

**RECOMMENDED MANAGEMENT GUIDELINES  
FOR LAND USE IN OR ADJACENT TO  
ROARING BROOK MAYFLY AND SPRING SALAMANDER HABITAT**

*Maine Department of Inland Fisheries and Wildlife  
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To protect the integrity of stream habitats with documented or potential occurrences of Roaring Brook Mayfly (Endangered) or Spring Salamander (Special Concern), MDIFW recommends the following guidelines for development and/or forestry activities proposed in or near the stream channel. These management guidelines are based on the best professional judgment of MDIFW Wildlife Biologists and modeled after previously published standards for protecting rare aquatic and stream-side fauna (Carlson and Sweeney 1999, Elliott 1999, Mitchell et al. 2006, deMaynadier et al. 2007). The goal of these recommendations is to avoid or minimize impacts to these rare species and their habitat. If impacts are unavoidable and could lead to Take of the Roaring Brook Mayfly, MDIFW may recommend an Incidental Take Plan be developed to ensure compliance with Maine's Endangered Species Act [12MRSA, Chpt. 925, §12808].

Streams having potentially suitable habitat should be surveyed for the presence of Roaring Brook Mayfly or Spring Salamander prior to any disturbance of riparian vegetation in preparation for development projects, using survey protocols recommended and approved by MDIFW. In the absence of surveys, suitable stream habitat should be considered as potentially occupied and protected using the following guidelines:

**Management Guidelines**

- No construction activities, use of machinery, or other disturbances should occur within the stream channel except as necessary to place stream crossing structures per the standards below.
- Maintain a riparian buffer of 250 feet on both sides of the stream, within which the first 25 feet from the stream be retained as a no-cut and no-disturbance zone; and the remaining 25-250 feet be maintained with no less than 60-70% forest canopy cover using single-tree or small-group selection cuts.
- On slopes facing the stream, maintain an unscarified filter strip of at least the width indicated below between the normal highwater mark of the stream and any exposed mineral soil created by management activities. These recommendations follow minimum performance standards for timber harvest as defined in the Maine Land Use Regulation Commission's Rules and Regulations (Chapter 10.27E)<sup>1</sup>.

<b>Average Slope of Land</b> (%)	<b>Width of Strip</b> (Feet Along Surface of Ground)
0	25
10	45
20	65
30	85
40	105
50	125
60	145
70	165

- No development or permanent land use conversion should occur within the 250 ft. riparian buffer. Permanent land use conversion includes any alteration that prevents succession of riparian vegetation to its formerly natural state (e.g., gravel and winter roads, turbine pads and laydown areas, buildings). Powerline right-of-way crossings should meet minimum performance standards as defined for Maine's Site Location of Development law (ME DEP Rules, Chapter 375, Appendix A, Section 2)<sup>2</sup>.

- Stream-crossings should be avoided. If crossings are unavoidable, they should be minimized to a narrow trail with forest canopy cover maintained to the greatest extent possible. Crossing structures should span at least 1.5 times the bankfull width of the stream channel and provide an openness ratio<sup>3</sup> of at least 0.60 meters. In the case of permanent crossings, a spanning arch or bridge structure is recommended. Current, published Best Management Practices (e.g., Moesswilde 2004) for stream crossings should be followed in order to prevent erosion, sedimentation, alteration of stream flow, or other impacts to stream habitat.
- Avoid the use of herbicides or pesticides within the 250 ft. riparian buffer. Exceptions may be considered depending on product and circumstance following consultation with MDIFW biologists.

## References Cited:

Carlson, B.D. and J.M. Sweeney. 1999. Threatened and Endangered Species in Forests of Maine: A Guide to Assist with Forestry Activities. A cooperative publication of Champion International Corp., U.S. Fish and Wildlife Service, Maine Department of Inland Fisheries and Wildlife, Maine Natural Areas Program, and the University of Maine Cooperative Extension Service.

deMaynadier, P., T. Hodgman, and B. Vickery. 2007. Forest Management Recommendations for Maine's Riparian Ecosystems. Unpublished technical report submitted to the Maine Department of Inland Fisheries and Wildlife, Bangor, ME.

Elliott, C.A. (ed.). 1999. Biodiversity in the Forests of Maine: Guidelines for Land Management. University of Maine Cooperative Extension Bulletin #7147, Orono, Maine.

Mitchell, J.C., A.R. Breisch, and K.A. Buhlmann. 2006. Habitat Management Guidelines for Amphibians and Reptiles of the Northeastern United States. Partners in Amphibian and Reptile Conservation, Tech. Pub. HMG-3, Montgomery, AL.

Moesswilde, M. 2004. Best Management Practices for Forestry: Protecting Maine's Water Quality. Maine Department of Conservation, Maine Forest Service, Augusta, ME.

<sup>1</sup> text available at [http://www.maine.gov/doc/lurc/reference/rulechapters/chapter10\\_1-20-09.pdf](http://www.maine.gov/doc/lurc/reference/rulechapters/chapter10_1-20-09.pdf)

<sup>2</sup> text available at [http://www.maine.gov/dep/blwq/topic/site\\_storm\\_revisions/site\\_rules/fourth\\_informal\\_draft/APPENDIX\\_A\\_2\\_cl.pdf](http://www.maine.gov/dep/blwq/topic/site_storm_revisions/site_rules/fourth_informal_draft/APPENDIX_A_2_cl.pdf)

<sup>3</sup> The openness aspect or "ratio" of a structure is defined as the width times the height of the structure, which is then divided by the total length of the structure (Maine DOT publication "Waterway and Wildlife Crossing Policy and Design Guide", 3<sup>rd</sup> edition, July 2008)