



## DEFINITIONS

May 2015

### TERMINOLOGY

The North Carolina Natural Heritage Program (NC NHP) collects information on occurrences of rare plants and animals, exemplary or unique natural communities, and important animal assemblages (e.g., heronries and colonial waterbird nesting sites). Collectively, these plants, animals, natural communities, and animal assemblages are referred to as "elements of natural diversity" or simply as "elements". Specific occurrences of these elements are referred to as "element occurrences".

### DEFINITIONS

#### TAXONOMIC GROUP

A taxonomic group is the broad biological group into which the element falls. Most are well known, such as mammals, crayfish, and mosses. Less familiar groups are *natural communities*, which are a distinct and reoccurring assemblage of populations of plants, animals, bacteria, and fungi naturally associated with each other and their physical environment; and *animal assemblages*, which are a concentration of animal species using the same site for a phase of their life cycle (feeding, reproduction, migration, hibernating, etc.), e.g. bird colonies, bat or reptile hibernacula, concentrations of migrating shorebirds, multispecific spawning grounds, or multispecific mussel habitats.

#### SCIENTIFIC NAME

Plant names follow those used in "Flora of the Southern and Mid-Atlantic States" by Alan Weakley (2011 draft). For the most part, animal names follow those found in NatureServe Explorer (<http://www.natureserve.org/explorer/>). Names of natural communities are from a "Guide to the Natural Communities of North Carolina, Fourth Approximation" by Michael P. Schafale, 2012.

#### COMMON NAME

Plant names follow those used in "Flora of the Southern and Mid-Atlantic States" by Alan Weakley (2011 draft). For the most part, animal names follow those found in NatureServe Explorer (<http://www.natureserve.org/explorer/>).

#### NORTH CAROLINA STATUS

Definitions of the state protection statuses for plants and animals differ.

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

<b>CODE</b>	<b>STATUS</b>	<b>DEFINITION</b>
E	Endangered	"Any native or once-native species of wild animal whose continued existence as a viable component of the State's fauna is determined by the Wildlife Resources Commission to be in jeopardy or any species of wild animal determined to be an 'endangered species' pursuant to the Endangered Species Act." (Article 25 of Chapter 113 of the General Statutes; 1987).
T	Threatened	"Any native or once-native species of wild animal which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range, or one that is designated as a threatened species pursuant to the Endangered Species Act." (Article 25 of Chapter 113 of the General Statutes; 1987).
SC	Special Concern	"Any species of wild animal native or once-native to North Carolina which is determined by the Wildlife Resources Commission to require monitoring but which may be taken under regulations adopted under the provisions of this Article." (Article 25 of Chapter 113 of the General Statutes; 1987).
SR	Significantly Rare	Any species which has not been listed by the N.C. Wildlife Resources Commission as an Endangered, Threatened, or Special Concern species, but which exists in the state (or recently occurred in the state) in small numbers and has been determined by the N.C. Natural Heritage Program to need monitoring. Significantly Rare species include "peripheral" species, whereby North Carolina lies at the periphery of the species' range (such as Hermit Thrush), as well as species of historical occurrence with some likelihood of re-discovery in the state. Species considered extirpated in the state, with little likelihood of re-discovery, are given no N.C. Status (unless already listed by the N.C. Wildlife Resources Commission as E, T, or SC).
SR-G	Game Animal	Species is a game animal or a furbearer, and therefore (by law) cannot be listed for State protection as E, T, or SC.

The following five watch categories have been devised to indicate the reasons for each animal's current placement(s). A number of animals have been placed in two Watch Categories, because it is believed they may be "in trouble" for at least two reasons. For example, the Red-breasted Nuthatch has a rather small breeding population in the state, in the higher elevations of the mountains, giving it a W2 status. However, as a portion of the breeding population occurs in the spruce-fir zone, which is undergoing degradation of the canopy, it is also given a W5 status, as well.

Watch Category 1 (W1) includes animals that are known to be declining in North Carolina, for one reason or another. The distribution or population sizes of such species in the state are fairly well known; loss of habitat is not necessarily a factor. A large number of species are known to be declining in the state, such as Neotropical migrant birds, but the species in this category must have an N.C. Rank of S3S4 or higher (S3, S2, S1, etc.). Examples: Rusty Blackbird, Spotted Turtle, Bull Chub.

Watch Category 2 (W2) includes animals that are rare to uncommon in North Carolina, but are not necessarily considered to be declining or otherwise in trouble. Generally speaking, the distribution or population sizes of

such species in the state are fairly well known. Examples: Willow Flycatcher, Pine Woods Snake, Spotted Sunfish.

Watch Category 3 (W3) includes animals that are poorly known in North Carolina, but are not necessarily considered to be declining or otherwise in trouble. The distribution and population sizes of such species are not well known; this is especially true for a large number of invertebrates, as well as secretive or nocturnal vertebrates. Examples: Striped Mud Turtle, Sandhills Salamander, Banner Clubtail.

Watch Category 4 (W4) includes animals reported from North Carolina without adequate documentation. These species should be listed at a higher level, if their reported occurrence in North Carolina is true. This category includes sight records of uncertain validity, old and vague reports for which no documentation has appeared, specimens that cannot be verified as being taken in the state, and, in a few cases, more recent reports for which we have not yet received documentation. Example: Smooth Green Snake, Cumberland Crayfish Ostracod, Elusive Clubtail.

Watch Category 5 (W5) includes animals with increasing amounts of threats to its habitat, whether or not populations are known to be declining. These threats can include loss of habitat (e.g., the dramatic loss of maritime forests), degradation of habitat (e.g., pollution and sedimentation of rivers and streams), and disturbance to the habitat (e.g., humans and their vehicles on beaches), among other types of threats. Threats can also include use of pesticides, acid rain, fire suppression, over-collection by zoologists, and varied other factors. Examples: American Kestrel, Bigeye Chub, Phaon Crescent.

Plant protection statuses are determined by the Plant Conservation Program (NC Department of Agriculture) and the Natural Heritage Program (NC Department of Environment and Natural Resources). Endangered, Threatened, and Special Concern species are protected by state law (Plant Protection and Conservation Act, 1979). Significantly rare designations indicate rarity and the need for population monitoring and conservation action.

<b>CODE</b>	<b>STATUS</b>	<b>DEFINITION</b>
E	Endangered	"Any species or higher taxon of plant whose continued existence as a viable component of the State's flora is determined to be in jeopardy" (GS 19B 106:202.12). (Information on permitting regulations for NC Endangered, Threatened, and Special Concern species can be found at <a href="http://www.ncplant.com">www.ncplant.com</a> )
T	Threatened	"Any resident species of plant which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range" (GS 19B 106:202.12).
SC-V	Special Concern-Vulnerable	"Any species or higher taxon of plant which is likely to become a threatened species within the foreseeable future"(NCAC 02 NCAC 48F .0401).
SC-H	Special Concern-Historical	"Any species or higher taxon of plant that occurred in North Carolina at one time, but for which all known populations are currently considered to be either historical or extirpated." "(NCAC 02 NCAC 48F .0401).
SR	Significantly	Any species not listed by the N.C. Plant Conservation Program as Endangered,

	Rare	Threatened, or Candidate, which is rare in North Carolina, generally with 1-100 populations in the state, frequently substantially reduced in numbers by habitat destruction (and sometimes also by direct exploitation or disease).
SR-L	Limited	The range of the species is limited to North Carolina and adjacent states (endemic or near endemic). These are species that may have 20-50 populations in North Carolina, but fewer than 100 populations rangewide. The preponderance of their distribution is in North Carolina and their fate depends largely on conservation here.
SR-T	Throughout	The species is rare throughout its range (fewer than 100 populations total).
SR-D	Disjunct	The species is disjunct to North Carolina from a main range in a different part of the country or world.
SR-P	Peripheral	The species is at the periphery of its range in North Carolina. These species are generally more common somewhere else in their ranges, occurring in North Carolina peripherally to their main ranges, mostly in habitats which are unusual in North Carolina.
SR-O	Other	The range of the species is sporadic or cannot be described by the other Significantly Rare categories
W	Watch List	Any other species believed to be rare and of conservation concern in the state but not warranting active monitoring at this time (see the Watch List section for a more complete discussion).

The watch list has been divided into seven categories as follows:

Watch Category 1 (W1) includes rare plants whose status in North Carolina is relatively well known and which appear to be relatively secure at this time. While still notably rare, these species do not currently require site-specific monitoring and so are not on the main list (E, T, C, SR, or SC). Many of these species were formerly on the main list; they are retained in this category because they require a lower level of continued monitoring to ensure their long-term security. NC NHP maintains paper files on W1 species and requests occurrence data.

Watch Category 2 (W2) includes plants with questionable taxonomy, including taxa of dubious validity and taxa under study and potentially to be named. If further study reveals that these are valid taxa, they would warrant addition to the Rare Plant List as Endangered, Threatened, Candidate, or Significantly Rare. This category has been used for named and unnamed taxa which currently appear to have some significant chance of being proven valid. We request data on taxonomic validity, as well as data on localities and populations.

Watch Category 3 (W3) includes plants which have been reported from North Carolina without adequate documentation. These species should be listed at a higher level when their reported occurrence in North Carolina is verified. This category includes sight records, old and vague reports for which no documentation has appeared, and, in a few cases, more recent literature reports for which we have not yet received documentation. We request data documenting native occurrence in North Carolina, as well as locality and population data.

Watch Category 4 (W4) includes plants known to occur in North Carolina which current data suggest are not native to North Carolina, but whose native occurrence is plausible. Some of these species were previously

listed at a higher level, but field investigations suggest that all known North Carolina occurrences are introductions. We request data documenting the native occurrences of the species in North Carolina.

Watch Category 5a (W5a) includes plants which have declined sharply in North Carolina, but which do not appear yet to warrant site-specific monitoring. Most species in this category have undergone declines of more than 50% (in many cases more than 90%) from their pre-Columbian status. Reasons for decline include exotic pests or pathogens, massive modification of the landscape, suppression of natural fires, and failure of reproduction. Because many of these species were once abundant or even dominant in parts of North Carolina, they may still be fairly common or frequently encountered, despite the strong decline. If current trends continue, however, many of these species will be threatened with extirpation in all or a major part of their ranges in North Carolina. NC NHP does not actively maintain files on W5b species occurrences.

Watch Category 5b (W5b) includes widespread plants, at least within their physiographic province, that are in commercial demand and are often collected and sold in high volume. Such high volume collection can cause local extirpation and is not sustainable in the long run. This category has been created to bring attention to the issue before commercial collection of these species reaches the point where they become rare. Not included in this category are species that are already listed in other sections of this rare plant list. The NC NHP requests information on illegal collection incidents, but does not otherwise maintain files on W5b species occurrences. NC NHP does not actively maintain files on W5b species occurrences.

Watch Category 6 (W6) includes plants which are rare in one region of North Carolina, while uncommon to abundant in another. These regional rarities, generally within-state disjuncts, are significant for protection of genetic variation and long-term viability of species. NC NHP does not actively maintain files on W6 species occurrences.

Watch Category 7 (W7) includes plants with inadequate information about their distribution and rarity in North Carolina. These are generally species which have not been previously listed as rare in North Carolina, but which appear to be so, based on herbarium records and field experience of NC NHP staff, consultants, and cooperating scientists. Further information is needed in order to determine the true status of these species in North Carolina. We request locality and population data on these species.

## **FEDERAL STATUS**

This protection status is designated by the U.S. Fish and Wildlife Service (USFWS) and the U.S. National Marine Fisheries Service in accordance with the U.S. Endangered Species Act of 1973, as amended (U.S. ESA). Plants and plant varieties, (including fungi and lichens), animal species and subspecies, and vertebrate populations are considered for Endangered or Threatened status according to the criteria established under the U.S. ESA. Proposals and determinations to add taxa or populations to the Lists of Endangered and Threatened Wildlife and Plants are published in the Federal Register. Additionally, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service periodically publish a Notice of Review or Notice of Reclassification in the Federal Register that present an updated list of plant and animal taxa that are regarded as candidates or proposed for possible addition to the Lists of Endangered and Threatened Wildlife and Plants. Contact the Asheville or Raleigh Ecological Services Field Offices for more information.

<b>CODE</b>	<b>STATUS</b>	<b>DEFINITION</b>
E	Endangered	A taxon “which is in danger of extinction throughout all or a significant portion of its range” (Endangered Species Act, Section 3).

CODE	STATUS	DEFINITION
T	Threatened	A taxon “which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range” (Endangered Species Act, Section 3).
T(S/A)	Threatened due to Similarity of Appearance	“Section 4 (e) of the [Endangered Species] Act authorizes the treatment of a species (subspecies or population segment) as endangered or threatened even though it is not otherwise listed as endangered or threatened if -- (a) the species so closely resembles in appearance an endangered or threatened species that enforcement personnel would have substantial difficulty in differentiating between the listed and unlisted species; (b) the effect of this substantial difficulty is an additional threat to an endangered or threatened species; and (c) such treatment of an unlisted species will substantially facilitate the enforcement and further the policy of the Act.” (Federal Register, November 4, 1997). [The American Alligator is listed as T(S/A) due to similarity of appearance to other rare crocodilians, and the southern population of the Bog Turtle is listed as T(S/A) due to similarity of appearance to the northern population of the Bog Turtle (which is federally listed as Threatened and which does not occur in North Carolina).]
C	Candidate	“Taxa for which the [Fish and Wildlife] Service has on file enough substantial information on biological vulnerability and threat(s) to support proposals to list them as endangered or threatened. Proposed rules have not yet been issued because this action is precluded at present by other listing activity. Development and publication of proposed rules on these taxa are anticipated. The Service encourages State and other Federal agencies as well as other affected parties to give consideration to these taxa in environmental planning.” (Federal Register, February 28, 1996). Taxa formerly considered as ‘Category 1’ are now considered as ‘Candidate’.
BGPA	Bald and Golden Eagle Protection Act	Bald Eagles were removed from the federal list of threatened and endangered species on August 9, 2007 and are no longer protected under the Endangered Species Act. However, Bald Eagles remain protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The Bald and Golden Eagle Act prohibits anyone from taking, possessing, or transporting a Bald Eagle ( <i>Haliaeetus leucocephalus</i> ) or Golden Eagle ( <i>Aquila chrysaetos</i> ), or the parts, nests, or eggs of such birds without prior authorization. This includes inactive nests as well as active nests. Take means to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb. Activities that directly or indirectly lead to take are prohibited without a permit. For more information, see the Code of the Federal Register: 50 Part 22 or visit <a href="http://www.fws.gov/midwest/MidwestBird/EaglePermits/index.html">http://www.fws.gov/midwest/MidwestBird/EaglePermits/index.html</a>
FSC	Federal Species of Concern	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

CODE	STATUS	DEFINITION
		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 (U.S. Fish and Wildlife Service, Raleigh Office, 2014).
T-4(d)	Threatened, with an Interim 4(d) Rule	A taxon listed as threatened, but with an interim 4(d) rule that allows for certain incidental take exemptions. For additional information, see links at <a href="http://www.fws.gov/midwest/nleb/">http://www.fws.gov/midwest/nleb/</a> .
EXP	Nonessential Experimental Population	The Endangered Species Act permits the reintroduction of endangered animals as "nonessential experimental" populations. Such populations, considered nonessential to the survival of the species, are managed with fewer restrictions than populations listed as endangered. "Section 10 (j) of the Endangered Species Act of 1973, as amended, provides for the designation of introduced populations of federally listed species as nonessential experimental. This designation allows for greater flexibility in the management of these populations by local, state, and Federal agencies. Specifically, the requirement for Federal agencies to avoid jeopardizing these populations by their actions is eliminated and allowances for taking the species are broadened." (U.S. Fish and Wildlife Service, 1995). 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 (U.S. Fish and Wildlife Service, Raleigh Office, 2014).
D	De-listed	Species has been proposed by the U.S. Fish and Wildlife Service for de-listing from the List of Endangered and Threatened Wildlife. However, at the present time, the species is still on the List of Endangered and Threatened Wildlife and is thus protected under the Endangered Species Act. Because such species still have legal Federal protection, the NHP will maintain existing records on the species, though new records might not necessarily be added. If the status becomes law prior to the next publication of the NHP Rare Animal List, the Program will remove the Federal designation from its database (and thus the species will no longer appear on printouts of Federally listed species). NHP may or may not continue to track the species, depending on its legal State status and other factors such as overall abundance and range in the state.
P_	Proposed	A species which has been formally proposed in the Federal Register for listing as Endangered or Threatened

**STATE RANK**

Natural Heritage Programs and NatureServe have developed a consistent method for evaluating the relative imperilment of both species and ecological communities. These assessments lead to the designation of a conservation status rank. For plant and animal species these ranks provide an estimate of extinction risk. This information has been developed by the NC NHP, NatureServe, and a large number of collaborators in

government agencies, universities, natural history museums and botanical gardens, and other conservation organizations. This information has been developed primarily to help in guiding conservation and informing environmental planning and management. Conservation status ranks are based on a one to five scale, ranging from critically imperiled (S1) to demonstrably secure (S5). These status assessments are based on the best available information, considering a variety of factors such as abundance, distribution, population trends, and threats.

<b>CODE</b>	<b>RANK</b>	<b>DESCRIPTION</b>
S1	Critically imperiled	Critically imperiled in North Carolina due to extreme rarity or some factor(s) making it especially vulnerable to extirpation (local extinction) from the state. Typically 5 or fewer occurrences or very few remaining individuals (<1,000).
S2	Imperiled	Imperiled in North Carolina due to rarity or some factor(s) making it very vulnerable to extirpation from the state. Typically 6 to 20 occurrences or few remaining individuals (1,000 to 3,000).
S3	Vulnerable	Vulnerable to extinction in North Carolina either because rare or uncommon, or found only in a restricted range (even if abundant at some locations), or due to other factors making it vulnerable to extirpation. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals.
S4	Apparently Secure	Apparently secure and widespread in North Carolina, usually with more than 100 occurrences and more than 10,000 individuals.
S5	Secure	Common, widespread, and abundant in North Carolina. Essentially ineradicable under present conditions. Typically with considerably more than 100 occurrences and more than 10,000 individuals.
S#S#	Range Rank	A numeric range rank (e.g., S2S3) is used to indicate uncertainty about the exact status of the element.
SH	Historical	Occurred in North Carolina historically, with some expectation that it may be rediscovered. Its presence may not have been verified in the past 20 years. Upon verification of an extant occurrence, SH-ranked elements would typically receive an S1 rank.
SX	Presumed Extirpated	Believed to be extirpated in North Carolina and has not been located despite intensive searches of historical sites and other appropriate habitat.
SU	Unrankable	Currently cannot be assigned a rank in North Carolina due to lack of information or substantially conflicting information about status or trends. Need more information.
SNR	Not Ranked	Rank in North Carolina not yet assessed.
SNA	Not Applicable	A conservation status rank is not applicable because the element is not a suitable target for conservation because it is (1) an interspecific hybrid without conservation value, (2) not native to North Carolina, (3) outside its usual range and not regularly found in North Carolina, (4) never confidently documented as present in North Carolina, or (5) a taxon not confidently documented as present in North Carolina.

<b>CODE</b>	<b>RANK</b>	<b>DESCRIPTION</b>
B	Breeding	Rank of breeding population in North Carolina. Used for migratory species only. (Used as qualifier of above ranks, e.g., S5B.)
N	Nonbreeding	Rank of non-breeding population in North Carolina. Used for migratory species only. (Used as qualifier of above ranks, e.g., S3N.)
?	Uncertain	Indicates an inexact or uncertain numeric rank. (Used as qualifier of above ranks, e.g., S2?.)

### **GLOBAL RANK**

Global conservation status ranks are assigned by NatureServe staff biologists and contract biologists, based on a consensus of scientific experts, the individual natural heritage programs, and the Natural Heritage Network. They apply to the status of a species throughout its range. This system is widely used by other agencies and organizations, as the best available scientific and objective assessment of a species' rarity throughout its range.

<b>CODE</b>	<b>RANK</b>	<b>DESCRIPTION</b>
G1	Critically imperiled	Critically imperiled globally because of extreme rarity or because of some factor(s) making it especially vulnerable to extinction. Typically five or fewer occurrences or very few remaining individuals (<1,000), acres (<2,000), or linear miles (<10).
G2	Imperiled	Imperiled globally because of rarity or because of some factor(s) making it very vulnerable to extinction. Typically 6 to 20 occurrences, or few remaining individuals (1,000 to 3,000), acres (2,000 to 10,000), or linear miles (10 to 50).
G3	Vulnerable	Vulnerable globally either because very rare throughout its range found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extinction. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals.
G4	Apparently Secure	Uncommon but not rare (although it may be rare in parts of its range, particularly on the periphery) and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern. Typically more than 100 occurrences and more than 10,000 individuals.
G5	Secure	Common, widespread, and abundant (although it may be rare in parts of its range, particularly on the periphery). Not vulnerable in most of its range. Typically with considerably more than 100 occurrences and more than 10,000 individuals.
G#G#	Range Rank	A rank involving two numbers indicates uncertainty of rank. For example, a G2G3 rank indicates that the species may be a G2 or a G3, but that existing data do not allow that determination to be made.
GH	Historical	Known from only historical occurrences, but with some expectation that it may be rediscovered. May still be extant; further searching is needed.
GX	Presumed Extinct	Believed to be extinct throughout its range with virtually no likelihood that it will be rediscovered. Not located despite intensive searches of historical sites and other appropriate habitat.

<b>CODE</b>	<b>RANK</b>	<b>DESCRIPTION</b>
GU	Uncertain	Currently cannot be assigned a rank due to lack of information or due to substantially conflicting information about status or trends; need more information.
GNR	Not Ranked	Global rank not yet assessed.
GNA	Not Applicable	A conservation status rank is not applicable because the Element is not a suitable target of conservation activities. A rank is not assigned either because it is (1) an interspecific hybrid without conservation value; or (2) the element is a product of domestication or cultivation.
T#	Intraspecific Taxon	The rank of a subspecies or variety. As an example, G4T1 would apply to a subspecies of a species with an overall rank of G4, but the subspecies warranting a rank of G1.
?	Inexact or Uncertain	Denotes inexact or uncertain numeric rank. Used as qualifier of above ranks.
Q	Questionable taxonomy	Questionable taxonomy that may reduce conservation priority. Distinctiveness of this entity as a taxon at the current level is questionable. Resolution of this uncertainty may result in change from a species to a subspecies or inclusion of this taxon in another taxon, with the resulting species having a lower-priority conservation status rank. Used as qualifier of above ranks.