

Best Management Practices for Forest Pesticide Applications

The following best management practices (BMPs) describe techniques to avoid contaminating surface water and groundwater. These guidelines compliment local, state, and federal regulations governing the storage, handling and application of pesticides (herbicides, fungicides, insecticides).

The land manager and/or applicator are expected to consider site specific conditions and adjust setbacks, methods, and materials to ensure that discharges of pesticides to surface waters of the state do not occur. **If the pesticide label also establishes setback requirements, the more stringent requirements apply.**

The Maine Board of Pesticides Control (BPC) water quality rule (CMR 01-026, Chapter 29) **prohibits broadcast application of pesticides within 25 feet of surface water. Only targeted, spot treatments are allowed within the setback.** In addition, the BPC drift rule (CMR 01-026, Chapter 22) establishes operational standards and thresholds for off-target drift.

General BMPs

In most cases, applications must only be conducted by MEBPC licensed applicators or USEPA Worker Protection Standard Pesticide Handlers.

1. Use a pesticide screening tool such as 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. Abide by all pesticide label requirements, including use rates, handling, storage, and disposal.
3. 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.
4. Maintain a spill containment and cleanup kit appropriate for the materials being applied.
5. Report all spills to the Maine Department of Environmental Protection and the Maine Board of Pesticides Control.
6. Store pesticides in a secure enclosure and maintain them at application sites only as long as necessary.
7. When possible use the “SmartDrum” product delivery technology. The closed system, product tracking, environmental solution to herbicide mixing and delivery allows for accurate premixed solutions, no open containers, no triple rinsing, and proper prescriptions without the need to use open pesticide containers.
8. Triple rinse pesticide containers. Recycle containers when possible or dispose of them through a solid waste facility when required.

Equipment

9. Rinse spray equipment and apply rinse water only in areas that are part of the application site.
10. Properly maintain and repair all equipment for leaking hoses, connections and nozzles.
11. Calibrate spray equipment to apply chemicals uniformly and in the correct quantities.

Sensitive Areas/Application

12. Develop and employ site treatment maps showing all sensitive areas, including surface waters with the appropriately applied buffers.
13. Only make spot treatment applications within 25 feet of surface waters for ground application.
14. Use spot-injection or stump treatments methods when applying chemicals not labeled for aquatic use in streamside management zones.
15. Direct spray applications away from surface waters when feasible.
16. Avoid spraying areas with standing water connected to a surface water.
17. Avoid applications to saturated soils.
18. 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.
19. Avoid applications close to steep slopes or drainage swales and other features that lead to surface waters potentially resulting in a discharge.
20. Avoid application to impervious surfaces, exposed bedrock, or frozen soils.

Weather/Drift Management

21. Apply pesticides only during favorable weather conditions.
 - a. Avoid applications prior to an expected heavy rainfall.
 - b. Avoid applications during periods of atmospheric inversion or fog.
 - c. Avoid application in high temp, low humidity conditions.
 - d. Only apply pesticides when wind conditions are between 2-10 mph.
22. Follow a drift management plan to prevent drift.
 - a. Maintain buffers between spray operations and water bodies.
 - b. Increase the buffer size when there is no vegetation in the buffer.
 - c. Use low-volatility pesticides when possible.

- d. Spray when winds blow away from surface waters or have a monitor/spotter in full PPE to warn applicator if drift becomes an issue.
- e. Select spray nozzles and pump pressures that produce the largest, efficacious droplet.
- f. Add adjuvants to reduce spray drift when the pesticide label allows, unless not recommended by the University of Maine Cooperative Extension.

BMPs Specific to Aerial Applications

- 23. Ensure a drift management plan is available for inspection.
- 24. Define a 75-100 foot spray buffer on all surface waters for aerial application.
- 25. Depict all sensitive areas and the appropriate buffers on paper maps to ensure adequate protection.
- 26. Supply pilots with individual site treatment maps for each treatment block prior to application.
- 27. Discuss each site with the pilot prior to application to ensure all sensitive areas are protected.
- 28. Use GIS created paper treatment maps and uploaded treatment maps in the onboard “realtime” GPS navigation system to ensure that the correct sites are being treated.
- 29. Pre-fly application sites to:
 - a. Ensure the digitized sites reflect the true nature of the treatment site.
 - b. Scout for surface water that might not be present on the paper site map provided to the pilot.
- 30. Use the AUTOCAL system to maintain proper GPA based on the speed of the aircraft.
- 31. Use Accu-Flo or other large droplet style nozzles for herbicide applications in order to produce the largest efficacious droplets with the narrowest size spectrum to minimize drift.
- 32. Configure application equipment to minimize wind shear of spray droplets.
- 33. Turn booms on and off at the appropriate time when entering or leaving a treatment block.
- 34. 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.
- 35. 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.
- 36. Apply parallel to surface waters when feasible.
- 37. Employ all depicted buffers around all surface waters.
- 38. Fly treatment block edges that are next to surface waters when the wind is away from the surface waters.

39. 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 more information, contact the Maine Board of Pesticides Control

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