

## Neonicotinoid Pesticides Biological Evaluations Frequently Asked Questions

What is the significance of the “likely to adversely affect” findings for threatened and endangered species conservation?

EPA’s likely to adversely affect (LAA) findings are based on a conclusion that there may be discernible effects to one individual or more of a listed species. LAA determinations are based on the potential effects of the pesticide and do not consider the baseline status of the species. Thus, EPA must make an LAA finding if it finds any likely adverse effects, regardless of whether the effects may have broader implications for the species’ conservation or recovery. For those species and pesticides with LAA determinations, the likelihood of jeopardy to the species is considered. In this population level analysis, the overall vulnerability of the species is considered when weighing the likelihood that the pesticide related action will jeopardize the continued existence of the species. Overall vulnerability considers factors such as population size, population trajectory, habitat quality, and distribution.

Could there be additional mitigation measures that EPA may need to adopt to protect threatened and endangered species from these neonicotinoid pesticides?

Yes, through the registration review of the neonicotinoids, EPA is currently proposing mitigations to protect non-target species. EPA may need to adopt additional mitigations in the future to ensure that the neonicotinoids are not likely to jeopardize listed species or adversely modify their designated critical habitats.

What scientific methods did EPA use in the final biological evaluations?

The scientific method used in the final biological evaluations follows the Revised Method for National Level Listed Species Biological Evaluations of Conventional Pesticides that EPA finalized in 2020. As described in the Revised Method, listed species risk assessments for pesticides consist of three steps. Steps 1 and 2 are represented by a biological evaluation, which considers whether any individual of a listed species is reasonably expected to be exposed to a pesticide and, if so, whether that exposure is likely to adversely affect the individual. EPA also applies this process to any designated critical habitat. The Revised Method does not apply to Step 3, which evaluates whether the adverse effects identified in Step 2 rise to the level of “jeopardizing” a species or “adversely modifying” critical habitat.

Did EPA consider real world pesticide usage data in the final biological evaluations?

Yes. Under EPA’s Revised Method for conducting biological evaluations, the agency considers real world data on pesticide applications, including how much, when, and where pesticides are applied. EPA

evaluates these usage data to determine whether a species is likely or not to be adversely affected by a pesticide (step 2 in EPA's biological evaluation). Before incorporating usage data, EPA evaluates the quality and relevance of the data to determine their applicability, utility, and soundness. In general, EPA considers the most recent 5 years of usage data to represent current labeled uses.

### What types of species maps did EPA use in the final biological evaluations?

EPA used species ranges that the U.S. Fish and Wildlife Service and the National Marine Fisheries Service made available as of November 2020. For some species, the U.S. Fish and Wildlife Service uploaded to its website new ranges after 2020. For the final biological evaluations, however, it was infeasible for EPA to rerun its spatial analysis and effects determination to incorporate the new maps, while still meeting its court-ordered deadline for issuing the evaluation. While these updates may impact the estimated value of the extent to which labeled uses may overlap spatially with listed species, the final effects determination would not be impacted for most species. Since the biological evaluations assess the impacts to a single individual member of a species, a change to an effects determination would require there to be a significant change to the species location file, which the Agency does not expect exists for most or all species. During the neonicotinoid consultation process, EPA will consider opportunities to incorporate updated spatial and other data, as appropriate and necessary to further inform jeopardy and adverse modification determinations, as part of the ESA's mandate to use the best available scientific and commercial data in section 7 consultations.

### What is EPA doing to improve the pesticide consultation process?

EPA is working actively with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, U.S. Department of Agriculture, and stakeholders to improve the process and outcomes of pesticide consultations. For example, EPA will be working with the Services throughout the consultation process to identify how the effects determinations included in the final biological evaluations and the comments received on the draft biological evaluations can inform the Services' biological opinions. EPA's support is intended to make the consultation more efficient and allow the Services to focus their resources on developing additional mitigations to protect species that are the most vulnerable to potential exposures.

In addition, consistent with EPA's goal of adopting targeted mitigation measures for listed species earlier in the process, in January 2020, EPA proposed a comprehensive suite of mitigation measures for the use of these pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act, including annual application rate reductions, application timing restrictions, and measures to reduce spray drift which would reduce exposure generally to non-listed and listed species. The Agency anticipates releasing amended proposed interim decisions (PIDs) in 2023, which will include updates to some of the previously proposed mitigations, as well as early mitigation measures aimed at reducing neonicotinoid exposures for certain listed species.

These improvements to the consultation process are aligned with EPA's April 2022 ESA workplan, which is a guiding document for EPA's work to provide practical protections from pesticides for listed species. As described in the workplan, improving the interagency consultation process is a key strategy for fulfilling EPA's goals to better protect species and meet its obligations under the ESA.

Did EPA incorporate the proposed mitigations mentioned above in the final biological evaluations?

EPA did not incorporate them into the final biological evaluations because EPA has not yet finalized the mitigations and will issue amended PIDs with updates to these mitigations for public comment. Rather, these mitigations would be incorporated during consultation with the Services.

How are the three neonicotinoid pesticides used to control pests?

In general, neonicotinoid insecticides provide control of a variety of piercing and sucking pests, including those that cause plant diseases, such as aphids and whitefly. Depending on the crop, these pests may damage young seedlings, with potentially severe consequences for yield, or damage developing grains, fruits, or vegetables, with consequences for yield and/or quality.

The key characteristics of the neonicotinoid pesticides that make them useful in pest control include selective and systemic activity, as well as a unique mode of action. Due to their relatively selective activity, neonicotinoids are able to control a number of important pests without seriously disrupting the beneficial pest control role of many predatory or parasitoid insects. This makes them a key component in Integrated Pest Management (IPM) programs that combine biological control methods with targeted pesticide applications. Their systemic activity provides long-lasting control, which reduces the number of pesticide applications that may be needed and helps to target pests hidden within the crop canopy. The unique mode of action supports resistance management by permitting growers to rotate among chemistries and minimize selection pressure, as well as manage pests already resistant to insecticides with other modes of action.

Alternatives to the neonicotinoids depend on the crop or use site and the specific target pest involved. In many situations, likely alternatives include broad-spectrum insecticides such as organophosphates, pyrethroids, and carbamates. Other, more selective insecticides may be appropriate for certain insect pests or life stages. These alternatives tend to be more expensive or otherwise raise production costs due to increased insecticide use to achieve season-long control or to address secondary pest outbreaks. However, for some crops and pests, alternatives are less effective, and their use would compromise pest control and potentially reduce yield and/or quality of the produce.