

## **Transcript – Draft Strategy to Better Protect Endangered Species from Insecticides September 5, 2024**

0:05

Hello, welcome to EPA's Draft Insecticide Strategy webinar. My name is Natalie Bray, I work in the Pesticide Re-evaluation Division in the Office of Pesticide Programs. I'll be moderating today's webinar. We have a great lineup of speakers and panelists here today. Michael Wagman from the Environmental Fate and Effects Division will be leading our presentation. After the presentation we will have a question and answer session that includes all of our speakers and additional panelists. We will have Megan Guevara, Keith Sappington, and Andrew Shelby from the Environmental Fate and Effects Division, Elizabeth Karn from the Biological and Economic Analysis Division, and Melanie Biscoe from the Pesticide Re-evaluation Division. We also want to acknowledge the entire Insecticide Strategy team who worked with us on the webinar and on all the materials related to the Strategy. Before we start, here are some tips for participants in the webinar.

1:13

To toggle between a maximized and standard view of the presentation, click on the four corner symbol highlighted by the yellow arrow. If you are having technical difficulties, please press the raise your hand icon highlighted with the blue arrow and we will do our best to help. To download the PDF version of this presentation, press the paper icon highlighted with the green arrow. The slides as well as the recording of this presentation will be posted to EPA's ESA webpage. To pose a question, use the question box shown with the red arrow. Please note that all participants will remain muted during this event. We will hold most questions until the end of the presentation, but the moderators may pause the presentation if there is a relevant question that is best answered at that time. I'm going to hand it over to Michael now.

2:12

Thanks, Natalie. The purpose of today's webinar is to provide a high-level overview of the draft Insecticide Strategy on which EPA is requesting public comment. The proposed Insecticide Strategy was posted to the public docket on July 25th, 2024 and is open for public comment for 60 days until September 23rd. There is a link to the docket on this slide. We encourage you to review the materials in the docket and submit your comments on the draft Strategy.

2:43

We're going to start today with an introduction of the goals and scope of the draft Insecticide Strategy, which I'll sometimes refer to as just the draft Strategy. Then we'll move into the three-step framework EPA proposes in the draft Strategy that identifies whether, how much, and where mitigations could be needed such that population-level impacts to listed species are unlikely. Finally, we'll discuss the next steps for the draft Insecticide Strategy.

3:14

First, we'll discuss the goals and scope of the draft Insecticide Strategy.

3:21

Our goal is to develop a broad approach to reduce potential population-level impacts to over 850 federally listed invertebrates and listed species that depend on invertebrates from the agricultural uses of conventional insecticides. And I want to note here that throughout this presentation, when we are referring to impacts, we are referring to impacts at the population level, unless

specifically stated otherwise. The Strategy is not self-implementing. Instead, application of the Strategy would occur through registration and registration review actions. The Strategy focuses on reducing the potential for impacts associated with spray drift, runoff, and erosion transport. More specifically, it focuses on reducing direct impacts to listed aquatic and terrestrial invertebrates in the lower 48 states that are under the jurisdiction of the U.S. Fish and Wildlife Service. We're also addressing listed species that depend on invertebrates, either as part of their diet or for pollination services. This includes listed obligate species that depend on only one or a very small number of species of invertebrates, as well as listed generalists that may more broadly depend on a variety of invertebrate species. The draft Strategy does not cover direct impacts to non-invertebrate species. Additionally, species that are under the jurisdiction of the National Marine Fisheries Service are being addressed separately.

4:45

These figures show the species that are covered under the draft Strategy. On the left, we have listed invertebrate species that may have direct impacts from the use of insecticides. A large number of aquatic invertebrates are aquatic snails and mussels, which represent 80% of listed aquatic invertebrates, followed by crustaceans such as shrimp, and then a small number of aquatic-phase insects. The largest number of listed terrestrial invertebrates are moths and butterflies. On the right side, we have listed species that depend on invertebrates for diet or pollination. The largest number here are terrestrial plants that rely on insects for pollination. There are also many fish species that depend on aquatic invertebrates as part or all of their diet.

5:32

The next set of slides provides an overview of the draft Insecticide Strategy process.

5:40

At the heart of the Strategy is a framework consisting of a three-step process. In the first step, we identify the potential for impacts by comparing potential exposure and toxicity data and evaluating other lines of evidence. Step one establishes the potential for impacts to the listed species as not likely, low, medium, or high. The low, medium, and high categories indicate a potential concern for impacts that may need mitigation. EPA begins by considering the uses of the insecticide, so for example application rates, crops, application methods, its fate in the environment such as major transportation routes off the field and degradation, and potential exposures for listed species to the insecticide, as well as the toxicity of the insecticide to listed species and habitats of listed species. This Strategy refines assessment processes that evaluate impacts to individual organisms or small groups of individuals by considering more realistic and less conservative toxicity endpoints that represent impacts to populations and communities of invertebrates. The Strategy accounts for available information that suggests there are differences in the sensitivity of a particular species to a given chemical in comparison to others in the same taxa and for different types of habitats. The refined assessment process also considers whether EPA's standard exposure models represent a listed species habitat and adjusts the identified level of mitigations to address any overly conservative assumptions that would not apply to a particular species.

Then in step two, we identify mitigation measures that when applied would reduce the potential for these impacts. Step two involves identifying the level of mitigation to reduce exposure via spray drift or runoff and erosion to address the potential for any identified impacts from step one. EPA would identify a greater level of mitigation where the potential for impacts is higher and less mitigation where there is lower potential for impacts. EPA will not identify mitigation if it

finds the potential for impacts is unlikely. As part of step two, we've also incorporated tier three refined risk assessment methods, particularly using a concept of runoff vulnerability to illustrate those areas where less runoff or erosion is likely.

Finally, in step three, we identify where in the contiguous US the mitigations identified in step two would apply. In some cases, EPA expects the mitigations would apply across the full spatial extent of a use pattern, such as a specific crop, within the contiguous US. In other cases, EPA plans to require any necessary mitigations only in geographically specific areas. Step three also incorporates refined risk assessment methods such as incorporating usage data, spatial data, and information on the habitat and biology of each specific species. We'll cover these three steps in more detail in the following slides.

8:41

Let's zoom into step one, identifying the potential for population-level impacts. To determine the potential for population-level impacts, we start with the magnitude of difference or MOD concept. The MOD is the ratio of the insecticide exposure to its corresponding toxicity threshold value. This concept is like the risk quotient approach we have historically used in our risk assessments. One difference is that instead of looking at impacts to individuals, we are now evaluating potential population-level impacts. As the MOD increases, the potential for population-level impacts increase. EPA calculates different MODs for different types of exposures, so for example spray drifts for runoff and erosion, for different types of habitats and different groupings of species.

9:29

Let's start by exploring differences in exposure for different types of habitats. As we developed the draft strategy, we were thinking about the diversity of habitats where listed species within its scope occur. For aquatic species, we know that listed species occur in a wide variety of habitats such as seasonal vernal pools, prairie potholes, larger wetlands, and larger water bodies, including rivers and large lakes. Similarly, on the terrestrial side, we know that we can have attractive habitat in places like meadows, immediately adjacent to treated fields, but also in forests and other habitat types. Using this information, we considered how well our existing model approaches describe these different habitats.

10:14

On the toxicity side, we know that there are a diversity of listed invertebrate species out there. For aquatic invertebrates, we have organisms like vernal pool fairy shrimp, aquatic-phase stonefly larvae, and mussels and snails. Similarly, for terrestrial invertebrates, we have different orders of insects like moths and butterflies, beetles, as well as terrestrial snails. Using this information and the available toxicity data for a specific chemical, we can consider whether there are differences in the sensitivity of invertebrate organisms to different insecticides.

10:49

As mentioned earlier, as the magnitude of difference increases, the potential for population-level impacts increase. Given the inherent variability in exposure and toxicity estimates, the magnitude of difference approach shows that when the MOD is less than one, meaning exposures are lower than population-level toxicity estimates, the potential for impacts is not likely. Generally, when exposures are within an order of magnitude greater than the toxicity estimates, EPA determines that there is low potential for population-level impacts. When exposures exceed toxicity

estimates by one or more orders of magnitude, EPA determines that there is a medium to high potential for population-level impacts.

11:37

Now we are moving to step two, where we identify the level of mitigation needed to reduce exposure via drift or runoff and erosion to address the potential for any identified impacts. When the potential for impacts is not likely, EPA would not identify mitigation. When the potential for impacts is low, a low level of mitigation is identified. When the potential for impacts is high, a high level of mitigation is identified. In the following slides, we'll discuss mitigation to address impacts from both spray drift and runoff.

12:12

For spray drift, for insecticide applications made either via broadcast spray, using aerial or ground equipment, and for airblast in orchards, when there is a potential for impacts, we identify a spray drift buffer distance, which would represent the distance downwind from the insecticide application, where exposure is such that those impacts are unlikely. As stated before, when there's a low potential for impacts, we are looking for a level of mitigation that reduces exposures by an order of magnitude. For spray drift, this equates to between 10 and 50 feet for ground and aerial applications, respectively. When we identify high potential for impacts, we identify a maximum buffer, which is the distance downwind from the insecticide application beyond which exposures are not appreciably reduced. When we identify a medium potential for impacts, we calculate a chemical-specific distance where exposures are reduced below those population-level impacts. We've anchored these distances based on commonly used equipment and nozzles. For aerial nozzles, that means they are based on medium droplet spectra, and for ground nozzles, they are based on high boom equipment and very fine-to-fine droplet distribution.

Finally, EPA determined that spray drift from certain application methods would be limited, for example, seed treatments and soil applications, and thus the potential for impacts is unlikely and spray drift mitigations would not be identified. A list of these methods is described in the Strategy and provided in a supplemental slide at the end of this presentation.

13:48

When a buffer is identified on a pesticide label and the directions for use allow mitigations to reduce the distance, EPA identified approximately 29 mitigation options to reduce the buffer across the different application methods. These are described in the draft Strategy and the Mitigation Support document. The exact reduction in the buffer size depends on the mitigation measure and application method, which are described more completely in the draft Strategy and the accompanying Mitigation Support document. The drift mitigation options include those related to application parameters, such as reduced rate, treating only a portion of the field, or increasing droplet size spectra, as well as mitigations that are adjacent to the treated field, such as wind breaks, and those related to relative humidity. The reduction for each option can range from a minimum of 10% for aerial and ground applications conducted at higher humidities, all the way to 100% when riparian or forest habitats of at least 60 feet wide exist on the downwind side, regardless of the application method. If the applicator has reached a reduction of 100% when using these buffer reduction options, then no additional buffer would be identified. I'll also note here that we are still evaluating the extent to which adjuvants that are added to insecticide formulations may decrease the potential for drift.

15:15

There are areas that are considered highly managed and when downwind at the time of application can count towards the spray drift buffer. While these are not intentionally created for the purpose of mitigating pesticide exposure, due to their composition and size on the landscape, they reduce the distance spray drift may travel to sensitive habitats. These may include areas such as other agricultural fields, roads, buildings, as well as other examples that can be found in the draft Strategy.

15:45

Now we'll move into discussing mitigations for runoff and erosion exposure to aquatic habitats. To address impacts from runoff and erosion, for runoff-prone chemicals, EPA would identify mitigation points. The number of mitigation points reflects the potential for impacts and whether a chemical is either runoff or erosion prone. For runoff-prone chemicals, EPA would identify 3 points of mitigation for low impacts, 6 points for medium impacts, and 9 points for high impacts. For erosion chemicals, those corresponding points would be 2, 4, and 6 points respectively. Less points are required for erosion-prone chemicals due to the lower mobility of soil particles relative to water and the increased effectiveness of the mitigation practices in reducing soil and runoff. EPA also determined that certain applications such as spot treatments and soil applications (soil injections, excuse me) would have limited runoff exposure, and thus the potential for impacts is unlikely and mitigations would not be identified. A list of these methods are described in the Strategy and also presented in a supplemental slide at the end of this presentation.

17:00

There are approximately 40 different mitigation measures identified in the Strategy to reduce runoff or erosion exposure. I'm not going to go through all the mitigations in this webinar given the time, but roughly they are separated out into options related to application parameters, characteristics of the treated field, infield mitigations, mitigations that are adjacent to the treated field, and retention systems that capture runoff and control discharge. EPA is also providing mitigation points for applicators that work with a qualifying technical expert or participate in a qualifying conservation program, as we have higher confidence that mitigation measures identified and implemented through these would achieve higher than average efficacy at reducing runoff and erosion. The mitigation measures are described in the draft Strategy and the Mitigation Support document.

Finally, when EPA develops pesticide use limitation areas or PULAs for a given species, the geographic extent of the mitigations does not extend beyond 1,000 feet from those areas it identifies for conservation of a listed species and its critical habitat because the potential for population-level impacts does not extend beyond that distance. For those cases where EPA identifies mitigations for listed species that will apply across the full spatial extent of the use pattern, EPA similarly does not want growers and applicators to implement mitigations unless they're within 1,000 feet of habitat or water body. Based on feedback from a wide variety of stakeholders, EPA is not relying on habitat descriptions because stakeholders widely indicated that they could not identify habitat based on these descriptions. Instead, EPA is relying on managed lands, as we described above for spray drift. In other words, to the extent that managed areas represent the entirety of the thousand feet downslope and immediately adjacent to a pesticide application, and they themselves are not being treated with the pesticide, the applicator would not need to implement runoff and erosion mitigations.

19:07

The amount of runoff and erosion transport differs across the contiguous US, especially due to differences in frequency and the amount of rainfall. To address this, EPA incorporates sophisticated spatially refined risk assessment methods to evaluate the potential for pesticide exposure in runoff given these differences in order to differentiate geographical areas by runoff vulnerability and reduce the amount of runoff and erosion mitigation identified in these areas. In practice, this is county-level relief points that reduce the amount of additional mitigation that would be needed in areas that do not have high pesticide runoff vulnerability. This slide shows a runoff vulnerability map. EPA assigned relief points to all counties with medium (two points), low (three points), or very low (six points) pesticide runoff vulnerability.

EPA's analysis has shown through the vulnerability map resulted in the determination that in some areas where runoff and erosion is less likely, the agency would provide relief points. These relief points based on our analysis, in turn, lessen the impacts to growers and users in areas where there's less runoff and therefore less pesticide exposure. Approximately 80% of cultivated land in the lower 48 states would get at least some relief points. About half of all cultivated land, approximately 175 million acres, would receive two points. Three relief points would be applicable to about 30% of cultivated land, which is approximately 96 million acres. Six points would be applicable to about 2% of cultivated land, which translates to 7 million acres.

This relief map and the mitigation menu are relevant to both the draft Insecticide and final Herbicide Strategies so mitigations could be planned with these relief points and the runoff erosion mitigation menu in mind. A lot of folks are planning for a maximum of nine points. However, EPA does not expect nine points to be common on the general labels for herbicides and insecticides, which would more likely occur within specific geographic areas for specific listed species. However, for the sake of a chemical with high potential for impacts to generalist species, as an example, where nine points of mitigation have been identified to prevent those impacts, those nine points would be applicable only to the 20% of cultivated land that's represented by the dark green areas in the map. In the light green areas that cover about half of cultivated land, a maximum of seven points would be applicable. In the yellow areas representing about 30% of cultivated land, a maximum of six points would be applicable. And only three points would be applicable in the tan areas that represent 2% of cultivated land.

22:01

Now we're going to move into applying step three of the framework and considering the spatial extent of potential mitigations. In this step, EPA expects to implement mitigations broadly when it identifies mitigations for listed generalists and using the Bulletins Live Two (BLT) site when additional mitigations are identified for listed invertebrates. EPA has identified approximately 660 listed species that are listed generalists for the Insecticide Strategy. Blue areas on the map represent these species demonstrate that they range across most of the contiguous US. That is why EPA expects to convey mitigations for these species on the general label. Another key concept here is that EPA expects to identify less mitigation for such generalists compared to listed invertebrate species, which EPA will discuss on the next slide.

22:54

There are 210 listed invertebrate species. In this step, EPA considers the degree of overlap of each species range with cultivated land, insecticide usage data, and species-specific factors such as habitat to evaluate if a listed species might rise to the level of population-level impacts from agricultural uses of insecticides. The yellow areas on this map show the range of the 73 species and designated critical habitat for which the draft Strategy determined there may be a potential

for these impacts. This does not mean that EPA has determined that a particular chemical would have potential for impacts to these species. Rather, it means that for these 73 listed species, it represents the maximum number of species where EPA may find a potential for impacts and therefore, identify mitigations. As you can see, the spatial extent of these species is much smaller than the spatial extent of the generalist species, which is why EPA would communicate the locations where additional mitigations could apply through PULAs. EPA is now working with US Fish and Wildlife Service and others to refine the species locations, which will in turn likely result in smaller PULAs.

Many of the 73 listed species will likely share the same level of mitigation for a particular insecticide. This is because they share similar modeled habitats or population-level endpoints based on the assessment of sensitivity differences among specific groupings. While the mitigations identified may vary among insecticides, EPA anticipates the level of mitigation for a particular pesticide would be the same. Therefore, EPA is planning to group these species into 10 common PULAs, which EPA will develop after it develops refined maps for the 73 listed species.

24:43

In developing the 10 PULA groups, EPA also groups species when toxicity data may be available to differentiate between sensitivities of different types of invertebrates. These groupings are based on the concepts incorporated in step one, where we identify the potential for population-level impacts based on different considerations of exposure, species habitat, taxonomy, and characterization of the expected differences in EPA's exposure models and exposures in the species' habitats. For example, all other things being equal, we would expect lower exposure and a lower level of potential mitigation for species that live in larger flowing water bodies like rivers that have high dilution or dispersion of the chemical compared to those living in smaller, static wetlands. In this way, we are trying to target any potential mitigations to the types of species that need them most, either because of their sensitivity or because of habitat differences. As another example, as highlighted on our slide, based on our available data, where mussels and aquatic snails have different sensitivity compared to crustaceans and aquatic-phase insects, the level of identified mitigation may differ between these PULAs. It's worth noting that our ability to distinguish mitigations among these different groups also depends on how much toxicity data we have. Specifically, the more toxicity data we have for different species, the more likely we can target the mitigations to protect sensitive taxa and not identify overly restrictive mitigations for less sensitive taxa.

26:20

EPA conducted case studies of nine representative insecticides to help develop the draft Insecticide Strategy. These nine insecticides were chosen to represent different insecticidal modes of action, physical/chemical properties, use sites, levels of agricultural usage, application methods, and toxicity to invertebrate species. Importantly, these insecticide case studies are not intended to support a regulatory action for the chemical and do not replace existing mitigations implemented on the labels and are intended for illustrative purposes only. Use of these representative insecticides allowed EPA to explore any differences among these pesticides relative to exposure and impacts for identifying when and where different types of mitigations may or may not be needed for individual insecticides.

When working through the case studies and thinking about potential mitigations, we learned a few things. First, as we illustrated earlier, the greatest number of listed invertebrate species are

mollusks, which represent 80% of listed aquatic invertebrates. For several chemicals, we identified lower toxicity for mollusks, demonstrating that they are less sensitive when compared to aquatic-phase insects and crustaceans. For the chemicals where mollusks were less sensitive, we consequently identified lower levels of mitigation for those species compared to the more sensitive aquatic invertebrates. We identified the greatest level of mitigations for vernal pool species, which represent a small number of listed species. We also identified less mitigation for larger water bodies, such as large ponds, as compared to wetlands. Finally, on the terrestrial side, we are most concerned with exposure from spray drift. We will now discuss EPA's implementation plans and next step for the Insecticide Strategy. I will now hand it back to Natalie from the Pesticide Re-evaluation Division to discuss implementation.

28:15

Thanks Michael. The Strategy itself once finalized would not be self-implementing. EPA plans to consider the applicability of the final Strategy to inform conventional new active ingredient registration actions and conventional registration review actions. EPA will continue to provide opportunities for public input on proposed decisions including mitigation that may come from a final Strategy. As part of the registration review process, EPA will issue proposed interim decisions with proposed mitigations before issuing an interim decision. Similarly, proposed decisions with proposed mitigations for new active ingredients will be issued before the final decision. When label language on products is updated, it may also include directions to access BLT and the mitigation menu website. To assist with updates and implementation, EPA will continue to provide educational materials and support to stakeholders.

29:26

As we implement this Strategy, EPA is also working to ensure that the mitigations in the Strategies like the draft Insecticide Strategy are aligned to the extent appropriate with mitigations and other EPA efforts, including the Herbicide Strategy and the Vulnerable Species Pilot. For example, the runoff/erosion mitigation options are consistent across the Strategies and Projects so that a grower's investment in one mitigation measure is assured to receive credit across pesticides. The level of mitigation needed across EPA Strategies and Projects is likely to vary based on the potential for impacts to listed species and the goals of the different Projects. To the extent possible, EPA expects to align label language for mitigation measures across the Strategies.

30:20

As a quick reminder, the draft Strategy and associated documents are open for public comment for 60 days. The public comment period will close on September 23rd, 2024. This webinar is intended to help potential commenters better understand the draft Strategy. EPA will consider and respond to public comments. EPA expects to finalize the Insecticide Strategy no later than March 2025.

30:51

To get updates on EPA's major decisions as well as Strategies, please sign up for OPP updates on OPP's main website. The slide identifies a few different ways to sign up. I'll pause here for a minute to allow everyone to review the slide and sign up if needed. Okay, I'm going to move on.

31:30

The mitigation menu presented on the website [www.epa.gov/pesticides/mitigation-menu](http://www.epa.gov/pesticides/mitigation-menu) currently reflects the FIFRA IEM effort. EPA intends to revise the ecological mitigation website

to reflect the mitigation menus for spray drift and runoff identified in the draft Strategy and the Ecological Mitigation Support document in the near future.

32:05

Thank you again for attending this webinar. We would now like to open the floor for feedback and questions. The graphic on the slide shows you how to navigate to ask a question. For the question and answer portion, I'd like to remind everyone that we have a panel of experts here to address your questions and I'd like to invite them to join us right now. A couple reminders while our panelists get ready. Documents are available in the public docket for the draft Insecticide Strategy and the public comment period closes on September 23rd. To download the PDF version of this presentation, press the paper icon highlighted in green on your screen. The slides as well as the recording of this presentation will be posted to EPA's ESA webpage.

32:56

It looks like I have my panel ready to go, and the first question is going to go to Megan. What are the differences between the Insecticide Strategy and the Herbicide Strategy?

33:12

The draft Insecticide Strategy builds on concepts and analyses that EPA included in the final Herbicide Strategy. The draft Insecticide Strategy incorporates improvements based on public comments on the draft Herbicide Strategy, including to increase flexibility and improve ease of implementation while still protecting federally listed species. There are several key differences between the Strategies. First, remember that the Strategies are only looking at a subset of all non-target organisms for direct effects. So, the draft Insecticide Strategy considers direct exposures to terrestrial listed insects like butterflies, while the draft Herbicide Strategy focused on direct exposure to terrestrial plants, and then for indirect effects, focused on what the loss of invertebrates for the Insecticide Strategy and plants for the Herbicide Strategy would mean for listed species and other taxa. Additionally, in the final Herbicide Strategy, EPA assumed that listed plants or other non-target plants did not need on-field mitigations because the majority of species are not likely to occur on highly managed agricultural areas. For the draft Insecticide Strategy, EPA is considering whether there are any listed terrestrial invertebrate species such as butterflies that are likely to occur on-field to levels that warrant concern for population-level impacts and potential mitigations.

34:40

Thanks, Megan. In the questions, I am getting requests for people to see the docket link and the QR code, so during the next few questions, I will toggle between those two slides, and if you still more time to review those slides, please drop your question in the question box again.

35:01

So, the next question is for Melanie. When will we see updated labels incorporating these mitigations for specific chemicals?

35:11

That's a great question. For registration review, once we review the public comments on the proposed interim decision that actually proposes the Strategy mitigation, we will publish an interim decision. After that interim decision, the registrants have 60 days to submit labels, and then once we get those labels in, at that 60-day point, and review and stamp those, the registrant will have some time to prepare the labeling before it appears on all product labels. The product labels have to go through a state registration process. That timing varies by state. So, there is

some process involved with each of the cases that we have or the registrations. For new active ingredient registration actions, there would be a stamped label issued with that registration that would again have to go through a state registration process. So, we recommend checking the registration review schedule, checking chemical-specific dockets, and signing up for OPP Updates to get the latest information. And do note that the Insecticide Strategy is not going to be implemented through actions before it is final.

36:33

Thanks, Melanie. And as Melanie noted, to sign up for OPP updates, I have the slide up, and again, I'll go back to the docket slide for the next question.

36:43

Okay, so my next question is for Libby. The runoff erosion and drift mitigations are complex. How do pesticide users know how to meet their requirements?

36:58

So, stakeholder comments and feedback indicate that growers and applicators prefer flexibility over a rigid system in which everyone must take the same measures to protect listed species. The grower or applicator can decide, based on the unique situation for each field, which mitigation measures to implement. Inherent in that flexibility is having many options for mitigation that may reduce runoff and erosion or spray drift buffer distance, so the mitigation has to be more complex to give users sufficient options. While we will not discuss the Scenarios document and the NRCS Crosswalk document today, they are available for download and review in the docket for the Herbicide Strategy. The Scenarios document explains how a grower and or applicator in field and specialty crops can, one, accrue points for active ingredients that require runoff and erosion mitigation, two, reduce spray drift buffer distances, and three, think about simultaneous integration of both mitigation for runoff and erosion and for spray drift. The goal of the Crosswalk document is to explain to growers and other stakeholders how conservation practices that growers may already be using could be used to meet EPA's new runoff and erosion mitigation requirements. In addition to these documents, EPA intends to help growers understand their obligations and options through continuing outreach efforts like this webinar, and continued outreach will also allow EPA to learn about and to share additional mitigation options over time.

38:41

Great. Thank you, Libby. The next question is for Keith. Did EPA consider any refinements in the Strategy?

38:53

Thanks, Natalie. Yes, EPA, we actually incorporated refinements throughout the process, the three-step process that Michael outlined. And for example, in step one, where we're looking to identify the potential for population-level impacts, we specifically considered sensitivity differences among various taxa. So, mussels versus insects, for example. We also focused on population-level impacts for direct effects, and that's different than the individual-level that we've done in previous assessments. And we also focused on toxicity thresholds that represent community-level impacts when we're looking at indirect effects to the listed generalists. And those listed generalists are various taxa (birds, mammals, *et cetera*) that broadly depend on invertebrates for either food or pollination services. So that's in step one. In step two, we considered highly refined county information like the map that Michael showed about runoff vulnerability. And that's used to adjust the mitigation points or provide relief points for runoff

and erosion. And then finally in step three, we considered usage data when we calculated the amount of overlap between cultivated land and the listed species ranges and critical habitat. And those sources included the USDA, as well as the California Department of Pesticide Regulation.

40:38

Great. Thank you, Keith. Okay, the next question I have is for Melanie. When is EPA going to release a draft Insecticide Strategy for non-agricultural insecticides, and where can you get more information?

40:55

That's a really great question. As you know, we've been really busy working on the existing Strategies that have been published. And so, we don't have a timeline just yet on release for what we have publicly kind of proposed to do, which is a Mosquito Adulticide Strategy, as well as a Residential Use Strategy. But that is something that we are looking at, and we would be working closely with Fish and Wildlife on that in the coming years.

41:26

Thanks, Melanie. The next question is also for you. The speaker said that EPA will not identify mitigations when impacts to populations found to be not likely. Does this also mean that the FIFRA Interim Ecological Mitigation would not apply in these same cases?

41:47

That's a really, really good question. So I think, and Michael can correct me if I'm wrong, but that is in the context of the Strategy. And so the Strategy is focused on population-level impacts, whereas our FIFRA risk assessments just pre-Strategy look at acute and chronic effects and aren't necessarily population levels. So there is kind of a difference there, and so what we have to do as EPA is look at all of the risk in totality, be it through the Strategy for listed species and population level or risk for non-targets generally. And if folks from EFED want to weigh in on that, that's totally great.

42:49

I might just add, yeah, I mean, I think there are probably situations where we don't identify population-level impacts where the IEM would be applied.

43:04

Yeah, and I would add that, you know, we've refined the PULAs and are continuing to refine the PULAs for the 73 species that are identified, but the Interim Ecological Mitigation measures are appropriate for other non-listed, non-target taxa, and so, yeah, I think there will be cases where the IEM would also apply when the listed species doesn't simply because of overlap, for example.

43:42

Great. Thank you all for answering that question. The next question is for Andrew. What is the justification for a 10-foot buffer?

43:54

Sure. Thanks, Natalie. So, I think this 10-foot buffer in the question is referring to the lower limit buffer for ground applications. So, EPA based the identified lower limit buffers distances on the points in the distribution curves generated in AgDRIFT for the deposition fraction that is estimated to be 10 percent of the application rate for different application methods (in this case, ground) and common droplet size distributions. So, if whoever asked the question wants more

details on this, I would suggest going to the docket linked by Natalie to the Ecological Mitigation Support document and going to Section 4.1 where there will be more details on that. Thank you.

44:43

Yeah thanks, Andrew. The next question is for Megan. How will applicators determine whether a chemical is runoff or erosion prone?

44:55

So, the degree to which a chemical is runoff or erosion prone is related to its potential to sorb to soil particles, specifically based on its fate property or the  $K_{OC}$  of the chemical. So, chemicals with higher  $K_{OC}$ 's are erosion-prone and require less mitigation points to achieve a set reduction in exposure compared to runoff-prone chemicals. And EPA will look at these values when applying the Strategies to individual chemicals in order to determine the number of mitigation points needed. Ultimately, the label and/or BLT for PULAs will indicate the number of points that will be needed based on the pesticide's properties.

45:35

Awesome. Thanks, Megan. This next question can be for Megan and Andrew, anyone else who wants to jump in. EPA describes how drift-resistant adjuvants will be credited towards drift reduction in the final Herbicide Strategy. Will they be different for the Insecticide Strategy?

45:54

Sure, I can take this and Megan can jump in if you want. So, for the final Herbicide Strategy, EPA received data from the Council for Producers and Distributors of Agrotechnology, which allowed for analysis of the performance of adjuvants for reducing drift specifically for herbicides. What we currently have is for herbicides. We are expecting to receive more data from CPDA on insecticides, and any credit that can be given for adjuvants be based on that data. It may or may not be similar to the credit given for herbicides, but it will depend on that insecticide-specific data. Thanks. It's a good question.

46:48

I think Andrew covered that one, but if anyone else wants to jump in. I think we're good. Awesome. Okay. I'm going to move on to the next question for Megan. For erosion and runoff, growers get points for reducing the rate compared to the annual maximum. Do those points count for each individual application even if a grower applies the product more than once?

47:14

That's a really great question. So, the runoff and erosion points that might be indicated on a label for any given use are required to be in place at the time of the application. And so, for the reduction of an application rate or the annual maximum applied rate, might be applicable for an early season application but those points would need to be then accounted for later in the season for each individual application.

47:46

Great, thanks Megan. For anyone on the EFED team, you can answer this question. How did EPA determine that three points are equivalent to a tenfold MOD reduction?

48:05

I think I can take this one too. So, the low, medium, and high scale where we set the points at three, six, and nine was the scale that EPA has selected to move forward, and it's the scale that

we looked at when assigning efficacy for each of the different mitigation points. And so, the order of magnitude reduction is reflected in the mitigation measures that are available in the menu.

48:32

Thanks, Megan. Moving to the next question for Melanie. Assuming PIDs and IDs are issued before all the Strategies are finalized and PULAs are refined, how should producers assess how many mitigation points they need?

48:51

Yeah, that's a really, really good question on the implementation and so let's just say hypothetically we're in a situation where there is a label that says, hey you have runoff mitigation required, you need to see if you are in this Insecticide Strategy PULA or somewhere in the lower 48 states to see what your mitigation is. And so, what you would then do is go to the Bulletins Live! Two website and identify your location, and that website is going to tell you whether you're in one of those Insecticide Strategy PULAs. If there are no PULAs, you would use the mitigation that is specified for anywhere in the lower 48 states, basically, and that would be, for the purposes of the Strategy, that would be generalist runoff mitigation. And so, then when the PULAs are live, you would, you would go to your label, you would go to BLT and see that you were in a bulletin. So, without the PULAs ready for the Strategy, you're simply just going to use the generalist mitigation on the label. And if you follow the label directions, we're trying to make it so that it's clear what you do need to do and a lot less confusing than how I'm explaining it right now. So, that's something that we'll be proposing and on a case-by-case basis, as you all have comments on the label clarity aspect and clarity on how this works, we're welcome to have those and improve it.

50:48

Thanks, Melanie. The next question for Megan: We're circling back a little bit to the runoff vulnerability points here, but I think this is good to clarify for everyone. What factors weigh into the runoff vulnerability point classification system? Are the maps available online?

51:09

Yeah, so the runoff vulnerability classification system factored in the entire range of soil, climate, and crop information that we have in the contiguous United States. And we looked at analyses conducted for a runoff-prone chemical and the relative propensity for that chemical to be in runoff across when compared to the highest. And as to the maps being available online, the maps are available in both the Insecticide Strategy main document as well as the Ecological Mitigation Support document.

51:55

Great. Thanks, Megan. The next question can be for Keith or Michael. Can being in a PULA require more than nine points?

52:07

Sure, I can take that. So, no, I think our understanding is that it's very, really very difficult for farmers and applicators to achieve more than nine points. So, if something was incredibly toxic, you know, we might have to consider other aspects of restrictions in that area. But, no, it wouldn't be any additional mitigation beyond nine points at the max.

52:38

Yeah, agreed.

52:42

Great, thank you. For Melanie, this next question: How will applicators be directed to understand the county-specific relief points they fall under?

52:56

Great question. And as we update the mitigation menu website, I think that will become a lot clearer. And we will have some outreach on that as well. But getting back to the question, on the mitigation menu website, we will be updating that with a link to the counties and the associated mitigation relief points for each county in the lower 48 states. And so that would be part of the mitigation menu. And we will also, we're also intending to include a calculator on the menu, so that it's easy to identify for your field, or even across multiple fields, what your, what mitigation relief points qualify for that field, including the runoff mitigation (or sorry, the runoff vulnerability mitigation relief) so that it's among the, all of the options that are on the menu. It makes it fairly seamless to determine whether you're achieving the mitigation points for your field or not.

54:11

Thanks Melanie. The next question can be for Keith or Michael. Can EPA release the list of 660 species that are generalists? Are the generalists dependent upon both listed and non-listed invertebrates?

54:29

I can take that. Michael, you can add to it as you need to. We have, Appendix D to the draft Insecticide Strategy is actually a spreadsheet. And it has multiple tabs on it. And one of those tabs, I believe it's called indirect effects for dependent listed species, that tab has a listing of all of what we're calling generalists, all the listed generalists. And they depend on invertebrates in general. It may be a listed invertebrate, but it mostly probably isn't. We also have information on the obligates, those that depend on one or very few species, and those are also indicated in that appendix.

55:20

Nothing to add, thanks Keith.

55:24

Great, thank you. The next question, back to Melanie: Can we expect alignment between FIFRA IEMs and the Insecticide Strategy mitigations? Also, would they be on different websites and can farmers/applicators go to one website and see all available mitigations?

55:51

Melanie, I believe you're muted. I apologize. No problem.

55:57

... and we've been really thinking through that a lot since the inception of the Strategies. The real concept that we're trying to think through here is, you know, would we be more restrictive for non-target species than we would for a listed species, just on the whole? And so, we want to make sure that, you know, all of these options and flexibility that we're incorporating into listed species, mitigation, and mitigation relief, that that is brought over into FIFRA IEM. And so, we're basically converting FIFRA IEM from kind of its own pick list to a point system with generally, in concept, fewer points than what you would expect for Strategy mitigation, at least for runoff, so that it can be seamless and you don't really need to think through, when you're looking at a label, well, you know, what website am I supposed to use? Is it a FIFRA IEM

website or a Strategy website? It will be the mitigation menu website. That said, you know, we do have it set up so that you do still have to visit more than one website. You do have to check the bulletins website for to see if you're in a PULA, to see if there are, you're in a PULA with any more restrictive, you know, bulletin requirements. And you also, if there's runoff and erosion mitigation on your label, have to look at the mitigation menu website. So, you know, it's, we're trying to streamline as much as possible. But there isn't going to be exactly a one-stop shop for everything. It'll be as much as we can with the resources we have available to us.

57:57

Great. Thank you, Melanie. Our next question for anyone on the EFED team: In the supplemental slide, does the less than one-tenth acre treated and spot treatment apply to soil drench insecticide applications? I'm asking this question specifically about forests for forest tree conservation from invasive insects.

58:22

So, I think I can take this slide if you don't mind getting to that slide, Natalie. Yes, so for the first part, yes, I would say it does apply to soil drench insecticide applications that would not need additional runoff mitigation. However, you're asking us specifically about forests and forests are not kind of within the scope of the draft Strategy since it's just covering agricultural uses. Feel free anyone else on the team to add.

58:55

That covers it, Michael. That's what I was going to say.

59:02

Great. We are almost out of time. So that will be our last question for today.

59:08

I want to let the audience know that if you asked a question and we were not able to address it today with our panel, we do receive a copy of all of the questions that were asked during the webinar. And we will consider those as we move forward with the draft Insecticide Strategy. And we encourage everyone to comment on the draft Insecticide Strategy before the comment period closes on September 23rd. I'd like to thank everyone for listening to our presentation and participating in our question and answer session. A final reminder to comment on the draft Insecticide Strategy, and I'd like to thank all of our speakers and panelists for joining us today, as well as the entire Insecticide Strategy team at EPA for their effort on the draft Strategy.

1:00:00

Thanks again for joining our webinar and have a great day.