EPA's Final Insecticide Strategy for ESA

This description has been endorsed by the Entomological Society of America and the Weed Science Society of America

1: What is the Endangered Species Act (ESA)?

The Endangered Species Act is a long-standing federal law, passed in 1973, requiring government agencies to ensure that any actions they take do not jeopardize a species that has been federally listed as endangered or threatened. When an agency has a proposed a project or an action that might affect a listed species or its habitat, they consult with the agencies responsible for the ESA, the U.S. Fish and Wildlife Service (terrestrial and aquatic freshwater ESA species) or the National Marine Fisheries Service (aquatic marine and anadromous, e.g. Pacific salmon and Atlantic sturgeon, ESA species). This is known as "***a consultation***" with "***the Services***". The Services may then recommend changes to the project or action to protect listed species or habitats. A pesticide registration or reevaluation decision, also called registration review, under the Federal Insecticide Fungicide and Rodenticide Act (FIFRA) are actions that must also comply with the Endangered Species Act.

Meeting this ESA responsibility is a formidable task, considering the tens of thousands of pesticide products and registration amendments for which EPA is required to review the potential effects for over 1,700 U.S. listed species. Due to previous lawsuits by environmental groups, the EPA has developed new strategies to protect endangered species and their critical habitats from pesticides. These include the Vulnerable Species Action Plan, the Herbicide Strategy, the Insecticide Strategy and the Rodenticide Strategy, and in the future the draft Fungicide Strategy. The EPA has also developed a draft "Hawaii Strategy" aimed at protecting ESA species from pesticide use in Hawaii since approximately 40 percent of all ESA listed species occur in Hawaii. The strategies are not self-implementing but rather provide a framework for registration and registration review. The final protections will be described on pesticide labels and in bulletins located in the EPA website Bulletins Live! Two and can be found on the WSSA.NET/endangered-species website.

2: What is the Final Insecticide Strategy?

On April 29, 2025 the EPA released a "Insecticide Strategy (Final) to Reduce Exposure of Federally Listed Endangered and Threatened Species and Designated Critical Habitats from the Use of Conventional Agricultural Insecticides." insecticide-strategy . This 141-page document reflects the EPA's multi-step process to identify runoff/erosion and spray drift mitigations to protect listed species and their habitats as part of EPA's conventional insecticide registration and re-evaluation processes.

The Insecticide Strategy covers only conventional insecticides, insect growth regulators, nematicides and miticides, for agricultural uses in the lower 48 states. The mitigations identified

in the strategy address potential impacts to aquatic and terrestrial listed invertebrates, and also mitigations to reduce insecticide exposure for listed invertebrates as well as listed species which depend on invertebrates. The mitigations included in the Insecticide Strategy would reduce population level impacts to more than 900 listed species in the continental 48 states.

The Insecticide Strategy does not by itself require label changes, but it will be used by EPA as a framework for evaluation the level of pesticide mitigation needed for each pesticide and writing pesticide decisions. The strategy considers field and regional conditions and is intended to allow growers to select options from a mitigation menu Mitigation Menu that work best for their situation. Insecticide labels have started to change, but it may take several years for the process to catch up for all insecticides.

3: How will the Insecticide Strategy affect pesticide use?

In cases where an insecticide has the potential to impact listed species or their habitat, the EPA could require spray drift mitigations and/or runoff/erosion mitigations on the product label with more restrictive mitigations in specific geographic areas called Pesticide Use Limitation Areas (PULAs). PULAs identify the critical areas where listed species are most likely to occur. The applicator will be required by the product label to visit EPA's Bulletins Live! Two to determine if the application site(s) are within listed species PULAs. If the application site overlaps with a PULA, the applicator may have more restrictive mitigations for that application. The applicator can do this on the day of the application, but they can also plan ahead by checking for the bulletin up to 6 months prior to the application. When an applicator acquires a bulletin ahead of time, they are not required to get an updated bulletin if there were any changes between the time acquiring the bulletin and applying.

4: What about fungicides?

The EPA is developing a draft fungicide strategy, that is due to be released for public comment in the spring of 2026, that will identify the need for, the level of, and the mitigations to protect endangered species from fungicide use.

5: Pesticide use in critical areas: Pesticide Use Limitation Areas (PULA)

The EPA's Bulletins Live! Two is a website designed to provide information for specific geographic areas (PULAs) where listed species or their critical habitat are found. If EPA requires additional mitigations in these areas, those pesticide-specific requirements will be outlined for each PULA The applicator will be required to check EPA's Bulletins Live! Two within 6 months of the application to determine whether the application site is in a PULA. If it is, the pesticide label and/or bulletins on the EPA's Bulletins Live! Two website would identify the amount or type of additional mitigations needed. The EPA has developed an approach to refine the PULAs (maps) where the listed species and their critical habitat are found. This refinement process is intended to ensure that additional mitigation steps are required where they are most needed to protect listed species and their habitat.

6: How can I reduce spray drift?

Spray drift mitigations were developed to reduce the likelihood of impacts to listed species and designated critical habitat. EPA's approach includes specifying minimum droplet sizes,

maximum windspeeds, and maximum release height requirements, as well as requirements for downwind spray drift buffers when needed.

Table 1. Maximum downwind buffer distances (feet)

Aerial Spray	Airblast	Chemigation	Ground Spray
300	85	0 to 25 depending on configuration	100

Applicators can use various buffer reduction options to reduce the size of the required downwind buffers as described on the mitigation menu website. Some examples for ground applications include using coarser droplet size, lowering boom height, using hooded sprayers, treating a reduced proportion of the field, reducing the single application rate, maintaining downwind windbreaks, or applying during weather conditions that include relative humidity greater than 60% at time of application.

Each of these buffer reduction options reduce the buffer as a percentage of the label required buffer and are additive such that three mitigations of 75%, 15% and 10% reduction would add to 100% reduction in the buffer requirement. Some managed areas can be included in the buffer area, for example: agricultural fields, roads, buildings and their perimeters, grassy areas next to field, vegetative windbreaks, or field borders. Some application methods are not prone to spray drift and will not require a buffer. Examples include: non-overhead chemigation methods, in-furrow sprays when nozzle height is ≤ 8 inches above the soil, tree trunk drench, tree injection, soil injection, or small area applications (< 1/10 acre or < 1,000 sq ft).

7: How can I reduce runoff/erosion?

EPA's Mitigation Menu was developed to reduce pesticide off-site movement via runoff or due to soil erosion. The product label and/or bulletins will outline mitigation requirements of 0 to 9 mitigation points that will depend on factors such as the insecticide used, crop, application parameters, and site-specific geographic conditions. EPA's Mitigation Menu Website includes descriptions of each mitigation and mitigation relief measure, cross references to National Resource Conservation Service (NRCS) conservation practice standards, a runoff and spray drift calculator called Pesticide App for Label Mitigations PALM.

EPA's mitigation measures for erosion/runoff risk reduction include application parameters (e.g., partial field treatment, reduced annual application rate, etc.), field characteristics (e.g., slope ≤ 3% or predominantly sandy soil), in-field runoff mitigation measures (e.g., conservation tillage, cover crops, etc.), measures adjacent to the treated field (e.g., grassed waterway, vegetated filter strips), and systems that capture runoff and have controlled discharges (e.g., ponds or sediment basins). In some sites, if certain mitigation measures are in place, then no further runoff/erosion mitigations are needed (e.g., such as permanent basins, tailwater return systems). Similarly, some application methods would result in limited runoff/erosion potential and negligible potential for population impacts. Some examples are tree injection, soil injection, or small area applications (less than 1/10 acre or < 1,000 sq ft treated). Other mitigation options include working with a technical expert in runoff/erosion control, or tracking mitigation measures used on their treated site, etc.

Each of these mitigation options have a point value of 1 to 3 points. Mitigation points are additive, for example if a grower uses three practices worth: 1 point, plus 2 points, plus 3 points, the three combined runoff/erosion control practices add up to 6 mitigation points. Thus, in this example if an insecticide requires 6 points for a particular field or site the impacted field or grower would have enough runoff/erosion mitigation points to use that insecticide.

8: Mitigation Relief Points for Runoff Vulnerability:

The EPA has determined that for counties with medium, low, and very low runoff potential, less runoff/erosion mitigation is needed to reduce risks to listed species. Therefore, the EPA assigned "Relief Points" based on runoff vulnerability that count toward the required mitigation points.

Counties with **medium runoff** vulnerability will receive 2 relief points, counties with **low runoff** vulnerability will receive 3 relief points, and counties with **very low runoff** vulnerability will receive 6 relief points. These points reduce the number of additional mitigations that may be needed, such that a field in a county identified with 6 relief points due to very low runoff potential would not need to Implement any other runoff/erosion mitigations for a product that requires 6 mitigation points. Relief points will reduce mitigation needs for approximately 80% of cultivated agricultural acres and 95% of specialty and minor crop production acres.

9: Evolution of ESA Mitigation Process:

EPA's process to reduce impacts on listed species and their critical habitat continues to be refined over time. The mitigations to reduce spray drift and runoff/erosion as well as their definitions are changing based on new scientific information, stakeholder input, and feedback from public comments as new pesticide decisions are published. And, these changes can impact conventional fungicides, herbicides, and insecticides. State and local regulations will still need to be followed and may take precedence over federal endangered species requirements.