Pollinator Working Group

Working Group to Make Findings and Recommendations with Regard to Maintaining, Protecting and Enhancing Pollinator Habitat and Health in Rhode Island

Year Two Report

February 15, 2018

http://www.dem.ri.gov/programs/agriculture/pollinator-working-group.php

The Pollinator Working Group (PWG) was created in 2016 by the Rhode Island House of Representatives (2016 -- H 8265) to support the RI Department of Environmental Management (DEM) and study pollinator health and habitats in Rhode Island. The PWG's initial findings were reported to the Director of DEM, the House of Representatives and the Governor in February 2017. The House of Representatives requested that the DEM continue working with the PWG (2017 -- H 6256) and report to the Director and House of Representatives on or before February 15, 2018.

The PWG is charged with:
(a) making findings with regard to:
(1) Developments in the scientific and technical understanding of conditions and practices affecting pollinator population;
(2) Conditions and practices affecting the maintenance, protection, and enhancement of pollinator habitat and health in Rhode Island;
(3) Opportunities for expanding pollinator habitat on state owned property;
(4) Rhode Island's pesticide and apiary laws and regulations and training;
(5) Strategies to publicize and coordinate public education programs directed at pollinator health and habitat;
(6) Strategies to fund pollinator monitoring and habitat enhancement;
(b) make recommendations based on its findings, to maintain, protect and enhance pollinator health and habitat in Rhode Island.

I. Recommendations to maintain, protect and enhance pollinator health and habitat in Rhode Island

The Pollinator Working Group's recommendations are in 4 categories – Regulatory, Programmatic, Knowledge Gaps and Public Education. The following section updates recommendations from the 2017 report showing progress and identifying next steps identified by the Pollinator Working Group.

A. Regulatory

1) Rhode Island should use a portion of the funds it collects from the registration of pesticides to strengthen regulation of pesticides, oversight of beekeepers and to fill research needs. We recommend using the funds for key RI Department of Environmental Management

programs related to pesticides and pollinators with reporting and oversight by the legislature. We recognize there is an FTE cap, but funds could be applied to these issues via contractual arrangements. Funds could be used in the following areas:

- Beekeeper registration and training. All beekeepers need to be registered.
- Technical support and inspections of beekeepers.
- Environmental monitoring, and oversight of licensed pesticide applicators.
- Research to fill knowledge gaps.

Funding could also be directed to the University of Rhode Island, a key partner providing pesticide training:

- Expand pesticide training to include pollinator information/education.

Progress: In 2017, Representative Handy introduced House bill 6264 to appropriate $500,000 from pesticide registration fees to the Rhode Island Department of Environmental Management. The bill was referred to House Finance and did not progress.

Next steps: The Pollinator Working Group urges the legislature to reconsider appropriation of $500,000 from the pesticide registration fees to the RI Department of Environmental Management for the purpose of pollinator health and pesticide safety.

2) We recommend that the RI Department of Environmental Management review the connections between vector control management and pollinator protection, especially the concern that mist blowers used in mosquito control likely impact beneficial insects. The Department should develop regulations for the mosquito control industry and encourage the use of cultural controls such as removing sources of standing water.

   Progress and Next steps: See 3) below.

3) Modernize the state's pesticide program. The program – laws and regulations – are thirty years old and do not take into account development in pesticides, the pest control industry, pests and circumstances of applications as they relate to pollinator safety. A full review is in order with recommendations for strengthening initial and ongoing pesticide license training as well as how pesticide regulations impact pollinators.

   Progress: In 2017, Senators Sosnowski, Coyne Calkin, Kettle and Conley introduced and passed a resolution (S 0982) that created a special legislative commission to study pesticide control regulations. In 2018, the Senate passed S 2109 which extends the reporting deadline to March 30, 2018. To date, the commission has not been seated.

   Next steps: The PWG strongly encourages the commission to be formed and begin meeting. We look forward to supporting the work of the commission and hope that the commission will examine the PWG's concerns summarized in this report.

B. Programmatic

1) The RI Department of Environmental Management and the RI Department of Transportation should make it a priority to enhance pollinator habitats and promote best management practices.

   Progress**:** RI Department of Environmental Management's Division of Fish and Wildlife has on-going projects restoring fallow fields with new native plantings that provide dual benefits for birds and mammals and for pollinators and other beneficial insects. Field habitat at many Management Areas is managed with winter/fall mowing to prevent woody vegetation from taking over, to maintain fields in herbaceous cover and to make the fields beneficial for pollinators. The Division also promotes young forest habitat by incorporating cuts into state forest lands. This practice improves the density of pollinator friendly vegetation.

   The RI Department of Transportation is exploring opportunities for enhancing pollinator habitat as part of the Department's stormwater program and as part of other highway initiatives. Identified challenges include modifying maintenance strategies that satisfy the public while enhancing pollinators and using cost-effective pollinator friendly seed mixes.

   Next steps: The Massachusetts Department of Transportation has developed a successful pollinator enhancement project in partnership with the Mass. Natural Heritage and Endangered Species Program (which provides seeds) and the Mass. State Parks (which provides sites and creates explanatory signage). Rhode Island is exploring opportunities for replicating this model.

2) Consider requiring state projects to devote some portion of their landscaping to pollinator habitat.

   Progress: In 2017, the RI Legislature passed amendments to the state's Green Buildings Act (H 5427, S 952). The Green Buildings Act was first passed by Rhode Island in 2010 and requires that major facility projects of public agencies be designed and constructed to at least the LEED certified or equivalent high performance green building standard. Major facilities are defined as building construction projects larger than 5,000 square feet or renovation projects larger than 10,000 square feet. Public facilities are defined as "public institution, public facility, public equipment, or any physical asset owned, leased or controlled in whole or in part by this state or any agency or political subdivision thereof"[1]. The 2017 amendments expanded the metrics applied to public facilities to include LEED for neighborhood development and SITES. These metrics include enhanced pollinator habitats.

[1] Rules and Regulations to Implement the Green Buildings Act Adopted October 2010 Puruant to RIGL Section 37-24-5

Next steps: The bill specified that the state will start with four pilot projects and we will follow the implementation to explore opportunities for pollinator enhancement.

3) Rhode Island should work regionally to build a "seed industry" for rehabilitation and restoration. The "National Seed Strategy for Rehabilitation and Restoration 2015-2020" presents an opportunity. [2]

   Progress and Next Steps: The Rhody Native initiative and other constituencies continue to work with regional and national programs in order to stay in touch with out of state developments and coordinate the efforts of Rhode Island based stakeholders

4) The state's beekeeper advisory board, required under R.I.G.L. § 4-12-16 to provide leadership and assistance to the state's apiary program, should be strengthened and engaged. DEM should encourage the existing board constituency to be more active. A new, different board membership might better reflect present-day issues but would have to be provided for by changes in the statute.

   Progress and Next Steps: No progress to date.

5) Promote best management practices for pollinator plantings/management for different crops and roadsides, etc. The Farm Bureau has national recommendations for enhancing pollinator habitats in road side management - The New England DOT's also have recommendations.

   Progress and Next Steps: PWG is encouraging coordination among URI researchers and others studying roadside vegetation to produce a list of native plant species that support pollinator habitat needs and are also suited to the conditions and maintenance regimes on roadsides. PWG will work with the Rhody Native initiative and others in the nursery industry to identify sources of appropriate seeds and/or other propagation strategies for these species and make that information available to DOT and other state agencies.

C. Knowledge Gaps

RI scientists and managers should look for ways to fill the following four knowledge gaps in our understanding of pollinator health and habitats and conduct research to better understand:

1) The sub-lethal effects of pesticides and the synergistic effects of pesticides through stacking or application for different reasons in the same area (mosquito control followed by

[2] https://www.fs.fed.us/wildflowers/Native_Plant_Materials/documents/SeedStrategy081215.pdf
http://digitalcommons.conncoll.edu/cgi/viewcontent.cgi?article=1001&context=arboretum_otherpubs

chemical applications on lawn and garden). Rhode Island also needs an assessment/study of hives (wax, bee bread, and pollen) for the types and concentration of pesticides. And the state should promote best management practices for pesticide application and encourage Integrated Pest Management.

Next steps: The PWG recommends that the Pesticide Study Commission examine these issues.

2) Status and trends in RI pollinator species and habitats.
Progress: The PWG worked with Dr. Pete August and Julia Bancroft on a first-cut analysis of existing GIS data to explore the hypothesis that RI's small-scale agriculture and well developed habitat restoration programs provide robust pollinator habitat. (See section IV. Pollinator Working Group Research and Findings, 2017).

Next steps: Funding is needed for additional GIS and field work

3) Beekeeping data including location of managed hives, the number of hives, number and types of bees being imported into the state, treatments of hives.

Progress and Next Steps: In process (RIDEM).

4) Identify funding potential sources for additional research.

Progress and Next Steps: No progress to date.

D. Public Education

Rhode Island should expand public education on pollinator health and habitats, exploring some of the following strategies:

1) Bring farming back into the K-12 curriculum. One strategy could be to work with the Future Farmers of America (FFA). In Rhode Island, programs are disappearing (there are currently five active charters of FFA in Rhode Island), but other states are bringing them back. RI should follow suit. Classes can cover agricultural best practices, information on how to best manage pesticides (could help with residential application), and information on pollinators and beekeeping. Encourage schools to have hives.

2) Support and expand development of suburban/urban pollinator habitats. Explore strategies for expanding the excellent training and network developed by the URI Master Gardeners.

3) Use advertising to get the word out. People are becoming aware of the challenges facing pollinators through TV programs, news, etc. RI should build from this to reach a larger

audience. Explore grant funding for student assistance to develop a web page, linked through RIDEM's website, containing our recommended best practices for the application and use of pesticides, especially in regard to how it pertains to pollinators.

4) Support the development of citizen science programs like programs under development at RI DEM Division of Fish & Wildlife

Next steps: The Pollinator Working Group will coordinate state-wide publicity during Pollinator Week, 2018 (June 18 – 24, 2018). We are exploring opportunities to highlight pollinator issues including illuminating the State House, a press conference at the State House and a shared calendar of activities for the week. We will explore a "Plant Pro" segment with Sejal Lanterman (which is a 2- minute spot every Sunday morning on channel 10 featuring tips in conjunction with the URI Master Gardeners program) covering best practices for pesticide application and use in regard to how best to avoid impacts to pollinators.

II. Pollinator Working Group Recommendations to the Special Legislative Commission to Study Pesticide Control Regulations

The Pollinator Working Group respectfully requests the Legislative Commission to consider the following questions and concerns:

1. Evaluate and strengthen the pesticide applicator training program offered at URI and the state licensure program.
    a. Consider requiring the training for all applicants taking the licensing test by regulation. Although this is done as a matter of practice by RIDEM, it is not required by law or regulation.
    b. Review and update the training program at URI.
    c. Include a robust module on pollinators in the licensing training to increase awareness of pollinator health and the impacts of pesticides on the state's pollinators.
    d. Ensure that licensed applicators have the ability to read and follow pesticide labels. Ensure that the test verifies this ability.

2. Evaluate state oversight of mosquito sprayers and consider regulations to limit impacts on pollinators.

3. Evaluate the sub-lethal effects of pesticides and fungicides and the synergistic effects of pesticides through stacking or application for different reasons in the same area (mosquito control followed by chemical applications on lawn and garden). Consider strategies to address through law and regulation.

4. Evaluate how Rhode Island can establish an annual pesticide take-back program for non-residential scale users. RI Resource Recovery EcoDepot will take pesticides from homeowners, but commercial users cannot take advantage of this program. RIDEM oversaw a take back program in the past and it was very successful. Such a take-back program, combined with EcoDepot, would get the unwanted, unused, surplus and dangerous pesticides out of the system – both commercial scale (farms) and residential scale.

III. Pollinator Working Group Recommendations to State Agencies

The PWG respectfully offers the following recommendations to the RI Department of Transportation (RIDOT) and the RI Department of Environmental Management (RIDEM). We are available to help move these ideas forward.

<u>RI Department of Transportation</u>
RIDOT has prepared a draft plan of action to enhance pollinator plantings along state highways. The plan has the following components: 1) Explore opportunities to expand plantings at RIDOT's daffodil spots to include flowering pollinator friendly, native plants throughout the growing season; 2) Include pollinator-friendly plant species in projects being built under the stormwater consent decree; 3) Research opportunities for limited mow areas; 4) Revise RIDOT's "Blue Book" specifications to create a wildflower mix that includes native pollinator species; 5) Explore collaboration with RIDEM to enhance cross-agency learning about strategies for enhancing pollinators; and 6) Explore opportunities for pollinator plantings at Adopt-A-Spot gardens.

The PWG offers the following additional recommendations:

- Consider introducing pollinator seed mixes to roadside areas selected for reduced mowing.
- Use white clover as ground cover in areas that receive less mowing.
- Increase the organic matter content of top soil specified in road planting contracts to help pollinator friendly plant species thrive.

<u>RI Department of Environmental Management</u>
RIDEM is participating in the implementation of the Green Buildings Act. We encourage the selected projects to consider enhancing pollinator habitat.

RIDEM and other state experts have expertise in land management and pollinator enhancement that will benefit RIDOT. We encourage the two agencies to work together in partnership with other experts on road side pollinator enhancement.

We encourage RIDEM to strengthen the state apiary program by considering the following recommendations:

- Improve beekeeping data including location of managed hives, the number of hives, number and types of bees being imported into the state, treatments of hives (in process).
- Conduct an assessment/study of hives (wax, bee bread, and pollen) for the types and concentration of pesticides.
- Strengthen the state's beekeeper advisory board required under R.I.G.L. § 4-12-16 or work with the legislature to revise the statute to better reflect present-day issues and constituencies.

IV. Pollinator Working Group Research and Findings, 2017

Examine potential pollinator habitat areas in Rhode Island using existing GIS data layers: Preliminary analysis

URI Professor Dr. Pete August and Julia Bancroft, a student in his GIS analysis class, worked with a committee of the Pollinator Working Group to conduct an initial analysis of pollinator habitats in Rhode Island using GIS data. The committee included Dr. August, David Gregg, Shannon Brawley and Meg Kerr (members of the PWG) along with Dr. Steve Alm and Dr. Howie Ginsberg.

Bancroft used existing GIS data layers from the RI Ecological Communities Classification and RI Forest data layers. The steering committee agreed to use a foraging radius for bees of 2.5 miles (4.0 km). For each pixel in the map, she looked at the total number (variety) of habitat types deemed most suitable for bees within this foraging radius and mapped the results state wide. She also looked at the abundance of high value pollinator habitat (total square kilometers of suitable pollinator habitat) within a foraging distance of 2.5 miles (4.0 km). These results were also mapped. Finally, she developed a map where the diversity and abundance were added together.

The maps were compared to field data collected by Dr. Alm at blueberry sites throughout the state. There are 13 hive sites near blueberry growing facilities/farms and for comparison 12 sites were randomly generated. They found that there was no difference in average bee habitat between the hive sites and randomly generated sites. There was significant difference in how variable the two datasets were. The random sites were three times more variable than the blueberry sites.

<u>Conclusions:</u>

- Rhode Island has a wide range of suitable habitats for pollinators (not homogeneous)
- There are distinct spatial patterns with 1) the South Shore, 2) Northern RI, and 3) Tillinghast Pond Management Area.

- There are anomalies in the data associated with 1) the northern end of Jamestown and 2) a patch through Aquidneck Island.
- Additionally, the East Bay and Block Island show good habitat.
- However, it is unknown how these or other patterns detectable in Rhode Island compare to neighboring states, Connecticut and Massachusetts.

Next Steps:

Based on the discussion from the October 5, 2017 Pollinator Working Group meeting, the following were suggested for next step actions:

- Compare results with Steve Alm's new bee data
- Take 10 high habitat areas and 10 low habitat areas and ground truth
- Adjust and re-weight the variables based on favorable habitat areas
- Take temporal assessments and growing seasons into consideration for the data collection and analysis (e.g: red maple swamp)

APPENDIX – Members of the Pollinator Working Group, 2017

Ken	Ayars	R.I. Dept. of Environmental Management, Div. of Ag.
Meg	Kerr	Audubon Society of Rhode Island (committee/admin. support)
Joel	Tirrell	R.I. Nursery and Landscape Association
Shannon	Brawley	R.I. Nursery and Landscape Association (admin. support)
David	Brunetti	Environment Council of R.I.
Henry	Wright	R.I. Farm Bureau
Heidi	Quinn	R.I. Farm Bureau
Ken	Payne	
David	Gregg	R.I. Natural History Survey
Lisa	Tewksbury	University of R.I., Plant Sciences - Bio-Control Lab
Rafael	Nightengale	URI Lands and Grounds
Keith	Salisbury	R.I. Beekeepers Association
Robert	Mann	National Assn of Landscape Professionals
Sarah	Churgin	Eastern RI Conservation District

2017 Meetings

September 7, 2017
October 5, 2017
November 2, 2017
December 7, 2017
January 11, 2018

APPENDIX – RIDEM Wildlife Habitat Program's activities that enhance pollinator habitats

Rhode Island Department of Environmental Management

RIDEM Division of Fish and Wildlife – Wildlife Habitat Program (Tanner Steeves)

DFW directly manages ~25,000 acres and participates in management of an additional ~20,000 acres. Primary management objective is to benefit wild birds and mammals (through the Federal Aid to Wildlife Restoration Program), but this effort often provides direct benefits to pollinators and other beneficial insects.

Types of "Pollinator Effort":

- Field mowing during winter months to maintain non-forested upland patches as herbaceous on a perennial to triennial schedule that incorporates within-patch rotational strategy where feasible to provide over-wintering refugia. Total field area statewide under DFW management is approx. 490 acres.
- Seeding projects to create annual wildlife food plots that utilize pollinator-friendly plants (buckwheat, clover, sunflower, etc).
- Seeding projects to restore disturbed or low-quality sites to permanent native cover: "Pollinator Plots" and "Grassland Plots", descriptions below.
- Timber harvesting projects to enhance wildlife habitat often benefit pollinators by thinning forest canopies and creating forest openings which increase the abundance and diversity of pollinator-friendly plants.

Summary of Recent Effort…

2015

- Annual winter mowing effort: 193 acres
- "Grassland Plots", consisting of native warm season grasses were established from seed at two sites (Arcadia and Carolina Management Areas). Seed mix consisted of: little bluestem, indian grass, wild rye, and many species of forbs that benefit pollinators

(Ernst Seeds Northeastern U.S. Roadside Native Mix, ERNMX-105). Total: 5 acres

- **"**Pollinator Plots", consisting of native forbs (wildflowers) and some grasses, were established from seed at three sites Great Swamp Management Area (Ernst Seeds Xerces Society Northeastern Pollinator Mix). Total: 3.5 acres
- "Wildlife Food Plots" – Annual plots that typically consist of one or more beneficial pollinator component (buckwheat, clover, sunflower and/or). Total: 35 acres

2016

- Annual winter mowing effort: 176 acres
- "Pollinator Plot" at Sapowet Marsh WMA – Native warm season grasses and forbs were established at Sapowet Marsh WMA as part of a coastal restoration project to "permanently" restore ag-modified site. Custom coastal seed mix developed in cooperation with Xerces Society: switchgrass (coastal ecotype) and little bluestem, along with many pollinator friendly plants. Total: 9 acres
- "Grassland Plot" at Great Swamp WMA – Native warm season grasses and forbs were established to restore ag-modified site to permanent cover. New England Wetland Plants: New England Conservation/Wildlife Mix. Total: 5 acres
- "Wildlife Food Plots": Total: 17 acres

2017

- Annual winter mowing effort: 91 acres
- "Wildlife Food Plots": Total: 28 acres