

# 2021

PROVISO REPORT TO THE LEGISLATURE

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## WSDA Pesticide Investigations and Referrals



Washington  
State Department of  
Agriculture

**PESTICIDE MANAGEMENT DIVISION**

**AGR PUB 701-899 (N/6/21)**

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# Proviso Report:

# WSDA Pesticide Investigations and Referrals

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## Proviso report: Scope, Content and Context

Through a proviso, the 2020 legislature directed the Washington State Department of Agriculture (WSDA) to work with partner agencies and external stakeholders to evaluate pesticide investigation rules, processes, and first responder outreach.

*The department [WSDA] must work with the departments of natural resources, labor and industries, health, and ecology, as well as local health jurisdictions and the state poison center, and consult with nongovernmental stakeholders including, but not limited to, tribal and environmental representatives, to evaluate pesticide investigation rules and processes. By June 30, 2021, the work group must report back to the legislature with any recommended changes, including how complaints should be reported and ensuring that complaints are properly referred.*

This proviso report contains recommendations to address improving WSDA pesticide investigation rules and processes, including how pesticide complaint reporting, referrals and tracking could be improved. While the focus of the Proviso is narrowed to WSDA actions, this report includes recommendations where multi-agency actions are necessary. Additionally, progress made on recommendations from the 2019 Aerial Herbicides in Forestlands Workgroup (2019 AHFW) legislative report are included in this report. For the purposes of this report, “pesticides” includes herbicides, insecticides, fungicides, rodenticides and other products intended to control pest populations or mitigate pest damage.

For this report, WSDA did not engage all stakeholders who may apply pesticides for commercial purposes, such as pest control professionals, and non-forestry agriculture. WSDA worked mostly with stakeholders that participated in the 2019 AHFW. During interviews, WSDA clarified that the scope of their participation was broader than just aerial herbicide applications to forestlands. However, their participation in the 2019 AHFW did provide background and context for additional discussions about how WSDA can improve pesticide investigation rules and processes, including how pesticide complaint reporting, referrals and tracking could be improved, per the proviso scope.

## Executive Summary

The 2020 Legislature directed WSDA to interview stakeholders to examine the agency’s pesticide complaint investigation, reporting, and referral processes.

The Washington State Department of Agriculture’s Pesticide Management Division (PMD) is comprised of programs that educate applicators, register pesticides and fertilizers, license and recertify pesticide applicators, consultants and dealers through testing and certification, and investigate the misuse of pesticides. WSDA has statutory authority to conduct pesticide investigations and apply enforcement actions when pesticides are misused. Examples of misuse include pesticides not applied according to their registered label, improper packaging, storage, transportation and disposal. If WSDA receives a pesticide complaint or report of loss due to pesticide misuse, the Pesticide Compliance Program determines, based on additional information from the complainant or the investigation, whether the complaint should be referred to other agencies. If WSDA conducts the investigation and determines that an applicator has violated an applicable RCW or WAC (primary ones are [Chapter 15.58 RCW Washington Pesticide Control Act](#), [Chapter 17.21 RCW Washington Pesticide Application Act](#), and [Chapter 16-228 WAC General Pesticide Rules](#)), WSDA may issue a verbal warning, a Notice of Correction, or a Notice of Intent to issue a civil penalty and/or revoke or suspend the pesticide license, depending on the severity of the violation.

Collaboration with partner agencies including the Department of Natural Resources (DNR), the Environmental Protection Agency Region 10 (EPA Region 10), the Department of Ecology (Ecology), the Department of Health (DOH), and Labor and Industries (L&I), is key to WSDA’s success investigating pesticide complaints. Given that multiple agencies may be involved in a single pesticide investigation, protecting human health and the environment relies on clearly defined agency roles and goals associated with responding to pesticide complaints, conducting referrals, and reporting.

Between July 1, 2020 and April 30, 2021, WSDA met with stakeholders, including many who participated in the 2019 AHFW. The stakeholders represented tribes, state and local agencies, private citizens, environmental groups, forest land owners, and pesticide applicators. From these discussions, WSDA identified common themes and the following recommendations to address pesticide investigation processes and responses to pesticide complaints, the agency referral process, and policy or rule making. WSDA also addressed broad comments outside the required scope of the proviso on communication/transparency improvements, and research needs:

- **Policy and rule making:**
  - » WSDA — Increase penalty amounts for pesticide violations.
  - » WSDA — Require specific certification for aerial applicators and evaluate educational needs for that group.
  - » WSDA — Station WSDA Pesticide Compliance investigators at sites before, during, and/or after aerial forestry herbicide applications.
  - » WSDA — Evaluate regulatory actions to ensure they are unbiased.

- **Investigation response to pesticide complaints:**
  - » WSDA — There were no broadly supported recommendations to change the way WSDA conducts pesticide investigations. However, WSDA continuously evaluates procedures and has implemented new policies to improve inspections and expedite enforcement.
- **Pesticide complaint referral process:**
  - » Multi-agency — Create a pesticide complaint referral flowchart that is supported by all agencies with a role in investigation and tracking of pesticide incidents.
  - » Multi-agency — Establish one phone number for all pesticide related complaints. Promote that number to citizens and agencies, including law enforcement.
  - » Multi-agency — Create one database that DOH, WSDA, and L&I have access to. Track all pesticide complaints, referrals, investigations, and outcomes.
- **Communication and transparency improvements:**
  - » Multi-agency — Create one website for public to access information about pesticide laws, rules, complaint reports, and ongoing research.
  - » WSDA and DNR — Improve the pesticide application notification and pesticide sensitivity registration notification systems.
  - » Multi-agency — Reestablish routine meetings between WSDA, DOH, and L&I.
  - » Evaluate the benefits of requiring some pesticide usage reporting to allow for better human health and/or environmental risk evaluation in areas where regular pesticide applications occur.
- **Research needs:**
  - » WSDA — Support research, improve regulation, and register spray adjuvants (which include surfactants) that are commonly used in conjunction with pesticides.
  - » WSDA — Consider following pesticide applications with downstream water sampling and analysis to determine the effects on water quality. *(Some overlap with recommendation from 2019 AHFW to conduct or contract a literature review of data gaps related to herbicides in streams, buffer effectiveness, fish and soil health)*

These recommendations represent the common themes heard from a diverse group. The recommendations that did not get broad support are generally not discussed unless they add context to the report.

## Introduction

Through a proviso, the 2020 legislature directed WSDA to collaborate with stakeholders to consider improvements to pesticide rules, policy, investigations, and complaint referrals between agencies. The Legislature tasked WSDA with this work based on their statutory authority to conduct pesticide misuse investigations. The stakeholders represented tribes, state and local agencies, private citizens, environmental groups, forest landowners, and pesticide applicators. While some recommendations from this stakeholder work build on the recommendations found in the 2019 Aerial Herbicides in Forestlands Workgroup (AHFW) report, the recommendations are broader than aerial herbicide applications to forestland, and focus on specific actions that WSDA can take, or can move forward in collaboration with partner agencies.

Collaboration is challenging, as many agencies have different roles in responding to, referring, tracking, and investigating pesticide complaints. For example, if an aerial pesticide application drifts onto employees in a forest or orchard, and causes significant human harm, the following agencies will respond:

- **WSDA** will assign a case number and investigate to gather evidence from the site and determine the extent of the violation of pesticide laws and rules. WSDA also notifies other agencies with a role in the case, such as L&I, if employees at a jobsite that were harmed. WSDA has enforcement authority for pesticide violations and worker protection rules related to pesticides.

- **L&I** assigns a case number or numbers, and investigates the incident when an employer's actions may cause harm to employees. One incident may result in multiple cases with their own unique case numbers, depending on the number of employees that were harmed. L&I has enforcement authority for workplace safety violations.
- **DOH** will assign an event number for each incident unique to their investigation of human exposure to pesticides. Additionally, they assign a case number to each person that was exposed during the incident. DOH has no enforcement authority for pesticide or workplace safety violations, however they have statutory authority to investigate suspected cases of human pesticide poisoning.
- **EPA** Region 10 will assign a case number unique to their investigation when criminal activity or significant environmental or human harm has occurred. EPA has enforcement authority where criminal activity, or significant human or environmental damage occurred from the pesticide use.

Other agencies such as DNR, Ecology, or Washington Department of Fish and Wildlife may also be involved, depending on the specifics of the violation. Improving pesticide complaint response, investigation, and agency referrals requires investing in a multi-agency approach.

Between July 1, 2020 and April 30, 2021, WSDA met through various virtual platforms with stakeholders, including many who participated in the 2019 AHFW. WSDA emailed notes from the conversations back to individual stakeholders for their review, edits, and approval. Finally, WSDA consolidated the notes into central themes supported by the majority of stakeholders. In addition to addressing WSDA's pesticide rules and policy, investigations, and complaint referrals between agencies, stakeholders spent a lot of time commenting on pesticide education and transparency needs. The Proviso did not specify pesticide research, or education and transparency as focus areas, however, this report would be incomplete if these issues were not included. Additionally, many of the stakeholder conversations touched on issues and recommendations previously identified by the 2019 AHFW; those recommendations are not included in this report unless they add clarity or specificity to previous recommendations.

## Findings and Recommendations

Stakeholder's identified common themes which WSDA grouped into the following five categories:

- Policy and rule making
- Investigation response to pesticide complaints
- Pesticide complaint referral process
- Communication and transparency improvements
- Research needs

Many of the recommendations in these categories will intersect with each other and those from the 2019 AHFW report. Those intersections help clarify how different recommendations work together to support the overall goal of improving pesticide rules and policy, investigations, and agency referrals. As stated above, the final two bullets were outside of the required scope of the proviso but were heard across all stakeholder conversations and so are included here for posterity and possible future action.

### **POLICY AND RULE MAKING:** [ Stakeholders recommended the following: ]

- ***WSDA should increase penalties for pesticide violations. Increasing penalties would serve as a disincentive to commit initial or first-time violations.***
  - » WSDA will seek rule revision between 2021 and 2022 to update the penalty matrix in WAC 16-228-1130. Changes considered include adding specifics to the mitigating and aggravating conditions of pesticide law and rule violations, and creating separate penalty matrices for specific types of violations. These updates would allow more equitable implementation of the penalty matrix, and allow for multiple and escalating penalties associated with human health violations.

- ***WSDA should require a specific certification for aerial pesticide applicators and evaluate educational needs for that group.***
  - » This is already in progress. Prior to this stakeholder work and recommendation, in response to the 2017 Federal Certification and Training (C&T) Rule, WSDA revised and submitted their state C&T plan to EPA. WSDA's C&T plan includes the aerial pesticide application category for private and commercial applicators. After EPA accepts WSDA's state plan revisions, WSDA must revise WAC 16-228-1545(3) to add the new aerial applicator certification category to rule.
- ***WSDA should consider stationing Pesticide Compliance investigators at sites before, during and/or after aerial forestry herbicide applications.***
  - » WSDA does not have a policy or adequate funding to achieve staffing levels necessary to station Pesticide Compliance investigators at sites before, during and/or after **all** aerial forestry herbicide applications. However, where WSDA has determined that staffing would be critical to the success of the application or protecting human health or the environment, Pesticide Compliance investigators can be made available and have staffed sites during aerial herbicide applications.
- ***WSDA should evaluate regulatory actions to ensure they are unbiased.***
  - » Some stakeholders believe agencies such as WSDA and DNR may ignore pesticide research that conflicts with what EPA has deemed sound science. However, the Natural Resources Assessment Section (NRAS), a non-regulatory arm of WSDA, conducts routine reviews of any new research related to pesticide fate, transport, and risk assessments. As a science group, NRAS tracks and reviews additional pesticide and toxicology science from a variety of science sources including academic institutions, state and federal agencies and researchers, regulatory agencies in other countries, and peer-reviewed journals. For example, in 2015, studies supported by the World Health Organization's International Agency for Research of Cancer classified glyphosate as Group 2A: probably carcinogenic to humans. However, in a [January 2020 press release](#), EPA and other international partners concluded that when used according to the label, glyphosate is not a carcinogen. In October 2020, NRAS published [Glyphosate: Ecological Fate and Effects and Human Health Summary](#). This publication provides links to additional research conducted on glyphosate, information on Washington State's use of glyphosate, and provides a summary of detections in the water samples collected in agriculture, urban, and forestry settings.
  - » WSDA and EPA co-regulate pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). Before registering pesticides in Washington, they must first be registered with EPA under FIFRA, taking into account the economic, social, and environmental costs and benefits of pesticide uses. EPA scientists and toxicologists conduct the risk assessments and make decisions to register pesticide products, and they are required to routinely re-register pesticides based on more current scientific and usage information. State FIFRA lead agencies, such as WSDA, have primacy and are co-regulators with EPA for pesticides. WSDA can make decisions on any further regulation, as is the case with adjuvants, which EPA does not register as a pesticide.

## **INVESTIGATION RESPONSE TO PESTICIDE COMPLAINTS:**

[ Stakeholders recommended the following: ]

- Most stakeholders who commented on WSDA's role in pesticide investigations agreed that WSDA's Pesticide Compliance Program had staff with the appropriate expertise to investigate pesticide complaints. WSDA has authority under law and rule to conduct investigations and proceed with enforcement, including civil penalty and pesticide applicator license suspension. One stakeholder felt that WSDA should not conduct pesticide investigations at all; the stakeholder felt that WSDA could not conduct unbiased investigations because they also license pesticide applicators and register pesticides for use.
  - » WSDA completed the Pesticide Compliance Investigator Manual in October 2017. Through research and robust review, the nearly 600 page manual covers most aspects of pesticide inspections, investigations, health and safety, reporting, corrective action, and referrals. The manual provides a resource for policies, procedures, and guidance to support Pesticide Compliance Investigator training, and to ensure consistent and accurate application of pesticide laws and rules during inspections and investigations.

- » WSDA is continually looking for ways to improve the way they investigate and respond to complaints. This data analysis can lead to innovative agency-led, industry partnered efforts to reduce the human health risks from pesticide exposure. One example of this was the 2020 WSDA Pesticide Compliance Program's Drift Observation Inspection process. This primarily focuses on airblast pesticide applications where the majority of human exposure incidents are reported. If a Pesticide Compliance inspector observes an off-target drift, they take a photo of the drift and conduct an inspection with the applicator or grower. Information obtained during the investigation includes pesticide label verification, weather conditions, and the pesticide application record. If WSDA finds the observed drift in violation of the pesticide label, RCW and/or WAC, they issue a Notice of Correction within two weeks after the drift was first observed. If WSDA determines the drift affected workers, adjacent housing, traffic on roads, or crops about to be harvested, the inspector will gather additional information for the investigation. The case will then be reviewed by the WSDA's Pesticide Compliance case review officer for potential penalty assessment.

## **PESTICIDE COMPLAINT REFERRAL PROCESS:** [ Stakeholders recommended the following: ]

- **WSDA should collaborate with partner agencies to create one pesticide complaint referral flow chart.**
  - » The Pesticide Application Safety Committee (PASCO) has drafted a flow chart to facilitate appropriate referrals. While currently focused on human exposure to pesticides, this flow chart could be expanded to include environmental damage and general pesticide misuse.
- **Through multi-agency collaboration, establish one phone number for all pesticide related complaints that is answered by a human being, 24/7; from that phone number each complaint should be referred to the appropriate agency. Promote that number to citizens and agencies, including law enforcement.**

- » WSDA's Pesticide Management Division (PMD) has two toll-free numbers. Both numbers have pre-recorded greetings in English and Spanish, and provide a path for the caller to report a concern about pesticide applications. Currently, the Bilingual Drift Complaint Line (1-844-388-2020) is answered in Spanish with the option to choose English; it is dedicated to reporting pesticide misuse. The general number (1-877-301-4555) is answered in English with the option to choose Spanish, and gives the caller a menu directing them to the appropriate voicemail box if they have questions about pesticide licensing and registration, laws, compliance, or waste disposal. Citizens with pesticide concerns can also call any of the numbers for the Pesticide Compliance Area Managers, listed on [PMD Compliance Field Office Information](#) webpage.

- ♦ WSDA should consider renaming the Bilingual Drift Complaint line to the Bilingual Pesticide Complaint line. This dedicated line should be posted on both PMD's and WSDA's main page, and promoted to our partner agencies.
  - Consider contracting with the Washington Emergency Management Division to staff the dedicated line 24/7.

A model to address the recommendation above may be found in Ecology's [ERTS \(Environmental Report Tracking System\)](#). The Washington Emergency Management Division staffs the ERTS phone number 24/7. After a complaint is received, the ERTS coordinator assigns a unique ERTS case number to each complaint, followed by a case referral to the appropriate responders. The ERTS case number stays with the complaint, and subsequent follow up can be tracked by all agencies that have or will "touch" the complaint. While ERTS is specific to spills, this model could be expanded to include all pesticide complaints. WSDA should consider a scoping discussion with Ecology and partner agencies to determine if ERTS could offer a solution to response and referral of all pesticide complaints.

Another model is Oregon State's use of 211. The [Oregon Pesticide Analytical and Response Center](#) contracts with 211 to field and refer pesticide related calls 24/7 through the Oregon Emergency Response System.

- **Through multi-agency collaboration, create one database to track and report on all pesticide complaints received through the pesticide complaint line. Responsive agencies, such as DOH, WSDA, and L&I should have access.**
  - » Establishing one database to track all pesticide complaints, referrals, and outcomes would take substantial funding and collaboration between partner agencies. A single database would require additional work for each agency, as each already has their own complaint tracking database. After establishing a single database, all pesticide complaints, referrals, investigations, and outcomes could be tracked and reported out annually. A robust report would allow for detailed analysis of where pesticide complaints are generated and how they are being addressed.

## COMMUNICATION AND TRANSPARENCY IMPROVEMENTS:

[ Stakeholders recommended the following: ]

- **Through multi-agency collaboration, create one website for the public to access information about Washington pesticide laws, rules, complaint reports, and research.**

» In addition to WSDA and partner agency pesticide-specific websites, several websites contain pesticide information, such as [University of Washington's Pacific Northwest Agricultural Safety and Health Center](#) (PNASH), [Pesticide Educational Resources Collaborative](#) (PERC), and the [National Pesticide Information Center](#) (NPIC). However, stakeholders are looking for a single website, managed by one agency or a collaborative group which should include, but not be limited to the following:

- ♦ How to report a pesticide concern displaying a 24/7 staffed phone number, and a fillable web form.  
*Note: WSDA Pesticide Compliance will add a fillable form to their existing webpage in 2021*
- ♦ Reports on past pesticide complaints from all agencies including WSDA, DNR, L&I, EPA Region 10, and Washington Poison Center.
- ♦ Information about pesticide usage, applicator training, and pesticide disposal.
- ♦ Links to all federal, university, and agency pesticide webpages. Agency pesticide webpages should be updated to provide email contacts for subject matter experts.
- ♦ Links to state and national published peer-reviewed pesticide research.
- ♦ Day, time, agenda, and virtual attendance option for pesticide meetings, such as PASCO, that are open to the public.
  - Notes and associated reports from past meetings.

If WSDA and other agencies consider pursuing a website, this would require legislative funding and multi-agency collaboration to develop and maintain.

- **WSDA should improve pesticide application notification system.**

- » Currently DNR and WSDA host separate lists, requiring citizens to register to be notified when pesticide applications occur near their residence or in their zip code.
- ♦ To receive notification of aerial forest pesticide applications from DNR, citizens must enroll in the [Forest Practices Application Review System \(FPARS\)](#), and submit a Forest Practices Reviewer Notification application, which requires a Secure Access Washington Account, and multiple steps to complete a Forest Practices Reviewer Profile.
    - DNR requested \$3.7 million in the 2021 legislative session to replace the aging FPARS, and received partial funding to do so beginning July 1, 2022. The replacement system will be designed with input from users, and is intended to streamline ways that citizens can obtain information about forest practices proposals of interest, including aerial herbicide applications to private and state forests.
  - ♦ To receive notification about landscape or right-of-way applications (does not include agricultural land) for pesticide sensitive individuals from WSDA, citizens must complete a fillable pdf form available on WSDA's [Pesticide Sensitivity Registry](#) website, and submit the form with a doctor's signature to WSDA. The renewal form must be filled out annually to keep the Pesticide Sensitivity Registration list current. The complete list is mailed twice a year (by January 1 and June 15 of each year) to applicable certified pesticide applicators likely to make landscape applications.
- » Both WSDA and DNR notification systems require a significant commitment from the citizen seeking notification, and from the certified applicator to reach out to individuals on the list.
- ♦ The maintenance and notification process of WSDA's Pesticide Sensitivity Registration system is statutorily mandated; WSDA is working internally to identify better ways for managing the notification list and the biannual release of the list to licensed applicators. Some of this work will occur as WSDA completes their database buildout to support customer access.

- WSDA could consider managing the notification list through a GIS map, updated weekly with location and contact information for citizens who have completed their Pesticide Sensitivity Registration form. In the public facing view, registered citizens would appear as dots on the map with no contact information listed. Certified applicators would be required to view the map prior to all pesticide applications to landscape or right-of-way. If they see a dot in the area where pesticides will be applied, they must enter a password to make the map interactive, allowing the applicator to download contact information for all pesticide sensitive registered citizens in the application area. To keep the map current, citizens would still have to update their information annually, or their “dot” would disappear.
- ***Through multi-agency collaboration, re-establish a multi-agency group that regularly meets to coordinate pesticide complaint responses, referral, and reporting.***
  - » In 2019, the Legislature passed a bill to establish the [Pesticide Application Safety Committee](#) (PASCO). Chaired jointly by DOH and WSDA, PASCO was formed to improve the safety of pesticide applications. Committee members include legislators, L&I, DNR, WSU’s College of Agricultural, Human, and Natural Resource Sciences, WSU Cooperative Extension, and University of Washington’s Pacific Northwest Agricultural Safety and Health Center. PASCO members, through routine coordination will develop recommendations to improve pesticide application safety. Topics addressed by the committee include but are not limited to industry best practices, techniques to reduce pesticide exposures, improving complaint reporting, identifying new spray technology, and establishing baseline data on types and quantity of pesticide applications.
  - » Continued support and engagement with PASCO is essential to identify other key agencies and stakeholders that respond to pesticide complaints or educate pesticide users. This group would have a role in updating a collaborative website associated with pesticide use, compliance, investigation, research, and reporting. *Note: WSDA is one of six agencies that comprised the Pesticide Incident Reporting and Tracking panel (PIRT). PIRT members monitored pesticide-related incidents and met regularly to discuss pesticide policy and agency coordination. PIRT dissolved in 2010 due to lack of funding.*
- ***WSDA should evaluate the benefits of requiring some pesticide usage reporting to allow for better human health and/or environmental risk evaluation in areas where regular pesticide applications occur. (This also fits with the rules/policy section)***
  - » Not all stakeholders support pesticide usage reporting. Some thought it should be mandatory, and others thought that usage reporting served little purpose as it was an “after the fact” report and may give other pesticide applicators a competitive advantage by knowing what chemicals were applied. An argument for pesticide usage reporting is that it could provide actual data about what pesticides were used in what areas. Usage reporting could provide agencies such as DOH with reliable data necessary to describe the human health risk associated with applications, and to help focus research on links between human health issues and specific pesticides.
    - ◆ All commercial and public pesticide applicators are required to retain pesticide application records. WSDA requires those records be made available when needed.
  - » One example of voluntary usage reporting is the agency’s current pesticide usage data process. WSDA’s Natural Resources Assessment Section (NRAS) periodically collects pesticide usage data from pesticide applicators and commodity groups (such as potato and cranberry groups) by bringing growers, consultants, and researchers together to talk about pesticide usage for the specific commodities they manage. Pesticide usage information shared on a voluntary basis includes the common name of the pesticide product used on specific crops, the rate, timing, spray interval, number of applications, percent of crop treated, region of the state, and pesticide application methods. NRAS uses the pesticide usage data in a variety of ways including the following:
    - ◆ Tracking and reporting on usage trends.
    - ◆ Reporting findings back to applicators and commodity groups.
    - ◆ Coordinating with Washington State University (WSU) for research and extension education work.
    - ◆ Supplying additional information for water quality monitoring study areas.
    - ◆ Prioritizing analytes when monitoring surface or ground water for pesticide residues.
    - ◆ Relaying state-specific data to EPA and federal partners to assist during product reregistration periods and water quality and endangered species assessments.

NRAS can produce pesticide usage reports by active ingredient that contain tables, maps, and descriptions that combine the latest pesticide usage data with NRAS crop mapping GIS data. NRAS generates reports in response to specific requests for information about active ingredients in pesticides. Reports, generally shared with EPA, US Fish and Wildlife Service, and National Oceanic and Atmospheric Administration, provide a spatial coverage of projected use in the state by reported usage and cropping patterns. Tables and maps depicting projected use may also assist the applicators, commodity groups, and WSU, and could benefit DOH in their effort to identify links between human health exposure and specific pesticides.

- » Another example of robust available pesticide usage information is the vegetable and fruit chemical surveys conducted by the USDA's National Agricultural Statistics Service (NASS). These datasets are high in quality and involve a review of application records for substantial acreages in top Washington commodities (i.e. apples, pears, cherries, juice grapes, wine grapes, raspberries, blueberries, onions, carrots). This dataset is limited to that specific application year and does not cover all Washington crops. The data provides a snapshot in time with no specific application date or application method. The data meets growers' needs for confidentiality but also provides information that could be used, in conjunction with WSDA's collected data to provide information for epidemiological studies.

## RESEARCH NEEDS: [ Stakeholders recommended the following: ]

- **WSDA should support research, improve regulation, and register spray adjuvants (which include surfactants) that are commonly used in conjunction with pesticides. Stakeholders are concerned that the ingredients in adjuvants may be as or more harmful to human health and the environment as the pesticide they are enhancing.**
  - » While spray adjuvants are not registered by EPA (EPA registers all common pesticides), Washington is one of only nine states that **does register [spray adjuvants](#)**. Prior to approving an adjuvant registration, WSDA specialists focus on the adjuvant formula, label elements, and the Globally Harmonized System compliant Safety Data Sheet. Adjuvants approved for aquatic use must meet even more stringent requirements, and must be reviewed and approved by a WSDA toxicologist prior to registration.
- **WSDA should consider following pesticide applications with downstream water sampling and analysis to determine the effects on water quality.**
  - » WSDA's NRAS conducts a [surface water monitoring program](#) where water samples are collected from salmonid-bearing streams in select watersheds March through October. Since 2003, an accredited lab has analyzed water samples for current use and historic pesticides and pesticide breakdown products. NRAS also collects additional stream data, such as pH, water temperature, and dissolved oxygen. The [Natural Resources Assessment Publications](#) webpage provide links to reports and factsheets detailing NRAS findings from over 17 years of research. Through collaboration with DNR and aerial pesticide applicators, NRAS has targeted surface water sampling in areas that were recently sprayed.
    - ♦ NRAS sees value in future possible forest watershed and herbicide specific projects to their monitoring designs and yearly monitoring work, which would be coordinated with PMD, DNR, conservation districts, watershed groups, forestry industry groups, tribes, and other agencies.

## Conclusion

Where the focus of the 2019 AHFW was primarily on forest herbicide applications, the discussions for this report broadened to include all pesticide issues that WSDA could address through policy or rule change, increased education and training, research, and through collaboration with partner agencies. Some overlap occurs between the recommendations above and the recommendations from the 2019 AHFW. For example, improving the pesticide sensitivity registry and requiring an aerial pesticide application certification were brought up by stakeholders in both discussions.

Of the 13 recommendations from primarily AHFW stakeholders, six either require no additional action from WSDA or work is ongoing as issues are being addressed. Those recommendations include the following:

## Work is ongoing

- Increase penalty amounts for pesticide violations.
- Require a specific certification for aerial applicators.
- Increase water sampling, testing for pesticides down stream of application areas.
- Improve the Pesticide Sensitivity Registration notification systems.
- Re-establish routine meetings between WSDA, DOH, and L&I.
  - » This work has started with the Pesticide Application Safety Committee

## No additional action needed

- Improve research and regulation of spray adjuvants.
  - » Spray adjuvants are researched and regulated in Washington.

The remaining seven recommendations require additional review to determine need, requirements for statute, rule or policy change, multi-agency collaboration, and/or substantial funding to develop.

## Review to determine need, statute, rule or policy work, collaboration and funding needs

- Create a pesticide referral flowchart that is supported by all agencies with roles in investigation and tracking pesticide incidents.
- Create one database that DOH, WSDA, and L&I have access to. Track all pesticide complaints, referrals, investigations, and outcomes.
- Create one website for the public to access information about pesticide laws, rules, complaint reports, and research.
- Establish one phone number for all pesticide-related complaints. Promote that number to citizens and agencies, including law enforcement.
- Consider stationing WSDA Pesticide Compliance investigators at sites before, during and/or after aerial forestry herbicide applications.
- Evaluate the benefits of requiring some pesticide usage reporting to allow for better human health and/or environmental risk evaluation in areas where regular pesticide applications occur.
- Evaluate regulatory actions to ensure they are unbiased.

For this effort, stakeholders included improved communication and collaboration between partner agencies and the public in the majority of their recommendations. Developing tools, such as a single database to track **all** pesticide complaints, referrals, and responses, would streamline and improve the accuracy of pesticide reporting. More comprehensive and timely reports would improve transparency and help build public confidence, and provide each agency with the tools they need to focus on emerging pesticide and policy issues.

A recommendation to establish a formal multi-agency group that meets regularly to address pesticide issues, also speaks to stakeholder requests for improved collaboration and communication. Currently the Pesticide Application Safety Committee has started to fill this role. Looking outside of Washington for an example of a multi-agency group addressing pesticide issues, Oregon State currently funds (approximately \$2,000,000 per biennium) the [Pesticide Analytical and Response Center \(PARC\)](#), a non-regulatory program that includes eight member agencies. PARC collects pesticide-related information suspected to have public or environmental health impacts, collects information on investigation outcomes, makes policy recommendations based on observed pesticide problems and trends, and creates activity reports for each legislative session. Establishing this type of collaborative group in Washington would require a similar commitment to funding.

Overall, the Legislature supported WSDA's proposals in the 2021 legislative session which will support ongoing and new work planned by the Pesticide Management Division. The following bills passed to increase funding to support additional education, outreach, investigation capabilities, customer service, and collaboration:

- [Pesticide Safety Reform Bill](#): Increases fees associated with pesticide registration and licensing, allowing WSDA to increase focus to prevent pesticide drift, increase training, education, and outreach and communication to stakeholders and the public.
- [Fertilizer Fee Bill](#): Sustains WSDA's Fertilizer Program and provides funds to finish building the new database that will allow online fertilizer registration, tonnage reporting, and a customer portal.
- [Pollinator Bill](#): Requires renewed and coordinated efforts between WSDA's Pesticide Management and Plant Protection divisions, and WSU to support pollinator health.

Ongoing legislative, agency, and community support is critical to continued progress toward improving WSDA's pesticide investigation rules and processes, including how pesticide complaint reporting, referrals and tracking could be improved.

## Appendices

### Appendix A: Resources

The links below provide additional information on pesticide use, regulation, and education in Washington and at the federal level.

WSDA's [Technical Services and Education Program](#) provides the following services, in Spanish and English, to educate applicators and promote safe and compliant pesticide use:

- Pesticide safety training for pesticide handlers.
- Free waste pesticide collection.
- Worker Protection Standard (WPS) training and train-the-trainer workshops in Spanish and English.
- Airblast sprayer calibration and optimization best management practices training in Spanish and English.
- On-farm airblast calibration and technical assistance.
- Respirator fit-test train-the-trainer.
- Private applicator prelicense courses (Spanish only).
- Educational videos in Spanish and English on topics such as unclogging pesticide application spray nozzles.

[Pesticide Application Safety Committee](#) (PASCO), chaired jointly by DOH and WSDA was formed to improve the safety of pesticide applications. Committee members include legislators, L&I, DNR, WSU's College of Agricultural, Human, and Natural Resource Sciences, WSU Cooperative Extension, and University of Washington's Pacific Northwest Agricultural Safety and Health Center.

[WSDA's Natural Resources Assessment Section](#) (NRAS) is the agency's non-regulatory, research program focused primarily on impacts of agricultural chemicals on Washington's natural resources. A few of NRAS's publications include the following:

- August 2020, [Ambient Monitoring for Pesticides in Washington State Surface Water 2018 Technical Report](#)
- August 2020, [Understanding Pesticide Leaching Potential and Protecting Groundwater factsheet](#)
- September 2020, [Pesticide Application and Water Quality factsheet](#)
- October 2020, [Glyphosate: Ecological Fate and Effects and Human Health Summary](#)
- November 2020, [Understanding Pesticide Product Labels](#) factsheet

Washington State Department of Health's [Pesticide Illness Data and Reports](#) webpage provides links to research and pesticide incident reports associated with human health.

[Washington Poison Center](#) provides a 24/7 hotline, staffed with medical professionals, responsive to all human health emergencies related to poisons. Pesticide incidents are tracked and shared with DOH.

University of Washington's [Pacific Northwest Agricultural Safety and Health Center](#) conducts research and provides education and training to all Northwest farming, fishing, and forestry producers and workers.

Washington State University has merged the pesticide programs below into the Pesticide Resources and Education Program. The single program will include applicator education, initial certification training, WSU pesticide recommendation review, and the PICOL pesticide label database.

- [Urban IPM and Pesticide Safety Education](#) program through WSU Extension provides training for pesticide prelicensing and recertification.
- [Pesticide Information Center OnLine](#) provides searchable, online pesticide label database for Oregon and Washington

The [National Pesticide Information Center](#) provides links to research and information about pests, pest control, and pesticide products.

The [Pesticide Educational Resources Collaborative](#) compiles and develops a variety of pesticide-related materials that includes manuals, videos and guides.

## Appendix B: Acknowledgements

Through many conversations, stakeholders provided time and thoughtful comments that resulted in recommendations to improve pesticide investigation rules and processes, including how pesticide complaint reporting, referrals and tracking could be improved. These stakeholders represented the following groups:

Confederated Tribes of the Colville Reservation	Washington State Department of Agriculture
Hancock Forest Products	Washington State Department of Ecology
Helena Agri-Enterprises, LLC	Washington State Department of Health
Kitsap County Noxious Weed Control Board	Washington State Department of Labor and Industries
Kitsap Environmental Coalition	Washington State Department of Natural Resources
Oregon Department of Agriculture: Pesticide Analytical and Response Center	Washington State Environmental Health Association
Port Gamble S'Klallam Tribe	Washington State University Pesticide Safety Education Program
Washington Environmental Council	Weyerhaeuser
Washington Farm Forestry Association	Wilbur-Ellis
Washington Poison Center	University of Washington Pacific Northwest Agricultural Safety and Health Center
Washington State Association of Public Health Officials	