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April 28, 2016

Kim Skyrms, Ph.D
Chief Apiary Inspector/Apiary Program Coordinator
Massachusetts Department of Agricultural Resources
251 Causeway Street, Suite 500
Boston, MA 02114

Via email: Kim.Skyrm@state.ma.us

Re: **Pollinator Plan Comments**

Dear Dr. Skyrms:

On behalf of Mass Audubon, I submit the following comments on the draft *Massachusetts Pollinator Protection Plan* (Plan). Mass Audubon appreciates the Massachusetts Department of Agricultural Resources (MDAR) efforts to recognize and address threats to pollinators, which are critically important not only to agriculture but also to the health of natural ecosystems. The focus of the plan is primarily on managed bees, i.e. bees that are raised and managed in constructed hives. The plan briefly references potential application of some of the strategies identified in the plan as also being beneficial to native, wild bees and other pollinators. Mass Audubon encourages MDAR to broaden the final plan and to adopt and implement strategies to benefit both wild and managed pollinators thereby supporting both agricultural and natural ecosystems.

Mass Audubon recommends that MDAR and other state agencies collaborate to provide increased protection and support for native insect pollinators, and play a more active role in educating beekeepers, pesticide applicators, land managers/farmers, nurseries/landscapers, and the general public in protecting pollinator health.

Mass Audubon recommends that native bee and other pollinator conservation efforts be coordinated across state agencies and integrated with statewide land management goals. We also support coordination with a broad range of public and private landowners and stakeholders. For example, MassDOT could be supported in expanding areas of wildflower meadows adjacent to highways under its Greendot program, and the state could engage with utilities to further refine integrated vegetation management practices on utility rights-of-ways. The State Reclamation and Mosquito Control Board and mosquito districts presently only address managed hives in their management practices. Impacts of mosquito spraying on native pollinators should also be considered particularly in relation to routine ground spraying operations in locations where the current mosquito borne disease risk is “low” as ranked by the Department of Public

Health (updated throughout the season). There are also many opportunities to enhance landscape plantings and management on municipal and private lands.

Background:

According to scientists there are estimated to be over 4,000 species of native bees in the U.S. alone¹. About 400 species of bees have been documented in New England and one survey of cranberry bogs in Southeastern Massachusetts revealed the presence of 80 different species of native bees². Our diverse natural landscape is home to hundreds of unique species of flowering plants, some of which rely on very specific plant-pollinator relationships. The SWAP includes nine species of native bees in the list of Species of Greatest Conservation Need. It also notes that four species of formerly common native bumblebees have been extirpated in the state since 2005, probably due to exotic pathogen(s) imported with managed bee hives³. Many other native insects also perform important roles as pollinators, including moths, butterflies, beetles and flies. Managed bees, while important, are only one small aspect of pollination services that are important to both food production and natural plant communities. Wild pollinators suffer from many of the same stresses impacting managed bees, and it is important for the state to apply strategies that can improve the health and population stability of both.

The draft plan was developed in response to the *National Strategy to Promote the Health of Honey Bees and Other Pollinators* (the Strategy) issued by the Obama Administration on June 20, 2014. The Strategy recognized the seriousness of declines in both managed and native pollinators, due to numerous factors including loss of habitat and forage, parasites, pathogens, reduced genetic diversity, and pesticide exposure.

The national Strategy calls for federal agencies, in partnership with state and local governments and other stakeholders, to coordinate efforts to improve pollinator health. The overarching goals of the Strategy are to reduce mortality among managed honey bees, protect monarch butterflies and increase and improve pollinator habitat acreage. The Strategy recognizes the importance of a broad spectrum of pollinators to agriculture, the environment, human health and the economy. The Strategy includes several components, one of which is for the U.S. Environmental Protection Agency (EPA) to work with states and tribes to develop and implement Managed Pollinator Protection Plans (MP3s). EPA is promoting MP3s to address the use of highly toxic pesticides in areas where bees are brought onsite to provide contract pollination services. States and tribes have the flexibility to determine the scope of an MP3 that best responds to pollinator issues in their regions and may expand their focus to include conservation of native pollinators.

Wild Pollinator Conservation

The Massachusetts plan can and should be broadened to address wild as well as managed pollinators. There are many opportunities to improve pollinator habitat including public and private landscaping practices and management of utility and road rights-of-ways.

Adding the goal of native bee and other pollinator conservation to land management increases the ecological integrity of an ecosystem by conserving a unique biological interaction that is the basis for

¹ <http://www.xerces.org/pollinator-conservation/native-bees/>

² Mackenzie, K.E. and Averill, A.L. 1995 Bee (Hymenoptera:Apoidea) Diversity and Abundance on Cranberry in Southeastern Massachusetts. *Annals of the Entomological Society of America*, April.

³ Cameron, S.A., J.D. Lozier, J.P. Strange, J.B. Koch, N. Cordes, L.F. Solter, and T.L. Griswold. 2011. Patterns of widespread decline in North American bumble bees. *PNAS* 108(2): 662-667. Referenced in Massachusetts SWAP Chapter 3 <http://www.mass.gov/eea/agencies/dfg/dfw/wildlife-habitat-conservation/state-wildlife-conservation-strategy.html>.

most native wild plant reproduction⁴. Land can be managed for the purpose of enhancing populations of native bees by:

- Providing adequate bee habitat within agricultural ecosystems
- Increasing access to nectar and pollen throughout the spring and summer
- Providing nesting materials and sites, water and refuge from insecticides

Farmland should be managed as part of an overall agroecosystem inclusive of diverse habitats suitable for native pollinators such as deciduous and coniferous forest, open meadow, wetland and riparian habitats. This approach can reduce overreliance on managed bees; Kremen et al.⁵ observed that farms adjacent to natural unmanaged habitat that also did not use insecticides were characterized by diverse native pollinator communities which provided the necessary pollination services for crop production.

Supporting wild pollinators through land management has many co-benefits for crop production:

- Increased habitat complexity provides wild flowering plants and nesting sites which may also have the added benefit of supporting predatory and parasitic wasps that attack insect pests^{6,7}.
- Increased soil fertility in fields sown with insect-pollinated legumes (cover-cropping) have the ability to collect nitrogen from the air, store it in the roots, and leave it to enrich soil for other plants
- Provide high quality and highly efficient pollination services – inadequate pollination can result in reduced yields, delayed yields and inferior fruits. To compensate growers may rely on fertilizers and pesticides, as well as managed bees, which are expensive, resource intensive, and detrimental to populations of native bees.

Populations of native bees can be supported for both farm pollination services as well as for state wildlife management goals (SWAP). Diverse habitats support wild flowering plants which are not only necessary for the conservation of native bee communities, but which are also in decline both regionally and worldwide (New England Wildflower Society State of New England's Native Plants).

Information and Training for Pesticide Applicators

The plan provides voluntary guidelines for protecting pollinators, including recommendations for licensed pesticide applicators to follow. Such a program might be quite helpful if it is easy to use. It would be helpful if MDAR can obtain resources to enhance its website and provide additional information and resource links for applicators to improve their knowledge of practices to better protect pollinators. The pesticide applicators license exam could also be revised to include more questions on protecting pollinators. Expansion of continuing education on this subject would also be beneficial. For example, revisions to the two day training course offered by UMass Extension for those seeking to take the applicator license could be considered to better incorporate pollinator protection. Once licensed, applicators might be required to take a pollinator protection training course at least once every three years as part of their continuing education requirement. Frequent offerings of pollinator protection workshops

⁴ Loose, J. L., Drummond, F. A., Stubbs, C., Woods, S., & Hoffmann, S. (2005). Conservation and Management of Native Bees in Cranberry. University of Maine, Maine Agricultural & Forest Experiment Station, Orono, ME. (pp. 1-33)

⁵ Kreme, C., Williams, N.M., Thorp, R.W. 2002 Crop pollination from native bees at risk from agricultural intensification

⁶ Altieri M. A., Cure M.A., Garcia M.A., 1993. The role and enhancement of parasitic Hymenoptera biodiversity in agroecosystems. [In:] LaSalle J., Gauld I.D. (eds.), Hymenoptera and biodiversity. C.A.B. International, Oxon, 257–276.

⁷ Collins, W., and Qualset. C.O., 1998. Biodiversity in Agroecosystems, CRC Press, Boca Raton, FL.

annually at a number of locations around the state would increase access to such information by a large number of applicators.

Conclusion

The draft Massachusetts Pollinator Protection Plan is a positive step. Mass Audubon encourages MDAR to significantly expand its focus to include the important role of and threats to native, wild pollinators and associated habitats. We encourage MDAR to coordinate closely with MassWildlife and other agencies and stakeholders in these efforts.

Thank you for considering these comments.

Sincerely,



John J. Clarke
Director of Public Policy & Government Relations

cc: Jack Buckley, Director, MassWildlife

Mass Audubon works to protect the nature of Massachusetts for people and wildlife. Together with more than 100,000 members, we care for 35,000 acres of conservation land, provide school, camp, and other educational programs for 225,000 children and adults annually, and advocate for sound environmental policies at local, state, and federal levels. Founded in 1896 by two inspirational women who were committed to the protection of birds, Mass Audubon is now one of the largest and most prominent conservation organizations in New England. Today we are respected for our sound science, successful advocacy, and innovative approaches to connecting people and nature. Each year, our statewide network of wildlife sanctuaries welcomes nearly half a million visitors of all ages, abilities, and backgrounds and serves as the base for our work. To support these important efforts, call 800-AUDUBON (800-283-8266) or visit www.massaudubon.org.

Protecting the Nature of Massachusetts