

North Carolina Natural Heritage Program

TERMINOLOGY AND 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 generally follow those used in “Flora of the Southeastern United States” by Alan Weakley and the Southeastern Flora Team (2024). For the most part, animal names follow those found in NatureServe Explorer (<http://www.natureserve.org/explorer/>). Names of natural communities are from a “Classification of the Natural Communities of North Carolina, Fourth Approximation” by Michael P. Schafale, 2024.

Common Name

Plant names generally follow those used in [Flora of the Southeastern United States](#) by Alan Weakley and the Southeastern Flora Team (2024 updated). For the most part, animal names follow those found in NatureServe Explorer (<http://www.natureserve.org/explorer/>). Natural communities do not have common names.

North Carolina Status (NC Status)

Definitions of the state protection status for plants and animals differ. In North Carolina, Endangered, Threatened, and Special Concern animals have legally protected status through the North Carolina Wildlife Resources Commission (NCWRC) and plants have legally protected status through the North Carolina Plant Conservation Program (NCPCP). Significantly Rare designations indicate rarity and the need for population monitoring and conservation action. However, it is a non-regulatory NC Natural Heritage Program designation (NCNHP). The NCNHP also maintains Watch Lists for species of plants and animals that are rare or uncommon, are not well studied, or are otherwise threatened with serious decline but are not currently legally protected or designated as Significantly Rare.

CODE	NC STATUS	DEFINITION
E	Endangered	<p>"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)</p> <p>OR</p> <p>"Any native or once-native species or higher taxon of plant whose continued existence as a viable component of the State's flora is determined to be Endangered." (GS 19B 106: 202.12).</p>
T	Threatened	<p>"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)</p> <p>OR</p> <p>"Any native or once-native 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 or one that is designated as a Threatened species pursuant to the Endangered Species Act." (GS 19B 106:202.12).</p>
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).
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 Rare	This is an NCNHP designation. Any species which has not been listed as an Endangered, Threatened, or Special Concern species, but which exists in the state (or recently occurred in the state) in small numbers (generally fewer than 100 statewide populations) and has been determined by the NCNHP to need monitoring. Significantly Rare species include species of historical occurrence with some likelihood of rediscovery in the state and species substantially reduced in numbers by habitat destruction, direct exploitation, or disease. Species considered extirpated in the state, with little likelihood of re-discovery, are given no N.C. Status (unless already listed by the NC Wildlife Resources Commission or NC Plant Conservation Program 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.

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	This is an NCNHP designation for any other species believed to be rare and of conservation concern in the state but not warranting active monitoring at this time.
W-PD	Population Decline in NC	Species that are known to be declining in North Carolina for reasons beyond habitat loss . The distribution or population sizes of such species in the state are relatively well-known. Reasons for decline include exotic pests or pathogens, overcollection, poaching, and failure of reproduction. Because many of these taxa were once abundant or even dominant in parts of N.C., 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 N.C.
W-RS	Rare but Relatively Secure	Species whose status in N.C. is relatively well known and 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 Rare List. Many of these species were formerly on the Rare List; they are retained in this category because they require a lower level of monitoring to ensure their long-term security.
W-PK	Poorly Known in NC	Species with inadequate information about their distribution and rarity in N.C. These are generally species which appear to be rare based on museum records and field experience of NCNHP staff, consultants, and cooperating scientists. Further information is needed to determine the true status of these species in N.C.
W-QD	Rare but Questionable Documentation	Species that have been reported from N.C. without adequate documentation. These species should be listed at a higher level when their reported occurrence in N.C. 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.

W-TH	Threat to Habitat	Species with increasing threats to their habitat but not yet warranting active tracking, whether or not populations are known to be declining. These threats can include loss of habitat from development and other modification (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 vehicles on beaches), among other types of threats. Threats include use of pesticides, acid rain, and fire suppression.
W-NN	Rare but Believed Not Native	Species known to occur in N.C. that current data suggest are not native to N.C. but whose native occurrence is plausible. Some of these species were previously listed at a higher level, but field and/or genetic investigations suggest that all known N.C. occurrences are introductions.
W-QT	Rare but Questionable Taxonomy	Species that include 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 List. This category has been used for named and unnamed taxa that appear likely to achieve recognition by accepted taxonomic authorities.

Federal Status (United States Status)

The Federal Status is designated by the U.S. Fish and Wildlife Service (USFWS) and the U.S. National Marine Fisheries Service (USNMFS) in accordance with the U.S. Endangered Species Act of 1973 (USESA), as amended.

FEDERAL		
CODE	STATUS	DEFINITION
E	Endangered	A taxon “which is in danger of extinction throughout all or a significant portion of its range” (Endangered Species Act, Section 3).
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. (Endangered Species Act, Section 4).

C	Candidate	Taxa for which the USFWS 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 USFWS encourages state and other federal agencies as well as other affected parties to give consideration to these taxa in environmental planning.
BGPA	Bald and Golden Eagle Protection Act	In the 9 July 2007 Federal Register (72:37346-37372), the bald eagle was declared recovered and removed (delisted) from the Federal List of Threatened and Endangered Wildlife. After delisting, the Bald and Golden Eagle Protection Act (Eagle Act) (16U.S.C. 668-668d) becomes the primary law protecting bald eagles. The Eagle Act prohibits take of bald and golden eagles and provides a statutory definition of "take" that includes "disturb." The USFWS has developed National Bald Eagle Management Guidelines to provide guidance to land managers, landowners, and others as to how to avoid disturbing bald eagles. For additional information please see https://www.fws.gov/program/eagle-management .
XN	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).
P_	Proposed	A species which has been formally proposed in the Federal Register for listing as Endangered or Threatened. The status would therefore be PE or PT, respectively.

State Rank

The State Rank is a measure of the relative imperilment of both species and ecological communities in the State of North Carolina. For plant and animal species these ranks provide an estimate of extinction risk. This information has been developed by the NC Natural Heritage Program, NatureServe, and a large number of collaborators in government agencies, universities, natural history museums and botanical gardens, and other conservation organizations. These ranks have been developed primarily to help in guiding conservation and to inform environmental planning and management. State 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.

CODE	STATE RANK	DEFINITION
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), or less than 2,000 acres occupied in the state.
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) or 2,000- 10,000 acres occupied in the state.
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 or 10,000- 50,000 acres occupied in the state.
CODE	STATE RANK	DEFINITION
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.
S_B	Breeding	Rank of breeding population in North Carolina. Used for migratory species only. (Used as qualifier of above ranks, e.g., S5B.)
S_N	Nonbreeding	Rank of non-breeding population in North Carolina. Used for migratory species only. (Used as qualifier of above ranks, e.g., S3N.)
S_?	Uncertain	Indicates an inexact or uncertain numeric rank. (Used as qualifier of above ranks, e.g., "S2?".)

Global Rank

The Global Rank is a measure of the relative imperilment of both species and ecological communities globally. Global ranks are assigned by NatureServe staff and contract biologists, based on a consensus of scientific experts, 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.

CODE	GLOBAL RANK	DEFINITION
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) globally.
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) globally.
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, between 3,000 and 10,000 individuals, or 10,000-50,000 acres occupied globally.
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.
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.
G_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.
G_?	Inexact or Uncertain	Denotes inexact or uncertain numeric rank. Used as qualifier of above ranks.
G_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.

County

The name of the county within North Carolina where a species, natural community, or animal assemblage is known to the NC Natural Heritage Program to currently occur or previously occurred.

County Status

An indicator of whether a species or natural community is known to the NC Natural Heritage Program to have been observed recently. Current and historical designations provided by the USFWS may differ from these assigned by the NC Natural Heritage Program. Where there is a difference and a federal nexus, please defer to the USFWS.

COUNTY STATUS	DEFINITION
Current	The species or natural community has been seen recently in the county.
Historical	The species or natural community has not been seen recently in the county.
Obscure	The date the species or natural community was last seen in the county is uncertain.

Habitat Comment (displayed on range map and .csv download only)

The Habitat Comment includes information related to the habitat in which the plant or animal is found. These should not be regarded as the only possible habitats of the species in the state; our knowledge of the flora and fauna of North Carolina is still imperfect. (Note: there is no habitat comment for animal assemblages and natural communities.)