Farmers for Monarchs & Honey Bee Health Coalition

Recommendations for enhancing honey bee, monarch butterfly, and pollinator habitat and forage in U.S. Department of Agriculture private land conservation programs

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Executive Summary

Pollinators, including honey bees, are a vital part of U.S. agriculture. Yet honey bees face a variety of health challenges, resulting in losses that are higher in the past decade compared to historical averages. Similarly, monarch butterfly populations have experienced declines over the past two decades.

In many areas of the country, farmers, ranchers and landowners are necessary partners to establish, enhance and expand habitat and forage for monarch butterflies, honey bees, and other pollinators on a large scale. Private land conservation programs offered through the U.S. Department of Agriculture (USDA) are critical to pollinator conservation efforts, but to maximize the utilization and success of these programs in rapidly increasing and maintaining high-quality pollinator habitat, key barriers and concerns must be addressed.

The Honey Bee Health Coalition and Farmers for Monarchs are diverse, public-private partnerships that support agricultural productivity and thriving ecosystems. Together, our members have identified two critical priorities:

I) Seek and utilize technical input from more diverse and representative organizations on strategies for honey bee, monarch butterfly and native pollinator conservation. Areas of input should include habitat seed and plant mixes, geographic prioritization, and potential mitigation measures.

- Ensure that the National Agricultural Research, Extension, Education, and Economics (NAREEE) Advisory Board's National Pollinator Subcommittee is activated quickly, and represents a diversity of perspectives across honey bee, monarch butterfly, and agricultural stakeholders. We provided support letters and continue to provide strong encouragement for consideration of Wendy Caldwell, Darren Cox, Danielle Downey, and Caydee Savinelli — who are all active and trusted members of our collaborations — for this subcommittee.

II) Improve USDA private land conservation program specifications to emphasize and incentivize high-quality, cost-effective monarch butterfly, honey bee, and pollinator forage on private lands.

- Address existing seeding specifications and seed mixture designs that limit the pollinator benefits that would better support diversity, cost-effectiveness, and alignment with operator objectives. Planting rates, seeding recommendations, and maintenance practices should create habitat that reduces opportunities for weed growth and ensures pollinator-friendly plants over the term of the contract.
- Increase management options and flexibility to foster conservation in concert with farm and ranch operations.
- Promote the use of native milkweed species as critical to the life cycle of the monarch butterfly.

Background

The role and effectiveness of USDA private lands programs in supporting farmers' pollinator habitat conservation measures is a matter of urgent concern. It is critically important to address the challenges faced annually by beekeepers to maintain healthy colonies and pollinate crops throughout the U.S. Incentivizing widespread, voluntary adoption of practices that support native pollinators remains paramount in responding to and staying ahead of endangered species listings and protecting biodiversity.

Honey bees and other pollinators are vital to U.S. agriculture. They support production of most of the fruits, nuts, and vegetables grown in the country, with an approximate $19 billion in agricultural production annually. Honey bees face a variety of challenges including poor nutrition, incidental pesticide exposure, parasites, and diseases. Overwintering honey bee colony losses have ranged from 22 percent to 37 percent over the last 11 years — compared to a historical average of 10 to 15 percent.

The eastern monarch butterfly population has declined by more than 80 percent over the past two decades, due to a variety of challenges. The recent monitoring report of the forest area occupied by monarch butterflies in 2020-2021, carried out by World Wildlife Fund (WWF) and the National Commission of Protected Natural Areas (CONANP) in Mexico, registered ten colonies of butterflies occupying 2.84 hectares of forest. This is a modest increase of about 35% from the previous season, but still well below the national target for a sustainable population. In 2020, the U.S. Fish and Wildlife Service responded to a petition to consider listing monarchs under the Endangered Species Act with a decision that listing the species was warranted, but precluded by higher priority actions. In 2022, the International Union for the Conservation of Nature added migratory monarchs to their Red List as endangered.

Given the distribution of public versus private lands across the U.S., conservation of pollinators and monarch butterflies must include addition of habitat and forage to working lands. Thus, USDA conservation programs are critical to the success of pollinator conservation efforts. To help combat the decline of the monarch butterfly, the USDA launched a 10-state targeted monarch conservation effort and has enrolled acreage for pollinator conservation within the Conservation Reserve Program (CRP) and other USDA conservation programs. To help support honey bee health, the USDA launched a six-state targeted honey bee conservation effort and has enrolled acreage for bee and pollinator conservation within the CRP and other USDA conservation programs. The lands enrolled in programs such as the CRP, Environmental Quality Incentives Program (EQIP), Agricultural Conservation Easement Program (ACEP) and Conservation Stewardship Program (CSP) offer the opportunity to provide millions of acres of high-quality habitat and forage for butterflies, honey bees, and other pollinator species.

Success in pollinator conservation on private lands will require robust public-private partnerships. Through stronger integration with, and input from, a diverse set of stakeholders working to engage farmers and ranchers in pollinator conservation, the scale and infrastructure of federal conservation programs can be leveraged for much greater success. Farmers for Monarchs and the Honey Bee Health Coalition are two multi-stakeholder, public-private partnerships working to help address these and other challenges to pollinator health.

Farmers for Monarchs is a multi-sector initiative to support a sustainable population of monarch butterflies while simultaneously meeting agricultural productivity and habitat conservation goals. Farmers for Monarchs' membership spans the research community, agricultural production, conservation causes, public agencies and others working to develop collaborative solutions to address this challenge.

The Honey Bee Health Coalition is a public-private partnership working to improve the health of honey bees and other pollinators in the context of productive agricultural systems and thriving ecosystems. This partnership brings together more than 45 member organizations representing beekeepers, producers of pollinated specialty crops (*e.g.*, almonds, fruits, and vegetables), producers of commodity crops (*e.g.*, corn, soy, canola, and wheat), agribusinesses (including seed and chemical companies), conservation groups, manufacturers and consumer-facing brands, researchers, government agencies, and other key partners. Through the Honey Bee Health Coalition, these members work together on voluntary strategies across the multiple factors impacting bee health that make sense for beekeepers, farmers, conservationists, and the agricultural supply chain.

Detailed Recommendations

Recommendations to enhance quality and cost-effectiveness of monarch butterfly, honey bee and pollinator habitat in USDA private land conservation programs specifications:

1. **Allow the use of a broader range of native and introduced species adapted to a geographic area.** Allowing flexibility to evaluate a broader range of forb plant species when creating conservation program seeding mixtures can improve opportunities to create geographically-appropriate, cost-effective seed mixes that enhance pollinator nutrition and address other considerations for program success.

2. **Increase the minimum requirements for the number of pollinator-friendly forb species in all pollinator conservation programs and encourage the use of highly diverse seed mixtures.** Increasing the minimum species requirements in seed mixes will significantly increase the diversity and nutritional value of seed mixes for pollinators. An increase in the minimum required number of species — combined with allowance and use of a broader range of species in the seed mix (above) — will enable the design of diverse mixes that remain cost-effective and regionally-feasible. Recent studies indicate that mixes of 20 or more species tend to produce better establishment (Norland *et al*. 2015), support greater pollinator diversity, and can be cost-effective (Otto *et al*. 2017). Many members of the Honey Bee Health Coalition and Farmers for Monarchs support significant increases in minimum species requirements in pollinator conservation programs to 15+ species.

3. **Improve the bloom period dates currently being used by USDA with the objective of having blooms from February through October.** Due to pollinator foraging needs, bloom periods should be designed to require blooms in April and May, and allow for earlier blooms where appropriate (ex. supplemental forage during almond pollination). Therefore, Bloom Period 1

should more appropriately be February 15 to May 31, with Bloom Period 2 running June 1 to July 31, and Bloom Period 3 running August 1 to October 31.

4. **Allow the use of pollinator seeding mixtures designed with greater than 30 seeds per square foot.** Some programs do not allow the use of seeding mixtures with greater than 30 seeds per square foot. Allowing mixtures designed with greater than 30 seeds per square foot will provide resource professionals an option to outcompete early successional weeds.

5. **Re-evaluate the limit on the percentage of introduced legumes allowed in a seed mixture.** Pollinator seeding mixtures with a high percentage of introduced legumes can be used to develop seed mixtures that are cost-effective, able to compete with early successional weeds, quickly established, and offer highly nutritious forage for many pollinator species. The appropriate percentage of introduced species in a mixture will depend on the specific situation, as determined by geography as well as landowner objectives.

6. **Limit the use of grasses in pollinator mixtures at the state level; where grass species are included, encourage less aggressive grass species that do not outcompete pollinator-friendly forbs.** While the USDA Conservation Reserve Program CP-42 (CRP-687) guidance on Native Habitat Development for Pollinators appropriately limits the percentage of grass to no more than 25% of the seeding mixture, exemptions have allowed state seeding specifications to consist of a greater percentage of grass seed. The CP-42 guidance should continue to require that no more than 25% of a seeding mixture can be comprised of grass species based on the number of seeds per square foot, and limit state exemptions. In addition, the grass species used in pollinator seeding mixtures should be limited to bunch grasses and not include the use of rhizomatous grass species that can outcompete flowering forbs.

7. **Encourage a broader range of establishment options in state programs.** Examples include**:** dormant seedings in autumn; establishment with a no-till drill; and discouraging the use of tillage prior to seeding in sites with known weed competition history. While current national guidance includes a variety of establishment options, state seeding specifications and recommendations unduly restrict establishment practices that produce positive pollinator habitat and forage results. National guidance that encourages a variety of establishment practices can have positive impacts for honey bees and other pollinators.

8. **Increase flexibility in CRP practices.** Examples of management options that help establish and maintain high quality pollinator habitat and forage include: prescribed fire, light disking, managed grazing, managed haying, herbicide application, inter-seeding, or a combination of the above. Management of pollinator habitat and forage may require three or more years for site preparation and maintenance. However, encouraging a diversity of land management practices can help produce forage and early-successional habitat that have positive impacts for monarch butterflies and other pollinators.

9. **Encourage cost-effective seed mix options as important for program participation; encourage states to adjust their seeding specifications to provide more cost-effective approaches for pollinator seeding.** The cost of seed mixes has a significant impact on a producer's decision to enroll in the program, especially when a large number of acres is being enrolled. In these situations, high-cost seed mixes and seeding specifications that increase the cost of the practice can create barriers to participation and success. By emphasizing cost-effectiveness in seeding specifications and offering a range of options for plants included in mixes, producers will be able to plant pollinator mixes within their budget. Importantly, reducing the required

number of species is NOT an effective cost-reduction measure as it may reduce the quality and effectiveness of the pollinator mixes. Instead, adjustment of seeding specifications to include a wider range of acceptable species enables diverse and cost-effective plantings that do not compromise quality for cost.

10. **Strongly promote the use of milkweed species in USDA program plantings.** Milkweed and other monarch butterfly and pollinator forage plant species can be effectively incorporated into numerous USDA programs – including pollinator-specific practices as well as water quality and nutrient management practices such as buffer strips and edge-of-field technology (*e.g*., bioreactors, saturated buffers). Promoting the use of milkweed species, as well as other pollinator forage species, in all practicable USDA programs is critical to enhancing monarch butterfly and pollinator habitat and forage.

11. **Encourage states and local offices to minimize geographic restrictions on seed sourcing for forage on agricultural lands, enabling increased access to cost-effective and highly diverse seed mixtures.** Although geographic restrictions on seed sourcing are not always codified in requirements or specifications, many states in the Midwest (*e.g.*, Nebraska, Iowa, Missouri) have mileage restrictions in their seed specifications, or restrictions based on local ecotype sources. Where the restrictions are not formally codified, they are frequently encouraged and incorporated into seed mix recommendations. Minimizing geographic preferences for local seed sourcing of forage projects on agricultural lands would enable increased access to cost-effective and highly diverse seed mixtures. Species should still be selected based on geographic suitability; however, many species adapted from a geographic area are available for sourcing beyond the current mileage restrictions.

12. **Provide options for stacking benefits.** Pollinator forage and habitat is not a stand-alone benefit but can be interwoven with many other benefits (*e.g.*, soil, water, carbon sequestration, other wildlife, etc.).

In summary, Farmers for Monarchs and the Honey Bee Health Coalition encourage the USDA to consider and implement these recommendations to enhance pollinator forage and habitat in USDA private land conservation programs. We welcome the opportunity to meet with USDA managers and senior staff to discuss how best to urgently address these topics.

For more information and to coordinate the scheduling of a meeting, please contact:

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