



WASHINGTON STATE DEPARTMENT OF
NATURAL RESOURCES

DNR Response to Legislative Report SSB 5597

Prepared by

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Background

The Washington State Legislature passed Substitute Senate Bill (SSB) 5597, titled Creating a Work Group on Aerial Pesticide Applications in Forestlands, which formed the Aerial Application of Herbicides in Forestlands workgroup in 2019. As part of the bill, a number of recommendations were made to multiple agencies and programs, including within the Washington Department of Natural Resources (DNR). This report summarizes the activity and recommendations thus far on the individual suggestions for change from the original SSB 5597 for DNR related activities. The recommendations covered in this report include:

- The workgroup recommends that DNR provide a replacement or improvement to the user interface for chemical application review in the Forest Practices Application Review System (FPARS).
- The workgroup recommends that the DNR restructure the location of the FPARS link on the DNR website homepage to make it more accessible to the general public.
- The workgroup recommends that the Forest Practices Illustrated (FPI) and Forest Practices Board Manual section 12 be updated to reflect improvements to the legally required signage posting for aerial herbicide applications.
- The workgroup recommends that non-chemical vegetation management strategies should continue to be evaluated, and small trials be conducted in consultation with DNR, Forest Service, UW, and WSU.
- The workgroup recommends that the DNR include herbicide applications into its larger biennial Forest Practices rule compliance monitoring sampling.

A response for each recommendation that involve DNR is presented in this update report.

Improvements to FPARS Chemical Application Review User Interface

Several of the workgroup recommendations focused on the benefit from improved distribution of information to interested parties and the public. Below is an update on the recommendations that have been completed or are work in progress regarding interface with stakeholders and interested parties.

The workgroup recommended DNR consider the placement of the Forest Practices Application review system (FPARS) link on the [DNR Forest Regulation website homepage](#) to increase the accessibility to the general public. This action was completed in February 2020. Additional information is available to the public regarding [forest pesticide application](#) on a webpage within the Forest Regulation webpage. This webpage contains information on regulation, permitting, notification, sensitive area buffer widths, and compliance.

Another work group recommendation was to update the guidelines for signage associated with herbicide applications. [Forest Practices Illustrated](#) was updated in January 2021 to include more information on the signage, encouragement to notify neighbors prior to application, and an illustration to depict the sensitive area buffer requirements. There was also information on requirement and example of notification sign in the Forest Practices Illustrated and in the updated [Forest Practices Board Manual](#).

A recommendation to DNR for the FPARS replacement or upgrade includes an improved user interface for chemical application review.

DNR is moving forward with steps to build, test and then release FPOne. The FPOne purpose is to replace an essential statewide forest practices permit database system. The current system, FPARS, is out of date. The FPOne system will modernize the FPA/notification process, and better meet stakeholder and agency needs. FPOne is being built with the goal of an interactive e-business application, which will improve program functionality, efficiency and customer service. FPOne will include all current FPARS capabilities and additional modernizations including electronic payments and signatures. FPOne when completed will accomplish the recommendation of improving the efficiency of approval on all forest practices applications.

Forest Practices Illustrated and Board Manual Section 12

The Aerial Application of Herbicides in Forestlands Workgroup (2019) made several recommendations about the Forest Practices Program to the legislature, which included asking the Forest Practices Board to update Board Manual Section 12, Guidelines for Application of Forest Chemicals. Section 12 is the technical guidance to the forest chemical rule chapter, WAC 222-38. The legislature funded and required this work to be accomplished through a stakeholder process with the objective of new guidance and update existing best management practices (BMP) in Board Manual Section 12. The legislature workgroup did not request DNR to amend the forest chemical rules. Those assisting DNR with the recommended board manual updates included a wide variety of expertise and knowledge, including small and large forest landowners, field practitioners, Washington Department of Ecology (ECY), Washington Department of Fish and Wildlife (WDFW), and Washington State Department of Agriculture (WSDA) staff, and a representative from a pesticide awareness group. The group was approximately eighteen individuals that met between July 2021 and January 2022. The proposed changes are consistent with the existing rule but provide options and BMPs to conduct aerial spray activities safely that includes a new focus on communicating with neighboring landowners. The amendments to Section 12 include:

- An introduction to describe the purpose of the section and the regulatory structure within Washington
- A new part encouraging landowners to communicate their planned aerial spray activity with adjacent property owners including potential discussion topics to help neighbors understand a proposed activity
- Revised language on the maintenance of aerial application spray records
- A new part with a description of what to include on the notification signs that are to be placed adjacent to spray units and examples of strategic posting locations
- A new part with a description of the required residence and agricultural land buffers in rule
- A new part providing alternative management options for conducting site preparation and for controlling competing vegetation in lieu of forest chemicals
- Updated BMPs and processes for identifying surface waters prior to herbicide applications and or how various weather factors affect herbicide drift
- Updated language describing how equipment affects spray applications

Forest Practices Board approved the recommendations to Section 12 of the Forest Practices Board manual on February 9, 2022.

Evaluating Non-Chemical Vegetation Management Strategies in DNR State Lands

The Forest Vegetation Management Strategies for Reforestation in Washington State project represents a collaborative effort between the Washington Department of Natural Resources and the Vegetation Management Research Cooperative at Oregon State University. The project is funded by the Washington State Legislature and was designed to evaluate the efficacy, costs, and operational feasibility of different chemical and non-chemical vegetation management strategies for successful reforestation. A secondary objective was to evaluate the impact of removing glyphosate from the chemical pre-planting site preparation treatment due to public concerns regarding this chemical. In total, the study contains eight vegetation management strategies:

- 1) No-action control
- 2) Use of harvest residue management and no other form of vegetation control
- 3) a pre-planting herbicide application with glyphosate included in the tank mix
- 4) a pre-planting herbicide application with glyphosate included in the tank mix followed by a post-planting herbicide application in the spring of the first growing season
- 5) a pre-planting herbicide application without glyphosate included in the tank mix
- 6) a pre-planting herbicide application without glyphosate included in the tank mix followed by a post-planting herbicide application in the spring of the first growing season
- 7) manual removal of competing vegetation in the spring of the first growing season
- 8) manual removal of competing vegetation in the spring of the first and second growing seasons

These eight treatments are being tested at several sites across Washington State and are strategically selected to represent the range of conditions found across the landscape. Two sites were installed in 2022, three sites were installed in 2023, and additional sites will continue to be installed in the current biennium. Several measurements are being conducted at each of the sites including: 1) seedling condition, height, and diameter, 2) species-level vegetation cover and height, 3) site weather conditions, and 4) soil moisture dynamics.

Preliminary results only include data from the first two sites installed in 2022 as these are the only sites that have had a full growing season. Both sites had less than 15% vegetation cover prior to study installation, but vegetation cover in the no-action control quickly increased to an average 39% cover by the summer of the first growing season. There were no significant differences in total vegetation cover between the no-action control and harvest residue management treatment at either site. The pre-planting herbicide application treatments (3 and 5) both significantly reduced vegetation cover to about 14% cover and did not significantly differ from one another. The manual removal treatments (7 and 8) did not significantly differ from the pre-planting herbicide treatments at either site or averaged 17% cover. When a post-planting herbicide treatment was applied following the pre-planting treatment, vegetation cover was significantly lower than all other treatments averaging only 2% cover.

Soil moisture dynamics reflected the differences in vegetation cover among the treatments with large reductions observed in the no action-control, moderate and similar reductions observed for the pre-planting herbicide application and manual removal treatments, and very little reduction observed for the treatments with post-planting herbicide applications.

Survival after one growing season was not statistically different among the different vegetation management treatments at either site, except for the manual removal treatment having significantly lower survival at one of the sites. This is likely due to exposure of seedling roots when the duff layer was disturbed. The vegetation management treatments did not significantly affect seedling volume at either site. The pre-planting herbicide application followed by a post-planting herbicide application in the spring of the first growing season generally had the largest average seedling volume. More time and more data from the additional sites will be needed to better understand differences in tree survival and growth between chemical and non-chemical treatment options.

Compliance Monitoring of Herbicide Applications

The Compliance Monitoring Program conducts a two-year research project to understand how Forest Practices Rules are being complied with across the state in riparian timber harvests and publishes biannual reports available on the DNR website. The Compliance Monitoring Program (CMP) spent one year (2022-2023) exploring the possibility of incorporating aerial herbicide into the current CMP sample year. The exploration efforts included evaluating potential barriers for a pilot study involving willing landowner members of the Washington Forest Protection Association (WFPA). The pilot study would include a variety of sites in western Washington in fall of 2022. The CMP goal was to understand if Compliance Monitoring was the correct program to conduct aerial spray compliance, and to determine what information could be gleaned from field visits in a 6 month to 1-year post-spray setting.

The CMP is not including aerial spray in the current compliance monitoring samples for the following reasons:

1. Lack of evidence of off-target spray in Riparian Management Zone Buffers (RMZs)
2. Extensive evidence showing excessive buffers for aerial applications
3. Lack of current alternatives to control species (many of which are classified as noxious weeds) that interfere with tree growth

CMP examined nine units in southwestern Washington (DNR Pacific Cascade Region). The goal for each site visit was to build relationships with landowners and allow for educational opportunities for CMP staff on aerial spray application, examine the line-of-spray along RMZ buffers (if present), identify differences between hand-spray application and aerial application, and determine if off-target spray into RMZ buffers can be identified post-spray. In post-spray observations, CMP did not find any evidence of off-target spray in RMZ buffers, and all sites were found to have aerial spray buffers in excess of the required RMZ buffer in WAC on streams and wetlands within the unit. In part, this was due to the inability of the spray helicopter booms to navigate close to the tree line on RMZ buffers. Landowners shared numerous beneficial documents, including flight paths and detailed maps used for aerial application, exact timing of spray applications, helped identify which units included both aerial spray and hand-spray, and offered many more resources and informational documents with CMP staff.

CMP also spoke with numerous officials at the WSDA to understand what infrastructure would be needed to examine aerial application compliance. WSDA has a current monitoring program in place to check compliance with state and federal regulations for pesticide and herbicide applications in agricultural lands and forestlands. In a recent deep dive into data from WSDA covering inspections, investigations, and violations, a total of only five violations were found across 11 counties over six years.

Table 1- Summary of all inspections, investigations, technical assistance, and violations from 2017 to 2023 (data provided by WSDA).

County	Closed Inspections	Closed Investigations	Technical Assistance	# Violations	Total
Cowlitz	2	0	0	1	2
Grays Harbor	0	0	1	0	1
Jefferson	0	1	0	0	1
King	2	1	0	1	3
Klickitat	0	1	1	0	2
Lewis	4	0	0	0	4
Mason	0	1	1	0	2
Pierce	0	1	0	0	1
Snohomish	0	2	0	3	2
Thurston	1	0	0	0	1
Whatcom	2	0	0	0	2
Totals	11	7	3	5	21

Because WSDA is responsible for ensuring that pesticides and herbicides are used safely and legally in the state and are responsible for registering all pesticides (including adjuvants, plant growth regulators, defoliant, and desiccants), maintaining a licensing program for applicators, conducting inspections, and investigating complaints of alleged pesticide misuse, CMP believes they are the right experts for this project. In addition, WSDA has the infrastructure in place, including the existing experienced staff to monitor pre- and post-spray applications in the field, laboratory access for field sample chemical testing, easy access to landowner spray information and detailed documentation, spray card protocols, and track record of monitoring compliance. CMP recommends that the aerial herbicide applications continue to be monitored and regulation compliance continue to be the responsibility of the WSDA. Compliance of forest practice applications of aerial chemical applications with existing forest practices rules and potential violations regarding the agricultural, residential, and riparian aerial spray buffer, and signage, will continue to be WA DNR Forest Practices responsibility.