

MNRCP Riparian Habitat Management Guidelines

Requirements for Applicants
Adopted June 2021

The Case for Strong Riparian Habitat Management

The primary goal of the Maine Natural Resource Conservation Program (MNRCP) is to restore, enhance, and permanently protect wetlands, streams and other aquatic resources in Maine as mitigation for impacts to other aquatic resources from various development projects. Consequently, proposed projects must meet rigorous ecological standards to ensure the long-term viability and conservation of the many values associated with these aquatic resources, including especially water quality; nutrient flow, pollution abatement, and floodplain protection; protection of rare, threatened and endangered plant and animal species or natural communities; and conservation of high value fish and wildlife habitat.

Because activities adjacent to and surrounding the target wetlands, streams, and other aquatic resources can impact and/or influence all these and other ecological values, precautions must be taken to ensure these conserved aquatic resources are adequately buffered from potential future disturbance and degradation.

Scientific research clearly documents that riparian habitats, particularly forested ones, provide remarkable economic, ecological, and social benefits. Numerous species, such as mink, beaver, otter, kingfisher, and osprey are inextricably tied to these areas. Certain natural plant communities are found predominantly in these areas. Furthermore, over 85% of Maine's vertebrate wildlife species use riparian habitats some time during their annual life cycle, whether for feeding, nesting, denning, or travel. In addition, riparian areas with structurally complex, more mature forests are known to store large amounts of carbon and add to landscape-scale climate resilience. These areas can help meet state goals identified in Maine's Climate Action Plan for increasing carbon storage in our natural and working lands to offset carbon emissions and impacts from climate change.

MNRCP Riparian Habitat Management Guidelines

After an extensive review of the scientific literature, discussions with state and federal agencies and conservation organizations, and a review of current regulatory requirements, the MNRCP has adopted a set of minimum guidelines for riparian habitat buffers around wetlands, streams, and other aquatic resources that all projects must meet, as set forth below.

The guidelines are based in part on information drawn from biologists at the Maine Department of Inland Fisheries and Wildlife, the Maine Natural Areas Program, Maine Audubon, the U.S. Fish and Wildlife Service, The Nature Conservancy in Maine, Trout Unlimited, and Kleinschmidt Associates (engineering and ecological consultants with extensive

experience in water resources). Some of the technical publications consulted are referenced below.

For the purposes of projects funded by MNRCP, the program is striving for enhanced protection of wetlands, streams, and other aquatic resources beyond the minimum regulatory requirements or agency recommendations, using an approach that is both easy to understand, and relatively easy to apply. Generally speaking, the bigger the buffer the better!

It is also worth noting that there may be projects where, as a condition of the MNRCP award, no forest management or timber harvesting will be allowed on the property, regardless of the ability to meet or exceed these guidelines.

Table 1. Minimum MNRCP riparian habitat management area required for all projects, starting from the high-water edge of the waterbody, and including a 100’ no-cut buffer. For coastal wetlands and tidal streams, sea level rise* should be taken into account when determining the extent of the management area.

Freshwater or Tidal Aquatic System	Minimum MNRCP Riparian Habitat Management Area
1st order stream	100’ no-cut buffer
2nd and 3rd- order streams	330 ft. (includes 100’ no-cut buffer)
4th-order and higher streams	660 ft. (includes 100’ no-cut buffer)
Permanent Open Wetlands > ½ acre, and Ponds < 10 ac	330 ft. (includes 100’ no-cut buffer)
Ponds > 10 acres	660 ft. (includes 100’ no-cut buffer)
Significant Wildlife Habitat (as defined under the Natural Resources Protection Act)	660 ft. (includes 100’ no-cut buffer)
Vernal Pools	660 ft. (includes 100’ no-cut buffer; 100-660 ft. retain ≥ 70% canopy cover, openings < 1 ac)
Forested Wetlands	No harvesting within forested wetlands. Add 100’ no-cut buffer around the wetland.

*The Maine Climate Action plan recommends that the state commit to manage for a 3.9’ sea level rise by 2100, and that 3.9’ be utilized in planning and regulatory processes.



First order streams are small perennial streams at the upper end of the watershed. **Second order streams** are somewhat larger perennial streams where two first-order streams come together. **Third order streams** are larger streams or small rivers, formed when two second-order streams join together. **Fourth order streams** are typically larger rivers, formed when two third-order streams join together.

Please note: These guidelines are minimum expectations; if there are opportunities for extending either the 100’ no-cut buffer or entire riparian habitat management area within a project that is certainly preferable. The wider the no-cut buffer, the stronger the proposal, and the higher the proposal will likely rank in terms of mitigating wetland and stream impacts from other projects.

Some limited exceptions to meeting the guidelines may be allowed, but they will be outliers. For example, if a property’s shape and size are such that it cannot meet the guidelines but is otherwise of extremely high value, it may still qualify for funding, although it may rank lower than other projects that can fully meet the guidelines. Project proposals that cannot meet the minimum guidelines for the riparian habitat management area should provide a brief explanation of the relevant circumstances.

Timber harvesting within the Riparian Habitat Management Area

Not all projects awarded funding by MNRCP will be approved for timber harvesting. Many MNRCP awards are given with the condition that no timber harvesting will occur on the property. If timber harvesting will occur on the parcel, within the riparian habitat management area, the first 100’ directly adjacent to the resource should be no-cut, followed by limited harvesting in the remainder of the management area. The minimum no-cut buffer should be expanded out as far as 250’ wherever there are steep slopes (>10%), porous soils or other conditions that are prone to windthrow, sensitive or high value habitats that may benefit from a larger no-cut buffer, areas with no forest beyond the no-cut buffer, or sand or gravel aquifers within the buffer. Further, the full riparian habitat management area for 1st, 2nd, and 3rd-order streams could be expanded out as far as 660’, and as far as 1,000’ for 4th-order streams.

Where there are multiple vernal pools near one another, forming a vernal pool cluster, the riparian habitat management area should be applied around the entire cluster as if it were one pool, not just to each individual pool. During most of the year, pool-breeding amphibians live

in undisturbed wetlands and uplands, often between pools; thus, keeping an intact forest cover between pools is crucial.

Forest management operations within the riparian management area can only occur outside of the 100-foot no-cut buffer, and outside all wetlands, and should: (1) be done only when the ground is frozen or dry; (2) avoid stream crossings unless explicitly allowed by MNRCP; (3) use single-tree or small-group selection cuts that retain relatively continuous forest canopy cover (>70% cover with trees 40+ feet tall, and openings \leq 5,000 square feet); (4) use temporary roads and bridges wherever possible; and, when finished (5) culverts and bridges should be removed and roads put to bed with native plantings.

If stream crossings are unavoidable and approved by MNRCP, they must span the stream with no impacts to the stream channel and should be minimized to a narrow trail with forest canopy cover maintained to the greatest extent possible. No fords or new permanent roads or culverts should be allowed in the riparian habitat management area. In addition, woods roads should be monitored for the presence of invasive species for at least three years after being put to bed, and every effort should be made to eliminate these invasives before they spread.

Logging roads, landings, and approved stream crossings should all be built following the Maine Forest Service's Best Management Practices (see https://digitalmaine.com/cgi/viewcontent.cgi?article=1052&context=for_docs), and located outside of the riparian management area. All approved culverts and bridges should meet [Stream Smart](https://maineaudubon.org/projects/stream-smart/) standards (<https://maineaudubon.org/projects/stream-smart/>).

Rutting should be minimized by reaching in to cut and remove logs within the management area from adjacent upland areas whenever possible. All slash should be left on the ground, either scattered or in small piles, but not in any wetland or other aquatic habitat. The use of herbicides or pesticides should be avoided within all riparian management areas, except in the treatment of invasive species.

Where there are opportunities, MNRCP recommends expanding the riparian habitat management area for harvesting wherever the riparian management area abuts an adjoining unfragmented block of forest that is at least 300-600 acres in size to benefit other forest wildlife that nest and breed further away from the waterway, such as interior forest songbirds, cavity-nesting ducks, northern long-eared bats, wood turtles, river otter, and American marten. These recommendations are consistent with those of the Beginning with Habitat program as well (see [Conserving Wildlife in Maine's Shoreland Habitats](http://www.maineaudubon.org/wp-content/uploads/2017/03/MEAud-Conserving-Wildlife-Shoreland-Habitats.pdf) for more details; <http://www.maineaudubon.org/wp-content/uploads/2017/03/MEAud-Conserving-Wildlife-Shoreland-Habitats.pdf>).

Finally, these streams and wetlands will benefit from keeping at least 80% of the surrounding watershed in forested cover to protect water quality, water temperature, and aquatic habitat for cold-water Brook trout, Atlantic salmon, and other sensitive aquatic wildlife. Even the smallest streams that may dry up in summer are crucial – they are the capillaries that feed the larger streams, ponds, and lakes lower in the watershed. Their shaded cool waters help keep downstream waters cool and enriched with decayed leaves and other organic matter. Forest management beyond the riparian habitat management area plays a big role in determining the

health of these aquatic habitats, whose conservation is the focus of the MNRCP. Projects that limit forest management to those areas outside the Riparian Habitat Management Area and adopt low impact, fish and wildlife-friendly, and carbon storage enhancing practices may score higher as they better match MNRCP mitigation goals. Similarly, projects that propose no forest management at all may score even higher. Timber harvesting proposed in upland areas outside of the riparian habitat management area may be further addressed on a project specific basis.

Definitions:

Permanent Open Wetland: Wetlands dominated by open water or emergent/aquatic vegetation, including both freshwater and coastal wetlands.

Significant Wildlife Habitat: Under the NRPA, the following habitats have been defined and mapped: Wading Bird and Waterfowl Habitat; Shorebird Nesting, Feeding and Staging Areas; Seabird Nesting Islands; Deer Wintering Areas; and Significant Vernal Pools.

Vernal Pool: Any natural water body that holds water long enough in a typical year to support breeding fairy shrimp, wood frogs, and/or spotted or blue-spotted salamanders. While vernal pools are typically natural landscape features, occasionally anthropogenically created or modified water bodies such as abandoned gravel pits, can function as important vernal pool breeding habitat as well. Ruts left after harvesting and roadside ditches that have amphibians or egg masses in them do not qualify as vernal pools for the purposes of MNRCP.

Selected References:

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Maine Department of Inland Fisheries and Wildlife. *Forest Management Recommendations for Brook Trout*. Two-page fact sheet. Specifically designed for Brook Trout waters.

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