

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
Forest Certification Work Instruction

DRAFT FINAL

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Work Instruction Title: 2.2 Use of Pesticides and Other Chemicals on State Forest Lands

Work Area Group: 2 – Forest Regeneration and Chemical Use

Purpose: To define best management practices for use of pesticide on State Forest Lands.

Work Instruction:

1. **Prescriptions:** Minimize pesticide use to achieve management objectives. Use alternatives to chemical pesticides when they are reasonably cost effective and available and meet management objectives. When chemical pesticides are used, select the least-toxic, narrowest spectrum products labeled for the target species. On state forest lands, only products on the attached list of “DNR approved products for use on state forest lands” may be used. The list includes only products registered for use in Michigan that are not on FSC’s highly hazardous pesticide list, or that are chemicals on the highly hazardous list that the DNR may continue to use under temporary derogation. New additions to the list must be approved by the FRD Pesticide Coordinator. Follow the procedures outlined in Policy 592, Pesticide Use, Section D.3.a, for making pesticide prescriptions.
 - a. When a Forest Treatment Proposal (FTP, R-4048) requiring a pesticide application is approved, complete a Pesticide Application Plan (PAP, R-4029E). Attach the PAP to the FTP. The PAP must include personal and environmental safety precautions, potential environmental effects, and the location of any environmentally sensitive areas, including threatened or endangered species and species of special concern. The PAP must also document planned public notification methods for each application.
 - b. A single PAP may be prepared for a series of applications during a single growing season, if they all use the same treatment (products, dosage, target, application method). This will simplify the process for routine applications like poison ivy control in campgrounds, trail and pathways maintenance. Campground, trail and pathway maintenance involving ready-to-use pesticides (which do not require the applicator to have a pesticide applicators license) does not require an FTP or PAP (per Work Instruction 3.1).
2. **Operational Use of Pesticides:**
 - a. **Certification of Applicators:** All DNR personnel directly involved in the application of pesticides, other than ready-to-use pesticides as describe below, will be commercially certified applicators or as registered technicians by the Michigan Department of Agriculture and Rural Development (MDARD), Pesticide and Plant Management Division (Policy 592). Applicators that use general use, ready-to-use (RTU) pesticides are exempt from these certification requirements. RTU pesticides can be applied by non-certified personnel, as long as they are only applied in the original container consistent with the label directions. If mixing, diluting, or transferring of the product to another container is required, then the applicator must have a MDARD pesticide applicator certification. As a general rule, non-certified personnel are discouraged from participating in pesticide applications. If non-certified individuals are involved with pesticide use (including RTU pesticides) applicable Worker Protection Standards shall apply, including annual training and required training documentation.

Commercially certified applicators must be certified in commodity or site specific categories, such as the Forest, Field crop, Right-of-Way (ROW), Aquatic, or Mosquito categories. Commercially certified applicators may apply general and restricted use pesticides and supervise applications of the same by registered technicians. Registered technicians are also required to obtain category or site specific certifications, but may

only apply general use pesticides under supervision, and restricted use pesticides under direct supervision of a commercially certified pesticide applicator.

- b. Review of all PAPs: PAPs must be reviewed and approved by DNR staff certified as commercial applicators with the appropriate commodity or site-specific category certification for the work proposed (e.g., turf grass, ROW, field crops, forests, etc.) and knowledge of the subject matter attained through work experience and continuing education. (Note: A staff person cannot approve their own PAP.)
- c. Application and Evaluation: Pesticide applications are accomplished with either DNR staff or contract applicators. Upon completion of a pesticide application for all DNR authored projects, DNR staff will complete a Forest Treatment Completion form (FTC, R-4048-1) and attach a Pesticide Use Evaluation Report (PUER, R-4029-1). Note that public notification methods used must be documented on the PUER. For herbicide applications, complete Section 9 of the PUER during the growing season following treatment.

(Pesticide use at nurseries and tree improvement centers does not require use of FTP, FTC, PAP, or PUER forms.) Also, keep records in accordance with the 1992 worker protection standards for agricultural pesticides.

- d. Reporting of Pesticide Use: All applicators are required to document quantities used by product and provide this documentation on an annual basis to their TMS or regional supervisor, who will in turn submit a report to the FRD Pesticide Coordinator for SFI reporting purposes. The FRD Pesticide Coordinator will coordinate compilation of an annual report of pesticides used (including RTU pesticides) on certified state forest lands using the Annual Summary of Pesticide Use on State Forest Lands (R-4029-2). The report must be submitted to the Forest Certification Coordinator by September 14 of each year for products used during the previous one year period (September 1 to August 31). The Forest Certification Coordinator is responsible for submitting reported use to the FSC certification auditor.
- e. Pesticides used must be labeled for the intended use and used within the label requirements.
- f. Buffer strips: Riparian and other buffers must be clearly identified. Aerial applications should parallel buffer strips. Use the following table as a guide to establish buffers along riparian areas and other features.

Interim Recommended Buffer Distances in Feet*			
Type Feature	Application Method		
	Aerial (ft)	Ground-Based Mechanical (ft)	Ground-Based Manual (ft)
Occupied Dwellings	200	150	100
Seasonal Dwellings	100	100	100
Human Drinking Water Sources	100	50	25
Stock Water Sources	50	25	10
Active Streams, Lakes, Ponds, & Major Waterways ¹	100	100	100
Flowing Ditches & Intermittent Streams ¹	100	100	100
Farm / Crop Lands	25	10	5
Public Roadway ²	15	10	5

¹Buffer on water features may be zero for applications of pesticides with aquatic labels. Natural River zoning requirements must be complied with.

²Buffer distances measured from edge of road surface; if right-of-way width exceeds buffer minimum, the right-of-way takes precedence. In some instances applications may be made to the edge of the road surface with the concurrence of County Road Commission or the Michigan Department of Transportation.

*adapted from International Paper ISO 14000 Standard

- g. Personal safety: Personal protective equipment must be used as specified on product labels. Incidents of worker exposure to pesticides must be documented on the Pesticide Application Report.
- h. Work-related pesticide illness shall be reported to: Occupational and Environmental Medicine, Michigan State University, 117 W. Fee Hall, E. Lansing, MI 48824-1315, 1-800-446-7805

- i. Emergency Procedures: Spill kits must be carried on DNR equipment and contractor's equipment whenever pesticides are being transported or applied. Absorb spills that create noticeable pool or puddles with absorbent pads. Collect contaminated absorbent material in a labeled impermeable container and store them to prevent contact with other liquids. Spill kits should be adequate for the volume of pesticides on hand. Spill kits are available from most industrial safety supply sources. Typical contents include absorbent socks, pillows or pads, protective gloves and a leak-proof bag to dispose of contaminated materials. Contact state officials to determine procedures for reporting, handling, and disposing of contaminated soil or other materials: Michigan Pollution Emergency Alerting System (PEAS): 800-292-4706.
- j. Access Control: Restrict access to all pesticide treatment areas including those treated with RTU products, for the period specified on the pesticide product label to prevent inadvertent exposure of employees and the public. Restrict access using signs, guards, locked gates, or trucks blocking the road. When treating near roadside buffers or during road maintenance applications, a "rolling road-block" may be used, whereby escort vehicles signal the spray vehicle to shut off while traffic passes.
- k. Notification (Policy 592): The need for public notification is determined at the Forest Management Unit in consultation with a DNR-certified commercial applicator. This is also reviewed by the FRD District Supervisor. The plan for notification must be documented on both the PAP and the Non-DNR Project PAP forms. The need for public notification is evaluated within each of the following categories:
 - 1) Public risk. The possibility of adverse exposure to a pesticide.
 - 2) Public concern. Perceived problems relating to the use and/or exposure to pesticides.
 - 3) Public relations and education. Used to inform the public of decision criteria and decision-making processes involved; and to involve the public in the decision-making process if appropriate.
 - 4) If need for public notification is established, notification will consist of one or all of the following:
 - Signing. Signs should include the following information: Re-entry information, pesticide used, date of application, and phone/address of Forest Management Unit. Signs will be posted at time of application and removed at the end of the field season.
 - News media. Used primarily for broad scale aerial applications, and where applications are highly visible.
 - Personal contacts. Where individuals, organizations or situations warrant extra efforts involved.
- l. Spraying state-owned ROW's and other non-DNR pesticide applications: ROW vegetation control and other pesticide applications are conducted through Use Permits (PR-1138-1) granted to the entity requesting that activity. The permit application and resulting permit must be accompanied by a Non-DNR Project PAP (PR-1138-5) that documents chemical products that will be used, rates, methods, specific areas of application and signing and notification requirements. The Non-DNR Project PAP must be reviewed and approved by a DNR certified pesticide applicator with the ROW category certification. The Forest Resources Land Use Specialist or other designee coordinates review of the permit application by the FMU Managers, and the biologists from Wildlife Division (WD) and Fisheries Division (FD) within the affected Forest Management Units (PRD is also included if a recreational facility is nearby). The local Wildlife Biologist is responsible for T&E species review by the Endangered Species Coordinator.
- m. Storage, Transportation and Disposal of Pesticide (Policy 592): Only pesticides needed for the current or next fiscal year will be purchased. The storage and transportation of pesticides shall meet all state and federal guidelines, as indicated on the label. Storage of unused and surplus pesticides is discouraged. All rinsate and residue should be applied as per label instructions. If necessary, unused pesticide must be disposed of in a manner consistent with labeling.

Pesticides Approved for Use on State Forest Lands (revised using FSC chemical list dated January 20, 2010)

Product common name(s)*	Active ingredient	CAS #	Use status
Accord, Rodeo, Roundup, & other glyphosate formulations	glyphosate	38641-94-0	Use is allowed.
Amine 400 2,4-D	dimethylamine salt of 2,4-dichlorophenoxyacetic acid (2,4-D)	2008391	Use is allowed.
Arsenal, Habitat	imazapyr, isopropylamine salt of imazapyr	81334-34-1; 81510-83-0	Use is allowed.
Cellu-treat	disodium octaborate tetrahydrate	12280-03-4	Use is allowed.
Dimension	dithiopyr	97886-45-8	Use is allowed.
Dimlin	diflubenzuron	35367-38-5	May only be used in conformance with conditions in approved FSC pesticide derogation, expires 01/05/2020.
Envoy	clethodim	99129-21-2	Use is allowed.
Escort	metsulfuron-methyl	74223-64-6	Use is allowed.
Esplanade	indaziflam	950782-86-2	Use is allowed.
Garlon 3A	triclopyr triethylamine salt	57213-69-1	Use is allowed.
Garlon 4	triclopyr-2-butoxyethyl ester	64700-56-7	Use is allowed.
Hyvar	bromacil	314-40-9	Use is allowed.
Krenite	fosamine ammonium	25954-13-6	Use is allowed.
LV400 2,4-D Weed Killer Solvent Free	2,4-Dichlorophenoxyacetic acid, isooctyl (2-ethylhexyl) ester (2,4-D 2-EHE)	1928434	Use is allowed.
Merit	imidcloprid	138261-41-3	Temporarily allowed until 10/31/2016, pending the effectiveness of the new FSC HHP list and consideration of the DNR's joint derogation application
Milestone	aminopyralid tri-isopropanolammonium	566191-89-7	Use is allowed.
Oust	sulfometuron methyl	74222-97-2	Use is allowed.
Plateau	imazapic	104098-49-9	Use is allowed.
Rotenone	rotenone	83-79-4	Temporarily allowed until 10/31/2016, pending the effectiveness of the new FSC HHP list and consideration of the DNR's derogation application
Sporax	sodium tetraborate decahydrate	1303-96-4	Use is allowed.
Tordon 101	2,4-Dichlorophenoxyacetic acid, triisopropanolamine salt Picloram triisopropanolamine salt	18584-79-7 6753-47-5	Use is allowed
Tordon RTU	Picloram: (4-amino-3,5,6-trichloropicolinic acid), triisopropanolamine salt + 2,4-Dichlorophenoxyacetic acid, triisopropanolamine salt	6753-47-5 18584-79-7	Use is allowed.
Transline	clopyralid monoethanolamine salt	57754-85-5	Use is allowed.
Tree-age	emamectin benzoate	155569-91-8	Temporarily allowed until 10/31/2016, pending the effectiveness of the new FSC HHP list and consideration of the DNR's joint derogation application.
Velpar	hexazinone	51235-04-2	Use is allowed.
Zenivex E20 or E4 RTU	etofenprox	80844-07-1	Use is allowed until

Product common name(s)*	Active ingredient	CAS #	Use status
			10/31/2016 pending the effectiveness of the new FSC HHP list.
Kontrol® 4-4	permethrin	52645-53-1	Use allowed <u>only</u> upon approval of DNR derogation application.

*Note: The list of common names for chemicals is not comprehensive.

Scope: (All State Forest Land and Affected Divisions): State Forest Land Other: _____
 DNR – FRD DNR – Wildlife DNR – Fish DNR – Law DNR – PRD

Responsibility and Role: (Staff who will implement or supervise this instruction)

Job Title/Division	Role
Timber Management Specialist / FRD, or other designee with commercial applicator certification	Review FTP's, write PAP's, approve PAP's authored by others for woody and herbaceous plants (may not approve PAP's authored by themselves), supervise herbicide applications, complete PEUR. . Submit data for annual SFI Pesticide Application report.
Land Use Specialist/ FRD or other District designee	Coordinate reviews of use permits for utility right-of-way herbicide maintenance.
Forest Health Specialist/ FRD, or other qualified/certified staff	For forest pathogen and insect control: Review FTP's, write PAP's, approve PAP's authored by others (may not approve PAP's authored by themselves), supervise applications including contract applications, complete PEUR
Pesticide applicator / DNR	Apply or administer contract application of silvicultural herbicides, write PAPs and track and report on quantities used for each chemical.
Other involved staff	Assist in the handling, storage, transportation, access management, or treatment evaluation of pesticide treatments.
Pesticide Coordinator/ FRD	Approve new additions to the list of chemicals meeting FSC criteria and labeled for use in Michigan. Coordinate FSC pesticide derogation applications. Approve PAP's authored by others (may not approve PAP's authored by self). Complete Annual Summary of Pesticide Use on State Forest lands (R-4029-2).
FRD Forest Certification Coordinator	Submit annual summary of pesticide use to the FSC certification auditor.
FRD Unit Manager	Review and approve use permits within their FMU.
FRD District Supervisor	Review and approve use permits across FMU boundaries.
FRD Field Coordinator	Review and approve use permits across FRD District boundaries.

Training/Skills: (Those required to accomplish work instruction)

Item	Brief Description of Skill or Course	Exists/ New
Certified Pesticide Applicator	All DNR staff directly involved in pesticide application must have a valid State of Michigan pesticide application certification.	<input checked="" type="checkbox"/> E <input type="checkbox"/> N
Worker Protection Training	DNR staff involved in the handling, storage, transportation, access management, or evaluation of pesticide treatments must be certified or have federally mandated Worker Protection Training.	<input type="checkbox"/> E <input checked="" type="checkbox"/> N
Knowledge of Work Instruction	All managers and supervisors with direct responsibility to approve pesticide use.	<input type="checkbox"/> E <input checked="" type="checkbox"/> N

References:

- FRD Pesticide Use Policy Number 592, October 26, 1999
- Personal protective equipment: <http://www.epa.gov/oppfead1/safety/workers/equip.htm>
- Worker Protection Standards, basic principles: <http://www.epa.gov/oppfead1/safety/workers/principi.htm>
- Worker Protection Standards, full document: <http://www.epa.gov/pesticides/safety/workers/PART170.htm>
- Approved FSC pesticide derogation documents, December, 2009

Monitoring:

Upon completion of a pesticide application, a Forest Treatment Completion form (R-4048-1) and an attached Pesticide Use Evaluation Report (R-4029-1) is completed by the staff person responsible for the treatment.

Records:

- Forest Treatment Proposal (R-4048) filed in the Forest Management Unit Offices
- Forest Treatment Proposal Completion Report (R-4048-1) filed in Forest Management Unit Offices
- Pesticide Application Plan (R-4029) filed with the FTP in the Forest Management Unit Offices
- Pesticide Use Evaluation Report (R-4029-1) filed with the FTP in the Forest Management Unit Offices
- Non-DNR Pesticide Application Plan (PR-1138-5) filed in Forest Management Unit Offices
- Annual Summary of Pesticide Use on State Forest Lands (R-4029-2) Worker protection training records
- Use Permit (PR 1138-1)