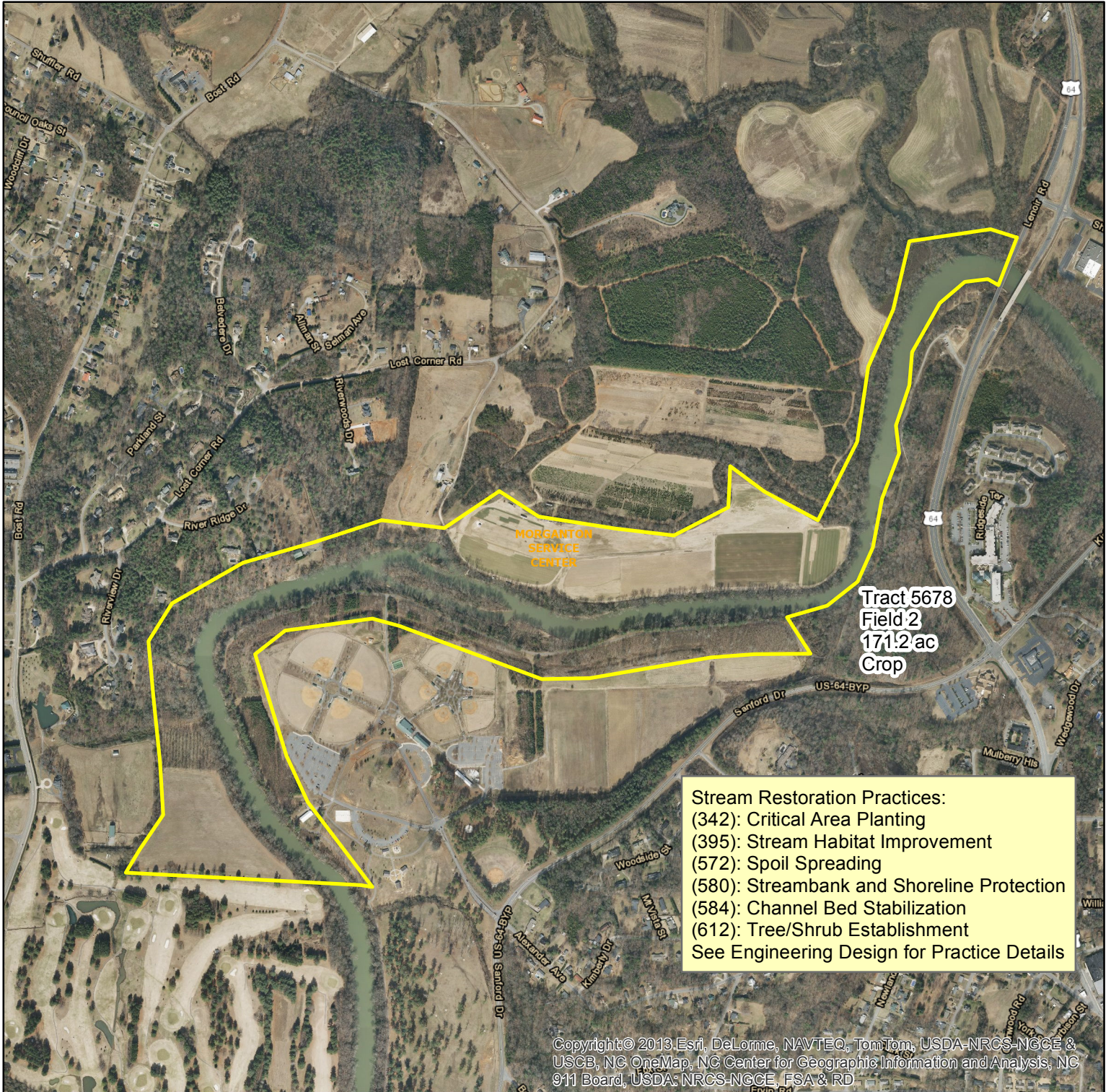


Conservation Plan Map

Customer(s): Jimmy Big Time
 Burke County, NC
 Burke Soil and Water Conservation District
 Approx. Acres: 171.2

Date: 5/1/2018
 Agency: USDA-NRCS
 Assisted by: J Firster
 Farm 1234 Tract 5678



Legend

Cons_Plan_WNCISI

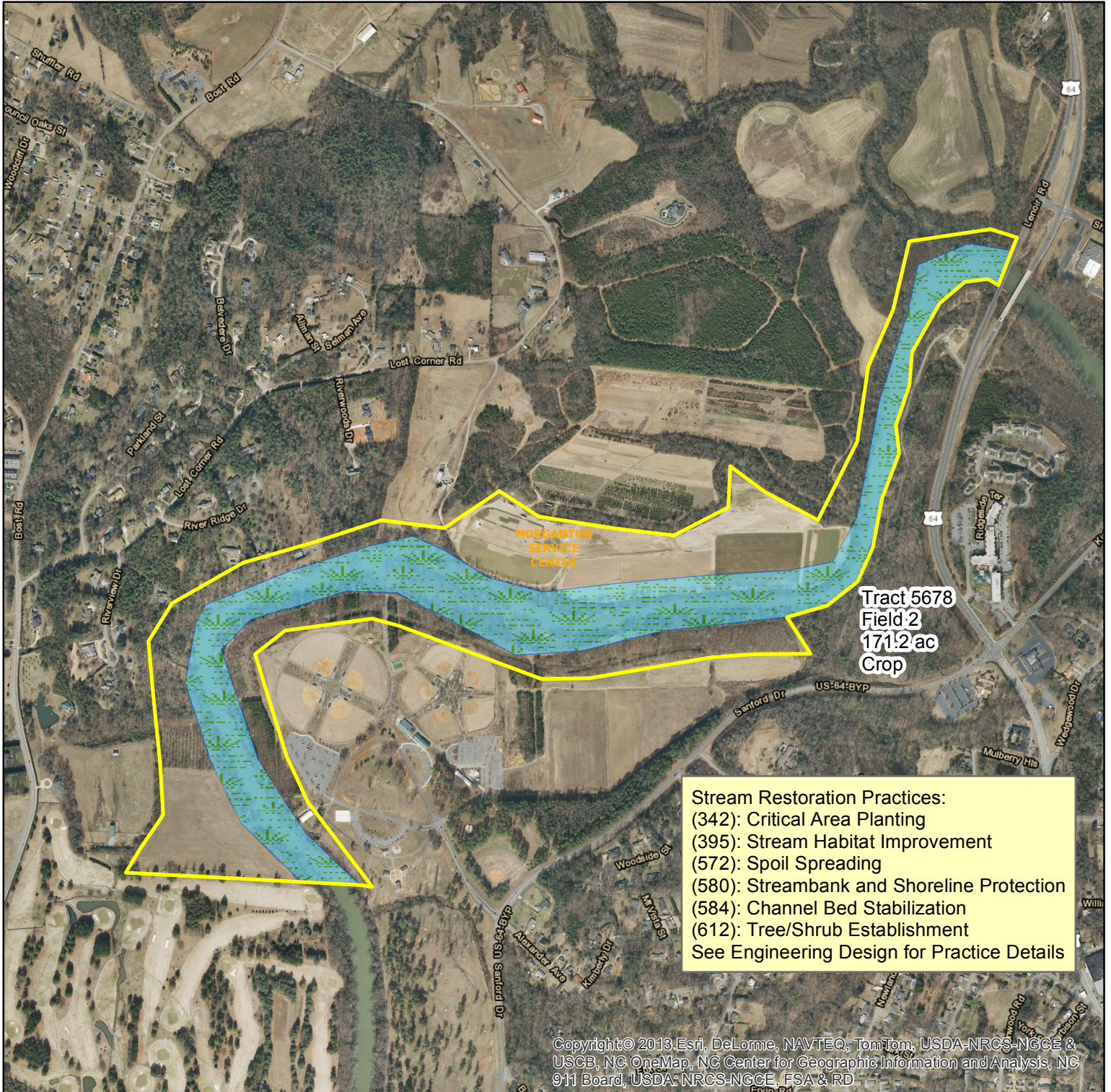


0 350 700 1,400 2,100 2,800 Feet



Conservation Plan Map

Customer(s): Jimmy Big Time
 Burke County, NC
 Burke Soil and Water Conservation District
 Approx. Acres: 171.2

Date: 5/1/2018
 Agency: USDA-NRCS
 Assisted by: J Firster
 Farm 1234 Tract 5678



Legend

-  Cons_Plan_WNCISI
-  Stream Restoration

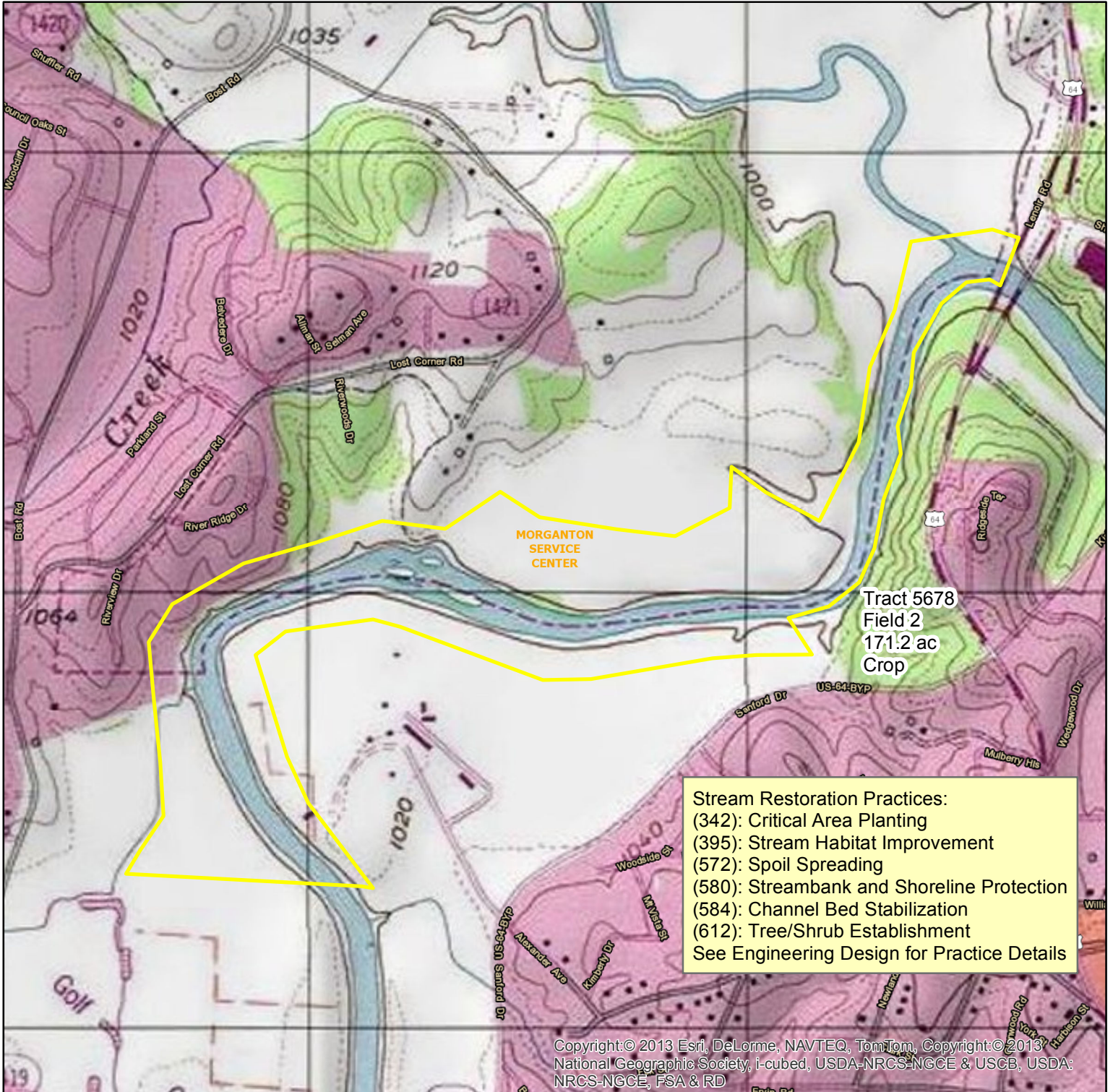


0 350 700 1,400 2,100 2,800 Feet


Conservation Plan Map

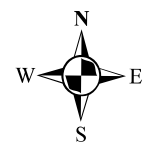
Customer(s): Jimmy Big Time
 Burke County, NC
 Burke Soil and Water Conservation District
 Approx. Acres: 171.2

Date: 5/1/2018
 Agency: USDA-NRCS
 Assisted by: J Firster
 Farm 1234 Tract 5678



Legend

 Cons_Plan_WNCISI



0 350 700 1,400 2,100 2,800 Feet

Mountain Riparian Species

TREES	SMALL TREES/SHRUBS	HERBACEOUS	GRAMINOIDS AND FERNS
<i>Acer negundo</i> box elder	<i>Aesculus sylvatica</i> painted buckeye	<i>Arisaema triphyllum</i> ✓ jack-in-the-pulpit	<i>Andropogon gerardii</i> * big bluestem
✓ <i>Acer rubrum</i> red maple	<i>Alnus serrulata</i> tag alder	<i>Asclepias incarnata</i> swamp milkweed	<i>Arundinaria gigantea</i> river cane
<i>Acer saccharinum</i> silver maple	<i>Amelanchier arborea</i> common serviceberry	<i>Bidens frondosa</i> beggartick	<i>Athyrium filix-femina</i> <i>ssp. asplenioides</i> southern lady fern
<i>Betula lenta</i> cherry birch	<i>Aronia arbutifolia</i> (<i>Photinia pyrifolia</i>) red chokeberry	<i>Chelone glabra</i> turtlehead	<i>Carex crinata</i> fringed sedge
<i>Betula nigra</i> river birch	<i>Aronia melanocarpa</i> (<i>Photinia melanocarpa</i>) black chokeberry	<i>Eupatorium fistulosum</i> Joe-pye-weed	✓ <i>Carex intumescens</i> bladder sedge
<i>Carya cordiformis</i> bitternut hickory	<i>Asimina triloba</i> common pawpaw	<i>Eupatorium perfoliatum</i> boneset	<i>Carex lupulina</i> hop sedge
✓ <i>Carya ovata</i> shagbark hickory	<i>Calycanthus floridus</i> sweet-shrub	<i>Gentiana clausa</i> meadow bottle gentian	<i>Carex lurida</i> lurid sedge
<i>Celtis laevigata</i> sugarberry	<i>Carpinus caroliniana</i> ironwood	<i>Helenium autumnale</i> common sneezeweed	✓ <i>Carex scoparia</i> broom sedge
<i>Diospyros virginiana</i> persimmon	✓ <i>Cephalanthus occidentalis</i> buttonbush	<i>Helenium flexuosum</i> purplehead sneezeweed	<i>Carex stricta</i> tussock sedge
<i>Fraxinus pennsylvanica</i> green ash	<i>Cornus alternifolia</i> alternate leaf dogwood	✓ <i>Helianthus angustifolius</i> swamp sunflower	<i>Carex vulpinoidea</i> fox sedge
<i>Halesia caroliniana</i> silverbell	✓ <i>Cornus amomum</i> silky dogwood	<i>Impatiens capensis</i> jewel-weed	<i>Chasmanthium latifolium</i> river oats
✓ <i>Juglans nigra</i> black walnut	<i>Corylus americana</i> hazel-nut	✓ <i>Lobelia cardinalis</i> cardinal flower	<i>Chasmanthium laxum</i> slender woodoats

Mountain Riparian Species

TREES	SMALL TREES/SHRUBS	HERBACEOUS	GRAMINOIDS AND FERNS
✓ <i>Nyssa sylvatica</i> blackgum	<i>Hamamelis virginiana</i> witch-hazel	<i>Lobelia siphilitica</i> great blue lobelia	<i>Cyperus strigosus</i> umbrella sedge
<i>Platanus occidentalis</i> sycamore	<i>Ilex verticillata</i> winter berry	<i>Ludwigia alternifolia</i> bushy seedbox	<i>Elymus hystrix</i> bottlebrush grass
<i>Populus deltoides</i> eastern cottonwood	<i>Lindera benzoin</i> spicebush	<i>Mimulus ringens</i> monkeyflower	<i>Elymus virginicus</i> Virginia wild rye
✓ <i>Prunus serotina</i> black cherry	<i>Lyonia ligustrina</i> male-berry	<i>Physostegia virginiana</i> obedient plant	<i>Juncus coriaceus</i> leathery rush
<i>Salix nigra</i> black willow	<i>Magnolia tripetala</i> umbrella tree	<i>Pycnanthemum tenuifolium</i> narrowleaf mountainmint	<i>Juncus tenuis</i> poverty rush
	<i>Physocarpus opulifolius</i> ninebark	<i>Pycnanthemum muticum</i> bigleaf mountainmint	<i>Juncus effusus</i> soft rush
	<i>Rhododendron maximum</i> rosebay	<i>Rhexia mariana</i> Maryland meadowbeauty	<i>Leersia oryzoides</i> rice cutgrass
	✓ <i>Rhododendron periclymenoides</i> wild azalea	<i>Rhexia virginica</i> Virginia meadowbeauty	✓ <i>Onoclea sensibilis</i> sensitive fern
	<i>Rhododendron viscosum</i> swamp azalea	✓ <i>Rudbeckia laciniata</i> cutleaf coneflower	<i>Osmunda cinnamomea</i> cinnamon fern
	✓ <i>Rosa palustris</i> swamp rose	<i>Sparganium americanum</i> bur-reed	<i>Osmunda regalis</i> royal fern
	<i>Salix sericea</i> silky willow	✓ <i>Symphotrichum novae-angliae</i> New England aster	✓ <i>Panicum clandestinum</i> (<i>Dichanthelium clandestinum</i>) deertongue


Conservation Plan Map

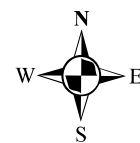
Customer(s): Jimmy Big Time
Burke County, NC
Burke Soil and Water Conservation District
Approx. Acres: 24.8

Date: 5/1/2018
Agency: USDA-NRCS
Assisted by: J Firster
Farm 1234 Tract 5678



Legend

 Cons_Plan_Forest



0 270 540 1,080 1,620 2,160 Feet

Conservation Plan Map

Customer(s): Jimmy Big Time
 Burke County, NC
 Burke Soil and Water Conservation District
 Approx. Acres: 24.8

Date: 5/1/2018
 Agency: USDA-NRCS
 Assisted by: J Firster
 Farm 1234 Tract 5678

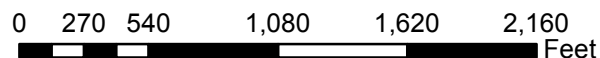


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Legend

- Cons_Plan_Forest
- Forest Stand Improvement (666)

- *Single Stem Treatment
- *Create Patch Clearcut



Map Unit Description

Burke County, North Carolina

[Minor map unit components are excluded from this report]

Map unit: AaA - Arkaqua loam, 0 to 2 percent slopes, occasionally flooded

Component: Arkaqua, occasionally flooded (85%)

The Arkaqua, occasionally flooded component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on mountain valleys. The parent material consists of loamy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is occasionally flooded. It is rarely ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria.

Map unit: BoB - Biltmore loamy sand, 0 to 5 percent slopes, occasionally flooded

Component: Biltmore, occasionally flooded (90%)

The Biltmore, occasionally flooded component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. This component is on natural levees on flood plains on mountain river valleys. The parent material consists of sandy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 57 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria.

Map unit: CvA - Colvard sandy loam, 0 to 3 percent slopes, occasionally flooded

Component: Colvard, occasionally flooded (85%)

The Colvard, occasionally flooded component makes up 85 percent of the map unit. Slopes are 0 to 3 percent. This component is on flood plains on valleys. The parent material consists of loamy and sandy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 51 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Map unit: FaC2 - Fairview sandy clay loam, 8 to 15 percent slopes, moderately eroded

Component: Fairview, moderately eroded (88%)

The Fairview, moderately eroded component makes up 88 percent of the map unit. Slopes are 8 to 15 percent. This component is on interfluvial on uplands. The parent material consists of saprolite residuum weathered from granite and gneiss and/or saprolite residuum weathered from schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Map unit: FaD2 - Fairview sandy clay loam, 15 to 25 percent slopes, moderately eroded

Component: Fairview, moderately eroded (88%)

The Fairview, moderately eroded component makes up 88 percent of the map unit. Slopes are 15 to 25 percent. This component is on interfluvial on uplands. The parent material consists of saprolite residuum weathered from granite and gneiss and/or saprolite residuum weathered from schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 4e. This soil does not

Map Unit Description

Burke County, North Carolina

Map unit: FaD2 - Fairview sandy clay loam, 15 to 25 percent slopes, moderately eroded

Component: Fairview, moderately eroded (88%)

meet hydric criteria.

Map unit: UnC - Unison fine sandy loam, 8 to 15 percent slopes

Component: Unison (80%)

The Unison component makes up 80 percent of the map unit. Slopes are 8 to 15 percent. This component is on stream terraces, river valleys. The parent material consists of old alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

U.S. Fish & Wildlife Service

Endangered Species, Threatened Species, Federal Species of Concern, and Candidate Species,

Burke County, North Carolina



Updated: 03-26-2018

Critical Habitat Designations:

Mountain golden heather - *Hudsonia montana* - The area bounded by the following: on the west by the 2200' contour; on the east by the Linville Gorge Wilderness. Boundary north from the intersection of the 2200' contour and the Shortoff Mountain Trail to where it intersects the 3400' contour at ?The Chimneys?--then follow the 3400' contour north until it reintersects the Wilderness Boundary--then follow the Wilderness Boundary again northward until it intersects the 3200' contour extending west from its intersection with the Wilderness Boundary until it begins to turn south--at this point the Boundary extends due east until it intersects the 2200' contour.

Federal Register Reference: October 20, 1980, Federal Register, 45: 69360-69363.

Common Name	Scientific name	Federal Status	Record Status
Vertebrate:			
Allegheny woodrat	<i>Neotoma magister</i>	FSC	Current
Bald eagle	<i>Haliaeetus leucocephalus</i>	BGPA	Current
Bog turtle	<i>Glyptemys muhlenbergii</i>	T (S/A)	Current
Northern long-eared bat	<i>Myotis septentrionalis</i>	T	Current
Rafinesque's big-eared bat	<i>Corynorhinus rafinesquii</i>	FSC	Current
Red crossbill (Southern Appalachian)	<i>Loxia curvirostra</i>	FSC	Current
Invertebrate:			
Brook floater	<i>Alasmidonta varicosa</i>	ARS	Current

Cherokee clubtail	<i>Gomphus consanguis</i>	ARS	Obscure
Diana fritillary (butterfly)	<i>Speyeria diana</i>	FSC	Current
Edmund's snaketail	<i>Ophiogomphus edmundo</i>	ARS	Current
Margarita River skimmer	<i>Macromia margarita</i>	ARS	Current
Midget snaketail	<i>Ophiogomphus howei</i>	FSC	Current

Vascular Plant:

Butternut	<i>Juglans cinerea</i>	FSC	Current
Dwarf-flowered heartleaf	<i>Hexastylis naniflora</i>	T	Current
Gray's saxifrage	<i>Saxifraga caroliniana</i>	FSC	Current
Heller's blazing star	<i>Liatris helleri</i>	T	Current
Mountain golden heather	<i>Hudsonia montana</i>	T	Current
Small whorled pogonia	<i>Isotria medeoloides</i>	T	Current
Spreading avens	<i>Geum radiatum</i>	E	Historic
White irisette	<i>Sisyrinchium dichotomum</i>	E	Current

Nonvascular Plant:

a liverwort	<i>Plagiochila sullivantii</i> var. <i>sullivantii</i>	FSC	Current
a liverwort	<i>Porella wataugensis</i>	FSC	Current
a liverwort	<i>Cephaloziella obtusilobula</i>	FSC	Historic
a liverwort	<i>Plagiochila sullivantii</i> var. <i>spinigera</i>	FSC	Historic

Lichen:

Rock gnome lichen	<i>Gymnoderma lineare</i>	E	Current
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Definitions of Federal Status Codes:

E = endangered. A taxon "in danger of extinction throughout all or a significant portion of its range."

T = threatened. A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."

C = candidate. A taxon under consideration for official listing for which there is sufficient information to support listing. (Formerly "C1" candidate species.)

BGPA = Bald and Golden Eagle Protection Act. See below.

ARS = [At Risk Species](#)

FSC = Federal Species of Concern. FSC is an informal term. It is not defined in the federal Endangered Species Act. In North Carolina, the Asheville and Raleigh Field Offices of the US Fish and Wildlife Service (Service) define Federal Species of Concern as those species that appear to be in decline or otherwise in need of conservation and are under consideration for listing or for which there is insufficient information to support listing at this time. Subsumed under the term "FSC" are all species petitioned by outside parties and other selected focal species identified in Service strategic plans, State Wildlife Action Plans, or Natural Heritage Program Lists.

T(S/A) = threatened due to similarity of appearance. A taxon that is threatened due to similarity of appearance with another listed species and is listed for its protection. Taxa listed as T(S/A) are not biologically endangered or threatened and are not subject to Section 7 consultation. See below.

EXP = experimental population. A taxon listed as experimental (either essential or nonessential).

Experimental, nonessential populations of endangered species (e.g., red wolf) are treated as threatened species on public land, for consultation purposes, and as species proposed for listing on private land.

Asheville Ecological Services Office

Conserving the Nature of America

- [Refuge Finder](#)
- [Service Finder](#)
- [Office Finder](#)
- [Contact Finder](#)

- [Asheville Field Office home](#)
- [Project planning and review](#)
- [Design and construction recommendations](#)
- [Biological assessment contents and tips](#)



Northern long-eared bat – what it means for your project

General information about the northern long-eared bat

(Note: This simply describes Northern long-eared bat protections under the Endangered Species Act. Please contact the North Carolina Wildlife Resources Commission to ensure compliance with any state wildlife laws.)

Background on Endangered Species Act and the Northern long-eared bat

In 2015, Northern long-eared bats were listed as threatened under the Endangered Species Act (ESA), due to the impacts of white-nose syndrome, a disease which has killed millions of cave-hibernating bats. Because white-nose syndrome is the major threat, we chose not to apply broad protections across the bat's entire range, focusing instead on locations and time periods especially important for the bat. Regardless of the legal protections afforded the Northern long-eared bat, we always encourage people to take proactive steps to conserve bats whenever possible.

Endangered Species Act protections for the Northern long-eared bat

The ESA protects threatened and endangered wildlife from "take," which includes harming, harassing, or killing a listed species. However, the Service implemented a special rule under section 4(d) of the ESA providing flexibility to those working in northern long-eared bat habitat. Under the 4(d) rule:

All intentional take is prohibited, except:

- Defense of human life (includes for public health monitoring)
- Removal of hazardous trees for protection of human life and property
- Removal of bats from human structures (check with the N.C. Wildlife Resources Commission to ensure compliance with state wildlife laws)
- Limited research permit exemption through May 3, 2016

In western North Carolina, incidental take without a permit is prohibited:

- Within hibernation sites (includes disturbing or disrupting hibernating individuals and alternation of hibernation habitat, including cave or mine entrance, when bats are not present)
- Within ¼ mile of a known hibernation site
- Within a 150-foot radius of a known, occupied maternity roost during the pup season (June 1- July 31)

Western North Carolina areas where incidental take may be a special consideration

According to the Service's records, confirmed hibernation and maternity sites for this species occur in the counties listed/highlighted below. To learn if your project requires further consultation, click on the highlighted counties or select a county from the list below to see areas that may be subject to restrictions related to maternity and hibernation sites.

If your project is located entirely outside of the gray shaded areas and your project does not require prohibited intentional take (see above), then your project has met the criteria for the 4(d) rule, any associated take is therefore exempt, and it is not necessary to wait 30 days for the Service to object or concur. Unless you or your agency has established a surrogate consultation procedure with the Service, please complete this [consultation form \(pdf, 66 KB\)](#) and submit it to the Asheville Field Office, 160 Zillicoa St., Asheville, NC 28801, or via email to nleb_notifications_asheville@fws.gov.

The consultation form is not necessary if an action agency determines that a proposed action will have no effect on the Northern long-eared bat. Providing this information does not address section 7(a)(2) compliance for any other listed species. For questions about ESA permits or Northern long-eared bats in western North Carolina, contact the Asheville Field Office at 828/258-3939.

Project planning and review contacts:

Address for all:
160 Zillicoa St.
Asheville, NC 28801

Marella Buncick

office - 828/258-3939, ext. 237
cell - 828/215-1743
fax - 828/258-5330
marella_buncick@fws.gov

Projects involving:
N.C. Department of Transportation
Federal Highway Administration

Byron Hamstead

office - 828/258-3939, ext. 225
byron_hamstead@fws.gov

Projects involving:
U.S. Army Corps of Engineers

Vacant

office - 828/258-3939, ext. 227
andrew_henderson@fws.gov

Projects involving:
N.C. Department of Transportation
Federal Highway Administration

Allen Ratzlaff

office - 828/258-3939, ext. 229
fax - 828/258-5330

allen_ratzlaff@fws.gov

Projects involving:
US Forest Service
Rural Utilities Services
Farm Services
Rural Development
National Park Service
Bureau of Indian Affairs
Environmental Protection Agency
Federal Aviation Authority
Federal Transportation Administration
Department of Housing and Urban Development
mines and industrial parks

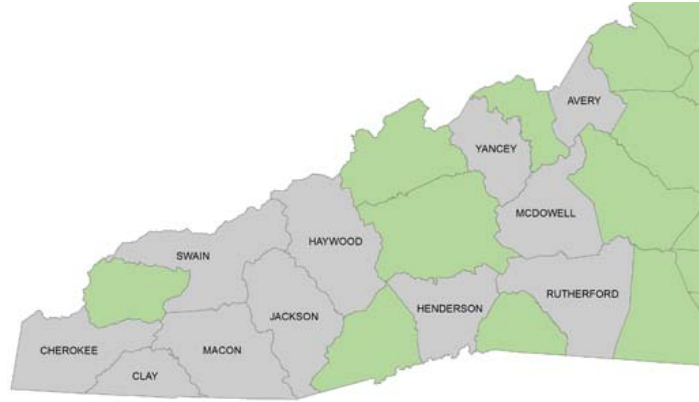
Bryan Tompkins

office - 828/258-3939, ext. 240
fax - 828/258-5330

bryan_tompkins@fws.gov

Projects involving:
Federal Energy Regulatory Commission
Tennessee Valley Authority

Click on a county for more county-specific maps



Click on a county name for more information

(Red HUC maps for those following U.S. Army Corps of Engineers guidance)

<ul style="list-style-type: none">• Avery• Cherokee• Clay• Jackson• Haywood• Henderson	<ul style="list-style-type: none">• Macon• McDowell• Rutherford• Swain• Yancey
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For GIS users - download shapefiles of areas with confirmed hibernation and maternity sites (uploaded June 1, 2016)

Taking extra steps to help the Northern long-eared bat

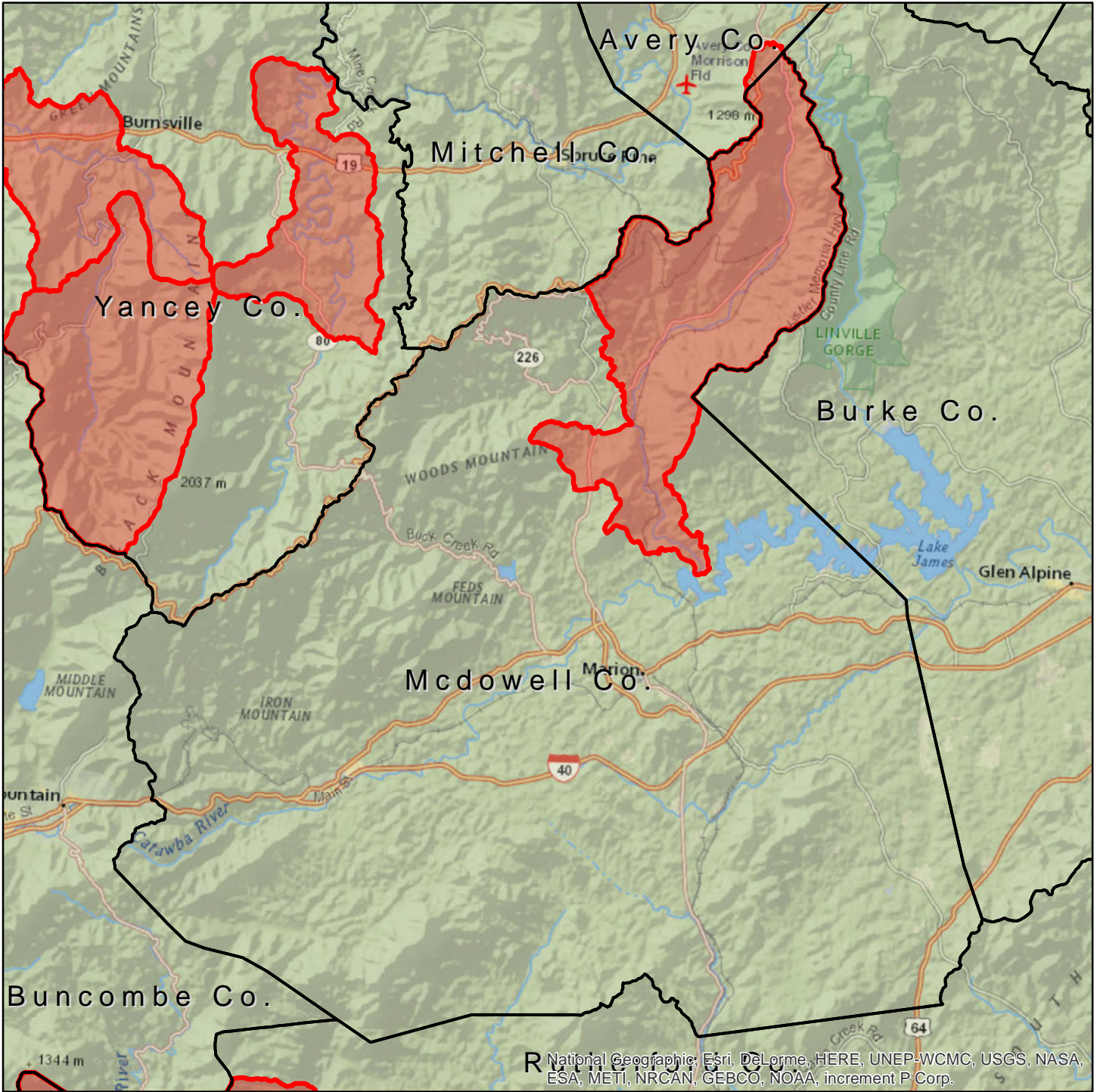
Beyond the requirements of the Endangered Species Act, we heartily encourage proactive conservation steps to help conserve this species:

- Prior to implementing a project, survey for northern long-eared bats. Such data allows us to better understand the bat's habitat use and distribution, track its status, evaluate threats and impacts, and develop effective recovery actions.
- Remove trees outside the pup season (June 1 to July 31) and/or active season (April 1 to October 31) to reduce the chance of impacting unidentified maternity roosts
- Avoid clearing habitat within a 5-mile radius of hibernation sites when bats are emerging from or preparing for hibernation (April 1 to May 15 and August 15 to November 14, respectively).
- Manage forests to ensure a continual supply of snags and other suitable maternity roost trees.
- Conduct prescribed burns outside the pup season (June 1 to July 31) and/or the active season (April 1 to October 31), and avoid high-intensity burns.
- Perform bridge repair, retrofit, or maintenance outside the bat's active season (April 1 to October 31) in areas where they are known to roost on bridges or where such use is likely.
- Minimize use of herbicides and pesticides. If necessary, spot treatment is preferred over aerial application.
- Minimize light pollution during the active season by angling lights downward or via other light minimization measures.


Note: Fish & Wildlife Service project planning and review is coordinated by the Asheville Field Office in the western half of North Carolina and by the Raleigh Field Office in the eastern half.




U.S. Fish & Wildlife Service
Northern Long-Eared Bat Consultation Areas
 Mcdowell County

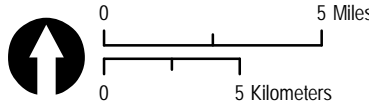


National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

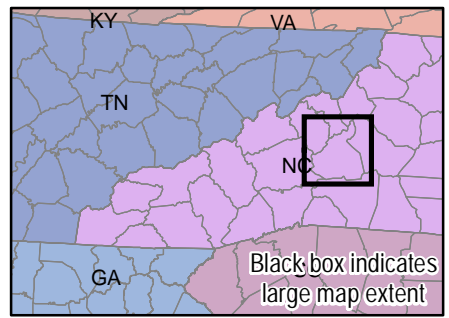
 North Carolina County Boundary

 Watersheds with Known NLEB Maternity Trees or Hibernation Sites

If your project falls within the red areas identified in Mcdowell County, please contact the USFWS Asheville Field Office.



USFWS Ecological Services
 Asheville, North Carolina
 Map Date: 2/3/2016



Asheville Ecological Services Field Office

Conserving the Nature of America

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- [Service Finder](#)
- [Office Finder](#)
- [Contact Finder](#)

- [Asheville Field Office Home](#)
- [Additional dwarf-flowered heartleaf resources](#)
- [Regulatory background on dwarf-flowered heartleaf \(listing, critical habitat, recovery plan, etc.\)](#)
- [Dwarf-flowered heartleaf fact sheet \(pdf, 189 KB\)](#)

- [Additional information on threatened and endangered plants and animals](#)
- [Species regulatory information and recovery plans](#)
- [Five-year status reviews](#)
- [List of threatened or endangered species by North Carolina county](#)
- [List of threatened or endangered species in North Carolina \(.pdf 42 KB\)](#)

- [Additional resources](#)
- [Publication library](#)
- [Image library](#)
- [Podcasts](#)

Dwarf-flowered heartleaf

Hexastylis naniflora

Status: Threatened

Description: Dwarf-flowered heartleaf is a low-growing evergreen perennial plant. It has heart-shaped leaves that are four to six centimeters long, dark green and leathery, supported by long thin leaf stems connecting it to an underground stem. The jug-shaped flowers are usually beige to dark brown or purple and appear from mid-March to early June. The flowers are small and inconspicuous and are found near the base of the leaf stems, often buried beneath the leaf litter.



Habitat: Dwarf-flowered heartleaf grows in acidic soils along bluffs and adjacent slopes, in boggy areas next to streams and creek heads, and along the slopes of nearby hillsides and ravines.



Range: The upper piedmont region of Western North Carolina and upstate South Carolina. In North Carolina, this includes Alexander, Burke, Caldwell, Catawaba, Cleveland, Gaston, Iredell, Lincoln, Rutherford and Polk counties.

Threats: The greatest threat to dwarf-flowered heartleaf is conversion of habitat to agricultural, residential, commercial, and industrial uses. Habitat may also be eliminated through the construction of reservoirs, which floods habitat.

Listing: Threatened, Friday, April 14, 1989.

Critical habitat: None designated

Why should we be concerned about the loss of species? Extinction is a natural process that has been occurring since long before the appearance of humans. Normally, new species develop (through a process known as speciation) at about the same rate other species become extinct. However, because of air and water pollution, forest clearing, loss of wetlands, and other human-induced environmental changes, extinctions are now occurring at a rate that far exceeds the speciation rate.

All living things are part of a complex and interconnected network. We depend on the diversity of plant and animal life for our recreation, nourishment, many of our lifesaving medicines, and the ecological functions they provide. One-quarter of all the prescriptions written in the United States today contain chemicals that were originally discovered in plants and animals. Industry and agriculture are increasingly making use of wild plants, seeking out the remaining wild strain of many common crops, such as wheat and corn, to produce new hybrids that are more resistant to disease, pests, and marginal climatic conditions. Our food crops depend on insects and other animals for pollination. Healthy forests clean the air and provide oxygen for us to breathe. Wetlands clean water and help minimize the impacts of floods. These services are the foundation of life and depend on a diversity of plants and animals working in concert. Each time a species disappears, we lose not only those benefits we know it provided but other benefits that we have yet to realize.

Known Distribution in North Carolina:
Dwarf-flowered Heartleaf



Species Contact:

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 fax - 828/258-5330
 160 Zillicoa St.
 Asheville, NC 28801
rebekah_reid@fws.gov





What you can do to help:

Tread lightly, and stay on designated trails. On some popular mountains, the vegetation has virtually been destroyed by human trampling.

Visit arboretums, botanical gardens, and parks to learn all you can about endangered plants and the causes of their decline.

Don't collect or buy plants that have been gathered from wild populations.

Participate in the protection of our remaining wild land and the restoration of damaged ecosystems.

Be careful with the use and disposal of pesticides and other chemicals, especially near sensitive habitats.

Prepared by:
U.S. Fish and Wildlife Service
Asheville Field Office
160 Zillicoa Street
Asheville, North Carolina 28801
(828) 258-3939

November, 2011

Questions, comments or concerns about the website, contact gary_peoples@fws.gov or 828/258-3939, ext. 234

Asheville Ecological Services Field Office

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- [Additional Heller's blazing star resources](#)
- [Regulatory background on Heller's blazing star \(listing, critical habitat, recovery plan, etc.\)](#)
- [Heller's blazing star fact sheet \(pdf, 186 KB\)](#)

- [Additional information on threatened and endangered plants and animals](#)
- [Species regulatory information and recovery plans](#)
- [Five-year status reviews](#)
- [List of threatened or endangered species by North Carolina county](#)
- [List of threatened or endangered species in North Carolina \(.pdf 42 KB\)](#)

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Heller's blazing star

Liatriis helleri

Status: Threatened

Description: Heller's blazing star is a perennial herb in the Aster family. It has one or more erect or arching stems arising from a tuft of narrow, grass-like, pale green basal leaves. Its flowering stems reach up to 16 inches in height; they are topped by a showy, three to eight inch-long spike of lavender flowers. The flowering season lasts from July through September, and its fruits are present from September through October. This species grows on the shallow acidic soils of high-elevation cliffs and rocky outcrops in full sun. Very little specific information is available on the biology of Heller's blazing star. Other species of blazing stars, also called rattlesnake masters and button snakeroots, have yielded valuable medicinal compounds. Particularly notable are drugs used to treat leukemia and other forms of cancer. Heller's blazing star has not yet been studied for potentially valuable medicinal or industrial chemical, in part due to the limited number of plants in existence.

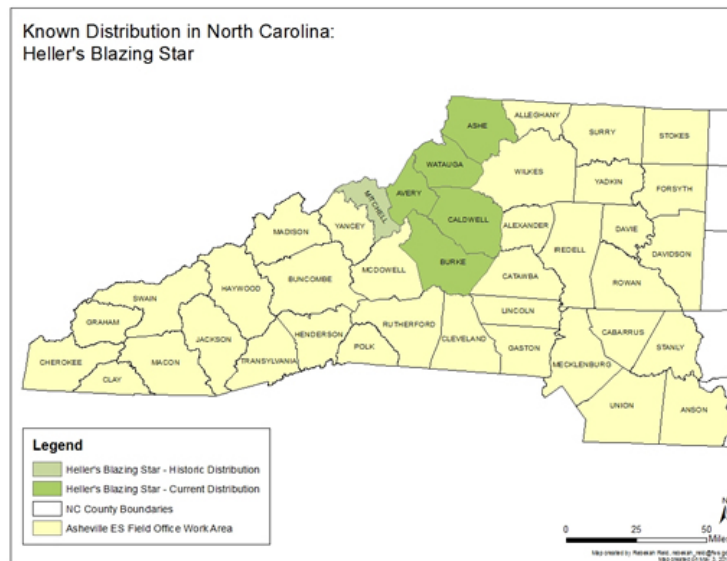


Habitat: High elevation ledges of rock outcrops and cliffs in shallow acid soils.

Range: Heller's blazing star is known from Avery, Ashe, Caldwell, Watauga, and Burke Counties, North Carolina

Listing: Threatened, November 19, 1987. 52 FR 44397 44401

Critical habitat: None designated



Threats: Being confined to small areas on a few rocky mountain summits, this species is extremely vulnerable to such seemingly minor threats as trampling by hikers, climbers, and sightseers, as well as to more pervasive threats such as acid precipitation and other forms of air pollution that have been found to be concentrated at the higher elevations in the Southern Appalachian Mountains. All of these factors threaten the last remaining populations of Heller's blazing star.

Why should we be concerned about the loss of species? Extinction is a natural process that has been occurring since long before the appearance of humans. Normally, new species develop through a process known as speciation, at about the same rate other species become extinct. However, because of air and water pollution, forest clearing, loss of wetlands, and other human-induced environmental changes, extinctions are now occurring at a rate that far exceeds the speciation rate.

Species Contact:

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What you can do to help

Tread lightly and stay on designated trails. Vegetation on popular high mountains has virtually been destroyed by human trampling.

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Don't collect or buy plants collected from wild populations.

Participate in the protection of our remaining wild lands and the restoration of damaged ecosystems.

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Raleigh Ecological Services Field Office

Conserving the Nature of America

Mountain Golden Heather (*Hudsonia montana*)



Mountain Golden Heather. Credit: USFWS

Family: Rock-Rose (*Cistaceae*)

Federal Status: Threatened, listed October, 20, 1980

Best Search Time: Late-May through Early June

Description: Mountain golden heather is a tiny, needle-leaved shrub with yellow flowers. It usually grows about 6 inches (in) (15.2 centimeters; cm) tall, in clumps from 4 - 8 in (10.1 – 20.3 cm) across. Occasionally, very vigorous plants form larger patches of a foot or more in length. The plants have the general appearance of a large moss or low juniper, but their branching is more open, their leaves are about one-quarter of an inch long, and the plant is often somewhat yellow-green in color, especially in shaded areas. The flowers appear in early or mid-June, are nearly an inch across, and have five blunt-tipped petals. Viable seeds may remain in the soil over more than one growing season when germination conditions are unfavorable. Mountain golden heather usually begins flowering in its third year and roots vegetatively at the edges once it forms large clumps, after perhaps ten years.

Habitat: Mountain golden heather usually grows on exposed quartzite cliffs at elevations of 2,800 to 4,000 feet (853 – 1219 meters).

Distribution: Mountain golden heather is found in Burke and McDowell Counties, North Carolina.

Threats: Intensive recreational use by hikers, climbers, and campers has resulted in a loss of plants due to trampling and soil compaction. Plants have also been taken from the wild by collectors. A major contributor to the decline of this species is the exclusion of natural wildfire from its habitat. Recent studies have shown that the habitat of mountain golden heather is adapted to periodic fire. Wildfire suppression has changed forest composition, allowing shrubs and trees to take over the naturally open habitat required by golden heather.

Critical Habitat: Critical habitat for Mountain Golden Heather was designated on October 20, 1980 (45 FR 69360 69363).

References:

Buchanan, M.F. and J.T. Finnegan. 2010. Natural Heritage Program List of the Rare Plant Species of North Carolina. N.C. Natural Heritage Program, Raleigh, NC.

U.S. Fish and Wildlife Service. 1983. Mountain Golden Heather Recovery Plan. Atlanta, GA. 26 pp.

For More Information on Mountain Golden Heather...

Raleigh Ecological Services Field Office

Conserving the Nature of America

Small Whorled Pogonia (*Isotria medeoloides*)



Small Whorled Pogonia. Credit: USFWS.

Family: Orchid (*Orchidaceae*)

Federal Status: Endangered, listed September 9, 1982

Best Search Time: Mid-May through Early-July

Description: Small-whorled pogonia has a greenish-white stem that grows between 3 – 13 inches (7.6 - 33 centimeters) tall. It gets its common name from the five or six grayish-green leaves that are displayed in a single whorl around the stem. When the leaves are well developed, a single flower or sometimes a flower pair rises from the center of the circle of leaves. The flowers are yellowish-green with a greenish-white lip. Each flower has three sepals of equal length that spread outward. The flowers are scentless, lack nectar, and are primarily self-pollinating. It produces fruit which ripens in the fall. The seeds contain very little food reserves and therefore need to fall on soil containing mycorrhizal fungi in order for the seed to germinate and seedlings to become established. An over-wintering vegetative bud may form in late August or September. Occasionally small whorled pogonia will reproduce vegetatively, without the use of seeds.

Habitat: Small whorled pogonia can be limited by shade. The species seems to require small light gaps, or canopy breaks, and generally grows in areas with sparse to moderate ground cover. Too many other plants in an area can be harmful to this plant. This orchid typically grows under canopies that are relatively open or near features that create long-persisting breaks in the forest canopy such as a road or a stream. It grows in mixed-deciduous or mixed-deciduous/coniferous forests that are generally in second- or third-growth successional stages. The soils in which it lives are usually acidic, moist, and have very few nutrients.

Distribution: Small-whorled pogonia is found sporadically across the eastern United States and Canada. In North Carolina, this species is extant in Burke, Cherokee, Guilford, Jackson, McDowell, Rutherford and Transylvania counties. It is considered historic in Haywood, Henderson, Macon, and Surry counties.

Threats: Habitat destruction is the primary threat to small whorled pogonia. Commercial and residential development have encroached upon populations and eliminated what once was productive habitat. Development has also decreased the amount of available habitat for deer, concentrating their numbers, which increases deer herbivory on these plants. Small-whorled pogonia also appears to suffer from low rates of seedling establishment, meaning new plants do not replace older ones as they die.

References:

Buchanan, M.F. and J.T. Finnegan. 2010. Natural Heritage Program List of the Rare Plant Species of North Carolina. NC Natural Heritage Program, Raleigh, NC.

Raleigh Ecological Services Field Office

Conserving the Nature of America

Spreading Avens (*Geum radiatum*)



Spreading Avens. Credit: USFWS

Family: Rose (*Rosaceae*)

Federal Status: Endangered, listed April 5, 1990

Best Search Time: June through September

Description: Spreading avens is a tall perennial herb growing 8 - 20 inches (in) (20.3 – 50.8 centimeters; cm) tall. Its distinctive bright yellow flowers, which are generally up to 1 in (2.5 cm) across) appear from June through September, and fruits form and ripen from August through October.

Habitat: This species grows in full sun on the shallow acidic soils of high-elevation cliffs (above 4,200 feet (1,280 meters)), rocky outcrops, steep slopes, and on gravelly talus.

Distribution: Spreading avens is known to occur only on high mountain peaks in western North Carolina and eastern Tennessee.

Threats: Being confined to small areas on a few rocky mountain summits, this species is extremely vulnerable to such seemingly minor threats as trampling by hikers, climbers, and sightseers, as well as to more pervasive threats such as acid precipitation, and other forms of air pollution. An exotic insect, the balsam woolly adelgid, contributes to the decline of the fir forests adjacent to the cliffs where Spreading avens grows. Although Spreading avens does not grow beneath dense forest, the death of the adjacent forests results in drier and hotter conditions, as well as increased soil erosion. All of these factors threaten the last remaining Spreading avens populations.

References:

Buchanan, M.F. and J.T. Finnegan. 2010. Natural Heritage Program List of the Rare Plant Species of North Carolina. N.C. Natural Heritage Program, Raleigh, NC.

U.S. Fish and Wildlife Service. 1993. Spreading Avens Recovery Plan. Atlanta, Georgia. 32 pp.

For More Information on Spreading Avens...

- [U.S. Fish and Wildlife Service Environmental Conservation Online System](#)
- [Spreading Avens Recovery Plan](#)
- [U.S. Department of Agriculture Natural Resource Conservation Service Plants Database](#)
- [Center for Plant Conservation species profile](#)

Raleigh Ecological Services Field Office

Conserving the Nature of America

White Irisette (*Sisyrinchium dichotomum*)



White Irisette. Credit: USFWS

Family: Iris (*Iridaceae*)

Federal Status: Endangered, listed September 26, 1991

Best Search Time: Late-May through July

Description: White irisette is a perennial herb that lives in areas with partial sun. It generally grows from 10 - 16 inches (25.4 – 40.6 centimeters) tall and has winged stems. An individual White irisette plant is typically defined as a cluster of stems arising from fibrous roots. There may be 10 or more stems on one plant. White irisette flowers from late May through July. The seeds are very small and black and three to six seeds are contained in each capsule.

Habitat: The species is found on mid elevation slopes, characterized by open, dry to moderate-moisture oak hickory forests. White irisette usually grows in shallow soils on regularly disturbed sites (such as woodland edges and roadsides) and over rocky, steep terrain.

Distribution: White irisette is known from Henderson, Polk and Rutherford Counties, North Carolina; and Greenville County, South Carolina.

Threats: White irisette is threatened by many human caused disturbances, such as residential development, road construction, and possibly herbicide use. It is also indirectly affected by the extirpation of elk and bison and possibly the suppression of fire. The elimination or suppression of these natural disturbances allows vegetative succession to occur, often accompanied by exotic invasive plants that out compete this native species.

References:

Buchanan, M.F. and J.T. Finnegan. 2010. Natural Heritage Program List of the Rare Plant Species of North Carolina. N.C. Natural Heritage Program, Raleigh, NC.

U.S. Fish and Wildlife Service. 1995. White Irisette Recovery Plan. U.S. Fish and Wildlife Service, Atlanta, Georgia. 22 pp.

For More Information on White Irisette...

- [U.S. Fish and Wildlife Service Environmental Conservation Online System](#)
- [White Irisette Recovery Plan](#)
- [U.S. Department of Agriculture Natural Resource Conservation Service Plants Database](#)
- [Center for Plant Conservation species profile](#)

Threatened & Endangered Species

The Natural Resources Conservation Service personnel are expected to utilize information about protected species and their habitats when completing an Inventory of Planning Area (benchmark inventory), Environmental Evaluation Worksheets (NRCS-CPA-52) and Damage Survey Reports (DSRs) in order to fulfill the agency's mission and to comply with the Endangered Species Act.

Lists of federally recognized endangered, threatened, and candidate species and their critical habitats occurring in North Carolina are maintained by the U.S. Fish & Wildlife Service (USFWS) and the North Carolina Wildlife Resources Commission. Field personnel will obtain current county lists of federally listed species, maps indicating observed range, species descriptions, and general habitat requirements by obtaining Fact Sheets developed by USFWS by following the following directions:

NRCS Field Offices serviced by Raleigh Ecological Services Field Office (USFWS)

1. Go to http://www.fws.gov/raleigh/es_tes.html.
2. Click on [County List](#) hyperlink.
3. Choose county(s) in work unit from the interactive map or from text at bottom of page.

NRCS Field Offices serviced by Asheville Ecological Services Field Office (USFWS)

1. Go to <http://www.fws.gov/asheville/>.
2. Click on [County List](#) hyperlink.
3. Choose county(s) in work unit from the interactive map or from text at bottom of page.

Additionally, the NC Natural Heritage Program website provides lists by county of the rare plant and animal species, exemplary natural communities, and special animal habitats that have been observed in the state. NRCS personnel can obtain a current list of rare and protected species, maps indicating observed range, species descriptions, and general habitat requirements by following the following directions:

Go to <http://www.ncnhp.org/web/nhp> and utilize the "Data Explorer" tools listed below:

1. Provides interactive map to view, query, and create maps of natural heritage and other natural resource data.
2. Use Species/Community Search to search their database and create summaries of natural heritage resources by county, USGS topo maps, conservation status ranks, protection status, and taxonomic group.

NOTE - Lists generated from these sources are NOT a definitive record of all the occurrences of rare species in the state. Absence of a species from a list does not verify the species' absence- it only means the species has not been observed in the area of interest. The list should not over rule field observation.

USFWS-NRCS Interagency Consultation Matrix (ICM)

NRCS Conservation Practice Effects Determination for Threatened & Endangered Species (T&E) and Designated Critical Habitat

(ESA; NRCS Policy: 190-GM, Part 410, Subpart B, Sec. 410.22E and 190-NECH, Part 610, Subparts C, H-L)

Practice Effect Determination:

NE – No Effect

NLAA – Not Likely to Adversely Affect

NLAA,B – Not Likely to Adversely Affect (**Beneficial Effect; NRCS State Biologist must be notified via email**)

MA – May Affect T&E Species (**Requires further guidance from NRCS State Biologist**)

Symbol Designations (under Practice Effects Designation Table):

N – No effect; proceed with practice implementation.

X – Refer to NLAA Practice Implementation Scenarios. If implementation of practice avoids defined scenario, proceed with practice implementation. If defined scenario cannot be avoided, contact NRCS State Biologist. Please be prepared to provide the following information: County name, application and tract numbers, plan map, Con Plan/conservation practice(s), site description of area that may be impacted, and picture(s) of possible impact site.

B – Beneficial Effect; refer to NLAA Practice Implementation Scenarios. If implementation of practice meets defined condition, practice implementation could have a POSITIVE benefit on T&E Species and their habitat. Any NLAA-B determination must be recorded on the CPA-52 and reported via email to the NRCS State Biologist. Please be prepared to provide the following information: County name, application and tract numbers, plan map, Con Plan/conservation practice(s) that was determined to benefit species, species, and include brief discription how T&E will be benefitted).

C – Consult; refer to NRCS State Biologist. State Biologist will contact USFWS to determine if formal or informal consultation is required. DO NOT proceed with practice implementation until notified by the NRCS State Biologist. Please be prepared to provide the following information: County name, application and tract numbers, plan map, Con Plan/conservation practice(s), site description of area that may be impacted, and picture(s) of possible impact site.

The following table will be used to assist in making planning decisions regarding federally listed T&E species and designated critical habitat. Refer to Section IV of the eFOTG for detailed standards and specifications for the practices listed within the table. Some practices May Affect (MA) or have a Beneficial Effect (B) dependent upon where, when and how practice installation occurs. If a MA determination is made, the practice implementation should not begin until notified by NRCS State Biologist. Similarly, if a practice has both an X (NLAA) and a B (NLAA,B) designation, the X takes precedence. This action does not void or discount potential B determination. Practice implementation should not begin unless the scenario defined by the X designation is avoided or the NRCS State Biologist authorizes implementation.

Review the practice conditions established for each practice as well as the practice standard in the eFOTG carefully before making a decision to proceed with installation.

Note: Any formal or informal consultation with USFWS that may identify a client and/or the specific location of a species or a species habitat requires written permission from the client to release confidential information. This can be accomplished by having the client provide a signed letter or by submitting the Authorization for Release of Records document. If formal consultation is required, and written permission cannot be obtained, NRCS will terminate assistance until such time that written permission can be obtained.

USFWS-NRCS Interagency Consultation Matrix (ICM)

PRACTICE CODE	PRACTICE NAME & UNIT	PRACTICE EFFECTS DESIGNATION			
		NE	NLAA	NLAA,B	MA
472	Access Control (Acres)			B1, B5	
560	Access Road (Feet)		X2, X5, X6, X7, X8, X10	B5	
309	Agrichemical Handling Facility		X2, X7		
311	Alley Cropping	N			
591	Amendments for Treatment of Agricultural Waste (au)	N			
366	Anaerobic Digester		X2		
316	Animal Mortality Facility (no)		X2		
397	Aquaculture Ponds (Acres)				C
396	Aquatic Organism Passage (Mile)				C
310	Bedding (Acre)		X2, X7		
314	Brush Management (Acre)		X3, X4, X7	B6	
672	Building Envelope Improvements (No)	N			
584	Channel Bed Stabilization		X7, X9		
326	Clearing and Snagging (Feet)				C
317	Composting Facility (No)		X2, X7		
327	Conservation Cover (Acre)			B3	
328	Conservation Crop Rotation (Acre)	N			
656	Constructed Wetland		X7		
332	Contour Buffer Strips			B5	
330	Contour Farming (Acre)			B5	
331	Contour Orchard and Other Fruit Area (Acre)			B5	
340	Cover Crop (Acre)	N			
342	Critical Area Planting (Acre)		X1, X2, X3, X4	B5	
589C	Cross Wind Trap Strips (Acre)	N			
402	Dam (No)				C
348	Dam, Diversion (No)				C
324	Deep Tillage (Acres)	N			
356	Dike (Feet)		X2, X7		
362	Diversion (Feet)		X2	B5	
554	Drainage Water Management (Acres)	N			
432	Dry Hydrant (Each)		X7		
647	Early Successional Habitat Management (Acre)		X1, X2, X3, X4	B7	
374	Farmstead Energy Improvement (No)	N			
382	Fence (Feet)			B1, B2, B5	
386	Field Border (Feet)	N			
393	Filter Strip (Acre)			B5	
394	Firebreak (Feet)		X1, X2, X5, X6, X7, X8, X10		
398	Fish Raceway or Tank (Feet)				C

ICM Matrix (continued)

PRACTICE CODE	PRACTICE NAME & UNIT	PRACTICE EFFECTS DESIGNATION			
		NE	NLAA	NLAA,B	MA
399	Fishpond Management (No)				C
512	Forage and Biomass Planting (Acre)		X3, X4	B5	
511	Forage Harvest Management	N			
666	Forest Stand Improvement (Acres)		X1, X2, X3, X4, X5, X6, X7, X8, X10	B6, B7	
655	Forest Trails and Landings (Acre)		X2, X5, X6, X7, X8, X10		
383	Fuel Break (Acre)		X1, X2, X3, X4, X5, X6, X7, X8, X10		
410	Grade Stabilization Structure (No)		X1, X2	B5	
412	Grassed Waterway (Acre)		X2		
548	Grazing Land Mechanical Treatment (Acre)	N			
355	Groundwater Testing (No.)	N			
561	Heavy Use Area Protection (Acre)		X2		
422	Hedgerow Planting (Feet)		X3, X4		
315	Herbaceous Weed Control (Acre)		X3, X4, X7	B1, B6	
603	Herbaceous Wind Barriers (Feet)		X3, X4		
325	High Tunnel System (Sq Ft)		X7		
423	Hillside Ditch (Feet)		X2		
595	Integrated Pest Management (Acre)	N			
320	Irrigation Canal or Lateral (Feet)		X2, X5, X6, X7, X8, X10		
428	Irrigation Ditch Lining (Feet)	N			
388	Irrigation Field Ditch (Feet)		X2, X5, X6, X7, X8, X10		
464	Irrigation Land Leveling (Acre)	N			
430	Irrigation Pipeline (Feet)	N			
436	Irrigation Reservoir (No)				C
441	Irrigation System, Micro-irrigation (Acre)	N			
443	Irrigation System, Surface and Subsurface	N			
447	Irrigation System, Tailwater Recovery (No)	N			
449	Irrigation Water Management (Acre)	N			
460	Land Clearing (Acre)		X1, X2, X3, X4, X5, X6, X7, X8, X10		
453	Land Reclamation, Landslide Treatment (No)		X2, X5, X6, X7, X8, X9, X10		
466	Land Smoothing (Acre)	N			
670	Lighting System Improvement (No)	N			

ICM Matrix (continued)

PRACTICE CODE	PRACTICE NAME & UNIT	PRACTICE EFFECTS DESIGNATION			
		NE	NLAA	NLAA,B	MA
468	Lined Waterway or Outlet (Feet)		X2, X5, X6, X8, X10		
516	Livestock Pipeline (Feet)		X2, X7		
576	Livestock Shelter Structure (No)		X1, X2, X7		
482	Mole Drain (Feet)		X2		
484	Mulching (Acre)	N			
590	Nutrient Management (Acre)	N			
500	Obstruction Removal (Acre)		X1, X5, X8, X10		
319	On Farm Secondary Containment Facility (No)		X1, X2, X7		
582	Open Channel (Feet)				C
378	Pond (No)				C
520	Pond Sealing or Lining - Compacted Soil Treatment (ft^2)	N			
522	Pond Sealing or Lining - Concrete (ft^2)	N			
521A	Pond Sealing or Lining, Flexible Membrane (no)	N			
462	Precision Land Forming (Acre)	N			
338	Prescribed Burning (Acre)			B6, B7	
528	Prescribed Grazing (Acre)			B2	
533	Pumping Plant (No)		X1, X2		
562	Recreation Area Improvement (Acre)		X1, X2, X3, X4, X5, X6, X7, X8, X10	B3, B6	
566	Recreation Land Grading and Shaping (Acre)		X2, X5, X6, X7, X8, X10		
329	Residue and Tillage Management, No-Till (Acre)	N			
345	Residue and Tillage Management, Reduced Till (Ac.)	N			
643	Restoration and Management of Rare and Declining Habitats (Acre)		X1, X3, X4, X5, X6, X8, X10	B7	
391	Riparian Forest Buffer (Acre)		X1, X4	B2, B3, B5	
390	Riparian Herbaceous Cover (Acre)		X1, X4	B2, B3, B5	
654	Road/Trail/Landing Closure and Treatment (Feet)		X1, X2, X5, X6, X8, X10	B1, B2, B3, B5	
555	Rock Barrier (Feet)	N			
558	Roof Runoff Structure (No)	N			
367	Roofs and Covers (No)	N			
557	Row Arrangement (Acre)	N			
350	Sediment Basin (No)		X2, X5, X6, X7, X8, X10	B5	
646	Shallow Water Development and Management (Acre)		X2		

ICM Matrix (continued)

PRACTICE CODE	PRACTICE NAME & UNIT	PRACTICE EFFECTS DESIGNATION			
		NE	NLAA	NLAA,B	MA
381	Silvopasture Establishment (Acre)		X2		
572	Spoil Spreading (Feet)		X2, X7		
574	Spring Development (No)		X2, X9		
442	Sprinkler System (No/Acre)		X7		
570	Stormwater Runoff Control (No and ac)	N			
578	Stream Crossing (No)		X2, X7	B2, B5	
395	Stream Habitat Improvement and Management (Acre)		X7	B2	
580	Streambank and Shoreline Protection (Feet)		X1, X2, X5, X7, X10	B2, B3, B4, B5	
585	Stripcropping (Acre)	N			
587	Structure For Water Control (No)		X1	B5	
606	Subsurface Drain (Feet)		X2, X5, X6, X7, X8, X10		
607	Surface Drainage, Field Ditch (Feet)		X2, X5, X6, X7, X8, X10		
608	Surface Drainage, Main/Lateral (Feet)		X2, X5, X6, X7, X8, X10		
600	Terrace (Feet)		X2, X5, X6, X8, X10		
575	Trails and Walkways (ft)		X1, X2, X5, X6, X7, X8, X10	B5	
612	Tree/Shrub Establishment (Acre)		X2	B2, B3, B5, B7	
660	Tree/Shrub Pruning (Acre)	N			
490	Tree/Shrub Site Preparation (Acre)		X1, X2, X3, X4		
620	Underground Outlet (Feet)		X2, X5, X6, X7, X8, X10		
645	Upland Wildlife Habitat Management (Acre)	N		B3, B7	
601	Vegetative Barrier (Feet)	N			
360	Waste Facility Closure (No)			B2	
632	Waste Separation Facility (No)	N			
313	Waste Storage Facility (No)		X2, X5, X6, X7, X8, X10		
634	Waste Transfer (No)	N			
629	Waste Treatment (No)	N			
359	Waste Treatment Lagoon (No)		X2, X5, X6, X7, X8, X10		
638	Water and Sediment Control Basin (No)	N			
642	Water Well (No)		X2		
614	Watering Facility (No)		X2		

ICM Matrix (continued)

PRACTICE CODE	PRACTICE NAME & UNIT	PRACTICE EFFECTS DESIGNATION			
		NE	NLAA	NLAA,B	MA
351	Water Well Decommissioning (No)	N			
658	Wetland Creation (Acre)		X1, X2, X4, X7		
659	Wetland Enhancement (Acre)				C
657	Wetland Restoration (Acre)				C
644	Wetland Wildlife Habitat Management (Acre)		X2, X3	B7	
380	Windbreak/Shelterbelt Establishment (Feet)	N			
384	Woody Residue Treatment (Acre)		X1, X2		

NLAA Practice Implementation Scenarios

(If the conditions of the scenarios are unavoidable, contact NRCS State Biologist for assistance.)

<p align="center">X1</p>	<p>If the practice will be placed in a habitat type where a federally listed threatened or endangered species may reside AND <i>earthmoving and/or soil disturbance</i> is involved during the installation of the practice, further investigation is required. Review the habitat type, species characteristics, and appearance in the fact sheet on the USFWS Ecological Services website. Make a visual observation of the area to determine if the species or potential habitat for the species exists.</p> <p>Raleigh Asheville</p>
<p align="center">X2</p>	<p>If the practice will be placed in a habitat type where a federally listed threatened or endangered species may reside AND <i>disturbance of native vegetation</i> (e.g., changing landuse) is involved in the installation of the practice, further investigation is required. Review the habitat type, species characteristics, and appearance in the fact sheet on the USFWS Ecological Services website. Make a visual observation of the area to determine if the species or potential habitat for the species exists.</p> <p>Raleigh Asheville</p>
<p align="center">X3</p>	<p>If the practice will be placed in a habitat type where a federally listed threatened or endangered <i>plant species</i> may reside AND <i>pesticide application is involved</i> in installation of this practice, further investigation is required. Review the habitat type, species characteristics, and appearance in the fact sheet on the USFWS Ecological Services website. Make a visual observation of the area to determine if the species or potential habitat for the species exists.</p> <p>Raleigh Asheville</p>
<p align="center">X4</p>	<p>If the practice will be placed within 200 feet of a perennial stream OR within 100 feet of an intermittent stream, in-stream pond or lake, OR within the bed of a stream AND the practice is installed within a county that contains federally listed threatened or endangered aquatic species AND if pesticide application is involved in the installation of the practice, further investigation is required. Review the habitat type, species characteristics, and appearance in the fact sheet on the USFWS Ecological Services website. Make a visual observation of the area to determine if the species or potential habitat for the species exists.</p>
<p align="center">X5</p>	<p>If the practice requires removing trees greater than 3" DBH with the following characteristics: live trees with shaggy bark such as white oak or some hickories OR dead and dying trees with loose or peeling bark, with broken tree tops, splintered or split areas, or have cavities and hollowed areas AND the project area is located within counties with occurrence data for the Indiana Bat: Cherokee, Graham, Rutherford, or Swain, contact the NRCS State Biologist. NOTE: TO AVOID IMPACTS, the removal of the trees described above should occur between October 15 - April 15 (outside the maternity/roosting period). Additionally, prescribed forest burns should be conducted between October 15 - April 15 (outside the maternity/roosting period). If applying pesticides to control gypsy moth infestations or other forest pests, field offices should consult with the NRCS State Biologist. This does not apply to the removal of live, invasive exotic tree species such as Tree of heaven (<i>Ailanthus altissima</i>) and Princess tree (<i>Paulownia tomentosa</i>).</p>

NLAA Practice Implementation Scenarios

(If the conditions of the scenarios are unavoidable, contact NRCS State Biologist for assistance.)

X6	If removing southern yellow pine tree species ≥ 10 " DBH in a pine-dominated stand located in counties with current or historical populations of Red Cockaded Woodpecker, contact the NRCS State Biologist.
X7	If the practice will be within 200 feet of a perennial stream OR within 100 feet of an intermittent stream, in-stream pond or lake, OR within the bed of a stream AND the practice is installed within a county containing federally listed threatened or endangered aquatic species, further investigation is required. Review the habitat type, species characteristics, and appearance in the fact sheet on the USFWS Ecological Services website. Make a visual observation of the area to determine if the species or potential habitat for the species exists.
X8	If working in forests above 4000 feet in counties with current or historical populations of Carolina northern flying squirrel or spruce-fir moss spider .
X9	If practice is being installed in counties with current or historical populations of Bunched Arrowhead (Buncombe & Henderson), contact the NRCS State Biologist.
X10	If the practice requires the removal of trees within the Northern long-eared bat consultation areas as defined on the U.S. Fish & Wildlife Service county specific maps (USFWS; https://www.fws.gov/asheville/htmls/project_review/NLEB_in_WNC.html), contact the NRCS State Biologist. This does not apply to the removal of live, invasive exotic tree species such as Tree of heaven (<i>Ailanthus altissima</i>) and Princesstree (<i>Paulownia tomentosa</i>). NOTE: TO AVOID IMPACTS , plan the removal of trees or conduct prescribed burns outside the pup/active seasons (June 1 - July 31 / April 1 - October 31, respectively) -- OR -- avoid clearing habitat within 1/4 mile of any known hibernacula (a.k.a. hibernation site) -- OR -- avoid clearing with a 5-mile radius of hibernation sites when bats are emerging from or preparing for hibernation (April 1 - May 15 and August 15 - November 14, respectively).

NLAA Practice Implementation Scenarios

(If the conditions of the scenarios are met, a benefit to federally listed threatened or endangered species and their habitat may result. Any NLAA-B determination must be recorded on the CPA-52 and reported via email to the NRCS State Biologist.)

B1	Federally listed threatened or endangered species are present within the planning unit AND practice installation assists in avoiding disturbance.
B2	The practice is installed on or adjacent to a stream within a county containing federally listed threatened or endangered aquatic species.
B3	<p>If this practice will be implemented in riparian or wetland areas, use plants appropriate to the physiographic province as suggested in "Recommended Native Plant Species for Stream Restoration in North Carolina" at: http://www.bae.ncsu.edu/programs/extension/wgg/srp/riparian.html</p> <p>If the practice will be implemented in upland areas, use plants appropriate to the area such as those identified in an adjacent natural area or in Schafale and Weakley's (1990) Classification of the Natural Communities of North Carolina at: http://www.ncnhp.org/Images/Other%20Publications/class.pdf</p> <p>Care should be taken to ensure that non-native or invasive species are not planted, by comparing the recommended species list with the NC Native Plant Society's list of non-native invasive species at: http://www.ncwildflower.org/invasives/list.htm</p>
B4	Using natural stream design/bioengineering within a county containing federally listed threatened or endangered aquatic species.
B5	If practice implementation controls runoff and sedimentation into a stream within a county containing federally listed threatened or endangered aquatic species.
B6	If this practice is conducted in an area that contains the appropriate soil types and habitat that these species require, it may provide benefits to the following plant species: Schweinitz's sunflower (<i>Helianthus schweinitzii</i>), Michaux's sumac (<i>Rhus michauxii</i>), smooth coneflower (<i>Echinacea laevigata</i>), and Georgia aster (<i>Symphotrichum georgianum</i>).
B7	If practice is being installed in a habitat type where a federally threatened or endangered species may reside within a county supporting current or historical populations of threatened and endangered species.

Definitions

eFOTG = electronic Field Office Technical Guide; official location of NRCS practice standards.

Pesticide = any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest(s).

In-Stream Pond = ponds developed by constructing a dam or other structure within the stream channel.

Residue Management = agronomic practice designed to increase level of crop residue present on the field (i.e., long-term no-till).

Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.

In Section "G" complete and attach Environmental Procedures Guide Sheets for documentation as applicable. Items with a "●" may require a federal permit or consultation/coordination between the lead agency and another government agency. In these cases, effects may need to be determined in consultation with another agency. Planning and practice implementation may proceed for practices not involved in consultation.

G. Special Environmental Concerns (Document existing/ benchmark conditions)	J. Impacts to Special Environmental Concerns					
	No Action		Stream Restoration Scenario		Forest Stand Improvement Scenario	
	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action
●Clean Air Act <i>Guide Sheet FS1 FS-2</i> Planning Land Unit is not located in a Non-Attainment Area	No Effect Current activities do not contribute to PM emissions	<input type="checkbox"/>	No Effect PM contributing activities are not planned	<input type="checkbox"/>	No Effect PM contributing activities are not planned	<input type="checkbox"/>
●Clean Water Act / Waters of the U.S. <i>Guide Sheet Fact Sheet</i> Planning Unit located adjacent to Catawba River	No Effect Site is currently contributing sedimentation to Catawba River but management activities do not require 404 permit	<input type="checkbox"/>	May Effect Minor erosion associated with implementation of practices will have short term negative impact but completed practices provide long term benefits. 404 Permit required	<input checked="" type="checkbox"/>	No Effect Planned practices will not involve discharge or placement of fill in waters of the US	<input type="checkbox"/>
●Coastal Zone Management <i>Guide Sheet Fact Sheet</i> Planning Land Unit is not located in Coastal Zone	No Effect Planning Land Unit is not located in Coastal Zone	<input type="checkbox"/>	No Effect Planning Land Unit is not located in Coastal Zone	<input type="checkbox"/>	No Effect Planning Land Unit is not located in Coastal Zone	<input type="checkbox"/>
Coral Reefs <i>Guide Sheet Fact Sheet</i> Coral Reefs are not present in Planning Land Unit	No Effect Coral Reefs are not present in Planning Land Unit	<input type="checkbox"/>	No Effect Coral Reefs are not present in Planning Land Unit	<input type="checkbox"/>	No Effect Coral Reefs are not present in Planning Land Unit	<input type="checkbox"/>
●Cultural Resources / Historic Properties <i>Guide Sheet Fact Sheet</i> No known Cultural Resources or Historic Properties in PLU	No Effect Current activities do not impact any known cultural resources	<input type="checkbox"/>	May Effect Planned activities contain Group 1 practices so review request must be sent to CR Specialist for determination	<input checked="" type="checkbox"/>	May Effect Planned activities contain Group 3 practices. If cultural resources are noted CR Specialist will be notified	<input type="checkbox"/>
●Endangered and Threatened Species <i>Guide Sheet Fact Sheet</i> Potential habitat for Dwarf- Flowered Heartleaf, Small Whorled Pogonia & NLEB in PLU	No Effect Current activities do not impact any potential T & E Habitat	<input type="checkbox"/>	May Effect Dwarf-Flowered Heartleaf determined to be insignificant / potentially beneficial by USFWS. Tree / Shrub practice may have beneficial impact on NLEB due to use of Shag Bark Hickory (ICM B7)	<input type="checkbox"/>	May Effect Small Whorled Pogonia habitat may benefit due to opening of canopy with FSI (666) practice (ICM B7)	<input type="checkbox"/>
Environmental Justice <i>Guide Sheet Fact Sheet</i> 10% of population in PLU is low poverty and 14% minority	No Effect Current activities do not present a disproportionate effect on low income or minority populations	<input type="checkbox"/>	No Effect Practices installed will not present a disproportionate effect on low income or minority populations	<input type="checkbox"/>	No Effect Practices installed will not present a disproportionate effect on low income or minority populations	<input type="checkbox"/>
●Essential Fish Habitat <i>Guide Sheet Fact Sheet</i> Catawba River not designated as Essential Fish Habitat in PLU	No Effect Catawba River not designated as Essential Fish Habitat in PLU	<input type="checkbox"/>	No Effect Catawba River not designated as Essential Fish Habitat in PLU	<input type="checkbox"/>	No Effect Catawba River not designated as Essential Fish Habitat in PLU	<input type="checkbox"/>
Floodplain Management <i>Guide Sheet Fact Sheet</i> PLU is located in 100 year flood plain of Catawba River	No Effect Current activities do not increase flood hazards or create other adverse effects to floodplain or land downstream	<input type="checkbox"/>	No Effect Planned practices do not increase flood hazards or create other adverse effects to floodplain or land downstream	<input type="checkbox"/>	No Effect Planned practices do not increase flood hazards or create other adverse effects to floodplain or land downstream	<input type="checkbox"/>
Invasive Species <i>Guide Sheet Fact Sheet</i> Invasive plant species noted in PLU.	No Effect Current activities do not control spread of invasive species	<input type="checkbox"/>	No Effect Participant / Contractor will use BMPs to reduce potential spreading of invasives	<input type="checkbox"/>	No Effect Participant / Contractor will use BMPs to reduce potential spreading of invasives	<input type="checkbox"/>
●Migratory Birds/Bald and Golden Eagle Protection Act <i>Guide Sheet Fact Sheet</i> PLU is located in Bald Eagle range. No nests noted during site visit.	No Effect Current activities do not result in the take of migratory birds or bald eagles	<input type="checkbox"/>	No Effect Planned practices will not result in the take of migratory birds or bald eagles	<input type="checkbox"/>	No Effect Planned practices will not result in the take of migratory birds or bald eagles	<input type="checkbox"/>
Natural Areas <i>Guide Sheet Fact Sheet</i> No designated Natural Areas in PLU (NHI)	No Effect No designated Natural Areas in PLU (NHI)	<input type="checkbox"/>	No Effect No designated Natural Areas in PLU (NHI)	<input type="checkbox"/>	No Effect No designated Natural Areas in PLU (NHI)	<input type="checkbox"/>

Prime Farmland in PLU (CvA)	Current activities do not convert current farm land to non-farmland <input type="checkbox"/>	Planned Tree / Shrub practice will convert crop land containing Prime Farmland Soils to non-ag. Unable to avoid since practice is integral part of planned system <input type="checkbox"/>	Current land use is not crop <input type="checkbox"/>
Riparian Area Guide Sheet Fact Sheet Riparian Area is found in PLU	No Effect Current activities do not impact function of riparian area <input type="checkbox"/>	May Effect Planned activities should improve function of riparian area through establishment Tree / Shrubs and wildlife habitat improvements <input type="checkbox"/>	May Effect Planned practices should improve function of riparian area through improvements in wildlife habitat and forest composition <input type="checkbox"/>
Scenic Beauty Guide Sheet Fact Sheet PLU does not contain areas designated for scenic beauty.	No Effect Current activities do not adversely affect scenic quality or general landscape <input type="checkbox"/>	No Effect Planned practices will not adversely affect scenic quality or general landscape <input type="checkbox"/>	No Effect Planned practices will not adversely affect scenic quality or general landscape <input type="checkbox"/>
•Wetlands Guide Sheet Fact Sheet Wetlands are present near the PLU	No Effect Current activities do not alter the function of present wetlands <input type="checkbox"/>	No Effect Practices will not impact or manipulate wetland functions <input type="checkbox"/>	No Effect Practices will not impact or manipulate wetland functions <input type="checkbox"/>
•Wild and Scenic Rivers Guide Sheet Fact Sheet Catawba River not designated Wild, Scenic or Recreational River. Warrior Fork listed on NRI	No Effect Current activities do not adversely affect values of Warrior Fork <input type="checkbox"/>	May Effect Planned practices will potentially provide beneficial affects to Warrior Branch through reduced sedimentation and improved wildlife habitat <input type="checkbox"/>	No Effect Planned practices will not affect values of Warrior Fork <input type="checkbox"/>

5/18/2018

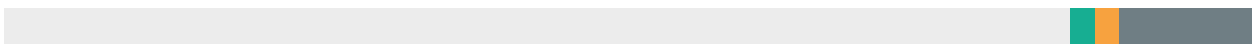
USDA-NRCS
Morganton Field Office

Dear USDA-NRCS,

This letter is to give my authorization for USDA-NRCS to share any information found in my case file that is related to the Threatened and Endangered Species evaluations for EQIP contract 74453218888 with the USFWS. This information may be released to the USFWS until 12/31/2022 which is the expiration date of this contract.

Sincerely,

Jimmy Big Time



From: XXXX - USFWS, Raleigh, NC

Sent: Tuesday, June 6, 2018 10:32 AM

To: Moule, Brett - NRCS, Raleigh, NC <Brett.Moule@nc.usda.gov>

Subject: Burke Co. - Dwarf-flowered Heartleaf (*Hexastylis naniflora*)

Hey Brett,

Good talking with you yesterday. Based on the conversation we had and the information you provided concerning the NRCS Conservation Practices (CP) 342 - Critical Area Planting and NRCS CP 580 – Streambank and Shoreline Protection, the Service concludes that this action is not likely to adversely affect listed resources. This action is considered insignificant/potentially beneficial. This concurrence, and this determination, is based on effects to individuals, not the species as a whole. All appropriate BMPs should be followed during the life of this project. The Service anticipates reduced erosion/sedimentation because of the streambank and shoreline protection and the planting that will follow along this corridor. Only native vegetation should be identified and used during the development of this project.

Please retain a copy of this email for your records.

If anything else is needed, please let me know.

XXXX

U.S. Fish and Wildlife Service

*** FOR TRAINING PURPOSES ONLY ***

Scenario #1 (Stream)

- beneficial determination (CP612; B3 & 7 - Small Whorled Pogonia and NLEB). Email State Biologist.
- NLAA (X1; CP 342 & 580) contact State Biologist. USFWS emails (attachment) implementation of these practices are supported and minimal impacts are determined. Service anticipates reduced erosion/sedimentation b/c stabilization and critical area planting. They consider action insignificant/potentially beneficial. All BMPs should be followed and only native vegetation should be planted.

<u>Conservation Practice</u>	<u>Potential NLAA</u>	<u>Determination</u>	<u>Documentation on CPA-52 / Action</u>
Critical Area Planting (342)	X1	Yes. Habitat for Dwarf-Flowered Heartleaf is potentially present and Soil Disturbance occurring.	Contact State Biologist with the following information: County, Tract number, Plan Map with practices identified, description of area and pictures of impacted site, application Number (if applicable)
	X2	No. No Land Use change	
	X3	No. Pesticide applications not involved	
	X4	No. No Aquatic T & E in County & no pesticide applications involved.	
	B5	No. No Aquatic T & E in County.	
Stream Habitat Improvement (395)	X7	No. No Aquatic T & E in County	Document NLAA Scenarios not applicable due to no presence of Aquatic T & E species
	B2	No. No Aquatic T & E in County	
Spoil Spreading (572)	X2	No. No Land Use change	Document NLAA Scenarios not applicable due to no land use change and no presence of Aquatic T & E species
	X7	No. No Aquatic T & E in County	
Streambank and Shoreline Protection (580)	X1	Yes. Habitat for Dwarf-Flowered Heartleaf is potentially present and Soil Disturbance occurring.	Contact State Biologist with the following information: County, Tract number, Plan Map with practices identified, description of area and pictures of impacted site, application Number (if applicable)
	X2	No. No Land Use change	
	X5	No. Indiana Bat not present in planning area	
	X7	No. No Aquatic T & E in County	
	X10	No. Burke County does not have a confirmed hibernation or maternity sites identified by USFWS	
Channel Bed Stabilization (584)	X7	No. No Aquatic T & E in County	Document NLAA Scenarios not applicable due to no presence of Aquatic T & E species & no Bunched Arrowhead populations in county
	X9	No. Not located in Buncombe or Henderson County	
Tree / Shrub Establishment (612)	X2	No. No Land Use change	Document Beneficial Effect on CPA-52. Practice implementation could have positive effect on NLEB Habitat. E-mail State Biologist Practice(s), Species, and brief description of how T&E species will benefit
	B2	No. No Aquatic T & E in County	
	B3	Yes. Utilizing species off of "Recommended Native Plant Species for Stream Restoration..."	
	B5	No. No Aquatic T & E in County	
	B7	Yes. Shagbark Hickory will benefit NLEB	

Conservation Practice	Potential NLAA	Determination	Documentation on CPA-52 / Action
Forest Stand Improvement (666)	X1	No. Soil Disturbance not occurring	Contact State Biologist with the following information: County, Tract number, Plan Map with practices identified, description of area and pictures of impacted site, application Number (if applicable)
	X2	No. Land Use change not occurring	
	X3	Yes. Habitat for Dwarf-Flowered Heartleaf & Small Whorled Pogonia potentially present and pesticide application occurring with Single Stem Treatment	
	X4	No. No Aquatic T & E in County	
	X5	No. Indiana Bat not present in planning area	
	X6	No. Red Cockaded Woodpecker population not in planning area	
	X7	No. No Aquatic T & E in County	
	X8	No. Work is being performed under 4000 feet	
	X10	No. Burke County does not have a confirmed hibernation or maternity sites identified by USFWS	
	B6	No. USFWS shows that planning area is outside of the species' range	
	B7	Yes. Opening of canopy will benefit Small Whorled Pogonia	