

Wildlife Conservation Land Priority Habitat Management Guidelines

Stream and Riparian Zones



Protected species

associated with riverine systems within stream and riparian zones include manatee, river frog, Eastern spiny softshell, Neuse river waterdog, water shrew, hellbender, mudpuppy, stripenneck musk turtle, and American alligator.



North Carolina Wildlife Resources Commission

1722 Mail Service Center
Raleigh, NC 27699-1722
Phone: (919) 707-0050
ncwildlife.org

Habitat Description

Stream and riparian zone habitat is defined as the land area adjacent to and including a perennial or intermittent water body. The riparian zone generally extends from the water's edge at base flow (stream water from groundwater, not runoff) to the place where the stream does not interact with or influence the type and density of vegetation present; generally where the upland ecological community begins.

It encompasses the stream banks and floodplain with their plant communities as well as plant material (natural debris such as grass, leaves, twigs, branches, trees) likely to enter the stream. Stable riparian zones contain stream banks that are not eroding and have diverse plant communities that are generally undisturbed.

Stream and riparian zone habitat, as designated by the Wildlife Conservation Land Program (WCLP) refers to riverine aquatic communities, floodplain forests, and aquatic river basins in all three of the eco-regions in North Carolina. These are described in the North Carolina Wildlife Action Plan (NCWAP). Stream and riparian zone habitat is critically important to a wide range of terrestrial, semi-aquatic, and aquatic wildlife.

Unfortunately, land use in and around these areas has contributed to a drastic decline in the quality and quantity of the remaining wildlife habitat.

Threats to the Resource

In addition to direct habitat loss from land use conversion and development, water quality deterioration and habitat degradation are serious problems that affect wildlife in stream and riparian zones.

Clean water is critical to a host of species that live in rivers and streams for all or a portion of their lives but can be negatively impacted by runoff.

Direct input of contaminants occurs when runoff from poorly managed crop and animal agriculture operations, from commercial and residential development, and from other point and non-point sources is allowed to enter the waterway. The resulting water pollution can kill aquatic species and contaminate the food chain for other wildlife. Increased sediment loads from land disturbing activities can irreparably damage the integrity of aquatic systems.

In addition, fragmentation and loss of upland habitat in riparian zones pose significant challenges to priority species such as neotropical migratory birds that nest in floodplain forests.

Management Strategies – Wildlife Conservation Lands Program (WCLP)

Well vegetated buffers can help mitigate or prevent impacts from pollution and sedimentation into North Carolina's waterways.

Perennial or intermittent blue-line streams (waterways that are designated on a USGS topographic map, streams that are shown to be present using LIDAR data or a professional field delineation can be enrolled under the Stream and Riparian Zone category of the WCLP.

Ephemeral streams, springs, seeps can be very important breeding habitats for salamanders. Small streams, springs, and seeps will need to be considered on a case-by-case basis

Under the WCLP, the riparian area will be delineated by measuring horizontally from the top of the stream bank. The minimum width for qualifying aquatic habitat shall be 30 feet on each side of the stream or an average of 60 feet total; the minimum width for qualifying terrestrial habitat shall be 15 feet on each side of the stream; and the maximum width will be 300 feet or the width of the floodplain, whichever is greater. Site specific conditions may justify a narrower minimum width dependent on property lines, road restrictions, and other permanent fixtures. It is important to note that there is no single riparian width statewide that will maintain and enhance a fully functional aquatic and terrestrial habitat. The minimum widths above have been noted for minimal water quality benefits to wildlife. All landowners will be encouraged to maximize wildlife benefits through a fully functional stream and riparian zone which means a width larger than 30 feet.

The riparian zone shall not extend beyond the watershed boundary as delineate by the ridges surrounding the watershed. The stream area included in this habitat type shall be the area as measured between the top of the banks along the channel. A diversity of stream bank vegetation should be retained to prevent sloughing and erosion. Stable riparian zones contain stream banks that are not eroding and have vegetation that has not been disturbed within the last 3 years.

The riparian zone must be protected from damage from livestock with permanent fencing. Cost-share from various agencies may be available.

Ideally, riparian zones will contain a diverse plant community composed of native trees, shrubs, vines, grasses, sedges, and other herbaceous plants, as well as woody debris such as rootwads and logs of downed trees. This structural diversity is especially important to neotropical birds and to amphibians using these areas.

Heavy infestations of invasive exotic plants can dramatically reduce the diversity of riparian native plant communities. Control of invasive exotic plants within the riparian zone may be recommended if the extent of the infestation covers over 50% of the area. Approved herbicides and surfactants will be of low toxicity to aquatic wildlife.

Restoration may be warranted if the site is badly degraded. An assessment can be completed by a resource professional and recommendations developed to restore hydrology and/or native plant communities as deemed necessary.

This and other priority habitat types are listed as habitats of concern in the North Carolina Wildlife Action Plan (NCWAP) and more detailed information concerning each habitat type may be found at www.ncwildlife.org/fs_index_07_conservation.htm.

