

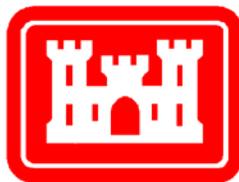
# Threatened & Endangered Species

of the Upper Savannah River Basin

## Protected Species Survey Manual

U.S. Army Corps of Engineer lands along the Upper Savannah River:

J. Strom Thurmond Lake  
Richard B. Russell Lake  
Hartwell Lake



REVISED  
**JULY 2011**

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In the Upper Savannah River Basin

## SECTION 1

### INTRODUCTION

This revised manual was prepared by natural resources team members of the Savannah District Corps of Engineers to assist in identifying endangered animals and plants in the Georgia and South Carolina counties surrounding the Upper Savannah River Basin.

The manual's purpose is to provide practical guidance in identifying protected species listed by federal and state agencies. This manual primarily covers those protected species with a legal status in each state; therefore, there may be some “species of concern” or “watch list” species not recorded in this document. The manual includes descriptions of critical habitat with emphasis placed on the unique habitat needs of each species. It should assist natural resource professionals in identifying protected species and their habitat(s).

Georgia counties covered by this manual are Stephens, Franklin, Hart, Elbert, Wilkes, Lincoln, Columbia, and McDuffie Counties. South Carolina counties include Oconee, Pickens, Anderson, Abbeville, and McCormick. A map of these counties and adjacent counties is included on page 4 for quick reference. A map identifying a listed species' known range within the upper basin is available as part of each species description; maps and listings are based on both historical and extant population records.

Endangered species surveys that are to be submitted to the U.S. Fish and Wildlife Service (USFWS) for approval must include Federally-listed endangered species found in all adjacent counties to include those counties not normally associated with the Upper Savannah River Basin (USRB). Ranger personnel are not usually involved with the preparation of endangered species surveys, however all resource management personnel should be aware of endangered and threatened species listed in immediate and neighboring counties. Appendix A describes protected fish species, which are usually surveyed by federal and state fisheries biologists or the Corps District Fisheries Biologist. Appendix B includes rare plants found on USRB Corps projects. Additional information on species outside the USRB can be obtained from the Corps District Wildlife Biologist.

An up-to-date list of protected species is maintained by the USFWS. State natural resource agencies also keep current lists of state and federally protected species. The District Wildlife Biologist will maintain current information and updated materials. As information becomes available, this manual will be updated.

This manual is available online at <http://www.sas.usace.army.mil/endspec/endspec.htm>

Updated Protected Species Lists for Georgia are available at

<http://www.georgiawildlife.com/conservation/georgia-animals-plants>

Or, for South Carolina [https://www.dnr.sc.gov/pls/heritage/county\\_species.select\\_county\\_map](https://www.dnr.sc.gov/pls/heritage/county_species.select_county_map)

## CREDITS:

Sources for information and photos obtained from Georgia's Endangered Animals and Plants Manual by Cooperative Extension Service/The University of Georgia College of Agricultural and Environmental Sciences Athens and Georgia DNR.

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Georgia Department of Natural Resources- photo of wood storks, McDuffie County site

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## REGION COVERED BY THIS MANUAL

This manual is designed for use on the public lands managed by the Corps of Engineers surrounding J. Strom Thurmond, Richard B. Russell and Hartwell Lakes.

State and federal agencies often list protected species by county. Therefore, this manual covers those counties found around the identified lakes.

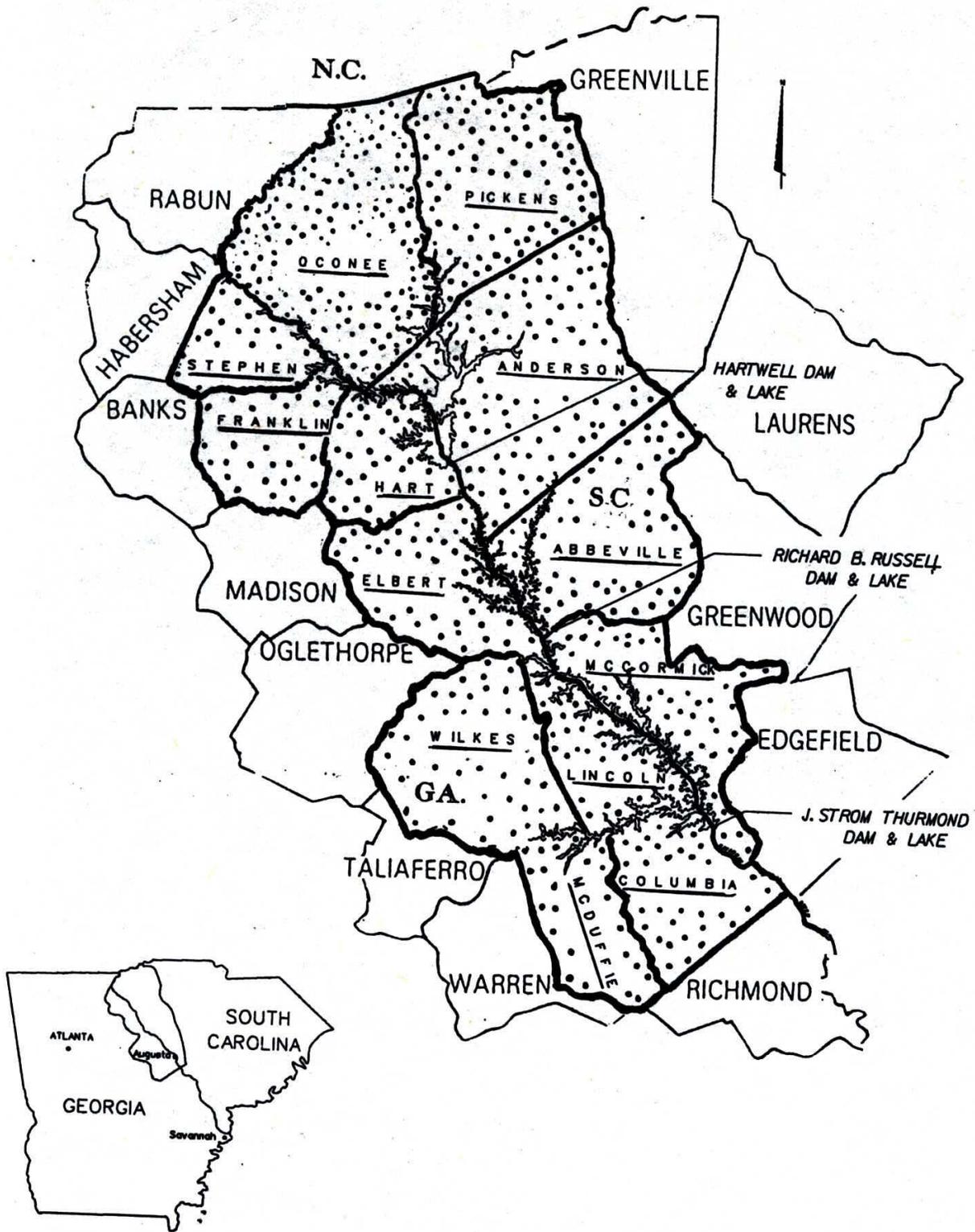
Georgia counties covered by this manual include:

- Stephens
- Franklin
- Hart
- Elbert
- Wilkes
- Lincoln
- Columbia
- McDuffie

South Carolina counties covered by this manual include:

- Oconee
- Pickens
- Anderson
- Abbeville
- McCormick

A map of these counties is included for quick reference. On each set of species description sheets in this manual, a range map is also attached to further assist manual users. Counties in which a particular species has historically or currently been reported are marked in color.



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## HOW TO USE THIS MANUAL

1. ACTION AND COUNTY IDENTIFICATION: Identify the location of the proposed action requiring an endangered species survey. Locate within what county it lies.

2. SURVEY SPECIES IDENTIFICATION: Refer to the County-by-County Listed Species Finder (listings) in SECTION 2. Using this chart/list, identify all endangered or threatened species for which you must survey in your identified location in that county. These are the "potential survey species." Protected species surveys that are to be submitted to the U.S. Fish and Wildlife Service (USFWS) for approval must also include Federally listed endangered species found in the subject county AND all adjacent counties. Endangered or threatened species from the counties should be listed in Section II of the worksheet. Please note that surveys must be conducted by qualified personnel who include Ranger and Natural Resource Management personnel that have been trained and certified by the USFWS or the Savannah District Wildlife Biologist. Protected fish or mussel species habitat (Appendix A) will be surveyed by federal and state fisheries biologists or the District Fisheries Biologist. Consideration should also be given to rare plants listed in Appendix B.

3. HABITAT SURVEY:

a. Read through each potential survey species' description sheet and identify each species' required habitat. Check SECTION 3 and 4 for flowering and fruiting data. Record this information in Part II, p. 1.

b. Determine whether habitat is available for any potential survey species Listed in Part II

c. If required habitat is not present for any of the potential survey species, your action is complete.

d. If a survey is required because of potential habitat being present, refer to Part III, p. 2. First (1) describe the survey method used. Then (2) BRIEFLY list the most common overstory, understory, and groundcover plants present. Next (3) identify what protected species might be in each potential habitat and look for these species. If none is encountered, state this per habitat type. For example, if large pines are present with a low midstory this would be considered potential habitat for red cockaded woodpecker. Thus you might write "60 year old loblolly pines present, potential habitat for red-cockaded; trees checked for holes and resin runs. No holes or birds seen." If any protected species are observed, list these in Part IV and immediately notify the District Wildlife Biologist. If the survey is done at a time of year when the protected species could not be observed but appropriate habitat is present, then a resurvey will be necessary. State this in Part IV if it applies.

e. If the proposed action takes place more than one year after the protected species survey, a resurvey will be required.

f. Include these worksheets, maps, and county lists from the manual in the summary report.



**III. Description of survey methods:** Less than one acre, search entire area; for larger sites run 200 ft parallel transects; for critical habitats run 50 ft parallel transects; any protected populations encountered should be surveyed for numbers, condition, and exact location.

1. List dominant plants seen (overstory, understory, and groundcover species)

Overstory:

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Midstory:

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Groundcover and vines:

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2. List types of habitat seen and relate to habitats of protected species; mark locations of any protected species and habitats on field maps. Note if resurvey is needed based on timing and habitat suitability.

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#### DOCUMENTATION

1. Attach county lists from US Fish & Wildlife Service or state agencies.
2. Attach field maps showing locations of protected species locations or suitable habitat areas and site boundaries.
3. Attach summary report if needed.



## SECTION TWO

### COUNTY BY COUNTY ENDANGERED, THREATENED, OR RARE SPECIES LISTING FOR UPPER SAVANNAH RIVER BASIN<sup>1</sup> GEORGIA

<b>COLUMBIA COUNTY, GEORGIA</b>	<b>FEDERAL STATUS</b>	<b>STATE STATUS</b>
<a href="#"><u>Southern Bald Eagle</u></a> ( <i>Haliaeetus leucocephalus</i> )	NONE	T
<a href="#"><u>Robust redhorse</u></a> ( <i>Moxostoma robustum</i> )	NONE	E
<a href="#"><u>Sandbar Shiner</u></a> ( <i>Notropis szepticus</i> )	NONE	R
<a href="#"><u>Southern Hognose Snake</u></a> ( <i>Heterodon simus</i> )	SC <sup>2</sup>	T
<a href="#"><u>Atlantic Pigtoe Mussel</u></a> ( <i>Fusconaia masoni</i> )	NONE	E
<a href="#"><u>Sweet Pitcher Plant</u></a> ( <i>Sarracenia rubra</i> )	NONE	T
<a href="#"><u>Silky Camellia</u></a> ( <i>Stewartia malacodendron</i> )	NONE	R
<a href="#"><u>Yellow Nailwort</u></a> ( <i>Paronychia virginica</i> )	NONE	E
<a href="#"><u>Dixie Mtn Breadroot</u></a> ( <i>Pedimelum piedmontanum</i> )	NONE	E
<a href="#"><u>Carolina Birdfoot-trefoil</u></a> ( <i>Lotus helleri</i> )	SC	E
<a href="#"><u>Barbara's Buttons</u></a> ( <i>Marshallia ramosa</i> )	SC	R
<a href="#"><u>Georgia Aster</u></a> ( <i>Symphotrichum georgianum</i> )	<b>CANDIDATE</b>	T
<a href="#"><u>Georgia Plume</u></a> ( <i>Elliottia racemosa</i> )	NONE	T
<a href="#"><u>Granite Stonecrop</u></a> or Dwarf Stonecrop ( <i>Sedum pusillum</i> )	NONE	T
<a href="#"><u>Little Amphianthus</u></a> ( <i>Amphianthus pusillus</i> )	<b>T</b>	T
<a href="#"><u>Mat-forming Quillwort</u></a> ( <i>Isoetes tegetiformans</i> )	<b>E</b>	E
<a href="#"><u>Ocmulgee Skullcap</u></a> ( <i>Scutellaria ocmulgee</i> )	SC	T
<a href="#"><u>Relict Trillium</u></a> ( <i>Trillium reliquum</i> )	<b>E</b>	E
<a href="#"><u>Shoals Spiderlily</u></a> ( <i>Hymenocallis coronaria</i> )	SC	T
<a href="#"><u>Whitlow Grass</u></a> or Sun-Loving Draba ( <i>Draba aprica</i> )	NONE	E
<a href="#"><u>False Poison Sumac</u></a> ( <i>Rhus michauxii</i> )	<b>E</b>	E
<b><u>ELBERT COUNTY, GEORGIA:</u></b>		
<a href="#"><u>Southern Bald Eagle</u></a> ( <i>Haliaeetus leucocephalus</i> )	NONE	T
<a href="#"><u>Lean Crayfish</u></a> ( <i>Cambarus strigosus</i> )	NONE	T
<a href="#"><u>Broad River Burrowing Crayfish</u></a> ( <i>Distocambarus devexus</i> )	NONE	T
<a href="#"><u>Sandbar Shiner</u></a> ( <i>Notropis szepticus</i> )	NONE	R
<a href="#"><u>Robust redhorse</u></a> ( <i>Moxostoma robustum</i> )	NONE	E
<a href="#"><u>Carolina Birdfoot-trefoil</u></a> ( <i>Lotus helleri</i> )	SC	E
<a href="#"><u>Sweet Pinesap</u></a> ( <i>Monotropsis odorata</i> )	NONE	T
<a href="#"><u>False Poison Sumac</u></a> ( <i>Rhus michauxii</i> )	<b>E</b>	E
<a href="#"><u>Granite Stonecrop</u></a> Dwarf Stonecrop ( <i>Sedum pusillum</i> )	NONE	T
<a href="#"><u>Oglethorpe Oak</u></a> ( <i>Quercus oglethorpensis</i> )	NONE	T

<sup>1</sup> South Carolina species of concern list for each county is more extensive than listed here please refer to:  
[http://www.dnr.state.sc.us/pls/heritage/county\\_species.select\\_county\\_map](http://www.dnr.state.sc.us/pls/heritage/county_species.select_county_map)

<sup>2</sup> Federal Species of Concern are formerly the C2 species

<b>FRANKLIN COUNTY, GEORGIA</b>	<b>FEDERAL STATUS</b>	<b>STATE STATUS</b>
<a href="#"><u>Sandbar Shiner</u></a> ( <i>Notropis scepcticus</i> )	NONE	R
<a href="#"><u>Southern Bald Eagle</u></a> ( <i>Haliaeetus leucocephalus</i> )	NONE	T
<a href="#"><u>Robust redhorse</u></a> ( <i>Moxostoma robustum</i> )	NONE	E
<a href="#"><u>Wood's False Hellebore</u></a> ( <i>Veratrum woodii</i> )	SC	R
<b>HART COUNTY, GEORGIA</b>		
<a href="#"><u>Sandbar Shiner</u></a> ( <i>Notropis scepcticus</i> )	NONE	R
<a href="#"><u>Southern Bald Eagle</u></a> ( <i>Haliaeetus leucocephalus</i> )	NONE	T
<b>LINCOLN COUNTY, GEORGIA</b>		
<a href="#"><u>Sandbar Shiner</u></a> ( <i>Notropis scepcticus</i> )	NONE	R
<a href="#"><u>Southern Bald Eagle</u></a> ( <i>Haliaeetus leucocephalus</i> )	NONE	T
<a href="#"><u>Carolina Birdfoot-trefoil</u></a> ( <i>Lotus helleri</i> )	SC	E
<a href="#"><u>Shoals Spiderlily</u></a> ( <i>Hymenocallis coronaria</i> )	SC	T
<a href="#"><u>Oglethorpe Oak</u></a> ( <i>Quercus oglethorpensis</i> )	NONE	T
<a href="#"><u>Pink Ladyslipper</u></a> ( <i>Cypripedium acaule</i> )	NONE	U
<b>MCDUFFIE COUNTY, GEORGIA</b>		
<a href="#"><u>Sandbar Shiner</u></a> ( <i>Notropis scepcticus</i> )	NONE	R
<a href="#"><u>Southern Bald Eagle</u></a> ( <i>Haliaeetus leucocephalus</i> )	NONE	T
<a href="#"><u>Southern Hognose Snake</u></a> ( <i>Heterodon simus</i> )	SC	T
<a href="#"><u>Gopher Tortoise</u></a> ( <i>Gopherus polyphemus</i> )	SC	T
<a href="#"><u>Spotted Turtle</u></a> ( <i>Clemmys guttata</i> )	NONE	U
<a href="#"><u>Savannah Lilliput</u></a> ( <i>Toxolasma pullus</i> )	NONE	T
<a href="#"><u>Wood Stork</u></a> ( <i>Mycteria americana</i> )	<b>E</b>	E
<a href="#"><u>Carolina Bogmint</u></a> ( <i>Macbridea caroliniana</i> )	NONE	R
-Bogs, marshes, and alluvial woods		
<a href="#"><u>Georgia Aster</u></a> ( <i>Symphyotrichum georgianum</i> )	<b>CANDIDATE</b>	T
<a href="#"><u>Oglethorpe Oak</u></a> ( <i>Quercus oglethorpensis</i> )	NONE	T
<a href="#"><u>Carolina Birdfoot-trefoil</u></a> ( <i>Lotus helleri</i> )	SC	E
<a href="#"><u>Pink Ladyslipper</u></a> ( <i>Cypripedium acaule</i> )	NONE	U
<a href="#"><u>Indian Olive</u></a> ( <i>Nestronia umbellula</i> )	NONE	R
<b>STEPHENS COUNTY, GEORGIA</b>		
<a href="#"><u>Appalachian Cottontail</u></a> ( <i>Sylvilagus obscurus</i> )	NONE	R
<a href="#"><u>Green Salamander</u></a> ( <i>Aneides aeneus</i> )	NONE	R
<a href="#"><u>Southern Bald Eagle</u></a> ( <i>Haliaeetus leucocephalus</i> )	NONE	T
<a href="#"><u>Radford Sedge</u></a> ( <i>Carex radfordii</i> )	NONE	T
<a href="#"><u>Bay Star-vine</u></a> ( <i>Schisandra glabra</i> )	NONE	T
<a href="#"><u>Georgia Aster</u></a> ( <i>Symphyotrichum georgianum</i> )	<b>CANDIDATE</b>	T
<a href="#"><u>Golden Seal</u></a> ( <i>Hydrastis canadensis</i> )	NONE	E
<a href="#"><u>Wood's False Hellebore</u></a> ( <i>Veratrum woodii</i> )	SC	R
<a href="#"><u>Fraser Loosestrife</u></a> ( <i>Lysimachia fraseri</i> )	SC	R

<b>STEPHENS COUNTY, GEORGIA</b>	<b>FEDERAL STATUS</b>	<b>STATE STATUS</b>
<u>Indian Olive</u> ( <i>Nestronia umbellula</i> )	NONE	R
<u>Monkey-face Orchid</u> ( <i>Platanthera integrilabia</i> )	CANDIDATE	T
<u>Persistent Trillium</u> ( <i>Trillium persistens</i> )	E	E
<u>Piedmont Barren Strawberry</u> ( <i>Waldsteinia lobata</i> )	SC	R
<u>Smooth Purple Coneflower</u> ( <i>Echinacea laevigata</i> )	E	E

**WILKES COUNTY, GEORGIA**

<u>Southern Bald Eagle</u> ( <i>Haliaeetus leucocephalus</i> )	NONE	T
<u>Lean Crayfish</u> ( <i>Cambarus strigosus</i> )	NONE	T
<u>Broad River Burrowing Crayfish</u> ( <i>Distocambarus devexus</i> )	NONE	T
<u>Sandbar Shiner</u> ( <i>Notropis scepoticus</i> )	NONE	R
<u>Robust redhorse</u> ( <i>Moxostoma robustum</i> )	NONE	E
<u>Delicate Spike</u> ( <i>Elliptio arctata</i> )	NONE	E
<u>Granite Stonecrop</u> ( <i>Sedum pusillum</i> )	NONE	T
<u>Indian Olive</u> ( <i>Nestronia umbellula</i> )	NONE	R
<u>Oglethorpe Oak</u> ( <i>Quercus oglethorpensis</i> )	NONE	T
<u>Shoals Spiderlily</u> ( <i>Hymenocallis coronaria</i> )	SC	T
<u>Whitlow Grass</u> or Sun-Loving Draba ( <i>Draba aprica</i> )	NONE	E
<u>Pink Ladyslipper</u> ( <i>Cypripedium acaule</i> )	NONE	U

**SOUTH CAROLINA**

**ABBEVILLE COUNTY, SOUTH CAROLINA**

<u>Carolina heelsplitter</u> ( <i>Lasmigona decorata</i> )	SC	SC
<u>American Kestrel</u> ( <i>Falco sparverius</i> )	SC	SC
<u>Loggerhead Shrike</u> ( <i>Lanius ludovicianus</i> )	SC	SC
<u>Southern Bald Eagle</u> ( <i>Haliaeetus leucocephalus</i> )	NONE	E
<u>Swainsons Warbler</u> ( <i>Limnothlypis swainsonii</i> )	SC	SC
<u>Adder's-Tongue</u> ( <i>Ophioglossum vulgatum</i> )	NONE	SC
<u>Allegheny-Spurge</u> ( <i>Pachysandra procumbens</i> ) -Mesic hardwood forests over basic soils	NONE	SC
<u>American Ginseng</u> ( <i>Panax quinquefolius</i> )	NONE	SC
<u>Columbo</u> ( <i>Frasera caroliniensis</i> )	NONE	SC
<u>Faded Trillium</u> ( <i>Trillium discolor</i> )	SC	SC
<u>Georgia Aster</u> ( <i>Symphyotrichum georgianum</i> )	CANDIDATE	SC
<u>Green-fringe Orchid</u> ( <i>Platanthera lacera</i> )	NONE	SC
<u>Schwerin Indigo-bush</u> ( <i>Amorpha schwerinii</i> ) -Rocky upland woods	NONE	SC
<u>Southern Nodding Trillium</u> ( <i>Trillium rugelii</i> )	NONE	SC
<u>Three-parted violet</u> ( <i>Viola tripartita</i> )	SC	SC
<u>Three-parted violet</u> ( <i>Viola tripartita glarberima</i> )	SC	SC
<u>Three-parted violet</u> ( <i>Viola tripartita tripartita</i> )	SC	SC
<u>Tuberous Gromwell</u> ( <i>Lithospermum tuberosum</i> )	NONE	SC
<u>Wahoo</u> ( <i>Euonymus atropurpureus</i> )	NONE	SC

<b>ANDERSON COUNTY, SOUTH CAROLINA</b>	<b>FEDERAL STATUS</b>	<b>STATE STATUS</b>
<b>Carolina Darter</b> ( <i>Etheostoma collis</i> )	SC	T
<b>Christmas Darter</b> ( <i>Etheostoma hopkinsi</i> )	SC	SC
<b>Eastern Creekshell</b> ( <i>Villosa delumbis</i> )	SC	SC
<b><u>Southern Bald Eagle</u></b> ( <i>Haliaeetus leucocephalus</i> )	NONE	E
<b>American Kestrel</b> ( <i>Falco sparverius</i> )	SC	SC
<b>Loggerhead Shrike</b> ( <i>Lanius ludovicianus</i> )	SC	SC
<b><u>American Ginseng</u></b> ( <i>Panax quinquefolius</i> )	NONE	SC
<b><u>Carolina Birdsfoot Trefoil</u></b> ( <i>Lotus helleri</i> )	SC	SC
<b>Climbing Fern</b> ( <i>Lygodium palmatum</i> )	NONE	SC
-Thickets and open upland forests on acidic soil		
<b><u>Fraser Loosestrife</u></b> ( <i>Lysimachia fraseri</i> )	SC	SC
<b>Green-fringe Orchid</b> ( <i>Platanthera lacera</i> )	NONE	SC
<b><u>Indian Olive</u></b> ( <i>Nestronia umbellula</i> )	NONE	SC
<b><u>Smooth Purple Coneflower</u></b> ( <i>Echinacea laevigata</i> )	E	E
<b>Three-parted violet</b> ( <i>Viola tripartita</i> )	SC	SC
<b>Three-parted violet</b> ( <i>Viola tripartita glaberrima</i> )	SC	SC
<b>Three-parted violet</b> ( <i>Viola tripartita tripartita</i> )	SC	SC
<b><u>MCCORMICK COUNTY, SOUTH CAROLINA</u></b>		
<b>Brook floater</b> ( <i>Alasmidonta varicosa</i> )	SC	SC
<b><u>Carolina Heelsplitter</u></b> ( <i>Lasmigona decorata</i> )	E	E
<b>Yellow Lampmussel</b> ( <i>Lampsilis cariosa</i> )	SC	SC
<b>American Kestrel</b> ( <i>Falco sparverius</i> )	SC	SC
<b>Bachmans Sparrow</b> ( <i>Aimophila aestivalis</i> )	SC	SC
<b>Loggerhead Shrike</b> ( <i>Lanius ludovicianus</i> )	SC	SC
<b><u>Red-Cockaded Woodpecker</u></b> ( <i>Picoides borealis</i> )	E	E
<b><u>Southern Bald Eagle</u></b> ( <i>Haliaeetus leucocephalus</i> )	NONE	E
<b><u>Webster's Salamander</u></b> ( <i>Plethodon websteri</i> )	NONE	E
<b><u>Adder's-Tongue</u></b> ( <i>Ophioglossum vulgatum</i> )	NONE	SC
<b><u>American Ginseng</u></b> ( <i>Panax quinquefolius</i> )	NONE	SC
<b><u>Birdsfoot Trefoil</u></b> ( <i>Lotus helleri</i> )	SC	SC
<b><u>Brittle Fern</u></b> ( <i>Cystopteris protrusa</i> )	NONE	SC
<b><u>Carolina Larkspur</u></b> ( <i>Delphinium carolinianum</i> )	NONE	SC
<b><u>Durand's White Oak</u></b> ( <i>Quercus sinuata</i> )	NONE	SC
<b><u>Dutchman's Breeches</u></b> ( <i>Dicentra cucullaria</i> )	NONE	SC
<b><u>Eared Goldenrod</u></b> ( <i>Solidago auriculata</i> )	NONE	SC
<b>Enchanter's Nightshade</b> ( <i>Circaea lutetiana canadensis</i> )	NONE	SC
<b><u>False Rue Anemone</u></b> ( <i>Enemion biternatum</i> )	NONE	SC
<b><u>Florida or Miccosukee gooseberry</u></b> ( <i>Ribes echinellum</i> )	T	T
<b><u>Georgia Aster</u></b> ( <i>Symphyotrichum georgianum</i> )	<b>CANDIDATE</b>	SC
<b><u>Indian Olive</u></b> ( <i>Nestronia umbellula</i> )	NONE	SC
<b><u>Lance-leaved Trillium</u></b> ( <i>Trillium lancifolium</i> )	NONE	SC
<b><u>Nebraska Sedge</u></b> ( <i>Carex jamesii</i> )	NONE	SC
<b><u>Oglethorpe Oak</u></b> ( <i>Quercus oglethorpensis</i> )	NONE	SC

<b>MCCORMICK COUNTY, SOUTH CAROLINA</b>	<b>FEDERAL STATUS</b>	<b>STATE STATUS</b>
<a href="#"><u>One-flowered Broomrape</u></a> ( <i>Orobanche uniflora</i> )	NONE	SC
<a href="#"><u>Prairie Rosinweed</u></a> ( <i>Silphium terebinthinaceum</i> )	NONE	SC
<a href="#"><u>Shoals Spiderlily</u></a> ( <i>Hymenocallis coronaria</i> )	NONE	SC
<a href="#"><u>Shooting Star</u></a> ( <i>Dodecatheon meadia</i> )	NONE	SC
<a href="#"><u>Streambank Mock-orange</u></a> ( <i>Philadelphus hirsutus</i> )	NONE	SC
<a href="#"><u>Southern Nodding Trillium</u></a> ( <i>Trillium rugelii</i> )	NONE	SC
<a href="#"><u>Swamp White Oak</u></a> ( <i>Quercus bicolor</i> )	NONE	SC
<a href="#"><u>Tall Bellflower</u></a> ( <i>Campanula americana</i> )	NONE	SC
<a href="#"><u>Tuberous Gromwell</u></a> ( <i>Lithospermum tuberosum</i> )	NONE	SC
<a href="#"><u>Upland Privet</u></a> ( <i>Forestiera ligustrina</i> )	NONE	SC
<a href="#"><u>Virginia Spiderwort</u></a> ( <i>Tradescantia virginiana</i> )	NONE	SC
<a href="#"><u>White-leaved Sunflower</u></a> ( <i>Helianthus glaucophyllus</i> )	NONE	SC
<b>OCONEE COUNTY, SOUTH CAROLINA</b>		
<a href="#"><u>Banded Darter</u></a> ( <i>Etheostoma zonale</i> )	NONE	SC
<b>Blacknose Dace</b> ( <i>Rhinichthys atratulus</i> )	NONE	SC
<b>Brook floater</b> ( <i>Alasmidonta varicosa</i> )	SC	SC
<a href="#"><u>Green Salamander</u></a> ( <i>Aneides aeneus</i> )	SC	SC
<b>Hellbender</b> ( <i>Cryptobranchus alleganiensis</i> )	SC	SC
<a href="#"><u>Indiana Bat</u></a> ( <i>Myotis sodalis</i> )	<b>E</b>	E
<a href="#"><u>Rafinesque's Big-eared Bat</u></a> ( <i>Corynorhinus rafinesquii</i> )	SC	E
<a href="#"><u>Small-footed Bat</u></a> ( <i>Myotis leibii</i> )	NONE	T
<a href="#"><u>Appalachian Bewicks Wren</u></a> ( <i>Thryomanes bewickii altus</i> )	SC	T
<b>Swainsons Warbler</b> ( <i>Aimophila aestivalis</i> )	SC	SC
<b>American Kestrel</b> ( <i>Falco sparverius</i> )	SC	SC
<a href="#"><u>Southern Bald Eagle</u></a> ( <i>Haliaeetus leucocephalus</i> )	NONE	E
<b>Allegheny-Spurge</b> ( <i>Pachysandra procumbens</i> )	NONE	SC
<a href="#"><u>American Ginseng</u></a> ( <i>Panax quinquefolius</i> )	NONE	SC
<a href="#"><u>Biltmore Sedge</u></a> ( <i>Carex biltmoreana</i> )	SC	SC
<b>Black-stem Spleenwort</b> ( <i>Asplenium resiliens</i> )	NONE	SC
<b>Bristle-Fern</b> ( <i>Trichomanes boschianum</i> )	NONE	SC
-Acidic ledges and overhangs		
<b>Broad-toothed Hedge-nettle</b> ( <i>Stachys tenuifolia latidens</i> )	NONE	SC
-Mesic hardwood forests		
<b>Brook Saxifrage</b> ( <i>Boykinia aconitifolia</i> )	NONE	SC
<a href="#"><u>Birdsfoot Trefoil</u></a> ( <i>Lotus helleri</i> )	SC	SC
<b>Climbing Fern</b> ( <i>Lygodium palmatum</i> )	NONE	SC
-Thickets and open upland forests on acidic soil		
<b>Clingman's Hedge-Nettle</b> ( <i>Stachys clingmanii</i> )	NONE	SC
<b>Enchanter's Nightshade</b> ( <i>Circaea lutetiana canadensis</i> )	NONE	SC
<b>Evan's Cheilolejeunea</b> ( <i>Cheilolejeunea evansii</i> )	NONE	SC
<a href="#"><u>Fraser Loosestrife</u></a> ( <i>Lysimachia fraseri</i> )	SC	SC
<b>Gay-wing Milkwort</b> ( <i>Polygala paucifolia</i> )	NONE	SC
<a href="#"><u>Georgia Aster</u></a> ( <i>Symphotrichum georgianum</i> )	<b>CANDIDATE</b>	SC
<b>Glade Fern</b> ( <i>Diplazium pycnocarpon</i> )	NONE	SC

<b>OCONEE COUNTY, SOUTH CAROLINA</b>	<b>FEDERAL STATUS</b>	<b>STATE STATUS</b>
<b>Goldie's Woodfern</b> ( <i>Dryopteris goldiana</i> )	NONE	SC
<b>Indian Olive</b> ( <i>Nestronia umbellula</i> )	NONE	SC
<b>Kidney-leaf Grass-of-Parnassus</b> ( <i>Parnassia asarifolia</i> )	NONE	SC
<b>Large-fruited Sanicle</b> ( <i>Sanicula trifoliata</i> )	NONE	SC
-Mesic hardwood forests		
<b>Longstalk Sedge</b> ( <i>Carex pedunculata</i> )	NONE	SC
- Cove hardwood forests		
<b>Mountain Camellia</b> ( <i>Stewartia ovata</i> )	NONE	SC
<b>Mountain Witch-alder</b> ( <i>Fothergilla major</i> )	NONE	SC
-Rocky woods, stream margins		
<b>Oconee bells</b> ( <i>Shortia galacifolia</i> )	SC	SC
<b>Persistent Trillium</b> ( <i>Trillium persistens</i> )	E	E
<b>Piedmont Barren Strawberry</b> ( <i>Waldsteinia lobata</i> )	SC	SC
<b>Purple-stem Cliff-brake</b> ( <i>Pellaea atropurpurea</i> )	NONE	SC
<b>Single-haired Mountain-Mint</b> ( <i>Pycnanthemum montanum</i> )	NONE	SC
<b>Single-sorus Spleenwort</b> ( <i>Asplenium monanthes</i> )	NONE	SC
<b>Small Whorled Pogonia</b> ( <i>Isotria medeoloides</i> )	T	T
<b>Smooth Purple Coneflower</b> ( <i>Echinacea laevigata</i> )	E	E
<b>Southern Nodding Trillium</b> ( <i>Trillium rugelii</i> )	NONE	SC
<b>Streambank Mock-orange</b> ( <i>Philadelphus hirsutus</i> )	NONE	SC
<b>Striped Maple</b> ( <i>Acer pensylvanicum</i> )	NONE	SC
<b>Sun-facing Coneflower</b> ( <i>Rudbeckia heliopsidis</i> )	SC	SC
-Limestone or sandstone barrens and streamsides		
<b>Sweet Pinesap</b> ( <i>Monotropsis odorata</i> )	SC	SC
<b>Teaberry</b> ( <i>Gaultheria procumbens</i> )	NONE	SC
<b>Tunbridge Fern</b> ( <i>Hymenophyllum tunbridgense</i> )	SC	SC
<b>Umbrella-leaf</b> ( <i>Diphylleia cymosa</i> )	NONE	SC
<b>Wahoo</b> ( <i>Euonymus atropurpureus</i> )	NONE	SC
<b>White Goldenrod</b> ( <i>Solidago bicolor</i> )	NONE	SC
<b>Granite-domed Goldenrod</b> ( <i>Solidago simulans</i> )	SC	SC
<b>Yellow Birch</b> ( <i>Betula alleghaniensis</i> )	NONE	SC
<b><u>PICKENS COUNTY, SOUTH CAROLINA</u></b>		
<b>American Kestrel</b> ( <i>Falco sparverius</i> )	SC	SC
<b>Bewick's Wren</b> ( <i>Thryomanes bewickii altus</i> )	SC	T
<b>Bog Turtle</b> ( <i>Glyptemys mühlenbergi</i> )	T	T
<b>Carlson's Polycentropus Caddisfly</b> ( <i>Polycentropus carlsoni</i> )	NONE	SC
<b>Eastern Cougar</b> ( <i>Felis concolor</i> )	E	E
<b>Fantail Darter</b> ( <i>Etheostoma flabellare</i> )	NONE	SC
<b>Green Salamander</b> ( <i>Aneides aeneus</i> )	SC	SC
<b>Peregrine falcon</b> ( <i>Falco peregrinus anatum</i> )	NONE	E
<b>Rafinesque's Big-eared Bat</b> ( <i>Corynorhinus rafinesquii</i> )	SC	E
<b>Small-footed Bat</b> ( <i>Myotis leibii</i> )	NONE	T
<b>Southern Bald Eagle</b> ( <i>Haliaeetus leucocephalus</i> )	NONE	E

<b>PICKENS COUNTY (CONTINUED)</b>	<b>FEDERAL STATUS</b>	<b>STATE STATUS</b>
<b>Swainsons Warbler</b> ( <i>Aimophila aestivas</i> )	SC	SC
<b><u>Southern Coal Skink</u></b> ( <i>Eumeces anthracinus pluvialis</i> )	NONE	T
<b>Alexander's Rock Aster</b> ( <i>Aster avitus</i> )	SC	SC
Granite outcrops in seep margins, often with <i>Solidago gracillima</i>		
<b>Allegheny-spurge</b> ( <i>Pachysandra procumbens</i> )	NONE	SC
<b><u>American Ginseng</u></b> ( <i>Panax quinquefolius</i> )	NONE	SC
<b>Appalachian Lophocolea</b> ( <i>Lophocolea appalchiana</i> )	NONE	SC
<b>Appalachian Pellia</b> ( <i>Pellia appalachiana</i> )	NONE	SC
<b>Biltmore Greenbrier</b> ( <i>Smilax biltmoreana</i> )	SC	SC
<b><u>Biltmore Sedge</u></b> ( <i>Carex biltmoreana</i> )	SC	SC
<b><u>Birdsfoot Trefoil</u></b> ( <i>Lotus helleri</i> )	SC	SC
<b><u>Black-spored Quillwort</u></b> ( <i>Isoetes melanospora</i> )	E	E
<b>Bluntleaf Waterleaf</b> ( <i>Hydrophyllum canadense</i> )	NONE	SC
<b>Bristle-Fern</b> ( <i>Trichomanes boschianum</i> )	NONE	SC
-Acidic ledges and overhangs		
<b>Broad-leaved Tickseed</b> ( <i>Coreopsis latifolia</i> )	NONE	SC
-Mature deciduous forests with open understory		
<b>Broad-toothed Hedge-nettle</b> ( <i>Stachys tenuifolia latidens</i> )	NONE	SC
-Mesic hardwood forests		
<b>Canada Lily</b> ( <i>Lilium canadense</i> )	NONE	SC
-Openings in rich woods		
<b>Carey Saxifrage</b> ( <i>Saxifraga careyana</i> )	NONE	SC
-Moist rock ledges		
<b>Cuthbert Turtlehead</b> ( <i>Chelone cuthberti</i> )	SC	SC
<b>Dwarf-flowered Heartleaf</b> ( <i>Hexastylis naniflora</i> )	T	T
<b>Enchanter's Nightshade</b> ( <i>Circaea lutetiana canadensis</i> )	NONE	SC
<b>Evan's Cheilolejeunea</b> ( <i>Cheilolejeunea evansii</i> )	NONE	SC
<b><u>Fraser Loosestrife</u></b> ( <i>Lysimachia fraseri</i> )	SC	SC
<b>Gay-wing Milkwort</b> ( <i>Polygala paucifolia</i> )	NONE	SC
<b>Granite domed Goldenrod</b> ( <i>Solidago simulans</i> )	SC	SC
<b>Green-fringe Orchid</b> ( <i>Platanthera lacera</i> )	NONE	SC
<b><u>Indian Olive</u></b> ( <i>Nestronia umbellula</i> )	NONE	SC
<b>Large-leaved Grass-of-Parnassus</b> ( <i>Parnassia grandifolia</i> )	NONE	SC
-Seep limestone and shale ledges		
<b>Lobed Spleenwort</b> ( <i>Asplenium pinnatifidum</i> )	NONE	SC
<b>Longstalk Sedge</b> ( <i>Carex pedunculata</i> )	NONE	SC
- Cove hardwood forests		
<b>Manharts Sedge</b> ( <i>Carex manhartii</i> )	SC	SC
<b>Mountain Camellia</b> ( <i>Stewartia ovata</i> )	NONE	SC
<b><u>Mountain Sweet Pitcher Plant</u></b> ( <i>Sarracenia rubra jonesii</i> )	E	E
<b>Mountain Witch-alder</b> ( <i>Fothergilla major</i> )	NONE	SC
-Rocky woods, stream margins		
<b><u>Oconee bells</u></b> ( <i>Shortia galacifolia</i> )	SC	SC
<b><u>Open-ground Whitlow-grass</u></b> ( <i>Draba aprica</i> )	NONE	SC

<b>PICKENS COUNTY (CONTINUED)</b>	<b>FEDERAL STATUS</b>	<b>STATE STATUS</b>
<b>Piedmont Quillwort</b> ( <i>Isoetes piedmontana</i> )	NONE	SC
<b>Piedmont Ragwort</b> ( <i>Senecio millefolium</i> ) -High elevation rock outcrops	SC	SC
<b>Porter's Goldeneye</b> ( <i>Helianthus porteri</i> )	NONE	SC
<b>Purple-stem Cliff-brake</b> ( <i>Pellaea atropurpurea</i> )	NONE	SC
<b>Radford Sedge</b> ( <i>Carex radfordii</i> )	SC	SC
<b>Single-haired Mountain-Mint</b> ( <i>Pycnanthemum montanum</i> )	NONE	SC
<b>Single-sorus Spleenwort</b> ( <i>Asplenium monanthes</i> )	NONE	SC
<b><u>Smooth Purple Coneflower</u></b> ( <i>Echinacea laevigata</i> )	<b>E</b>	E
<b>Soft Groovebur</b> ( <i>Agrimonia pubescens</i> )	NONE	SC
<b><u>Southern Nodding Trillium</u></b> ( <i>Trillium rugelii</i> )	NONE	SC
<b><u>Streambank Mock-orange</u></b> ( <i>Philadelphus hirsutus</i> )	NONE	SC
<b>Sweet Pinesap</b> ( <i>Monotropsis odorata</i> )	SC	SC
<b>Taylor's Fern</b> ( <i>Hymenophyllum tayloriae</i> )	NONE	SC
<b>Teaberry</b> ( <i>Gaultheria procumbens</i> )	NONE	SC
<b>Tunbridge Fern</b> ( <i>Hymenophyllum tunbridgense</i> )	SC	SC
<b>Wahoo</b> ( <i>Euonymus atropurpureus</i> )	NONE	SC
<b>Yellow Birch</b> ( <i>Betula alleghaniensis</i> )	NONE	SC
<b>Yellowwood</b> ( <i>Cladastris kentukea</i> )	NONE	SC

## Protected Species in Counties Adjacent to the Upper Savannah River Basin Counties

### GEORGIA

<b>BANKS COUNTY, GEORGIA</b>	<b>FEDERAL STATUS</b>	<b>STATE STATUS</b>
<a href="#"><u>Wood's False Hellebore</u></a> ( <i>Veratrum woodii</i> )	SC	R
<a href="#"><u>Sandbar Shiner</u></a> ( <i>Notropis szepticus</i> )	NONE	R
<b><u>HABERSHAM COUNTY, GEORGIA</u></b>		
<b>Bluestripe Shiner</b> ( <i>Cyprinella callitaenia</i> )	NONE	R
-Found in flowing area in large creeks and medium rivers, over rocky substrates		
<b>Highscale Shiner</b> ( <i>Notropis hypsilepsis</i> )	NONE	R
-Found in small to large streams over sand or bedrock substrates		
<a href="#"><u>Green Salamander</u></a> ( <i>Aneides aeneus</i> )	SC	R
<b>Bachman's Sparrow</b> ( <i>Aimophila aestivalis</i> )	SC	R
<a href="#"><u>Georgia Aster</u></a> ( <i>Symphyotrichum georgianum</i> )	<b>CANDIDATE</b>	T
<a href="#"><u>Persistent Trillium</u></a> ( <i>Trillium persistens</i> )	E	E
<a href="#"><u>Piedmont Barren Strawberry</u></a> ( <i>Waldsteinia lobata</i> )	SC	R
<a href="#"><u>Pink Ladyslipper</u></a> ( <i>Cypripedium acaule</i> )	NONE	U
<a href="#"><u>Small Whorled Pogonia</u></a> ( <i>Isotria medeoloides</i> )	T	T
<a href="#"><u>Smooth Purple Coneflower</u></a> ( <i>Echinacea laevigata</i> )	E	E
<b>Sweet Pinesap</b> ( <i>Monotropsis odorata</i> )	SC	T
<a href="#"><u>Monkey-face Orchid</u></a> ( <i>Plantanthera integrilabia</i> )	<b>CANDIDATE</b>	T
<b>Carolina Bog Laurel</b> ( <i>Kalmia carolina</i> )	NONE	T
<b>Purple Pitcher-plant</b> ( <i>Sarracenia purpurea</i> )	NONE	E
<b>Carolina Hemlock</b> ( <i>Tsuga caroliniana</i> )	NONE	E
<b>Halloween Darter</b> ( <i>Percina crypta</i> )	NONE	T
<b><u>MADISON COUNTY, GEORGIA</u></b>		
<a href="#"><u>Sandbar Shiner</u></a> ( <i>Notropis szepticus</i> )	NONE	R
<a href="#"><u>Robust redhorse</u></a> ( <i>Moxostoma robustum</i> )	NONE	E
<a href="#"><u>Georgia Aster</u></a> ( <i>Symphyotrichum georgianum</i> )	<b>CANDIDATE</b>	T

<b>OGLETHORPE COUNTY, GEORGIA</b>	<b>FEDERAL STATUS</b>	<b>STATE STATUS</b>
<a href="#"><u>Sandbar Shiner</u></a> ( <i>Notropis scepcticus</i> )	NONE	R
<a href="#"><u>Lean Crayfish</u></a> ( <i>Cambarus strigosus</i> )	NONE	T
<a href="#"><u>Broad River Burrowing Crayfish</u></a> ( <i>Distocambarus devexus</i> )	NONE	T
<a href="#"><u>Birdsfoot Trefoil</u></a> ( <i>Lotus helleri</i> )	SC	E
<a href="#"><u>Granite Stonecrop</u></a> ( <i>Sedum pusillum</i> )	NONE	T
<a href="#"><u>Indian Olive</u></a> ( <i>Nestronia umbellula</i> )	NONE	R
<a href="#"><u>Little Amphianthus</u></a> ( <i>Amphianthus pusillus</i> )	<b>T</b>	T
<a href="#"><u>Oglethorpe Oak</u></a> ( <i>Quercus oglethorpensis</i> )	NONE	T
<b><u>RABUN COUNTY, GEORGIA</u></b>		
<a href="#"><u>Bog Turtle</u></a> ( <i>Glyptemys muhlenbergi</i> )	<b>T</b>	E
<a href="#"><u>Rafinesque's Big-eared Bat</u></a> ( <i>Corynorhinus rafinesquii</i> )	SC	R
<a href="#"><u>Fatlips Minnow</u></a> ( <i>Phenacobius crassilabrum</i> )	NONE	E
-High gradient streams and rivers		
<a href="#"><u>Green Salamander</u></a> ( <i>Aneides aeneus</i> )	SC	R
<a href="#"><u>Hellbender</u></a> ( <i>Cryptobranchus alleganiensis</i> )	SC	T
<a href="#"><u>Highscale Shiner</u></a> ( <i>Notropis hypsilepis</i> )	NONE	R
-Found in small to large streams over sand or bedrock substrates.		
<a href="#"><u>Sandbar Shiner</u></a> ( <i>Notropis scepcticus</i> )	NONE	R
<a href="#"><u>Silver Shiner</u></a> ( <i>Notropis photogenis</i> )	NONE	E
-Found in large creeks to small rivers, in riffles and flowing pools over firm substrates		
<a href="#"><u>Biltmore sedge</u></a> ( <i>Carex biltmoreana</i> )	SC	T
<a href="#"><u>Canada Burnet</u></a> ( <i>Sanguisorba canadensis</i> )	NONE	T
-Found in mountain bogs and seeps		
<a href="#"><u>Carolina Bog Laurel</u></a> ( <i>Kalmia carolina</i> )	NONE	T
<a href="#"><u>Carolina Hemlock</u></a> ( <i>Tsuga caroliniana</i> )	NONE	E
<a href="#"><u>Cuthbert's turtlehead</u></a> ( <i>Chelone cuthberti</i> )	SC	T
<a href="#"><u>Eastern Turkeybeard</u></a> ( <i>Xerophyllum asphodeloides</i> )	NONE	R
-Found in dry oak-hickory forest		
<a href="#"><u>Fraser Loosestrife</u></a> ( <i>Lysimachia fraseri</i> )	SC	R
<a href="#"><u>Fraser Sedge</u></a> ( <i>Cymophyllus fraseri</i> )	SC	T
-Hemlock/hardwood ravines		
<a href="#"><u>Goldenseal</u></a> ( <i>Hydrastis canadensis</i> )	NONE	E
<a href="#"><u>Yellow Ladyslipper</u></a> ( <i>Cypripedium parviflorum pubescens</i> )	NONE	R
-Found in upland oak-hickory-pine forests and mixed hardwood forests		
<a href="#"><u>Monkey-face Orchid</u></a> ( <i>Platanthera integrilabia</i> )	<b>CANDIDATE</b>	T
<a href="#"><u>Oconee Bells</u></a> ( <i>Shortia galacifolia</i> )	SC	E
<a href="#"><u>Persistent Trillium</u></a> ( <i>Trillium persistens</i> )	<b>E</b>	E
<a href="#"><u>Pink Ladyslipper</u></a> ( <i>Cypripedium acaule</i> )	NONE	U
<a href="#"><u>Porters Reed Grass</u></a> ( <i>Calamagrostis porteri</i> )	NONE	R
<a href="#"><u>Purple Pitcher-plant</u></a> ( <i>Sarracenia purpurea</i> )	NONE	E
-Found in sphagnum and pine bogs		
<a href="#"><u>Cliffside Goldenrod</u></a> ( <i>Solidago simulans</i> )	NONE	E

<b>RABUN COUNTY, GEORGIA</b>	<b>FEDERAL STATUS</b>	<b>STATE STATUS</b>
<b>Rock Gnome Lichen</b> ( <i>Gymnoderma lineare</i> ) -found on vertical cliffs below seeps at high elevations	E	E
<b>Sand Myrtle</b> ( <i>Leiophyllum buxifolium</i> )	NONE	T
<b>Yellow Ladyslipper</b> ( <i>Cypripedium parviflorum parviflorum</i> )	NONE	R
<b>Small Whorled Pogonia</b> ( <i>Isotria medeoloides</i> )	T	T
<b>Swamp Pink</b> ( <i>Helonias bullata</i> ) -Found in cold, Blue Ridge seepage swamps	T	T
<b>Sweet Pinesap</b> ( <i>Monotropis odorata</i> )	SC	T
<b>Blue Ridge Golden Ragwort</b> ( <i>Packera millefolia</i> )	NONE	T
<b>American Barberry</b> ( <i>Berberis canadensis</i> )	NONE	E
<b>Wretched sedge</b> ( <i>Carex misera</i> )	SC	T
<b><u>RICHMOND COUNTY, GEORGIA</u></b>		
<b>Atlantic Pigtoe Mussel</b> ( <i>Fusconaia masoni</i> )	NONE	E
<b>Robust redhorse</b> ( <i>Moxostoma robustum</i> )	NONE	E
<b>Rafinesque's Big-eared Bat</b> ( <i>Corynorhinus rafinesquii</i> )	SC	R
<b>Spotted Turtle</b> ( <i>Clemmys guttata</i> )	NONE	U
<b>Bluebarred Pygmy Sunfish</b> ( <i>Elassoma okatie</i> )	SC	E
<b>Gopher Frog</b> ( <i>Rana capito</i> )	SC	R
<b>Gopher Tortoise</b> ( <i>Gopherus polyphemus</i> ) -Found in sand hills, dry hammocks, longleaf pine/turkey oak woods	SC	T
<b>Southern Hognose Snake</b> ( <i>Heterodon simus</i> )	SC	T
<b>Red-cockaded Woodpecker</b> ( <i>Picoides borealis</i> )	E	E
<b>Shortnose Sturgeon</b> ( <i>Acipenser brevirostrum</i> )	E	E
<b>Southern Bald Eagle</b> ( <i>Haliaeetus leucocephalus</i> )	NONE	T
<b>Wood Stork</b> ( <i>Mycteria americana</i> )	E	E
<b>Atlantic White Cedar</b> ( <i>Chamaecyparis thyoides</i> )	NONE	R
<b>Pink Ladyslipper</b> ( <i>Cypripedium acaule</i> )	NONE	U
<b>Georgia Aster</b> ( <i>Symphyotrichum georgianum</i> )	<b>CANDIDATE</b>	T
<b>Indian Olive</b> ( <i>Nestronia umbellula</i> )	NONE	R
<b>Ocmulgee Skullcap</b> ( <i>Scutellaria ocmulgee</i> )	SC	T
<b>Pickering's Morning-glory</b> ( <i>Stylisma pickeringii</i> )	SC	T
<b>Sandhill Milkvetch</b> ( <i>Astragalus michauxii</i> )	SC	T
<b>Silky Camellia</b> ( <i>Stewartia malacodendron</i> )	NONE	R
<b>Shoals Spiderlily</b> ( <i>Hymenocallis coronaria</i> )	SC	T
<b>Sweet Pitcher Plant</b> ( <i>Sarracenia rubra</i> )	<b>NONE</b>	T
<b><u>WARREN COUNTY, GEORGIA</u></b>		
<b>Atlantic Pigtoe Mussel</b> ( <i>Fusconaia masoni</i> )	NONE	E
<b>Savannah Lilliput</b> ( <i>Toxolasma pullus</i> )	NONE	T
<b>Southern Hognose Snake</b> ( <i>Heterodon simus</i> )	SC	T
<b>Spotted Turtle</b> ( <i>Glyptemys guttata</i> ) -Found in swamps, marshes, bogs, and small ponds	NONE	U
<b>Granite Stonecrop</b> ( <i>Sedum pusillum</i> )	NONE	T
<b>Georgia Aster</b> ( <i>Symphyotrichum georgianum</i> )	<b>CANDIDATE</b>	T

**SOUTH CAROLINA**

<b>EDGEFIELD COUNTY, SOUTH CAROLINA</b>	<b>FEDERAL STATUS</b>	<b>STATE STATUS</b>
<a href="#"><u>Carolina Heelsplitter mussel</u></a> ( <i>Lasmigona decorata</i> )	E	E
Yellow Lampmussel ( <i>Lampsilis cariosa</i> )	SC	SC
Brook floater ( <i>Alasmidonta varicosa</i> )	SC	SC
American Kestrel ( <i>Falco sparverius</i> )	SC	SC
Bachmans Sparrow ( <i>Aimophila aestivalis</i> )	SC	SC
Loggerhead Shrike ( <i>Lanius ludovicianus</i> )	SC	SC
<a href="#"><u>Red-cockaded Woodpecker</u></a> ( <i>Picoides borealis</i> )	E	E
<a href="#"><u>Southern Bald Eagle</u></a> ( <i>Haliaeetus leucocephalus</i> )	NONE	E
<a href="#"><u>Webster's Salamander</u></a> ( <i>Plethodon websteri</i> )	NONE	E
<a href="#"><u>Adder's Tongue</u></a> ( <i>Ophioglossum vulgatum</i> )	NONE	SC
<a href="#"><u>American Ginseng</u></a> ( <i>Panax quinquefolius</i> )	NONE	SC
American nailwort ( <i>Paronychia americana</i> )	NONE	SC
<a href="#"><u>Birdsfoot Trefoil</u></a> ( <i>Lotus helleri</i> )	SC	SC
Butternut ( <i>Juglans cinerea</i> )	NONE	SC
-Floodplain forests		
<a href="#"><u>Carolina larkspur</u></a> ( <i>Delphinium carolinianum</i> )	NONE	SC
<a href="#"><u>Durand's white oak</u></a> ( <i>Quercus sinuata</i> )	NONE	SC
Dwarf Aster ( <i>Aster mirabilis</i> )	SC	SC
<a href="#"><u>Georgia Aster</u></a> ( <i>Symphyotrichum georgianum</i> )	<b>CANDIDATE</b>	SC
<a href="#"><u>Granite Stonecrop</u></a> ( <i>Sedum pusillum</i> )	NONE	SC
<a href="#"><u>Lance-leaved Trillium</u></a> ( <i>Trillium lancifolium</i> )	NONE	SC
<a href="#"><u>Micosukee Gooseberry</u></a> ( <i>Ribes echinellum</i> )	<b>T</b>	T
<a href="#"><u>Oglethorpe Oak</u></a> ( <i>Quercus oglethorpensis</i> )	NONE	SC
Piedmont quillwort ( <i>Isoetes piedmontana</i> )	NONE	SC
<a href="#"><u>Relict Trillium</u></a> ( <i>Trillium reliquum</i> )	<b>E</b>	E
Rose coreopsis ( <i>Coreopsis rosea</i> )	NONE	SC
<a href="#"><u>Shoals Spider lily</u></a> ( <i>Hymenocallis coronaria</i> )	SC	SC
Small skullcap ( <i>Scutellaria parvula</i> )	NONE	SC
Smooth indigo bush ( <i>Amorpha glabra</i> )	NONE	SC
<a href="#"><u>Streambank mock orange</u></a> ( <i>Philadelphus hirsutis</i> )	NONE	SC
Sunnybells ( <i>Schoenolirion croceum</i> )	NONE	SC
<a href="#"><u>Tuberous gromwell</u></a> ( <i>Lithospermum tuberosum</i> )	NONE	SC
<a href="#"><u>Upland privet</u></a> ( <i>Forestiera ligustrina</i> )	NONE	SC
<b><u>GREENVILLE COUNTY, SOUTH CAROLINA</u></b>		
Blacknose Dace ( <i>Rhinichthys atratulus</i> )	NONE	SC
<a href="#"><u>Bog Turtle</u></a> ( <i>Glyptemys muhlenbergi</i> )	<b>T</b>	T
<a href="#"><u>Eastern Small-footed Bat</u></a> ( <i>Myotis leibii</i> )	NONE	T
Fantail Darter ( <i>Etheostoma flabellare</i> )	NONE	SC
<a href="#"><u>Green Salamander</u></a> ( <i>Aneides aeneus</i> )	SC	SC
<a href="#"><u>Appalachian Bewicks Wren</u></a> ( <i>Thryomanes bewickii altus</i> )	SC	SC
<a href="#"><u>Peregrine Falcon</u></a> ( <i>Falco peregrinus</i> )	NONE	E

<b>GREENVILLE COUNTY (CONTINUED)</b>	<b>FEDERAL STATUS</b>	<b>STATE STATUS</b>
<b><u>Rafinesque's Big-eared Bat</u></b> ( <i>Corynorhinus rafinesquii</i> )	SC	E
<b>Southeastern Bat</b> ( <i>Myotis asutroparius</i> )	SC	SC
<b><u>American Ginseng</u></b> ( <i>Panax quinquefolius</i> )	NONE	SC
<b>Golden Saxifrage</b> ( <i>Chrysosplenium americanum</i> )	NONE	SC
-Pools in rocky montane		
<b>Biltmore Greenbrier</b> ( <i>Smilax biltmoreana</i> )	SC	SC
<b><u>Biltmore Sedge</u></b> ( <i>Carex biltmoreana</i> )	SC	SC
<b><u>Birdsfoot Trefoil</u></b> ( <i>Lotus helleri</i> )	SC	SC
<b>Blunt-leaf Waterleaf</b> ( <i>Hydrophyllum canadense</i> )	NONE	SC
<b>Bog Rose</b> ( <i>Arethusa bulbosa</i> )	NONE	SC
<b>Bristle Fern</b> ( <i>Trichomanes boschianum</i> )	NONE	SC
-Acidic ledges and overhangs		
<b>Broad-leaved tickseed</b> ( <i>Coreopsis latifolia</i> )	NONE	SC
-Mature deciduous forest with open understory		
<b>Broad-toothed Hedge-nettle</b> ( <i>Stachys tenuifolia latidens</i> )	NONE	SC
-Cove hardwoods and mesic forests		
<b>Bunched Arrowhead</b> ( <i>Sagittaria fasciculata</i> )	E	E
-Known from crevices of rock in shallow pools along Little River; endemic to Alabama and Georgia.		
<b>Canada Lily</b> ( <i>Lilium canadense</i> )	NONE	SC
-Openings in rich woods		
<b>Carey Saxifrage</b> ( <i>Saxifrage careyana</i> )	NONE	SC
-Moist rock ledges		
<b>Climbing Fern</b> ( <i>Lygodium palmatum</i> )	NONE	SC
-Acid soils of thickets and open upland forests		
<b>Cuthbert Turtlehead</b> ( <i>Chelone cuthberti</i> )	SC	SC
<b>Deep-root Clubmoss</b> ( <i>Lycopodium tristachyum</i> )	NONE	SC
<b>Dwarf-flowered Heartleaf</b> ( <i>Hexastylis naniflora</i> )	T	T
-Found in sloped hardwoods		
<b>Enchanter's Nightshade</b> ( <i>Circaea lutetiana canadensis</i> )	NONE	SC
<b>Fernleaf Phacelia</b> ( <i>Phacelia bipinnatifida</i> )	NONE	SC
<b>Granite-domed Goldenrod</b> ( <i>Solidago simulans</i> )	SC	SC
<b>Gray-wing Milkwort</b> ( <i>Polygala paucifolia</i> )	NONE	SC
<b>Green-fringe Orchid</b> ( <i>Platanthera lacera</i> )	NONE	SC
<b>Large-fruited Sanicle</b> ( <i>Sanicula trifoliata</i> )	NONE	SC
<b>Lobed Spleenwort</b> ( <i>Asplenium pinnatifidum</i> )	NONE	SC
<b>Long Sedge</b> ( <i>Carex folliculata</i> )	NONE	SC
<b>Longstalk Sedge</b> ( <i>Carex pedunculata</i> )	NONE	SC
-Cove hardwood forests		
<b><u>Mock-orange, streambank</u></b> ( <i>Philadelphus hirsutus</i> )	NONE	SC
<b><u>Mountain Sweet Pitcher Plant</u></b> ( <i>Sarracenia rubra jonesii</i> )	E	E
<b>Mountain Witch-alder</b> ( <i>Fothergilla major</i> )	NONE	SC
<b><u>Oconee Bells</u></b> ( <i>Shortia galacifolia</i> )	SC	SC
<b>Piedmont Ragwort</b> ( <i>Senecio millefolium</i> )	SC	SC
-High elevation rock outcrops		

<b>GREENVILLE COUNTY (CONTINUED)</b>	<b>FEDERAL STATUS</b>	<b>STATE STATUS</b>
<b>Purple Fringeless Orchid</b> ( <i>Platanthera peramoena</i> ) -Wet meadow openings among bottomland hardwoods	NONE	SC
<b>Reflexed Blue-eyed Grass</b> ( <i>Sisyrinchium dichotomum</i> )	E	E
<b>Rock Clubmoss</b> ( <i>Lycopodium porophilum</i> )	NONE	SC
<b>Rock Gnome Lichen</b> ( <i>Gymnoderma lineare</i> ) -found on vertical cliffs below seeps at high elevations	E	E
<b>Shortleaf Sneezeweed</b> ( <i>Helenium brevifolium</i> ) -Seepage bogs, sometimes with <i>Sarracenia rubra</i>	NONE	SC
<b>Single-haired Mountain-Mint</b> ( <i>Pycnanthemum montanum</i> )	NONE	SC
<b>Small Whorled Pogonia</b> ( <i>Isotria medeoloides</i> )	T	T
<b>Soft Groovebur</b> ( <i>Agrimonia pubescens</i> )	NONE	SC
<b>Striped Maple</b> ( <i>Acer pensylvanicum</i> )	NONE	SC
<b>Swamp Pink</b> ( <i>Helonias bullata</i> ) -Known only from a single Blue Ridge peat bog.	T	T
<b>Sweet Pinesap</b> ( <i>Monotropsis odorata</i> )	SC	SC
<b>Tall Bellflower</b> ( <i>Campanula americana</i> )	NONE	SC
<b>Teaberry</b> ( <i>Gaultheria procumbens</i> )	NONE	SC
<b>Umbrella-leaf</b> ( <i>Diphylleia cymosa</i> )	NONE	SC
<b>White Fringeless Orchid</b> ( <i>Platanthera integrilabia</i> ) -Red maple-gum swamps; peaty seeps and streambanks	<b>CANDIDATE</b>	SC
<b>White Goldenrod</b> ( <i>Solidago bicolor</i> )	NONE	SC
<b>White-leaved Sunflower</b> ( <i>Helianthus glaucophyllus</i> )	NONE	SC
<b>Yellow Birch</b> ( <i>Betula alleghaniensis</i> )	NONE	SC
<b>Yellowwood</b> ( <i>Cladrastis kentukea</i> )	NONE	SC
<b><u>GREENWOOD COUNTY, SOUTH CAROLINA</u></b>		
<b>Carolina Heelsplitter mussel</b> ( <i>Lasmigona decorata</i> )	E	E
<b>American Kestrel</b> ( <i>Falco sparverius</i> )	SC	SC
<b>Bachmans Sparrow</b> ( <i>Aimophila aestivalis</i> )	SC	SC
<b>Loggerhead Shrike</b> ( <i>Lanius ludovicianus</i> )	SC	SC
<b>Southern Bald Eagle</b> ( <i>Haliaeetus leucocephalus</i> )	NONE	E
<b>Adders-tongue</b> ( <i>Ophioglossum vulgatum</i> )	NONE	SC
<b>American Ginseng</b> ( <i>Panax quinquefolius</i> )	NONE	SC
<b>Birdsfoot Trefoil</b> ( <i>Lotus helleri</i> )	SC	SC
<b>Columbo</b> ( <i>Frasera caroliniensis</i> )	NONE	SC
<b>Georgia Aster</b> ( <i>Symphyotrichum georgianum</i> )	<b>CANDIDATE</b>	SC
<b>Green-fringe Orchid</b> ( <i>Platanthera lacera</i> )	NONE	SC
<b>Indian Olive</b> ( <i>Nestronia umbellula</i> )	NONE	SC
<b>Mock-orange, streambank</b> ( <i>Philadelphus hirsutus</i> )	NONE	SC
<b>Oglethorpe Oak</b> ( <i>Quercus oglethorpensis</i> )	NONE	SC
<b>Small skullcap</b> ( <i>Scutellaria parvula</i> )	NONE	SC

<b>LAURENS COUNTY (CONTINUED)</b>	<b>FEDERAL STATUS</b>	<b>STATE STATUS</b>
<b>American Kestrel</b> ( <i>Falco sparverius</i> )	SC	SC
<b>Bachmans Sparrow</b> ( <i>Aimophila aestivalis</i> )	SC	SC
<b>Loggerhead Shrike</b> ( <i>Lanius ludovicianus</i> )	SC	SC
<b><u>Red-cockaded Woodpecker</u></b> ( <i>Picoides borealis</i> )	E	E
<b>Brook floater</b> ( <i>Alasmidonta varicosa</i> )	SC	SC
<b><u>Georgia Aster</u></b> ( <i>Symphyotrichum georgianum</i> )	<b>CANDIDATE</b>	SC
<b><u>American Ginseng</u></b> ( <i>Panax quinquefolius</i> )	NONE	SC
<b>Biltmore Greenbrier</b> ( <i>Smilax biltmoreana</i> )	SC	SC
<b><u>Birdsfoot Trefoil</u></b> ( <i>Lotus helleri</i> )	SC	SC
<b>Columbo</b> ( <i>Frasera caroliniensis</i> )	NONE	SC
<b><u>One-flowered broomrape</u></b> ( <i>Orobanche uniflora</i> )	NONE	SC
<b><u>Southern nodding trillium</u></b> ( <i>Trillium rugellii</i> )	NONE	SC

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**SECTION THREE**

F= Flowering Season  
O= Fruiting Season

**FRUITING AND FLOWERING CHART FOR ENDANGERED PLANTS  
PIEDMONT COUNTIES - GEORGIA AND SOUTH CAROLINA**

MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

Bay Star-vine, Climbing Magnolia, or Wild Sarsaparilla <i>(Schisandra glabra)</i>	FFFFFFFF OOOOOO
Dutchman's Breeches <i>(Dicentra cucullaria)</i>	FFFFFFFF OOOOOOOO
False Poison Sumac <i>(Rhus michauxii)</i>	FFFF OOOOOO
False Rue Anemone	FFFFFFFF OOOO
Florida or Miccosukee Gooseberry <i>(Ribes echinellum)</i>	FFFFFFFF OOOOOOOOOO
Georgia Plume <i>(Elliottia racemosa)</i>	FFFFFFFF OOOOOO
Granite Stonecrop or Dwarf Stonecrop <i>(Sedum pusillum)</i>	FFFFFFFF OOOOOOOO
Indian Olive or Conjurer's Nut <i>(Nestronia umbellula)</i>	FFFFFFFF OOO
Little Amphianthus or Pool Sprite <i>(Amphianthus pusillus)</i>	FFFFFFFF OOOOOO
Monkey-face Orchid <i>(Platanthera integrilabia)</i>	FFFFFFFF OOOOOOOO

F= Flowering Season
O= Fruiting Season

FRUITING AND FLOWERING CHART FOR ENDANGERED PLANTS  
 PIEDMONT COUNTIES - GEORGIA AND SOUTH CAROLINA

MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

Ocmulgee Skullcap  
*(Scutellaria ocmulgee)* FFFFFFFFFF  
 OOOOOOOO

Oglethorpe Oak  
*(Quercus oglethorpensis)* FFF OOOOOOO

Persistent Trillium  
*(Trillium persistens)* FFFFFFFFFF OOOOOOOO

Piedmont Barren  
 Strawberry  
*(Waldsteinia lobata)* FFFFFFFFFFFFFFFF  
 OOOOOOOOOOOO

Quillwort, Black-spored  
*(Isoetes melanospora)* NON-FLOWERING  
 (PRODUCE SPORES)

Quillwort, Mat-forming  
*(Isoetes tegetiformans)* NON-FLOWERING  
 (PRODUCE SPORES)

Relict Trillium  
*(Trillium reliquum)* FFFFFFFFFF OOOOOOO

Shoals Spiderlily or  
 Cahaba Lily  
*(Hymenocallis coronaria)* FFFFFFFF  
 OOOOOOOOO

Small Whorled Pogonia  
*(Isotria medeoloides)* FFFF OOOOOOO



## SECTION FOUR

### SPECIES IDENTIFICATION SHEETS

#### PLANTS

PLANT:

Barbara's Buttons

*Marshallia ramosa*

FEDERAL LIST

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

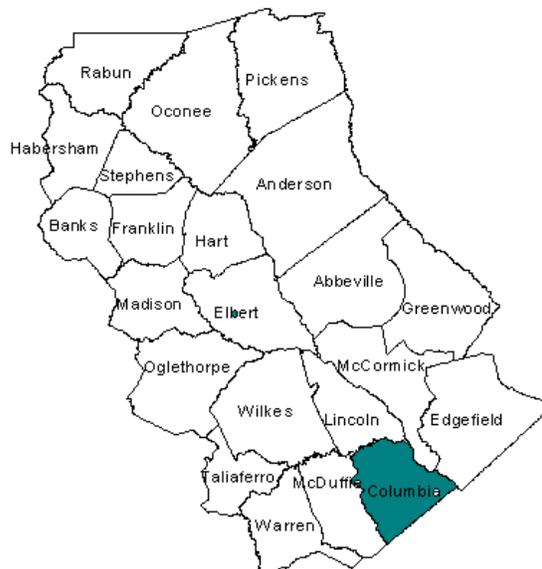
STATE LIST

GEORGIA  
Rare

SOUTH CAROLINA  
Unlisted



SERPIN



GENERAL DESCRIPTION:

Perennial herb; stems are clumped and branched, 4-6 dm tall. Leaves are either linear, narrowly elliptic, or oblanceolate, 8-20 cm long, up to 1.5 cm wide, and three-nerved. Leaf stalks tend to be purplish; flowers are terminal, flat-topped clusters of 4-12 heads, each 1.5-2.0 cm wide and subtended by numerous, rounded to minutely pointed bracts. The disk flowers are pale rose to white, each subtended by a single, persistent, rounded to minutely pointed scale-like bract. The fruit is a 5-angled, 10-ribbed achene; about 2 mm long, with a hairy surface. Flowers mid-May to July and producing fruit from July to September.

GENERAL HABITAT: Found in open forests over ultramafic rock.

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PLANT:

Bay Star-vine or *Schisandra glabra*  
Climbing Magnolia or  
Wild Sarsaparilla  
(Woody Vine)



FEDERAL LIST:

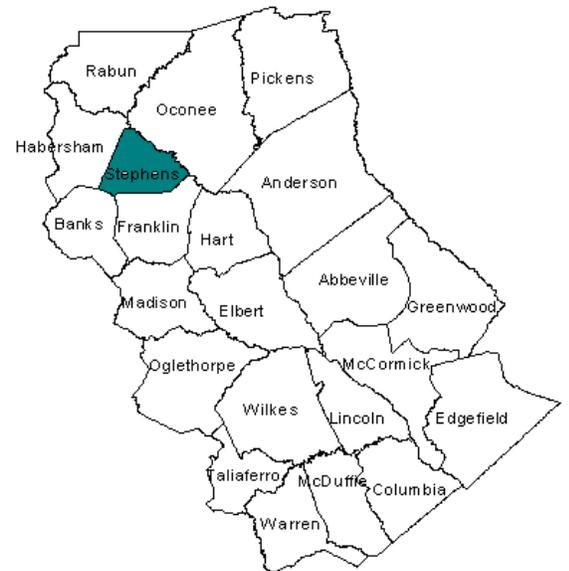
STATE LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern

GEORGIA  
Threatened

SOUTH CAROLINA  
Unlisted



**GENERAL DESCRIPTION:** This twining **vine** can easily be confused with climbing hydrangea (*Decumaria barbara*), which is quite common. The difference between the two species is that *Decumaria barbara* has opposite leaves and climbs by means of aerial roots, and *Schisandra glabra* has **alternate leaves** and twines. The leaves of *S. glabra* are up to 6in (15cm) long and 2.5in (6cm) wide, have sparsely toothed margins, and are sweet smelling when crushed. Both **male and female flowers** occur on the same plant (monoecious), and droop on long, delicate flower stalks arising from the leaf axils of mature vines. The 9-12 petals are 0.3in (5-8mm) long, and crimson colored. The **fruit** is a cluster of red berries on an elongated spike; mature fruits are formed rarely in droughty summers. Flowering period is May through June with fruiting in July through August.

**GENERAL HABITAT:** Typically found twining over understory trees and shrubs in rich, alluvial woods, and on lower slopes near streams.

[Return to contents](#)

PLANT:

Bellflower, tall  
(Biennial herb)

*Campanula americana*

FEDERAL LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

STATE LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern



GENERAL DESCRIPTION: Growing to a **height** of 6 ft (5.5 m) from a weak taproot, this plant has **flowers arranged on short lateral branches** from the main stem. **Leaves** are toothed and lance-shaped 2 ½-6 ½ in (6-17cm ) long and ½ -2 ½ in (1-6cm) wide. The green calyx has five linear lobes subtending the **light blue petals that are fused into a short tube with five spreading lobes**, giving each flower a “bell shape.” Extending beyond the lobes is a slightly darker style that curves upward. Flowers appear from June to September followed by fruiting capsules that open by side pores.

GENERAL HABITAT: It is infrequent in Piedmont woods and prefers mature deciduous forest with basic to circumneutral soils. More common in mountainous areas.

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PLANT:

Biltmore Sedge

*Carex biltmoreana*

FEDERAL LIST

STATE LIST

GEORGIA  
Unlisted

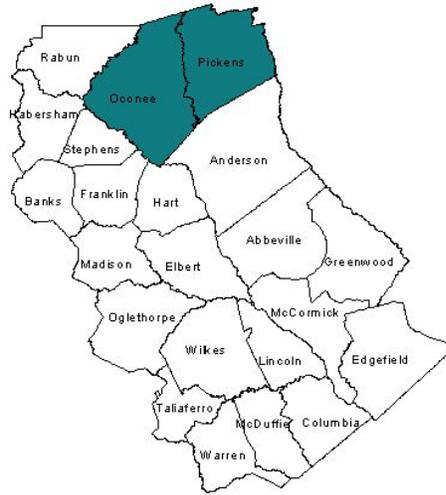
SOUTH CAROLINA  
Concern

GEORGIA  
Threatened

SOUTH CAROLINA  
Concern



SERPIN



GENERAL DESCRIPTION: This **annual** is from **6-12in (15-30cm) tall**. **Basal leaves** have 1-2 teeth per side, and are 0.5-0.75in (1-2cm) long and rounded. Flowers are produced at the base of the side branches and also terminal. The **flowers** have four **white petals** that are less than 0.1in (3mm) long and have a small notch at the apex. The **fruit** is a narrowly elliptic, two-part pod (short silique or silicle), 0.15-0.2in (4-6mm) long and is covered with tiny star-shaped hairs. *Draba brachycarpa* strongly resembles this species but has hairless fruits and more elongated lower branches. *Draba aprica* flowers from March to April and the fruiting period is from April to May.

GENERAL HABITAT: Found in shallow soils on granite outcrops, especially beneath widely scattered, old-growth eastern red cedar (*Juniperus virginiana*).

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PLANT:

Brittle Fern  
(Perennial herb)

*Cystopteris protrusa*



Tip of rhizome

FEDERAL LIST:

STATE LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern



GENERAL DESCRIPTION: The delicate light green compound leaves arise from an **underground stem (rhizome) whose tip extends about an inch (2cm)** beyond the youngest leaf. The rhizome has **golden yellow scales**. The **leaves**, up to 8 ½ in (22 cm) long and 4 ½ in (12cm) wide, have an overall deltoid to ovate-lanceolate shape with a pale yellow petiole that is shorter than the blade. The **blade is once to twice divided** with veins extending to teeth along the margins. When present, **the sporangia** are in small, round clusters enclosed by a thin, cup-shaped covering (indusium). Other diagnostic characters include a **stem with two vascular bundles** as seen in cross-section; the stems and branched parts of leaves also have **glandular hairs** (trichomes).

GENERAL HABITAT: Moist, very rich woods. Common at Steven’s Creek Preserve but otherwise very rare in Piedmont.

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PLANT:

Broomrape, one-flowered  
(Perennial herb)

*Orobanche uniflora*

FEDERAL LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

STATE LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern



GENERAL DESCRIPTION: The bluish white flowers of this root parasite are borne singly at the tips of stems 3-6in (7-15cm) tall. The leaves are small, overlapping brownish scales at the base of the plant, which has glandular hairs. The flower parts are five-lobed and tubular with the bluish corolla about 1/2-3/4in (12-20mm) long that encloses the four stamens. Flowers appear in April-May and the fruit is a capsule.

GENERAL HABITAT: Rich woods, typically

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**PLANT:**

Carolina Birdsfoot Trefoil  
(Annual herb)

*Lotus helleri*

**FEDERAL LIST:**

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

**STATE LIST:**

GEORGIA  
Endangered

SOUTH CAROLINA  
Unlisted



©Hugh and Carol Nourse

**GENERAL DESCRIPTION:** Annual **herb** with erect, leaning, or trailing **stems** up to 30 inches (75 cm) tall; main stems reddish with strongly two-ranked side branches; stems and branches usually hairy. Most **leaves** with 3 narrow, pointed **leaflets**, ¼ - ¾ inch (0.5 - 1.8 cm) long and less than ¼ inch (0.5 cm) wide, the uppermost leaves with only 1 leaflet. **Flower** less than ½ inch (0.8 cm) long, pink, with an erect banner petal and 2 wing petals enclosing a yellowish keel petal; flower usually solitary on a stalk up to ½ inch (2 cm) long that arises in the angle between leaf and stem. **Fruit** a narrow pod up to 1½ inches (2 - 3.5 cm) long.

**Habitat:** Openings in post oak and blackjack oak woodlands with clay soils, over bedrock high in iron and magnesium, such as ultramafic rock; clearings, roadsides, and rights-of-way through these habitats.

**Survey Recommendations:** Surveys are best conducted during flowering (late August–September) and fruiting (August–October).

PLANT:

Carolina Larkspur  
(Perennial herb)

*Delphinium carolinianum*

FEDERAL LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

STATE LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern



Photograph courtesy of Carl G. Hunter and the Ozark Society Foundation

**GENERAL DESCRIPTION:** Tall plant, up to 80cm (30 in), with **hairy stems**. **Alternate leaves** are dissected and hairy, with **linear segments** about 2.5mm (1/8in) wide. **The flower is light purple/blue** with four **spurred sepals and petals**. Fruits are in threes and have one-opening, elongated, **straight follicles** containing **winged seeds**. These characters distinguish this species from the common larkspur, *D. tricorne*, which has divergent follicles and is usually less than 40cm (15in) tall.

**GENERAL HABITAT:** The species is generally found on outcrops and in rocky, oak dominated woods, flowering from March-May, followed by fruits, which may persist through early summer.

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PLANT:

Coneflower, smooth purple  
(Perennial herb)

*Echinacea laevigata*

FEDERAL LIST:

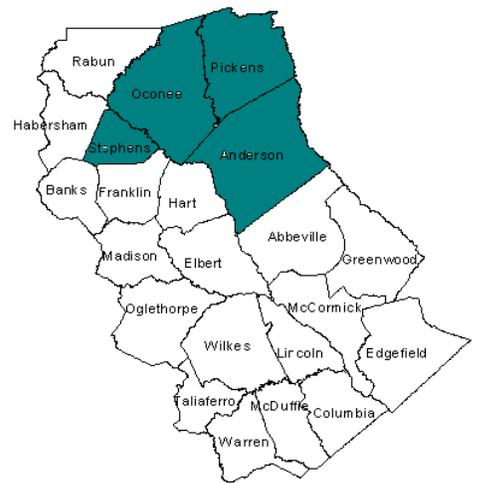
GEORGIA  
Endangered

SOUTH CAROLINA  
Endangered

STATE LIST:

GEORGIA  
Endangered

SOUTH CAROLINA  
Endangered



GENERAL DESCRIPTION: This plant is **1.5-3.5ft (50-100cm) tall** and arises from a thick fleshy **root**. The **basal leaves** are much longer than wide, coarsely toothed, smooth above and beneath, 3-5in (8-13cm) long, 1-3in (3-8cm) wide, and are attached by long slender petioles. The **stem leaves** are alternate, similar in shape to the basal leaves but smaller, and with shorter petioles. The single **flower head** is terminal and has two kinds of small flowers, ray and disk. The one petal of each **ray flower is deep to pale pink**, toothed at the tip, 2-3in (5-8cm) long, and drooping. The **disk flowers are purple** and about 0.3in (1cm) long. The **fruit** is an achene (nutlet). Flowering is from May through July with fruiting in late summer.

GENERAL HABITAT: Found in meadows and open woodlands on basic or circumneutral soils, often with eastern red cedar (*Juniperus virginiana*). House construction has reduced the coneflower population. Over-utilization due to aesthetic and possible medicinal qualities also poses a threat.

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PLANT:

Dutchman's Breeches      *Dicentra cucullaria*  
(Perennial herb)



FEDERAL LIST:

STATE LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern



**GENERAL DESCRIPTION:** The plant consists of clusters of **blue-green, highly dissected basal leaves with long, stem-like petioles, 7-22cm (2 ½ in-9in) long.** The **flowers** are in elongated clusters. Each has **four white petals: the outer two are sack-like, 7-9mm (2 ½- 3 ½ in) long, resembling a pair of breeches,** hence the common name; the inner two petals are much shorter and spatula-shaped. Two clusters of three stamens each are opposite the outer petals. The **fruit** is a capsule with shiny black seeds.

**GENERAL HABITAT:** Plants are found in mature hardwood forests, frequently on north-facing slopes and near streams. Flowering occurs from March-June, followed by fruits which may persist into July/August.

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PLANT:

False Poison Sumac or *Rhus michauxii*  
Michaux's Sumac or  
Dwarf Sumac  
(Deciduous shrub)

FEDERAL LIST:

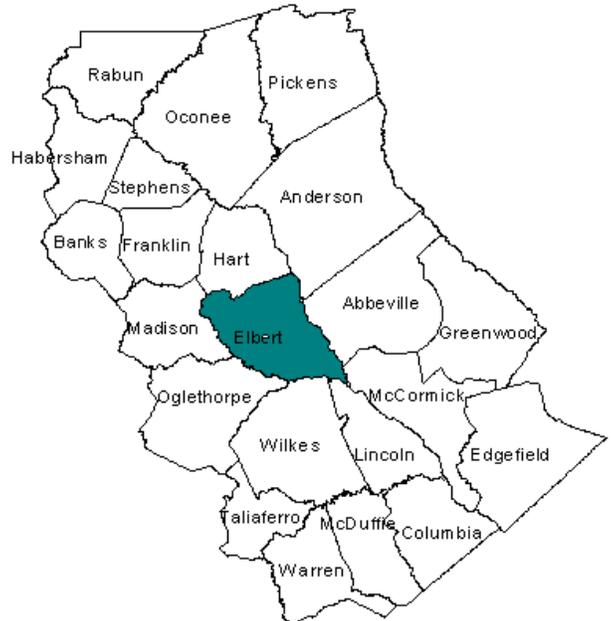
GEORGIA  
Endangered

SOUTH CAROLINA  
Endangered

STATE LIST:

GEORGIA  
Endangered

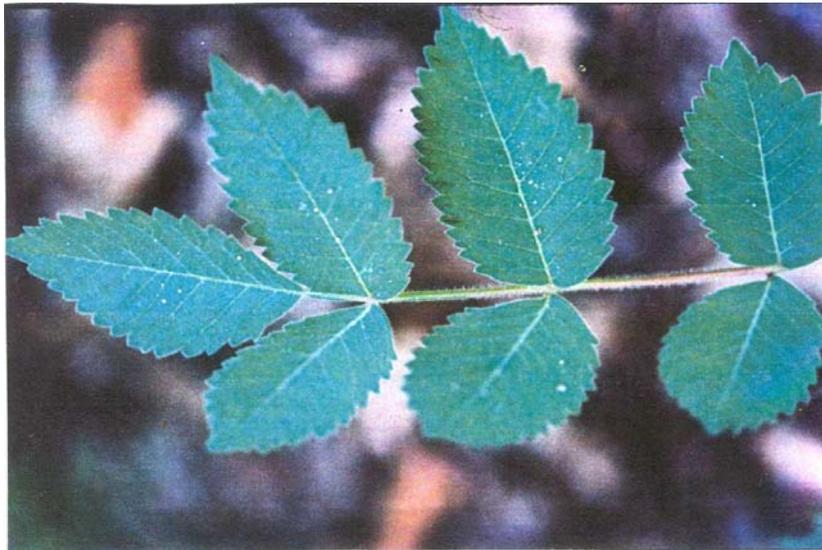
SOUTH CAROLINA  
Endangered



GENERAL DESCRIPTION: This small, **low-growing shrub, 1.0-3.75ft (0.3-1m)** tall, grows in clumps. The **stems** grow from an underground rhizome to a height of about 15 in (40cm). The **leaves** are pinnately compound with 9-13 **leaflets** which, except for the terminal leaflet, are stalkless, lance-shaped, and coarsely toothed. Leaflets are 2.0-3.5in (5-9cm) long and 0.75-2.0in (2-5cm) wide with a sharp point. The terminal leaflet sometimes has a winged stalk as in *Rhus copallina*. Leaves and twigs are heavily **covered with hairs**. Individual plants bear either male or female flowers (dioecious), and entire clumps are usually of one sex only. This sumac flowers in June, having flowers in dense, strongly conical-shaped, terminal clusters. Each small **flower** has **4-5 minute, greenish-yellow petals**. Female flowers produce red, fleshy **fruits**, which are covered by short hairs and contain a single large seed about 0.2in (5mm) in diameter. The species is believed to be extinct in South Carolina.

**GENERAL HABITAT:** Found in open, upland woods, along forest edges and maintained right-of-ways. Prefers the droughtier, full sun areas that have limited competition, especially from taller plants. It does not tolerate shade. Grows on sandy and rocky sites and along ridgelines. Requires periodic disturbance of surrounding vegetation. Found historically near Coastal Plain sandhills and across the Piedmont.

This sumac is currently found in only one Corps site in Elbert County, GA. A few other sites are known to occur in Georgia and North Carolina. The Elbert County site is on Corps of Engineers land which is leased by the Georgia Department of Natural Resources (GADNR) as part of the Broad River Wildlife Management Area.



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PLANT:

False rue-anemone  
(Perennial herb)

*Enemion biternatum*



FEDERAL LIST:

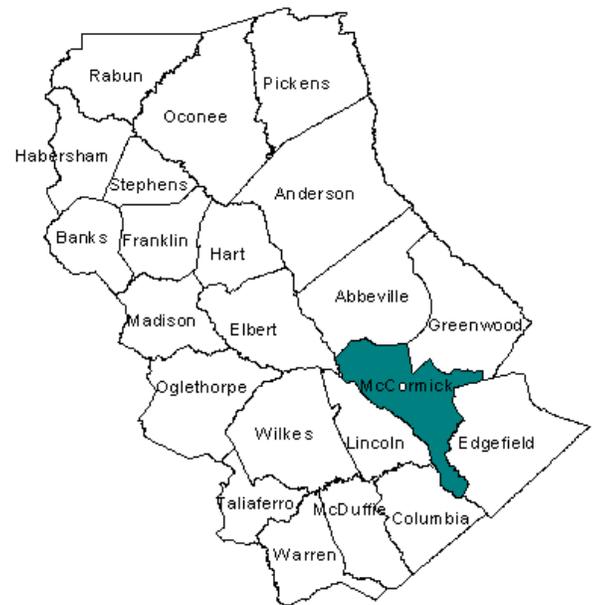
STATE LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern



**GENERAL DESCRIPTION:** This is a delicate plant up to 20in (50cm) tall, arising from a thick, yellowish root. The leaves are compound, in arrangements of three, with lobed leaflets about 3/4 in (2cm) wide. The flowers are both axillary and terminal with 5 white sepals that look like petals. There are many stamens and 2-5 pistils that become pointed follicles (see fruiting photo on next page) that open along one line to release the seeds. The plant is often confused with wind flower, *Thalictrum thalictroides*, which also occurs in similar habitats. This latter plant however has leaflets whose lobes are more rounded and the flowers are

always in terminal umbels, never axillary. Also the fruits of the wind flower are achenes which do not break open.

**GENERAL HABITAT:** False rue anemone flowers and fruits from March to May in rich woods and alluvial soils. Currently it is known only from the Steven's Creek Preserve east of the Thurmond Dam area. The look-a-like wind flowers are found in similar habitats and are fairly common in the Thurmond Dam area.



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PLANT:

Florida or Miccosukee Gooseberry  
(Deciduous shrub)

*Ribes echinellum*



FEDERAL LIST:

GEORGIA  
Not listed

SOUTH CAROLINA  
Threatened

STATE LIST:

GEORGIA  
Not listed

SOUTH CAROLINA  
Threatened



GENERAL DESCRIPTION: The Miccosukee Gooseberry is a **spiny-stemmed shrub** growing to **3.2ft (1m)** in height and forming clumps that often measure several meters in diameter. This plant has **three-lobed leaves** that measure approximately 1.0in (2.5cm) long. The **flowers** are **greenish-white** and small, 0.5in (15-20mm) long. The **fruits** are spiny and measure up to 0.5in (22mm) in diameter. The plant sheds most leaves in the summer and new leaves emerge in the autumn and over-winter. Flowering occurs in March and April and fruits mature in May to July. Reproduction is from seeds and also occurs asexually by the rooting of stem tips when they touch soil. Seed dispersal and pollinators have not been studied.

GENERAL HABITAT: Found in steeply sloping land containing stands of deciduous hardwood trees more typically found to the north. The present populations are possibly remnants of a vegetative distribution which developed during the Pleistocene period and remain stable. The species is found along Stevens Creek, 1.5 mi (2.4km) northeast of Clarks Hill, McCormick County, South Carolina. The population covers approximately 35 acres (14 hectares) and runs into the hundreds. This population seems to be stable.

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PLANT:

Fraser Loosestrife  
(Perennial herb)

*Lysimachia fraseri*

FEDERAL LIST:

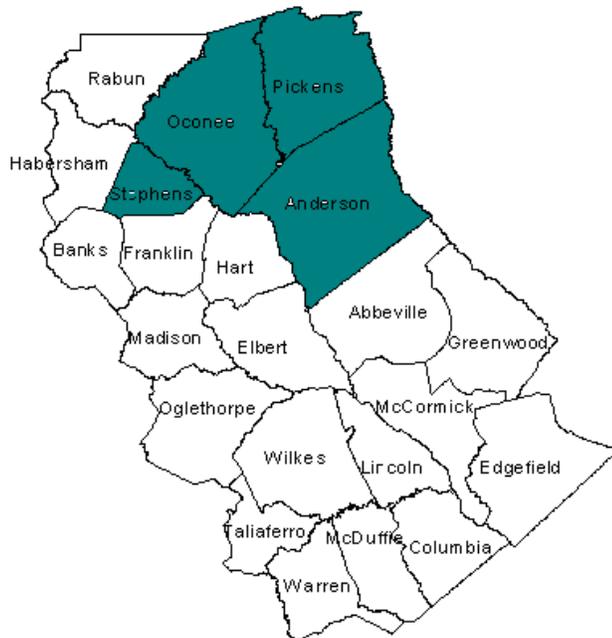
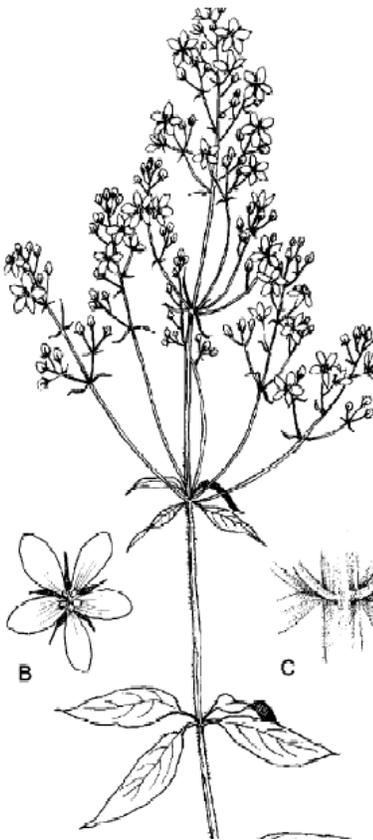
GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

STATE LIST:

GEORGIA  
Rare

SOUTH CAROLINA  
Concern



GENERAL DESCRIPTION: Stems erect, stipitate-glandular, otherwise glabrous, stout, 1-1.5m tall, rhizomatous. Leaves stipitate-glandular, in whorls of 3-5, lanceolate to lance-elliptic, 6-15 cm long, 2-6 cm wide, acute, base cuneate to rounded; petioles 4-10 mm long. Inflorescence a leafy panicle 0.6-2.5 dm long, stipitate-glandular. Calyx densely stipitate-glandular, 4-5 mm long, lobes lanceolate, acute to acuminate, margins purple, seeds dark brown, finely alveolate. Flowers June and fruiting Sept-Oct.

GENERAL HABITAT: Moist, open, gravel bars and streambanks; also at edge of granite or sandstone outcrops.

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PLANT:

Georgia Plume or *Elliottia racemosa*  
Elliottia  
(Deciduous tree)



FEDERAL LIST:

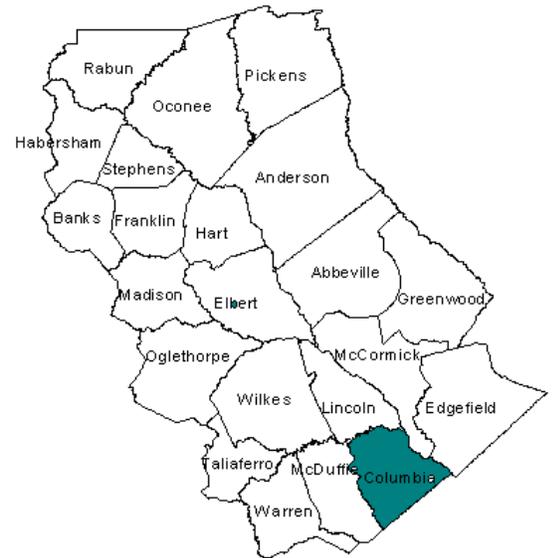
GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

STATE LIST:

GEORGIA  
Threatened

SOUTH CAROLINA  
Unlisted



GENERAL DESCRIPTION: This **small tree** grows to approximately **30ft (10m) tall**. The **bark** is gray and furrowed. The **leaves**, arranged alternately on the stem, are elliptic, and 2-5in (5-12cm) long. The many flowered, plume-shaped **inflorescence** (flowering portion of plant) is quite showy and is a distinctive characteristic of this species. The **flowers** have four **white petals** that are up to 0.5in (14mm) long. The **fruit** is a round capsule, 0.3-0.5in (10-14mm) in diameter. Flowering period is from June to July with fruiting period from July to August. The species is believed to be extinct in South Carolina.

GENERAL HABITAT: Found in generally sunny to partially shady conditions on sand ridges, oak ridges, evergreen hammocks, and sandstone outcrops in a variety of sandy soil conditions ranging from moist to extremely dry.

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PLANT:

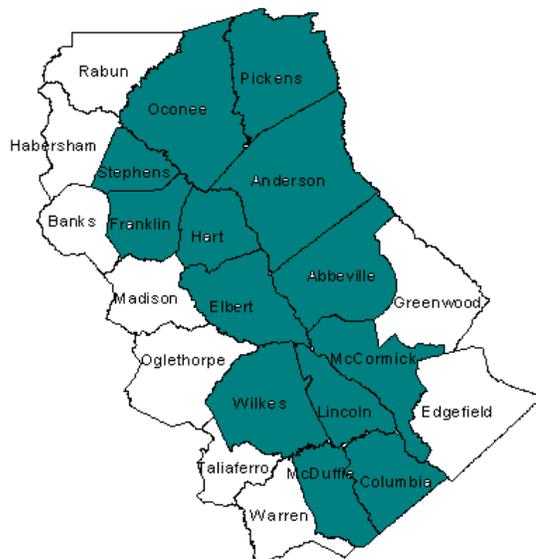
Georgia Aster            *Symphyotrichum (Aster) georgianum*  
(Perennial herb)

FEDERAL LIST:

GEORGIA            SOUTH CAROLINA  
Candidate            Candidate

STATE LIST:

GEORGIA            SOUTH CAROLINA  
Threatened            Concern



GENERAL DESCRIPTION: Plant is 3-12 dm (12-48 inches) tall and canescent. **Alternate leaves** are lanceolate to oblanceolate, scabrous and clasp scabrous stem; 2.5-13 cm, 0.7-4 cm wide. Involucres turbinate, 7-8 mm long, 7-10 mm broad; bracts oblanceolate, glandular, often pubescent, and ciliate. Rays 18-22, blue-violet, 1.5-2 cm long; disc flowers yellow, purple, or red. Nutlets tan, oblanceolate to ellipsoid, 4 mm long, ribbed achene.

GENERAL HABITAT: The species is generally found in upland oak-hickory forests and openings, sometimes with *Echinacea laevigata*. Relict of post oak savannahs; found on roads, woodland borders, and dry rocky woods.

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PLANT:

Golden Seal *Hydrastis canadensis*  
(Perennial herb)

FEDERAL LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

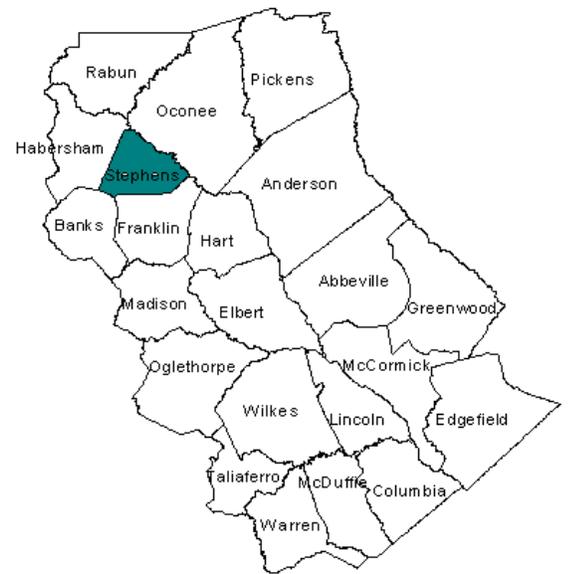
STATE LIST:

GEORGIA  
Endangered

SOUTH CAROLINA  
Unlisted



Scott Kelley, USACE



**GENERAL DESCRIPTION:** This perennial **herbaceous plant** has distinct maple-like leaves from yellowish rhizome; 1.5-5 dm (6-20 inches) tall. Flower solitary, scape densely hirsute, 0.5-2 cm long. Flowers April with fruiting from May to June. The **fruit** is a round, fleshy capsule 0.4in (1cm) in diameter.

**GENERAL HABITAT:** Found in mature hardwood forests. Occurs in rich cove sites with moist, well-drained, deep soils. Located on Hartwell Project in Stephens County.

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PLANT:

Ginseng, American                      *Panax quinquefolius*  
(Perennial herb)

FEDERAL LIST:

GEORGIA                      SOUTH CAROLINA  
Unlisted                      Unlisted

STATE LIST:

GEORGIA                      SOUTH CAROLINA  
Unlisted                      Concern



**GENERAL DESCRIPTION:** This plant grows from a branched fleshy root system and reaches heights of 8-24 in (20-60cm) with 3-4 compound leaves. Each leaf has five leaflets arranged in a palmate pattern with the two lower leaflets smaller than the upper three. Leaflets have pointed tips and toothed edges. The terminal cluster of small yellow-green flowers is borne on an elongated stalk above the leaves. The fruit is a cluster of bright red berries. May-Oct. Wild sarsaparilla is similar appearing but its compound leaves are pinnately arranged and the flowers and fruits are borne on leafless stems.

**GENERAL HABITAT:** Rich hardwoods, often with sugar maple.

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PLANT:

Goldenrod, eared  
(Perennial herb)

*Solidago auriculata*

FEDERAL LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

STATE LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern



Jennifer Anderson – USDA NRCS PLANTS Database



GENERAL DESCRIPTION: Perennial herb, leaves alternate, cauline and larger toward the base or middle of stem.

GENERAL HABITAT: Early-successional fields

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PLANT:

Gromwell, Tuberous  
(Perennial herb)

*Lithospermum tuberosum*



FEDERAL LIST:

STATE LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern



Photos: Darel Hess, www.2bnthewild.com

GENERAL DESCRIPTION: A tuber-like root gives rise to this slender, **hairy** plant that grows to 8- 30in (20-70 cm) high from a **basal rosette of leaves** that are 2-4in (5-10cm) long. The **alternate stem leaves are much smaller**, elliptic shaped, and widely spaced. The **pale yellow flowers are tube-shaped with spreading tips** and arranged in loose terminal clusters. Flowering occurs from March to June.

GENERAL HABITAT: Found in mixed deciduous forests and on wooded bluffs.

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PLANT:

Indian Olive or  
Conjurer's Nut  
(Deciduous shrub)

*Nestronia umbellula*



FEDERAL LIST:

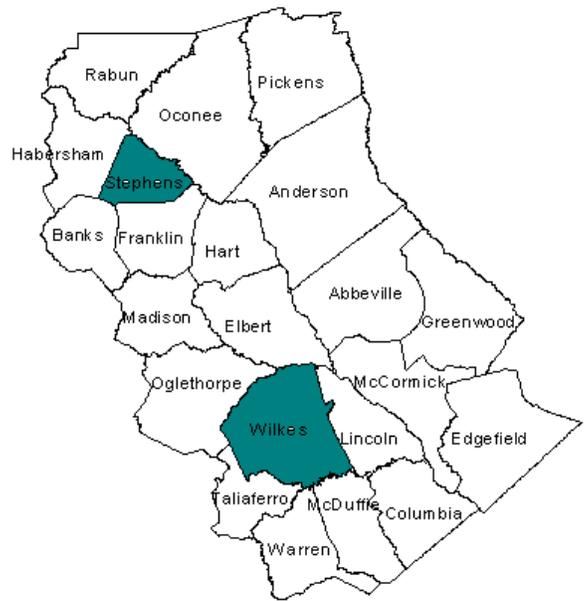
GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

STATE LIST:

GEORGIA  
Rare

SOUTH CAROLINA  
Concern



GENERAL DESCRIPTION: This small **shrub** is **colonial** and grows up to **3ft, (1m) tall**. The **leaves** are arranged oppositely on the stem, narrowly ovate to elliptic, and 1.25-2.3in (3-6cm) long. **Male and female flowers** are produced on different plants (dioecious). The female flowers are solitary and the male flowers are in umbellate clusters; both types arise from the axils of the leaves. The petals on the male and female flowers are absent; however, the **4-5 sepals are petal-like, greenish-yellow to maroon**, and less than 0.1in, (3mm) long. Flowering occurs April through May with fruiting in July. The **fruit** is a spherical drupe (fleshy, one-seeded.) This species may be parasitic on the roots of pines and oaks.

GENERAL HABITAT: Primarily found in dry, open, upland forest of mixed hardwood and pine.

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PLANT:

Ladyslipper, Yellow  
(Perennial herb)

*Cypripedium parviflorum*

FEDERAL LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

STATE LIST:

GEORGIA  
Rare

SOUTH CAROLINA  
Unlisted



**GENERAL DESCRIPTION:** Perennial **herb**, 3 - 28 inches (7 - 70 cm) tall, with 3 - 5 leaves evenly spaced along an erect, hairy stem. **Leaves** up to 8 inches (20 cm) long and 4 inches wide, broadly oval with pointed tips and clasping leaf bases, hairy, strongly ribbed, alternate. **Flowers** 1 - 2 per plant, at the top of the stem, fragrant, with an erect, green **bract** behind each flower; a yellow, pouch-like lip petal (“**slipper**”) up to 2 inches (5.4 cm) long and 1\_ inch wide (3.5 cm); 2 spirally twisted, drooping **petals**, 1 - 4 inches (2.4 - 9.7 cm) long; and 2 **sepals**, one curved over the top of the flower and another curved behind the slipper; sepals and petals are green with maroon spots or solid maroon. **Fruit** an oval capsule, up to 2 inches (5 cm) long.

**GENERAL HABITAT:** Rich, cove forests

PLANT:

Little Amphianthus  
Pool Sprite  
(Annual herb)

*Amphianthus pusillus*

FEDERAL LIST:

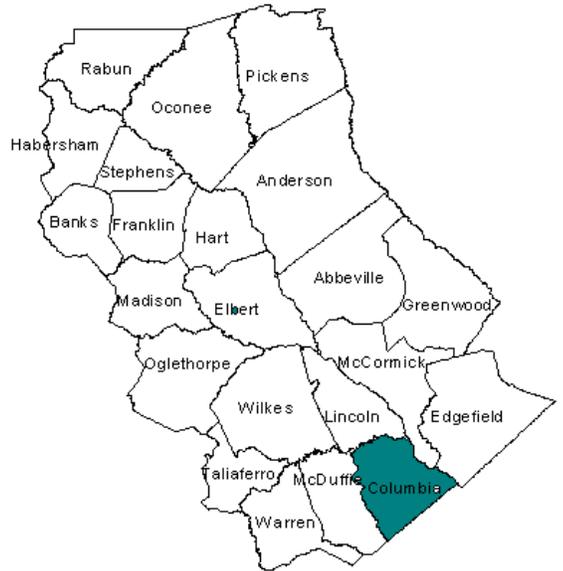
GEORGIA  
Threatened

SOUTH CAROLINA  
Threatened

STATE LIST:

GEORGIA  
Threatened

SOUTH CAROLINA  
Threatened



**GENERAL DESCRIPTION:** Delicate **annual herb** with **fibrous roots**. This **2-4in (5-10cm) tall** plant has **submerged and floating greenish-purple leaves**. Submerged leaves are thin and narrow, 0.4in (1.0cm) in length, and arranged in a basal rosette. Paired floating leaves, 0.32in (0.8cm) in length, are ovate, rounded, and surround a single **white flower**, all attached to a thin stem. Flowers are borne in the axils of both types of leaves. Only the floating flowers are opened. *Amphianthus* flowers from March through April. It has been speculated this plant produces seeds asexually which may threaten its ability to adapt. The plant's life cycle is usually only three or four weeks. The **fruit** is a capsule 0.12in (2-3mm) wide and 0.04in (1mm) containing many banana-shaped, dark brown seeds, 0.04in (1mm) long. Fruiting is from April to May.

**GENERAL HABITAT:** Granite outcrops occur as large isolated domes or gently rolling flatrocks in full sunlight. This plant typically occurs in shallow flat-bottomed pools located on the crest and/or flattened

slopes of these outcrops. The pools range in size from 0.3-10.0 yd<sup>2</sup> (0.3-10.0 m<sup>2</sup>), the vast majority ranging from 0.5-1.0 yd<sup>2</sup> (0.5-1.0 m<sup>2</sup>). These pools retain water for several weeks following a heavy rain and completely dry out with summer droughts. The seeds can lie dormant over several seasons until moisture becomes available.

Disturbance, particularly quarrying, is the major threat to granite outcrop plants.

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PLANT:

Mock-orange, streambank  
(Deciduous shrub)

*Philadelphus hirsutus*

FEDERAL LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

STATE LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern



*Philadelphus inodorus* – Shirley Willard, USACE



GENERAL DESCRIPTION: The white flowers on this shrub appear for only a short time during April and May. Up to 6-7ft (2m) tall, this shrub has opposite, toothed, somewhat hairy leaves. These are oval shaped, 2-3in (4-8cm) long and 1/2-2in (1 1/2-5 cm ) wide with short petioles up to 1/4 in (1cm). The four-petaled white flowers are about 1 1/2 in (4cm) in diameter with numerous stamens. The ovary which is under the petals forms a ridged capsule in June-Aug. Common mock-orange is easily confused with this species; they are distinguished by differences in flower characteristics. Streamside mock-orange has a hairy calyx which spreads after the capsule forms, and the stigmas and styles are fused while those of the common mock-orange are separate.

GENERAL HABITAT: Moist, very rich woods, near streams.

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PLANT:

Oak, Durand's White  
(Deciduous Tree)

*Quercus sinuata*



FEDERAL LIST:

STATE LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern



GENERAL DESCRIPTION: Easily confused with white oak , Oglethorpe oak, and water oak, this tree also has **gray, scaly bark as do white and Oglethorpe oaks. Water oak however lacks this distinctive bark.** The **obovate leaves** are arranged alternately on the stem, are widest above the middle, and may have 3 shallow lobes toward the tip. Leaf size is generally **1 ½-4in (4-10cm) long and ¾-1 ½ in (1.5-3.5cm) wide** with the underside being somewhat hairy. **Male and female flowers** are produced on the same tree (monoecious); male flowers appear as long drooping catkins. The **fruit** is a nut or "acorn", which has **a shorter stalk than white oak.** The cup covers less than 1/3 of the acorn. Flowering occurs in April with fruiting in the fall of the same year.

GENERAL HABITAT: Found on hillsides and stream banks; more common in coastal plain counties.

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PLANT:

Oak, Oglethorpe  
(Deciduous Tree)

*Quercus oglethorpensis*



FEDERAL LIST:

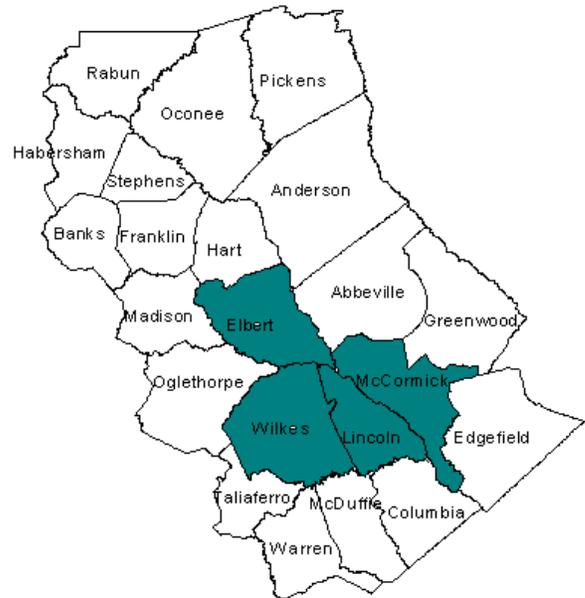
GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

STATE LIST:

GEORGIA  
Threatened

SOUTH CAROLINA  
Concern



**GENERAL DESCRIPTION:** This tree is **medium-sized** with **gray, scaly bark** that resembles white oak. The leathery **leaves** are arranged- alternately on the stem, mostly elliptic, smooth above, covered with **tawny star-shaped hairs beneath** and are **2-5.5in (5-13cm) long and 1.0-2.0in (1.5-5cm) wide**. Occasionally there are some irregular lobes toward the tip of the leaves, but generally lobes are lacking. **Male and female flowers** are produced on the same tree (monoecious); male flowers appear as long drooping catkins. The **fruit** is a nut or "acorn", which has a short turban-shaped cup, and is about 0.3in (1cm) long including the cup. Flowering occurs in April with fruiting in the fall of the same year. When suppressed by competitors and stressed by low water levels, it may be affected by chestnut blight.

**GENERAL HABITAT:** Found in poorly drained, seasonally wet Piedmont seepage swamps and on small stream terraces, often with cherrybark oak (*Quercus pagoda*).

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PLANT:

Oak, Swamp White  
(Deciduous Tree)

*Quercus bicolor*



FEDERAL LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

STATE LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern



GENERAL DESCRIPTION: Easily confused with regular white oak, this tree also has **gray, scaly bark**. The **obovate leaves** are arranged alternately on the stem, are widest above the middle, and have 6-10 pairs of shallow, rounded lobes. Leaf size is generally **2 ½-8in (7-20cm) long and 1 ½-4.0in (4-10cm) wide**. The underside of the leaf has white to tawny hairs. **Male and female flowers** are produced on the same tree (monoecious); male flowers appear as long drooping catkins. The **fruit** is a nut or "acorn", which has a **longer stalk than white oak, 1in (2.5cm)**. The cup covers 1/3 to 1/2 of the acorn and sometimes has a fringed edge. Flowering occurs in April with fruiting in the fall of the same year.

GENERAL HABITAT: Found in poorly drained areas and swamps.

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PLANT:

Oconee Bells      *Shortia galacifolia*

FEDERAL LIST

GEORGIA  
Unlisted

STATE LIST

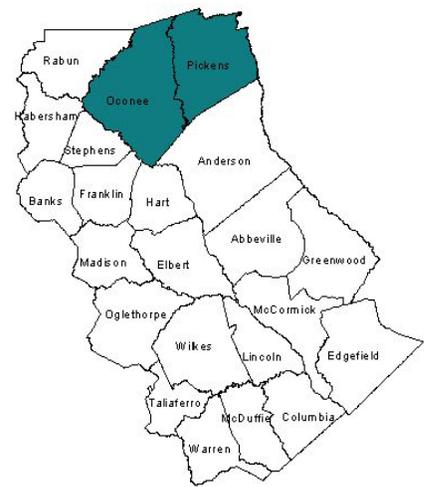
SOUTH CAROLINA  
Concern

GEORGIA  
Endangered

SOUTH CAROLINA  
Concern



Appalachian State



GENERAL DESCRIPTION:

Rhizomatous, acaulescent, glabrous herbs with suborbicular to elliptic-orbicular leaves, 3-8 cm long, emarginate to truncate, coarsely crenate-serrate, base rounded to cordate. Flowers solitary, scapose, scapes to 18 cm long, 3-5 bracteate with 5 sepals. Corolla white to pinkish, campanulate, 2-2.5 cm long with petals united 1/24 or less their length; capsulte 5-6 mm long. Flowers March-April and produces fruit from July-August.

GENERAL HABITAT: Found in mesic forests in association with mountain laurel (*Kalmia latifolia*) and rhododendron.

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PLANT

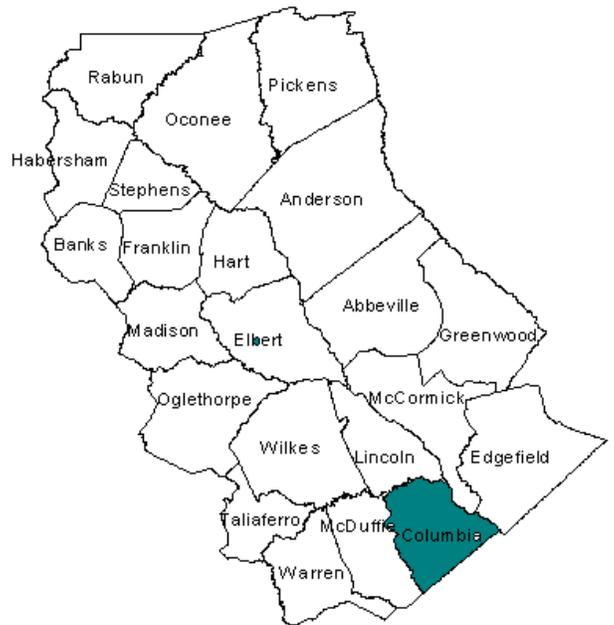
Ocmulgee Skullcap      *Scutellaria ocmulgee*  
(Perennial herb)

FEDERAL LIST:

GEORGIA      SOUTH CAROLINA  
Concern      Unlisted

STATE LIST:

GEORGIA      SOUTH CAROLINA  
Threatened      Unlisted



**GENERAL DESCRIPTION:** This is an erect plant, 12-24in (30-60cm) tall. The **square stem** is slightly branched at the tip and hairy with some backward-pointing hairs. Stalked glands are present above the second internode. The **leaves are attached oppositely**, **petioles** are 0.75-1.0in (1.8-2.5 cm) long, and blades are more or less orbicular shaped below mid-stem and broadly ovate and smaller above, 1.0-1.2in (5-6cm) long, 1.3-2.0in (3.5-5.5cm) wide. Leaf apices are obtuse to round and margins are wavy. Both surfaces are hairy, the upper often with stalked glands. **Inflorescence** is a system of paired, lateral racemes with bracts changing from elliptic and crenate to oblanceolate with smooth margins. **Flowers** are irregular with the characteristic "capped" calyx which lacks stalked glands; flower stems are hairy, the **petals** are blue, fused, somewhat hairy, 0.9-1.0in (20-24cm) long, with a gradually dilating tube, the lower lip entire. Four stamens are present, extending beyond the petals; the stigma is two-parted. **Fruits** consist of 4 small nutlets. The flowering period is from late June to early August and fruits remain on the plant until mid-August at the latest. In this area the plants often fail to make flowers and fruits. Deer heavily browse both.

Overall the plants somewhat resemble catnip, another mint, in color, leaf shape, and in being softly hairy. *Scutellaria ovata* is very similar, but differs in the following:

- a. The calyx lobes have stalked **glandular hairs** in *S. ovata*, but they are absent in *S. ocmulgee*.
- b. The 2nd stem section (internode) before the base of the flowering portion lacks stalked **glandular hairs** in *S. ovata* whereas they are present in *S. ocmulgee*.

GENERAL HABITAT: Typically found in rich soils under old-growth hardwoods on slopes above streams, often growing with geranium, heart-leaf, and lop-seed.

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PLANT:

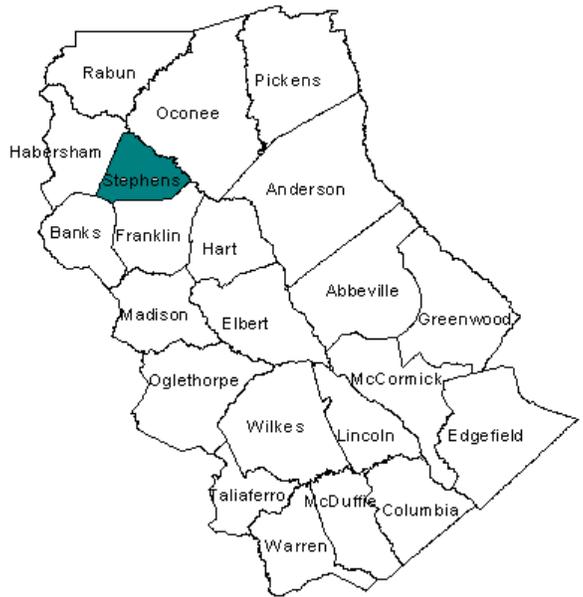
Orchid, Monkey-face or *Platanthera integrilabia*  
White fringeless orchid  
(Terrestrial monocot)

FEDERAL LIST:

GEORGIA                      SOUTH CAROLINA  
Candidate                      Candidate

STATE LIST:

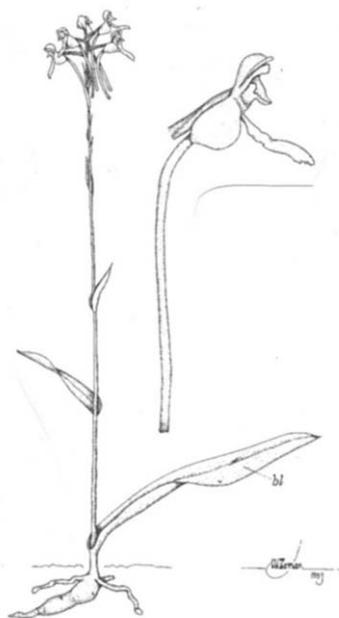
GEORGIA      SOUTH CAROLINA  
Threatened      Concern



GENERAL DESCRIPTION: Perennial **herb** either with leafy flowering **stems** to 2 ft (6 dm) tall, or with a single, strap-shaped basal leaf, all attached to tuberous, fleshy **roots**. The 2-3 stem **leaves**, up to 8in (20cm) long and 1.3in (3cm) wide, are elliptic to lance-shaped with a single main vein. Leaves become bract-like near the top of the stem. The terminal **inflorescence** is a loosely flowered raceme with 6-15 pure **white flowers**, each helmet-shaped with a spur 1.7-2in (4-5cm) long. The lip petal is narrow, extended up to 0.5in (13mm) long and 0.25in (3-4mm) wide without a distinct fringe on the margin, but with irregular fine teeth. The **fruit** is an ellipsoid capsule, 0.5in (15mm) long, 0.15in (3mm) wide with numerous, dust-like seeds. Flowering period: mid-July to late August; fruiting period: September-October. The flower must be seen to distinguish it from other similar orchids.

GENERAL HABITAT: Typically found in red maple/black gum swamps and along sandy, damp stream margins; also on seepy, rocky, thinly vegetated slopes. Often associated with other orchids, white violets, cowbane, and grass-of-parnassas.

Photos and drawings courtesy of Larry Zettler, Illinois College



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PLANT:

Pitcherplant , sweet  
(Red Pitcherplant)  
(Perennial Herb)

*Sarracenia rubra* (No federal listing)  
*Sarracenia rubra jonesii* (Endangered)

FEDERAL LIST:

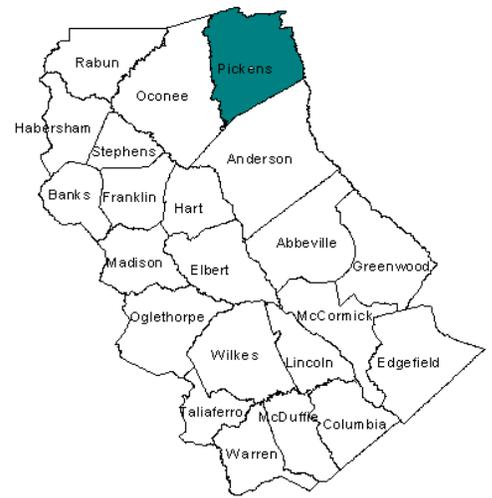
GEORGIA  
Endangered

SOUTH CAROLINA  
Endangered

STATE LIST:

GEORGIA  
Endangered

SOUTH CAROLINA  
Endangered



GENERAL DESCRIPTION: This **insectivorous** plant is 3-24in (8-68cm) tall. Its **hollow leaves** are green with some red or purplish veins above. It stands very erect and is strongly recurved at the base. The leaf hoods are sharply pointed with red-netted veins; they arch over the opening. The single, fragrant, **flowers** are borne on long stalks that usually exceed the leaves. The petals are maroon above, and sometimes gray or dull purple beneath, and 1.0-1.5in (2.5-4.0cm) long. Sepals are purplish above, greenish beneath, and 0.75-1.0in (1.8-2.5cm) long. The disc-shaped style is 1.0-1.5in (2.8-4cm) in diameter. The **fruit** is a capsule about 0.3in (1cm) in diameter. Flowering period- April through May; fruiting period June through July.

GENERAL HABITAT: Sometimes found in shaded areas along streams or moist areas in mesic woodlands. More frequently found in open or shaded depressions where acidic conditions have developed, such as sandhill seeps and open bogs. In some locations its long-term existence and vigor have apparently required periodic fires to control successional vegetation and insect pests.

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PLANT:

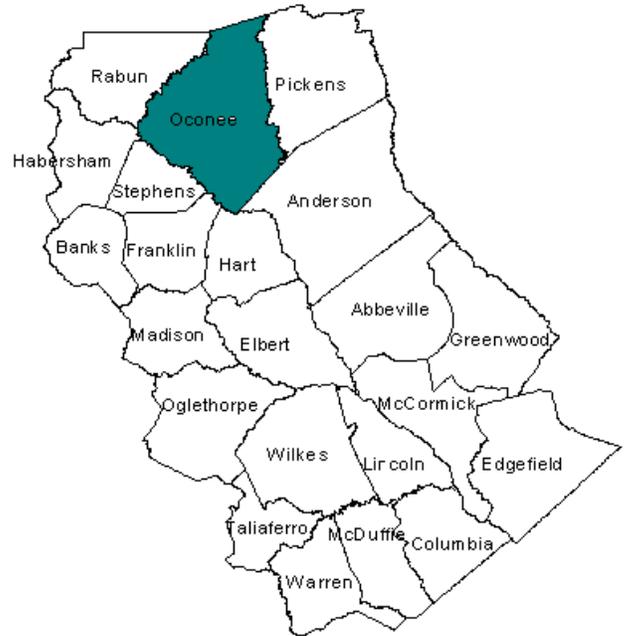
Pogonia, small whorled      *Isotria medeoloides*  
(Perennial herb)

FEDERAL LIST:

GEORGIA                  SOUTH CAROLINA  
Threatened              Threatened

STATE LIST:

GEORGIA                  SOUTH CAROLINA  
Threatened              Threatened



**GENERAL DESCRIPTION:** This perennial, showy **orchid** is **6-10in (15-25cm) tall**. A single whorl of five to six **leaves**, pale, dusty green, drooping, 2.0-3.2in (5-8cm) long, 1.2-2in (3-5cm) wide, grow from the top of the stem. The leaf **stalk** and leaves may have a grayish coating over their surfaces. Single (rarely 2) **flowers** grow from the center of the leaves and are tubular, **yellow-green in** color, and asymmetrical (orchid-like). The middle petal is greenish-white, 3-lobed, 0.6in (15mm) long, 0.2in (5mm) wide, ridged or crested down the middle. This petal crest has small yellow warts. It flowers in May and fruits in June and July. The **fruit** is an elliptical capsule 1in (2.5cm) long and 0.4in (1cm) wide. Similar species: Large whorled pogonia (*Isotria verticillata*) has purplish-green stems and spreading rather than drooping leaves. Indian cucumber-root (*Medeola virginiana*) has 6 or more slender leaves and a stem with cobwebby clusters of hairs.

**GENERAL HABITAT:** Habitat for the species consists of middle-aged, dry hardwood or mixed pine-hardwood forests with an open canopy, open understory and sparsely covered ground surface. Preferred

habitat is near long-term canopy gaps such as streams, vine gaps and old roads. Orchid collectors and small population size are major factors in the decline of this species. The species is typically found in the mountains of northeast Georgia.

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PLANT:

Quillwort, Black-spored  
(Fern relative)

*Isoetes melanospora*

FEDERAL LIST

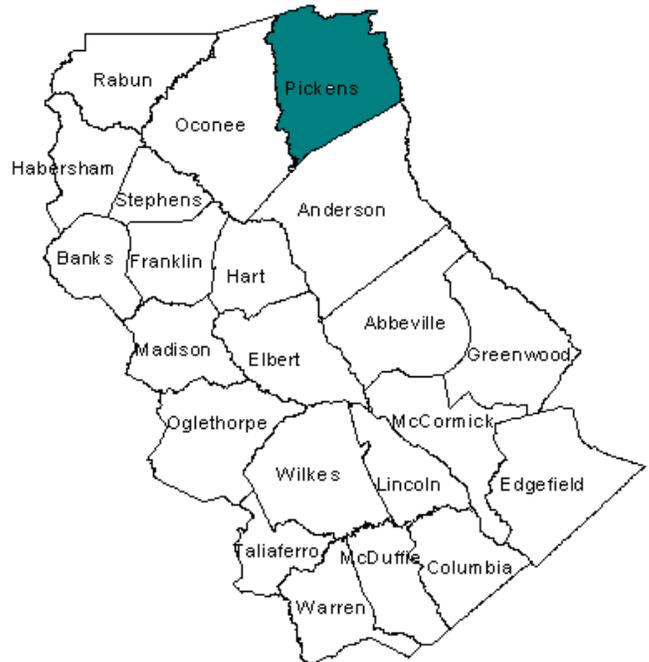
GEORGIA  
Endangered

SOUTH CAROLINA  
Endangered

STATE LIST:

GEORGIA  
Endangered

SOUTH CAROLINA  
Endangered



GENERAL DESCRIPTION: *Isoetes* species are **non-flowering** plants allied to ferns. They are frequently mistaken for small, aquatic grasses but lack the hollow stems, nodes, and flat leaves of typical grasses. Quillwort **leaves are hollow, quill-like**, and reveal cross-like partitions when cut in cross section. The leaves of black-spored quillwort are stiff to arching and usually **less than 8 cm (3in) tall**, but generally longer than those of mat-forming quillwort (5 cm; also described in this manual). Each leaf is narrow, 1-2 mm (less than 1/8in) wide, and broadens to a swollen base where it attaches in clusters to a **bulb-like, underground rhizome**, a characteristic of all quillwort species except mat-forming quillwort, *I. tegetiformans*. This swollen base also contains male and female sporangia protected by a thin, transparent covering (velum) which is used diagnostically to help identify quillwort species. Like mat-forming quillwort, black-spored quillwort also produces **dark-colored female spores**. Other Georgia quillworts have light-colored female spores.

The **roots** of black-spored and mat-forming quillworts are also useful in distinguishing between the two species. Roots arise from the underground rhizome in both species, but those of black-spored quillwort fork while those of mat-forming quillwort do not fork.

GENERAL HABITAT: Only six counties in Georgia are known for this aquatic plant, none in the Savannah Basin. It occurs in Pickens County, South Carolina. This plant grows in small, wet granite depressions and can regenerate with rain after a dry spell. Its habitat, granite outcrops, is like that of mat-forming quillwort with which it could be easily confused. The difference in habit- spreading for mat-forming quillwort, and condensed clusters for black-spored quillwort- is probably the most useful way of initially distinguishing between these two related species.

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PLANT:

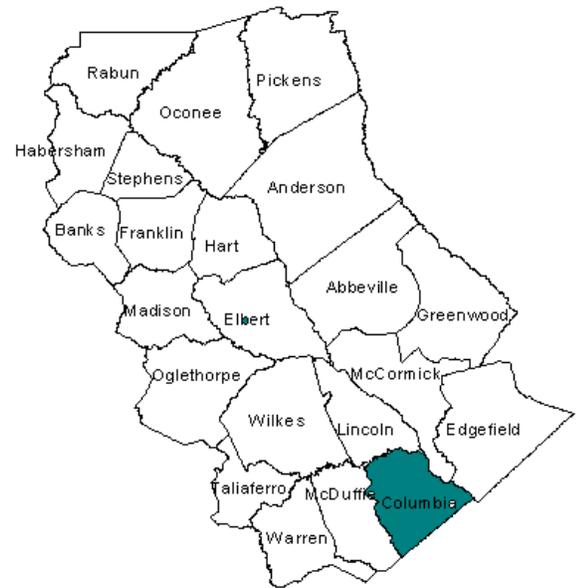
Quillwort, mat-forming *Isoetes tegetiformans*  
(Fern relative)

FEDERAL LIST

GEORGIA                      SOUTH CAROLINA  
Endangered                      Not listed

STATE LIST:

GEORGIA                      SOUTH CAROLINA  
Endangered                      Unlisted



GENERAL DESCRIPTION: The species was originally described in 1978 from material collected at Heggie's Rock Preserve in Columbia County, Georgia from a single vernal (periodically wet and dry) pool. Only 10 additional populations, all in Georgia, have been located, and one has been destroyed. It is a **spore-producing** (no flowers) plant with narrow leaves that resemble short grass. The plant is separated from other quillwort species by technical characteristics that include complete velum coverage, dark tuberculate megaspores, and short, **0.8-1.8in (2-5cm) narrow, spiraled leaves** that are arranged along a spreading **rhizome (underground stem)** unlike other quillworts which have short bulb-like rhizomes. Immature plants may more closely resemble other quillworts. The small **roots** arise along the rhizome and do not branch. This plant forms **colonies**. Ideal moisture and light conditions are required for successful spore germination and growth. The dormancy period for the spores is unknown. It is speculated that this plant produces asexually, a genetic factor which may threaten its ability to adapt.

**GENERAL HABITAT:** This is an aquatic plant limited to granite outcrop pools and thus has very restrictive conditions for survival. It is found only in the Piedmont region. Seventy percent of the extant sites contain only one or two pools with this plant. In the remaining sites (30%), it has been observed in four to eight pools. Individual pools probably contain only a few genetically variable individuals.

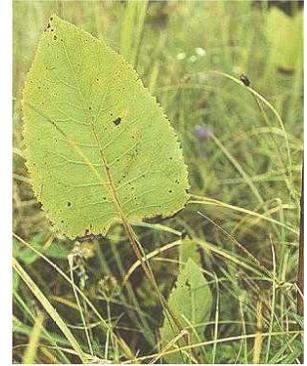


[Return to contents](#)

PLANT:

Rosinweed, prairie  
(Herbaceous perennial)

*Silphium terebinthinaceum*



FEDERAL LIST:

STATE LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern



Photos by K. J. Systma

GENERAL DESCRIPTION: When in flower, this **plant is very tall- 3-10ft (1-2 ½ m)** and has sunflower-like heads of flowers. The **large, toothed, heart-shaped leaves can be up to 2ft (61cm)** long and form a distinctive basal clump. The leaf upper surfaces feel rough (scabrous). Heads of flowers appear on nearly leafless, branched stalks from Aug-Sept. and are typically 2-3in (5-8cm) wide **with yellow disc and ray flowers**. Plant parts have a **turpentine-like odor**.

GENERAL HABITAT: Open areas, often associated with limestone .

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PLANT:

Sedge, Nebraska  
(Perennial herb)

*Carex jamesii*

FEDERAL LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

STATE LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern



D. Powell, USDA Forest Service



GENERAL DESCRIPTION: Like many sedges, this plant is often mistaken for a grass; it can reach heights of 8-12in (20-30cm). The leaves which are less than ¼ in wide (1-3mm) are longer than the individual stems. The separate male and female flowers are borne at the top of an elongated solitary stem. Flower structures must be examined with magnification to identify parts. One characteristic feature of all *Carex* spp. is a sac-like structure, the perigynium, that surround the ovary in female flowers. Subtle differences occur between species. Any suspected plants will probably require identification by someone familiar with the genus which has over 120 species in the Savannah Basin counties. Flowering occurs in May-June followed by formation of a fruit which is 3-sided.

GENERAL HABITAT: Found only in mature, rich woods.

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PLANT:

Shoals Spiderlily or Cahaba Lily *Hymenocallis coronaria*  
(Perennial herb)



FEDERAL LIST:

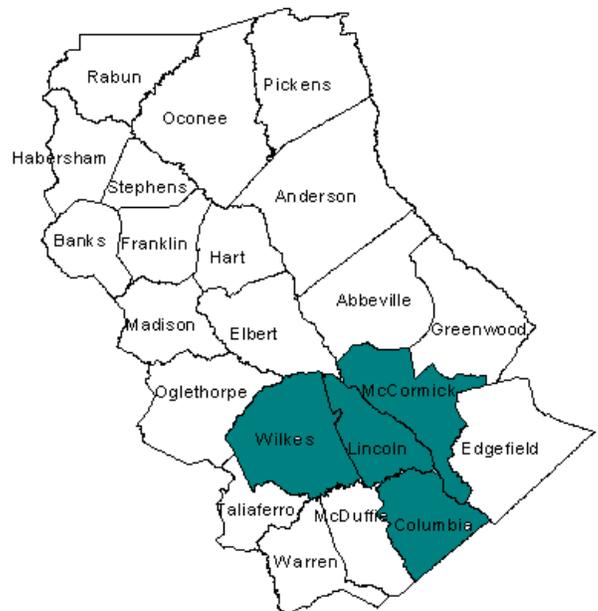
GEORGIA  
Concern

SOUTH CAROLINA  
Concern

STATE LIST:

GEORGIA  
Threatened

SOUTH CAROLINA  
Concern



GENERAL DESCRIPTION: This is a conspicuous **monocot** growing to **3ft, (1m) tall** from a large **bulb**. The **leaves** are basal, strap-shaped, 1.3-1.75in (3-5cm) wide, and up to 31.5in (80cm) long. Typically six to nine fragrant white flowers are borne in a terminal cluster on a long stalk that equals or exceeds the basal leaves. Individual **flowers** which measure up to 6in (15cm) in diameter, open consecutively and last only one day. The **flowers** are quite showy with yellowish center, a narrow tube bearing six long petal-like parts, and a central **white cup** or crown (corona) to which the anther filaments are attached. The **fruit** is a fleshy capsule that prematurely splits open exposing the dark green, oblong seeds, each 0.75-1.5in (2-4cm) long, and resembling green olives. Flowering period is mid-May to late June with fruiting period late June through August. Federally-listed as a Species of Concern.

GENERAL HABITAT: Found in major streams and rivers among boulders in rocky shoals, usually with riverweed and water willow. An isolated population is located on Broad River just north of Anthony Shoals (Thurmond Lake) between Lincoln and Elbert counties in Georgia.

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PLANT:

Shooting Star  
(Perennial herb)

(*Dodecatheon meadia*)



FEDERAL LIST:

STATE LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern



**GENERAL DESCRIPTION:** Basil leaves and a rocket-looking flower describe this spring blooming plant that grows up to 2ft (60cm) high. Leaves are entire, elliptic to lance-shaped, 4-11 in (10-30cm) long and 1½ - 3in (3-8cm) wide. A cluster of flowers with white reflexed petals with five stamens protruding forward forms at the end of a tall stalk. Flowering occurs from March to May. The fruit is a capsule with dark reddish brown seeds.

**GENERAL HABITAT:** Along streams in moist hardwood forests.

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PLANT:

Spiderwort, Virginia *Tradescantia virginiana*  
(Herbaceous perennial, monocot)

FEDERAL LIST:

GEORGIA Unlisted  
SOUTH CAROLINA Unlisted

STATE LIST:

GEORGIA Unlisted  
SOUTH CAROLINA Concern



George F. Russell USDA NRCS 2001. The PLANTS Database Version 3.1



**GENERAL DESCRIPTION:** Unlike grasses whose leaves look similar, this monocot has showy 3-petaled flowers with variable colors- blue, red, white, and purple. It grows to 1-2ft (30-60cm), spreading to 3ft (90cm). Leaves can be up to 18in (45cm) long by 1in (2.5cm) wide. Flowers are about 1in (2.5cm) wide and have six, hairy yellow stamens. A hairy sheath which is not readily apparent and looks much like the vegetative leaves loosely surrounds them. Flowers last only a day, closing in the afternoon. The flowering period continues for several weeks, extending from April-June. The fruit is a capsule.

**GENERAL HABITAT:** Dry, semi-open woods.

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PLANT:

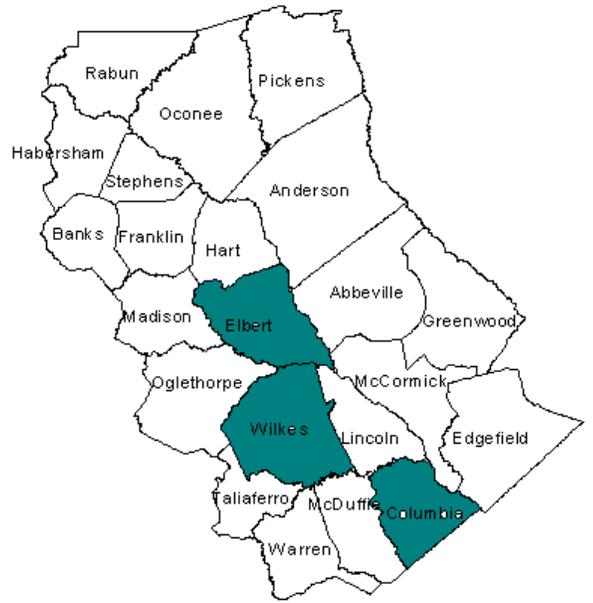
Stonecrop, Granite or Dwarf Stonecrop  
(Annual herb) *Sedum pusillum*

FEDERAL LIST

GEORGIA Unlisted  
SOUTH CAROLINA Unlisted

STATE LIST:

GEORGIA Threatened  
SOUTH CAROLINA Unlisted



GENERAL DESCRIPTION: This plant is small and succulent. Normally it grows to 0.75in (12cm) tall. The **succulent leaves** are up to 0.5in (12mm) and are cylindrical and overlapping. This plant is often confused with "red moss" or Elf Orpine (*Sedum smallii*) which is abundant on most granite outcrops and has uniform red leaves. The differences are only slight. *Sedum pusillum* is the larger of the two species and has bluish-green leaves, sometimes with tinges of red. *Sedum pusillum* has small white **flowers**, consisting of four petals that are 0.1in (2-3mm) long. The **fruit** is the most distinguishing feature. *Sedum smallii* fruit opens by a small flap on the underside, whereas *S. pusillum* opens by a slit on the topside. The fruit is a follicle, 0.1-0.2in (3-5mm) long, and opens by a longitudinal suture facing upward. The flowering period is from March through April and the fruiting period is from April through May.

GENERAL HABITAT: Found growing among lichens in partial shade under large, open-grown eastern red cedar (*Juniperus virginiana*) trees on granite outcrops.

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PLANT:

Strawberry, Piedmont Barren  
(Perennial herb)

*Waldsteinia lobata*



FEDERAL LIST

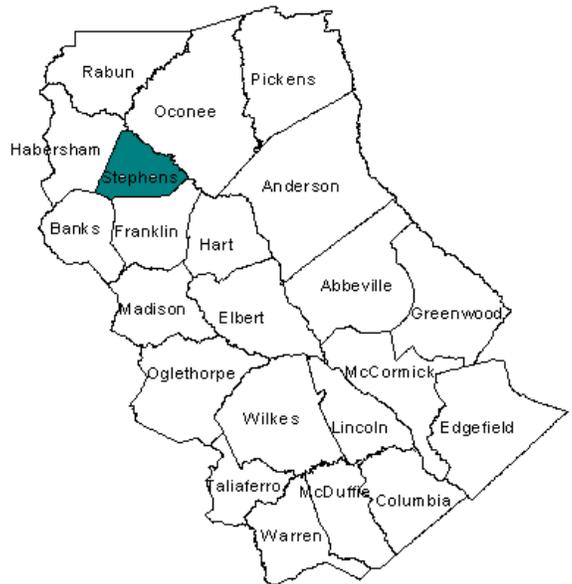
GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

STATE LIST:

GEORGIA  
Rare

SOUTH CAROLINA  
Unlisted



GENERAL DESCRIPTION: This is a low-growing plant that spreads by **subsurface stems** (rhizomes) and stoloniferous shoots. The **leaves** are heart-shaped, deeply 3-5 lobed, toothed on the margins, hairy, 1.5-2.75in (3.5-7cm) wide and 1.3-2.0in (3-5cm) long, and are attached to the stem by long hairy petioles. The **flowers** are borne on long stalks that equal or exceed the leaves. The five bright yellow petals are shorter than the sepals, and the numerous stamens (50 or more) make the flowers somewhat showy. The **fruit** is an achene. Flowering period is from April through June with fruiting in the summer.

GENERAL HABITAT: Found in rocky, acidic woods along streams with mountain laurel (*Kalmia latifolia*); also in drier, upland oak- hickory-pine woods.

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PLANT:

Sunflower, White-leaved  
(Perennial herb)

*Helianthus glaucophyllus*

FEDERAL LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

STATE LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern



B. Eugene Wofford, Tennessee Vascular Plants Atlas

GENERAL DESCRIPTION: At flowering this plant can be 4-8ft (1-2.5m) tall. The **toothed, opposite leaves are rough above, and smooth beneath with a whitish tinge**. Leaf bases are rounded to tapering to a petiole that is usually more than 1/2in (10mm) long. **Leaf size** is about 4-10in (10-25cm) long and 1-3in (3-8cm) wide with a lance shape. Heads of flowers appear from July-Sept. and are usually 2-3in (5-8cm) wide **with yellow disc and ray flowers**. Rays are rounded at their tips and 1/2-1 1/2 in (2-4cm) long. Unlike commercial sunflower “seeds,” the fruits are smaller and a solid brown.

GENERAL HABITAT: Mixed deciduous woods.

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PLANT:

Trillium, lance-leaf (*Trillium lancifolium*)  
(Perennial herb)



FEDERAL LIST:

STATE LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern



GENERAL DESCRIPTION: Like other trilliums, this one has parts in threes. It is distinguished from other **maroon flowered, sessile** trilliums such as *T. reliquum* by having fewer shades of green and **very narrow leaves and petals**. (See description in this manual of the latter species.) The three leaves are about 2-3in (5-8cm) long and 3/4 -1in (2-2 1/2 cm) wide. The petal color is usually brownish maroon, but some plants may have somewhat yellow-tinged petals. Flowering occurs from March-May; fruits are round berries with many seeds.

GENERAL HABITAT: Moist, very rich woods. Common at Steven’s Creek Preserve but otherwise very rare in Piedmont.

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PLANT:

Trillium, nodding or southern nodding  
(Perennial herb)

(*Trillium rugelii*)

FEDERAL LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

STATE LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern



GENERAL DESCRIPTION: This large white-petaled trillium is distinguished by very broad, **unmottled, light green leaves** and a **flower that bends downward, hence “nodding.”** The leaves are 5-8in (13-20cm) long and 4-6in (10-15cm) wide. The **flower** may be up to 3in (7-8cm) wide. The stamens and pistil are a light purple color. Both the green calyx parts and the white flower petals- all in 3s- tend to bend backwards (reflexed) at maturity. Flowering occurs in Mar-April followed by fruits of rounded berries.

GENERAL HABITAT: Moist, very rich woods. Found at Steven’s Creek Preserve but otherwise very rare in the Piedmont.

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PLANT:

Trillium, persistent  
(Lily Family--Perennial herb)

*Trillium persistens*



FEDERAL LIST:

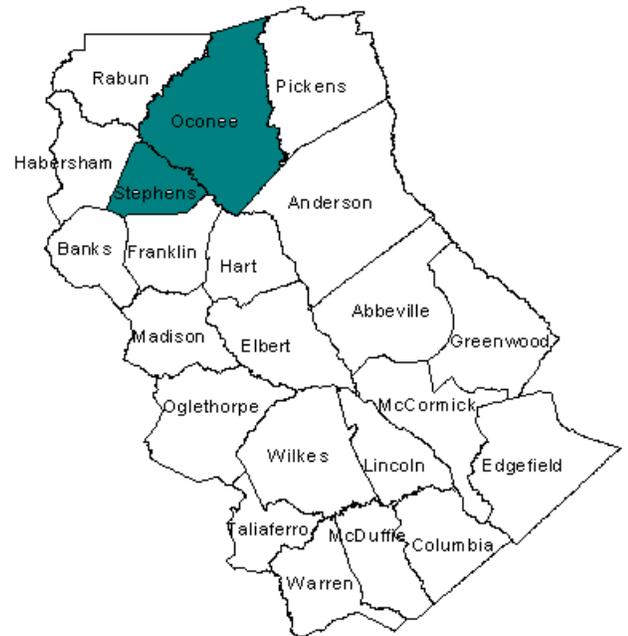
GEORGIA  
Endangered

SOUTH CAROLINA  
Endangered

STATE LIST:

GEORGIA  
Endangered

SOUTH CAROLINA  
Endangered



**GENERAL DESCRIPTION:** This is an early-blooming, perennial wildflower with a pale green to dark reddish-purple colored **stem**, 4-10in (10-25cm) long. The stem is topped with a single whorl of 3 spreading leaves, as is typical of all species of *Trillium*. **Leaves** are 1.2-3in (3-8cm) long, 0.4-1.2in (1-3cm) wide, slightly folded along the mid-vein and long-tapering to a sharp point with no petioles and a wedge shaped base. Leaves are dark green on the upper surface and paler or whitened below. The solitary showy **flowers** have 3 white petals, 0.8-1.4in (20-35mm) long and 0.2-0.4in (5-10mm) wide) that have edges slightly curled or twisted, growing from the middle of the leaf whorl. Flower anthers are straight and pale yellow. The flowers turn pink with age. The **fruit** is a fleshy capsule, greenish white, weakly six-lobed with 5-40 seeds. Fruiting occurs in late June to July. Similar species: Common rose trillium (*Trillium catesbaei*) has a larger white to pink flower with arching petals held on a reclining flower stalk. Its flower anthers are twisted and bright, egg-yolk yellow.

GENERAL HABITAT: Restricted to the Tallulah-Tugaloo River system in northeast Georgia where it is typically found on steep slopes growing under rhododendrons (*Rhododendron maximum* or *R. minus*) in mixed pine-hemlock-hardwood in moist, rocky, well-drained coves and ravines. Clearing, burning, thinning, grazing and soil/site disturbance are destroying its habitat.

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PLANT:

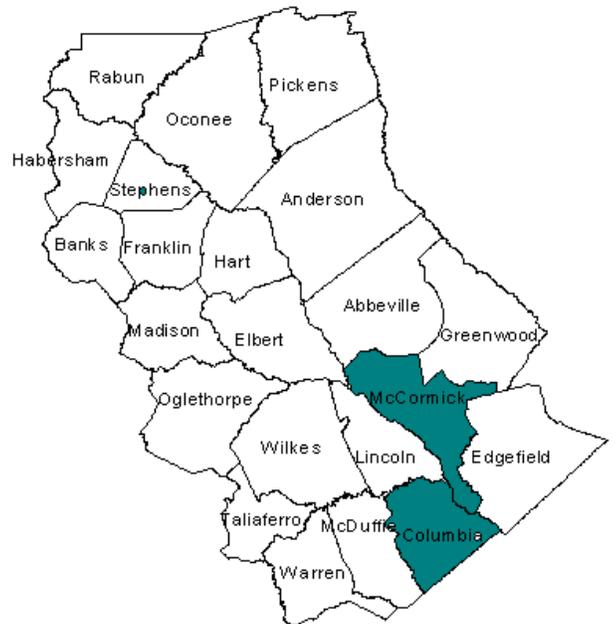
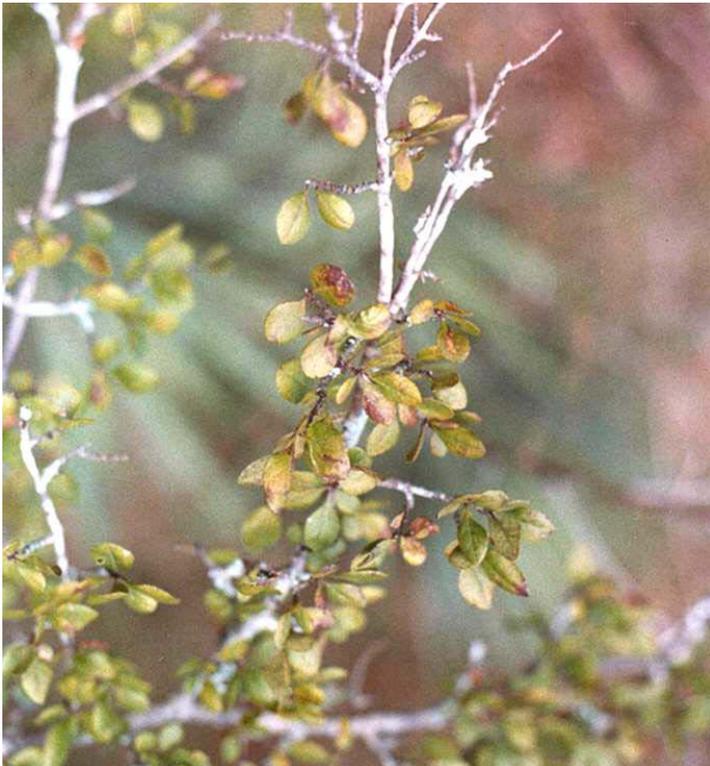
Upland privet (*Forestiera ligustrina*)  
Shrub

FEDERAL LIST:

GEORGIA Unlisted  
SOUTH CAROLINA Unlisted

STATE LIST:

GEORGIA Unlisted  
SOUTH CAROLINA Concern



GENERAL DESCRIPTION: This small shrub with light gray bark and rather scraggly-looking branches, is easily overlooked and sometimes confused with deciduous hollies. The small, **oval leaves are opposite** (hollies are alternate) with **faint teeth**. The average size is about 2-2.5 cm by 1-1.5 cm. **Hairs on the young twigs are in two lines, changing ninety degrees at each node**. The small, **unisexual flowers** are very hard to see, appearing about April-May. Petals are absent. The male flowers have 1-4 stamens. Female flowers have two-lobed stigmas and produce a **black, one-seeded fruit** about half a centimeter long in early fall.

HABITAT: Prefers rocky outcrops and is often found with eastern red cedar, sparkle-berry, and/or deciduous holly.

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PLANT:

Whitlow-Grass or  
Sun loving Draba  
(Annual herb)

*Draba aprica*



FEDERAL LIST

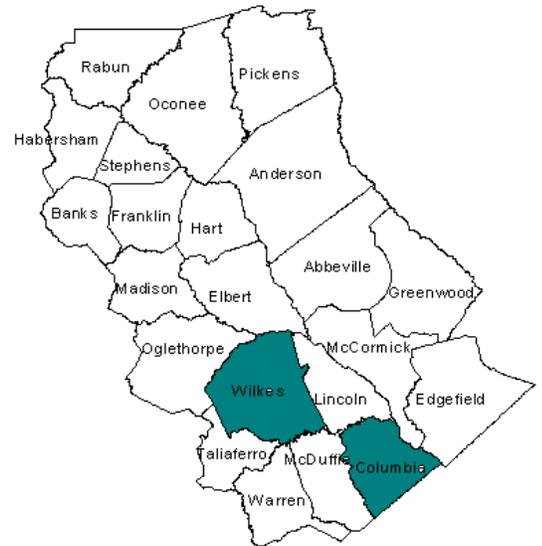
GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

STATE LIST

GEORGIA  
Endangered

SOUTH CAROLINA  
Concern



GENERAL DESCRIPTION: This **annual** is from **6-12in (15-30cm) tall**. **Basal leaves** have 1-2 teeth per side, and are 0.5-0.75in (1-2cm) long and rounded. Flowers are produced at the base of the side branches and also terminal. The **flowers** have four **white petals** that are less than 0.1in (3mm) long and have a small notch at the apex. The **fruit** is a narrowly elliptic, two-parted pod (short silique or silicle), 0.15-0.2in (4-6mm) long and is covered with tiny star-shaped hairs. *Draba brachycarpa* strongly resembles this species but has hairless fruits and more elongated lower branches. *Draba aprica* flowers from March to April and the fruiting period is from April to May.

GENERAL HABITAT: Found in shallow soils on granite outcrops, especially beneath widely scattered, old-growth eastern red cedar (*Juniperus virginiana*).

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PLANT:

Ozark Bunchflower (Wood's False Hellebore)  
(Perennial herb)

*Veratrum woodii*

FEDERAL LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

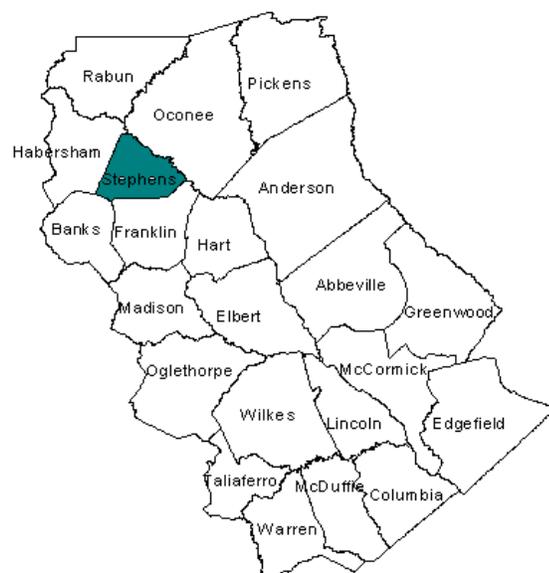
STATE LIST:

GEORGIA  
Rare

SOUTH CAROLINA  
Unlisted



Scott Kelley, USACE



**GENERAL DESCRIPTION:** This perennial **herbaceous plant** has distinct bright green basal leaves, elliptic to broadly oblanceolate, 35-60 cm (14-24 inches) long and 4-8 cm (2-3 inches) wide with conspicuous parallel veins. The numerous flowers are in a terminal panicle that rises well above the leaves. The three sepals and three petals are similar, purplish brown to maroon and each about 1 cm long. The fruit is a capsule about 1.5 cm long, 3-lobed with strongly winged seeds. Flowers sporadically from July to September with fruiting from August to October.

**GENERAL HABITAT:** Found in mature hardwood forests. Occurs in rich cove sites with moist, well-drained, deep soils, often in clumps on terraces along streams or on lower slopes. Located on Hartwell Project in Stephens County.

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**SECTION FIVE**

**SPECIES IDENTIFICATION SHEETS**

**ANIMALS**

**(INCLUDING MAMMALS, BIRDS, REPTILES/AMPHIBIANS,  
FISH, AND INVERTEBRATES)**

**SPECIES IDENTIFICATION SHEETS**

**MAMMALS**

MAMMAL:

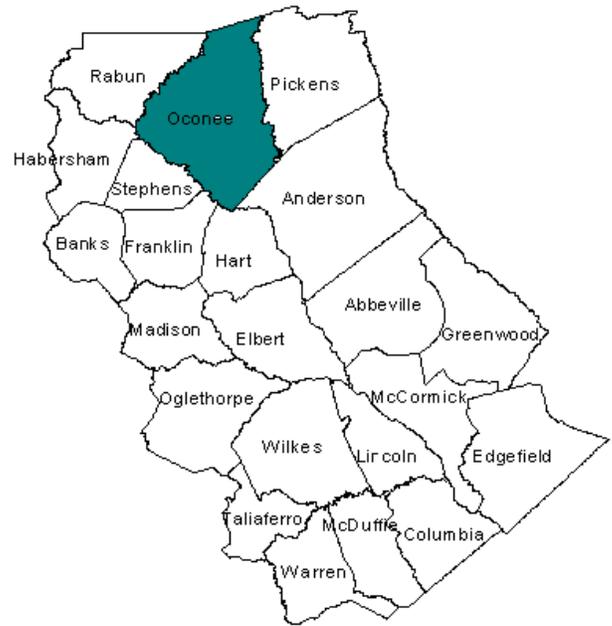
Indiana bat *Myotis sodalis*

FEDERAL LIST:

GEORGIA Endangered SOUTH CAROLINA Endangered

STATE LIST:

GEORGIA Endangered SOUTH CAROLINA Endangered



GENERAL DESCRIPTION: The Indiana bat is 3-3.5in (7.6-9.0cm) long with a wingspan of 9.5-10.5in (24.0-26.7cm). Fur is dark gray to chestnut colored and fine textured with a pinkish gray undercover.

GENERAL HABITAT: A mid-western and eastern species, the Indiana bat can occur in the northwestern third of Georgia and possibly parts of South Carolina. There is a single record in Georgia, from a cave in Dade County. The species is listed as endangered for South Carolina, although there is no recorded citing for the state. The Indiana bat is a cave dweller and hibernates near the entrance of caves. Northern populations migrate to the limestone cave areas in Alabama, Tennessee, Kentucky, Indiana, Missouri and West Virginia. Two caves in Kentucky and a mine in Missouri house 90% of the known U.S. population.

During winter, Indiana bats hibernate in dense masses on cave ceilings where they may number up to 100/ft<sup>2</sup> (900/m<sup>2</sup>). Indiana bats mate in April before they disperse over a wide area that includes Georgia and possibly South Carolina. During summer, populations are less vulnerable because they do not use caves. Females roost with their young under the loose bark of trees. The major causes of decline seem to be disturbance of caves by people, including vandalism, commercialization and careless visitors. Pesticides are also implicated in their decline.

The Indiana bat forages along river and lake shorelines and above crowns of trees in flood plains. It feeds on moths, beetles, flies, caddis flies and other insects.

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MAMMAL:

Rafinesque's Big-eared Bat

*Corynorhinus rafinesquii*

FEDERAL LIST:

GEORGIA  
Unlisted

SOUTH CAROLINA  
Concern

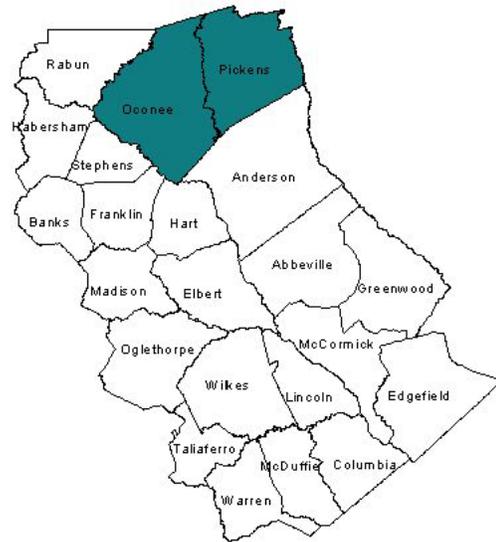
STATE LIST:

GEORGIA  
Rare

SOUTH CAROLINA  
Endangered



Photo courtesy of U.S. Fish & Wildlife Service



**GENERAL DESCRIPTION:** This medium-sized bat is 3.10 - 4.33 in (8.1 - 11.0 cm) in size with extremely long ears and small glandular growths on each side of the snout. The fur is gray to brown on back and sides. Fur on the underside is dark brown to black at the base, with sharply contrasting white tips. Long hairs on the foot extend noticeably beyond the toes. The wings and interfemoral membrane are dark brown.

**GENERAL HABITAT:** Rafinesque's big-eared bat ranges from Virginia to central Indiana, south to Oklahoma and Texas, and along the Gulf coast to the Atlantic coast. Rafinesque's big-eared bat inhabits forested regions of pine flatwoods and hardwood hammocks largely devoid of natural caves. Roosts include hollow trees, crevices behind bark, under dry leaves, bridges, and buildings. Although Rafinesque's big-eared bat tends to be a solitary bat, it has been encountered in colonies of 2-100 individuals. The species does not appear to hibernate in the lower part of its range, but tends to seek out underground retreats and hibernate in the northern part of the range. Like other bat species, Rafinesque's big-eared bat emerges after dark to forage on small, night-flying insects, particularly moths. Rafinesque's big-eared bats bear single young in late May to early July. The young shed their milk dentition by mid-July, and reach adult size and appearance in August or September.

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MAMMAL:

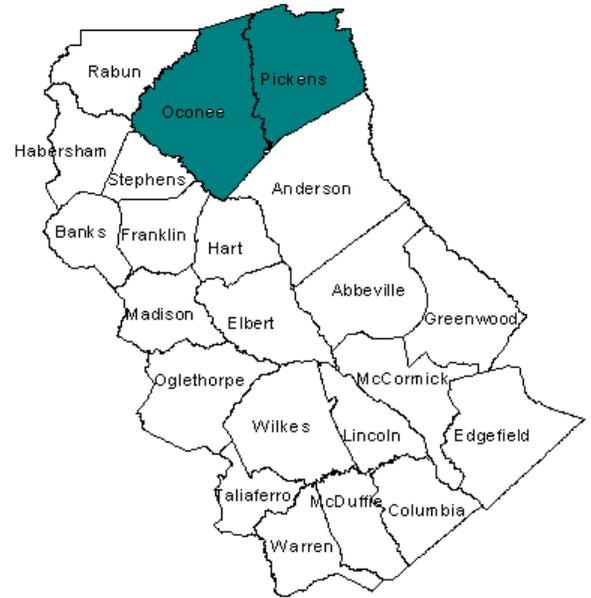
Small footed bat *Myotis leibii*

FEDERAL LIST:

GEORGIA Unlisted  
SOUTH CAROLINA Unlisted

STATE LIST:

GEORGIA Unlisted  
SOUTH CAROLINA Threatened



**GENERAL DESCRIPTION:** This bat is 2.75-3.25in (7.0-8.25cm) in size with glossy fur, light tan to golden brown above, buff to nearly white below. The wings and interfemoral membrane are dark brown. These bats have black ears and a black mask and have a calcar keel. Its hind foot, for which it is named, is usually slightly smaller than that of other members of its genus.

**GENERAL HABITAT:** Little is known of the habitat but they have been found beneath rock slabs and crevices. Range is from New England southwest to northern Georgia, with scattered populations into the southern mid-west. This species is widespread in the western United States. Records are primarily of the hibernating Small-footed bat. Although the numbers found hibernating are not large, they have significantly decreased at nearly every known site. This species sometimes hibernates on cave floors or under rocks or in cracks. Caves where the greatest numbers of these bats were found are in heavy hemlock forests in the foothills of mountains that rise to 2,000 or more feet (600 or more meters). It has been noted that this species was most readily captured at cave entrances in South Dakota and Kentucky during late summer and early autumn. Information of this species during summer is virtually unknown; records of this species away from caves and during summer months are very rare, and are usually from accidental encounters. This bat forms small maternity colonies, and females bear a single young per year. Pregnant females have been caught in June and July, and nonvolant juveniles have been encountered in May and June. Nonvolant juveniles, a volant juvenile, and a postlactating female were all reported from the same area of South Dakota in late July.

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**SPECIES IDENTIFICATION SHEETS**

**BIRDS**

BIRDS:

Peregrine Falcon *Falco peregrinus*



FEDERAL LIST:

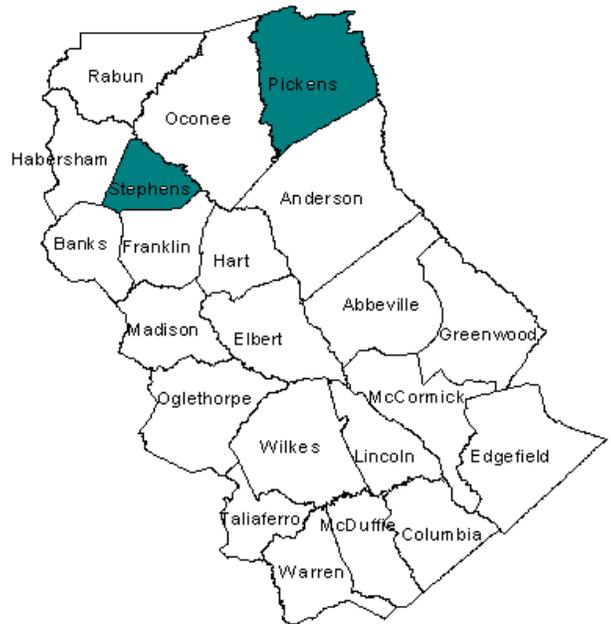
GEORGIA  
Not Listed

SOUTH CAROLINA  
Not Listed

STATE LIST:

GEORGIA  
Rare

SOUTH CAROLINA  
Endangered



**GENERAL DESCRIPTION:** The Peregrine is about the size of a crow; 1.5ft (0.5m) long with a 3.3ft (1m) wingspread. The Peregrine has a characteristic falcon shape which differs from other types of hawks. The wings are pointed and the tail is narrow. At rest the bird has a heavy shouldered tapering look. Adults are dark, slate gray above. The head is black with black mustache markings extending on the neck. The throat is white. The undersides are pale barred crosswise with black. Immature birds are dark brown on back, with a light underside with dark brown vertical streaks.

Peregrines are easily confused with other species. Peregrines do not soar but flap their wings continuously when in level flight. Marsh hawks also flap continuously but are larger and have a white rump patch. Peregrines are swift fliers. They will fly 10-20mi (16-32km) from the nest to search for prey. Birds are their favorite prey. They may accelerate to 200mph (320kph) when diving at prey. They club large birds with

their feet and follow them to earth to feed. Small birds are seized with the talons. There are perhaps 200 pairs in the Continental U.S. Peregrine prey is hunted over open habitat such as waterways, field and wetland areas (swamps and marshes). They possess great strength and agility and have been used since 2000 B.C. for the art of falconry. Average home ranges cover 20 mi<sup>2</sup> (52km<sup>2</sup>). Falcons generally reach sexual maturity at 3 years of age. Peregrines generally mate for life. Mating occurs in late March or early April. Incubation averages about 32 days for each egg, with a 2-day hatching interval between eggs in the clutch. Clutch size averages three. Young stay in the nest 6-7 weeks and become self-sufficient after several months.

In Georgia and South Carolina it is possible to see either the American or Arctic races. The American peregrine is larger, darker, and has more extensive black markings on the face than the Arctic peregrine.

**GENERAL HABITAT:** Preferred habitat and nesting sites are cliffs overlooking water. Slopes, river cutbanks, mounds, sand dunes, trees, flat bogs and plains are also nesting sites. Peregrines are a cosmopolitan species and do not occur in large numbers. They live where prey is very abundant and feed on pigeons in the city. Old records indicate that peregrines once nested near Caesar's Head and Table Rock, South Carolina. Now the peregrine is generally considered only a winter migrant in the state. More recent records reveal that peregrines have been sited in Atlanta, Georgia. Sightings in Columbia County, Georgia, have, unfortunately, never been confirmed. Actual sightings have been very few. Probable sightings occur when peregrines are in migration along the coast. Experimental hacking (reintroduction) programs have recently been conducted in the Table Rock area, increasing potential for observation of the species in northern Upper Savannah River Basin area.

Peregrines have declined due to use and buildup of DDT and other chlorinated hydrocarbon pesticides in their food chain. Contaminated peregrines have impaired calcium metabolism which causes thin-shelled eggs. Such eggs break easily and do not hatch. Falconers have removed many of these birds from the wild. Elimination of the Peregrines habitat has contributed to its decline. The great horned owl is its major predator.

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BIRDS:

Red-cockaded Woodpecker *Picoides borealis*



FEDERAL LIST:

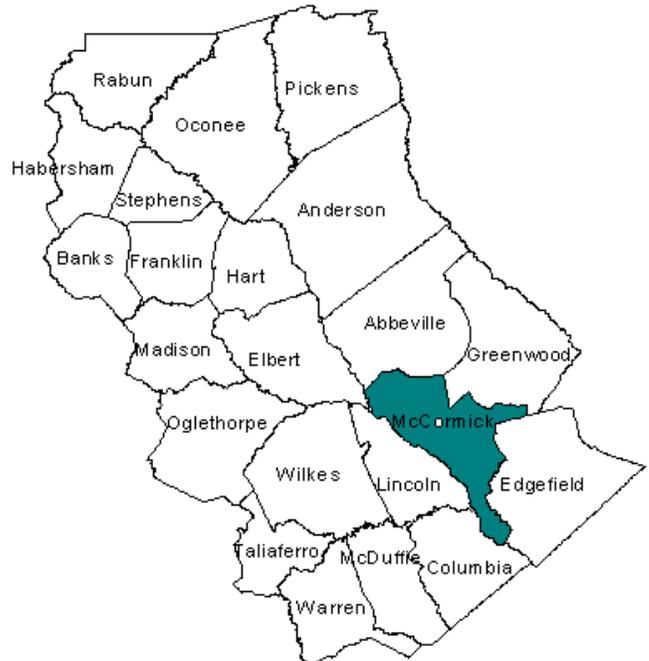
GEORGIA  
Endangered

SOUTH CAROLINA  
Endangered

STATE LIST:

GEORGIA  
Endangered

SOUTH CAROLINA  
Endangered



(McCormick record historic)

GENERAL DESCRIPTION: A non-migratory species similar in appearance to the hairy woodpecker, except that the top of the head is black, the cheeks conspicuously white, and the sides spotted with black. Birds are gregarious except during the breeding season. Males have an inconspicuous red streak above each ear. The average length is 7in (18cm). The nest is easily recognized by pitch that covers the bark below the nest entrance. These woodpeckers feed in the upper regions of large **living** pines. Food consists of insects and arthropods, including the larvae of wood boring insects, and some vegetable matter. They move from one tree to another, covering large areas in the course of a day. Vocalizations usually consist of high-pitched squeals. This species apparently mates for life. Two to seven eggs are laid in clutches and incubation begins before completion of the clutch. Hatching of the young is staggered. One or two young are fledged at about 26-29 days. The young are foraging for themselves at this stage but may continue to receive food from their

parents for several months. There is never more than one breeding pair per colony although as many as 20 cavities may occur in a colony. The red-cockaded woodpecker is unique in that it is the only woodpecker that excavates a cavity in a living tree.

**GENERAL HABITAT:** Nesting and roosting is tied very closely to over-mature pines, infected with red heart disease, caused by the fungus *Formes pini*. The average age of trees in existing habitats are 85 years in a range from 59 to 167 years. These mature pine forests must be fairly open and free of a hardwood understory. Longleaf pines (*Pinus palustris*) are most commonly used, but other species of southern pine are also acceptable. Foraging habitat is pine and pine hardwood stands 30 years old or older with foraging preference for pine trees 10in (25.4cm) or larger in diameter. J. Strom Thurmond Lake is the only Savannah District Project that has confirmed Red-cockaded Woodpecker activity.

The last remaining Red-cockaded Woodpecker colony disappeared from the Hawe Creek site in McCormick County, South Carolina in 1992. The Savannah District Wildlife Biologist, the U.S. Fish and Wildlife Service and the U.S. Forest Service are currently considering the reintroduction of the species into appropriate habitat found in the J. Strom Thurmond Lake area. Additional information and a detailed recovery plan are available from the District Wildlife Biologist.

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**BIRDS:**

Southern Bald Eagle *Haliaeetus leucocephalus*

**FEDERAL LIST:**

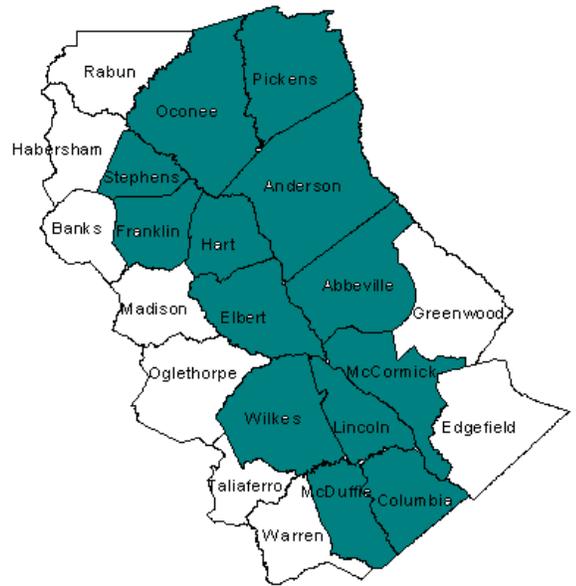
GEORGIA  
Not Listed

SOUTH CAROLINA  
Not Listed

**STATE LIST:**

GEORGIA  
Threatened

SOUTH CAROLINA  
Endangered



**GENERAL DESCRIPTION:** A large raptor, wingspread of about 7ft (2.1 m), plumage mainly dark brown with pure white head and tail when adult. First year juveniles are often chocolate brown to blackish, sometimes with white mottling on the tail, belly and underwings. The head and tail become increasingly white with age until full adult plumage is reached in the fifth or sixth year.

**GENERAL HABITAT:** The bald eagle is primarily riparian, associated with coasts, rivers, and lakes, usually nesting near bodies of water where they feed. Selection of nesting sites varies tremendously depending on the species of trees growing in a particular area. Although the tops of tall trees, either living or dead, are generally preferred, bald eagles may even nest in small mangroves less than 20ft (6.1m) above ground. Regardless of this large variation in sites, there are certain general elements which seem to be consistent: The proximity of water (usually within 0.5mi or 0.8km) and a clear flight path to a close point on the water; the largest living tree in a span; an open view of the surrounding area. The proximity of good perching trees may also be a factor in site selection. Excessive human activity in the area can render a site

unsuitable. The eagle exhibits territorial behavior during the breeding season by showing aggressiveness toward other large birds, including eagles, which approach the vicinity of its nest. Territorial size ranges from 28-112 acres (11-47 hectares) averaging 57 acres (23 hectares). Habitat requirements are somewhat altered during migratory situations. They are not as closely limited to shores at this time, gathering food where it is most easily available. Often the immatures will fly inland at night to roost communally away from coastal nesting areas. Eagles are opportunistic feeders and will take a variety of vertebrate prey. If fish are abundant, they comprise the major part of the diet and are the birds' choice. Eagles will lay one to four eggs but the usual is two. A second clutch may be laid if the first is lost. Incubation time is thirty five days; ten or twelve weeks are needed for fledging, and 4-5 years are required for the birds to reach breeding age. Total life span is apparently quite long, since eagles have been known to live for 50 years in captivity.

The Savannah District Corps of Engineers participates annually in the midwinter eagle survey. All eagle sightings or suspected nesting activity should be reported to the District Wildlife Biologist. A detailed recovery plan for bald eagles is also available from the District Wildlife Biologist. Although the Bald Eagle was delisted in 2007 and is no longer protected by Endangered Species Act provisions, the eagle is still protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

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**BIRDS:**

Wood Stork                      *Mycteria americana*



**FEDERAL LIST:**

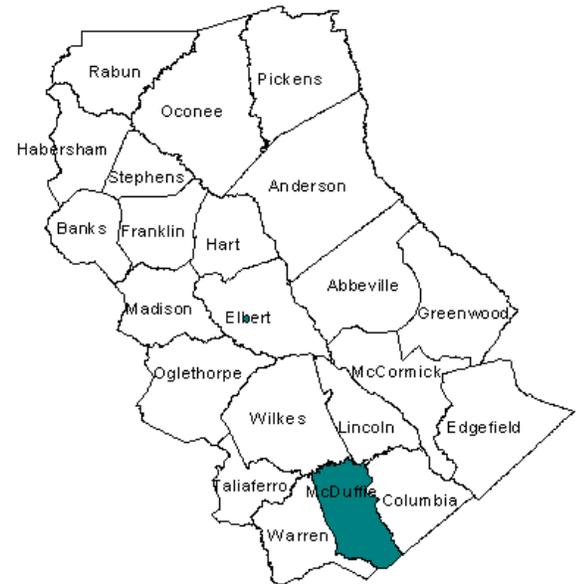
**STATE LIST:**

**GEORGIA**  
Endangered

**SOUTH CAROLINA**  
Endangered

**GEORGIA**  
Endangered

**SOUTH CAROLINA**  
Endangered



**GENERAL DESCRIPTION:** The wood stork is locally known as "the flinthead" because of its gray-black, featherless head. It stands more than 3.5ft (1.1m) tall and has a wingspan of more than 5ft (1.5m). The wood stork's body is white; the tail and trailing edges of the wings are black. The 6-9in (15-23cm) bill is black, thick at the base, and slightly decurved. Immature birds are dingy gray and have a yellowish bill. Wood storks fly with their legs and necks outstretched.

**GENERAL HABITAT:** Once found across the South, the wood stork's range in the United States has been reduced to Florida, south Georgia and a small portion of South Carolina. Storks are birds of freshwater and brackish wetlands, primarily nesting in cypress or mangrove swamps, and feeding in freshwater marshes, flooded pastures and flooded ditches. Flocks may travel up to 80 mi (130km) to feed in shallow waters. Particularly attractive feeding sites are depressions in marshes and swamps where fish become concentrated during periods of falling water levels. Wood storks feed by groping with their beaks. When their beaks

touch a fish they seize it with one of the fastest reflex motions in the animal world. Reasons for decline are loss of feeding habitat and adverse water management practices particularly in the Florida Everglades.



Woodstorks feeding in Big Creek, west of Highway 78 bridge, McDuffie County, July 2000.

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BIRDS:

Bewick's Wren      *Thyromanes bewickii*

FEDERAL LIST:

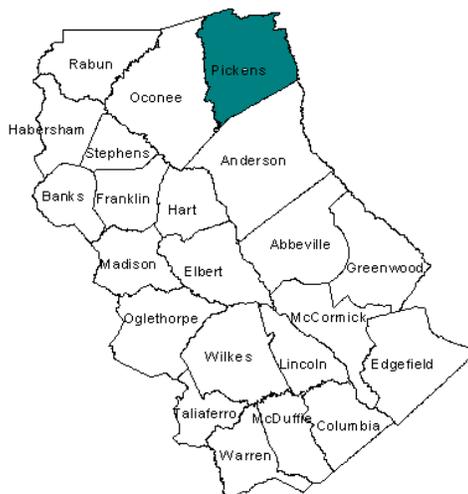
GEORGIA      SOUTH CAROLINA  
Unlisted      Unlisted

STATE LIST:

GEORGIA      SOUTH CAROLINA  
Unlisted      Threatened



IFWIS



GENERAL DESCRIPTION: Gray-brown above and white below; 5.5” in length. Similar to Carolina wren, but shows white in tail feathers during flight and is typically slightly smaller.

GENERAL HABITAT: Prefers brushy habitats, open stands, scrubby area and hedgerows.

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**SPECIES IDENTIFICATION SHEETS**

**REPTILES/AMPHIBIANS**

REPTILE/AMPHIBIAN:

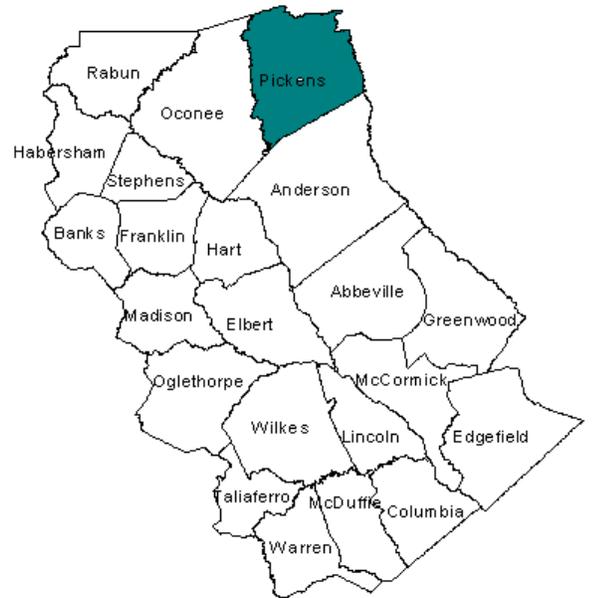
Bog turtle *Glyptemys muhlenbergi*

FEDERAL LIST:

GEORGIA Threatened SOUTH CAROLINA Threatened

STATE LIST:

GEORGIA Endangered SOUTH CAROLINA Threatened



GENERAL DESCRIPTION: This turtle is 3.0-4.5in (7.5-11.5cm) long with a record of 4.5in (11.5cm). Formerly called "Muhlenberg's turtle" it is a small brown turtle. The head patch sometimes is yellow or split in 2 parts. Scutes of the carapace are light brown to mahogany and may have yellowish or reddish centers. On large scutes a light-brown or orange sunburst pattern may be present; it is weakly keeled and rough or smooth depending on age. The plastron is brownish-black with varying amounts of yellow along the midline; hingeless, with 12 scutes. The male has a concave plastron and thick tail, with anal opening beyond the margin of the carapace. This turtle reaches sexual maturity in 5-7 years. Mating takes place during the first warm days of spring with nesting in June. It lays a single clutch of 1-6 (typically 3-4) elliptical, flexible- shelled eggs, averaging 1.1in (2.8cm) in length in a 2in (5cm) nest cavity. Hatchlings emerge in August and September after incubating 6-9 weeks. At hatching the young are about 1in (2.5cm) in length. The color patches may be few or (rarely) lacking entirely on the young. In some cases it may be necessary to examine head and neck for several yellow or orange spots. In the male the horny portion of both jaws is almost completely covered with dark pigment. This turtle is very secretive. Active from April to mid-

October, it searches out a wide variety of prey, including tadpoles, slugs, snails, worms, and insects. In spring it often basks in full sunlight atop grassy tussocks.

**GENERAL HABITAT:** Habitat includes sphagnum bogs, swamps, spring seepages, and clear, slow-moving meadow streams with muddy bottoms are preferred. It also inhabits wet cow pastures and slow-moving, narrow, shallow rivulets. During hot periods the turtle buries itself in mud or vegetative debris, exposing only a small portion of its shell to the sun. Winter is spent buried deep in mud flooded by subterranean waters. Man's propensity for draining and reclaiming the habitat of this species has contributed to its disappearance in many areas.

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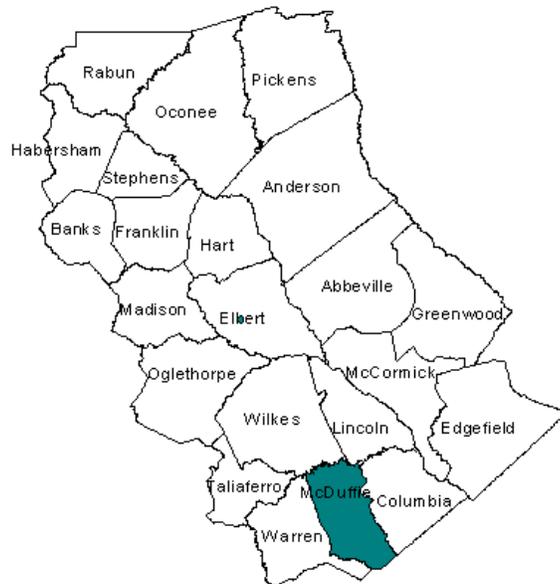
REPTILE

Southern Hognose Snake

*Heterodon simus*

FEDERAL LIST:  
None

STATE LIST:  
Georgia Threatened



**GENERAL DESCRIPTION:** Heavy bodied snake; 12-24 inches; upturned snout; is distinguished from Eastern hognose by coloration on underside of tail. The coloration on the underside of the tail on the southern hognose is similar to the rest of the belly.

**GENERAL HABITAT:** Typically, coastal plain or sandhills physiographic region; found in sandy fields and open woodlands.

REPTILE/AMPHIBIAN:

Southern Coal Skink *Eumeces anthracinus pluvialis*

FEDERAL LIST:

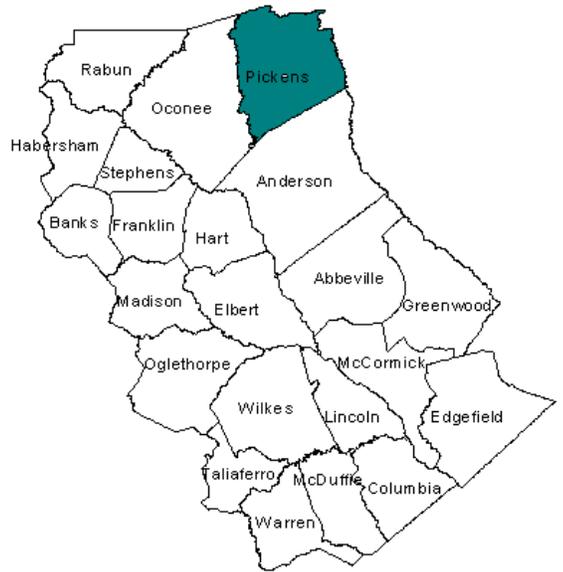
GEORGIA  
Unlisted

STATE LIST:

SOUTH CAROLINA  
Unlisted

GEORGIA  
Unlisted

SOUTH CAROLINA  
Threatened



GENERAL DESCRIPTION: The Coal Skink is 5-7in (13-17.8cm) in length with a maximum of 2.75in (7cm) head-body length. This is a 4-lined skink, but with the light stripes extending onto the tail. The broad dark lateral stripe is 4-4.5 scales wide and there are no light lines on top of the head. The dorsolateral light stripe is on the edges of the 3rd and 4th scale rows, counting from midline of back. One postmental scale is present. The sides of the head of the male are reddish during spring breeding season, at least in some parts of the range. The Coal Skink mates in the spring or early summer, laying a clutch of 8 or 9 eggs in four to five weeks. The young of one subspecies is plain black; the other subspecies young are patterned like the adults. Young are about 1.9in (5cm) at hatching.

The Southern Coal Skink as a subspecies has posterior supralabials with light centers and dark edges, producing a spotted appearance. There are 26 or more rows of scales around the middle of the body. Sometimes the black-colored young have faint suggestions of light stripes or whitish labial spots or both; snout and lips may be reddish and the tail is blue.

GENERAL HABITAT: The more humid portions of wooded hillsides with abundant leaf litter or loose stones are favorite habitats. This skink's habitat may also include areas around springs and rocky bluffs

overlooking creek valleys. If pursued, they will not hesitate to take refuge in shallow water, going to the bottom and hiding under stones or debris. They live in isolated colonies in Georgia and Alabama. The southern Coal Skink intergrades with the Northern Coal Skink in parts of the Southeast. Humans are destroying or altering their habitat.

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REPTILE/AMPHIBIAN:

Green Salamander *Aneides aeneus*

FEDERAL LIST:

GEORGIA  
Unlisted

STATE LIST:

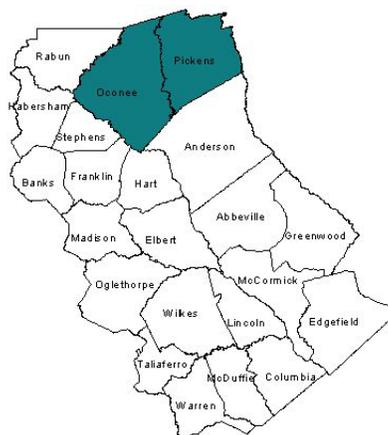
SOUTH CAROLINA  
Unlisted

GEORGIA  
Rare

SOUTH CAROLINA  
Unlisted



R.D. Bartlett



GENERAL DESCRIPTION: This flattened salamander is dark in color with green or yellow lichen-like markings on the back; toes are square at tip.

GENERAL HABITAT: Found in moist rock crevices; however, recent information suggests that they may frequent hardwood tree canopies.

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REPTILE/AMPHIBIAN:

Webster's Salamander *Plethodon websteri*



FEDERAL LIST:

GEORGIA Unlisted  
SOUTH CAROLINA Unlisted

STATE LIST:

GEORGIA Unlisted  
SOUTH CAROLINA Endangered

← 2 cm →



**GENERAL DESCRIPTION:** This species is a small, brown salamander with a light red/orange stripe running down its back. It was believed to be part of the widespread zig-zag salamander species, until it was reclassified, in 1979, due to information obtained from biochemical techniques. It is currently classified as a unique species, separate but related to the zig-zag salamander. Courtship and mating probably occur between January and March, with eggs being laid in June or July. Eggs hatch in August or September. Adults are known to feed on termites from October through May.

**GENERAL HABITAT:** Webster's salamander has been found to inhabit approximately 20 sites, in McCormick and Edgefield counties, South Carolina. Its preferred habitat consists of streams that are underlain by rock in moist, rich hardwood forests. This salamander is usually found under fallen trees and rocks. During the drier summer months, it retreats underground into cracks and fissures of the underlying rocks.

One site at which the species is found is the Stevens Creek Natural Area, a Heritage Preserve of the South Carolina Heritage Trust Program. Habitat loss, due to clear-cutting, is apparently the primary threat to the species' continued existence. Protection of the population in Stevens Creek, and possibly some additional sites, should assure the survival of the Webster's salamander in South Carolina.

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SPECIES IDENTIFICATION SHEETS

**INVERTEBRATES**

INVERTEBRATES:

Atlantic pigtoe mussel *Fusconaia masoni*

FEDERAL LIST

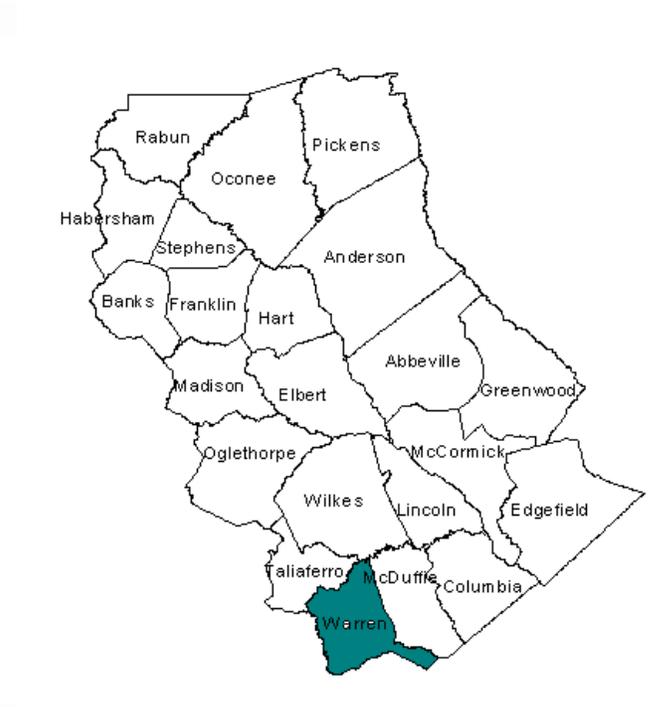
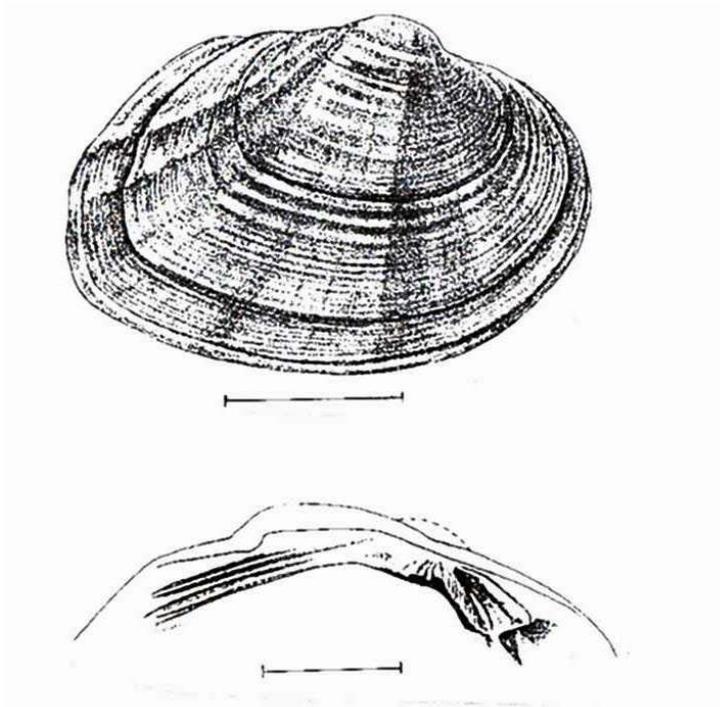
GEORGIA  
Concern

SOUTH CAROLINA  
Concern

STATE LIST

GEORGIA  
Endangered

SOUTH CAROLINA  
Unlisted



(Note: Top drawing shows details of external shell; bottom drawing shows interior hinge area with teeth. Line represents 1 cm.)

**GENERAL DESCRIPTION:** This two-shelled mussel is triangular-rhomboidal except in headwater areas where individuals are more elongate. The convex, posterior ridge is distinct and extends from the umbo to the margin of the shell. The beak or umbo (knob-like area near the junction of the two shell halves) usually protrudes well above the shell edges. The thin outer layer of the shell (periostracum) is smooth, parchment-like and yellow to dark brown. The internal lining of the shell (nacre) ranges from an iridescent blue to salmon, to white to orange. When the shell is open the "teeth" in the hinge area are evident. Both pseudocardinal and lateral teeth are present; however, the anterior pseudocardinal tooth is vestigial in the right shell.

GENERAL HABITAT: Found in unpolluted, fast-flowing water in coarse sand/gravel substrate. Most Georgia populations have been coastal plain inhabitants in water underlain by limestone and dolomite. The only extant population is in the Ogeechee drainage in Williamson Swamp Creek, Jefferson County, although the type locale is in the Savannah River above Augusta.

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INVERTEBRATES:

Carolina Heelsplitter      *Lasmigona decorata*

FEDERAL LIST

GEORGIA                      SOUTH CAROLINA  
Unlisted                      Endangered

STATE LIST

GEORGIA    SOUTH CAROLINA  
Unlisted    Endangered



**GENERAL DESCRIPTION:** This freshwater mussel has a greenish brown to dark brown, unsculptured, oval shell which has a trapezoid shape. Younger specimens may have faint greenish brown to black rays. The largest specimens measure about 11.5cm (4.6in) in length, 3.9cm (1.6in) in width, and 6.8 cm (2.7in) in height. The inside surface (nacre) is typically pearly to bluish white, grading to orange in the umbo area or may be entirely mottled, pale orange in older specimens (Keferl 1991).

**GENERAL HABITAT:** The current distribution is very fragmented. It has limited distribution in North Carolina and historically was known from the Pee Dee and Savannah River systems and possibly the Saluda river system in South Carolina. Alderman (1995) collected this species in the Steven’s Creek watershed; it has also been found recently in Edgefield County in Beaverdam, Mountain, and Turkey Creeks.

Its preferred habitat appears to be mud, muddy sand, or muddy gravel substrates along stable, shaded stream banks. In Mountain Creek it was found in the center of the stream channel in a mix of sand, gravel, and cobble (Fridell of USF&WS, Asheville, NC). Human disturbance of streams, from siltation and pollution to inadequate shading, further threatens the habitat of this species.

Reference and photos:

Kerfl, E. P. 1991. A Status Survey for the Carolina Heelsplitter (*Lasmigona decorata*), a Freshwater Mussel Endemic to the Carolinas. Unpublished report to the USF&WS.



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INVERTEBRATES:

Broad River Burrowing Crayfish

*Distocambarus devexus*

FEDERAL LIST

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

STATE LIST

GEORGIA  
Threatened

SOUTH CAROLINA  
Unlisted



**GENERAL DESCRIPTION:** The overall color of the Broad River burrowing crayfish is tan to brownish with dark mottling. The areola is fairly narrow and the rostrum is wide, gradually converging anteriorly to a blunt point. The moveable fingers of the claws are about the same length as the mesial margins of the palm of the claws. The abdomen appears narrower than the cephalothorax. This species reaches a maximum total body length of about 75 mm (3 inches).

**GENERAL HABITAT:** Simple and complex burrows adjacent to streams or in low areas where the water table is near the surface of the ground.

INVERTEBRATES:

Lean Crayfish      *Cambarus strigosus*

FEDERAL LIST

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

STATE LIST

GEORGIA  
Threatened

SOUTH CAROLINA  
Unlisted



**GENERAL DESCRIPTION:** The overall color of the lean crayfish is bluish-olive with the margins of the rostrum creamy orange. The areola is very narrow to non-existent and the abdomen appears much narrower than the cephalothorax. The claws may be robust. This species reaches a maximum total body length of about 75 mm (3 inches).

**GENERAL HABITAT:** Complex burrows adjacent to streams or in low areas where the water table is near the surface of the ground.

## SECTION SIX

### BIBLIOGRAPHY AND REFERENCE DOCUMENTS

Burch, J. B. 1975. North American Unionacean Clams (EPA Identification Manual # 11) Mycological Publ., Hamburg, MI pp 1-47.

Cooperative Extension Service, The University of Georgia College of Agriculture and Environmental Sciences. 1992. Georgia's Endangered Animals and Plants. The University of Georgia, College of Agriculture and Environmental Sciences, Athens. 31pp.

Georgia Department of Natural Resources, Wildlife Resources Division, Georgia Natural Heritage Program. 1991. Georgia's Protected Plants. Social Circle. 62pp. plus supplement; also:  
<http://www.dnr.state.ga.us/dnr/wild/> (current)

South Carolina Heritage Trust. 1992. Distributions of Threatened and Endangered Species in South Carolina. South Carolina Heritage Trust, Columbia. 46pp: also:  
[http://www.dnr.state.sc.us/heritage/owa/county\\_species.select\\_county\\_map](http://www.dnr.state.sc.us/heritage/owa/county_species.select_county_map) (current)

South Carolina Wildlife and Marine Resources Department. 1992 South Carolina's Endangered Species Portfolio. South Carolina Wildlife and Marine Resources Department, Columbia. 80pp. also:  
<http://cricket.biol.sc.edu/herb/> (current)

U.S. Fish and Wildlife Service. 1992. Endangered and Threatened Species of the Southeastern United States (The Red Book). Prepared by Ecological Services, Division of Endangered Species, Southeast Region. Government Printing Office, Washington, DC. 1,070pp.

U.S. Fish and Wildlife Service. Current listings, see Web site:  
<http://endangered.fws.gov/wildlife.html#maps>

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APPENDIX A

**Protected Fish Species**

FISH

Atlantic Shortnose Sturgeon

*Acipenser brevirostrum*

FEDERAL LIST

STATE LIST

GEORGIA            SOUTH CAROLINA  
Endangered        Endangered

GEORGIA        SOUTH CAROLINA  
Endangered     Endangered

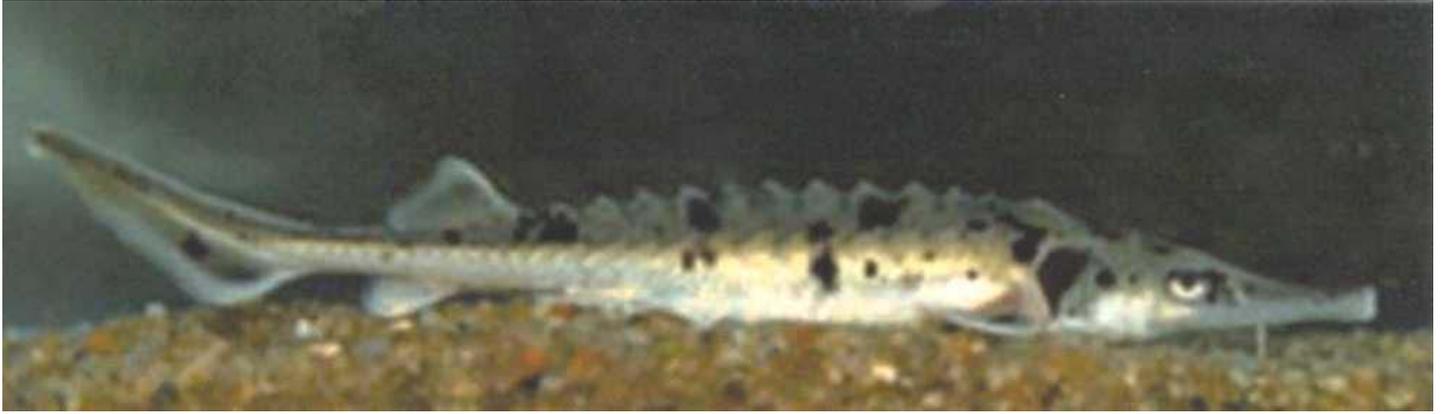


**GENERAL DESCRIPTION:** This long-lived fish is usually less than three feet long, is dark above and light below. The wide mouth is pointed downward beneath a short snout which is not upturned at the tip as in other sturgeon. Distinctive features also include five rows of pointed plates along the sides of the body, fleshy barbels, and blackish viscera. The shortnose is a bottom feeder, consuming shrimp, worms, and stems/leaves of larger aquatic plants.

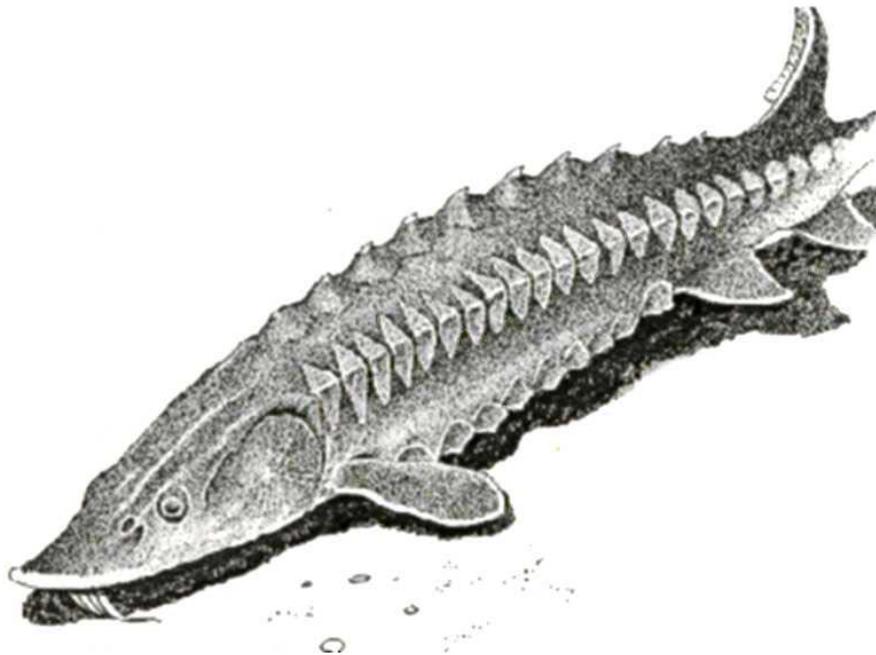
**HABITAT:** This sturgeon lives in lower sections of larger rivers and coastal waters along the Atlantic Coast. It moves upstream in spring to spawn. It has disappeared from much of its former range due to pollution and dams which prevent access to spawning grounds upstream. Known occurrences include the Augusta sector of the Savannah River.

Atlantic Shortnose Sturgeon

Juvenile



Shortnose, showing pointed plates



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FISH

Robust Redhorse

*Moxostoma robustum*

FEDERAL LIST

STATE LIST

GEORGIA  
Concern

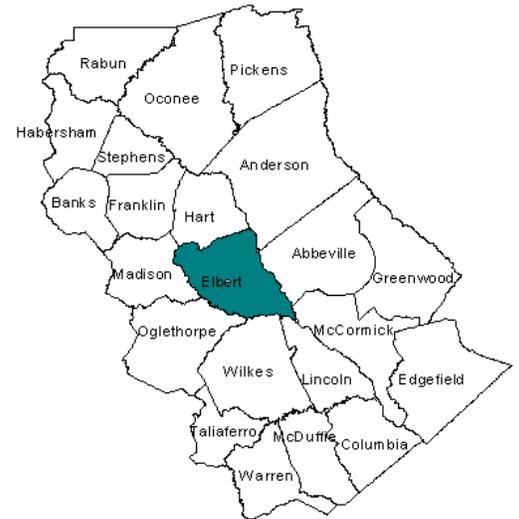
SOUTH CAROLINA  
Unlisted

GEORGIA  
Endangered

SOUTH CAROLINA  
Unlisted



© B.J. Freeman 1997



**GENERAL DESCRIPTION:** A large, long-lived member of the redhorse sucker group averaging 25 inches and weighing 9 pounds, but can exceed 29 inches and 17 pounds. This fish is smokey colored with yellow belly and rose-colored paired and caudal fins. The margin of the lower lip is nearly straight. Adults feed almost exclusively on bivalves including Asiatic *Corbicula*. A similar species, adult brassy jumprocks, has nearly straight lips but dusky-colored fins and is generally smaller.

**HABITAT:** Non-spawning adults prefer deeper, moderately swift outside river bends while breeding fish are found in shallow to moderately deep gravel deposits with clear water. The former range extended from North Carolina to Georgia in larger Atlantic slope rivers. This fish was rediscovered in 1991 in the Oconee River, and population studies and reintroductions are currently underway.

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FISH

Whitefin Shiner

*Cyprinella nivea*

FEDERAL LIST

STATE LIST

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted



WHITEFIN SHINER PHOTO BY STEVEN ELLIS

HABITAT: Medium streams with gravel, cobble, and sand substrates

FISH

Banded Darter

*Etheostoma zonale*

FEDERAL LIST

STATE LIST

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted

GEORGIA  
Unlisted

SOUTH CAROLINA  
Unlisted



PHOTO BY G.W. SNEEGRASS AND KANSAS AQUATIC IMAGES

HABITAT: Large to medium streams with bedrock or cobble substrate. Upper Savannah River reaches in South Carolina; likely extirpated in that area.

APPENDIX B

**Uncommon Species  
Identified on the Upper Savannah River Basin**

<b><u>Plant List</u></b>	<b><u>Page</u></b>
<u>Shrubs/trees</u>	
<a href="#"><u>Chinquapin</u></a> ( <i>Castanea pumila</i> )	3
<a href="#"><u>Cucumber tree</u></a> ( <i>Magnolia acuminata</i> )	4
<u>Herbs</u>	
<a href="#"><u>Faded trillium</u></a> ( <i>Trillium discolor</i> )	5
<a href="#"><u>False dill</u></a> ( <i>Trepocarpus aethusae</i> )	6
<a href="#"><u>Pink Lady Slipper</u></a> ( <i>Cypripedium acaule</i> )	7
<a href="#"><u>Trailing arbutus</u></a> ( <i>Epigaea repens</i> )	8
<u>Non-flowering plants</u>	
<a href="#"><u>Adder's-tongue Fern</u></a> ( <i>Ophioglossum vulgatum</i> var <i>pycnostichum</i> )	9

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## Uncommon Plants

Chinquapin      *Castanea pumila*  
(Small deciduous tree)



Found on south-facing open slope, north side of Newford Creek, Lincoln Co.

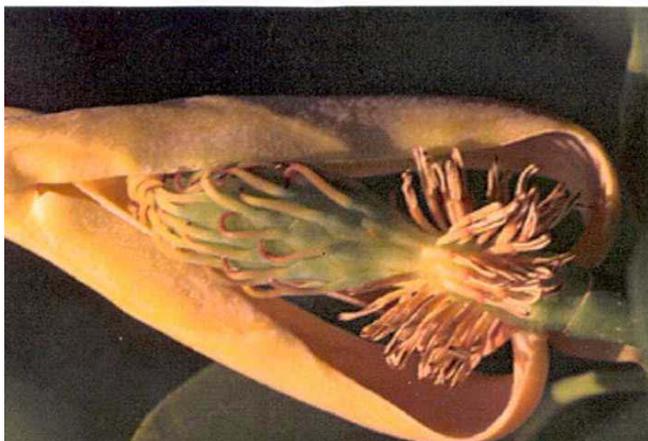
**GENERAL DESCRIPTION:** This small tree is found only infrequently in the Piedmont area of Georgia. The trunk has smooth bark. **Leaves** are similar to those of chestnut, **alternately arranged**, elliptic to obovate, 6-20 cm long, 2-2.5 cm wide with coarse, **bristle-tipped teeth**. The upper surfaces are green and smooth, lower surfaces are densely hairy. **Male flowers** occur in dense, elongated clusters called catkins, 4-15 cm long and sometimes with **female flowers** at the base; the female flowers are usually separate and in clusters of three spiny “balls” which later develop into **spiny fruits** with shiny brown seeds.

**HABITAT:** Open, dry woods with hardwoods and some pine.

[Return to Plant List](#)

## Uncommon Plants

Cucumber tree      *Magnolia acuminata*  
(Small to medium deciduous tree)



Occurrences: Murray Creek,  
Lincoln Co.

*Photos courtesy of Hugh Wilson,  
Herbarium, Texas A & M*

**GENERAL DESCRIPTION:** The deciduous **leaves** tend to be broader above the middle and have pointed tips and tapering bases, 1-3 dm (6-10in) long by 5-18 cm (3-6in) wide. Leaf margins are smooth and only the lower surface is hairy. The bark is a gray-brown color with long, scaly ridges and narrow fissures. **Twigs have encircling stipular scars** associated with the point of leaf attachment and old leaf scars. **Flowers**, which appear in April-May, are bell-shaped, 5-8cm (2-3 in) wide with greenish-yellow petals, and have many stamens and pistils. The **fruit** is cone-shaped with red seeds.

**HABITAT:** Trees are usually along stream banks in fertile soil, usually with other hardwoods.

[Return to Plant List](#)

Uncommon Plants

Faded trillium  
(Perennial monocot)

*(Trillium discolor)*



Found below Thurmond Dam along streams and in adjacent flood plains.

**GENERAL DESCRIPTION:** The **three leaves** of this mottled trillium are similar in size, shape, and general appearance to relict trillium; however the darker green leaf spots are less profuse, there is no central lighter green area, and the flower size and shape is different. **Flower petals are greenish white and spoon-shaped.** (Those of relict trillium are maroon and more linear.) The anthers are about 1/4<sup>th</sup> the length of the petals and are maroon-colored with extended tips measuring about 1 mm. Most plants flower about three-four weeks after relict trillium, usually in early April.

**HABITAT:** Prefers rich, mesic forested areas, especially near streams and on flood plains.

[Return to Plant List](#)

Uncommon Plants

False Dill  
(Annual dicot)

*Trepocarpus aethusae*



Peninsula tip west of Little  
River Bridge, Lincoln Co.  
and Clarks Hill WMA

**GENERAL DESCRIPTION:** A member of the celery family, this fragile-looking plant has **finely divided compound leaves** that somewhat resemble those of dill plants. It grows to about 5-6 dm.. The small, **white-petaled flowers** (a few mm wide) are produced in May and June and occur in funnel-shaped clusters called **umbels**. By August the **narrow, ribbed fruits**, about 8-10 mm long, have turned a greenish black color.

**HABITAT:** Prefers stream and pond margins with somewhat sandy soils in semi-open, young hardwood stands. At Thurmond this plant grows back from the lakeshore high water line and often amidst wind-thrown trees and branches.

[Return to Plant List](#)

## Uncommon Plants

Pink Lady Slipper  
(Herbaceous monocot)

*Cypripedium acaule*



Found among 30-40 yr old pines, north-facing slope, south side of Newford Creek, & Broad River area Lincoln Co.

**GENERAL DESCRIPTION:** The light green, ribbed, **broadly tongue-shaped leaves** of this orchid occur at the base of the plant and remain after flowering until cold weather. Somewhat pubescent, they are 10-24 cm long, 3-14 cm wide. The **pink, sack-like flower**, up to 4.5 dm tall, arises between the leaves and has an **over-arching bract** that remains after the flower has died. Only the lip of the flower is actually pink; the remaining parts are green to greenish purple. Flowers appear in April to May and have an over-all size about 4-8 cm long by 3-5 cm wide. The fruit is an elliptical capsule about 3-4.5 cm long.

**HABITAT:** Prefers moderately mature pine woods with semi-open canopy and dry soil.

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## Uncommon Plants

Trailing arbutus                      *Epigaea repens*  
(Herbaceous to woody trailing dicot)



Found in mixed pine-hard woods on north-facing slope, McCormick Co..

**GENERAL DESCRIPTION:** This **woody** member of the blueberry family appears somewhat herbaceous and **vine-like** as it spreads along the ground. **The hairy stems have hairy, evergreen leaves** that are alternate and oval-shaped, 3-8 cm (1-3in) long by 1-4cm (1-1 1/2in) wide. The leaf margins are smooth, the leaf tip has a short stiff hair, and the base is more-or-less heart-shaped. One cm wide **pink to white flowers** smell very sweet and appear in late February through March. These are clustered and tubular-shaped with five spreading lobes and 10 stamens. The **fruit** is a capsule with whitish pulp and many small seeds.

**HABITAT:** Dry, mixed pine-hardwoods in sandy to rocky soils.

[Return to Plant List](#)

Uncommon Plants

Adder's-tongue Fern  
(Perennial)

*Ophioglossum vulgatum var pycnostichum*



Found in wet, open hardwood areas near entrance gate at Bussey Point, Lincoln Co., and in stream floodplains in several McCormick Co. locations.

GENERAL DESCRIPTION: Each plant, usually about 11-20 cm high, has one yellow-green, broadly **tongue-shaped leaf**, 5-8 cm by 3-5 cm. Leaves have an unusual, net-like arrangement of veins which are not easily seen. The **spore-producing part** appears as a linear projection from the base of the leaf and extends about the length of the leaf above the leaf itself. Plants begin to appear in late March and die back by mid-June. Not all leaves have the spore-producing segment and without it, they may somewhat resemble young green-brier leaves.

HABITAT: Low-lying, but not wet hardwood areas with a semi-open canopy are the preferred habitat. The populations at Russell Creek are in medium-aged hardwoods on a gentle slope with areas that appear to hold water for a short time after a rain.

[Return to Plant List](#)