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Statement of Beyond Pesticides
Massachusetts Department of Fish and Game
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Representatives of the Massachusetts Department of Fish and Game, we appreciate the opportunity to comment on the proposed Biodiversity Conservation Goals and the importance of adopting regulations that protect and enhance biodiversity, public health, and climate resilience. Beyond Pesticides and co-signers are in support of Governor Healey's leadership on the intersection of these monumental issue areas with a forward-thinking vision to integrate holistic policy solutions across the Commonwealth of Massachusetts.

Beyond Pesticides was founded in 1981 as a national, grassroots, membership organization that represents community-based organizations and a range of people seeking to bridge the interests of consumers, farmers, and farmworkers. Beyond Pesticides advances improved protections from pesticides and alternative pest management strategies that eliminate a reliance on pesticides. Our membership and network span the 50 states and the world. We are providing this testimony on behalf of our members and supporters in Massachusetts.

We urge the State of Massachusetts, in developing the Biodiversity Conservation Goals, to adopt a broad government-wide strategy that establishes biodiversity protection and enhancement as a basic tenet for all programmatic decisions going forward. In this context, the following issues, among others, stand out as emblematic of issues that require attention under the state's Biodiversity Conservation Goals: (i) Ecologically-based mosquito management requirements, (ii) aggressive efforts and chemical restrictions to protect pollinators and stave off the "insect apocalypse" and wildlife decline, and (iii) organic land management practices for all state lands in accordance with defined practices and allowed substances in conformance with the federal National Organic Program's National List of Allowed and Prohibited Substances.

In the face of federal stagnation on biodiversity protections, the leadership of state and local governments are critical to the ongoing disregard of escalating ecosystem deterioration. The United States has yet to sign or ratify the United Nations Convention on Biological Diversity as of the last Convention of Parties in 2022, despite ratification by 196 nations worldwide.[1] The health of soil and microbial life, air, waterways and coastlines, pollinators and insect populations, ecosystems and farmland, is at stake. In a 2024 study published in *The Lancet*, one

of the oldest running and internationally respected public health journals, researchers declare "the imperative role of comprehensive research and conservation strategies has never been as pressing."[2]

It is critical that the State of Massachusetts take a broader approach in response to the cascading impacts of biodiversity collapse, climate crisis, and public health threat and ensure that the response to this ecological crisis is defined by a large body of peer-reviewed scientific findings and the following goals:

1. Mosquito management must adopt measure that recognize the benefit of preventive strategies that establish source reduction programs that manage breeding sites on public lands and educate on the management of private lands, employ programs for larval management with biological controls, and eliminate the use of toxic pesticides.
2. The prohibition of neonicotinoid insecticides and treated seeds must involve programs that disclose information on the use of all pesticides the state through a virtual database, educational opportunities to teach the public how to access this information, and coordinate with state universities and experts to provide readily available information and scientific literature on the adverse effects of toxic pesticides.
3. Land management on public lands must center regenerative organic principles and organic certified products, including hospitals, higher education institutions, schools, state and recreational parks, among other areas to transition to an alternative, viable system that prioritizes long-term economic, ecological, and public health.

Main Recommendations

In alignment with the values and input of frontline communities, scientists, farmers, farmworkers, and advocates across the state, we recommend the following to be incorporated into the Biodiversity Conservation Goals:

Task the Executive Office of Energy and Environmental Affairs, in consultation with relevant offices, to:

1. Adopt an ecologically based mosquito management plan that emphasizes aerial and ground spraying prohibitions by 2030.
2. Prohibit the use of toxic petrochemical pesticides and pesticide treated seeds, including neonicotinoid insecticides, on public lands by 2030.
3. Adopt the National List of Allowed and Prohibited Substances, in alignment with National Organic Standards (CFR 7 U.S.C. 6517)[3], as the official allowed and prohibited inputs for public lands by 2030.

These three goals are not the ceiling of policy actions but demonstrate a starting point to address the cascading crises on our doorstep.

Ecologically Based Mosquito Management Plans

Pyrethroid insecticides are the chemicals of choice for pest management strategies, particularly for mosquitoes out of concern over exposure to dengue fever, arborvirus, Zika, malaria, among other diseases. Unfortunately, studies show that reliance on pyrethroids jeopardize agencies' ability to protect the public against these diseases in common mosquito species (A*edes aegypti* and *Culex quinquefasciastus*) leading not only to genetic mutations which cause rapid resistance, but also female mosquitoes learning how to evade spraying through smell.[4] There are decades of expert research, model policies, and information around mosquito control and mosquito-borne diseases to draw upon. [5]

Legislators in your state are attempting to act. There is an existing bill sitting in the state legislature that reflects the second target, including S.445/H.845, that we support in concept. Advocates in our network were disappointed that agency participants in the Mosquito Control for the 21st Century Task Force [6] did not support the recommendations banning aerial spraying and allowing municipalities to opt out of ground spraying [7], decisions that – if approved – fly in the face of documented evidence of adverse health impacts of pesticide and chemical drift through the air, streams, and soil.

Researchers have found viable alternatives [8] to pesticide use for pest management, such as supporting beneficial insects that consume pest insects. This includes planting different flowers that attract syrphid flies – which are known to consume various garden and on-farm insect pests – in Massachusetts and the surrounding New England area.

Neonicotinoid Insecticides

Insects, particularly pollinators, are under existential threat from neonicotinoid (neonic) insecticides and neonic-treated seeds. A study published earlier this year in *PLOS One* found that globally, populations rates are projected to decline by as much as 30 to 50 percent within the next two decades. [9] In Midwestern states, the coveted monarch butterfly (*Danaus plexippus*) saw precipitous declines in abundance beginning in 2003 – at the same time of rampant increases in neonicotinoid use on commodity crops.[10] A meta-analysis of the last three decades of studies indicates impacts on pollinator anatomy leading to colony collapse and developmental issues that undermine the reproduction of bees. [11]

As of 2024, there are five states – Maine, New Jersey, Nevada, New York, and Vermont – that have passed legislation to eliminate, with some exceptions, the use of neonicotinoid pesticides for outdoor non-agricultural purposes. [12] Seven additional states – California, Colorado, Massachusetts Maryland, Minnesota, Rhode Island, and Washington – have prohibited the homeowner use of neonicotinoids and only permit licensed operators to spray. [13]

The casual use of toxic chemicals has led to unintended consequences, including pesticide resistance in mosquitoes[14] and antibiotic resistance in humans [15]. Meanwhile, research shows that organically managed systems sequester more carbon dioxide per acre than chemical

intensive operations, as well as reducing acidification of the environment, net greenhouse gas emissions, energy use, and biodiversity loss. [16] [17]

Advocates implore the Commonwealth will go further than this "whack-a-mole" approach of individual and class-wide bans of pesticides and subsequent replacement with additional toxic pesticides. The solution? Adopt a wholesale transition in alignment with National Organic Program's National List of Allowed and Prohibited Substances.

National List of Allowed and Prohibited Substances

With the passage of the *Organic Foods Production Act* in 1990, the National Organics Standards Board within the U.S. Department of Agriculture (USDA) is tasked to develop criteria for acceptable inputs – including pesticides – that do not jeopardize biological health in water, soil, and living beings. The National List of Allowed and Prohibited Substances, if adopted as the only acceptable list of chemicals, inputs, fertilizers, and pesticides on public lands, would instantaneously prohibit the use of most toxic pesticides with documented adverse health effects currently on the market.

Pesticide mixtures, including insecticides, are proven to have existential impacts on ecosystem integrity. Even at individually low levels found in aquatic ecosystems, researchers build on existing literature that demonstrates how groups of pesticides cumulatively amplify as they move up through the food chain. This exposure impacts fish[18], microorganisms [19], amphibians, [20] mammals [21], and sensitive ecosystems like coral reefs.[22]

USDA found there are 4.89 million acres of organic-certified land in the United States as of 2021[23]– with potentially millions of additional acres that adopt practices consistent with organic land management practices and principles. Communities and institutions across the nation are determined to move beyond the rampant use of toxic materials as chronic illness soars and ecosystems are left in a troubling state.

As you consider the development of these Goals, supported by the scientific findings and citations in this statement, we urge you to recognize the dire need to improve state safeguards concerning not just neonicotinoids – hazardous insecticides that harm pollinators, birds, wildlife, soil and aquatic organisms, and human health, as well as contaminate surface and drinking water – but also set forward thinking policies and regulations that replace all toxic pesticides with organic land management principles and approved inputs.

The development of robust Biodiversity Conservation Goals has the opportunity to address gaps in U.S. Environmental Protection Agency (EPA) regulatory action that threaten resident safety and ecological stability in the state of Massachusetts. These gaps include critical shortcomings in EPA ecological risk assessment that include but are not limited to underestimating risks of pesticides on pollinators [24] , failure to quantify the alleged economic benefits of pesticide use [25]

, failure to comply with *Endangered Species Act* [26] , and cumulative exposure to numerous pesticides. [27]

Conclusion

We appreciate the State of Massachusetts approaching biodiversity conservation in a multifaceted framework. Executive Order 618 charges the Commissioner pf the Department of Fish and Game to "recommend biodiversity conservation goals for 2030, 2040, and 2050 and strategies to meet those goals, including coastal and marine biodiversity conservation, to halt and reverse the loss of the variety of species and habitats of Massachusetts" and "conduct a comprehensive review of the existing efforts of all executive department offices and agencies to support biodiversity conservation in Massachusetts."[28] \

Massachusetts has been a leader on preserving public health in the context of pesticides and public health implications. We applaud Governor Healey's proclamation to establish May 12-18 as Multiple Chemical Sensitivity (MCS) Week [29], building on the momentum of various other states.

At a time of cascading and intersecting public health, biodiversity, and climate crises, we must stop the use of toxic petrochemical-based pesticides that are found to cause immense harm; yet, we must also move toward an approach that incentivizes sustainable practices that do not necessitate these chemicals in the first place. The recommendations above serve as a baseline of policy priorities that the Commonwealth should adopt into the holistic vision for preserving and enhancing biological diversity, health, and climate resilience.

We would be happy to work with the Department of Fish and Game to achieve these broader health and sustainability goals going forward. With the adoption of these proposed goals, we urge the Commonwealth to act in the context of eliminating damaging pesticides that can be replaced by practices and materials compatible with the environment and public safety.

Thank you for the opportunity to comment.

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Endnotes

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