

Maine Board of Pesticides Control

Guidance for the Application of Pesticides in Forest Settings in Order to Minimize the Risk of Discharges to Surface Waters

Selected List of Legal Requirements

There are numerous state and federal laws pertaining to the use of pesticides in Maine, including forestry settings. The following is a partial list of pesticide laws that are often applicable to forest pesticide applications. This is not intended as an exhaustive compilation of every legal requirement. It is the responsibility of the landowner and the pesticide applicator to identify and comply with all applicable laws.

All Applications

1. **The Pesticide label.** The pesticide label is the law. Abide by all pesticide label requirements, including use rates, handling, storage, and disposal.
 - Triple rinse empty pesticide containers or use equivalent procedures such as a pressure rinser.
2. **Chapter 22.** Maine Board of Pesticides Control (“BPC”) rule CMR 01-026, Chapter 22, “Standards for Outdoor Application of Pesticides by Powered Equipment in Order to Minimize Off-Target Deposition” (commonly called “the drift rule”), establishes procedures and standards for the outdoor application of pesticides by powered equipment in order to minimize spray drift and other unconsented exposure to pesticides. This chapter contains numerous standards that are important to minimizing the risks of discharges to surface waters. Forestry applicators are advised to pay particular attention to this chapter.
3. **Chapter 29.** BPC rule CMR 01-026, Chapter 29, “Standards for Water Quality Protection,” establishes standards for protecting surface water. Of particular note, this chapter:
 - Prohibits broadcast application of pesticides within 25 feet of surface water.
 - Establishes a 50 foot setback from surface water for mixing and loading of pesticides.
 - Sets requirements for the use of anti-siphoning devices and segregation of hoses used for pesticides and mix water.
 - Sets forth requirements for securing containers on vehicles and sprayers and cleaning up spills occurring within the setback zone. Establishes restrictions on pesticide applications to control browntail moths near marine waters.
4. **Chapter 50.** BPC rule CMR 01-026, Chapter 50 requires applicators to report all significant spills to the BPC. The Maine Department of Environmental Protection and also has spill reporting requirements.
5. In most cases, applications must only be conducted by BPC licensed applicators or USEPA Worker Protection Standard Pesticide Handlers. See BPC Rules for specifics.

Aerial Applications

6. For aerial applications, follow the terms of the Department of Environmental Protection (DEP) Pesticides General Permit.
7. BPC **Chapter 22** contains specific standards for aerial application of pesticides, including:
 - Positive identification of target site.
 - Site plan requirements.
 - Site specific checklist. Buffer zones.
8. BPC **Chapter 22** specifies that aerial applications may not be conducted within 1,000 feet of a sensitive area likely to be occupied unless wind speed is between 2 and 10 miles per hour.
9. **Chapter 51.** BPC rule CMR 01-026, Chapter 51, “Notice of Aerial Pesticide Applications.” describes the notification requirements for persons contracting aerial pesticide applications to control forest, ornamental plant, right-of-way, biting fly and public health pests.

Pesticide Application Guidelines

The following guidelines are intended to complement laws pertaining to pesticide use and assist applicators in preventing drift and discharges to surface waters. These guidelines are not intended to be construed as mandatory requirements, since not all of the practices will be feasible or appropriate in every circumstance. Applicators must consider site specific conditions to determine which recommendations are applicable and adjust practices to minimize the likelihood of discharges of pesticides to surface waters of the state.

General Guidelines

1. Use a pesticide screening tool such as the USDA-NRCS, WIN-PST program and choose effective products that exhibit the lowest combination of leaching potential, pesticide solution runoff potential, and pesticide adsorbed runoff potential.
2. Conduct all pesticide handling—mixing, loading, equipment cleaning, and storage—on upland sites, away from water bodies, outside filter areas, and away from road drainage systems.
3. Maintain a spill containment and cleanup kit appropriate for the materials being applied.
4. Store pesticides in a secure enclosure and maintain them at application sites only as long as necessary.
5. When practical, use product delivery technology that offers features such as a closed system and product tracking and allows for accurate premixed solutions. These technology options eliminate the need for open containers and triple rinsing and provide proper prescriptions without the need to use open pesticide containers.
6. Recycle containers when possible or dispose of them through a solid waste facility when required.

Equipment

7. When rinsing spray equipment, apply rinse water only in areas that are part of the application site.

Sensitive Areas/Application

8. Use spot, injection or stump treatments methods when applying chemicals not labeled for aquatic use in streamside management zones. Broadcast pesticide applications are prohibited within 25 feet of a stream.
9. Direct spray applications away from surface waters when feasible.
10. Avoid drift to areas with standing water connected to surface water.
11. Avoid applications to saturated soils.
12. Avoid applying herbicides in areas where the chemicals can injure stabilizing vegetation on slopes, gullies, and other fragile areas subject to erosion that drain into surface water.
13. Avoid applications close to steep slopes or drainage swales and other features that lead to surface waters which may potentially result in a discharge.
14. Avoid application to impervious surfaces, exposed bedrock, or frozen soils.

Weather

15. Apply pesticides only during favorable weather conditions:
 - Avoid applications prior to an expected heavy rainfall.
 - Avoid applications during periods of atmospheric inversion or fog.
 - Avoid application in high temp, low humidity conditions.
 - Whenever possible, only apply pesticides when wind conditions are between 2-10 mph.

Drift Management

16. In addition to following the requirements in BPC Chapter 22:
 - Maintain buffers between spray operations and water bodies.
 - Increase the buffer size when there is no vegetation in the buffer.
 - Use low-volatility pesticides when possible.
 - Spray when winds blow away from surface waters or have a spotter in full PPE to warn the applicator if drift becomes an issue.
 - Select spray nozzles and pump pressures that produce the largest, effective droplet.
 - Consider adjuvants to reduce spray drift when the pesticide label allows, unless not recommended by the University of Maine Cooperative Extension.

Guidelines Specific to Aerial Applications

17. Use the best available weather information sources to provide the most accurate, locally relevant, real-time weather information in order to target suitable application conditions for proper deposition. Use available combinations of on-site portable weather stations, remote sensing stations and stationary sites.
18. Make applications in neutral air conditions when small droplets are required to effectively control targeted pests:
 - Neutral atmospheric conditions represent the most suitable conditions for proper spray deposition. Droplets spread out evenly and fall close to the release point rather than carried upward by unstable conditions or concentrated and carried laterally from the release point by stable conditions. Neutral atmospheric conditions are most likely to occur in the morning and evening.
 - Stable atmospheric conditions—when there is little to no air movement—indicate the likelihood of inversions under which diffusion is the primary physical property influencing fine droplet movement. Stable air causes droplets to be carried laterally, for short distances, resulting in higher off target deposition in proximity to the application site.
 - Unstable atmospheric conditions—when there is both vertical and horizontal air movement—indicate the likely existence of thermal updrafts which decrease the target site deposition and can lead to long range transport of fine droplets, but reduce the probability of high off-target residues in proximity to the application site.
19. Use on-board GPS navigation systems coupled with digital site maps to ensure that the correct sites are being treated, appropriate buffers are observed, and booms are turned on and off at the appropriate times.
20. Depict all sensitive areas and the appropriate buffers on application maps to ensure adequate protection.
21. Supply pilots with individual site treatment maps for each treatment block prior to application.
22. Discuss each site with the pilot prior to application to ensure all sensitive areas are protected.
23. Pre-fly application sites to:
 - Ensure the digitized maps reflect the true nature of the treatment site.
 - Scout for surface water that might not be present on the paper site map provided to the pilot.
24. Use AUTOCAL or a similar system to maintain proper application rate based on the speed of the aircraft.
25. Use the best available nozzles that minimize formation of fine droplets for herbicide applications in order to produce the largest effective droplets with the narrowest size spectrum to minimize drift.
26. Configure application equipment to minimize wind shear of spray droplets when appropriate.
27. Turn booms on and off at the appropriate time when entering or leaving a treatment block.

28. Avoid spraying directly on the downwind edge of a treatment block. Move the spray swath upwind from this this edge, i.e., offset by 1/2 to 1 swath width.
29. Identify and avoid streamside management zones and surface water to prevent pesticides from drifting over open water or from accidentally being applied directly on the water. Avoid flying directly over surface waters while making applications.
30. Apply parallel to surface waters when feasible.
31. Employ all depicted buffers around all surface waters.
32. Fly treatment block edges that are next to surface waters when the wind is away from the surface waters.
33. Download post-application log files from the on-board GPS system showing the flight of the helicopter/aircraft with booms on and off. Create maps and overlay on the treatment site maps; save for two years and file with the required application reports. For aerial forest insect applications, submit site/spray maps to the BPC with the annual summary reports (requested by the Joint Standing Committee on Agriculture, Conservation and Forestry).

For more information, contact the Maine Board of Pesticides Control at 287-2731.

References

- Barry, Don and Gary Fish (eds). 2012. *Pesticide Education Manual*. The University of Maine Cooperative Extension. Orono.
- Maine Forest Service. 2004. *Best Management Practices for Forestry: Protecting Maine's Water Quality*. Augusta.