

Wildlife Conservation Land Program Priority Habitat Management Guidelines

Stream and Riparian Zones



Species of Greatest Conservation Need associated with riverine systems within stream and riparian zones include bog turtle, river frog, Eastern spiny softshell, Neuse River waterdog, water shrew, hellbender, mudpuppy, stripe-necked musk turtle and American alligator.



North Carolina Wildlife
Resources Commission

1722 Mail Service Center
Raleigh, NC 27699-1700
Phone: (919) 707-0050
ncwildlife.org

Habitat Description

Stream and Riparian Zone (SRZ) habitat is defined as a perennial or intermittent flowing body of water and the land adjacent to it. The riparian zone generally extends from the water's edge at base flow, not including storm runoff, to the place where the stream does not influence the vegetation type or density. Generally, this somewhat obscure boundary is where the upland ecological community begins.

The SRZ encompasses the stream banks, floodplain and their plant communities, as well as plant material (natural debris such as grass, leaves, twigs, branches and trees) which will likely enter the stream. Desirable riparian zones include stream banks that are not eroding and diverse native plant communities that are generally undisturbed.

SRZ habitat, as designated by the Wildlife Conservation Land Program (WCLP), refers to fluvial aquatic communities, floodplain forests and aquatic river basins in all three of the eco-regions in North Carolina. These vital habitats are identified as a priority in the North Carolina Wildlife Action Plan. SRZ habitat is critically important to a wide range of terrestrial, aquatic and semi-aquatic species.

Threats to the Resource

Land use adjacent to these aquatic systems contributes significantly to the quality and quantity of wildlife habitat within the watershed.

Clean water is critical to a host of species that utilize rivers and streams for some or all of their life cycle. In addition to direct habitat loss from land use conversion and development, water quality degradation and habitat deterioration can seriously impact the wildlife utilizing stream and riparian habitats.

Water quality can be negatively impacted by nutrients, chemicals or sediment. Direct input of contaminants may occur when runoff from poorly managed agriculture operations, commercial development, residential building sites and various non-point sources are allowed to enter waterways. The resulting water pollution can kill aquatic species and contaminate the food chain.

Increased sediment loads from land disturbance can damage the integrity of aquatic systems. In addition, fragmentation and loss of diverse habitat in forested riparian buffers pose a significant challenge to priority species such as neotropical migratory birds that nest in floodplain forests.

Management Considerations – Wildlife Conservation Land Program (WCLP)

Perennial or intermittent streams qualify for enrollment in WCLP as SRZ. While United States Geological Survey topographic maps and LIDAR data may be used to identify qualifying waterways, ground truthing of location and stream condition is required. Ephemeral streams, springs and seeps will be considered on a case-by-case basis and may better qualify for WCLP as Small Wetland Communities.

Specific site conditions should be considered when developing management prescriptions for SRZ. Under the WCLP, riparian areas will be delineated by measuring horizontally from the top of the stream bank. The minimum buffer width shall be 15 feet on each side of the stream; and the maximum width may be up to 300 feet on each side of the stream or the width of the floodplain, whichever is greater. The riparian buffer for a given stream shall not extend beyond the watershed boundary as delineated by the topography surrounding the qualifying waterbody. In very limited situations, site conditions may justify a narrower minimum buffer width dependent on property boundary, road restrictions, and/or other permanent features. All Wildlife Habitat Conservation Agreements should encourage participants to maximize wildlife benefits by enrolling SRZ buffers which are wider than 30 feet.

Stable riparian zones contain stream banks that are not eroding and have vegetation that has not been disturbed within the last three years. Stream bank vegetation must be retained to prevent sloughing and erosion. When adjacent to grazing lands, livestock must be excluded from the riparian zone with permanent fencing. Funding may be available from various agencies to assist with exclusion fencing.

Vegetated buffers can help mitigate or reduce impacts from pollution and sedimentation in North Carolina's waterways. Ideally, riparian zones will contain a diverse native plant community composed of trees, shrubs, vines, grasses, sedges and other herbaceous plants, as well as coarse woody debris such as root wads and downed logs. Structural diversity within riparian buffers is especially important for neotropical birds and amphibians using these areas.

Non-native plants can dramatically reduce structural and compositional diversity of native plant communities. Control of exotic plants may be required to meet the intent of this classification. Areas where infestations of exotic plants cover more than 15% of the riparian area or where invasive control is not feasible may not qualify as SRZ. Herbicide application methodology and chemical formulations used for SRZ management must be of low toxicity to wildlife, be as selective for target species as practical and must be applied according to instructions on the product label.

Restoration activities 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 within the SRZ if deemed necessary.

Information concerning this and other priority habitat types can be found in the [North Carolina Wildlife Action Plan \(NCWAP\)](#).

