WASHINGTON STATE ENDANGERED SPECIES PROTECTION PLAN for PESTICIDE USE

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WASHINGTON STATE DEPARTMENT OF AGRICULTURE
ENDANGERED SPECIES PROGRAM
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Introduction

Agriculture and Fisheries are two industries critical to the economy of Washington State. In 2002, the value of Washington's agriculture production was $5.6 billion, calculated as the 'farm-gate' value, or the amount received at the farm level for the commodities grown. The actual retail value of Washington's agricultural production is estimated to be over $25 billion. Fisheries, both commercial and sport, also support the overall economy of Washington State. Aquaculture, commercial and sport fishing contribute over $1.6 billion to the Washington State economy.

During the past decade, seven salmonid species - members of the *Salmonidae* family such as salmon and trout - have been listed for protection under the Federal Endangered Species Act (ESA) of 1973. These seven species have been listed for protection in twenty-nine different geographic regions. The National Oceanic and Atmospheric Administration (NOAA) Fisheries has listed Evolutionary Significant Units for chum, coho, steelhead, chinook and sockeye salmon as threatened and/or endangered. The U.S. Fish and Wildlife Service has listed Distinct Populations Segments of bull trout as threatened. NOAA Fisheries and US Fish & Wildlife Service are hereafter collectively referred to as the Services.

Because of the potential impact ESA listings could have on agriculture, WSDA created an Endangered Species Program in 2001. The Endangered Species Program was charged to ensure pesticide use remains available as a tool for agricultural production and agricultural production is in full compliance with the ESA.

WSDA has developed a plan entitled, "The Washington State Endangered Species Protection Plan for Pesticides" which has three components:

- Reducing uncertainty for pesticide registration decisions in collaboration with EPA.
- Interact with NOAA Fisheries and US Fish and Wildlife to accurately represent the best available data regarding pesticide use in the development of biological opinions.
- Provide a process for Washington stakeholders to have input into the development of mitigation measures required by EPA for protection.

The Washington State plan will contribute to the protection of federally listed endangered salmonid [1]species from pesticide exposures by incorporating federal protection strategies or developing alternative local plans where needed. The Washington State Initiated Plan as described in this document is submitted to EPA for approval to develop a plan for NOAA-Fisheries designated endangered salmonid species.

[1] In the context of this plan, "endangered" species refers to NOAA-Fisheries listed salmonids as Endangered, Threatened, Proposed Endangered, and Proposed Threatened.

Background

Agriculture Production and Pesticide Use in Washington State

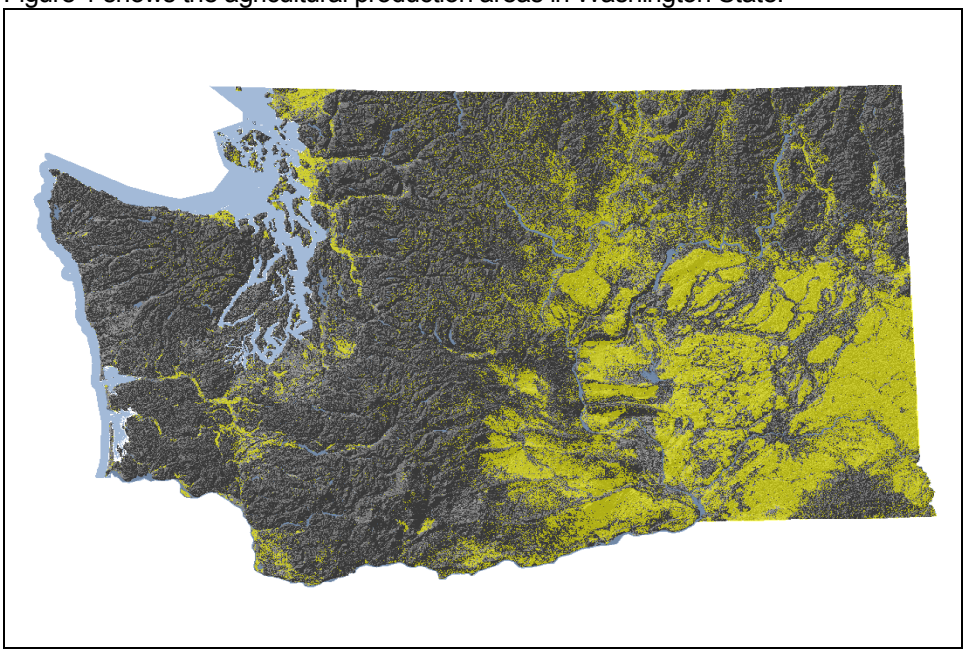
Washington State is split into two geographic areas by the Cascade Mountains. The north-south trending Cascades divide the state into the western part, which has a marine climate characterized by cool, wet winters and warm, relatively dry summers, and into the eastern part, which has a climate of cold winters and hot, dry summers. Western Washington is a mixture of large urban areas, forested regions, and smaller agricultural production areas. Eastern Washington is a mix of large agricultural production areas, forested-mountainous areas, and more isolated urban areas.

Within each of these regions are distinctly different microclimates, soil types, and topography, which result in the ability to grow over 250 agricultural commodities. Washington State ranks third nationally as a minor crop production state.

The wide diversity of crops grown is evidenced also by the wide diversity in pesticides used. Because some commodities have very specific pesticide needs, the potential effects of ESA mitigation measures may impact each commodity to a varying degree. Of particular concern is the potential impact to minor crops, which have limited crop protection chemicals registered for use. Eliminating the use of one of these chemicals may significantly impact crop protection needs.

In addition, integrated pest management (IPM) strategies for crops have been developed over many years, and rely upon specific combinations of crop protection chemicals to both protect beneficial organisms and minimize overall pesticide use. The removal of any one specific chemical can have a domino effect disrupting the IPM strategy, and must be considered.

Figure 1 shows the agricultural production areas in Washington State.



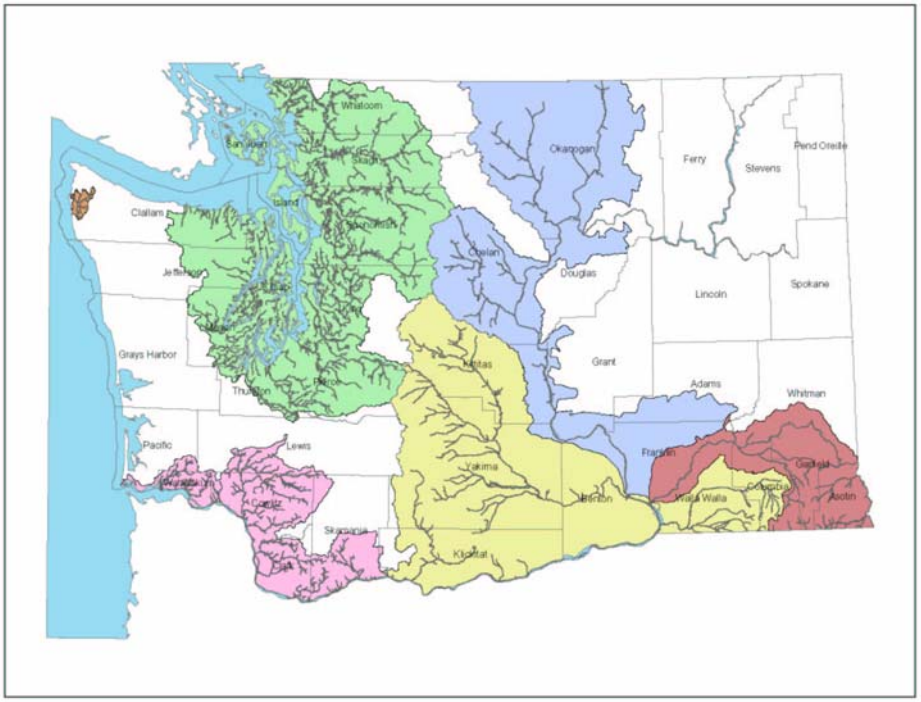
• Figure 1. Agricultural production areas in Washington State shown in yellow.

Pesticide use is not limited to agricultural production areas. Pesticides are also used by homeowners as well as private and public entities. Because urban centers in western Washington are in close proximity to salmonid habitat, pesticide use in these areas may also be impacted by ESA mitigation measures.

Endangered Salmonids in Washington State

Washington's rivers, tributaries, and estuaries provide habitat for several species of salmon, steelhead, and trout. Seventy percent of Washington State's landmass provides habitat for salmonids listed for protection by NOAA Fisheries under the ESA.

The steelhead and spring-run Chinook populations in the Upper Columbia River evolutionary significant unit (ESU) are currently listed as endangered in Washington State. In addition, several Chinook, sockeye, chum, and steelhead ESUs have been listed as threatened in various river basins and estuaries throughout the state. Also, Coho salmon in the Southwest Washington/Lower Columbia River ESU and in the Puget Sound/Strait of Georgia ESU are currently candidate species. The location of NOAA Fisheries listed threatened and endangered salmonid ESUs in Washington State is illustrated in Figure 2.



- Figure 2. NOAA Fisheries designated threatened and endangered salmonid locations in Washington State.

Regulatory Authorities

Federal Insecticide Rodenticide and Fungicide Act (FIFRA)

The Federal Insecticide Rodenticide and Fungicide Act gives the U.S. Environmental Protection Agency (EPA) the authority to regulate the use of pesticides in the United States (*7 U.S.C. 136 et. seq.*). One condition of registration EPA must determine is whether the pesticide use would cause "unreasonable adverse effects on the environment" (*FIFRA Sec.*

3(c)(5)). FIFRA defines "unreasonable adverse effects on the environment" to include "any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide" (*FIFRA sec. 2(bb)*).

Endangered Species Act (ESA)

At the same time, Section 7 of the Endangered Species Act imposes obligations on all Federal agencies whose actions may adversely impact threatened and endangered species. Specifically, *Section 7(a)(2)* directs all Federal agencies, in consultation with, and with the assistance of the Secretaries of the Interior and Commerce (delegated to the US Fish and Wildlife Service and NOAA Fisheries, collectively referred to as the Services), to ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of habitat of such species that has been designated as critical habitat (*16 U.S.C. 1536(a)(2)*). To comply with this requirement, each agency is required to use the "best scientific and commercial data available" (*16 U.S.C. 1536(a)(2)*).

EPA must ensure that its actions are not likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of their designated critical habitat. Therefore, EPA's challenge to carry out its responsibilities to implement FIFRA, which is based on risk/benefit analysis, in a way that ensures compliance with the requirements of the ESA.

ESA Implementation under FIFRA

On December 2, 2002, EPA announced in a Federal Register Notice (*Vol. 67, Num. 231, Pg. 71549-71561*) the field implementation of its Endangered Species Protection Program (ESPP). EPA stated its goal for the ESPP is "to carry out responsibilities under FIFRA in compliance with the ESA, while at the same time not placing unnecessary burden on agriculture and other pesticide users." EPA proposes to implement its responsibilities under *Section 7(a)(2)* of ESA by completing and upgrading County Bulletins, amending pesticide labels to reference County Bulletins, and enhancing monitoring programs. County Bulletins are county-level, specific supplemental pesticide labels that provide use restrictions to protect federally listed species. EPA proposes to use County Bulletins to put in place protection measures identified through consultations with the Services and, as appropriate, to put measures in place necessary to protect threatened and endangered species, even in the absence of a biological opinion from the Services.

In addition, EPA announced that since state circumstances may influence the effectiveness of different approaches to listed species protection, states could develop alternative approaches for protecting listed species. EPA will allow States to develop alternative plans for protecting listed species in their areas. States that wish to develop plans are guided to submit their proposal to EPA for review and approval. EPA will then coordinate with the Services to determine the provisions of a state plan will provide adequate protections for listed species within that state. If EPA approves the plan following any necessary consultation with the Services, EPA would then adopt it and could require, through County Bulletins, that users comply with the requirements of the plan. Finally, alternative plans can be developed for all or a portion of the species affected in that state.

State Initiated Plan

The Washington State Department of Agriculture serves the people of Washington State by supporting the agricultural community and promoting consumer and environmental protection. After evaluating the regulatory authorities WSDA operates under as the State Lead Agency for pesticide regulation, WSDA has determined that its mandate to support

agriculture and protect the environment would be best served by developing a state initiated plan for endangered species protection.

Key to developing this plan was evaluating the process EPA uses to make registration decisions for pesticides. Instead of developing a stand-alone plan that would operate independent of current pesticide registration processes, WSDA has worked with stakeholders, EPA, and Washington State University to incorporate current efforts into a process that compliments EPA's risk assessment paradigm for pesticide registration. Components of the plan include pesticide use profiles, crop mapping, and surface water monitoring for pesticides which aids in reducing uncertainty in the pesticide risk assessment process and thus allowing risk managers to make good decisions.

Washington State Initiated Plan for Endangered Species Protection

The Washington State plan for endangered species protection is designed to complement the EPA Endangered Species Protection Program (ESPP). An outline of the current pesticide/ESA consultation process and WSDA's plan for involvement through its proposed Plan is presented in Figure 3.

The Washington State plan can be divided into three phases.

- Phase 1 facilitates the exchange of data and information between WSDA and EPA regarding the pesticides that EPA will be evaluating for ESA compliance.
- Phase 2 allows WSDA and NOAA Fisheries to exchange information about pesticides for which EPA has made "likely to adversely affect" determinations.
- Phase 3, if needed, consists of WSDA and EPA collaboratively developing County Bulletins to provide supplemental pesticide labeling instructions to pesticide applicators in Washington State.

Risk Assessment and Pesticide Registration

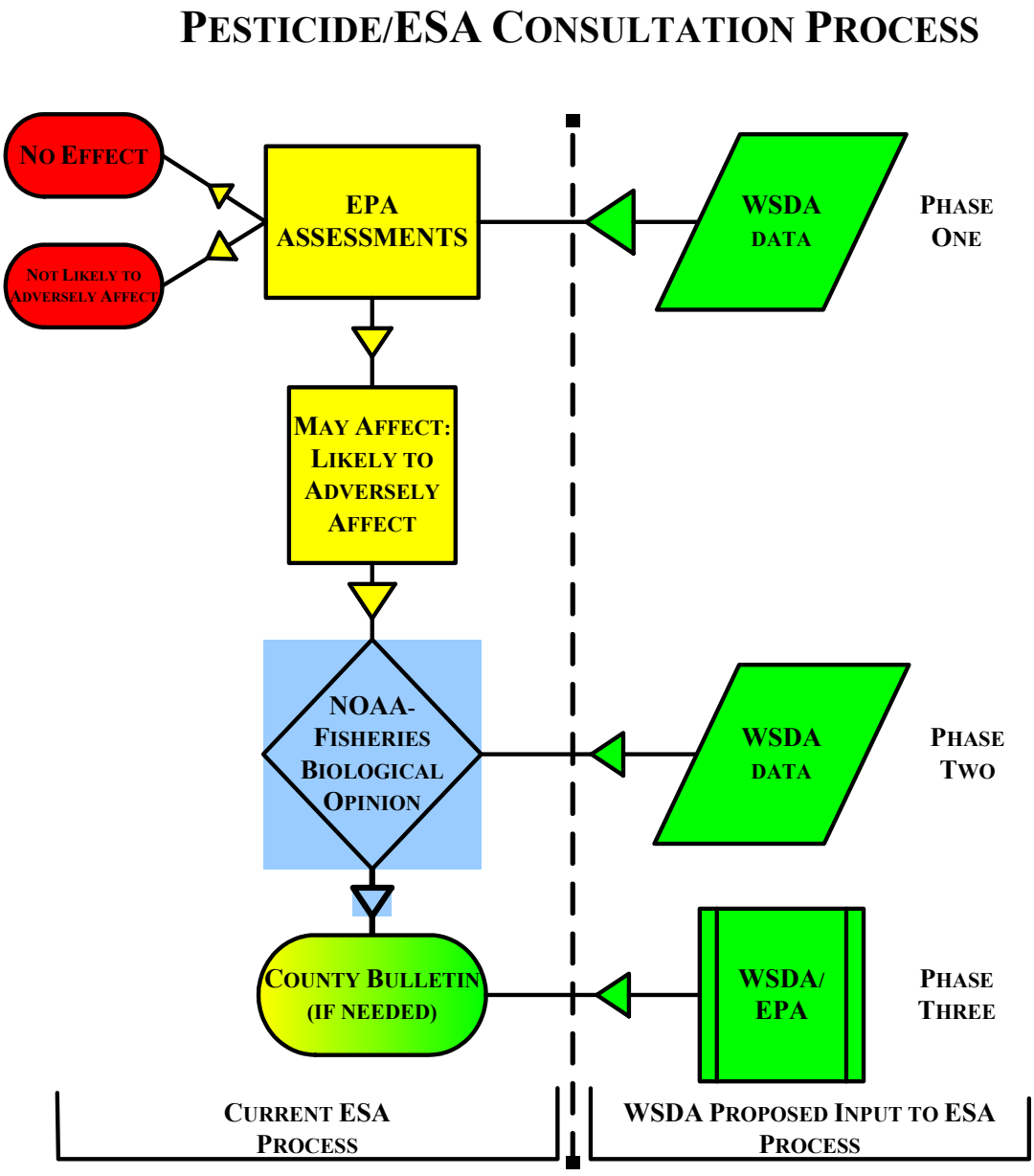
Risk assessments evaluate available data regarding the use, environmental fate, transport and effects of a pesticide. If data is unavailable, the lack of knowledge is expressed as uncertainty. Inherent to the risk assessment process, when there is uncertainty regarding the potential effect of a pesticide, it may be assumed that an adverse effect will occur until data indicates otherwise. This scenario is especially relevant when the risk assessment is for an endangered species since the endangered species act requires a risk manager to err on the side of the species. Factors that can specifically effect risk assessment determinations for pesticides are: application timing, interval, pounds applied, area treated, and application method. In lieu of information to the contrary, EPA must assume the maximum value for all conditions mentioned.

WSDA is proposing a process that will provide EPA with Washington State specific information that will allow EPA to consider assessment scenarios other than those that would result in maximum exposure.

For example, a pesticide is under consideration for re-registration and is applied to grapes for control of fungus. EPA evaluates the label and data from the Census of Agriculture and determines the fungicide is applied to 23,000 acres, four times a year, at one-week intervals, with a maximum application rate of three pounds per acre and determines there is a potential adverse effect to spawning salmonids in the Yakima River. However, the actual

use is on 20% of the total 27,000 acres of wine grapes using two applications at 1.5 pounds per acre in June and July. The first scenario results in an estimate of 276,000 lbs applied during spawning season. The second scenario results in an estimate of 8,100 lbs applied and allows for consideration of the application to when spawning actually occurs.

The following sections describe in detail each component of the Washington State Endangered Species Protection Plan for Pesticide Use and how it relates to the EPA risk assessment process, the Services development of Biological Opinions, County Bulletins and surface water monitoring.



• Figure 3. Current and proposed pesticide consultation process.

Phase 1: WSDA/EPA Collaboration

During Phase 1, EPA will provide WSDA with the pesticides and relevant timelines for EPA's ecological risk assessments and/or ESA effects determination package development. This collaboration can occur on an annual, quarterly, or in certain cases on an as-needed basis, provided that EPA provides this information to WSDA with sufficient time for WSDA to develop data packages. WSDA's data packages will include:

- Geographic information system (GIS)-based maps that depict, at the section level, the location of crops where the pesticide is applied in each ESU;
- List of crops grown in each ESU with estimated county-level and/or watershed acreage for each crop;
- Pesticide use summaries including major usage estimates by commodity, and rates, methods, and timing for applications;
- Historical and salmonid-specific surface water monitoring data complete with pesticide-specific maps and tables listing detection locations, concentrations and date of sampling; and,
- GIS-based maps showing designated salmonid habitat.

WSDA will submit its data packages to EPA with sufficient time for EPA to review, validate and incorporate the WSDA data into the effects determinations for salmonids. WSDA will provide any additional follow-up data, validation, or related services requested of EPA upon EPA's receipt of the data.

EPA will make effects determinations either resulting in a "no effect or not likely to adversely affect" determinations indicating the current pesticide label is adequate to protect listed species, or a "may affect: likely to adversely affect" determination requiring EPA to request consultation with the Services on the future use and labeling of the pesticide. If the pesticide receives a "may affect: likely to adversely affect" determination, WSDA will work with NOAA Fisheries in the next phase of the plan.

Phase 2: WSDA/NOAA Fisheries Collaboration

If EPA determines that a pesticide is likely to adversely affect a listed salmonid species, EPA will submit a consultation initiation request to NOAA Fisheries. The request typically includes the effects determination for a specific pesticide. NOAA Fisheries then evaluates the EPA effects determinations and determines whether or not use of the specific pesticide will result in jeopardy to endangered salmonid species or their habitat.

As part of the consultation process, WSDA will provide NOAA Fisheries with the same data package provided to EPA during the effects determination phase. GIS layers developed by WSDA data will assist NOAA in characterizing the regional and local use and distribution of pesticides in Washington State. WSDA is confident that the information it has developed for EPA effects determinations will also be useful also to NOAA Fisheries as they evaluate whether the action results in a jeopardy call or not.

The WSDA data will assist NOAA Fisheries scientists in developing the biological opinions for Washington State by providing site-specific pesticide use data as well as pesticide occurrences in salmonid habitat. WSDA has been collaborating with NOAA Fisheries in this

capacity since 1999 and is confidant that WSDA's data and expertise will be a valuable asset to the process. NOAA Fisheries' response to EPA will then direct the final step in the Consultation process.

Phase3: County Bulletin Development

WSDA recognizes ESA implementation may require restrictions or modifications to pesticide use that may impact the Washington agriculture. If mitigation measures are necessary, WSDA intends to work with stakeholders to ensure any proposed mitigation is practical, protective and minimizes economic hardship.

Supplemental labeling will be developed in cases where EPA and the Services determine that additional restrictions are warranted for the continued use of a particular pesticide. EPA has proposed County Bulletins as a supplemental labeling mechanism to provide pesticide use directions and/or restrictions at the county level to pesticide users. The County Bulletins are referenced on the pesticide label and the applicator is instructed to obtain and follow the bulletin. County Bulletins provide county-level maps depicting the affected areas, a brief description of the endangered species requiring protection, and specific use restrictions in the affected areas. County Bulletins have been used in 24 other states, including California, Florida, and Arizona.

WSDA proposes to produce the Washington County Bulletins in collaboration with EPA. It is WSDA's intent to work with pesticide users, Washington State University research and extension agents, crop consultants, and other interested parties to develop ESA mitigation measures that not only reduce pesticide transport to salmonid habitat but also remain practical for implementation.

WSDA is also aware that in certain cases, mitigation measures may be developed in conjunction with the effects determination package to drive a decision of "Not likely to Adversely Affect or No Effect." In either case, whether the mitigation measures are developed up-front in the initial phase of the process at EPA or at the end of the process, WSDA would like to participate in developing those measures.

Assurances

EPA and the Services have emphasized that state plans for protecting endangered species must be as protective as the federal plan. To provide assurances that WSDA's plan is protective, WSDA proposes to use its salmonid-specific surface water-monitoring program to adaptively manage the County Bulletin program in Washington.

The surface water-monitoring program is designed to augment the EPA pesticide registration process, which evaluates the fate, transport and effects of a given pesticide. In particular, the surface water monitoring allows the EPA risk assessor to compare and contrast the estimated environmental concentrations of a pesticide calculated from models with data collected in actual use areas. Typically, surface water monitoring data is not collected on an ongoing basis near use areas and seldom has been targeted at the habitat of a specific species. Thus, conclusions or assumptions are drawn from data collected in other geographic areas or from monitoring data that may not reflect current use conditions. WSDA's salmonid-specific pesticide monitoring program collects weekly samples in both agricultural and urban watersheds during the pesticide application season (April-October) in designated salmonid habitat. This program will provide timely monitoring data that will track concentrations of pesticides over time in waters utilized by salmonids. For more information about WSDA's surface water monitoring program please see, http://agr.wa.gov/PestFert/EnvResources/SWM/default.htm.

The second goal for the surface water monitoring data is to evaluate pesticide concentrations over time so the efficacy of any mitigation measures can be assessed. Mitigation measures could be specified by either EPA or the Services. The Services have indicated monitoring data will be key for assessing whether or not specified mitigation actually reduces pesticide concentrations in surface water. In lieu of demonstrating the efficacy of mitigation, the Services would need to err on the side of the listed species and thus potentially recommend the ban of certain uses. WSDA considers banning a pesticides use as an option of last resort and believes that by working with affected commodities mitigation measures can be developed that reduce potential exposures to salmonids while maintaining the use of crop protection chemicals vital for agricultural production in Washington State.

Summary

As the state lead agency for regulating the use and distribution of pesticides in Washington State, WSDA has the regulatory authority to formally request EPA to recognize the Washington State Plan as a federally recognized State-Initiated Plan as allowed by EPA's ESPP.

Further, for the past 18 months, WSDA has provided state-specific pesticide use summaries for EPA's ESPP. WSDA has an excellent working relationship with EPA's ESPP and is confidant that formalizing this working relationship will only strengthen that relationship.

WSDA's plan, which includes the following components, will provide both protection for endangered species and a voice for Washington agriculture in a very legal and complex process:

- Reducing uncertainty for pesticide registration decisions in collaboration with EPA.
- Interact with NOAA Fisheries and US Fish and Wildlife to accurately represent the best available data regarding pesticide use in the development of biological opinions.
- Provide a process for Washington stakeholders to have input into the development of mitigation measures required by EPA for protection.

The Washington State plan will contribute to the protection of federally listed salmonid endangered species from pesticide exposures by incorporating federal protection strategies or developing alternative local plans where needed.

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