



SFIREG

State FIFRA Issues Research and Evaluation Group

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Environmental Fate and Effects Division, Office of Pesticide Programs
Office of Chemical Safety and Pollution Prevention
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
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Submitted electronically via Regulations.gov

RE: SFIREG Comments regarding *Draft Herbicide Strategy Framework to Reduce Exposure of Federally Listed Endangered and Threatened Species and Designated Critical Habitats from the Use of Conventional Agricultural Herbicides*, Docket Number EPA-HQ-OPP-2023-0365-0001

Dear Ms. Matuszko;

The State FIFRA Issues Research and Evaluation Group (SFIREG) and its working committees provide a platform for the states and US Environmental Protection Agency (EPA) to resolve challenges for successful implementation of pesticide programs and policies. SFIREG serves as a permanent standing committee of the Association of American Pesticide Control Officials (AAPCO), which works to represent states in the development, implementation, and communication of sound public policies and programs related to the sale, use, transport, and disposal of pesticides. SFIREG and the Joint Working Committee (JWC) are made up of various State Lead Agency (SLA) managers and scientists from around the nation that have responsibilities leading state FIFRA cooperative agreement regulatory programs. SFIREG has been working with EPA in coregulatory processes since 1978.

On behalf of SFIREG and our JWC, we appreciate the opportunity to comment on the topics related to the *Draft Herbicide Strategy Framework to Reduce Exposure of Federally Listed Endangered and Threatened Species and Designated Critical Habitats from the Use of Conventional Agricultural Herbicides*, Docket Number EPA-HQ-OPP-2023-0365-0001. Our comment letter provides perspectives related to the concepts and proposed policies located in the Draft Herbicide Strategy Framework (Herbicide Strategy). State Lead Agencies (SLAs) around the nation have engaged in and support Endangered Species Act (ESA) work as it is related to pesticides and other ESA listed species recovery issues and processes. State governments,

including some SLA pesticide programs, have extensive experience with herbicide management and regulation, and also working through science and recovery strategies with various local, state, and federal partners including the US Fish and Wildlife Service (FWS) and NOAA Fisheries.

After review of the Herbicide Strategy, SFIREG and SLAs have considerable concerns related to the contents and impacts of this Herbicide Strategy. New EPA regulatory policies of this magnitude deserve an extensive review period and opportunities for follow-up with SFIREG and SLAs to provide further input for improvement. SFIREG appreciates the extension of the comment period, however SFIREG is concerned that the Herbicide Strategy combines very general modeling and mitigation development that then will result in an over application of unnecessary regulatory and mitigation for agriculture. SFIREG is also concerned about how SLAs and partners will implement the Herbicide Strategy. The Herbicide Strategy is based on assumptions and modeling that does not contain very clear or traditional risk assessment science from EPA. Conducting general modeling and mitigation assumptions and then extrapolating the conclusions to broad regulations of pesticides for nearly a thousand species across the diverse climatic and agricultural settings around the nation is concerning. SFIREG is concerned about this general risk assessment described in the Herbicide Strategy, and that the broad-based science approaches and the stringent proposals don't match up with what is required under both FIFRA and ESA. The examples of the mitigation strategies for the various cropping do not contain enough viable options for the commodities highlighted and specialty crops and the points systems are not necessarily realistic for the cropping and production systems and locations.

The Herbicide Strategy should be revised to provide additional detailed work related to mitigations and possible regulation, and recovery strategies that would capture the reasonable and likely scenarios of risk and how to recover the species in concert with the Services recovery plans and requirements. SFIREG would recommend and encourage EPA to find more reasonable workable and implementable approaches for this Herbicide Strategy. SFIREG recommends that EPA work to create a process, in addition to this opportunity to comment, for gathering further input from SLAs, SFIREG, land grant university scientists and educators, additional endangered species scientists from state and federal governments, pesticide user groups, and national agricultural organizations. State governments and SLAs have experience around the nation to support efforts to protect water quality and listed endangered and threatened species. These policies will have substantial negative impacts to agriculture, SLAs, and education and training partners throughout the nation.

General Comments

Like the Vulnerable Species Pilot, the Herbicide Strategy was developed and announced with no consultation or co-regulatory work with SLAs. SFIREG serves as an expert group composed of SLAs nationwide and should be involved in the development of such extensive EPA strategies. SFIREG requests that EPA consult with SFIREG and the JWC further in refining these proposals. SFIREG requests that EPA provide funding and support for SFIREG to form an ESA Pesticide Working Group with SLA members from throughout all EPA Regions in the nation. These strategies have significant impacts on SLAs and all the various partners involved in regulating, educating and supporting pesticide applicators and conservation and stewardship

programs at the state and local levels. The varied and diverse agricultural landscapes and cropping systems throughout the nation are far more complex than described in the Herbicide Strategy. As written in the Herbicide Strategy, most farmers and applicators in nation will be unable to garner enough mitigation points to apply herbicides. EPA has mentioned on several occasions that “this is just a draft,” and it’s just “to get the conversation started.” Getting “the conversation started” should have “started” before releasing the Herbicide Strategy and involved conversations with SLAs, Pesticide Safety Education Program (PSEP), land grant universities, local conservation districts and other natural resource scientists to develop a workable plan that supports both listed species, regulation, and agricultural viability. SFIREG recommends forming an SLA SFIREG working group as soon as possible since the final Herbicide Strategy is due by March 30, 2024.

SFIREG further recommends EPA provide an explanation regarding its authority to make label changes without new scientific information supporting the broad-ranging restrictions and mitigations mentioned in the Herbicide Strategy, and how that aligns with the stated FIFRA requirements for registration and registration review. In particular, SFIREG would like to know how EPA has balanced the requirement of FIFRA to ascertain *any unreasonable risk to man or the environment, while taking into account the economic, social, and environmental costs and benefits of the use of any pesticide* with the elements of the Endangered Species Act that essentially bans pesticide use until a farmer garners enough points. A cost benefit analysis focusing on the economic impact on SLAs, landowners, applicators, farming, production losses and other complications should be included in the Herbicide Strategy. The proposals in the Herbicide Strategy appear to exceed FIFRA requirements. SFIREG recommends that EPA consult with their offices of general counsel to determine how the Herbicide Strategy and the Vulnerable Species Pilot are authorized under FIFRA. SFIREG would like a summary of these questions from SLAs.

SFIREG Workgroup Formation and Financial Support

SFIREG recommends that EPA work with SFIREG on updating the Herbicide Strategy and ESA Vulnerable Species Pilot Project documents before these products and policies become final and permanent. SFIREG requests that EPA work with SFIREG to update the SFIREG/EPA cooperative grant agreement to form and fund a national SFIREG workgroup that would involve SFIREG members and representatives nationwide. The expert SFIREG workgroup should be composed of SLA representatives throughout all ten EPA regions; along with full SFIREG, JWC, and invited supportive collaborators from other University, Pesticide Safety Educator, and state and conservation group professionals. EPA funding to SFIREG would support the SLA SFIREG ESA workgroup to implement a science and policy-based process and to also hire contractors to assist in formation, facilitation, and management of the process. SFIREG also suggests EPA should also properly involve and fund EPA Regional Office Pesticide Program staff to be involved in assist SLAs and SFIREG in each region and nationwide.

Recognized conservation or stewardship programs

The Herbicide Strategy has some detail (information below) about how EPA is working to assess the existence of conservation and stewardship programs and how the EPA is working with

USDA Office of Pest Management Policy (OPMP) to survey and assess these programs. SFIREG commends EPA for working with OPMP to gather additional information on state and local programs, and also specialty cropping systems. However, SFIREG suggests that EPA work directly with SLAs regulators and scientists from SFIREG, and state level experts. While SFIREG coordinates closely with USDA OPMP and appreciates the engagement and their support in these processes, USDA OPMP does not represent SLAs, states, and local partners throughout the nation. SFIREG has considerable concerns about how EPA has left SLAs and states out of the science and state level strategy development. USDA OPMP doesn't have a coregulatory role in implementing FIFRA at the state or territory level or working with Tribal Nation pesticide programs and the Tribal Pesticide Program Council (TPPC). SLAs and states have the primary role for implementing FIFRA, and other federal acts such as the Clean Water Act (CWA), and ESA at the state and local levels. SFIREG requests that EPA rewrite the Herbicide Strategy and make these stewardship themes more prominent. The Herbicide Strategy is written like a risk assessment and then has a small amount of information (below) about how a state or local program could be recognized to serve as an implementation method. SFIREG requests that EPA restructure how they've written the herbicide strategy, including all these modeling assumptions and mitigations, and begin involving SFIREG and SLAs in the overall ESA pesticide strategy. The document and some other broader strategy documents should be written in a manner that outlines these pesticide program strategies and implementation with the states. Ultimately it will be the SLAs and state and local partners that will be needed to implement mitigations and develop structured programs within jurisdictions to implement compatible pesticide and ESA programs through recognized conservation or stewardship programs.

Potential Exemption Language for Label: *If the lands are managed with a site-specific runoff and/or erosion plan or pesticide loss mitigation plan implemented according to the recommendations of a recognized conservation program, then the runoff mitigation menu practices are not needed. Recognized conservation or stewardship programs include those established by federal and state agencies; local, county, or municipal government; university extension programs; or independent certification programs. Growers must maintain documentation of their participation in the program, including recommendations, planning, design, implementation, and maintenance of any conservation practices.*

Alternatively, growers may implement a site-specific runoff and/or erosion plan designed in conjunction with a qualified professional, independent of an established program. The professional must hold a certification that includes training or expertise in mitigating runoff and erosion from agricultural fields.

The programs would need to have characteristics that would result in reduction in offsite runoff and erosion transport that would be functionally equivalent to the runoff mitigation menu. These characteristics are currently under development.

USDA OPMP is conducting a survey about participation in runoff and/or erosion mitigation programs to better understand available programs and their attributes. EPA is collaborating with USDA to identify criteria or characteristics of the programs that would meet this exemption and welcomes potential criteria from stakeholders. Feedback

is requested on the types of experts and appropriate criteria that could be relied upon to ensure that this is an effective practice.

The EPA recognizes that an evidence-based conservation plan aimed to reduce runoff/erosion from a grower's lands and developed by an experienced conservation program specialist will likely result in effective implementation of mitigation/conservation practices for that land. EPA's current thinking is that if a grower is following recommendations from a recognized expert to reduce runoff/erosion, then mitigation practices identified on the menu would not need to be followed.

EPA with the help of USDA has been collecting information on such programs that could be considered "functionally equivalent" to the identified mitigation practices. These include federal, state, municipal, and local government programs, a state university extension program, National Alliance of Independent Crop Consultants, or certified agricultural conservation specialists. Some example programs that might be applicable include the following:

- **Federal:** National Resource Conservation Service (NRCS) programs, erosion control plans required for Crop Insurance;*
- **State:** California erosion control plans implanted through Water Boards; Colorado voluntary soil health program, Michigan Agricultural Environmental Assurance Program; and*
- **Local/municipal:** soil and water health programs run by Conservation districts, watershed districts.*

Conservation Specialist or Certified Expert Exemptions

The Herbicide Strategy states that if the landowner follows recommendations from a conservation specialist or certified expert, they may be exempt from needing to follow the mitigation menu. However, conservation specialist or certified expert is not defined, other than to reference conservation programs such as USDA National Resource Conservation Service (NRCS) program. The USDA OPMP survey information listed in the Herbicide Strategy is incomplete as it relates to the potential conservation programs nationwide. EPA should communicate and work with SLA's, conservation experts, and other partners to identify conservation programs that were available throughout the states on a federal, state, and local level, and if these existing programs were acceptable for the exemption. EPA should restructure the Herbicide Strategy to highlight these acceptable and preferred concepts and plans that already exist around the country, including voluntary stewardship plans. SLAs and states have the authority and option to determine what is acceptable in their respective states. EPA has identified mitigations to reduce the likelihood of runoff/erosion and spray drift but has not provided specific criteria or design information that would allow landowners to implement these mitigations. The mitigation names generally match up with names of conservation practice standards published by USDA NRCS. However, these practice standards often have varying design criteria depending on the intended purpose. Without guidance on design criteria,

landowners may use resources to install or implement management practices that don't confer the intended protective function.

EPA should work with SFIREG to determine the minimum requirements needed in a conservation program using consistent terminology and established standards and determine the minimum requirements to be considered a certified expert including the entity that does certification. SLAs staffing varies nationwide, and EPA should work with SFIREG to determine the budgetary impacts to SLAs of these new requirements. Without SLA and SFIREG involvement, under this current Herbicide Strategy, EPA is setting up a process that would likely ultimately fail nationwide without immediate SFIREG and SLA involvement to restructure the proposals of this strategy.

Herbicide Strategy Modeling

SFIREG is concerned about the modeling and assumptions utilized resulting in the outcomes pursued in the Herbicide Strategy. It seems that much of the information about the modeling is missing from the Herbicide Strategy. Even though the Herbicide Strategy isn't a traditional chemical by chemical risk assessment; it is difficult to follow the strategy development when risk assessment modeling with extensive assumptions are utilized while leaving out the details. SFIREG is concerned about how the document is structured where EPA appears to be conducting risk assessments based on exposure modeling (AgDrift Modeling and related assessments), population impact assessment (including Magnitude of Difference (MoD) analysis) with a high level of safety built in without adequate reference to scientific support and prior use of this approach. It would be helpful for SFIREG and other stakeholders to be informed about such background information to justify the content of the Herbicide Strategy. SFIREG has concerns about the modeling and lack of details where EPA uses model results and assessments for a small number of crop factors and then extrapolates out to all 900 species. SFIREG has concerns about the projection of substantial error based on a narrowly focused model assessment, where two types of vigor and emergence tests are utilized for 10 species groups, and then expanding requirements out to all 900 species nationwide without giving sufficient weight to factors related to the species, location, climate, crops, crop rotation, pesticide use, toxicity and location to ESA listed species. SFIREG requests that EPA include more information about the modeling, the assumptions and boundary conditions. SFIREG requests that EPA reconsider extrapolating this modeling and the mitigation restrictions out to nearly 1,000 ESA listed species nationwide throughout the diverse agriculture systems throughout the nation. SFIREG requests that EPA evaluate and provides additional and/or seeks additional expert input and support of the overall assessment. SFIREG has concerns and requests that EPA provide further explanation about how the modeling system is layered with the near-field area, distances for no spray setbacks, the mitigation systems and choices for mitigation, and the points systems. Many of these systems may be very overly protective and not necessary. There will be a lot of confusion and questions about how farms and farm fields will be either within 1,000 feet or outside of 1,000 feet with respect to the runoff exposure and what all of that really means for the landowner and applicator. Landowners, farmers, and applicators should be able to work with their conservation expert to determine how their applications and field will install adequate

mitigations. SFIREG recommends that EPA considers expert input received through comments and seeks additional expert input to reevaluate all of these conclusions and work to refine these concepts. SFIREG requests EPA establish a higher-level science review, including establishing a Science Advisory Panel review and evaluation of the modeling and approaches in the Herbicide Strategy and other ESA pesticide strategies.

SFIREG suggests that EPA clarify how these models work, describe all the assumptions, and provide information on how the EPA uses the standard protocols for seedling vigor and seedling emergence in this ESA Herbicide Strategy and then extrapolates those values to be protective for all endangered plant species. SFIREG assumes that EPA is utilizing these procedures and requests that this information be explained in more detail.

- Seedling Emergence and Seedling Growth
 - <https://www.regulations.gov/document/EPA-HQ-OPPT-2009-0154-0023>
- Vegetative Vigor
 - <https://www.regulations.gov/document/EPA-HQ-OPPT-2009-0154-0024>

These studies have been done as a part of registration processes and are submitted to EPA. There is a lot of data in the system that is potentially not being utilized, although SFIREG is unsure on these topics. Also, there was discussion of the species that are used to evaluate plant toxicity, looking up the plant study requirements for pesticide registration pesticide registration (<https://www.epa.gov/test-guidelines-pesticides-and-toxic-substances/series-850-ecological-effects-test-guidelines>). Part D includes the guidelines for seedling emergence and growth, and vegetative vigor (see list below). The guideline documents include information related to species to be included. As an example, copied some text from the Seedling Emergence and Growth guideline below.

Group D – Terrestrial and Aquatic Plants, Cyanobacteria, and Terrestrial Soil Core Microcosm

[850.4000 - Background and Special Considerations-Tests with Terrestrial and Aquatic Plants, Cyanobacteria, and Terrestrial Soil-Core Microcosms \(June 2012\)](#)

[850.4100 - Seedling Emergence and Seedling Growth \(June 2012\)](#)

[850.4150 - Vegetative Vigor \(June 2012\)](#)

[850.4230 - Early Seedling Growth Toxicity Test \(June 2012\)](#)

[850.4300 - Terrestrial Plants Field Study \(June 2012\)](#)

[850.4400 - Aquatic Plant Toxicity Test Using Lemna spp. \(June 2012\)](#)

[850.4450 - Aquatic Plants Field Study \(June 2012\)](#)

[850.4500 - Algal Toxicity \(June 2012\)](#)

[850.4550 - Cyanobacteria \(Anabaena flos-aquae\) Toxicity \(June 2012\)](#)

[850.4600 - Rhizobium-Legume Toxicity \(June 2012\)](#)

[850.4800 - Plant Uptake and Translocation Test \(June 2012\)](#)

[850.4900 - Terrestrial Soil-Core Microcosm Test \(June 2012\)](#)

Seedling emergence and growth: page 6-15 ([850.4100 - Seedling Emergence and Seedling Growth \(June 2012\)](#))

(3) Test organism—

(i) Species. The test is performed using crop and/or non-crop terrestrial plant species selected from a cross-section of the terrestrial plant species that have been historically used for this type of testing. A listing of crop and non-crop plant taxa that have been used in toxicity tests can be found in Table 1 and Table 2, respectively, of this guideline.

Endangered or threatened species as determined by the Endangered Species Act of 1973 (Public Law 93-205)

may not be used without permission from the Fish and Wildlife Service. Seeds of plant species

with low or variable germination potential should be avoided for this study.

(A) Number of species tested. For testing industrial chemicals, the specific plant(s) used are selected on a case-by-case basis. For pesticide testing, at a minimum ten plant species from the plant groups and families identified in paragraphs (e)(3)(i)(A)(1) through (e)(3)(i)(A)(3) of this guideline are tested:

(1) Dicotyledoneae: Six species of at least four families, one species of which is soybean (*Glycine max*).

(2) Monocotyledoneae: Four species of at least two families, one species of which is corn (*Zea mays*).

(3) At least one root crop species (either a monocot such as onion or dicot such as carrot, table beet, or sugar beet).

(B) Crop species. A representative list of crop species that are acceptable test species are listed in Table 1.

(C) Non-crop species. When selecting plant species other than the three crop species (soybean, corn, and a root crop (onion, carrot, table beet or sugar beet)) which are tested at a minimum, the use of sensitive non-crop

plant species is recommended. Table 2 provides a list of recommended non-crop species. The information provided for each species is a compilation from several sources. References are provided in brackets to each entry. The references appearing in brackets in Table 2 appear in paragraph (k) of this guideline. The table is based on a table from the reference in paragraph (j)(5) of this guideline

The EPA should allow for more time and expert input to provide a more complete and understandable strategy. On many levels this strategy misses the mark and is difficult for landowners, applicators, registrants, commodity groups, SLAs, PSEPs and everyone involved with supporting agriculture to understand. Much of the Herbicide Strategy, structure and the broad application of the mitigations and scoring systems over a very broad and vast aerial extent of agricultural landscapes, will likely do little to improve conditions for species and only negatively impact agricultural production, while making the SLA regulatory and PSEP responsibilities difficult to implement and overly burdensome.

Sprayer Mitigation

SFIREG has concerns about the language and information associated with Table 6-1 and the statements related droplet size and spray methods and distances. There is an emphasis on spray drift reduction, but the Herbicide Strategy doesn't include information about typical and advanced technology systems for spray nozzles, droplet size and overall spray drift reduction. The Herbicide Strategy mentions the Spray Drift Task Force in places also, but the statements are fairly minimal and there isn't much detail. Some of these items are listed around Table 6-1, but then Table 6-2 only mentions Hood Sprayers as spray mitigation. SFRIEG is concerned that spray drift mitigation options for Table 6-2 for ground and aerial spray methods with spray technology, doesn't include the details of the task force and industry spray mitigation science. Why just hooded sprayers? The Spray Drift Task Force is barely mentioned in a footnote but there is no reliance on all the nozzle and spray drift reduction science and data. SFIREG recommends that EPA utilize all of the registration, research and industry data for these mitigation options. SFIREG also recommends that EPA utilize modern sprayer technology systems and equipment, and all the fate and transport data on every pesticide, which is also not mentioned or utilized.

Utilizing References to Impact Citation Conclusions

SFIREG has concerns related to Herbicide Strategy concepts that minimize certain mitigations without adequate science or citations where a variety of citations are utilized arbitrarily to either support or minimize studies and recommendations from studies. Following the statements and citations in this document takes considerable review and analysis. One example is located around Page 24 and 25, section 6.3.1, where EPA is discussing hedgerows and windbreaks, and the Washington State Department of Agriculture (WSDA) study, Hancock et al., 2019 (conducted in 2015 and published in the Journal of Environmental Quality (JEQ)). The EPA

language on Page 25 discusses how the EPA authors scale back on the effectiveness of these Washington State hedgerows based on information from a citation called FOCUS (2007). Once a reader goes to FOCUS (2007) to review the potential rationale, it becomes difficult to figure out how the EPA justified the reductions of the effectiveness concluded in Hancock et al., 2019. So, the effectiveness of hedgerows and the use of precision helicopter spraying described in the WSDA study is therefore reduced by some arbitrary citation(s) and so the allotted points are impacted. The further resulting impact is that the EPA is adding arbitrary reasoning for greater sized buffers or greater no spray distances based on mixing citations that don't go together or shouldn't be applied for a common scientific use to support of furthering buffer distance restrictions. SFIREG and WSDA appreciate the inclusion of the Hancock et al., 2019 study, but then the effectiveness is downgraded for some unknown reason. SFIREG doesn't agree with the use of FOCUS 2007 or USEPA 2022b citations to make that conclusion. The WSDA study showed over 90% effectiveness over numerous blueberry farms in Northwest Washington with malathion helicopter application. The results were far more effective than the 40 or 50% effectiveness referred to by EPA in the Herbicide Strategy. The study was also for insecticide and not herbicides. The EPA also made this same downgrade of the WSDA study in the Appendix update (USEPA 2022b), the vulnerable species white paper, and now this Herbicide Strategy. EPA should, without exception, use the best science available and not tailor research to support more restrictive proposals. Any kind of filter strip, riparian buffer, hedgerow, vegetative plantings, constructed wetland, or other physical practices will take time to establish to a level of maturity where the full aspects of the mitigation practice will be fulfilled. Downgrading hedgerows or some other practice arbitrarily should be avoided. EPA strategies will have to have some factors built in for implementation and mitigation development, establishment time frames, operations and maintenance factors, climatic issues, droughts, and effectiveness evaluations.

Phase in ESA Implementation over several years

Implementing ESA for hundreds of pesticides and 900 or more ESA listed species will dramatically transform farming, the agricultural landscape, SLAs and all the partners involved across the nation. This is a tremendously large undertaking that will impact hundreds of crops, millions of acres, the entire national agricultural system, and all of the federal, state, and local support systems. SFIREG recommends that EPA look at developing an acceptable phased in approach. A phased in process for ESA and FIFRA should be consistent with any other process for the CWA nonpoint source programs, other national USDA NRCS and Farm Services Agency (FSA) cost share and USDA Climate Smart Agriculture programs. Many of these programs to support agriculture in meeting some larger environmental goals are also well funded or the funding and support is emerging and building while being supported from federal agencies and the U.S. Congress. The EPA has historically phased in regulations with large pesticide issues such as the Worker Protection Standards, and the eight-year phase out of soil fumigation with methyl bromide under the treaty for the Montreal Protocol on Substances that Deplete the Ozone Layer.

Cropping System Scenarios

SFIREG has concerns about all of the cropping system scenario examples as those cropping systems on the ground will likely not be able to match the mitigation items listed with their farming and rotational systems and also meet the required points. Many of the mitigations listed are also potentially not utilized for that specific farming system. Having just a few mitigations listed per cropping scenario is limiting and will not be able to be utilized by all farms that might have that cropping system and the complex rotations for that land area. The mitigation and points system will also not be equal for each pesticide active ingredient, causing unequal and complex choices for the farmer, landowner, and applicator. There are also concerns and questions about why the number of nine points is chosen for some scenarios and a lesser number of points are required for other scenarios. SFIREG is concerned about the support and transparency for these systems and allocation of points.

In many cases, the commercial applicator may opt to not accept application contracts and jobs because of the complex nature of the mitigations and points, or if the systems are not in place or can't be validated prior to spraying. This may result in the loss of highly trained applicators and the applications actually being conducted by applicators with less experience and training. SFIREG suggests restructuring and revisions to the cropping and mitigation systems. SFIREG suggests involving SFIREG, SLAs, and other partners to develop workable cropping scenarios and mitigation, and points systems. EPA also does not include information about any record-keeping requirements that will be needed to ensure that growers and applicators choose appropriate mitigations for their specific fields and crops, the nearby environmental conditions, and that points were assigned and calculated correctly. If the label requires mitigation points, SLAs will be tasked with determining if the label was followed during any inspection or investigation actions. Without significant input of training, education, and outreach from EPA, this will present a substantial burden on SLAs, and without record-keeping requirements, it will be impossible for SLAs to enforce this part of the label. The Herbicide Strategy does not include any system for such implementation training that would be crucial for growers, applicators, SLAs and other stakeholders including extension agents and conservation experts.

The cropping Scenario 10: Apple orchard in Washington sloped land, sandy soils, drip irrigation offers up mitigation and points systems that aren't accurate of tree fruit systems in Washington State. The below scenario has items listed that should have further review and input for applicability and accuracy including Western Agriculture, vegetative filter strips, and contouring farming. The Western Agriculture category should be rewritten so it makes sense for Washington State, and other areas of the west. Western Agriculture could be considered any agricultural area in the seventeen or so western states. If the climatic conditions are conducive to minimizing ESA impacts, why not give more points for the Western Agriculture category. Washington State tree fruit orchards aren't necessarily planted on a contour. Tree fruit and contour farming are not something that happens together typically. Tree fruit systems have ground cover and cover crops usually, and they're all on drip or micro sprinklers. The irrigation water mitigation should be more prominent and be allocated more than one point. Other mitigation measures like Pesticide Management (NRCS 595 Standard) should be utilized. Pesticide Management (595), including Integrated Pest Management (IPM) is a prominent practice in conventional tree fruit systems.

This scenario represents apple orchard production in the intermountain region of Eastern Washington. Although this is a very low rainfall area, vegetation is maintained between the tree rows for soil conservation. This scenario is for sandy loam soil, but there are multiple non-sandy soils used for tree fruit production in this area. Fields in this area are sloped and it is assumed that the orchards are planted with the contour. As herbicides in apple orchards are applied as banded applications, rate reductions for certain herbicides may be achieved in these systems.

Practice	Points
Sandy loam soil	1
Western agriculture	1
Irrigation management	1
Adjacent to field vegetative filter strip	2
Contour farming with strips	3
Multiple categories	1
Total points	9

There are many examples of agricultural soil erosion protection, watershed protection and ESA protection programs around the nation that should be looked at as workable examples. Modeling and adaptive farm planning with diverse USDA Field Office Technical Guide (FOTG) practice standards can be combined with Best Management Practice (BMP) and management decisions with farmer input for a holistic systems approach for water quality and species protection. Many states diverse protection programs whether it’s the Great Lakes areas, west coast, Midwest, Southeast, and the Chesapeake Bay Program states have implemented these types of approaches. Here are some other concepts that BMP programs in these regions and others have followed.

- States and SLAs, and regional systems for ESA listed species should be allowed to adapt what EPA is proposing, consult with their experts, FWS, NOAA Fisheries, and their State and Regional teams and adapt these EPA strategies, coupled with Recovery Plans and be allowed to adapt these systems to have them work. There is FIFRA and there is ESA and CWA, and these proposals go way beyond FIFRA. We should tell EPA our opinions on this. These are the State’s issues to work to protect species while working with agriculture in that nexus of FIFRA, ESA, and CWA.
- As voluntary implementation occurs, there should be a mechanism to direct BMP implementation adjustments in watersheds with landowners and with support from CDs who can assist with BMP O&M assessments, and follow-up effectiveness monitoring. A continuing process of evaluation and implementation could occur.
- A combination of component practices can be determined by the farmer and local experts to be the most effective in agricultural activities.
- Buffers and associated BMPs should be decided locally to address site-specific issues.
- BMP package decisions are based on site-specific data gathered and analyzed by the landowner, farmer, and a trained and experienced resource specialist that may be assisting.

- Because of all these unique factors and decisions, the distinctive combination of site characteristics and natural resource objectives will result in BMP and component practice(s) implementation that can be applied uniquely by each farm and within each watershed without having to meet a prescriptive approach.
- A framework should be developed that capitalizes on the foundations of the Practice Standards contained in the NRCS FOTG and FSA guides. Practices are voluntary and not everyone farms based on NRCS Practice Standards and the FOTG, so the process needs to be adaptive.
- BMPs are modified over time by NRCS, CDs, and farmers as there are making improvement in technology through research and demonstration, change in crops and cropping systems, change in soil health knowledge and conditions, change in commodity pricing and economic conditions, change in social conditions, cost share and subsidy programs, and change in resource concerns.
- This kind of system is intended to be adaptive and can change through effectiveness evaluations through local level assessments with support from state and federal agency partners.
- There are also so many other issues at play and every farm and location is different. Localized producer decisions are the key to success.
- All of the USDA NRCS FOTG Practice Standards: <https://www.nrcs.usda.gov/resources/guides-and-instructions/field-office-technical-guides> should be options for landowners, and for Washington State those are found at: <https://efotg.sc.egov.usda.gov/#/details>, and should be cited by number and name in the guidance.
 - As an example, the Washington State FOTG and all the practices and technical notes listed below can be found here: [Field Office Technical Guide \(usda.gov\)](#)
 - An Index of important Conservation Practice Standards & Support Documents that could be utilized with ESA and Pesticide mitigation in mind are the following:
 - Agrichemical Handling Facility (309)
 - Alley Cropping (311)
 - Amending Soil Properties with Gypsum Products (333)
 - Anionic Polyacrylamide (PAM) Application (450)
 - Aquaculture Pond (397)
 - Brush Management (314)
 - Conservation Cover (327)
 - Conservation Crop Rotation (328)
 - Constructed Wetland (656)
 - Contour Buffer Strips (332)
 - Contour Farming (330)
 - Contour Orchard and Other Perennial Crops (331)
 - Cover Crop (340)
 - Critical Area Planting (342)
 - Cross Wind Ridges (588)
 - Cross Wind Trap Strips (589)
 - Dam (402)

- Dam, Diversion (348)
- Deep Tillage (324)
- Dike or Levee (356)
- Diversion (362)
- Drainage Ditch Covering (775)
- Drainage Water Management (554)
- Early Successional Habitat Development/Management (647)
- Fence (382)
- Field Border (386)
- Filter Strip (393)
- Forest Farming (379)
- Forest Stand Improvement (666)
- Grade Stabilization Structure (410)
- Grassed Waterway (412)
- Groundwater Testing (355)
- Hedgerow Planting (422)
- Herbaceous Weed Treatment (315)
- Herbaceous Wind Barriers (603)
- High Tunnel System (325)
- Hillside Ditch (423)
- Irrigation and Drainage Tailwater Recovery (447)
- Irrigation Canal or Lateral (320)
- Irrigation Ditch Lining (428)
- Irrigation Field Ditch (388)
- Irrigation Land Leveling (464)
- Irrigation Pipeline (430)
- Irrigation Reservoir (436)
- Irrigation System, Microirrigation (441)
- Irrigation System, Surface and Subsurface (443)
- Irrigation Water Management (449)
- Lined Waterway or Outlet (468)
- Mulching (484)
- On-Farm Secondary Containment Facility (319)
- Pasture and Hay Planting (512)
- Pest Management Conservation System (595)
- Pond (378)
- Pond Sealing or Lining – Geomembrane or Geosynthetic Clay Liner (521)
- Pond Sealing or Lining, Compacted Soil Treatment (520)
- Pond Sealing or Lining, Concrete (522)
- Precision Land Forming and Smoothing (462)
- Range Planting (550)
- Residue and Tillage Management, No-Till (329)
- Residue and Tillage Management, Reduced Till (345)
- Restoration of Rare or Declining Natural Communities (643)
- Riparian Forest Buffer (391)

- Riparian Herbaceous Cover (390)
 - Saturated Buffer (604)
 - Sediment Basin (350)
 - Shallow Water Development and Management (646)
 - Silvopasture (381)
 - Sprinkler System (442)
 - Stormwater Runoff Control (570)
 - Stream Habitat Improvement and Management (395)
 - Streambank and Shoreline Protection (580)
 - Stripcropping (585)
 - Structure for Water Control (587)
 - Structures for Wildlife (649)
 - Subsurface Drain (606)
 - Surface Drain, Field Ditch (607)
 - Surface Drain, Main or Lateral (608)
 - Surface Roughening (609)
 - Terrace (600)
 - Tree/Shrub Establishment (612)
 - Tree/Shrub Pruning (660)
 - Tree/Shrub Site Preparation (490)
 - Underground Outlet (620)
 - Upland Wildlife Habitat Management (645)
 - Vegetated Treatment Area (635)
 - Vegetative Barrier (601)
 - Vertical Drain (630)
 - Water and Sediment Control Basin (638)
 - Water Harvesting Catchment (636)
 - Waterspreading (640)
 - Wetland Creation (658)
 - Wetland Enhancement (659)
 - Wetland Restoration (657)
 - Wetland Wildlife Habitat Management (644)
 - Wildlife Habitat Planting (420)
 - Windbreak/Shelterbelt Establishment and Renovation (380)
 - Windbreak/Shelterbelt Renovation (650)
 - Woody Residue Treatment (384)
- Various FOTG products should document FOTG Practice Standards that are a part of the tools available at conservation districts to support farm approaches to protect streams and ESA habitat and species.
 - There are also so many other issues at play and every farm and location is different.
 - The farm planning decisions need to be localized with the producers and the technical provider that is assisting with the farm planning.
 - We recommend including flexibility of the mitigation systems based on each ESA species recovery needs, habitat protection needs, watershed, pesticides to be management and mitigated, type of farm and crops, crop rotation, BEs and BiOps, EPA OPP pesticide

labeling strategies to meet RPMs and RPAs, watershed modeling, dynamics of the lands and farms involved, and the overall economic, social, and cultural factors of implementing voluntary BMP programs with landowners.

- EPA should look at all the diverse FOTG Practice Standards and develop checklists and credit systems for BLT and pesticide labels.

USDA Natural Resources Conservation Service (NRCS) Practice Standards, Farm Services Agency (FSA) Practices, and Mitigation Measures

SFIREG recommends that EPA make reference to the land management mitigation practices develop by USDA NRCS and USDA Farm Services Agency (ARS) advisable and voluntary options for mitigation and to be implemented within a recognized state, federal or local Pesticide Stewardship Program and not make them label mandated mitigations. The EPA mentions this concept briefly in the white paper, but the complete concept isn't fully acknowledged or explained by EPA in the document. EPA also references MAgPIE, which is a useful mitigation strategy originating from SETAC Europe workshops and documents. The SETAC Europe effort is contained in the science document, *Mitigating the Risks of Plant Protection Products in the Environment: MAgPIE* (May, 2017) <https://www.setac.org/resource/magpie-epub-zip.html>.

SFIREG also recommends that EPA reference the actual numbering system for the NRCS type mitigation measures that are suggested and listed in the workplan. NRCS is the federal agency that defines the practice standards in the NRCS FOTG [Field Office Technical Guide | NRCS - USDA](#). Some of the mitigation measures listed by EPA are also from the USDA FSA Conservation Reserve Program (CRP) Practice Library <https://www.fsa.usda.gov/programs-and-services/conservation-programs/crp-practices-library/index>. Each state has the opportunity to amend practice standards typically through their state conservation commission and state NRCS and FSA offices, and state agencies and SLAs are active throughout the Nation in these activities. Also, Conservation Districts and Land Grant Universities participate in assessing and revising Practice Standard and CRP Practices. Updates to state level practice standards and priorities for NRCS and FSA cost share programs are made to each NRCS state conservationist through the NRCS State Technical Advisory Committee (STAC) and to FSA for each state. In this EPA white paper and also in the previous ESA workplan draft appendix, EPA is utilizing land management mitigations that are really NRCS and FSA practice standards from the FOTG and CRP guides, and EPA is also abbreviating or changing the intent and language of those standards to fit the workplan. Abbreviated and altered definitions of NRCS and FSA practice standards should not be used in EPA regulatory programs. There are concerns this will jeopardize the processes of NRCS and state programs to properly define and implement conservation practice standards, and the trust and work that it takes to gain landowner interest in complex voluntary cost share funding programs.

The FOTG and FSA guides contain technical information for the state and field offices to utilize. The FOTG and FSA sections contain the necessary information and references for state and field offices technical service providers and planners to conduct their work with landowners. For every practice standard the NRCS and FSA has detailed sections including general resource references, manuals, natural and cultural resource information, resource concerns and planning criteria, supporting documents, and conservation effects. These practice standards are

foundational aspects of the FOTG and FSA guides and are specifically applied under cost share programs to support agriculture by managing agricultural practices and pesticide use for the conservation of soil, water, air, and related plant and animal resources and can additionally support the protection of endangered species.

There are many practice standards that are missing from this white paper and also the previously published EPA ESA appendix. In the white paper, only a few practices or mitigation options are listed. We recommend that EPA incorporate the opportunity for decision making at the farm level to include all of the NRCS Practice Standards and FSA CRP Practices besides Contour Farming, Cover Crop, Vegetative Filter Strip, Mulching, Residue and Tillage management, Terraces, Grassed Waterways, Riparian Buffers, Constructed Wetlands, and Sediment Control Basins. The small number of practices listed in the white paper will not be viable or a complete list of options for all the types of dryland and irrigated farms through the many climatic zones of the nation. The simplicity of the listed items in Table 4 related to runoff/erosion measures is not a workable option or adequate decision-making model for the millions of acres of diverse agriculture and landscapes across all states and the nation.

Among other omissions from the NRCS and FSA lists, the EPA Table 4 does not include two important options that are currently utilized throughout the nation: Pesticide Management Conservation System (595) and Irrigation Water Management (449). When working with landowners in dryland and irrigated land settings, those are two of the more important practices that are often discussed and implemented by landowners. Those two in particular are extensively utilized when NRCS does cost share work with growers related to pesticides and also for irrigated agriculture. Some states also have emphasized the use of Polyacrylamide (PAM) as an approved FOTG practice, which is the PAM (450) standard. The Anionic Polyacrylamide (PAM) (450) standard is commonly utilized in irrigated agriculture and can be utilized in a compatible package with Pesticide Management Conservation System (595), Irrigation Water Management (449), and other practices that involved vegetation, filter strips, and settling basins. Also, there are a variety of FSA Cropping Practices that are utilized such as CP-8A Grass Waterway, CP-15A Contour Grass Strips, CP-21 Filter Strip, CP-22 Riparian Buffers, CP-25 Rare and Declining Habitat, CP-42 Pollinator Habitat, CP-43 Prairie Strips, and many others are all important practices to list and utilize.

Landowners, growers, and applicators need to be able to work with NRCS and conservation districts to implement these practices and gain technical support and cost share opportunities. When the resource concern is pesticide related, NRCS and conservation districts typically work with landowners to focus on Pesticide Management Conservation System (595) initially and then add other complementary FOTG practices based on the resource needs and the planning process per farm. The focus of the work is based on the specific resource needs for each farm and their unique issues. NRCS, FSA and conservation districts are responsible for working with landowners and farmers on implementing voluntary cost shareable practices from the NRCS FOTG and FSA guides, and the processes to implement these BMPs can take a series of years to implement and maintain. The rules on designing, engineering, installing, and paying for these practices are all very complex. These efforts have consistently been shown to benefit soil and water resources and documented for use to support species recovery.

We encourage the EPA to take additional time and form a SFIREG group to assist EPA. SFIREG encourages EPA seek input from local and regional agricultural and watershed planning groups, state conservation commissions, conservation districts, state lead agencies for pesticide regulations and their partners, agricultural research and university extension experts, and ARS experts. This will provide additional input to assess national and local resource management systems and result in a more adaptive approach that will protect both ESA listed species and agriculture. EPA should actively collaborate with the agricultural sectors in each pilot species area, with the many state agencies involved in resource management, including pesticide SLAs, and state Conservation Commissions and Conservation Districts. This collaboration will allow for a scientifically supported shift from the mitigations being proposed to a more variable and adaptable system that will be more economically and socially acceptable and benefit sustainability in agriculture and the recovery of ESA listed species. Farm practices and mitigation decisions are based on numerous factors and those often-voluntary practices and strategies are affected by many variables: the farm operation, farmer preference, crops, crop rotation, soils, slope, topography, weather, rainfall, irrigation, on-farm conditions, soil health, equipment available, pest pressure, nutrient needs, crop protection and input decisions, BMPs or NRCS FOTG Practice Standards.

State and Local Conservation Programs

SFIREG recommends EPA work directly with SLAs and SFIREG to assess the state and local programs around the nation that provide leadership, technical support, education, and cost share funding for nonpoint source pollution abatement. These programs exist at the state and local levels. There are abundant successful programs throughout the nation and SFIREG requests that EPA work with SLAs and SFIREG to identify these programs. The following is an example list.

- The [Minnesota Agricultural Water Quality Certification Program \(MAWQP\)](#) is a successful to the list. MAWQCP is a voluntary program for farmers to take the lead in implementing conservation practices that protect Minnesota's water. The program has certified more than 1,250 producers with almost one million acres: <https://www.mda.state.mn.us/environment-sustainability/minnesota-agricultural-water-quality-certification-program>
- Washington State VSP Program, which is statewide program: <https://www.scc.wa.gov/vsp>
- Oregon Pesticide Stewardship Program: <https://www.oregon.gov/oda/programs/pesticides/water/pages/pesticidestewardship.aspx>
- Michigan's Agriculture Environmental Assurance Program (MAEAP), which is a statewide programs: <https://www.michigan.gov/mdard/environment/maeap>
- Florida Department of Agriculture and Consumer Services, Agricultural Best Management Programs: <https://www.fdacs.gov/Divisions-offices/Agricultural-Water-Policy>

Every state in the nation has a Clean Water Act Nonpoint Source Plan and well organized and delegated authorities with various state and local programs for agricultural BMP implementation.

Every state has a process for BMP implementation and also they have BMP guides and manuals for the implementation of agricultural BMPs that address water quality impairments and also pertain to ESA recovery support programs. Some examples are the Minnesota Ag BMP Manual (<https://www.mda.state.mn.us/agricultural-bmp-handbook-minnesota>), Washington State Clean Water Guidance for Agriculture (<https://ecology.wa.gov/About-us/Accountability-transparency/Partnerships-committees/Voluntary-Clean-Water-Guidance-for-Agriculture-Adv>), and the Florida Department of Agriculture and Consumer Services, Agricultural Best Management Programs and Guides (<https://www.fdacs.gov/Divisions-offices/Agricultural-Water-Policy>). SFIREG recommends that EPA work with SLAs and SFIREG to inventory and catalog all of these programs nationwide for their successful approaches and the potential future partnership opportunities to assist agriculture and SLAs with state and local implementation.

Improving Bulletin Live! Two (BLT), and Challenges expected with interpreting and enforcing proposed BLT bulletins for pesticide applicators and state lead agencies.

State lead agencies anticipate several challenges in enforcing newly proposed bulletin requirements because of the level of specialized knowledge required by applicators and state lead agency staff to interpret appropriate implementation of pick list measures. While information contained within the Draft Technical Support for Runoff, Erosion, and Spray Drift Mitigation Practices to Protect Non-Target Plants and Wildlife is useful in helping better understand how the EPA envisions these practices being implemented, technical guidance falls short of defining prescriptive design elements for each pick list practice. To follow the proposed bulletins, applicators will need to know key pieces of information about the land (water management practices) and agronomic practices (e.g., contour farming, cover crops, reduced tillage) utilized. Many applicators may not have such specialized knowledge, particularly if they are not the landowner or operator of the land.

Farmland in many parts of the United States is often owned and operated by different parties and inputs, like pesticide application, can be provided by a third, commercial, entity. In these scenarios, land managers and pesticide applicators may have no control over implementing large-scale changes to the land. The EPA should consider situations in which farmland is owned and operated by different parties. By requiring the use of land management practices through a bulletin's pick list, concern exists that the EPA is making an applicator responsible for the implementation of land management practices they do not control. The EPA should make it abundantly clear, through training and outreach, who is to be held responsible for violations of pick list land management practices.

The new label language will require applicators to visit and navigate multiple websites such as online weather services (to obtain information on the likelihood of future storms resulting in runoff), and Bulletin Live! Two (BLT) website (to identify regional ESA bulletin restrictions). Information obtained from these websites would then need to be interpreted and applied to the intended application site to determine if label requirements were met. Issues with enforcement of BLT bulletins containing seasonal mitigation are also anticipated by state lead regulators. Currently, the BLT website does not allow users to view bulletins retroactively, making reference to past mitigation requirements difficult and further necessitating the need for a

recordkeeping requirement. Because these processes may be new to many applicators and state lead regulators, strong training and outreach by the EPA will be required. Additional funding through cooperative agreements would be beneficial for state lead agencies to assist the EPA with education and outreach for stakeholders and will be needed to educate and train SLA inspectors.

There is general widespread agreement from SLAs and SFIREG that specific label language referring to BLT is the correct and proper mechanism to notify applicators of changes with products for the protection of Endangered Species. Users and the regulators will need additional training on how to utilize BLT, especially as new notices emerge. There are concerns about the latest utilization of species ranges, boundaries, and spatial coverages used in BLT and the applicability of these areas to pesticide applicator use locations. Understanding BLT can be difficult; some of the spatial coverages will be tricky to understand and not all applicators and users are able to navigate effectively within an online computer application and platform. Improving the mapping tools and the functionality of BLT could be helpful. We suggest platform options be added to allow searches by active ingredient, product name, state, county, watershed number, geospatial coordinates, and any other technological search tool that could be helpful. As it currently works, BLT is an inadequate geospatial platform and should be improved. We also recommend an application that could be utilized on mobile devices. Growers, applicators, registrants, and regulators would all benefit from an improved system and applications that could be accessed on mobile devices.

Concern over lack of record-keeping requirements

The Herbicide Strategy and the Vulnerable Listed Species Pilot Project take a holistic approach towards avoiding and minimizing pesticide impacts for pesticides and also for a subset of listed pilot species. Mitigation guidance covers foreseeable, legal uses of pesticide products currently registered and provides new requirements for application methods, timing, and rates. This complex approach is nuanced and will require pesticide applicators to carefully read and understand site specific criteria to accurately and legally carry out pesticide applications in areas near pilot species and their habitat. Bulletins will require applicators to evaluate site-specific criteria related to wind direction, presence of wind breaks/shelters or other EPA specified buffers, PULA designations (avoidance vs minimization, and use of short vs detailed habitat description), broadcast spray droplet size, application method (aerial, ground, airblast), soil saturation, irrigation rates, weather forecast, and local conservation practices currently in place for the intended application site. As the EPA works on implementing BLT bulletins, state lead regulators, often responsible for enforcing EPA's regulations, request the EPA to include record-keeping requirements for the above site-specific criteria to make assessment of label compliance possible "after the fact."

Concerns about other forms of herbicide exposure

While it is recognized that the EPA believes their approach is likely to capture a large portion of herbicide exposure for listed pilot species and their habitat, concern still exists for alternate

exposure pathways and/or herbicide users not covered by this pilot project. SFIREG is concerned about EPA targeting agriculture only, and not including all herbicide sources. There are exposures from noncrop applications, and metropolitan, residential settings. Excluding certain pesticide users, such as non crop, urban/residential applicators and home residents, the EPA may be missing important routes of pesticide exposure for ESA species.

“Conservation Specialist” or “Certified Expert” Exemptions

The Herbicide Strategy states that if the landowner follows recommendations from a “conservation specialist” or “certified expert” that they may be exempt “from needing to follow the mitigation menu.” However, “conservation specialist” or “certified expert” is not defined, other than to reference “conservation programs such as USDA NRCS program.” Before releasing the Herbicide Strategy, EPA should have communicated with SLA’s, conservation experts, and other partners to identify conservation programs that were available throughout the states on a federal, state, and local level, and if these existing programs were acceptable for the exemption. EPA should restructure the Herbicide Strategy to highlight these acceptable and preferred concepts and plans that already exist around the country, including voluntary stewardship plans. EPA has identified mitigations to reduce the likelihood of runoff/erosion and spray drift but has not provided specific criteria or design information that would allow landowners to implement these mitigations. The mitigation names generally match up with names of conservation practice standards published by USDA NRCS. However, these practice standards often have varying design criteria depending on the intended purpose. Without guidance on design criteria, landowners may use resources to install or implement management practices that don’t confer the intended protective function.

EPA should determine the minimum requirements needed in a conservation program using consistent terminology and established standards and determine the minimum requirements to be considered a “certified expert” including the entity that does certification. While some SLAs and states are very well staffed, with extensive funding and cooperation in the state, most are understaffed and underfunded pesticide SLAs and not fully capable of implementing these newly proposed systems and requirements on their own. This will make it nearly impossible for these states to offer a regulatory and conservation program exemption in their state. SFIREG requests that EPA allow for support for these efforts nationwide with strategy support, financial support, and overall support through the FIFRA Cooperative Agreement process with SLAs. SFIREG requests that EPA support SFIREG through a cooperative agreement effort to build a SFIREG working group to assist EPA in these processes in a science-based and equitable manner nationwide.

SLA Certification and Training (C&T) Programs and Authorities

The SLAs have revised the Certification and Training (C&T) plans and EPA is finalizing certification of SLA and Tribal plans. The proposals within the Herbicide Strategy are not identified in federal certification competency standards and the SLA plans. The mitigations and points system and working with a certified program or expert for ESA pesticide program implementation is not a C&T plan competency element. A number of SLAs and PSEP partners

around the country have a history of educating applicators on ESA and pesticides and preparing for the use of BLT. The extensive detail of the ESA mitigations proposed in the Herbicide Strategy would significantly increase the complexity of the work by SLAs and PSEP in implementing the C&T programs.

Under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 11. Use of Restricted Use Pesticides; Applicators. (a) (1):

“the Administrator shall prescribe standards for the certification of applicators of pesticides. Such standards shall provide that to be certified, an individual must be determined to be competent with respect to the use and handling of pesticides, or to the use and handling of the pesticide or class of pesticides covered by such individual’s certification.”

Further, 40 CFR § 171.103 (c) and (d), there are no core or category standards specific to conservation or land management practices. The word “conservation” does not even appear in the core or category standards. It is understandable that not all terms must be specifically stated if addressed more broadly, but the scale and scope of the changes being proposed by the Proposed Herbicide Strategy through the pesticide label are significant. It is questionable how applicators will establish competency in the use or handling of all agricultural herbicides without new topics being covered by their certification. Several of the proposed ESA mitigations are new to pesticide applicators and extend to individuals’ actions and decisions outside of the pesticide application. The proposed changes would require additional coordination between the applicator and the grower/farmer/land manager, which should be included in pesticide applicator training. SFIREG suggests that EPA work with SFIREG, SLAs and partners on how to develop these C&T details and allow for a phased in process for these efforts.

Pesticide applicator training is not addressed in the Proposed Herbicide Strategy

SFIREG suggests for EPA to work with SFIREG and others about how to establish pesticide applicators training on the Herbicide Strategy, the complex mitigation point system/picklist options, how to blend land management practices prior to pesticide application, and how to utilize BLT. Most farmers don’t work within USDA NRCS cost share programs or work with a certified program or consultant of some kind. As these Herbicide Strategy concepts become a requirement, SFIREG is concerned that SLAs do not have technical resources available to answer the large volume of questions that will follow from applicator community about land management and conservation and engineering practices. SFIREG has the same concern with respect to local Conservation Districts becoming overwhelmed by the demand for programs to be developed to support landowners and applicators. This expertise is currently housed in USDA NRCS and Conservation Districts. These groups support agriculture on voluntary approaches and practices, not regulatory. The Herbicide Strategy regulatory components will likely not be supported by the voluntary based technical and cost share system at the local level. SFIREG has concerns about the large increase in growers/landowners that will be looking to implement new conservation and land management practices once they become regulatory requirements for herbicides. SFIREG suggests further discussion on these topics and a phased approach for implementation. There will need to be the ability for SLAs to adapt programs, applicator training, and coordinate with conservation program leaders.

Herbicide Strategy Runoff and Erosion Mitigation Points and Spray Drift Mitigations

The Herbicide Strategy outlines a mitigation point system in which applicators and/or landowners must document enough mitigation points in order to apply the herbicide. The point system is complex, confusing, and not consistent. Landowners and applicators have to decipher the various mitigation categories and options to try to determine if they can obtain enough points to use the herbicide or combination of herbicides if tank mixed. Even experts are having trouble deciphering the point system created by EPA: Applicators are likely to get frustrated and apply herbicides, anyway, defeating the whole purpose of creating the Herbicide Strategy to protect listed species.

EPA is inconsistent and has not relied on the best scientific and commercial data available regarding spray drift technology. In Table 6-1, (page 35) EPA lists proposed maximum drift buffer distances for aerial, ground, and air blast applications. However, in Table 6-2, (page 37) EPA lists only hooded sprayers as a spray drift mitigation option that could result in reducing the spray drift buffer. EPA did not list any spray method mitigations for other ground, aerial, and air blast spray drift technology that has been developed. EPA mentions that "EPA is aware of other spray drift mitigation options that may have the potential to reduce the spray drift buffers but there are not enough data to support proposing the mitigations at this time." EPA should have sought out the best scientific and commercial data available regarding spray technology before releasing the draft Herbicide Strategy. EPA could have consulted with the Spray Drift Task Force, could have conferred with industry on all their nozzle and spray drift reduction science (LiDAR enhanced sprayers) and data related to nozzles, and could have communicated with companies developing drift reduction adjuvants added to the herbicide tank mix.

It appears that EPA has access to this scientific and commercial data and resources but is not utilizing them. EPA has all the fate and transport data on every registered pesticide, and it appears they are not factoring this information into the Herbicide Strategy either. Furthermore, when scientific and commercial data is available, EPA appears to be downgrading the data. For example, in [*The Effectiveness of Riparian Hedgerows at Intercepting Drift from Aerial Pesticide Application*](#), Hancock et al., 2019 (conducted in 2015 and published in Journal of Environmental Quality), results showed over 90% effectiveness in drift reduction using hedgerows. Yet Table 6-5 (b) only allows a 50% effectiveness in drift reduction when using hedgerows. If EPA is supposed to be using the best available science and commercial data available, they should not be downgrading or minimizing the research.

EPA also allows an exemption to runoff and erosion mitigation measures if the application is 1000 feet away from a habitat for listed species but doesn't explain why that distance was selected. It appears to be arbitrarily selected and should be explained better with further science-based support. The system proposed in the Herbicide Strategy will have variable impacts for cropping systems and for each herbicide active ingredient.

EPA is proposing these mitigation measures and mitigation point calculations in the Herbicide Strategy but does not propose how the applicator is supposed to document that enough points were acquired to make the application. Nor is there any method or recommendation how the landowner can document if they are enrolled in a conservation program or are following

recommendations from a “certified expert.” EPA should also clarify the role of the landowner and the role applicator if they are separate entities, especially when the exemption for the applicator is dependent on the conservation program enrollment of the landowner.

If a Bulletin is required to be obtained through Bulletins Live! Two, EPA needs to determine how an applicator is to demonstrate that they have obtained a Bulletin and followed the mitigations, if applicable, in their area of treatment. As an example, Washington State's recordkeeping laws and rules (RCW 17.21.100 and WAC 16-228-1320) do not require that an applicator retain the pesticide label that was used at the time of application. The only recordkeeping requirement related to the pesticide is the EPA registration number and the full name of the pesticide product applied. Any other mitigations or directions to obtain a Bulletin is not documented. EPA's guidance “recommends” that they retain a copy of the Bulletin with their application record. This is “suggestive” language and is unenforceable, furthermore it does not address how long the Bulletin or other mitigation documentation needs to be retained.

SFIREG understands that EPA cannot make recordkeeping requirements without going to rulemaking and amending FIFRA. However, EPA should develop a means by which applicators can demonstrate their compliance with the new ESA label mitigations, how mitigation points were calculated, how to document the enrollment in a conservation program, or document that a required Bulletin was obtained. If EPA cannot or is unwilling to develop documentation guidance, then EPA needs to clearly state that only through direct observation by a regulatory agency or verified through an investigation, that an applicator could be found to be in violation of the ESA mitigations or Bulletin(s) associated with new labels.

Development of an Interactive Decision Matrix Website

As mentioned earlier, the mitigation measures are complex, complicated, and difficult to decipher. The Herbicide Strategy describes an implementation plan (Section 9, page 75) option involving the use of a website. SFIREG is supportive of this use of a website, and recommends EPA develop and host a website with an interactive decision matrix. The website could be similar to tax preparation apps and could start with questions about location, crop, and active ingredient. Answers to questions would guide the user through the decision matrix, help them determine if they need to apply mitigation measures, and if so, determine the number of efficacy points needed. The website could be designed so that the applicator could select the mitigation measures they are employing, and then print or save the report for their records.

An interactive website will also help keep pesticide labels less cumbersome and more understandable. An applicator would be more prone to using a website to determine mitigations than trying to read through and understanding mitigations on complex pesticide labels written in six-point or less font. As new data is evaluated by EPA, mitigation changes could be quickly addressed and amended on an interactive website.

Since herbicide labels will have references to the Herbicide Strategy mitigation language on them EPA will need to ensure that users understand that these mitigations are for commercial cultivated agriculture only. Applications to forestry, rangeland, or non-agricultural areas are

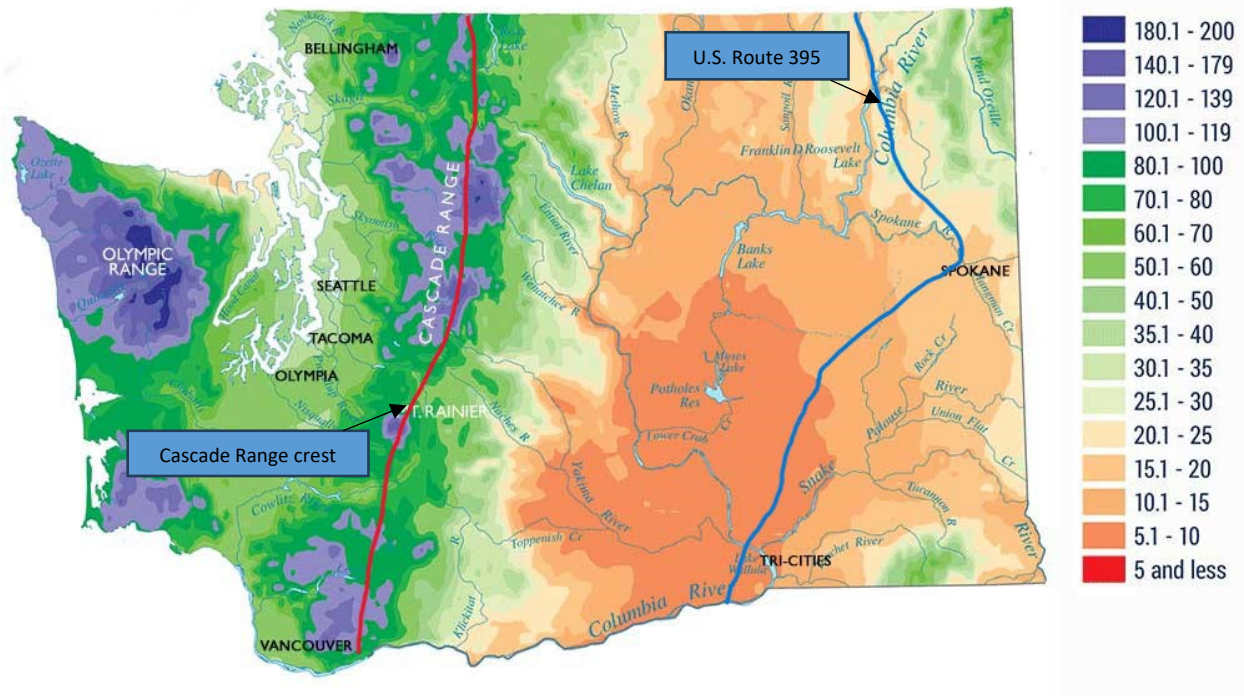
exempt from these mitigations. This distinction should be made expressly clear on labels, websites, and outreach from EPA.

Utilization of an interactive website will assist EPA to update the list of mitigations available, points values, and PULAs on a regular and frequent basis as new information becomes available. EPA should commit to regular updates of mitigations and Pesticide Use Limitation Areas (PULA).

Definition of Western Agriculture

Section 7.3.3.3. (page 52) of the *Draft Technical Support for Runoff, Erosion, and Spray Drift Mitigation Practices to Protect Non-Target Plants and Wildlife* defines western agriculture as “*When a field is located in western agriculture, the lower precipitation amounts create less runoff and erosion. Western agriculture is defined as the area is to the west of the Interstate 35 and east of the Sierra Nevada Mountains and Cascade Mountains or U.S. Route 395. The efficacy category assigned for this item is low because much of the mitigating benefit of these regions is already included in the modeling of the EECs.*” (Estimated environmental concentrations.)

As evidenced by the map below, the definition of the area EPA considers “western agriculture” in Washington State is unclear and misleading. The red line on the map is the Cascade Mountains. The blue line on the map is U.S. Route 395. EPA’s definition of western agriculture is “...east of ... (the) Cascade Mountains or U.S. Route 395.” Since Washington state has both boundaries running nearly parallel in a roughly north-south line but at 170 to 200 miles apart—which line should applicators use to determine if they qualify for the western agriculture mitigation point?



Washington State average annual precipitation in inches – from the [Choose Washington/Washington State Department of Commerce](#) website with additional markup.

According to the map and the dual, arbitrary boundaries of “western agriculture,” the area between the lines is some of the driest landscapes (precipitation-wise) in Washington state. This area also contains the most irrigated managed lands in Washington state.

SFIREG supports WSDA perspectives that the “western agriculture” boundary in Washington State be defined as the Cascade Range only. The U.S. Route 395 boundary should not be part of the definition. SFIREG recommends that EPA rework this definition and allow states to characterize the landscape of their own state. SFIREG has similar concerns about the Western Agriculture concepts for other states also. There are other definitions for nationwide mitigation categories or exemptions that should be reassessed.

Use of Field Characteristics to Mitigate Runoff and Erosion

SFIREG provides additional comments from the Minnesota Department Agriculture (MDA) related to a variety of mitigation concepts and also the use of boundaries such as interstate highways for spatial boundaries. MDA understands the challenge in creating an approach that effectively evaluates individual field characteristics while using a country-wide spatial scale to differentiate regions qualifying for mitigation measures. However, the use of Interstate-35 east/west for purposes of differentiating regions contributing to runoff and erosion will, in many instances, under or overestimate actual on-field conditions. The MDA encourages the EPA to instead use state-specific data, when available, and Bulletins Live! Two (BLT) mapping to better characterize regions where applicators may gain efficacy points based on their local field’s

characteristics. See here for Minnesota specific examples of [Soil Erosion Susceptibility Map](#), and [Vulnerable Groundwater Area Map](#). Alternatively, the MDA suggests that field characteristics not be used for purposes of gaining efficacy points and instead have applicators rely on other mitigation measures listed in Table 6-9.

Since EPA’s Vulnerable Species Pilot Project public comment period, the agency has made strides in clarifying mitigation measure descriptors such as those describing application parameters resulting in overall per acre rate reductions. The MDA appreciates the EPA addressing concerns related to pest resistance management associated with lower rates of application.

Using Exemptions to Mitigate Runoff and Erosion

The Draft Herbicide Strategy Framework takes an inclusive and science-based approach to evaluating available evidence for runoff and erosion mitigation practices. The EPA should be commended for only including mitigation practices that can be evaluated and quantitatively assess a practice’s ability to modify an herbicide product’s Magnitude of Difference score. Assigning efficacy points to mitigation practices is an easy-to-follow approach based on evidence. Similarly, exemptions listed in Table 6-10 seem to follow this science based rational while allowing applicators additional avenues to mitigate runoff and erosion and minimize exposure to listed species.

The EPA requested feedback regarding the exemption “Follow recommendations from Conservation Specialist or Certified Expert to reduce runoff/erosion.” Minnesota has state-specific programs where conservation specialists work with landowners to help implement and maintain conservation practices that mitigate off-site transport of nutrients and pesticides. The MDA’s Minnesota Agricultural Water Quality Certification Program (MAWQCP) works with landowners to evaluate runoff and erosion concerns and implement mitigation practices that meet NRCS practice standards. Sites meeting sufficient practice standards become a water quality certified site for a period of 10 years. The MDA requests that the EPA consider MAWQCP certified sites to fulfill the exemption for the runoff and erosion mitigation menu proposed in Table 6-10. The MDA also suggests that the EPA consider the benefits of landowners working with Conservation Agronomists or their local Soil and Water Conservation Districts to implement conservation practices that benefit runoff and erosion goals outlined in the Draft Herbicide Strategy Framework.

The MDA has some concern about how difficult it may be to correctly implement and enforce the spray drift exemption “Field is more than 1000 feet away from a terrestrial or aquatic habitat for listed species.” Specific concerns include:

- Correctly interpreting the buffer distance, particularly in areas without straight field edges;
- Correctly interpreting if land qualifies for consideration as part of a spray drift and/or runoff and erosion a buffer (unsprayed areas in-field, fallow land, federally supported conservation programs and measures, areas considered disturbed or managed, irrigation resource considerations, etc. from Section 6.3);

- Correctly interpreting whether on-site vegetation maintenance meets EPA standards, and if the pesticide application relates to a terrestrial or aquatic listed species habitat.

The MDA suggests the EPA provide applicators and state-led regulators with a clearly defined list of practices and land types/maintenance requirements that need to be considered for use as an approved buffer. This guidance would also benefit from the inclusion of graphical examples like Figure 6-1.

Regarding the use of subsurface drainage or installed tile drains and its related exemption, use of subsurface drainage is commonly used in many agricultural areas including areas like the upper mid-west. However, many operators face financial barriers to implementing controlled drainage terminating into a retention pond or saturation zone. The MDA would encourage the EPA to consider working with state, local, and NRCS type agencies to strengthen conservation program assistance which allocates additional money to promote this sort of controlled drainage practice.

During the Vulnerable Species Pilot Project public comment period, the MDA raised concerns that also apply to the Draft Herbicide Strategy including:

- The level of specialized knowledge an applicator needs to determine if mitigation practices have been appropriately implemented, especially when they are not the landowner or operator of the land;
- The level of EPA's commitment to applicator and landowner training and outreach to ensure it is abundantly clear who is to be held responsible for violations of mitigation practice implementation, especially when pesticide applicators may have no control over implementing large-scale changes to the contracted application area;
- The increased complexity to comply with labels now that applicators are being asked to navigate multiple websites (weather service predictions and BLT guidance); and
- The lack of required record-keeping will hinder and at times prevent SLA regulators from appropriately enforcing these important regulations.

Saturated Buffers concepts, research, and other mitigation examples

In the state of Iowa, there are numerous programs for saturated buffers and other treatment practices that have been researched by Iowa State University and are being implemented by Conservation Districts and others. The designs and funding for these NRCS and FSA practices are complex, take time, and cost a considerable amount of money. Some of the documents found are:

- <https://www.iaagwater.org/saturated-buffer-batch-and-build>
- <https://www.extension.iastate.edu/news/saturated-buffer-field-day-be-held-july-25-near-slater>
- <https://www.cals.iastate.edu/inrc/wider-not-necessarily-better-iowa-state-research-seeks-optimize-saturated-buffer-design>
- <https://www.leopold.iastate.edu/files/pubs-and-papers/2013-06-funding-impact-brief-bear-creek-riparian-buffer-project.pdf>

- <https://www.extension.iastate.edu/smallfarms/what-riparian-buffer/>
- <https://www.nrcs.usda.gov/programs-initiatives/rcpp-regional-conservation-partnership-program/regional-conservation-partnership-program-2022-projects>
- <https://landstewardshipproject.org/wp-content/uploads/Multiple-Benefits-of-Ag-Report.pdf>
- <https://crops.extension.iastate.edu/cropnews/2020/07/measuring-conservation-and-nutrient-reduction-iowa-agriculture>
- <https://iowaagriculture.gov/crep>
- <https://store.extension.iastate.edu/product/Woodchip-Bioreactors-for-Nitrate-in-Agricultural-Drainage>
- <https://store.extension.iastate.edu/product/Applying-Woodchip-Bioreactors-for-Improved-Water-Quality> <https://northcentral.sare.org/resources/woodchip-bioreactors-for-nitrate-in-agricultural-drainage/>
- Iowa State University STRIPS Program and Research: <https://www.nrem.iastate.edu/research/STRIPS/>

Broad Based Assumptions about Commercial Agriculture

The Herbicide Strategy makes broad based assumptions about cropping systems across the United States. Creating a universal Herbicide Strategy that accurately covers all the diverse agricultural landscapes and cropping methods is nearly impossible, especially for minor crop states. Many of the mitigations listed in the Herbicide Strategy document are not available to Washington growers and will make compliance nearly impossible. Growers with pest pressure may opt to make an herbicide application, regardless of the number of runoff and erosion mitigation points they can earn, or buffer distance restrictions, to keep unwanted weeds out of their crops.

Management practices vary dramatically in the nation’s diverse agricultural and environmental systems. Some of the management practices included in the Herbicide Strategy are being used by agriculture already and agricultural landowners and applicators should get credit. SFIREG suggests greater flexibility for growers and SLAs. EPA should work with SLAs, SFIREG, JWC, state conservation specialists, and natural resource specialists to identify additional or modified mitigations that could be used to address the challenges faced by growers.

Address Enforceability of Herbicide Use on Listed Plants on Private Land

EPA general counsel should review the ESA and clarify in the Herbicide Strategy if herbicide use on listed plants is allowable if the listed plants are on private property. [Section 9 \(a\) \(2\) \(B\)](#) of the Endangered Species Act seems to indicate that there are no provisions in the ESA that directly prohibit private landowners from “taking” any listed plant on their private property or from adversely modifying its habitat. As applied to plants, section 9 only prohibits private parties from taking listed plants that are located “on lands that are under Federal jurisdiction or on other lands in violation of State laws.”

EPA should use best available sources for information

As required in ESA section 7(a)(2), wherein EPA *must use the best scientific and commercial data available* EPA should seek out current up to date information on species ranges and the risks to listed species should be provided by and reviewed by species experts at FWS, as well as other regional experts. Some of the general species' maps in the Herbicide Strategy were verbally confirmed by FWS staff to be inflated and out of date during discussions of the Herbicide Strategy at meetings.

Establishment of an Evaluation Timeline to determine the Effectiveness of the Herbicide Strategy (and upcoming Strategy documents)

EPA should develop a timeline with established metrics and goals to determine if the proposed Strategies are effective in protecting listed species. This timeline should be included in the Strategy documents in order to justify these new regulatory changes. This will help promote landowner and applicator compliance knowing that their efforts are making a difference, and that this new framework is not more bureaucracy designed to hinder their ability to farm.

Updates and Enhancements to Bulletins Live! Two

With the addition of new Pesticide Use Limitation Areas (PULA) associated with the Herbicide Strategy and the PULAs associated with the Vulnerable Species Pilot, EPA should consider changes and enhancements to make Bulletin's Live! Two more intuitive and user friendly:

- EPA should reverse the order of input field entry boxes on the BLT website. The EPA registration number should be listed in the first box, as the user is being directed to the BLT website based on the directions for use on a specific EPA registered product.
 - Entering information in the current format lists ALL the products associated with the PULA. The Bulletin created can be 10's of pages long, covering multiple products, adding confusion and frustration for the user.
- Bulletins should be available in Spanish with the roll out of PRIA 5 bilingual labeling.
- The current BLT site has accessibility issues for people with colorblindness:
 - The red (Printable Bulletin)/green (Printable Bulletin) button appears gray to people with colorblindness. There is no way to tell them apart because the text is the same.
 - The color contrasts on the maps are hard to read and may not be accessible to people with color blindness. This is especially true when the PULA (in flesh/pink) overlays the light yellow that has identifying text. The text is so washed out that it is nearly impossible to read, and therefore impossible to accurately pinpoint an area of intended application.

SFIREG recommends that EPA spend additional resources on communication, training, and outreach related to Bulletins Live! Two. SFIREG and the PSEP partners have spent countless hours developing outreach and communication materials and creating and conducting presentations to applicators and landowners. This is an additional burden on our staff to train stakeholders on an EPA initiated program.

Summary of SFIREG Comments

As SLAs and coregulators, SFIREG is looking to be supportive, to contribute to a workable mitigation and white paper approach that can protect listed species while fitting into national ES recovery plans and agricultural production systems. We recommend that EPA strive for the best science-based mitigations, which is a requirement of the Endangered Species Act and create guidance that will support our diverse agricultural systems and farmers SLAs in the regulatory processes.

We question many aspects of the Herbicide Strategy, the previous Vulnerable Species White Paper, and ESA appendix update by EPA. SFIREG offers to assist EPA in reworking the Herbicide Strategy, and EPA should provide cooperative grant agreement funding to SFIREG to support the revision of this strategy and the development of the future strategies and the overall regulatory process. The Herbicide Strategy as written will have very significant negative social and economic impacts for agriculture, rural economies, and has potential to imperil food security and availability. The Herbicide Strategy will have considerable negative impacts to SLAs and the various conservation and PSEP partners across the nation. SFIREG is not sure how the Herbicide Strategy and the ESA Vulnerable Species White Paper will actually assist recovery of the ESA listed species as the concepts seem to solely focus on agricultural pesticide use and do not address the complexity of how agriculture works and also the overall Services ESA recovery plan implementation. Real world solutions must be implemented in coordination with landowners, SLAs, state and local agencies, and other locally based technical service providers that can assist in actual tangible and effective recovery work. We strongly recommend reworking this Herbicide Strategy, and to involved SLAs, SFIREG and other partners in that revision, while utilizing a more adaptive approach that can be effectively paired with concepts from science-based approaches that have been found to be successful. Also, utilizing agricultural groups and researchers, state and local conservation district expertise, and the agricultural partners and producers at the state and local level is recommended. SFIREG urges EPA to work with SLAs and SFIREG before draft documents are released. The processes used for both the Vulnerable Species Pilot and the Herbicide Strategy have strained the relationship between EPA and the SLAs as co-regulators and partners in pesticide regulation.

In conclusion, SFIREG supports the protection of ESA species and the opportunity to work with EPA to develop workable strategies and programs. SFIREG suggests that EPA work to involve SLAs, SFIREG and the JWC, and a potential new SFIREG workgroup to build a comprehensive and workable ESA and pesticide program. SFIREG believes the SLA team can provide science-based information and regulatory options to support EPA for mitigation and approaches that would work for SLAs, NRCS, conservation districts, landowners, growers, applicators, and registrants. We recommend a broader pesticide and ESA team that would involve SLAs, NRCS, FSA, ARS, USDA OPMP, Conservation Districts, agricultural land grant institutions, pesticide safety educators, and others around the country. Ideally these groups can contribute their experiences and science expertise to the process related to agricultural pesticide uses, comprehensive practices for water quality and ESA protection, and the FOTG and FSA guide expertise to assist in developing a workable and an acceptable ESA pesticide framework.

SFIREG suggests that EPA fund SFIREG and also consider holding an extensive national workshop or a series of working meetings with SFIREG, SLAs, and partners to develop a practical approach that is acceptable to SLA, SFIREG, and agriculture. We suggest that these efforts be funded and staffed properly by EPA and other partners like USDA, similar to other recent USDA programs such as the climate smart commodity work, where states, landowners and pesticide users can be supported for this important work. SFIREG and SLAs are focused on providing science-based information and consistent regulations for EPA, the public, stakeholders, and industry. We thank EPA for the opportunity to comment and to express our concerns on this issue.

We look forward to working with EPA on these important science and regulatory processes. Thank you for your consideration.

Sincerely,



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