

Governor’s Committee on Pollinator Protection- Action Proposals 7/20/2017

A-1: Reduce pesticide usage	Technical Assistance and Incentives
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- A. Through BMPs, technical assistance, Extension outreach, farmer-to-farmer networking & field days, etc., work with farmers to reduce use of pollinator-harming pesticides on their farms.
- B. Incentives for farmers to move away from neonic seed treatments in corn/soy. State program should include free on-the-ground technical support, assistance accessing seed, \$/acre payment, and no jeopardization of crop insurance (many growers are concerned about this). Immediate action steps in MN could include developing decision-making tools/resources for farmers and crop advisors, such as this recent document developed by Xerces and the NRCS with help from Iowa State University.
http://iowaipm.xerces.org/wp-content/uploads/2017/05/Neonicotinoid-Seed-Treatment-Use-in-Iowa_web.pdf
- C. Development of key messages and innovative strategies for dispersing information to a wide range of target audiences with the ultimate goal of increased adoption of pollinator-friendly practices across MN.
- D. If not on track to reach targets by 2021, shift to regulatory action -- e.g. mandate verification of need for use of all pollinator-harming pesticides, or take certain chemicals off the market.

A-2: Change on-farm practices	Technical Assistance and Incentives
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- A. Financial incentives and support for farmers to increase “whole farm” diversity. This could include
 - i. crop diversification (e.g., integrating a small grain into a typical corn/bean rotation, see: Practical Farmers of Iowa youtube video series: Rotationally Raised https://www.youtube.com/watch?v=SFg4eiTSgF0&list=PL5v5mi3djmDttYr1K_zqTz1EErmX8fxjF
 - ii. increased use of cover crops
 - iii. increased native habitat (prioritizing areas protected from pesticides)
 - iv. *Focus on cover crops and having the state step in to provide funding for cover crops where NRCS is unable to do so.*
- B. Provide incentives to growers to plant pollinator habitat on privately owned farms, in locations and amounts that they deem would work best on their land. The pollinator habitat could be native, diverse seed mixes or non-native, non-invasive seed mixes (e.g., as promoted by the Bee and Butterfly Habitat Fund).
- C. Offer funding to farmers to install high-quality pollinator habitat on their farms. For conventional farmers, add a dollar-per-acre incentive for every acre planted in insecticide-free seeds, to ensure that habitat created on the landscape is protected from insecticide contamination.
- D. Expand implementation of public-private partnerships to establish pollinator habitat.
- E. Provide a clearing house of information ,tools, and options available to ensure that habitat establishment can advance without significant delays or obstacles.

A-3: Reduce/eliminate aerial pesticide drift	Technical Assistance and Incentives
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Provide a reward or incentive program for innovative methods to reduce drift (e.g., chemical and mechanical engineering; new ways to time and deliver applications; best management practices; etc.)

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A-4: Insurance program for farmers reducing use of neonicotinoids	Technical Assistance and Incentives
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Create a program to compensate growers for early-season losses due to seed- and seedling-feeding pests if growers decide not to protect their crop with seed- or soil-applied insecticides.

A-5: Training events for county, municipal, state, and others on pollinator-friendly habitat management	Technical Assistance and Incentives
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- A. Develop a training program including practices planned to address safety concerns from highway departments and other road authorities. Economic analyses would need to be completed to mitigate budget concerns, although some of this has been completed already- e.g., the MN DNR Landscaping for Wildlife publication that shows that an acre of lawn costs municipalities \$1000/yr to maintain.
- B. Statewide pollinator habitat training for county and township land managers and road maintenance workers.
- C. Approach all the departments that take care of the roads/roadsides - plowing, painting, cutting grass/brush, spraying. Find out their policies, beliefs, WHY - they cut and spray (and what they spray) the way they do. Let them know you/we appreciate the roles they are tasked to accomplish and interested in how the roadsides are managed. They likely are trying to balance demands from many people and policy places - safety, line of sight, "beauty," control of noxious weeds, plus budget concerns. Selective cutting and weed management are in my opinion very labor intensive and slow - spraying is faster and cutting everything is easier. That does not make those options better, but "gets the job done" quickly. What is their awareness and concern for long-term environmental sustainability? Is there a long-term management plan to decrease cutting and spraying. What role might community members and users of roads play in bringing about more pollinator friendly practices?

A-6: Utility corridor incentives	Technical Assistance and Incentives
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Offer utility companies an incentive. Those corridors are often conduits for movement of invasive species across the landscape. Active management could favor beneficial species, instead. We could organize volunteer inspectors to ensure compliance for companies enrolled in the program.

A-6: DriftWatch/BeeCheck	Technical Assistance and Incentives
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Encourage and expand utilization of the DriftWatch and BeeCheck registry system with both beekeepers and applicators. This program helps to facilitate good communication and understanding on hive locations etc. It has become a key tool in all states surrounding MN and has been successfully live streaming this data into application software system used by commercial and areal applicators.

A-6: Beekeeper education	Technical Assistance and Incentives
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Increase education for beekeepers on varroa/disease management and pesticide use within hives.

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B1: Public pesticide use registry	Data Development
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Create a public database of commercial pesticide application, as in California, so everyone can know what was applied, when, and where (This program can complement the FieldWatch program).

B2: Improve risk assessments	Data Development
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- A. Thorough, MN-specific assessment of bee exposure to pesticides applied in hives and to surrounding habitats (agricultural, urban, etc.). This is a missing component of the risk equation (risk = exposure x toxicity). Toxicological profiles seem pretty well documented, except for interactions among mixtures of pesticides.
- B. Use another bee species in determining pesticide toxicities on labels in MN, as adult honey bees (currently pesticide registration considers LD50 for adult honey bees) are not indicative of a chemical's toxicity to other bee species. If we were to change these metrics we may also need to fund the data collection to figure out what the metrics are.

B3: Improve IPM data	Data Development
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Working with Minnesota and Midwest researchers and farm organizations, identify non-chemical IPM practices for managing pest and disease issues identified. Identify research gaps -- what pest & disease problems are most difficult to manage without use of pollinator-harming pesticides? Provide state funding to close these research gaps.

B4: Habitat data	Data Development
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- A. Develop a tool that prioritizes landscapes most desirable for planting pollinator habitat based on topography and current land cover. i.e. GIS tool that integrates LiDAR and landcover data to identify maintained, high-slope areas that are more costly/risky to maintain and/or areas that have invasive species (reason to mitigate/restore) or adjacency to other high quality, protected, or public (reason to protect). Provide this or offer training in how to use to municipalities or other LGUs.
- B. Provide resources and direction to state agencies to conduct an inventory of mowed turf on all state managed property to identify areas that are under-utilized and can be converted to prairie/oak savanna. In this process, staff would determine the cost per acre annually of maintaining turf grass, which would then be used to calculate the return on investment.
- C. To assist with stabilizing and increasing Monarch populations, provide research funding to the MN Department of Natural Resources (DNR)/University of MN to identify key Monarch migratory corridors in the state where efforts could be made to prioritize efforts to increase Milkweed and nectar resources.
- D. Create and keep updated a database of habitat creation program funding for each county. Farmers, other landowners, schools, etc. could use this to determine which federal, state, local, or private programs would work for them.

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B5: Track pesticide information to drive 30% reduction in pesticide use by 2025	Data Development
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- A. Develop or update list of pesticides known to harm pollinators at lethal or sublethal doses (will likely include mostly insecticides and fungicides)
- B. Working with academics & farm organizations (representing farm operations of diverse sizes, from different parts of the state, who grow different crops, etc.), identify most significant pests and diseases for which these products are used.
- C. Track annual pesticide use rates, **including seed treatments**. Release data annually. Tailor research & outreach efforts based on which pesticides used are diminishing annually, and which are not.

B6: Pesticide drift research	Data Development
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We've seen some data that demonstrates the movement of neonics from treated crops to neighboring wildflowers that are expressed in the nectar and pollen of those flowers at exposure levels that harm bees. Provide funding for pesticide analysis to accompany these on farm habitat programs.

C1: Roadsides	Policy/Program Changes
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- A. Provide funding for the Minnesota Department of Transportation and Minnesota Board of Water and Soil Resources to create roadside seed mixes that increase nectar resources available for pollinators on roadsides. Specifically, with an emphasis on mixes that tolerate high levels of mowing, varying levels of haying. The development of these seed mixes would then be used for future state-aid transportation projects.
- B. Include Integrated Roadside Vegetation Management (IVRM) into roadside maintenance. It was suggested I look at the Karner Blue butterfly management program in Wisconsin for guidance on these protocols and perhaps also a mode for stakeholder engagement. Another resource: <https://tallgrassprairiecenter.org/irvm>
- C. Specific roadside habitat installations with key areas/expansion defined annually: Native habitat, legumes, defined strategically with the mapping work EQB is doing.
- D. Develop pollinator plants that can be mowed in a road ditch and still produce pollinator-friendly growth. This would allow highway departments to manage invasive weeds along roadsides while still maintaining pollinator-friendly plantings.
- E. Amend Minnesota statute 160.232 to include a later mowing date for roadside ditches (as stated in the Pollinator Best Management Practices for Roadsides and other Rights-of-Way" published by the MN Dept of Ag) The Monarch Joint Venture (MJV) recommends not mowing before Oct. 1 in southern MN and before Sept 20 in northern MN. More resources: https://www.fws.gov/southwest/es/Documents/R2ES/Pollinators/7-PollinatorsAndRoadsides_Guideline_Xerc...
<https://www.lrrb.org/pdf/200820.pdf> (lots of great links in this one for MN statutes, etc.)

C2: Pollinator habitat	Policy/Program Changes
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- A. To increase pollinator habitat, have the Minnesota Department of Agriculture (MDA) develop and introduce policies and program proposals that would lead to the conversion of 1,000,000 acres of marginal yield corn/soybean fields to perennial working landscapes (Grazing, Haying, biofuels, fruit/nut ect.).
Target areas would include:
 - i. Establish perennial working landscapes immediately adjacent to MN DNR natural areas to reduce pesticide drift.
 - ii. Increase perennial working landscapes within corridors developed by the MN DNR Prairie Conservation Plan, and other future corridor plans.
 - iii. Develop several large connected perennial working landscapes to reduce the risk of pesticide impact to native and managed honeybees, and provide safe foraging opportunities for honeybee producers during corn/soybean planting season.
- B. Percent for Pollinators in the Parks
Seek Legislative approval of the necessary language and appropriation to create a program to plant pollinator gardens or fields in every state, regional, county, or municipal park in Minnesota with the goal being the planting of pollinator habitat on one percent of all park land. Note: 1% may seem high, but a 20 foot roadside strip (aka a ditch) around a section of land, that would equal about 7.5 acres or a little over 1.2% of that section of land

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- i. The legislation should provide 100% state funding for necessary seed at no cost to the park authority.
- ii. The legislation should provide adequate funding for Pollinator Planting technical assistance to park authorities and for program management.
- iii. The legislation should provide adequate funding to market and promote the program.
- iv. State agency staff can assist the committee by:
 - determining the most appropriate state agency to oversee this program,
 - determining the staffing needed to support this program along with the needed appropriation amount for salary benefits and expenses
 - determining the amount of needed appropriation to support marketing and promotion
 - determining the needed appropriation for seed and other material costs.
 - arranging for the drafting of the needed bill language

C. Make better use of existing public lands to increase the acres available for pollinator habitat. I propose that the management plan for every one of these properties include large pollinator areas. Substantial acres throughout southern Minnesota have been and continue to be purchased by groups such as Ducks Unlimited and Pheasants Forever. The ownership of many of these acres ends up being the MN DNR. Entire farms in my home area have been purchased in recent years. The purchase of this land is a point of contention for many in the rural areas because often there is a one time payment made to local units of government in lieu of taxes but as time goes on there is no property tax payments going to local government units from these land parcels, resulting in higher tax burdens for the remaining land owners. Rural landowners would at least know this property is being used to work towards pollinator sustainability.

D. Establishment of "safe zones". These would be areas designated to be left unmowed. A similar concept exists in organic agriculture; trap cropping is an uncultivated area used to lure pests away from crops. In this case, the unmowed areas would be refugia and pollinator habitat....and hopefully full of milkweed!

C3: Pesticide usage	Policy/Program Changes
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- A. Have the MDA introduce legislation that would require any local government employee (local, state) who applies any pesticide on public land, be a certified pesticide applicator.
- B. Fund MDA Pollinator Protection Account through treated seed program.
- C. Devolve pesticide preemption in MN, giving local municipalities the authority to regulate their own pesticides.
- D. Make neonics a restricted use pesticide, with no immediate effects on the ag industry that couldn't be adapted to, and may help mitigate negative effects or misuse by homeowners/residential users to a large degree.
- E. Immediate suspension of use of neonicotinoid seed coatings on Minnesota farms.
- F. Ban neonicotinoids statewide while introducing alternative practices for farmers not to be dependent on neonicotinoids.
- G. Pesticides should be treated like tobacco. The State of Minnesota should lead a national effort to sue the pesticide industry to recover the costs of their products use to human

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health and the environment. Trust fund monies from the recovery would fund public health ad campaigns explaining the dangers associated with these products use.

C4: Apiary program	Policy/Program Changes
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Reinstate the apiary program within the MN Department of Agriculture. Expand education on Best Management Practices to all stakeholder, Beekeepers, Applicators, Land and Water Resource Managers, County Transportation personnel concerning mowing practices etc.

C5: MDA spending	Policy/Program Changes
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Pollinators need to be recognized as a critically necessary component of agricultural productivity. Pollinators are responsible for one in every three bites of food we eat. To protect this valuable resource one in every three dollars MDA spends should be pollinator related.

D1: Education standards	Outreach/Education
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- A. Engage the Department of Education in working with public schools to develop pollinator habitat and integrate this discussion into curricular standards. There are several second grade science standards directly related to plants and studying them that could be used as touchpoints for native plant and pollinator interactions in the classroom. I attached a clipping of a few of them. It's exciting to think what a second grade science class would look like around the state if native plants were integrated into it as a way to teach curricular standards. Teach people how to grow these things!

2	4. Life Science	1. Structure and Function of Living Systems	1. Living things are diverse with many different observable characteristics.	2.4.1.1.1	Describe and sort plants into groups in many ways, according to their physical characteristics and behaviors.
2	4. Life Science	2. Interdependence Among Living Systems	1. Natural systems have many components that interact to maintain the system	2.4.2.1.1	Recognize that plants need space, water, nutrients and air, and that they fulfill these needs in different ways.
2	4. Life Science	3. Evolution in Living Systems	1. Plants and animals undergo a series of orderly changes during their life cycles.	2.4.3.1.1	Describe the characteristics of plants at different stages of their life cycles. <i>For example:</i> Use live organisms or pictures to observe the changes that occur during the life cycle of bean plants or marigolds.

Several other grade levels have science, math and other standards that could be integrated with native plants and establishing native plant habitat. This pollinator protection and habitat establishment discussion, to ensure long-term success, must be promoted in classrooms and public education settings.

- B. Support and promote known “champion” teachers and other individuals or groups that are piloting and/or succeeding with pollinator-friendly programming or projects. Find a way to integrate trainings on similar things into state-sponsored (Department of Education) materials, trainings, standard development, etc.

D2: Increase pollinator awareness	Outreach/Education
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- A. Create educational materials (powerpoints, pamphlets, talking points, visual cards, media) to distribute to farmers, residents, and schools’
- B. Meet with newscasters about pollinator awareness
- C. Distribute pollinator friendly seeds to residents to plant
- D. Brand the idea of a pollinator-friendly state
- E. Brand signs for pollinators protected and advertise to homeowners, businesses, and etc...
 - a. Pollinator-friendly highway signs
- F. Educate the general public on pesticide (not just neonicotinoid) use and ways to reduce risk to non-target organisms, including pollinators.

D3: Habitat	Outreach/Education
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- A. Establish demonstration habitat sites in different types of settings (i.e., different soil types and natural resource regions of the state).
- B. “Champion” farmers. Xerces is currently working with Monarch Joint Venture to develop a handful of case studies of farmers who are engaged in monarch conservation-- including project/habitat details, what motivated the work, what the challenges and rewards have been, etc. MDA has a few case studies like this on their website, also. It would be neat to expand this, focusing on the state level (highlighting champion farmers from many cropping systems and regions throughout the state). With enough of these stories pulled together, interesting patterns would emerge, as well as valuable opportunities for farmers to learn from each other, and for us to learn from farmers.

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- C. Develop key messages and innovative strategies for dispersing information to a wide range of target audiences... with the ultimate goal of increased adoption of pollinator-friendly practices across MN.

D4: Celebrate pollinators	Outreach/Education
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- A. Create a holiday for pollinators (I suggest the Saturday on the week of summer solstice)
- B. Parade around cities
- C. Engage with the community members on pollinators and how they have the power to make a difference
- D. Support business that supports pollinator friendly habitats (local farmers)

D5: Create pollinator friendly ratings	Outreach/Education
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Create a rating systems on how pollinator friendly your home, business, and support it

- i. How much pollinator friendly habitats total in landscape
- ii. How many dollars go into supporting businesses that supports pollinators (includes food)
- iii. Invite businesses to get rated and advertise their products to create awareness
- iv. Note: Xerces Society has **Bee Better Certified program, which partners with innovative farmers and food companies to protect bees and other pollinators in agricultural lands. The Bee Better Certified seal gives consumers confidence that their purchasing decisions benefit pollinators, reward conservation-minded farmers, and incentivize the incorporation of pollinator conservation into product supply chains. The Bee Better production standards are science-based and field-tested, guaranteeing that the actions farmers take actually improve pollinator well-being. Together we can make the world better for bees.** <http://beebettercertified.org/>

D5: Introduce the “Pollinator Friendly Diet”	Outreach/Education
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The “Pollinator Friendly Diet” includes:

- i. Learning where your food comes from and understanding who, what, when, where, and how it was produced.
- ii. Eating food that is pollinator friendly:
 - a. No neonicotinoids were applied directly or indirectly to the produce
 - b. From a farm that supports a diverse array of pollinator habitats
 - c. Meat, fish, eggs, and cheese must be produced without neonicotinoid dependence (feed did not have neonicotinoids applied)
 - d. No greenhouse food unless the producer has healthy pollinator habitats