nonvascular Plant	*Anzia americana*	Foliose lichen	High
Nonvascular Plant	*Arthonia kermesia*	Mountain Red Dot Lichen	Very High

Taxa Group	Scientific Name	Common Name	Weight
Nonvascular Plant	*Arthopyrenia betulicola*	Ol' Birch Spots	Very High
Nonvascular Plant	*Arthopyrenia degelii*	Delgius Spots	High
Nonvascular Plant	*Bazzania nudicaulis*	A Liverwort	High
Nonvascular Plant	*Brachythecium roteanum*	Rota's Feather Moss	High
Nonvascular Plant	*Cheilolejeunea evansii*	A Liverwort	Very High
Nonvascular Plant	*Drepanolejeunea appalachiana*	A Liverwort	Very High
Nonvascular Plant	*Frullania appalachiana*	A Liverwort	Moderate
Nonvascular Plant	*Graphis sterlingiana*	Sterling Lips	Very High
Nonvascular Plant	*Herzogiella turfacea*	Flat Stump Moss	High
Nonvascular Plant	*Heterodermia appalachensis*	Foliose lichen	Very High
Nonvascular Plant	*Hylocomiastrum umbratum*	Shaded Fether Moss	High
Nonvascular Plant	*Hypotrachyna sinuosa*	A Foliose Lichen	Very High
Nonvascular Plant	*Hypotrachyna virginica*	Virginia Square Britches	Very High
Nonvascular Plant	*Lecanora masana*	Masa's Disc Lichen	High
Nonvascular Plant	*Leptodontium excelsum*	Grandfather Mountain Leptodontium	Very High
Nonvascular Plant	*Leptoscyphus cunefolius*	A Liverwort	High
Nonvascular Plant	*Lobaria scrobiculata*	Textured Lingwort	Very High
Nonvascular Plant	*Metzgeria uncigera*	A Liverwort	High
Nonvascular Plant	*Metzgeria violacea*	A Liverwort	Very High
Nonvascular Plant	*Mycoporum biseptatum*	Double Spots	Very High
Nonvascular Plant	*Pannaria conoplea*	Mealy-rimmed Shingle Lichen	Very High
Nonvascular Plant	*Pertusaria appalachensis*	Appalachian Wart Lichen	Very High
Nonvascular Plant	*Plagiochila corniculata*	A Liverwort	Very High
Nonvascular Plant	*Punctelia reddenda*	Speckled Shield Lichen	Very High
Nonvascular Plant	*Radula tenax*	A Liverwort	Moderate
Nonvascular Plant	*Riccardia jugata*	A Liverwort	High
Nonvascular Plant	*Schlotheimia lancifolia*	Highlands Moss	Very High
Nonvascular Plant	*Sticta limbata*	Powdered Moon Lichen	Very High
Nonvascular Plant	*Taxilejeunea sharpii*	A Liverwort	High

Taxa Group	Scientific Name	Common Name	Weight
Nonvascular Plant	*Usnea angulata*	Old Man's Beard	Very High

Table B. Indicators and Rating Definitions Used in the NPESE for the Bark and Leaf Epiphytes Species Group

The right column indicates the relative weight (i.e., strength of relationship) of the indicator to the ecosystem. Additionally, relevant indicators from appropriate ecosystems are referenced in composite score calculations.

Indicator	Poor	Fair	Good	Very Good	Weight
Acres of mid-seral class within mesic ecozones	<60,000	60,000-119,000	120,000-169,000	>169,000	Moderate
Acres of optimal suitable habitat (larger trees) within mesic ecozones	<100,000	100,000-199,000	200,000-299,000	300,000-355,000	Very High

Table C. Expected Outcomes, by Alternative and Indicator, for the Bark and Leaf Epiphytes Species Group Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Acres of mid-seral class within mesic ecozones	175K	186K	100K	186K	90000	177K	113K	186K	80000	177K	117K	186K	80000	177K	118K
Acres of optimal suitable habitat (larger trees) within mesic ecozones	200K	283K	400K	280K	395K	255K	335K	272K	388K	255K	328K	273K	388K	255K	328K

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Acres of mid-seral class within mesic ecozones	VG	VG	F	VG	F	VG	F	VG	F	VG	F	VG	F	VG	F
Acres of optimal suitable habitat (larger trees) within mesic ecozones	G	G	VG	G	VG	G	VG	G	VG	G	VG	G	VG	G	VG

Coarse Woody Debris and Downed Wood Associates

Table A. Species Included in the Coarse Woody Debris and Downed Wood Associates Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Weight
Amphibian	*Ambystoma maculatum*	Spotted Salamander	High
Amphibian	*Ambystoma talpoideum*	Mole Salamander	Very High
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander	Moderate
Amphibian	*Desmognathus aneneus*	Seepage Salamander	High
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander	High
Amphibian	*Desmognathus imitator*	Imitator Salamander	High
Amphibian	*Desmognathus imitator pop. 1*	Waterrock Knob Salamander	High
Amphibian	*Desmognathus organi*	Northern Pigmy Salamander	High

Taxa Group	Scientific Name	Common Name	Weight
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander	High
Amphibian	*Desmognathus wrighti*	Southern Pygmy Salamander	High
Amphibian	*Eurycea bislineata*	Two-lined Salamander	High
Amphibian	*Eurycea junaluska*	Junaluska Salamander	High
Amphibian	*Eurycea longicauda*	Longtail Salamander	High
Amphibian	*Hemidactylium scutatum*	Four-toed Salamander	High
Amphibian	*Plethodon amplus*	Blue Ridge Gray-cheeked Salamander	High
Amphibian	*Plethodon aureolus*	Tellico Salamander	Very High
Amphibian	*Plethodon chattahoochee*	Chattahoochee Slimy Salamander	Very High
Amphibian	*Plethodon cheoah*	Cheoah Bald Salamander	Very High
Amphibian	*Plethodon glutinosus*	Northern Slimy Salamander	High
Amphibian	*Plethodon jordani*	Jordan's Salamander (Red-cheeked Salamander)	High
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander	High
Amphibian	*Plethodon meridianus*	South Mountain Gray-cheeked Salamander	High
Amphibian	*Plethodon richmondi*	Southern Ravine Salamander	High
Amphibian	*Plethodon shermani*	Red-legged Salamander	Very High
Amphibian	*Plethodon teyahalee*	Southern Appalachian Salamander	High
Amphibian	*Plethodon ventralis*	Southern Zigzag Salamander	Very High
Amphibian	*Plethodon wehrlei*	Wehrle's Salamander	High
Amphibian	*Plethodon welleri*	Weller's Salamander	High
Amphibian	*Plethodon yonahlossee*	Yonahlossee Salamander	High
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog	Moderate
Bird	*Bonasa umbellus*	Ruffed Grouse	High
Bird	*Catharus guttatus*	Hermit Thrush	Low
Bird	*Dryocopus pileatus*	Pileated Woodpecker	Moderate
Mollusk	*Mesodon mitchellianus*	Sealed Globelet	Moderate
Mollusk	*Ventridens lasmodon*	Hollow Dome	Moderate
Nonvascular Plant	*Cheilolejeunea evansii*	A Liverwort	Moderate
Reptile	*Crotalus horridus*	Timber Rattlesnake	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Reptile	*Eumeces anthracinus*	Coal Skink	Moderate
Reptile	*Lampropeltis triangulum triangulum*	Eastern Milk Snake	Moderate
Reptile	*Pituophis melanoleucus*	Northern Pinesnake	Moderate
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake	Moderate

Table B. Indicators and Rating Definitions Used in the NPESE for the Coarse Woody Debris and Downed Wood Associates Species Group

The right column indicates the relative weight (i.e., strength of relationship) of the indicator to the ecosystem. Additionally, relevant indicators from appropriate ecosystems are referenced in composite score calculations.

Indicator	Poor	Fair	Good	Very Good	Weight
Total number of pieces of CWD per acre	<5	5-10	11-15	>15	High

Table C. Expected Outcomes, by Alternative and Indicator, for the Coarse Woody Debris and Downed Wood Associates Species Group Within the NPESE.

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Total number of pieces of CWD per acre	12	13	16	13	16	13	15	13	16	13	15	13	16	13	15

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Total number of pieces of CWD per acre	G	G	VG	G	VG	G	G	G	VG	G	G	G	VG	G	G

Hard and Soft Mast Associates

Table A. Species Included in the Hard and Soft Mast Dependent Species Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Weight
Bird	*Bombycilla cedrorum*	Cedar Waxwing	High
Bird	*Bonasa umbellus*	Ruffed Grouse	Moderate
Bird	*Catharus fuscescens*	Veery	Moderate
Bird	*Catharus guttatus*	Hermit Thrush	Moderate
Bird	*Catharus ustulatus*	Swainson's Thrush	Moderate
Bird	*Meleagris gallopavo*	Wild Turkey	High
Bird	*Setophaga coronata*	Yellow-rumped Warbler	Moderate
Mammal	*Neotoma magister*	Alleghany Woodrat	Moderate
Mammal	*Odocoileus virginianus*	White-tailed Deer	High
Mammal	*Ursus americanus*	Black Bear	High

Table B. Indicators and Rating Definitions Used in the NPESE for the Hard and Soft Mast Dependent Species Species Group

The right column indicates the relative weight (i.e., strength of relationship) of the indicator to the ecosystem. Additionally, relevant indicators from appropriate ecosystems are referenced in composite score calculations.

Indicator	Poor	Fair	Good	Very Good	Weight
Miles of Forest Edge	<1,000	1,000-1,500	1,500-2,000	>2,000	High
Total acorn production (lbs/acre)	<20	20-40	41-60	>60	High

Table C. Expected Outcomes, by Alternative and Indicator, for the Hard and Soft Mast Dependent Species Species Group Within the NPESE.

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Miles of Forest	1,610.7	1,629.9	1,707.6	1,675.2	1,749.4	1,696.4	1,855.2	1,681.4	1,761.8	1,714.7	1,928.2	1,692.6	1,846	1,725.2	2,079.7

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Edge															
Total acorn production (lbs/acre)	55	59	75	59	75	59	72	59	75	59	72	59	75	59	72

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Miles of Forest Edge	G	G	G	G	G	G	G	G	G	G	G	G	G	G	VG
Total Acorn Production (lbs/acre)	G	G	VG	G	VG	G	VG	G	VG	G	VG	G	VG	G	VG

Snag and Den Tree Associates

Table A. Species Included in the Snag and Den Tree Associates Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Weight
Bird	*Accipiter striatus*	Sharp-shinned Hawk	Moderate
Bird	*Aegolius acadicus pop. 1*	Southern Appalachian Northern Saw-whet Owl	Moderate
Bird	*Buteo platycephalus*	Broad-winged Hawk	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Bird	*Certhia americana*	Brown Creeper	Moderate
Bird	*Chaetura pelagica*	Chimney Swift	Moderate
Bird	*Colaptes auratus*	Northern Flicker	Moderate
Bird	*Contopus virens*	Eastern Wood-pewee	Moderate
Bird	*Dryocopus pileatus*	Pileated Woodpecker	Very High
Bird	*Falco peregrinus*	Peregrine Falcon	Moderate
Bird	*Falco sparverius*	American Kestrel	Moderate
Bird	*Haliaeetus leucocephalus*	Bald Eagle	Very High
Bird	*Melanerpes erythrocephalus*	Red-headed Woodpecker	Very High
Bird	*Poecile atricapillus practica*	Southern Appalachian black-capped chickadee	High
Bird	*Sitta pusilla*	Brown-headed Nuthatch	High
Bird	*Sphyrapicus varius*	Yellow-bellied Sapsucker	High
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat (mountain subspecies)	Very High
Mammal	*Eptesicus fuscus*	Big Brown Bat	Very High
Mammal	*Glaucomys sabrinus coloratus*	Carolina Northern Flying Squirrel	Very High
Mammal	*Myotis leibii*	Eastern Small-footed Bat	Very High
Mammal	*Myotis lucifugus*	Little Brown Myotis	Very High
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)	Very High
Mammal	*Myotis sodalis*	Indiana Bat	Very High
Mammal	*Perimyotis subflavus*	Tri-colored Bat	Very High
Mammal	*Ursus americanus*	Black Bear	Very High

Table B. Indicators and Rating Definitions Used in the NPESE for the Snag and Den Tree Associates Species Group

The right column indicates the relative weight (i.e., strength of relationship) of the indicator to the ecosystem. Additionally, relevant indicators from appropriate ecosystems are referenced in composite score calculations.

Indicator	Poor	Fair	Good	Very Good	Weight
Snag Density (#/ac)	<25	26-37.5	37.6-50	>50	High

Table C. Expected Outcomes, by Alternative and Indicator, for the Snag and Den Tree Associates Species Group Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Snag Density (#/ac)	59.00	49.00	39.00	49.00	39.00	49.00	42.00	49.00	39.00	49.00	42.00	49.00	39.00	49.00	42.00

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Snag Density (#/ac)	VG	G	G	G	G	G	G	G	G	G	G	G	G	G	G

Fire-intolerant Associates

Table A. Species Included in the Fire-intolerant Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Weight
Bird	*Aegolius acadicus pop. 1*	Southern Appalachian Northern Saw-whet Owl	High
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)	High
Mammal	*Myotis sodalis*	Indiana Bat	High
Mammal	*Perimyotis subflavus*	Tri-colored Bat	High
Mollusk	*Carychium clappi*	Appalachian Thorn	Moderate
Mollusk	*Carychium exiguum*	Obese Thorn	Moderate
Mollusk	*Carychium nannodes*	File Thorn	Moderate
Mollusk	*Discus bryanti*	Sawtooth Disc	Moderate
Mollusk	*Entodon compressus*	Flattened Entodon	Moderate
Mollusk	*Entodon sullivantii*	Sullivant's Entodon	High
Mollusk	*Euchemotrema fasciatum*	Mountain Pillsnail	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Mollusk	*Fumonelix cherohalaensis*	Roan Covert	Moderate
Mollusk	*Fumonelix jonesiana*	Big-tooth Covert	Moderate
Mollusk	*Fumonelix langdoni*	Talus Covert	Moderate
Mollusk	*Fumonelix orestes*	Engraved Covert	Moderate
Mollusk	*Fumonelix roanensis*	Rock-loving Covert	Moderate
Mollusk	*Fumonelix wheatleyi*	Cinnamon Covert	Moderate
Mollusk	*Fumonelix wheatleyi clingmanicus*	Clingman Covert	Moderate
Mollusk	*Glyphyalinia clingmani*	Fragile Glyph	Moderate
Mollusk	*Glyphyalinia junaluskana*	Dark Glyph	Moderate
Mollusk	*Glyphyalinia pentadelphia*	Pink Glyph	Moderate
Mollusk	*Helicodiscus bonamicus*	Spiral Coil	Moderate
Mollusk	*Helicodiscus fimbriatus*	Fringed Coil	Moderate
Mollusk	*Inflectarius ferrissi*	Smoky Mountain Covert	Moderate
Mollusk	*Inflectarius subpalliatus*	Velvet Covert	Moderate
Mollusk	*Inflectarius verus*	A Snail	Moderate
Mollusk	*Mesodon altivagus*	Wandering Globe	Moderate
Mollusk	*Mesodon andrewsae*	Balsam Globe	Moderate
Mollusk	*Mesodon mitchellianus*	Sealed Globelet	Moderate
Mollusk	*Mesomphix andrewsae*	Mountain Button	Moderate
Mollusk	*Mesomphix latior*	Broad Button	Moderate
Mollusk	*Pallifera hemphilli*	Black Mantleslug	Moderate
Mollusk	*Paravitrea andrewsae*	High Mountain Supercoil	Moderate
Mollusk	*Paravitrea clappi*	Mirey Ridge Supercoil	Moderate
Mollusk	*Paravitrea lacteodons*	Ramp Cove Supercoil	Moderate
Mollusk	*Paravitrea lamellidens*	Lamellate Supercoil	Moderate
Mollusk	*Paravitrea placentula*	Glossy Supercoil	Moderate
Mollusk	*Paravitrea ternaria*	Sculpted Supercoil	Moderate
Mollusk	*Paravitrea umbilicaris*	Open Supercoil	Moderate
Mollusk	*Paravitrea varidens*	Roan Supercoil	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Mollusk	*Patera clarki clarki*	Dwarf Proud Globe	Moderate
Mollusk	*Patera clarki nantahala*	Noonday Globe	Moderate
Mollusk	*Pilsbryna nadopalma*	Oar Tooth Bud	Moderate
Mollusk	*Pilsbryna vanattai*	Honey Glyph	Moderate
Mollusk	*Praticolella lawae*	Appalachian Scrubsnail	Moderate
Mollusk	*Stenotrema depilatum*	Great Smoky Slitmouth	Moderate
Mollusk	*Succinea campestris*	Crinkled Ambersnail	Moderate
Mollusk	*Succinea unicolor*	Squatty Ambersnail	Moderate
Mollusk	*Succinea wilsoni*	Golden Ambersnail	Moderate
Mollusk	*Triodopsis tennesseensis*	Budded Threetooth	Moderate
Mollusk	*Ventridens arcellus*	Golden Dome	Moderate
Mollusk	*Ventridens coelaxis*	Bidentate dome	Moderate
Mollusk	*Ventridens collisella*	Sculptured Dome	Moderate
Mollusk	*Ventridens lasmodon*	Hollow Dome	Moderate
Mollusk	*Ventridens suppressus*	Flat Dome	Moderate
Mollusk	*Vertigo bollesiana*	Delicate Vertigo	Moderate
Mollusk	*Vertigo parvula*	Smallmouth Vertigo	Moderate
Mollusk	*Vertigo sp. 3*	A Vertigo Snail	Moderate
Mollusk	*Xolotrema caroliniense*	Blunt Wedge	Moderate
Mollusk	*Zonitoides patuloides*	Appalachian Gloss	Moderate
Nonvascular Plant	*Arthonia kermesia*	Hot Dots	High
Nonvascular Plant	*Arthopyrenia betulicola*	Ol' Birch Spots	High
Nonvascular Plant	*Bartramidula wilsonii*	Dwarf Apple Moss	Moderate
Nonvascular Plant	*Brachythecium rotaeanum*	Rota's Feather Moss	Moderate
Nonvascular Plant	*Cheilolejuenea evansii*	A Liverwort	High
Nonvascular Plant	*Dichodontium pellucidum*	A Moss	Moderate
Nonvascular Plant	*Dicranum undulatum*	Bog Broom-moss	Moderate
Nonvascular Plant	*Ditrichum ambiguum*	Ambiguous Ditrichium	Moderate
Nonvascular Plant	*Encalypta procera*	Extinguisher Moss	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Nonvascular Plant	*Fellhanera hybrida*	Piedmont Crustose Lichen	High
Nonvascular Plant	*Fissidens appalachensis*	Appalachian pocket moss	High
Nonvascular Plant	*Fontinalis sphagnifolia*	A Water Moss	Moderate
Nonvascular Plant	*Frullania appalachiana*	A Liverwort	Very High
Nonvascular Plant	*Graphis sterlingiana*	Sterling Lips	High
Nonvascular Plant	*Gymnoderma lineare*	Rock Gnome Lichen	Moderate
Nonvascular Plant	*Herzogiella turfacea*	Flat Stump Moss	Moderate
Nonvascular Plant	*Homalia trichomanoides*	Lime Homalia	Moderate
Nonvascular Plant	*Homaliadelphus sharpii*	Sharp's homaliadelphus	Moderate
Nonvascular Plant	*Hypotrachyna sinuosa*	A Foliose Lichen	High
Nonvascular Plant	*Hypotrachyna virginica*	Virginia Square Britches	High
Nonvascular Plant	*Lejeunea blomquistii*	A Liverwort	Moderate
Nonvascular Plant	*Leptodontium excelsum*	Grandfather Mountain Excelsum	Very High
Nonvascular Plant	*Leptohymenium sharpii*	Mount Leconte Moss	Very High
Nonvascular Plant	*Leptoscyphus cunefolius*	Wedge Flapwort	Very High
Nonvascular Plant	*Lobaria scrobiculata*	Textured Lungwort	High
Nonvascular Plant	*Lophocolea appalachiana*	A Liverwort	High
Nonvascular Plant	*Lophocolea muricata*	A Liverwort	High
Nonvascular Plant	*Melanelia stygia*	A Foliose Lichen	High
Nonvascular Plant	*Mylia tayorii*	A Liverwort	Moderate
Nonvascular Plant	*Palamocladium leskeoides*	Palamocladium	Moderate
Nonvascular Plant	*Plagiochila austinii*	Liverwort	Moderate
Nonvascular Plant	*Plagiochila corniculata*	A Liverwort	Moderate
Nonvascular Plant	*Plagiochila echinata*	A Liverwort	Moderate
Nonvascular Plant	*Plagiochila sharpii*	Sharp's Leafy Liverwort	Moderate
Nonvascular Plant	*Plagiochila sullivantii var. sullivantii*	Sullivant's Leafy Liverwort	Moderate
Nonvascular Plant	*Plagiomnium carolinianum*	Carolina Star-moss	Moderate
Nonvascular Plant	*Plagiomnium ellipticum*	Marsh Magnificent Moss	Moderate
Nonvascular Plant	*Plagiomnium rostratum*	Long-beaked Thread Moss	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Nonvascular Plant	*Platyhypnidium pringlei*	Pringles Water Feather Moss	Moderate
Nonvascular Plant	*Pogonatum dentatum*	Hair-like Hair-cap	Moderate
Nonvascular Plant	*Pohlia lescuriana*	Spherical Bulb Nodding Moss	Moderate
Nonvascular Plant	*Porella wataugensis*	A Liverwort	Moderate
Nonvascular Plant	*Ptilidium ciliare*	A Liverwort	Moderate
Nonvascular Plant	*Punctelia reddenda*	Speckled Shield Lichen	High
Nonvascular Plant	*Racomitrium aciculare*	Dark Mountain Fringe Moss	Moderate
Nonvascular Plant	*Radula voluta*	A Liverwort	Moderate
Nonvascular Plant	*Rhytidadelphus subpinnatus*	A Moss	Moderate
Nonvascular Plant	*Rhytidium rugosum*	Golden Tundra-moss	Moderate
Nonvascular Plant	*Riccardia jugata*	A Liverwort	Moderate
Nonvascular Plant	*Schlotheimia lancifolia*	Highlands Moss	High
Nonvascular Plant	*Scopelophila cataractae*	Agoyan Cataract Moss	Moderate
Nonvascular Plant	*Scopelophila ligulata*	Copper Moss	Moderate
Nonvascular Plant	*Sphagnum pylaesii*	Simple Peatmoss	Moderate
Nonvascular Plant	*Sphagnum squarrosum*	Squarrose Peatmoss	Moderate
Nonvascular Plant	*Sphagnum tenellum*	Delicate Peatmoss	Moderate
Nonvascular Plant	*Taxiphyllum alternans*	Japanese Yew-moss	Moderate
Nonvascular Plant	*Tortula ammonsiana*	Ammon's Tortula	Moderate
Nonvascular Plant	*Usnea angulata*	Old Man's Beard	Moderate
Nonvascular Plant	*Warnstorfia fluitans*	Floating Sickle-moss	Moderate
Vascular Plant	*Botrychium oneidense*	Blunt-lobed Grape Fern	Moderate
Vascular Plant	*Corallorhiza wisteriana*	Spring Coral-root	Moderate
Vascular Plant	*Coreopsis grandiflora var. grandiflora*	Large-flowered Tickseed	Moderate
Vascular Plant	*Corydalis micrantha*	Slender Corydalis	Moderate
Vascular Plant	*Crocanthemum bicknellii*	Plains Sunrose	Moderate
Vascular Plant	*Croton monanthogynus*	Prarie-tea Croton	Moderate
Vascular Plant	*Cystopteris fragilis*	Fragile Fern	Moderate
Vascular Plant	*Dalibarda repens*	Robin Runaway	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Vascular Plant	*Diervilla rivularis*	Riverbank Bush-honeysuckle	Moderate
Vascular Plant	*Draba ramosissima*	Branching Draba	Moderate
Vascular Plant	*Geum geniculatum*	Bent Avens	Moderate
Vascular Plant	*Geum radiatum*	Spreading Avens	Moderate
Vascular Plant	*Glyceria laxa*	Lax Mannagrass	Moderate
Vascular Plant	*Glyceria nubigena*	Smoky Mountain Mannagrass	Moderate
Vascular Plant	*Heuchera pubescens*	Downy Alumroot	Moderate
Vascular Plant	*Hexastylis contracta*	Mountain Heartleaf	Moderate
Vascular Plant	*Hexastylis rhombiformis*	French Broad Heartleaf	Moderate
Vascular Plant	*Houstonia montana*	Roan Mountain Bluet	Moderate
Vascular Plant	*Huperzia porophila*	Rock Fir Clubmoss	Moderate
Vascular Plant	*Hydrastis canadensis*	Golden Seal	Moderate
Vascular Plant	*Hymenophyllum tayloriae*	Gorge Filmy Fern	Moderate
Vascular Plant	*Juncus trifidus*	Highland Rush	Moderate
Vascular Plant	*Lonicera canadensis*	American Fly-honeysuckle	Moderate
Vascular Plant	*Micropolypodium nimbatum*	West Indian Dwarf Polypody	Moderate
Vascular Plant	*Minuartia groenlandica*	Mountain Sandwort	High
Vascular Plant	*Packera millefolium*	Divided-leaf Ragwort	Moderate
Vascular Plant	*Phegopteris connectilis*	Northern Beech Fern	Moderate
Vascular Plant	*Phlox subulata*	Moss Pink	High
Vascular Plant	*Robinia viscosa var. hartwigii*	Hartwig's Locust	High
Vascular Plant	*Robinia viscosa var. viscosa*	Clammy Locust	Moderate
Vascular Plant	*Rubus idaeus ssp. strigosus*	American Red Raspberry	Moderate
Vascular Plant	*Sagittaria fasciculata*	Bunched Arrowhead	Moderate
Vascular Plant	*Scutellaria saxatilis*	Rock Skullcap	Moderate
Vascular Plant	*Sedum glaucophyllum*	Cliff Stonecrop	Moderate
Vascular Plant	*Shortia galacifolia var. brevistyla*	Northern Oconee Bells	Moderate
Vascular Plant	*Shortia galacifolia var. galacifolia*	Southern Oconee Bells	Moderate
Vascular Plant	*Solidago simulans*	Granite Dome Goldenrod	Moderate

Taxa Group	Scientific Name	Common Name	Weight
Vascular Plant	*Solidago spithamaea*	Blue Ridge Goldenrod	Moderate
Vascular Plant	*Solidago uliginosa var. uliginosa*	Bog Goldenrod	Moderate
Vascular Plant	*Solidago ulmifolia*	Elm-leaf Goldenrod	Moderate
Vascular Plant	*Spartina pectinata*	Freshwater Cordgrass	Moderate
Vascular Plant	*Spiraea virginiana*	Virginia Spiraea	Moderate
Vascular Plant	*Stachys clingmanii*	Clingman's Hedge-nettle	High
Vascular Plant	*Stewartia ovata*	Mountain Camellia	Moderate
Vascular Plant	*Streptopus amplexifolius*	White Mandarin	High
Vascular Plant	*Symphyotrichum oblongifolium*	Aromatic Aster	Moderate
Vascular Plant	*Trichomanes boschianum*	Appalachian Filmy-fern	Moderate
Vascular Plant	*Trichomanes petersii*	Dwarf Filmy-fern	Moderate
Vascular Plant	*Trientalis borealis*	Starflower	Moderate
Vascular Plant	*Trillium discolor*	Mottled Trillium	Moderate
Vascular Plant	*Trillium simile*	Sweet White Trillium	Moderate
Vascular Plant	*Turritis glabra*	Tower Mustard	Moderate
Vascular Plant	*Woodsia appalachiana*	Appalachian Cliff Fern	Moderate

Table B. Indicators and Rating Definitions Used in the NPESE for the Fire-intolerant Species Species Group

The right column indicates the relative weight (i.e., strength of relationship) of the indicator to the ecosystem. Additionally, relevant indicators from appropriate ecosystems are referenced in composite score calculations.

Indicator	Poor	Fair	Good	Very Good	Weight
Percent of acres burned within mesic habitats (floodplain, acidic cove, rich cove, and northern hardwood ecozones)	>50	45.1-50	40-45	<40	Very High

Table C. Expected Outcomes, by Alternative and Indicator, for the Fire-intolerant Species Species Group Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	Current	10	50	10	50	10	50	10	50	10	50	10	50	10	50

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Acres burned within mesic habitats (floodplain, acidic cove, rich cove, and northern hardwood ecozones)	38	38	38	39	39	42	40	39	39	42	42	39	39	42	42

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Acres burned within mesic habitats (floodplain, acidic cove, rich cove, and northern hardwood ecozones)	VG	VG	VG	VG	VG	G	G	VG	VG	G	G	VG	VG	G	G

Fire-adapted Associates

Table A. Species Included in the Fire-adapted Species Group Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

The right column indicates the relative weight (i.e., strength of relationship) of the species to the species group.

Taxa Group	Scientific Name	Common Name	Weight
Insect	*Phyciodes batesii maconensis*	Appalachian Tawny Crescent	High
Insect	*Speyeria aphrodite cullasaja*	Cullasaja Aphrodite Fritillary	High
Reptile	*Pituophis melanoleucus*	Northern Pinesnake	Moderate
Vascular Plant	*Berberis canadensis*	American Barberry	High
Vascular Plant	*Botrychium matricariifolium*	Daisy-leaf Moonwort	High
Vascular Plant	*Botrychium simplex var. simplex*	Least Moonwort	Moderate
Vascular Plant	*Bouteloua curtipendula var. curtpiendula*	Sideoats Grama Grass	High
Vascular Plant	*Calamagrostis canadensis var. canadensis*	Canada Reedgrass	Moderate
Vascular Plant	*Calamagrostis porteri ssp. porteri*	Porter's Reedgrass	High

Taxa Group	Scientific Name	Common Name	Weight
Vascular Plant	*Chamerion platphyllum*	Purple Willowherb	High
Vascular Plant	*Cleistesiopsis bifaria*	Small Spreading Pogonia	High
Vascular Plant	*Delphinium exaltatum*	tall larkspur	Moderate
Vascular Plant	*Deschampsia cespitosa ssp. glauca*	Tufted Hairgrass	Very High
Vascular Plant	*Dodecatheon meadia*	Shootingstar	Moderate
Vascular Plant	*Echinacea purpurea*	Eastern Purple Coneflower	High
Vascular Plant	*Elymus trachycaulus ssp. trachycaulus*	Slender Wheatgrass	Very High
Vascular Plant	*Eupatorium incarnatum*	Pink Throughwort	High
Vascular Plant	*Euphorbia purpurea*	Glade Spurge	High
Vascular Plant	*Fothergilla major*	Large Witch-alder	Very High
Vascular Plant	*Frasera caroliniensis*	American Colombo	High
Vascular Plant	*Gentianopsis crinita*	Fringed Gentian	High
Vascular Plant	*Hexalectris spicata*	Crested Coralroot	High
Vascular Plant	*Hudsonia montana*	Mountain Golden-heather	Very High
Vascular Plant	*Liatris helleri*	Heller's Blazing Star	High
Vascular Plant	*Liatris squarrulosa*	Earle's Blazing Star	Very High
Vascular Plant	*Liatris turgida*	Shale-barren Blazing Star	Very High
Vascular Plant	*Lilium grayi*	Gray's Lily	High
Vascular Plant	*Lilium philadelphicum var. philadelphicum*	Wood Lily	High
Vascular Plant	*Lysimachia fraseri*	Fraser's Loosestrife	High
Vascular Plant	*Melica nitens*	Three-flowered melic grass	Very High
Vascular Plant	*Monotropsis odorata*	Sweet Pinesap	High
Vascular Plant	*Muhlenbergia glomerata*	Marsh Muhly	Moderate
Vascular Plant	*Packera paupercula var. appalachiana*	Prairie Ragwort	High
Vascular Plant	*Packera serpenticola*	Serpentine Ragwort	Very High
Vascular Plant	*Parnassia grandifolia*	Large-leaved grass-of-parnassus	High
Vascular Plant	*Pedicularis lanceolata*	Swamp Lousewort	High
Vascular Plant	*Poa saltuensis*	Drooping Bluegrass	Very High
Vascular Plant	*Polygala senega var. senega*	Seneca Snakeroot	High

Taxa Group	Scientific Name	Common Name	Weight
Vascular Plant	*Pycnanthemum curvipes*	Tennessee Mountain-mint	High
Vascular Plant	*Pycnanthemum torreyi*	Torrey's Mountain-mint	High
Vascular Plant	*Ranunculus fascicularis*	Early Buttercup	High
Vascular Plant	*Ruellia purshiana*	Pursh's Wild Petunia	High
Vascular Plant	*Silene ovata*	Ovate Catchfly	High
Vascular Plant	*Spigelia marilandica*	Pink Root	High
Vascular Plant	*Sporobolus heterolepis*	Prairie Dropseed	Very High
Vascular Plant	*Stenanthium leimanthoides*	Pinebarren Death-camas	High
Vascular Plant	*Symphyotrichum laeve var. laeve*	Smooth Blue Aster	Moderate
Vascular Plant	*Symphyotrichum pratense*	Barren's Silky Aster	Very High
Vascular Plant	*Symphyotrichum rhiannon*	Rhiannon's Aster	Very High
Vascular Plant	*Symphyotrichum shortii*	Short's Aster	High
Vascular Plant	*Thalictrum macrostylum*	Small-leaved Meadowrue	High
Vascular Plant	*Thaspium pinnatifidum*	Mountain Thaspium	High
Vascular Plant	*Thermopsis fraxinifolia*	Ash-leaved Golden-banner	High
Vascular Plant	*Thermopsis mollis*	Appalachian Golden-banner	Very High
Vascular Plant	*Thermopsis villosa*	Hairy Golden-banner	Moderate
Vascular Plant	*Trichostema brachiatum*	Glade Bluecurls	High

Table B. Indicators and Rating Definitions Used in the NPESE for the Fire-adapted Species Species Group

The right column indicates the relative weight (i.e., strength of relationship) of the indicator to the ecosystem. Additionally, relevant indicators from appropriate ecosystems are referenced in composite score calculations.

Indicator	Poor	Fair	Good	Very Good	Weight
Percent open forest canopy within fire-adapted ecozones	<25	25-50	50-60	>60	High
Percent system burned at desired return interval (Buck Creek Serpentine Barrens)	<25	25-50	51-75	>75	Very High

Indicator	Poor	Fair	Good	Very Good	Weight
Percent system burned at desired return interval (Low Elevation Rocky Summit)	<25	25-50	51-75	>75	Very High
Percent system burned at desired return interval (Low Elevation Glades)	<25	25-50	51-75	>75	High
Percent system burned at desired return interval (Woodlands and Shale Slopes)	<25	25-50	51-75	>75	Moderate

Table C. Expected Outcomes, by Alternative and Indicator, for the Fire-Adapted Species Species Group Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent open forest canopy within fire-adapted ecozones	1.6	2	6	2	10	2	18	2	13	2	23	2	9	2	18
Percent system burned at desired return interval (Buck Creek Serpentine Barrens)	75	80	80	80	80	90	90	80	80	90	90	80	80	90	90
Percent system burned at desired return interval (Low Elevation Rocky Summit)	12	12	12	12	25	20	55	12	25	20	55	12	25	20	55
Percent system burned at desired return interval (Low Elevation Glades)	20	20	20	20	25	25	30	20	30	30	51	20	30	30	51
Percent system burned at desired return interval (Woodlands and Shale Slopes)	0	10	33	10	45	45	75	10	45	45	75	10	45	45	75

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent open forest canopy within fire-adapted ecozones	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Percent system burned at desired return interval (Buck Creek Serpentine Barrens)	G	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG
Percent system burned at desired return interval (Low Elevation Rocky Summit)	P	P	P	P	F	P	G	P	F	P	G	P	F	P	G
Percent system burned at desired return interval (Low Elevation Glades)	P	P	P	P	F	F	F	P	F	F	G	P	F	F	G
Percent system burned at desired return interval (Woodlands and Shale Slopes)	P	P	F	P	F	F	G	P	F	F	G	P	F	F	G

Unique Habitats (Ecosystems)

Woodland (Open Canopy)

Low Elevation Glades

Table A. Species Included in the Low Elevation Glade Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Aneides aeneus*	Green Salamander
Amphibian	*Desmognathus imitator*	Imitator Salamander
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander
Amphibian	*Eurycea longicauda*	Longtail Salamander
Amphibian	*Plethodon amplus*	Blue Ridge Gray-cheeked Salamander
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander
Amphibian	*Plethodon meridianus*	South Mountain Gray-cheeked Salamander
Amphibian	*Plethodon wehrlei*	Wehrle's Salamander
Amphibian	*Plethodon yonahlossee*	Yonahlossee Salamander
Bird	*Bonasa umbellus*	Ruffed Grouse
Insect	*Autochton cellus*	Golden-banded Skipper
Insect	*Bombus affinis*	Rusty-patched Bumblebee
Insect	*Bombus bariabilis*	Variable Cuckoo Bumblebee
Insect	*Bombus pennsylvanicus*	American Bumblebee
Insect	*Bombus terricola*	Yellow-banded Bumblebee
Insect	*Bombus vagans*	Half Black Bumblebee
Insect	*Celastrina nigra*	Dusky Azure
Insect	*Chlosyne gorgone*	Gorgone Checkerspot
Insect	*Danaus plexippus*	Monarch Butterfly
Insect	*Erora laeta*	Early Hairstreak
Insect	*Erynnis martialis*	Mottled Duskywing

Taxa Group	Scientific Name	Common Name
Insect	*Euchloe olympia*	Olympia Marble
Insect	*Euphydryas phaeton*	Baltimore Checkerspot
Insect	*Papilio cresphontes*	Giant Swallowtail
Insect	*Phyciodes batesii maconensis*	Appalachian Tawny Crescent
Insect	*Polygonia faunus smythi*	Smyth's Green Comma
Insect	*Polygonia progne*	Gray Comma
Insect	*Pyrgus wyandot*	Appalachian Grizzled Skipper
Insect	*Satyrium caryaevorus*	Hickory Hairstreak
Insect	*Speyeria aphrodite cullasaja*	Cullasaja Aphrodite Fritillary
Insect	*Speyeria diana*	Diana Fritillary
Insect	*Speyeria idalia*	Regal Fritillary
Mammal	*Cervus elaphus*	Elk
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat (mountain subspecies)
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Microtus chrotorrhinus carolinensis*	Southern Rock Vole
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Neotoma floridana haematoria*	Southern Appalachian Woodrat
Mammal	*Neotoma magister*	Allegheny Woodrat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Ursus americanus*	Black Bear
Mollusk	*Fumonelix wheatleyi*	Cinnamon covert
Mollusk	*Fumonelix wheatleyi clingmanicus*	Clingman Covert
Mollusk	*Paravitrea lamellidens*	Lamellate Supercoil
Mollusk	*Paravitrea placentula*	Glossy Supercoil
Mollusk	*Ventridens suppressus*	Flat Dome

Taxa Group	Scientific Name	Common Name
Mollusk	*Vertigo bollesiana*	Delicate Vertigo
Nonvascular Plant	*Macrocoma sullivantii*	Sullivant's Manned-moss
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces anthracinus*	Coal Skink
Reptile	*Lampropeltis triangulatum triangulatum*	Eastern Milk Snake
Reptile	*Pituophis melanoleucus*	Northern Pinesnake
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Adlumia fungosa*	Climbing Fumatory
Vascular Plant	*Arabis patens*	Spreading Rockcress
Vascular Plant	*Asplenium bradleyi*	Bradley's Spleenwort
Vascular Plant	*Berberis canadensis*	American Barberry
Vascular Plant	*Calamagrostis canadensis var. canadensis*	Canada Reedgrass
Vascular Plant	*Calamagrostis porteri ssp. porteri*	Porter's Reedgrass
Vascular Plant	*Celastrus scandens*	Climbing Bittersweet
Vascular Plant	*Coreopsis grandiflora var. grandiflora*	Large-flowered Tickseed
Vascular Plant	*Dodecatheon meadia*	Shootingstar
Vascular Plant	*Draba ramosissima*	Branching Draba
Vascular Plant	*Euphorbia purpurea*	Glade Spurge
Vascular Plant	*Fleischmannia incarnata*	Pink Throughwort
Vascular Plant	*Liatris squarrulosa*	Earle's Blazing Star
Vascular Plant	*Liatris turgida*	Shale-barren Blazing Star
Vascular Plant	*Packera millefolium*	Divided-leaf Ragwort
Vascular Plant	*Phlox subulata*	Moss Pink
Vascular Plant	*Phemeranthus teretifolius*	Quill Fameflower
Vascular Plant	*Polygala senega var. senega*	Seneca Snakeroot
Vascular Plant	*Pycnanthemum curvipes*	Stone Mountain-mint
Vascular Plant	*Robina hispida var. kelseyi*	Kelsey's Locust
Vascular Plant	*Rudbeckia triloba var. beadlei*	Chauncey's Coneflower

Taxa Group	Scientific Name	Common Name
Vascular Plant	*Sedum glaucophyllum*	Cliff Stonecrop
Vascular Plant	*Solidago simulans*	Granite Goldenrod
Vascular Plant	*Symphyotrichum pratense*	Barrens Silky Aster
Vascular Plant	*Woodsia appalachiana*	Appalachian Cliff Fern

Table B. Indicators and Rating Definitions Used in the NPESE for the Low Elevation Glade Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent sites with heavy recreational traffic	>33	21-33	10-20	<10
Percent sites with low coverage (<1%) of NNIS	<40	40-74	75-90	>90
Percent system acres burned at desired interval	<25	25-50	50-75	>75

Table C. Expected Outcomes, by Alternative and Indicator, for the Low Elevation Glade Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with heavy recreational traffic	25	25	25	30	30	31	31	28	28	29	29	29	29	30	30
Percent sites with low coverage (<1%) of NNIS	69	72	75	72	75	59	66	72	75	66	75	72	75	63	69
Percent system acres burned at desired interval	20	20	20	20	25	25	30	20	30	30	50	20	30	30	50

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with heavy recreational traffic	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Percent sites with low coverage (<1%) of NNIS	F	F	G	F	G	F	F	F	G	F	G	F	G	F	F
Percent system acres burned at desired interval	P	P	P	P	F	F	P	F	F	F	G	P	F	F	G

Serpentine Woodlands

Table A. Species Included in the Serpentine Woodlands Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Bird	*Antrostomus carolinensis*	Chuck-will's-widow
Bird	*Antrostomus vociferus*	Whip-poor-will
Bird	*Bonasa umbellus*	Ruffed Grouse
Bird	*Catharus guttatus*	Hermit Thrush
Bird	*Contopus virens*	Eastern Wood-pewee
Bird	*Empidonax minimus*	Least Flycatcher
Bird	*Empidonax virescens*	Acadian Flycatcher
Bird	*Melanerpes erythrocephalus*	Red-headed Woodpecker
Bird	*Meleagris galapavo*	Wild Turkey
Bird	*Mniotilta varia*	Black-and-white Warbler
Bird	*Parkesia motacilla*	Louisiana Waterthrush
Bird	*Scolopax minor*	American Woodcock

Taxa Group	Scientific Name	Common Name
Bird	*Setophaga cerulea*	Cerulean Warbler
Bird	*Setophaga dominica*	Yellow-throated Warbler
Bird	*Spinus pinus*	Pine Siskin
Insect	*Autochton cellus*	Golden-banded Skipper
Insect	*Bombus affinis*	Rusty-patched Bumblebee
Insect	*Bombus bariabilis*	Variable Cuckoo Bumblebee
Insect	*Bombus pennsylvanicus*	American Bumblebee
Insect	*Bombus terricola*	Yellow-banded Bumblebee
Insect	*Bombus vagans*	Half Black Bumblebee
Insect	*Celastrina nigra*	Dusky Azure
Insect	*Chlosyne gorgone*	Gorgone Checkerspot
Insect	*Danaus plexippus*	Monarch Butterfly
Insect	*Erora laeta*	Early Hairstreak
Insect	*Erynnis martialis*	Mottled Duskywing
Insect	*Euchloe olympia*	Olympia Marble
Insect	*Euphydryas phaeton*	Baltimore Checkerspot
Insect	*Papilio cresphontes*	Giant Swallowtail
Insect	*Phyciodes batesii maconensis*	Appalachian Tawny Crescent
Insect	*Polygonia faunus smythi*	Smyth's Green Comma
Insect	*Polygonia progne*	Gray Comma
Insect	*Pyrgus wyandot*	Appalachian Grizzled Skipper
Insect	*Satyrium caryaevorus*	Hickory Hairstreak
Insect	*Speyeria aphrodite cullasaja*	Cullasaja Aphrodite Fritillary
Insect	*Speyeria diana*	Diana Fritillary
Insect	*Speyeria idalia*	Regal Fritillary
Mammal	*Cervus elaphus*	Elk
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat (mountain subspecies)
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Mustela nivelis*	Least Weasel

Taxa Group	Scientific Name	Common Name
Mammal	*Myotis grisescens*	Gray Myotis (Gray Bat)
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Ursus americana*	Black Bear
Nonvascular Plant	*Drepanolejeunea appalachiana*	Liverwort
Nonvascular Plant	*Schlotheimia lancifolia*	Highlands Moss
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces anthracinus*	Coal Skink
Reptile	*Pituophis melanoleucus*	Northern Pinesnake
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Calamagrostis porteri ssp. porteri*	Porter's Reedgrass
Vascular Plant	*Deschampsia cespitosa ssp. glauca*	Tufted Hairgrass
Vascular Plant	*Elymus trachycaulus ssp. trachycaulus*	Slender Wheatgrass
Vascular Plant	*Frasera caroliniensis*	American Columbo
Vascular Plant	*Gentianopsis crinita*	Fringed Gentian
Vascular Plant	*Muhlenbergia glomerata*	Marsh Muhly
Vascular Plant	*Packera serpenticola*	Serpentine Ragwort
Vascular Plant	*Parnassia grandifolia*	Large-leaved grass-of-parnassus
Vascular Plant	*Pedicularis lanceolata*	Swamp Lousewort
Vascular Plant	*Poa saltuensis*	Drooping Bluegrass
Vascular Plant	*Ranunculus fascicularis*	Early Buttercup
Vascular Plant	*Sporobolus heterolepis*	Prairie Dropseed
Vascular Plant	*Symphyotrichum rhiannon*	Rhiannon's Aster
Vascular Plant	*Thalictrum macrostylum*	Small-leaved Meadowrue

Taxa Group	Scientific Name	Common Name
Vascular Plant	*Thermopsis villosa*	Aaron's-rod
Vascular Plant	*Viola appalachiensis*	Appalachian Blue Violet

Table B. Indicators and Rating Definitions Used in the NPESE for the Serpentine Woodland Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent of system (area) burned at desired interval	<25	25-50	50-75	>75
Percent of system (area) with rock harvesting	>10	5-10	1-5	<1

Table C. Expected Outcomes, by Alternative and Indicator, for the Serpentine Woodland Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of system (area) burned at desired interval	75	80	80	80	80	90	90	80	80	90	90	80	80	90	90
Percent of system (area) with rock harvesting	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of system (area) burned at desired interval	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Percent of system (area) with rock	G	F	G	F	G	F	G	F	G	F	G	F	G	F	G

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
harvesting															

Woodland and Shale Slopes

Table A. Species Included in the Woodland and Shale Slope Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Bird	*Antrostomus carolinensis*	Chuck-will's-widow
Bird	*Antrostomus vociferus*	Whip-poor-will
Bird	*Bonasa umbellus*	Ruffed Grouse
Bird	*Catharys guttatus*	Hermit Thrush
Bird	*Colaptes auratus*	Northern Flicker
Bird	*Colinus virginianus*	Northern Bobwhite
Bird	*Contopus virens*	Eastern Wood-pewee
Bird	*Empidonax minimus*	Least Flycatcher
Bird	*Empidonax virescens*	Acadian Flycatcher
Bird	*Melanerpes erythrocephalus*	Red-headed Woodpecker
Bird	*Meleagris gallopavo*	Wild Turkey
Bird	*Mniotilta varia*	Black-and-white Warbler
Bird	*Parkesia motacilla*	Lousiana Waterthrush
Bird	*Scolopax minor*	American Woodcock
Bird	*Setophaga cerulea*	Cerulean Warbler
Bird	*Setophaga dominica*	Yellow-throated Warbler
Bird	*Spinus pinus*	Pine Siskin
Bird	*Vermivora chrysoptera*	Golden-winged Warbler
Bird	*Vermivora cyanoptera*	Blue-winged Warbler
Insect	*Autochton cellus*	Golden-banded Skipper
Insect	*Bombus affinis*	Rusty-patched Bumblebee
Insect	*Bombus bariabilis*	Variable Cuckoo Bumblebee
Insect	*Bombus pennsylvanicus*	American Bumblebee
Insect	*Bombus terricola*	Yellow-banded Bumblebee
Insect	*Bombus vagans*	Half Black Bumblebee

Taxa Group	Scientific Name	Common Name
Insect	*Celastrina nigra*	Dusky Azure
Insect	*Chlosyne gorgone*	Gorgone Checkerspot
Insect	*Danaus plexippus*	Monarch Butterfly
Insect	*Erora laeta*	Early Hairstreak
Insect	*Erynnis martialis*	Mottled Duskywing
Insect	*Euchloe olympia*	Olympia Marble
Insect	*Euphydryas phaeton*	Baltimore Checkerspot
Insect	*Papilio cresphontes*	Giant Swallowtail
Insect	*Phyciodes batesii maconensis*	Appalachian Tawny Crescent
Insect	*Polygonia faunus smythi*	Smyth's Green Comma
Insect	*Polygonia progne*	Gray Comma
Insect	*Pyrgus wyandot*	Appalachian Grizzled Skipper
Insect	*Satyrium caryaevorus*	Hickory Hairstreak
Insect	*Satyrium edwardsii*	Edwards' Hairstreak
Insect	*Speyeria aphrodite cullasaja*	Cullasaja Aphrodite Fritillary
Insect	*Speyeria diana*	Diana Fritillary
Insect	*Speyeria idalia*	Regal Fritillary
Mammal	*Cervus elaphus*	Elk
Mammal	*Corynorhinus townsendii virginianus*	Virginia Big-eared Bat
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Mustela nivalis*	Least Weasel
Mammal	*Myotis grisescens*	Gray Myotis (Gray Bat)
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Ursus americana*	Black Bear

Taxa Group	Scientific Name	Common Name
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces antracinus*	Coal Skink
Reptile	*Lampropeltis triangulatum triangulatum*	Eastern Milk Snake
Reptile	*Pituiphis melanoleucus*	Northern Pinesnake
Reptile	*Regina septemvittata*	Queen Snake
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Adlumia fungosa*	Climbing Fumatory
Vascular Plant	*Arabis patens*	Spreading Rockcress
Vascular Plant	*Cheilanthes alabamensis*	Alabama Lipfern
Vascular Plant	*Draba ramosissima*	Branching Draba
Vascular Plant	*Fleischmannia incarnata*	Pink Throughwort
Vascular Plant	*Heuchera pubescens*	Downy Alumroot
Vascular Plant	*Melica nitens*	Three-flowering Melic Grass
Vascular Plant	*Muhlenbergia glomerata*	Marsh Muhly
Vascular Plant	*Packera paupercula var. appalachiana*	Prairie Ragwort
Vascular Plant	*Ruellia purshiana*	Pursh's Wild Petunia
Vascular Plant	*Symphyotrichum oblongifolium*	Aromatic Aster
Vascular Plant	*Trichostema brachiatum*	Glade Bluecurls

Table B. Indicators and Rating Definitions Used in the NPESE for the Woodland and Shale Slope Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent of area burned at desired return interval	<25	25-50	50-75	>75
Percent sites with low coverage (<1%) of NNIS	<40	40-74	75-90	>90
Percent sites (area) affected by recreational traffic)	>33	21-33	10-20	<10

Table C. Expected Outcomes, by Alternative and Indicator, for the Woodland and Shale Slope Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		D2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of area burned at desired return interval	0	10	33	10	45	45	75	10	45	45	75	10	45	45	75
Percent sites with low coverage (<1%) of NNIS	100	100	100	94	94	88	88	94	94	88	88	94	94	88	88
Percent sites (area) affected by recreational traffic)	39	38	33	38	33	44	38	39	33	44	38	38	33	44	38

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of area burned at desired return interval	P	P	F	P	F	F	G	P	F	F	G	P	F	F	G
Percent sites with low coverage (<1%) of NNIS	VG	VG	VG	VG	VG	Food	G	VG	VG	G	G	VG	VG	G	G
Percent sites (area) affected by recreational traffic)	P	P	F	P	F	P	P	P	F	P	P	P	F	P	P

Montane Red Cedar-Hardwood Woodlands

Table A. Species Included in the Montane Red Cedar Hardwood Woodland Forest Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Bird	*Antrostomus carolinensis*	Chuck-will's-widow
Bird	*Antrostomus vociferus*	Whip-poor-will
Bird	*Catharus guttatus*	Hermit Thrush
Bird	*Contopus virens*	Eastern Wood-pewee
Bird	*Empidonax minimus*	Least Flycatcher
Bird	*Empidonax virescens*	Acadian Flycatcher
Bird	*Melanerpes erythrocephalus*	Red-headed Woodpecker
Bird	*Meleagris gallopavo*	Wild Turkey
Bird	*Mniotilta varia*	Black-and-white Warbler
Bird	*Scolopax minor*	American Woodcock
Bird	*Setophaga cerulea*	Cerulean Warbler
Bird	*Spinus pinus*	Pine Siskin
Bird	*Vermivora chrysoptera*	Golden-winged Warbler
Bird	*Vermivora cyanoptera*	Blue-winged Warbler
Insect	*Bombus affinis*	Rusty-patched Bumblebee
Insect	*Bombus terricola*	Yellow-banded Bumblebee
Insect	*Chlosyne gorgone*	Gorgone Checkerspot
Insect	*Erynnis martialis*	Mottled Duskywing
Insect	*Euchloe olympia*	Olympia Marble
Insect	*Melanoplus nubilus*	Nubile Short-wing Grasshopper
Insect	*Melanoplus serrulatus*	Serrulate Melanoplus
Insect	*Pyrgus wyandot*	Appalachian Grizzled Skipper
Insect	*Satyrium caryaevorus*	Hickory Hairstreak
Insect	*Satyrium edwardsii*	Edwards' Hairstreak
Insect	*Speyeria aphrodite cullasaja*	Cullasaja Aphrodite Fritillary

Taxa Group	Scientific Name	Common Name
Insect	*Speyeria diana*	Diana Fritillary
Insect	*Speyeria idalia*	Regal Fritillary
Mammal	*Cervus elaphus*	Elk
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Mustela nivelus*	Least Weasel
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Bat
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Ursus americanus*	Black Bear
Nonvascular Plant	*Macrocoma sulivantii*	Sullivant's Manned-moss
Nonvascular Plant	*Tortula ammonsiana*	Ammon's Tortula
Nonvascular Plant	*Tortula fargilis*	Fragile Tortula
Nonvascular Plant	*Usnea angulata*	Old Man's Beard
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces anthracinus*	Coal Skink
Reptile	*Pituophis melanoleucus*	Northern Pine Snake
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Berberis canadensis*	American Barberry
Vascular Plant	*Calamagrostis porteri ssp. porteri*	Porter's Reedgrass
Vascular Plant	*Doedecantheon meadia*	Shootingstar
Vascular Plant	*Packera millefolium*	Divided-leaf Ragwort
Vascular Plant	*Phemeranthus teretifolius*	Fameflower
Vascular Plant	*Pycnanthemum curvipes*	Stone Mountain-mint
Vascular Plant	*Rudbeckia triloba var. beadlei*	Chauncey's Coneflower
Vascular Plant	*Sedum glaucophyllum*	Cliff Stonecrop

Taxa Group	Scientific Name	Common Name
Vascular Plant	*Solidago simulans*	Granite Dome Goldenrod
Vascular Plant	*Woodsia appalachiana*	Appalachian Cliff Fern

Table B. Indicators and Rating Definitions Used in the NPESE for the Montane Red Cedar Hardwood Woodland Forest Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent sites (area) impacted by recreational traffic	>33	21-33	10-20	<10
Percent sites with low coverage (<1%) of NNIS	<40	40-74	75-90	>90

Table C. Expected Outcomes, by Alternative and Indicator, for the Montane Red Cedar Harwdood Woodland Forest Ecosystem Within the NPESE.

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites (area) impacted by recreational traffic	8	8	8	8	8	10	8	9	9	11	9	10	10	12	10
Percent sites with low coverage (<1%) of NNIS	78	78	78	77	78	76	76	76	77	75	75	75	76	74	74

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites (area) impacted by recreational traffic	VG	VG	VG	VG	VG	G	VG	VG	VG	G	VG	G	G	G	G
Percent sites with low coverage (<1%) of NNIS	G	G	G	G	G	G	G	G	G	G	G	G	G	F	F

Rock Outcrops

High Elevation Rocky Summit

Table A. Species Included in the High Elevation Rocky Summit Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander
Amphibian	*Plethodon yonahlossee*	Yonahlossee Salamander
Bird	*Aquila chrysaetos*	Golden Eagle
Bird	*Corvus corvax*	Common Raven
Bird	*Falco peregrinus*	Peregrine Falcon
Insect	*Bombas affinis*	Rusty-patched Bumblebee
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat (mountain subspecies)
Mammal	*Corynorhinus townsendii virginianus*	Virginia Big-eared Bat
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Microtus chrotorrhinus carolinensis*	Southern Rock Vole
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Bat (Little Brown Myotis)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Neotoma floridana haematoria*	Southern Appalachian Woodrat
Mammal	*Neotoma magister*	Alleghany Woodrat
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mollusk	*Fumonelix wheatleyi*	Cinnamon Covert
Mollusk	*Fumonelix wheatleyi clingmanicus*	Clingman Covert
Mollusk	*Paravitrea lamellidens*	Lamellate Supercoil
Mollusk	*Paravitrea placentula*	Glossy Supercoil
Mollusk	*Patera clarki nantahala*	Noonday Globe

Taxa Group	Scientific Name	Common Name
Mollusk	*Ventridens suppressus*	Flat Dome
Mollusk	*Vertigo bollesiana*	Delicate Vertigo
Nonvascular Plant	*Anastrophyllum saxicola*	A Liverwort
Nonvascular Plant	*Barbilophozia hatcheri*	A Liverwort
Nonvascular Plant	*Cephaloziella spinicaulis*	A Liverwort
Nonvascular Plant	*Cetaria arenaria*	Sand-loving Iceland Lichen
Nonvascular Plant	*Ephebe americana*	A Fructicose Lichen
Nonvascular Plant	*Gymnoderma lineare*	Rock Gnome Lichen
Nonvascular Plant	*Leptodontium flexifolium*	Pale-margined Leptodontium
Nonvascular Plant	*Melanelia stygia*	Foliose lichen
NonVascular Plant	*Plagiochila sharpii*	Sharp's Leafy Liverwort
Nonvascular Plant	*Rhytidium rugosum*	Golden Tundra-moss
Nonvascular Plant	*Sphagnum flavicomans*	Peatmoss
Nonvascular Plant	*Sphagnum subsecundum*	Orange Peatmoss
Nonvascular Plant	*Xanthoparmelia monticola*	Xanthoparmelia lichen
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces anthracinus*	Coal Skink
Vascular Plant	*Abies fraseri*	Fraser fir
Vascular Plant	*Agrostis mertensii*	Arctic Bentgrass
Vascular Plant	*Cystopteris fragilis*	Fragile Fern
Vascular Plant	*Geum radiatum*	Spreading Avens
Vascular Plant	*Houstonia montana*	Roan Mountain Bluet
Vascular Plant	*Juncus trifidus*	Highland Rush
Vascular Plant	*Minuartia groenlandica*	Mountain Sandwort
Vascular Plant	*Phlox subulata*	Moss Pink
Vascular Plant	*Solidago spithamaea*	Blue Ridge Goldenrod
Vascular Plant	*Stenanthium leimanthoides*	Pinebarren Death-camas
Vascular Plant	*Woodsia appalachiana*	Appalachian Cliff Fern

Table B. Indicators and Rating Definitions Used in the NPESE for the High Elevation Rocky Summit Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent sites with heavy recreational traffic	>33	21-33	10-20	<10
Percent sites with low coverage (<1%) of NNIS	1-40	40-74	75-90	>90

Table C. Expected Outcomes, by Alternative and Indicator, for the High Elevation Rocky Summit Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with heavy recreational traffic	25	25	25	25	24	27	25	25	22	26	23	25	24	27	25
Percent sites with low coverage (<1%) of NNIS	81	80	82	75	78	76	78	80	84	78	80	79	82	77	79

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with heavy recreational traffic	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Percent sites with low coverage (<1%) of NNIS	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

High Elevation Granitic Dome

Table A. Species Included in the High Elevation Granitic Dome Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander

Taxa Group	Scientific Name	Common Name
Amphibian	*Plethodon yonahlossee*	Yonahlossee Salamander
Bird	*Aquila chrysaetos*	Golden Eagle
Bird	*Corvus corvax*	Common Raven
Bird	*Falco peregrinus*	Peregrine Falcon
Mammal	*Mictotus chrotorrhinus carolinensis*	Southern Rock Vole
Mammal	*Neotoma floridana haematoria*	Southern Appalachian Woodrat
Mammal	*Neotoma magister*	Alleghany Woodrat
Mollusk	*Fumonelix wheatleyi*	Cinnamon Covert
Mollusk	*Fumonelix wheatleyi clingmanicus*	Clingman Covert
Mollusk	*Paravitrea lamellidens*	Lamellate Supercoil
Mollusk	*Paravitrea placentula*	Glossy Supercoil
Mollusk	*Ventridens suppressus*	Flat Dome
Mollusk	*Vertigo bollesiana*	Delicate Vertigo
Nonvascular Plant	*Campylopus atrovirens var. atrovirens*	Black Fish Hook Moss
Nonvascular Plant	*Ephebe americana*	A Fructicose Lichen
Nonvascular Plant	*Gymnoderma lineare*	Rock Gnome Lichen
Nonvascular Plant	*Physcia pseudospeciosa*	Rosette lichen
Nonvascular Plant	*Sphagnum tenellum*	Delicate Peatmoss
Nonvascular Plant	*Usnea angulata*	Old Man's Beard
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces anthracinus*	Coal Skink
Vascular Plant	*Crocanthemum bicknellii*	Plains Sunrose
Vascular Plant	*Lysimachia fraseri*	Fraser's Loosestrife
Vascular Plant	*Packera millefolium*	Divided-leaf Ragwort
Vascular Plant	*Robinia hispida var fertilis*	Fruitful Locust
Vascular Plant	*Robinia viscosa var. hartwigii*	Hartwig's Locust
Vascular Plant	*Robinia viscosa var. viscosa*	Clammy Locust
Vascular Plant	*Rudbeckia triloba var. beadlei*	Chauncey's Coneflower
Vascular Plant	*Solidago simulans*	Granite Dome Goldenrod

Table B. Indicators and Rating Definitions Used in the NPESE for the High Elevation Granitic Dome Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent sites with heavy recreational traffic	>33	21-33	10-20	<10
Percent sites with low coverage (<1%) of NNIS	1-40	40-74	75-90	>90

Table C. Expected Outcomes, by Alternative and Indicator, for the High Elevation Granitic Dome Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with heavy recreational traffic	33	33	25	33	25	33	25	33	25	33	25	33	25	33	25
Percent sites with low coverage (<1%) of NNIS	91	91	91	91	91	75	77	91	91	88	90	91	91	80	85

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with heavy recreational traffic	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Percent sites with low coverage (<1%) of NNIS	VG	VG	VG	VG	VG	G	G	VG	VG	G	G	VG	VG	G	G

Low Elevation Rocky Summit

Table A. Species Included in the Low Elevation Rocky Summit Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander
Amphibian	*Plethodon yonahlossee*	Yonahlossee Salamander
Bird	*Aquila chrysaetos*	Golden Eagle
Bird	*Corvus corvax*	Common Raven
Bird	*Falco peregrinus*	Peregrine Falcon
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Microtus chrotorrhinus carolinensis*	Southern Rock Vole
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Bat
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Neotoma floridana haematoria*	Southern Appalachian Woodrat
Mammal	*Neotoma magister*	Alleghany Woodrat
Mammal	*Perimyotis subflavus*	Tri-colored Bat
NonVascular Plant	*Diplophyllum obtusatum*	Liverwort
NonVascular Plant	*Macrocoma sullivantii*	Sullivant's manned-moss
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces anthracinus*	Coal Skink
Vascular Plant	*Arabis patens*	Spreading rockcress
Vascular Plant	*Asplenium bradleyi*	Bradley's Spleenwort
Vascular Plant	*Berberis canadensis*	American barberry
Vascular Plant	*Fothergilla major*	Large Witch-alder
Vascular Plant	*Hudsonia montana*	Mountain Golden-heather
Vascular Plant	*Liatris helleri*	Heller's Blazing-star
Vascular Plant	*Liatris turgida*	Shale-barren Blazing Star

Taxa Group	Scientific Name	Common Name
Vascular Plant	*Melica nitens*	Three-flowered melic grass
Vascular Plant	*Minuartia groelandica*	Mountain Sandwort
Vascular Plant	*Packera millefolium*	Divided-leaf Ragwort
Vascular Plant	*Phemeranthus teretifolius*	Fameflower
Vascular Plant	*Robinia hispida var kelseyi*	Kelsey's locust
Vascular Plant	*Sedum glaucophyllum*	Cliff Stonecrop
Vascular Plant	*Solidago simulans*	Granite Dome Goldenrod
Vascular Plant	*Stenanthium leimanthoides*	Pinebarren Death-camas
Vascular Plant	*Tsuga caroliniana*	Carolina Hemlock
Vascular Plant	*Woodsia appalachiana*	Appalachian Cliff Fern

Table B. Indicators and Rating Definitions Used in the NPESE for the Low Elevation Rocky Summit Ecosystem

Indicator	P	F	G	VG
Percent sites with heavy recreational traffic	>33	21-33	10-20	<10
Percent sites with low coverage (<1%) of NNIS	<40	40-74	75-90	>90
Percent burned at desired return interval	<25	25-50	50-75	>75

Table C. Expected Outcomes, by Alternative and Indicator, for the Low Elevation Rocky Summit Ecosystem Within the NPESE

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with heavy recreational traffic	71	71	60	70	50	71	55	71	60	75	60	71	60	75	60
Percent sites with low coverage	46	46	50	46	52	44	50	44	48	42	46	44	48	42	46

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
(<1%) of NNIS															
Percent burned at desired return interval	12	12	12	12	25	20	55	12	25	20	55	12	25	20	55

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with heavy recreational traffic	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Percent sites with low coverage (<1%) of NNIS	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Percent burned at desired return interval	P	P	P	P	F	P	G	P	F	P	G	P	F	P	G

Low Elevation Granitic Dome

Table A. Species Included in the Low Elevation Granitic Dome Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander
Amphibian	*Plethodon yonahlossee*	Yonahlossee Salamander
Bird	*Aquila chrysaetos*	Golden Eagle
Bird	*Corvus corvax*	Common Raven
Bird	*Falco peregrinus*	Peregrine Falcon
Mammal	*Microtus chrotorrhinus carolinensis*	Southern Rock Vole
Mammal	*Neotoma floridana haematoria*	Southern Appalachian Woodrat
Mammal	*Neotoma magister*	Alleghany Woodrat
NonVascular Plant	*Macrocoma sullivantii*	Sullivant's manned-moss
NonVascular Plant	*Orthodontium pellucens*	Translucent Orthodontium
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces anthracinus*	Coal Skink
Snail	*Fumonelix wheatleyi*	Cinnamon Covert
Snail	*Fumonelix wheatleyi clingmanicus*	Clingman Covert
Snail	*Paravitrea lamellidens*	Lamellate Supercoil
Snail	*Paravitrea placentula*	Glossy Supercoil
Snail	*Ventridens suppressus*	Flat Dome
Snail	*Vertigo bollesiana*	Delicate Vertigo
Vascular Plant	*Croton monanthogynus*	Prarie-tea Croton
Vascular Plant	*Packera millefolium*	Divided-leaf Ragwort
Vascular Plant	*Phemeranthus teretifolius*	Fameflower
Vascular Plant	*Phlox subulata*	Moss Pink
Vascular Plant	*Pycnanthemum curvipes*	Stone Mountain-mint
Vascular Plant	*Solidago simulans*	Granite Dome Goldenrod

Table B. Indicators and Rating Definitions Used in the NPESE for the Low Elevation Granitic Dome Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent sites with heavy recreational traffic	>33	21-33	10-20	<10
Percent sites with low coverage (<1%) of NNIS	<40	40-74	75-90	>90

Table C. Expected Outcomes, by Alternative and Indicator, for the Low Elevation Granitic Dome Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with heavy recreational traffic	17	17	17	17	17	23	23	17	17	20	20	17	17	25	25
Percent sites with low coverage (<1%) of NNIS	66	66	66	66	66	50	66	66	83	66	83	66	66	50	66

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with heavy recreational traffic	G	G	G	G	G	F	F	G	G	G	G	G	G	F	F
Percent sites with low coverage (<1%) of NNIS	F	F	F	F	F	F	F	F	G	F	G	F	F	F	F

Montane Cliffs: Acidic

Table A. Species Included in the Montane Acidic Cliffs Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander
Amphibian	*Plethodon yonahlossee*	Yonahlossee Salamander
Bird	*Corvus corvax*	Common Raven
Bird	*Falco peregrinus*	Peregrine Falcon
Mammal	*Microtus chrotorrhinus carolinensis*	Southern Rock Vole
Mammal	*Neotoma floridana haematoria*	Southern Appalachian Woodrat
Mammal	*Neotoma magister*	Allegheny Woodrat
NonVascular Plant	*Diplophyllum obtusatum*	Liverwort
NonVascular Plant	*Gymnoderma lineare*	Rock Gnome Lichen
NonVascular Plant	*Leparia lanata*	Appalachian Dust Bunnies
Nonvascular plant	*Scopelophila ligulata*	Copper Moss
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces anthracinus*	Coal Skink
Vascular Plant	*Adlumia fungosa*	Climbing fumatory
Vascular Plant	*Asplenium bradleyi*	Bradley's Spleenwort
Vascular Plant	*Asplenium monanthes*	Single-Sorus Spleenwort
Vascular Plant	*Asplenium pinnatifidum*	Lobed Spleenwort
Vascular Plant	*Cheilanthes alabamensis*	Alabama Lipfern
Vascular Plant	*Micranthes caroliniana*	Carolina Saxifrage
Vascular Plant	*Woodsia appalachiana*	Appalachian Cliff Fern

Table B. Indicators and Rating Definitions Used in the NPESE for the Montane Acidic Cliffs Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent sites with heavy recreational traffic	>45	30-45	15-29	<15
Percent sites with low coverage (<1%) of NNIS	1-40	40-74	75-90	>90

Table C. Expected Outcomes, by Alternative and Indicator, for the Montane Acidic Cliffs Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with heavy recreational traffic	20	20	20	23	23	25	25	21	21	22	22	22	22	23	23
Percent sites with low coverage (<1%) of NNIS	75	75	80	70	73	66	69	74	77	72	75	72	75	69	72

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with heavy recreational traffic	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Percent sites with low coverage (<1%) of NNIS	G	G	G	F	F	F	F	F	G	F	G	F	G	F	F

Montane Cliffs: Calcareous

Table A. Species Included in the Montane Calcareous Cliffs Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Plethodon amplus*	Blue Ridge Gray-cheeked Salamander
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander
Amphibian	*Plethodon meridianus*	South Mountain Gray-cheeked Salamander
Amphibian	*Plethodon yonahlossee*	Yonahlossee Salamander

Taxa Group	Scientific Name	Common Name
Bird	*Corvus corvax*	Common Raven
Bird	*Falco peregrinus*	Peregrine Falcon
Mammal	*Neotoma floridana haemetoria*	Southern Appalachian Woodrat
Mammal	*Neotoma magister*	Allegheny Woodrat
NonVascular Plant	*Encalypta procera*	Extinguisher Moss
NonVascular Plant	*Entodon compressus*	Flattened Entodon
NonVascular Plant	*Leptodontium flexifolium*	Pale-margined Leptodontium
NonVascular Plant	*Orthodontium pellucens*	Translucent Orthodontium
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces anthracinus*	Coal Skink
Vascular Plant	*Adlumia fungosa*	Climbing fumatory
Vascular Plant	*Arabis patens*	Spreading rockcress
Vascular Plant	*Asplenium ruta-muraria*	Wall-rue
Vascular Plant	*Berberis canadensis*	American barberry
Vascular Plant	*Cheilanthes alabamensis*	Alabama Lipfern
Vascular Plant	*Croton monanthogynus*	Prarie-tea Croton
Vascular Plant	*Deschampsia cespitosa ssp. glauca*	Tufted Hairgrass
Vascular Plant	*Dodecatheon meadia*	Shootingstar
Vascular Plant	*Draba ramosissima*	Branching Draba
Vascular Plant	*Heuchera longiflora*	Long-Flower Alumroot
Vascular Plant	*Micranthes caroliniana*	Carolina Saxifrage
Vascular Plant	*Muhlenbergia glomerata*	Spiked muhly
Vascular Plant	*Phlox subulata*	Moss Pink
Vascular Plant	*Pycnanthemum curvipes*	Stone Mountain-mint
Vascular Plant	*Rudbeckia triloba var. beadlei*	Chauncey's Coneflower
Vascular Plant	*Symphyotrichum oblongifolium*	Aromatic Aster
Vascular Plant	*Trichostema brachiatum*	Glade Bluecurls

Table B. Indicators and Rating Definitions Used in the NPESE for the Montane Calcareous Cliffs Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent sites with heavy recreational traffic	>45	30-45	15-29	<15
Percent sites with low coverage (<1%) of NNIS	<40	40-74	75-90	>90

Table C. Expected Outcomes, by Alternative and Indicator, for the Montane Calcareous Cliffs Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with heavy recreational traffic	41	41	41	43	43	44	44	42	42	43	43	43	43	44	44
Percent sites with low coverage (<1%) of NNIS	90	90	90	87	90	85	88	89	90	87	90	87	90	85	88

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with heavy recreational traffic	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Percent sites with low coverage (<1%) of NNIS	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

Wet

Southern Appalachian Bogs

Table A. Species Included in the Southern Appalachian Bog Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Ambystoma maculatum*	Spotted Salamander
Amphibian	*Ambystoma talpoideum*	Mole Salamander
Amphibian	*Desmognathus aneneus*	Seepage Salamander
Amphibian	*Eurycea bislineata*	Two-lined Salamander
Amphibian	*Eurycea longicauda*	Longtail Salamander
Amphibian	*Hemidactylium scutatum*	Four-toed Salamander
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog
Bird	*Empidonax alnorum*	Alder Flycatcher
Bird	*Empidonax minimus*	Least Flycatcher
Bird	*Empidonax traillii*	Willow Flycatcher
Insect	*Bombas pennsylvanicus0*	American Bumblebee
Insect	*Bombus affinis*	Rusty-patched Bumblebee
Insect	*Bombus bariabilis*	Vaiable Cuckoo Bumblebee
Insect	*Bombus terricola*	Yellow-banded Bumblebee
Insect	*Bombus vagans*	Half Back Bumblebee
Nonvascular Plant	*Docranum undulatum*	Bog Broom-moss
Nonvascular Plant	*Sphagnum angustifolium*	Narrowleaf Peatmoss
Nonvascular Plant	*Sphagnum capillifolium*	Northern Peatmoss
Nonvascular Plant	*Sphagnum fallax*	Pretty peatmoss
Nonvascular Plant	*Sphagnum flexuosum*	Flexuous Peatmoss
Nonvascular Plant	*Sphagnum fuscum*	Brown Peatmoss
Nonvascular Plant	*Sphagnum russowii*	Russow's peatmoss
Nonvascular Plant	*Sphagnum subsecundum*	Orange Peatmoss
Reptile	*Glyptemys muhlenbergii*	Bog Turtle

Taxa Group	Scientific Name	Common Name
Reptile	*Lampropeltis trianglatum triangulatum*	Eastern Milk Snake
Reptile	*Regina septemvittata*	Queen Snake
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Arethusa bulbosa*	Dragon's Mouth
Vascular Plant	*Arisaema triphyllum ssp. stewardsonii*	Bog Jack-in-the-Pulpit
Vascular Plant	*Botrychium oneidense*	Blunt-lobed grape fern
Vascular Plant	*Campanula aparinoides var. aparinoides*	Marsh bellflower
Vascular Plant	*Carex baileyi*	Bailey's Sedge
Vascular Plant	*Carex oligosperma*	Few-seeded Sedge
Vascular Plant	*Carex projecta*	Necklace Sedge
Vascular Plant	*Carex utriculata*	Beaked Sedge
Vascular Plant	*Chelone cuthbertii*	Cuthbert's Turtlehead
Vascular Plant	*Chelone obliqua var. erwinae*	Mountin Purple Turtlehead
Vascular Plant	*Dalibarda repens*	Robin Runaway
Vascular Plant	*Epilobium ciliatum ssp. ciliatum*	Hair Willow-herb
Vascular Plant	*Filipendula rubra*	Queen-of-the-Prairie
Vascular Plant	*Helenium brevifolium*	Littleleaf Sneezeweed
Vascular Plant	*Helonias bullata*	Swamp Pink
Vascular Plant	*Lycopodiella inundata*	Northern Bog Clubmoss
Vascular Plant	*Oenothera perennis*	Perennial Sundrops
Vascular Plant	*Parnassia grandifolia*	Large-leaved grass-of-parnassus
Vascular Plant	*Pedicularis lanceolata*	Swamp Lousewort
Vascular Plant	*Platanthera flava var. herbiola*	Turbercled Rein-orchid
Vascular Plant	*Platanthera grandiflora*	Large Purple Fringed Orchid
Vascular Plant	*Platanthera integrilabia*	White Fringeless Orchid
Vascular Plant	*Platanthera peramoena*	Purple Fringeless Orchid
Vascular Plant	*Rhododendron vaseyi*	Pink-shell Azalea
Vascular Plant	*Rhynchospora alba*	White Beakrush

Taxa Group	Scientific Name	Common Name
Vascular Plant	*Sagittaria fasciculata*	Bunched Arrowhead
Vascular Plant	*Sarracenia jonesii*	Mountain Sweet Pitcher Plant
Vascular Plant	*Sarracenia purpurea var. montana*	Southern Appalachian Purple Pitcher Plant
Vascular Plant	*Solidago uliginosa var. uliginosa*	Bog Goldenrod
Vascular Plant	*Triantha glutinosa*	Sticky Bog Asphodel
Vascular Plant	*Vaccinium macrocarpon*	Large Cranberry

Table B. Indicators and Rating Definitions Used in the NPESE for the Southern Appalachian Bog Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent of bogs with open canopy conditions	<50	50-74	75-90	>90
Percent sites with low coverage (<3%) of NNIS	<40	40-74	75-90	>90
Percent of bogs (area) affected by trampling	>33	21-33	10-20	<10

Table C. Expected Outcomes, by Alternative and Indicator, for the Southern Appalachian Bog Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of bogs with open canopy conditions	59	69	75	78	100	78	100	78	100	78	100	78	100	78	100
Percent sites with low coverage (<3%) of NNIS	75	75	80	73	77	70	75	75	80	73	77	73	77	70	75
Percent of bogs (area) affected by	13	13	13	19	19	24	19	13	13	19	19	19	19	24	19

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
trampling															

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of bogs with open canopy conditions	F	F	G	G	VG	G	VG	G	VG	G	VG	G	VG	G	VG
Percent sites with low coverage (<3%) of NNIS	G	G	G	F	G	F	G	F	G	F	G	F	G	F	G
Percent of bogs (area) affected by trampling	G	G	G	G	G	F	G	G	G	G	G	G	G	F	G

Swamp Forest-Bog Complex

Table A. Species Included in the Swamp Forest Bog Complex Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Ambystoma maculatum*	Spotted Salamander
Amphibian	*Ambystoma talpoideum*	Mole Salamander
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander
Amphibian	*Desmognathus aneneus*	Seepage Salamander
Amphibian	*Eurycea bislineata*	Two-lined Salamander

Taxa Group	Scientific Name	Common Name
Amphibian	*Eurycea longicauda*	Longtail Salamander
Amphibian	*Hemidactylium scutatum*	Four-toed Salamander
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog
Bird	*Certhia americana*	Brown Creeper
Bird	*Melanerpes erythrocephalus*	Red-headed Woodpecker
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Bat
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Reptile	*Glyptemys muhlenbergii*	Bog Turtle
Reptile	*Lampropeltis triangulatum triangulatum*	Eastern Milk Snake
Reptile	*Regina septemvittata*	Queen Snake
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Arisaema triphyllum spp. stewardsii*	Bog Jack-in-the-pulpit
Vascular Plant	*Carex utriculata*	Beaked Sedge
Vascular Plant	*Chelone cuthbertii*	Cuthbert's Turtlehead
Vascular Plant	*Chelone obliqua var. erwinae*	Mountain Purple Turtlehead
Vascular Plant	*Dalibarda repens*	Robin Runaway
Vascular Plant	*Helonias bullata*	Swamp Pink
Vascular Plant	*Platanthera flava var. herbiola*	Turbercled Rein-orchid
Vascular Plant	*Platanthera peramoena*	Purple Fringeless Orchid
Vascular Plant	*Rhododendron vaseyi*	Pink-shell Azalea
Vascular Plant	*Sagittaria fasciculata*	Bunched Arrowhead
Vascular Plant	*Sarracenia purpurea var. montana*	Southern Appalachian Purple Pitcher Plant

Table B. Indicators and Rating Definitions Used in the NPESE for the Swamp Forest Bog Complex Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent sites with low coverage (<1%) of NNIS	<40	41-74	75-90	>90

Table C. Expected Outcomes, by Alternative and Indicator, for the Swamp Forest Bog Complex Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with low coverage (<1%) of NNIS	81	81	81	78	78	75	75	80	80	78	78	78	78	75	75

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with low coverage (<1%) of NNIS	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

Spray Cliffs

Table A. Species Included in the Spray Cliff Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Aneides aeneus*	Green Salamander
Amphibian	*Desmognathus imitator*	Imitator Salamander
Amphibian	*Desmognathus imitator pop. 1*	Waterrock Knob Salamander
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander

Taxa Group	Scientific Name	Common Name
Nonvascular Plant	*Acrobolbus ciliatus*	A Liverwort
Nonvascular Plant	*Bartramidula wilsonii*	Dwarf Apple Moss
Nonvascular Plant	*Bryocrumia vivicolor*	Gorge Moss
Nonvascular Plant	*Bryoxiphium norvegicum*	Sword Moss
Nonvascular Plant	*Bryum riparium*	Riverside Bryum
Nonvascular Plant	*Cirriphyllum piliferum*	a moss
Nonvascular Plant	*Dichodontium pellucidum*	a moss
Nonvascular Plant	*Entodon sullivantii*	Sullivant's Entodon
Nonvascular Plant	*Gymnoderma lineare*	Rock Gnome Lichen
Nonvascular Plant	*Homalia trichomanoides*	Lime Homalia
Nonvascular Plant	*Lejeunea blomquistii*	A Liverwort
Nonvascular Plant	*Lophocolea appalachiana*	A Liverwort
Nonvascular Plant	*Mylia tayorii*	A Liverwort
Nonvascular Plant	*Plagiochila echinata*	A Liverwort
Nonvascular Plant	*Plagiochila sullivantii var. spinigera*	A Liverwort
Nonvascular Plant	*Plagiochila sullivantii var. sullivantii*	Sullivant's Leafy Liverwort
Nonvascular Plant	*Plagiochila virginica var. caroliniana*	A Liverwort
Nonvascular Plant	*Platyhypnidium pringlei*	Pringles Water Feather Moss
Nonvascular Plant	*Porella japonica ssp. appalachiana*	A Liverwort
Nonvascular Plant	*Radula voluta*	A Liverwort
Nonvascular Plant	*Sphagnum flavicomans*	Peatmoss
Nonvascular Plant	*Sphagnum pylaesii*	Simple Peatmoss
Nonvascular Plant	*Sphagnum squarrosum*	Squarrose Peatmoss
Nonvascular Plant	*Sphagnum subsecundum*	Orange Peatmoss
Nonvascular Plant	*Taxiphyllum alternans*	Japanese Yew-moss
Nonvascular Plant	*Warnstorfia fluitans*	Floating Sickle-moss
Vascular Plant	*Asplenium monanthes*	Single-sorus Spleenwort
Vascular Plant	*Huperzia porophila*	Rock Fir Clubmoss
Vascular Plant	*Hymenophyllum tayloriae*	Gorge Filmy Fern

Taxa Group	Scientific Name	Common Name
Vascular Plant	*Micropolypodium nimbatum*	West Indian Dwarf Polypody
Vascular Plant	*Phegopteris connectilis*	Northern Beech Fern
Vascular Plant	*Spartina pectinata*	Freshwater Cordgrass
Vascular Plant	*Trichomanes boschianum*	Appalachian Filmy-fern
Vascular Plant	*Trichomanes petersii*	Dwarf Filmy-fern

Table B. Indicators and Rating Definitions Used in the NPESE for the Spray Cliff Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent sites with low coverage (<1%) of NNIS	>90	75-90	40-74	<40
Percent of spray cliffs (area) affected by trampling	>33	21-33	10-20	<10

Table C. Expected Outcomes, by Alternative and Indicator, for the Spray Cliff Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with low coverage (<1%) of NNIS	80	80	80	75	77	70	75	77	80	74	80	75	77	70	75
Percent of spray cliffs (area) affected by trampling	28	28	28	25	28	22	25	26	29	23	26	25	28	22	25

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with low coverage (<1%) of NNIS	G	G	G	G	G	F	G	G	G	F	G	G	G	F	G
Percent of spray cliffs (area) affected by trampling	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F

Seeps

Table A. Species Included in the Seeps Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Ambystoma maculatum*	Spotted Salamander
Amphibian	*Ambystoma talpoideum*	Mole Salamander
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander
Amphibian	*Desmognathus aneneus*	Seepage Salamander
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander
Amphibian	*Desmognathus imitator*	Imitator Salamander
Amphibian	*Desmognathus imitator pop. 1*	Waterrock Knob Salamander
Amphibian	*Desmognathus organi*	Northern Pigmy Salamander
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander
Amphibian	*Desmognathus wrighti*	Southern Pygmy Salamander
Amphibian	*Eurycea bislineata*	Two-lined Salamander
Amphibian	*Eurycea longicauda*	Longtail Salamander
Amphibian	*Hemidactylium scutatum*	Four-toed Salamander
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog

Taxa Group	Scientific Name	Common Name
Arachnid	*Microhexura montivaga*	Spruce Fir Moss Spider
Crustacean	*Cambarus carolinus*	Red Burrowing Crayfish
Crustacean	*Skistodiaptomus carolinensis*	Carolina Skistodiaptomus
Crustacean	*Stygobromus carolinensis*	Yancey Sideswimmer (Carolina Seep Scud)
Mamma	*Sorex palustris punctulatus*	Southern Water Shrew
Mollusk	*Carychium clappi*	Appalachian Thorn
Mollusk	*Carychium exiguum*	Obese Thorn
Mollusk	*Carychium nannodes*	File Thorn
Mollusk	*Mesodon mitchellianus*	Sealed Globelet
Mollusk	*Patera clarki clarki*	Dwarf Proud Globe
Mollusk	*Patera clarki nantahala*	Noonday Globe
Mollusk	*Pilsbryna vanattai*	Honey Glyph
Nonvascular Plant	*Dicranum undulatum*	Bog Broom-Moss
Nonvascular Plant	*Sphagnum flavicomans*	A Peatmoss
Nonvascular Plant	*Sphagnum squarrosum*	Squarrose Peatmoss
Reptile	*Eumeces anthracinus*	Coal Skink
Reptile	*Terrapene carolina*	Eastern Box Turtle
Vascular Plant	*Aconitum reclinatum*	White Monkshood
Vascular Plant	*Bromus ciliatus*	Fringed Brome
Vascular Plant	*Calamagrostis canadensis var. canadensis*	Canada Reedgrass
Vascular Plant	*Cardamine clematitis*	Mountain Bittercress
Vascular Plant	*Cardamine rotundifolia*	Mountain Watercress
Vascular Plant	*Carex baileyi*	Bailey's Sedge
Vascular Plant	*Carex projecta*	Necklace Sedge
Vascular Plant	*Chelone obliqua var. erwinia*	Mountain Purple Turtlehead
Vascular Plant	*Chelone obliqua var. obliqua*	Red Turtlehead
Vascular Plant	*Epilobium ciliatum ssp. ciliatum*	Hair Willow-herb
Vascular Plant	*Gentiana saponaria var. latidens*	Balsam Gentian
Vascular Plant	*Geum geniculatum*	Bent Avens

Taxa Group	Scientific Name	Common Name
Vascular Plant	*Glyceria laxa*	Lax Mannagrass
Vascular Plant	*Glyceria nubigena*	Smoky Mountain Mannagrass
Vascular Plant	*Helenium brevifolium*	Little Sneezeweed
Vascular Plant	*Lilium grayi*	Gray's Lily
Vascular Plant	*Liparis loeselii*	Loesel's twayblade
Vascular Plant	*Lonicera canadensis*	American fly-honeysuckle
Vascular Plant	*Lycopodiella inundata*	Northern Bog Clubmoss
Vascular Plant	*Parnassia grandifolia*	Large-leaved grass-of-parnassus
Vascular Plant	*Pedicularis lanceolata*	Swamp Lousewort
Vascular Plant	*Platanthera grandiflora*	Large Purple Fringed Orchid
Vascular Plant	*Platanthera peramoena*	Purple Fringeless Orchid
Vascular Plant	*Rhododendron vaseyi*	Pink-shell Azalea
Vascular Plant	*Solidago uliginosa var. uliginosa*	Bog Goldenrod
Vascular Plant	*Streptopus amplexifolius*	White Mandarin
Vascular Plant	*Triantha glutinosa*	Sticky Bog Asphodel
Vascular Plant	*Veronica americana*	American Speedwell
Vascular Plant	*Vaccinium macrocarpon*	Cranberry

Table B. Indicators and Rating Definitions Used in the NPESE for the Seep Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent sites with low coverage (<1%) of NNIS	<40	40-74	75-90	>90

Table C. Expected Outcomes, by Alternative and Indicator, for the Seep Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with low coverage (<1%) of NNIS	69	69	69	64	64	63	63	67	67	66	66	66	66	64	64

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with low coverage (<1%) of NNIS	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F

Upland Vernal Pools

Table A. Species Included in the Upland Vernal Pool Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Ambystoma maculatum*	Spotted Salamander
Amphibian	*Ambystoma talpoideum*	Mole Salamander
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander
Amphibian	*Desmognathus aneneus*	Seepage Salamander
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog
Bird	*Setophaga americana*	Northern Parula
Bird	*Setophaga dominica*	Yellow-throated Warbler
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat (mountain subspecies)
Mammal	*Corynorhinus townsendii virginianus*	Virginia Big-eared Bat
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Myotis grisescens*	Gray Myotis (Gray Bat)
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Nonvascular Plant	*Sphagnum pylaesii*	Simple Peatmoss
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake

Table B. Indicators and Rating Definitions Used in the NPESE for the Upland Vernal Pool Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent sites within 0.25 miles of fish-bearing waterbody	>67	33-67	<33	0
Percent sites with low coverage (<1%) of NNIS	<40	41-74	75-90	>90

Table C. Expected Outcomes, by Alternative and Indicator, for the Upland Vernal Pool Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites within 0.25 miles of fish-bearing waterbody	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent sites with low coverage (<1%) of NNIS	66	66	100	66	100	33	66	66	100	33	66	66	100	33	66

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites within 0.25 miles of fish-bearing waterbody	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG
Percent sites with low coverage (<1%) of NNIS	F	F	VG	F	VG	P	F	F	VG	P	F	F	VG	P	F

Floodplain Pools

Table A. Species Included in the Floodplain Pool Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Ambystoma talpoideum*	Mole Salamander
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander
Amphibian	*Desmognathus aneneus*	Seepage Salamander
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander
Amphibian	*Desmognathus imitator*	Imitator Salamander
Amphibian	*Desmognathus imitator pop. 1*	Waterrock Knob Salamander
Amphibian	*Desmognathus organi*	Northern Pygmy Salamander
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander
Amphibian	*Desmognathus wrighti*	Southern Pygmy Salamander
Amphibian	*Eurycea bislineata*	Two-lined Salamander
Amphibian	*Eurycea junaluska*	Junaluska Salamander
Amphibian	*Eurycea longicauda*	Longtail Salamander
Amphibian	*Hemidactylium scutatum*	Four-toed Salamander

Taxa Group	Scientific Name	Common Name
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog
Bird	*Coccyzus erythropthalmus*	Black-billed Cuckoo
Bird	*Empidonax alnorum*	Alder Flycatcher
Bird	*Empidonax traillii*	Willow Flycatcher
Bird	*Empidonax virescens*	Acadian Flycatcher
Bird	*Geothlypis formosa*	Kentucky Warbler
Bird	*Haliaeetus leucocephalus*	Bald Eagle
Bird	*Limnothlypis swainsonii*	Swainson's Warbler
Bird	*Piranga olivacea*	Scarlet Tanager
Bird	*Scolopax minor*	American Woodcock
Bird	*Setophaga citrina*	Hooded Warbler
Bird	*Setophaga dominica*	Yellow-throated Warbler
Bird	*Vireo flavifrons*	Yellow-throated Vireo
Bird	*Vireo gilvus*	Warbling vireo
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-earred Bat
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Mustela nivalis*	Least Weasel
Mammal	*Myotis grisescens*	Gray Bat
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Bat
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Sorex palustris punctulatus*	Southern Water Shrew
Mammal	*Ursus americanus*	Black Bear
Reptile	*Apalone spinifera spinifera*	Eastern Spiny Softshell
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Graptemys geographica*	Common Map Turtle

Taxa Group	Scientific Name	Common Name
Reptile	*Regina septemvittata*	Queen Snake
Reptile	*Sternotherus minor*	Loggerhead Musk Turtle
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Trachemys scripta troostii*	Cumberland Slider
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Arisaema triphyllum ssp. stewardsonii*	Bog Jack-in-the-pulpit

Table B. Indicators and Rating Definitions Used in the NPESE for the Floodplain Pool Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent of sites experiencing at least 1 flood annually	0	1-49	50-99	100
Percent sites with low coverage (<1%) of NNIS	<40	40-74	75-90	>90

Table C. Expected Outcomes, by Alternative and Indicator, for the Floodplain Pool Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of sites experiencing at least 1 flood annually	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Percent sites with low coverage (<1%) of NNIS	100	100	100	100	100	75	75	100	100	75	75	100	100	75	75

Indicator Rating		A		B1		B2		C1		C2		D1		D2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of sites experiencing at least 1 flood annually	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG
Percent sites with low coverage (<1%) of NNIS	VG	VG	VG	VG	VG	G	G	VG	VG	G	G	VG	VG	G	G

Rocky Bar and Shore

Table A. Species Included in the Rocky Bar and Shore Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Ambystoma talpoideum*	Mole Salamander
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander
Amphibian	*Desmognathus aneneus*	Seepage Salamander
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander
Amphibian	*Desmognathus imitator*	Imitator Salamander
Amphibian	*Desmognathus organi*	Northern Pygmy Salamander
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander
Amphibian	*Desmognathus wrighti*	Southern Pygmy Salamander
Amphibian	*Eurycea bislineata*	Two-lined Salamander
Amphibian	*Eurycea junaluska*	Junaluska Salamander
Amphibian	*Eurycea longicauda*	Longtail Salamander
Amphibian	*Hemidactylium scutatum*	Four-toed Salamander
Amphibian	*Pseudacris brachyphona*	Mountain Chorus Frog
Bird	*Coccyzus erythropthalmus*	Black-billed Cuckoo
Bird	*Empidonax alnorum*	Alder Flycatcher
Bird	*Empidonax trailii*	Willow Flycatcher

Taxa Group	Scientific Name	Common Name
Bird	*Empidonax virescens*	Acadian Flycatcher
Bird	*Geothlypis formosa*	Kentucky Warbler
Bird	*Haliaeetus leucocephalus*	Bald Eagle
Bird	*Limnothlypis swainsonii*	Swainson's Warbler
Bird	*Parkesia motacilla*	Louisiana Waterthrush
Bird	*Piranga olivacea*	Scarlet Tanager
Bird	*Scolopax minor*	American Woodcock
Bird	*Setophaga cerulea*	Cerulean Warbler
Bird	*Setophaga dominica*	Yellow-throated Warbler
Bird	*Vireo flavifrons*	Yellow-throated Vireo
Bird	*Vireo gilvus*	Warbling Vireo
Mammal	*Cervus elaphus*	Elk
Mammal	*Corynorhynus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Mustela nivalis*	Least Weasel
Mammal	*Myotis grisescens*	Gray Bat
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Bat
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Peromyitos subflavus*	Tri-colored Bat
Mammal	*Sorex palustris punctulatus*	Southern Water Shrew
Reptile	*Apalone spinifera spinifera*	Eastern Spiny Softshell
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Graptemys geographica*	Common Map Turtle
Reptile	*Ophisaurus attenuatus longicaudus*	Eastern Slender Glass Lizard
Reptile	*Regina septemvittata*	Queen Snake
Reptile	*Sternotherus minor*	Loggerhead Musk Turtle

Taxa Group	Scientific Name	Common Name
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Trachemys scripta troostii*	Cumberland Slider
Reptile	*Viriginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Lysimachia fraseri*	Fraser's Loosestrife
Vascular Plant	*Platanthera peramoena*	Purple Fringless Orchid
Vascular Plant	*Spiraea virginiana*	Virginia Spiraea

Table B. Indicators and Rating Definitions Used in the NPESE for the Rocky Bar and Shore Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent sites with low coverage (<1%) of NNIS	<40	40-74	75-90	>90
Percent sites (acres) experiencing frequent flooding	0	1-49	50-99	100

Table C. Expected Outcomes, by Alternative and Indicator, for the Rocky Bar and Shore Ecosystem Within the NPESE

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with low coverage (<1%) of NNIS	80	83	85	83	85	75	80	83	85	75	80	83	85	75	80
Percent sites (acres) experiencing frequent flooding	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with low coverage (<1%) of NNIS	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Percent sites (acres) experiencing frequent flooding	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG

Forested

Calcareous Oak-Walnut Forest

Table A. Species Included in the Calcareous Oak Walnut Forest Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Ambystoma talpoideum*	Mole Salamander
Amphibian	*Ambystoma tigrinum tigrinum*	Eastern Tiger Salamander
Amphibian	*Aneides aeneus*	Green Salamander
Amphibian	*Desmognathus aeneus*	Seepage Salamander
Amphibian	*Desmognathus folkertsi*	Dwarf Blackbelly Salamander
Amphibian	*Desmognathus imitator*	Imitator Salamander
Amphibian	*Desmognathus imitator pop. 1*	Waterrock Knob Salamander
Amphibian	*Desmognathus organi*	Northern Pigmy Salamander
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander
Amphibian	*Desmognathus wrighti*	Southern Pygmy Salamander
Amphibian	*Eurycea bislineata*	Two-lined Salamander
Amphibian	*Eurycea junaluska*	Junaluska Salamander
Amphibian	*Eurycea longicauda*	Longtail Salamander
Amphibian	*Hemidactylium scutatum*	Four-toed Salamander

Taxa Group	Scientific Name	Common Name
Amphibian	*Plethodon aureolus*	Tellico Salamander
Amphibian	*Plethodon chattahoochee*	Chattahoochee Slimy Salamander
Amphibian	*Plethodon cheoah*	Cheoah Bald Salamander
Amphibian	*Plethodon glutinosus*	Northern Slimy Salamander
Amphibian	*Plethodon jordani*	Jordan's Salamander (Red-cheeked Salamander)
Amphibian	*Plethodon longicris*	Crevice Salamander
Amphibian	*Plethodon richmondi*	Southern Ravine Salamander
Amphibian	*Plethodon shermani*	Red-legged Salamander
Amphibian	*Plethodon teyahalee*	Southern Appalachian Salamander
Amphibian	*Plethodon ventralis*	Southern Zigzag Salamander
Amphibian	*Plethodon wehrlei*	Wehrle's Salamander
Amphibian	*Plethodon welleri*	Weller's Salamander
Amphibian	*Plethodon yonahlossee*	Yonahlossee Salamander
Amphibian	*Pseudacris bracyphona*	Mountain Chorus Frog
Bird	*Bonasa umbellus*	Ruffed Grouse
Bird	*Cardellina canadensis*	Canada Warbler
Bird	*Catharus fuscescens*	Veery
Bird	*Catharus guttatus*	Hermit Thrush
Bird	*Catharus ustulatus*	Swainson's Thrush
Bird	*Certhia americana*	Brown Creeper
Bird	*Chaetura pelagica*	Chimney Swift
Bird	*Coccyzus erythropthalmus*	Black-billed Cuckoo
Bird	*Colaptes auratus*	Northern Flicker
Bird	*Contopus virens*	Eastern Wood-pewee
Bird	*Dryocopus pileatus*	Pileated Woodpecker
Bird	*Empidonax alnorum*	Alder Flycatcher
Bird	*Empidonax minimus*	Least Flycatcher
Bird	*Empidonax trailii*	Willow Flycatcher
Bird	*Empidonax virescens*	Acadian Flycatcher

Taxa Group	Scientific Name	Common Name
Bird	*Geothlypis formosa*	Kentucky Warbler
Bird	*Helmitheros vermivorum*	Worm-eating Warbler
Bird	*Hylocichla mustelina*	Wood Thrush
Bird	*Icteria virens*	Yellow-breasted Chat
Bird	*Limnothlypis swainsonii*	Swainson's Warbler
Bird	*Melanerpes erythrocephalus*	Red-headed Woodpecker
Bird	*Meleagris gallopavo*	Wild Turkey
Bird	*Mniotilta varia*	Black-and-white Warbler
Bird	*Parkesia motacilla*	Louisiana Waterthrush
Bird	*Pipilo erythrophthalmus*	Eastern Towhee
Bird	*Piranga olivacea*	Scarlet Tanager
Bird	*Scolopax minor*	American Woodcock
Bird	*Seiurus aurocapilla*	Ovenbird
Bird	*Setophaga cerulea*	Cerulean Warbler
Bird	*Setophaga citrina*	Hooded Warbler
Bird	*Setophaga coronata*	Yellow-rumped Warbler
Bird	*Setophaga discolor*	Prairie Warbler
Bird	*Setophaga dominica*	Yellow-throated Warbler
Bird	*Setophaga fusca*	Blackburnian Warbler
Bird	*Setophaga magnolia*	Magnolia Warbler
Bird	*Sitta pusilla*	Brown-headed Nuthatch
Bird	*Sphyrapicus varius*	Yellow-bellied Sapsucker
Bird	*Toxostoma rufum*	Brown Thrasher
Bird	*Vireo flavifrons*	Yellow-throated Vireo
Bird	*Vireo gilvus*	Warbling Vireo
Insect	*Scudderia septentrionalis*	Northern Bush Katydid
Mammal	*Cervus elaphus*	Elk
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat (mountain subspecies)
Mammal	*Eptesicus fuscus*	Big Brown Bat

Taxa Group	Scientific Name	Common Name
Mammal	*Mustela nivelis*	Least Weasel
Mammal	*Myotis grisescens*	Gray Myotis (Gray Bat)
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Ursus americanus*	Black Bear
Mollusk	*Mesomphix andrewsae*	Mountain Button
Mollusk	*Pallifera hemphilli*	Black Mantleslug
Mollusk	*Paravitrea lamellidens*	Lamellate Supercoil
Mollusk	*Paravitrea placentula*	Glossy Supercoil
Mollusk	*Paravitrea ternaria*	Sculpted Supercoil
Nonvascular Plant	*Encalypta procera*	Extinguisher Moss
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces anthracinus*	Coal Skink
Reptile	*Lampropeltis triangulum triangulum*	Eastern Milk Snake
Reptile	*Regina septemvittata*	Queen Snake
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Arabis patens*	Spreading Rockcress
Vascular Plant	*Carex hitchcockiana*	Hitchcock's Sedge
Vascular Plant	*Clematis catesbyana*	Coastal Virgin's-bower
Vascular Plant	*Hexalectris spicata*	Crested Coralroot
Vascular Plant	*Hydrastis canadensis*	Goden Seal
Vascular Plant	*Stachys cordata*	Heartleaf Hedge-nettle
Vascular Plant	*Thaspium pinnatifidum*	Mountain Thaspium

Table B. Indicators and Rating Definitions Used in the NPESE for the Calcareous Oak Walnut Forest Ecosystem

Indicator	Poor	Fair	Good	Very Good
Quality of single site with characteristic native vegetation	<2	2.2.9	3-3.9	4
Percent sites with low coverage (<1%) of NNIS	<40	40-74	75-90	>90

Table C. Expected Outcomes, by Alternative and Indicator, for the Calcareous Oak Walnut Forest Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Quality of single site with characteristic native vegetation	3	3	3.8	3	3.8	2.5	3.5	4	4	3.5	4	3	3.8	2.5	3.5
Percent sites with low coverage (<1%) of NNIS	90	90	90	85	88	80	85	93	93	91	93	85	88	80	85

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Quality of single site with characteristic native vegetation	G	G	G	G	G	F	G	VG	VG	G	VG	G	G	F	G
Percent sites with low coverage	G	G	G	G	G	G	G	VG	VG	VG	VG	G	G	G	G

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
(<1%) of NNIS															

White Pine Forest

Table A. Species Included in the White Pine Forest Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Bird	*Bonasa umbellus*	Ruffed Grouse
Bird	*Meleagris gallopavo*	Wild Turkey
Bird	*Spinus pinus*	Pine Siskin
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Myotis leibii*	Eastern Small-footed bat
Mammal	*Myotis lucifugus*	Little Brown Bat
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Ursus americana*	Black Bear
Reptile	*Pituophis melanoleucus*	Northern Pinesnake
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virgnia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Galax urceolata*	Galax
Vascular Plant	*Lysimachia fraseri*	Fraser's Loosestrife
Vascular Plant	*Tsuga carolinae*	Carolina Hemlock

Table B. Indicators and Rating Definitions Used in the NPESE for the White Pine Forest Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent of sites dominated by characteristic native canopy vegetation	<50	50-74	75-90	>90
Percent sites with low coverage (<1%) of NNIS	<40	40-74	75-90	>90

Table C. Expected Outcomes, by Alternative and Indicator, for the White Pine Forest Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of sites dominated by characteristic native canopy vegetation	83	83	100	83	100	83	100	83	100	83	100	83	100	83	100
Percent sites with low coverage (<1%) of NNIS	100	100	100	83	83	75	75	91	91	83	83	91	91	83	83

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of sites dominated by characteristic native canopy vegetation	G	G	VG	G	VG	G	VG	G	VG	G	VG	G	VG	G	VG
Percent sites with low coverage (<1%) of NNIS	VG	VG	VG	G	G	G	G	VG	VG	G	G	VG	VG	G	G

Beech Gap/Boulderfields

Table A. Species Included in the Beech Gap/Boulderfield Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Desmognathus imitator*	Imitator Salamander
Amphibian	*Desmognathus santeetlah*	Santeetlah Dusky Salamander
Amphibian	*Plethodon amplus*	Blue Ridge Gray-cheeked Salamander
Amphibian	*Plethodon aureolus*	Tellico Salamander
Amphibian	*Plethodon chattahoochee*	Chattahoochee Slimy Salamander
Amphibian	*Plethodon cheoah*	Cheoah Bald Salamander
Amphibian	*Plethodon glutinosus*	Northern Slimy Salamander
Amphibian	*Plethodon jordani*	Jordan's Salamander (Red-cheeked Salamander)
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander
Amphibian	*Plethodon meridianus*	South Mountain Gray-cheeked Salamander
Amphibian	*Plethodon richmondi*	Southern Ravine Salamander
Amphibian	*Plethodon shermani*	Red-legged Salamander
Amphibian	*Plethodon teyahalee*	Southern Appalachian Salamander
Amphibian	*Plethodon ventralis*	Southern Zigzag Salamander
Amphibian	*Plethodon wehrlei*	Wehrle's Salamander
Amphibian	*Plethodon welleri*	Weller's Salamander
Amphibian	*Plethodon yonahlossee*	Yonahlossee Salamander
Bird	*Corvus corvax*	Common Raven
Mammal	*Cortnorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat
Mammal	*Glaucomys sabrinus coloratus*	Carolina Northern Flying Squirrel
Mammal	*Microtus chrotorrhinus carolinensis*	Southern Rock Vole
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Bat (Little Brown Myotis)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Neotoma floridana haematoria*	Southern Appalachian Woodrat

Taxa Group	Scientific Name	Common Name
Mammal	*Neotoma magister*	Alleghany Woodrat
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mollusk	*Pilsbryna nadopalma*	Oar Tooth Bud
Mollusk	*Vertigo parvula*	Smallmouth Vertigo
Nonvascular Plant	*Arthopyrenia betulicola*	Ol' Birch Spots
Nonvascular Plant	*Graphis sterlingiana*	Sterling Lips
Reptile	*Crotalus horridus*	Timber Rattlesnake
Vascular Plant	*Abies fraseri*	Fraser Fir
Vascular Plant	*Aconitum reclinatum*	White Monkshood
Vascular Plant	*Allium tricoccum*	Red Ramps
Vascular Plant	*Betula cordifolia*	Mountain Paper Birch
Vascular Plant	*Cardamine clematitis*	Mountain Bittercress
Vascular Plant	*Geum geniculatum*	Bent Avens
Vascular Plant	*Glyceria nubigena*	Smoky Mountain Mannagrass
Vascular Plant	*Lilium grayi*	Gray's Lily
Vascular Plant	*Lonicera canadensis*	American Fly-honeysuckle
Vascular Plant	*Meehania cordata*	Meehania
Vascular Plant	*Platanthera grandiflora*	Large Purple Fringed Orchid
Vascular Plant	*Rhododendron vaseyi*	Pink-shell Azalea
Vascular Plant	*Rubus idaeus ssp. strigosus*	American Red Raspberry
Vascular Plant	*Scutellaria saxatilis*	Rock Skullcap
Vascular Plant	*Scutllaria ovata ssp. Rugosa var. 1*	Appalachian Skullcap
Vascular Plant	*Stachys clingmanii*	Clingman's Hedge-nettle
Vascular Plant	*Streptopus amplexifolius*	White Mandarin

Table B. Indicators and Rating Definitions Used in the NPESE for the Beech Gap/Boulderfield Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent of sites dominated by characteristic native canopy vegetation	<50	50-74	75-90	>90

Indicator	Poor	Fair	Good	Very Good
Percent sites with low coverage (<1%) of NNIS	<40	40-74	75-90	>90

Table C. Expected Outcomes, by Alternative and Indicator, for the Beech Gap/Boulderfield Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of sites dominated by characteristic native canopy vegetation	75	75	66	75	66	75	66	75	66	75	66	75	66	75	66
Percent sites with low coverage (<1%) of NNIS	91	91	91	80	85	70	75	85	90	75	80	85	90	75	80

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of sites dominated by characteristic native canopy vegetation	G	G	F	G	F	G	F	G	F	G	F	G	F	G	F
Percent sites with low coverage (<1%) of NNIS	VG	VG	VG	G	G	F	G	G	G	G	G	G	G	G	G

Carolina Hemlock Bluffs/Forests

Table A. Species Included in the Carolina Hemlock Forest Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Bird	*Bonasa umbellus*	Ruffed Grouse

Taxa Group	Scientific Name	Common Name
Bird	*Cardellina canadensis*	Canada Warbler
Bird	*Catharus fuscescens*	Veery
Bird	*Certhia americana*	Brown Creeper
Bird	*Chaetura pelagica*	Chimney Swift
Bird	*Coccyzus erythropthalmus*	Black-billed Cuckoo
Bird	*Colaptes auratus*	Northern Flicker
Bird	*Contopus virens*	Eastern Wood-pewee
Bird	*Dryocopus pileatus*	Pileated Woodpecker
Bird	*Empidonax alnorum*	Alder Flycatcher
Bird	*Empidonax minimus*	Least Flycatcher
Bird	*Empidonax trailii*	Willow Flycatcher
Bird	*Empidonax virescens*	Acadian flycatcher
Bird	*Geolypthis formosa*	Kentucky Warbler
Bird	*Helmitheros vermivorum*	Worm-eating Warbler
Bird	*Hylocichla mustelina*	Wood Thrush
Bird	*Icteria virens*	Yellow-breasted chat
Bird	*Limnothlypis swainsonii*	Swainson's Warbler
Bird	*Loxia curvirostra pop. 1*	Southern Appalachian Red Crossbill
Bird	*Melanerpes erythrocephalus*	Red-headed Woodpecker
Bird	*Meleagris gallopavo*	Wild Turkey
Bird	*Mniotitta varia*	Black-and-white Warbler
Bird	*Parkesia motacilla*	Lousiana Waterthrush
Bird	*Pipilo erythrophthalmus*	Eastern towhee
Bird	*Piranga olivacea*	Scarlet Tanager
Bird	*Poecile atricapillus practica*	Southern Appalachian Black-capped Chickadee
Bird	*Scolopax minor*	American Woodcock
Bird	*Seiurus aurocapilla*	Ovenbird
Bird	*Setophaga cerula*	Cerulean Warbler
Bird	*Setophaga citrina*	Hooded Warbler

Taxa Group	Scientific Name	Common Name
Bird	*Setophaga coronata*	Yellow-rumped Warbler
Bird	*Setophaga discolor*	Prairie Warbler
Bird	*Setophaga dominica*	Yellow-throated Warbler
Bird	*Setophaga fusca*	Blackburnian Warbler
Bird	*Setophaga magnolia*	Magnolia Warbler
Bird	*Sitta pusilla*	Field Sparrow
Bird	*Sphyrapicus varius*	Yellow-bellied Sapsucker
Bird	*Spinus pinus*	Pine Siskin
Bird	*Toxostomua rufum*	Brown Thrasher
Bird	*Vireo flavifrons*	Yellow-throated Vireo
Bird	*Vireo gilvus*	Warbling Vireo
Mammal	*Cervus elaphus*	Elk
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat
Mammal	*Corynorhinus townsendii virginianus*	Virginia Big-eared Bat
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Mustela nivelis*	Least Weasel
Mammal	*Myotis grisescens*	Gray Bat (Gray Myotis)
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Bat (Little Brown Myotis)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Odocoileus virginianus*	White-tailed Deer
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Ursus americanus*	Black Bear
Nonvascular Plant	*Brachymenium andersonii*	Anderson's Melon-moss
Reptile	*Crotalus horridus*	Timber Rattlesnake
Reptile	*Eumeces anthracinus*	Coal Skink
Reptile	*Lampropeltis triangulatum triangulatum*	Eastern Milk Snake
Reptile	*Regina septemvittata*	Queen Snake

Taxa Group	Scientific Name	Common Name
Reptile	*Terrapene carolina*	Eastern Box Turtle
Reptile	*Virginia valeriae valeriae*	Eastern Earthsnake
Vascular Plant	*Galax urceolata*	Galax
Vascular Plant	*Fothergila major*	Large Witch-alder
Vascular Plant	*Robinia hispida var. kelseyi*	Kelsey's Locust
Vascular Plant	*Thermopsis villosa*	Appalachian Golden-banner
Vascular Plant	*Tsuga caroliniana*	Carolina Hemlock

Table B. Indicators and Rating Definitions Used in the NPESE for the Carolina Hemlock Forest Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent sites with minimal impacts by hemlock woolly adelgid	>50	50-69	70-90	>90
Percent sites with low coverage (<1%) of NNIS	<40	40-74	75-90	>90
Percent of sites dominated by characteristic native canopy vegetation	<60	60-75	75-90	>90

Table C. Expected Outcomes, by Alternative and Indicator, for the Carolina Hemlock Forest Ecosystem Within the NPESE

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites not with minimal impactsed by hemlock woolly adelgid	77	75	80	95	100	95	100	95	100	95	100	95	100	95	100
Percent sites with low coverage (<1%) of NNIS	84	84	86	82	84	80	82	80	82	78	80	76	78	74	76

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of sites dominated by characteristic native canopy vegetation	65	70	70	80	95	80	95	80	95	80	95	80	95	80	95
Percent sites not with minimal impactsed by hemlock woolly adelgid	G	G	G	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG	VG
Percent sites with low coverage (<1%) of NNIS	G	G	G	G	G	G	G	G	G	G	G	G	G	F	G
Percent of sites dominated by characteristic native canopy vegetation	F	F	F	G	VG	G	VG	G	VG	G	VG	G	VG	G	VG

Balds

Grassy Balds

Table A. Species Included in the Grass Balds Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Plethodon cheoah*	Cheoah Bald Salamander

Taxa Group	Scientific Name	Common Name
Amphibian	*Plethodon welleri*	Weller's Salamander
Bird	*Accipiter striatus*	Sharp-shinned Hawk
Bird	*Aquila chrysaetos*	Golden Eagle
Bird	*Bonasa umbellus*	Ruffed Grouse
Bird	*Buteo platypterus*	Broad-winged Hawk
Bird	*Cardellina canadensis*	Canada Warbler
Bird	*Colaptes auratus*	Northern Flicker
Bird	*Colinus virginianus*	Northern Bobwhite
Bird	*Dryocopus pileatus*	Pileated Woodpecker
Bird	*Empidonas minimus*	Least Flycatcher
Bird	*Empidonax alnorum*	Alder Flycatcher
Bird	*Empidonax trailii*	Willow Flycatcher
Bird	*Empidonax virescens*	Acadian Flycatcher
Bird	*Meleagris gallapavo*	Wild Turkey
Bird	*Passerina cyanea*	Indigo Bunting
Bird	*Pipilo erythrophthalmus*	Eastern Towhee
Bird	*Pooecetes gramineus*	Vesper Sparrow
Bird	*Setophaga coronata*	Yellow-rumped Warbler
Bird	*Spinus pinus*	Pine Siskin
Bird	*Spizella pusilla*	Field Sparrow
Bird	*Sturnella magna*	Eastern Meadowlark
Bird	*Toxostoma rufum*	Brown Thrasher
Bird	*Vermivora chrysoptera*	Golden-winged Warbler
Bird	*Vermivora cyanoptera*	Blue-winged Warbler
Insect	*Autochton cellus*	Golden-banded Skipper
Insect	*Bombus affinis*	Rusty-patched Bumblebee
Insect	*Bombus bariabilis*	Variable Cuckoo Bumblebee
Insect	*Bombus pennsylvanicus*	American Bumblebee
Insect	*Bombus terricola*	Yellow-banded Bumblebee

Taxa Group	Scientific Name	Common Name
Insect	*Bombus vagans*	Half Black Bumblebee
Insect	*Celastrina nigra*	Dusky Azure
Insect	*Chlosyne gorgone*	Gorgone Checkerspot
Insect	*Danaus plexippus*	Monarch Butterfly
Insect	*Erora laeta*	Early Hairstreak
Insect	*Erynnis martialis*	Mottled Duskywing
Insect	*Euchloe olympia*	Olympia Marble
Insect	*Euphydryas phaeton*	Baltimore Checkerspot
Insect	*Melanoplus attenuatus*	a spur-throat grasshopper
Insect	*Melanoplus divergens*	Divergent Melanoplus
Insect	*Melanoplus nubilus*	Nubile Short-wing Grasshopper
Insect	*Melanoplus serrulatus*	Serrulate Melanoplus
Insect	*Papilio cresphontes*	Giant Swallowtail
Insect	*Phyciodes batesii maconensis*	Appalachian Tawny Crescent
Insect	*Polygonia faunus smythi*	Smyth's Green Comma
Insect	*Polygonia progne*	Gray Comma
Insect	*Pyrgus wyandot*	Appalachian Grizzled Skipper
Insect	*Satyrium caryaevorus*	Hickory Hairstreak
Insect	*Satyrium edwardsii*	Edwards' Hairstreak
Insect	*Speyeria aphrodite cullasaja*	Cullasaja Aphrodite Fritillary
Insect	*Speyeria diana*	Diana Fritillary
Insect	*Speyeria idalia*	Regal Fritillary
Insect	*Trimerotropis saxatalis*	Lichen Grasshopper
Mammal	*Cervus elaphus*	Elk
Mammal	*Corynorhinus townsendii virginianus*	Virginia Big-eared Bat
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Mustela nivalis*	Least Weasel
Mammal	*Myotis grisescens*	Gray Myotis (Gray Bat)
Mammal	*Myotis leibii*	Eastern Small-footed Bat

Taxa Group	Scientific Name	Common Name
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Sylvilagus obscurus*	Appalachian Cottontail
Reptile	*Crotalus horridus*	Timber Rattlesnake
Vascular Plant	*Abies fraseri*	Fraser Fir
Vascular Plant	*Agrostis mertensii*	Arctic Bentgrass
Vascular Plant	*Alnus viridis ssp crispa*	Green Alder
Vascular Plant	*Botrychium lanceolatum var. angustisegmentum*	Lance-leaf Moonwort
Vascular Plant	*Botrychium matricariifolium*	Daisy-leaf Moonwort
Vascular Plant	*Botrychium multifidum*	Leathery Grape Fern
Vascular Plant	*Botrychium simplex var. simplex*	Least Moonwort
Vascular Plant	*Bromus ciliatus*	Fringed Brome Grass
Vascular Plant	*Calamagrostis canadensis var. canadensis*	Canada Reedgrass
Vascular Plant	*Chamerion platphyllum*	Purple Willowherb
Vascular Plant	*Houstonia montana*	Roan Mountain Bluet
Vascular Plant	*Lilium grayi*	Gray's Lily
Vascular Plant	*Lilium philadelphicum var. philadelphicum*	Wood Lily
Vascular Plant	*Monarda media*	Purple Bee-balm
Vascular Plant	*Minuartia groenlandica*	Mountain Sandwort
Vascular Plant	*Packera schweinitziana*	Schweinitz's Ragwort
Vascular Plant	*Poa palustris*	Swamp Bluegrass
Vascular Plant	*Platanthera grandiflora*	Large Purple-fringed Orchid
Vascular Plant	*Rhododendron cumberlandense*	Cumberland Azalea
Vascular Plant	*Solidago lancifolia*	Lance-leaf Goldenrod

Table B. Indicators and Rating Definitions Used in the NPESE for the Grass Balds Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent of grass bald (area) sites in open canopy condition	<50	50-75	75-90	>90
Percent sites with low coverage (<1%) of NNIS	<40	40-75	75-90	>90
Percent of grass bald sites impacted by recreational traffic	>33	21-33	10-20	<10

Table C. Expected Outcomes, by Alternative and Indicator, for the Grass Balds Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of grass bald (area) sites in open canopy condition	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Percent sites with low coverage (<1%) of NNIS	75	80	80	80	85	85	91	80	85	85	91	80	85	85	91
Percent of grass bald sites impacted by recreational traffic	38	38	38	33	21	33	21	33	21	33	21	33	21	33	21

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of grass bald (area) sites in open canopy condition	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent sites with low coverage (<1%) of NNIS	G	G	G	G	G	G	VG	G	G	G	VG	G	G	G	VG
Percent of grass bald sites impacted by recreational traffic	P	P	P	F	F	F	F	F	F	F	F	F	F	F	F

Shrub Balds

Table A. Species Included in the Shrub Balds Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Bird	*Accipiter striatus*	Sharp-shinned Hawk
Bird	*Aquila chrysaetos*	Golden Eagle
Bird	*Bonasa umbellus*	Ruffed Grouse
Bird	*Buteo platypterus*	Broad-winged Hawk
Bird	*Catharus fuscescens*	Veery
Bird	*Catharus guttatus*	Hermit Thrush
Bird	*Colaptes auratus*	Northern Flicker
Bird	*Colinus virginianus*	Northern Bobwhite
Bird	*Contopus virens*	Eastern Wood-pewee
Bird	*Dryocopus pileatus*	Pileated Woodpecker
Bird	*Empidonas minimus*	Least Flycatcher
Bird	*Empidonax alnorum*	Alder Flycatcher
Bird	*Empidonax trailii*	Willow Flycatcher
Bird	*Empidonax virescens*	Acadian Flycatcher
Bird	*Helmitheros vermivorum*	Worm-eating Warbler
Bird	*Hylocichla mustelina*	Wood Thrush

Taxa Group	Scientific Name	Common Name
Bird	*Lixos curvirostra pop. 1*	Southern Appalachian Red Crossbill
Bird	*Meleagris gallapavo*	Wild Turkey
Bird	*Mniotilta varia*	Black-and-white Warbler
Bird	*Parkesia moticilla*	Louisiana Waterthrush
Bird	*Passerina cyanea*	Indigo Bunting
Bird	*Pipilo erythrophthalmus*	Eastern Towhee
Bird	*Piranga olivacea*	Scarlet Tanager
Bird	*Poecile atricapillus practica*	Southern Appalachian Black-capped Chickadee
Bird	*Pooecetes gramineus*	Vesper Sparrow
Bird	*Seiurus aurocapilla*	Ovenbird
Bird	*Setophaga citrina*	Hooded Warbler
Bird	*Setophaga coronata*	Yellow-rumped Warbler
Bird	*Setophaga fusca*	Blackburnian Warbler
Bird	*Setophaga magnolia*	Magnolia Warbler
Bird	*Spinus pinus*	Pine Siskin
Bird	*Spizella pusilla*	Field Sparrow
Bird	*Sturnella magna*	Eastern Meadowlark
Bird	*Toxostoma rufum*	Brown Thrasher
Bird	*Vermivora chrysoptera*	Golden-winged Warbler
Bird	*Vermivora cyanoptera*	Blue-winged Warbler
Insect	*Autochton cellus*	Golden-banded Skipper
Insect	*Bombus affinis*	Rusty-patched Bumblebee
Insect	*Bombus bariabilis*	Variable Cuckoo Bumblebee
Insect	*Bombus pennsylvanicus*	American Bumblebee
Insect	*Bombus terricola*	Yellow-banded Bumblebee
Insect	*Bombus vagans*	Half Black Bumblebee
Insect	*Celastrina nigra*	Dusky Azure
Insect	*Chlosyne gorgone*	Gorgone Checkerspot
Insect	*Danaus plexippus*	Monarch Butterfly

Taxa Group	Scientific Name	Common Name
Insect	*Erora laeta*	Early Hairstreak
Insect	*Erynnis martialis*	Mottled Duskywing
Insect	*Euchloe olympia*	Olympia Marble
Insect	*Euphydryas phaeton*	Baltimore Checkerspot
Insect	*Papilio cresphontes*	Giant Swallowtail
Insect	*Phyciodes batesii maconensis*	Appalachian Tawny Crescent
Insect	*Polygonia faunus smythi*	Smyth's Green Comma
Insect	*Polygonia progne*	Gray Comma
Insect	*Pyrgus wyandot*	Appalachian Grizzled Skipper
Insect	*Satyrium caryaevorus*	Hickory Hairstreak
Insect	*Satyrium edwardsii*	Edwards' Hairstreak
Insect	*Speyeria aphrodite cullasaja*	Cullasaja Aphrodite Fritillary
Insect	*Speyeria diana*	Diana Fritillary
Insect	*Speyeria idalia*	Regal Fritillary
Mammal	*Cervus elaphus*	Elk
Mammal	*Corynorhinus townsendii virginianus*	Virginia Big-eared Bat
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Sylvilagus obscurus*	Appalachian Cottontail
Mammal	*Ursus americana*	Black Bear
Nonvascular Plant	*Lecanora masana*	Masa's Disc Lichen
Vascular Plant	*Rhododendron cumberlandense*	Cumberland Azalea
Vascular Plant	*Rhododendron vaseyi*	Pink-shell Azalea

Table B. Indicators and Rating Definitions Used in the NPESE for the Shrub Balds Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent of shrub bald (area) sites in open canopy condition	<60	60-74	75-90	>90

Table C. Expected Outcomes, by Alternative and Indicator, for the Shrub Balds Ecosystem Within the NPESE

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of shrub bald (area) sites in open canopy condition	81	81	85	81	85	81	85	81	85	81	85	81	85	81	85

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of shrub bald (area) sites in open canopy condition	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

Caves and Abandoned Mines

Table A. Species Included in the Caves and Abandoned Mines Ecosystem Within the Nantahala/Pisgah Forest Plan Revision ESE Tool (NPESE)

Taxa Group	Scientific Name	Common Name
Amphibian	*Eurycea longicauda*	Longtail Salamander
Amphibian	*Plethodon longicris (P. yonahlossee pop. 1)*	Crevice Salamander

Taxa Group	Scientific Name	Common Name
Amphibian	*Plethodon ventralis*	Southern Zigzag Salamander
Amphibian	*Plethodon wehrlei*	Wehrle's Salamander
Amphibian	*Plethodon yonahlossee*	Yonahlossee Salamander
Aquatic Insect	*Caecidotea carolinensis*	Bennet's Cave Mill Water Slater
Arachinid	*Hypochilus coylei*	a lampshade weaver
Arachnid	*Hypochilus sheari*	a lampshade weaver
Arachnid	*Nesticus bishopi*	a cave cobweb spider
Arachnid	*Nesticus carolinensis*	Linville Caverns Spider
Arachnid	*Nesticus cooperi*	Lost Nantahala Cave Spider
Arachnid	*Nesticus crosbyi*	a cave cobweb spider
Arachnid	*Nesticus gertschi*	a cave cobweb spider
Arachnid	*Nesticus mimus*	a cave cobweb spider
Arachnid	*Nesticus nasicus*	a cave cobweb spider
Arachnid	*Nesticus reclusus*	a cave cobweb spider
Arachnid	*Nesticus sheari*	a cave cobweb spider
Arachnid	*Nesticus silvanus*	a cave cobweb spider
Arachnid	*Nesticus sp. 1*	a cave cobweb spider
Arachnid	*Nesticus sp. 2*	a cave cobweb spider
Bird	*Chaetura pelagica*	Chimney Swift
Mammal	*Corynorhinus rafinesquii rafinesquii*	Rafinesque's Big-eared Bat (mountain subspecies)
Mammal	*Corynorhinus townsendii virginianus*	Virginia Big-eared Bat
Mammal	*Eptesicus fuscus*	Big Brown Bat
Mammal	*Myotis grisescens*	Gray Myotis (Gray Bat)
Mammal	*Myotis leibii*	Eastern Small-footed Bat
Mammal	*Myotis lucifugus*	Little Brown Myotis (Little Brown Bat)
Mammal	*Myotis septentrionalis*	Northern Long-eared Bat (Northern Myotis)
Mammal	*Myotis sodalis*	Indiana Bat
Mammal	*Perimyotis subflavus*	Tri-colored Bat
Mammal	*Ursus americana*	Black Bear

Table B. Indicators and Rating Definitions Used in the NPESE for the Caves and Abandoned Mines Ecosystem

Indicator	Poor	Fair	Good	Very Good
Percent of occupied mines or caves (by rare bats) adversely impacted by recreational traffic	>10	5-10	1-5	<1
Present or absence of WNS in this system	present	N/A	N/A	absent

Table C. Expected Outcomes, by Alternative, from the NPESE for the Caves and Abandoned Mines Ecosystem

Indicator Value		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of occupied mines or caves (by rare bats) adversely impacted by recreational traffic	>50	>50	25	>50	25	>50	25	>50	25	>50	25	>50	25	>50	25
Present or absence of WNS in this system	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present	Present

Indicator Rating		Alt A		Alt B Tier 1		Alt B Tier 2		Alt C Tier 1		Alt C Tier 2		Alt D Tier 1		Alt D Tier 2	
Indicator	**Current**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**	**10**	**50**
Percent of occupied mines or caves (by rare bats) adversely impacted by recreational traffic	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Present or absence of WNS in this system	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

Plan Component Crosswalk Table

This table documents **Step 7,** the final step of the Ecological Sustainability Evaluation process, in which plan components are checked to ensure species specific needs are met. In the following table, plan components that contribute 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. To see which species are associated with each ecosystem or species group, refer to Table A for the appropriate element (in this appendix).

Updated 3/31/2020

AQUATIC Ecosystems/Species Groups | TERRESTRIAL Ecozones ----------> | UNIQUE HABITATS ----------> | TERRESTRIAL Species Groups ----------->

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AIR-DC-03	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
AIR-DC-04	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
AQS-DC-01	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
AQS-DC-02	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
AQS-DC-03	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
AQS-DC-04	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
AQS-DC-05	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
AQS-DC-06	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
AQS-DC-07	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
AQS-DC-08	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
AQS-DC-09	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
AQS-DC-10	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
AQS-G-01	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
AQS-G-02	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
AQS-G-03	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
AQS-G-04	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
AQS-O-01	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
AQS-O-02	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
AQS-O-03	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
AQS-S-01	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
CC-DC-01	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CC-DC-02	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CC-DC-03	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CC-DC-04	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CC-DC-05	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CC-DC-06	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CC-DC-07	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CE-DC-04	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CE-DC-06	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CE-DC-08	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
COM-DC-07	FW			X			X		X	X	X	X	X		X	X	X	X	X	X	X																																						
ECO-DC-01	FW										X	X	X		X	X	X	X	X	X	X																																					
ECO-DC-02	FW										X	X	X		X	X	X	X	X	X	X																																					
ECO-DC-03	FW										X	X	X		X	X	X	X	X	X	X																																					
ECO-DC-04	FW										X	X	X		X	X	X	X	X	X	X																																					
ECO-DC-05	FW										X	X	X		X	X	X	X	X	X	X																																					
ECO-DC-06	FW										X	X	X		X	X	X	X	X	X	X																																					

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ECO-DC-07	FW										X	X	X		X	X	X	X	X	X	X																																						
ECO-DC-08	FW										X	X	X		X	X	X	X	X	X	X																																					
ECO-DC-09	FW										X	X	X		X	X	X	X	X	X	X																																				
ECO-DC-10	FW										X	X	X		X	X	X	X	X	X	X																																				
ECO-DC-11	FW											X	X		X		X	X		X																												X									
ECO-DC-12	FW										X	X	X		X	X	X	X	X	X	X																																			
ECO-DC-19	FW										X	X	X		X	X	X	X	X	X	X																																			
ECO-DC-20	FW										X	X	X		X	X	X	X	X	X	X																																			
ECO-DC-21	FW										X	X	X		X	X	X	X	X	X	X																																			
ECO-DC-22	FW										X	X	X		X	X	X	X	X	X	X						X																						X							
ECO-DC-23	FW										X	X	X		X	X	X	X	X	X	X																																			X
ECO-DC-24	FW										X	X	X		X	X	X	X	X	X	X																														X					
ECO-DC-25	FW										X	X	X		X	X	X	X	X	X	X																															X				
ECO-DC-26	FW										X	X	X		X	X	X	X	X	X	X															X			X							X									X
ECO-DC-27	FW										X	X	X		X	X	X	X	X	X	X																											X				X				
ECO-DC-28	FW										X	X	X		X	X	X	X	X	X	X																														X					
ECO-DC-29	FW										X	X	X		X	X	X	X	X	X	X																										X					X			X	X
ECO-DC-30	FW										X	X	X		X	X	X	X	X	X	X																														X				
ECO-DC-31	FW										X	X	X		X	X	X	X	X	X	X																										X				X		X	X			X	X
ECO-DC-32	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X											
ECO-DC-33	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X											
ECO-DC-34	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X											
ECO-DC-35	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X											
ECO-G-01	FW										X	X	X		X	X	X	X	X	X	X																																			
ECO-G-02	FW										X	X	X		X	X	X	X	X	X	X																																			
ECO-G-04	FW										X	X	X		X	X	X	X	X	X	X																																			X
ECO-G-05	FW										X	X	X		X	X	X	X	X	X	X																														X					X
ECO-G-06	FW										X	X	X		X	X	X	X	X	X	X																																			
ECO-G-07	FW										X	X	X		X	X	X	X	X	X	X															X			X							X									X	
ECO-G-08	FW										X	X	X		X	X	X	X	X	X	X						X												X										X							X
ECO-G-09	FW										X	X	X		X	X	X	X	X	X	X																																			
ECO-G-10	FW										X	X	X		X	X	X	X	X	X	X																																			X
ECO-G-11	FW										X	X	X		X	X	X	X	X	X	X																																			
ECO-G-12	FW										X	X	X		X	X	X	X	X	X	X																													X						
ECO-G-13	FW										X	X	X		X	X	X	X	X	X	X																																			
ECO-G-14	FW										X	X	X		X	X	X	X	X	X	X																																			
ECO-G-15	FW										X	X	X		X	X	X	X	X	X	X																																			
ECO-G-16	FW										X	X	X		X	X	X	X	X	X	X																														X					

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ECO-G-17	FW										X	X	X		X	X	X	X	X	X	X																																							
ECO-O-01.1	FW										X	X	X		X	X	X	X	X	X	X						X																															X			X
ECO-O-01.2	FW										X	X	X		X	X	X	X	X	X	X						X																															X			X
ECO-O-02.1	FW										X	X	X		X	X	X	X	X	X	X																																					X			X
ECO-O-02.2	FW										X	X	X		X	X	X	X	X	X	X																																					X			X
ECO-O-03.2	FW										X	X	X		X	X	X	X	X	X	X																																						X			
ECO-O-04.1	FW										X	X	X		X	X	X	X	X	X	X																																					X			
ECO-O-05.1	FW										X	X	X		X	X	X	X	X	X	X																																							X	
ECO-O-06.1	FW										X	X	X		X	X	X	X	X	X	X																	X							X				X										X	
ECO-O-06.2	FW										X	X	X		X	X	X	X	X	X	X																	X							X				X										X	
ECO-O-07.1	FW																				X																																							
ECO-O-08.1	FW										X	X	X		X	X	X	X	X	X	X																																							
ECO-O-08.2	FW										X	X	X		X	X	X	X	X	X	X																																							
ECO-O-09.1	FW										X	X	X		X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X			X	X					X	X															
ECO-O-09.2	FW										X	X	X		X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X			X	X					X	X															
ECO-O-10	FW										X	X	X		X	X	X	X	X	X	X																																							
ECO-S-02	FW										X	X	X		X	X	X	X	X	X	X																																							
ECO-S-03	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ECO-S-04	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X															
ECO-S-08	FW										X	X	X		X	X	X	X	X	X	X																																							
ECO-S-09	FW										X	X	X		X	X	X	X	X	X	X																																							
ECO-S-10	FW										X	X	X		X	X	X	X	X	X	X																																							
ECO-S-11	FW										X	X	X		X	X	X	X	X	X	X																																							
ECO-S-12	FW										X	X	X		X	X	X	X	X	X	X																																							
ECO-S-13	FW										X	X	X		X	X	X	X	X	X	X																																							
ECO-S-15	FW										X	X	X		X	X	X	X	X	X	X																														X									X
ECO-S-16	FW										X	X	X		X	X	X	X	X	X	X																																							
ECO-S-17	FW										X	X	X		X	X	X	X	X	X	X						X																						X									X
ECO-S-18	FW										X	X	X		X	X	X	X	X	X	X																																							
ECO-S-19	FW										X	X	X		X	X	X	X	X	X	X																																							
ECO-S-20	FW										X	X	X		X	X	X	X	X	X	X																													X									
ECO-S-21	FW										X	X	X		X	X	X	X	X	X	X																																							
ECO-S-22	FW										X	X	X		X	X	X	X	X	X	X																																							
ECO-S-23	FW										X	X	X		X	X	X	X	X	X	X																																							
ECO-S-24	FW										X	X	X		X	X	X	X	X	X	X																																							
ECO-S-25	FW										X	X	X		X	X	X	X	X	X	X																											X				X		X	X				X
ECO-S-26	FW										X	X	X		X	X	X	X	X	X	X																																			X				
ECO-S-27	FW										X	X	X		X	X	X	X	X	X	X																																		X				
ECO-S-28	FW										X	X	X		X	X	X	X	X	X	X																																		X				

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ECO-S-29	FW										X	X	X		X	X	X	X	X	X	X																																			X			
ECO-S-30	FW										X	X	X		X	X	X	X	X	X	X																									X			X	X				X		X
ECO-S-31	FW										X	X	X		X	X	X	X	X	X	X																													X	X						X
ECO-S-32	FW	X	X	X	X	X	X	X	X	X				X												X										X																							
ECO-S-33	FW										X	X	X		X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X			X	X				X	X														
ECO-S-34	FW										X	X	X		X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X			X	X				X	X													
ECO-S-35	FW										X	X	X		X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X			X	X				X	X						X							X
ECO-S-36	FW										X	X	X		X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X			X	X				X	X													
FAC-G-01	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
FAC-S-02	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
FR-DC-05	FW										X	X	X		X	X	X	X	X	X	X																	X						X				X	X							X	
FR-G-01	FW	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X																											X	X							
FR-G-02	FW	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X																											X	X							
FR-G-03	FW	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X																											X	X							
FR-S-01	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X							
FR-S-03	FW	X	X	X	X	X	X	X	X	X																																							X	X							
GEO-DC-01	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X												
GEO-DC-03	FW	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X																																				
GEO-S-01	FW	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X																																				
LSU-DC-01	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
LSU-DC-02	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
LSU-DC-03	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
LSU-G-01	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
LSU-G-02	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
LSU-G-03	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X
LSU-G-06	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X
LSU-G-08	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
LSU-S-02	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
LSU-S-06	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X
LSU-S-11	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
LSU-S-12	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
LSU-S-13	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X
LSU-S-14	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X
MIN-DC-01	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																				
MIN-DC-02	FW	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X																																				
MIN-DC-03	FW	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X																																				
MIN-DC-04	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																				
MIN-DC-05	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																				

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MIN-S-01	FW	X	X	X	X	X	X	X	X	X				X												X											X	X																					
MIN-S-05	FW																					X																																				
NTFP-DC-01	FW										X	X	X		X	X	X	X	X	X	X																																					
NTFP-DC-02	FW										X	X	X		X	X	X	X	X	X	X																																					
NTFP-DC-03	FW										X	X	X		X	X	X	X	X	X	X																																					
NTFP-DC-04	FW										X	X	X		X	X	X	X	X	X	X																																					
NTFP-DC-05	FW										X	X	X		X	X	X	X	X	X	X																																					
NTFP-DC-06	FW										X	X	X		X	X	X	X	X	X	X																																					
NTFP-DC-07	FW										X	X	X		X	X	X	X	X	X	X																																					
NTFP-DC-08	FW										X	X	X		X	X	X	X	X	X	X																																					
NTFP-G-01	FW										X	X	X		X	X	X	X	X	X	X																																					
NTFP-G-02	FW										X	X	X		X	X	X	X	X	X	X																																					
NTFP-O-01	FW										X	X	X		X	X	X	X	X	X	X																																					
NTFP-O-02	FW										X	X	X		X	X	X	X	X	X	X																																					
NTFP-S-01	FW										X	X	X		X	X	X	X	X	X	X																																					
NTFP-S-02	FW										X	X	X		X	X	X	X	X	X	X																																					
NTFP-S-03	FW										X	X	X		X	X	X	X	X	X	X																																					
NTFP-S-04	FW										X	X	X		X	X	X	X	X	X	X																																					
NTFP-S-05	FW										X	X	X		X	X	X	X	X	X	X																																					
PAD-DC-01	FW			X			X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PAD-DC-02	FW										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X				X		X	X			X	X
PAD-DC-03	FW										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X				X		X	X			X	X
PAD-DC-04	FW			X			X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X				X		X	X			X	X
PAD-DC-05	FW										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X													
PAD-G-01	FW			X			X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X													
PAD-O-01	FW																													X								X						X													
PAD-O-02	FW																							X																																	
PAD-O-03	FW																																							X																		
PAD-O-04	FW																										X												X																		
PAD-O-05.1	FW										X	X	X		X	X	X	X	X	X	X																																					
PAD-O-05.2	FW										X	X	X		X	X	X	X	X	X	X																																					
PAD-O-06	FW																																																									
PAD-S-01	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PAD-S-02	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
PAD-S-03	FW			X			X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X				X		X	X			X	X
PAD-S-04	FW																																	X															X								
PAD-S-05	FW																													X	X		X	X	X	X																					
PAD-S-06	FW																						X							X	X		X	X	X	X																					
PAD-S-07	FW																						X							X	X		X	X	X	X																					

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PAD-S-08	FW																								X																																	
PAD-S-09	FW																								X																																
PAD-S-10	FW																								X																																
PAD-S-11	FW																								X																																
PAD-S-12	FW			X			X				X	X	X		X	X	X	X	X	X	X																																			X		
PAD-S-13	FW										X	X	X		X	X	X	X	X	X	X																																				
PAD-S-14	FW																					X																																			
REC-DC-03	FW	X	X	X	X	X	X	X	X	X				X													X											X	X																			
REC-DC-04	FW	X	X	X	X	X	X	X	X	X				X													X											X	X																			
REC-DC-05	FW	X	X	X	X	X	X	X	X	X				X													X											X	X																			
REC-DC-22	FW	X	X	X	X	X	X	X	X	X				X													X											X	X																			
REC-DC-24	FW	X	X	X	X	X	X	X	X	X				X													X											X	X																			
REC-G-05	FW	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X																																				
REC-G-08	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X											
REC-O-09.2	FW																											X	X		X	X	X	X																							
REC-O-10	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
REC-S-03	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
REC-S-09	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
REC-S-15	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																					
REC-S-18	FW																						X					X	X		X	X	X	X																							
REC-S-19	FW																																									X															
SLS-DC-01	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SLS-DC-02	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SLS-DC-03	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SLS-G-01	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
SLS-G-02	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
SLS-S-01	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
SLS-S-02	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SZ-DC-01	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
SZ-DC-02	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
SZ-G-01	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
SZ-O-01.1	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
SZ-O-01.2	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
SZ-O-02.1	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
SZ-O-02.2	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
SZ-S-01	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
SZ-S-02	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
SZ-S-03	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X

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SZ-S-04	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TA-DC-07	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TA-DC-08	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TA-DC-10	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TA-G-01	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TA-G-02	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TA-O-01	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TA-O-02	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TA-O-03	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TA-O-04	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TA-O-05.1	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TA-O-05.2	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TA-O-06.1	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TA-O-06.2	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TA-S-04	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TA-S-06	FW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TR-DC-03	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TR-DC-04	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TR-G-03	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
TR-G-04	FW										X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X			X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X
WSD-DC-01	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																			
WSD-O-01.1	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																			
WSD-O-01.2	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																			
WSD-O-02.1	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																			
WTR-DC-01	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																			
WTR-DC-02	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																			
WTR-DC-04	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																			
WTR-DC-05	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																			
WTR-DC-06	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																			
WTR-DC-07	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																			
WTR-DC-08	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																			
WTR-DC-09	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																			
WTR-DC-10	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																			
WTR-DC-11	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																			
WTR-DC-12	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																			
WTR-G-01	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																			
WTR-G-02	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																			
WTR-G-03	FW	X	X	X	X	X	X	X	X	X				X												X										X	X																			

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WTR-G-04	FW	X	X	X	X	X	X	X	X	X				X												X											X	X																						
WTR-S-01	FW	X	X	X	X	X	X	X	X	X				X												X											X	X																						
AT-DC-07	MA										X	X	X		X	X	X	X	X	X	X																																X						X
AT-S-02	MA										X	X	X		X	X	X	X	X	X	X																																					
BAC-DC-01	MA										X	X	X		X	X	X	X	X	X	X																																	X	X	X			
BAC-DC-02	MA										X	X	X		X	X	X	X	X	X	X																																	X	X				X
BAC-DC-03	MA										X	X	X		X	X	X	X	X	X	X																																	X	X	X			
BAC-DC-04	MA										X	X	X		X	X	X	X	X	X	X																																	X	X				
BAC-DC-05	MA										X	X	X		X	X	X	X	X	X	X																																X						X
BAC-DC-06	MA										X	X	X		X	X	X	X	X	X	X																			X						X				X								X	X
BAC-DC-08	MA										X	X	X		X	X	X	X	X	X	X																			X						X				X								X	X
BAC-DC-09	MA										X	X	X		X	X	X	X	X	X	X																			X						X				X								X	X
BAC-G-01	MA										X	X	X		X	X	X	X	X	X	X																																						
BAC-S-02	MA										X	X	X		X	X	X	X	X	X	X																															X		X	X	X		X	X
BAC-S-03	MA										X	X	X		X	X	X	X	X	X	X																															X		X	X	X		X	X
BAC-S-04	MA										X	X	X		X	X	X	X	X	X	X																															X							X
BAC-S-05	MA										X	X	X		X	X	X	X	X	X	X																															X							X
BAC-S-07	MA										X	X	X		X	X	X	X	X	X	X																												X		X					X	X
BAC-S-09	MA	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X																																						
BAC-S-10	MA	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X																																	X					
BAC-S-11	MA	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X																															X						X
CDW-DC-01	MA										X	X	X		X	X	X	X	X	X	X																																					
CDW-DC-02	MA										X	X	X		X	X	X	X	X	X	X																																		X			
CDW-DC-03	MA										X	X	X		X	X	X	X	X	X	X																												X						X		X	
CDW-G-02	MA	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X																																					
CDW-G-03	MA	X	X	X	X	X	X	X	X	X																																																
CDW-G-04	MA	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X																																					
CDW-G-08	MA										X	X	X		X	X	X	X	X	X	X																												X							X		
CDW-O-02.2	MA										X	X	X		X	X	X	X	X	X	X																																					
CDW-S-05	MA																											X	X		X	X	X	X																									
CDW-S-11	MA										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X													
CDW-S-12	MA										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X								X		
CDW-S-14	MA										X	X	X		X	X	X	X	X	X	X																																					
CDW-S-15	MA										X	X	X		X	X	X	X	X	X	X																																					
CDW-S-16	MA	X	X	X	X	X	X	X	X	X																																																
CDW-S-24	MA										X	X	X		X	X	X	X	X	X	X																																					
CDW-S-27	MA										X	X	X		X	X	X	X	X	X	X																																	X	X	X			

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RM-O-02	MA																										X												X													X	X						X
RM-S-02	MA																										X												X													X	X						X
RM-S-03	MA																										X												X													X	X						X
RM-S-04	MA																										X	X	X			X	X	X	X		X		X												X	X			X			X
RM-S-06	MA																										X												X													X	X						X
RM-S-08	MA																										X												X													X	X						X
RNA-DC-01	MA										X	X	X		X	X	X	X	X	X	X																																		X				
RNA-DC-03	MA	X	X	X	X	X	X	X	X	X				X												X											X	X						X															
RNA-G-01	MA										X	X	X		X	X	X	X	X	X	X																																						
RNA-G-02	MA										X	X	X		X	X	X	X	X	X	X																																						
RNA-G-03	MA										X	X	X		X	X	X	X	X	X	X																																						
RNA-G-05	MA										X	X	X		X	X	X	X	X	X	X																																						
RNA-G-06	MA										X	X	X		X	X	X	X	X	X	X																																						
RNA-S-02	MA										X	X	X		X	X	X	X	X	X	X																																						
RNA-S-04	MA										X	X	X		X	X	X	X	X	X	X																																						
RNA-S-10	MA										X	X	X		X	X	X	X	X	X	X																													X								
RW-DC-01	MA										X	X	X		X	X	X	X	X	X	X																																						
RW-DC-02	MA										X	X	X		X	X	X	X	X	X	X																										X				X							X
RW-G-01	MA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X										X	X						X															
RW-G-04	MA										X	X	X		X	X	X	X	X	X	X																																						
RW-S-03	MA										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X													
RW-S-04	MA										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X													
RW-S-07	MA										X	X	X		X	X	X	X	X	X	X																											X								X		
RW-S-08	MA										X	X	X		X	X	X	X	X	X	X																																					
RW-S-09	MA										X	X	X		X	X	X	X	X	X	X																	X							X				X								
SB-DC-07	MA										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X													
SB-DC-08	MA										X	X	X		X	X	X	X	X	X	X																														X							X
SB-DC-09	MA										X	X	X		X	X	X	X	X	X	X																																					
SB-DC-13	MA																X				X																																			X		
SB-DC-14	MA										X	X	X		X	X	X	X	X	X	X																																					
SB-DC-18	MA										X	X	X		X	X	X	X	X	X	X																																					
SB-S-01	MA										X	X	X		X	X	X	X	X	X	X																																					
SB-S-03	MA										X	X	X		X	X	X	X	X	X	X																														X							X
SB-S-04	MA										X	X	X		X	X	X	X	X	X	X																														X							X
WSR-DC-01	MA	X	X	X	X	X	X	X	X	X				X												X										X	X																						
WSR-DC-07	MA										X	X	X		X	X	X	X	X	X	X																														X							X
WSR-G-01	MA	X	X	X	X	X	X	X	X	X				X												X										X	X																					
WSR-G-02	MA	X	X	X	X	X	X	X	X	X				X												X										X	X																					
WSR-G-03	MA										X	X	X		X	X	X	X	X	X	X																												X								X	X

Updated 3/31/2020

AQUATIC Ecosystems/Species Groups | TERRESTRIAL Ecozones ----------> | UNIQUE HABITATS ----------> | TERRESTRIAL Species Groups ----------->

Plan Component	Scale	SG: Aquatic Species Senstive to Invasives Species	SG: Hydrologic Modification Sensitive Species	SG: Medium and Large River Associates	SG: Non-point Source Pollution Sensitive Species	SG: Point Source Pollution Sensitive Species	SG: Pond, Lake and Reservoir Associates	SG: Sediment Sensitive Species	SG: Small River Associates	SG: Stream Associates	ES: Acidic Cove Forest	ES: Dry Oak Forest	ES: Dry-mesic Oak Forest	ES: Floodplain Forest	ES: High Elevation Red Oak Forest	ES: Mesic Oak Forest	ES: Northern Hardwood Forest	ES: Pine-oak Heath Forest	ES: Rich Cove Forest	ES: Shortleaf Pine Forest	ES: Spruce-fir Forest	ES: Beech Gaps/Boulderfield Forest	ES: Calcareous Oak-walnut Forest	ES: Carolina Hemlock Forest	ES: Caves and Abandoned Mines	ES: Floodplain Pools	ES: Grassy Balds	ES: High Elevation Granitic Domes	ES: High Elevation Rocky Summit	ES: Low Elevation Glades	ES: Low Elevation Granitic Domes	ES: Low Elevation Rocky Summit	ES: Montane Calcareous Cliffs	ES: Montane Cliffs	ES: Montane Red Cedar Hardwood Woodlands	ES: Rocky Bar and Shore	ES: Seeps	ES: Serpentine Woodlands	ES: Shrub Balds	ES: Southern Appalachian Bogs	ES: Spray Cliffs	ES: Swamp Forest Bog Complex	ES: Upland Vernal Pools	ES: White Pine Forest	ES: Woodlands and Shale Slopes	SG: Bark/Leaf Epiphytes	SG: Closed Canopy Forest Associates	SG: Coarse Woody Debris/Downed Wood Associates	SG: Fire adapted Species	SG: Fire Intolerant Species	SG: Forest Edge and Transition Associates	SG: Hard and Soft Mast Dependent Species	SG: Interior Forest Associates	SG: Old Growth Forest Associates	SG: Road Density Sensitive Species	SG: Snag and Den Tree Associates	SG: Woodland Associates	SG: Young Forest Associates
WSR-G-04	MA										X	X	X		X	X	X	X	X	X	X																												X									X	X
WSR-G-05	MA										X	X	X		X	X	X	X	X	X	X																																						
WSR-G-13	MA	X	X	X	X	X	X	X	X	X				X												X										X	X																						
WSR-S-01	MA	X	X	X	X	X	X	X	X	X				X												X										X	X																						
WSR-S-02	MA										X	X	X		X	X	X	X	X	X	X																																					X
WSR-S-03	MA										X	X	X		X	X	X	X	X	X	X																																					X
WSR-S-05	MA	X	X	X	X	X	X	X	X	X				X												X										X	X																						
WSR-S-06	MA	X	X	X	X	X	X	X	X	X				X												X										X	X																						
WSR-S-10	MA	X	X	X	X	X	X	X	X	X				X												X										X	X																						
WSR-S-24	MA	X	X	X	X	X	X	X	X	X				X												X										X	X																						
WSR-S-39	MA	X	X	X	X	X	X	X	X	X				X												X										X	X																						