

Update on Draft Herbicide Strategy (April 2024)

EXECUTIVE SUMMARY

The Environmental Protection Agency (EPA) released the draft strategy for public comment in July 2023. This strategy is part of EPA's larger plan to improve meeting its Endangered Species Act (ESA) obligations, by considering mitigations for its registration and registration review actions to protect federally listed species from herbicide exposure. The goal is to consider mitigations during the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) process, even before EPA makes ESA effects determinations or, if necessary, completes an ESA consultation. The draft strategy describes whether, how much, and where mitigations may be needed to protect federally listed species from agricultural uses of conventional herbicides. Once final, EPA would have to take further action to implement it. Specifically, EPA would apply the strategy to FIFRA actions when issuing new active ingredient registrations or registration review decisions under FIFRA. EPA provides a public comment period for such FIFRA actions.

EPA received extensive comments on the draft, including many concerns that it is too difficult to understand and would be too onerous for growers to implement. EPA has considered these concerns and provides this update on improvements it expects to make before issuing the final strategy to address these concerns. This update does not cover all the changes EPA might make to the strategy before finalizing it nor does it provide all the details on the potential changes described here. The purpose of the update is to give stakeholders an idea of some improvements that EPA plans to make as it continues finalizing the strategy. EPA is not seeking public comments on this update.

The primary improvements fall into three categories. First is to make the strategy easier to understand. Many commenters complained about the complexity of the decision framework to determine the amount of mitigation a label requires for a particular pesticide product—up to nine points of mitigation. In response, EPA is simplifying its approach, such as using only four tiers—none, low, medium, high—to describe the amount of mitigation that may be needed. EPA also plans to create educational materials that concisely explain how an herbicide user would determine the amount of mitigation needed based on a pesticide product labeling. EPA plans to include in the educational materials summary information on how EPA calculates this amount based on the toxicity and other properties of an herbicide, and on where and how it is applied.

The second set of changes EPA is considering is to increase the flexibility for growers to implement the mitigation in the strategy. For example, EPA expects to expand its menu of mitigation measures, especially for minor and specialty crops, to include nine new measures such as erosion barriers, reservoir tillage, and soil carbon amendments. EPA is also working with United States Department of Agriculture (USDA) and other organizations to identify other measures to add to the mitigation menu that can reduce pesticide runoff and erosion ("runoff" hereafter). In May 2024, for example, the two agencies will host a workshop with agricultural stakeholders to identify possible other measures to add to the menu in the draft strategy and this update.

Third, EPA is considering reducing the amount of mitigation that may be needed when growers have already adopted practices to reduce pesticide runoff or where runoff is minimal. For example, in areas of

the country with flat lands or minimal precipitation, EPA is considering approaches to reduce the mitigation burden on growers. As a result, those growers may need less or no additional measures to use agricultural herbicides, compared to those in the draft strategy. Another example is that EPA is considering whether growers could meet any necessary mitigation requirements if they participate in agricultural conservation programs or work with qualified experts to design and implement mitigation measures.

Besides these three types of improvements, EPA is also working to improve other aspects of the herbicide strategy and how it will be implemented. For example, in many cases, species range maps used in the draft strategy include area where pesticide-related mitigations may not be necessary for species conservation. EPA is working with the U.S. Fish and Wildlife Service (USFWS) and others to develop a process for refining maps for hundreds of species. This process could then be used by applicants for registration actions and by others to produce draft maps for the agencies to consider. Through this work, EPA expects that the footprint of pesticide restrictions under the final strategy could shrink for many species.

EPA plans to publish the final strategy by the deadline of August 30, 2024. The strategy itself does not impose any requirements or restrictions on pesticide use. Rather, EPA will use the strategy to inform mitigation requirements for new conventional herbicides registrations and registration review of conventional herbicides. Thus, for any herbicide, mitigation measures from the strategy will not become effective until EPA approves labels for that herbicide as part of a new active ingredient registration or registration review decision. Before finalizing these decisions, EPA would provide an opportunity for public comment.

INTRODUCTION

EPA recognizes that it needs to fundamentally change the way it approaches its ESA-FIFRA work and has taken several steps in the last 18 months to do so. In January 2022, the Agency committed to fully complying with the ESA before registering any new conventional pesticides. In April 2022, the Agency released a workplan on how it will address the ESA-FIFRA challenge, including by improving how EPA assesses effects to listed species in its pesticide evaluations and consultation processes, and how it plans to implement early protections for listed species in its FIFRA process (before EPA has made effects determinations or, if necessary, completed consultation). And in November 2022, the Agency released a workplan update, which describes the Agency's efforts to reduce pesticide exposure to nontarget organisms, including listed species, during the FIFRA registration review process and through other FIFRA actions. The update also describes other planned strategies to expedite implementation of the ESA Workplan, including strategies for identifying and implementing early ESA mitigation across groups of chemicals (*e.g.*, herbicides, rodenticides, insecticides).

EPA released the draft strategy for public comment on July 24, 2023¹ as one part of this overall goal of identifying and implementing earlier protections for federally listed species when assessing its FIFRA

¹ The draft strategy is consistent with EPA's April 2022 ESA-FIFRA Workplan and November 2022 Workplan Update, both available at <https://www.epa.gov/endangered-species/implementing-epas-workplan-protect-endangered-and-threatened-species-pesticides>.

actions. The draft strategy identified mitigations to reduce exposures to federally listed species from agricultural uses of conventional herbicides in the contiguous U.S., along with identifying the geographic extent of the listed species ranges. EPA developed the strategy to identify mitigations that, when implemented, would reduce the likelihood of population level impacts to these listed species and their designated critical habitats.

During the 90-day public comment period on the draft strategy and associated documents, EPA received more than 18,000 comments from a variety of groups, including states, other federal agencies, the pesticide industry (e.g., pesticide companies, applicators), grower groups, environmental groups, academics, and individuals. EPA received approximately 250 unique comments, with the remainder being from mail-in campaigns that either supported or opposed the draft strategy. In general, commenters reiterated the importance of protecting federally listed species from herbicides. Commenters also identified concerns with specific aspects of the draft strategy and suggested revisions. The Agency appreciates all federal, state, and public stakeholder perspectives submitted during the comment period. After considering the comments, EPA determined that refinements to the draft strategy are necessary before issuing the final strategy.

EPA is releasing this update, given the high stakeholder interest in the Herbicide Strategy. This update summarizes the major themes in the public comments and communicates revisions EPA is considering before issuing the final strategy, including updates to the mitigation options that were in the draft strategy. EPA expects that many of these updates would lead to improved flexibility and feasibility for growers to implement the mitigation measures, while still providing protections to federally listed species. The list below summarizes EPA's current considerations of modifications to the draft strategy. When issued, the final strategy will describe in more detail the public comments and any changes made from the draft strategy.

- Revisit EPA's approach for identifying areas with lower potential for pesticide runoff based on factors such as weather and soil type that inform the need for and level of mitigations. EPA believes this consideration is necessary as many areas in the western U.S., particularly those with minimal precipitation, may not need as many additional mitigations, if any at all.
- Revisit how flat fields are described, the mitigation efficacy (high, medium, or low), and the relief from mitigation requirements for those fields. Through these changes, the description would better align with USDA's definition of flat fields and may result in mitigation relief if EPA determines greater reductions in exposure are achieved to listed species and less mitigation measures would be necessary for farms with flat fields.
- Expansion of the mitigation options, especially for minor and specialty crops, to include nine new measures such as erosion barriers and soil carbon amendments.
- Revisit the mitigation efficacy (high, medium, or low) and the points associated with each mitigation measure. Through these changes, EPA may show that certain measures provide greater reductions in exposure.
- Explain how growers can use conservation practices from Natural Resources Conservation Service (NRCS), and other similar conservation programs, when considering how to achieve runoff mitigations that could be required on pesticide labeling.

- Provide clarification of the runoff mitigation achieved through participating in conservation programs and define the important characteristics of qualified conservation programs.
- Clarify how EPA assesses population-level impacts and the amount of mitigation identified to reduce exposure to listed species to avoid population-level impacts.
- Simplify and improve communication about the decision framework for the herbicide strategy to determine the amount of mitigation a label requires for a particular pesticide product.
- Consider the proposed Pesticide Use Limitation Areas (PULAs) by focusing on areas that are important to species conservation within which mitigations to protect listed species from herbicide use would apply. EPA expects that these refinements, in many cases, could result in PULAs smaller in geographic area than those in the draft strategy.
- Clarify how EPA plans to implement the herbicide strategy through its registration actions and registration review cases.

The remainder of this document provides more detail and context to these and other changes being considered.

SUMMARY OF MAJOR THEMES IN PUBLIC COMMENTS AND POTENTIAL CHANGES TO THE HERBICIDE STRATEGY

I. Reduce Need for Run-off Mitigation Measures for Areas that have Low Annual Precipitation or Low Runoff Vulnerability

Summary of public comments: Commenters questioned EPA’s “western agriculture” measure in the draft strategy and recommended that EPA revisit how it distinguished the applicable areas and the amount of mitigation relief in areas that receive less annual rainfall.

EPA’s plans to increase the mitigation points given to areas with less precipitation and its “western agriculture” concept: **EPA reevaluated the potential for runoff and expects to describe runoff vulnerability at the county level rather than relying on Interstate Hwy 35 and US Route 395. EPA also expects to increase the relief from mitigation requirements for growers in areas with lower potential for runoff.**

EPA revisited the scientific literature and analyses it used to differentiate areas by rainfall and the amount of mitigation that may be needed in those areas. Specifically, EPA assessed the underlying environmental data at a finer geographic scale and more thoroughly compared pesticide runoff vulnerability based on precipitation, soils, and agricultural areas. This work allows EPA to define the runoff vulnerability at a county level. EPA anticipates assigning more relief (points) to all counties with medium, low, or very low pesticide runoff vulnerability (**Figure 1**). This county level relief reduces the amount of additional mitigation that would be needed in areas that do not have high pesticide runoff vulnerability. At this time, EPA has not yet assigned points to the categories in **Figure 1**. EPA estimates that these changes may reduce the additional runoff mitigation burden (points needed) for approximately 80% of cultivated agriculture acres and 95% of specialty and minor crop production acres.

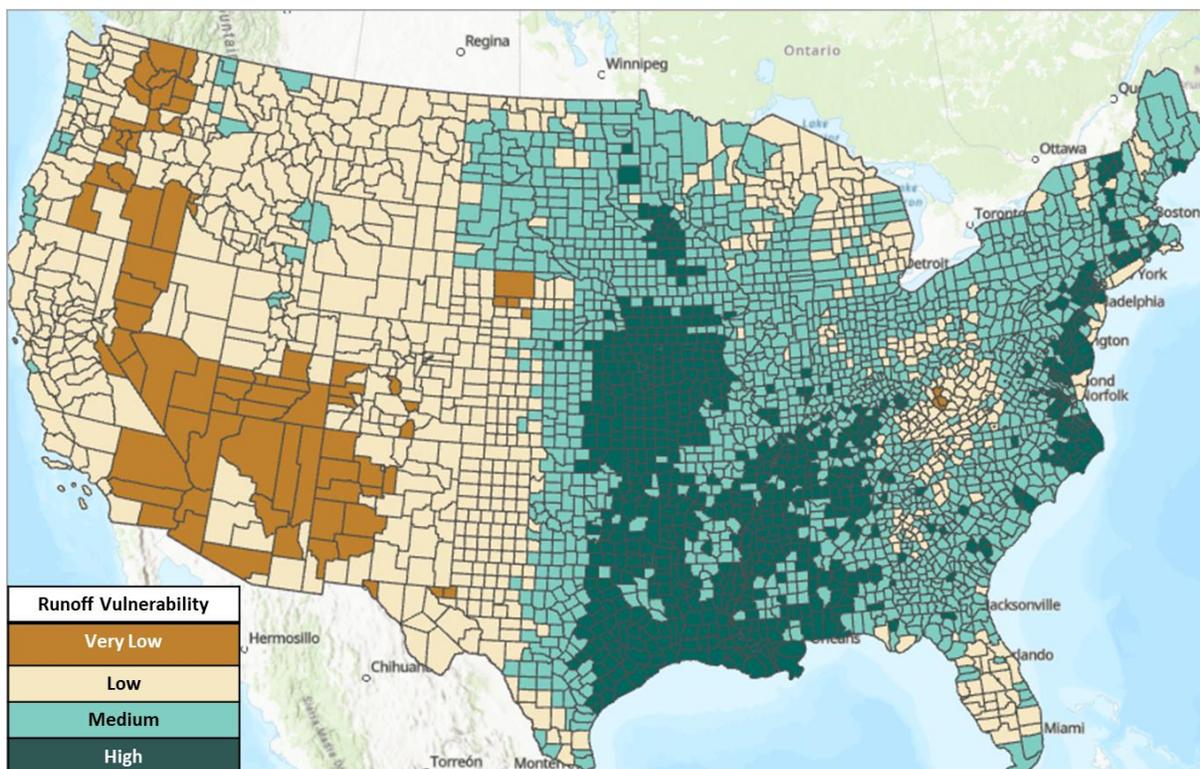


Figure 1. Revised analysis of pesticide runoff vulnerability at the county level.

II. Increase Runoff Mitigation Options and Other Improvements

Summary of Public Comments: Commenters generally supported the draft strategy’s mitigation menu approach, noting that it provides flexibility to pesticide users to choose mitigations that work best for their situation. Some commenters suggested the menu include additional mitigations, especially for minor and specialty crops and for leased lands. Other commenters requested that EPA reconsider the mitigation efficacy of and associated points for certain runoff mitigation menu measures. Many commenters raised concerns about the points associated with reducing application rates because of concerns that growers would use non-efficacious rates that lead to weed resistance.

EPA’s plans to update the runoff mitigations: EPA expects to make at least seven changes to how it handles runoff mitigation, which would increase the flexibility of the mitigation menu and better account for data on mitigation efficacy.

First, EPA is aligning how it describes low sloping “flat” fields with USDA’s definition by increasing the percent slope from $\leq 2\%$ to $\leq 3\%$. Additionally, EPA is evaluating the available efficacy information and expects to increase the relief (points) for flat fields. As a result, more growers should qualify for having flat fields and those growers should need fewer additional mitigation measures.

Second, in response to comments on the reduced application rate measure, EPA’s intent in the draft strategy was to give mitigation points for practices that reduce the maximum annual application rate on

the pesticide product label while maintaining its pesticidal efficacy. For example, targeted application methods, such as banded applications, maintain efficacious rates in the treated area while reducing the overall rate applied to a field. Nevertheless, EPA acknowledges how rate reductions can impact the development of resistance. So, EPA also plans to add language to the rate reduction measure description to reinforce resistance management statements on herbicide product labels.

Third, EPA is planning to add the following new measures to the mitigation menu based on efficacy data the Agency has received since it published the draft strategy. These new measures would expand mitigation options, particularly for minor and specialty crops.

- Reservoir tillage: A method that creates depressions in the soil in the rows between the crop plants. These depressions act like pools to collect rainwater and irrigation water. The depressions allow for increased water infiltration into the soil, thereby decreasing erosion and runoff.
- Erosion barriers: A physical barrier such as a wattle (*i.e.*, straw in mesh netting rolls) designed to control soil erosion by capturing sediment and redistributing water to reduce flow velocity, thus allowing for infiltration, and reducing runoff.
- Landscape/habitat improvement: A collection of habitat improvements that, when located in an area down gradient from an application site and in a location that would collect or receive runoff from the application site, functions similarly to a vegetative filter strip.
- Wetland and riparian habitat improvement: The establishment and improvement of constructed and natural wetland systems that capture agricultural effluent and allow for sedimentation, sorption, and degradation of pesticides.
- Permanent elevated field perimeter: The treated field is surrounded by a permanent elevated border (berm), such that all rainfall or irrigation water is kept on the treated field.
- Irrigation tailwater return systems: Engineered systems installed to collect and retain runoff and erosion resulting from runoff and irrigation from a treated field.
- Irrigation method: Irrigation methods that reduce the potential for runoff (e.g., center pivot; drip tape and micro sprinklers; subsurface irrigation).
- Soil carbon amendments on the field: Carbon amendments (*i.e.*, activated carbon) applied to soil to improve or maintain soil organic matter, improve soil aggregate stability, increase water infiltration, and improve habitat for microorganisms that promote soil and plant health. The intent of applying a carbon amendment to soil is adsorption or degradation of pesticides that may move off a field through runoff and erosion.
- Carbon amendments adjacent to the field: Applications of activated carbon in filters, sleeves, socks, or filtration units for receiving drains or water outlets adjacent to agricultural fields. The purpose of these filters is to increase the adsorption or degradation of pesticides in runoff or erosion.

EPA is still evaluating data on effectiveness of the mitigation measures listed above and other mitigation suggestions. At this time, EPA has not categorized the efficacy of each of the above mitigations as high, medium, or low nor has EPA assigned points for these mitigation measures.

Fourth, EPA is revisiting the efficacy rankings (high, medium, or low) of various mitigation measures on the mitigation menu in the draft strategy. For example, EPA grouped all the available efficacy data on cover crops to determine the efficacy of this measure. Based on public comments, EPA is evaluating

breaking the efficacy data into subgroups based on the duration a cover crop is in place relative to the time of the year a commodity crop is planted (e.g., fall vs spring for a summer crop) and on the presence of the cover crop at planting (e.g., tillage vs no-tillage). EPA expects this updated analysis will increase the efficacy and assigned points for highly effective cover crop practices. Similarly, EPA is evaluating efficacy for vegetative filter strips based on the length of the filter strip and plans to create two categories of filter strips: 20- to 30-ft and 30+ ft. Depending on the results of this evaluation, the mitigation menu may assign points for 20-ft vegetative filter strips with more assigned points for strips exceeding 30 ft.

Fifth, several commenters pointed out that when EPA described the exemption for fields with tile drains, it distinguished between those with and without controlled outlets. EPA plans to clarify that fields with tile drainage without controlled outlets are eligible measures in the mitigation menu.

Sixth, many commenters requested that USDA and EPA work together to ensure that growers who voluntarily employ USDA's Natural Resources Conservation Service (NRCS) practices can use those practices to fulfill runoff pesticide product labeling requirements. To address this request, EPA and USDA signed a memorandum of understanding (MOU²) on February 6, 2024, describing how pesticide product labeling could reference NRCS practices that EPA has determined are effective at addressing pesticide runoff. EPA is developing a guidance document to assist growers in understanding how existing NRCS practices relate to and satisfy specific EPA mitigation measures. EPA plans to include this guidance on its future mitigation menu website. Nothing about the MOU changes the voluntary nature of NRCS programs nor will EPA ask growers to enroll in those programs. In fact, EPA is merely referencing NRCS descriptions of its conservation practices to give growers more options to meet pesticide mitigation requirements, even if growers use those measures without enrolling in NRCS programs.

To expand the measures on the mitigation menu, particularly for minor and speciality crops, USDA and EPA will cohost a mitigation workshop in May 2024. One purpose of the workshop is to hear from growers on what conservation practices they undertake, how they could implement measures on the mitigation menu, the costs and technical assistance needed to comply, and how long it would take to implement these practices. EPA also plans to share a list of the mitigation measures identified in the public comments for which the Agency has data to evaluate their effectiveness. EPA also plans to discuss measures which the Agency is aware of but lacks enough data to add to the menu. As EPA becomes aware of additional data, the Agency would evaluate this information to determine whether to include new measures on the mitigation menu.

Seventh, the purpose of the identified mitigation measures is to reduce offsite movement of pesticides through runoff and erosion. In addition to NRCS practices, EPA is aware of other federal, state, and non-governmental programs that growers may employ that may also fulfill pesticide product labeling requirements. As described in the draft strategy, the available data demonstrate that the effectiveness of many conservation practices can vary depending on site-specific considerations. EPA recognizes that mitigation measures will likely be more effective when growers work with experts to design and implement mitigation measures best suited to a particular field. EPA, USDA, and FWS are working to help

² [https://www.epa.gov/endangered-species/memorandum-understanding-between-epa-and-usda-help-protect-endangered-species#:~:text=On%20Feb.,Conservation%20Service%20\(NRCS\)%20practices.](https://www.epa.gov/endangered-species/memorandum-understanding-between-epa-and-usda-help-protect-endangered-species#:~:text=On%20Feb.,Conservation%20Service%20(NRCS)%20practices.)

growers and stakeholders who decide to work with experts and participate in conservation programs for which EPA could offer points towards fulfilling pesticide product labeling requirements. To inform this work, EPA is considering the availability of data on conservation practices that growers use as a result of participating in non-NRCS conservation programs to inform the important characteristics of qualified conservation programs.

III. Refine Pesticide Use Limitation Areas (PULAs)

Summary of Public Comments: Commenters requested EPA to reconsider its approach to establishing PULAs, stating that it overburdens herbicide users unnecessarily because it captures many areas that are not needed to protect listed species. Commenters requested that EPA refine PULAs that are overly broad, such that they minimize impacts on agriculture.

EPA's plans on revising the PULAs: EPA, with input from FWS and USDA, are developing an approach to refine PULAs with the goal of making the approach available to the public.

If EPA identifies geographically specific mitigations to protect a listed species or critical habitat from the use of a pesticide (or group of pesticides), EPA communicates those mitigations and where they apply using a web-based system called Bulletins Live! Two (BLT). The locations where those mitigations would apply are called PULAs. PULAs focus on areas where pesticide exposures are likely to impact the continued existence of a listed species, which may include a reduction in survival or recovery of the species. Thus, the purpose of a PULA is to identify geographic areas where pesticide mitigations are needed to conserve a listed species and its critical habitat (if designated).

EPA is working to refine the PULAs to ensure they are limited to those areas needed to protect the species. In the near future, EPA will be working with a small group of beta testers to apply EPA's approach to refining the PULAs for hundreds of listed species. The approach that EPA will be testing includes integrating available information on listed species and likely pesticide exposure areas to identify specific locations where pesticide mitigations would apply, while minimizing impacts to pesticide users. In the final strategy, EPA plans to communicate further on this.

IV. Spray Drift Mitigation

Summary of Public Comments:

Commenters generally agreed with the approaches EPA proposed for pesticide users to reduce the spray drift buffer (*e.g.*, including roads and buildings to reduce the buffer) but requested that EPA expand its definition of windbreaks. Some commenters also provided data on additional approaches to reduce the spray drift buffer. Some commenters indicated use of wind-directional spray drift buffers as appropriate, whereas other commenters suggested omni-directional buffers or only buffers in the areas nearest to habitats. Finally, commenters suggested that EPA revise the approach of using the species habitat to determine where a buffer begins, because many people have difficulty identifying species habitat.

Some commenters requested EPA consider updating its spray drift buffers based on recommendations from the National Agricultural Aviation Association (NAAA). Some commenters also stated that the approach EPA described for calculating maximum drift buffers is overly conservative in that it will identify overly large buffers that are not feasible, while others agreed with the approach.

EPA's Plans on Updating Draft Spray Drift Modeling and Mitigation: EPA expects to update its aerial spray drift modeling, revise the spray drift mitigation measures to expand flexibility, and simplify how a person determines buffer distances in the field.

In response to comments on approaches to reduce the spray drift buffer and where a buffer begins, EPA expects to revise the spray drift buffer definition. Spray buffers begin where the application ends and, therefore, a buffer may include areas on-field, adjacent to the field, or a combination of both. EPA is considering including areas in the buffer that are not directly treated with the herbicide, as described in **Table 1**, including buildings and roads as suggested by commenters. In effect, this clarification reduces the perceived requirement that spray drift buffers would always require a grower eliminate part of their field from production. With these revisions, the applicator and grower would no longer need to identify "listed species habitat."

Table 1. Downwind managed areas that can be included as part of a spray buffer.

When spray drift buffers are identified as mitigations to protect listed species, the following managed areas can be subtracted from a spray drift buffer distance if they are immediately adjacent to or contiguous with the treated field in the downwind direction:

- a. Agricultural fields, including untreated portions of the treated field;
 - b. Roads, paved or gravel surfaces, mowed grassy areas adjacent to field, and areas of bare ground from recent plowing or grading that are contiguous with the treated area;
 - c. Areas occupied by a building and its perimeter, silo, or other man-made structure with walls and/or roof;
 - d. Areas maintained as a mitigation measure for runoff/erosion or drift control, such as vegetative filter strips (VFS), field borders, hedgerows, Conservation Reserve Program lands (CRP), and other mitigation measures identified by EPA on the mitigation menu;
 - e. Managed wetlands including constructed wetlands on the farm; and
 - f. On-farm contained irrigation water resources that are not connected to adjacent water bodies, including on-farm irrigation canals and ditches, water conveyances, managed irrigation/runoff retention basins, and tailwater collection ponds.
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The NAAA has provided EPA with information on application conditions and on a more modern aircraft currently used in aerial application of pesticides. EPA intends to use this information to update its method for predicting off-field spray drift deposition. This change would make the drift estimation process more representative of real-world conditions, and applicable to modern day equipment and agricultural practices, and may result in less drift mitigation needed for some chemicals.

In response to comments regarding the conservativeness of the maximum buffers, for the final strategy, EPA plans to provide additional support for the identified maximum buffer so that stakeholders better

understand why EPA's approach is appropriate. Also, as described above, EPA expects to include additional measures that pesticide users can include in any identified spray drift buffer. EPA is considering revising the definition of windbreaks to potentially capture more types of windbreaks. Based on new information received in comments, EPA is also considering increasing the percent reduction in an identified maximum buffer associated with hooded sprayers.

V. Herbicide Strategy Decision Framework

Summary of Public Comments: Commenters generally communicated either support for or opposition to the overall decision framework. Some commenters conveyed that the framework was based on a sound scientific approach addressing herbicides and use specific mitigations, was focused on the highest herbicide use patterns (agriculture), provided flexibility and uniformity to mitigation for herbicide users, and was expeditious and efficient in finding mitigations for listed species. Others commented that steps in the framework were unclear, which led to confusion about EPA's recommendations. For example, several commenters requested that EPA follow its standard science-based risk assessment process despite that being the first step of the framework. Some commenters also expressed concern with EPA's approach in the first step of the framework to evaluate potential population level impacts based on species sensitivity distributions, noting that the approach would not include all species. Commenters also provided input on the second step in the framework, which is to determine the magnitude of potential impacts for a particular herbicide, use, and listed species on a national basis using an estimated exposure to toxicity ratio (which EPA refers to as the Magnitude of Difference (MoD)) and then to relate the level of mitigation needed for that ratio. Some commenters suggested this approach did not identify enough protection while others suggested it identified too much protection.

EPA's Plans on Revising the Framework: In response to the comments on the framework, EPA is considering revisions to the framework steps to improve communication, clarify points of misunderstanding, and simplify the descriptions.

EPA is developing a short, high-level summary of the Herbicide Strategy Framework to describe the purpose, scope, and process in a website that will host training materials.

EPA is revisiting the mitigation level approach (e.g., 0, 3, 6 and 9 points of runoff mitigation) to consider if a simpler approach can achieve the same mitigation level goals. For example, EPA is considering a "none", "low," "medium," "high" approach that creates only four tiers of mitigation needs. As part of this consideration, EPA is also considering revising the description of and support for the method to identify potential population level impacts (i.e., the MoD approach) and how much mitigation is needed to address identified impacts. EPA is also exploring methods to incorporate a broader range of tested species into the analyses (e.g., species sensitivity distributions (SSDs)). By including more test species in its analysis, the characterization of potential population level impacts in the risk assessments that the final strategy will rely upon would be more comprehensive.

VI. Herbicide Strategy Implementation

The Herbicide Strategy, once final, would not change an individual herbicide's labeled use patterns, use restrictions, or existing mitigations. Rather, the Herbicide Strategy is a framework for how the Agency intends to reduce the likelihood of population level impacts to listed species and their critical habitats by requiring different levels of mitigation in geographically specific areas. EPA plans to implement any needed mitigations identified through this approach in its future registration and registration review actions. EPA would apply the final strategy framework as part of these actions. For example, EPA would look at an application for a new conventional herbicidal active ingredient and determine whether the final strategy applies and, if so, how it applies to the specific request for registration and what mitigations may be necessary. Similarly, in registration review, when an herbicide is being reevaluated to ensure that it continues to meet the FIFRA standard, EPA would consider whether the final strategy applies to the reevaluation and what mitigations may be necessary. In both examples, there would be an opportunity for public comment and working with the applicant/registrant to address any changes to the pesticide product labeling.

To successfully implement the Herbicide Strategy, EPA will work with its state partners and stakeholders during the implementation of the final strategy. To assist in communication, EPA intends to make available various communication and education materials to support awareness of new label requirements, particularly those resulting from registration review. Because herbicide users may have been using some herbicide products for many years, awareness of any changes in how these herbicides may be used is key to their ability to comply with any updated mitigation requirements. EPA recognizes that the main sources of information for many growers/herbicide users are the states, crop consultants, university extension, and agricultural retailers and that EPA needs to communicate with them to improve grower and herbicide applicator awareness. EPA expects that communicating with these professionals will help improve understanding of the strategy and mitigation measures, will facilitate implementation of mitigation in the field, will increase familiarity with BLT, Bulletins, and PULAs, will improve compliance, and thus help decrease herbicide exposures to listed species.

VII. Other Suggested Mitigations that EPA has Not Included

The following mitigation practices were mentioned in public comments but EPA is unlikely to add to the menu by the time of the final strategy due to insufficient description of the practice, lack of data to evaluate their efficacy, or environmental concerns with the practice. If more information about these practices is made available, EPA will consider adding these measures to the mitigation menu in the future.

- Polyacrylamide (PAM) - a water absorbing polymer that has been used in industrial water treatment
- Flooded Agricultural Practices
- Crop Row Spacing

VIII. Other Suggested Mitigations Not Applicable to Herbicide Use on Cultivated Agriculture

Commenters recommended EPA add the following USDA NRCS practices to its runoff mitigation menu. EPA's review of these practices, however, has determined that they are unsuitable for managing runoff from cultivated agriculture. Therefore, EPA does not intend to include these practices as eligible for mitigation measure points.

- NRCS 512: Forage and Biomass Planting
- NRCS 511: Forage Harvest Management
- NRCS 548: Grazing Land Mechanical Treatment
- NRCS 453: Land Reclamation, Landslide Treatment
- NRCS 528: Prescribed Grazing
- NRCS 550: Range Planting
- NRCS 381: Silvopasture
- NRCS 561: Heavy Use Area Protection
- NRCS 578: Stream Crossing
- NRCS 590: Nutrient Management
- NRCS 614: Watering Facility
- NRCS 432: Dry Hydrant

NEXT STEPS

EPA recognizes that the Herbicide Strategy represents a new approach that benefits from stakeholder engagement and feedback. EPA appreciates the thoughtful input from multiple stakeholders in various venues on the draft strategy and other ESA efforts. EPA continues to consider the previously submitted public comments, meet with stakeholders, and seek feedback from the FWS, USDA, and state agencies. By August 30, 2024, EPA intends to provide the public with the final strategy.