
Biodiversity Work Group Report: Appendices

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The following table explains the Natural Heritage ranking codes used for Global (G), National (N), and State (S) status of individual species throughout this document. Source: UNEP World Conservation Monitoring Center website, http://www.unep-wcmc.org/index.html?http://www.unep-wcmc.org/species/plants/status_tnc.htm~main ; accessed June, 2004.

Natural Heritage Rank	Definition
GX, NX, SX	presumed extinct (not located despite extensive searches)
GH, NH, SH	possibly extinct (or h historical occurrence (still some hope of discovery)
G1, N1, S1	critically imperilled (typically five or fewer occurrences or 1,000 or fewer individuals)
G2, N2, S2	imperilled (typically six to twenty occurrences or 1,000-3,000 individuals)
G3, N3, S3	vulnerable (rare; typically 21 to 100 occurrences or 3,000 to 10,000 individuals)
NR, SR, N?, S?	Recorded within nation or state, but local status not available; when combined with global rank of G1 to G3, local status is given in this book as Indeterminate
G4, N4, S4	Apparently secure (uncommon but not rare; some cause for long-term concern, usually more than 100 occurrences and 10,000 individuals)
G5, N5, S5	Secure (common, widespread and abundant)

A: INITIAL LIST OF IMPORTANT SITES

Table A-1: Initial List of Important Sites (Albemarle County Locations of Special Plant Communities, Unusual Habitats, or Species Rare to Scarce in the County)
Rivanna Bald Eagle Nest Site. On the south side of the Rivanna River opposite Glenmore, a rare Bald Eagle nest was found. (USGS Quadrangle: Simeon)
Brush Mountain Rock Face. Brush Mountain Rock Face is an outstanding example of a south-facing, open granite-slope plant community located 3.1 miles northeast of Faber. The only known station for <i>Minuartia glabra</i> (Appalachian Sandwort) is found here. A small colony of <i>Cheilanthes tomentosa</i> (wooly lip-fern), one of only two known county sites is found nearby. (USGS Quadrangle: Schuyler)
Bucks Elbow. Bucks Elbow Mountain has greenstone cliffs and open rock faces on the southeast side which support two colonies of <i>Potentilla arguta</i> (tall cinquefoil). This plant is rare in Virginia where it is on the edge of its known range and this site is the only one known in Albemarle County. This is also the location of the only known County occurrence of the pine snake (<i>Pituophis melanoleucus</i>). (USGS Quadrangle: Crozet)
Bungletown. Bungletown, at the east foot of the Fan Mountains, is the site of the only known native occurrence of <i>Rhododendron maximum</i> (great laurel) in the county. It is found in a small colony in the woods on the upper Sheepneck Branch. (USGS Quadrangle: Schuyler)
Buzzard Rock. “Buzzard Rock,” on the east side of Dudley Mountain, is the site of an outstanding open granite rock-face plant community (lithophytes). Other parts of Dudley mountain are interesting both for plant communities and birds. Hairy lip-fern (<i>Cheilanthes lanosa</i>), Rock selaginella (<i>Selaginella rupestris</i>), and Appalachian phacelia (<i>Phacelia dubia</i>) occur here. (USGS Quadrangle: Alberene)
Campbell Wetlands 1, 2. Near Campbell, in a wooded area northwest of the railroad, is the only county occurrence of the beautiful <i>Polemonium reptans</i> (Jacob’s Ladder), found along with many spring ephemerals. About 0.7 mile northeast of Campbell is a small marsh containing <i>Caltha palustris</i> (marsh marigold), <i>Nuphar luteum</i> (spatterdock), and <i>Carex stricta</i> (stool sedge). The only known occurrence in the county of <i>Carex shortiana</i> (Short’s sedge) is also in this area. (USGS Quadrangle: Keswick)
Chalk Rock. Chalk Rock is an exemplary open rock plant community on the south end of Chalk Mountain, 2.75 miles north of Coveseville. The lovely orchid <i>Hexalectris spicata</i> (crested coralroot) and the rock fern <i>Cheilanthes tomentosa</i> (wooly lip-fern) occur nearby; both are known from only one other station in the county. (USGS Quadrangle: Coveseville)
Doyles/Moormans River Confluence. The Doyles River/Moormans River confluence and adjacent floodplain and wetland areas are excellent bird habitat. In winter, swamp and tree sparrows, snipe; in summer, willow flycatchers. (USGS Quadrangle: Brown’s Cove)
Fan Mountains 1-2. The Fan Mountains are a rich, mostly wooded region with many ravines and stream valleys. This is the only known site in the county for <i>Lygodium palmatum</i> (climbing fern). The area is rich in ferns including <i>Dryopteris celsa</i> (log-fern), <i>Dryopteris goldiana</i> (Goldies fern), and <i>Diplazium pycnocarpon</i> (glade fern), the unusual closed gentian, <i>Gentiana clausa</i> , is also found here. (USGS Quadrangle: Coveseville)
Hybrid Fern <i>Dryopteris x bootii</i> Site. A rare in Albemarle fern hybrid, <i>Dryopteris x bootii</i> is found here. (USGS Quadrangle: Charlottesville West)
Green Mountain near Estouteville. Green Mountain, a low (about 750 feet high) ridge in southern Albemarle, has a number of interesting sites. Near “Estouteville”, two stations are found for <i>Ribes rotundifolium</i> (smooth gooseberry), the only records in the county east of the Blue Ridge. Also found nearby is a colony of <i>Dryopteris celsa</i> (log-fern). (USGS Quadrangle: Alberene)
Hardware River Bluffs. Among a number of north to northeast facing bluffs along the Hardware river, one of the most interesting is located 2 miles south of Carter’s Bridge. This wooded bluff has <i>Tsuga canadensis</i> (eastern hemlock), <i>Pinus rigida</i> (pitch pine), <i>Pinus pungens</i> (table-mountain pine), and the scarce in the Piedmont shrub <i>Comptonia peregrina</i> (sweet fern). (USGS Quadrangle: Alberene)
Henleys Pond, Beaver Creek Reservoir, Lake Albemarle. This area contains three lakes, Henley’s Pond, Beaver Creek Reservoir, and Lake Albemarle. These lakes and the surrounding fields and woods are prime bird habitat in all seasons. (USGS Quadrangle: Crozet)
Jefferson Mill. A north-facing, wooded Kalmia bluff on the Hardware River 0.7 mile above the Jefferson Mill. <i>Xerophyllum asphodoloides</i> (turkey beard) is found here. (USGS Quadrangle: Scottsville)



<p>Key West. Another site along the North Fork Rivanna lies between Red Bud Creek and the north end of the bluffs at the Key West subdivision. This is a good spring wildflower area and is another site for <i>Delphinium tricornae</i> (dwarf larkspur). (USGS Quadrangle: Charlottesville East)</p>
<p>McCullough Site. The McCullough site is an area of south-facing hardwoods bluffs on the James River running about 0.5 miles upstream from a point 3.2 miles west of Warren. Two colonies of <i>Quercus muhlenbergii</i> (chinquapin oak), the only two stations in the county, are found within a half mile of each other on the river here. (USGS Quadrangle: Esmont)</p>
<p>Monticello Mountain Bluffs. Another outstanding site is the rich, wooded, north facing bluff of Monticello Mountain on the Rivanna River. A rich spring display of wildflowers includes <i>Xanthorhiza simplicissima</i> (yellow root), <i>Mertensia virginica</i> (bluebells), and <i>Staphylea trifoliata</i> (bladder-nut). The unusual sedge <i>Carex albursina</i> is also found here. (USGS Quadrangle: Charlottesville East)</p>
<p>Moormans River Bluffs 1,2. North facing bluffs along the Moorman's River west of Ridge Road. In a seep under the hemlocks, the wild northern white violet, <i>Viola mackloskeyi</i>, is found. The beautiful purple flowering raspberry, <i>Rubus odoratus</i>, is found downstream from the bluffs. (USGS Quadrangle: Free Union)</p>
<p>Mount Alto Bluffs. Mount Alto bluff, a north-facing pine-hardwoods-heath association on the Rockfish River 3 miles southeast of Schuyler. <i>Rhododendron catawbiense</i> (Catawba rhododendron), <i>Xerophyllum asphodeloides</i> (turkey beard), <i>Dirca palustris</i> (leatherwood), <i>Lycopodium tristachyum</i> (slender groundpine), <i>Waldsteinia fragarioides</i> (barren strawberry, found at only one other station in the county) all occur at this site. Both <i>Pinus pungens</i> (table- mountain pine) and <i>Pinus rigida</i> (pitch-pine). This is a superb site. (USGS Quadrangle: Schuyler)</p>
<p>North Fork Cunningham Creek. East of Woodridge several branches of the North Fork Cunningham Creek provide sites for several Albemarle plant rarities. This is the only known county station for <i>Veratrum virginicum</i> (bunch-flower) and <i>Orontium aquaticum</i> (golden- club). The very scarce orchid <i>Malaxis unifolia</i> (green adder's-mouth) also occurs here. (USGS Quadrangle: Simeon)</p>
<p>North Fork Rivanna South of Proffit Road. Probably the most outstanding wildflower site in Albemarle County is the 1.85 mile long, northwest facing wooded bluff and floodplain along the North Fork Rivanna below the Route 649 bridge. The display of spring ephemerals here is fantastic. Several colonies of <i>Trillium sessile</i> (toad trillium--the only known county occurrence) and <i>Delphinium tricornae</i> (dwarf larkspur--one of only three county occurrences) are found here. Three very scarce ferns, <i>Asplenium bradleyi</i> (Bradley's spleenwort--only known county station), <i>Asplenium pinnatifidum</i> (pinnatifid spleenwort), and <i>Asplenium x trudellii</i> (Trudell's spleenwort) occur here on quartzite cliffs upslope. This is also a important area for birds. (USGS Quadrangle: Charlottesville East)</p>
<p>North Rivanna Flood Plain and Piney Mountain. This area near the GEFanuc Facility, north of Chris Greene Lake and south of Piney Mountain, includes flood plain of the North Rivanna River and associated slopes. Prothonotary warblers, very rare in Albemarle County, found singing as if on territory during nesting season. An unusual sedge, <i>Carex hirtifolia</i> is found near the river. (USGS Quadrangle: Earlysville)</p>
<p>Pinkerton Slash. Pinkerton "Slash" is a small swamp bordered by a marshy area located off Route 633, 1.1 miles southwest of South Garden. <i>Rhus vernix</i> (poison sumac) (one of only two known stations in the county), <i>Leucothoe racemosa</i> (swamp fetter-bush) (only known county station), <i>Maianthemum canadense</i> (Canada May-flower--a mountain species), and the rare in the county orchid <i>Platanthera peramoena</i> (purple fringeless orchid) are all found here. (USGS Quadrangle: Coveseville)</p>
<p>Power Line at 618 North East of Woodridge. Powerline and adjacent areas south of Route 618 near the Albemarle-Fluvanna boundary. Many interesting wet soil plants including <i>Lobelia georgiana</i> (lobelia), only county record, and <i>Viburnum nudum</i> (southern wild raisin). (USGS Quadrangle: Simeon)</p>
<p>Preddy Creek Wetlands (see also Earlysville). A long stretch of discontinuous Preddy Creek "wetlands", rather unusual in Albemarle County, runs from Three Forks southwest to Gilbert. Slightly northeast of this wetland is a small colony of <i>Quercus imbricaria</i> (shingle oak) for which this is the only known extant occurrence. (USGS Quadrangle: Barboursville)</p>
<p>Preddy Creek Wetlands (see also Barboursville). The Preddy Creek "wetlands" continue south from Gilbert to Turkey Run. (USGS Quadrangle: Earlysville)</p>
<p>Ragged Mountains and Reservoir. The Ragged Mountain area, including Hickory Hill and the Charlottesville (Ragged Mountain) Reservoir, provide a large mostly wooded area which supports a great diversity of migrant and nesting birds. Wood frogs, wood otter, and prothonotary warblers have been found in this region. Two ferns scarce in Albemarle County, <i>Diplazium pycnocarpon</i> (glade fern) and <i>Dryopteris celsa</i> (log-fern) are found in these mountains. (USGS Quadrangle: Charlottesville West)</p>
<p>Rivanna Bluffs below Buck Island Creek. Below the mouth of Buck Island Creek and northeast of Route 53, a steep northwest facing bluff on the Rivanna River provides an exemplary example of a Piedmont hemlock bluff.</p>



<p><i>Xerophyllum asphodeloides</i> (turkey beard), the ferns <i>Asplenium pinnatifidum</i> (Pinnatifid spleenwort) and <i>Asplenium trudellii</i> (Trudell's spleenwort), the scarce in the Virginia Piedmont clubmoss <i>Lycopodium tristachyum</i> (slender ground pine), and <i>Arabis lyrata</i> (lyreleaf rockcress), which makes its only Albemarle appearance here. The only known apparently native loblolly pine (<i>Pinus taeda</i>), a 34" DBH, approximately 135 year-old tree, is located in an adjacent ravine. Some of the pitch pines (<i>Pinus rigida</i>) in the same area seem to have loblolly genes. (USGS Quadrangle: Boyd Tavern)</p>
<p>Rock Island. Rock Island is a small wooded island in the James River 0.9 miles downstream from Warren. One of only two county stations for <i>Jeffersonia dyphylla</i> (twin-leaf) is found here, and north-facing cliffs support the county's only known station for <i>Heuchera villosa</i> (hairy heuchera). (USGS Quadrangle: Esmont)</p>
<p>Polo Grounds Salamander Crossing. Spotted Salamander crossing at Polo Grounds Road, about 100 yards in from route 29. Seasonally wet areas near fields. (USGS Quadrangle: Charlottesville East)</p>
<p>Scotland Farm Area. Scotland Farm Pond and several other farm ponds in the same general area are probably the best sites in the county for water and shore birds. (USGS Quadrangle: Esmont)</p>
<p>South Rivanna Dam Area 1-2. Two areas adjacent to the South Fork Rivanna River Dam are of interest. An abandoned quarry north of the dam is the site of two ferns rare in Albemarle County, <i>Lycopodiella appressa</i> (southern bog clubmoss) and <i>Lycopodiella inundata</i> (northern bog clubmoss), with the possibility of a hybrid of these. Also the unusual <i>Utricularia gibba</i> (bladderwort) is found as the second Albemarle station. Near the base of the dam, the rare <i>Triadenum walteri</i> (Walter's St. Johns-wort), <i>Sagittaria graminea</i> (grass-leaved arrow-head), and <i>Amorpha fruticosa</i> (indigo) are found. (USGS Quadrangle: Charlottesville East)</p>
<p>Southern Albemarle Mountains. The large area encompassing the Mill Mountain-Castle Rock-Moses Mountain-Heards Mountain-Boaz Mountain group--a mostly wooded, mountainous region. Some rich, wooded, north-facing slopes and ravines harbor <i>Dryopteris goldiana</i> (Goldies fern), <i>Veratrum parviflorum</i> (small-flowered bunch-flower), <i>Rubus odoratus</i> (purple flowering raspberry), <i>Aristolochia macrophylla</i> (Dutchman's pipe), and the two orchids <i>Corallorhiza maculata</i> (spotted coralroot) and <i>Corallorhiza wisteriana</i> (Spring coralroot). The very small and rare daisy-leaved grape-fern (<i>Botrychium matricariaefolium</i>) is found here as the only known station in the county east of the Blue Ridge. In addition to this wealth of flora, this region has a large diversity of nesting wood warblers including: <i>Parula americana</i> (Northern Parula), <i>Helmitheros vermivora</i> (Worm-eating Warbler), <i>Dendroica virens</i> (Black-throated Green Warbler), <i>Dendroica cerulea</i> (Cerulean Warbler), <i>Oporornis formosus</i> (Kentucky Warbler), and possibly <i>Vermivora pinus</i> (Blue-Winged Warbler). The only nesting occurrence east of the Blue Ridge for the beautiful Rose-Breasted Grosbeak (<i>Pheucticus ludovicianus</i>) is in these mountains. The only county occurrence of the diploid species of the gray tree frog (<i>Hyla crysoscelis</i>) is suspected in this area. There has been confirmed breeding of Allegheny woodrats (<i>Neotoma magister</i>) in this area. (USGS Quadrangle: Coveseville)</p>
<p>Sugar Hollow Reservoir. Old forest near Sugar Hollow Reservoir. Good birding habitat for species including Blue-winged and Kentucky warblers. (USGS Quadrangle: Brown's Cove)</p>
<p>Turkey Run. A Piedmont-rare Great Blue Heron rookery is located here. (USGS Quadrangle: Earlysville)</p>
<p>Warren Floodplain at Donegal Farm. Donegal Farm and Hatton Grange at Warren provide a floodplain site on the James River. This site includes a three-quarter mile long wet meadow with marshy strips. Excellent habitat for wintering birds, with large numbers of song (<i>Melospiza melodia</i>) and swamp (<i>Melospiza georgiana</i>) sparrows. The wet areas with many grasses and sedges are an outstanding site for common yellowthroat (<i>Geothlypis trichas</i>) and prothonotary warblers (<i>Protonotaria citrea</i>) in the summer. (USGS Quadrangle: Esmont)</p>
<p>Wooded River Bluffs. The wooded bluffs along the Moormans, Mechums, and Rivanna Rivers constitute important habitat for birds and for flowering plants. (USGS Quadrangle: Charlottesville West)</p>
<p>Woolen Mills. Across the Rivanna River from the old Woolen Mills on a rock outcrop in the woods is a colony of <i>Rhus aromatica</i> (fragrant sumac) the only known occurrence in the county. (USGS Quadrangle: Charlottesville East)</p>



B: AN ANNOTATED LIST OF THE MAMMALS OF ALBEMARLE COUNTY

Table B-1: Mammals of Albemarle County								
Common Name	Genus	species	G	N	S	County Status	Habitat	Status Description
Virginia Opossum	Didelphis	virginiana	G5	N5	S5	common	Wide variety; prefers wooded lowlands interspersed with pastures, fields, brushy fencerows. Often forages near rivers, lakes, streams.	Common throughout County.
Masked Shrew	Sorex	cinereus	G5	N5	S5	uncertain	Wide variety of habitats; prefers moist, mixed woods with moss-covered rocks and decaying logs. Also found in grassy fields, swamps, dry upland fields.	This species is found in the mountains of western VA, and is possible in western Albemarle. Can be common in good habitat, but is likely rare or absent from the County.
Southeastern Shrew	Sorex	longirostris	G5	N5	S5	likely uncommon	Prefers moist woods or fields, also brushy thickets, young forest with dense honeysuckle and herbaceous ground cover.	Usually found below 1500 feet; studies in VA indicate this species to be uncommon and widely scattered; likely uncommon to scarce in County.
Smoky Shrew	Sorex	fumeus	G5	N5	S5	uncertain	Cool, moist mountain forests with deep leaf litter. Prefers hemlock, spruce and damp deciduous forests; also found in swamps/bogs with moss-covered rocks and logs.	Possibly occurs in the mountains of western Albemarle. Can be abundant in good habitat, but likely scarce in the County.



Pygmy Shrew	Sorex	hoyi	G5	N5	S3	likely uncommon	Prefers well-drained sites in deciduous woodlands with minimal understory; slopes or tops of ridges above streams; most often found in deep leaf litter or decaying logs.	Occurs statewide but densities are difficult to determine. Likely uncommon to rare in the County.
Least Shrew	Cryptotis	parva	G5	N5	S5	common	Prefers open, grassy fields.	Common throughout County in suitable habitat.
Northern Short-tailed Shrew	Blarina	brevicauda	G5	N5	S5	very common	Wide variety; prefers thick leaf litter of moist woodlands. Often found also in fields, thickets, and is the most likely shrew to enter buildings.	Very common throughout County.
Eastern Mole	Scalopus	aquaticus	G5	N5	S5	very common	Almost any area with well-drained loam or sandy soil. Fields, lawns, gardens, deciduous and coniferous forests.	Very common throughout County, except in areas of heavy clay soils.
Hairy-tailed Mole	Parascalops	breweri	G5	N5	S5	scarce	Well-drained soils above 2000 feet. Prefers forested areas with thick vegetation; also found in cultivated fields, grassy areas, and rhododendron thickets.	Found in western and southern portions of the County in suitable habitat.
Star-nosed Mole	Condylura	crinata	G5	N5	S3	likely rare	Wet meadows, marshes, and low, wet areas near streams and lakes.	Rare in County due to minimal habitat.



Little Brown Myotis	Myotis	lucifugus	G5	N5	S5	common	Colonial; inhabits caves and mines in winter. Summer: buildings, hollow trees, under loose bark, cliffs, bridges, etc. Maternity colonies most often are in man-made structures.	Common throughout County in warm months; will travel long distances to roost in caves during winter. Very sensitive to organochlorine insecticides and other pollutants.
Northern Myotis	Myotis	septentrionalis	G4	N4	S3	likely scarce	Caves, mines, buildings, under loose bark, hollow trees, etc. Will roost singly in cracks and crevices; will also mix with other bats in caves.	Uncommon throughout VA; likely scarce in County.
Indiana Bat	Myotis	sodalis	G2	N2	S1	unlikely	federally and state endangered	Most often in caves; also mines, buildings, hollow trees, under loose bark, etc.
Small-footed Myotis	Myotis	leibii	G3	N3	S1	unlikely	Most often found in caves in forested areas; also in mines, under bridges, and sometimes in buildings	Albemarle is on the eastern edge of this species' range; in VA it has only been recorded in a few locations in the western mountains (one record is from the piedmont of Maryland). Likely rare or absent from County.
Silver-haired Bat	Lasionycteris	noctivagans	G5	N5	S3	scarce	Usually solitary; prefers to roost near water in hollow trees or under bark of old trees. Migratory - most individuals breed in northern US and migrate southward in the fall.	Scarce in County; most likely to be found during cooler months.
Eastern Pipistrelle	Pipistrellus	subflavus	G5	N5	S5	common	Hibernates in caves and rock crevices. Maternity colonies in warmer months are usually in buildings or hollow trees.	Widespread and common to uncommon in County during warmer months.



Big Brown Bat	Eptesicus	fuscus	G5	N5	S5	uncommon	Wide habitat preferences; prefers buildings, caves, hollow trees. Most often seeks buildings for winter roosts and maternity colonies.	Widespread though uncommon throughout County.
Evening Bat	Nycticeius	humeralis	G5	N5	S4	uncertain	Hollow trees, bark crevices, buildings, bridges; prefers woodland areas. Does not inhabit caves. Migratory, although specifics are poorly understood.	Albemarle is on the western edge of this species' range. It prefers low elevation and is possible in the County, most likely in the eastern portion.
Eastern Red Bat	Lasiurus	borealis	G5	N5	S4	common	Deciduous woods, orchards; preferably near water. Solitary; seldom inhabits caves. Often hangs from tree or shrub branches.	Widespread throughout County; often forages for insects over water or above outdoor lights. Migratory, but may overwinter here.
Hoary Bat	Lasiurus	cinereus	G5	N5	SU	rare	Prefers coniferous forests, or conifer patches in deciduous forest; often roosts hanging from a branch. Solitary; seldom found in caves. Migratory - breeds in northern US and Canada; winters further south.	Rare in County; most records from western portion.
Eastern Cottontail	Sylvilagus	floridanus	G5	N5	S5	very common	Primarily in disturbed areas: old fields, thickets, brushy fencerows, woodland edges. Escape cover is the most important element of good habitat.	Widespread and very common throughout County in open, brushy, and cultivated areas.



Appalachian Cottontail (formerly Sylvilagus transitionalis)	Sylvilagus	obscurus	G4	N4	S4	uncertain	Prefers higher elevations of the Appalachian Mountains; woods, brush, rhododendron thickets. Found in thicker wooded cover than eastern cottontail.	Albemarle County is on the eastern edge of this species' range. Could possibly be found in western parts of County. Visually, nearly indistinguishable from eastern cottontail.
Eastern Chipmunk	Tamias	striatus	G5	N5	S5	common	Deciduous forest, brushy areas with crevices, logs, rock piles for refuge. Solitary except during breeding season.	Widespread and common throughout County.
Woodchuck	Marmota	monax	G5	N5	S5	common	Prefers open areas near woodland edge; grassy fields, meadows, railroad and highway right-of-ways; sometimes under buildings.	Widespread and common throughout County in suitable habitat.
Eastern Gray Squirrel	Sciurus	carolinensis	G5	N5	S5	very common	Dense hardwood and mixed hardwood/coniferous forests, especially in ravines and bottomlands. Also inhabits woodlots, parks, and urban areas with suitable trees.	Widespread and very common throughout County. Forestry practices such as removal of old trees and establishment of pine stands are detrimental.
Eastern Fox Squirrel	Sciurus	niger	G5	N5	S4	rare	Prefers mature forest stands of oak, hickory, pine with minimal understory.	Encountered very rarely in the County; usually in western and southern portions.
Red Squirrel	Tamiasciurus	hudsonicus	G5	N5	S5	rare	Prefers coniferous woodlands and high-elevation mountainous areas.	Rarely encountered in the County; most likely to occur in western portion.



Southern Flying Squirrel	Glaucomys	volans	G5	N5	S5	common	Prefers mature hardwood forests with large trees for nesting/roosting cavities; also mixed hardwood/coniferous forests and residential areas; may nest in buildings and bird houses.	Widespread and common throughout County in suitable habitat. Rarely encountered due to secretive and nocturnal habits.
American Beaver	Castor	canadensis	G5	N5	S5	uncommon	Streams, swamps, lakes in wooded areas.	Widespread though uncommon (locally common in some areas) throughout County.
Eastern Harvest Mouse	Reithrodontomys	humulis	G5	N5	S5	uncommon	Old fields, brushy borders of cultivated fields, broomsedge, short grass with interlaced thickets and tangles.	Not commonly encountered, probably due to loss of preferred habitat to extensive pasture establishment of recent decades.
Deer Mouse	Peromyscus	maniculatus	G5	N5	S5	Likely rare	Prefers cool, moist forests of western and northern VA.	Could possibly be found in the mountains of western portion of County.
White-footed Mouse	Peromyscus	leucopus	G5	N5	S5	very common	Hardwood and mixed hardwood/coniferous forest, field edges, thickets, brushy fencerows.	Very common and widespread throughout County. Important prey species for many predators. Prefers nest sites above ground, sometimes in trees or buildings.
Golden Mouse	Ochrotomys	nuttalli	G5	N5	S4	scarce	Prefers forested lowlands and floodplains with thick undergrowth, especially vines such as greenbrier and honeysuckle. Arboreal; often climbs vines to get to nest sites in trees.	Possible in lowland areas, most likely in southern and eastern Albemarle.



Allegheny Woodrat	Neotoma	magister	G3	N3	S3	rare	Deciduous forest, talus slopes, rocky outcrops, crevices, caves in mountainous areas of state. Often inhabits buildings near suitable habitat.	Reported rarely from southern (Heards Mt.) and western portions of County. Declining over most of its range in eastern US for unknown reasons.
Southern Red-backed Vole	Clethrionomys	gapperi	G5	N5	S5	uncommon	Northern species which extends its range into Appalachian Mountains, generally found above 2500 feet. Prefers cool, damp areas in coniferous forests; also found in deciduous and mixed forests. Fond of moss-covered logs and rocks, rock crevices, shaded slopes.	Likely uncommon in County due to lack of preferred habitat; most likely to be found in mountains of southern and western Albemarle.
Meadow Vole	Microtis	pennsylvanicus	G5	N5	S5	very common	Prefers open grassy areas: old fields, orchards, low moist areas near streams.	widespread and very common in Albemarle; important prey species. One of the most common small mammals in eastern US.
Woodland Vole	Microtis	pinetorum	G5	N5	S5	common	Woodlands, old fields, orchards; prefer moist but well-drained soil or deep humus, combined with heavy ground cover.	Widespread and common in County.
Southern Bog Lemming	Synaptomys	cooperi	G5	N5	S5	likely rare	Generally occurs in mountains west of the Blue Ridge. Variety of habitats including moist meadows, sphagnum bogs, marsh borders, grasslands and weedy fields.	Likely rare in County due to lack of preferred habitat; western mountains of County are most likely area of occurrence.



Common Muskrat	Ondatra	zibethicus	G5	N5	S5	scarce	Fresh and salt water marshes, swamps, edges of ponds, lakes and streams. Prefers areas with bulrushes and/or cattails.	Encountered infrequently in Albemarle due to lack of preferred marshy/swampy habitat.
Black Rat	Rattus	rattus	G5	NE	SE	uncertain	Introduced species. Found mainly near coastal areas; usually in buildings.	Uncertain; likely is absent from County, as it is in most of VA. Easily displaced by more aggressive Norway Rat.
Norway Rat	Rattus	norvegicus	G5	NE	SE	common	Introduced species. Wide variety of habitats from cities to rural areas; usually associated with human activity. Found in and under buildings, trash heaps, barnyards, fields, ditches, dumpsters, etc. Usually found in lower reaches of structures. Aggressive, prolific breeder, and usually considered a pest.	Widespread and common throughout County.
House Mouse	Mus	musculus	G5	NE	SE	very common	Introduced species. Mostly associated with human activity - homes, barns, restaurants, warehouses, etc.; also common in cultivated and abandoned fields, fencerows, swamps, and other natural habitats. Will inhabit all levels of structures. Prolific breeder, unsanitary, and usually considered a pest.	Widespread and very common throughout County.



Meadow Jumping Mouse	Zapus	hudsonius	G5	N5	S5	uncommon	wet meadows, bogs, abandoned grassy fields, thick vegetation near marshes and streams. Hibernates through winter.	Uncommon in County, though present in desirable habitat. Not often observed due to nocturnal and solitary nature.
Porcupine	Erethizon	dorsatum	G5	N5	SX	extirpated	Mixed conifer/hardwood forests and woodlands.	Primarily a northern species, porcupines once inhabited the southern Appalachians. Closest current populations occur in south-central Pennsylvania. Most recent record from Virginia is from Bath County, 1978. Porcupines likely once occupied the woodlands of Albemarle County.
Red Fox	Vulpes	vulpes	G5	N5	S5	common	Open areas and fields interspersed with brush and woodlots. Frequents streams and forest edges.	Common in appropriate habitat in most areas of County.
Gray Fox	Urocyon	cinereoargenteus	G5	N5	S5	common	Forest and brushy areas; woodlots. Prefers more wooded terrain than red fox. Often occurs in suburban areas.	Common and widespread throughout County.
Coyote	Canis	latrans	G5	N5	S5	scarce	Open woodlands, forest edges, semi-open farmland, brushy areas.	Observed infrequently in County; most sightings in eastern Albemarle.
Gray Wolf	Canis	lupus	G4	N4	SX	extirpated	Wide variety of habitats; limited more by availability of prey than landscape requirements. Prefers wilderness habitat with minimal human disturbance.	Gray wolves once inhabited all of Virginia, and undoubtedly roamed and bred in the forests of Albemarle County. They were last recorded in the County in 1850. The last wild wolf reported in Virginia was killed in Tazewell County,



								1910.
Black Bear	Ursus	americanus	G5	N5	S4	scarce	Heavily wooded forests; lowland swamps. Prefers oak-hickory and mixed hardwood forests, and areas of minimal human habitation. Can range over long distances.	Seen occasionally in County, mostly in western and southern portions.
Common Raccoon	Procyon	lotor	G5	N5	S5	common	Stream, river, and lake edges, bottomland, wooded areas. Often takes up residence in barns, attics, and other buildings.	Widespread and common throughout County.
Least Weasel	Mustela	nivalis	G5	N5	S3	rare	Wide variety: woodlands, old fields, brushy fencerows. Northern species whose range extends through Appalachian Mountains.	Albemarle is on the eastern edge of this species' range; anecdotal sightings; likely rare in County, though insufficiently studied.
Long-tailed Weasel	Mustela	frenata	G5	N5	S5	Uncommon	Farmland, woods, swamps. Fond of brushy fencerows and field edges, and areas near water.	Uncommon throughout County, seldom encountered due to nocturnal and secretive nature.
Mink	Mustela	vison	G5	N5	S5	scarce	Banks of streams, rivers, lakes, and in swamps, marshes. Prefers wooded or brushy areas.	Rarely observed in County, though observation opportunities limited due to habitat and nocturnal nature of species.



Northern River Otter	Lutra	canadensis	G5	N5	S4	rare	Aquatic areas: streams, rivers, lakes, swamps. Requires relatively clean water; prefers areas of minimal human disturbance.	Has been reported in Rivanna River, Ragged Mountain Reservoir, and other scattered locations in County. Observed rarely, though apparently increasing in past decade.
Eastern Spotted Skunk	Spilogale	putorius	G5	N5	S4	rare	Found in the mountains of Virginia; prefers open forests with rock piles and rock outcrops. Also found around farms and houses.	Occurs primarily west of the Blue Ridge. Sightings in Albemarle are from western and southern (Heards Mt.) areas.
Striped Skunk	Mephitis	mephitis	G5	N5	S5	common	Prefers upland areas: old fields, farmland, brushy fencerows. Often found near homes and in suburban areas.	Scattered, though common in most areas of County.
Mountain Lion	Puma	concolor	F5	N4	SH	uncertain(federally and state endangered)	Mountains, hilly woodlands, wilderness areas with minimal human disturbance.	Credible sightings recorded in recent years from many counties in western Virginia, including Albemarle. It is possible that this species does roam through the County; most likely occurrence would be in mountains of western portion.
Bobcat	Lynx	rufus	G5	N5	S4	rare	Occurs mostly in the mountainous areas of Virginia; prefers second-growth deciduous forest, rocky areas, river bottom swamps.	Rarely observed in the County, mostly in western portion. Observation opportunities limited due to species' nocturnal, solitary, and extremely secretive nature.



Elk	Cervus	elaphus	G5	N5	SX	extirpated	Open forests with adjacent meadows and fields.	Elk once inhabited much of the eastern US, and likely occurred throughout Albemarle County. The last native elk recorded in Virginia was killed in 1855. Subsequent reintroductions have met with partial success. The last wild elk in Virginia was recorded in Bland County, 1974.
White-tailed Deer	Odocoileus	virginianus	G5	N5	S5	very common	Woodland, semi-open areas, farmland. Often found in residential areas.	Widespread and very common in most areas of County.
American Bison	Bison	bison	G4	N4	SX	extirpated	Eastern bison, a variation of the western bison, were well adapted to woodlands; they occurred in small herds and preferred open valleys of the piedmont and mountains.	Bison were reportedly plentiful around Charlottesville in the early to mid 1700's. They were gradually driven from the East as settlement progressed; the last records in Virginia are from the late 1700's.

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The Virginia Fish and Wildlife Information Service (VA Department of Game and Inland Fisheries) – online database: <http://vafwis.org>

Virginia Natural Heritage Program (VA Department of Conservation and Recreation) – online database: www.dcr.state.va.us/dnh/



C: BIRDS

An Annotated List of the Birds of Albemarle County

Table C-1 Frequency codes for birds in Albemarle County, from Minor and Stevens, 1997.

V	Very common; likely in large numbers in proper habitat at the proper season
C	Common; seen most of the time or in small numbers in proper habitat/season
U	Uncommon; occurs in small numbers or in limited habitat
S	Scarce; seen only a few times each season
R	Rare; occurs irregularly in small numbers
A	Accidental; out of normal range (or for season)
-	Not observed.

Table C-2: Birds of Albemarle County

Common Name	Genus/Species	Extirpated	G	S	Summer Resident Limited to Mountains	Breeds	Spr	Sum	Fall	Winter	Federal Species of Concern	Audubon 2002 Watch List	PIF Priority
Red-throated Loon	<i>Gavia stellata</i>		G5	SNR			R	-	R	R			
Common Loon	<i>Gavia immer</i>		G5	SNR	Yes		S	-	R	R			
Pied-billed Grebe	<i>Podilymbus podiceps</i>		G5	S2B,S3N			U	R	U	U			
Horned Grebe	<i>Podiceps auritus</i>		G5	SNR			S	-	R	R			
Red-necked Grebe	<i>Podiceps grisegena</i>		G5	SNR			R	-	R	R			
Brown Pelican	<i>Pelecanus occidentalis</i>		G4	S1B,S3N			A	-	A	-			
Double-crested Cormorant	<i>Phalacrocorax auritus</i>		G5	S3B,S4N			R	R	R	-			
Magnificent Frigatebird	<i>Fregata magnificens</i>		G5	SNA			-	-	A	-			
American Bittern	<i>Botaurus lentiginosus</i>		G4	S1B,S2N			R	R	R	-			
Least Bittern	<i>Ixobrychus exilis</i>		G5	S3B,S3N			A	A	A	-			
Great Blue Heron	<i>Ardea herodias</i>		G5	S3B,S5N		Yes	U	S	U	U			
Great Egret	<i>Ardea alba</i>		G5	S2B,S3N			S	U	-	-			
Snowy Egret	<i>Egretta thula</i>		G5	S2B,S3N			-	R	R	-			
Little Blue Heron	<i>Egretta caerulea</i>		G5	S2B,S3N			R	S	S	-			



Tricolored Heron	<i>Egretta tricolor</i>		G5	S2B,S3N			-	-	R	-		
Cattle Egret	<i>Bubulcus ibis</i>		G5	SNA			R	-	R	R		
Green Heron	<i>Butorides virescens</i>		G5	S5		Yes	U	C	U	R		
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>		G5	S3B,S4N			R	R	R	R		
Yellow-crowned Night-Heron	<i>Nyctanassa violacea</i>		G5	S2B,S3N			-	R	-	-		
White Ibis	<i>Eudocimus albus</i>		G5	S1B,SNAN			-	R	R	-		
Glossy Ibis	<i>Plegadis falcinellus</i>		G5	S2B,S1N			R	-	-	-		
Black Vulture	<i>Coragyps atratus</i>		G5	S4		Yes	U	U	U	U		
Turkey Vulture	<i>Cathartes aura</i>		G5	S4		Yes	C	C	C	C		
Greater White-fronted Goose	<i>Anser albifrons</i>		G5	SNR			A	-	-	-		
Snow Goose	<i>Chen caerulescens</i>		G5	SNR			R	-	R	R		
Canada Goose	<i>Branta canadensis</i>		G5	S3S4		Yes	C	C	C	C		
Mute Swan	<i>Cygnus olor</i>		G5	SNA			-	-	-	R		
Tundra Swan	<i>Cygnus columbianus</i>		G5	SNR			R	-	R	R		
Wood Duck	<i>Aix sponsa</i>		G5	S5		Yes	U	U	U	S		
Gadwall	<i>Anas strepera</i>		G5	S2B,S3N			S	-	S	S		
Eurasian Wigeon	<i>Anas penelope</i>		G5	SNR			A	-	-	-		
American Wigeon	<i>Anas americana</i>		G5	SNR			S	-	R	R		
American Black Duck	<i>Anas rubripes</i>		G5	S4			U	R	U	U		Yellow
Mallard	<i>Anas platyrhynchos</i>		G5	S4		Yes	C	U	C	C		
Blue-winged Teal	<i>Anas discors</i>		G5	S1B,S2N			U	-	U	R		
Northern Shoveler	<i>Anas clypeata</i>		G5	SNR			R	-	R	R		
Northern Pintail	<i>Anas acuta</i>		G5	S1			R	-	R	R		
Green-winged Teal	<i>Anas crecca</i>		G5	SU			U	-	U	-		
Canvasback	<i>Aythya valisineria</i>		G5	SNR			R	-	-	R		
Redhead	<i>Aythya americana</i>		G5	SNR			R	-	-	R		
Ring-necked Duck	<i>Aythya collaris</i>		G5	SNR			U	-	U	U		
Greater Scaup	<i>Aythya marila</i>		G5	SNR			R	-	-	-		
Lesser Scaup	<i>Aythya affinis</i>		G5	SNR			C	R	S	S		
White-winged Scoter	<i>Melanitta fusca</i>		G5	SNR			R	-	R	R		
Long-tailed Duck	<i>Clangula hyemalis</i>		G5	SNR			R	-	R	R		
Bufflehead	<i>Bucephala albeola</i>		G5	SNR			R	-	S	S		
Common Goldeneye	<i>Bucephala clangula</i>		G5	SNR			S	-	R	R		



Hooded Merganser	Lophodytes cucullatus		G5	SNAB,S4N			U	-	S	U		
Red-breasted Merganser	Mergus serrator		G5	SNR			S	R	R	R		
Common Merganser	Mergus merganser		G5	S1B,S4N			S	-	R	R		
Ruddy Duck	Oxyura jamaicensis		G5	SNR			S	R	S	R		
Osprey	Pandion haliaetus		G5	S4			U	R	U	R		
Swallow-tailed Kite	Elanoides forficatus		G5	SNA			A	-	-	-		
Mississippi Kite	Ictinia mississippiensis		G5	S1B			A	-	-	-		
Bald Eagle	Haliaeetus leucocephalus		G4	S2S3B,S3N		Yes	R	R	R	R		
Northern Harrier	Circus cyaneus		G5	S1S2B,S3S4N			U	R	U	R		
Sharp-shinned Hawk	Accipiter striatus		G5	S3S4	Yes		U	U	U	U		
Cooper's Hawk	Accipiter cooperii		G5	S3B,S3N		Yes	U	U	U	U		
Northern Goshawk	Accipiter gentilis		G5	SNA			?	-	R	-	Yes	
Red-shouldered Hawk	Buteo lineatus		G5	S4		Yes	U	U	U	U		
Broad-winged Hawk	Buteo platypterus		G5	S4		Yes	C	U	U	-		
Red-tailed Hawk	Buteo jamaicensis		G5	S4		Yes	C	C	C	C		
Rough-legged Hawk	Buteo lagopus		G5	SNR			R	-	R	R		
Golden Eagle	Aquila chrysaetos		G5	SHB,S1N			R	-	R	R		
American Kestrel	Falco sparverius		G5	S4		Yes	U	U	U	U		
Merlin	Falco columbarius		G5	SNR			R	-	R	R		
Peregrine Falcon	Falco peregrinus		G4	S1B,S2N			-	-	R	R		
Ring-necked Pheasant	Phasianus colchicus		G5	SNA		Yes	R	R	R	R		
Ruffed Grouse	Bonasa umbellus		G5	S5		Yes	U	U	U	U		
Wild Turkey	Meleagris gallopavo		G5	S5		Yes	U	U	U	U		
Northern Bobwhite	Colinus virginianus		G5	S5		Yes	S	S	S	S		Yes
Clapper Rail	Rallus longirostris		G5	S5			-	-	A	-		
King Rail	Rallus elegans		G4G 5	S2B,S3N			-	-	R	-		
Virginia Rail	Rallus limicola		G5	S2B,S3N			R	-	R	-		
Sora	Porzana carolina		G5	S1B,S2N			R	-	R	R		
Common Moorhen	Gallinula chloropus		G5	S1B,S1N			R	-	-	-		
American Coot	Fulica americana		G5	S1B,S5N			R	-	R	R		
Black-bellied Plover	Pluvialis squatarola		G5	SNR			R	-	R	-		
American Golden-Plover	Pluvialis dominica		G5	SNR			-	-	R	-		Yellow



Semipalmated Plover	Charadrius semipalmatus		G5	SNR			R	-	R	-			
Killdeer	Charadrius vociferus		G5	S5		Yes	C	U	C	S			
American Avocet	Recurvirostra americana		G5	SNAB			-	-	R	-			
Greater Yellowlegs	Tringa melanoleuca		G5	SNR			U	-	S	-			
Lesser Yellowlegs	Tringa flavipes		G5	SNR			U	-	S	-			
Solitary Sandpiper	Tringa solitaria		G5	SNR			C	-	C	-			
Willet	Catoptrophorus semipalmatus		G5	S4			R	-	-	-			
Spotted Sandpiper	Actitis macularia		G5	S2B			C	R	C	R			
Upland Sandpiper	Bartramia longicauda		G5	S1B			R	R	R	-			
Ruddy Turnstone	Arenaria interpres		G5	SNR			-	-	R	-			
Sanderling	Calidris alba		G5	SNR			-	-	R	-			
Semipalmated Sandpiper	Calidris pusilla		G5	SNR			S	-	S	-			
Western Sandpiper	Calidris mauri		G5	SNR			R	-	R	-			
Least Sandpiper	Calidris minutilla		G5	SNR			C	-	S	-			
White-rumped Sandpiper	Calidris fuscicollis		G5	SNR			R	R	R	-			
Baird's Sandpiper	Calidris bairdii		G5	SNR			-	-	R	-			
Pectoral Sandpiper	Calidris melanotos		G5	SNR			R	-	S	-			
Dunlin	Calidris alpina		G5	SNR			-	-	R	-			
Stilt Sandpiper	Calidris himantopus		G5	SNR			-	-	R	-			
Short-billed Dowitcher	Limnodromus griseus		G5	SNR			R	-	R	-		Yellow	
Common Snipe	Gallinago gallinago		G5	SNR			C	-	U	S			
American Woodcock	Scolopax minor		G5	S5		Yes	U	S	U	R		Yellow	Yes
Wilson's Phalarope	Phalaropus tricolor		G5	SNR			R	-	-	-		Yellow	
Red-necked Phalarope	Phalaropus lobatus		G4G 5	SNR			-	-	R	-			
Red Phalarope	Phalaropus fulicaria		G5	SNR			-	-	R	-			
Laughing Gull	Larus atricilla		G5	S3S4			R	-	-	-			
Bonaparte's Gull	Larus philadelphia		G5	SNR			S	-	-	R			
Ring-billed Gull	Larus delawarensis		G5	SNR			S	-	R	-			
Herring Gull	Larus argentatus		G5	S4			R	-	R	R			
Caspian Tern	Sterna caspia		G5	S1B,S2N			R	-	-	-			
Royal Tern	Sterna maxima		G5	S2B			R	-	-	-			
Common Tern	Sterna hirundo		G5	S3B			R	-	R	-			



Forster's Tern	<i>Sterna forsteri</i>		G5	S3B,S3N			R	-	R	-		
Least Tern	<i>Sterna antillarum</i>		G4	S2B			-	-	R	-		
Black Tern	<i>Chlidonias niger</i>		G4	SNR			R	-	R	-		
Black Skimmer	<i>Rynchops niger</i>		G5	S2B,S1N			A	-	-	-		
Rock Pigeon	<i>Columba livia</i>		G5	SNA		Yes	C	C	C	C		
Mourning Dove	<i>Zenaida macroura</i>		G5	S5		Yes	C	C	C	C		
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>		G5	S4		Yes	R	R	R	-		
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>		G5	S5		Yes	C	C	C	-		
Barn Owl	<i>Tyto alba</i>		G5	S3B,S3N			R	R	R	R		
Eastern Screech-Owl	<i>Otus asio</i>		G5	S5		Yes	C	C	C	C		
Great Horned Owl	<i>Bubo virginianus</i>		G5	S5		Yes	U	U	U	U		
Snowy Owl	<i>Nyctea scandiaca</i>		G5	SNR			-	-	-	R		
Burrowing Owl	<i>Athene cunicularia</i>		G4	SNA			-	-	A	-		
Barred Owl	<i>Strix varia</i>		G5	S5		Yes	U	U	U	U		
Long-eared Owl	<i>Asio otus</i>		G5	S1			-	-	R	R		
Short-eared Owl	<i>Asio flammeus</i>		G5	S1B,S3N			-	R	R	R		Yellow
Northern Saw-whet Owl	<i>Aegolius acadicus</i>		G5	S1B,S1N			-	-	R	R		
Common Nighthawk	<i>Chordeiles minor</i>		G5	S4			S	R	U	-		
Chuck-will's-widow	<i>Caprimulgus carolinensis</i>		G5	S4			R	R	-	-		
Whip-poor-will	<i>Caprimulgus vociferus</i>		G5	S5		Yes	U	U	U	-		Yes
Chimney Swift	<i>Chaetura pelagica</i>		G5	S5		Yes	V	V	V	-		
Ruby-throated Hummingbird	<i>Archilochus colubris</i>		G5	S5		Yes	C	C	C	-		
Rufous Hummingbird	<i>Selasphorus rufus</i>		G5	SNA			-	-	A	-		Yellow
Belted Kingfisher	<i>Ceryle alcyon</i>		G5	S5		Yes	C	C	C	C		
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>		G5	S4		Yes	R	R	R	R		Yellow
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>		G5	S5		Yes	C	C	C	C		
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>		G5	S1B,S4N			C	-	C	C		
Downy Woodpecker	<i>Picoides pubescens</i>		G5	S5		Yes	C	C	C	C		
Hairy Woodpecker	<i>Picoides villosus</i>		G5	S5		Yes	U	U	U	U		
Northern Flicker	<i>Colaptes auratus</i>		G5	S5		Yes	C	C	C	U		
Pileated Woodpecker	<i>Dryocopus pileatus</i>		G5	S5		Yes	U	U	U	U		
Olive-sided Flycatcher	<i>Contopus cooperi</i>		G4	SHB			R	-	R	-		



Eastern Wood-Pewee	Contopus virens		G5	S5		Yes	C	C	C	-			
Yellow-bellied Flycatcher	Empidonax flaviventris		G5	S1B			R	-	R	-			
Acadian Flycatcher	Empidonax virescens		G5	S5		Yes	C	C	U	-			
Alder Flycatcher	Empidonax alnorum		G5	S1B									
Willow Flycatcher	Empidonax traillii		G5	S4			S	S	-	-		Yellow	
Least Flycatcher	Empidonax minimus		G5	S4			R	-	R	-			
Eastern Phoebe	Sayornis phoebe		G5	S5		Yes	C	C	C	S			
Great Crested Flycatcher	Myiarchus crinitus		G5	S5		Yes	U	U	U	-			
Eastern Kingbird	Tyrannus tyrannus		G5	S5		Yes	U	U	U	-			
Scissor-tailed Flycatcher	Tyrannus forficatus		G5	SNAB			A	-	-	-			
Loggerhead Shrike	Lanius ludovicianus		G4	S2B,S3N		Yes	R	R	R	R	Yes		
White-eyed Vireo	Vireo griseus		G5	S5		Yes	U	U	U	-			
Blue-headed Vireo	Vireo solitarius*					Yes	U	U	U	-			
Yellow-throated Vireo	Vireo flavifrons		G5	S4		Yes	U	U	U	-			
Warbling Vireo	Vireo gilvus		G5	S4		Yes	R	R	R	-			
Philadelphia Vireo	Vireo philadelphicus		G5	SNR			R	-	R	-			
Red-eyed Vireo	Vireo olivaceus		G5	S5		Yes	V	V	V	-			
Blue Jay	Cyanocitta cristata		G5	S5		Yes	C	C	C	C			
American Crow	Corvus brachyrhynchos		G5	S5		Yes	V	V	V	V			
Fish Crow	Corvus ossifragus		G5	S4		Yes	C	C	C	C			
Common Raven	Corvus corax		G5	S4		Yes	U	U	U	U			
Horned Lark	Eremophila alpestris		G5	S4		Yes	R	R	R	R			
Purple Martin	Progne subis		G5	S5		Yes	S	S	S	-			
Tree Swallow	Tachycineta bicolor		G5	S5		Yes	S	S	U	-			
Northern Rough-winged Swallow	Stelgidopteryx serripennis		G5	S5		Yes	C	C	S	-			
Bank Swallow	Riparia riparia		G5	S3B			S	R	S	-			
Barn Swallow	Hirundo rustica		G5	S5		Yes	C	C	C	-			
Cliff Swallow	Petrochelidon pyrrhonota		G5	S3B		Yes	U	S	S	-			
Carolina Chickadee	Poecile carolinensis		G5	S5		Yes	C	C	C	C			
Black-capped Chickadee	Poecile atricapillus						-	-	R	R			
Tufted Titmouse	Baeolophus bicolor		G5	S5		Yes	C	C	C	C			
Red-breasted Nuthatch	Sitta canadensis		G5	S2B,S4N			U	-	U	U			



White-breasted Nuthatch	<i>Sitta carolinensis</i>		G5	S5		Yes	C	C	C	C			
Brown Creeper	<i>Certhia americana</i>		G5	S3B,S5N			U	-	U	U			
Carolina Wren	<i>Thryothorus ludovicianus</i>		G5	S5		Yes	C	C	C	C			
Bewick's Wren	<i>Thryomanes bewickii</i>	Yes	G5	S1			-	R	-	-	Yes		
House Wren	<i>Troglodytes aedon</i>		G5	S5		Yes	U	U	U	R			
Winter Wren	<i>Troglodytes troglodytes</i>		G5	S2B,S4N	Yes		U	R	U	U			
Sedge Wren	<i>Cistothorus platensis</i>		G5	S1B,S1S2N			-	R	R	R			
Marsh Wren	<i>Cistothorus palustris</i>		G5	S5			R	-	R	R			
Golden-crowned Kinglet	<i>Regulus satrapa</i>		G5	S2B,S5N			U	-	U	U			
Ruby-crowned Kinglet	<i>Regulus calendula</i>		G5	SNR			U	-	U	U			
Blue-gray Gnatcatcher	<i>Poliophtila caerulea</i>		G5	S5		Yes	C	C	C	-			
Northern Wheatear	<i>Oenanthe oenanthe</i>		G5	SNA			-	-	R	-			
Eastern Bluebird	<i>Sialia sialis</i>		G5	S5		Yes	C	C	C	C			
Veery	<i>Catharus fuscescens</i>		G5	S4	Yes	Yes	U	S	U	-			
Gray-cheeked Thrush	<i>Catharus minimus</i>		G5	SNR			S	-	S	-			
Swainson's Thrush	<i>Catharus ustulatus</i>		G5	S1B			U	-	U	-			
Hermit Thrush	<i>Catharus guttatus</i>		G5	S1B,S5N			U	-	U	U			
Wood Thrush	<i>Hylocichla mustelina</i>		G5	S5		Yes	C	C	C	-	Yellow	Yes	
American Robin	<i>Turdus migratorius</i>		G5	S5		Yes	V	V	V	U			
Varied Thrush	<i>Ixoreus naevius</i>		G5	SNA			-	-	-	A			
European Starling	<i>Sturnus vulgaris</i>		G5	SNA		Yes	V	V	V	V			
Gray Catbird	<i>Dumetella carolinensis</i>		G5	S5		Yes	C	C	C	R			
Northern Mockingbird	<i>Mimus polyglottos</i>		G5	S5		Yes	C	C	C	C			
Brown Thrasher	<i>Toxostoma rufum</i>		G5	S5		Yes	U	U	U	R			
American Pipit	<i>Anthus rubescens</i>		G5	SNR			U	-	U	R			
Cedar Waxwing	<i>Bombycilla cedrorum</i>		G5	S4		Yes	U	U	U	U			
Blue-winged Warbler	<i>Vermivora pinus</i>		G5	S2			R	R	R	-	Yellow		
Golden-winged Warbler	<i>Vermivora chrysoptera</i>		G4	S3B	Yes		R	R	R	-	Red		
Tennessee Warbler	<i>Vermivora peregrina</i>		G5	SNR			U	-	C	-			
Orange-crowned Warbler	<i>Vermivora celata</i>		G5	SNR			R	-	R	-			
Nashville Warbler	<i>Vermivora ruficapilla</i>		G5	S1B			U	-	U	-			
Northern Parula	<i>Parula americana</i>		G5	S5		Yes	C	C	C	-			
Yellow Warbler	<i>Dendroica petechia</i>		G5	S5		Yes	C	C	C	A			



Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>		G5	S4	Yes	Yes	C	U	C	-			
Magnolia Warbler	<i>Dendroica magnolia</i>		G5	S2B			C	-	C	-			
Cape May Warbler	<i>Dendroica tigrina</i>		G5	SNR			C	-	C	A			
Black-throated Blue Warbler	<i>Dendroica caerulescens</i>		G5	S4	Yes	Yes	C	U	C	-			
Yellow-rumped Warbler	<i>Dendroica coronata</i>		G5	SNAB,S5N			C	-	C	U			
Black-throated Green Warbler	<i>Dendroica virens</i>		G5	S4	Yes	Yes	C	-	C	-			
Blackburnian Warbler	<i>Dendroica fusca</i>		G5	S2B	Yes		U	R	U	-			
Yellow-throated Warbler	<i>Dendroica dominica</i>		G5	S4		Yes	U	U	R	-			
Pine Warbler	<i>Dendroica pinus</i>		G5	S5		Yes	C	C	C	R			
Prairie Warbler	<i>Dendroica discolor</i>		G5	S5		Yes	C	C	U	-		Yellow	Yes
Palm Warbler	<i>Dendroica palmarum</i>		G5	SNR			U	-	U	R			
Bay-breasted Warbler	<i>Dendroica castanea</i>		G5	SNR			U	-	U	-		Yellow	
Blackpoll Warbler	<i>Dendroica striata</i>		G5	SNR			U	-	U	-			
Cerulean Warbler	<i>Dendroica cerulea</i>		G4	S3S4B		Yes	U	U	U	-	Yes	Red	Yes
Black-and-white Warbler	<i>Mniotilta varia</i>		G5	S5		Yes	U	U	U	-			
American Redstart	<i>Setophaga ruticilla</i>		G5	S5		Yes	C	C	C	-			
Prothonotary Warbler	<i>Protonotaria citrea</i>		G5	S4			S	S	-	-		Yellow	
Worm-eating Warbler	<i>Helminthos vermivorus</i>		G5	S4		Yes	C	C	S	-		Yellow	
Swainson's Warbler	<i>Limnothlypis swainsonii</i>		G4	S2B			-	R	-	-			
Ovenbird	<i>Seiurus aurocapillus</i>		G5	S5		Yes	C	C	C	-			
Northern Waterthrush	<i>Seiurus noveboracensis</i>		G5	S1B			S	-	R	-			
Louisiana Waterthrush	<i>Seiurus motacilla</i>		G5	S5		Yes	C	C	R	-			Yes
Kentucky Warbler	<i>Oporornis formosus</i>		G5	S5		Yes	U	U	R	-		Yellow	Yes
Connecticut Warbler	<i>Oporornis agilis</i>		G4	SNR			-	-	R	-			
Mourning Warbler	<i>Oporornis philadelphia</i>		G5	S1B			R	-	R	-			
Common Yellowthroat	<i>Geothlypis trichas</i>		G5	S5		Yes	C	C	C	R			
Hooded Warbler	<i>Wilsonia citrina</i>		G5	S5		Yes	C	C	C	-			
Wilson's Warbler	<i>Wilsonia pusilla</i>		G5	SNR			S	-	S	-			
Canada Warbler	<i>Wilsonia canadensis</i>		G5	S4	Yes	Yes	U	S	C	-		Yellow	
Yellow-breasted Chat	<i>Icteria virens</i>		G5	S5		Yes	C	C	S	A			
Summer Tanager	<i>Piranga rubra</i>		G5	S5		Yes	U	U	U	-			
Scarlet Tanager	<i>Piranga olivacea</i>		G5	S5		Yes	C	C	C	-			
Western Tanager	<i>Piranga ludoviciana</i>		G5	SNA			-	-	-	A			



Eastern Towhee	<i>Pipilo erythrophthalmus</i>		G5	S5		Yes	C	C	C	U			
Bachman's Sparrow	<i>Aimophila aestivalis</i>		G3	S1B			R	R	-	-	Yes	Red	
American Tree Sparrow	<i>Spizella arborea</i>		G5	SNR			-	-	-	R			
Chipping Sparrow	<i>Spizella passerina</i>		G5	S5		Yes	C	C	C	R			
Field Sparrow	<i>Spizella pusilla</i>		G5	S5		Yes	C	C	C	C			Yes
Vesper Sparrow	<i>Poocetes gramineus</i>		G5	S4		Yes	U	R	U	R			
Lark Sparrow	<i>Chondestes grammacus</i>		G5	SHB			R	-	-	-			
Savannah Sparrow	<i>Passerculus sandwichensis</i>		G5	S3S4B,S4N			U	-	U	S			
Grasshopper Sparrow	<i>Ammodramus savannarum</i>		G5	S4		Yes	U	U	U	R			Yes
Henslow's Sparrow	<i>Ammodramus henslowii</i>	Yes	G4	S1B			R	R	R	-	Yes	Red	Yes
Nelson's Sharp-tailed Sparrow	<i>Ammodramus nelsoni</i>		G5	SNR			R	-	R	-		Red	
Fox Sparrow	<i>Passerella iliaca</i>		G5	SNR			S	-	U	S			
Song Sparrow	<i>Melospiza melodia</i>		G5	S5		Yes	C	C	C	C			
Lincoln's Sparrow	<i>Melospiza lincolni</i>		G5	SNR			R	-	S	-			
Swamp Sparrow	<i>Melospiza georgiana</i>		G5	S1B,S4S5N			U	-	U	S			
White-throated Sparrow	<i>Zonotrichia albicollis</i>		G5	SNR			C	A	C	C			
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>		G5	SNR			U	-	U	U			
Dark-eyed Junco	<i>Junco hyemalis</i>		G5	S4			C	U	C	C			
Lapland Longspur	<i>Calcarius lapponicus</i>		G5	SNR			-	-	R	R			
Snow Bunting	<i>Plectrophenax nivalis</i>		G5	SNR			-	-	R	R			
Northern Cardinal	<i>Cardinalis cardinalis</i>		G5	S5		Yes	V	V	V	V			
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>		G5	S4	Yes	Yes	U	S	U	R			
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>		G5	SNA			A	-	-	A			
Blue Grosbeak	<i>Guiraca caerulea</i>		G5	S5		Yes	U	U	U	A			
Indigo Bunting	<i>Passerina cyanea</i>		G5	S5		Yes	V	V	V	A			
Painted Bunting	<i>Passerina ciris</i>		G5	SNA			-	-	A	-		Yellow	
Dickcissel	<i>Spiza americana</i>		G5	SUB			R	R	R	R		Yellow	
Bobolink	<i>Dolichonyx oryzivorus</i>		G5	S1B			U	-	U	-			
Red-winged Blackbird	<i>Agelaius phoeniceus</i>		G5	S5		Yes	V	C	C	U			
Eastern Meadowlark	<i>Sturnella magna</i>		G5	S5		Yes	C	C	C	U			
Rusty Blackbird	<i>Euphagus carolinus</i>		G5	SNR			U	-	U	U		Yellow	
Common Grackle	<i>Quiscalus quiscula</i>		G5	S5		Yes	V	V	V	U			



Brown-headed Cowbird	Molothrus ater		G5	S5		Yes	C	C	C	S			
Orchard Oriole	Icterus spurius		G5	S4		Yes	U	U	R	-			
Baltimore Oriole	Icterus galbula		G5	S5		Yes	U	U	S	R			
Purple Finch	Carpodacus purpureus		G5	S1B,S5N			U	-	U	U			
House Finch	Carpodacus mexicanus		G5	SNA		Yes	V	C	C	V			
Red Crossbill	Loxia curvirostra		G5	S1B			R	R	R	R			
White-winged Crossbill	Loxia leucoptera		G5	SNR			R	-	-	R			
Common Redpoll	Carduelis flammea		G5	SNR			R	-	R	R			
Pine Siskin	Carduelis pinus		G5	SNR			S	S	S	S			
American Goldfinch	Carduelis tristis		G5	S5		Yes	C	C	C	C			
Evening Grosbeak	Coccothraustes vespertinus		G5	SNR			U	-	U	U			
Eurasian Tree Sparrow	Passer montanus					Yes	U	U	U	U			



Bird Species Status Tables and Charts

Species of Concern in Albemarle County

Table C-3. US Fish and Wildlife bird species of concern in Virginia (US Fish and Wildlife Service Virginia Field Office, "Natural Resource Information: Albemarle County, Virginia." 2003). Local occurrences, breeding status, and frequency from Minor and Stevens, 1997.

<i>Common Name</i>	<i>Occurs in County</i>	<i>Breeding in County Verified</i>	<i>Frequency</i>			
			<i>Spring</i>	<i>Summer</i>	<i>Fall</i>	<i>Winter</i>
Northern Goshawk	Yes	No	?	-	R	-
Black Rail	No	No	-	-	-	-
Loggerhead Shrike	Yes	Yes	R	R	R	R
Bewick's Wren	Formerly occurred; now extirpated	No	-	R	-	-
Cerulean Warbler	Yes	Yes	U	U	U	-
Bachman's Sparrow	Yes	No	R	R	-	-
Henslow's Sparrow	Formerly occurred; now extirpated	No	R	R	R	-

Table C-4. Partners in Flight priority species occurring in Albemarle County (from Kearney, Richard F., Partners in Flight Landbird Conservation Plan Physiographic Area 10: Mid-Atlantic Piedmont, version 1.0, September 2003). Occurrences, breeding status, and frequency from Minor and Stevens, 1997.

<i>Common Name</i>	<i>Breeding in County Verified</i>	<i>Frequency</i>				<i>Habitat Requirements & Management Notes</i>
		<i>Spring</i>	<i>Summer</i>	<i>Fall</i>	<i>Winter</i>	
Northern Bobwhite	Yes	S	S	S	S	Declining throughout the Northeast.
American Woodcock	Yes	U	S	U	R	Shows steep population declines; requires combination of forest clearings, second-growth hardwoods, and moist soils for foraging.
Whip-poor-will	Yes	U	U	U	-	Poorly monitored; may favor natural pine-oak barrens.
Wood Thrush	Yes	C	C	C	-	Prefers moist deciduous forests with dense and well developed understory.
Prairie Warbler	Yes	C	C	U	-	Occurs here in the highest relative abundance of any



						physiographic area.
Cerulean Warbler	Yes	U	U	U	-	Small, but locally important populations; requires tall, broken canopy in uplands and riparian bottomlands.
Louisiana Waterthrush	Yes	C	C	R	-	Sensitive to declining stream quality and loss of riparian forest buffers.
Kentucky Warbler	Yes	U	U	R	-	Requires moist deciduous forest with dense understory and ground cover.
Field Sparrow	Yes	C	C	C	C	Common, yet declining nearly throughout the East.
Grasshopper Sparrow	Yes	U	U	U	R	Largest population in northeastern U.S.; apparently stable or increasing.
Henslow's Sparrow	No	R	R	R	-	Formerly an uncommon breeder (until 1970's--now extirpated in County); requires tall, dense, unmowed pasture.

Table C-5. National Audubon Society Watch List 2002 bird species found in Albemarle County, from <http://audubon2.org/webapp/watchlist/AudubonWatchList2002.pdf>. Occurrences, breeding status, and frequency from Minor and Stevens, 1997.

<i>Common Name</i>	<i>Watch-List Status 2002</i>	<i>Breeding in County Verified</i>	<i>Frequency</i>			
			<i>Spring</i>	<i>Summer</i>	<i>Fall</i>	<i>Winter</i>
American Black Duck	Yellow	No	U	R	U	U
American Golden-Plover	Yellow	No	-	-	R	-
Short-billed Dowitcher	Yellow	No	R	-	R	-
American Woodcock	Yellow	Yes	U	S	U	R
Wilson's Phalarope	Yellow	No	R	-	-	-
Short-eared Owl	Yellow	No	-	R	R	R
Rufous Hummingbird	Yellow	No	-	-	A	-
Red-headed Woodpecker	Yellow	Yes	R	R	R	R
Willow Flycatcher	Yellow	No	S	S	-	-
Wood Thrush	Yellow	Yes	C	C	C	-
Blue-winged Warbler	Yellow	No	R	R	R	-
Golden-winged Warbler	Red	No	R	R	R	-
Prairie Warbler	Yellow	No	C	C	U	-
Bay-breasted Warbler	Yellow	No	U	-	U	-
Cerulean Warbler	Red	Yes	U	U	U	-
Prothonotary Warbler	Yellow	No	S	S	-	-

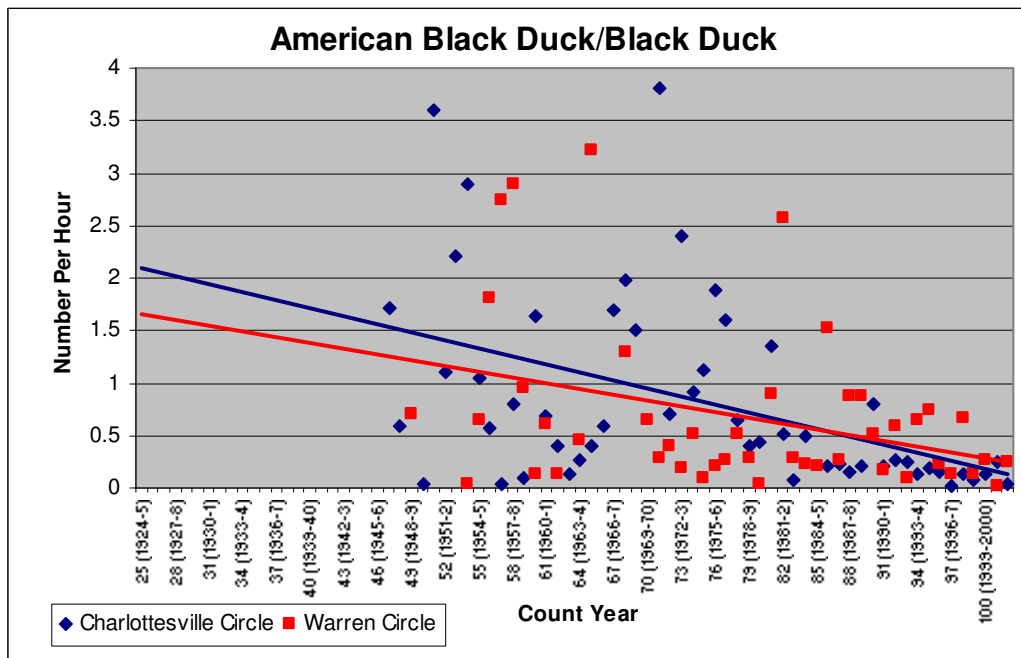


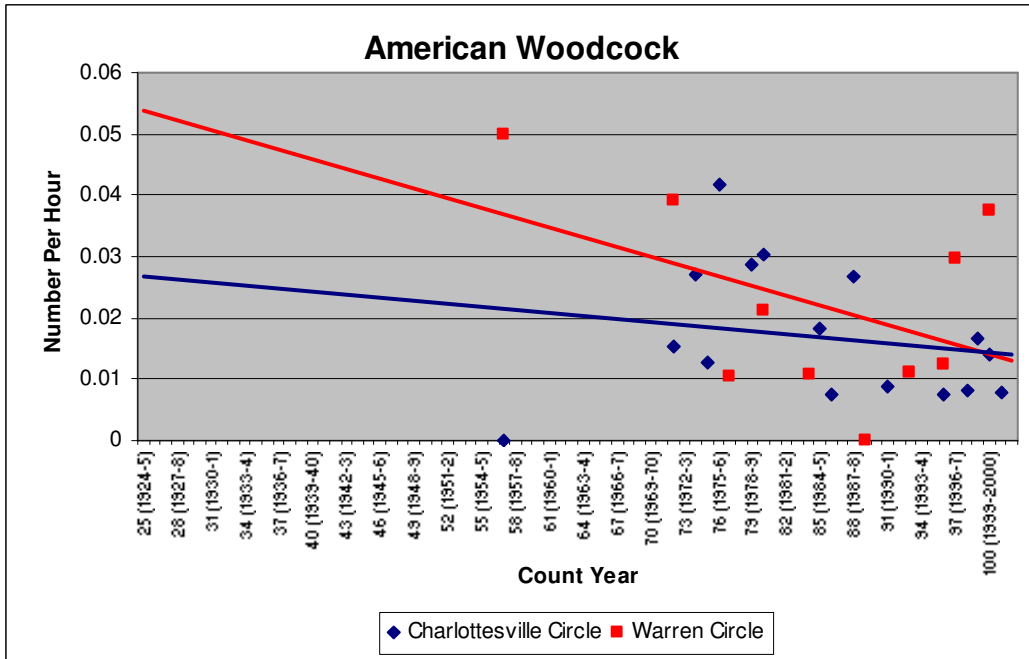
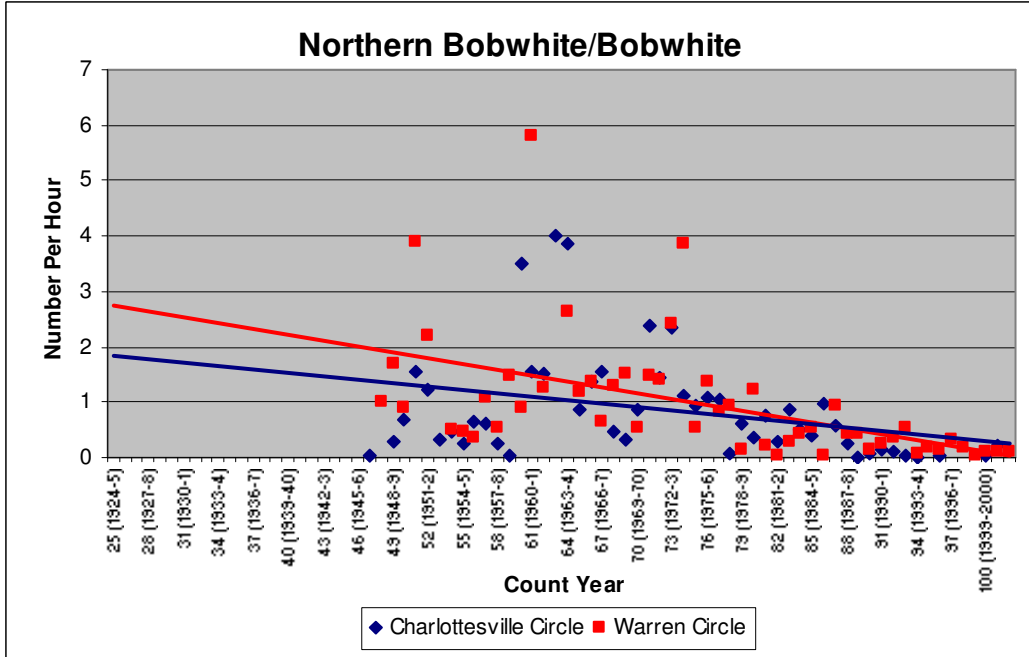
Worm-eating Warbler	Yellow	Yes	C	C	S	-
Kentucky Warbler	Yellow	Yes	U	U	R	-
Canada Warbler	Yellow	Yes	U	S	C	-
Bachman's Sparrow	Red	No	R	R	-	-
Henslow's Sparrow*	Red	No	R	R	R	-
Nelson's Sharp-tailed	Red	No	R	-	R	-
Painted Bunting	Yellow	No	-	-	A	-
Dickcissel	Yellow	No	R	R	R	R
Rusty Blackbird	Yellow	No	U	-	U	U

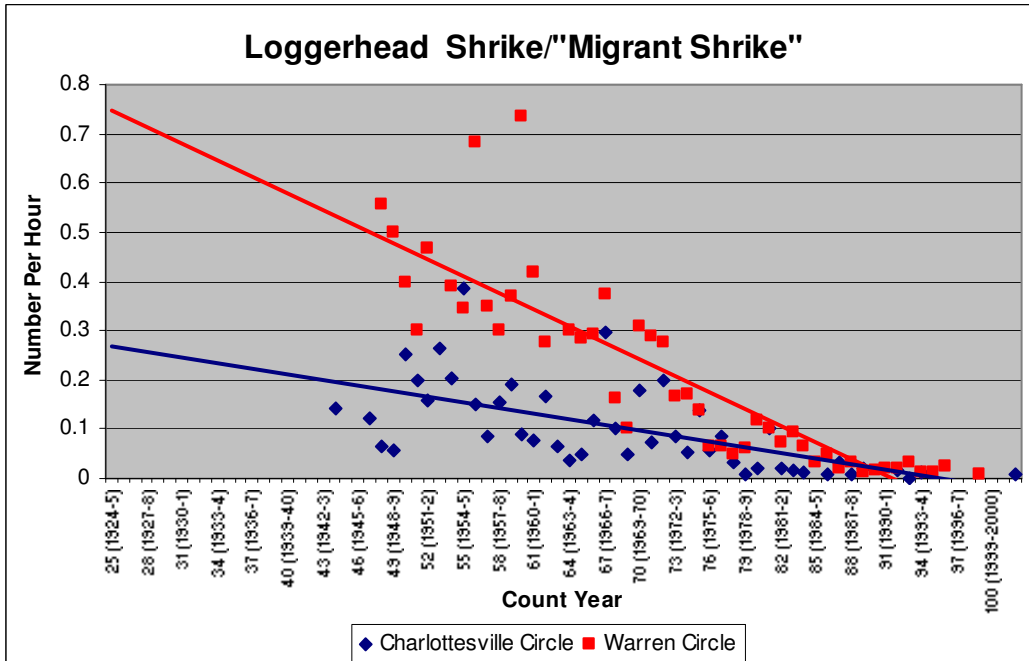
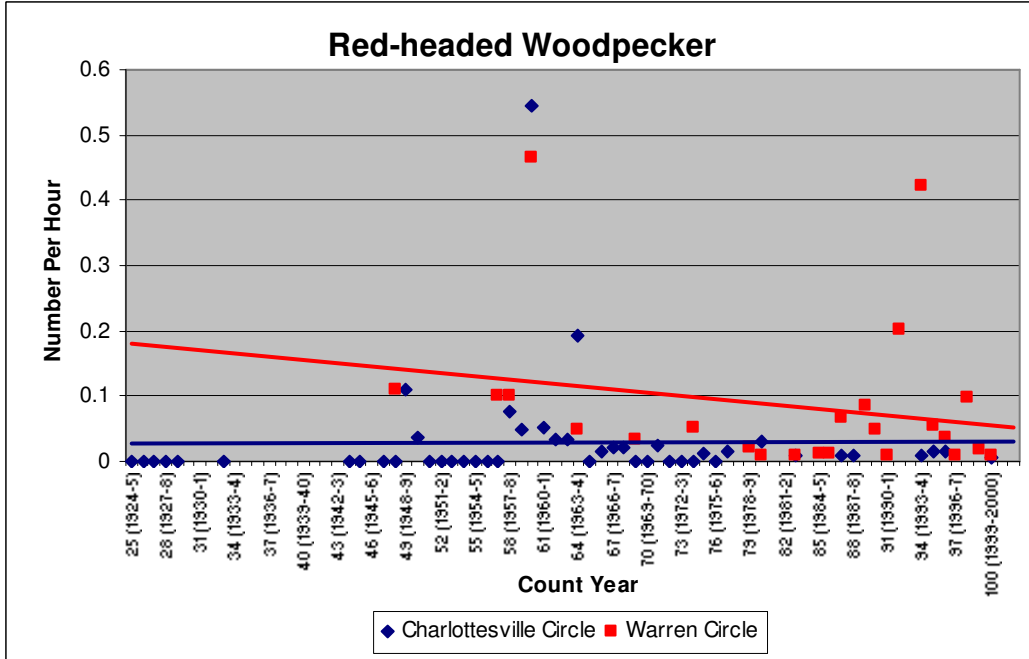
*Formerly occurred, now extirpated from County

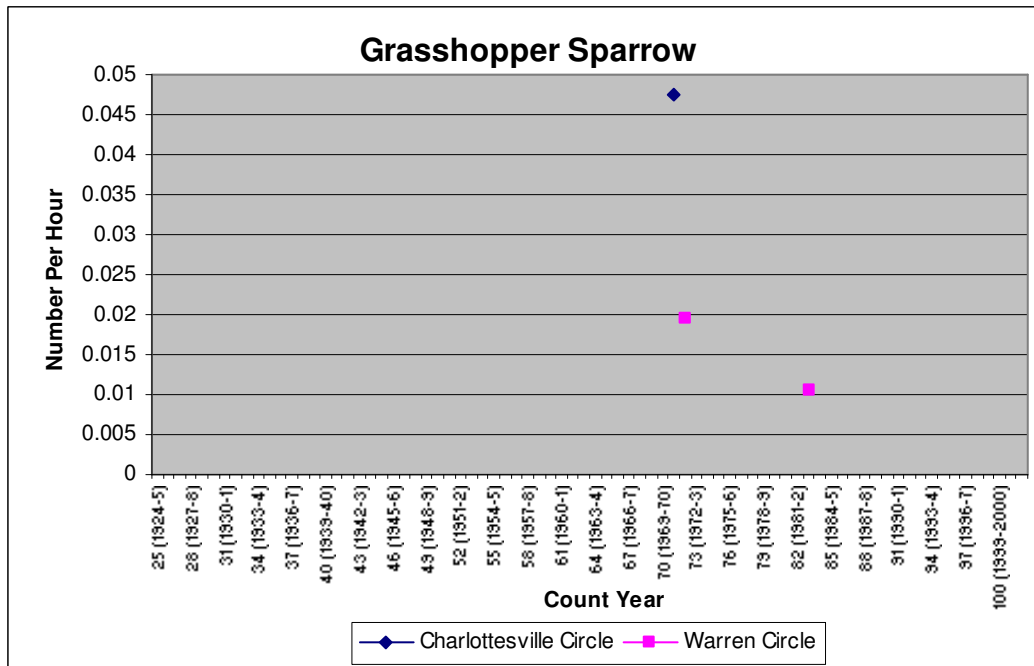
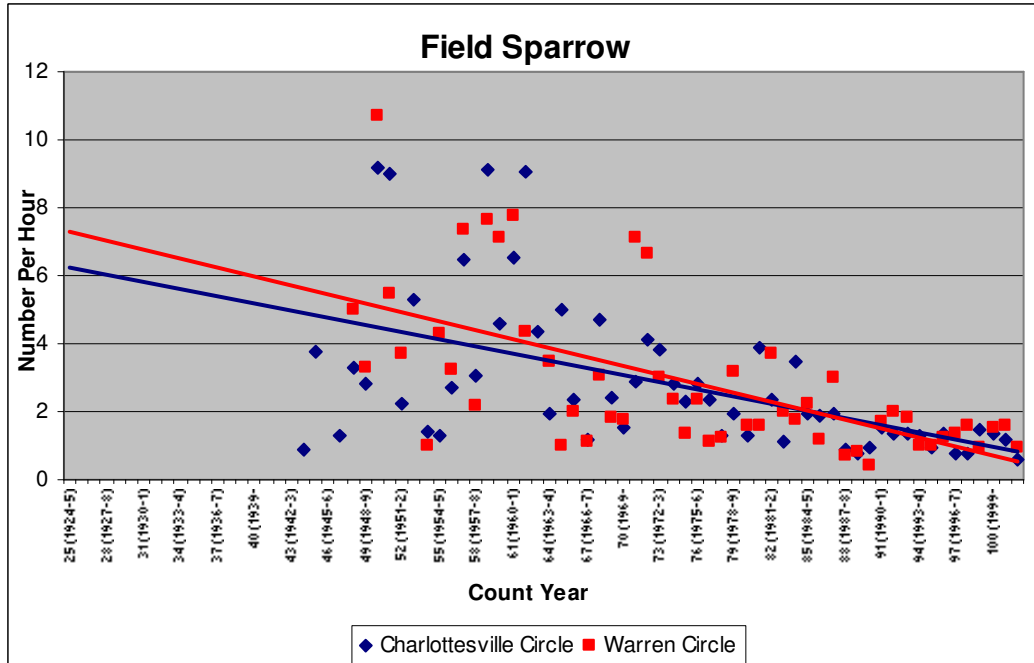
Trends in Observations of Species of Concern

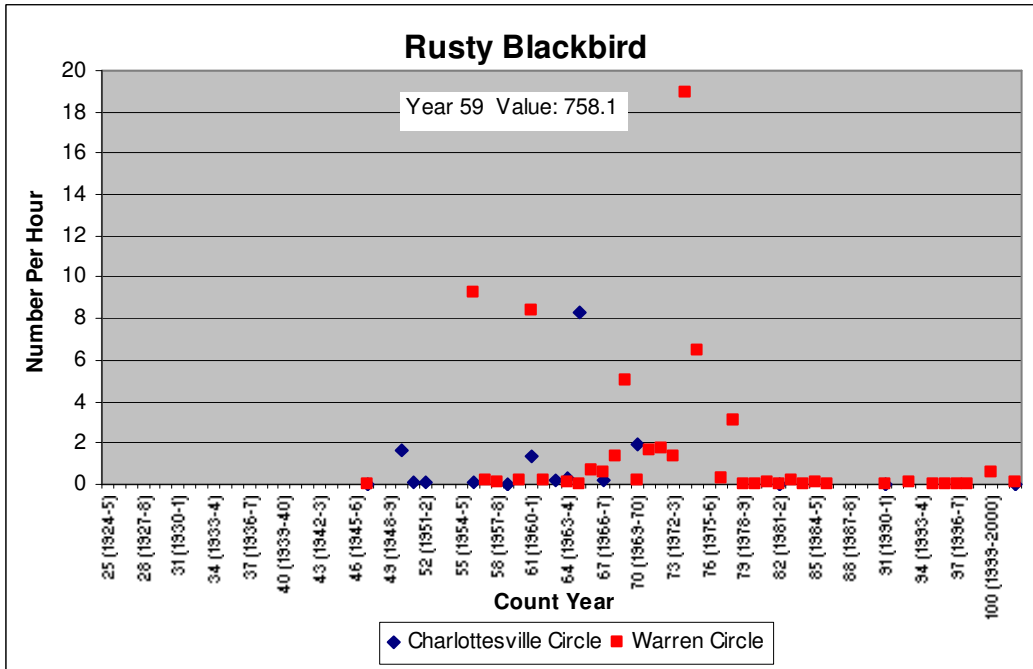
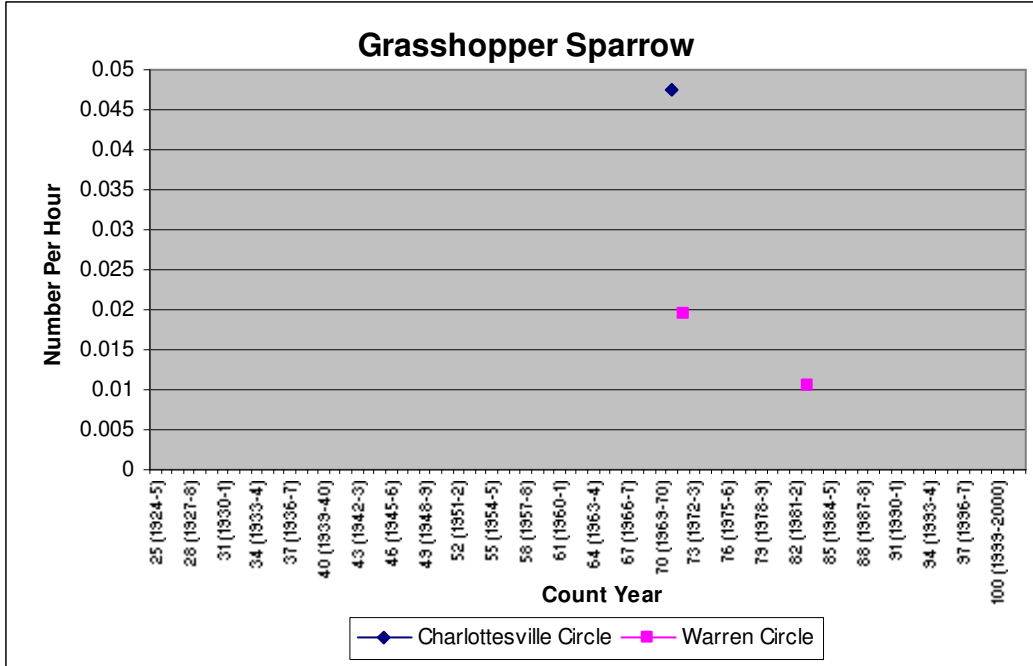
Christmas Bird Count











Breeding Bird Survey

Table C-6: Known Albemarle Breeding Bird Species with Declining Trends in the Southern Piedmont, 1966-2002

<i>Common Name</i>	<i>Genus/Species</i>	<i>Adjusted Trend (percentage change per year)</i>
Loggerhead Shrike	Lanius ludovicianus	-10.8007
Northern Bobwhite	Colinus virginianus	-4.9957
Red-winged Blackbird	Agelaius phoeniceus	-4.284
Eastern Meadowlark	Sturnella magna	-3.627
Gray Catbird	Dumetella carolinensis	-3.4225
Common Grackle	Quiscalus quiscula	-3.115
Northern Flicker	Colaptes auratus	-2.9843
Field Sparrow	Spizella pusilla	-2.9429
Barn Swallow	Hirundo rustica	-2.3495
Eastern Kingbird	Tyrannus tyrannus	-2.1131
Yellow-billed Cuckoo	Coccyzus americanus	-2.0665
Whip-poor-will	Caprimulgus vociferus	-1.9744
Wood Thrush	Hylocichla mustelina	-1.6991
Eastern Wood-Pewee	Contopus virens	-1.5516
European Starling	Sturnus vulgaris	-1.4311
Blue Jay	Cyanocitta cristata	-1.4169
Belted Kingfisher	Ceryle alcyon	-1.2113
Eastern Towhee	Pipilo erythrophthalmus	-1.1925
Northern Mockingbird	Mimus polyglottos	-1.1309
Chimney Swift	Chaetura pelagica	-1.0226
Mourning Dove	Zenaida macroura	-0.5898
Blue Grosbeak	Guiraca caerulea	-0.4838

Table C-7: Known Albemarle Breeding Bird Species with Increasing Trends in the Southern Piedmont, 1966-2002

<i>Common Name</i>	<i>Genus/Species</i>	<i>Adjusted Trend (percentage change per year)</i>
House Finch	Carpodacus mexicanus	15.6724
Canada Goose	Branta canadensis	15.5524
Blue-headed Vireo	Vireo solitarius*	11.245
Mallard	Anas platyrhynchos	10.7907
Cedar Waxwing	Bombycilla cedrorum	10.1025
Great Blue Heron	Ardea herodias	9.8487
Cooper's Hawk	Accipiter cooperii	7.2639
Fish Crow	Corvus ossifragus	6.823
White-breasted Nuthatch	Sitta carolinensis	6.1864
Northern Parula	Parula americana	5.2792
Louisiana Waterthrush	Seiurus motacilla	5.1989



Red-tailed Hawk	<i>Buteo jamaicensis</i>	5.1171
Red-shouldered Hawk	<i>Buteo lineatus</i>	4.8994
Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>	4.1793
Black-and-white Warbler	<i>Mniotilta varia</i>	4.1642
Black Vulture	<i>Coragyps atratus</i>	3.8736
Turkey Vulture	<i>Cathartes aura</i>	3.812
Eastern Bluebird	<i>Sialia sialis</i>	3.2071
Hooded Warbler	<i>Wilsonia citrina</i>	3.1941
Yellow-throated Vireo	<i>Vireo flavifrons</i>	2.9549
Pileated Woodpecker	<i>Dryocopus pileatus</i>	2.7934
Killdeer	<i>Charadrius vociferus</i>	2.5453
Tufted Titmouse	<i>Baeolophus bicolor</i>	2.4453
American Goldfinch	<i>Carduelis tristis</i>	2.3821
Red-eyed Vireo	<i>Vireo olivaceus</i>	2.3591
Ovenbird	<i>Seiurus aurocapillus</i>	2.2529
Eastern Phoebe	<i>Sayornis phoebe</i>	2.1258
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	1.6786
Chipping Sparrow	<i>Spizella passerina</i>	1.2744
American Crow	<i>Corvus brachyrhynchos</i>	1.0798
Carolina Wren	<i>Thryothorus ludovicianus</i>	1.0554
Pine Warbler	<i>Dendroica pinus</i>	0.9402



D. FISH OF ALBEMARLE COUNTY

Table D-1: Fish of Albemarle County

Common Name	Family	Genus	Species	Status	Introduced	Jenkins et. al. (1993) Database of Observations	Rohde et.al. (1994) Range Maps	VDGIF Rivanna 1998 Study	VDGIF (2002) Database of Observations	VDGIF (2003) Known or Likely in BOVA Database
American eel	Anguillidae	Anguilla	rostrata				Yes	Abundant	Yes	Yes
Quillback	Catostomidae	Carpionodes	cyprinus			Yes	Yes	Rare	Yes	
White sucker	Catostomidae	Catostomus	commersoni			Yes	Yes	Common	Yes	Yes
Creek chubsucker	Catostomidae	Erimyzon	oblongus			Yes	Yes	Rare	Yes	Yes
Northern hog sucker	Catostomidae	Hypentelium	nigricans			Yes	Yes	Common	Yes	Yes
Black jumprock	Catostomidae	Moxostoma	cervinum				Yes	Common	Yes	Yes
Shorthead redhorse	Catostomidae	Moxostoma	macrolepidotum				Yes	Rare	Yes	
Torrent sucker	Catostomidae	Moxostoma	rathoeum			Yes	Yes	Abundant	Yes	Yes
Rock bass	Centrarchidae	Ambloplites	rupestris		Yes	Yes		Uncommon	Yes	Yes
Redbreast sunfish	Centrarchidae	Lepomis	auritus			Yes	Yes	Abundant	Yes	Yes
Green sunfish	Centrarchidae	Lepomis	cyanelus		Yes			Uncommon	Yes	
Pumkinseed sunfish	Centrarchidae	Lepomis	gibbosus			Yes	Yes	Rare	Yes	Yes
Warmouth	Centrarchidae	Lepomis	gulosus				Yes			
Bluegill	Centrarchidae	Lepomis	macrochirus		Yes	Yes	Yes	Common	Yes	Yes
Redear sunfish	Centrarchidae	Lepomis	microlophus		Yes			Uncommon	Yes	Yes
Smallmouth bass	Centrarchidae	Micropterus	dolomieu		Yes	Yes	Yes	Common	Yes	Yes
Spotted bass	Centrarchidae	Micropterus	punctulatus		Yes			Rare	Yes	
Largemouth bass	Centrarchidae	Micropterus	salmoides		Yes	Yes	Yes	Uncommon	Yes	Yes



White crappie	Centrarchidae	Pomoxis	annularis		Yes	Yes	Yes	Rare	Yes	Yes
Black crappie	Centrarchidae	Pomoxis	nigromaculatus			Yes	Yes	Uncommon	Yes	Yes
Gizzard shad	Clupeidae	Drosoma	cepedianum		Yes		Yes			
Mottled sculpin	Cottidae	Cottus	bairdi				Yes	Uncommon	Yes	
Central stoneroller	Cyprinidae	Campostoma	anomalum			Yes	No	Uncommon	Yes	Yes
Goldfish	Cyprinidae	Carassius	auratus		Yes		Yes			
Rosyside dace	Cyprinidae	Clinostomus	funduloides			Yes	Yes	Common	Yes	Yes
Grass carp	Cyprinidae	Ctenopharyngodon	idella		Yes	Yes	Yes			
Satinfin shiner	Cyprinidae	Cyprinella	analostana			Yes	Yes	Common	Yes	Yes
Spotfin shiner	Cyprinidae	Cyprinella	spiloptera							Yes
Common carp	Cyprinidae	Cyprinus	carpio				Yes			
Cutlips minnow	Cyprinidae	Exoglossum	maxillingua			Yes	Yes	Uncommon	Yes	Yes
Eastern silvery minnow	Cyprinidae	Hybognathus	regius				Yes			Yes
Crescent shiner	Cyprinidae	Luxilus	cerasinus						Yes	Yes
Common shiner	Cyprinidae	Luxilus	cornutus			Yes	Yes	Abundant	Yes	Yes
Rosefin shiner	Cyprinidae	Lythrurus	ardens			Yes	Yes	Uncommon	Yes	Yes
Bluehead chub	Cyprinidae	Nocomis	leptocephalus			Yes	Yes	Abundant	Yes	Yes
River chub	Cyprinidae	Nocomis	micropogon			Yes	Yes	Common	Yes	Yes
Bull chub	Cyprinidae	Nocomis	raneyi					Common	Yes	Yes
Golden shiner	Cyprinidae	Notemigonus	crysoleucas			Yes	Yes	Rare	Yes	Yes
Comely shiner	Cyprinidae	Notropis	amoenus			Yes	?	Uncommon	Yes	Yes
Spottail shiner	Cyprinidae	Notropis	hudsonius			Yes	Yes	Abundant	Yes	Yes
Tennessee shiner	Cyprinidae	Notropis	leuciodus						Yes	Yes
Swallowtail shiner	Cyprinidae	Notropis	procne			Yes	Yes	Common	Yes	Yes
Rosyface shiner	Cyprinidae	Notropis	rebellus			Yes	?	Common	Yes	Yes
Mountain redbelly dace	Cyprinidae	Phoxinus	oreas			Yes	Yes	Common	Yes	Yes
Bluntnose minnow	Cyprinidae	Pimephales	notatus				Yes	Common	Yes	Yes
Blacknose dace	Cyprinidae	Rhinichthys	atratus			Yes	Yes	Common	Yes	Yes
Longnose dace	Cyprinidae	Rhinichthys	cataractae			Yes	Yes	Uncommon	Yes	Yes
Creek chub	Cyprinidae	Semotilus	atromaculatus			Yes	Yes	Uncommon	Yes	Yes
Fallfish	Cyprinidae	Semotilus	corporalis			Yes	Yes	Abundant	Yes	Yes
Northern pike	Esocidae	Esox	lucius		Yes	Yes				
Muskellunge	Esocidae	Esox	masquinongy		Yes	Yes	Yes			
Chain pickerel	Esocidae	Esox	niger				Yes	Rare	Yes	



White catfish	Ictaluridae	Ameiurus	catus				Yes			
Yellow bullhead	Ictaluridae	Ameiurus	natalis				Yes	Rare	Yes	Yes
Brown bullhead	Ictaluridae	Ameiurus	nebulosus			Yes	Yes		Yes	Yes
Channel catfish	Ictaluridae	Ictalurus	punctatus		Yes	Yes	Yes	Rare	Yes	Yes
Margined madtom	Ictaluridae	Noturus	insignis			Yes	Yes	Common	Yes	Yes
Longnose gar	Lepisosteidae	Lepisosteus	osseus					Rare	Yes	Yes
Fantail darter	Percidae	Etheostoma	flabellare			Yes	Yes	Common	Yes	Yes
Longfin darter	Percidae	Etheostoma	longimanum			Yes	Yes	Uncommon	Yes	Yes
Johnny darter	Percidae	Etheostoma	nigrum			Yes	Yes	Common	Yes	Yes
Tessellated darter	Percidae	Etheostoma	olmstedii						Yes	Yes
Glassy darter	Percidae	Etheostoma	vitreum			Yes	Yes	Uncommon	Yes	Yes
Appalachia darter	Percidae	Percina	gymnocephala	Federal Species of Concern (G4,N4,S3)						Yes
Stripeback darter	Percidae	Percina	notogramma			Yes	Yes	Uncommon	Yes	Yes
Shield darter	Percidae	Percina	peltata				Yes	Rare	Yes	Yes
Roanoke darter	Percidae	Percina	roanoka					Common	Yes	Yes
Walleye	Percidae	Stizostedion	vitreum		Yes	Yes	Yes			
Rainbow trout	Salmonidae	Oncorhynchus	mykiss		Yes	Yes	Yes		Yes	Yes
Brown trout	Salmonidae	Salmo	trutta		Yes	Yes	Yes		Yes	Yes
Brook trout	Salmonidae	Salvelinus	fontinalis			Yes	Yes	Rare	Yes	Yes

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E. AN ANNOTATED CHECKLIST OF THE AMPHIBIANS OF ALBEMARLE COUNTY

Table E-1: Amphibians of Albemarle County	
Salamanders (Order: Caudata)	
Family: Salamandridae	
Eastern Newt (<i>Notophthalmus viridescens</i>) G5 N5 S5 County: common	
Habitat: Ponds, lakes, rivers, and stream pools. Efts inhabit moist, wooded areas.	
Status: Widespread and common throughout County.	
Family: Ambystomatidae	
Jefferson Salamander (<i>Ambystoma jeffersonianum</i>) G4 N5 S4 County: uncertain	
Habitat: Low woods, bottomlands. Prefer undisturbed forest habitats with rotting wood debris. Migrates to woodland ponds, pools to spawn after first warm spring rains.	
Status: Appalachian species; Albemarle is on the eastern/southern edge of its range. Threats include loss of vernal breeding pools, soil compaction from timber harvesting, and road kill during breeding season.	
Spotted Salamander (<i>Ambystoma maculatum</i>) G5 N5 S5 County: uncommon	
Habitat: Deciduous woodlands with semi-permanent breeding pools.	
Status: Found throughout County in suitable habitat. Fossorial, thus rarely encountered.	
Marbled Salamander (<i>Ambystoma opacum</i>) G5 N5 S5 County: uncommon	
Habitat: Prefers lowlands, swamps, moist sandy areas along ponds and streams. Less common in mountains.	
Status: Likely throughout County in suitable habitat.	
Family: Plethodontidae	
Northern Dusky Salamander (<i>Desmognathus imitator</i>) G5 N5 S5 County: common	
Habitat: Streams, springs, woodland seepages, forest ravines.	
Status: Common in suitable habitat throughout County.	
Seal Salamander (<i>Desmognathos monticola</i>) G5 N5 S5 County: uncommon	
Habitat: Stream edges, seepages, springs. Occurs in mountains and adjacent Piedmont.	
Status: More likely to be found in western portions of County in suitable habitat.	
Northern Two-lined Salamander (<i>Eurycea bislineata</i>) G5 N5 S5 County: uncertain	
Habitat: Streams, seepages, springs - prefers hardwood forests and swamps. More likely in mountains.	
Status: Albemarle is on the southern edge of species' range - likely absent or rare in extreme northern portion of County.	
Southern Two-lined Salamander (<i>Eurycea cirrigera</i>) County: uncommon	
Habitat: similar to Northern Two-lined Salamander.	
Status: Documented from central and western portions of County.	
Three-lined Salamander (<i>Eurycea guttolineata</i>) G5 N5 S? County: uncertain	



Habitat: Bottomland forest, creek bottomlands in Piedmont and larger mountain valleys.
Status: Documented form central and western Albemarle.
Longtail Salamander (<i>Eurycea longicauda</i>) G5 N5 S5 County: accidental
Habitat: Rocky streams and bottomlands, damp caves, usually associated with limestone and shale substrates.
Status: Found west of the Blue Ridge, so likely absent from County; or accidental in extreme western portions.
Spring Salamander (<i>Gyrinophilus porphyriticus</i>) G5 N5 S5 County: uncertain
Habitat: Springs; small cold, rocky streams; caves. More common in mountains.
Status: Likely uncommon in County due to limited suitable habitat.
Four-toed Salamander (<i>Hemidactylium scutatum</i>) G5 N5 S5 County: uncertain
Habitat: Bogs, seepages, shallow ponds with moss-covered logs, roots, and grassy vegetation in calm water. Widely scattered.
Status: Uncertain; likely occurs sporadically throughout County.
Red-backed Salamander (<i>Plethidon cinereus</i>) G5 N5 S5 County: abundant
Habitat: Forested areas: under rocks, logs, leaf litter.
Status: Widespread and abundant throughout County in suitable habitat.
Slimy Salamander (<i>Plethidon glutinosus</i>) G5 N5 S5 County: common
Habitat: Wooded areas, prefers hardwood forests - slopes, ravines; often found under logs, rocks, leaf litter.
Status: Widespread in County in suitable habitat.
Mud Salamander (<i>Pseudotriton montanus</i>) G5 N5 S5 County: uncertain
Habitat: Fine mud and black muck in and around streams, backwater ponds, seepages.
Found in Piedmont and some mountain lowlands.
Status: Possible, though no recorded records.
Red Salamander (<i>Pseudotriton ruber</i>) G5 N5 S5 County: uncommon
Habitat: Clear rocky streams and spring-fed brooks in wooded areas. Inhabits leaf clusters in stream shallows or under nearby leaf litter, rocks, boards, logs.
Status: Secretive; present in County in suitable habitat but seldom encountered.
Toads and Frogs (Order: Anura)
Family: Pelobatidae
Eastern Spadefoot Toad (<i>Scaphiopus holbrookii</i>) G5 N5 S4 County: uncertain
Habitat: Sandy lowlands. Absent from most of Piedmont; more likely in coastal areas and mountains.
Status: Likely rare or absent in County.
Family: Bufonidae
American Toad (<i>Bufo americanus</i>) G5 N5 S5 County: common
Habitat: Wide variety of habitats: ponds, lakes, woodlands, yards, gardens.
Status: Widespread and common throughout County.
Fowler's Toad (<i>Bufo woodhousei</i>) G5 N5 S5 County: uncommon
Habitat: Wide variety: wooded areas, lowlands.



Status: Found throughout County, though not as common as American Toad.
Family: Hylidae
Northern Cricket Frog (<i>Acris crepitans</i>) G5 N5 S4 County: uncommon
Habitat: Prefers open, grassy areas near ponds, lakes, ditches, swamps.
Status: Found sparingly throughout County in suitable habitat.
Gray Treefrog (<i>Hyla versicolor</i>) G5 N5 S5 County: common
Habitat: Woodlands; woodland edges; disturbed areas with shrubby, viney growth; yards. Arboreal; often found in trees, shrubs, vines.
Status: Widespread throughout County; less common in mountains.
Cope's Gray Treefrog (<i>Hyla chrysoscelis</i>) G5 N5 S5 County: rare/absent
Habitat: Forested areas. More likely in mountains than Piedmont. Arboreal; rarely found on ground.
Status: Reported, but not confirmed, from Heards Mountain.
Spring Peeper (<i>Hyla crucifer</i>) G5 N5 S5 County: common
Habitat: Woodlands - in forest litter and brushy undergrowth. Breeds in woodland pools, swamps, ditches.
Status: Widespread throughout County in suitable habitat.
Upland Chorus Frog (<i>Pseudacris triseriata</i>) G5 N5 S5 County: rare
Habitat: Wide variety; prefers thick vegetation, wooded areas near water. Sometimes found with spring peepers in breeding season.
Status: Once common, has gone through drastic population decline in recent decades. Now rarely encountered in County.
Family: Ranidae
Bullfrog (<i>Rana catesbeiana</i>) G5 N5 S5 County: common
Habitat: Lakes, ponds, backwater. Prefers calm waters.
Status: Widespread throughout County in suitable habitat.
Green Frog (<i>Rana clamitans</i>) G5 N5 S5 County: common
Habitat: Streams, ponds, lakes, swampy areas.
Status: Widespread throughout County in suitable habitat.
Pickerel Frog (<i>Rana palustris</i>) G5 N5 S5 County: uncommon
Habitat: Ponds, lakes. Prefer aquatic habitats in woodland areas; bogs; grassy areas near shaded streams.
Status: Found sparingly throughout County in suitable habitat.
Wood Frog (<i>Rana sylvatica</i>) G5 N5 S5 County: rare
Habitat: Moist woods near water. More common in mountains of VA than Piedmont.
Status: Seldom encountered in County. Known to breed in Sugar Hollow area and near Ragged Mountain Reservoir.
Family: Microhylidae
Eastern Narrowmouth Toad (<i>Gastrophryne carolinensis</i>) G5 N5 S4 County: uncertain
Habitat: Shaded, moist areas. Often burrows in soil and hides under logs, rocks, debris.
Status: Unknown; records exist from scattered locations in Piedmont, west and south of Albemarle.



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F. AN ANNOTATED CHECKLIST OF THE REPTILES OF ALBEMARLE COUNTY, VIRGINIA

Table F-1: Reptiles of Albemarle County
Turtles (Order: Testudinata)
Family: Chelydridae
Snapping Turtle (<i>Chelydra serpentina</i>) G5 N5 S5 County: uncommon Habitat: Lakes, ponds, rivers, streams. Often wanders across land. Status: Found in suitable habitat throughout County.
Family: Emydidae
Painted Turtle (<i>Chrysemys picta</i>) G5 N5 S5 County: very common Habitat: Prefers quiet water with muddy bottoms. Often basks on logs, rocks. Status: Plentiful throughout County in ponds, lakes.
River Cooter (<i>Chrysemys concinna</i>) G5 N5 S4 County: rare Habitat: Prefers large rivers with basking sites and submerged vegetation. Status: Only a few records from Albemarle County.
Eastern Box Turtle (<i>Chrysemys carolina</i>) G5 N5 S4 County: common Habitat: Mostly terrestrial; prefers wooded areas, but also found in fields, swamps, etc. Status: Widespread and common throughout County in wooded areas.
Spotted Turtle (<i>Clemmys guttata</i>) G5 N5 S4 County: uncertain Habitat: Freshwater wetlands: ponds, creeks, flooded pastures, forested wet areas. Status: Has been documented in Orange and Augusta Counties; is likely rare in Albemarle. Very vulnerable to loss of wetlands; also popular with pet trade.
Family: Kinosternidae
Eastern Mud Turtle (<i>Kinosternon subrubrum</i>) G5 N5 S5 County: uncertain Habitat: Prefers the slow-moving, shallow water of ponds, creeks, ditches, boggy areas. Status: Common in coastal plain; increasingly scarce westward into the piedmont. Likely rare in County.
Common Musk Turtle (<i>Sternotherus odoratus</i>) G5 N5 S5 County: uncommon Habitat: Most aquatic habitats. Prefers swamps, ponds, ditches with submerged vegetation. Status: Difficult to determine; spends majority of time submerged, walking on bottom. Likely uncommon in County. Other common name: Stinkpot
Lizards and Snakes (Order: Squamata)
Lizards (Suborder: Lacertilia)
Family: Iguanidae



Northern Fence Lizard (<i>Sceloporus undulatus</i>) G5 N5 S5 County: common
Habitat: Prefers dry areas with access to sunlight - pine woods, mixed deciduous woods, edges, farm buildings, fenceposts.
Status: Widespread throughout County in suitable habitat.
Family: Scincidae
Coal Skink (<i>Eumeces anthracinus</i>) G5 N5 S2 County: rare
Habitat: Mountainous, forested areas with rock cover and sunlit openings.
Status: Documented in northwestern portion of Albemarle County; status largely unknown due to secretive habits.
Five-lined Skink (<i>Eumeces fasciatus</i>) G5 N5 S5 County: common
Habitat: Wide variety; prefers moist wooded areas and edges; also commonly found under boards, logs, etc. and around buildings.
Status: Common throughout County in suitable habitat.
Southeastern Five-lined Skink (<i>Eumeces inexpectatus</i>) G5 N5 S5 County: uncommon
Habitat: Prefers drier habitats than Five-lined Skink; pine forests, field and woods edges, under debris around buildings.
Status: Not often encountered in County.
Broad-headed Skink (<i>Eumeces laticeps</i>) G5 N5 S5 County: uncommon
Habitat: Mostly arboreal; prefers open forested areas, especially in mature pine and mixed hardwood stands. Also found around farm buildings.
Status: Not often encountered in County.
Ground Skink (<i>Scincella lateralis</i>) G5 N5 S5 County: uncertain
Habitat: Forest leaf litter.
Status: Albemarle is on the western edge of this species range in VA. It likely occurs sparsely in County in appropriate habitat.
Family: Teiidae
Six-lined Racerunner (<i>Cnemidophorus sexlineatus</i>) G5 N5 S5 County: scarce
Habitat: Open, dry areas in fields, woods, road embankments. Prefers sandy areas; also found in shale barrens.
Status: Very limited in County due to scarcity of preferred habitat.
Snakes: (Order: Squamata, Suborder: Serpentes)
Family: Colubridae
Eastern Worm Snake (<i>Carphophis amoenus</i>) G5 N5 S5 County: common
Habitat: Secretive; prefers wooded habitats with soils suitable for burrowing. Often found under rocks, boards, logs, etc.
Status: Fairly common throughout County in suitable habitat.
Northern Scarlet Snake (<i>Cemophora coccinea</i>) G5 N5 S4 County: uncertain
Habitat: Prefers pine areas with well-drained, sandy soils.
Status: Albemarle is on the western edge of this species range in VA; it is likely rare in County due to lack of suitable habitat.
Black Racer (<i>Coluber constrictor</i>) G5 N5 S5 County: uncommon



Habitat: Open grassy areas, or open woods near grassy areas. Prefers dry locations; found in both farm and urban areas.
Status: Widespread throughout County in suitable habitat. Not commonly encountered.
Ringneck Snake (<i>Diadophis punctatus</i>) G5 N5 S5 County: common
Habitat: Prefers wooded areas; usually found in leaf litter, moist debris, under logs, rocks, boards, etc.
Status: Found throughout County in suitable habitat.
Corn Snake (<i>Elaphe guttata</i>) G5 N5 S4 County: scarce
Habitat: Fossorial; utilizes rodent borrows. Fields, open grassy areas, open hardwood forests.
Status: Secretive; encountered very infrequently in County.
Black Rat Snake (<i>Elaphe obsoleta</i>) G5 N5 S5 County: very common
Habitat: Wide variety: farms, hardwood forests, woodlots, forested wetlands, barns, houses. Often climbs trees.
Status: Widespread throughout County. Most commonly encountered snake.
Eastern Hognose Snake (<i>Heterodon platirhinos</i>) G5 N5 S5 County: uncommon
Habitat: Prefers areas with sandy soils; fields, open woods, streambanks.
Status: Widespread, though not commonly encountered in County.
Mole Kingsnake (<i>Lampropeltis calligaster</i>) G5 N5 S5 County: uncommon
Habitat: Mostly fossorial; abandoned fields, woodland - sometimes found in suburban fields and woodlots.
Status: Found sporadically throughout County in suitable habitat.
Eastern Kingsnake (<i>Lampropeltis getula</i>) G5 N5 S5 County: uncommon
Habitat: Wide variety: forests, abandoned fields, upland portions of swamps and marshes, streambanks.
Status: Widespread though not commonly encountered in County.
Eastern Milk Snake (<i>Lampropeltis triangulum</i>) G5 N5 S5 County: scarce
Habitat: Deciduous hardwood forests and mixed hardwood/pine forests, fields, rock outcrops. Often found under rocks, logs, boards, etc.
Status: Seldom encountered in County; most likely found in western portion and higher elevations.
Northern Water Snake (<i>Nerodia sipedon</i>) G5 N5 S5 County: common
Habitat: Wet areas: lakes, rivers, streams, ponds, ditches, swamps, etc.
Status: Widespread and fairly common throughout County.
Rough Green Snake (<i>Opheodrys aestivus</i>) G5 N5 S5 County: uncommon
Habitat: Arboreal: woodlands, thickets, vines, hedgerows, roadsides.
Status: Infrequently encountered in County. Populations declining; often killed by vehicles; pesticides suspected as factor in decline also.
Smooth Green Snake (<i>Opheodrys vernalis</i>) G5 N5 S3 County: rare
Habitat: Mountainous areas; prefers high-elevation grassy fields and balds.
Status: Found rarely in northwestern Albemarle County; little suitable habitat.
Northern Pine Snake (<i>Pituophis melanoleucus</i>) G4 N4 S1 County: uncertain
Habitat: Mountainous areas; dry slopes, ridges - prefers pine woods, mountain laurel and rhododendron, with substrate suitable for burrowing.
Status: Likely extremely rare in western portion of County, if present at all. Confirmed record from Bucks Elbow Mountain in May, 1983.



Queen Snake (<i>Regina septemvittata</i>) G5 N5 S5 County: uncommon
Habitat: Prefers rocky streams with areas open sunlight; also found along pond and lake edges.
Status: At risk from siltation of streams, which causes decline of crayfish populations, the principal food source of this species.
Brown Snake (<i>Storeria dekayi</i>) G5 N5 S5 County: uncommon
Habitat: Wide variety: woods, fields, gardens, yards. Usually found under debris.
Status: Secretive; declining over past several decades.
Redbelly Snake (<i>Storeria occipitomaculata</i>) G5 N5 S5 County: uncommon
Habitat: Forested areas, abandoned fields, woodlots in farm and urban areas, wetland edges.
Status: Secretive, not well known. Not commonly encountered in County.
Southeastern Crowned Snake (<i>Tantilla coronata</i>) G5 N5 S2 County: uncertain
Habitat: Prefers dry pine forests with decaying logs and stumps. Also mixed oak/pine areas - most often found under rotting debris, rocks.
Status: Unknown; most likely area of occurrence would be eastern portion of County.
Eastern Ribbon Snake (<i>Thamnophis sauritus</i>) G5 N5 S5 County: uncommon
Habitat: Semiaquatic; marshes, grassy floodplains, streambanks, woodlands near wetlands.
Status: Widespread throughout County in suitable habitat.
Eastern Garter Snake (<i>Thamnophis sirtalis</i>) G5 N5 S5 County: common
Habitat: Wide variety: woodlands, grassy areas, abandoned fields, streambanks, farm and urban areas.
Status: Widespread throughout County.
Smooth Earth Snake (<i>Virginia vleriae</i>) G5 N5 S5 County: uncertain
Habitat: Wide variety of terrestrial habitats (below 2000 ft.): woodlands, upland ridges, pastures, moist lowlands. Usually found under debris.
Status: Not commonly encountered in County.
Family: Viperidae
Northern Copperhead (<i>Agkistrodon contortrix</i>) G5 N5 S5 County: common
Habitat: Wide of variety of terrestrial habitats: woodlands, abandoned fields, hedgerows, near streams, outbuildings, woodpiles.
Status: Widespread in County; more common in mountains.
Timber Rattlesnake (<i>Crotalus horridus</i>) G4 N4 S4 County: rare
Habitat: Mountainous areas; upland hardwood and mixed oak/pine forest with rock outcrops, talus slopes. Also grassy fields, secondary growth.
Status: Rare in western portion of County. Has declined dramatically in recent decades due to human predation and habitat loss.

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Virginia Natural Heritage Program (VA Department of Conservation and Recreation) – online database: www.dcr.state.va.us/dnh/



G. INVERTEBRATE LISTS

Table G-1: Mollusks

Common Name	Asian clam	Swamp fingernail clam	General fingernail clam	Striated fingernail clam	Adam peaclam	Ubiquitous peaclam	Notched rainbow mussel	James spinymussel	Creeper (mussel)
Genus	<i>Corbicula</i>	<i>Musculium</i>	<i>Sphaerium</i>	<i>Sphaerium</i>	<i>Pisidium</i>	<i>Pisidium</i>	<i>Villosa</i>	<i>Pleurobema</i>	<i>Strophitus</i>
Species	<i>fluminea</i>	<i>partumeium</i>	<i>sp.</i>	<i>striatinum</i>	<i>adamsi</i>	<i>casertanum</i>	<i>constricta</i>	<i>collina</i>	<i>undulatus</i>
Status	Exotic invasive	(G5/N?/S4)	Exotic invasive	(G5/N?/S3)	(G5/N?/S3)	(G5/N?/S4)	(G3/N3/S3)	Federal Endangered (G1/N1/S1)	(G5/N5/S3)
Piney Run	Yes						Yes	Yes	
Buck Mountain Creek	Yes						Yes	Yes	
Ivy Creek	Yes						Yes	Yes	Yes
Rocky Creek									Yes
Wards Creek	Yes						Yes	Yes	Yes
Ward Creek / Rocky Creek							Yes	Yes	Yes
Moormans River							Yes	Yes	
Mechums River	Yes						Yes	Yes	Yes
Swift Run	Yes						Yes	Yes	Yes
North Fork Rivanna River	Yes						Yes	Yes	Yes



South Fork Rivanna River									
Rivanna River	Yes								
Known or likely, but location not specified		Yes	Yes	Yes	Yes	Yes			
Common Name	Creeper (mussel)	Green floater (mussel)	Eastern elliptio (mussel)	Carolina lance (mussel)	Variable spike (mussel)	Atlantic pigtoe (mussel)	Triangle floater (mussel)	Giant floater (mussel)	
Genus	<i>Strophitus</i>	<i>Lasmigona</i>	<i>Elliptio</i>	<i>Elliptio</i>	<i>Elliptio</i>	<i>Fusconaia</i>	<i>Alasmidonta</i>	<i>Pyganodon</i>	
Species	<i>undulatus</i>	<i>subviridis</i>	<i>complanata</i>	<i>angustata</i>	<i>icterina</i>	<i>masoni</i>	<i>undulata</i>	<i>grandis</i>	
Status	(G5/N5/S3)	Federal Species of Concern (G3/N3/S2)	(G5/N5/S5)	(G4/N4/S4)	(G4Q/N4/S?)	State Threatened (G2/N2/S2)	(G4/N4/S3)	(G5/N5/S?)	
Piney Run									
Buck Mountain Creek									
Ivy Creek	Yes								
Rocky Creek	Yes		Yes						
Wards Creek	Yes								
Ward Creek / Rocky Creek	Yes								
Moormans River		Yes							
Mechums River	Yes								
Swift Run	Yes								
North Fork Rivanna River	Yes								
South Fork Rivanna River				Yes					
Rivanna River			Yes				Yes		
Known or likely, but location not specified					Yes	Yes		Yes	
Common Name	Eastern floater (mussel)	Carolina lance (mussel)	Variable spike (mussel)	Atlantic pigtoe (mussel)	Triangle floater (mussel)	Giant floater (mussel)	Eastern floater (mussel)	Paper pondshell (mussel)	



Genus	<i>Pyganodon</i>	<i>Elliptio</i>	<i>Elliptio</i>	<i>Fusconaia</i>	<i>Alasmidonta</i>	<i>Pyganodon</i>	<i>Pyganodon</i>	<i>Utterbackia</i>	
Species	<i>cataracta</i>	<i>angustata</i>	<i>icterina</i>	<i>masoni</i>	<i>undulata</i>	<i>grandis</i>	<i>cataracta</i>	<i>imbecillis</i>	
Status	(G5/N5/S5)	(G4/N4/S4)	(G4Q/N4/S?)	State Threatened (G2/N2/S2)	(G4/N4/S3)	(G5/N5/S?)	(G5/N5/S5)	(G5/N5/S2S3)	
Piney Run									
Buck Mountain Creek									
Ivy Creek									
Rocky Creek									
Wards Creek									
Ward Creek / Rocky Creek									
Moormans River									
Mechums River									
Swift Run									
North Fork Rivanna River									
South Fork Rivanna River		Yes							
Rivanna River					Yes				
Known or likely, but location not specified	Yes		Yes	Yes		Yes	Yes	Yes	
Common Name	Fragile ancyloid (snail)	Creeping ancyloid (snail)	Dusky ansylid (snail)	Tadpole physa (snail)	Pewter physa (snail)	Two-ridge rams-horn (snail)	Crested mudalia (snail)	Mimic lymnaea	Bugle sprite
Genus	<i>Ferrissia</i>	<i>Ferrissia</i>	<i>Laevapex</i>	<i>Physella</i>	<i>Pysella</i>	<i>Helisoma</i>	<i>Leptoxis</i>	<i>Pseudosuccinea</i>	<i>Micomenetux</i>
Species	<i>fragilis</i>	<i>rivularis</i>	<i>fuscus</i>	<i>gyrina</i>	<i>heterostropha</i>	<i>anceps</i>	<i>carinata</i>	<i>columella</i>	<i>dilatatus</i>
Status	(G5/N5/S5)	(G5/N5/S4)	(G5/N?/S4)	(G5/N5/S5)	(G5/N5/S5)	(G5/N5/S5)	(G5/N5/S5)	(G5/N5/S5)	(G5/N5/S5)
Piney Run									
Buck Mountain Creek									
Ivy Creek									
Rocky Creek									



Wards Creek									
Ward Creek / Rocky Creek									
Moormans River									
Mechums River									
Swift Run									
North Fork Rivanna River									
South Fork Rivanna River									
Rivanna River									
Known or likely, but location not specified	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
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Table G-2: Odonata

Scientific Name	Common Name	Flight Season	Habitat	VA Odonata Abundance (Roble 1997)	Potential Albemarle Dragonflies (Dunkle 2000)	Potential Albemarle Odonata (USGS 2003)	Observed Albemarle Odonata (USGS 2003)	Albemarle Samples in Collection of DCR-DNH
ANISOPTERA (Dragonflies)								
PETALURIDAE (Petalails)								
<i>Tachopteryx thoreyi</i>	Gray Petaltail	Late spring-summer	Seepage areas	Uncommon	Yes	Probable		
AESHNIDAE (Darners)								
<i>Aeshna canadensis</i>	Canada Darner	Summer-fall	Marshy ponds	Rare		Unlikely		
<i>Aeshna constricta</i>	Lance-tipped Darner	Summer-fall	Marshy ponds	Rare		Possible		
<i>Aeshna mutata</i>	Spatterdock Darner	Spring	Marshy ponds	Rare		Possible		
<i>Aeshna tuberculifera</i>	Black-tipped Darner	Summer-fall	Marshy ponds	Rare	Yes	Possible		
<i>Aeshna umbrosa</i>	Shadow Darner	Summer-fall	Ponds, streams	Common	Yes	Probable		
<i>Aeshna verticalis</i>	Green-striped Darner	Summer-fall	Marshy ponds	Rare		Unlikely		
<i>Anax junius</i>	Common Green Darner	Spring-fall	Ponds	Common	Yes	Possible		
<i>Anax longipes</i>	Comet Darner	Late spring-summer	Fishless ponds	Rare to uncommon	Yes	Probable		
<i>Basiaeschna janata</i>	Springtime Darner	Spring	Streams, rivers	Common	Yes	Unlikely		
<i>Boyeria grafiana</i>	Ocellated Darner	Summer-fall	Rocky rivers	Uncommon		Possible		
<i>Boyeria vinosa</i>	Fawn Darner	Summer-fall	Streams, rivers	Common	Yes	Probable		Yes
<i>Coryphaeschna ingens</i>	Regal Darner	Summer	Marshy ponds/lakes	Rare		Unlikely		
<i>Epiaeschna heros</i>	Swamp Darner	Spring-fall	Swamps, ponds	Common	Yes	Probable		
<i>Gomphaeschna antilope</i>	Taper-tailed Darner	Spring	Boggy ponds	Uncommon	Yes	Unlikely		
<i>Gomphaeschna furcillata</i>	Harlequin Darner	Spring	Boggy ponds	Uncommon	Yes	Probable		



Nasiaeschna pentacantha	Cyrano Darner	Late spring-summer	Slow streams	Uncommon	Yes	Unlikely		
GOMPHIDAE (Clubtails)								
Aphylla williamsoni	Two-striped Forceptail	Summer-fall	Muddy lakes/rivers, cypress pools	Rare		Unlikely		
Arigomphus furcifer	Lilypad Clubtail	Summer	Lily ponds	Rare		Unlikely		
Arigomphus villosipes	Unicorn Clubtail	Late spring-summer	Ponds	Uncommon	Yes	Unlikely		
Dromogomphus spinosus	Black-shouldered Spinyleg	Late spring-fall	Rivers, lakes	Common	Yes	Probable		
Erpetogomphus designatus	Eastern Ringtail	Summer	Rivers	Uncommon	Yes	Possible		
Gomphus abbreviatus	Spine-crowned Clubtail	Spring	Large rivers	Uncommon		Unlikely		
Gomphus adelphus	Moustached Clubtail	Spring	Rocky rivers	Rare		Unlikely		
Gomphus apomyius	Banner Clubtail	Spring	Small rivers	Rare		Unlikely		
Gomphus borealis	Beaverpond Clubtail	Spring	Beaver ponds	Rare		Unlikely		
Gomphus consanguis	Cherokee Clubtail	Spring	Small streams	Rare		Unlikely		
Gomphus descriptus	Harpoon Clubtail	Spring	Streams	Rare		Unlikely		
Gomphus exilis	Lancet Clubtail	Spring-summer	Ponds	Common	Yes	Probable		
Gomphus fraternus	Midland Clubtail	Spring-summer	Large rivers	Rare	Yes	Unlikely		
Gomphus lineatifrons	Splendid Clubtail	Spring-early summer	Rivers	Uncommon	Yes	Unlikely		
Gomphus lividus	Ashy Clubtail	Spring-summer	Streams, rivers	Common	Yes	Possible		
Gomphus parvidens	Piedmont Clubtail	Spring	Small rivers	Rare		Possible		
Gomphus quadricolor	Rapids Clubtail	Spring	Large rivers	Rare	Yes	Possible		
Gomphus rogersi	Sable Clubtail	Spring-early summer	Small streams	Rare to uncommon	Yes	Possible		
Gomphus vastus	Cobra Clubtail	Spring-summer	Large rivers	Uncommon	Yes	Probable		
Gomphus ventricosus	Skillet Clubtail	Spring	Large rivers	Rare	Yes	Unlikely		
Gomphus viridifrons	Green-faced Clubtail	Spring	Rivers	Rare		Unlikely		
Hagenius brevistylus	Dragonhunter	Spring-summer	Streams, rivers	Uncommon	Yes	Probable	Yes	
Lanthus parvulus	Northern Pygmy Clubtail	Spring	Small streams	Rare		Unlikely		
Lanthus vernalis	Southern Pygmy Clubtail	Spring	Small streams	Rare to uncommon		Unlikely		
Ophiogomphus alleghaniensis	Allegheny Snaketail	Spring	Small streams	Rare		Unlikely		
Ophiogomphus aspersus	Brook Snaketail	Spring	Sandy streams	Rare		Unlikely		
Ophiogomphus carolus	Riffle Snaketail	Spring	Rocky rivers	Rare		Unlikely		
Ophiogomphus howei	Pygmy Snaketail	Spring	Large rivers	Rare	Yes	Unlikely		



Ophiogomphus incurvatus	Appalachian Snaketail	Spring	Small streams	Rare		Unlikely		
Ophiogomphus mainensis	Maine Snaketail	Spring	Small streams	Rare		Unlikely		
Ophiogomphus rupinsulensis	Rusty Snaketail	Spring-summer	Large rivers	Uncommon		Unlikely		
Progomphus obscurus	Common Sanddragon	Late spring-fall	Sandy streams	Common	Yes	Possible		
Stylogomphus albistylus	Least Clubtail	Late spring-summer	Rocky streams	Uncommon	Yes	Unlikely		
Stylogomphus sp. nov.	(A Clubtail)	Late spring-summer	Small streams	Rare		Unlikely		
Stylurus amnicola	Riverine Clubtail	Summer	Large rivers	Rare	Yes	Unlikely		
Stylurus laurae	Laura's Clubtail	Summer	Streams, rivers	Rare	Yes	Unlikely		
Stylurus notatus	Elusive Clubtail	Summer	Large rivers	Rare	Yes	Unlikely		
Stylurus plagiatus	Russet-tipped Clubtail	Late summer-fall	Streams, rivers	Uncommon	Yes	Unlikely		
Stylurus scudderi	Zebra Clubtail	Late summer-fall	Small rivers	Rare	Yes	Unlikely		
Stylurus spiniceps	Arrow Clubtail	Summer	Rivers	Uncommon	Yes	Probable	Yes	Yes
CORDULEGASTRIDAE (Spiketails)								
Cordulegaster bilineata	Brown Spiketail	Spring-summer	Small streams	Uncommon	Yes	Unlikely		
Cordulegaster diastatops	Delta-spotted Spiketail	Early summer	Small streams	Rare		Possible		
Cordulegaster erronea	Tiger Spiketail	Summer	Small streams	Uncommon	Yes	Possible		
Cordulegaster maculata	Twin-spotted Spiketail	Spring-early summer	Small streams	Common	Yes	Unlikely		
Cordulegaster obliqua	Arrowhead Spiketail	Early summer	Small streams	Uncommon	Yes	Unlikely		
MACROMIIDAE (Cruisers)								
Didymops transversa	Stream Cruiser	Spring-late summer	Streams	Common	Yes	Probable		
Macromia alleghaniensis	Allegheny River Cruiser	Late spring-summer	Rivers	Rare to uncommon	Yes	Unlikely		
Macromia illinoiensis	Illinois River Cruiser	Late spring-fall	Rivers, streams	Common	Yes	Unlikely		
Macromia margarita	Mountain River Cruiser	Late spring-summer	Small rivers	Rare		Unlikely		
Macromia taeniolata	Royal River Cruiser	Late spring-fall	Rivers	Uncommon	Yes	Unlikely		
CORDULIIDAE (Emeralds)								
Cordulia shurtleffii	American Emerald	Late spring-summer	Boggy ponds	Rare		Possible		
Epitheca canis	Beaverpond Baskettail	Late spring	Boggy ponds	Rare		Unlikely		
Epitheca costalis	Stripe-winged Baskettail	Late spring	Sandy ponds/lakes	Rare	Yes	Unlikely		
Epitheca cynosura	Common Baskettail	Spring-early summer	Ponds	Common	Yes	Probable		
Epitheca princeps	Prince Baskettail	Late spring-fall	Ponds,rivers,lakes	Common	Yes	Probable		



<i>Epitheca semiaquea</i>	Mantled Baskettail	Late spring	Boggy ponds	Rare		Unlikely		
<i>Epitheca spinosa</i>	Robust Baskettail	Early spring	Boggy ponds, swamps	Rare		Unlikely		
<i>Helocordulia selysii</i>	Selys' Sundragon	Spring	Small streams	Rare	Yes	Unlikely		
<i>Helocordulia uhleri</i>	Uhler's Sundragon	Spring	Streams	Common	Yes	Unlikely		
<i>Neurocordulia obsoleta</i>	Umber Shadowdragon	Late spring-summer	Streams, rivers	Uncommon	Yes	Unlikely		
<i>Neurocordulia virginienensis</i>	Cinnamon Shadowdragon	Early summer	Rivers	Rare		Unlikely		
<i>Neurocordulia yamaskanensis</i>	Stygian Shadowdragon	Early summer	Large rivers	Rare		Unlikely		
<i>Somatochlora elongata</i>	Ski-tailed Emerald	Summer-early fall	Boggy ponds	Rare		Unlikely		
<i>Somatochlora filosa</i>	Fine-lined Emerald	Summer-fall	Boggy streams	Rare	Yes	Unlikely		
<i>Somatochlora georgiana</i>	Coppery Emerald	Summer	Warm streams	Rare	Yes	Unlikely		
<i>Somatochlora linearis</i>	Mocha Emerald	Summer-fall	Swamps, small streams	Uncommon	Yes	Probable		
<i>Somatochlora provocans</i>	Treetop Emerald	Summer	Small streams, boggy seeps	Rare	Yes	Unlikely		
<i>Somatochlora tenebrosa</i>	Clamp-tipped Emerald	Summer-fall	Ponds, small streams	Common	Yes	Probable		
<i>Somatochlora williamsoni</i>	Williamson's Emerald	Summer	Boggy ponds	Rare		Unlikely		
LIBELLULIDAE (Skimmers)								
<i>Brachymesia gravida</i>	Four-spotted Pennant	Summer-early fall	Salt marshes	Locally common		Unlikely		
<i>Celithemis elisa</i>	Calico Pennant	Spring-early fall	Ponds	Common	Yes	Probable		
<i>Celithemis eponina</i>	Halloween Pennant	Summer-early fall	Ponds, marshes	Common	Yes	Possible		
<i>Celithemis fasciata</i>	Banded Pennant	Late spring-summer	Ponds	Uncommon	Yes	Probable		
<i>Celithemis martha</i>	Martha's Pennant	Summer-early fall	Boggy ponds	Rare	Yes	Probable		
<i>Celithemis ornata</i>	Faded Pennant	Summer	Ponds	Rare		Unlikely		
<i>Celithemis verna</i>	Double-ringed Pennant	Late spring-summer	Ponds	Rare to uncommon	Yes	Probable		
<i>Dythemis velox</i>	Swift Setwing	Summer-early fall	Sluggish streams	Uncommon		Unlikely		
<i>Erythemis simplicicollis</i>	Eastern Pondhawk	Spring-fall	Ponds, marshes	Common	Yes	Probable		
<i>Erythrodiplax berenice</i>	Seaside Dragonlet	Spring-fall	Salt marshes	Locally abundant		Unlikely		
<i>Erythrodiplax minuscula</i>	Little Blue Dragonlet	Summer-early fall	Ponds	Uncommon	Yes	Probable		
<i>Libellula</i> (aka <i>Ladona</i>) <i>deplanata</i>	Blue Corporal	Spring-early summer	Ponds, marshes	Common	Yes	Probable		



Ladona exusta	White Corporal	Spring	Ponds	Rare		Unlikely		
Ladona julia	Chalk-fronted Corporal	Late spring-summer	Boggy ponds	Rare		Unlikely		
Leucorrhinia frigida	Frosted Whiteface	Late spring	Boggy ponds	Rare	Yes	Unlikely		
Leucorrhinia hudsonica	Hudsonian Whiteface	Late spring	Boggy ponds	Rare		Unlikely		
Leucorrhinia intacta	Dot-tailed Whiteface	Spring-mid summer	Boggy ponds	Uncommon		Possible		
Leucorrhinia proxima	Red-waisted Whiteface	Early summer	Boggy ponds	Rare		Unlikely		
Libellula auripennis	Golden-winged Skimmer	Late spring-summer	Ponds	Uncommon	Yes	Probable		
Libellula axilena	Bar-winged Skimmer	Spring-summer	Ponds	Uncommon	Yes	Probable		
Libellula cyanea	Spangled Skimmer	Early spring-fall	Ponds, marshes	Common	Yes	Probable		
Libellula flavida	Yellow-sided Skimmer	Spring-fall	Seepage areas	Uncommon	Yes	Possible		
Libellula incesta	Slaty Skimmer	Spring-fall	Ponds, marshes	Common	Yes	Probable		
Libellula luctuosa	Widow Skimmer	Spring-fall	Ponds	Common		Probable		
Libellula needhami	Needham's Skimmer	Spring-fall	Salt marshes	Locally abundant		Unlikely		
Libellula pulchella	Twelve-spotted Skimmer	Spring-fall	Ponds	Common	Yes	Probable		
Libellula semifasciata	Painted Skimmer	Spring-fall	Ponds, marshes	Common	Yes	Probable		
Libellula vibrans	Great Blue Skimmer	Spring-fall	Swamps, ponds	Common	Yes	Possible		
Miathyria marcella	Hyacinth Glider	Summer	Ponds,marshy lakes	Rare		Unlikely		
Nannothemis bella	Elfin Skimmer	Late spring-summer	Boggy ponds	Rare	Yes	Unlikely		
Pachydiplax longipennis	Blue Dasher	Spring-fall	Ponds, marshes	Common	Yes	Probable		
Pantala flavescens	Wandering Glider	Spring-fall	Ponds	Common	Yes	Possible		
Pantala hymenaea	Spot-winged Glider	Summer-fall	Ponds	Common	Yes	Unlikely		
Perithemis tenera	Eastern Amberwing	Spring-fall	Ponds, marshes	Common	Yes	Probable		
Libellula (aka Plathemis) lydia	Common Whitetail	Spring-fall	Ponds, marshes	Common	Yes	Probable		
Sympetrum ambiguum	Blue-faced Meadowhawk	Summer-fall	Swamps, ponds	Uncommon	Yes	Unlikely		
Sympetrum corruptum	Variiegated Meadowhawk	Summer	Ponds	Rare		Unlikely		
Sympetrum janeae	Jane's Meadowhawk	Fall	Ponds	Rare		Unlikely		
Sympetrum obtrusum	White-faced Meadowhawk	Late summer-fall	Boggy ponds	Rare		Unlikely		
Sympetrum rubicundulum	Ruby Meadowhawk	Summer-fall	Ponds	Common	Yes	Possible		
Sympetrum semicinctum	Band-winged Meadowhawk	Summer-fall	Marshes	Common	Yes	Possible		
Sympetrum vicinum	Yellow-legged Meadowhawk	Summer-fall	Ponds	Common	Yes	Probable		



<i>Tramea carolina</i>	Carolina Saddlebags	Spring-fall	Ponds, marshes	Common	Yes	Probable		
<i>Tramea lacerata</i>	Black Saddlebags	Spring-fall	Ponds, marshes	Common	Yes	Probable		
<i>Tramea onusta</i>	Red-mantled Saddlebags	Spring-summer	Ponds	Rare		Probable		
ZYGOPTERA (Damselflies)								
CALOPTERYGIDAE (Broad-winged Damselflies)								
<i>Calopteryx aequabilis</i>	River Jewelwing	Early summer	Small rivers	Rare		Unlikely		
<i>Calopteryx amata</i>	Superb Jewelwing	Early-mid summer	Rocky streams	Rare		Unlikely		
<i>Calopteryx angustipennis</i>	Appalachian Jewelwing	Spring-mid summer	Rocky rivers	Rare		Probable		
<i>Calopteryx dimidiata</i>	Sparkling Jewelwing	Spring-summer	Sandy streams	Uncommon		Probable		
<i>Calopteryx maculata</i>	Ebony Jewelwing	Spring-fall	Streams, rivers	Common		Probable		
<i>Hetaerina americana</i>	American Rubyspot	Spring-fall	Rivers	Common		Probable	Yes	Yes
<i>Hetaerina titia</i>	Smoky Rubyspot	Late summer	Rivers	Rare to uncommon		Unlikely		
LESTIDAE (Spread-winged Damselflies)								
<i>Archilestes grandis</i>	Great Spreadwing	Late summer-fall	Streams, ponds	Uncommon		Probable		
<i>Lestes congener</i>	Spotted Spreadwing	Summer-fall	Ponds	Uncommon		Probable		
<i>Lestes disjunctus</i>	Common Spreadwing	Spring-fall	Ponds	Common		Probable		
<i>Lestes dryas</i>	Emerald Spreadwing	Spring-summer	Ponds	Rare		Unlikely		
<i>Lestes eurinus</i>	Amber-winged Spreadwing	Spring-summer	Ponds	Uncommon		Probable		
<i>Lestes forcipatus</i>	Sweetflag Spreadwing	Spring-fall	Ponds	Uncommon		Possible		
<i>Lestes inaequalis</i>	Elegant Spreadwing	Spring-summer	Ponds	Uncommon		Unlikely		
<i>Lestes rectangularis</i>	Slender Spreadwing	Spring-fall	Ponds	Common		Probable		
<i>Lestes vidua</i>	Carolina Spreadwing	Fall	Ponds	Rare		Unlikely		
<i>Lestes vigilax</i>	Swamp Spreadwing	Spring-fall	Ponds	Uncommon		Probable		
COENAGRIONIDAE (Narrow-winged Damselflies)								
<i>Amphiagrion saucium</i>	Eastern Red Damsel	Spring-late summer	Seepage areas	Uncommon		Probable	Yes	
<i>Argia apicalis</i>	Blue-fronted Dancer	Spring-fall	Rivers, ponds	Common		Possible		



<i>Argia bipunctulata</i>	Seepage Dancer	Spring-fall	Seepage areas	Uncommon		Possible		
<i>Argia fumipennis violacea</i>	Violet (Variable) Dancer	Spring-fall	Streams	Common		Probable		
<i>Argia moesta</i>	Powdered Dancer	Spring-fall	Rocky rivers	Common		Possible		
<i>Argia sedula</i>	Blue-ringed Dancer	Summer-fall	Streams, rivers	Common		Unlikely		
<i>Argia tibialis</i>	Blue-tipped Dancer	Summer	Streams, rivers	Common		Unlikely		
<i>Argia translata</i>	Dusky Dancer	Summer	Rivers	Uncommon		Possible		
<i>Chromagrion conditum</i>	Aurora Damsel	Spring-early summer	Boggy ponds, spring-fed streams	Uncommon		Probable		
<i>Enallagma aspersum</i>	Azure Bluet	Spring-fall	Ponds	Common		Probable		
<i>Enallagma basidens</i>	Double-striped Bluet	Spring-fall	Ponds, streams	Uncommon		Possible		
<i>Enallagma civile</i>	Familiar Bluet	Spring-fall	Ponds, lakes	Common		Probable		
<i>Enallagma cyathigerum</i>	Northern Bluet	Spring-early summer	Boggy ponds	Rare		Unlikely		
<i>Enallagma daeckii</i>	Attenuated Bluet	Spring-summer	Marshy ponds	Uncommon		Unlikely		
<i>Enallagma divagans</i>	Turquoise Bluet	Spring-early summer	Streams, ponds	Uncommon		Probable		
<i>Enallagma doubledayi</i>	Atlantic Bluet	Spring-summer	Ponds	Uncommon		Possible		
<i>Enallagma dubium</i>	Burgundy Bluet	Summer	Swampy ponds	Rare		Unlikely		
<i>Enallagma durum</i>	Big Bluet	Spring-fall	Salt marshes	Uncommon		Unlikely		
<i>Enallagma ebrium</i>	Marsh Bluet	Spring-summer	Montane ponds	Rare		Unlikely		
<i>Enallagma exsulans</i>	Stream Bluet	Spring-fall	Rivers	Common		Probable		
<i>Enallagma geminatum</i>	Skimming Bluet	Spring-summer	Ponds	Uncommon		Probable		
<i>Enallagma hageni</i>	Hagen's Bluet	Late spring-summer	Montane ponds	Rare		Unlikely		
<i>Enallagma pallidum</i>	Pale Bluet	Late spring	Swampy lakes	Rare		Unlikely		
<i>Enallagma signatum</i>	Orange Bluet	Spring-fall	Ponds, lakes	Common		Probable		
<i>Enallagma traviatum</i>	Slender Bluet	Spring-mid summer	Ponds, lakes	Uncommon		Possible		
<i>Enallagma vesperum</i>	Vesper Bluet	Late spring-summer	Ponds, lakes	Uncommon		Unlikely		
<i>Enallagma weewa</i>	Blackwater Bluet	Summer	Sandy streams	Rare		Unlikely		
<i>Ischnura hastata</i>	Citrine Forktail	Spring-fall	Ponds, seeps, salt marshes	Common		Probable		
<i>Ischnura kellicotti</i>	Lilypad Forktail	Late spring-summer	Lily ponds	Uncommon		Unlikely		
<i>Ischnura posita</i>	Fragile Forktail	Spring-fall	Ponds, marshes	Common		Probable		
<i>Ischnura prognata</i>	Furtive Forktail	Spring-summer	Swamps, seeps	Uncommon		Unlikely		
<i>Ischnura ramburii</i>	Rambur's Forktail	Spring-fall	Salt marshes, sandy ponds	Uncommon		Unlikely		
<i>Ischnura verticalis</i>	Eastern Forktail	Spring-fall	Ponds	Common		Possible		
<i>Nehalennia gracilis</i>	Sphagnum Sprite	Spring-summer	Boggy ponds	Rare		Unlikely		
<i>Nehalennia integricollis</i>	Southern Sprite	Late spring-summer	Boggy ponds	Rare		Probable		



Nehalennia irene	Sedge Sprite	Late spring-summer	Boggy ponds	Rare		Unlikely		
Telebasis byersi	Duckweed Firetail	Summer	Swampy ponds	Rare to uncommon		Unlikely		
Dunkle, S.W. 2000. Dragonflies through Binoculars. Oxford University Press, New York, NY.								
USGS (United States Geological Survey). 2003. Database of dragonflies and damselflies of North America [web application]. Northern Prairie Wildlife Research Center, Jamestown, ND. Available: http://www.npwrc.usgs.gov/resource/resource.htm . (Accessed: March 2003).								
Roble, S.M. 1997. Checklist of dragonflies and damselflies of Virginia. Virginia Department of Conservation and Recreation Division of Natural Heritage, Richmond, VA.								

Table G-3: Crayfish

Common Name	Scientific Name	Status	Record
Appalachian brook crayfish	<i>Cambarus bartonii</i>	G5/N5/S4	Likely or known in DGIF BOVA Database
No common name	<i>Cambarus acuminatus</i>	G4/N4/S4	Appears in DGIF Database of Observations (Swift Run, North Fork Rivanna River, Mechums River, Lickinghole Creek)
No common name	<i>Cambarus longulus</i>	G5/N5/S4	Likely or known in DGIF BOVA Database
Spinycheek crayfish	<i>Orconectes limosus</i>	G4G5/N4N5/S3	Likely or known in DGIF BOVA Database
Virile crayfish	<i>Orconectes virilis</i>	G5/N5	Likely or known in DGIF BOVA Database
White River crayfish	<i>Procambarus acutus</i>	G5/N5/S?	Likely or known in DGIF BOVA Database
NatureServe Explorer. 2003. An online encyclopedia of life [web application]. Version 1.6. Arlington, Virginia, USA: NatureServe. Available: http://www.natureserve.org/explorer . (Accessed: March 2003).			
VDGIF (Virginia Department of Game and Inland Fisheries). 2002. Database of wildlife observations in Albemarle County, VA (computer file). Richmond, VA.			
VDGIF (Virginia Department of Game and Inland Fisheries). 2003. Internet database (Biota of Virginia) of wildlife [web application]. Richmond, VA. Available: www.vafwis.org . (Accessed: March 2003).			
Watson, B.T. 2003. Email to C. French of the Thomas Jefferson Soil and Water Conservation District (6/6/2003). Department of Game and Inland Fisheries, Forest, VA.			



Table G-4: Aquatic Invertebrate Families

			River	Broad Axe Creek	Dollins Creek	Mechums River	Pounding Branch	South Fork Rivanna River
			Location	Off Rt. 682	Near Batesville	At Rt. 692	Near Batesville	At McMurdo Farm
			Number of Sampling Events	7	1	1	2	2
<i>Order (Insects) or Class (Non Insects)</i>	<i>Common Order/Class</i>	<i>Family</i>	<i>"Common" Family from McCafferty 1981 or Voshell 2002</i>					
Coleoptera	Water beetles	Dryopidae	Longtoed water beetles	Yes			Yes	
Coleoptera	Water beetles	Elmidae	Riffle beetles	Yes	Yes		Yes	Yes
Coleoptera	Water beetles	Haliplidae	Crawling water beetles					Yes
Coleoptera	Water beetles	Hydrophilidae	Water scavenger beetles					Yes
Coleoptera	Water beetles	Psephenidae	Water pennies	Yes				Yes
Coleoptera	Water beetles	Ptilodactylidae	Ptilodactylid beetles				Yes	
Diptera	True flies	Athericidae	Watersnipe flies	Yes				
Diptera	True flies	Ceratopogonidae	Biting midges			Yes		Yes
Diptera	True flies	Chironomidae	Midges (non-biting)	Yes	Yes	Yes	Yes	Yes
Diptera	True flies	Empididae	Aquatic dance flies	Yes				
Diptera	True flies	Simuliidae	Black flies	Yes	Yes	Yes	Yes	Yes
Diptera	True flies	Tanyderidae	Primitive crane flies				Yes	
Diptera	True flies	Tipulidae	Crane flies	Yes	Yes	Yes	Yes	
Ephemeroptera	Mayflies	Baetidae	Small minnow (swimming) mayflies	Yes	Yes	Yes	Yes	Yes
Ephemeroptera	Mayflies	Baetiscidae	Armored mayflies	Yes	Yes		Yes	
Ephemeroptera	Mayflies	Ephemerellidae	Spiney crawlers	Yes	Yes	Yes		Yes
Ephemeroptera	Mayflies	Ephemeridae	Common burrowers				Yes	Yes
Ephemeroptera	Mayflies	Heptageniidae	Flatheaded mayflies	Yes	Yes	Yes	Yes	Yes
Ephemeroptera	Mayflies	Oligoneuriidae	Brushlegged mayflies			Yes	Yes	
Ephemeroptera	Mayflies	Siphonuridae	Primitive minnow mayflies				Yes	



Hemiptera	Water bugs	Gerridae	Water striders					Yes
		Veliidae	Shortlegged striders	Yes				
Megaloptera	Megaloptera	Corydalidae	Fishflies and dobsonflies	Yes		Yes	Yes	
Odonata - Anisoptera	Dragonflies	Cordulegastridae	Biddies	Yes				
		Gomphidae	Clubtails	Yes	Yes	Yes	Yes	Yes
		Libellulidae	Common skimmers					Yes
Odonata - Zygoptera	Damselflies	Coenagrionidae	Narrowwinged damselflies					Yes
Plecoptera	Stoneflies	Capniidae	Slender winter stoneflies	Yes				
		Chloroperlidae	Green stoneflies	Yes				
		Nemouridae	Nemourid broadbacks	Yes	Yes	Yes	Yes	Yes
		Perlidae	Common stoneflies	Yes	Yes	Yes	Yes	Yes
		Perlodidae	Perlodid stoneflies	Yes		Yes		
		Taeniopterygidae	Taeniopterygid broadbacks	Yes				
Trichoptera	Caddisflies	Glossosomatidae	Saddlecase makers	Yes	Yes		Yes	
		Hydropsychidae	Common net-spinners	Yes	Yes	Yes	Yes	
		Limnephilidae	Northern casemakers	Yes				
		Philopotamidae	Fingernet casemakers	Yes	Yes	Yes		
		Polycentropodidae	Trumpetnet and tubemaking caddisflies	Yes				
Turbellaria	Flatworms	Planariidae	Flatworms					Yes
Arachnida	Mites	Hydrachnidae	Water mites	Yes		Yes		Yes
Bivalvia	Mussels and clams	Corbiculidae	Asian clams					Yes
		Sphaeridae	Fingernail or pea clams					Yes
Gastropoda	Snails	Ancylidae	Ancylid snail ("limpet")	Yes		Yes		
		Physidae	Physid snail					Yes
		Planorbidae	Planorbid snail					Yes
Malacostraca		Gammaridae	Scuds	Yes	Yes		Yes	
		Cambaridae	Crayfishes				Yes	
Oligochaeta	Worms	Lumbriculidae	Aquatic earthworms	Yes		Yes		
Tubificida	Tubiface worms	Naididae	Tubiface worms					Yes
		Tubificidae	Tubiface worms					Yes

VDEQ (Virginia Department of Environmental Quality). 2002. Database of aquatic invertebrate families collected in Albemarle County, VA. Harrisonburg, VA.



Table G-5: List of invertebrate species in Albemarle Co. from VDGIF databases. Collections and Aquatics databases are documented occurrences from scientific studies. BOVA (Biota of Virginia) is a literature-based database; distributional information in BOVA may be extrapolated from more general species distribution descriptions.

Status	Common Name	Scientific Name	Confirming Database
	Butterfly, hoary edge	<i>Achalarus lyciades</i>	BOVA Confirmed
	Mussel, triangle floater	<i>Alasmidonta undulata</i>	Aquatics
	Tick, lone star	<i>Amblyomma americanum</i>	BOVA Confirmed
	Butterfly, least skipper	<i>Ancyloxypha numitor</i>	BOVA Confirmed
	Butterfly, falcate orangetip	<i>Anthocharis midea</i>	BOVA Confirmed
	Butterfly, hackberry emperor	<i>Asterocampa celtis</i>	BOVA Confirmed
	Butterfly, tawny emperor	<i>Asterocampa clyton</i>	BOVA Confirmed
	Butterfly, sachem	<i>Atalopedes campestris</i>	BOVA Confirmed
	Butterfly, pipevine swallowtail	<i>Battus philenor</i>	BOVA Confirmed
	Butterfly, brown elfin	<i>Callophrys augustinus</i>	BOVA Confirmed
	Butterfly, olive juniper hairstreak	<i>Callophrys gryneus gryneus</i>	BOVA Confirmed
	Butterfly, Henry's elfin	<i>Callophrys henrici</i>	BOVA Confirmed
	Butterfly, eastern pine elfin	<i>Callophrys niphon</i>	BOVA Confirmed
	Butterfly, red-banded hairstreak	<i>Calycopis cecrops</i>	BOVA Confirmed
	Crayfish, no common name	<i>Cambarus acuminatus</i>	COLLECTIONS
	Crayfish, Appalachian brook	<i>Cambarus bartonii bartonii</i>	BOVA Confirmed
	Crayfish, no common name	<i>Cambarus dubius</i>	BOVA Confirmed
	Crayfish, no common name	<i>Cambarus Hiaticambarus longulus</i>	Aquatics
	Crayfish, no common name	<i>Cambarus longulus</i>	BOVA Confirmed
	Crayfish, no common name	<i>Cambarus Puncticambarus acuminatus</i>	Aquatics
	Crayfish, no common name	<i>Cambarus robustus</i>	BOVA Likely
	Butterfly, spring azure	<i>Celastrina ladon</i>	BOVA Confirmed
	Butterfly, common wood-nymph	<i>Cercyonis pegala</i>	BOVA Confirmed
	Butterfly, silvery checkerspot	<i>Chlosyne nycteis</i>	BOVA Confirmed
	Butterfly, orange sulphur	<i>Colias eurytheme</i>	BOVA Confirmed
	Butterfly, clouded sulphur	<i>Colias philodice</i>	BOVA Confirmed



	Clam, Asian	<i>Corbicula fluminea</i>	COLLECTIONS, Aquatics
	Gnat	<i>Culicoides stellifer</i>	BOVA Confirmed
	Moth, codling	<i>Cydia pomonella</i>	BOVA Likely
	Butterfly, monarch	<i>Danaus plexippus</i>	BOVA Confirmed
	Tick, winter	<i>Dermacentor albipictus</i>	BOVA Likely
	Tick, American dog	<i>Dermacentor variabilis</i>	BOVA Likely
	Mussel, Carolina lance	<i>Elliptio angustata</i>	COLLECTIONS, Aquatics
	Mussel, eastern elliptio	<i>Elliptio complanata</i>	COLLECTIONS, Aquatics
	Butterfly, silver-spotted skipper	<i>Epargyreus clarus</i>	BOVA Confirmed
	Butterfly, sleepy duskywing	<i>Erynnis brizo</i>	BOVA Confirmed
	Butterfly, dreamy duskywing	<i>Erynnis icelus</i>	BOVA Confirmed
	Butterfly, Juvenal's duskywing	<i>Erynnis juvenalis</i>	BOVA Confirmed
	Butterfly, variegated fritillary	<i>Euptoieta claudia</i>	BOVA Confirmed
	Butterfly, zebra swallowtail	<i>Eurytides marcellus</i>	BOVA Confirmed
	Butterfly, eastern tailed-blue	<i>Everes comyntas</i>	BOVA Confirmed
	Butterfly, harvester	<i>Feniseca tarquinius</i>	BOVA Confirmed
	Limpet, creeping ancyliid	<i>Ferrissia rivularis</i>	COLLECTIONS, Aquatics
FSST	Pigtoe, Atlantic	<i>Fusconaia masoni</i>	COLLECTIONS
	Tick, rabbit	<i>Haemaphysalis leporispalustris</i>	BOVA Likely
	Earworm, corn	<i>Heliathis zea</i>	BOVA Likely
	Snail, two-ridge rams-horn	<i>Helisoma anceps anceps</i>	COLLECTIONS, Aquatics
	Moth, buck	<i>Hemileuca maia</i>	BOVA Confirmed
	Butterfly, fiery skipper	<i>Hylephila phyleus</i>	BOVA Confirmed
	Butterfly, common buckeye	<i>Junonia coenia</i>	BOVA Confirmed
FSSS	Floater, green	<i>Lasmigona subviridis</i>	COLLECTIONS
	Snail, crested mudalia	<i>Leptoxis carinata carinata</i>	COLLECTIONS
	Butterfly, American snout	<i>Libytheana carinenta</i>	BOVA Confirmed
	Butterfly, viceroy	<i>Limenitis archippus</i>	BOVA Confirmed
	Butterfly, red-spotted purple	<i>Limenitis arthemis astyanax</i>	BOVA Confirmed
	Butterfly, American copper	<i>Lycaena phlaeas</i>	BOVA Confirmed
	Moth, gypsy	<i>Lymantria dispar</i>	BOVA Confirmed
	Butterfly, little wood-satyr	<i>Megisto cymela</i>	BOVA Confirmed



	Butterfly, swarthy skipper	<i>Nastra lherminier</i>	BOVA Confirmed
	Butterfly, mourning cloak	<i>Nymphalis antiopa</i>	BOVA Confirmed
	Crayfish	<i>Orconectes immunis</i>	BOVA Confirmed
	Crayfish, spiny cheek	<i>Orconectes limosus</i>	BOVA Confirmed
	Crayfish, virile	<i>Orconectes virilis</i>	Aquatics
	Borer, European corn	<i>Ostrinia nubilatis</i>	BOVA Likely
	Butterfly, eastern tiger swallowtail	<i>Papilio glaucus</i>	BOVA Confirmed
	Butterfly, black swallowtail	<i>Papilio polyxenes asterius</i>	BOVA Confirmed
	Butterfly, spicebush swallowtail	<i>Papilio troilus</i>	BOVA Confirmed
	Butterfly, white M hairstreak	<i>Parrhasius m-album</i>	BOVA Confirmed
	Snail, tadpole physa	<i>Physella gyrina</i>	Aquatics
	Snail, pewter physa	<i>Physella heterostropha pomila</i>	COLLECTIONS
	Butterfly, cabbage white	<i>Pieris rapae</i>	BOVA Likely
FESE	Spinymussel, James (= Virginia)	<i>Pleurobema (= Fusconaia, = Elliptio, = Canthyra) collina</i>	COLLECTIONS, Aquatics
	Butterfly, Hobomok skipper	<i>Poanes hobomok</i>	BOVA Confirmed
	Butterfly, Zabulon skipper	<i>Poanes zabulon</i>	BOVA Confirmed
	Butterfly, carus skipper	<i>Polites carus</i>	BOVA Confirmed
	Butterfly, crossline skipper	<i>Polites origenes</i>	BOVA Confirmed
	Butterfly, eastern comma	<i>Polygonia comma</i>	BOVA Confirmed
	Butterfly, question mark	<i>Polygonia interrogationis</i>	BOVA Confirmed
	Butterfly, gray comma	<i>Polygonia progne</i>	BOVA Confirmed
	Butterfly, little glassywing	<i>Pompeius verna</i>	BOVA Confirmed
	Crayfish. White River	<i>Procambarus acutus acutus</i>	Aquatics
	Armyworm	<i>Pseudaletia unipuncta</i>	BOVA Likely
	Mussel, giant floater	<i>Pyganodon grandis</i>	COLLECTIONS
	Tick, brown dog	<i>Rhipicephalus sanguineus</i>	BOVA Likely
	Butterfly, banded hairstreak	<i>Satyrium calanus</i>	BOVA Confirmed
	Butterfly, striped hairstreak	<i>Satyrium liparops</i>	BOVA Confirmed
	Butterfly, Aphrodite fritillary	<i>Speyeria aphrodite</i>	BOVA Confirmed
	Butterfly, great spangled fritillary	<i>Speyeria cybele</i>	BOVA Confirmed



FS	Fritillary, regal	<i>Speyeria idalia</i>	BOVA Confirmed
	Clam, general fingernail	<i>Sphaerium spp.</i>	Aquatics
	Mussel, creeper	<i>Strophitus undulatus</i>	COLLECTIONS, Aquatics
	Butterfly, southern cloudywing	<i>Thorybes bathyllus</i>	BOVA Confirmed
	Butterfly, northern cloudywing	<i>Thorybes pylades</i>	BOVA Confirmed
	Butterfly, European skipper	<i>Thymelicus lineola</i>	BOVA Confirmed
	Butterfly, red admiral	<i>Vanessa atalanta</i>	BOVA Confirmed
	Butterfly, American lady	<i>Vanessa virginiensis</i>	BOVA Confirmed
	Mussel, notched rainbow	<i>Villosa constricta</i>	COLLECTIONS, Aquatics
	Butterfly, northern broken dash	<i>Wallengrenia egeremet</i>	BOVA Confirmed

H. FLORA OF ALBEMARLE COUNTY

The complete Flora of Albemarle County includes over 1,300 species. As this list is too long to be practically included in this document, the information will be kept on file in the Albemarle County Planning Department.

I. RARE PLANTS OF ALBEMARLE COUNTY

Table I-1: Rare Plants of Albemarle County						
Common Name	Genus	species	subspecies	var	Scarcity	Found in Shenandoah NP
Southern clubmoss	Lycopodium	appressum				
Common clubmoss	Lycopodium	clavatum				
Bog clubmoss	Lycopodium	inundatum				
Daisy-leaved grape-fern	Botrychium	matricariaefolium				
Bradley's spleenwort	Asplenium	bradleyi				
Lobed spleenwort	Asplenium	pinnatifidum			very scarce	
Trudell's spleenwort	Asplenium	trudellii				
Glade fern	Athyrium	pyncocarpon			very scarce	
Wooly lip-fern	Cheilanthes	tomentosa				
Log fern	Dryopteris	celsa				
Goldie's shield fern	Dryopteris	goldiana				
Oak fern	Gymnocarpum	dryopteris				YES
Climbing fern	Lygodium	palmatum				
Grass-leaved arrowhead	Sagittaria	graminea				
Golden club	Orontium	aquaticum				
Sedge	Carex	albursina				
Sedge	Carex	comosa				
Sedge	Carex	shortiana				
Flat sedge	Cyperus	aristatus				
Watermeal	Wolffia	borealis				
Canada lily	Lilium	canadense				YES
Bunchflower	Melanthium	hybridum				YES
Featherbells	Stenanthium	gramineum			very scarce	YES
Turkey beard	Xerophyllum	asphodeloides				
Spotted coralroot	Corallorhiza	maculata				YES
Pale green orchid	Habenaria	flava				
Purple fringeless orchid	Habenaria	peramoena				
Long-bracted green orchid	Habenaria	viridis				YES
Crested coralroot	Hexalectris	spicata				
Spring ladies'-tresses	Spiranthes	vernalis				
Bent-awn plumegrass	Erianthus	contortus				
Eastern mannagrass	Glyceria	septentrionalis				
Bear's-grass	Gymnopogon	ambiguus				
Bluegrass	Poa	alsodes				YES



Indian grass	Sorghastrum	eliottii			
Narrow-leaved cattail	Typha	augustifolia			
Yellow-eyed grass	Xyris	torta			
Cottonweed	Froelichia	gracilis			
Fragrant sumac	Rhus	aromatica			
Poison sumac	Rhus	vernix			
Golden alexanders	Zizia	aurea			
Dutchman's pipe	Aristolochia	macrophylla			
Heart-leaf	Hexastylis	heterophylla			
Common angle-pod	Matelea	gonocarpa			
Single-headed pussytoes	Antennaria	solitaria			
Saw-tooth sunflower	Helianthus	grosse-serratus			
Maximillian's sunflower	Helianthus	maximiliani			
Gray sunflower	Helianthus	mollis			
Camphor-weed	Heterotheca	subaxillaris			
Pineapple weed	Matricaria	matricarioides			
Rand's goldenrod	Solidago	randii			YES
Jefferson twin-leaf	Jeffersonia	diphylla			
Paper birch	Betula	papyrifera			YES
Lyreleaf rockcress	Arabis	lyrata			
Dry-land bitter-cress	Cardamine	parviflora			
Prickly-pear	Opuntia	humifusa		very scarce	
Lobelia	Lobelia	georgiana			
Common hops	Humulus	lupulus			
Clammy-weed	Polanisia	dodecandra			
Smooth honeysuckle	Lonicera	dioica			YES
Downy arrowwood	Viburnum	rafinesquianum		very scarce	
Mountain sandwort	Arenaria	groenlandica			
Summer-cypress	Kochia	scoparia			
Bunchberry	Cornus	canadensis			YES
Fetterbush	Leucothoe	racemosa			
Rose-bay	Rhododendron	maximum			
Rough-pod copperleaf	Acalypha	ostryifolia			
Carolina leaf-flower	Phyllanthus	caroliniensis			
Sickle-pod	Cassia	obtusifolia			
Yellow bartonia	Bartonia	virginica		very scarce	
Stork's-bill	Erodium	cicutarium			
Humped bladderwort	Utricularia	gibba			
Virginia sida	Sida	hermaphrodita		extinct?	
Watershield	Brasenia	schreberi			
Fragrant waterlily	Nymphaea	odorata		extinct?	
Black ash	Fraxinus	nigra			YES
American willow-herb	Epilobium	ciliatum			YES
River seed box	Ludwigia	leptocarpa			
Plume-poppy	Macleaya	cordata		extinct?	
Riverweed	Podostemon	ceratophyllum			



Mountain phlox	Phlox	ovata				
Moss pixie	Phlox	subulata				
Marsh marigold	Caltha	palustris			very scarce	
Dwarf larkspur	Delphinium	tricorne				
Lesser celandine	Ranunculus	ficaria				
Tasselrue	Trautvetteria	carolinensis				
Tall potentilla	Potentilla	arguta				
Meadowsweet	Spiraea	alba				
Barren strawberry	Waldsteinia	fragarioides				
Small bluets	Houstonia	pusilla				
Wafer-ash	Ptelea	trifoliata				YES
Quaking aspen	Populus	tremoloides				
Hairy heuchera	Heuchera	villosa				
Miterwort	Mitella	diphylla			very scarce	YES
Michaux's saxifrage	Saxifraga	michauxii				YES
Mazus	Mazus	japonicus				
Winged monkey-flower	Mimulus	alatus				
Leatherwood	Dirca	palustris				
Northern white violet	Viola	macloskeyi		pallens		



J. EDUCATION FRAMEWORK/TABLE

Target Audience		Tasks/ Topics	Performed by/ Addressed by	Existing Education Programs		Needed Education Programs	
				School	Outside School	School	Outside School
General Public	Natural History Community						
	Clubs/Organizations						
	Other						
Educational Institutions	K-12						
	Adult						
Public Policy Makers	BOS/City Council						
	Planning Commissions						
	Local Government Staff						
	State Officials						
	Federal Officials						
	UVA						
Landowners/ Managers	Farmers						
	Business Owners						
	Parks (government)						
	UVA						
	Schools						
	Developers						
	Construction Companies						
	Conservation groups						
Easement Holders							
TOTALS:	Everyone in Albemarle County	Protection and Understanding of Albemarle's Biological Resources	Educators in Various Roles and Program Participants	Public Education Program			