

APPENDICES

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APPENDIX A
VALUE ANALYSIS-MINI VA

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VALUE ANALYSIS REPORT - Mini VA

Park: Blue Ridge Parkway

Project: Mt. Pisgah Wastewater Treatment Plant Improvements

Package: BLRI-081430

Date: October 13, 2005

Component Evaluated: Wastewater Treatment Facility Improvements

Phase I - Information:

Background Information/Special Concerns/Constraints/Previous Decisions/Description of Present Proposal/Design Assumptions

The Blue Ridge Parkway (BRP) maintains the Mt. Pisgah Inn, a campground, trailer waste disposal and associated facilities in the Mt. Pisgah area, located near mile 410 of the BRP approximately 20 miles south of Asheville, NC. These combined facilities generate approximately 15,000 gallons per day (gpd) average of municipal plus trailer disposal wastewater during the operating season from April through November with peaks of 30,000 gpd during holiday weekends. The existing aerated lagoon facility meets NPDES effluent requirements on a regular basis with the exception of some infrequent whole effluent toxicity (WET) biomonitoring excursions. These excursions are likely attributed to effluent ammonia toxicity.

The liquid treatment scheme follows: plant influent is conveyed via gravity to the 0.46 acre, three-compartment aerated lagoon and pumped from the lagoon effluent transfer station to the lobe tank. There are two existing effluent transfer (submersible type) pump units. Plant flow is then pumped through the filters; chlorinated and dechlorinated before being discharged to Flat Laurel Creek. A

diaphragm pump is located in a separate concrete chamber for pumping settled sludge out of the lagoon.

Alternative A: Upgrade Existing Aerated Lagoon Facility

Lagoons systems similar to the facultative lagoon at Mt. Pisgah are in operation throughout the country to comply with effluent standards similar to those for Mt. Pisgah (30 mg/l BOD and TSS). The presence of filters downstream of the lagoon increases the likelihood of meeting the effluent requirements considerably. Without the filters, algae in the effluent can be attributed to effluent TSS violations during high algae growth seasons.

This alternative would focus primarily on improving the sludge removal system and solids storage/treatment capabilities onsite. Per the July 8, 2005 HDR Technical Memorandum (TM), it was determined that excessive sludge accumulation in the lagoons over the operating season is the likely cause of the prior WET excursions. A diesel-driven pump on a floating barge would be installed in the lagoon to facilitate more frequent sludge removal from the lagoon. The lagoon sludge pump would convey solids to a 25,000 gallon steel sludge storage tank. A 2.5 HP progressing cavity sludge transfer pumps would be located next to the storage tank, so that sludge could

be transferred at the end of the season to a sludge disposal truck. Many facility improvements would also be incorporated into this project including: sludge drying bed and Imhoff tank demolition, office building improvements, partial plant asphalt drive reconstruction, and a new emergency electrical generator.

This alternative offers the advantage of low cost, but the disadvantage of potential WET test excursions and lagoon safety concerns.

Alternative B: Construct Extended Aeration Package Treatment System

Pre-engineered, pre-fabricated extended aeration activated sludge wastewater treatment facilities are commonly used for flow ranges similar to Mount Pisgah. These systems apply the same biochemical technologies frequently used in larger facilities, but can be procured in a fully enclosed system designed for smaller flow ranges. If properly operated and maintained, extended aeration package treatment facilities produce acceptable effluent quality, and low levels of BOD, TSS and NH₃. The effluent from the package facility can either be conveyed to the existing filters or bypass the existing filters.

In this scenario, the lagoon would be taken out-of-service and a new plant influent pumping station wetwell with short-term equalization storage constructed. Two submersible pumps would be provided in the pumping station. The extended aeration package plant would be mounted to a concrete slab-on-grade. The exterior dimensions of the pre-fabricated structure are approximately 70' (length) by 15' (wide) by 15' (height). Within the structure, the following zones are present: sludge thickening/storage zone, aeration zone, clarifier zone, and a disinfection contact zone (if needed). The sludge thickening/storage zone would temporarily hold biosolids generated in the system until solids are conveyed to a new onsite sludge storage/treatment facility. Sludge would be gravity conveyed to a 25,000 gallon steel sludge storage tank. A 2.5 HP progressing cavity sludge transfer pumps

would be located next to the storage tank, so that sludge could be transferred to a sludge disposal truck. Sludge drying bed and Imhoff tank demolition would also be included in this Project. To facilitate facility reliability, a new 25 kW generator would also be included in this Project.

Advantages of the extended aeration package treatment facility are the relatively low cost, high degree of reliability, and compact footprint.

Alternative C: Polishing Constructed Wetlands Addition

J.F. New and Associates prepared a Preliminary Engineering Study (PES) in August 2001 that evaluated a constructed wetlands treatment system to either supplement or replace the lagoon system. In the PES, it was assumed that more stringent effluent permit would be issued in December 2001 and that more stringent effluent ammonia or other nutrients standards would be enforced. To-date, this yet to occur.

Two HDR TMs and an independent Olver, Inc. report were generated to evaluate the feasibility of replacing the aerated lagoon treatment system with a constructed wetlands waste treatment system. Both parties agreed that this was not a feasible alternative. The system has the following disadvantages: 1) Based on preliminary sizing requirements of 20 lbs BOD/(acre day), 3.5 acres to 5.0 acres of constructed wetland area would be required to treat the Mt. Pisgah wastewater. This magnitude of acreage is not available at the Mt. Pisgah site; 2) Site constraints at the treatment facility site would severely limit construction of any additional wetlands beyond the site limits without considerable earthwork activities and cost.; 3) Per discussions with NCDENR, regulatory approval of a constructed wetland system for the Mt. Pisgah site would be challenging; 4) Vegetation planted in the wetlands would require harvesting in the fall.

In our TM dated July 8, 2005, it was determined that the only feasible way to integrate a wetland system at Mt. Pisgah is via a polishing

wetland. An 0.3 acre polishing wetland system could be located downstream of the existing filters and the aerated lagoon system would remain in-service.

This alternative is being considered, since this alternative would promote “green” solutions for the park service. Plant effluent would flow in and out of the wetland via gravity, so no additional mechanical or electrical components will be required for this alternative. However, this alternative does not remove any of the existing mechanical system components from service.

Alternative D: Install Recirculating Sand Filtration System

The National Park Service has had success with recirculating sand filtration systems at other sites and recommended that this alternative be considered for Mt. Pisgah. The recirculating sand filter would require a minimum 92' by 18' footprint to treat 30,000 gpd flow. Three septic tanks, a recirculating tank, and recirculation pumps will also be required for this alternative. Due to the areal requirements of this alternative, the only feasible sand filter and tank location is within the aerated lagoon footprint. This option will utilize a considerable amount of compacted fill dirt to bring the top of filter/tank elevations up to existing grade. A concrete containment barrier would also be poured around the filter perimeter. Per conversations with a recirculating sand filter manufacturer, the recirculating sand filter can be anticipated to produce BOD and TSS effluent quality less than 10 mg/L. Additionally, ammonia reduction is expected to be in the 40-50% range.

Advantages of the recirculating sand filter system include prior experience with the system at other NPS facilities while disadvantages include limited filter construction period due to the need to utilize the aerated lagoon area.

Alternative E: Install Membrane Bioreactor (MBR) Package Treatment System

An MBR package system, an innovative alternative in wastewater treatment, is similar in some respects to the extended aeration package treatment facility. The MBR uses membrane technology to separate mixed liquor suspended solids (MLSS) in the aeration basin from treated effluent rather than a gravity separation clarifier used in typical activated sludge processes. Similar sludge production would be expected from both systems. MBR systems produce superior effluent quality compared to the most other wastewater treatment technologies due to the very small membrane pore space. Anticipated effluent quality would be BOD and TSS concentrations less than 5 mg/L and Ammonia concentration less than 1 mg/L.

In this scenario, the lagoon would be taken out-of-service and a new plant influent pumping station wetwell with short-term equalization storage constructed. Two submersible pumps would be provided in the pumping station. The MBR package plant would be mounted to a concrete slab-on-grade. The exterior dimensions of the pre-fabricated structure are approximately 50' (length) by 15' (wide) by 15' (height). Within the structure, the following zones are present: influent holding tank, anoxic basin, aeration basin, and a membrane basin (two cells). The existing chlorination and dechlorination facilities would be utilized. A pre-programmed PLC and process control panel would be provided and would control the system and all process components.

Advantages of the MBR system include the superior effluent quality while disadvantages include higher capital and operating costs (compared to an extended aeration facility).

Alternative F: Install Membrane Bioreactor (MBR) Package Treatment System w/Ultraviolet (UV) Disinfection

This alternative is identical to Alternative E except that the existing chlorination/dechlorination equipment would be taken out-of-service and a new in-line UV disinfection unit installed.

Advantages of installing a UV disinfection system in conjunction with the MBR system include elimination of chlorine discharge to the environment and elimination of chlorination/dechlorination chemicals onsite while disadvantages include the capital cost associated with purchasing the UV equipment.

Alternative G: Install Sequencing Batch Reactor (SBR) Treatment System

An SBR treatment system would be constructed to replace the existing aerated lagoon. NPS has used SBR technology successfully at other sites. Two concrete basins would require construction with minimum dimensions (LWD) 16' by 14' by 19'. The SBR system requires a minimum sidewater depth of 16'. There is a considerable amount of rock in this area and it is very likely that rock would be encountered while constructing these basins. The anticipated SBR effluent quality will likely be in the 20-15 mg/l BOD, 20-15 mg/L TSS, and 5 mg/L Ammonia concentration range. Thus, it is anticipated that the existing effluent filters will have to remain in-service.

Advantages of the SBR system include prior experience with the system at other NPS facilities while disadvantages include excessive sidewater depth requirements and anticipated effluent quality similar to the existing aerated lagoon system.

Alternative H: Install Orenco Advantex Filtration System

Eight, 5,000 GPD Orenco Advantex Filtration system modules would replace the aerated lagoon. NPS has used this technology successfully at other sites and wanted to evaluate this technology for this location. The filter modules have dimensions (LWD) 16' by 8' by 4'. The

anticipated Orenco system effluent quality would be in the 20 mg/l BOD, 20 mg/L TSS, and 5-10 mg/L Ammonia concentration range. Thus, it is anticipated that the existing effluent filters will have to remain in-service.

Advantages of the Orenco system include prior experience with the system at other NPS facilities while disadvantages include a proprietary membrane technology required for long-term system operation.

Phase II - Functional Analysis:

Functional Analysis/Description of the Present Proposal:
Active Verb Noun

- | | |
|-------------|---------------------------|
| 1. Satisfy | NPDES Permit Requirements |
| 2. Enhance | Effluent Quality |
| 3. Reduce | Staff Effort |
| 4. Maximize | Staff Safety |
| 5. Protect | Public Health |

Phase III - Creativity:

#	Treatment Alternatives	Action
0	Maintain existing aerated lagoon operation (Do nothing)	Not viable; risk of failing ammonia toxicity still exists; plant effluent quality will not be enhanced.
A	Maintain existing aerated lagoon treatment; upgrade existing facility to increase solids removal frequency from lagoon; provide onsite solids storage location	Viable.
B	Replace the lagoon with an extended aeration package treatment plant system	Viable.
C	Install polishing constructed wetlands downstream of the lagoon	Not viable, because the lagoon must remain in operation and effluent quality improvement would be limited.
D	Replace the lagoon with a recirculating sand filtration system	Not viable. The lagoon area would be utilized for the filters, recirculation and septic tanks. Earthwork will be significant and the capital costs exceed available funding.
E	Replace the lagoon with a membrane bioreactor (MBR) package treatment system	Viable.
F	Replace the lagoon with a membrane bioreactor (MBR) package treatment system and UV disinfection	Not viable; capital costs exceed available funding.
G	Replace the lagoon with a sequencing batch reactor (SBR) treatment system	Not viable; sidewater depth requirements are very high which will create an excessive amount of excavation; capital costs exceed available funding.

#	Treatment Alternatives	Action
H	Replace the lagoon with an Orenco Advantex filtration system	Not viable; proprietary filter media is a major negative for this system.

Phase IV - Evaluation

Evaluation Sub-Factors or Variables:

#	Evaluation Variables	Variable Importance Factor
1	Improve Effluent Quality	10 points
2	Simplify Operations	9 points
3	Enhance Safety	8 points
4	Improve Long-Term Reliability	7 points
5	Simplify Construction	6 points
6	Provide Flexibility for Expansion/More Stringent Effluent Limits	5 points
7	Simplify Regulatory Agency Permitting Approval	4 points
8	Limit Environmental Impacts Due to Site Disturbance	3 points
9	Gain Public Acceptance and Support	2 points
10	Provide an Innovative Solution	1 point

Choosing by Advantages (CBA) matrix is attached in the Appendix.

Phase V – Development:

NPS has \$1.13 M available funds for this construction project. All of the considered alternatives were initially considered viable for the site except for Alternatives 0 – Do Nothing, C – Polishing Wetlands Addition, and H – Install Orenco Advantex Filtration System. Alternative C did not achieve project objectives for the capital money required. Alternative H is a proprietary product that caused concerns regarding future filter media replacement. The capital cost for three (Alternatives D, F, and G) of the seven alternatives exceeded the available construction funding for the project. Thus, Alternatives A, B, and E remained viable. Alternatives A and B have similar capital and life cycle cost. Alternative E has a higher capital and life cycle cost, but provides superior effluent quality compared to Alternatives A and B. After much discussion, the project team threw

out Alternative E and focused on Alternatives A and B. The project team decided that Alternative B: Construct Extended Aeration Package Treatment System would be more feasible than Alternative A: Upgrade Existing Aerated Lagoon Facility.

Phase VI - Recommendations:

The team selected Alternative B: Construct Extended Aeration Package Treatment System as the preferred alternative. Relative to Alternative A, Alternative B would essentially provide NPS with a brand-new treatment facility for approximately the same capital cost. Concerns were expressed regarding spending capital to improve existing facilities relative to the age of the existing aerated lagoon system. Additionally, the plant operator has prior operating experience with extended aeration package plants and prefers this type of facility over the lagoon system. Package plant effluent quality should be the same or slightly better than the existing facility. Extended aeration package plants also have a long-history of operating experience and are considered a time-proven technology. The tentative location for the package plant is in the current sludge drying bed and Imhoff tank area. Neither facility is in use and would be demolished. The lagoon area may also be filled in with compacted dirt and useable plant site area increased by almost 0.5 acres. Since extended aeration package plants are a proven wastewater treatment technology, the NCDENR permitting process should also be simplified.

Phase VII - Implementation

The value analysis study was conducted on October 13, 2005, in Asheville, NC. NPS team to present this preferred alternative to the DAB in March 2006 for approval. If approval is granted, design document development would begin in June 2006.

Study Team Members

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APPENDIX

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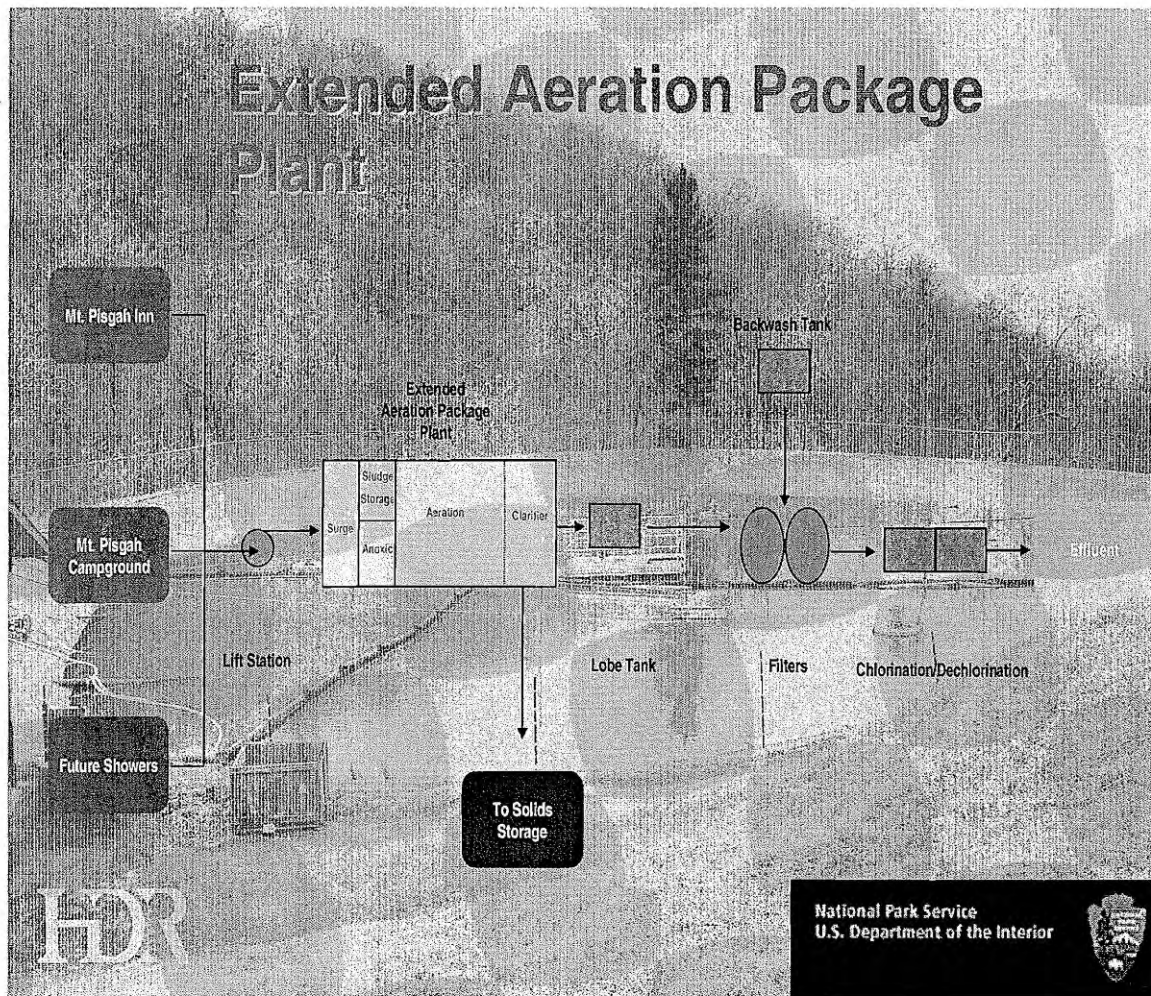


Figure 1: Schematic for the Extended Aeration Package Plant Alternative

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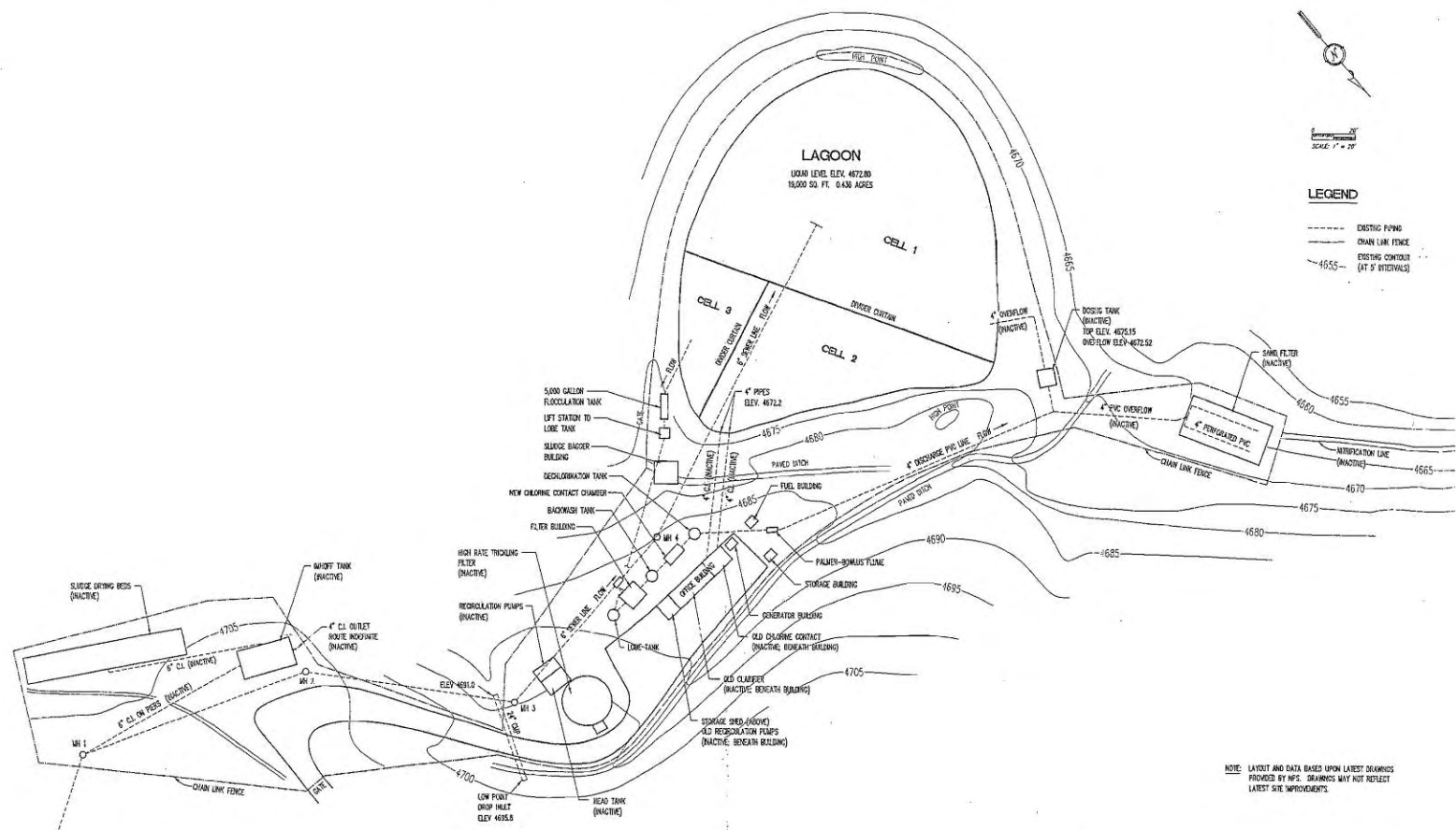


Figure 2: Mt. Pisgah WWTP Site Plan

BLUE RIDGE PARKWAY – PMIS NO. 081430
MT. PISGAH WASTEWATER TREATMENT PLANT IMPROVEMENTS
Choosing by Advantages (CBA)

IMPORTANCE FACTOR	10	9	8	7	6	5	4	3	2	1			
ALTERNATIVES	Improve Effluent Quality	Simplify Operations	Enhance Safety	Improve Long-Term Reliability	Simplify Construction	Provide Flexibility for Expansion/More Stringent Limits	Simplify Regulatory Agency Permitting Approval	Limit Environmental Impacts Due to Site Disturbance	Gain Public Acceptance and Support	Provide an Innovative Solution	Importance Point Totals	Capital Cost (\$M)	Adjusted Point Totals
ALTERNATIVE A: UPGRADE EXISTING AERATED LAGOON FACILITY	6 TOTAL = 60	6 TOTAL = 54	8 TOTAL = 64	9 TOTAL = 63	9 TOTAL = 54	6 TOTAL = 30	10 TOTAL = 90	8 TOTAL = 24	6 TOTAL = 12	3 TOTAL = 3	404		531
ALTERNATIVE B: CONSTRUCT EXTENDED AERATION PACKAGE PLANT	7 TOTAL = 70	10 TOTAL = 90	8 TOTAL = 64	8 TOTAL = 56	10 TOTAL = 60	7 TOTAL = 35	8 TOTAL = 32	8 TOTAL = 24	7 TOTAL = 14	4 TOTAL = 4	449		561
ALTERNATIVE C: POLISHING CONSTRUCTED WETLANDS ADDITION	7 TOTAL = 70	1 TOTAL = 9	4 TOTAL = 32	1 TOTAL = 7	8 TOTAL = 48	3 TOTAL = 15	8 TOTAL = 32	8 TOTAL = 24	8 TOTAL = 16	8 TOTAL = 8	261		326
ALTERNATIVE D: INSTALL RECIRCULATING SAND FILTRATION SYSTEM	4 TOTAL = 40	3 TOTAL = 27	9 TOTAL = 72	2 TOTAL = 14	5 TOTAL = 30	4 TOTAL = 20	5 TOTAL = 20	8 TOTAL = 24	4 TOTAL = 8	4 TOTAL = 4	259		212
ALTERNATIVE E: INSTALL MBR PACKAGE PLANT	9 TOTAL = 90	6 TOTAL = 54	8 TOTAL = 64	8 TOTAL = 56	10 TOTAL = 60	9 TOTAL = 45	4 TOTAL = 16	8 TOTAL = 24	9 TOTAL = 18	9 TOTAL = 9	436		396
ALTERNATIVE F: INSTALL MBR PACKAGE PLANT W/UV DISINFECTION	10 TOTAL = 100	7 TOTAL = 63	8 TOTAL = 64	8 TOTAL = 56	10 TOTAL = 60	9 TOTAL = 45	4 TOTAL = 16	8 TOTAL = 24	9 TOTAL = 18	9 TOTAL = 9	455		373
ALTERNATIVE G: INSTALL SEQUENCING BATCH REACTOR (SBR) SYSTEM	7 TOTAL = 70	7 TOTAL = 63	8 TOTAL = 64	8 TOTAL = 56	10 TOTAL = 60	7 TOTAL = 35	7 TOTAL = 28	8 TOTAL = 24	7 TOTAL = 14	7 TOTAL = 7	421		329

Park <u>Mt. Pisgah, NC</u>	NATIONAL PARK SERVICE		Sheet <u>1</u>
Area	DENVER SERVICE CENTER		of <u>1</u>
Project	By	Checked	Pkg.
Feature <u>VA Study - Attendance</u>	Date	Date	Account

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APPENDIX B
PROTECTED SPECIES LISTS AND INFORMATION

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LIST OF FEDERAL AND STATE LISTED SPECIES OF PLANTS AND ANIMALS IN BUNSCOMB COUNTY, NORTH CAROLINA
(SOURCE: NORTH CAROLINA NATURAL HERITAGE PROGRAM 2006. <http://207.4.179.38/nhp/find.php>).

<u>Major Group</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>State Status</u>	<u>Federal Status</u>	<u>State Rank</u>	<u>Global Rank</u>	<u>County - Status</u>	<u>Map - Habitat</u>
Invertebrate Animal	<i>Alasmidonta raveneliana</i>	Appalachian Elktoe	E	E	S1	G1	Buncombe - Historical	Link
Invertebrate Animal	<i>Barbaetis benfieldi</i>	Benfield's Bearded Small Minnow Mayfly	SR	None	S1	G2G4	Buncombe - Current	Link
Invertebrate Animal	<i>Callophrys irus</i>	Frosted Elfin	SR	None	S2	G3	Buncombe - Obscure	Link
Invertebrate Animal	<i>Cambarus reburus</i>	French Broad River Crayfish	SR	FSC	S2S3	G3G4	Buncombe - Current	Link
Invertebrate Animal	<i>Celastrina nigra</i>	Dusky Azure	SR	None	S2?	G4	Buncombe - Obscure	Link
Invertebrate Animal	<i>Discus bryanti</i>	Sawtooth Disc	SC	None	S2	G3	Buncombe - Current	Link
Invertebrate Animal	<i>Ephemerella bernerii</i>	A Mayfly	SR	None	S2	G4	Buncombe - Current	Link
Invertebrate Animal	<i>Epioblasma capsaeformis</i>	Oyster Mussel	EX	E	SX	G1	Buncombe - Historical	Link
Invertebrate Animal	<i>Epioblasma florentina walkeri</i>	Tan Riffleshell	EX	E	SX	G1T1	Buncombe - Historical	Link
Invertebrate Animal	<i>Erora laeta</i>	Early Hairstreak	SR	None	S2S3	G3G4	Buncombe - Obscure	Link
Invertebrate Animal	<i>Erynnis martialis</i>	Mottled Duskywing	SR	None	S3	G3G4	Buncombe - Obscure	Link
Invertebrate Animal	<i>Euphydryas phaeton</i>	Baltimore Checkerspot	SR	None	S2	G4	Buncombe - Obscure	Link
Invertebrate Animal	<i>Fusconaia subrotunda</i>	Long-solid	SR	None	S1	G3	Buncombe - Historical	Link
Invertebrate Animal	<i>Hypochilus coylei</i>	A Lampshade Spider	SR	None	S3?	G3?	Buncombe - Current	Link

<u>Major Group</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>State Status</u>	<u>Federal Status</u>	<u>State Rank</u>	<u>Global Rank</u>	<u>County - Status</u>	<u>Map - Habitat</u>
Invertebrate Animal	<i>Hypochilus sheari</i>	A Lampshade Spider	SR	None	S2S3	G2G3	Buncombe - Current	Link
Invertebrate Animal	<i>Macdunnoa brunnea</i>	A Mayfly	SR	None	S2	G3G4	Buncombe - Current	Link
Invertebrate Animal	<i>Medionidus conradicus</i>	Cumberland Moccasinshell	EX	None	SX	G3G4	Buncombe - Historical	Link
Invertebrate Animal	<i>Micrasema burksi</i>	A Caddisfly	SR	None	S3	G4G5	Buncombe - Current	Link
Invertebrate Animal	<i>Paravitrea andrewsae</i>	High Mountain Supercoil	SC	None	S2	G2	Buncombe - Obscure	Link
Invertebrate Animal	<i>Phyciodes batesii maconensis</i>	Tawny Crescent	SR	FSC	S2	G4T2T3	Buncombe - Historical	Link
Invertebrate Animal	<i>Polygonia faunus smythi</i>	Smyth's Green Comma	SR	None	S2	G5T3T4	Buncombe - Current	Link
Invertebrate Animal	<i>Polygonia progne</i>	Gray Comma	SR	None	S1	G5	Buncombe - Current	Link
Invertebrate Animal	<i>Satyrium caryaevorus</i>	Hickory Hairstreak	SR	None	S1?	G4	Buncombe - Current	Link
Natural Community	<i>Acidic cove forest</i>	None	None	None	S5	G5	Buncombe - Current	Link
Natural Community	<i>Boulderfield forest</i>	None	None	None	S3	G3	Buncombe - Current	Link
Natural Community	<i>Canada hemlock forest</i>	None	None	None	S5	G5	Buncombe - Current	Link
Natural Community	<i>Carolina hemlock bluff</i>	None	None	None	S2	G2G3	Buncombe - Current	Link
Natural Community	<i>Chestnut oak forest</i>	None	None	None	S5	G5	Buncombe - Current	Link
Natural Community	<i>Grassy bald</i>	None	None	None	S2	G2	Buncombe - Current	Link
Natural Community	<i>Heath bald</i>	None	None	None	S3	G4	Buncombe - Current	Link

<u>Major Group</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>State Status</u>	<u>Federal Status</u>	<u>State Rank</u>	<u>Global Rank</u>	<u>County - Status</u>	<u>Map - Habitat</u>
Natural Community	<i>High elevation granitic dome</i>	None	None	None	S2	G2	Buncombe - Current	Link
Natural Community	<i>High elevation red oak forest</i>	None	None	None	S5	G5	Buncombe - Current	Link
Natural Community	<i>High elevation rocky summit</i>	None	None	None	S2	G2	Buncombe - Current	Link
Natural Community	<i>High elevation seep</i>	None	None	None	S2S3	G3	Buncombe - Current	Link
Natural Community	<i>Low elevation granitic dome</i>	None	None	None	S1	G2	Buncombe - Current	Link
Natural Community	<i>Low elevation rocky summit</i>	None	None	None	S2	G2	Buncombe - Current	Link
Natural Community	<i>Montane alluvial forest</i>	None	None	None	S1	G2?	Buncombe - Current	Link
Natural Community	<i>Montane mafic cliff</i>	None	None	None	S1	G2?	Buncombe - Current	Link
Natural Community	<i>Montane oak--hickory forest</i>	None	None	None	S5	G5	Buncombe - Current	Link
Natural Community	<i>Montane red cedar-hardwood woodland</i>	None	None	None	S1?	GNR	Buncombe - Obscure	Link
Natural Community	<i>Northern hardwood forest (beech gap subtype)</i>	None	None	None	S2?	G2?	Buncombe - Current	Link
Natural Community	<i>Northern hardwood forest (typic subtype)</i>	None	None	None	S4	G5	Buncombe - Current	Link
Natural Community	<i>Pine--oak/heath</i>	None	None	None	S4	G5	Buncombe - Current	Link
Natural Community	<i>Red spruce--fraser fir forest</i>	None	None	None	S2	G2	Buncombe - Current	Link
Natural Community	<i>Rich cove forest</i>	None	None	None	S4	G4	Buncombe - Current	Link
Natural Community	<i>Rocky bar and shore</i>	None	None	None	S5	G5	Buncombe - Current	Link

<u>Major Group</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>State Status</u>	<u>Federal Status</u>	<u>State Rank</u>	<u>Global Rank</u>	<u>County - Status</u>	<u>Map - Habitat</u>
Natural Community	<i>Spray cliff</i>	None	None	None	S3	G2	Buncombe - Current	Link
Natural Community	<i>Swamp forest-bog complex (typic subtype)</i>	None	None	None	S3	G2G3T2	Buncombe - Current	Link
Nonvascular Plant	<i>Acrobolbus ciliatus</i>	A Liverwort	SR-D	None	S1	G3?	Buncombe - Current	Link
Nonvascular Plant	<i>Bazzania nudicaulis</i>	A Liverwort	SR-T	None	S2	G2G3	Buncombe - Historical	Link
Nonvascular Plant	<i>Cetrelia cetrarioides</i>	Sea Storm Lichen	SR-D	None	S2	G4G5	Buncombe - Historical	Link
Nonvascular Plant	<i>Dichodontium pellucidum</i>	A Moss	W1	None	S2	G4G5	Buncombe - Historical	Link
Nonvascular Plant	<i>Dicranum undulatum</i>	Bog Broom-moss	SR-D	None	S1	G5	Buncombe - Historical	Link
Nonvascular Plant	<i>Diplophyllum obtusatum</i>	A Liverwort	SR-D	None	S1	G2?	Buncombe - Historical	Link
Nonvascular Plant	<i>Entodon sullivantii</i>	Sullivant's Entodon	SR-O	None	S2	G3G4	Buncombe - Historical	Link
Nonvascular Plant	<i>Gymnoderma lineare</i>	Rock Gnome Lichen	T	None	S2	G2	Buncombe - Current	Link
Nonvascular Plant	<i>Hydrothyria venosa</i>	Waterfan Lichen	SR-P	None	S3	G3G5	Buncombe - Current	Link
Nonvascular Plant	<i>Melanelia stygia</i>	Alpine Camouflage Lichen	SR-D	None	StS2	G4G5	Buncombe - Current	Link
Nonvascular Plant	<i>Nardia scalaris ssp. scalaris</i>	A Liverwort	SR-D	None	S1	G5T5	Buncombe - Current	Link
Nonvascular Plant	<i>Pannaria conoplea</i>	Mealy-rimmed Shingle Lichen	SR-D	None	S1	G3G4	Buncombe - Historical	Link
Nonvascular Plant	<i>Plagiochila corniculata</i>	A Liverwort	SR-D	None	S2	G4?	Buncombe - Historical	Link
Nonvascular Plant	<i>Rhytidium rugosum</i>	Golden Tundra-moss	SR-P	None	S2	G5	Buncombe - Historical	Link

<u>Major Group</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>State Status</u>	<u>Federal Status</u>	<u>State Rank</u>	<u>Global Rank</u>	<u>County - Status</u>	<u>Map - Habitat</u>
Nonvascular Plant	<i>Xanthoparmelia monticola</i>	A Rock-shield Lichen	SR-L	None	S2?	G2?	Buncombe - Historical	Link
Vascular Plant	<i>Aconitum reclinatum</i>	Trailing Wolfsbane	SR	None	S3	G3	Buncombe - Current	Link
Vascular Plant	<i>Adlumia fungosa</i>	Climbing Fumitory	SR-P	None	S2	G4	Buncombe - Current	Link
Vascular Plant	<i>Amelanchier sanguinea</i>	Roundleaf Serviceberry	SR-P	None	S2	G5	Buncombe - Current	Link
Vascular Plant	<i>Arabis hirsuta</i> var. <i>adpressipilis</i>	Hairy Rockcress	SR-P	None	S1	G5T4Q	Buncombe - Current	Link
Vascular Plant	<i>Berberis canadensis</i>	American Barberry	SR-T	None	S2	G3	Buncombe - Historical	Link
Vascular Plant	<i>Botrychium jenmanii</i>	Alabama Grape-fern	SR-P	None	S2	G3G4	Buncombe - Historical	Link
Vascular Plant	<i>Botrychium oneidense</i>	Blunt-lobed Grape-fern	SR-P	None	S2	G4Q	Buncombe - Historical	Link
Vascular Plant	<i>Buckleya distichophylla</i>	Piratebush	E	FSC	S2	G2	Buncombe - Current	Link
Vascular Plant	<i>Calamagrostis cainii</i>	Cain's Reed Grass	E	FSC	S1	G1	Buncombe - Current	Link
Vascular Plant	<i>Caltha palustris</i>	Marsh-marigold	SR-P	None	S1	G5	Buncombe - Historical	Link
Vascular Plant	<i>Carex biltmoreana</i>	Biltmore Sedge	SR-L	None	S3	G3	Buncombe - Current	Link
Vascular Plant	<i>Carex hitchcockiana</i>	Hitchcock's Sedge	SR-P	None	S1	G5	Buncombe - Current	Link
Vascular Plant	<i>Carex leptoneurva</i>	A Wood Sedge	SR-P	None	S2	G4	Buncombe - Current	Link
Vascular Plant	<i>Carex misera</i>	Wretched Sedge	SR-L	None	S3	G3	Buncombe - Current	Link
Vascular Plant	<i>Carex roanensis</i>	Roan Sedge	SR-T	FSC	S2	G2	Buncombe - Current	Link

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Vascular Plant	<i>Carex trisperma</i>	Three-seeded Sedge	SR-P	None	S1	G5	Buncombe - Obscure	Link
Vascular Plant	<i>Celastrus scandens</i>	American Bittersweet	SR-P	None	S2?	G5	Buncombe - Historical	Link
Vascular Plant	<i>Clematis glaucophylla</i>	White-leaved Leatherflower	SR-P	None	SH	G4?	Buncombe - Obscure	Link
Vascular Plant	<i>Clematis occidentalis</i>	Mountain Clematis	SR-P	None	S1	G5	Buncombe - Current	Link
Vascular Plant	<i>Coeloglossum viride</i> var. <i>virescens</i>	Long-bracted Frog Orchid	SR-P	None	S1	G5T5	Buncombe - Historical	Link
Vascular Plant	<i>Coreopsis latifolia</i>	Broadleaf Coreopsis	SR-T	None	S3	G3	Buncombe - Current	Link
Vascular Plant	<i>Dicentra eximia</i>	Bleeding Heart	SR-P	None	S2	G4	Buncombe - Current	Link
Vascular Plant	<i>Dodecatheon meadia</i> var. <i>meadia</i>	Eastern Shooting-Star	SR-P	None	S2	G5T5	Buncombe - Current	Link
Vascular Plant	<i>Draba ramosissima</i>	Branching Draba	SR-P	None	S2	G4	Buncombe - Current	Link
Vascular Plant	<i>Epilobium ciliatum</i>	Purpleleaf Willowherb	SR-P	None	S2	G5	Buncombe - Current	Link
Vascular Plant	<i>Euphorbia commutata</i>	Cliff Spurge	SR-P	None	S1	G5	Buncombe - Current	Link
Vascular Plant	<i>Euphorbia purpurea</i>	Glade Spurge	SR-T	FSC	S2	G3	Buncombe - Current	Link
Vascular Plant	<i>Filipendula rubra</i>	Queen-of-the-prairie	E	None	S1	G4G5	Buncombe - Historical	Link
Vascular Plant	<i>Geum radiatum</i>	Spreading Avens	E-SC	E	S2	G1	Buncombe - Current	Link
Vascular Plant	<i>Hasteola suaveolens</i>	Sweet Indian-plantain	SR-T	None	SH	G3	Buncombe - Obscure	Link
Vascular Plant	<i>Helianthemum bicknellii</i>	Plains Sunrose	SR-P	None	SH	G5	Buncombe - Current	Link

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Vascular Plant	<i>Helianthemum propinquum</i>	Creeping Sunrose	SR-P	None	S1	G4	Buncombe - Current	Link
Vascular Plant	<i>Helianthus occidentalis</i>	Few-leaf Sunflower	SR-P	None	SX	G5	Buncombe - Historical	Link
Vascular Plant	<i>Hexastylis contracta</i>	Mountain Heartleaf	E	FSC	S1	G3	Buncombe - Current	Link
Vascular Plant	<i>Hexastylis rhombiformis</i>	French Broad Heartleaf	SR-L	FSC	S2	G2	Buncombe - Current	Link
Vascular Plant	<i>Huperzia appalachiana</i>	Appalachian Fir-clubmoss	SR-P	None	S2	G4G5	Buncombe - Current	Link
Vascular Plant	<i>Hydrastis canadensis</i>	Goldenseal	E-SC	None	S2	G4	Buncombe - Current	Link
Vascular Plant	<i>Hydrophyllum macrophyllum</i>	Largeleaf Waterleaf	SR-P	None	S2	G5	Buncombe - Current	Link
Vascular Plant	<i>Juncus trifidus</i>	Highland Rush	E	None	S1	G5	Buncombe - Current	Link
Vascular Plant	<i>Juniperus communis var. depressa</i>	Dwarf Juniper	SR-D	None	S1	G5T5	Buncombe - Historical	Link
Vascular Plant	<i>Liatris turgida</i>	Shale-barren Blazing-star	SR-T	None	S1S2	G3	Buncombe - Historical	Link
Vascular Plant	<i>Lilium grayi</i>	Gray's Lily	T-SC	FSC	S3	G3	Buncombe - Current	Link
Vascular Plant	<i>Lonicera canadensis</i>	American Fly-honeysuckle	SR-P	None	S2	G5	Buncombe - Current	Link
Vascular Plant	<i>Lonicera flava</i>	Yellow Honeysuckle	SR-P	None	S2	G5?	Buncombe - Current	Link
Vascular Plant	<i>Lysimachia fraseri</i>	Fraser's Loosestrife	E	FSC	S2	G2	Buncombe - Historical	Link
Vascular Plant	<i>Monotropsis odorata</i>	Sweet Pinesap	SR-T	FSC	S3	G3	Buncombe - Current	Link
Vascular Plant	<i>Packera millefolium</i>	Divided-leaf Ragwort	T	FSC	S2	G2	Buncombe - Current	Link

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Vascular Plant	<i>Packera schweinitziana</i>	Schweinitz's Ragwort	E	None	S2	G5?	Buncombe - Current	Link
Vascular Plant	<i>Parnassia grandifolia</i>	Large-leaved Grass-of-parnassus	T	FSC	S2	G3	Buncombe - Historical	Link
Vascular Plant	<i>Pedicularis lanceolata</i>	Swamp Lousewort	SR-P	None	S1	G5	Buncombe - Current	Link
Vascular Plant	<i>Phegopteris connectilis</i>	Northern Beech Fern	SR-P	None	S2	G5	Buncombe - Current	Link
Vascular Plant	<i>Phlox subulata</i>	Moss Pink	SR-P	None	S1	G5	Buncombe - Current	Link
Vascular Plant	<i>Platanthera flava</i> var. <i>herbiola</i>	Northern Green Orchid	SR-P	None	S1?	G4T4Q	Buncombe - Historical	Link
Vascular Plant	<i>Platanthera grandiflora</i>	Large Purple-fringed Orchid	SR-P	None	S2	G5	Buncombe - Current	Link
Vascular Plant	<i>Platanthera peramoena</i>	Purple Fringeless Orchid	SR-P	None	S2	G5	Buncombe - Obscure	Link
Vascular Plant	<i>Rhododendron vaseyi</i>	Pink-shell Azalea	SR-L	None	S3	G3	Buncombe - Current	Link
Vascular Plant	<i>Robinia hispida</i> var. <i>kelseyi</i>	Kelsey's Locust	SR-O	None	S1	G4T1	Buncombe - Historical	Link
Vascular Plant	<i>Rubus idaeus</i> ssp. <i>strigosus</i>	Red Raspberry	SR-P	None	S2?	G5T5	Buncombe - Current	Link
Vascular Plant	<i>Rudbeckia triloba</i> var. <i>pinnatiloba</i>	Pinnate-lobed Black-eyed Susan	SR-T	None	S1	G5T3	Buncombe - Current	Link
Vascular Plant	<i>Sagittaria fasciculata</i>	Bunched Arrowhead	E	E	S1	G1	Buncombe - Historical	Link
Vascular Plant	<i>Sarracenia jonesii</i>	Mountain Sweet Pitcher Plant	E-SC	E	S1	G3T1	Buncombe - Historical	Link
Vascular Plant	<i>Saxifraga caroliniana</i>	Carolina Saxifrage	SR-T	FSC	S3	G2	Buncombe - Current	Link
Vascular Plant	<i>Silene ovata</i>	Mountain Catchfly	SR-T	FSC	S3	G3	Buncombe - Current	Link

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Vascular Plant	<i>Spiraea virginiana</i>	Virginia Spiraea	E	T	S2	G2	Buncombe - Historical	Link
Vascular Plant	<i>Spiranthes ochroleuca</i>	Yellow Ladies'-tresses	SR-P	None	SH	G4	Buncombe - Historical	Link
Vascular Plant	<i>Streptopus amplexifolius</i>	White Mandarin	SR-P	None	S1	G5	Buncombe - Current	Link
Vascular Plant	<i>Thermopsis fraxinifolia</i>	Ash-leaved Golden-banner	SR-T	None	S2?	G3?	Buncombe - Current	Link
Vascular Plant	<i>Thermopsis mollis</i>	Appalachian Golden-banner	SR-P	None	S2	G3G4	Buncombe - Current	Link
Vascular Plant	<i>Trichophorum cespitosum</i>	Deerhair Bulrush	SR-D	None	S2S3	G5	Buncombe - Current	Link
Vascular Plant	<i>Woodsia appalachiana</i>	Appalachian Cliff Fern	SR-P	None	S2	G4	Buncombe - Historical	Link
Vascular Plant	<i>Zigadenus elegans ssp. glaucus</i>	White Camas	SR-P	None	S1	G5T4T5	Buncombe - Historical	Link
Vertebrate Animal	<i>Aegolius acadicus pop. 1</i>	Southern Appalachian Northern Saw-whet Owl	T	FSC	S2B,S2N	G5TNR	Buncombe - Current	Link
Vertebrate Animal	<i>Aimophila aestivalis</i>	Bachman's Sparrow	SC	FSC	S3B,S2N	G3	Buncombe - Historical	Link
Vertebrate Animal	<i>Ambystoma talpoideum</i>	Mole Salamander	SC	None	S2	G5	Buncombe - Current	Link
Vertebrate Animal	<i>Apalone spinifera spinifera</i>	Eastern Spiny Softshell	SC	None	S1	G5T5	Buncombe - Current	Link
Vertebrate Animal	<i>Catharus guttatus</i>	Hermit Thrush	SR	None	S2B,S5N	G5	Buncombe - Current	Link
Vertebrate Animal	<i>Certhia americana</i>	Brown Creeper	SC	None	S3B,S5N	G5	Buncombe - Current	Link
Vertebrate Animal	<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo	SR	None	S2B	G5	Buncombe - Current	Link
Vertebrate Animal	<i>Corynorhinus rafinesquii rafinesquii</i>	Rafinesque's Big-eared Bat - Mountain Subspecies	T	FSC	S2	G3G4TNR	Buncombe - Historical	Link

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Vertebrate Animal	<i>Crotalus horridus</i>	Timber Rattlesnake	SC	None	S3	G4	Buncombe - Current	Link
Vertebrate Animal	<i>Cryptobranchus alleganiensis</i>	Hellbender	SC	FSC	S3	G3G4	Buncombe - Current	Link
Vertebrate Animal	<i>Dendroica cerulea</i>	Cerulean Warbler	SR	FSC	S2B	G4	Buncombe - Current	Link
Vertebrate Animal	<i>Dendroica magnolia</i>	Magnolia Warbler	SR	None	S1S2B	G5	Buncombe - Current	Link
Vertebrate Animal	<i>Desmognathus wrighti</i>	Pigmy Salamander	SR	FSC	S3	G3G4	Buncombe - Current	Link
Vertebrate Animal	<i>Empidonax alnorum</i>	Alder Flycatcher	SR	None	S2B	G5	Buncombe - Current	Link
Vertebrate Animal	<i>Erimonax monachus</i>	Spotfin Chub	T	T	S1	G2	Buncombe - Historical	Link
Vertebrate Animal	<i>Erimystax insignis</i>	Blotched Chub	SR	FSC	S3	G3G4	Buncombe - Obscure	Link
Vertebrate Animal	<i>Falco peregrinus</i>	Peregrine Falcon	E	None	S1B,S2N	G4	Buncombe - Current	Link
Vertebrate Animal	<i>Glaucomys sabrinus coloratus</i>	Carolina Northern Flying Squirrel	E	E	S2	G5T1	Buncombe - Current	Link
Vertebrate Animal	<i>Glyptemys muhlenbergii</i>	Bog Turtle	T	T	S2	G3	Buncombe - Current	Link
Vertebrate Animal	<i>Hemidactylium scutatum</i>	Four-toed Salamander	SC	None	S3	G5	Buncombe - Current	Link
Vertebrate Animal	<i>Loxia curvirostra pop. 1</i>	Southern Appalachian Red Crossbill	SC	FSC	S3B,S3N	G5TNR	Buncombe - Current	Link
Vertebrate Animal	<i>Mustela nivalis</i>	Least Weasel	SR	None	S2	G5	Buncombe - Current	Link
Vertebrate Animal	<i>Myotis grisescens</i>	Gray Myotis	E	E	SU	G3	Buncombe - Current	Link
Vertebrate Animal	<i>Myotis leibii</i>	Eastern Small-footed Myotis	SC	FSC	SUB,S2N	G3	Buncombe - Current	Link

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Vertebrate Animal	<i>Myotis septentrionalis</i>	Northern Long-eared Myotis	SC	None	S3	G4	Buncombe - Current	Link
Vertebrate Animal	<i>Necturus maculosus</i>	Common Mudpuppy	SC	None	SH	G5	Buncombe - Historical	Link
Vertebrate Animal	<i>Neotoma floridana haematoreia</i>	Eastern Woodrat - Southern Appalachian Population	SC	FSC	S3	G5T4Q	Buncombe - Current	Link
Vertebrate Animal	<i>Neotoma magister</i>	Appalachian Woodrat	SC	FSC	S2	G3G4	Buncombe - Current	Link
Vertebrate Animal	<i>Percina burtoni</i>	Blotchside Logperch	E	FSC	S1	G2	Buncombe - Historical	Link
Vertebrate Animal	<i>Percina macrocephala</i>	Longhead Darter	SC	FSC	SX	G3	Buncombe - Historical	Link
Vertebrate Animal	<i>Plethodon amplus</i>	Blue Ridge Gray-cheeked Salamander	SR	None	S1S2	G1G2	Buncombe - Obscure	Link
Vertebrate Animal	<i>Plethodon ventralis</i>	Southern Zigzag Salamander	SC	None	S1	G4	Buncombe - Current	Link
Vertebrate Animal	<i>Plethodon yonahlossee pop. 1</i>	Crevice Salamander	SC	None	S1	G4T1Q	Buncombe - Current	Link
Vertebrate Animal	<i>Poecile atricapillus practica</i>	Southern Appalachian Black-capped Chickadee	SC	FSC	S3	G5TNR	Buncombe - Historical	Link
Vertebrate Animal	<i>Polyodon spathula</i>	Paddlefish	E	FSC	SH	G4	Buncombe - Historical	Link
Vertebrate Animal	<i>Puma concolor cougar</i>	Eastern Cougar	E	E	SH	G5THQ	Buncombe - Historical	Link
Vertebrate Animal	<i>Sciurus niger pop. 1</i>	Eastern Fox Squirrel -- Mountain population	SR	None	S1?	G5TNR	Buncombe - Historical	Link
Vertebrate Animal	<i>Sorex dispar</i>	Long-tailed Shrew	SC	None	S2	G4	Buncombe - Current	Link
Vertebrate Animal	<i>Sorex palustris punctulatus</i>	Southern Water Shrew	SC	FSC	S2	G5T3	Buncombe - Current	Link
Vertebrate Animal	<i>Sphyrapicus varius appalachiensis</i>	Appalachian Yellow-bellied Sapsucker	SC	FSC	S3B,S5N	G5TNR	Buncombe - Current	Link

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Vertebrate Animal	<i>Thryomanes bewickii altus</i>	Appalachian Bewick's Wren	E	FSC	SHB	G5T2Q	Buncombe - Historical	Link
Vertebrate Animal	<i>Vermivora pinus</i>	Blue-winged Warbler	SR	None	S2B	G5	Buncombe - Current	Link
Vertebrate Animal	<i>Vireo gilvus</i>	Warbling Vireo	SR	None	S2B	G5	Buncombe - Current	Link

NC NHP database updated: March, 2006.

Search performed on Monday, 17 April 2006 @ 14:26:44 EDST

EXPLANATION OF CODES FOR COUNTY AND QUAD STATUS LISTS

The county and quadrangle status lists provided by the NC Natural Heritage Program tally the elements of natural diversity (rare plants and animals, rare and exemplary natural communities, and special animal habitats) known to occur in all North Carolina counties and USGS 7.5-minute quadrangles. The information on which these lists is based comes from a variety of sources, including field surveys, museums, herbaria, scientific literature, and personal communications. These lists are dynamic, with new records continually being added and old records being revised as new information is received. As a result, a list cannot be considered a definitive record of the elements of natural diversity present in a given county or quad and should not be used as a substitute for field surveys. When this information is used in any document, we request that the date this list was compiled be given and that the NC Natural Heritage Program be credited.

STATE STATUS

CODE	STATUS	CODE	STATUS
E	Endangered	SR	Significantly Rare
T	Threatened	EX	Extirpated
SC	Special Concern	P_	Proposed (used only as a qualifier of the ranks above)
C	Candidate		

NOTE: the definitions of state statuses of plants and animals differ. Below are summaries of the statuses for each group.

Plant statuses are determined by the Plant Conservation Program (NC Department of Agriculture) and the Natural Heritage Program (NC Department of Environment and Natural Resources). Endangered, Threatened, and Special Concern species are protected by state law (Plant Protection and Conservation Act, 1979). Candidate and Significantly Rare designations indicate rarity and the need for population monitoring and conservation action. Note that plants can have a double status, e.g., E-SC, indicates that while the plant is endangered, it is collected or sold under regulation.

CODE	STATUS	DEFINITION
E	Endangered	"Any species or higher taxon of plant whose continued existence as a viable component of the State's flora is determined to be in jeopardy" (GS 19B 106: 202.12). (Endangered species may not be removed from the wild except when a permit is obtained for research, propagation, or rescue which will enhance the survival of the species.)
T	Threatened	"Any resident species of plant which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range" (GS 19B 106:202.12). (Regulations are the same as for Endangered species.)

CODE	STATUS	DEFINITION
SC	Special Concern	"Any species of plant in North Carolina which requires monitoring but which may be collected and sold under regulations adopted under the provisions of [the Plant Protection and Conservation Act]" (GS 19B 106:202.12). (Special Concern species which are not also listed as Endangered or Threatened may be collected from the wild and sold under specific regulations. Propagated material only of Special Concern species which are also listed as Endangered or Threatened may be traded or sold under specific regulations.)
C	Candidate	Species which are very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction (and sometimes also by direct exploitation or disease). These species are also either rare throughout their ranges (fewer than 100 populations total) or disjunct in North Carolina from a main range in a different part of the country or world. Also included are species which may have 20-50 populations in North Carolina, but fewer than 50 populations rangewide. These are species which have the preponderance of their distribution in North Carolina and whose fate depends largely on their conservation here. Also included are many species known to have once occurred in North Carolina but with no known extant occurrences in the state (historical or extirpated species); if these species are relocated in the state, they are likely to be listed as Endangered or Threatened. If present land use trends continue, candidate species are likely to merit listing as Endangered or Threatened.
SR	Significantly Rare	Species which are very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction (and sometimes also by direct exploitation or disease). These species are generally more common somewhere else in their ranges, occurring in North Carolina peripherally to their main ranges, mostly in habitats which are unusual in North Carolina. Also included are some species with 20-100 populations in North Carolina, if they also have only 50-100 populations rangewide and are declining.
-L	Limited	The range of the species is limited to North Carolina and adjacent states (endemic or near endemic). These are species which may have 20-50 populations in North Carolina, but fewer than 50 populations rangewide. The preponderance of their distribution is in North Carolina and their fate depends largely on conservation here. Also included are some species with 20-100 populations in North Carolina, if they also have only 50-100 populations rangewide and declining.
-T	Throughout	These species are rare throughout their ranges (fewer than 100 populations total)
-D	Disjunct	The species is disjunct to NC from a main range in a different part of the country or world.
-P	Peripheral	The species is at the periphery of its range in NC. These species are generally more common somewhere else in their ranges, occurring in North Carolina peripherally to their main ranges, mostly in habitats which are unusual in North Carolina.
-O	Other	The range of the species is sporadic or cannot be described by the other Significantly Rare categories
P_	Proposed	A species which has been formally proposed for listing as Endangered, Threatened, or Special Concern, but has not yet completed the legally mandated listing process.

Animal statuses are determined by the Wildlife Resources Commission and the Natural Heritage Program. Endangered, Threatened, and Special Concern species of mammals, birds, reptiles, amphibians, freshwater fishes, and freshwater and terrestrial mollusks have legal protection status in North Carolina (Wildlife Resources Commission). The Significantly Rare designation indicates rarity and the need for population monitoring and conservation action.

CODE	STATUS	DEFINITION
E	Endangered	"Any native or once-native species of wild animal whose continued existence as a viable component of the State's fauna is determined by the Wildlife Resources Commission to be in jeopardy or any species of wild animal determined to be an 'endangered species' pursuant to the Endangered Species Act." (Article 25 of Chapter 113 of the General Statutes; 1987).
T	Threatened	"Any native or once-native species of wild animal which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range, or one that is designated as a threatened species pursuant to the Endangered Species Act." (Article 25 of Chapter 113 of the General Statutes; 1987).
SC	Special Concern	"Any species of wild animal native or once-native to North Carolina which is determined by the Wildlife Resources Commission to require monitoring but which may be taken under regulations adopted under the provisions of this Article." (Article 25 of Chapter 113 of the General Statutes; 1987).
SR	Significantly Rare	Any species which has not been listed by the N.C. Wildlife Resources Commission as an Endangered, Threatened, or Special Concern species, but which exists in the state in small numbers and has been determined by the N.C. Natural Heritage Program to need monitoring. (This is a N.C. Natural Heritage Program designation.) Significantly Rare species include "peripheral" species, whereby North Carolina lies at the periphery of the species' range (such as Hermit Thrush). The designation also includes marine and estuarine fishes identified as "Vulnerable" by the N.C. State Museum of Biological Sciences (Ross et al., 1988, <u>Endangered, Threatened, and Rare Fauna of North Carolina. Part II. A Reevaluation of the Marine and Estuarine Fishes</u>).
EX	Extirpated	A species which is no longer believed to occur in the state.
P_	Proposed	Species has been proposed by a Scientific Council as a status (Endangered, Threatened, Special Concern, Watch List, or for De-listing) that is different from the current status, but the status has not yet been adopted by the Wildlife Resources Commission and by the General Assembly as law. In the lists of rare species in this book, these proposed statuses are listed in parentheses below the current status. Only those proposed statuses that are different from the current statuses are listed.

FEDERAL STATUS

These statuses are designated by the US Fish and Wildlife Service. Federally listed Endangered and Threatened species are protected under the provisions of the Endangered Species Act of 1973, as amended through the 100th Congress. Unless otherwise noted, definitions are taken from the *Federal Register*, Vol. 56, No. 225, November 21, 1991 (50 CFR Part 17).

CODE	STATUS	DEFINITION
E	Endangered	A taxon "in danger of extinction throughout all or a significant portion of its range."
T	Threatened	A taxon "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."
EXN	Endangered, nonessential experimental population.	The Endangered Species Act permits the reintroduction of endangered animals as "nonessential experimental" populations. Such populations, considered nonessential to the survival of the species, are managed with fewer restrictions than populations listed as endangered.
T(S/A)	Threatened due to Similarity of Appearance.	The Endangered Species Act authorizes the treatment of a species (subspecies or population segment) as threatened even though it is not otherwise listed as threatened if: (a) The species so closely resembles in appearance a threatened species that enforcement personnel would have substantial difficulty in differentiating between the listed and unlisted species; (b) the effect of this substantial difficulty is an additional threat to a threatened species; and (c) such treatment of an unlisted species will substantially facilitate the enforcement and further the policy of the Act. The American Alligator has this designation due to similarity of appearance to other rare crocodilians. The Bog Turtle (southern population) has this designation due to similarity of appearance to Bog Turtles in the threatened northern population.
C	Candidate.	A taxon under consideration for which there is sufficient information to support listing. This category was formerly designated as a Candidate 1 (C1) species.
FSC	Federal "Species of Concern"	(Also called "Species at Risk"). Formerly defined as a taxon under consideration for which there is insufficient information to support listing; formerly designated as a Candidate 2 (C2) species.
PE	Proposed Endangered	Species has been proposed for listing as endangered.
PD	Proposed De-listed	Species has been proposed for de-listing.

GLOBAL AND STATE RANKS

These ranks are determined by The Nature Conservancy's system of measuring rarity and threat status. "Global" refers to worldwide ranks and "State" to statewide ranks.

STATE RANK	DEFINITIONS
S1	Critically imperiled in North Carolina because of extreme rarity or otherwise very vulnerable to extirpation in the state.
S2	Imperiled in North Carolina because of rarity or otherwise vulnerable to extirpation in the state.
S3	Rare or uncommon in North Carolina.
S4	Apparently secure in North Carolina, with many occurrences.
S5	Demonstrably secure in North Carolina and essentially ineradicable under present conditions.
SA	Accidental or casual; one to several records for North Carolina, but the state is outside the normal range of the species.
SH	Historic record: the element is either extirpated from the county or quad, or there have not been any recent surveys to verify its continued existence.
SR	Reported from North Carolina, but without persuasive documentation for either accepting or rejecting the report.
SX	Believed to be extirpated from North Carolina.
SU	Possibly in peril in North Carolina, but status uncertain; more information is needed.
S?	Unranked, or rank uncertain.
S_B	Rank of breeding population in the state. Used for migratory species only.
S_N	Rank of non-breeding population in the state. Used for migratory species only.
SZ_	Population is not of significant conservation concern; applies to transitory, migratory species.
GLOBAL RANK	DEFINITIONS
G1	Critically imperiled globally because of extreme rarity or otherwise very vulnerable to extinction throughout its range.
G2	Imperiled globally because of rarity or otherwise vulnerable to extinction throughout its range.

G3	Either very rare and local throughout its range, or found locally in a restricted area.
G4	Apparently secure globally, although it may be quite rare in parts of its range (especially at the periphery).
G5	Demonstrably secure globally, although it may be quite rare in parts of its range (especially at the periphery).
GH	Of historical occurrence throughout its range.
GX	Believed to be extinct throughout its range.
GU	Possibly in peril, but status uncertain; more information is needed.
G?	Unranked, or rank uncertain.
G_Q	Of questionable taxonomic status.
G_T_	Status of subspecies or variety; the G-rank refers to the species as a whole, the T-rank to the subspecies.

ADDITIONAL DEFINITIONS

Elements within a county or quad are subdivided into "Current", "Historic", "Obscure" or "Potential" records.

Current record: the element has been observed in the county or quad recently.

Historic record: the element is either extirpated from the county or quad, or there have not been any recent surveys to verify its continued existence.

Obscure record: the date the element was last observed in the county or quad is uncertain.

Potential record: the element has the potential to be found in the county or quad.

NOTE: Scientific and common names listed in parentheses are synonyms listed in US Fish and Wildlife Service, 1992, Endangered and Threatened Species of the Southeastern United States (The Red Book).

NC NHP County Element Search Results

Returned Elements: 181 using: HAYWOOD ALL

[Invertebrate Animal 22] [Natural Community 25] [Nonvascular Plant 33] [Vascular Plant 67] [Vertebrate Animal 34]

<u>Major Group</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>State Status</u>	<u>Federal Status</u>	<u>State Rank</u>	<u>Global Rank</u>	<u>County - Status</u>	<u>Map - Habitat</u>
Invertebrate Animal	<i>Alasmidonta raveneliana</i>	Appalachian Elktoe	E	E	S1	G1	Haywood - Current	Link
Invertebrate Animal	<i>Appalachina chilhoweensis</i>	Queen Crater	SC	None	S2	G4	Haywood - Obscure	Link
Invertebrate Animal	<i>Attaneuria ruralis</i>	A Stonefly	SR	None	S2	G4	Haywood - Current	Link
Invertebrate Animal	<i>Autochton cellus</i>	Golden Banded-Skipper	SR	None	S1S2	G4	Haywood - Current	Link
Invertebrate Animal	<i>Celastrina nigra</i>	Dusky Azure	SR	None	S2?	G4	Haywood - Current	Link
Invertebrate Animal	<i>Erora laeta</i>	Early Hairstreak	SR	None	S2S3	G3G4	Haywood - Current	Link
Invertebrate Animal	<i>Eulonchus marialiciae</i>	Mary Alice's Small-headed Fly	SR	None	S1S3	G1G3	Haywood - Current	Link
Invertebrate Animal	<i>Euphydryas phaeton</i>	Baltimore Checkerspot	SR	None	S2	G4	Haywood - Current	Link
Invertebrate Animal	<i>Fumonelix orestes</i>	Engraved Covert	T	None	S1	G1	Haywood - Current	Link
Invertebrate Animal	<i>Gomphus adelphus</i>	Moustached Clubtail	SR	None	S1S2	G4	Haywood - Obscure	Link

<u>Major Group</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>State Status</u>	<u>Federal Status</u>	<u>State Rank</u>	<u>Global Rank</u>	<u>County - Status</u>	<u>Map - Habitat</u>
Invertebrate Animal	<i>Gomphus descriptus</i>	Harpoon Clubtail	SR	None	S1?	G4	Haywood - Obscure	Link
Invertebrate Animal	<i>Gomphus lineatifrons</i>	Splendid Clubtail	SR	None	S2S3	G4	Haywood - Obscure	Link
Invertebrate Animal	<i>Inflectarius ferrissi</i>	Smoky Mountain Covert	T	None	S2	G2	Haywood - Obscure	Link
Invertebrate Animal	<i>Inflectarius subpalliatu</i> s	Velvet Covert	SC	None	S2	G2	Haywood - Obscure	Link
Invertebrate Animal	<i>Lampsilis fasciola</i>	Wavy-rayed Lampmussel	SC	None	S1	G5	Haywood - Current	Link
Invertebrate Animal	<i>Micrasema burksi</i>	A Caddisfly	SR	None	S3	G4G5	Haywood - Current	Link
Invertebrate Animal	<i>Ophiogomphus aspersus</i>	Brook Snaketail	SR	None	S1S2	G3G4	Haywood - Obscure	Link
Invertebrate Animal	<i>Ophiogomphus mainensis</i>	Maine Snaketail	SR	None	S2S3	G4	Haywood - Obscure	Link
Invertebrate Animal	<i>Paravitrea lamellidens</i>	Lamellate Supercoil	SC	None	S2	G2	Haywood - Obscure	Link
Invertebrate Animal	<i>Phyciodes batesii maconensis</i>	Tawny Crescent	SR	FSC	S2	G4T2T3	Haywood - Obscure	Link
Invertebrate Animal	<i>Polygonia faunus smythi</i>	Smyth's Green Comma	SR	None	S2	G5T3T4	Haywood - Current	Link
Invertebrate Animal	<i>Rhyacophila mainensis</i>	A Caddisfly	SR	None	S2	G5	Haywood - Current	Link
Natural Community	"Dry rocky slope"	None	None	None	S2	G3?	Haywood - Current	Link

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Natural Community	<i>Acidic cove forest</i>	None	None	None	S5	G5	Haywood - Current	Link
Natural Community	<i>Boulderfield forest</i>	None	None	None	S3	G3	Haywood - Current	Link
Natural Community	<i>Canada hemlock forest</i>	None	None	None	S5	G5	Haywood - Current	Link
Natural Community	<i>Carolina hemlock bluff</i>	None	None	None	S2	G2G3	Haywood - Current	Link
Natural Community	<i>Chestnut oak forest</i>	None	None	None	S5	G5	Haywood - Current	Link
Natural Community	<i>Fraser fir forest</i>	None	None	None	S1	G1	Haywood - Current	Link
Natural Community	<i>Grassy bald</i>	None	None	None	S2	G2	Haywood - Obscure	Link
Natural Community	<i>Heath bald</i>	None	None	None	S3	G4	Haywood - Current	Link
Natural Community	<i>High elevation red oak forest</i>	None	None	None	S5	G5	Haywood - Current	Link
Natural Community	<i>High elevation rocky summit</i>	None	None	None	S2	G2	Haywood - Current	Link
Natural Community	<i>High elevation seep</i>	None	None	None	S2S3	G3	Haywood - Current	Link
Natural Community	<i>Low elevation rocky summit</i>	None	None	None	S2	G2	Haywood - Current	Link
Natural Community	<i>Montane acidic cliff</i>	None	None	None	S3	G4	Haywood - Current	Link

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Natural Community	<i>Montane mafic cliff</i>	None	None	None	S1	G2?	Haywood - Current	Link
Natural Community	<i>Montane oak--hickory forest</i>	None	None	None	S5	G5	Haywood - Current	Link
Natural Community	<i>Northern hardwood forest (beech gap subtype)</i>	None	None	None	S2?	G2?	Haywood - Current	Link
Natural Community	<i>Northern hardwood forest (typic subtype)</i>	None	None	None	S4	G5	Haywood - Current	Link
Natural Community	<i>Pine--oak/heath</i>	None	None	None	S4	G5	Haywood - Current	Link
Natural Community	<i>Red spruce--fraser fir forest</i>	None	None	None	S2	G2	Haywood - Current	Link
Natural Community	<i>Rich cove forest</i>	None	None	None	S4	G4	Haywood - Current	Link
Natural Community	<i>Southern appalachian bog (northern subtype)</i>	None	None	None	S1S2	G1T1	Haywood - Current	Link
Natural Community	<i>Southern appalachian bog (southern subtype)</i>	None	None	None	S1S2	G1G2T1T2	Haywood - Current	Link
Natural Community	<i>Swamp forest-bog complex (spruce subtype)</i>	None	None	None	S1	G2G3T1	Haywood - Current	Link
Natural Community	<i>Swamp forest-bog complex (typic subtype)</i>	None	None	None	S3	G2G3T2	Haywood - Current	Link
Nonvascular Plant	<i>Acrobolbus ciliatus</i>	A Liverwort	SR-D	None	S1	G3?	Haywood - Historical	Link
Nonvascular Plant	<i>Brachythecium rotaeaeum</i>	Rota's Feather Moss	SR-D	None	S1	G3G4	Haywood - Current	Link

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Nonvascular Plant	<i>Buxbaumia aphylla</i>	Bug-on-a-stick	SR-O	None	SH	G4G5	Haywood - Historical	Link
Nonvascular Plant	<i>Campylopus atrovirens</i> var. <i>cucullatifolius</i>	Cliff Campylopus	SR-D	None	S1	G4G5T4	Haywood - Current	Link
Nonvascular Plant	<i>Cephaloziella spinicaulis</i>	A Liverwort	SR-P	None	S1	G3G4	Haywood - Current	Link
Nonvascular Plant	<i>Cetrelia cetrarioides</i>	Sea Storm Lichen	SR-D	None	S2	G4G5	Haywood - Historical	Link
Nonvascular Plant	<i>Dichodontium pellucidum</i>	A Moss	W1	None	S2	G4G5	Haywood - Historical	Link
Nonvascular Plant	<i>Dicranum undulatum</i>	Bog Broom-moss	SR-D	None	S1	G5	Haywood - Historical	Link
Nonvascular Plant	<i>Diplophyllum apiculatum</i> var. <i>taxifoloides</i>	A Liverwort	SR-L	None	S1	G5T2Q	Haywood - Historical	Link
Nonvascular Plant	<i>Diplophyllum taxifolium</i> var. <i>mucronatum</i>	A Liverwort	SR-L	None	S1	G5T1	Haywood - Historical	Link
Nonvascular Plant	<i>Ephebe americana</i>	A Rockshag Lichen	SR-T	None	S1	G2G3	Haywood - Historical	Link
Nonvascular Plant	<i>Frullania appalachiana</i>	A Liverwort	SR-L	None	S1?	G1?	Haywood - Historical	Link
Nonvascular Plant	<i>Gymnoderma lineare</i>	Rock Gnome Lichen	T	None	S2	G2	Haywood - Current	Link
Nonvascular Plant	<i>Hydrothyria venosa</i>	Waterfan Lichen	SR-P	None	S3	G3G5	Haywood - Current	Link
Nonvascular Plant	<i>Leptodontium excelsum</i>	Grandfather Mountain Leptodontium	SR-L	None	S1	G2	Haywood - Historical	Link

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Nonvascular Plant	<i>Leptodontium flexifolium</i>	Pale-margined Leptodontium	SR-D	None	S1	G5	Haywood - Historical	Link
Nonvascular Plant	<i>Leptohymenium sharpii</i>	Mount Leconte Moss	SR-L	None	S1	G1	Haywood - Historical	Link
Nonvascular Plant	<i>Leptoscyphus cuneifolius</i>	A Liverwort	SR-D	None	S2	G4G5	Haywood - Historical	Link
Nonvascular Plant	<i>Marsupella emarginata</i> var. <i>latiloba</i>	A Liverwort	SR-L	None	S1	G5T1T2	Haywood - Historical	Link
Nonvascular Plant	<i>Megaceros aenigmaticus</i>	A Hornwort	SR-L	None	S2S3	G2G3	Haywood - Current	Link
Nonvascular Plant	<i>Metzgeria temperata</i>	A Liverwort	SR-D	None	S1S2	G4	Haywood - Current	Link
Nonvascular Plant	<i>Metzgeria violacea</i>	A liverwort	SR-D	None	S1S2	GNR	Haywood - Current	Link
Nonvascular Plant	<i>Nardia scalaris</i> ssp. <i>scalaris</i>	A Liverwort	SR-D	None	S1	G5T5	Haywood - Historical	Link
Nonvascular Plant	<i>Pannaria conoplea</i>	Mealy-rimmed Shingle Lichen	SR-D	None	S1	G3G4	Haywood - Historical	Link
Nonvascular Plant	<i>Plagiochila caduciloba</i>	A Liverwort	SR-T	None	S2	G2	Haywood - Historical	Link
Nonvascular Plant	<i>Plagiochila corniculata</i>	A Liverwort	SR-D	None	S2	G4?	Haywood - Historical	Link
Nonvascular Plant	<i>Plagiochila sharpii</i>	A Liverwort	SR-L	FSC	S2	G2G4	Haywood - Historical	Link
Nonvascular Plant	<i>Plagiochila sullivantii</i> var. <i>sullivantii</i>	A Liverwort	SR-T	FSC	S2	G2T2	Haywood - Historical	Link

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Nonvascular Plant	<i>Riccardia jugata</i>	A Liverwort	SR-L	None	S1?	G2	Haywood - Current	Link
Nonvascular Plant	<i>Scopelophila ligulata</i>	Copper Moss	SR-O	None	S1	G5?	Haywood - Current	Link
Nonvascular Plant	<i>Sphagnum subsecundum</i>	Orange Peatmoss	SR-P	None	S1	G5	Haywood - Historical	Link
Nonvascular Plant	<i>Sphenolobopsis pearsonii</i>	A Liverwort	E	FSC	S2	G2?	Haywood - Historical	Link
Nonvascular Plant	<i>Xanthoparmelia monticola</i>	A Rock-shield Lichen	SR-L	None	S2?	G2?	Haywood - Historical	Link
Vascular Plant	<i>Aconitum reclinatum</i>	Trailing Wolfsbane	SR	None	S3	G3	Haywood - Current	Link
Vascular Plant	<i>Adlumia fungosa</i>	Climbing Fumitory	SR-P	None	S2	G4	Haywood - Current	Link
Vascular Plant	<i>Amelanchier sanguinea</i>	Roundleaf Serviceberry	SR-P	None	S2	G5	Haywood - Current	Link
Vascular Plant	<i>Berberis canadensis</i>	American Barberry	SR-T	None	S2	G3	Haywood - Historical	Link
Vascular Plant	<i>Botrychium oneidense</i>	Blunt-lobed Grape-fern	SR-P	None	S2	G4Q	Haywood - Historical	Link
Vascular Plant	<i>Botrychium simplex</i> var. <i>simplex</i>	Least Moonwort	SR-P	None	S2	G5T5	Haywood - Current	Link
Vascular Plant	<i>Brachyelytrum septentrionale</i>	Northern Shorthusk	SR-P	None	S3	G4G5	Haywood - Historical	Link
Vascular Plant	<i>Buckleya distichophylla</i>	Piratebush	E	FSC	S2	G2	Haywood - Current	Link

<u>Major Group</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>State Status</u>	<u>Federal Status</u>	<u>State Rank</u>	<u>Global Rank</u>	<u>County - Status</u>	<u>Map - Habitat</u>
Vascular Plant	<i>Calamagrostis canadensis</i>	Canada Reed Grass	SR-P	None	S1	G5	Haywood - Historical	Link
Vascular Plant	<i>Campanula aparinoides</i>	Marsh Bellflower	SR-P	None	S2	G5	Haywood - Obscure	Link
Vascular Plant	<i>Cardamine clematitis</i>	Mountain Bittercress	SR-T	FSC	S2	G2G3	Haywood - Current	Link
Vascular Plant	<i>Carex biltmoreana</i>	Biltmore Sedge	SR-L	None	S3	G3	Haywood - Current	Link
Vascular Plant	<i>Carex leptoneuria</i>	A Wood Sedge	SR-P	None	S2	G4	Haywood - Historical	Link
Vascular Plant	<i>Carex misera</i>	Wretched Sedge	SR-L	None	S3	G3	Haywood - Current	Link
Vascular Plant	<i>Carex trichocarpa</i>	Hairy-fruit Sedge	SR-P	None	SH	G4	Haywood - Historical	Link
Vascular Plant	<i>Celastrus scandens</i>	American Bittersweet	SR-P	None	S2?	G5	Haywood - Historical	Link
Vascular Plant	<i>Chamerion platyphyllum</i>	Fireweed	SR-P	None	S1	G5T5	Haywood - Current	Link
Vascular Plant	<i>Coeloglossum viride</i> var. <i>virescens</i>	Long-bracted Frog Orchid	SR-P	None	S1	G5T5	Haywood - Historical	Link
Vascular Plant	<i>Coreopsis latifolia</i>	Broadleaf Coreopsis	SR-T	None	S3	G3	Haywood - Current	Link
Vascular Plant	<i>Delphinium exaltatum</i>	Tall Larkspur	E-SC	FSC	S2	G3	Haywood - Current	Link
Vascular Plant	<i>Dicentra eximia</i>	Bleeding Heart	SR-P	None	S2	G4	Haywood - Current	Link

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Vascular Plant	<i>Dodecatheon meadia</i> var. <i>meadia</i>	Eastern Shooting-Star	SR-P	None	S2	G5T5	Haywood - Current	Link
Vascular Plant	<i>Draba ramosissima</i>	Branching Draba	SR-P	None	S2	G4	Haywood - Current	Link
Vascular Plant	<i>Euphorbia commutata</i>	Cliff Spurge	SR-P	None	S1	G5	Haywood - Current	Link
Vascular Plant	<i>Euphorbia purpurea</i>	Glade Spurge	SR-T	FSC	S2	G3	Haywood - Current	Link
Vascular Plant	<i>Filipendula rubra</i>	Queen-of-the-prairie	E	None	S1	G4G5	Haywood - Historical	Link
Vascular Plant	<i>Glyceria nubigena</i>	Smoky Mountain Mannagrass	T	FSC	S2	G2	Haywood - Current	Link
Vascular Plant	<i>Helianthemum bicknellii</i>	Plains Sunrose	SR-P	None	SH	G5	Haywood - Obscure	Link
Vascular Plant	<i>Helianthemum propinquum</i>	Creeping Sunrose	SR-P	None	S1	G4	Haywood - Current	Link
Vascular Plant	<i>Houstonia longifolia</i> var. <i>glabra</i>	Granite Dome Bluet	SR-L	None	S2	G4G5T2Q	Haywood - Current	Link
Vascular Plant	<i>Huperzia appalachiana</i>	Appalachian Fir-clubmoss	SR-P	None	S2	G4G5	Haywood - Current	Link
Vascular Plant	<i>Hydrophyllum macrophyllum</i>	Largeleaf Waterleaf	SR-P	None	S2	G5	Haywood - Current	Link
Vascular Plant	<i>Isotria medeoloides</i>	Small Whorled Pogonia	E	T	S2	G2	Haywood - Current	Link
Vascular Plant	<i>Lilium philadelphicum</i> var. <i>philadelphicum</i>	Wood Lily	SR-P	None	S2	G5T4T5	Haywood - Current	Link

<u>Major Group</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>State Status</u>	<u>Federal Status</u>	<u>State Rank</u>	<u>Global Rank</u>	<u>County - Status</u>	<u>Map - Habitat</u>
Vascular Plant	<i>Lonicera canadensis</i>	American Fly-honeysuckle	SR-P	None	S2	G5	Haywood - Current	Link
Vascular Plant	<i>Lonicera flava</i>	Yellow Honeysuckle	SR-P	None	S2	G5?	Haywood - Current	Link
Vascular Plant	<i>Lysimachia fraseri</i>	Fraser's Loosestrife	E	FSC	S2	G2	Haywood - Historical	Link
Vascular Plant	<i>Meehanian cordata</i>	Meehanian	SR-P	None	S2	G5	Haywood - Current	Link
Vascular Plant	<i>Oligoneuron rigidum</i> var. <i>rigidum</i>	Prairie Bold Goldenrod	SR-P	None	S1	G5T5	Haywood - Historical	Link
Vascular Plant	<i>Packera millefolium</i>	Divided-leaf Ragwort	T	FSC	S2	G2	Haywood - Current	Link
Vascular Plant	<i>Parnassia grandifolia</i>	Large-leaved Grass-of-parnassus	T	FSC	S2	G3	Haywood - Current	Link
Vascular Plant	<i>Pedicularis lanceolata</i>	Swamp Lousewort	SR-P	None	S1	G5	Haywood - Current	Link
Vascular Plant	<i>Phegopteris connectilis</i>	Northern Beech Fern	SR-P	None	S2	G5	Haywood - Current	Link
Vascular Plant	<i>Platanthera flava</i> var. <i>herbiola</i>	Northern Green Orchid	SR-P	None	S1?	G4T4Q	Haywood - Current	Link
Vascular Plant	<i>Platanthera grandiflora</i>	Large Purple-fringed Orchid	SR-P	None	S2	G5	Haywood - Historical	Link
Vascular Plant	<i>Platanthera peramoena</i>	Purple Fringeless Orchid	SR-P	None	S2	G5	Haywood - Historical	Link
Vascular Plant	<i>Poa palustris</i>	Swamp Bluegrass	SR-P	None	S1	G5	Haywood - Historical	Link

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Vascular Plant	<i>Poa saltuensis</i>	A Bluegrass	SR-P	None	S1	G5	Haywood - Current	Link
Vascular Plant	<i>Prenanthes alba</i>	White Rattlesnakeroot	SR-P	None	S2?	G5	Haywood - Historical	Link
Vascular Plant	<i>Prenanthes roanensis</i>	Roan Rattlesnakeroot	W1	None	S3	G3	Haywood - Historical	Link
Vascular Plant	<i>Pycnanthemum torrei</i>	Torrey's Mountain-mint	SR-T	FSC	S1	G2	Haywood - Historical	Link
Vascular Plant	<i>Rhododendron vaseyi</i>	Pink-shell Azalea	SR-L	None	S3	G3	Haywood - Current	Link
Vascular Plant	<i>Robinia hispida</i> var. <i>kelseyi</i>	Kelsey's Locust	SR-O	None	S1	G4T1	Haywood - Historical	Link
Vascular Plant	<i>Rubus idaeus</i> ssp. <i>strigosus</i>	Red Raspberry	SR-P	None	S2?	G5T5	Haywood - Current	Link
Vascular Plant	<i>Rugelia nudicaulis</i>	Rugel's Ragwort	T	FSC	S3	G3	Haywood - Current	Link
Vascular Plant	<i>Saxifraga caroliniana</i>	Carolina Saxifrage	SR-T	FSC	S3	G2	Haywood - Current	Link
Vascular Plant	<i>Silene ovata</i>	Mountain Catchfly	SR-T	FSC	S3	G3	Haywood - Current	Link
Vascular Plant	<i>Solidago uliginosa</i>	Bog Goldenrod	SR	None	S1S2	G4G5	Haywood - Current	Link
Vascular Plant	<i>Spiranthes ochroleuca</i>	Yellow Ladies'-tresses	SR-P	None	SH	G4	Haywood - Historical	Link
Vascular Plant	<i>Stachys clingmanii</i>	Clingman's Hedge-nettle	SR-T	None	SH	G2Q	Haywood - Historical	Link

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Vascular Plant	<i>Streptopus amplexifolius</i>	White Mandarin	SR-P	None	S1	G5	Haywood - Current	Link
Vascular Plant	<i>Tofieldia glutinosa</i>	Sticky Bog Asphodel	SR-P	None	S2	G5	Haywood - Current	Link
Vascular Plant	<i>Trichophorum cespitosum</i>	Deerhair Bulrush	SR-D	None	S2S3	G5	Haywood - Current	Link
Vascular Plant	<i>Trientalis borealis</i>	Starflower	SR-P	None	S1	G5	Haywood - Current	Link
Vascular Plant	<i>Trillium pusillum</i> var. <i>ozarkanum</i>	Alabama Least Trillium (=Trillium pusillum var. 1)	E	FSC	S1	G3T2Q	Haywood - Historical	Link
Vascular Plant	<i>Trillium simile</i>	Sweet White Trillium	SR-L	None	S2	G3	Haywood - Current	Link
Vascular Plant	<i>Vaccinium macrocarpon</i>	Cranberry	SR-P	None	S2	G4	Haywood - Current	Link
Vertebrate Animal	<i>Aegolius acadicus</i> pop. 1	Southern Appalachian Northern Saw-whet Owl	T	FSC	S2B,S2N	G5TNR	Haywood - Current	Link
Vertebrate Animal	<i>Catharus guttatus</i>	Hermit Thrush	SR	None	S2B,S5N	G5	Haywood - Current	Link
Vertebrate Animal	<i>Certhia americana</i>	Brown Creeper	SC	None	S3B,S5N	G5	Haywood - Current	Link
Vertebrate Animal	<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo	SR	None	S2B	G5	Haywood - Current	Link
Vertebrate Animal	<i>Contopus cooperi</i>	Olive-sided Flycatcher	SC	FSC	SUB	G4	Haywood - Current	Link
Vertebrate Animal	<i>Crotalus horridus</i>	Timber Rattlesnake	SC	None	S3	G4	Haywood - Obscure	Link

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Vertebrate Animal	<i>Cryptobranchus alleganiensis</i>	Hellbender	SC	FSC	S3	G3G4	Haywood - Current	Link
Vertebrate Animal	<i>Dendroica cerulea</i>	Cerulean Warbler	SR	FSC	S2B	G4	Haywood - Current	Link
Vertebrate Animal	<i>Dendroica magnolia</i>	Magnolia Warbler	SR	None	S1S2B	G5	Haywood - Current	Link
Vertebrate Animal	<i>Desmognathus wrighti</i>	Pigmy Salamander	SR	FSC	S3	G3G4	Haywood - Current	Link
Vertebrate Animal	<i>Empidonax alnorum</i>	Alder Flycatcher	SR	None	S2B	G5	Haywood - Current	Link
Vertebrate Animal	<i>Eurycea longicauda</i>	Longtail Salamander	None	None	S1S2	G5	Haywood - Historical	Link
Vertebrate Animal	<i>Falco peregrinus</i>	Peregrine Falcon	E	None	S1B,S2N	G4	Haywood - Current	Link
Vertebrate Animal	<i>Glaucomys sabrinus coloratus</i>	Carolina Northern Flying Squirrel	E	E	S2	G5T1	Haywood - Current	Link
Vertebrate Animal	<i>Haliaeetus leucocephalus</i>	Bald Eagle	T	T	S3B,S3N	G5	Haywood - Current	Link
Vertebrate Animal	<i>Loxia curvirostra pop. 1</i>	Southern Appalachian Red Crossbill	SC	FSC	S3B,S3N	G5TNR	Haywood - Current	Link
Vertebrate Animal	<i>Microtus chrotorrhinus carolinensis</i>	Southern Rock Vole	SC	FSC	S3	G4T3	Haywood - Current	Link
Vertebrate Animal	<i>Mustela nivalis</i>	Least Weasel	SR	None	S2	G5	Haywood - Current	Link
Vertebrate Animal	<i>Myotis grisescens</i>	Gray Myotis	E	E	SU	G3	Haywood - Current	Link

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Vertebrate Animal	<i>Myotis leibii</i>	Eastern Small-footed Myotis	SC	FSC	SUB,S2N	G3	Haywood - Current	Link
Vertebrate Animal	<i>Myotis septentrionalis</i>	Northern Long-eared Myotis	SC	None	S3	G4	Haywood - Current	Link
Vertebrate Animal	<i>Myotis sodalis</i>	Indiana Myotis	E	E	SUB	G2	Haywood - Historical	Link
Vertebrate Animal	<i>Neotoma floridana haematoreia</i>	Eastern Woodrat - Southern Appalachian Population	SC	FSC	S3	G5T4Q	Haywood - Current	Link
Vertebrate Animal	<i>Plethodon ventralis</i>	Southern Zigzag Salamander	SC	None	S1	G4	Haywood - Current	Link
Vertebrate Animal	<i>Poecile atricapillus practica</i>	Southern Appalachian Black-capped Chickadee	SC	FSC	S3	G5TNR	Haywood - Current	Link
Vertebrate Animal	<i>Pooecetes gramineus</i>	Vesper Sparrow	SR	None	S2B,S2N	G5	Haywood - Current	Link
Vertebrate Animal	<i>Pseudacris brachyphona</i>	Mountain Chorus Frog	SC	None	S1	G5	Haywood - Current	Link
Vertebrate Animal	<i>Puma concolor cougar</i>	Eastern Cougar	E	E	SH	G5THQ	Haywood - Historical	Link
Vertebrate Animal	<i>Sander canadensis</i>	Sauger	SR	None	S2	G5	Haywood - Obscure	Link
Vertebrate Animal	<i>Sorex dispar</i>	Long-tailed Shrew	SC	None	S2	G4	Haywood - Current	Link
Vertebrate Animal	<i>Sorex palustris punctulatus</i>	Southern Water Shrew	SC	FSC	S2	G5T3	Haywood - Current	Link

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Vertebrate Animal	<i>Sphyrapicus varius appalachiensis</i>	Appalachian Yellow-bellied Sapsucker	SC	FSC	S3B,S5N	G5TNR	Haywood - Current	Link
Vertebrate Animal	<i>Sylvilagus obscurus</i>	Appalachian Cottontail	SR	FSC	S3	G4	Haywood - Current	Link
Vertebrate Animal	<i>Thryomanes bewickii altus</i>	Appalachian Bewick's Wren	E	FSC	SHB	G5T2Q	Haywood - Historical	Link

NC NHP database updated: March, 2006.

Search performed on Monday, 17 April 2006 @ 17:48:55 EDST

[Explanation of Codes](#)

NC NHP County Element Search Results

Returned Elements: 179 using: TRANSYLVANIA ALL

[Invertebrate Animal 24] [Natural Community 22] [Nonvascular Plant 42] [Vascular Plant 63] [Vertebrate Animal 28]

<u>Major Group</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>State Status</u>	<u>Federal Status</u>	<u>State Rank</u>	<u>Global Rank</u>	<u>County - Status</u>	<u>Map - Habitat</u>
Invertebrate Animal	<i>Alasmidonta raveneliana</i>	Appalachian Elktoe	E	E	S1	G1	Transylvania - Current	Link
Invertebrate Animal	<i>Barbaetis benfieldi</i>	Benfield's Bearded Small Minnow Mayfly	SR	None	S1	G2G4	Transylvania - Current	Link
Invertebrate Animal	<i>Bolotoperla rossi</i>	A Stonefly	SR	None	S3	G4	Transylvania - Current	Link
Invertebrate Animal	<i>Cambarus chaugaensis</i>	Oconee Stream Crayfish	SC	None	S2	G2	Transylvania - Current	Link
Invertebrate Animal	<i>Cambarus reburrus</i>	French Broad River Crayfish	SR	FSC	S2S3	G3G4	Transylvania - Current	Link
Invertebrate Animal	<i>Celastrina nigra</i>	Dusky Azure	SR	None	S2?	G4	Transylvania - Obscure	Link
Invertebrate Animal	<i>Cymocythere clavata</i>	Oconee Crayfish Ostracod	SR	FSC	S2?	GNR	Transylvania - Current	Link
Invertebrate Animal	<i>Drunella longicornis</i>	A Mayfly	SR	None	S3	G5	Transylvania - Current	Link
Invertebrate Animal	<i>Erora laeta</i>	Early Hairstreak	SR	None	S2S3	G3G4	Transylvania - Obscure	Link
Invertebrate Animal	<i>Eulonchus marialiciae</i>	Mary Alice's Small-headed Fly	SR	None	S1S3	G1G3	Transylvania - Current	Link

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Invertebrate Animal	<i>Euphydryas phaeton</i>	Baltimore Checkerspot	SR	None	S2	G4	Transylvania - Historical	Link
Invertebrate Animal	<i>Fusconaia subrotunda</i>	Long-solid	SR	None	S1	G3	Transylvania - Current	Link
Invertebrate Animal	<i>Isoperla frisoni</i>	A Stonefly	SR	None	S3	G5	Transylvania - Current	Link
Invertebrate Animal	<i>Macromia margarita</i>	Mountain River Cruiser	SR	FSC	S2S3	G3	Transylvania - Historical	Link
Invertebrate Animal	<i>Matrioptila jeanae</i>	A Caddisfly	SR	None	S3	G4	Transylvania - Current	Link
Invertebrate Animal	<i>Pleurobema oviforme</i>	Tennessee Clubshell	E	FSC	SU	G2G3	Transylvania - Current	Link
Invertebrate Animal	<i>Polygonia faunus smythi</i>	Smyth's Green Comma	SR	None	S2	G5T3T4	Transylvania - Historical	Link
Invertebrate Animal	<i>Pyrgus wyandot</i>	Appalachian Checkered-Skipper	SR	FSC	S1	G1G2Q	Transylvania - Historical	Link
Invertebrate Animal	<i>Rhyacophila mainensis</i>	A Caddisfly	SR	None	S2	G5	Transylvania - Current	Link
Invertebrate Animal	<i>Satyrium edwardsii</i>	Edwards' Hairstreak	SR	None	S2?	G4	Transylvania - Historical	Link
Invertebrate Animal	<i>Satyrium kingi</i>	King's Hairstreak	SR	None	S2S3	G3G4	Transylvania - Obscure	Link
Invertebrate Animal	<i>Strophitus undulatus</i>	Creeper	T	None	S2	G5	Transylvania - Current	Link
Invertebrate Animal	<i>Trimerotropis saxatilis</i>	Rock-loving Grasshopper	SR	None	S1S2	G3?	Transylvania - Current	Link

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Invertebrate Animal	<i>Waltoncythere acuta</i>	Transylvania Crayfish Ostracod	SR	FSC	S2?	GNR	Transylvania - Current	Link
Natural Community	<i>Acidic cove forest</i>	None	None	None	S5	G5	Transylvania - Current	Link
Natural Community	<i>Canada hemlock forest</i>	None	None	None	S5	G5	Transylvania - Current	Link
Natural Community	<i>Chestnut oak forest</i>	None	None	None	S5	G5	Transylvania - Current	Link
Natural Community	<i>Floodplain pool</i>	None	None	None	S2S3	G3?	Transylvania - Current	Link
Natural Community	<i>Heath bald</i>	None	None	None	S3	G4	Transylvania - Current	Link
Natural Community	<i>High elevation granitic dome</i>	None	None	None	S2	G2	Transylvania - Current	Link
Natural Community	<i>High elevation red oak forest</i>	None	None	None	S5	G5	Transylvania - Current	Link
Natural Community	<i>High elevation rocky summit</i>	None	None	None	S2	G2	Transylvania - Current	Link
Natural Community	<i>Low elevation granitic dome</i>	None	None	None	S1	G2	Transylvania - Current	Link
Natural Community	<i>Low elevation seep</i>	None	None	None	S3	G4?	Transylvania - Current	Link
Natural Community	<i>Montane acidic cliff</i>	None	None	None	S3	G4	Transylvania - Current	Link
Natural Community	<i>Montane oak--hickory forest</i>	None	None	None	S5	G5	Transylvania - Current	Link

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Natural Community	<i>Northern hardwood forest (beech gap subtype)</i>	None	None	None	S2?	G2?	Transylvania - Current	Link
Natural Community	<i>Northern hardwood forest (typic subtype)</i>	None	None	None	S4	G5	Transylvania - Current	Link
Natural Community	<i>Piedmont/mountain semipermanent impoundment</i>	None	None	None	S4	G5	Transylvania - Obscure	Link
Natural Community	<i>Pine--oak/heath</i>	None	None	None	S4	G5	Transylvania - Current	Link
Natural Community	<i>Red spruce--fraser fir forest</i>	None	None	None	S2	G2	Transylvania - Current	Link
Natural Community	<i>Rich cove forest</i>	None	None	None	S4	G4	Transylvania - Current	Link
Natural Community	<i>Southern appalachian bog (southern subtype)</i>	None	None	None	S1S2	G1G2T1T2	Transylvania - Current	Link
Natural Community	<i>Spray cliff</i>	None	None	None	S3	G2	Transylvania - Current	Link
Natural Community	<i>Swamp forest-bog complex (typic subtype)</i>	None	None	None	S3	G2G3T2	Transylvania - Current	Link
Natural Community	<i>White pine forest</i>	None	None	None	S2?	GNR	Transylvania - Current	Link
Nonvascular Plant	<i>Anzia americana</i>	A Black-foam Lichen	SR-T	None	S1	G3G5	Transylvania - Historical	Link
Nonvascular Plant	<i>Aspiromitus appalachianus</i>	A Hornwort	SR-L	FSC	S1	G1	Transylvania - Historical	Link
Nonvascular Plant	<i>Brachythecium rotaeaeum</i>	Rota's Feather Moss	SR-D	None	S1	G3G4	Transylvania - Current	Link

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Nonvascular Plant	<i>Bryocrumia vivicolor</i>	Gorge Moss	E	FSC	SH	G1G2	Transylvania - Historical	Link
Nonvascular Plant	<i>Bryoxiphium norvegicum</i>	Sword Moss	SR-O	None	S1	G5?	Transylvania - Current	Link
Nonvascular Plant	<i>Bryum riparium</i>	Riverside Bryum	SR-D	None	SH	G2G4	Transylvania - Historical	Link
Nonvascular Plant	<i>Campylopus atrovirens</i> var. <i>cucullatifolius</i>	Cliff Campylopus	SR-D	None	S1	G4G5T4	Transylvania - Current	Link
Nonvascular Plant	<i>Cephalozia pleniceps</i> var. <i>caroliniana</i>	A Liverwort	SR-L	None	S1	G5T1	Transylvania - Historical	Link
Nonvascular Plant	<i>Cheilolejeunea evansii</i>	A Liverwort	E	None	S1	G1	Transylvania - Historical	Link
Nonvascular Plant	<i>Cheilolejeunea myriantha</i>	A Liverwort	SR-P	None	SH	G3G4	Transylvania - Historical	Link
Nonvascular Plant	<i>Chiloscyphus muricatus</i>	A Liverwort	SR-D	None	S1	G5	Transylvania - Current	Link
Nonvascular Plant	<i>Cirriphyllum piliferum</i>	A Moss	SR-P	None	S1	G5	Transylvania - Current	Link
Nonvascular Plant	<i>Dichodontium pellucidum</i>	A Moss	W1	None	S2	G4G5	Transylvania - Historical	Link
Nonvascular Plant	<i>Diplophyllum taxifolium</i> var. <i>mucronatum</i>	A Liverwort	SR-L	None	S1	G5T1	Transylvania - Historical	Link
Nonvascular Plant	<i>Drepanolejeunea appalachiana</i>	A Liverwort	SR-L	None	S1	G2?	Transylvania - Historical	Link
Nonvascular Plant	<i>Entodon sullivantii</i>	Sullivant's Entodon	SR-O	None	S2	G3G4	Transylvania - Current	Link

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Nonvascular Plant	<i>Gymnoderma lineare</i>	Rock Gnome Lichen	T	None	S2	G2	Transylvania - Current	Link
Nonvascular Plant	<i>Homalia trichomanoides</i>	Lime Homalia	SR-P	None	S1	G5	Transylvania - Current	Link
Nonvascular Plant	<i>Hydrothyria venosa</i>	Waterfan Lichen	SR-P	None	S3	G3G5	Transylvania - Current	Link
Nonvascular Plant	<i>Lejeunea blomquistii</i>	A Liverwort	SR-L	None	S1	G1G2	Transylvania - Current	Link
Nonvascular Plant	<i>Leptodontium excelsum</i>	Grandfather Mountain Leptodontium	SR-L	None	S1	G2	Transylvania - Historical	Link
Nonvascular Plant	<i>Leptodontium flexifolium</i>	Pale-margined Leptodontium	SR-D	None	S1	G5	Transylvania - Historical	Link
Nonvascular Plant	<i>Macrocoma sullivantii</i>	Sullivant's Maned-moss	SR-D	None	S2	G3G5	Transylvania - Current	Link
Nonvascular Plant	<i>Marsupella emarginata</i> var. <i>latiloba</i>	A Liverwort	SR-L	None	S1	G5T1T2	Transylvania - Historical	Link
Nonvascular Plant	<i>Metzgeria temperata</i>	A Liverwort	SR-D	None	S1S2	G4	Transylvania - Current	Link
Nonvascular Plant	<i>Philonotis cernua</i>	Dwarf Apple Moss	SR-D	None	S1	G4?	Transylvania - Current	Link
Nonvascular Plant	<i>Plagiochila caduciloba</i>	A Liverwort	SR-T	None	S2	G2	Transylvania - Current	Link
Nonvascular Plant	<i>Plagiochila corniculata</i>	A Liverwort	SR-D	None	S2	G4?	Transylvania - Historical	Link
Nonvascular Plant	<i>Plagiochila echinata</i>	A Liverwort	SR-L	None	S1	G2Q	Transylvania - Current	Link

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Nonvascular Plant	<i>Plagiochila ludoviciana</i>	A Liverwort	SR-P	None	S1	G5	Transylvania - Historical	Link
Nonvascular Plant	<i>Plagiochila sharpii</i>	A Liverwort	SR-L	FSC	S2	G2G4	Transylvania - Current	Link
Nonvascular Plant	<i>Plagiochila sullivantii</i> var. <i>sullivantii</i>	A Liverwort	SR-T	FSC	S2	G2T2	Transylvania - Historical	Link
Nonvascular Plant	<i>Plagiochila virginica</i> var. <i>caroliniana</i>	A Liverwort	SR-T	FSC	S1	G3T2	Transylvania - Historical	Link
Nonvascular Plant	<i>Plagiomnium carolinianum</i>	Carolina Star-moss (=Carolina Mnium)	SR-L	None	S2	G3	Transylvania - Current	Link
Nonvascular Plant	<i>Platyhypnidium pringlei</i>	Pringle's Eurhynchium	SR-D	None	S1	G2G3	Transylvania - Current	Link
Nonvascular Plant	<i>Porella wataugensis</i>	A Liverwort	SR-L	FSC	S1	G1G2Q	Transylvania - Current	Link
Nonvascular Plant	<i>Radula sullivantii</i>	A Liverwort	SR-L	None	S2	G3	Transylvania - Historical	Link
Nonvascular Plant	<i>Schlotheimia lancifolia</i>	Highlands Moss	T	None	S1	G2	Transylvania - Historical	Link
Nonvascular Plant	<i>Scopelophila ligulata</i>	Copper Moss	SR-O	None	S1	G5?	Transylvania - Current	Link
Nonvascular Plant	<i>Sphagnum angustifolium</i>	Narrowleaf Peatmoss	SR-D	None	S1	G5	Transylvania - Current	Link
Nonvascular Plant	<i>Sphagnum subsecundum</i>	Orange Peatmoss	SR-P	None	S1	G5	Transylvania - Current	Link
Nonvascular Plant	<i>Xanthoparmelia monticola</i>	A Rock-shield Lichen	SR-L	None	S2?	G2?	Transylvania - Historical	Link

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Vascular Plant	<i>Aconitum reclinatum</i>	Trailing Wolfsbane	SR	None	S3	G3	Transylvania - Current	Link
Vascular Plant	<i>Arethusa bulbosa</i>	Bog Rose	E	None	S1	G4	Transylvania - Current	Link
Vascular Plant	<i>Arisaema triphyllum ssp. stewardsonii</i>	Bog Jack-in-the-pulpit	SR-P	None	S2	G5T4	Transylvania - Current	Link
Vascular Plant	<i>Asplenium monanthes</i>	Single-sorus Spleenwort	E	None	S1	G4	Transylvania - Current	Link
Vascular Plant	<i>Baptisia albescens</i>	Thin-pod White Wild Indigo	SR-P	None	S2	G4	Transylvania - Historical	Link
Vascular Plant	<i>Berberis canadensis</i>	American Barberry	SR-T	None	S2	G3	Transylvania - Historical	Link
Vascular Plant	<i>Botrychium jenmanii</i>	Alabama Grape-fern	SR-P	None	S2	G3G4	Transylvania - Historical	Link
Vascular Plant	<i>Botrychium simplex var. simplex</i>	Least Moonwort	SR-P	None	S2	G5T5	Transylvania - Historical	Link
Vascular Plant	<i>Brachyelytrum septentrionale</i>	Northern Shorthusk	SR-P	None	S3	G4G5	Transylvania - Current	Link
Vascular Plant	<i>Calamagrostis porteri</i>	Porter's Reed Grass	SR-P	None	S1	G4	Transylvania - Historical	Link
Vascular Plant	<i>Calystegia catesbeiana ssp. sericata</i>	Blue Ridge Bindweed	SR-T	None	S3	G3T2T3Q	Transylvania - Current	Link
Vascular Plant	<i>Campanula aparinoides</i>	Marsh Bellflower	SR-P	None	S2	G5	Transylvania - Historical	Link
Vascular Plant	<i>Cardamine clematitis</i>	Mountain Bittercress	SR-T	FSC	S2	G2G3	Transylvania - Current	Link

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Vascular Plant	<i>Carex biltmoreana</i>	Biltmore Sedge	SR-L	None	S3	G3	Transylvania - Current	Link
Vascular Plant	<i>Carex misera</i>	Wretched Sedge	SR-L	None	S3	G3	Transylvania - Current	Link
Vascular Plant	<i>Carex pedunculata</i>	Longstalk Sedge	SR-P	None	S2	G5	Transylvania - Current	Link
Vascular Plant	<i>Carex projecta</i>	Necklace Sedge	SR-P	None	S1	G5	Transylvania - Current	Link
Vascular Plant	<i>Carex woodii</i>	Wood's Sedge	SR-P	None	S2	G4	Transylvania - Current	Link
Vascular Plant	<i>Celastrus scandens</i>	American Bittersweet	SR-P	None	S2?	G5	Transylvania - Historical	Link
Vascular Plant	<i>Chelone cuthbertii</i>	Cuthbert's Turtlehead	SR-L	FSC	S3?	G3	Transylvania - Current	Link
Vascular Plant	<i>Dalibarda repens</i>	Robin Runaway	E	None	S2	G5	Transylvania - Current	Link
Vascular Plant	<i>Eurybia avita</i>	Alexander's Rock Aster	SR-T	FSC	SX	G3	Transylvania - Historical	Link
Vascular Plant	<i>Fothergilla major</i>	Large Witch-alder	SR-T	None	S3	G3	Transylvania - Current	Link
Vascular Plant	<i>Geum radiatum</i>	Spreading Avens	E-SC	E	S2	G1	Transylvania - Current	Link
Vascular Plant	<i>Glyceria laxa</i>	Lax Mannagrass	SR-P	None	S1	G5	Transylvania - Historical	Link
Vascular Plant	<i>Glyceria nubigena</i>	Smoky Mountain Mannagrass	T	FSC	S2	G2	Transylvania - Current	Link

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Vascular Plant	<i>Hasteola suaveolens</i>	Sweet Indian-plantain	SR-T	None	SH	G3	Transylvania - Historical	Link
Vascular Plant	<i>Helianthemum bicknellii</i>	Plains Sunrose	SR-P	None	SH	G5	Transylvania - Historical	Link
Vascular Plant	<i>Helianthemum propinquum</i>	Creeping Sunrose	SR-P	None	S1	G4	Transylvania - Historical	Link
Vascular Plant	<i>Helonias bullata</i>	Swamp Pink	T-SC	T	S2	G3	Transylvania - Current	Link
Vascular Plant	<i>Hexastylis rhombiformis</i>	French Broad Heartleaf	SR-L	FSC	S2	G2	Transylvania - Current	Link
Vascular Plant	<i>Houstonia longifolia</i> var. <i>glabra</i>	Granite Dome Bluet	SR-L	None	S2	G4G5T2Q	Transylvania - Current	Link
Vascular Plant	<i>Huperzia appalachiana</i>	Appalachian Fir-clubmoss	SR-P	None	S2	G4G5	Transylvania - Current	Link
Vascular Plant	<i>Huperzia porophila</i>	Rock Fir-clubmoss	SR-P	None	S2	G4	Transylvania - Current	Link
Vascular Plant	<i>Isotria medeoloides</i>	Small Whorled Pogonia	E	T	S2	G2	Transylvania - Current	Link
Vascular Plant	<i>Liatris aspera</i>	Rough Blazing-star	SR-P	None	S1	G4G5	Transylvania - Historical	Link
Vascular Plant	<i>Lysimachia fraseri</i>	Fraser's Loosestrife	E	FSC	S2	G2	Transylvania - Current	Link
Vascular Plant	<i>Monotropsis odorata</i>	Sweet Pinesap	SR-T	FSC	S3	G3	Transylvania - Current	Link
Vascular Plant	<i>Muhlenbergia sobolifera</i>	Rock Muhly	SR-P	None	SH	G5	Transylvania - Historical	Link

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Vascular Plant	<i>Oenothera perennis</i>	Perennial Sundrops	SR-P	None	S2	G5	Transylvania - Current	Link
Vascular Plant	<i>Packera paupercula</i>	Balsam Ragwort	SR-P	None	S1?	G5	Transylvania - Historical	Link
Vascular Plant	<i>Parnassia grandifolia</i>	Large-leaved Grass-of-parnassus	T	FSC	S2	G3	Transylvania - Current	Link
Vascular Plant	<i>Phegopteris connectilis</i>	Northern Beech Fern	SR-P	None	S2	G5	Transylvania - Current	Link
Vascular Plant	<i>Platanthera flava</i> var. <i>herbiola</i>	Northern Green Orchid	SR-P	None	S1?	G4T4Q	Transylvania - Current	Link
Vascular Plant	<i>Platanthera grandiflora</i>	Large Purple-fringed Orchid	SR-P	None	S2	G5	Transylvania - Historical	Link
Vascular Plant	<i>Platanthera peramoena</i>	Purple Fringeless Orchid	SR-P	None	S2	G5	Transylvania - Current	Link
Vascular Plant	<i>Prenanthes alba</i>	White Rattlesnakeroot	SR-P	None	S2?	G5	Transylvania - Historical	Link
Vascular Plant	<i>Rhododendron cumberlandense</i>	Cumberland Azalea	SR-P	None	S1	G4?	Transylvania - Historical	Link
Vascular Plant	<i>Rhododendron vaseyi</i>	Pink-shell Azalea	SR-L	None	S3	G3	Transylvania - Current	Link
Vascular Plant	<i>Robinia hispida</i> var. <i>kelseyi</i>	Kelsey's Locust	SR-O	None	S1	G4T1	Transylvania - Historical	Link
Vascular Plant	<i>Sarracenia jonesii</i>	Mountain Sweet Pitcher Plant	E-SC	E	S1	G3T1	Transylvania - Current	Link
Vascular Plant	<i>Shortia galacifolia</i> var. <i>galacifolia</i>	Southern Oconee Bells	E-SC	FSC	S2	G2T2	Transylvania - Current	Link

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Vascular Plant	<i>Solidago uliginosa</i>	Bog Goldenrod	SR	None	S1S2	G4G5	Transylvania - Current	Link
Vascular Plant	<i>Spartina pectinata</i>	Freshwater Cordgrass	SR-P	None	S1	G5	Transylvania - Current	Link
Vascular Plant	<i>Stachys clingmanii</i>	Clingman's Hedge-nettle	SR-T	None	SH	G2Q	Transylvania - Historical	Link
Vascular Plant	<i>Symphotrichum shortii</i>	Short's Aster	SR-P	None	SH	G5	Transylvania - Historical	Link
Vascular Plant	<i>Thermopsis fraxinifolia</i>	Ash-leaved Golden-banner	SR-T	None	S2?	G3?	Transylvania - Current	Link
Vascular Plant	<i>Thermopsis mollis</i>	Appalachian Golden-banner	SR-P	None	S2	G3G4	Transylvania - Historical	Link
Vascular Plant	<i>Tofieldia glutinosa</i>	Sticky Bog Asphodel	SR-P	None	S2	G5	Transylvania - Current	Link
Vascular Plant	<i>Trichomanes petersii</i>	Dwarf Filmy-fern	T	None	S2	G4G5	Transylvania - Current	Link
Vascular Plant	<i>Trichophorum cespitosum</i>	Deerhair Bulrush	SR-D	None	S2S3	G5	Transylvania - Current	Link
Vascular Plant	<i>Trillium discolor</i>	Mottled Trillium	T	None	S1	G2	Transylvania - Current	Link
Vascular Plant	<i>Waldsteinia lobata</i>	Lobed Barren-strawberry	SR-T	FSC	S1	G2	Transylvania - Current	Link
Vertebrate Animal	<i>Aegolius acadicus pop. 1</i>	Southern Appalachian Northern Saw-whet Owl	T	FSC	S2B,S2N	G5TNR	Transylvania - Current	Link
Vertebrate Animal	<i>Ambystoma talpoideum</i>	Mole Salamander	SC	None	S2	G5	Transylvania - Historical	Link

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Vertebrate Animal	<i>Aneides aeneus</i>	Green Salamander	E	FSC	S2	G3G4	Transylvania - Current	Link
Vertebrate Animal	<i>Certhia americana</i>	Brown Creeper	SC	None	S3B,S5N	G5	Transylvania - Current	Link
Vertebrate Animal	<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo	SR	None	S2B	G5	Transylvania - Current	Link
Vertebrate Animal	<i>Corynorhinus rafinesquii rafinesquii</i>	Rafinesque's Big-eared Bat - Mountain Subspecies	T	FSC	S2	G3G4TNR	Transylvania - Historical	Link
Vertebrate Animal	<i>Crotalus horridus</i>	Timber Rattlesnake	SC	None	S3	G4	Transylvania - Current	Link
Vertebrate Animal	<i>Cryptobranchus alleganiensis</i>	Hellbender	SC	FSC	S3	G3G4	Transylvania - Current	Link
Vertebrate Animal	<i>Dendroica cerulea</i>	Cerulean Warbler	SR	FSC	S2B	G4	Transylvania - Current	Link
Vertebrate Animal	<i>Desmognathus wrighti</i>	Pigmy Salamander	SR	FSC	S3	G3G4	Transylvania - Current	Link
Vertebrate Animal	<i>Etheostoma inscriptum</i>	Turquoise Darter	SC (PT)	None	S1	G4	Transylvania - Current	Link
Vertebrate Animal	<i>Falco peregrinus</i>	Peregrine Falcon	E	None	S1B,S2N	G4	Transylvania - Current	Link
Vertebrate Animal	<i>Glaucomys sabrinus coloratus</i>	Carolina Northern Flying Squirrel	E	E	S2	G5T1	Transylvania - Current	Link
Vertebrate Animal	<i>Glyptemys muhlenbergii</i>	Bog Turtle	T	T	S2	G3	Transylvania - Current	Link
Vertebrate Animal	<i>Hybopsis rubrifrons</i>	Rosyface Chub	T	None	S1	G4	Transylvania - Current	Link

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Vertebrate Animal	<i>Lanius ludovicianus ludovicianus</i>	Loggerhead Shrike	SC	None	S3B,S3N	G4T4	Transylvania - Obscure	Link
Vertebrate Animal	<i>Loxia curvirostra pop. 1</i>	Southern Appalachian Red Crossbill	SC	FSC	S3B,S3N	G5TNR	Transylvania - Current	Link
Vertebrate Animal	<i>Micropterus coosae</i>	Redeye Bass	SR	None	S1	G5	Transylvania - Current	Link
Vertebrate Animal	<i>Myotis septentrionalis</i>	Northern Long-eared Myotis	SC	None	S3	G4	Transylvania - Current	Link
Vertebrate Animal	<i>Necturus maculosus</i>	Common Mudpuppy	SC	None	SH	G5	Transylvania - Historical	Link
Vertebrate Animal	<i>Neotoma floridana haematoresia</i>	Eastern Woodrat - Southern Appalachian Population	SC	FSC	S3	G5T4Q	Transylvania - Current	Link
Vertebrate Animal	<i>Notropis lutipinnis</i>	Yellowfin Shiner	SC	None	S2	G4Q	Transylvania - Current	Link
Vertebrate Animal	<i>Percina nigrofasciata</i>	Blackbanded Darter	SR (PT)	None	S1	G5	Transylvania - Current	Link
Vertebrate Animal	<i>Poecile atricapillus practica</i>	Southern Appalachian Black-capped Chickadee	SC	FSC	S3	G5TNR	Transylvania - Current	Link
Vertebrate Animal	<i>Sorex dispar</i>	Long-tailed Shrew	SC	None	S2	G4	Transylvania - Historical	Link
Vertebrate Animal	<i>Sphyrapicus varius appalachiensis</i>	Appalachian Yellow-bellied Sapsucker	SC	FSC	S3B,S5N	G5TNR	Transylvania - Current	Link
Vertebrate Animal	<i>Sylvilagus obscurus</i>	Appalachian Cottontail	SR	FSC	S3	G4	Transylvania - Historical	Link

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Vertebrate Animal	<i>Thryomanes bewickii altus</i>	Appalachian Bewick's Wren	E	FSC	SHB	G5T2Q	Transylvania - Historical	Link

NC NHP database updated: March, 2006.

Search performed on Monday, 17 April 2006 @ 17:54:01 EDST

[Explanation of Codes](#)



North Carolina's State and Federally Listed Wildlife Species

Last updated June 2004

The species listed in this document have been granted protection by the United States Fish and Wildlife Service, under the Federal Endangered Species Act (16 U.S.C. 1531 to 1543) and/or the North Carolina Wildlife Resources Commission, under the State Endangered Species Act (G.S. 113-331 to 113-337). This list was updated as of February 2004.

Legend

E - Endangered. Any native or once native species of wild animal whose continued existence as a viable component of the state's fauna is determined by the Wildlife Resources Commission to be in jeopardy or any wild animal determined to be an "endangered animal" pursuant to the Endangered Species Act.

T - Threatened. Any native or once native species of wild animal that is likely to become an endangered species within the foreseeable future throughout all, or significant, portions of its range, or one that is designated "threatened" pursuant to the Endangered Species Act.

T (S/A) - Threatened due to Similarity of Appearance. Designation of a species (subspecies or population segment) as federally listed, even though not otherwise federally listed, because it so closely resembles in appearance a federally listed species that enforcement personnel would have difficulty in differentiating between the listed and unlisted species.

SC - Special Concern. Any species of wild animal native or once native to North Carolina that is determined by the North Carolina Wildlife Resources Commission to require monitoring but that may be taken under regulations adopted under the provisions of Article 25.

FSC - Federal Species of Concern. A species of concern as designated by the U.S. Fish and Wildlife Service. Further research and field study are needed to determine the conservation status. Future listing may or may not be warranted.

XN - Experimental Population. Designation of introduced populations of federally listed species; it allows for greater flexibility in the management of these populations by local, state, and federal agencies.



	Common Name	Scientific Name	State Status	Federal Status
Amphibians	Carolina gopher frog	<i>Rana capito capito</i>	T	FSC
	Common mudpuppy	<i>Necturus maculosus</i>	SC	
	Crevice salamander	<i>Plethodon longicrus</i> (=yonahlossee, pop)	SC	
	Dwarf salamander [silver morph]	<i>Eurycea quadridigitata</i>	SC	
	Eastern hellbender	<i>Cryptobranchus alleganiensis</i>	SC	FSC
	Eastern tiger salamander	<i>Ambystoma tigrinum</i>	T	
	Four-toed salamander	<i>Hemidactylium scutatum</i>	SC	
	Green salamander	<i>Aneides aeneus</i>	E	FSC
	Junaluska salamander	<i>Eurycea junaluska</i>	T	FSC
	Longtail salamander	<i>Eurycea longicauda</i>	SC	
	Mole salamander	<i>Ambystoma talpoideum</i>	SC	
	Mountain chorus frog	<i>Pseudacris brachyphona</i>	SC	
	Neuse River waterdog	<i>Necturus lewisi</i>	SC	
	River frog	<i>Rana heckscheri</i>	SC	
	Southern zigzag salamander	<i>Plethodon ventralis</i>	SC	
	Wehrle's salamander	<i>Plethodon wehrlei</i>	T	
	Weller's salamander	<i>Plethodon welleri</i>	SC	
Birds	American peregrine falcon	<i>Falco peregrinus</i>	E	
	Bachman's sparrow	<i>Aimophila aestivalis</i>	SC	FSC
	Bachman's warbler	<i>Vermivora bachmanii</i>	E	E
	Bald eagle	<i>Haliaeetus leucocephalus</i>	T	T
	Bewick's wren	<i>Thryomanes bewickii altus</i>	E	FSC
	Black skimmer	<i>Rynchops niger</i>	SC	
	Black vulture	<i>Coragyps atratus</i>	SC	
	Black-capped chickadee	<i>Poecile atricapillus praticus</i>	SC	FSC
	Brown creeper	<i>Certhia americana</i>	SC	
	Common tern	<i>Sterna hirundo</i>	SC	
	Cooper's hawk	<i>Accipiter cooperii</i>	SC	
	Glossy ibis	<i>Plegadis falcinellus</i>	SC	
	Gull-billed tern	<i>Sterna nilotica</i>	T	
	Ivory-billed woodpecker	<i>Campephilus principalis</i>	E	E
	Kirtland's warbler	<i>Dendroica kirtlandii</i>	E	E
	Least tern	<i>Sterna antillarum</i>	SC	
	Little blue heron	<i>Egretta caerulea</i>	SC	
	Loggerhead shrike	<i>Lanius ludovicianus</i>	SC	
	Northern saw-whet owl	<i>Aegolius acadicus</i> (pop)	T	FSC
	Olive-sided flycatcher	<i>Contopus cooperi</i>	SC	FSC

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Birds	Piping plover	<i>Charadrius melodus melodus</i>	T	T
	Red crossbill	<i>Loxia curvirostra</i> (pop)	SC	FSC
	Red-cockaded woodpecker	<i>Picoides borealis</i>	E	E
	Roseate tern	<i>Sterna dougallii</i>	E	E
	Snowy egret	<i>Egretta thula</i>	SC	
	Tricolored heron	<i>Egretta tricolor</i>	SC	
	Wood stork	<i>Mycteria americana</i>	E	E
	Yellow-bellied sapsucker	<i>Sphyrapicus varius appalachiensis</i>	SC	FSC
Crustaceans	Broad River spiny crayfish	<i>Cambarus spicatus</i>	SC	
	Chowanoke crayfish	<i>Orconectes virginienensis</i>	SC	FSC
	Greensboro burrowing crayfish	<i>Cambarus catagius</i>	SC	
	Hiwassee headwaters crayfish	<i>Cambarus parrishi</i>	SC	FSC
	Little Tennessee River crayfish	<i>Cambarus georgiae</i>	SC	
	North Carolina spiny crayfish	<i>Orconectes carolinensis</i>	SC	
	Oconee stream crayfish	<i>Cambarus chaugaensis</i>	SC	
	Waccamaw crayfish	<i>Procambarus braswelli</i>	SC	
Fishes	American brook lamprey	<i>Lampetra appendix</i>	T	
	Atlantic sturgeon	<i>Acipenser oxyrinchus</i>	SC	
	Banded sculpin	<i>Cottus caroliniae</i>	T	
	Bigeye jumprock	<i>Scartomyzon ariommus</i>	T	
	Blotchsides logperch	<i>Percina burtoni</i>	E	
	Bluefin killifish	<i>Lucania goodei</i>	SC	
	Blueside darter	<i>Etheostoma jessiae</i>	SC	
	Bridle shiner	<i>Notropis bifrenatus</i>	SC	
	Broadtail madtom	<i>Noturus sp</i>	SC	FSC
	Cape Fear shiner	<i>Notropis mekistocholas</i>	E	E
	Carolina darter	<i>Etheostoma collis</i>	SC	FSC
	Carolina madtom	<i>Noturus furiosus</i>	SC	FSC
	Carolina pygmy sunfish	<i>Elassoma boehlkei</i>	T	FSC
	Cutlips minnow	<i>Exoglossum maxillingua</i>	E	
	Dusky darter	<i>Percina sciera</i>	E	
	Freshwater drum	<i>Aplodinotus grunniens</i>	T	
	Highfin carpsucker	<i>Carpododes velifer</i>	SC	
	Kanawha minnow	<i>Phenacobius teretulus</i>	SC	FSC
	Lake sturgeon	<i>Acipenser fulvescens</i>	SC	FSC

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	Common Name	Scientific Name	State Status	Federal Status
Fishes (continued)	Least brook lamprey	<i>Lampetra aepyptera</i>	T	
	Least killifish	<i>Heterandria formosa</i>	SC	
	Logperch	<i>Percina caprodes</i>	T	
	Longhead darter	<i>Percina macrocephala</i>	SC	FSC
	Mooneye	<i>Hiodon tergisus</i>	SC	
	Mountain madtom	<i>Noturus eleutherus</i>	SC	
	Olive darter	<i>Percina squamata</i>	SC	FSC
	Orangefin madtom	<i>Noturus gilberti</i>	E	FSC
	Paddlefish	<i>Polyodon spathula</i>	E	FSC
	Pinewoods darter	<i>Etheostoma mariae</i>	SC	FSC
	River carpsucker	<i>Carpododes carpio</i>	SC	
	Riverweed darter	<i>Etheostoma podostemone</i>	SC	
	Rosyface chub	<i>Hybopsis rubrifrons</i>	T	
	Rosyside dace [Little Tennessee River]	<i>Clinostomus funduloides</i> ssp	SC	FSC
	Rustyside sucker	<i>Thoburnia hamiltoni</i>	E	FSC
	Sandhills chub	<i>Semotilus lumbee</i>	SC	FSC
	Sharphead darter	<i>Etheostoma acuticeps</i>	T	
	Sharpnose darter	<i>Percina oxyrhynchus</i>	SC	
	Shortnose sturgeon	<i>Acipenser brevirostrum</i>	E	E
	Snubnose darter	<i>Etheostoma simoterum</i>	SC	
	Spotfin chub	<i>Cyprinella monacha</i>	T	T
	Stonecat	<i>Noturus flavus</i>	E	
	Striped shiner	<i>Luxilus chrysocephalus</i>	T	
	Thinlip chub	<i>Cyprinella</i> sp	SC	
	Turquoise darter	<i>Etheostoma inscriptum</i>	SC	
	Waccamaw darter	<i>Etheostoma perlongum</i>	T	FSC
	Waccamaw killifish	<i>Fundulus waccamensis</i>	SC	FSC
	Waccamaw silverside	<i>Menidia extensa</i>	T	T
	Wounded darter	<i>Etheostoma vulneratum</i>	SC	FSC
	Yellowfin shiner	<i>Notropis lutipinnis</i>	SC	
Mammals	Appalachian woodrat	<i>Neotoma magister</i>	SC	FSC
	Carolina northern flying squirrel	<i>Glaucomys sabrinus coloratus</i>	E	E
	Eastern cougar	<i>Puma concolor cougar</i>	E	E
	Eastern small-footed myotis (bat)	<i>Myotis leibii</i>	SC	FSC
	Eastern woodrat [Coastal plain]	<i>Neotoma floridana floridana</i>	T	
	Eastern woodrat [S. Appalachian]	<i>Neotoma floridana haematoreia</i>	SC	FSC
	Elk	<i>Cervus canadensis</i>	SC	

Legend

E - Endangered
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	Common Name	Scientific Name	State Status	Federal Status
Mammals (continued)	Fin whale	<i>Balaenoptera physalus</i>	---	E
	Gray myotis (bat)	<i>Myotis grisescens</i>	E	E
	Humpback whale	<i>Megaptera novaeangliae</i>	---	E
	Indiana myotis (bat)	<i>Myotis sodalis</i>	E	E
	Long-tailed shrew	<i>Sorex dispar</i>	SC	
	Manatee	<i>Trichechus manatus</i>	E	E
	Northern long-eared myotis (bat)	<i>Myotis septentrionalis</i>	SC	
	Pungo white-footed mouse	<i>Peromyscus leucopus easti</i>	SC	
	Rafinesque's big-eared bat	<i>Corynorhinus rafinesquii</i>	T	FSC
	Red wolf	<i>Canis rufus</i>	---	E/XN
	Right whale	<i>Eubalaena australis</i>	---	E
	Rock vole	<i>Microtus chrotorrhinus carolinensis</i>	SC	FSC
	Southeastern myotis (bat)	<i>Myotis austroriparius</i>	SC	FSC
	Southern water shrew	<i>Sorex palustris punctulatus</i>	SC	FSC
	Sperm whale	<i>Physeter macrocephalus</i>	---	E
	Star-nosed mole [Coastal plain]	<i>Condylura cristata</i> (pop)	SC	
	Virginia big-eared bat	<i>Corynorhinus townsendii virginianus</i>	E	E
Mollusks	Alewite floater	<i>Anodonta implicata</i>	T	
	Appalachian elktoe	<i>Alasmidonta raveneliana</i>	E	E
	Appalachian gloss	<i>Zonitoides patuloides</i>	SC	
	Atlantic pigtoe	<i>Fusconaia masoni</i>	E	FSC
	Barrel floater	<i>Anodonta couperiana</i>	E	
	Bidentate dome	<i>Ventridens coelaxis</i>	SC	
	Big-tooth covert	<i>Fumonelix jonesiana</i>	T	
	Black mantleslug	<i>Pallifera hemphilli</i>	SC	
	Blackwater ancyliid	<i>Ferrissia hendersoni</i>	SC	
	Blue-footed lancetooth	<i>Haplotrema kendeighi</i>	SC	
	Brook floater	<i>Alasmidonta varicosa</i>	E	FSC
	Cape Fear spike	<i>Elliptio marsupiobesa</i>	SC	
	Cape Fear threetooth	<i>Triodopsis soelneri</i>	T	FSC
	Carolina creekshell	<i>Villosa vaughaniana</i>	E	FSC
	Carolina fatmucket	<i>Lampsilis radiata conspicua</i>	T	
	Carolina heelsplitter	<i>Lasmigona decorata</i>	E	E
	Clingman covert	<i>Fumonelix wheatleyi clingmanicus</i>	T	FSC
	Creeper	<i>Strophitus undulatus</i>	T	
	Dark glyph	<i>Glyphyalinia junaluskana</i>	SC	
	Dwarf proud globe	<i>Patera clarki</i>	SC	

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	Common Name	Scientific Name	State Status	Federal Status
Mollusks (continued)	Dwarf threetooth	<i>Triodopsis fulciden</i>	SC	
	Dwarf wedgemussel	<i>Alasmidonta heterodon</i>	E	E
	Eastern lampmussel	<i>Lampsilis radiata radiata</i>	T	
	Eastern pondmussel	<i>Ligumia nasuta</i>	T	
	Engraved covert	<i>Fumonelix orestes</i>	T	
	Fragile glyph	<i>Glyphyalinia clingmani</i>	E	FSC
	Fringed coil	<i>Helicodiscus fimbriatus</i>	SC	
	Glossy supercoil	<i>Paravitrea placentula</i>	SC	
	Great Smoky slitmouth	<i>Stenotrema depilatum</i>	SC	
	Green floater	<i>Lasmigona subviridis</i>	E	FSC
	Greenfield rams-horn	<i>Helisoma eucosmium</i>	E	FSC
	High mountain supercoil	<i>Paravitrea andrewsae</i>	SC	
	Honey glyph	<i>Glyphyalinia vanattai</i>	SC	
	James spinymussel	<i>Pleurobema collina</i>	---	E
	Knotty elimia	<i>Elimia interrupta</i>	E	
	Lamellate supercoil	<i>Paravitrea lamellidens</i>	SC	
	Little-wing pearlymussel	<i>Pegias fabula</i>	E	E
	Magnificent rams-horn	<i>Planorbella magnifica</i>	E	FSC
	Mirey Ridge supercoil	<i>Paravitrea clappi</i>	SC	
	Mountain creekshell	<i>Villosa vanuxemensis</i>	T	
	Noonday globe	<i>Patera clarki nantahala</i>	T	T
	Notched rainbow	<i>Villosa constricta</i>	SC	
	Open supercoil	<i>Paravitrea umbilicaris</i>	SC	
	Pink glyph	<i>Glyphyalinia pentadelphia</i>	SC	
	Pod lance	<i>Elliptio folliculata</i>	SC	
	Purple wartyback	<i>Cyclonaias tuberculata</i>	E	
	Queen crater	<i>Appalachina chilhoweensis</i>	SC	
	Rainbow	<i>Villosa iris</i>	SC	
	Ramp Cove supercoil	<i>Paravitrea lacteodens</i>	SC	
	Roan supercoil	<i>Paravitrea varidens</i>	T	FSC
	Roanoke slabshell	<i>Elliptio roanokensis</i>	T	
	Savannah lilliput	<i>Toxolasma pullus</i>	E	FSC
	Saw-tooth disc	<i>Discus bryanti</i>	SC	
	Sculpted supercoil	<i>Paravitrea ternaria</i>	T	FSC
	Seep mudalia	<i>Leptoxis dilatata</i>	T	
	Slippershell mussel	<i>Alasmidonta viridis</i>	E	
	Smoky Mountain covert	<i>Inflectarius ferrissi</i>	T	
	Spike	<i>Elliptio dilatata</i>	SC	

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	Common Name	Scientific Name	State Status	Federal Status
Mollusks (continued)	Spiral coil	<i>Helicodiscus bonamicus</i>	SC	
	Tar river spiny mussel	<i>Elliptio steinstansana</i>	E	E
	Tennessee clubshell	<i>Pleurobema oviforme</i>	E	FSC
	Tennessee heelsplitter	<i>Lasmigona holstonia</i>	E	FSC
	Tennessee pigtoe	<i>Fusconaia barnesiana</i>	E	
	Tidewater mucket	<i>Leptodea ochracea</i>	T	
	Triangle floater	<i>Alasmidonta undulata</i>	T	
	Velvet covert	<i>Inflectarius subpalliat</i>	SC	
	Waccamaw ambersnail	<i>Catinella waccamawensis</i>	T	
	Waccamaw snail	<i>Amnicola</i> sp	SC	
	Waccamaw fatmucket	<i>Lampsilis fullerkati</i>	T	FSC
	Waccamaw siltsnail	<i>Cincinnatia</i> sp	SC	
	Waccamaw spike	<i>Elliptio waccamawensis</i>	E	FSC
	Wavy-rayed lampmussel	<i>Lampsilis fasciola</i>	SC	
	Yellow lampmussel	<i>Lampsilis cariosa</i>	E	FSC
	Yellow lance	<i>Elliptio lanceolata</i>	E	FSC
Reptiles	American alligator	<i>Alligator mississippiensis</i>	T	T (S/A)
	Atlantic ridley turtle	<i>Lepidochelys kempi</i>	E	E
	Bog turtle	<i>Clemmys (=Glyptemys) muhlenbergii</i>	T	T (S/A)
	Carolina pigmy rattlesnake	<i>Sistrurus miliarius miliarius</i>	SC	
	Carolina water snake	<i>Nerodia sipedon williamengelsi</i>	SC	
	Diamondback terrapin	<i>Malaclemys terrapin</i>	SC	FSC
	Eastern coral snake	<i>Micrurus fulvius</i>	E	
	Eastern diamondback rattlesnake	<i>Crotalus adamanteus</i>	E	
	Eastern spiny softshell turtle	<i>Apalone spinifera spinifera</i>	SC	
	Green turtle	<i>Chelonia mydas</i>	T	T
	Hawksbill turtle	<i>Eretmochelys imbricata</i>	E	E
	Leatherback turtle	<i>Dermochelys coriacea</i>	E	E
	Loggerhead turtle	<i>Caretta caretta</i>	T	T
	Mimic glass lizard	<i>Ophisaurus mimicus</i>	SC	FSC
	Northern pine snake	<i>Pituophis melanoleucus melanoleucus</i>	SC	FSC
	Outer banks kingsnake	<i>Lampropeltis getula sticticeps</i>	SC	
	Smooth green snake	<i>Opheodrys (=Liophorophis) vernalis</i>	SC	
	Southern hognose snake	<i>Heterodon simus</i>	SC	FSC
	Stripeneck musk turtle	<i>Sternotherus minor peltifer</i>	SC	
	Timber rattlesnake	<i>Crotalus horridus</i>	SC	

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	Common Name	Scientific Name	State Status	Federal Status
<i>Others Listed</i>	American burying beetle	<i>Nicrophorus americanus</i>	---	E
	Saint Francis' satyr (butterfly)	<i>Neonympha mitchellii francisci</i>	---	E
	Spruce-fir moss spider	<i>Microhexura montivaga</i>	---	E

Definitions:

pop - a unique geographic population within a broader ranging species.

sp - undescribed species that does not have a formal description or name assigned to it in scientific literature.

ssp - an undescribed subspecies that does not have a formal description or name assigned to it in scientific literature.

This publication is for informational purposes only. It represents the most current information available. In all cases, this information may or may not have been incorporated in the NCAC 10I .0100 Endangered and Threatened Species listings.

Legend

E - Endangered SC - Special Concern
T - Threatened FSC - Federal Species of Concern
XN - Experimental population --- No State Status
T (S/A) - Threatened Due to Similarity of Appearance

8



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U.S. Fish & Wildlife Service
USFWS Threatened and Endangered Species System (TESS)



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Notes:

- *This report shows the species listed in this state according to the Federal Register listing description.*
- *This list does not include experimental populations and similarity of appearance listings.*
- *This list includes species or populations under the sole jurisdiction of the National Marine Fisheries Service.*
- *Click on the highlighted scientific names below to view a Species Profile for each listing.*

Listed species (based on published population data) -- 63 listings

Animals -- 36

<u>Status</u>	<i>Species/Listing Name</i>
E	Bat, Indiana (Myotis sodalis)
E	Bat, Virginia big-eared (Corynorhinus (=Plecotus) townsendii virginianus)
E	Beetle, American burying (Nicrophorus americanus)
E	Butterfly, Saint Francis' satyr (Neonympha mitchellii francisci)
E	Cahow (Pterodroma cahow)
T	Chub, spotfin Entire (Erimonax monachus)

- E Curlew, Eskimo ([*Numenius borealis*](#))
- T Eagle, bald lower 48 States ([*Haliaeetus leucocephalus*](#))
- E Elktoe, Appalachian ([*Alasmidonta raveneliana*](#))
- E Heelsplitter, Carolina ([*Lasmigona decorata*](#))
- E Mussel, oyster Entire Range; Except where listed as Experimental Populations ([*Epioblasma capsaeformis*](#))
- E Pearlymussel, littlewing ([*Pegias fabula*](#))
- T Plover, piping except Great Lakes watershed ([*Charadrius melodus*](#))
- E Puma (=cougar), eastern ([*Puma \(=Felis\) concolor cougar*](#))
- E Riffleshell, tan ([*Epioblasma florentina walkeri \(=E. walkeri\)*](#))
- E Sawfish, smalltooth ([*Pristis pectinata*](#))
- T Sea turtle, green except where endangered ([*Chelonia mydas*](#))
- E Sea turtle, hawksbill ([*Eretmochelys imbricata*](#))
- E Sea turtle, Kemp's ridley ([*Lepidochelys kempii*](#))
- E Sea turtle, leatherback ([*Dermochelys coriacea*](#))
- T Sea turtle, loggerhead ([*Caretta caretta*](#))
- E Shiner, Cape Fear ([*Notropis mekistocholas*](#))
- T Silverside, Waccamaw ([*Menidia extensa*](#))

T	Snail, noonday (<i>Mesodon clarki nantahala</i>)
E	Spider, spruce-fir moss (<i>Microhexura montivaga</i>)
E	Spinymussel, Tar River (<i>Elliptio steinstansana</i>)
E	Squirrel, Carolina northern flying (<i>Glaucomys sabrinus coloratus</i>)
E	Sturgeon, shortnose (<i>Acipenser brevirostrum</i>)
E	Tern, roseate northeast U.S. nesting pop. (<i>Sterna dougallii dougallii</i>)
E	Wedgemussel, dwarf (<i>Alasmidonta heterodon</i>)
E	Whale, finback (<i>Balaenoptera physalus</i>)
E	Whale, humpback (<i>Megaptera novaeangliae</i>)
E	Whale, right (<i>Balaena glacialis (incl. australis)</i>)
E	Whale, sperm (<i>Physeter catodon (=macrocephalus)</i>)
E	Wolf, gray lower 48 States, except MN and where XN; Mexico (<i>Canis lupus</i>)
E	Woodpecker, red-cockaded (<i>Picoides borealis</i>)

Plants -- 27

Status *Species/Listing Name*

T	Amaranth, seabeach (<i>Amaranthus pumilus</i>)
---	--

- E Arrowhead, bunched ([*Sagittaria fasciculata*](#))
- E Avens, spreading ([*Geum radiatum*](#))
- E Bittercress, small-anthered ([*Cardamine micranthera*](#))
- T Blazingstar, Heller's ([*Liatris helleri*](#))
- E Bluet, Roan Mountain ([*Hedyotis purpurea* var. *montana*](#))
- E Chaffseed, American ([*Schwalbea americana*](#))
- E Coneflower, smooth ([*Echinacea laevigata*](#))
- E Dropwort, Canby's ([*Oxypolis canbyi*](#))
- T Goldenrod, Blue Ridge ([*Solidago spithamea*](#))
- E Harperella ([*Ptilimnium nodosum*](#))
- T Heartleaf, dwarf-flowered ([*Hexastylis naniflora*](#))
- T Heather, mountain golden ([*Hudsonia montana*](#))
- E Irisette, white ([*Sisyrinchium dichotomum*](#))
- T Joint-vetch, sensitive ([*Aeschynomene virginica*](#))
- E Lichen, rock gnome ([*Gymnoderma lineare*](#))
- E Loosestrife, rough-leaved ([*Lysimachia asperulaefolia*](#))
- E Meadowrue, Cooley's ([*Thalictrum cooleyi*](#))

- T Pink, swamp ([*Helonias bullata*](#))
 - E Pitcher-plant, green ([*Sarracenia oreophila*](#))
 - E Pitcher-plant, mountain sweet ([*Sarracenia rubra ssp. jonesii*](#))
 - T Pogonia, small whorled ([*Isotria medeoloides*](#))
 - E Pondberry ([*Lindera melissifolia*](#))
 - E Sedge, golden ([*Carex lutea*](#))
 - T Spiraea, Virginia ([*Spiraea virginiana*](#))
 - E Sumac, Michaux's ([*Rhus michauxii*](#))
 - E Sunflower, Schweinitz's ([*Helianthus schweinitzii*](#))
-

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APPENDIX C
SCOPING LETTER/AGENCY CORRESPONDENCE

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North Carolina
Department of Administration

Michael F. Easley, Governor

Britt Cobb, Secretary

June 8, 2006

Mr. Phillip Francis
U.S. Dept. of the Interior
National Park Service
Blue Ridge Parkway
199 Hemphill Knob Road
Asheville, NC 28803

Dear Mr. Francis:

Re: SCH File # 06-E-0000-0314; Scoping; Proposal to replace existing wastewater treatment plant located at Mt. Pisgah, North Carolina.

The above referenced environmental impact information has been submitted to the State Clearinghouse under the provisions of the National Environmental Policy Act. According to G.S. 113A-10, when a state agency is required to prepare an environmental document under the provisions of federal law, the environmental document meets the provisions of the State Environmental Policy Act. Attached to this letter for your consideration are the comments made by agencies in the course of this review.

If any further environmental review documents are prepared for this project, they should be forwarded to this office for intergovernmental review.

Should you have any questions, please do not hesitate to call.

Sincerely,

Chrys Baggett/SJG

Ms. Chrys Baggett
Environmental Policy Act Coordinator

Attachments

cc: Region B
Region A

Mailing Address:
1301 Mail Service Center
Raleigh, NC 27699-1301

Telephone: (919)807-2425
Fax (919)733-9571
State Courier #51-01-00
e-mail Chrys.Baggett@ncmail.net

Location Address:
116 West Jones Street
Raleigh, North Carolina

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NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

STATE NUMBER: 06-E-0000-0314 2006 H02
DATE RECEIVED: 04/28/2006
AGENCY RESPONSE: 05/23/2006
REVIEW CLOSED: 05/28/2006

MS RENEE BLEDSHILL-EARLEY
CLEARINGHOUSE COORD
DEPT OF CUL RESOURCES
ARCHIVES-HISTORY BLDG - MSC 4617
RALEIGH NC

REVIEW DISTRIBUTION
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DNR LEGISLATIVE AFFAIRS
DEPT OF CUL RESOURCES
DEPT OF TRANSPORTATION
LAND OF SKY REGIONAL COUNCIL



ERO6 1192
A-16H/RF 5-21-06
closed
S-NC 5/19/06

PROJECT INFORMATION

APPLICANT: U.S. Dept. of the Interior
TYPE: National Environmental Policy Act
ERD: Scoping

DUE 5/17/06

Buncombe

DESC: Proposal to replace existing wastewater treatment plant located at Mt. Pisgah,
North Carolina.

The attached project has been submitted to the N. C. State Clearinghouse for
intergovernmental review. Please review and submit your response by the above
indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED:

NO COMMENT

☐

COMMENTS ATTACHED

SIGNED BY:

Renee Bledhill-Earley

DATE:

5-22-06



North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor

William G. Ross Jr., Secretary

Secretary's Office
DOA

MAY 31 2006

MEMORANDUM

RECEIVED

TO: Chrys Baggett
State Clearinghouse

FROM: Melba McGee *[Signature]*
Project Review Coordinator

RE: 05-0314 Scoping for Wastewater Treatment Plant and Collection
System Replacement at Mt. Pisgah Transylvania and Haywood
Counties

DATE: May 31, 2006

The Department of Environment and Natural Resources has reviewed the proposed project. The attached comments are a result of this review. More specific comments will be provided during the environmental review process.

Thank you for the opportunity to respond. If during the preparation of the environmental document, additional information is needed, the applicant is encouraged to notify our respective divisions.

Attachments

1601 Mail Service Center, Raleigh, North Carolina 27699-1601
Phone: 919-733-4984 \ FAX: 919-715-3060 \ Internet: www.enr.state.nc.us/ENR/
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INTERGOVERNMENTAL REVIEW - PROJECT COMMENTS

After review of this project it has been determined that the DENR permit (s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of this form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (Statutory Time Limit)
☐ Permit to construct & operate wastewater treatment facilities, sewer system extensions & sewer systems not discharging into state surface waters.	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post application technical conference usual.	30 days (90 days)
☐ NPDES-permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begin activity. On-site inspection preapplication conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90 - 120 days (N/A)
☐ Water Use Permit	Preapplication technical conference usually necessary	30 days (N/A)
☐ Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)
☐ Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Preapplication conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
☐ Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100, 2Q.0300, 2H.0600)	N/A	60 days
☐ Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900	N/A	60 days (90 days)
☐ Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 2D.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-733-0020.		
☐ Complex Source Permit required under 15 A NCAC 2D.0600		
☒ The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (Land Quality Section) at least 30 days before beginning activity. A fee of \$50 for the first acre or any part of an acre.		20 days (30 days)
☐ The Sedimentation Pollution Control Act of 1973 must be addressed with respect to the referenced Local Ordinance.		30 days
☐ Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable stormwater conveyances and outlets.		
☐ Mining Permit	On-site inspection usual. Surety bond filed with DENR. Bond amount varies with type mine and number of acres of affected land. Any are mined greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
☐ North Carolina Burning permit	On-site inspection by N.C. Division of Forest Resources if permit exceeds 4 days	1 day (N/A)
☐ Special Ground Clearance Burning Permit 22 counties in coastal N.C. with organic soils.	On-site inspection by N.C. Division of Forest Resources required "If more than five acres of ground clearing activities are involved, inspections should be requested at least ten days before actual burn is planned."	1 day
☐ Oil Refining Facilities	N/A	90 - 120 days (N/A)

PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (Statutory Time Limit)
☐ Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to: prepare plans, inspect construction, certify construction is according to DENR approved plans. May also require permit under mosquito control program, and a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of \$200.00 must accompany the application. An additional processing fee based on a percentage of the total project cost will be required upon completion.	30 days (60 days)
☐ Permit to drill exploratory oil or gas well	FF's surety bond of \$5,000 with DENR running to State of N.C. conditional that any well opened by drill operator shall, upon abandonment, be plugged according to DENR rules and regulations.	10 days
☐ Geophysical Exploration Permit	Application filed with DENR at least 10 days prior to issue of permit. Application by letter. No standard application form.	10 days (N/A)
☐ State Lakes Construction Permit	Application fees based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property.	15 - 20 days (N/A)
☐ 401 Water Quality Certification	N/A	55 days (130 days)
☐ CAMA Permit for MAJOR development	\$250.00 fee must accompany application	60 days (130 days)
☐ CAMA Permit for MINOR development	\$50.00 fee must accompany application	22 days (25 days)
☐ Several geodetic monuments are located in or near the project area. If any monument needs to be moved or destroyed, please notify: N.C. Geodetic Survey, Box 27687 Raleigh, N.C. 27611		
☐ Abandonment of any wells, if required must be in accordance with Title 15A, Subchapter 2C, §100.		
☐ Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
☐ Compliance with 15A NCAC 2H 1000 (Coastal Stormwater Rules) is required.		45 days (N/A)
+ Other comments (attach additional pages as necessary; being certain to cite comment authority)		

REGIONAL OFFICES

Questions regarding these permits should be addressed to the Regional Office marked below.

☒ **Asheville Regional Office**
59 Woodfin Place
Asheville, N.C. 28801
(828) 251-6208

☐ **Mooreville Regional Office**
919 North Main Street
Mooreville, N.C. 28115
(704) 663-1699

☐ **Wilmington Regional Office**
127 Cardinal Drive Extension
Wilmington, N.C. 28405
(910) 395-3900

☐ **Fayetteville Regional Office**
225 Green Street, Suite 714
Fayetteville, N.C. 28301
(910) 486-1541

☐ **Raleigh Regional Office**
3800 Barrett Drive, P.O. Box 27687
Raleigh, N.C. 27611
(919) 571-4700

☐ **Winston-Salem Regional Office**
585 Waughtown Street
Winston-Salem, N.C. 27107
(336) 771-4600

☐ **Washington Regional Office**
943 Washington Square Mall
Washington, N.C. 27889
(252) 946-6481

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Secretary's Office
DOA

MAY 31 2006



RECEIVED

North Carolina Wildlife Resources Commission

Richard B. Hamilton, Executive Director

MEMORANDUM

TO: Melba McGee, Environmental Coordinator
Office of Legislative and Intergovernmental Affairs

FROM: Dave McHenry, Mountain Region Coordinator
Habitat Conservation Program

DATE: May 22, 2006

SUBJECT: National Park Service, Blue Ridge Parkway
Scoping for wastewater treatment plant and collection system replacement at Mt. Pisgah
Transylvania and Haywood counties
OLIA No. 06-0314

Biologists with the North Carolina Wildlife Resources Commission (Commission) reviewed the April 19, 2006 letter regarding the National Park Service's (NPS) proposal to upgrade the wastewater treatment facilities at Mt. Pisgah on the Blue Ridge Parkway. An Environmental Assessment (EA) will be prepared. Comments from the Commission are provided under provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the National Environmental Policy Act (42 U.S.C. 4332 (2)(c)).

The EA should evaluate its effects on aquatic and terrestrial habitats and describe measures that would be used to off-set potential adverse effects. Pisgah Creek downstream of the treatment plant supports wild trout. The potential for sedimentation in the creek during construction should be evaluated. Anticipated improvements to water quality after the upgrades should also be described. Amounts and types of wetland, stream, and important upland disturbance should be quantified. Southern Appalachian bog and habitat for the federally listed Carolina northern flying squirrel occurs in the project area. The main measure to protect flying squirrels is to avoid cutting spruce, fir and yellow birch trees and to avoid altering hydrology in drainages and spring seeps. The USFWS Recovery Plan has information about habitat identification and management for flying squirrels (http://ecos.fws.gov/docs/recovery_plans/1990/900924e.pdf Appendix A, items 2-I – 2-IV public lands).

The Commission also recommends that the NPS implement, as needed, bear-proofing measures with this project. Bears visited the treatment plant in the past. If they still do, fencing or other measures that help prevent nuisance situations should be used.

The Commission appreciates the opportunity to provide scoping comments on this project. If you need to discuss these comments please call me at (828) 452-2546 extension 24.
Sincerely,

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721
Telephone: (919) 707-0220 • Fax: (919) 707-0028

NPS, B&P
WWTP upgrade at Mt. Pisgah
Transylvania and Haywood

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May 22, 2006



Dave McHenry
Mountain Region Coordinator
Habitat Conservation Program



Eastern Band of Cherokee Indians
Tribal Historic Preservation Office
P.O. Box 455
Cherokee, NC 28719
Ph: 828-488-0237 Fax 828-488-2462

DATE: 13 - June - 06

TO: U.S. Department of Interior
National Park Service
Blue Ridge Parkway
Philip A. Francis, Jr.
Superintendent
199 Hemphill Knob Road
Asheville, NC 28803

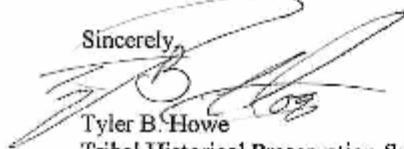
PROJECT(S): **Proposed replacement of existing wastewater treatment plant located at Mt. Pisgah, Haywood County, North Carolina.**

The Tribal Historic Preservation Office of the Eastern Band of Cherokee Indians is in receipt of the above-referenced project information and would like to thank you for the opportunity to comment on this proposed NHPA Section 106 activity.

The project's location is within the aboriginal territory of the Cherokee people. This area may have cultural, archaeological, or religious significance to the Eastern Band of Cherokee Indians. Potential cultural resources are subject to damage or destruction from land disturbing activities requiring new ground disturbance, or vegetation manipulation. Additionally, adverse effects to ethnographic sites, such as traditional Native American campsites or burials, can reduce the interpretative or spiritual significance of a site to Tribal and United States culture and history. The EBCI THPO requests any cultural resource data, including phase I archeological reports, topo maps, historical research, or archives research, forwarded to the North Carolina State Historic Preservation Office for comment also be to this office in accordance with Section 106 of the NHPA. The EBCI THPO looks forward to participating in the project review process as a consulting party as stipulated in Section 106 of the National Historic Preservation Act of 1966.

If we can be of further service, or if you have any comments or questions, please feel free to contact me at (828) 488-0237 ext 2.

Sincerely,


Tyler B. Howe
Tribal Historical Preservation Specialist
Eastern Band of Cherokee Indians

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WESTERN
NORTH
CAROLINA
ALLIANCE

A grassroots conservation organization

MAIN OFFICE
29 N. Market Street, Suite 610
Asheville, NC 28801
Phone: 828-258-8737
Fax: 828-258-8141
E-mail: asheville@wnca.org

WESTERN OFFICE
16 Stewart Street
Franklin, NC 28734
828-524-3899

June 15, 2006

National Park Service/Blue Ridge Parkway
Attn: Suzette Molling
Mt. Pisgah Wastewater Treatment Plant Comments
199 Hemphill Knob Road
Asheville, NC 28803-8636

Dear Suzette,

On behalf of the Western North Carolina Alliance Public Parks Task Force, thank you for the opportunity to comment on the Mt. Pisgah Wastewater Treatment Plant Project scoping. Thanks, as well, for the followup meeting at BLRI Headquarters to clarify some of the maps and points of this proposal.

We have reviewed the various alternatives listed in the public notice about this project and have the following comments.

It appears that Alternatives "O", "A", "F", "G" and "H" are not being seriously considered by BLRI because they will result in little or no effluent quality improvement or could not be funded. If that assumption is correct, Alternatives "B", "C", and "P" appear to be the most favorable.

We are especially interested in the membrane bioreactor package treatment system as it provides superior effluent quality. However, we have questions regarding each of these proposals, based on our recent research and on conversations with the NC Department of Environment and Natural Resources.

Alternative B

Would this be an enclosed system, whereby precipitation would not add to the treatment load? We would favor an enclosed package over an open process.

This system would create sludge, which must be processed or removed from the site. How is this currently being done, and how would this sludge be handled under Alternative "B"?

It appears that this system would provide barely, if any, improvement over the current system. Despite the "low cost", we question whether this is really the best option for

replacing the existing plant regarding improved water quality and the best "bang for the bucks".

Alternative C

We like the idea of this alternative from an ecological angle, and would certainly be highly supportive if the topography was more level and if no forest canopy would be lost. We are concerned that the high altitude and steepness of slope may make this proposal impracticable. Further, we are concerned that construction of such a wetland would very possibly cause significant harm to the existing soil, plant and wildlife ecology in the local area. There is also very good chance that sediment from and during such construction would make its way into Flat Laurel Creek, especially during storm events. Best Management Practices which work well in the Piedmont and Coastal Plain often fail during such events in the Mountain province.

Alternative F

This alternative looks the most favorable as it significantly improves effluent quality and is not significantly higher in cost. The Town of Highlands has apparently has had success with this technology and is in the process of upgrading its membrane bioreactor package capacity. It is our understanding that this can be an enclosed or open system, so we would again urge that an enclosed package be utilized. Also, apparently these systems have a built-in sludge treatment process (either as standard equipment or as an option?). This seems to be a better approach than having to deal with a separate sludge removal process. We would urge that this be included if that is the case.

In conclusion, we urge BLRI to give strong consideration to Alternative F and implement this if it continues to appear favorable. We believe that the new plant should be a significant, rather than a slight, improvement over the existing, aging treatment technology. We encourage BLRI to consult with the Town of Highlands and also with Western Carolina University/Cullowhee since membrane bioreactor technology is to be implemented there, as well in the near future.

Thank you again for the opportunity to comment on this proposal.

Sincerely,



Bob Gale

Ecologist
Western North Carolina Alliance



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Asheville Field Office
160 Zilliox Street
Asheville, North Carolina 28801

May 17, 2006

Ms. Suzette Molling
Blue Ridge Parkway
199 Hemphill Knob Road
Asheville, North Carolina 28803

Dear Ms. Molling:

Subject: Replacement of Mt. Pisgah Sewer Facilities, Blue Ridge Parkway, Haywood County, North Carolina

In your letter of April 19, 2006, you requested our comments on the subject project. The following comments are provided in accordance with the provisions of the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667c); the Migratory Bird Treaty Act, as amended (16 U.S.C. 703); and section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543).

According to your letter, the Blue Ridge Parkway (Parkway) is proposing to construct and operate an improved wastewater treatment plant to replace a failing system that was constructed in the 1950s. All construction would take place within a 5-acre fenced area, all of which is (or has been previously) disturbed, where the existing wastewater treatment facilities are located.

In October of 2003, the Parkway prepared a draft Environmental Assessment for a project titled "Rehabilitation of Mt. Pisgah Utilities" and issued a Finding of No Significant Impact in January of 2004 that appears to include the entire subject project. We provided comments on that project in March and October of 2003 and concurred with the Parkway's assessment that the project was not likely to adversely affect¹ any federally listed species. It is not clear to us why a new Environmental Assessment is being prepared. Nonetheless, we continue to support the Park

¹ As a result of informal consultation with us, the Parkway agreed to evaluate each tree identified for removal for Carolina flying squirrel nesting activity. If nesting activity is observed in any trees that will be impacted by the project, all activity will cease. The Parkway will then reopen consultation with us to determine the appropriate course of action.

Service's efforts to protect and improve conditions in the project area, particularly in and around the project area wetland, and have no additional comments beyond those we provided in 2003.

We appreciate the opportunity to provide these comments and request that you continue to keep us informed as to the status of this project. If we can be of assistance or if you have any questions, please do not hesitate to contact Mr. Allen Ratzlaff of our staff at 828/258-3939, Ext. 229. In any future correspondence concerning this project, please reference our Log Number 4-2-03-179.

Sincerely,

A handwritten signature in cursive script, appearing to read "Brian P. Cole".

Brian P. Cole
Field Supervisor

APPENDIX D
PUBLIC SCOPING NOTICE

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National Park Service
U.S. Department of the Interior

Blue Ridge Parkway
www.nps.gov/blri

199 Hemphill Knob Road
Asheville, NC 28803

Blue Ridge Parkway News Release

April 13, 2006

For Immediate Release

Contact: Suzette Molling (828) 271-4779 ext. 219; email Suzette_Molling@nps.gov
or Phil Noblitt (828) 271-4779 ext. 242; email Phil_Noblitt@nps.gov

Parkway Seeks Input for Exotic Plant Management Plan and for Wastewater Treatment at Pisgah

(Asheville)—The Blue Ridge Parkway is seeking public input, through May 15, for two undertakings--a proposed Exotic Plant Management Plan and wastewater treatment alternatives at Mt. Pisgah developed area.

Parkway officials said that both projects are at the scoping stage and that input is now being sought to help identify issues, areas requiring additional study, and topics to be analyzed in the Environmental Assessment process.

Exotic plants are ecologically harmful, frequently displacing or otherwise impairing the function of native plant communities. They can also alter historic landscapes and interfere with visitor use and enjoyment.

The existing wastewater treatment plant at Mt. Pisgah is aging and needs to be replaced or upgraded.

For more information and to comment on either or both undertakings, visit the National Park Service website: <http://parkplanning.nps.gov>. Select Blue Ridge Parkway from the park dropdown menu and then click on the project that you wish to comment on.

Information is also available, and comments made be made by writing to:
Superintendent, Blue Ridge Parkway, ATTN: Suzette Molling, 199 Hemphill Knob Road, Asheville, NC 28803. Comments must be postmarked by May 15.

Comments are typically treated as a public record and made available for public review. Individuals may request that the National Park Service withhold their name and address from disclosure. Such requests will be honored to the extent allowable by law.