

# Conservation of Critical Habitat for Freshwater Mussels in North Carolina

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**Abstract.** Regulations have now been established to expand protection of Critical Habitats for state and federally listed endangered and threatened mollusks in North Carolina. The process for protecting these Critical Habitats occurs in three major steps. First, after statewide public hearings to allow for citizen input, the Wildlife Resources Commission adopts areas as Critical Habitats based on recommendations from its Nongame Wildlife Advisory Committee. Next, the Wildlife Resources Commission recommends to the Environmental Management Commission that the Critical Habitats be protected as High Quality Waters. Finally, after considering both environmental and economic concerns expressed by citizens at statewide public hearings, the Environmental Management Commission reclassifies some or all of the areas as High Quality Waters. High Quality Waters receive special protection from the state. Within 1 mile of a High Quality Water, strict sedimentation and storm water controls are required. Significantly improved wastewater treatment is required, and the total volume of treated wastewater for all discharges combined will not exceed 50% of the total instream flow under 7Q10 conditions. No single-family, package sewage treatment plants are allowed in High Quality Waters areas.

## Introduction

Thirty-three freshwater mussel species are presently listed as endangered, threatened, or species of special concern in North Carolina. Three of these species are on the federal list as endangered, and another 11 are federal candidate species (category 2). These animals are declining in abundance and range throughout North Carolina.

Although various statutes and associated regulations exist that could be used to help conserve aquatic species, the reality is that we continue to see dramatic declines in mussel populations in our state. We hope that the identification of aquatic Critical Habitats as High Quality Waters will allow better conservation of the associated species.

## Methods

Although the North Carolina Wildlife Resources Commission can designate Critical Habitats for various animal species, there are no provisions in the state's endangered species act that provide protection for the identified Critical Habitats. However, it was recognized that the federal Clean Water Act and the state's Antidegradation Policy could be used to protect aquatic Critical Habitats as High Quality Waters.

In North Carolina, Critical Habitats are designated by the Wildlife Resources Commission, and High Quality Waters are designated by the Environmental Management Commission. During the past year, both commissions have adopted definitions and rules in the North Carolina Administrative Code which allow for the conservation of aquatic Critical Habitats as High Quality Waters. Public hearings were required by both commissions before the definitions and rules were adopted.

According to Wildlife Resources Commission definition, a Critical Habitat is any habitat which is considered essential for the continued survival of an endangered or threatened wildlife species. Critical Habitats are recommended for Wildlife Resources Commission adoption by the Nongame Wildlife Advisory Committee based on sound biological evidence. Critical Habitats include those areas within the geographic area occupied by the species on which are found those physical or biological features that are essential to the conservation of the species and that may require special management considerations or protection. Part of a Critical Habitat may also include specific areas outside the geographic area occupied by the species that are determined to be essential for the conservation of

the species. Critical Habitats do not include the entire geographic area that can be occupied by the threatened or endangered species unless the management and protection of this area has been determined to be essential for the conservation of the species. As can be seen, these definitions mirror the federal definition of Critical Habitat.

Critical Habitat, as defined by the Environmental Management Commission, is any area considered essential for the continued existence of an endangered or threatened species, and which is so designated by the Wildlife Resources Commission for animals or the North Carolina Department of Agriculture for plants.

The Environmental Management Commission's rules state that a water body listed as High Quality Water must meet one of the following criteria:

1. Biological and physical/chemical characteristics must be rated as excellent.
2. The water body is designated by the Wildlife Resources Commission as Native or Special Native Trout Waters.
3. The Marine Fisheries Commission or the Wildlife Resources Commission has designated the water body as a Primary Nursery Area.
4. The water body is designated as Critical Habitat by the Wildlife Resources Commission or the Department of Agriculture.
5. The water body is classified as a Water Supply watershed.
6. The water body is classified as a Shellfishing Area.

The Environmental Management Commission will not allow degradation of the quality of High Quality Waters below the water quality necessary to maintain existing uses. Therefore, special procedures have been implemented:

1. Discharges from single-family residences will be prohibited.
2. In general, new industrial process wastewater discharges are not allowed.
3. New domestic and nonprocess industrial dischargers must meet advanced wastewater treatment requirements, which include a failsafe treatment design with standby power capability for the entire treatment works, dual train design for all treatment components, or equivalent failsafe treatment designs.
4. The total volume of treated wastewater for all discharges combined will not exceed 50 percent of the total instream flow under 7Q10 conditions.
5. Land within 1 mile of and draining to a High Quality Water can be developed under a low density or high density option. Under the low

density option, minimum lot size is 1 acre for single-family developments, and other types of developments are limited to 12% built-upon area. Under the high-density option, higher density developments will be allowed if stormwater control systems utilizing wet detention ponds are constructed and maintained. Additional runoff control measures may be required.

With these definitions and rules in place, the Wildlife Resources Commission is now considering the adoption of 34 water bodies as aquatic Critical Habitats. These proposed Critical Habitats are found in each of the physiographic regions of the state. Critical Habitats include the Little Tennessee River Basin, the New River Basin, the Waccamaw River Basin and tributaries of the Catawba, Pee-Dee, Cape Fear, Neuse and Tar river basins. Once these areas are designated as Critical Habitats, the Wildlife Resources Commission will request High Quality Waters protection for these areas from the Environmental Management Commission.

## Discussion

High Quality Waters designations do not provide complete protection of aquatic Critical Habitats. Agricultural, forestry, and transportation activities are not addressed by High Quality Waters rules. However, the Wildlife Resources Commission hopes to encourage the adoption of Best Management Practices that will limit impacts to aquatic Critical Habitats in the future. The High Quality Waters rules do not address water intakes, diversions, irrigation, or reservoirs; however, under the state's antidegradation policy, these activities must not impair water quality or remove the classified uses. Therefore, aquatic Critical Habitats that are protected as High Quality Waters should be protected from such uses in the future.

## Summary

During the past 20 years, significant degradation of aquatic habitats and loss of diversity have been documented in North Carolina as a result of point and nonpoint sources of pollution. When possible, the Nongame Wildlife Advisory Committee has recommended several areas as Critical Habitat for state-listed endangered and threatened aquatic species. The goal is to maintain viable populations of these species in each river basin throughout the species' ranges. Then, when future water quality improves, the species can expand into their former ranges and ultimately be delisted.