

North Carolina  
Wildlife Resources Commission  
Elk Management Plan

2013-2015



## **Introduction**

Elk were introduced to the Great Smoky Mountain National Park (GRSM) in 2001 as an experimental reintroduction. The National Park Service (NPS) declared the experimental stage of the elk program complete and successful in 2008. Management of elk outside of GRSM then transferred to the North Carolina Wildlife Resources Commission (NCWRC). Since 2011, an elk management goal of our agency has been to establish a huntable population of elk outside of the GRSM.

Elk occur on NPS lands in GRSM and the Blue Ridge Parkway, on tribal trust lands of the Eastern Band of the Cherokee Indians (EBCI), and on public and private lands under the public-trust authority of the NCWRC (Figure 1). The wildlife management jurisdictions in the area where elk occur represent a unique and fluid situation with numerous opportunities for cooperative management. While this scenario presents challenges related to land and wildlife management, the unique commitment to the elk herd allows for a variety of management alternatives and opportunities that may lead to a more secure long-term sustainability of the elk population.

North Carolina State University was contracted to develop a model to determine where suitable elk habitat may occur in N.C. The model used landscape classification layers combined with several broad sociological exclusion masks (i.e., buffered 4-lane roads, urban areas, and row crop agriculture) to predict where suitable habitat occurs. Based on results of the modeling effort (Figure 2), it appears that suitable habitat occurs in several small blocks across the State. The model findings were presented to the NCWRC Habitat, Nongame and Endangered Species (HNGES) Committee in January 2013, which concluded that the most appropriate approach is to manage the elk where they currently exist. The HNGES Committee instructed staff to develop short-term strategies to manage N.C.'s elk population while efforts to determine landowner's attitudes and opinions about elk, and the feasibility of establishing a huntable elk population continue.

Herein, we provide information regarding the current elk population and NCWRC management actions and strategies proposed within the context of six goals through 2015. In addition, we list statutes and rules pertinent to elk management in N.C., including HB 936, adopted in 2013 by the General Assembly, wherein N.C.G.S. § 113-294 was revised establishing a minimum \$2,500 fine for illegal take, possession, or transportation of an elk (Appendix A). The management strategies involve development of a greater understanding of the elk population, including a minimal population estimate; habitat utilization, reproductive success, and behavior; private lands damage abatement and control; and home range size and movement patterns. The strategies presented herein include six primary goals and associated action items.

## **Goal 1: Quantify elk movement patterns and habitat use outside of the GRSM.**

In December 2012, staff initiated efforts to capture and fit a minimum of five elk (two bulls and three cows) with satellite telemetry equipment to track movement patterns and habitat use in Haywood County outside of the GRSM. Tracking these elk should provide information on multiple variables including movement patterns and habitat use and selection of reproductive habitat (i.e., rutting areas and calving grounds). Elk within the GRSM boundary are being monitored by GRSM staff. Tracking the movements of elk should allow us to determine the level of interaction between groups of elk and if, and to what extent, elk travel among jurisdictional boundaries. Developing an understanding of interaction among these groups of elk will provide insight into long-term population viability questions. Further, this information will aid in the development of population management strategies across jurisdictional boundaries.

### **NCWRC Action Items for Goal 1**

- Place remaining satellite telemetry collars on three cow elk after the fall 2013 rutting season.
- Track movement patterns and habitat use of all collared elk.
- Work with GRSM staff to determine the interaction between elk inside and outside of the GRSM.
- Develop a greater understanding of home range size, seasonal shifts in range, and other variables that might impact long-term management of elk.

## **Goal 2: Determine and evaluate the attitudes and opinions of private landowners regarding elk in western North Carolina.**

In July 2013, the NCWRC initiated a survey of private landowners in western N.C. to determine their attitudes and opinions about elk. The survey was stratified to provide statistically valid responses from 1.) landowners in Haywood County (where elk are frequently observed), 2.) the surrounding counties of Jackson, Madison and Swain, and 3.) greater western North Carolina (i.e., in and west of Rutherford, Burke, Caldwell, Wilkes, and Surry counties). The survey was further stratified by parcel ownership size to ensure an adequate and valid sample of three categories of parcel ownership sizes (0-2, 2-10, and >10 acres).

Results from the survey will establish our understanding of the opinions of private landowners regarding elk in western North Carolina and improve our understanding of the current elk distribution and the public's knowledge of elk in these areas. Information gathered will be used to design future, long-term management strategies consistent with our agency goals and those of the many constituencies involved in elk management in western North Carolina.

## **NCWRC Action Items for Goal 2**

- Analyze results and disseminate findings of the survey by 2014.
- Apply survey results to real time management efforts, refine current management strategies, and develop long-term management goals, objectives, and strategies.

## **Goal 3: Expand and improve cooperative habitat management efforts across the landscape.**

Elk currently occur in different jurisdictions. A portion of the public land in this area is managed under the authority of the U.S. Forest Service (USFS). While the NCWRC has management authority over the wildlife resources on these lands, all land management decisions are administered by the USFS. The Pisgah National Forest is the primary public land, other than the GRSM, in this area. Developing habitat for elk on these forests represents an important component of any efforts to significantly expand the current range or abundance of elk.

The NPS has specific restrictions regarding habitat creation and development due in part to differing purposes and use of NPS lands, but there is opportunity for habitat improvement within the GRSM. Lands under the control of the EBCI may represent the greatest opportunity for elk habitat development in the short term. While limited, there are some opportunities to develop and expand elk habitat on private lands in this area. While NCWRC staff has not traditionally incorporated elk habitat management into the technical guidance of wildlife habitat delivered to private landowners, we are expanding these efforts.

## **NCWRC Action Item for Goal 3**

- Continue, expand, and formalize habitat development efforts with the USFS, EBCI, NPS, Rocky Mountain Elk Foundation (RMEF), North Carolina Wildlife Federation (NCWF), other nongovernmental organizations, and private landowners.

## **Goal 4: Develop a greater understanding of population size and biological variables outside the GRSM.**

Critical to any successful wildlife management plan is a basic understanding of the population density in a given area. This information combined with habitat use information provides a better understanding of the opportunities and challenges of long-term population management. The current elk population estimate is derived from modeling predictions initiated early in GRSM's experimental reintroduction phase. While this model continues to provide an estimate of the total elk population in western N.C., it does not provide an estimate of the herd

size on private lands in the area. Further, there are no data regarding recruitment or other critical biological variables that will be needed for long-term management.

Staff is currently experimenting with several survey techniques to determine the best and most representative method to generate an estimate of elk located on public and private lands outside of the GRSM. The placement of tracking collars on a minimum number of elk will enable staff to obtain an actual count of elk in the group associated with those collared individuals. Staff will continue to explore the possibility of using infrared technology, trail camera population estimates, and direct counts. As with any attempt to census wild animals, these will be estimates, but as more information is gained and better estimates of recruitment are obtained the population estimates will improve.

Current modeling suggests a population of approximately 140<sup>+</sup> animals. NCWRC staff currently estimates that of those 140 perhaps between 50-75 elk spend all or a significant portion of their time outside the boundaries of the GRSM. The level of movement into and out of the GRSM is not clear at this time and will remain a focus as the project moves forward. No current estimates of elk within the EBCI lands are available but efforts to work cooperatively with tribal biological staff to generate this figure are underway.

#### **NCWRC Action Items for Goal 4**

- Use vhf/satellite collars to locate and count elk during the rutting period (2014 & 2015).
- Develop and improve long-term population monitoring techniques.

#### **Goal 5: Develop suitable and effective strategies to assist private landowners experiencing elk damage.**

Elk have utilized private lands outside of the GRSM boundary for most of the experimental period and the home ranges of a significant number of elk are found entirely outside park boundaries. With the existence of elk on the landscape comes inevitable conflicts with humans. Reported conflicts currently involve but are not limited to damage to agriculture crops, fences and livestock, injury and death of pets (specifically dogs), and damage to lawn and turf grass. The extent of tangible damage and the perception of damage vary and the landowner survey will provide greater insight to these private landowner beliefs and will facilitate development of appropriate management strategies to address these issues.

The NCWRC currently provides assistance to landowners when requested. Assistance ranges from technical advice regarding elk, the loan of temporary fencing materials for landowners to protect small gardens/crops (<4 acres), and technical guidance on the use of harassment techniques such as noise makers and non-lethal projectiles. Landowners may also

request a wildlife depredation permit through the NCWRC Raleigh office. Two depredation permits have been issued to separate landowners in Haywood County.

NCWRC strategies to address damage must include methods and alternatives to empower private landowners to address damage situations as they occur or to promote a viable economic benefit to having elk on their property. Most options available will require some regulatory or statutory change. Further options to consider may include the establishment of an elk hunting season and issue elk harvest tags to landowners (landowner tags) or to licensed hunters through random drawing. Either scenario might allow landowners to charge successful permit holders an access fee to hunt their property.

### **NCWRC Action Items for Goal 5**

- Continue onsite technical assistance to all landowners as requested.
- Continue to work with partners to address elk conflicts and provide support to individuals and landholders.
- Review the current listing status of elk.
- Provide viable alternatives to address elk damage on private lands including the issuance of depredation permits to private landowners.

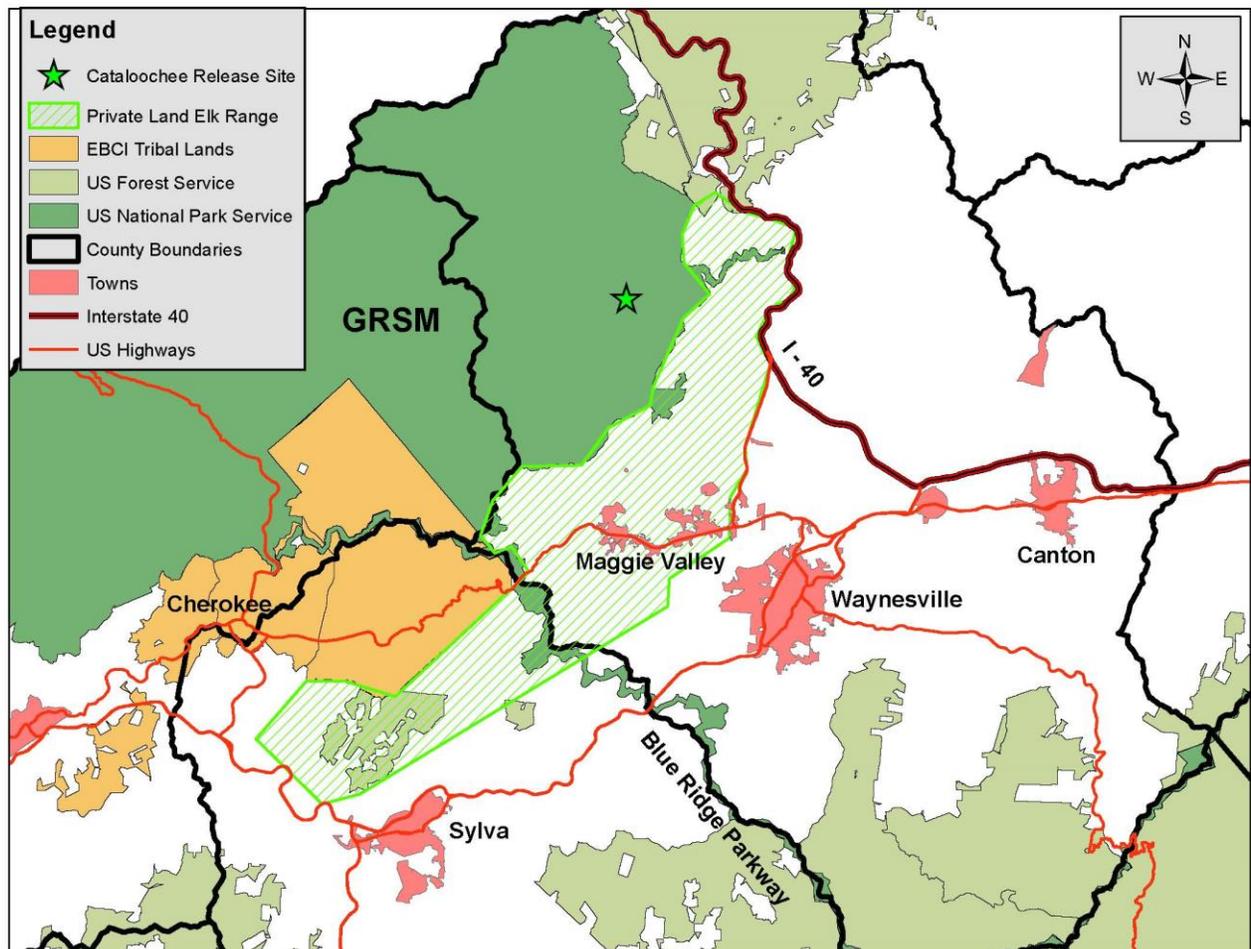
### **Goal 6: Develop and expand outreach and marketing activities promoting “elk watching” and other positive aspects of elk conservation.**

The GRSM has the highest annual visitation rate of all National Parks in the U.S. Part of the allure of this area is the presence of elk, especially in Cataloochee Valley. The RMEF, NPS, local businesses, and chambers of commerce all accrue benefits from persons who consider the presence of elk a positive component of western N.C. fauna. For elk restoration across the region and especially on private lands to be truly successful, private landowners must likewise view elk in a positive light. This melding of landowners’ perceptions is the most difficult challenge in elk management.

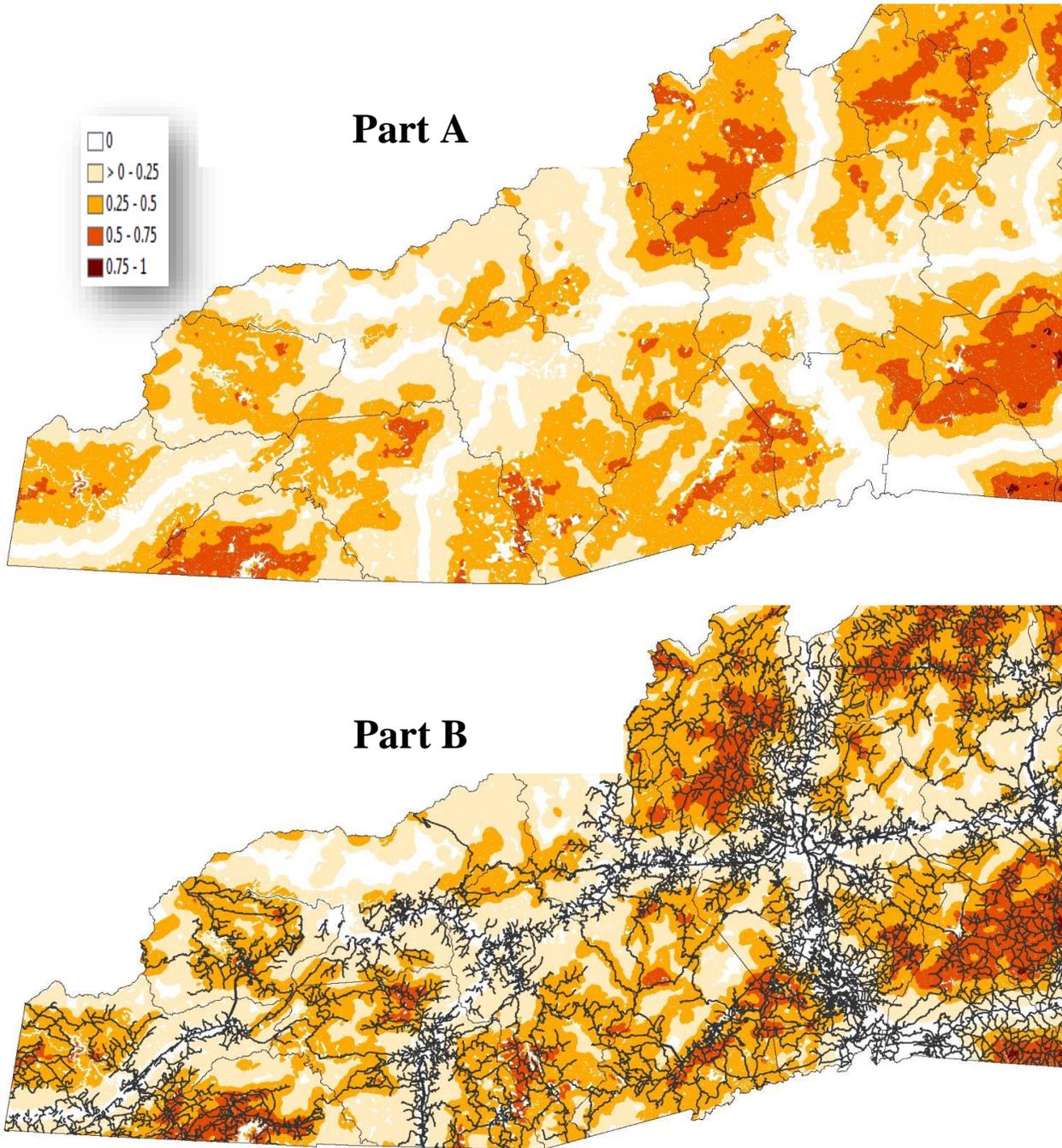
## NCWRC Action Items for Goal 6

- Work with the USFS, EBCI, NPS, RMEF, NCWF, other nongovernmental organizations, private landowners, and chambers of commerce to develop general strategies to promote the positive aspects of elk as a component of western N.C.'s fauna.
- Work with all elk management stakeholders to develop strategies to generate direct positive benefits of elk to private landowners in western N.C.
- Continue and expand outreach efforts to work cooperatively with local landowners and other stakeholders.
- Complete and issue the RFP for a range-wide elk feasibility study, initiate the project, and report results to the NCWRC and all stakeholders.

**Figure 1. Current Elk Range and Land Ownership.**



**Figure 2. Final Suitability Maps for Western North Carolina from NCSU analyses. (Notes: 1 = best habitat; 0 = least best habitat; Part B includes primary and secondary road layer)**



# **Appendix A**

## **Legal Status of Elk in North Carolina**

*Review of several current statutes and NCAC sections relative to elk and the take of elk.*

- Current legal status of elk: “nongame animal”.
- Elk are listed as a Special Concern Species.
- There is no established hunting season on elk however the Commission has the statutory authority under current law (§ 113-291.2) to establish a hunting season for wild animals and wild birds.
- 15A NCAC 10I.0102 (a) requires that either a statutory season be established or the rules be amended to allow an open season for take.
- The Commission may remove status as special concern species if such status is deemed no longer warranted.

## **General Statutes**

### **Article 21.**

#### **Licenses and Permits Issued by the Wildlife Resources Commission.**

#### **§ 113-274. Permits.**

- (a) As used in this Article, the word "permit" refers to a written authorization issued without charge by an employee or agent of the Wildlife Resources Commission to an individual or a person to conduct some activity over which the Wildlife Resources Commission has jurisdiction. When sale of wildlife resources is permitted, rules or the directives of the Executive Director may require the retention of invoices or copies of invoices in lieu of a permit.
- (b) Except as otherwise specifically provided, no one may engage in any activity for which a permit is required without having first procured a current and valid permit.
- (c) The Wildlife Resources Commission may issue the following permits:
- (1a) Depredation Permit. - Authorizes the taking, destruction, transfer, removal, transplanting, or driving away of undesirable, harmful, predatory, excess, or surplus wildlife or wildlife resources. Livestock or poultry owners shall be issued a depredation permit for coyotes upon request. The permit must state the manner of taking and the disposition of wildlife or wildlife resources authorized or required and the time for which the permit is valid, plus other restrictions that may be administratively imposed in accordance with rules of the Wildlife Resources Commission. No depredation permit or any license is needed for the owner or lessee

of property to take wildlife while committing depredations upon the property. The Wildlife Resources Commission may regulate the manner of taking and the disposition of wildlife taken without permit or license, including wildlife killed accidentally by motor vehicle or in any other manner.

(4) Other Permits. - In implementing the provisions of this Subchapter, the Wildlife Resources Commission may issue permits for taking, purchase, or sale of wildlife resources if the activity is lawfully authorized, if there is a need for control of the activity, and no other license or permit is applicable. In addition, if a specific statute so provides, a permit under this subdivision may be required in addition to a license when there is a need for closer control than provided by the license. (1935, c. 486, ss. 4, 22; 1941, c. 231, s. 1; 1965, c. 957, s. 2; 1971, c. 423, s. 2; c. 809, s. 1; 1973, c. 1262, s. 18; 1977, c. 794, s. 1; 1979, c. 830, s. 1; 1987, c. 827, s. 98; 1993, c. 18, s. 4; 2010-156, s. 2.)

## **Article 22. Regulation of Wildlife.**

### **§ 113-129. Definitions relating to resources.**

(11d) Nongame Animals. - All wild animals except game and fur-bearing animals.

(15) Wild Animals. - Game animals; fur-bearing animals; feral swine; and all other wild mammals except marine mammals found in coastal fishing waters....

## **Article 25. Endangered and Threatened Wildlife and Wildlife Species of Special Concern.**

### **§ 113-331. Definitions.**

(8) "Special concern species" means 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.

### **§ 113-332. Declaration of policy.**

The General Assembly finds that the recreation and aesthetic needs of the people, the interests of science, the quality of the environment, and the best interests of the State require that endangered and threatened species of wild animals and wild animals of special concern be protected and conserved, that their numbers should be enhanced and that conservation techniques be developed for them; however, nothing in this Article shall be construed to limit the rights of a landholder in the management of his lands for agriculture, forestry, development or any other lawful purpose without his consent. The North Carolina Zoological Park is not subject to the provisions of this Article. (1987, c. 382, s. 1.)

**§ 113-333. Powers and duties of the Commission.**

(a) In the administration of this Article, the Wildlife Resources Commission shall have the following powers and duties:

(1) To adopt and publish an endangered species list, a threatened species list, and a list of species of special concern, as provided for in G.S. 113-334, identifying each entry by its scientific and common name.

(2) To reconsider and revise the lists from time to time in response to public proposals or as the Commission deems necessary.

(3) To coordinate development and implementation of conservation programs and plans for endangered and threatened species of wild animals and for species of special concern.

(4) To adopt and implement conservation programs for endangered, threatened, and special concern species and to limit, regulate, or prevent the taking, collection, or sale of protected animals.

(5) To conduct investigations to determine whether a wild animal should be on a protected animal list and to determine the requirements for conservation of protected wild animal species.

(b) Using the procedures set out in Article 2A of Chapter 150B of the General Statutes, the Wildlife Resources Commission shall develop a conservation plan for the recovery of protected wild animal species. In developing a conservation plan for a protected wild animal species, the Wildlife Resources Commission shall consider the range of conservation, protection, and management measures that may be applied to benefit the species and its habitat. The conservation plan shall include a comprehensive analysis of all factors that have been identified as causing the decline of the protected wild animal species and all measures that could be taken to restore the species. The analysis shall consider the costs of measures to protect and restore the species and the impact of those measures on the local economy, units of local government, and the use and development of private property. The analysis shall consider reasonably available options for minimizing the costs and adverse economic impacts of measures to protect and restore the species.

(c) In implementing a conservation plan under this Article, the Wildlife Resources Commission shall not adopt any rule that restricts the use or development of private property. If a conservation plan identifies a conservation, protection, or restoration measure the implementation of which is beyond the scope of the authority of the Wildlife Resources Commission, the Commission may petition the General Assembly, any agency that has regulatory authority to implement the measure, a unit of local government, or any other public or private entity and request the assistance of that agency or entity in implementing the measure.

(d) The Commission is authorized to develop a bat eviction and exclusion curriculum that may be taught by trade associations or wildlife conservation organizations for certification. The curriculum may incorporate the training that is provided as part of Wildlife Damage Control Agent certification in best management practices for removing and evicting bats from structures and in preventing bats from reentering structures. (1987, c. 382, s. 1; 1995, c. 392, s. 1; 2003-100, s. 1; 2009-219, s. 1.)

**§ 113-337. Unlawful acts; penalties.**

- (a) It is unlawful:
- (1) To take, possess, transport, sell, barter, trade, exchange, export, or offer for sale, barter, trade, exchange or export, or give away for any purpose including advertising or other promotional purpose any animal on a protected wild animal list, except as authorized according to the regulations of the Commission, including those promulgated pursuant to G.S. 113-333(1);
  - (2) To perform any act specifically prohibited by the regulations of the Commission promulgated pursuant to its authority under G.S. 113-333.

## **NC Administrative Code**

### **15A NCAC 10B .0106 WILDLIFE TAKEN FOR DEPREDATIONS**

(a) Depredation permits allow the take of undesirable or excess wildlife resources as described in Subparagraphs (1) and (2) of this Paragraph. Only employees of the Wildlife Resources Commission and Wildlife Damage Control Agents may issue depredation permits. Each permit must be written on a form supplied by the Commission. No permit is needed for the owner or lessee of a property to take wildlife while committing depredations on the property, however the manner of taking, disposition of dead wildlife and reporting requirements as described in this Rule still apply. No permit shall be issued to take any endangered or threatened species of wildlife listed under 15A NCAC 10I, except alligators, by reason of depredations to property. Only the Executive Director may issue depredation permits for Special Concern species listed in 15A NCAC 10I .0103 and for alligators. An individual may take an endangered or threatened species in immediate defense of his own life or of the lives of others without a permit. Any endangered or threatened species that may constitute a demonstrable but non-immediate threat to human safety shall be reported to a federal or state wildlife enforcement officer, who, upon verification of the report, may take or remove the specimen as provided by 15A NCAC 10I .0102. Depredation permits for other species shall be issued under the following conditions:

(1) for taking wildlife that is or has been damaging or destroying property provided there is evidence of property damage. No permit may be issued for the taking of any migratory birds and other federally protected animals unless a corresponding valid U.S. Fish and Wildlife Service depredation permit, if required, has been issued. The permit shall name the species allowed to be taken and may contain limitations as to age, sex or any other condition within the species so named. The permit must be issued to a landholder or an authorized representative of a unit of local government for depredations on public property. The permit shall be used only by individuals named on the permit.

(c) Each depredation permit shall have an expiration date or time after which the depredation permit is no longer valid. The depredation permit authorizes possession of any wildlife resources taken under the permit and must be retained as long as the wildlife resource is in the permittee's possession. All individuals taking wildlife resources under the authority of a depredation permit are obligated to the conditions written on the permit and the requirements specified in this Rule.

(d) Manner of Taking:

(1) Taking Without a Permit. Wildlife taken without a permit while committing depredations to property may, during the open season on the species, be taken by the landholder by any lawful method. During the closed season such depredating wildlife may be taken without a permit only by the use of firearms or archery equipment as defined in 15A NCAC 10B .0116.

(2) Taking With a Permit. Wildlife taken under a depredation permit may be taken only by the method or methods authorized by the permit. When trapping is authorized, in order to limit the taking to the intended purpose, the permit may specify a reasonable distance

from the property sought to be protected, according to the particular circumstances, within which the traps must be set. The Executive Director or agent may also state in a permit authorizing trapping whether or not bait may be used and the type of bait, if any, that is authorized. In addition to any trapping restrictions that may be contained in the permit the method of trapping must be in accordance with the requirements and restrictions imposed by G.S. 113-291.6 and other local laws passed by the General Assembly.

No depredation permit shall authorize the use of poisons or pesticides in taking wildlife except in accordance with the provisions of the North Carolina Pesticide Law of 1971, the Structural Pest Control Act of 1955, and G.S. 113, Article 22A. No depredation permit shall authorize the taking of wildlife by any method by any landholder upon the lands of another except when the individual is listed as a second party on a depredation permit.

(3) Intentional Wounding. It is unlawful for any landholder, with or without a depredation permit, intentionally to wound a wild animal in a manner so as not to cause its immediate death as suddenly and humanely as the circumstances permit.

(e) Disposition of Wildlife Taken:

(1) Generally. Except as provided by the succeeding Subparagraphs of this Paragraph, any wildlife killed without a permit while committing depredations shall be buried or otherwise disposed of in a safe and sanitary manner on the property. Wildlife killed under a depredation permit may be transported to an alternate disposal site if desired. Anyone in possession of carcasses of animals being transported under a depredation permit must have the depredation permit in his or her possession. Except as provided by the succeeding Subparagraphs of (d)(2) through (5) of this Rule, all wildlife killed under a depredation permit must be buried or otherwise disposed of as stated on the permit.

**15A NCAC 10I .0105 SPECIAL CONCERN SPECIES LISTED**

The following species of resident wildlife are designated as state-listed special concern species:

(5) Mammals:

(f) Elk (*Cervus elaphus*)

**15A NCAC 10I .0102 PROTECTION OF ENDANGERED/THREATENED/SPECIAL CONCERN**

(a) No Open Season. There is no open season for taking any of the species listed as endangered in Rule .0103, or threatened in Rule .0104 of this Section, except for the American alligator (*Alligator mississippiensis*) as set forth in the rules of this Chapter. Unless otherwise provided in North Carolina General Statutes or the rules of this Chapter, there is no open season for taking any of the species listed as special concern

in Rule .0105 of this Section. Except as provided in Paragraphs (b), (c) and (e) of this Rule, it is unlawful to take or possess any of such species at any time.

- (b) Permits. The executive director may issue permits to take or possess an endangered, threatened, or special concern species:

- (4) To a person with demonstrable depredation from a Special Concern Species, or the American alligator (*Alligator mississippiensis*).