

Protecting Conservation Plantings from Pesticides

Guiding Principles for Project Planning and Implementation



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There is growing concern about the contamination of habitat plantings by pesticides (including insecticides, fungicides, and herbicides as well as their adjuvants) at levels that can be harmful to pollinators. The following key principles for project planning and implementation can help address concerns. Solutions that have the greatest impact will depend on the type of project and landscape setting. The Xerces Society publication [Guidance to Protect Habitat from Pesticide Contamination](#) provides additional information and resources on this topic.

Guiding Principles

1. Place pollinator plantings in areas that have the least risk of pesticide drift. Avoid planting habitat immediately downwind of (or draining from) pesticide-treated landscapes. Connect projects to larger habitat corridors and complexes to the greatest extent possible, to decrease the amount of habitat edges adjacent to chemical-intensive agriculture.
2. In agricultural landscapes or other settings where pesticide drift is a concern, ensure planting is separated from pesticide applications by a non-flowering buffer (e.g., grasses or woody vegetation) as follows:
 - ↪ 40 ft. wide buffer for ground-based applications
 - ↪ 60 ft. wide buffer for the use of airblast sprayers
 - ↪ 125 ft. wide buffer from aerial spraying or crops treated with neonicotinoids (including seed treatments)

If these distances can't be achieved, then a tall, non-flowering woody vegetative buffer (e.g., hedgerow or treeline) could be used between flowering habitat and adjacent chemical use. Note that woody buffers should not be planted in the prairie region of Minnesota, due to the potential for tree encroachment and negative impacts to grassland bird nesting habitat.
3. Prioritize installing habitat in areas where neonicotinoid treated seed has not been planted within the last two years. Most corn seed planted in Minnesota has been treated, and about half of soybean (note: fungicide seed treatments can also include neonicotinoid treatments). There is a new CSP enhancement ([E595116Z2](#)) available in Minnesota that compensates farmers for not planting treated corn and soybean seed. If additional time is needed for neonicotinoids to break down in the soil, grass cover crops could be planted (e.g., oats, rye). Mowing native prairie during the establishment years can also help prevent bees from contacting neonic-contaminated flowers (in addition to helping prevent annual weeds from setting seed).
4. Communicate with surrounding landowners and pesticide applicators about the need to prevent



A variety of strategies can help protect plantings from pesticides, including spatial buffers, changes in cropping systems, and reductions in pesticide use. (Photo: Xerces Society / Sarah Foltz Jordan.)

What's your story?

Please email us if you have questions, comments, or additional strategies for protecting pollinator habitat from pesticides.

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pesticide drift next to the project (i.e., explain that pollinators are using the habitat and ask if pesticide set-backs could be used and/or pesticides sprayed only in ideal conditions to avoid off-site movement).

- Visit projects twice a year to inspect for any problems, such as an absence of common pollinators. These visits could be combined with typical visits to inform weed management decisions, but try to schedule one visit during peak bloom and sunny weather to evaluate insect activity. The Xerces Society has developed a [monitoring protocol](#) and a [streamlined monitoring protocol](#) for native bee and honey bee monitoring in the Upper Midwest.

Above- and below-ground pesticide movement can be intercepted by non-flowering plants as well as deep roots.

Note: If possible, pollinator plantings should be placed upwind and uphill of pesticide application.

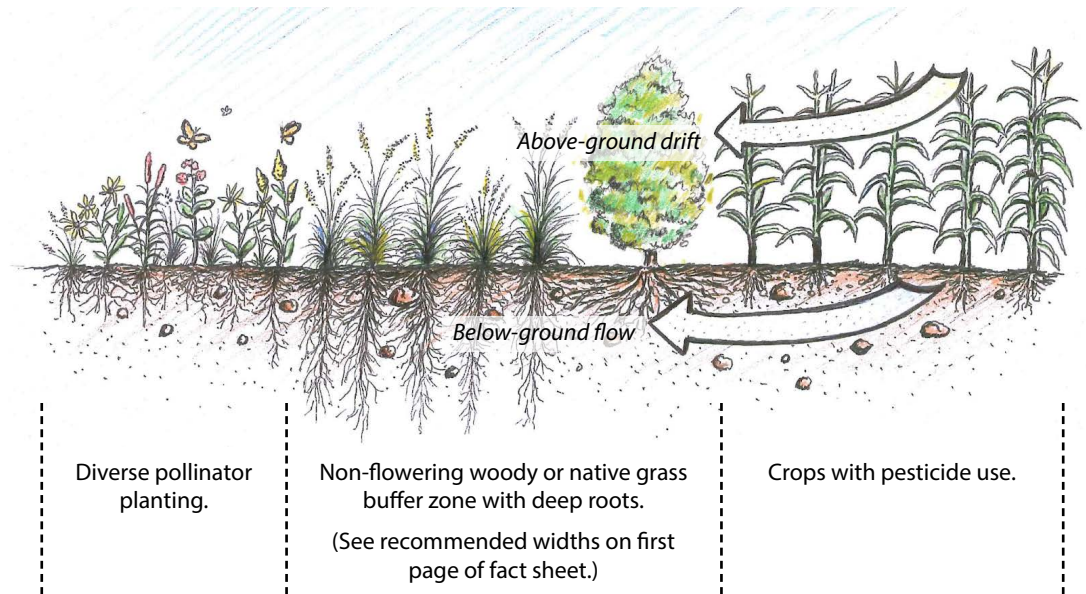


Illustration by Dan Shaw

Pollinator Habitat Protection Case Studies

Minimizing pesticide contamination of pollinator habitat can be challenging, and may require thoughtful adjustments to pesticide use, crop selection, and/or habitat placement. **Farmers and conservation planners have found several innovative ways to address this issue, including the following examples from Minnesota farms.**

- ☞ **Peter Clay, Dalbo, MN:** The only place on my farm that I had available for habitat was a strip of land next to my conventional soybean acreage. So I decided to plant the habitat there, and protect it by converting about 150 ft. wide strip of soy cropland into perennial alfalfa, which I can sell for hay. I'm also asking my son to purchase soybean seed not treated with neonics.
- ☞ **Andrew Erhmann & Betsy Allister, Northfield, MN:** A few years ago, we took some land out of conventional row crop and converted it to pollinator habitat. Knowing that there were likely neonic residues in the soil, we planted non-flowering cover crops (oats and barley) for a year before we seeded our natives, hoping to avoid a situation where bees were visiting contaminated flowers.
- ☞ **Tim Behrends, Hastings, MN:** When I signed up for pollinator habitat under the CSP program, I learned that the habitat had to be protected from neonic-treated seed crops by 100 ft. Putting in a buffer wasn't possible for me, so I agreed to not plant treated seeds in the field adjacent to the habitat. It will be interesting to see if there are any changes in yield in this field, compared to my other fields.
- ☞ **Dave Medvecky, Isanti, MN:** When planning for my new CRP planting this spring, I decided to use two different seed mixes—one, composed of mostly grasses, for the 10 acres adjacent to conventional row crop, and another, composed of native wildflowers, for the 27 acres that are more protected from pesticide exposure. I used to keep bees, and I really want my habitat to support pollinators, not just look pretty.
- ☞ **Aaron Wills, Northfield, MN:** I planted a double row of conifers to protect my pollinator habitat (and organic blueberry bushes) from potential pesticide drift from adjacent cropland. There wasn't a lot of room to work with, and the trees seemed like a better option than having just grass.

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