



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
ECOSYSTEMS, TRIBAL AND
PUBLIC AFFAIRS

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MEMORANDUM

SUBJECT: Comparative Characterization of Pacific Northwest Forestry Requirements for Aerial Application of Pesticides

FROM: Erik Peterson, Environmental Scientist
Environmental Review and Sediment Management Unit
Office of Ecosystems, Tribal and Public Affairs

TO: Scott Downey, Manager
Pesticides and Toxics Unit
Office of Compliance and Enforcement

David Powers, Regional Manager for Forests and Rangelands
Office of Water and Watersheds Immediate Office
Oregon Operations Office

SUMMARY:

Buffers for Human Residences

- In Oregon, applicators are responsible for, "...taking all precautions that are necessary...to avoid damaging drift onto forest resources or off-site sensitive areas such as residential areas or agricultural fields."¹
- In Washington, there is a 200 foot buffer for human residences.
- On BLM lands in eastern Oregon, there is a ¼ mile buffer for human residences. No aerial application of pesticides is allowed on BLM lands west of the Cascades.

Buffers for Water Resources

Overall, Oregon has the smallest forestry specific water resource buffers for aerial application of pesticides.

Drift Control

Oregon - unlike Washington, Idaho, California, and, the BLM - does not have prescriptive technology or weather related best management practices.

Notification

Washington, California and the BLM require public notification for aerial spraying. Oregon requires notification of community water system managers.

¹ <http://www.oregon.gov/ODF/privateforests/docs/guidance/OARDiv620.pdf?ga=t>

Notes

- Neither the BLM nor the Forest Service uses pesticides for timber production.
- No atrazine and no 2,4-D on Forest Service lands, and, no atrazine on BLM lands.
- Aerial chemical application for timber production in California is thought to be very minimal.
- Although a detailed characterization of British Columbia's regulations was not conducted, they appear to be more similar to Oregon (plus public notification requirements) than they are to Washington.

DETAILED INFORMATION:

Buffers for Human Residences

Oregon

Neither Oregon's Forest Practices Rules² nor the Forest Practice Rule Guidance has specific buffers for human residences.

Oregon's Forest Practice Rule Guidance³ does, however, mention impacts to residential areas

- "Applicators are responsible for taking all precautions that are necessary to comply with pesticide product labels and to avoid damaging drift onto forest resources or off-site sensitive areas such as residential areas or agricultural fields."
- "...some 2,4-D labels require specific no-application buffers for downwind residential areas. Many other forest pesticide labels suggest or require that precautions be taken to avoid drift onto sensitive sites such as residential areas or susceptible vegetation."

Oregon's guidance includes references to assist compliance with the aerial chemical application rule. The OSU reference, "Preventing Water Contamination and Pesticide Drift: A Checklist for Pesticide Applicators"⁴, for example, has a useful check – 'Checked if there are neighbors or any other people within ¼ mile?'

Washington

"(e) Operators applying aerial pesticides near residences or agricultural land must either:

- (i) Leave at least a 200 foot no application buffer strip around residences and 10 foot no application buffer strip adjacent to lands used for agriculture; or
- (ii) Apply the pesticides using the widest buffer for the applicable wind conditions as determined by the applicable tables in (a) of this subsection. These provisions do not apply where the residences or agricultural land that could be affected by drift from the aerial application of the pesticide is owned by the forest landowner or where the aerial application is acceptable to the resident or landowner."⁵

Idaho

Although Idaho has a buffer for human residences, it is unclear whether it would apply to single homes, or, clusters of several homes.

² http://arcweb.sos.state.or.us/pages/rules/oars_600/oar_629/629_620.html

³ <http://www.oregon.gov/ODF/privateforests/docs/guidance/OARDiv620.pdf?ga=t>

⁴ <http://extension.oregonstate.edu/catalog/pdf/em/em8964-e.pdf>

⁵ http://www.dnr.wa.gov/Publications/fp_rules_ch222-38wac.pdf

- “An aircraft pilot shall not apply any pesticide within one-half (1/2) mile of a hazard area unless there is air movement away from the hazard area.” Hazard Area - Cities, towns, subdivisions and densely populated areas.”⁶

BLM

BLM’s buffers are the largest, but, may be waived.

- “Establish a buffer between treatment areas and human residences based on guidance given in the HHRA, with a minimum buffer of ¼ mile for aerial applications and 100 feet for ground applications, unless a written waiver is granted.”⁷

California

Although I have not found forestry specific requirements, California’s human residences buffers are, as far as I can tell, similar to Oregon’s; more of a ‘responsibility of the operator to not cause harm’ than an explicit spatial requirement.

- “(b) Notwithstanding that substantial drift would be prevented, no pesticide application shall be made or continued when:
 - (1) There is a reasonable possibility of contamination of the bodies or clothing of persons not involved in the application process;
 - (2) There is a reasonable possibility of damage to nontarget crops, animals, or other public or private property; or
 - (3) There is a reasonable possibility of contamination of nontarget public or private property, including the creation of a health hazard, preventing normal use of such property. In determining a health hazard, the amount and toxicity of the pesticide, the type and uses of the property and related factors shall be considered.”⁸

Buffers for Water Resources

Oregon^{9,10}, *Washington*¹¹, and *Idaho*¹² have different forestry specific aerial chemical application buffers for water resources.

- Washington’s forestry specific aerial chemical application buffers for water resources appear to be the most protective of the three PNW states. For example, the buffer for a high release height (51-65 feet) near a fish bearing stream with domestic water use under calm or unfavorable wind conditions in Oregon would be 60 feet, whereas a similar situation’s buffer in Washington would be between 125 and 325 feet. For smaller streams - such as a non-fish bearing seasonal stream - Oregon has no specified buffer while Washington maintains at least a 50 foot buffer.
- Idaho’s forestry specific aerial chemical application buffers - “...when applying pesticide leave at least one (1) swath width (minimum on hundred (100) feet) untreated on each side of all Class I streams, flowing Class II streams and other areas of open water.” - represent a middle ground between Washington and Oregon. On the one hand, Idaho’s

⁶ <http://adm.idaho.gov/adminrules/rules/idapa02/0303.pdf>

⁷ http://www.blm.gov/or/plans/vegtreatmentseis/files/Veg_Treatments_ROD_Oct2010_AttachA.pdf

⁸ <http://www.cdpr.ca.gov/docs/legbills/calcode/030201.htm>

⁹ <http://www.oregon.gov/ODF/privateforests/docs/FPNote3Chemv5.pdf>

¹⁰ <http://www.oregon.gov/ODF/privateforests/docs/guidance/OARDiv620.pdf?ga=t>

¹¹ http://www.dnr.wa.gov/Publications/fp_rules_ch222-38wac.pdf

¹² <http://adm.idaho.gov/adminrules/rules/idapa20/0201.pdf>

general 100 foot buffer is wider than Oregon's general 60 foot buffer. On the other hand, Oregon includes a buffer for wetlands, while it is unclear whether a buffer is required for wetlands in Idaho. Comparing Idaho to Washington is somewhat more difficult as Washington's general buffer would be 50 feet for small streams up to the "width of the inner zone" for medium and large streams. The width of the inner zone is determined by site class, bankfull width, and management option, but, can be understood as roughly 90-130 feet.¹³

BLM, Oregon, East of the Cascades

"To protect domestic water sources, no herbicide treatments should occur within 100 feet of a well or 200 feet of a spring or known diversion used as a domestic water source unless a written waiver is granted by the user or owner."¹⁴

"Proposals to boom or aeri ally spray herbicides within 200 feet of streams that are within 1,000 feet upstream from a public water supply intake, or spot apply herbicides within 100 feet of streams that are within 500 feet upstream from a public water supply intake, will include coordination with the Oregon Department of Environmental Quality and the municipality to whom the intake belongs."¹⁵

Drift Control

Oregon

The bottom line for drift control in Oregon is an assertion that there are too many variables to recommend specific allowable application equipment, application techniques, temperature, relative humidity, or wind velocity figures. Guidance is provided for temperature and relative humidity and wind speed and direction factors to consider. References are also provided.¹⁶

Washington

Washington's Forest Practices Board Manual includes several required best management practices for nozzles, equipment, operations, and weather conditions. For example, "...do not apply when relative humidity is below 50% for ester formulations or below 40% for other pesticides."¹⁷

Idaho

Basically one operational requirement, "Shut off chemical application during turns and over open water.", one equipment requirement, "Use a bucket or spray device capable of immediate shutoff."¹⁸, and, one weather requirement, "No person shall apply any pesticide in sustained wind conditions exceeding ten (10) miles per hour or in wind conditions exceeding product label directions,..."¹⁹

California

¹³ <http://apps.leg.wa.gov/wac/default.aspx?cite=222-30-021>

¹⁴ http://www.blm.gov/or/plans/vegreatmentseis/files/Veg_Treatments_ROD_Oct2010.pdf

¹⁵ http://www.blm.gov/or/plans/vegreatmentseis/files/Veg_Treatments_ROD_Oct2010.pdf

¹⁶ See page 22-24 at: <http://www.oregon.gov/ODF/privateforests/docs/guidance/OARDiv620.pdf?ga=t>

¹⁷ http://www.dnr.wa.gov/Publications/fp_board_manual_section12.pdf

¹⁸ <http://adm.idaho.gov/adminrules/rules/idapa20/0201.pdf>

¹⁹ <http://adm.idaho.gov/adminrules/rules/idapa02/0303.pdf>

Similar to Washington and BLM²⁰

BLM²¹

Different format, but, similar to Washington and California; also includes potentially useful Forest Service drift table, “Table A2-2. Buffer Distances to Minimize Risk to Vegetation from Off-Site Drift of Forest Service- Evaluated Herbicides”

- “Make helicopter applications at a target airspeed of 40 to 50 miles per hour (mph), and at about 30 to 45 feet above ground.
- Take precautions to minimize drift by not applying herbicides when winds exceed >10 mph (>6 mph for aerial applications), or a serious rainfall event is imminent.
- Use drift control agents and low volatile formulations.
- Select proper application equipment (e.g., spray equipment that produces 200- to 800-micron diameter droplets [spray droplets of 100 microns and less are most prone to drift]).”

Pesticide Application Records

The primary difference among jurisdictions is the time that records must be maintained by applicators - Oregon and Idaho, 3 years; Washington, 7 years; BLM, 10 years.

There does not appear to be major differences in the required content of application records. All jurisdictions require content such as the following from Oregon’s OAR 620-620-0600: legal descriptions of location actually treated with chemicals, acreage treated, brand name, EPA registration number, carrier used, application rate, date and time, air temperature, relative humidity, wind velocity, contractor and pilot’s names.

Notifications

Oregon

Operators are required to notify community water system managers at least 15 days prior to spraying.²²

Oregon’s guidance includes references to assist compliance with the aerial chemical application rule. The OSU reference, “Preventing Water Contamination and Pesticide Drift: A Checklist for Pesticide Applicators”²³, for example, has a useful check – ‘All workers and neighbors notified ORALLY?’

Washington

Operators and/or landowners are not required to notify community water system managers. Public notification is, however, required.

- “Aerial chemical application areas shall be posted by the landowner by signing at significant points of regular access at least 5 days prior to treatment. Posting shall remain at least 15 days after the spraying is complete. The department may require an extended posting period in areas where human use or consumption of plant materials is probable.

²⁰ See 6460 Drift Control at: <http://www.cdpr.ca.gov/docs/legbills/calcode/020404.htm>

²¹ http://www.blm.gov/or/plans/vegreatmentseis/files/Veg_Treatments_ROD_Oct2010_AttachA.pdf

²² See OAR-629-620-0800 at: <http://www.oregon.gov/ODF/privateforests/docs/guidance/OARDiv620.pdf?ga=t>

²³ <http://extension.oregonstate.edu/catalog/pdf/em/em8964-e.pdf>

Posting at formal, signed trailheads that are adjacent to aerially treated units is required. The signs will contain the name of the product used, date of treatment, a contact telephone number, and any applicable restrictions.”²⁴

Idaho

There does not appear to be any notification requirements.

California

Fairly explicit notification requirements; there is also a process to “request for review”, which is a process for the public to stop or slow permitted spraying of concern.

- “(b) Each permit issued for such use shall be posted immediately, or as soon as practicable, by the commissioner in all offices of the commissioner and by the permittee at a post office or similar public place reasonably located so as to be seen by persons living within one mile of the proposed spraying area and shall remain posted until the expiration of such permit.
(c) Within five days after issuance of the permit, the permittee shall mail a copy of the permit to all owners of record of property within 300 feet of the area to be treated. The permittee shall also mail a copy to all persons residing within 300 feet of the spray site described in the permit area who have filed a request for written notification with the commissioner.”²⁵

BLM

Similar to California, without a review/appeal process; the spirit of why to notify is also captured in BLM’s SOPs

- “Post treated areas with appropriate signs at common public access areas.
- Provide public notification in newspapers or other media where the potential exists for public exposure.
- To minimize fears based on lack of information, provide public educational information on the need for vegetation treatments and the use of herbicides in an integrated vegetation management program for projects proposing local use of herbicides.”²⁶

Availability of Pesticide Application Records

Oregon

“The records required in sections (1), (2) and (3) of this rule shall be maintained by the operator for three years from the date of application and be made available at the request of the State Forester.”²⁷

Washington

“Application records shall be kept for a period of seven years from the date of the application of the pesticide to which such records refer. The director shall, upon request in writing, be furnished with a copy of such records immediately by the licensee.”²⁸

²⁴ http://www.dnr.wa.gov/Publications/fp_rules_ch222-38wac.pdf

²⁵ <http://www.cdpr.ca.gov/docs/legbills/calcode/020403.htm>

²⁶ http://www.blm.gov/or/plans/vegreatmentseis/files/Veg_Treatments_ROD_Oct2010_AttachA.pdf

²⁷ <http://www.oregon.gov/ODF/privateforests/docs/guidance/OARDiv620.pdf?ga=t>

²⁸ <http://apps.leg.wa.gov/wac/default.aspx?cite=16-228-1320>

Idaho

“Professional applicators shall maintain pesticide application records for three (3) years, ready to be inspected, duplicated, or submitted when requested by the Director.”²⁹

BLM

Pesticide Use Records are public information. Generally, contacting the field office of interest should do the job. Dr. Richard Lee (303-236-1734) compiles an annual report of pesticide use on BLM lands, he would have comprehensive information.

Federal Restrictions on Pesticides Used in Hwy 36 Area

Pesticides Used in HWY 36 Area - from available forestry notifications since 2006	Permitted on BLM Lands in Oregon - west of cascades?	Permitted for aerial application on BLM lands east of the cascades? No aerial west of cascades.	Permitted on USFS lands in Oregon and Washington?
Atrazine	no (not allowed in 17 western states)	no	no
Hexazinone	yes	yes	no
Imazapyr	yes	yes	yes
Sulfometuron Methyl	yes	no	yes
Metsulfuron Methyl	yes	restricted.	yes
2,4-D	yes (2,4-DP not permitted)	yes	no
Clopyralid	yes	yes	yes
Glyphosate	yes	yes	yes
Triclopyr	yes	yes	yes
Aminopyralid	no	no	no
Picloram	yes	yes	yes
Chlorophacinone	no	no	no

²⁹ <http://adm.idaho.gov/adminrules/rules/idapa02/0303.pdf>

REFERENCES:

Oregon

Oregon Administrative Rules - Department of Forestry “Chemical and Other Petroleum Product Rules” (OAR 629-620-0000 through 629-620-0800)

http://arcweb.sos.state.or.us/pages/rules/oars_600/oar_629/629_620.html

Oregon Department of Forestry “Forest Practice Rule Guidance - Chemical and Other Petroleum Products”

<http://www.oregon.gov/ODF/privateforests/docs/guidance/OARDiv620.pdf?ga=t>

Oregon Department of Forestry “Forest Practice Notes – Chemical and Other Petroleum Products” (1997)

<http://www.oregon.gov/ODF/privateforests/docs/FPNote3Chemv5.pdf>

Washington

Washington Administrative Code “Forest Chemicals” (Chapter 222-38 WAC)

http://www.dnr.wa.gov/Publications/fp_rules_ch222-38wac.pdf

Washington Forest Practices Board Manual “Guidance for Application of Forest Chemicals”

http://www.dnr.wa.gov/Publications/fp_board_manual_section12.pdf

Idaho

Idaho “Rules Pertaining to the Idaho Forest Practices Act – Use of Chemicals and Other Petroleum Products”

<http://adm.idaho.gov/adminrules/rules/idapa20/0201.pdf>

Idaho Department of Agriculture “Rules Governing Pesticide and Chemigation Use and Application”

<http://adm.idaho.gov/adminrules/rules/idapa02/0303.pdf>

California

California Code of Regulations (Title 3 Food and Agriculture); Division 6 Pesticides and Pest Control Operations

6443. Permits for Use of Phenoxy Herbicides on Timberland.

<http://www.cdpr.ca.gov/docs/legbills/calcode/020403.htm>

6460. Drift Control.

<http://www.cdpr.ca.gov/docs/legbills/calcode/020404.htm>

6614. Protection of Persons, Animals, and Property.

<http://www.cdpr.ca.gov/docs/legbills/calcode/030201.htm>

U.S. Bureau of Land Management

Oregon Vegetation Treatments EIS Documents

<http://www.blm.gov/or/plans/vegtreatmentseis/documents.php>

BLM EIS Lead – Todd Thomson

Eugene District Office Vegetation Management EA Scoping Letter

http://www.blm.gov/or/districts/eugene/plans/files/9015B_Scoping.pdf

U.S. Forest Service

Pacific Northwest Region Invasive Plant Program Preventing and Managing Invasive Plants
Record of Decision

<http://www.fs.fed.us/r6/invasiveplant-eis/FEIS/ROD/ROD-R6-NR-FHP-PR-02-05.pdf>

British Columbia

Integrated Pest Management Regulation

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/10_604_2004

A Citizen's Guide to Pesticide Use and the Law in BC

<http://wcel.org/sites/default/files/publications/Citizen's%20Guide%20to%20Pesticide%20Use%20and%20the%20Law%20in%20BC.pdf>